

RF Exposure Evaluation Report

Product : 20 in . 2.0 Soundbar
Trade mark : Soundwings
Model/Type reference : FW1866
Serial Number : N/A
Report Number : EED32O80593302
FCC ID : 2AR7X-FW1866SBAR
Date of Issue : May 25, 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:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Compiled by:

mark.chen

Mark Chen

Reviewed by:

Tom Chen

Tom Chen

Approved by:

Aaron Ma

Aaron Ma

Date:

May 25, 2022

Check No.: 7507280422



2 Version

| Version No. | Date | Description |
|-------------|-------------|-------------|
| 00 | May 25,2022 | Original |
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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: | 20 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 EED32O80593301 |
| 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. | |

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

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

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 / cm²

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 |

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32O80593301 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 ***