

# **RF Exposure Evaluation**

**Test report**

**On Behalf of**

**Shenzhen ma shang lai wan network technology Co., Ltd**

**For**

**Helmet Bluetooth Headset**

**Model No.:** BT30,BT30-1, A8, A8S, A10, A10S, A12, A12S, A18, A18S

**FCC ID: 2AW4K-BT30-1**

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## 1 General Description of EUT

Product Name:	Helmet Bluetooth Headset
Model/Type reference:	BT30
Serial Model:	BT30-1, A8, A8S, A10, A10S, A12, A12S, A18, A18S
Model Difference	All models have the same functionality, software and electronics, only the color, front frame shape and model names may differ. Test sample model: BT30-1
Trade Mark	N/A
FCC ID	2AW4K-BT30-1
Hardware Version:	V1.1
Software Version:	V1.8
Version:	Supported EDR
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79CH
Channel separation:	1MHz
Antenna type:	PCB Antenna
Antenna gain:	0 dBi
Power supply:	DC 3.7V from battery

## 2 RF Exposure Compliance Requirement

### 2.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

#### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### 2.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation

distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

### 3 EUT RF Exposure

GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.416	0±1	1	1.259	0.390	3.0
Middle (2441MHz)	0.065	0±1	1	1.259	0.393	
Highest (2480MHz)	0.089	0±1	1	1.259	0.397	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

π/4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.612	2±1	3	1.995	0.618	3.0
Middle (2441MHz)	2.250	2±1	3	1.995	0.623	
Highest (2480MHz)	2.253	2±1	3	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

8DPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.981	2±1	3	1.995	0.618	3.0

Middle (2441MHz)	2.673	2±1	3	1.995	0.623
Highest (2480MHz)	2.725	2±1	3	1.995	0.628
Conclusion: the calculated value $\leq 3.0$ , SAR is exempted.					

Remark: The Max Conducted Peak Output Power data refer to report Report No.: HK2007281961-E