



RF Exposure Evaluation

FCC ID: 2BTP9-256

According to KDB447498 D01 General RF Exposure Guidance v06

EUT Specification

Product Name:	Thermal Vision
Trade Mark:	/
Model/Type reference:	Tarantula LRF 25-256
Listed Model(s):	Tarantula LRF 35-384
Model Different:	All these models are identical in the same PCB, layout, electrical circuit and enclosure. The difference is the optical lenses.
Frequency band (Operating):	2412MHz ~ 2462MHz
Device category	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>50mm separation) ☐ Others ____
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ TX diversity ☐ RX diversity ☐ TX/RX diversity
Antenna gain (Max)	2.26dBi
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation

**Limit:**

According to the 4.3 General SAR Test Exclusion Guidelines of KDB 447498 D01

a) 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:

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

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.

b) 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 (also illustrated in Appendix B):

1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f_{\text{(MHz)}}/150)]\}$ mW, for 100 MHz to 1500 MHz

2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Product Description:

The product is evaluated in the manual, it can be mounted on the rifle and has two modes of use.

Mode 1: The product is mounted on the rifle and carried on the back. The product is in sleep mode.

Mode 2: When the product is sighted in, the wireless function of the product is turned on. The minimum distance from the head to the radiation element is 100mm.

Mode 3: When the product is in use, the limb holds the rifle. The minimum distance from the extremity to the radiation element is 50mm.

Therefore, the product is in Mode 2 and Mode 3 when RF exposure is evaluated and calculated.

The following figure shows the shortest distance from the antenna to the head when the wireless function is on.



The following figure shows the shortest distance from the antenna to the extremity when the wireless function is on.



**Measurement Result**

Extremity exposure @ 50mm								
Worst Mode	Frequency (MHz)	Maximum Power (dBm)	Max. Tune up Power (dBm)	EIRP (dBm)	EIRP (mW)	Calculation result	Limit (for 10-g SAR exclusion thresholds)	Verdict
802.11b	2412	13.80	15.00	17.26	53.21	1.65	7.5	Complies

Head exposure @ 100mm								
Worst Mode	Frequency (MHz)	Maximum Power (dBm)	Max. Tune up Power (dBm)	EIRP (dBm)	EIRP (mW)	Power allowed threshold for 50 mm (mW)	Limit (for 10-g SAR exclusion thresholds) (mW)	Verdict
802.11b	2412	13.80	15.00	17.26	53.21	96	496	Complies

Calculation:

Power allowed at numeric threshold for 50 mm in step a: $3.0 * (\text{min. test separation distance, mm}) / \sqrt{f_{\text{(GHz)}}} = [3.0 * 50] / \sqrt{2.412} = 96 \text{ mW}$

10-g SAR test exclusion thresholds: $\{[\text{Power allowed at numeric threshold for 50 mm in step a}]\} + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW} = 96 \text{ mW} + [(90 - 50) * 10 \text{ mW}] = 496 \text{ mW}$

EIRP (mW) ≤ for 10-g SAR exclusion thresholds (mW)

53.21 ≤ 496

Calculation result: Complies

Note:

1. Calculate by Worst-case mode.
2. Max. Tune up Power by Manufacturer's Declaration, and Max. Tune Up Power is used to calculate.
3. The extremity is calculated at a distance of 65mm, the head is calculated at a distance of 125mm (by the manufacturer).
4. For a more detailed features description, please refer to the RF Test Report.

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