IEEE C95.1
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

Computer

Model: POC127 ; POC-127XXXXXXXXXXXXXXX ; POC127XXXXXXXXXXXXXXX

(where "X" may be any alphanumeric character , "-" or blank)

Trade Name: ADVANTECH

Issued for

Advantech Co. Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
Hsinchu Lab.
NO. 989-1, Wenshan Rd., Shangshan Village,
Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: July 07, 2015

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	07/07/2015	Initial Issue	ALL	Michelle Chiu

TABLE OF CONTENTS

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

EUT	Computer
Model	POC127 ; POC-127XXXXXXXXXXXXXXX ; POC127XXXXXXXXXXXXXXX (where "X" may be any alphanumeric character , "-" or blank)
RF Module	62205ANHMW
Frequency band (Operating)	☒ 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz 802.11n HT40: 2.422GHz ~ 2.452GHz 802.11an HT20: 5.180GHz ~ 5.240GHz / 5.260 ~ 5.320GHz 5.500GHz ~ 5.700GHz / 5.745 ~ 5.825GHz 802.11an HT40: 5.190GHz ~ 5.230GHz / 5.270 ~ 5.310GHz 5.510GHz ~ 5.670GHz / 5.755 ~ 5.795GHz ☐ 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	Antenna 1 2.4GHz: Antenna Gain : -5.00 dBi (Numeric gain 0.32) 5 GHz: Antenna Gain : -5.00 dBi (Numeric gain 0.32) Antenna 2: 2.4GHz: Antenna Gain : -5.00 dBi (Numeric gain 0.32) 5 GHz: Antenna Gain : -5.00 dBi (Numeric gain 0.32)

Maximum Average output power	2.4G IEEE 802.11b Mode: 19.12 dBm (81.658 mW) IEEE 802.11g Mode: 23.99 dBm (250.611 mW) IEEE 802.11gn HT 20 Mode 27.67 dBm (584.790 mW) IEEE 802.11gn HT 40 Mode 24.29 dBm (268.534 mW) 5G UNII Band 1 IEEE 802.11a Mode: 17.36 dBm (54.450 mW) IEEE 802.11an HT20 Mode: 20.10 dBm (102.329 mW) IEEE 802.11an HT40 Mode: 19.56 dBm (90.365 mW) 5G UNII Band 2A IEEE 802.11a Mode: 17.49 dBm (56.105 mW) IEEE 802.11an HT20 Mode: 20.05 dBm (101.158 mW) IEEE 802.11an HT40 Mode: 19.52 dBm (89.536 mW) 5G UNII Band 2C IEEE 802.11a Mode: 17.34 dBm (54.200 mW) IEEE 802.11an HT20 Mode: 19.81 dBm (95.719 mW) IEEE 802.11an HT40 Mode: 19.69 dBm (93.111 mW) 5G UNII Band 3 IEEE 802.11a Mode: 17.66 dBm (58.345 mW) IEEE 802.11an HT20 Mode: 20.65 dBm (116.145 mW) IEEE 802.11an HT40 Mode: 18.24 dBm (66.681 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

3. 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 watts / meter

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 / 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 / cm^2

2.4G

IEEE 802.11b mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
2437	81.658	-5.00	20	-0.0812	1

IEEE 802.11g mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
2437	250.611	-5.00	20	-0.2494	1

IEEE 802.11gn HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
2437	584.790	-5.00	20	-0.5819	1

IEEE 802.11gn HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
2437	268.534	-5.00	20	-0.2672	1

5G UNII Band 1

IEEE 802.11a mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5240	54.450	-5.00	20	-0.0542	1

IEEE 802.11an HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5240	102.329	-5.00	20	-0.1018	1

IEEE 802.11an HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5320	90.365	-5.00	20	-0.0899	1

5G UNII Band 2A

IEEE 802.11a mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5230	56.105	-5.00	20	-0.0558	1

IEEE 802.11an HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5530	101.158	-5.00	20	-0.1007	1

IEEE 802.11an HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5270	89.536	-5.00	20	-0.0891	1

5G UNII Band 2C

IEEE 802.11a mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5580	54.200	-5.00	20	-0.0539	1

IEEE 802.11an HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5580	95.719	-5.00	20	-0.0952	1

IEEE 802.11an HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5550	93.111	-5.00	20	-0.0926	1

5G UNII Band 3

IEEE 802.11a mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5785	58.345	-5.00	20	-0.0581	1

IEEE 802.11an HT20 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5785	116.145	-5.00	20	-0.1156	1

IEEE 802.11an HT40 mode:

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
5795	66.681	-5.00	20	-0.0663	1