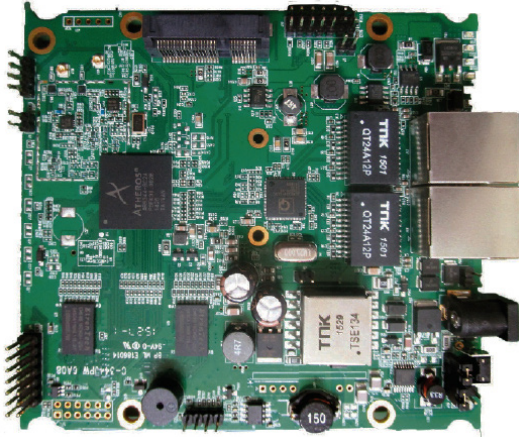


Multi-function AR9344 Embedded Board with on-board Wireless 560MHz CPU / 2x 1Gbps Ports / 1 x MiniPCIe Slot / Designed for 2x2

Model: WPJ344



KEY FEATURES

- Qualcomm Atheros AR9344 MIPS 74Kc 560MHz processor
- IEEE 802.11n compliant & backward compatible with 802.11b/g
- 2x2 on-board 2.4GHz radio, up to 300Mbps physical data rate

APPLICATIONS

- Optimized for 802.11ac Module Support
- 802.11b/g/n Access Point
- Point -to-Point High Capacity Wireless Bridge
- Point-to-Multipoint High Capacity Wireless Bridge
- Wireless Base Station
- Wireless Customer-Premises Equipment (CPE)

Specifications

Chipset	Qualcomm Atheros AR9344 560MHz processor 'Wasp' Series
Reference Design	Qualcomm Atheros DB120
System Memory	128MB DDR2
NOR Flash	16MB
Wireless	On-board 2x2 2.4GHz MIMO OFDM 802.11b/g/n, max 23dBm per chain 2x U.FL Connectors
Frequency Range	2.412~2.472GHz
Modulation Techniques	OFDM: BPSK, QPSK, 16-QAM, 64-QAM
MiniPCIe Slot	1x MiniPCIe Slot with PCIe1.1 and USB 2.0
Interface	2x 1 Gbps Ethernet Ports (Auto MDI-X) 1x JTAG 14 Pin Connector ¹ 1x Serial Port 4 Pin Connector ²
Reset Button	1x S/W Reset Button
LED	6x LED 12 Pin Indicators
Power Over Ethernet (PoE)	Passive PoE 24V (LV version), Passive PoE 24-56V or IEEE 802.3af/at PoE (HV version)
DC Power	1x DC Jack Connector: 12-24V
Power Consumption	7W (Max)
Certification	FCC & CE Certified, REACH and RoHS Compliance
Environmental Temperature	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 D x H) in mm	117 x 105 x 17

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

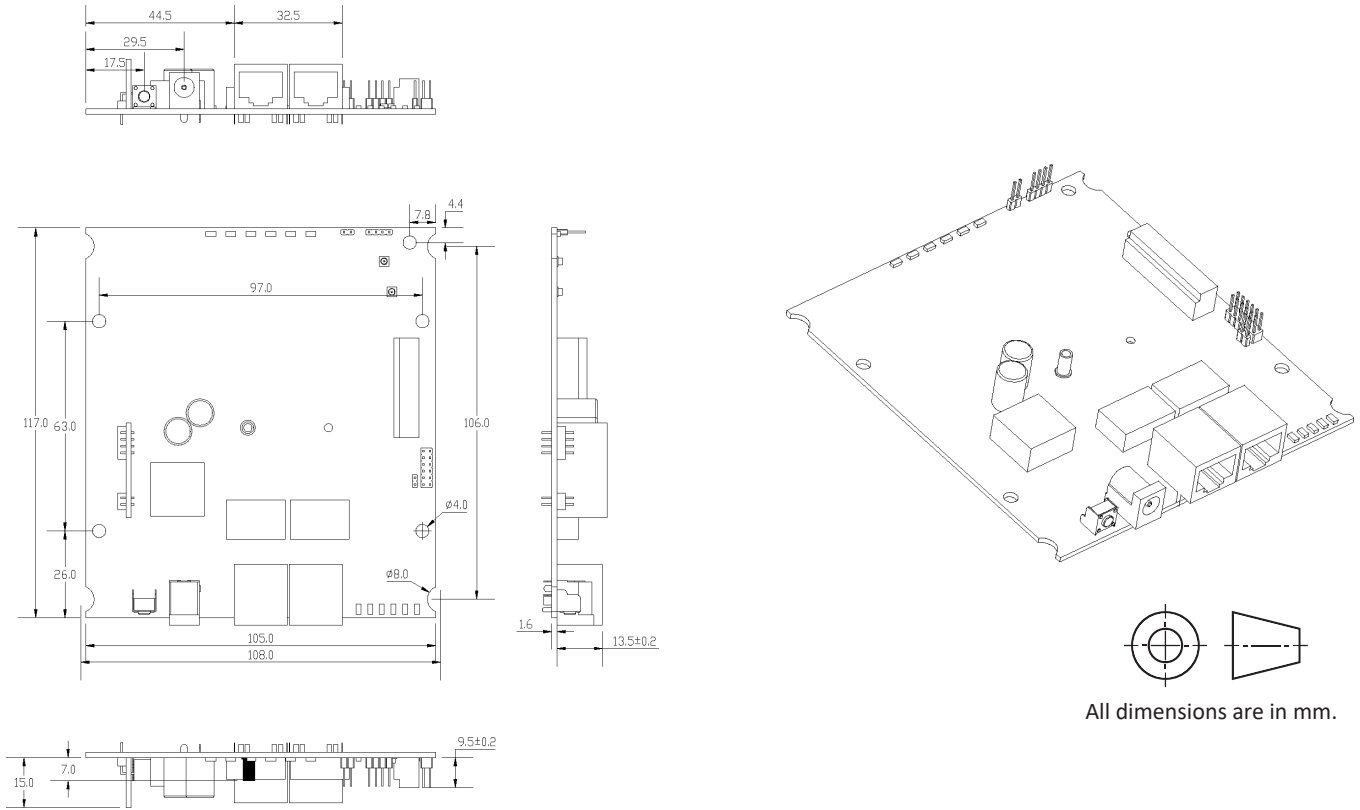
*Configurations are subject to change without notifications.

RF Performance Table for 2.4GHz

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

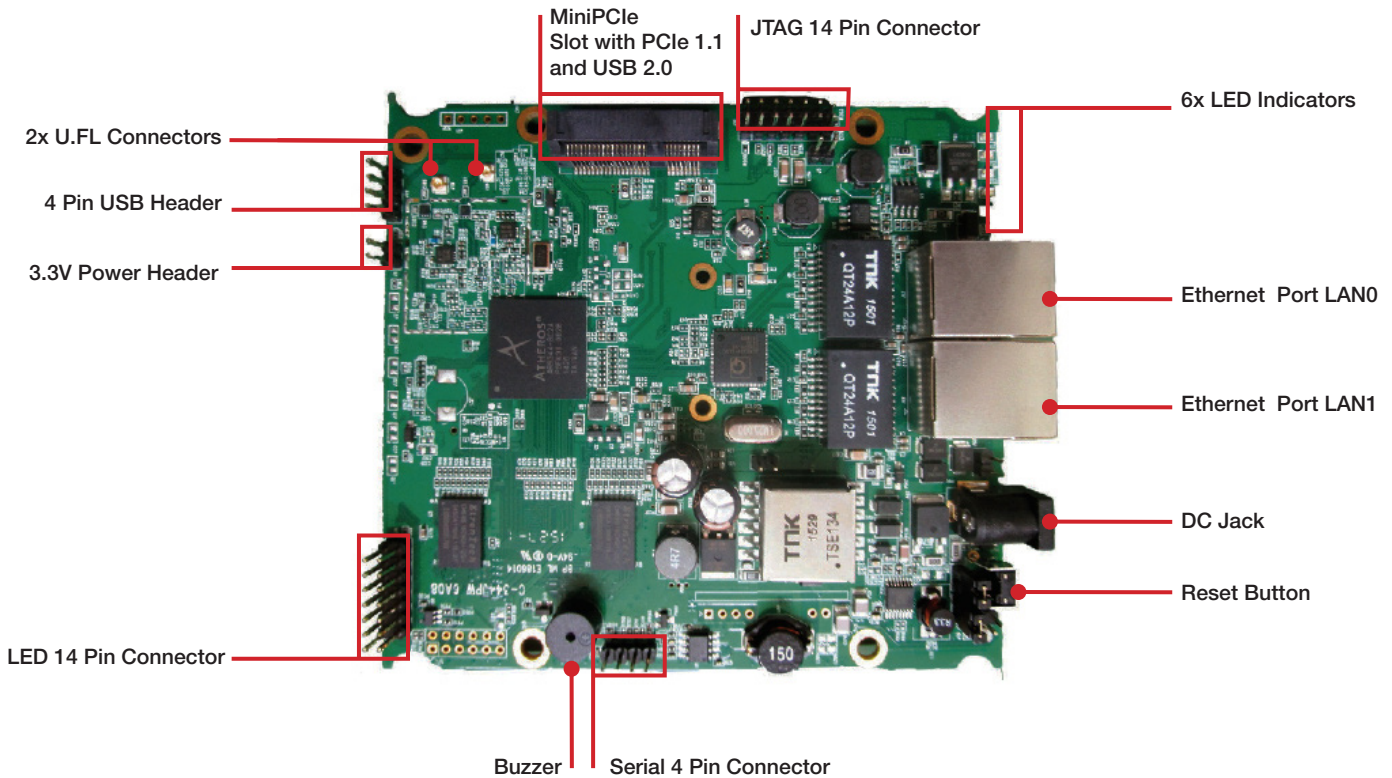
	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-95dBm	±2dB
	2Mbps	-94dBm	±2dB
	5.5Mbps	-92dBm	±2dB
	11Mbps	-90dBm	±2dB
2.4GHz 802.11g	6Mbps	-94dBm	±2dB
	9Mbps	-93dBm	±2dB
	12Mbps	-93dBm	±2dB
	18Mbps	-90dBm	±2dB
	24Mbps	-90dBm	±2dB
	36Mbps	-85dBm	±2dB
	48Mbps	-81dBm	±2dB
	54Mbps	-79dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-93dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-79dBm	±2dB
	MCS 6	-79dBm	±2dB
	MCS 7	-75dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-90dBm	±2dB
	MCS 1	-87dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-83dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-79dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-74dBm	±2dB

Mechanical Dimensions



All dimensions are in mm.

Component 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.

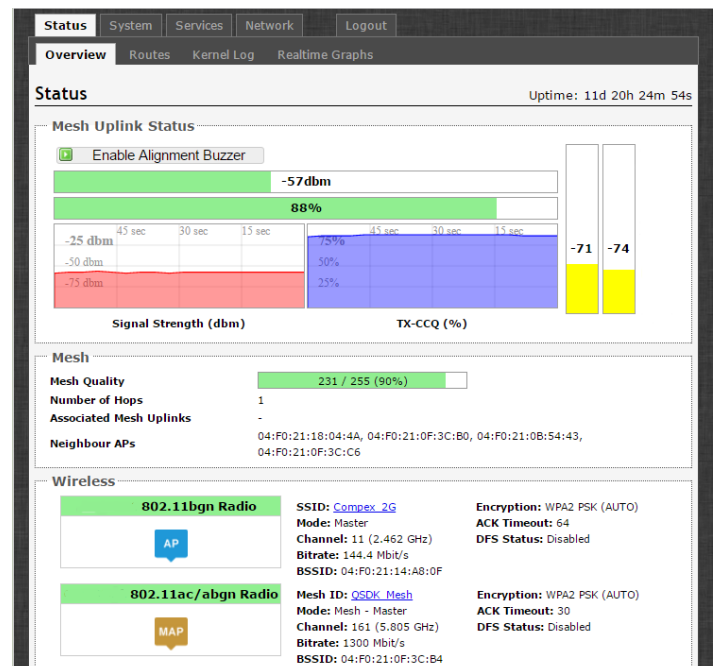
Powerful Wireless Features

- 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
- Works with Compex Network Management System (CNMS)
- Powerful Network Diagnostic Utilities
- Real-time Network Load Graphs

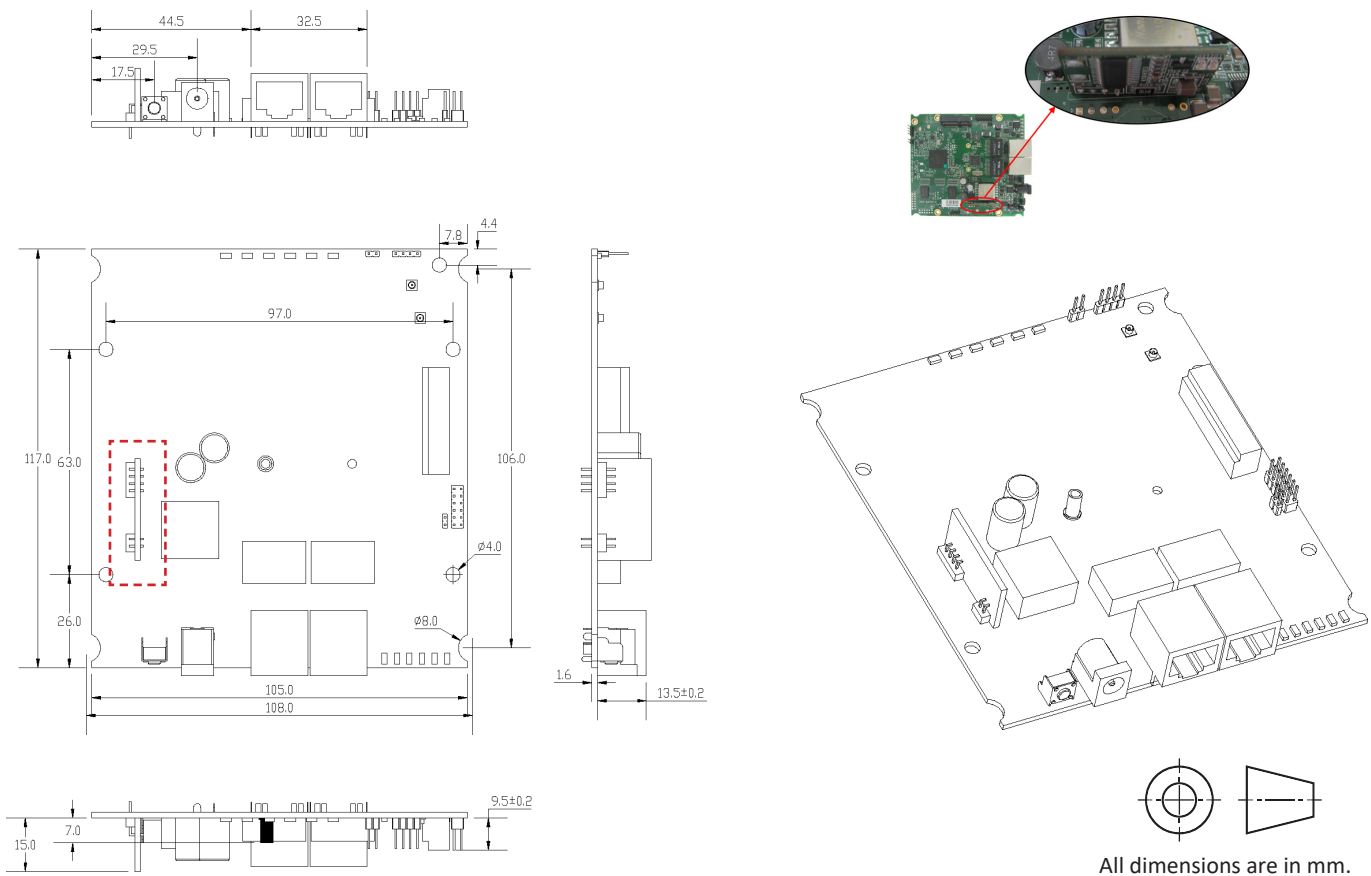
Find out more at <http://wiki.compex.com.sg/>



Optional Add-on

Type	Functionality	Remark
Power Sourcing Equipment (PSE) pass-thru Module	PoE pass-through - allow the second Ethernet port to provide PoE to another IEEE 802.3af/at compatible device (such as an IP Camera)	WPJ344 Dimensions will increased to 117 x 105 x 20 mm

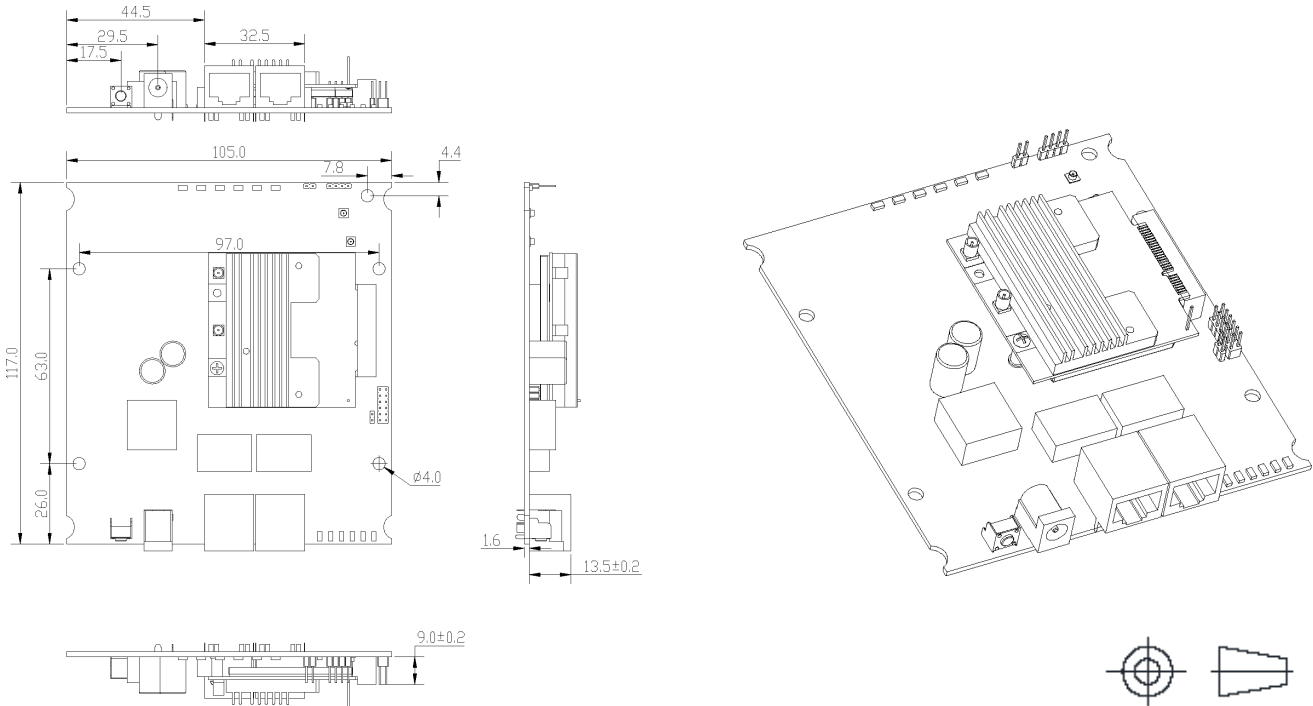
*Note: When the board operate with PSE module, please don't apply Passive PoE power to the Ethernet port close to DC jack, otherwise it will be damaged.



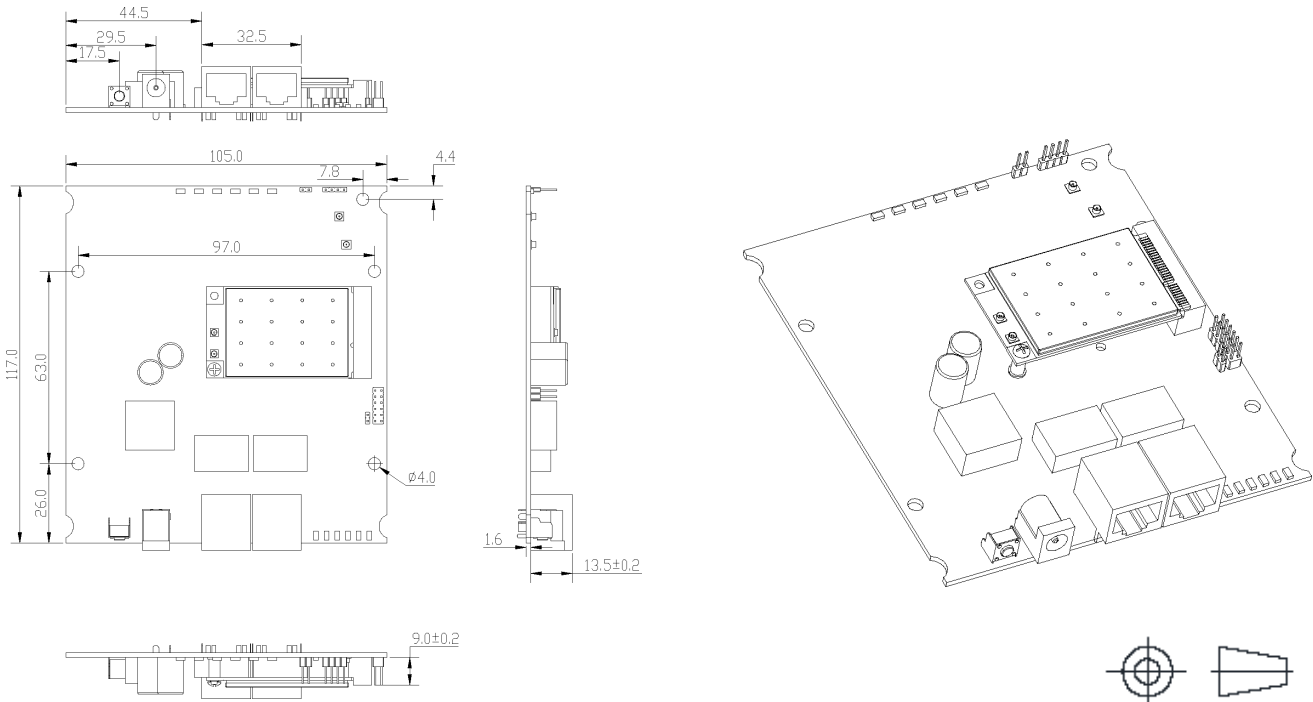
Dimensional Drawing of WPJ344 with PSE pass-thru Module

Wireless Module Compatibility

Model	Wireless Band	Operating Frequency	Channels	Connector	Board Dimension
Compex WLE600VX	802.11a/b/g/n/ac	2.4GHz or 5GHz	2 x 2 MIMO	2 x U.FL	117 x 105 x 17 mm
Compex WLE600V5-27	802.11a/n/ac	5GHz	2 x 2 MIMO	2 x MMCX	117 x 105 x 17 mm
Compex WLE900VX	802.11a/b/g/n/ac	2.4GHz or 5GHz	3 x 3 MIMO	3 x U.FL	117 x 105 x 17 mm
Compex WLE900V5-27	802.11a/n/ac	5GHz	3 x 3 MIMO	3 x MMCX	117 x 105 x 17 mm



Dimensional Drawing of WPJ344 with WLE600V5-27 (Fat Card Form Factor)



Dimensional Drawing of WPJ344 with WLE600VX (Normal Card Form Factor)

Customization Options

The WPJ344 can be customized for volume applications, contact our sales representatives for more information.

Removing of Peripherals

Reduce NOR Flash to 8 MB

For more customization, contact us at sales@compex.com.sg

Firmware / Software

The WPJ344 is shipped with CompexWRT firmware. SDKs with QCA binary drivers are available for software developers.

Supported Operating System

- CompexWRT Operating System
- OpenWRT/LEDE Operating System¹

Supported Mass Management Software

- CNMS AP Controller Software²

1. OpenWRT SDK is available without any technical support by Compex unless otherwise stated.

2. CNMS AP Controller only compatible with WPJ344 running CompexWRT.

Ordering Options

Item Code	Firmware	Processor	Power Solutions	NOR Flash	Memory
WPJ344HV-A 6A09PO16FBRBP	CompexWRT	AR9344	DC: 12-24V Passive PoE 24-56V or IEEE 802.3af/at ¹	16MB	128MB
WPJ344HV-A 6A08PO16FBRBP	CompexWRT	AR9344	DC: 12-24V Passive PoE 24-56V or IEEE 802.3af/at ¹	16MB	128MB
P-PSE-M-6A03-SPL	Power Sourcing Equipment (PSE) Module with PoE Pass Through functionality				
SUVGE24080CEY	Gigabit Passive 24V PoE Injector				
JTAG Programmer	JTAG 14 Pin to Parallel Port bridge				
Serial Port Converter	Serial 4 Pin to COM Port bridge				

1. HV version. The LV version (Passive PoE 24V and DC 12-24V) can be toggled through a jumper configuration on the embedded board

2. To pair the WLE600V5-27 module on WPJ344, DC power will be recommended.

Packaging Content

Item	Quantity
WPJ344 Embedded Board	1
Read Me First Documentation	1

Packaging Information

Packaging Type	Dimensions	Nett Weight	Gross Weight
Packaging Box (50 units)	875 x 330 x 205 mm	5.23 kg	6.98 kg