

EMP-8603

EnGenius EMP-8603 Premium radio module performs extreme high wireless power and economizes 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. It supports Atheros Turbo mode with high-speed wireless connection with data rate up to 108Mbps (optional EMP-8603S).

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 make the EMP-8603 Premium very easy to integrate into a wide range of embedded platforms.

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
Turbo mode support	Supports Super A/G up to 108Mbps data rate
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
Improving the heat issue	MTBF reliability improvement and keeps the system free from heat issue
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

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Technical Specifications

- Chipset: Atheros 6th Generation, AR5414/AR5413
- Data Rates
  802.11a: 6, 9, 12, 18, 24, 36, 48, 54 and 108Mbps
  802.11g: 6, 9, 12, 18, 24, 36, 48, 54 and 108Mbps
  802.11b: 1, 2, 5.5, 11Mbps
- Standards / Compliance
  WECA (Wi-Fi & Wi-Fi5 compliance)
  IEEE802.11, IEEE802.11a, IEEE802.11g, IEEE802.11b, RoHS and WEEE
- Regulation Certifications: FCC Part 15
- Operating 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
- Tx current conmsumption (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
- Security:
  WPA, WPA2, 64/128 bit WEP, TKIP, and AES. hardware-based IEEE 802.11i encryption engine

Environment & Physical

- Temperature Range
  Operating: -40°C to 85°C
  Storage: -45°C to 90°C
- Power offset table
  802.11a: 7dB
  802.11b/g: 9dB
- 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

RF Specification

- Frequency Band
  802.11a
  4.92~4.98GHz & 5.04~5.08GHz
  5.18~5.825 GHz
  802.11b/g
  2.4GHz
- Operating Channels
  802.11g: 2.412~2.472GHz
  802.11a: 4.92~5.825GHz
  802.11b: 2.412~2.472GHz
- Receive Sensitivity (Typical)
  802.11a:
  6Mbps @ -92dBm, 9Mbps @ -92dBm, 12Mbps @ -90dBm, 18Mbps @ -89dBm, 24Mbps @ -85dBm, 36Mbps @ -82dBm, 48Mbps @ -76dBm, 54Mbps @ -73dBm
  802.11g:
  6Mbps @ -94dBm, 9Mbps @ -93dBm, 12Mbps @ -92dBm, 18Mbps @ -91dBm, 24Mbps @ -87dBm, 36Mbps @ -84dBm, 48Mbps @ -78dBm, 54Mbps @ -74dBm
  802.11b:
  1Mbps @ -97dBm, 2Mbps @ -96dBm, 5.5Mbps @ -95dBm, 11Mbps @ -92dBm
  Tolerance:
  802.11a/b/g: +/-1.5dB
- Tx AVG. power (dBm)
  802.11a
  6,9,12,18,24Mbps @ 26dBm, 36Mbps @ 24dBm, 48Mbps @ 22dBm, 54Mbps @ 20dBm
  802.11g
  6,9,12,18,24Mbps @ 27dBm, 36Mbps @ 25dBm, 48Mbps @ 24dBm, 54Mbps @ 23dBm
  802.11b
  1,2,5.5,11Mbps @ 28dBm
  Tolerance:
  802.11a/b/g: +1 /-1.5dB
- Antenna connectors: 2 MMCX connectors (One is for 5GHz, the other is for 2.4GHz)
- Interface: 32-bit Mini-PCI type III A

Contact

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