

## RF EXPOSURE EVALUATION

### EUT Specification

<b>EUT</b>	Canopy Protect Outdoor
<b>Model Number</b>	NODE1
<b>FCC ID</b>	2BGX6-NODE1
<b>Antenna gain (Max)</b>	BLE: 1.2dBi; LoRa :4.55dBi
<b>Operation Frequency</b>	2402-2480MHz, 915MHz
<b>Input Rating</b>	DC 3.6V
<b>Standard</b>	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
<b>Modulation</b>	BLE(GFSK), LoRa

### Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  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  $\leq 7.5$  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<sup>17</sup> • The result is rounded to one decimal place for comparison 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 is applied to determine SAR test exclusion

According to KDB447498D01 General RF Exposure Guidance v06

Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### Calculated Result and Limit

Operation Mode: BLE(GFSK)						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
GFSK -Lowest (2402MHz)	3.66	3±1	4	2.51	0.78	3.0
GFSK -Middle (2440MHz)	3.89	3±1	4	2.51	0.78	
GFSK -Highest (2480MHz)	3.96	3±1	4	2.51	0.79	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

The Maximum power is less than the limit, complies with the exemption requirements, SAR is exempted.

For 915MHz :

Ant gain=4.55dBi

Ant numeric gain= 2.85

Field strength = 88.28dBuV/m@3m

EIRP=E-104.7+20logD=88.28-104.7+20log3=-6.88dBm

Maximum Conducted Output Power: -1.65dBm

Tune-up:-1±1

Channel	Antenna Distance (mm)	Maximum tune-up Power		Calculated value	Exclusion threshold
		(dBm)	(mW)		
915MHz	5	0	1.00	0.192	3.0
Conclusion: the calculated value ≤3.0, SAR is exempted.					

BLE and LoRa can be launched simultaneously. Simultaneous evaluation of compliant RFExposur:  
 Sum of Maximum Ratios:0.79+0.192=0.982<1

Remark: The Max Conducted Peak Output Power data refer to report Report No.:

90549-24-72-24-PP001 , 90549-24-72-24-PP002

The Maximum power is less than the limit, complies with the exemption requirements, SAR is exempted.