

RF Exposure Evaluation

FCC ID: 2AIL4-BH219A

1. Client Information

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

2. General Description of EUT

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

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

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