

# RF Exposure Evaluation

## FCC ID: 2ATK6-LC301

### 1. Client Information

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

### 2. General Description of EUT

<b>EUT Name</b>	:	Smart Watch
<b>Model(s) No.</b>	:	LC301, LC302, LC303, LC305, LC306, LC201, LC202, LC203, LC205, LC206
<b>Model Different</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is the model name.
<b>Product Description</b>	Operation Frequency:	Bluetooth 3.0: 2402MHz~2480MHz Bluetooth LE 5.1: 2402MHz~2480MHz
	Number of Channel:	Bluetooth 3.0: 79 channels Bluetooth LE 5.1:40 channels
	Antenna Gain:	0 dBi Wire Antenna
	Modulation Type:	GFSK, Pi/4-DQPSK, 8-DPSK
	Bit Rate of Transmitter:	Bluetooth :1/2/3Mbps Bluetooth LE:1/2Mbps
<b>Power Supply</b>	:	Input: DC 5V DC 3.7V by 250mAh Rechargeable Li-ion battery
<b>Software Version</b>	:	N/A
<b>Hardware Version</b>	:	MOY.M80166.02
<b>Remark:</b> 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  $\leq 5$  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(AC6956A) 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	-1.367	-1±1	0	1.000	0.310	3.0
2.441	-1.008	-1±1	0	1.000	0.312	3.0
2.480	-1.018	-1±1	0	1.000	0.315	3.0
Bluetooth(AC6956A) 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	-0.470	0±1	1	1.259	0.390	3.0
2.441	-0.103	0±1	1	1.259	0.393	3.0
2.480	-0.107	0±1	1	1.259	0.397	3.0
Bluetooth(AC6956A) Mode (8-DPSK)						
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	0.166	0±1	1	1.259	0.390	3.0
2.441	0.355	0±1	1	1.259	0.393	3.0
2.480	0.399	0±1	1	1.259	0.397	3.0
BLE(RTL8762) 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	0.425	0±1	1	1.259	0.390	3.0
2.442	1.180	1±1	2	1.585	0.495	3.0
2.480	1.574	1±1	2	1.585	0.499	3.0
BLE(RTL8762) Mode(2Mbps)						
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	0.432	0±1	1	1.259	0.390	3.0
2.442	1.177	1±1	2	1.585	0.495	3.0
2.480	1.630	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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