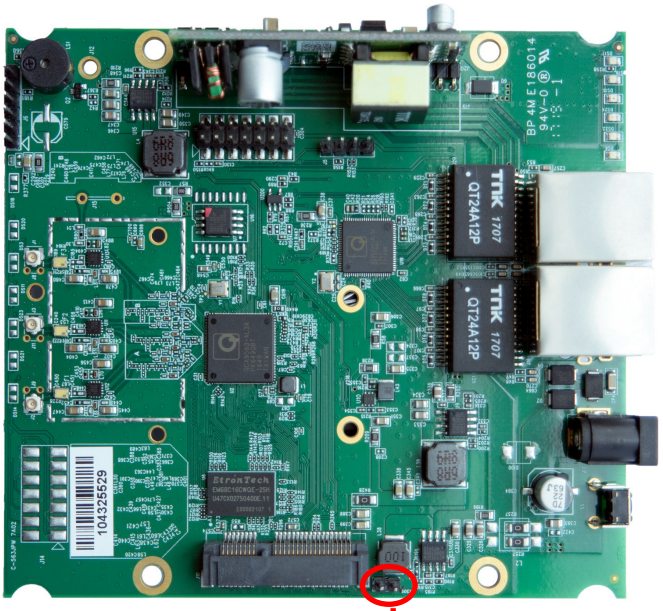
QCA9563 Embedded Board with on-board Wireless

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

如果使用高功率网卡（WLE600V5-27\WLE900V5-27等，
需要跳帽短接，给PCIE 加供5V 电源）

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[1] 1x JTAG 14 Pin Connector[2] 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

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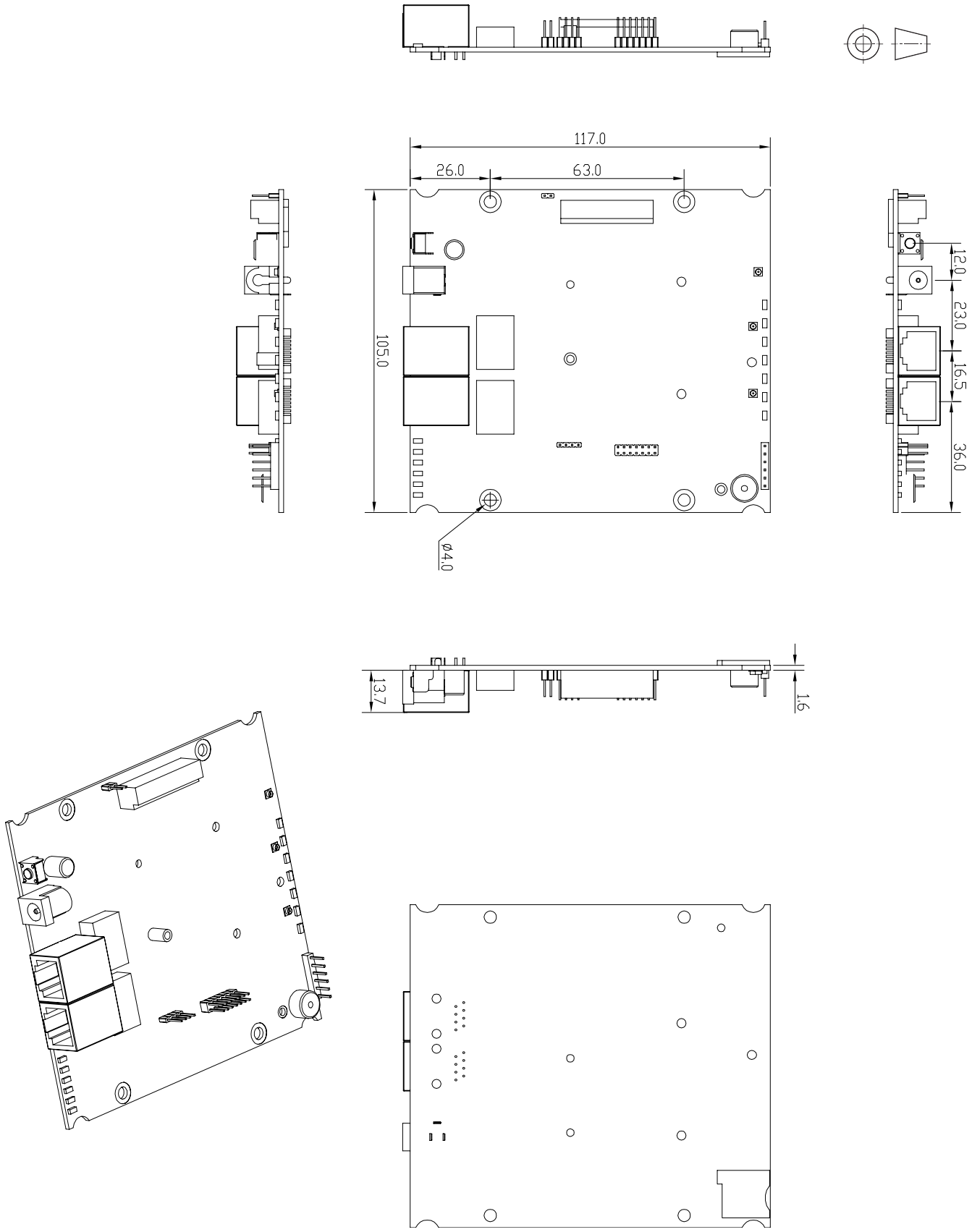
Mechanical Dimensions of WPJ563LV 7A02



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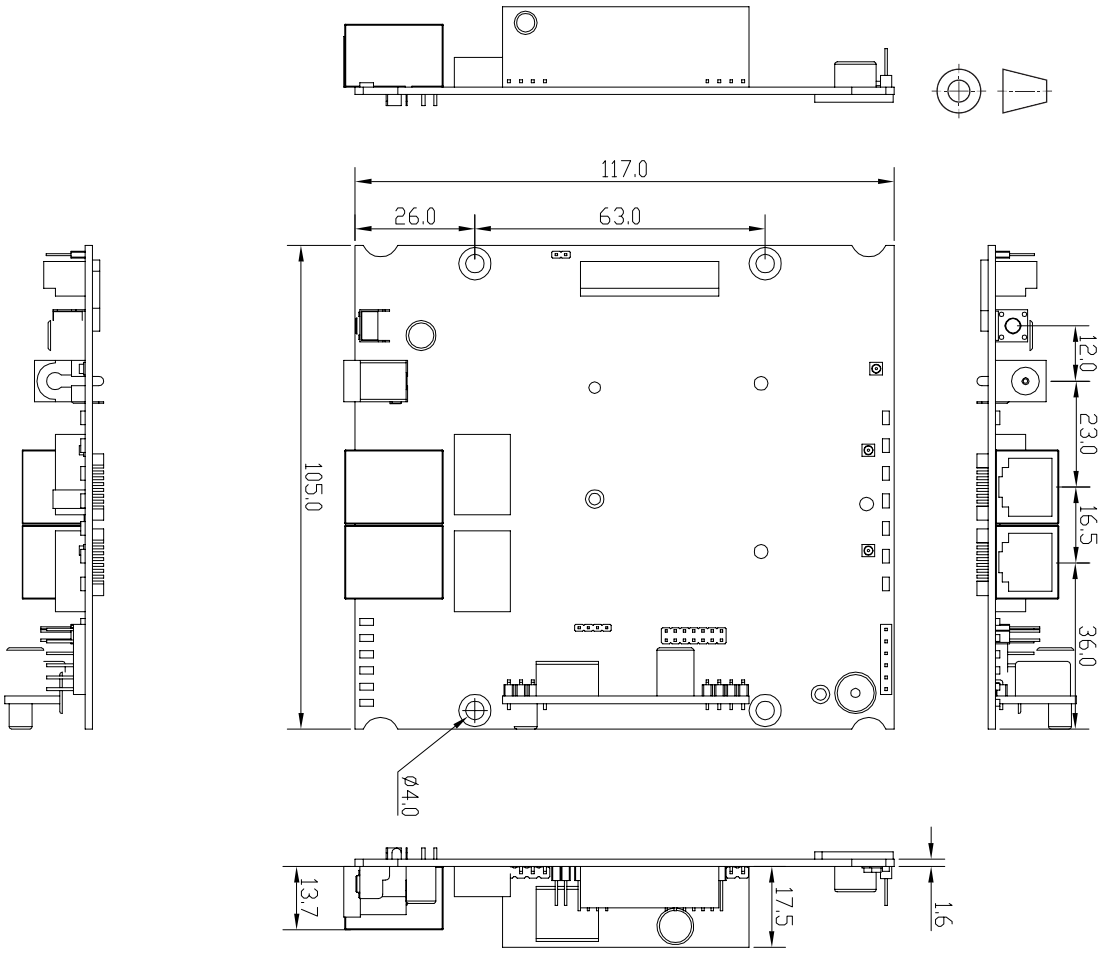
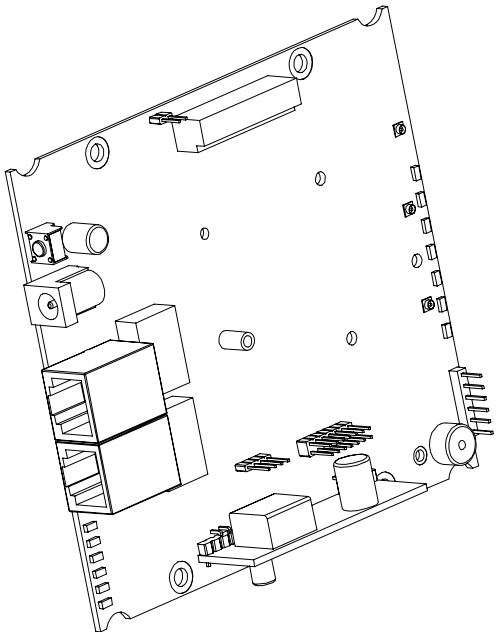
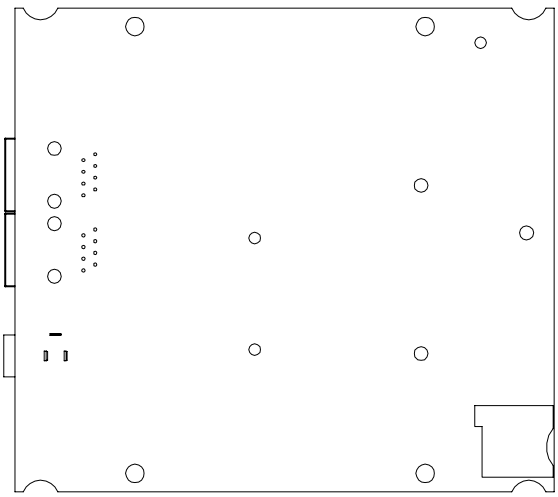
Mechanical Dimensions of WPJ563HV 7A02







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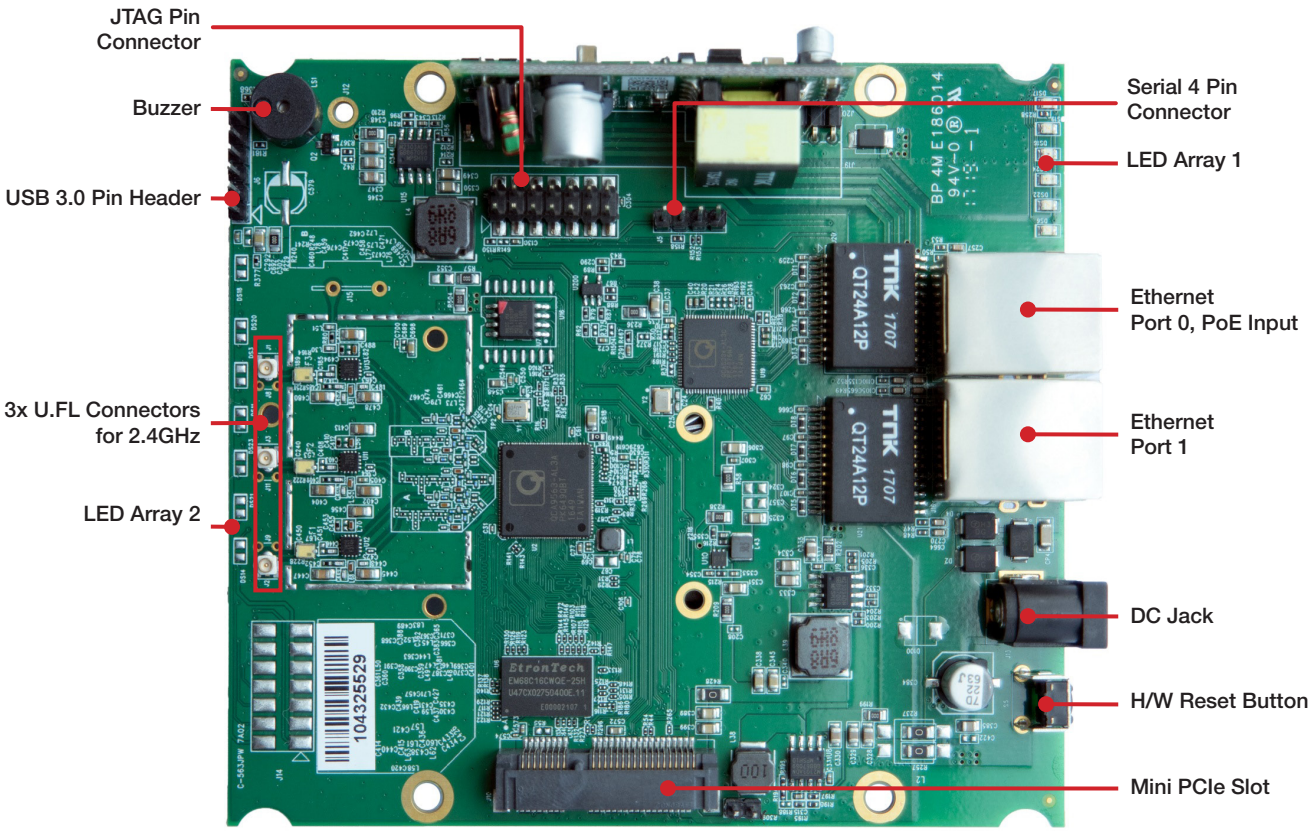
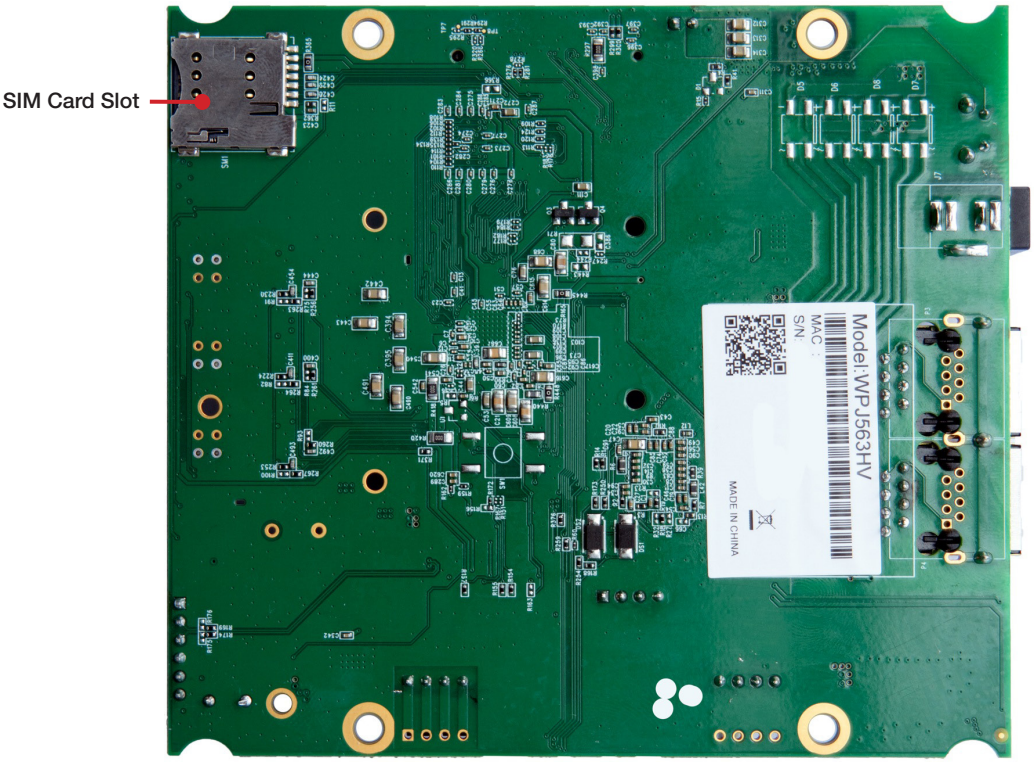
Component Map





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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.

WPJ563 supported Operating System	• **CompexWRT Operating System** • **OpenWRT/LEDE Operating System[1]**
WPJ563 supported Mass Management Software	• **Compex AP Controller Software[2]**

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

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