

# FCC RF Exposure Report

**FCC ID: WS2-ZB7**

**Project No. : 1605250**  
**Equipment : BLE/802.15.4 Module**  
**Model Name : ZB7**  
**Applicant : Jorjin Technologies INC.**  
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**B T L I N C .**

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Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	OneWave	7020 M-Ant 2.45 T4(WAN7020L245M04)	Chip	Soldering on board	1.256

According to FCC 47CFR §2.1093, systems operating under the provisions of this section shall be operated in manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission’s guideline.

This a Portable device with its physical nature to be used nearby, the distance between radiating structure and human is less than 20cm.

As per KDB 447498 D01, SAR test exclusion thresholds as follow:

(1)The SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

The test exclusions are applicable only when the minimum test separation distance is  $\leq$  50mm and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is<5mm, a distance of 5mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

**Measurement Result:**

The Max Tune-up power including Duty Factor = Max Output Power - Duty Cycle Factor

Type	Max Output Power(dBm)	Duty Cycle	Duty Cycle Factor(dB)	Max Tune-up power including Duty Factor(dBm)
Zigbee	5.33	85	0.71	4.62
BT LE	5.38	85	0.71	4.67

The SAR exclusion threshold result

Frequency(MHz)	Max Tune-up power (dBm)	Max Tune-up power (mW)	Distance(mm)	Result
2405	4.62	2.900	5	0.900
2402	4.67	2.934	5	0.909

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.