RF Exposure Evaluation

FCC ID: 2APD3TS15

1. Client Information

Applicant	:	SHEN ZHEN TOMSTAR TECHNOLOGY CO., LTD
Address	:	Room2110-2116, huafeng international building, No.4018 BaoAn Blvd, Shenzhen, China.
Manufacturer	:	Tomstar Industrial Limited
Address	:	Room 2110-2116, Huafeng International Commercial Building, Xixiang, BaoAn district, Shenzhen, China

2. General Description of EUT

EUT Name	:	smart watch	
Model(s) No.	:	TS15, TS15+, TS16	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance and shape.	
Sample ID	:	TBBJ-20200724-16-1# & TBBJ-20200724-16-2#	
Product Description	:	Operation Frequency:	Bluetooth 4.2(BLE): 2402MHz~2480MHz
		Number of Channel:	Bluetooth 4.2(BLE): 40 channels
		RF Output Power:	0.885 dBm (Max)
		Antenna Gain:	0 dB iinternal Antenna
		Modulation Type:	GFSK
		Bit Rate of Transmitter:	1Mbps
Power Rating	:	Input:DC 5V DC 3.7V by 180mAh Li-ion battery	
Software Version	:	N/A	
Hardware Version	:	M10014.01	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
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.

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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)]*[$\sqrt{f_{(GHz)}}$] ≤3.0 for 1-g SAR
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)]*[$\sqrt{f_{(GHz)}}$] ≤7.5.0 for 10-g SAR

2. Calculation:

Test separation: 5mm						
BLE 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	0.885	0±1	1	1.259	0.391	**3.0**
2.442	0.227	0±1	1	1.259	0.394	**3.0**
2.480	-0.288	0±1	1	1.259	0.397	**3.0**

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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