# Radio Frequency Exposure Report

## On Behalf of

# Prentke Romich Company

| | |
|---|---|
| **FCC ID:** | **2AD9PACN800PRC** |
| **Product Description:** | **Accent 800** |
| **Model No.:** | **ACN800** |
| **Supplementary Model:** | **N/A** |
| **Brand Name:** | **Accent ™ 800** |

**Prepared for:**  **Prentke Romich Company**
1022 Heyl Rd. Wooster, Ohio 44691

**Prepared by:**  **Shenzhen QC Testing Laboratory Co., Ltd.**

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**Test Date:**  August 18~ 24, 2015

**Tested by:** _Kare Gao_

Kare Gao

**Tested by:** _Carmi Du_

Carmi Du

**Approved by:** _Kendy Wang_

Kendy Wang

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# 1 - GENERAL INFORMATION

## 1.1 Product Description for Equipment Under Test (EUT)

| Applicant: | **Prentke Romich Company** |
|---|---|
| Address of Applicant: | 1022 Heyl Rd. Wooster, Ohio 44691 |
| Manufacturer : | **Prentke Romich Company** |
| Address of manufacturer: | 1022 Heyl Rd. Wooster, Ohio 44691 |

**General Description of E.U.T**

| Items | Description |
|---|---|
| EUT Description: | Accent 800 |
| Model No.: | ACN800 |
| Trade Name: | Accent $^{TM}$ 800 |
| Supplementary Model: | N/A |
| Frequency Band: | EEE 802.11b/g,<br>IEEE 802.11n HT20 (ISM Band) : 2412MHz～2462MHz,<br>IEEE 802.11n HT40 (ISM Band) : 2422MHz～2452MHz |
| Number of Channels: | IEEE 802.11b/g, 802.11n HT20:11 Channels 802.11n HT40:7 Channels |
| Type of Modulation: | IEEE 802.11b：DSSS (CCK, DQPSK, DBPSK)<br>IEEE 802.11g：OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT20/40：OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Antenna Gain: | 0.88dBi |
| Antenna Type: | Integral Antenna |
| Rated Voltage: | Input: 18VDC 3.4A from AC/DC adapter;7.4VDC from battery |
| Adapter description: | Model No:MENB1060A1800N02;<br>Manufacturer: SL POWER and AULT<br>Input: 100-240V~ 50-60Hz 1.5A Max ; Output:18.0V 3.4A |

Remark: * *The test data gathered are from the production sample provided by the manufacturer.*

## 1.2 Objective

The objective of the following report is used to demonstrate that EUT operated in a manner that ensures the public is not exposed to radio frequency energy levels in excess of the relative provisions of FCC 47CFR Part 1.1307

## 1.3 The Contains FCC ID Power

FCC ID : 2AD9PACN800

| Mode | Frequency Range(MHz) | MAX Output Power(dBm) |
|---|---|---|
| WIFI | 2412-2472 | 16+/-1.5 |
| BT4.0(DTS) | 2402-2480 | 0.65 |
| BT4.0(DSS) | 2402-2480 | 1.57 |

FCC ID : UYI24

| Mode | Frequency Range(MHz) | MAX Output Power(dBuV/m) |
|---|---|---|
| 2.4GHz TEANSCEIVER MODULE | 2402-2481 | 90.02 |

FCC ID : QOQWT32AE

| Mode | Frequency Range(MHz) | MAX Output Power(dBm) |
|---|---|---|
| BT | 2402-2480 | 1.56 |

Remark : The worst case is FCC ID : 2AD9PACN800 WIFI Mode.

## 1.4 General Description of Test

| Items | Description |
|---|---|
| EUT Frequency band | ☒ FHSS: 2.400GHz ~ 2.483GHz<br>☒ WLAN: 2.400GHz ~ 2.483GHz<br>☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz<br>☐ WLAN: 5.745GHz ~ 5825GHz<br><br>☐ Others: _____ |
| Device category | ☐ Portable (<20cm separation)<br>☒ Mobile (>20cm separation)<br><br>☐ Others _____ |
| Exposure classification | ☐ Occupational/Controlled exposure (S = 5mW/cm2)<br>☒ General Population/Uncontrolled exposure<br>   (S=1mW/cm$^2$)<br><br>☐ Others: _____ |
| Antenna diversity | ☒ Single antenna<br>☐ Multiple antennas:<br>     ☐ Tx diversity<br>     ☐ Rx diversity<br>     ☐ Tx/Rx diversity |
| Max. output power | 17.50dBm (0.056W) |
| Antenna gain (Max) | 0.88dBi (Numeric gain:1.22 ) |
| Evaluation applied | ☒ MPE Evaluation<br>☐ SAR Evaluation |
| **Note:**<br>*1. The maximum output power is 16+/-1.5dBm (with 1.22 numeric antenna gain.)*<br>*2. For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20 cm, even if the calculations indicate that the MPE distance would be lesser.* ||

## 1.5 Human Exposure Assessment Results

<u>Calculation</u>

Given $\quad E = \dfrac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \dfrac{E^{2}}{3770}$

Where $\quad$ E = Field Strength in Volts / meter
P = Power in Watts
G=Numeric antenna gain
d=Distance in meters
S=Power Density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^{2}}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and
d (cm) =100 * d (m)

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^{2}} = 0.0796 \times \frac{P \times G}{d^{2}} \qquad \textit{Equation 1}$$

Where $\quad$ d = distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power Density in mW / cm²

| EUT parameter (data from the separate report) | |
|---|---|
| Given<br><br>$$E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$ | Where<br>G: numerical gain of transmitting antenna;<br>TP: Transmitted power in watt;<br>d: distance from the transmitting antenna in meter |
| Max average output power in Watt (TP) | 13.76dBm (0.0238W) |
| Antenna gain (G) | 0.88dBi (Numeric gain: 1.22) |
| Exposure classification | S=1mW/cm$^2$ |
| Minimum distance in meter (d)<br>(from transmitting structure to the human body) | 20cm (0.2m) |
| Yields<br><br>$$S = \frac{30 x P x G}{3770 d^2}, \quad P=0.056W, \; G=1.22, \; d=0.2$$<br>S=0.0136mW/cm$^2$ | |
| Conclusion:<br>S=0.0136mW/cm$^2$ is significant lower than the General Population Exposure Power Density Limit 1mW/cm$^2$<br>(For mobile or fixed location transmitters, the maximum power density is 1.0 mW / cm$^2$ even if the calculation indicates that the power density would be larger.) | |