

RF Exposure Evaluation Report

Product : AR glasses
Trade mark : N/A
Model/Type reference : IMA01,AIR
Serial Number : N/A
Report Number : EED32O80684004
FCC ID : 2A62QIMA01
Date of Issue : May 31, 2022
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF
Exposure Guidance v06
Test result : PASS

Prepared for:

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D804, BUILDING F1, TCL INTERNATIONAL E CITY, SHUGUANG COMM
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2 Version

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4 General Information

4.1 Client Information

Applicant:	SHENZHEN YINGMU TECHNOLOGY CO., LTD
Address of Applicant:	D804, BUILDING F1, TCL INTERNATIONAL E CITY, SHUGUANG COMMUNITY, XILI STREET, NANSHAN, SHENZHEN, China
Manufacturer:	SHENZHEN YINGMU TECHNOLOGY CO., LTD
Address of Manufacturer:	D804, BUILDING F1, TCL INTERNATIONAL E CITY, SHUGUANG COMMUNITY, XILI STREET, NANSHAN, SHENZHEN, China
Factory:	Shenzhen Hungphone Technology Co., Ltd.
Address of Factory:	2nd Floor, Building B, Yongwei Industrial Park, No.118 Yongfu Road, Qiaotou Community, Fuhai Street, Baoan District, Shenzhen

4.2 General Description of EUT

Product Name:	AR glasses
Model No.:	IMA01,AIR
Test Model No.:	IMA01
Trade mark:	N/A

4.3 Product Specification subjective to this standard

Frequency Range:	BLE:2402MHz~2480MHz BT Classic:2402MHz~2480MHz 2.4G WiFi:IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz	
Modulation Type:	BLE:GFSK BT Classic:GFSK, $\pi/4$ DQPSK, 8DPSK 2.4G WiFi: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM,QPSK,BPSK)	
Test Power Grade:	Default	
Test Software of EUT:	Vysor	
Antenna Type:	BLE:PIFA Antenna BT Classic:PIFA Antenna 2.4G WiFi:PIFA Antenna	
Antenna Gain:	BLE:0.8dBi BT Classic:0.8dBi 2.4G WiFi:0.8dBi	
Power Supply:	USB port	DC 5.0V
	Battery	DC 3.8V,300mAh,1.14Wh
Max Conducted Peak Output Power:	BLE:-2.33dBm BT Classic:3.62dBm 2.4G WiFi:9.88dBm	
	The Max Conducted Peak Output Power data refer to the report EED32O80684001,EED32O80684002,EED32O80684003	
Sample Received Date:	May. 17, 2022	

Sample tested Date:	May. 17, 2022 to June 01, 2022
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Remark:

Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Model: IMA01, AIR

Only the model of IMA01 was tested. We the undersigned hereby confirm that any of our production units bearing the following model numbers have same electrical, PCB and layout, only the model names are different for marketing requirements.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
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.

5.1.2 Limits

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

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

$f(\text{GHz})$ 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 ≤ 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

5.1.3 EUT RF Exposure

1) For Bluetooth LE

Measurement Data:

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.80	-3.00±1	-2.00	0.631
Middle(2440MHz)	-2.59	-3.00±1	-2.00	0.631
Highest(2480MHz)	-2.33	-3.00±1	-2.00	0.631

Worst case is GFSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-2.80	-3.00±1	-2.00	0.631	0.196	3.0
Middle (2440MHz)	-2.59	-3.00±1	-2.00	0.631	0.197	
Highest (2480MHz)	-2.33	-3.00±1	-2.00	0.631	0.199	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32O80684001.

2) For Bluetooth Classic

Measurement Data:

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.46	1.50±1	2.50	1.778
Middle(2441MHz)	2.03	1.50±1	2.50	1.778
Highest(2480MHz)	1.97	1.50±1	2.50	1.778

$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.48	2.00±1	3.00	1.995
Middle(2441MHz)	2.09	2.00±1	3.00	1.995
Highest(2480MHz)	2.57	2.00±1	3.00	1.995

8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.62	3.00±1	4.00	2.512
Middle(2441MHz)	3.53	3.00±1	4.00	2.512
Highest(2480MHz)	2.92	3.00±1	4.00	2.512

Worst case is 8DPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.62	3.00±1	4.00	2.512	0.779	3.0
Middle (2441MHz)	3.53	3.00±1	4.00	2.512	0.785	
Highest (2480MHz)	2.92	3.00±1	4.00	2.512	0.791	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32O80684002.

3) For 2.4G WiFi

Measurement Data:

11B mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	9.43	9.00±0.5	9.50	8.913
Middle(2437MHz)	9.48	9.00±0.5	9.50	8.913
Highest(2462MHz)	9.42	9.00±0.5	9.50	8.913

11G mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	9.39	9.00±0.5	9.50	8.913
Middle(2437MHz)	9.30	9.00±0.5	9.50	8.913
Highest(2462MHz)	9.45	9.00±0.5	9.50	8.913

11N20SISO mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	9.34	9.00±0.5	9.50	8.913
Middle(2437MHz)	9.15	9.00±0.5	9.50	8.913
Highest(2462MHz)	9.43	9.00±0.5	9.50	8.913

Worst case is 11B mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest(2412M Hz)	9.43	9.00±0.5	9.50	8.913	2.77	3.0
Middle(2437M Hz)	9.48	9.00±0.5	9.50	8.913	2.78	
Highest(2462M Hz)	9.42	9.00±0.5	9.50	8.913	2.80	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32O80684003

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32O80684001 for EUT external and internal photos.

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*** End of Report ***