

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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Date of Report: **Jul. 29, 2020**

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 calculation¹⁷

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 ≤3.0, SAR is exempted.					

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