## FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Report No.: SZNS220531-23876E-RF-00C

## **Applicable Standard**

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation					
RF Source frequency (MHz)	Threshold ERP (watts)				
0.3-1.34	1,920 R <sup>2</sup> .				
1.34-30	3,450 R <sup>2</sup> /f <sup>2</sup> .				
30-300	3.83 R <sup>2</sup> .				
300-1,500	0.0128 R <sup>2</sup> f.				
1,500-100,000	19.2R <sup>2</sup> .				

Ris the minimum separation distance in meters f = frequency in MHz

For multiple RF sources: Multiple RF sources are exempt if:

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation:

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \le 1$$

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## Result

Mode	Frequency (MHz)	Tune up conducted power	Antenna Gain		ERP		Evaluation Distance	ERP Limit
		(dBm)	(dBi)	(dBd)	(dBm)	(W)	(m)	(W)
UHF	917-922.2	9.0	-1.03	-3.18	5.82	0.004	0.2	0.470
BT	2402-2480	8.5	-5.96	-8.11	0.39	0.001	0.2	0.768
BLE	2402-2480	5.5	-5.96	-8.11	-2.61	0.0005	0.2	0.768
Wi-Fi	2412-2462	24.0	-5.96	-8.11	15.89	0.039	0.2	0.768

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Note: 1. The tune up conducted power and antenna gain was declared by the applicant.
2. The UHF can transmit at the same time with the BT or Wi-Fi, the BT and Wi-Fi cannot Simultaneous transmitting

Simultaneous transmitting consideration (worst case):

The ratio= $ERP_{UHF}/limit+ERP_{Wi-Fi}/limit=0.004/0.470+0.039/0.768=0.059 \le 1.0$ , so simultaneous exposure is compliant.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.