

RF Exposure Evaluation Report

Product : Pulse Oximeter
Trade mark : JUMPER
Model/Type reference : JPD-500G, JPD-500H
Serial Number : N/A
Report Number : EED32K00143402
FCC ID : 2ADYL-JPD500G
Date of Issue : Aug. 01, 2018
Test Standards : 47 CFR Part 1.1307
: 47 CFR Part 2.1093
KDB 447498 D01v06
Test result : PASS

Prepared for:

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2 Version

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3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS.....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 SAR EVALUATION.....	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 Standard Requirement.....	6
5.1.2 Limits.....	6
5.1.3 EUT RF Exposure.....	6
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS.....	7

4 General Information

4.1 Client Information

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd
Address of Applicant:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Jumper Medical Equipment Co., Ltd
Address of Manufacturer:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan, Shenzhen, Guangdong, China
Factory:	Shenzhen Jumper Medical Equipment Co., Ltd
Address of Factory:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan, Shenzhen, Guangdong, China

4.2 General Description of EUT

Product Name:	Pulse Oximeter
Model No.(EUT):	JPD-500G, JPD-500H
Test Model No.:	JPD-500G
Trade mark:	JUMPER
EUT Supports Radios application:	BT 4.2 Single mode, 2402-2480MHz
Hardware Version of the sample:	V2.1(manufacturer declare)
Firmware version of the sample:	JPD_500G_BT(manufacturer declare)

4.3 Product Specification subjective to this standard

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	4.2
Modulation Technique:	DSSS
Number of Channel:	40
Test Power Grade:	N/A(manufacturer declare)
Test Software of EUT:	nRFgo Studio(manufacturer declare)
Antenna Type:	PCB Antenna
Antenna Gain:	0dBi
Power Supply:	Battery: 2x1.5V(AAA)=3.0V
Conducted Peak Output Power:	-3.695dBm The Conducted Peak Output Power data refer to the report EED32K00143401
Sample Received Date:	Jun. 8, 2018
Sample tested Date:	Jun. 8, 2018 to Aug. 1, 2018
The tested sample(s) and the sample information are provided by the client. Model No.: JPD-500G, JPD-500H Only the model JPD-500G was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being appearance and model name.	

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, Guangdong, China 518101

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:

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

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 -3.695dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0dBi.

$\text{EIRP} = -3.695\text{dBm} + 0\text{dBi} = -3.695\text{dBm}$

-3.695dBm logarithmic terms convert to numeric result is nearly 0.43mW

According to the formula. calculate the EIRP test result:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{(\text{min. test separation distance, mm}) \cdot \sqrt{f(\text{GHz})}} \right]$$

General RF Exposure = $(0.43\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.14$ ①

SAR requirement:

S = 3.0

② ;

① < ②.

So the SAR report is not required.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32K00143401 for EUT external and internal photos.

*** End of Report ***

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