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 / cm²

14.5.Maximum Permissible Exposure

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	22.63	4	20	0.0916	1
	5725-5850	22.51	4	20	0.0890	1
802.11an HT20	5150-5250	22.50	4	20	0.0889	1
	5725-5850	22.37	4	20	0.0862	1
802.11an HT40	5150-5250	22.56	4	20	0.0900	1
	5725-5850	22.61	4	20	0.0910	1
802.11ac VHT20	5150-5250	22.58	4	20	0.0906	1
	5725-5850	22.46	4	20	0.0880	1
802.11ac VHT40	5150-5250	22.62	4	20	0.0913	1
	5725-5850	22.68	4	20	0.0925	1
802.11ac VHT80	5150-5250	16.63	4	20	0.0230	1
	5725-5850	20.33	4	20	0.0539	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)
2.4G 11an HT20	2412-2462	27.95	3	20	0.2476
5G 11ac VHT40	5725-5850	22.68	4	20	0.0925
Co-location Total					0.3401
Maximum Permissible Exposure Limit					1