

**EMP9605H****High Power 2.4GHz 11n Mini-PCI Adapter****2.4GHz IEEE802.11b/g/n 2T2R 300Mbps High Performance****Package Contents**

1 x MiniPCI Adapter (EMP9605H)

Engenius Mini-PCI series radio modules perform extreme high power and economize the power consumption on the system platform. **EMP9605H** is an 802.11b/g/n WiFi 2x2 mini-PCI module designed specifically for integration to maximum performance ratio. EMP9605H delivers the ultimate wireless triple play experience for video, voice, and data transmission in the home, for the business, and on the road.

With enhanced features on the ESD protection, industrial-based operating temperature, economized system power consumption, industrial-best sensitivity than normal module, MMCX connectors, and stable heating protection design, makes the module is easily to integrate into a wide range of any platform.

# EMP9605H

## High Power 2.4GHz 11n Mini-PCI Adapter

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### Features

**Industrial-best Sensitivity** -96dBm@6Mbps, -82dBm@54Mbps, -97dBm@MCS0/MCS8, -76dBm@MCS7/MCS15

**Supports IEEE 802.11b/g and 802.11n** Compatible among multiple Wifi networks

**Enables Bandwidth up to 300Mbps** Fast throughput for 802.11n in 2.4GHz

**2T2R Design Architecture** Higher and greater reliable throughputs over range

**MMCX Antenna Connector** Two MMCX connectors

### Specification

#### Hardware Specification

<b>Standard</b>	WECA(WiFi & WiFi5 Compliance), IEEE802.11b/g/n, RoHS		
<b>Chipset</b>	Atheros AR9220		
<b>Physical Interface</b>	32-bit Mini-PCI Type III A 2 x MMCX Connector		
<b>Power Requirements</b>	Advanced Power Consumption Management Jump Wire ON : External DC power in supported, Voltage=5V Jump Wire OFF : Only Support DC Power from Mini-PCI Slot=3.3V		
<b>Current Consumption Information</b>	Tx Current Consumption	Continuous Tx@802.11b/g	<1.7A
		Continuous Tx@802.11n	<2A
	Rx Current Consumption	Continuous Rx	<450mA
	Card on Current	Data Communicating with AP	<450mA
	Sleep Current	Sleep Mode	<100mA

#### RF Specification

<b>Frequency Band</b>	<b>802.11b/g/n</b> 2.412GHz ~ 2.472GHz			
<b>Data rate</b>	300 Mbps			
<b>Receive Sensitivity (Typical)</b>	<b>802.11n</b>	<b>802.11n</b>	<b>802.11g</b>	<b>802.11b</b>
	<b>(20MHz)</b>	<b>(40MHz)</b>	-96dBm @ 6Mbps	-99dBm@1Mbps
	-97dBm @ MCS0	-94dBm @ MCS0	-82dBm @ 54Mbps	-93dBm@11Mbps
	-78dBm @ MCS7	-76dBm @ MCS7		
	-96dBm @ MCS8	-94dBm @ MCS8		
	-76dBm @ MCS15	-75dBm @ MCS15		

#### Software Specification

<b>Security</b>	WPA, WPA2, 64/128 bits WEP, TKIP and AES
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	Hardware-base IEEE 802.11i encryption engine
<b>Environment &amp; Mechanical</b>	
<b>Temperature Range</b>	-30°C to 80°C
<b>Humidity (non-condensing)</b>	0%~95% typical
<b>Dimensions</b>	66mm (L) x 59.5mm (W) x 5mm (H)
<b>Weight</b>	16g

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U.S. Regulatory Wireless Notice**Federal Communication Commission 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 generates, 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.

**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.

**IMPORTANT NOTE:****FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

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**This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna,
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: U2M-MP9605H".

**Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.