

RF Exposure Evaluation

FCC ID: 2AUEO-TEAIHS

1. Client Information

Applicant	:	SHENZHEN TELESIN DIGITAL CO.,LTD
Address	:	J, 5th floor, Block B, Building 9, Baoneng Science and Technology Park, No. 1 Qingxiang Road, Longhua Street, Longhua District, Shenzhen, China
Manufacturer	:	SHENZHEN TELESIN DIGITAL CO.,LTD
Address	:	J, 5th floor, Block B, Building 9, Baoneng Science and Technology Park, No. 1 Qingxiang Road, Longhua Street, Longhua District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Alexa Intelligent Voice Headset
Models No.	:	TE_AIHS_001, TE_AIHS_002, TE_AIEB_01, TE_AIEB_02
Model Difference	:	All these models are in the same PCB, layout and electrical circuit, the only difference is Model.
Product Description	Operation Frequency:	Bluetooth 4.2: 2402~2480 MHz
	RF Output Power:	Bluetooth: -3.894 dBm(Max) BLE: -2.881 dBm(Max)
	Antenna Gain:	0dBi Ceramic Antenna
Power Supply	:	DC Voltage Supply from USB Interface.. DC Voltage supplied by Li-ion battery.
Power Rating	:	DC 3.7V by 130mAh Li-ion battery
Software Version	:	BES_TaiXun_(Telesin-ABT)_V2.3.7_20190712_YQR
Hardware Version	:	TE-ABT-001_MB_20190704_V1.3
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:

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

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

2. Calculation:

Test separation: 5mm

Bluetooth 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	Thres hold Value
2.402	-4.042	-4.042±1	-3.042	0.496	0.154	3.0
2.441	-3.894	-3.894±1	-2.894	0.515	0.160	3.0
2.480	-4.282	-4.282±1	-3.282	0.470	0.147	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	Thres hold Value
2.402	-4.539	-4.539±1	-3.539	0.443	0.137	3.0
2.441	-4.085	-4.085±1	-3.085	0.491	0.154	3.0
2.480	-4.672	-4.672±1	-3.672	0.429	0.134	3.0

Bluetooth 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	Thres hold Value
2.402	-4.322	-4.322±1	-3.322	0.465	0.144	3.0
2.441	-4.118	-4.118±1	-3.118	0.488	0.152	3.0
2.480	-4.595	-4.595±1	-3.595	0.437	0.135	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	Thres hold Value
2.402	-3.241	-3.241±1	-2.241	0.597	0.185	3.0
2.442	-2.881	-2.881±1	-1.881	0.648	0.203	3.0
2.480	-3.309	-3.309±1	-2.309	0.588	0.184	3.0

Test separation: 5mm

The worst RF Exposure Evaluation

Worst Calculation Value	Threshold Value
0.203	3.0

The worst RF Exposure Evaluation is **0.203 / cm2 < limit 3.0**, So standalone SAR measurements are not required.

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