

RF Exposure Evaluation Report

Product : Portable Monitor
Trade mark : OWLENZ
Model/Type reference : SPD20,SPD30,SPD40,SPD50,SPD60,
SPD70,SPD80,SPD90,SPD100,SPD150,
SPD200,SPD300,SPD10.
Serial Number : N/A
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Date of Issue : Nov. 02, 2020
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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RM 102,1st FL, Building 8, 2nd Industry Zone,
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2 Version

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4 General Information

4.1 Client Information

Applicant:	Shenzhen Star Audio-Visual Equipment Co., Ltd
Address of Applicant:	RM 102,1st FL, Building 8, 2rd Industry Zone, Shajing Street, Baoan District, Shenzhen
Manufacturer:	Shenzhen Star Audio-Visual Equipment Co., Ltd
Address of Manufacturer:	RM 102,1st FL, Building 8, 2rd Industry Zone, Shajing Street, Baoan District, Shenzhen
Factory:	Shenzhen Zhengtongrenhe Technology Co., Ltd.
Address of Factory:	Room 201, Building E, Weihuada Industrial Park, No. 65, Huaning West Road, Xinwei, Xinshi Community, Dalang Street, Longhua District, Shenzhen

4.2 General Description of EUT

Product Name:	Portable Monitor
Model No.(EUT):	SPD20,SPD30,SPD40,SPD50,SPD60,SPD70,SPD80,SPD90,SPD100,SPD150,SPD200,SPD300,SPD10.
Test Model No.:	SPD10
Trade Mark:	OWLENZ
Frequency Range of Operation:	BT: 2400MHz~2483.5MHz 2.4G WIFI: IEEE 802.11b/g/n(HT20)(HT40): 2400MHz to 2483.5MHz 5G WIFI: U-NII-1 : 5150-5250MHz; U-NII-3:5725-5850MHz

4.3 Product Specification subjective to this standard

Operating Frequency:	BT: 2402MHz~2480MHz 2.4G WIFI :2412MHz to 2462MHz 5G WIFI: U-NII-1 : 5180-5240MHz; U-NII-3:5745-5825MHz	
Modulation Type:	BT:GFSK, $\pi/4$ DQPSK, 8DPSK WIFI:DSSS,OFDM	
Test Power Grade:	Default	
Test Software of EUT:	REALTEK	
Antenna Type:	Built-in dual-band antenna	
Antenna Gain:	3.0 dBi	
Power Supply:	Adapter	MODEL:FJ-SW618H-1E INPUT:100-240V~50/60Hz 0.6A Max OUTPUT:5.0V---3.0A,15.0W Max or 9.0V---2.0A,18.0W Max or 12.0V---1.5A,18.0W Max OUTPUT POWER:18.0W Max
	Battery	DQ30100115/2S 7.6V 5000mAh 38Wh
Max Conducted Peak Output Power:	BT: 6.907dBm; 2.4G WIFI: 6.91dBm; 5G WIFI: 6.09dBm The Max Conducted Peak Output Power data refer to the report EED32M00266501, EED32M00266502, EED32M00266503.	
Sample Received Date:	Aug. 28, 2020	
Sample tested Date:	Aug. 28, 2020 to Oct.16, 2020	
<p>Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: SPD20, SPD30, SPD40, SPD50, SPD60, SPD70, SPD80, SPD90, SPD100, SPD150, SPD200, SPD300, SPD10.Only the model SPD10 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color and the product model .</p>		

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 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 ≤ 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

The Max Conducted Peak Output Power is

BT: 6.907dBm;

2.4G WIFI: 6.91dBm;

5G WIFI: 6.09dBm

therefore the highest tune-up power is

BT:

7.0 dBm	(5.01 mW)	@ 2441 MHz
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2.4G WIFI:

7.0 dBm	(5.01 mW)	@ 2437 MHz
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5G WIFI:

6.5 dBm	(4.47 mW)	@ 5240 MHz
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When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

So,

BT:

$(5.01\text{mW} / 5\text{mm}) * (2.441\text{GHz}^{0.5})$	= 1.6
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2.4G WIFI:

$(5.01\text{mW} / 5\text{mm}) * (2.437\text{GHz}^{0.5})$	= 1.6
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5G WIFI:

$(4.47\text{mW} / 5\text{mm}) * (5.240\text{GHz}^{0.5})$	= 2.0
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$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] = 2.0 < 3.0$

Therefore, standalone SAR measurements are not required for both head and body

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32M00266501 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***