



IEEE C95.1
KDB 447498 D03

RF EXPOSURE REPORT

FOR

Product Name: WiFi module

Model : 6212A
Trade Name: TRANWO

Issued to

TRANWO TECHNOLOGY CORP.

No.236,Sec. 3Huanbei Rd., Jubei City.Hsinchu County, 30265, Taiwan (R.O.C.)

Issued by

Global Certification Corp.

No.146, Sec. 2, Xiangzhang Rd., Xizhi Dist.,New Taipei City 221,
Taiwan (R.O.C.)



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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
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1. GENERAL INFORMATION

Applicant : TRANWO TECHNOLOGY CORP.
Address : No.236,Sec. 3Huanbei Rd., Jubei City.Hsinchu County, 30265,
Taiwan (R.O.C.)
Manufacturer : TRANWO TECHNOLOGY CORP.
Address : No.236,Sec. 3Huanbei Rd., Jubei City.Hsinchu County, 30265,
Taiwan (R.O.C.)
EUT : WiFi module
Model No. : 6212A

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Tested By:

Approved by:

Sep. 11, 2017
Date



Eason Hsu, Engineer

Sep. 11, 2017
Date



Adam Chou, Manager

Designation Number: TW1089



1.1 DESCRIPTION OF THE TESTED SAMPLES

EUT Name : WiFi module
Model Number : 6212A
Operate Frequency : 802.11 b/g/n20 2412 ~2462 MHz
Device category : Portable (<20cm separation): Mobile (>20cm separation)
Exposure classification : Occupational/Controlled exposure (S=5mW/cm²)
General /Uncontrolled exposure(S=1mW/cm²)
Antenna Type : integral antenna: FPCB a dedicated antenna
Antenna gain : 2.5dBi
Max Peak Output Power : 802.11b: 9.12dBm / 802.11g : 12.86dBm / 802.11n20 : 13.48dBm
Evaluation applied : MPE Evaluation : SAR Evaluation N/A

1.2 LIMIT

According to §15.247(i),system operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines, See §1.1307(b)(1) of this chapter.



2. TEST RESULTS

No non-compliance noted.

Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \text{ \& } S = \frac{E^2}{377}$$

Where E=Field strength in Volts / meter

P=Power in Watts

G=Numeric antenna gain

d=Distance in meter

S=Power density in watts / meter

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

$$S = \frac{E^2}{377}$$

Changing to units of mW and cm, using:

P(mW) = P(W) / 1000 and

d(cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{2 \times 377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \text{ Equation 1}$$

Wherr d=Distance in cm

P=Power in mW

G=Numeric antenna gain

S=Power density in mW / cm²



3. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d=20$ cm into Equation 1 :

$$S=0.000199 \times P \times G$$

Where

P=Power in mW

G=Numeric antenna gain

S=Power density in mW / cm²

IEEE 802.11b :

Frq.(MHz)	P (mW)	Gain (num)	d (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
2462	8.17	2.5	20	0.004	1

IEEE 802.11g

Frq.(MHz)	P (mW)	Gain (num)	d (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
2462	19.32	2.5	20	0.0096	1

IEEE 802.11n20

Frq.(MHz)	P (mW)	Gain (num)	d (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
2462	22.28	2.5	20	0.011	1