

RADIO FREQUENCY EXPOSURE

EUT Specification

EUT	CH18
Frequency band (Operating)	☒ WLAN: 2.400GHz ~ 2.460GHz ☐ Others
Device category	☒ Portable (<20cm separation) ☐ Mobile (>20cm separation) ☐ Others
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
Max. output power	2.400-2.460GHz: 0.24mW
Antenna gain (Max)	0 dBi
Evaluation applied	☐ MPE Evaluation* ☐ SAR Evaluation ☒ N/A

Remark:

1. The maximum output power is 0.24mW at 2460MHz (with 1 numeric 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.

TEST RESULTS

No non-compliance noted.

$$\text{eirp} = \text{pt} \times \text{gt} = (\text{E} \times \text{d})^2 / 30$$

Where:

Pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, --- $10^{(\text{dBuV/m}/20)} / 10^6$

d = measurement distance in meters (m) --- 3m

$$\text{So Pt} = (\text{E} \times \text{d})^2 / 30 \times \text{gt}$$

Maximum Field strength: 89.02 dBuV/m @3m –Channel high:2460MHz

Refer to FCC Part 15C 15.249 Test Report page 12.

Ant gain = 0dBi; so Ant numeric gain=1

$$\text{So, Pt} = \{[(10^{(89.02/20)} / 10^6) \times 3]^2 / 30 \times 1\} \times 1000 \text{mW} = 0.24 \text{ mW}$$

Standard Requirement:

According to 447498 D01 General RF Exposure Guidance v05

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f_{\text{(GHz)}}}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,¹⁶ where

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Tune-up Maximum rated power (mW)		0.24
Body	Antenna to user (mm)	5
	Frequency(GHz)	2.460
	Test result	0.075
	SAR exclusion threshold	3

Per KDB 447498 D01v05r01 exclusion thresholds is $0.075 < 3$, RF exposure evaluation is not required.