

RF Exposure Evaluation

FCC ID: 2APD3TS11N

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.	:	TS11N ,TS11,VS2,SW9341
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is Software version.
Product Description	Operation Frequency:	Bluetooth 4.2(BLE): 2402MHz~2480MHz
	Number of Channel:	Bluetooth 4.2(BLE): 40 channels see note(3)
	RF Output Power:	-1.604dBm (Max)
	Antenna Gain:	0dBi Internal Antenna
	Modulation Type:	GFSK
	Bit Rate of Transmitter:	1Mbps
Power Rating	:	Input:C 5V DC 3.7V by 180mAh Li-ion battery
Software Version	:	V.01
Hardware Version	:	MOY.M10101.01
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.

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:

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

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

2. Calculation:

Test separation: 5mm						
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	-1.604	-1±1	0	1.000	0.310	3.0
2.442	-1.359	-1±1	0	1.000	0.313	3.0
2.480	-1.121	-1±1	0	1.000	0.315	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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