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Report No.: SZEM120300108102

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## SAR Evaluation Report

**Application No.:** SZEM1203001081RF  
**Applicant:** MAT GLOBAL SOLUTIONS, SL  
**Manufacturer:** ETHER ELECTRONICS CO., LTD.  
**Factory:** ETHER ELECTRONICS CO., LTD.  
**Product Name:** Bluetooth hands free kit  
**Model No.(EUT):** T-HSA  
**Standard:** FCC CFR Title 47 Part 1.1307  
FCC CFR Title 47 Part 2.1093  
**FCC ID:** DDOHSA  
**Date of Receipt:** 2012-03-14  
**Date of Test:** 2012-03-27 to 2012-05-02  
**Date of Issue:** 2012-05-10

<b>Test Result:</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang  
EMC Laboratory 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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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### 3 General Information

#### 3.1 Client Information

Applicant:	MAT GLOBAL SOLUTIONS, SL
Address of Applicant:	C/ Sant Sebastià, 202 bis 1a-E08223 TERRASSA (Barcelona)-Spain
Manufacturer:	ETHER ELECTRONICS CO., LTD.
Address of Manufacturer:	4F, 5Building, DongFangMing Industrial Park, No.83, DaBao Road, BaoAn District, ShenZhen City, China
Factory:	ETHER ELECTRONICS CO., LTD.
Address of Factory:	4F, 5Building, DongFangMing Industrial Park, No.83, DaBao Road, BaoAn District, ShenZhen City, China

#### 3.2 General Description of EUT

Name:	Bluetooth hands free kit
Mode No.	T-HSA
Trade Mark:	Twins
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	2.1+EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channel:	79
Sample Type:	Portable production
Test Power Grade:	255
Test Software of EUT:	CSR blue suite
Antenna Type and Gain:	Type :Integral Gain :2.5dBi
AC Adapter:	Model: PSM05R-050CHW (R) P RIMPART NO.:ASY-07559-001 INPUT: 100-240Vac, 50-60Hz, 0.15A, 10-20VA OUTPUT: 5VDC, 0.5A
EUT Power Supply:	Battery: 3.7V lithium battery

#### 3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.



### **3.4 Test Facility**

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

- **CNAS (No. CNAS L2929)**  
CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 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.
- **VCCI**  
The 3m Semi-anechoic chamber, Full-anechoic Chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197, G-416, T-1153 and C-2383 respectively.
- **FCC – Registration No.: 556682**  
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.
- **Industry Canada (IC)**  
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

### **3.5 Deviation from Standards**

None.

### **3.6 Abnormalities from Standard Conditions**

None.

### **3.7 Other Information Requested by the Customer**

None.

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

15.247(b)(4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 4.1.2 Limits

According to KDB447498 D01, SAR evaluation is typically not required when the maximum transmitter and antenna output power are  $\leq 60/f(\text{GHz})$  mW.

#### 4.1.3 EUT RF Exposure

The Max Conducted Peak Output Power is 8.12dBm(6.4863mW) in lowest channel;

The best case gain of the antenna is 2.5dBi.

2.5dBi logarithmic terms convert to numeric result is nearly 1.778.

According to the formula, calculate the EIRP test result:

$$\text{EIRP} = P \times G = 6.4863\text{mW} \times 1.778 = 11.5326\text{mW} \text{ ①}$$

SAR requirement:

$$S = 60 / f(\text{GHz}) = 60 / 2.402 = 24.98\text{mW} \text{ ②} ;$$

$$\text{①} < \text{②}.$$

So the SAR report is not required.

