RF Exposure Evaluation Report

Product	:	26 in . 2.0 Soundbar
Trade mark	:	Soundwings
Model/Type reference	:	FW1866
Serial Number	:	N/A
Report Number	:	EED32O80899902
FCC ID	:	2AR7X-FW1866SBAR
Date of Issue	:	Jun. 24, 2022
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	:	PASS

Prepared for:

FREEWINGS DIGITAL TECHNOLOGIES（NINGBO）CO.,LTD
502,WENSHUI ROAD, SHOUNAN SUBDISTRICT,
YINZHOU,NINGBO,CHINA

Prepared by:

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Approved by:	Aaron Ma	Date of issue:	Jun. 24, 2022
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CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. CTI Report Seal

2 Version

Version No.	Date	Description
00	Jun. 24, 2022	Original

3 Contents

4 General Information

4.1 Client Information

Applicant:	FREEWINGS DIGITAL TECHNOLOGIES（NINGBO）CO.,LTD
Address of Applicant:	502,WENSHUI ROAD, SHOUNAN SUBDISTRICT, YINZHOU,NINGBO,CHINA
Manufacturer:	FREEWINGS DIGITAL TECHNOLOGIES（NINGBO）CO.,LTD
Address of Manufacturer:	502,WENSHUI ROAD, SHOUNAN SUBDISTRICT, YINZHOU,NINGBO,CHINA
Factory:	FREEWINGS DIGITAL TECHNOLOGIES（NINGBO）CO.,LTD
Address of Factory:	502,WENSHUI ROAD, SHOUNAN SUBDISTRICT, YINZHOU,NINGBO,CHINA

4.2 General Description of EUT

Product Name:	26 in . 2.0 Soundbar
Model No.:	FW1866
Trade mark:	Soundwings

4.3 Product Specification subjective to this standard

Frequency Range:	2402 to 2480MHz
Modulation Type:	GFSK, π/4DQPSK
Test Power Grade:	Default
Antenna Type	PIFA Antenna
Antenna Gain	0dBi

Power Supply:	AC 120V
Max Conducted Peak Output Power:	2.13dBm
	The Max Conducted Peak Output Power data refer to the report EED32O80899901
Sample Received Date:	Apr. 28, 2022
Sample tested Date:	Apr. 28, 2022 to May. 09, 2022
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. This report only changed the product name. All test data come from the report of No. EED32O80593302.	

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 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

1) 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)	1.47	1±1	2	1.585
Middle(2441MHz)	1.19	1±1	2	1.585
Highest(2480MHz)	0.47	1±1	2	1.585

π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.13	2±1	3	1.995
Middle(2441MHz)	1.89	2±1	3	1.995
Highest(2480MHz)	1.24	2±1	3	1.995

BT Classic:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
0	2402	1.995	1	20	0.0004	1

*** End of Report ***