14. Radio Frequency Exposure

14.1. Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in

FCC Part 2 (Section 2.1091)

KDB 447498

14.2. EUT Specification

Frequency band (Operating)	☒ WLAN: 2412MHz ~ 2462MHz ☒ WLAN: 5150MHz ~ 5250MHz ☐ WLAN: 5250MHz ~ 5350MHz ☐ WLAN: 5470MHz ~ 5725MHz ☒ WLAN: 5725MHz ~ 5850MHz ☐ Bluetooth: 2402MHz ~ 2480MHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A
Remark: 1. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.	

14.3. Test Results

No non-compliance noted.

14.4.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

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

14.5.Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
802.11a	5150-5250	23.17	5.7	20	0.1533	1
802.11a	5725-5850	24.52	5.7	20	0.2095	1
802.11an HT20	5150-5250	23.80	5.7	20	0.1771	1
802.11an HT20	5725-5850	24.54	5.7	20	0.2103	1
802.11an HT40	5150-5250	25.81	5.7	20	0.2819	1
802.11an HT40	5725-5850	24.55	5.7	20	0.2109	1
802.11ac VHT20	5150-5250	23.83	5.7	20	0.1784	1
802.11ac VHT20	5725-5850	24.55	5.7	20	0.2107	1
802.11ac VHT40	5150-5250	25.83	5.7	20	0.2827	1
802.11ac VHT40	5725-5850	24.58	5.7	20	0.2120	1
802.11ac VHT80	5150-5250	19.95	5.7	20	0.0731	1
802.11ac VHT80	5725-5850	25.03	5.7	20	0.2352	1

Maximum Permissible Exposure (Co-location)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm^2)
802.11n HT20	2412-2462	29.61	4.5	20	0.5121
802.11ac VHT40	5150-5250	25.83	5.7	20	0.2827
Co-location Total					0.7948
Maximum Permissible Exposure Limit					1