



# Maximum Permissible Exposure Evaluation

**FCC ID: 2AYCHBEDPOD**

## 1. Client Information

<b>Applicant</b>	:	Spotta Limited
<b>Address</b>	:	Unit 2, Murdoch House, Garlic Row, Cambridge, CB58HW, United Kingdom
<b>Manufacturer</b>	:	Aiketon Electronics Limited
<b>Address</b>	:	Room 1313-14, Block A, Hoi Luen Industrial Centre, 55 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong

## 2. General Description of EUT

<b>EUT Name</b>	:	Smart pest monitor
<b>Models No.</b>	:	Bed Pod
<b>Model Difference</b>	:	----
<b>Sample ID</b>	:	RW-C-202412-0114-2-1#&RW-C-202412-0114-2-2#
<b>Product Description</b>	:	Operation Frequency: LoRa(125KHz): 903.9MHz~905.3MHz LoRa(500KHz): 904.6MHz
<b>Power Rating</b>	:	DC 1.5V from an AA cell
<b>Software Version</b>	:	bedpod_1.1.0_US915_v11_84b1db04.srec
<b>Hardware Version</b>	:	BP-130-BI v11.31
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual
<b>Remark</b>	:	the MPE report used the EUT-2(RW-C-202412-0114-2-2#).

## MPE Calculations for FCC

### 1. Antenna Gain:

Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
LoRa	N/A	N/A	Whip PCB	-1.61

### 2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where

**S**: power density

**P**: power input to the antenna

**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

### 4. Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is  $\leq 1.0$ .

This means that:

$$\sum \text{MPE ratios} \leq 1.0$$



## 5. Standalone MPE Evaluation:

LORA(DSS) Worst Maximum MPE Result									
Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm <sup>2</sup> ) [S]	Limit of Power Density (mW/ cm <sup>2</sup> ) (S)
LoRa	1	903.9	11.001	11±1	12	-1.61	20	0.00218	0.6015
		904.7	10.925	10±1	11	-1.61	20	0.00173	0.6015
		905.3	10.906	10±1	11	-1.61	20	0.00173	0.6015

**Note:**  
**N<sub>TX</sub>**= Number of Transmit Antennas  
**RF Output power** specifies that Maximum Conducted Peak Output Power.

LORA(DTS) Worst Maximum MPE Result									
Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm <sup>2</sup> ) [S]	Limit of Power Density (mW/ cm <sup>2</sup> ) (S)
LoRa	1	904.6	11.093	11±1	12	-1.61	20	0.00218	0.6015

**Note:**  
**N<sub>TX</sub>**= Number of Transmit Antennas  
**RF Output power** specifies that Maximum Conducted Peak Output Power.

Remark:

1. Output power including turn-up tolerance;
2. Output power was adjust to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.
4. Only the worst power was evaluated for each wireless function



**6. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For LoRa(125KHz): 903.9MHz~905.3MHz & LoRa(500KHz): 904.6MHz

MPE limit S: 1mW/ cm<sup>2</sup>

The worst MPE is calculated as **0.00218mW/cm<sup>2</sup> < limit 1mW/cm<sup>2</sup>**. So, RF exposure limit warning or SAR test are not required. The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

For a more detailed features description, please refer to the RF Test Report.

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----END OF THE REPORT-----



TB-RF-074-1.  
0