

# RF Exposure

FCC ID: MTD-0007

## 1.0 INTRODUCTION

These calculations are based on the highest average power from the EUT. The highest output power of the EUT is 17.7 mW and the highest duty cycle is 15.2%.

## 2.0 FCC SAR TESTING EXCLUSION:

In accordance with FCC KDB Publication 447498 D01 V05R02 Clause 4.3.1(a),

For 100 MHz to 6 GHz and *test separation distances*  $\leq 50$  mm, the 1-g and 10-g SAR *test exclusion thresholds* are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR,<sup>30</sup> where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>31</sup>
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as *numeric thresholds*

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  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 according to 4.1 f) is applied to determine SAR test exclusion.

This table is for devices with a separation less than 5 mm

MHz	Max Power dBm	Duty Cycle %	Average Power mW	Min Sep mm	SAR Exc Threshold at 5mm 4.3.1 a)	SAR Exclusion threshold per 4.3.1 a) for 1-g	Result	Notes
2402	12.49	3.0	0.53	5	0.16	3.0	Exempt	
2426	12.16	3.0	0.49	5	0.15	3.0	Exempt	
2402	2.44	8.8	0.15	5	0.05	3.0	Exempt	
2426	2.44	8.8	0.15	5	0.05	3.0	Exempt	
2402	-1.84	15.2	0.10	5	0.03	3.0	Exempt	
2426	-1.84	15.2	0.10	5	0.03	3.0	Exempt	

Judgement: The product is exempt from SAR testing

### 3.0 MPE CALCULATION FROM OET 65 & FCC 1.1310

Freq. (MHz)	Max Power (dBm)	Max Power (mW)	Max Ant Gain (dBi)	Max Ant Gain above isotropic (numeric)	Duty Cycle %	Max EIRP (mW)	Power Density at 20 cm (mW/cm <sup>2</sup> )	(S) GP Limit (mW/cm <sup>2</sup> )	MPE Ratio
2402	12.49	17.74	3.3	2.14	3.0	1.14	0.0002	1.000	0.0002
2426	12.16	16.44	3.3	2.14	3.0	1.05	0.0002	1.000	0.0002
2402	2.44	1.75	3.3	2.14	8.8	0.33	0.0001	1.000	0.0001
2426	2.44	1.75	3.3	2.14	8.8	0.33	0.0001	1.000	0.0001
2402	-1.84	0.65	3.3	2.14	15.2	0.21	0.0000	1.000	0.0000
2426	-1.84	0.65	3.3	2.14	15.2	0.21	0.0000	1.000	0.0000

Notes on the above table:

In accordance with OET 65, 97-01, Power Density is calculated by

$$S = P \cdot G / (4 \cdot \pi \cdot R^2)$$

Where

S = power density (mW/cm<sup>2</sup>)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

Since the calculated power density is less than the limit, this product fully meets the OET 65 requirements for the general population.