IEEE C95.1 2005
KDB 447498 D03, D01
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

802.11bgn WLAN module

Model: AP-AP6212A

Trade Name: APPRO

Issued to

APPRO Technology Inc.
13F, No. 66, Zhongzheng Rd., Xinzhuang Dist., New Taipei City, Taiwan.

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
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Issued Date: January 15, 2018

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	January 15, 2018	Initial Issue	ALL	Allison Chen
01	January 24, 2018	Added KDB 447498 D1.	P.1, P.4	Allison Chen

TABLE OF CONTENTS

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03, D01 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Tested by:

Sam Chuang
Manager
Compliance Certification Services Inc.
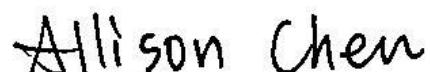
Allison Chen
Report coordinator
Compliance Certification Services Inc.

2. 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.

3. EUT SPECIFICATION

EUT	802.11bgn WLAN module
Model	AP-AP6212A
Trade Name	APPRO
Frequency band (Operating)	☒ 802.11b/g/n 20MHz: 2412MHz ~ 2462MHz ☐ 802.11n 40MHz: 2422MHz ~ 2452MHz ☐ 802.11a/n 20MHz: 5180MHz ~ 5700MHz / 5745MHz ~ 5825MHz ☐ 802.11n 40MHz: 5190MHz ~ 5670MHz / 5755MHz ~ 5795MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	WIFI 2.4G 2.00 dBi (Numeric gain: 1.58) Type: FPCB Antenna
Max tune up Power	<table><tr><td>WIFI 2.4G</td><td></td><td></td></tr><tr><td>IEEE 802.11b mode</td><td>17.0dBm</td><td>(50.119mW)</td></tr><tr><td>IEEE 802.11g mode</td><td>13.0dBm</td><td>(19.953mW)</td></tr><tr><td>802.11n 20MHz mode</td><td>13.0dBm</td><td>(19.953mW)</td></tr></table>
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

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4. TEST RESULTS

No non-compliance noted.

Calculation

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

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:

$$S = \frac{30 \times P \times G}{377 d^2}$$

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 / cm²

5. 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 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
6	2437	50.119	1.58	20	0.0158	1.000

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
1	2412	19.953	1.58	20	0.0063	1.000

IEEE 802.11n 20MHz mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
1	2412	19.953	1.58	20	0.0063	1.000