Measurement of Maximum Permissible Exposure

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

FCC ID	:	NDD9572060402
Product name	:	Wireless Gaming Adapter
Model name	:	as Appendix A of Test Report
Classification	:	Mobile Device (i) Under normal use condition, the antenna is at least 20cm away from the user; (ii) Warning statement for keeping 20cm separation distance and the prohibition of operating next to the person has been printed in the user's manual
Frequency Range	:	2.412 GHz ~ 2.462GHz
Supported Channel	:	11 Channels
Modulation Skill	:	DBPSK, DQPSK, CCK
Power Type	:	Powered by Adapter Model: DVR-1250-B11 I/P: 120VAC, 60Hz ; O/P: 12VDC, 500mA

5. Linits for Maximum Fermissible Exposure (MFE)					
Frequency Range	Electric Field Strength	Magnetic Filed Strength (H)	Power Density (S)	Averaging Time E ² , H ² or S	
(MHz)	(V/m)	(A/m)	(mW/cm2)	(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/Uncontrolle	ed 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	

3. Limits for Maximum Permissible Exposure (MPE)

[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: $S = \frac{PG}{4pR^2} = \frac{107.151 \times 1.585}{4p(20)^2} = 0.03378 mW/cm^2$ Estimated safe separation: $R = \sqrt{\frac{PG}{4p}} = \sqrt{\frac{107.151 \times 1.585}{4p}} = 3.676 cm$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 3.676cm."

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 (2.0 / 10) = 1.585

Ninput Output	PRODUCT SPECIFICATION	DOC. No: WL-TL-17 DATE: 25-MAR-02
Enterprise Corp.		REV. : C

PRODUCT NAME

2.4G ANTENNA WITH RP SMA

PART NUMBER



W205-108-D200

Signed By Customers

Approved By:

供應商: 垠旺精密股份有限公司

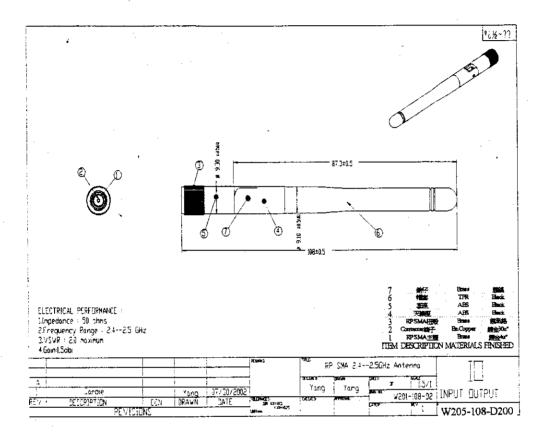
TEL:02-2917-7528;FAX:02-2912-1659

台北縣新店市寶興路 37號 3樓

NInput Output PRODUCT Enterprise Corp. SPECIFICATION 2.4 G ANTENNA WITH RP-SMA PLUG	DOC. No: WL-TL-17 DATE: 25-MAR-02 REV. : C
W205-108-D200 2.4G ANTENN	JA .
SPECIFICATION	
1. Electrical Properties	
1-1 Frequency Range	2.4~2.5GHz
1-2 Impedance	50 Ohms nominal
1-3 V.S.W.R	2.0 (Max.)
1-4 Return Loss	10.0 dB(Max.)
1-5 Max. Gain	2.0dBi
1-6 Polarization	Vertical
1-7 Admitted Power	1W
1-8 Electrical Wave	1/4 ت Dipole
2. Mechanical Properties	
2-1 ConnectorReverse	SMA Plug
2-2 CableR	G178
2-3 Antenna BodyT	.P.R.
2-4 Operating Temperature Range2	.0°C ~ +50°C
2-5 Storage Temperature Range2	20°C ~ +50°C

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