

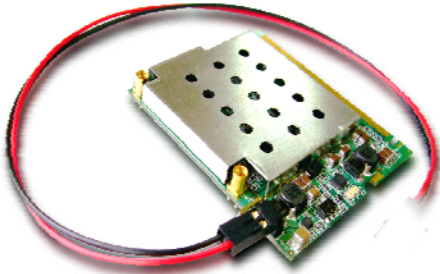
EMP-8603

MINI PCI Adapter – Go Green Series(PREMIUM)

2.4 GHz / 5.0 GHz

802.11 a/b/g

54Mbps



Engenius miniPCI series radio modules perform extreme high power and economize the power consumption on the system platform. EMP-8603 Premium is mini-PCI types A module, supports dual-band (2.4GHz & 5GHz) high transmit output power up to 500mW in 5GHz and 800mW in 2.4GHz. For outstanding performance on the extremely output power, it enables the longer transmit distance & provides the wider bandwidth & backhaul for 5GHz.

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.

Features	Benefits
500mW output power in 5GHz	Wider bandwidth & backhaul for 5GHz
800mW output power in 11b, and 600mW in 11g	Improve high and successful transmit range
Industrial-best sensitivity	-94 dBm @ 6 Mbps , -74 dBm @ 54 Mbps
Advanced power consumption management	Effectively reduce the total power consumption on the platform up to 3.5W
Advanced Hardware Design	Effective energy saving and tally to <i>Earth Friendly</i> concept.
ESD protection up to 16 kV	Make the module & platform more reliable and stable
Industrial-based operating temperature	Extended operating temperature -40~+85C
MMCX antenna connectors	Two MMCX connectors (One is for 2.4GHz, and the other is for 5GHz)
5/10/20 Channel bandwidth support	It's optional for special request, makes your RF management more flexible
Improving the heat issue	MTBF reliability improvement and keeps the system free from heat issue

General information	
Radio operation	802.11a: 5GHz
	802.11b/g : 2.4GHz
Interface	32-bit miniPCI Type III A
Operatnig voltage	Mini_PCI Slot : DC 3.3 V ± 5% with Advanced DC Power management support
	With External Jump wire : DC 5 V or 9 ~ 24 V
Antenna connectors	2 MMCX connectors (One is for 5GHz, the other is for 2.4GHz)
Tempeprature range	-40°C to + 85 °C (Operating temperature)
	-45°C to + 90°C (Storage temperature)

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* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

** All specifications are subject to change without notice.



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Security	WPA, WPA2, 64/128 bit WEP, TKIP, and AES. hardware-based IEEE 802.11i encryption engine
Data rates	6, 9, 12, 18, 24, 36, 48, and 54Mbps (11a /11g)
	1, 2, 5.5, and 11Mbps (11b)
Tx channel width support	5MHz / 10MHz / 20MHz
Standard/Compliance	WECA (Wi-Fi & Wi-Fi5 compliance), IEEE802.11, IEEE802.11a/b/g, RoHS and WEEE
Regulation Certifications	FCC Part 15

Radio frequency band

Channel	Data rate	Tx AVG. power (dBm)	Tolerance	Rx Sensitivity	Tolerance
802.11a (5.18~5.825GHz)	6 Mbps	26 dBm	+1/-2 dB	-93 dBm	+/-1.5 dB
	9 Mbps	26 dBm	+1/-2 dB	-92 dBm	+/-1.5 dB
	12 Mbps	26 dBm	+1/-2 dB	-90 dBm	+/-1.5 dB
	18 Mbps	26 dBm	+1/-2 dB	-89 dBm	+/-1.5 dB
	24 Mbps	26 dBm	+1/-2 dB	-85 dBm	+/-1.5 dB
	36 Mbps	24 dBm	+1/-2 dB	-82 dBm	+/-1.5 dB
	48 Mbps	22 dBm	+1/-2 dB	-76 dBm	+/-1.5 dB
	54 Mbps	20 dBm	+1/-2 dB	-73 dBm	+/-1.5 dB
	802.11g (2.412~2.472GHz)	6 Mbps	27 dBm	+1/-2 dB	-94 dBm
9 Mbps		27 dBm	+1/-2 dB	-93 dBm	+/-1 dB
12 Mbps		27 dBm	+1/-2 dB	-92 dBm	+/-1 dB
18 Mbps		27 dBm	+1/-2 dB	-91 dBm	+/-1 dB
24 Mbps		27 dBm	+1/-2 dB	-87 dBm	+/-1 dB
36 Mbps		25 dBm	+1/-2 dB	-84 dBm	+/-1 dB
48 Mbps		24 dBm	+1/-2 dB	-78 dBm	+/-1 dB
54 Mbps		23 dBm	+1/-2 dB	-74 dBm	+/-1 dB
802.11b (2.412~2.472GHz)		1Mbps	28 dBm	+1/-2 dB	-97 dBm
	2Mbps	28 dBm	+1/-2 dB	-96 dBm	+/-1 dB
	5.5Mbps	28 dBm	+1/-2 dB	-95 dBm	+/-1 dB
	11Mbps	28 dBm	+1/-2 dB	-92 dBm	+/-1 dB

Power offset table (Target power vs Actual output power)

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802.11a	7dB
802.11b/g	9dB

Current consumption information

Tx current consumption (without Jump wire)	Continuous TX @ 802.11.a	≤ 2 A
	Continuous TX @ 802.11.b/g	≤ 1.4 A
Rx current consumption	Continuous RX	≤ 400 mA
Card on Current	Data Communicating with AP	≤ 400 mA
Sleep Current	Sleep mode	≤ 100 mA

Advanced DC Power consumption management

Jump wire on	External DC power in supported , Voltage 5 V or 9 ~ 24 V
Jump wire off	Only support DC Power from mini-PCI slot (3.3 V)
Cable dimension	30cm

Driver information

Windows driver	Windows driver XP/2000
Linux driver	Mad WiFi

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