

# RF Exposure Evaluation

## FCC ID: 2AIL4-BH219A

### 1. Client Information

<b>Applicant</b>	:	VTIN TECHNOLOGY Co.,Limited
<b>Address</b>	:	Unit D, 16/F, One Capital Place, 18 Luard Road, Wan Chai, Hong Kong, China
<b>Manufacturer</b>	:	SHEN ZHEN SAILING ELECTRONIC CO.,LTD
<b>Address</b>	:	Building 29th, Baotian Industrial zone, Xixiang Town, Shenzhen City, Guangdong province, China

### 2. General Description of EUT

<b>EUT Name</b>	:	bluetooth fm transmitter
<b>Models No.</b>	:	BH219A, BH219B, 219C, 219, BC33
<b>Model Difference</b>	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is model name for commercial.
<b>Product Description</b>	Operation Frequency:	Bluetooth 4.2(BLE): 2402MHz~2480MHz
	RF Output Power:	GFSK: -0.932dBm $\pi$ /4-DQPSK:0.196dBm BLE:2.27dBm
	Antenna Gain:	0dBi PCB Antenna
<b>Power Rating</b>	:	Input: DC 12V-24V. Output:5V/4A (Max)
<b>Software Version</b>	:	BC33-AC6902C+3433-
<b>Hardware Version</b>	:	Main board: YHW-BC33-AC6902C-M-V2-20180317 / Power board: YHW-BC33-AC6902C-V3-20180317 / Display board: YHW-BC33-LED-V2-20180317
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual

**Note:** More test information about the EUT please refer the RF Test Report.

## SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance  $\leq 5$  mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 3.0 \text{ for 1-g SAR}}$$

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 7.5.0 \text{ for 10-g SAR}}$$

## 2. Calculation:

Test separation: 5mm						
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-1.940	-1±1	0	1	0.310	3.0
2.441	-0.934	-1±1	0	1	0.312	3.0
2.480	-0.932	-1±1	0	1	0.315	3.0
Bluetooth Mode ( $\pi/4$ -DQPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-0.742	0±1	1	1.259	0.390	3.0
2.441	0.196	0±1	1	1.259	0.393	3.0
2.480	0.181	0±1	1	1.259	0.397	3.0
BLE Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	1.512	2±1	3	1.995	0.618	3.0
2.442	2.147	2±1	3	1.995	0.623	3.0
2.480	2.270	2±1	3	1.995	0.628	3.0

So standalone SAR measurements are not required.

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