IEEE C95.1 2005
KDB 447498 D03
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

Neat Pad

Model: A1

Trade Name: neat.

Issued to

Neatframe AS
Martin Linges Vei 25 Fornebu Fornebu 1364 Norway

Issued by

Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
Issue Date: December 18, 2019

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	December 16, 2019	Initial Issue	ALL	Allison Chen
01	December 18, 2019	See the following note Rev.(01)	P.6, P.9	Allison Chen

Rev.(01)

1. Revised antenna gain.

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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 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
Statements of Conformity	
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

Approved by:

Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.

Reporter:

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	Neat Pad
Model	A1
Frequency band (Operating)	☒ Bluetooth: 2402MHz ~ 2480 MHz ☒ 802.11b/g/n HT20: 2412MHz ~ 2462 MHz 802.11n HT40: 2422MHz ~ 2452MHz 802.11a/n HT20: 5180MHz ~ 5240MHz / 5260MHz ~ 5320MHz / 5500MHz ~ 5700MHz / 5745MHz ~ 5825MHz 802.11n HT40: 5190MHz ~ 5230MHz / 5270MHz ~ 5310MHz / 5510MHz ~ 5670MHz / 5755MHz ~ 5795MHz 802.11ac VHT80: 5210MHz / 5290MHz / 5530MHz / 5775MHz ☐ 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	**For Bluetooth: FPC Antenna** Antenna Gain : 0.86 dBi (Numeric gain 1.22) **For 2.4GHz: FPC Antenna** Antenna 1 Antenna Gain : 0.86 dBi (Numeric gain 1.22) Antenna 2 Antenna Gain : 0.90 dBi (Numeric gain 1.23) MIMO Directional Gain Antenna Gain : 0.88 dBi (Numeric gain 1.22) **For 5GHz: FPC Antenna** Antenna 1 Antenna Gain : 3.47 dBi (Numeric gain 2.22) Antenna 2 Antenna Gain : 3.11 dBi (Numeric gain 2.05) MIMO Directional Gain Antenna Gain : 3.29 dBi (Numeric gain 2.13)

<table>
<tr><td>Maximum Average output power</td><td>
<table>
<tr><td>Bluetooth Mode:</td><td>7.05 dBm</td><td>(5.070 mW)</td></tr>
<tr><td>2.4GHz:</td><td></td><td></td></tr>
<tr><td>IEEE 802.11b Mode:</td><td>18.68 dBm</td><td>(73.790 mW)</td></tr>
<tr><td>IEEE 802.11g Mode:</td><td>19.25 dBm</td><td>(84.140 mW)</td></tr>
<tr><td>IEEE 802.11n HT 20 Mode:</td><td>22.14 dBm</td><td>(163.682 mW)</td></tr>
<tr><td>IEEE 802.11n HT 40 Mode:</td><td>21.57 dBm</td><td>(143.549 mW)</td></tr>
<tr><td>5GHz:</td><td></td><td></td></tr>
<tr><td>IEEE 802.11a Mode:</td><td>20.11 dBm</td><td>(102.565 mW)</td></tr>
<tr><td>IEEE 802.11n HT 20 Mode:</td><td>23.02 dBm</td><td>(200.447 mW)</td></tr>
<tr><td>IEEE 802.11n HT 40 Mode:</td><td>22.68 dBm</td><td>(185.353 mW)</td></tr>
<tr><td>IEEE 802.11ac VHT 80 Mode:</td><td>21.72 dBm</td><td>(148.594 mW)</td></tr>
</table>
</td></tr>
<tr><td>Maximum Tune up Power</td><td>
<table>
<tr><td>Bluetooth Mode:</td><td>8.00 dBm</td><td>(6.310 mW)</td></tr>
<tr><td>2.4GHz:</td><td></td><td></td></tr>
<tr><td>IEEE 802.11b Mode:</td><td>19.50 dBm</td><td>(89.125 mW)</td></tr>
<tr><td>IEEE 802.11g Mode:</td><td>20.00 dBm</td><td>(100.000 mW)</td></tr>
<tr><td>IEEE 802.11n HT 20 Mode:</td><td>23.00 dBm</td><td>(199.526 mW)</td></tr>
<tr><td>IEEE 802.11n HT 40 Mode:</td><td>22.50 dBm</td><td>(177.828 mW)</td></tr>
<tr><td>5GHz:</td><td></td><td></td></tr>
<tr><td>IEEE 802.11a Mode:</td><td>21.00 dBm</td><td>(125.893 mW)</td></tr>
<tr><td>IEEE 802.11n HT 20 Mode:</td><td>24.00 dBm</td><td>(251.189 mW)</td></tr>
<tr><td>IEEE 802.11n HT 40 Mode:</td><td>23.50 dBm</td><td>(223.872 mW)</td></tr>
<tr><td>IEEE 802.11ac VHT 80 Mode:</td><td>22.50 dBm</td><td>(177.828 mW)</td></tr>
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<tr><td>Evaluation applied</td><td>☒ MPE Evaluation*
☐ SAR Evaluation
☐ N/A</td></tr>
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4. TEST RESULTS

No non-compliance noted.

Calculation

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

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

Bluetooth mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
19	2440	6.31	1.22	20	0.0015	1

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	89.125	1.22	20	0.0216	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	100	1.22	20	0.0243	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
1	2412	199.526	1.22	20	0.0484	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
6	2437	177.828	1.22	20	0.0432	1

IEEE 802.11a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
100	5500	125.893	2.13	20	0.0534	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
157	5785	251.189	2.13	20	0.1065	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
110	5550	223.872	2.13	20	0.0949	1

IEEE 802.11ac VHT80 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
58	5290	177.828	2.13	20	0.0754	1

--End of Report--