



## 802.11a/b/g Wireless Mini-PCI Adapter EMP-8602 Plus-S

The EMP-8602 PLUS-S is a mini-PCI type III B High-Power card supporting dual-band (2.4GHz & 5GHz) radio operation. With the highest output power available in the market today in a very small form factor, EnGenius Technologies EMP-8602 Plus-S is the perfect solution using 802.11a/b/g networking technology.

### Specifications

#### Features:

- Up to 54Mbps data transfer rate
- Flexible designs for embedded systems or OEM project based applications
- Fully interoperable with IEEE802.11a/b/g compliant products
- Automatic data rate scaling at 54,48,36,24,18,12,11,9,6,5.5,2,1Mbps
- Updated 64/128-bit WEP engine for improved throughput
- Uses latest IEEE802.1x Client Support(EAP-TLS, EAP-TTLS supplicant)
- Advanced power management for extended battery life
- Improved indoor multipath distortion for higher link quality in an indoor environment
- Output Power up to 28dBm in 11b/g mode, 22dBm in 11a mode
- Extended tuning ranges for worldwide use and DFS/TPC for international operation
- Support for 802.11e standards for Wireless Multimedia Enhancements QoS

#### Network:

- **Compliant:** FCC Part 15/UL
- **Media Access Protocol:** CSMA/CA
- **Modulation Technology:** OFDM  
802.11a/g: OFDM (64-QAM, 16-QAM, QPSK, BPSK)  
802.11b: DSSS (DBPSK, DQPSK, CCK)
- **Security:**  
64/128-bit WEP data encryption  
IEEE802.1x Client Support(EAP-TLS, EAP-TTLS supplicant)  
WPA/WPA2- Wi-Fi Protected Access(64, 128-bit WEP with TKIP/AES, Pre-Share Key)
- **Network Standards:**  
IEEE802.11a IEEE802.11b IEEE802.11g IEEE802.1x  
IEEE802.11i IEEE802.11h IEEE802.1e IEEE802.1j

#### Physical Specifications:

- **Form Factor:** Mini-PCI Type IIIA
- **Dimensions:** 59.60mm X 44.45mm
- **Antenna Connector:** 2x U.FL Connectors
- **Operating Voltage:** 3.3V +/- 0.15V

#### Environmental:

- **Temperature Range:**  
Operating: 0°C to 70°C  
Storage: -20°C to 80°C
- **Humidity (non-condensing):**  
5%~95% Typical

#### Radio:

- **Frequency Band:**  
802.11a:  
5.15~5.35GHz,  
5.47~5.725GHz, 5.725~5.825GHz  
802.11b/g:  
U.S., Europe and Japan product covering 2.4 to 2.484 GHz,  
programmable for different country regulations
- **Radio Type:**  
Direct Sequence Spread Spectrum (DSSS)
- **Operation Channels:**  
11 for North America
- **Receive Sensitivity (Typical):**  
5.15~5.82 GHz  
6Mbps @ -90dBm 54Mbps @ -74dBm  
2.412~2.472 G(IEEE802.11g)  
6Mbps @ -92dBm 54Mbps @ -76dBm  
2.412~2.472 G(IEEE802.11b)  
11Mbps @ -92dBm 1Mbps @ -96dBm
- **Current Consumption:**  
Tx Current: 1A  
Rx Current: 400mA  
Card on Current: 400mA  
Sleep Current: 100mA
- **Available Transmit Power \*subject to country regulations\*:**  
5.15~5.25 GHz(IEEE802.11a)  
22dBm @6 ~ 24Mbps  
20dBm @36Mbps  
18dBm @48Mbps  
17dBm @54Mbps  
5.25~5.35GHz(IEEE802.11a)  
20dBm @6 ~ 24Mbps  
18dBm @36Mbps  
16dBm @48Mbps  
15dBm @54Mbps  
5.500~5.700GHz(IEEE802.11a)  
21dBm @6 ~ 24Mbps  
19dBm @36Mbps  
17dBm @48Mbps  
16dBm @54Mbps  
5.745~5.85GHz (IEEE802.11a)  
20dBm @6 ~ 24Mbps  
18dBm @36Mbps  
16dBm @48Mbps  
15dBm @54Mbps  
2.412~2.472G(IEEE802.11g)  
27dBm @6 ~ 24Mbps  
25dBm@36Mbps  
24 dBm@48Mbps  
23dBm@54Mbps  
2.412~2.472G(IEEE802.11b)  
28dBm. @1, 2, 5.5 and 11Mbps



1580 Scenic Avenue  
Costa Mesa, CA 92626  
Toll Free: 888.735.7888

Tel: 714.432.8668  
Fax: 714.432.8667  
www.engeniustech.com

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