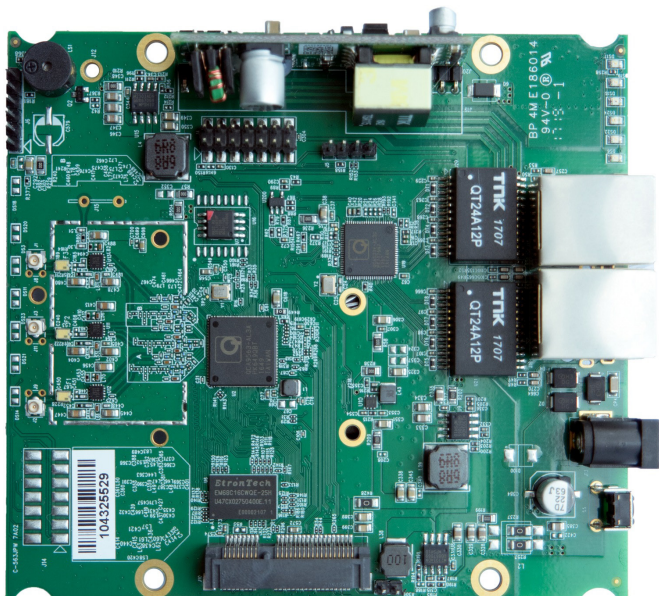


## QCA9563 Embedded Board with on-board Wireless

775MHz CPU / 2x GE Port / 1x Mini PCIe / Designed for 802.11ac

**Model: WPJ563 7A02**



### 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
- Supports Dynamic Frequency Selection (DFS)

### 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 23dBm per chain 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 1x Serial Port 4 Pin Connector <sup>1</sup> 1x JTAG 14 Pin Connector <sup>2</sup> 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	Passive PoE 24V (LV version) IEEE 802.3af/at or Passive PoE 36~56V (HV version)
DC Power	1x DC Jack Connector: 12~24V
Power Consumption (Board Only)	9.96W (Max)
Operating Voltage	3.3V, 5V
Supported Operating System	CompexWRT, OpenWRT/LEDE
Certification	RoHS Compliance
Environmental	Temperature: Operating: -20°C to 70°C, Storage: -40°C to 90°C Humidity (non-condensing): Operating: 5% to 95%, Storage: Max. 90%
ESD Sensitivity	Class 1C
Dimensions (W x H x D)	117 x 105 x 17.7 mm
Extras	1x SIM Card Slot 1x Buzzer
Other Features	Surge Suppressor, Watchdog Timer

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.

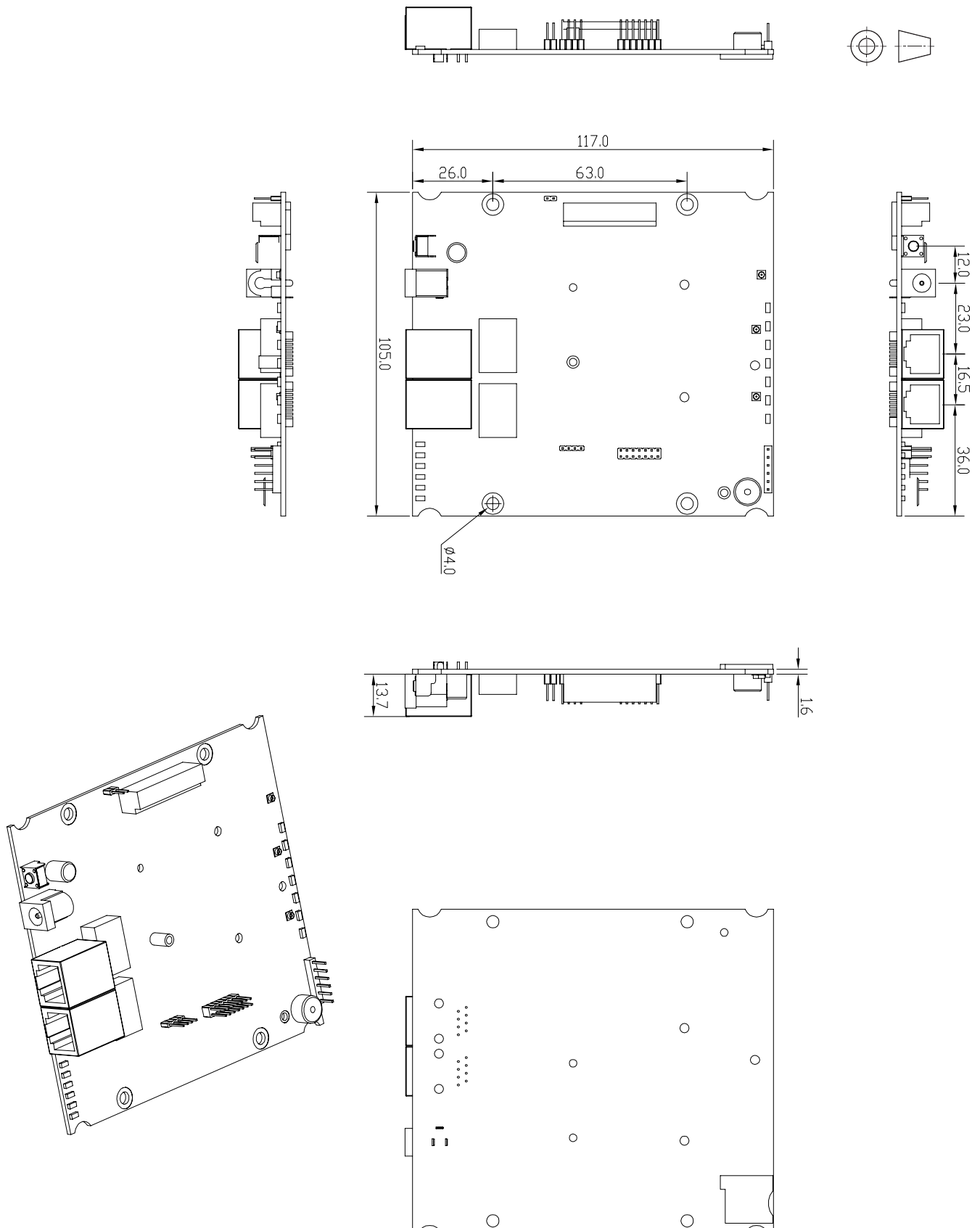
\*Configurations are subject to change without notifications.

## RF Performance Table

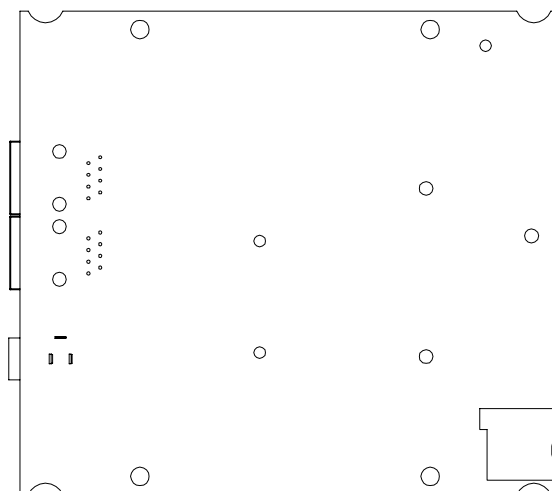
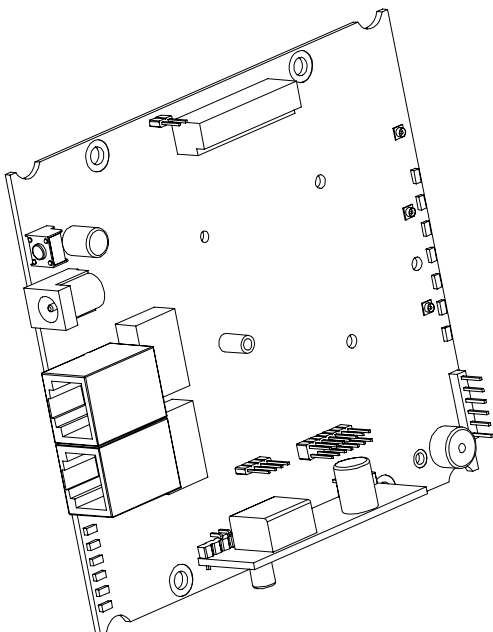
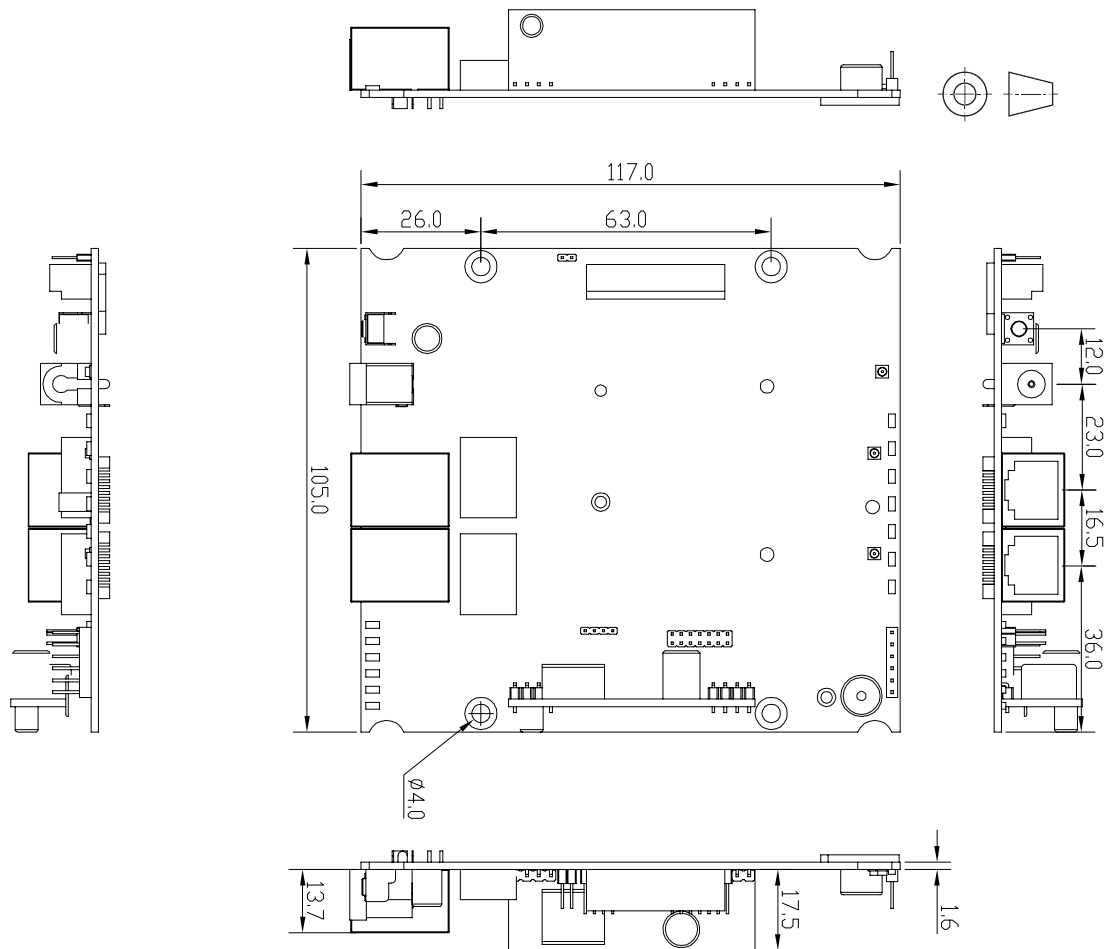
	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance
2.4GHz 802.11b	1Mbps	20dBm	25dBm	±2dB
	2Mbps	20dBm	25dBm	±2dB
	5.5Mbps	20dBm	25dBm	±2dB
	11Mbps	20dBm	25dBm	±2dB
2.4GHz 802.11g	6Mbps	23dBm	28dBm	±2dB
	9Mbps	23dBm	28dBm	±2dB
	12Mbps	23dBm	28dBm	±2dB
	18Mbps	23dBm	28dBm	±2dB
	24Mbps	23dBm	28dBm	±2dB
	36Mbps	21dBm	26dBm	±2dB
	48Mbps	19dBm	24dBm	±2dB
	54Mbps	18dBm	23dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	22dBm	27dBm	±2dB
	MCS 1	21dBm	26dBm	±2dB
	MCS 2	21dBm	26dBm	±2dB
	MCS 3	21dBm	26dBm	±2dB
	MCS 4	20dBm	25dBm	±2dB
	MCS 5	19dBm	24dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB
	MCS 7	17dBm	22dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	22dBm	27dBm	±2dB
	MCS 1	21dBm	26dBm	±2dB
	MCS 2	21dBm	26dBm	±2dB
	MCS 3	21dBm	26dBm	±2dB
	MCS 4	20dBm	25dBm	±2dB
	MCS 5	19dBm	24dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB
	MCS 7	17dBm	22dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-96dBm	±2dB
	2Mbps	-96dBm	±2dB
	5.5Mbps	-94dBm	±2dB
	11Mbps	-93dBm	±2dB
2.4GHz 802.11g	6Mbps	-96dBm	±2dB
	9Mbps	-96dBm	±2dB
	12Mbps	-96dBm	±2dB
	18Mbps	-94dBm	±2dB
	24Mbps	-93dBm	±2dB
	36Mbps	-91dBm	±2dB
	48Mbps	-87dBm	±2dB
	54Mbps	-86dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-95dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	-92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-83dBm	±2dB
	MCS 5	-80dBm	±2dB
	MCS 6	-77dBm	±2dB
	MCS 7	-74dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-93dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-77dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-74dBm	±2dB

## Mechanical Dimensions of WPJ563LV 7AO2

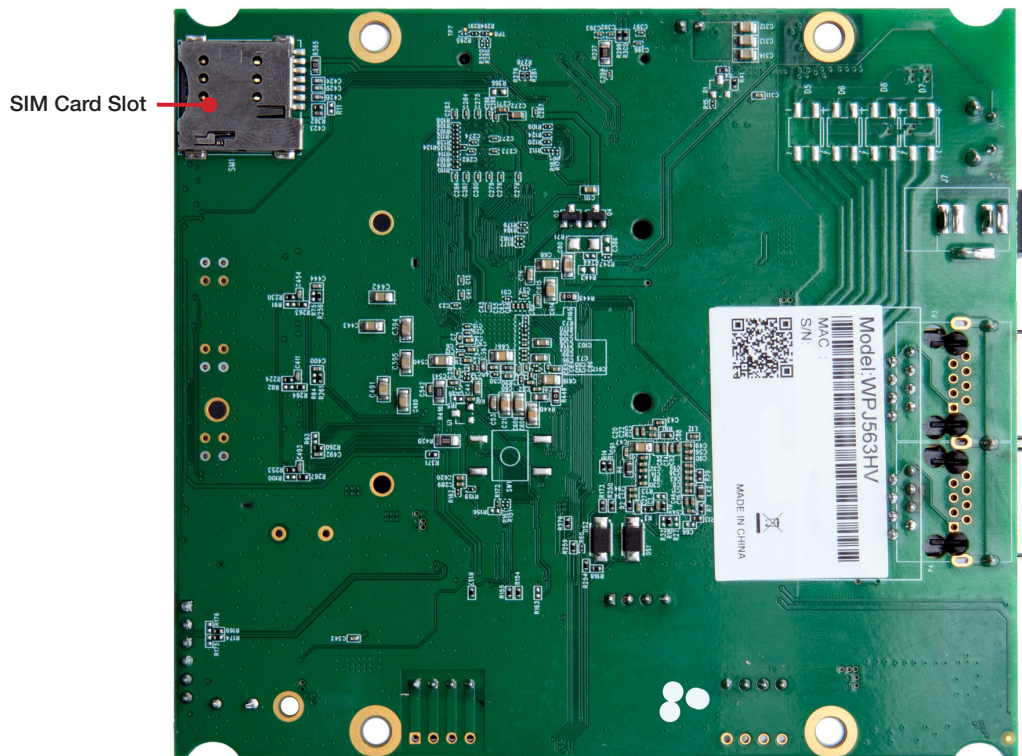
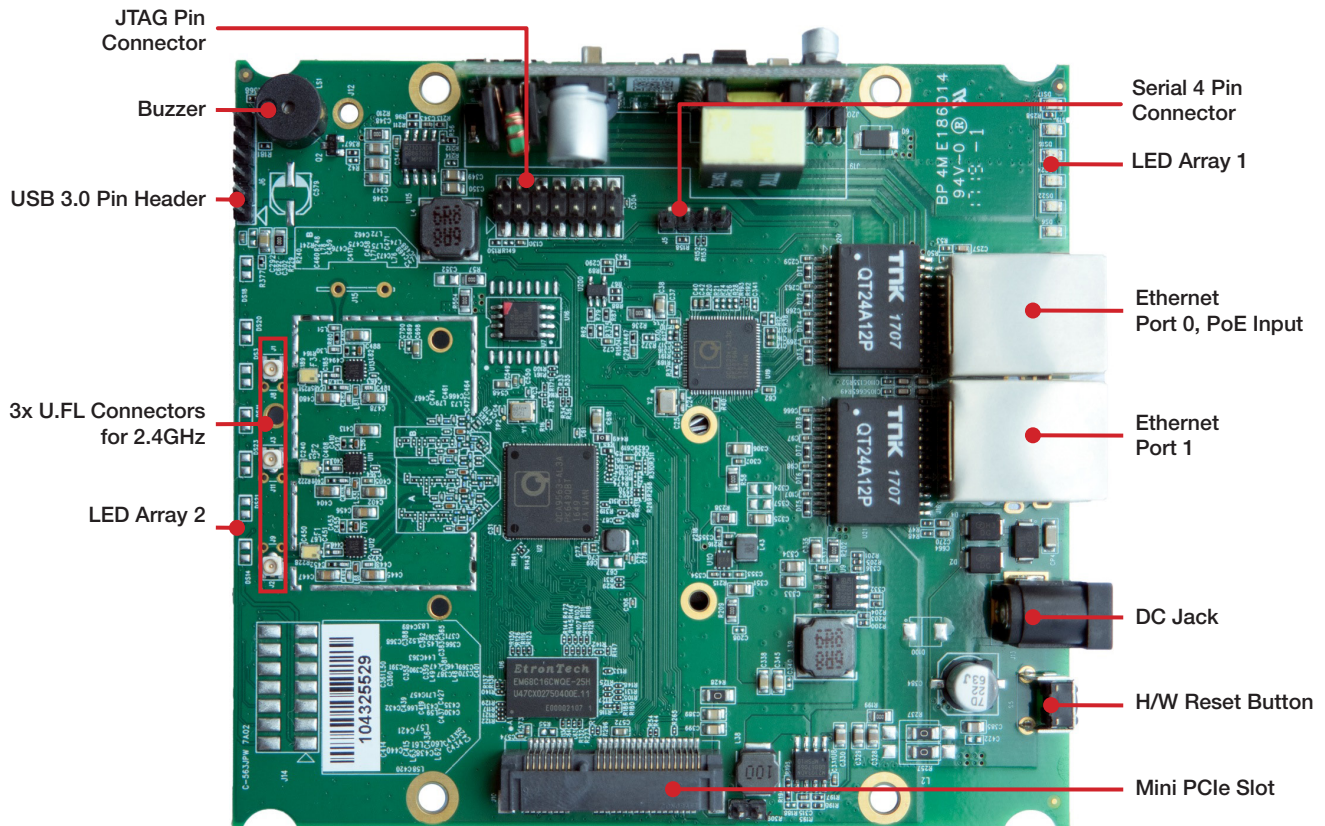


## Mechanical Dimensions of WPJ563HV 7A02





## Component Map



## Firmware / Software

The WPJ563 is shipped with the versatile CompexWRT firmware.  
OpenWRT SDK is provided for further development.  
SDKs with QCA binary drivers are available for software developers.

<b>WPJ563 supported Operating System</b>	<ul style="list-style-type: none"> <li>• CompexWRT Operating System</li> <li>• OpenWRT/LEDE Operating System<sup>1</sup></li> </ul>
<b>WPJ563 supported Mass Management Software</b>	<ul style="list-style-type: none"> <li>• Compex AP Controller Software<sup>2</sup></li> </ul>

1. OpenWRT SDK is available without any technical support by Compex unless otherwise stated.  
2. AP Controller only compatible with WPJ563 running CompexWRT.

## Ordering Options

Item Code	Firmware	Processor	Power Solutions
WPJ563LV 7A02PO16F1GBAR	QCA Reference Firmware	QCA9563	DC: 12~24V Passive PoE 24V
WPJ563HV 7A02PO16F1GBAR	QCA Reference Firmware	QCA9563	DC: 12~24V IEEE 802.3af/at or Passive PoE 36~56V

## Packaging Information

Packaging Type	Dimensions	Weight	Dimensional Weight
Carton Box (50 units)	875 x 330 x 205 mm	3.9 kg	5.8 kg