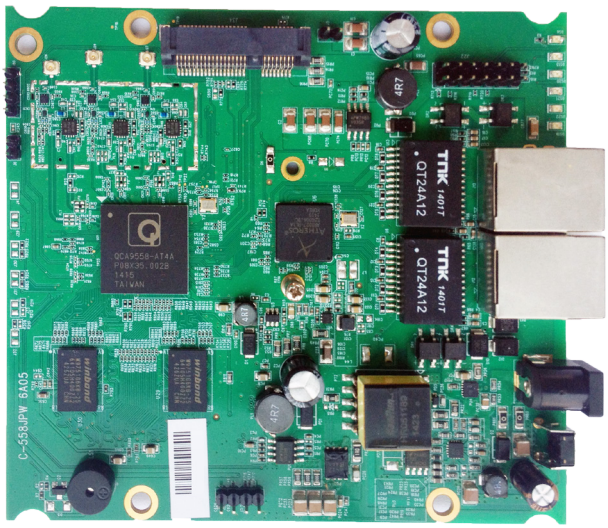
Multi-function QCA9558 Embedded Board with on-board Wireless

700MHz CPU / 2x GE Port / 1 x Mini PCI-e / Designed for 3x3 802.11ac

Model: WPJ558



KEY FEATURES

- Qualcomm Atheros QCA9558 MIPS 74Kc 700MHz CPU
- 128MB System Memory
- 16MB NOR Flash
- On-board 2.4GHz max 24dBm output power
- IEEE 802.11n compliant & backward compatible with 802.11b/g
- 3x3 On-board radio up to 450Mbps physical data rate
- 1x Mini PCI Express Slot at 9.2mm Height
- 2x Gigabit LAN RJ45 with Auto MDI/X
- Integrated 48V IEEE 802.3af/at Power Over Ethernet

Specifications

Chipset	CPU: Qualcomm Atheros QCA9558 700MHz
System Memory	128MB DDR2
NOR Flash	16MB
Wireless	Built in 2.4GHz 802.11b/g/n at 28dBm (aggregate) 3x U.FL connectors
Expansion	1x 9.2mm height Mini PCI-e slot
Interface	2x Gigabit Ethernet Port (Auto MDI-X) 1x JTAG 14 Pin Connector[1] 1x Serial Port 4 Pin Connector[2]
Reset Button	Yes
LED	6x LED Indicators
Power Over Ethernet	1x IEEE 802.3af/at or Passive PoE input minimum 36V
DC Power	1x DC Jack Connector: 24 - 56V
Power Consumption	8.6 Watt (Max)
Operating System	CompexWRT or OpenWRT[3]
RoHS Compliance	Yes
Environmental	Temperature: Operating: -20°C to 70°C, Storage: -40°C to 90°C Humidity (non-condensing): Operating: 5% to 95%, Storage: Max. 90%
Dimensions (W x H x D)	117 x 105 x 17 mm
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 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.

3. For more information on OpenWRT, please refer to the Firmware / Software Section.

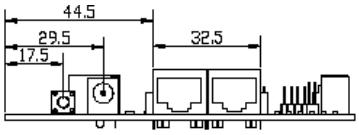
**Configurations are subject to change without notifications.*

RF Performance Table

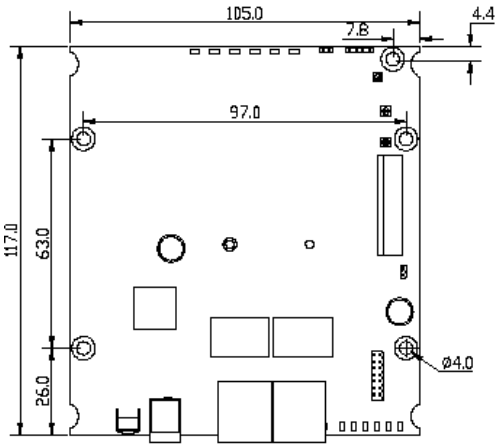
	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance
2.4GHz 802.11b	1Mbps	21dBm		±1dB
	2Mbps	21dBm		±1dB
	5.5Mbps	20dBm		±1dB
	11Mbps	20dBm		±1dB
2.4GHz 802.11g	6Mbps	21dBm		±1dB
	9Mbps	21dBm		±1dB
	12Mbps	21dBm		±1dB
	18Mbps	20dBm		±1dB
	24Mbps	20dBm		±1dB
	36Mbps	19dBm		±1dB
	48Mbps	19dBm		±1dB
	54Mbps	19dBm		±1dB
2.4GHz 802.11n HT20	MCS 0	20dBm	25dBm	±1dB
	MCS 1	19dBm	24dBm	±1dB
	MCS 2	19dBm	24dBm	±1dB
	MCS 3	19dBm	24dBm	±1dB
	MCS 4	18dBm	23dBm	±1dB
	MCS 5	18dBm	23dBm	±1dB
	MCS 6	17dBm	22dBm	±1dB
	MCS 7	17dBm	22dBm	±1dB
2.4GHz 802.11n HT40	MCS 0	16dBm	21dBm	±1dB
	MCS 1	16dBm	21dBm	±1dB
	MCS 2	15dBm	20dBm	±1dB
	MCS 3	15dBm	20dBm	±1dB
	MCS 4	15dBm	20dBm	±1dB
	MCS 5	14dBm	19dBm	±1dB
	MCS 6	14dBm	19dBm	±1dB
	MCS 7	13dBm	18dBm	±1dB

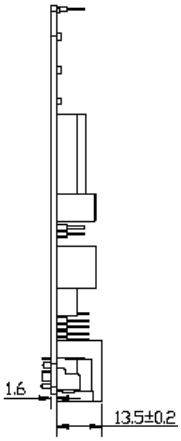
	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-95dBm	±2dB
	2Mbps	-93dBm	±2dB
	5.5Mbps	-90dBm	±2dB
	11Mbps	-88dBm	±2dB
2.4GHz 802.11g	6Mbps	-94dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-93dBm	±2dB
	18Mbps	-93dBm	±2dB
	24Mbps	-90dBm	±2dB
	36Mbps	-86dBm	±2dB
	48Mbps	-82dBm	±2dB
	54Mbps	-79dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-94dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	-92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-75dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-93dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-90dBm	±2dB
	MCS 3	-85dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-78dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-72dBm	±2dB

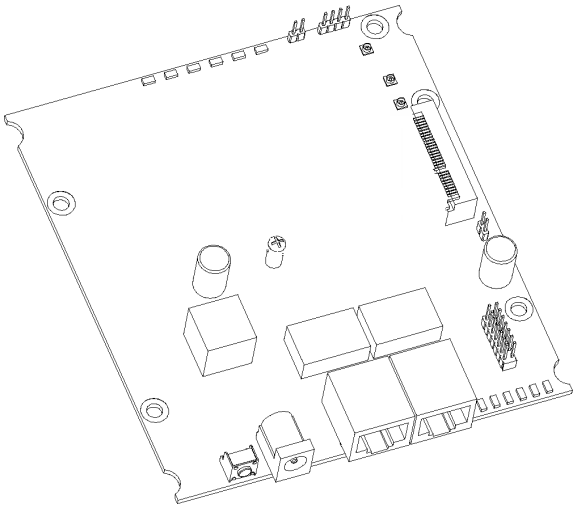
Mechanical Dimensions

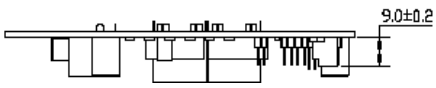


Caution: The EUT can install PCI module but if the OEM or applicant can't install randomly. They should get the manufacturer authorization and re-certification.









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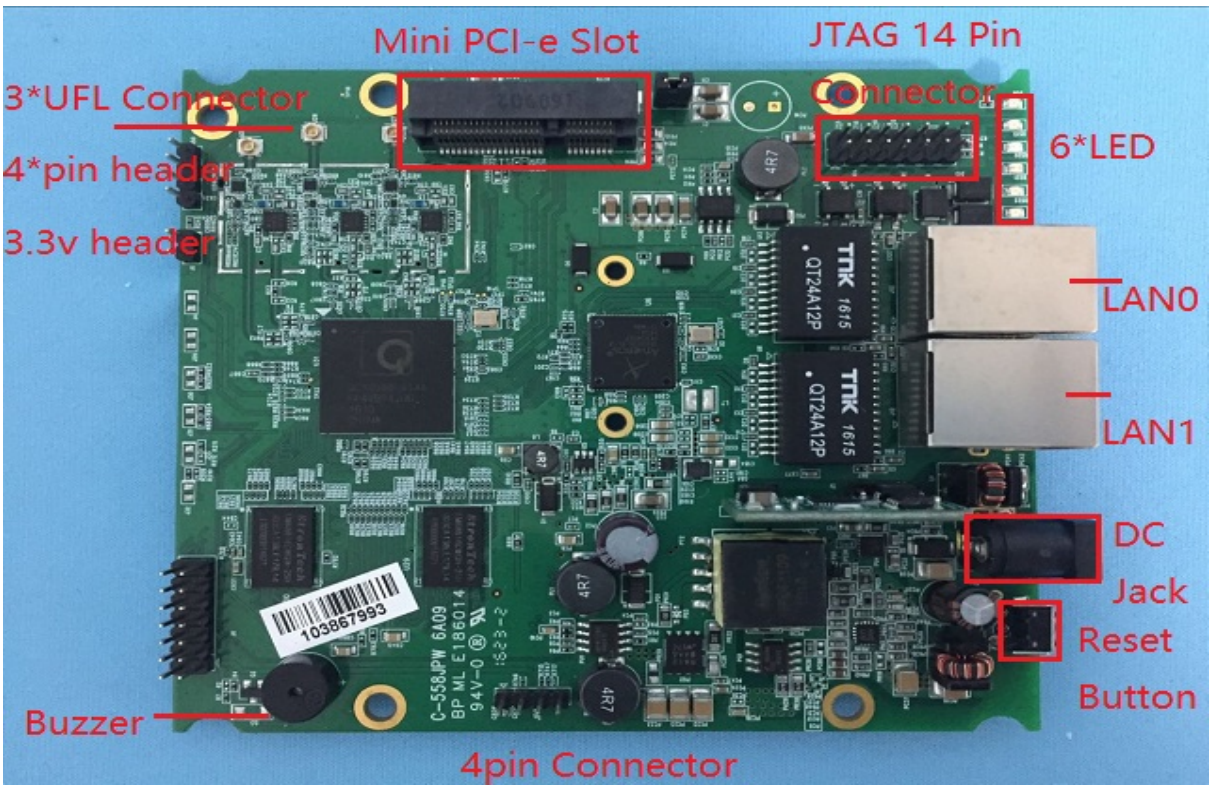
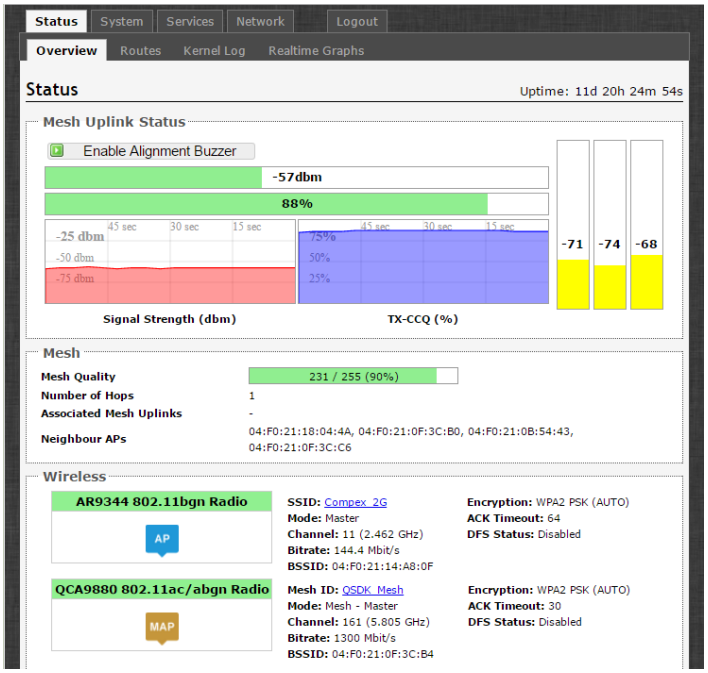
Component and Connector Map



CompexWRT Features

It is developed based on the OpenWRT platform and features the latest Qualcomm Atheros drivers with LuCI web interface. It combines all of the best in one system. It offers many levels of customization.



Powerful Wireless Features

- Qualcomm Atheros Drivers
- Native 802.11ac Support
- Wireless Distribution System (WDS) AP and Client Mode
- Seamless Mesh Networking

Enhanced Control

- User-friendly LuCI Graphical User Interface
- Hotspot and Guest Portal Support
- Powerful Network Diagnostic Utilities
- Real-time Network Load Graphs

Find out more at http://wiki.compex.com.sg/

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Firmware / Software

The WPJ558 is shipped with the versatile CompexWRT firmware.
OpenWRT SDK is provided for further development.
SDKs with QCA binary drivers are available for software developers.

WPJ558 supported Operating System	• CompexWRT Operating System • OpenWRT Operating System[1]
WPJ558 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 compatbiel with WPJ558 running CompexWRT.

Ordering Options

Item Code	Firmware	Processor	Power Solutions	NOR Flash	Memory
WPJ558	CompexWRT	QCA9558	DC: 24-56V	16MB	128MB

Packaging Content

Item	Quantity
WPJ558 Embedded Board	1
Read Me First Documentation	1

Packaging Information

Packaging Type	Dimensions	Nett Weight	Gross Weight
Carton Box (50 units)	875 x 330 x 205 mm	5.2 kg	6.7 kg

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Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF exposure warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.