



Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: QISAP7110DNAGN

Issued Date : Nov. 13, 2012
Project No. : 1209C078A
Equipment : Wireless LAN Access Point
Model : AP7110DN-AGN
Applicant : Huawei Technologies Co.,Ltd.
Address : Bantian, Longgang District, Shenzhen China

According: : **FCC Guidelines for Human Exposure IEEE C95.1**

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

where:

S = power density

P = power input to the antenna

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

Antenna Specification:

The product has 2 group antenna: Shenglu and Tongyu, The 5.74dBi of Shenglu was the worst case.

Group 1

Ant.	Manufacturer	Model Name	Antenna Type / Connector	function	Gain (dBi)
1	Guangdong Shenglu Telecommunication Tech.Co.Ltd	SL15870A	Dipole / R-SMA	TX/RX	5.74
2	Guangdong Shenglu Telecommunication Tech.Co.Ltd	SL15870A	Dipole / R-SMA	TX/RX	5.74
3	Guangdong Shenglu Telecommunication Tech.Co.Ltd	SL15870A	Dipole / R-SMA	TX/RX	5.74

Group 2

Ant.	Manufacturer	Model Name	Antenna Type / Connector	function	Gain (dBi)
1	Tongyu Communication Inc	TT-2403-6W1	Dipole / R-SMA	TX/RX	5.08
2	Tongyu Communication Inc	TT-2403-6W1	Dipole / R-SMA	TX/RX	5.08
3	Tongyu Communication Inc	TT-2403-6W1	Dipole / R-SMA	TX/RX	5.08

Note: This EUT supports MIMO, all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.74.

Operating Mode TX Mode	1TX	2TX	3TX
	802.11a	V (ANT2)	V (ANT1& ANT2)
802.11n(20MHz)	V (ANT2)	V (ANT1& ANT2)	V (ANT1 & ANT2 & ANT3)
802.11n(40MHz)	V (ANT2)	V (ANT1& ANT2)	V (ANT1 & ANT2 & ANT3)



TEST RESULTS

EUT:	Wireless LAN Access Point	Model Name :	AP7110DN-AGN
Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX - For 3TX Total		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.74	3.7497	13.69	23.3884	0.01745623	1	Complies
5.74	3.7497	13.58	22.8034	0.01701964	1	Complies
5.74	3.7497	14.42	27.6694	0.02065144	1	Complies

EUT:	Wireless LAN Access Point	Model Name :	AP7110DN-AGN
Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 2/TX - For 3TX Total		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.74	3.7497	16.50	44.6684	0.03333883	1	Complies
5.74	3.7497	16.39	43.5512	0.03250501	1	Complies
5.74	3.7497	17.40	54.9541	0.04101572	1	Complies

EUT:	Wireless LAN Access Point	Model Name :	AP7110DN-AGN
Temperature:	25 °C	Relative Humidity:	58 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 3/TX - For 3TX Total		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.74	3.7497	17.90	61.6595	0.04602040	1	Complies
5.74	3.7497	18.12	64.8634	0.04841170	1	Complies
5.74	3.7497	18.07	64.1210	0.04785754	1	Complies