# MPE TEST REPORT

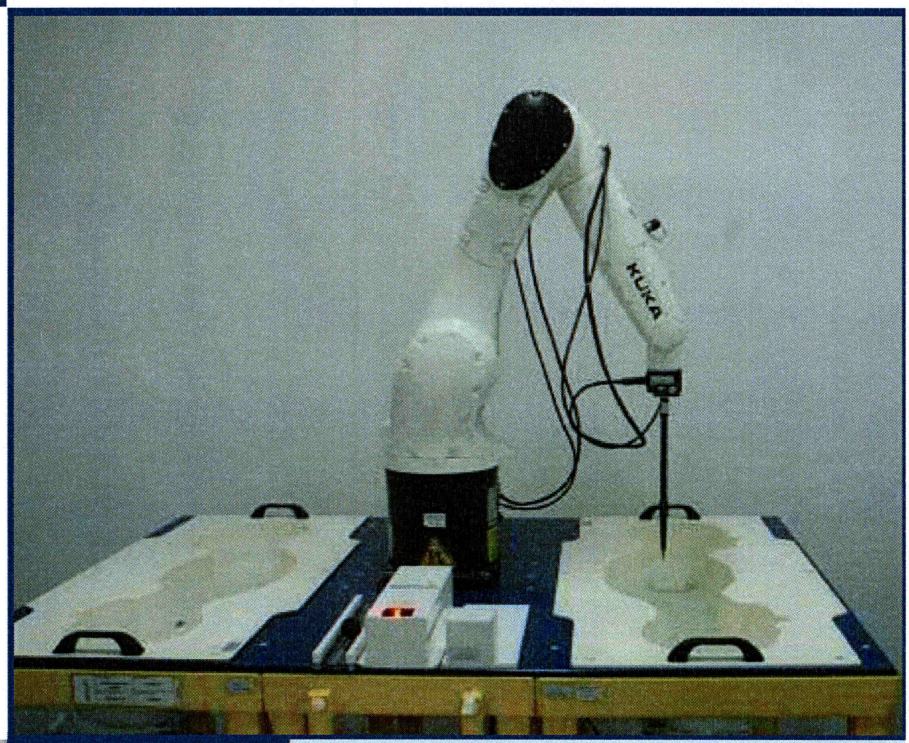
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

## Computer Multimedia Speaker

ISSUED TO
SHENZHEN FENDA TECHNOLOGY CO., LTD.

Fenda Hi-Tech Park, Zhoushi Road, Shiyan, Baoan, Shenzhen, China 518108




Tested by: Zong Liyao
Date Sep. 28, 2021

Approved by: Liao Jianming
(Technical Director)
Date Sep. 28, 2021

| | |
|---|---|
| Report No.: | BL-SZ2170989-701 |
| EUT Name: | Computer Multimedia Speaker |
| Model Name: | V720 (refer section 2.4) |
| Brand Name: | N/A |
| Test Standard: | EN IEC 62311: 2020 |
| Test Conclusion: | Pass |
| Test Date: | Aug. 19, 2021 ~ Sep. 15, 2021 |
| Date of Issue: | Sep. 28, 2021 |



Block B, 1st FL,Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055
TEL: +86-755-66850100, FAX: +86-755-61824271
Email: qc@baluntek.com
www.baluntek.com

**Revision History**

| Version | Issue Date | Revisions Content |
|---|---|---|
| Rev. 01 | Sep. 28, 2021 | Initial Issue |

# TABLE OF CONTENTS

# 1 GENERAL INFORMATION

## 1.1 Identification of the Testing Laboratory

| | |
|---|---|
| Company Name | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China. |
| Phone Number | +86 755 6685 0100 |
| Fax Number | +86 755 6182 4271 |

## 1.2 Identification of the Responsible Testing Location

| | |
|---|---|
| Test Location | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China. |
| Description | All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055 |

## 1.3 Test Environment Condition

| | |
|---|---|
| Ambient Temperature | 20℃ to 23℃ |
| Ambient Relative Humidity | 30% to 60 % |
| Ambient Pressure | 100 KPa to 102 KPa |

## 1.4 Announce

(1) The test report reference to the report template version V2.0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(7) . The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

# 2 PRODUCT INFORMATION

## 2.1 Applicant Information

| | |
|---|---|
| Applicant | SHENZHEN FENDA TECHNOLOGY CO., LTD. |
| Address | Fenda Hi-Tech Park, Zhoushi Road, Shiyan, Baoan, Shenzhen, China 518108 |

## 2.2 Manufacturer Information

| | |
|---|---|
| Manufacturer | SHENZHEN FENDA TECHNOLOGY CO., LTD. |
| Address | Fenda Hi-Tech Park, Zhoushi Road, Shiyan, Baoan, Shenzhen, China 518108 |

## 2.3 Factory Information

| | |
|---|---|
| Factory | SHENZHEN FENDA TECHNOLOGY CO., LTD. |
| Address | Fenda Hi-Tech Park, Zhoushi Road, Shiyan, Baoan, Shenzhen, China 518108 |

## 2.4 General Description for Equipment under Test (EUT)

| | |
|---|---|
| EUT Name | Computer Multimedia Speaker |
| Model Name Under Test | V720 |
| Series Model Name | V620 Plus, V620 Pro, V720 Pro, V720 Plus, V720X, V780, V780 Plus, V780 Pro, V780X |
| Description of Model name differentiation | All models are same with electrical parameters and internal circuit structure, but only differ in market and customer. |
| Hardware Version | N/A |
| Software Version | N/A |
| Dimensions (Approx.) | N/A |
| Weight (Approx.) | N/A |

## 2.5 Ancillary Equipment

Note: Not Applicable.

## 2.6 Technical Information

| | |
|---|---|
| Network and Wireless connectivity | Bluetooth (BR+EDR) |

The requirement for the following technical information of the EUT was tested in this report:

| | |
|---|---|
| Operating Mode | Bluetooth |
| Operating Frequency | 2400 MHz ~ 2483.5 MHz |
| ANT TYPE | PCB Antenna |
| Exposure Category | General Population/Uncontrolled Exposure |
| EUT Stage | Fixed Device |

# 3 STANDARD INFORMATION

## 3.1 Test Standard

| No. | Identity | Document Title |
|---|---|---|
| 1 | EN IEC 62311: 2020 | Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz) |

# 4 DEVICE CATEGORY AND LEVELS LIMITS

The field calculation does not take into account the antenna size, which is assumed to be a point source. An ideal isotropic antenna is used as a reference to compare the performance of practical antennas: ***P*** watts is radiated, from a point, uniformly over the surface of sphere of radius ***r***. The POINTING VECTOR gives the power density:

Assumed use distance from EUT to Human, **20 cm** separation distance warning is required. In this section, the power density at 20 cm location is calculated to examine if it is lower than the limit.

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density

P = output power (W)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Separation distance between radiator and human body (m)

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the following limits.

**Compliance criteria**

The electronic and electrotechnical apparatus shall comply with the basic restriction as specified in Annex II of Council Recommendation 1999/519/EC.

**1999/519/EC Limit**

**Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz, unperturbed rms values)**

| Frequency range | E-field strength (V/m) | H-field strength (A/m) | B-field (μT) | Equivalent plane wave power density $S_{eq}$ (W/m²) |
|---|---|---|---|---|
| 0-1 Hz | — | $3,2 \times 10^4$ | $4 \times 10^4$ | — |
| 1-8 Hz | 10 000 | $3,2 \times 10^4/f^2$ | $4 \times 10^4/f^2$ | — |
| 8-25 Hz | 10 000 | 4 000/f | 5 000/f | — |
| 0,025-0,8 kHz | 250/f | 4/f | 5/f | — |
| 0,8-3 kHz | 250/f | 5 | 6,25 | — |
| 3-150 kHz | 87 | 5 | 6,25 | — |
| 0,15-1 MHz | 87 | 0,73/f | 0,92/f | — |
| 1-10 MHz | $87/f^{1/2}$ | 0,73/f | 0,92/f | — |
| 10-400 MHz | 28 | 0,073 | 0,092 | 2 |
| 400-2 000 MHz | $1,375\ f^{1/2}$ | $0,0037\ f^{1/2}$ | $0,0046\ f^{1/2}$ | f/200 |
| 2-300 GHz | 61 | 0,16 | 0,20 | 10 |

# 5 MPE ASSESSMENT

## 5.1 Output Power

| Bluetooth | | | |
|---|---|---|---|
| Mode | BR/EDR | | |
| | GFSK | Π/4-DQPSK | 8-DPSK |
| EIRP (dBm) | **3.0** | **3.0** | 2.9 |
| Note: This report listed the worst case EIRP power value, please refer to RF test report for more details. | | | |

## 5.2 Assessment Result

| Mode | Max. EIRP (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density ($W/m^2$) | Limit of Power Density ($W/m^2$) | Verdict |
|---|---|---|---|---|---|---|
| Bluetooth | 3.0 | 2.0 | 20 | 0.004 | 10 | Pass |

## 5.3 Conclusion

This EUT is deemed to comply with the reference level limits by Council Recommendation 1999/519/EC, therefore the basic restrictions are compliant with human exposure limits.

--END OF REPORT--