

RF Exposure Evaluation

FCC ID: 2ATK6-Q1

1. Client Information

Applicant	:	SHENZHEN LOOKCARE INDUSTRY CO., LTD
Address	:	5F, Bldg H, No.8 East Area, Shangxue Science and Technology Industry, Bantian St, Longgang Dist. Shenzhen, China
Manufacturer	:	SHENZHEN LOOKCARE INDUSTRY CO., LTD
Address	:	5F, Bldg H, No.8 East Area, Shangxue Science and Technology Industry, Bantian St, Longgang Dist. Shenzhen, China

2. General Description of EUT

EUT Name	:	SmartWatch
Model(s) No.	:	Q1, Q2, Q3, Q5, Q6, Q7, Q8, Q9, Y1, Y2, Y3, Y5, Y6, Y7, Y8, Y9, X1, X2, X3, X5, X6, X7, X8, X9
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is the model name.
Product Description	Operation Frequency:	Bluetooth 5.0: 2402MHz~2480MHz BLE 4.2: 2402MHz~2480MHz
	Number of Channel:	Bluetooth 5.0(BT): 79 channels BLE 4.2(BLE):40 channels
	RF Output Power:	1.880 dBm(Max)
	Antenna Gain:	-1.53 dBi Internal Antenna
	Modulation Type:	GFSK, Pi/4-DQPSK
	Bit Rate of Transmitter:	1/2Mbps
Power Supply	:	USB Input: 5V DC 3.7V by 175mAh Li-ion battery
Software Version	:	N/A
Hardware Version	:	AB601-V1.1
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.		

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)] * $\sqrt{f(\text{GHz})}$ ≤ 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(JL) 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	-0.843	0 ± 1	1	1.259	0.390	3.0
2.441	-0.906	0 ± 1	1	1.259	0.393	3.0
2.480	-1.603	-1 ± 1	0	1.000	0.315	3.0
Bluetooth(JL) 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	-0.894	0 ± 1	1	1.259	0.390	3.0
2.441	-0.903	0 ± 1	1	1.259	0.393	3.0
2.480	-0.015	0 ± 1	1	1.259	0.397	3.0
BLE(HS6620D) Mode(1Mbps)						
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	1.838	1 ± 1	2	1.585	0.491	3.0
2.442	1.880	1 ± 1	2	1.585	0.495	3.0
2.480	1.378	1 ± 1	2	1.585	0.499	3.0

Simultaneous Transmission for SAR Exclusion			
Simultaneous Transmission for SAR Exclusion		Total Calculation Value	Limit
Bluetooth Mode	BLE Mode		
0.0530	0.0668	0.1	1.0
Note: The sample support one BT modular and BLE modular, they supports difference antenna, need consider simultaneous transmission;			

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

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