IEEE C95.1

KDB 447498 D01 v06

47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

WLAN High Power USB Module

Model: XN-725M

Trade Name: TECH-CAST ; mmcam

Issued for

TECH-CAST MFG.CORP.

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Issued Date: August 25, 2016

TAF Testing Laboratory 0240

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	08/25/2016	Initial Issue	All Page	Michelle Chiu

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1. Limit

According to §15.247(i), systems 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. EUT Specification

Product Name	WLAN High Power USB Module
Model Number	XN-725M
Identify Number	T60429N11
Received Date	June 29, 2016
Frequency band (Operating)	IEEE 802.11b/g Mode: 2412MHz ~ 2462MHz
Device category	Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	Dipole Antenna × 1, Antenna Gain : 5dBi
Maximum average output power	IEEE 802.11b Mode: 22.44 dBm IEEE 802.11g Mode: 20.19 dBm
Evaluation applied	MPE Evaluation*

Remark:

1. For more details, please refer to the User's manual of the EUT.

2. This submittal(s) (test report) is intended for FCC ID: ZCPXN725M201606 filing.

3. Test Results

No non-compliance noted.

Calculation

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

Where 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) = d(m) / 100

Yields

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

4. 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

Mode	Frequency (MHz)	Power (dBm)	Ant. Gain (dBi)	Distance (cm)	Power density (mW/cm²)	Limit (mW/cm²)
IEEE 802.11b	2437	22.44	5	20	0.1103	1
IEEE 802.11g	2437	20.19	5	20	0.0657	1