TRC® Since1985

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Measurement of MPE

1. Foreword

In adopt with the Human Exposure IEEE C95.1, and according to the FCC 1.1310. The *Maximum Permissible Exposure (MPE)* is obligated to measure in order to prove the safety of radiation harmfulness to the human body.

The *Gain* of the antenna used is measured in an *Anechoic chamber*. The *maximum total power to the antenna* is to be recorded. By adopting the ***Friis Transmission Formula*** and the *power gain of the antenna*, we can find the distance right away from the product, where the limit of the MPE is.

2. Description of EUT

EUT	**:**	WLAN PCMCIA Card
Classification	**:**	Portable& Mobile Device
		(i)Under normal use condition, the antenna is at least 2.5cm away from the user;
		(ii) Warning statement for keeping 2.5cm separation distance and the prohibition of operating next to the person has been printed in the user' s manual
Model No.	**:**	8800-510 / 8800-511 / 8800-512
Granted FCC ID	**:**	L8G8800001
Frequency Range	**:**	2.412 GHz ~ 2.462GHz
Antenna Kit	**:**	2 external fixed antennas
Supported Channel:		11 Channel
Modulation Skill	**:**	DBPSK, DQPSK, CCK
Power Type	**:**	Powered by the PCMCIA slot of the client' s device

3. Limits for *Maximum Permissible Exposure (MPE)*

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Filed Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	100	6
3.0-30	1842/f	4.89/f	$900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	100	30
1.34-30	824/f	2.19/f	$180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

[The EUT is tested in transmit and receive modes and in the first, middle and the last channel separately. The following shows only our observation have the greatest emissions.]

According to **OET BULLETIN 56 Fourth Edition/August 1999**, **Equation for Predicting RF Fields:**

Friis Transmission Formula: $S = \frac{PG}{4\pi R^2} = \frac{34.67 \times 1.259}{4\pi (20)^2} = 0.008684 mW/cm^2$

Where: S = *power density* (in appropriate units, e.g. mW/cm2)

P = *power input* to the antenna (in appropriate units, e.g., mW)

G = *power gain* of the antenna in the direction of interest relative to an isotropic radiator

R = *distance* to the center of radiation of the antenna (appropriate units, e.g., cm)

The *Numeric gain G* of antenna with a gain specified in dB is determined by:

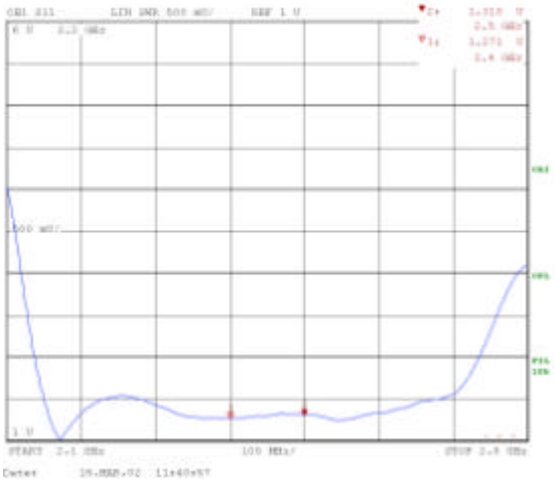
G = Log $^{-1}$ (dB antenna gain/10)

G = Log $^{-1}$ (1 / 10) = 1.259

PCMCIA External Antenna

Frequency Range	：2.4 ~2.5 GHz
Nominal Impedance	：50 Ohm
VSWR	：≤ 2.0
Gain	：1 dBi
Radiation	：Omnidirection
Polarization	：Vertical
Electronic Wave	：1/2 λ Dipole

VSWR



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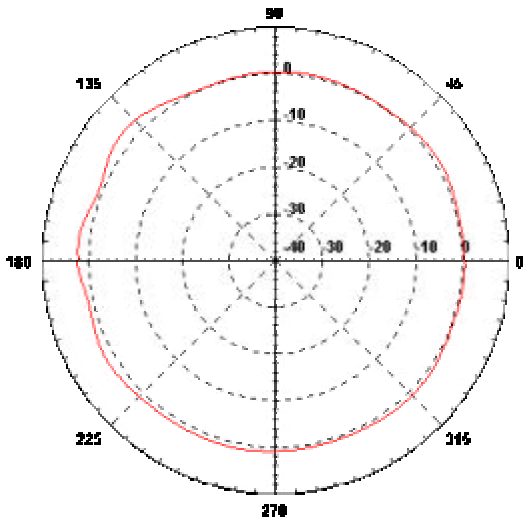

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