



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 23.34dBm (215.85mW) at 5270MHz (with numeric 4.2 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: 5250MHz ~ 5350MHz 802.11a: 20.61 dBm (114.98mW) 802.11an HT20: 21.06 dBm (127.62mW) 802.11an HT40: 23.32 dBm (214.63mW) 802.11ac VHT20: 21.09 dBm (128.47mW) 802.11ac VHT40: 23.34 dBm (215.85mW) 802.11ac VHT80: 17.62 dBm (57.80mW)
	Band: 5470MHz ~ 5725MHz 802.11a: 20.15 dBm (103.53mW) 802.11an HT20: 19.67 dBm (92.70mW) 802.11an HT40: 22.79 dBm (190.25mW) 802.11ac VHT20: 19.70 dBm (93.34mW) 802.11ac VHT40: 22.82 dBm (191.57mW) 802.11ac VHT80: 22.35 dBm (171.919mW)
	Beamforming Band: 5250MHz ~ 5350MHz 802.11a: 17.60 dBm (57.49mW) 802.11an HT20: 18.05 dBm (63.81mW) 802.11an HT40: 20.31 dBm (107.32mW) 802.11ac VHT20: 18.08 dBm (64.24mW) 802.11ac VHT40: 20.33 dBm (107.93mW) 802.11ac VHT80: 14.61 dBm (28.90mW)
Antenna gain (Max)	Band: 5470MHz ~ 5725MHz 802.11a: 17.14 dBm (51.77mW) 802.11an HT20: 16.66 dBm (46.35mW) 802.11an HT40: 19.78 dBm (95.13mW) 802.11ac VHT20: 16.69 dBm (46.67mW) 802.11ac VHT40: 19.81 dBm (95.79mW) 802.11ac VHT80: 19.34 dBm (85.9mW)
	5250MHz-5350MHz: ANT A: 4.02 dBi ; ANT B: 4.2 dBi 5470MHz-5725MHz: ANT A: 4.83 dBi ; ANT B: 4.05 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	5250-5350	20.61	4.2	20	0.0602	1
802.11a	5470-5725	20.15	4.83	20	0.0626	1
802.11an HT20	5250-5350	21.06	4.2	20	0.0668	1
802.11an HT20	5470-5725	19.67	4.83	20	0.0561	1
802.11an HT40	5250-5350	23.32	4.2	20	0.1123	1
802.11an HT40	5470-5725	22.79	4.83	20	0.1151	1
802.11ac VHT20	5250-5350	21.09	4.2	20	0.0672	1
802.11ac VHT20	5470-5725	19.70	4.83	20	0.0565	1
802.11ac VHT40	5250-5350	23.34	4.2	20	0.1129	1
802.11ac VHT40	5470-5725	22.82	4.83	20	0.1159	1
802.11ac VHT80	5250-5350	17.62	4.2	20	0.0302	1
802.11ac VHT80	5470-5725	22.35	4.83	20	0.1039	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	5250-5350	17.60	7.12	20	0.0589	1
802.11a	5470-5725	17.14	7.46	20	0.0574	1
802.11an HT20	5250-5350	18.05	7.12	20	0.0654	1
802.11an HT20	5470-5725	16.66	7.46	20	0.0514	1
802.11an HT40	5250-5350	20.31	7.12	20	0.1100	1
802.11an HT40	5470-5725	19.78	7.46	20	0.1055	1
802.11ac VHT20	5250-5350	18.08	7.12	20	0.0658	1
802.11ac VHT20	5470-5725	16.69	7.46	20	0.0517	1
802.11ac VHT40	5250-5350	20.33	7.12	20	0.1106	1
802.11ac VHT40	5470-5725	19.81	7.46	20	0.1062	1
802.11ac VHT80	5250-5350	14.61	7.12	20	0.0296	1
802.11ac VHT80	5470-5725	19.34	7.46	20	0.0952	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)
2.4G 11b	2412-2462	24.37	4.85	20	0.1661
5G 11ac VHT40	5250-5350	23.34	4.20	20	0.1129
5G 11ac VHT40	5470-5725	22.82	4.83	20	0.1159
Co-location Total					0.3949
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)
2.4G VHT20	2412-2462	20.77	7.64	20	0.1381
5G 11ac VHT40	5250-5350	20.33	7.12	20	0.1106
5G 11ac VHT40	5470-5725	19.81	7.46	20	0.1062
Co-location Total					0.3549
Maximum Permissible Exposure Limit					1