

## MIMO Junior Series

Single Band 2x2 MIMO 802.11ac/b/g/n Long Range Outdoor Access Point  
5GHz 2x2 at 867Mbps (Wave-2)

Model: MMJ563HV



### KEY FEATURES

- Qualcomm Atheros 775MHz Processor QCA9563
- IEEE 802.11ac/a/n compliant
- 5GHz 28dBm aggregate power
- Data rates of up to 867Mbps in 802.11ac 80 MHz channels
- Antenna Alignment Site Survey - LEDs/Buzzer
- Built-in 17dBi 5GHz Dual-polarization antenna
- 2x RP-SMA Male Connector for External Antenna (optional)
- Support AP Mass Management Software via SNMP Protocol

### APPLICATIONS

- Single band 802.11ac AP
- Point-to-Point / Point-to-Multipoint / Coverage
- Wireless Customer-Premises Equipment (CPE)

## Specifications

Chipset	Board CPU: Qualcomm Atheros QCA9563 775MHz Radio Card: Qualcomm Atheros QCA9888 (RF 5GHz)
System Memory	128MB DDR2
NOR Flash	16MB
Antenna	5GHz: Integrated 17dBi Dual-polarization antenna
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>1</sup>
Reset Button	Yes
LED	Indicators: Power LED, LAN Activity, 4x Signal Indicator
Power Over Ethernet	IEEE 802.3af/at PoE on LAN0
DC Power	No DC jack connector
Power Consumption	14.5W (Max)
Supported Operating System	CompexWRT or OpenWRT/LEDE <sup>2</sup>
Certification	RoHS Compliance
Environment	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
Enclosure Type	Weatherproof and IP53 Compliant
Dimensions	278.5 x 122.2 x 94.5 (mm)
Other Features	Surge Suppressor, Watchdog Timer

1. These features can only be accessed on the embedded board after removing the enclosure.

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

Configurations are subject to change without notifications.

## RF Performance Table

### Wireless Module (WLE650V5-25)

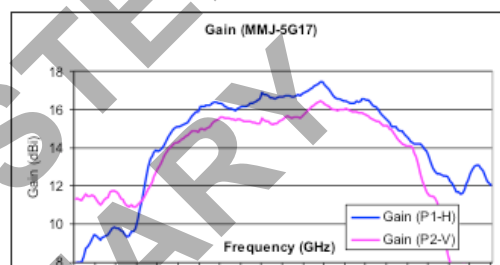
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11a	6Mbps	25dBm	28dBm	±2dB
	9Mbps	25dBm	28dBm	±2dB
	12Mbps	25dBm	28dBm	±2dB
	18Mbps	25dBm	28dBm	±2dB
	24Mbps	24dBm	27dBm	±2dB
	36Mbps	23dBm	26dBm	±2dB
	48Mbps	22dBm	25dBm	±2dB
	54Mbps	21dBm	24dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	25dBm	28dBm	±2dB
	MCS 1	25dBm	28dBm	±2dB
	MCS 2	25dBm	28dBm	±2dB
	MCS 3	24dBm	27dBm	±2dB
	MCS 4	23dBm	26dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	20dBm	23dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 8	18dBm	21dBm	±2dB
	MCS 0	25dBm	28dBm	±2dB
	MCS 1	25dBm	28dBm	±2dB
	MCS 2	25dBm	28dBm	±2dB
	MCS 3	24dBm	27dBm	±2dB
	MCS 4	23dBm	26dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
5GHz 802.11ac VHT80	MCS 7	20dBm	23dBm	±2dB
	MCS 8	19dBm	22dBm	±2dB
	MCS 9	18dBm	21dBm	±2dB
	MCS 0	25dBm	28dBm	±2dB
	MCS 1	25dBm	28dBm	±2dB
	MCS 2	25dBm	28dBm	±2dB
	MCS 3	24dBm	27dBm	±2dB
	MCS 4	23dBm	26dBm	±2dB
5GHz 802.11ac VHT80+80	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	20dBm	23dBm	±2dB
	MCS 8	18dBm	21dBm	±2dB
	MCS 9	17dBm	20dBm	±2dB
	MCS 0	24dBm	27dBm	±2dB
	MCS 1	24dBm	27dBm	±2dB
	MCS 2	24dBm	27dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-96dBm	±2dB
	9Mbps	-95dBm	±2dB
	12Mbps	-94dBm	±2dB
	18Mbps	-92dBm	±2dB
	24Mbps	-90dBm	±2dB
	36Mbps	-86dBm	±2dB
	48Mbps	-82dBm	±2dB
	54Mbps	-79dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-94dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-85dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-78dBm	±2dB
	MCS 6	-76dBm	±2dB
	MCS 7	-74dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 8	-70dBm	±2dB
	MCS 0	-90dBm	±2dB
	MCS 1	-86dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-78dBm	±2dB
	MCS 5	-73dBm	±2dB
	MCS 6	-71dBm	±2dB
5GHz 802.11ac VHT80	MCS 7	-70dBm	±2dB
	MCS 8	-66dBm	±2dB
	MCS 9	-65dBm	±2dB
	MCS 0	-87dBm	±2dB
	MCS 1	-84dBm	±2dB
	MCS 2	-82dBm	±2dB
	MCS 3	-79dBm	±2dB
	MCS 4	-74dBm	±2dB
5GHz 802.11ac VHT80+80	MCS 5	-71dBm	±2dB
	MCS 6	-69dBm	±2dB
	MCS 7	-67dBm	±2dB
	MCS 8	-63dBm	±2dB
	MCS 9	-60dBm	±2dB
	MCS 0	TBD	±2dB
	MCS 1	TBD	±2dB
	MCS 2	TBD	±2dB
5GHz 802.11ac VHT80+80	MCS 3	TBD	±2dB
	MCS 4	TBD	±2dB
	MCS 5	TBD	±2dB
	MCS 6	TBD	±2dB
	MCS 7	TBD	±2dB
	MCS 8	TBD	±2dB
	MCS 9	TBD	±2dB

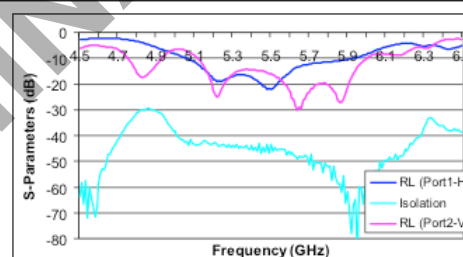
## 5GHz Antenna Performance Information

Gain	17dBi
Radiation	Directional
Frequency Range	5.1 ~ 5.9 GHz
Polarization	Dual Polarization
Azimuth -3dB Beamwidth	Horizontal(Port 1): 30 degrees Vertical(Port 2): 33 degrees
Elevation -3dB Beamwidth	Horizontal(Port 1): 17 degrees Vertical(Port 2): 17 degrees
Isolation	-40dB (Max)
Front-to-Back Ratio	-30dB (Max)
VSWR	Horizontal (Port 1) : < 1: 1.87; Vertical (Port 2): < 1: 1.55
Cross Polarisation Isolation	-28dB (Max)
SideLobe	<-12dB

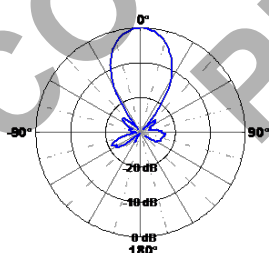
Gain Plot



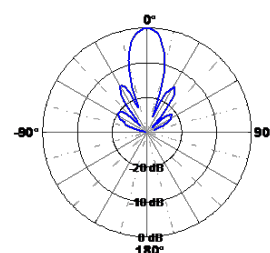
Return Loss & Isolation Plot



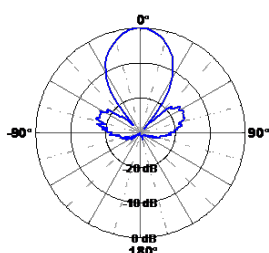
Polar Plots (At 5.6GHz)



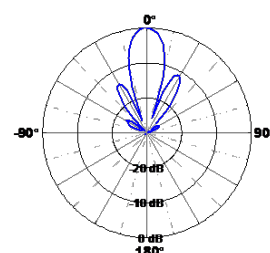
H-Pol Azimuth (Port 1 - H)



V-Pol Elevation (Port 1 - H)

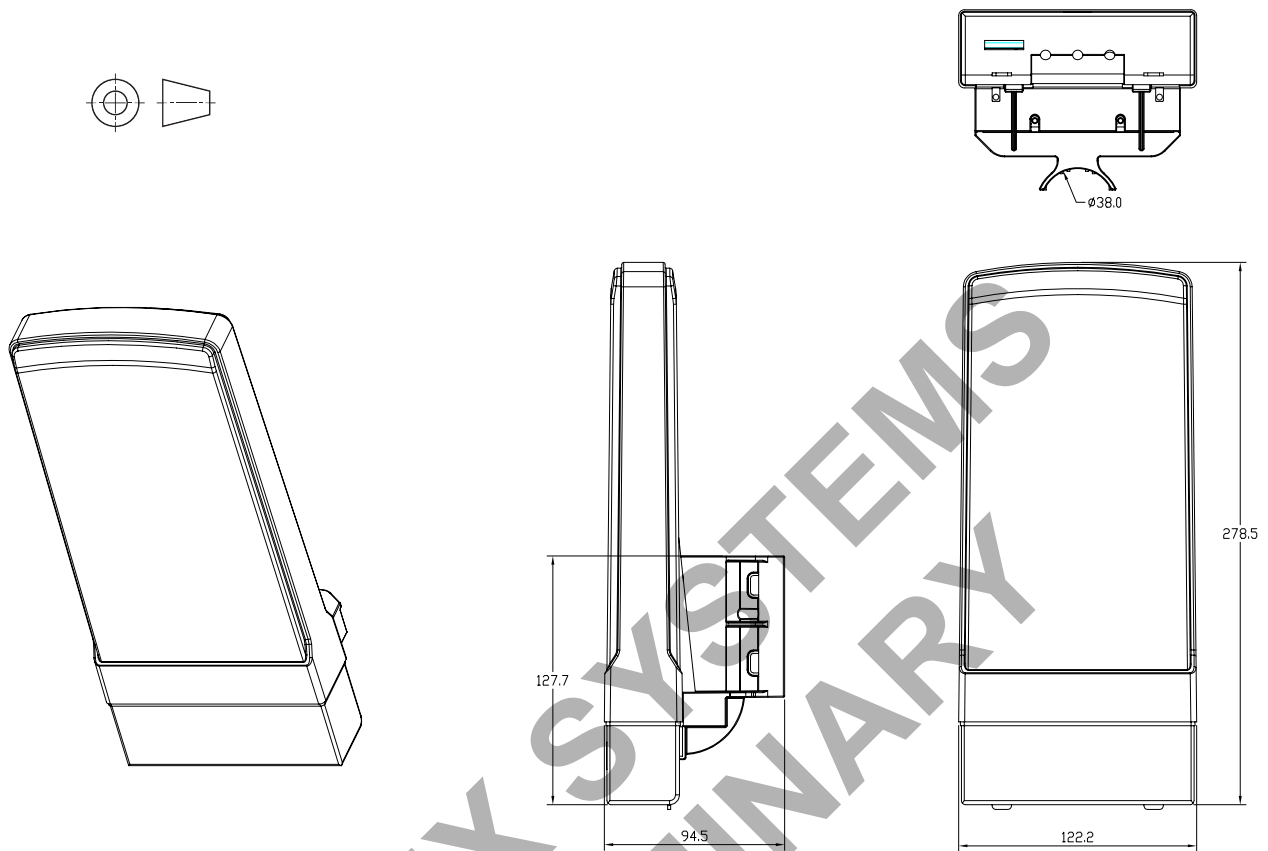


V-Pol Azimuth (Port 2 - V)



H-Pol Elevation (Port 2 - V)

## Dimensional Drawing



## 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.

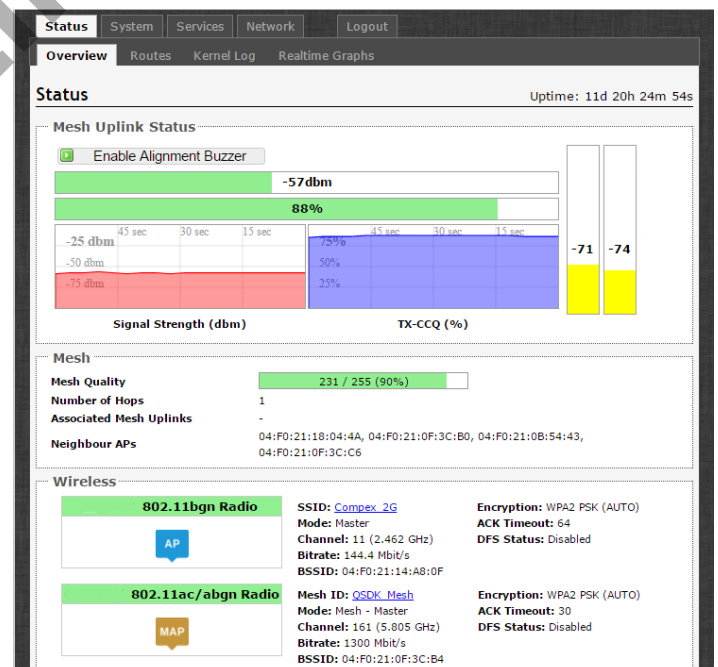
### Powerful Wireless Features

- 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/>



## Firmware / Software

The MMJ563HV is shipped with CompexWRT firmware.  
SDKs with QCA binary drivers are available for software developers.

<b>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>Supported Mass Management Software</b>	<ul style="list-style-type: none"> <li>CNMS AP Controller Software<sup>2</sup></li> </ul>
<p>1. OpenWRT SDK is available without any technical support by Compex unless otherwise stated.</p> <p>2. CNMS AP Controller only compatible with MMJ563HV running CompexWRT.</p> <p>*Configurations are subject to change without notifications.</p>	

## Ordering Options

Item Code	Antenna	Power Solutions	Radio Output	Power Supply
MMJ563HV 7A02DFOEBPV5-25B	17dBi 5GHz Dual-polarization antenna	IEEE 802.3af/at PoE	5GHz 28dBm	EU

## Packaging Content

Item	Quantity
MMJ563HV Outdoor Access Point	1
Read Me First Documentation	1
Mounting Bracket	1

## Customization Options

The MMJ563HV can be customized for volume applications. Contact our sales representatives for more information.

Removing of Peripherals	Reduce NOR Flash to 8 MB
Antenna Customization	Industrial Grade Chipset
	WiFi Module Customization

For more customization, contact us at [sales@compex.com.sg](mailto:sales@compex.com.sg)

## Packaging Information

Packaging Type	Dimensions	Nett Weight	Gross Weight
Carton Box (10 units)	675 x 310 x 220 mm	TBD, est. 8.185 kg	TBD, est. 8.915 kg