# 1 Cover Page

# *RF Exposure REPORT*

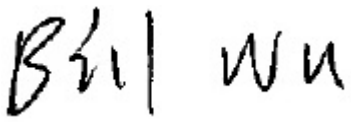
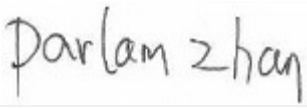
| | |
|---|---|
| **Application No.:** | SHEM2003001714CR |
| **FCC ID:** | 2AFF6-2G44IUAMDL |
| **Applicant:** | Adam Hall GmbH |
| **Address of Applicant:** | Adam-Hall-Str. 1, 61267 Neu-Anspach, Germany |
| **Manufacturer:** | Adam Hall GmbH |
| **Address of Manufacturer:** | Adam-Hall-Str. 1, 61267 Neu-Anspach, Germany |
| **Factory:** | Speaker Electronic (Jiashan) Co., Lltd. |
| **Address of Factory:** | No. 8 Development Zone Road, Huimin Sub-district, JiaShan County, Zhejiang, 314112, P.R. China |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | Active PA Box |
| **Model No.:** | LDMAUI44G2 |
| **Trade mark:** | LD |
| **Standard(s) :** | FCC Rules 47 CFR §2.1091<br>KDB447498 D01 General RF Exposure Guidance v06 |
| **Date of Receipt:** | 2020-03-17 |
| **Date of Test:** | 2020-03-23 to 2020-05-18 |
| **Date of Issue:** | 2020-05-19 |
| **Test Result:** | **Pass*** |

* In the configuration tested, the EUT complied with the standards specified above.

Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

| Revision Record | | | |
|---|---|---|---|
| **Version** | **Description** | **Date** | **Remark** |
| 00 | Original | 2020-05-19 | / |
| | | | |
| | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| | |  | | |
| | | **Bill Wu / Project Engineer** | | |
| | |  | | |
| | | **Parlam Zhan / Reviewer** | | |

# 2 Contents

Page

# 3 General Information

## 3.1 General Description of E.U.T.

| | |
|---|---|
| Power supply: | AC100-120V/200-240V 50-60Hz |
| Serial Number: | AH0090015046 |
| Firmware Version: | MAUI44G2 |
| Test voltage: | AC 120V/60Hz |
| Cable: | AC Cable 1.7m |

## 3.2 Details of E.U.T.

| | |
|---|---|
| Operation Frequency: | 2402MHz to 2480MHz |
| Spectrum Spread Technology: | Frequency Hopping Spread Spectrum(FHSS) |
| Antenna Gain: | 2dBi |
| Antenna Type: | Dipole Antenna |
| Bluetooth Version: | V4.2 Classic |
| Channel Spacing: | 1MHz |
| Modulation Type: | GFSK, π/4DQPSK, 8DPSK |
| Number of Channels: | 79 |

## 3.3 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

## 3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **NVLAP (LAB CODE: 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

- **FCC (Designation Number: CN5033)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

# 4 Test Standards and Limits

## 4.1 FCC Radiofrequency radiation exposure limits:

According to§1.1310, the limit for general population/uncontrolled exposures

| Frequency | Power density($mW/cm^2$) | Averaging time(minutes) |
|---|---|---|
| 300MHz~1.5GHz | f/1500 | 30 |
| 1.5GHz~100GHz | 1.0 | 30 |

# 5 Measurement and Calculation

## 5.1 Maximum transmit power

The BT Power Data is based on the RF Test Report SHEM200300171401.

**Test Data:**

**For BT Classic mode**

| Test mode | Channel | Peak Power (dBm) | Peak Power (mW) |
|---|---|---|---|
| GFSK | 2402 | 6.99 | 5.00 |
| | 2441 | 8.23 | **6.65** |
| | 2480 | 7.9 | 6.17 |
| π/4DQPSK | 2402 | 6.09 | 4.06 |
| | 2441 | 7.45 | 5.56 |
| | 2480 | 7.16 | 5.20 |
| 8DPSK | 2402 | 6.32 | 4.29 |
| | 2441 | 7.69 | 5.87 |
| | 2480 | 7.32 | 5.40 |

## 5.2 MPE Calculation

*For FCC:*

According to the formula $S=P/4\pi R^2$, we can calculate S which is MPE.

Note:

1) P (mW)

2) R = distance to the center of radiation of antenna (in meter) = 20cm

3) MPE limit = 1mW/cm²

| The max. antenna gain is | | 2 | dBi | | |
|---|---|---|---|---|---|
| Max. Conducted Power P(mW) | Gain in Linear Scale G | Operation Distance R(cm) | Power Density ($mW/cm^2$) | Limit ($mW/cm^2$) | Result |
| 6.65 | 1.585 | 20 | 0.00210 | 1 | Pass |

So the device is exclusion from SAR test.

**--End of the Report--**