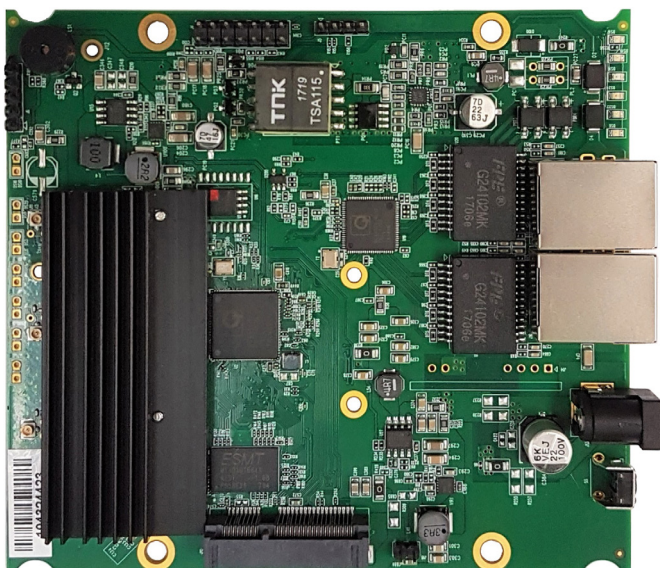


## High Power QCA9563 Embedded Board with on-board Wireless 775MHz CPU / 2x GE Port / 1x Mini PCIe / Designed for 802.11ac

**Model: WPJ564 6A01**



### KEY FEATURES

- Qualcomm Atheros QCA9563 74Kc MIPS processor with 64 KB I-Cache and 32 KB D-Cache, targeted to operate at 775MHz
- 128MB System Memory
- 16MB NOR Flash
- 3x3 On-board 2.4GHz radio, up to 450Mbps physical data rate
- High power with large heatsink

### APPLICATIONS

- 802.11g/n + 802.11a/n/ac Access Point
- Point-to-MultiPoint High Capacity Wireless Bridge
- Wireless Customer-Premises Equipment (CPE)

## Specifications

|                                        |                                                                                                                                                                              |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chipset                                | CPU: Qualcomm Atheros QCA9563 775MHz                                                                                                                                         |
| Reference Design                       | AP152-030                                                                                                                                                                    |
| System Memory                          | 128MB DDR2                                                                                                                                                                   |
| NOR Flash                              | 16MB                                                                                                                                                                         |
| Wireless                               | On-board 3x3 2.4GHz 802.11b/g/n, max 30dBm per chain<br>3x U.FL/MMCX connectors                                                                                              |
| Frequency Range                        | 2.412~2.472GHz                                                                                                                                                               |
| Modulation Techniques                  | OFDM: BPSK, QPSK, 16-QAM, 64-QAM                                                                                                                                             |
| Expansion                              | 1x 9.2mm height Mini PCIe slot                                                                                                                                               |
| Interface                              | 2x Gigabit Ethernet LAN RJ45 Port with Auto MDI-X<br>1x Serial Port 4 Pin Connector <sup>1</sup><br>1x JTAG 14 Pin Connector <sup>2</sup><br>1x USB 3.0 Pin Connector Header |
| Reset Button                           | 1x H/W Reset Button                                                                                                                                                          |
| LED                                    | 7x LED Indicators for MMZ/MMS/MPS                                                                                                                                            |
| Power over Ethernet                    | Supports IEEE 802.3af 48V, 802.3at 56V, and Passive PoE 36~56V DC                                                                                                            |
| DC Power                               | 1x DC Jack Connector: 12~24V                                                                                                                                                 |
| Power Consumption (Board Only)         | 19.8W (Max)                                                                                                                                                                  |
| Supported Operating System             | CompexWRT or OpenWRT/LEDE                                                                                                                                                    |
| Certification                          | REACH and RoHS Compliance                                                                                                                                                    |
| Environmental Temperature Range        | Operating: -20°C to 70°C, Storage: -40°C to 90°C                                                                                                                             |
| Environmental Humidity, non-condensing | Operating: 5% to 95%, Storage: Max. 90%                                                                                                                                      |
| Dimensions (W x H x D) in mm           | 117 x 105 x 17.7                                                                                                                                                             |
| Extras                                 | 1x SIM Card Slot<br>1x Buzzer                                                                                                                                                |
| Other Features                         | Surge Suppressor                                                                                                                                                             |

1.The Serial Port is a 4-pin header (TTL). A Serial Converter is available to change the TTL signals on the board to RS-232 signals for debugging.

2.The JTAG Port is a 14-pin header. A JTAG kit is for writing your self-developed loader and firmware directly.

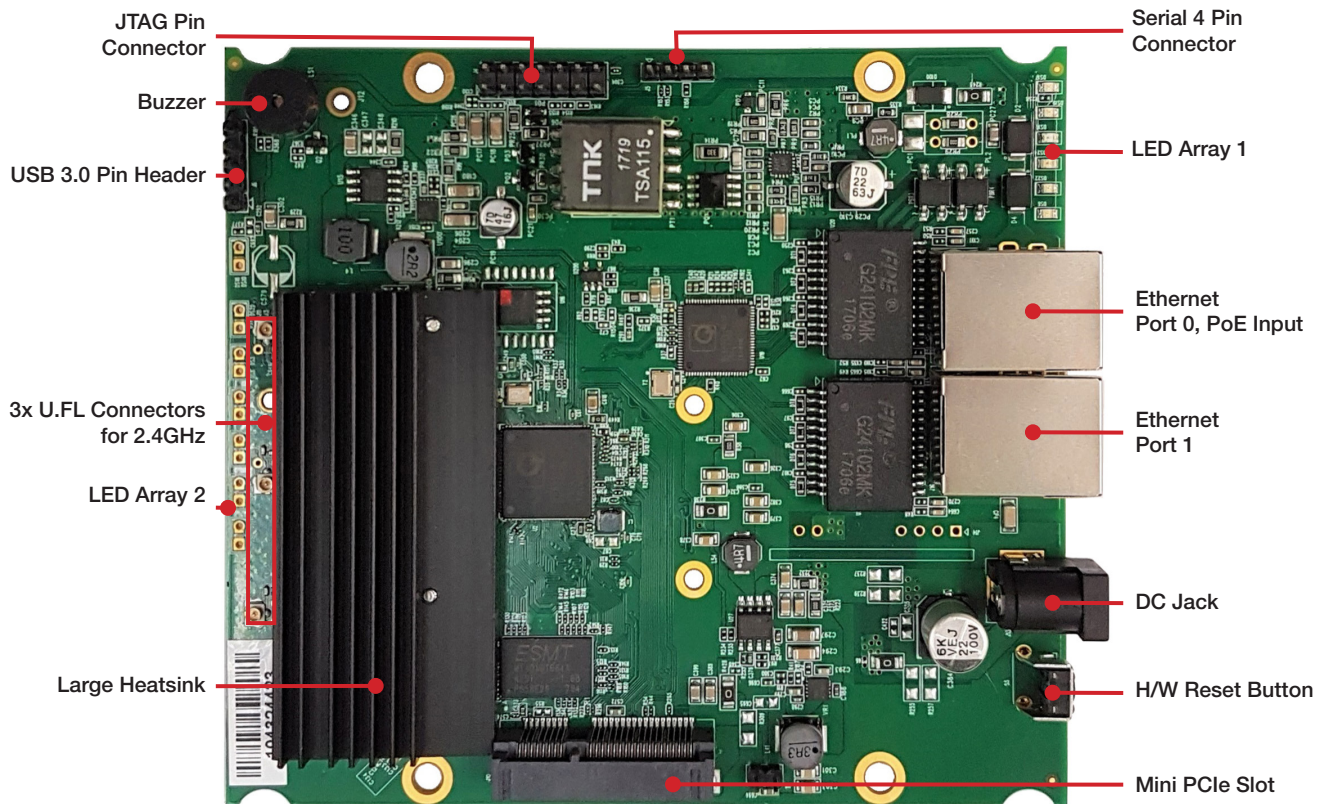
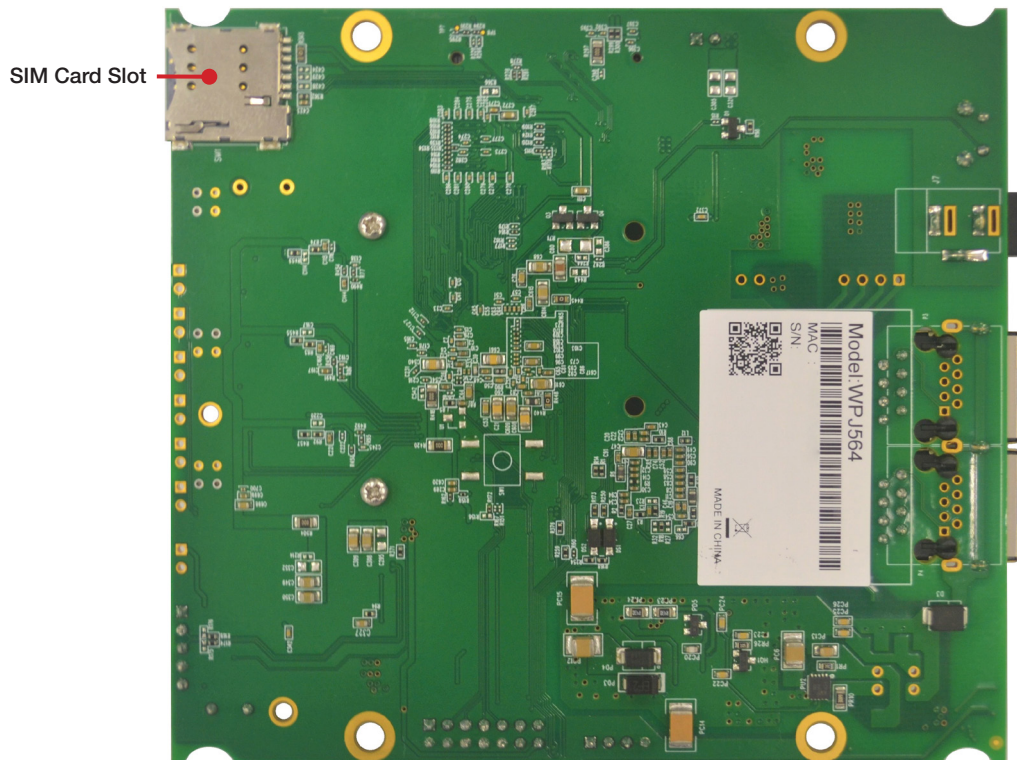
\*Configurations are subject to change without notifications.

## RF Performance Table

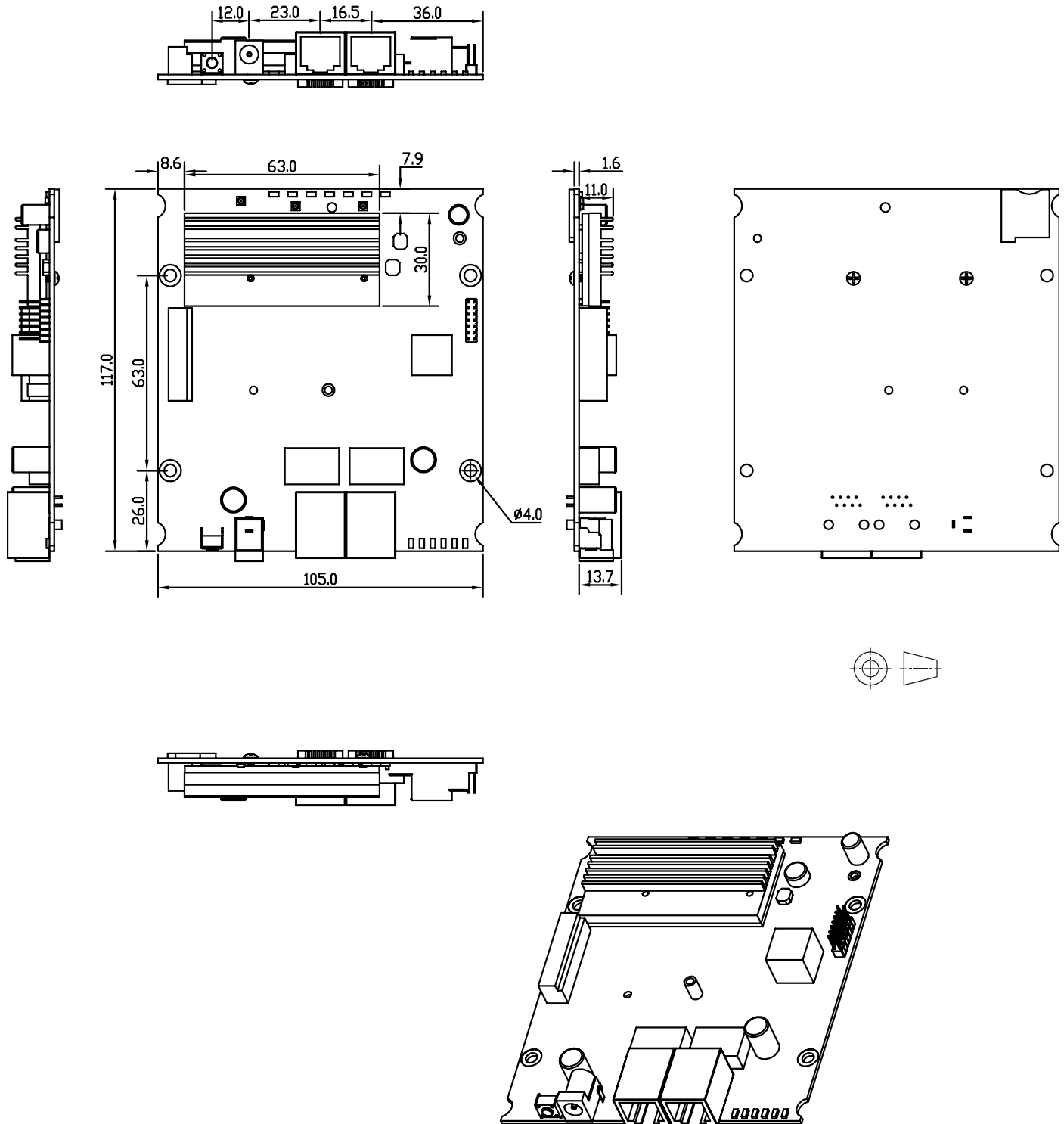
|                           | Data Rate | TX Power<br>(per chain) | TX Power<br>(3 chains) | Tolerance |
|---------------------------|-----------|-------------------------|------------------------|-----------|
| 2.4GHz<br>802.11b         | 1Mbps     | 28dBm                   | 33dBm                  | ±2dB      |
|                           | 2Mbps     | 28dBm                   | 33dBm                  | ±2dB      |
|                           | 5.5Mbps   | 28dBm                   | 33dBm                  | ±2dB      |
|                           | 11Mbps    | 28dBm                   | 33dBm                  | ±2dB      |
| 2.4GHz<br>802.11g         | 6Mbps     | 30dBm                   | 35dBm                  | ±2dB      |
|                           | 9Mbps     | 30dBm                   | 35dBm                  | ±2dB      |
|                           | 12Mbps    | 30dBm                   | 35dBm                  | ±2dB      |
|                           | 18Mbps    | 30dBm                   | 35dBm                  | ±2dB      |
|                           | 24Mbps    | 30dBm                   | 35dBm                  | ±2dB      |
|                           | 36Mbps    | 28dBm                   | 33dBm                  | ±2dB      |
|                           | 48Mbps    | 27dBm                   | 32dBm                  | ±2dB      |
|                           | 54Mbps    | 26dBm                   | 31dBm                  | ±2dB      |
| 2.4GHz<br>802.11n<br>HT20 | MCS 0     | 30dBm                   | 35dBm                  | ±2dB      |
|                           | MCS 1     | 28dBm                   | 33dBm                  | ±2dB      |
|                           | MCS 2     | 28dBm                   | 33dBm                  | ±2dB      |
|                           | MCS 3     | 28dBm                   | 33dBm                  | ±2dB      |
|                           | MCS 4     | 27dBm                   | 32dBm                  | ±2dB      |
|                           | MCS 5     | 26dBm                   | 31dBm                  | ±2dB      |
|                           | MCS 6     | 25dBm                   | 30dBm                  | ±2dB      |
|                           | MCS 7     | 24dBm                   | 29dBm                  | ±2dB      |
| 2.4GHz<br>802.11n<br>HT40 | MCS 0     | 29dBm                   | 34dBm                  | ±2dB      |
|                           | MCS 1     | 27dBm                   | 32dBm                  | ±2dB      |
|                           | MCS 2     | 27dBm                   | 32dBm                  | ±2dB      |
|                           | MCS 3     | 27dBm                   | 32dBm                  | ±2dB      |
|                           | MCS 4     | 26dBm                   | 31dBm                  | ±2dB      |
|                           | MCS 5     | 25dBm                   | 30dBm                  | ±2dB      |
|                           | MCS 6     | 24dBm                   | 29dBm                  | ±2dB      |
|                           | MCS 7     | 23dBm                   | 28dBm                  | ±2dB      |

|                           | Data Rate | RX Specifications<br>Sensitivity | Tolerance |
|---------------------------|-----------|----------------------------------|-----------|
| 2.4GHz<br>802.11b         | 1Mbps     | -96dBm                           | ±2dB      |
|                           | 2Mbps     | -94dBm                           | ±2dB      |
|                           | 5.5Mbps   | -92dBm                           | ±2dB      |
|                           | 11Mbps    | -90dBm                           | ±2dB      |
| 2.4GHz<br>802.11g         | 6Mbps     | -96dBm                           | ±2dB      |
|                           | 9Mbps     | -96dBm                           | ±2dB      |
|                           | 12Mbps    | -96dBm                           | ±2dB      |
|                           | 18Mbps    | -95dBm                           | ±2dB      |
|                           | 24Mbps    | -94dBm                           | ±2dB      |
|                           | 36Mbps    | -90dBm                           | ±2dB      |
|                           | 48Mbps    | -85dBm                           | ±2dB      |
|                           | 54Mbps    | -83dBm                           | ±2dB      |
| 2.4GHz<br>802.11n<br>HT20 | MCS 0     | -95dBm                           | ±2dB      |
|                           | MCS 1     | -95dBm                           | ±2dB      |
|                           | MCS 2     | -95dBm                           | ±2dB      |
|                           | MCS 3     | -92dBm                           | ±2dB      |
|                           | MCS 4     | -88dBm                           | ±2dB      |
|                           | MCS 5     | -86dBm                           | ±2dB      |
|                           | MCS 6     | -82dBm                           | ±2dB      |
|                           | MCS 7     | -80dBm                           | ±2dB      |
| 2.4GHz<br>802.11n<br>HT40 | MCS 0     | -94dBm                           | ±2dB      |
|                           | MCS 1     | -93dBm                           | ±2dB      |
|                           | MCS 2     | -92dBm                           | ±2dB      |
|                           | MCS 3     | -90dBm                           | ±2dB      |
|                           | MCS 4     | -85dBm                           | ±2dB      |
|                           | MCS 5     | -82dBm                           | ±2dB      |
|                           | MCS 6     | -79dBm                           | ±2dB      |
|                           | MCS 7     | -76dBm                           | ±2dB      |

## Component Map



## Mechanical Dimensions



## Ordering Options

| Item Code              | Model         | Description    |
|------------------------|---------------|----------------|
| WPJ564-A 6A01PO16128AR | WPJ564-A 6A01 | Embedded board |