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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

AC1200 Wireless Dual Band VDSL2 Gigabit VoIP IAD

Model: DL4480V

Trade Name: netis

Issued for

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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	AC1200 Wireless Dual Band VDSL2 Gigabit VoIP IAD
Model Number	DL4480V
Identify Number	T160504D02
Received Date	May 04, 2016
Frequency band (Operating)	802.11b/g/gn HT20 Mode: 2412MHz ~ 2462MHz 802.11gn HT40 Mode: 2422MHz ~ 2452MHz 802.11a, 802.11ac VHT20 Mode: 5180 MHz ~ 5240 MHz / 5745 MHz ~ 5825 MHz 802.11ac VHT40 Mode: 5190 MHz ~ 5230 MHz / 5755 MHz ~ 5795 MHz 802.11ac VHT80 Mode: 5210 MHz / 5775 MHz
Device category	Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	WiFi 2.4GHz Antenna: Ant. 1 (Chain A), Antenna Gain: 1.5 dBi Ant. 2 (Chain B), Antenna Gain: 1.5 dBi WiFi 5GHz Antenna: Ant. 1 (Chain A), Antenna Gain: 2 dBi Ant. 2 (Chain B), Antenna Gain: 2 dBi
Maximum average output power	IEEE 802.11b Mode: 21.61 dBm IEEE 802.11g Mode: 23.69 dBm IEEE 802.11gn HT20 MCS0 Mode: 23.14 dBm IEEE 802.11gn HT40 MCS0 Mode: 20.63 dBm IEEE 802.11a Mode: 23.87 dBm IEEE 802.11ac VHT20 NSS1/MCS0 Mode: 25.11 dBm IEEE 802.11ac VHT40 NSS1/MCS0 Mode: 24.82 dBm IEEE 802.11ac VHT80 NSS1/MCS0 Mode: 23.36 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: T58DL4480VR 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	2462	21.61	1.5	20	0.0407	1
IEEE 802.11g	2437	23.69	1.5	20	0.0657	1
IEEE 802.11gn HT20 MCS0	2437	23.14	1.5	20	0.0579	1
IEEE 802.11gn HT40 MCS0	2437	20.63	1.5	20	0.0325	1
IEEE 802.11a	5745	23.87	2	20	0.0769	1
IEEE 802.11ac VHT20 NSS1/MCS0	5200	25.11	2	20	0.1023	1
IEEE 802.11ac VHT40 NSS1/MCS0	5230	24.82	2	20	0.0957	1
IEEE 802.11ac VHT80 NSS1/MCS0	5775	23.36	2	20	0.0683	1

Simultaneously MPE

Simultaneously MPE = MPE 1 / Limit 1 + MPE 2 / Limit2 + ……..

WiFi 2.4GHz + 5GHz Mode

Simultaneously MPE = (0.0657 / 1) + (0.1023 / 1) = **0.168 mW/cm²**