



RF Exposure Evaluation

FCC ID: XUJLAUNCHITPMS

According to KDB 447498 D01 General RF Exposure Guidance v06, Clause 4.3.1(a).

EUT Specification

Product Name:	Modular activation programming tool
Trade Mark:	LAUNCH
Model/Type Reference:	LAUNCH i-TPMS
Listed Model(s):	/
Model Differences:	/
Frequency Band (Operating)	BT: 2402MHz ~ 2480MHz RF ID 125KHz
Device Category	☒ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☐ Fixed (>20cm separation) ☐ Others ____
Antenna Diversity	☐ Single antenna ☒ Multiple antennas ☐ TX diversity ☐ RX diversity ☐ TX/RX diversity
Antenna Gain (Max)	BT: -1.36dBi

Limit

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

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

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

-The result is rounded to one decimal place for comparison

-The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

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 according to 4.1 f) is applied to determine SAR test exclusion.

**Measurement Result**

Mode	Frequency (MHz)	Maximum Power (dBm)	Tune Up Tolerance (dB)	Max. Tune Up Power (dBm)	Result	Limit	Verdict
GFSK (BLE)	2480	3.12	± 1	4.0	0.79	3.0	Pass
8-DPSK (EDR)	2480	3.84	± 1	5.0	1.00	3.0	Pass

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

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

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

125kHz Field strength = 73.23 dBuV/m @3m

Ant gain 0dBi, Ant numeric gain = 1

$$\text{So pt} = \{[10^{(73.23/20)/10^6} \times 3]^2 / (30 \times 1)\} \times 1000 \text{ mW} = 0.0063 \text{ mW} = -22.0 \text{ dBm}$$

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

Note:

1. Calculate in the worst-case mode.
2. Max. Tune Up Power is declared by manufacturer, and used to calculate.
3. For a more detailed features description, please refer to the RF Test Report.

*****THE END*****