



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. The maximum output power is 22.95dBm (197.26mW) at 5220MHz (with numeric 4.81 antenna gain.)
2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.
3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm² even if the calculation indicates that the power density would be larger.

14.3.Test Results

No non-compliance noted.



14.4.Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

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:

$$S = \frac{30 \times P \times G}{3770d^2}$$

Changing to units of mW and cm, using:

$P \text{ (mW)} = P \text{ (W)} / 1000$ and

$d \text{ (cm)} = d \text{ (m)} / 100$

Yields

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²



14.5. Maximum Permissible Exposure

Max. output power	Non-Beamforming Band: 5150MHz ~ 5250MHz 802.11a: 22.95 dBm (197.26mW) 802.11an HT20: 22.86 dBm (193.21mW) 802.11an HT40: 22.03 dBm (159.60mW) 802.11ac VHT20: 22.93 dBm (196.37mW) 802.11ac VHT40: 22.10 dBm (162.19mW) 802.11ac VHT80: 16.34 dBm (43.069mW)
	Band: 5725MHz ~ 5850MHz 802.11a: 22.83 dBm (191.99mW) 802.11an HT20: 22.55 dBm (179.84mW) 802.11an HT40: 22.35 dBm (171.80mW) 802.11ac VHT20: 22.62 dBm (182.96mW) 802.11ac VHT40: 22.43 dBm (174.99mW) 802.11ac VHT80: 22.06 dBm (160.53mW)
	Beamforming Band: 5150MHz ~ 5250MHz 802.11a: 19.94 dBm (98.64mW) 802.11an HT20: 19.85 dBm (96.61mW) 802.11an HT40: 19.02 dBm (79.81mW) 802.11ac VHT20: 19.92 dBm (98.19mW) 802.11ac VHT40: 19.09 dBm (81.10mW) 802.11ac VHT80: 13.33 dBm (21.536mW)
Antenna gain (Max)	Band: 5725MHz ~ 5850MHz 802.11a: 19.82 dBm (96.00mW) 802.11an HT20: 19.54 dBm (89.93mW) 802.11an HT40: 19.34 dBm (85.90mW) 802.11ac VHT20: 19.61 dBm (91.49mW) 802.11ac VHT40: 19.42 dBm (87.50mW) 802.11ac VHT80: 19.05 dBm (80.27mW)
	5150MHz-5250MHz: ANT A: 4.18 dBi ; ANT B: 4.81 dBi 5725MHz-5850MHz: ANT A: 4.90 dBi ; ANT B: 4.18 dBi

**Maximum Permissible Exposure (Non-Beamforming)**

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
802.11a	5150-5250	22.95	4.81	20	0.1188	1
802.11a	5725-5850	22.83	4.9	20	0.1180	1
802.11an HT20	5150-5250	22.86	4.81	20	0.1164	1
802.11an HT20	5725-5850	22.55	4.9	20	0.1106	1
802.11an HT40	5150-5250	22.03	4.81	20	0.0961	1
802.11an HT40	5725-5850	22.35	4.9	20	0.1056	1
802.11ac VHT20	5150-5250	22.93	4.81	20	0.1183	1
802.11ac VHT20	5725-5850	22.62	4.9	20	0.1125	1
802.11ac VHT40	5150-5250	22.10	4.81	20	0.0977	1
802.11ac VHT40	5725-5850	22.43	4.9	20	0.1076	1
802.11ac VHT80	5150-5250	16.34	4.81	20	0.0259	1
802.11ac VHT80	5725-5850	22.06	4.9	20	0.0987	1

Maximum Permissible Exposure (Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
802.11a	5150-5250	19.94	7.51	20	0.1106	1
802.11a	5725-5850	19.82	7.56	20	0.1089	1
802.11an HT20	5150-5250	19.85	7.51	20	0.1083	1
802.11an HT20	5725-5850	19.54	7.56	20	0.1020	1
802.11an HT40	5150-5250	19.02	7.51	20	0.0895	1
802.11an HT40	5725-5850	19.34	7.56	20	0.0974	1
802.11ac VHT20	5150-5250	19.92	7.51	20	0.1101	1
802.11ac VHT20	5725-5850	19.61	7.56	20	0.1038	1
802.11ac VHT40	5150-5250	19.09	7.51	20	0.0909	1
802.11ac VHT40	5725-5850	19.42	7.56	20	0.0993	1
802.11ac VHT80	5150-5250	13.33	7.51	20	0.0241	1
802.11ac VHT80	5725-5850	19.05	7.56	20	0.0911	1

**Maximum Permissible Exposure (Co-location)****(Non-Beamforming)**

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
VHT20	2412-2462	23.78	4.85	20	0.1452
802.11a	5150-5250	22.95	4.81	20	0.1188
802.11a	5725-5850	22.83	4.90	20	0.1180
Co-location Total					0.382
Maximum Permissible Exposure Limit					1

(Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
VHT20	2412-2462	20.77	7.64	20	0.1381
802.11a	5150-5250	19.94	7.51	20	0.1106
802.11a	5725-5850	19.82	7.56	20	0.1089
Co-location Total					0.3576
Maximum Permissible Exposure Limit					1