



## STC Test Report

**Date:** 2017-05-04  
**No.:** HM170671

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**Applicant:** Supersonics Electronics Company  
Phase II, Block C, 4<sup>th</sup> Floor, Gee Chang Ind. Bldg.,  
108 Lok Shan Road, Kowloon,  
Hong Kong

**Manufacturer:** Supersonics Electronics Toys (Shenzhen) Co. Ltd.  
Block 1 & 2, Xin Tian Village, Xin Feng Ind. Area, Guan  
Lan, BaoAn, Shanzhen, China

**Description of Sample(s):** Submitted samples(s) said to be  
Product: WALKIE TALKIES  
Brand Name: N/A  
Model Number: 33310  
FCC ID: II633310

**Date Sample(s) Received:** 2017-03-21

**Date Tested:** 2017-03-28 to 2017-05-04

**Investigation Requested:** Perform ElectroMagnetic Interference measurement in  
accordance with FCC 47CFR [Codes of Federal  
Regulations] Part 15: 2015 and ANSI C63.10: 2013 for  
FCC Certification.

**Conclusion(s):** The submitted product COMPLIED with the requirements  
of Federal Communications Commission [FCC] Rules and  
Regulations Part 15. The tests were performed in  
accordance with the standards described above and on  
Section 2.2 in this Test Report.

**Remark(s):** Laboratory Report supersedes our previous Test Report No.  
HM170671 issued on 2017-04-07 which is hereby deemed  
null and void.



Dr. LEE Kam Chuen,  
Authorized Signatory  
ElectroMagnetic Compatibility Department  
For and on behalf of  
The Hong Kong Standards and Testing Centre Ltd.



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### **1.0 General Details**

#### **1.1 Equipment Under Test [EUT] Description of Sample(s)**

|                |                                                  |
|----------------|--------------------------------------------------|
| Product:       | WALKIE TALKIES                                   |
| Manufacturer:  | Supersonics Electronics Toys (Shenzhen) Co. Ltd. |
| Brand Name:    | N/A                                              |
| Model Number:  | 33310                                            |
| Input Voltage: | 9Vd.c("6F22" size battery x1)                    |

##### **1.1.1 Description of EUT Operation**

The Equipment Under Test (EUT) is an audio signal transceiver. The transceiver was operating with 1 button; the EUT was set into continuous transmission by affixing the adhesive tape on the push-to-talk button. The audio signal was modulated by IC, and the type of modulation is AM.

#### **1.2 Date of Order**

2017-03-21

#### **1.3 Submitted Sample(s):**

1 Sample

#### **1.4 Test Duration**

2017-03-28 to 2017-05-04

#### **1.5 Country of Origin**

China

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### **2.0 Technical Details**

#### **2.1 Investigations Requested**

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 Regulations and ANSI C63.10: 2013 for FCC Certification.

#### **2.2 Test Standards and Results Summary Tables**

| <b>EMISSION<br/>Results Summary</b>                                |                  |                   |                     |                                     |                          |
|--------------------------------------------------------------------|------------------|-------------------|---------------------|-------------------------------------|--------------------------|
| Test Condition                                                     | Test Requirement | Test Method       | Class /<br>Severity | Test Result                         |                          |
|                                                                    |                  |                   |                     | Pass                                | Failed                   |
| Field Strength of<br>Fundamental Emissions &<br>Spurious Emissions | FCC 47CFR 15.235 | ANSI C63.10: 2013 | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emissions,<br>30MHz to 1GHz                               | FCC 47CFR 15.209 | ANSI C63.10: 2013 | N/A                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Note: N/A - Not Applicable

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### **3.0 Test Results**

#### **3.1 Emission**

##### **3.1.1 Radiated Emissions (30 – 1000MHz)**

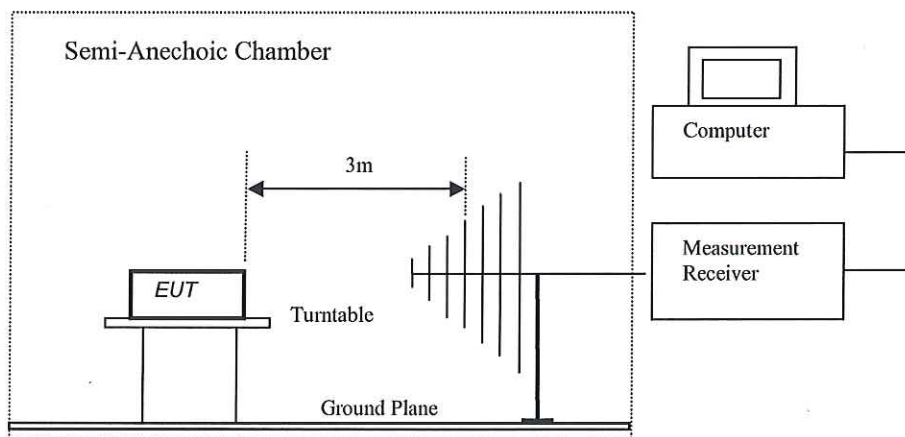
|                    |                   |
|--------------------|-------------------|
| Test Requirement:  | FCC 47CFR 15.235  |
| Test Method:       | ANSI C63.10: 2013 |
| Test Date:         | 2017-03-28        |
| Mode of Operation: | Tx mode           |

#### **Test Method:**

The sample was placed 0.8m above the ground plane of semi-anechoic chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\*: Semi-anechoic chamber located on the G/F of "The Hong Kong Standards and Testing Centre Ltd." with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

#### **Test Setup:**



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### Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.235]:

| Frequency Range of Fundamental<br>[MHz] | Field Strength of Fundamental Emission<br>[Peak]<br>[ $\mu\text{V/m}$ ] | Field Strength of Fundamental Emission<br>[Average]<br>[ $\mu\text{V/m}$ ] |
|-----------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 49.82-49.90                             | 100,000                                                                 | 10,000                                                                     |

### Results of Tx mode: PASS

| Field Strength of Fundamental Emissions<br>Peak Value |                                        |                           |                                      |                                   |                              |                  |
|-------------------------------------------------------|----------------------------------------|---------------------------|--------------------------------------|-----------------------------------|------------------------------|------------------|
| Frequency<br>MHz                                      | Measured Level @3m<br>dB $\mu\text{V}$ | Correction Factor<br>dB/m | Field Strength<br>dB $\mu\text{V/m}$ | Field Strength<br>$\mu\text{V/m}$ | Limit @3m<br>$\mu\text{V/m}$ | E-Field Polarity |
| 49.860                                                | 51.4                                   | 6.8                       | 58.2                                 | 812.8                             | 100,000                      | Vertical         |

| Field Strength of Fundamental Emissions<br>Average |                                        |                              |                           |                                      |                                   |                              |                  |
|----------------------------------------------------|----------------------------------------|------------------------------|---------------------------|--------------------------------------|-----------------------------------|------------------------------|------------------|
| Frequency<br>MHz                                   | Measured Level @3m<br>dB $\mu\text{V}$ | Adjusted by Duty Cycle<br>dB | Correction Factor<br>dB/m | Field Strength<br>dB $\mu\text{V/m}$ | Field Strength<br>$\mu\text{V/m}$ | Limit @3m<br>$\mu\text{V/m}$ | E-Field Polarity |
| 49.860                                             | 51.1                                   | Nil                          | 6.8                       | 57.9                                 | 785.2                             | 10,000                       | Vertical         |

According to FCC 47CFR15.35, the limit on the radio frequency emissions as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.

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### Limits for Radiated Emissions [FCC 47 CFR 15.209]:

| Frequency Range<br>[MHz] | Quasi-Peak Limits<br>[ $\mu\text{V/m}$ ] |
|--------------------------|------------------------------------------|
| 30-88                    | 100                                      |
| 88-216                   | 150                                      |
| 216-960                  | 200                                      |
| Above 960                | 500                                      |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### Results of Tx mode (9kHz-30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s).

### Results of Tx mode: PASS

| Radiated Emissions<br>Quasi-Peak |                                           |                              |                                         |                                      |                              |                     |
|----------------------------------|-------------------------------------------|------------------------------|-----------------------------------------|--------------------------------------|------------------------------|---------------------|
| Frequency<br>MHz                 | Measured<br>Level @3m<br>dB $\mu\text{V}$ | Correction<br>Factor<br>dB/m | Field<br>Strength<br>dB $\mu\text{V/m}$ | Field<br>Strength<br>$\mu\text{V/m}$ | Limit @3m<br>$\mu\text{V/m}$ | E-Field<br>Polarity |
| 99.72                            | 12.2                                      | 8.3                          | 20.5                                    | 10.6                                 | 150                          | Vertical            |
| 199.44                           | 19.6                                      | 10.2                         | 29.8                                    | 30.9                                 | 150                          | Vertical            |
| 398.92                           | 19.1                                      | 17.6                         | 36.7                                    | 68.4                                 | 200                          | Vertical            |
| 448.76                           | 14.4                                      | 18.1                         | 32.5                                    | 42.2                                 | 200                          | Vertical            |

### Remarks:

No further spurious emissions found between lowest internal frequency and 30MHz.

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty (30MHz – 1GHz): 4.9dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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### **3.2 20dB Bandwidth of Fundamental Emission**

|                    |                                  |
|--------------------|----------------------------------|
| Test Requirement:  | FCC 47 CFR 15.235                |
| Test Method:       | ANSI C63.10: 2013 (Clause 6.9.2) |
| Test Date:         | 2017-03-28 to 2017-05-04         |
| Mode of Operation: | Tx mode                          |

#### **Test Method:**

Refer to ANSI C63.10: 2013 (Clause 6.9.2)

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

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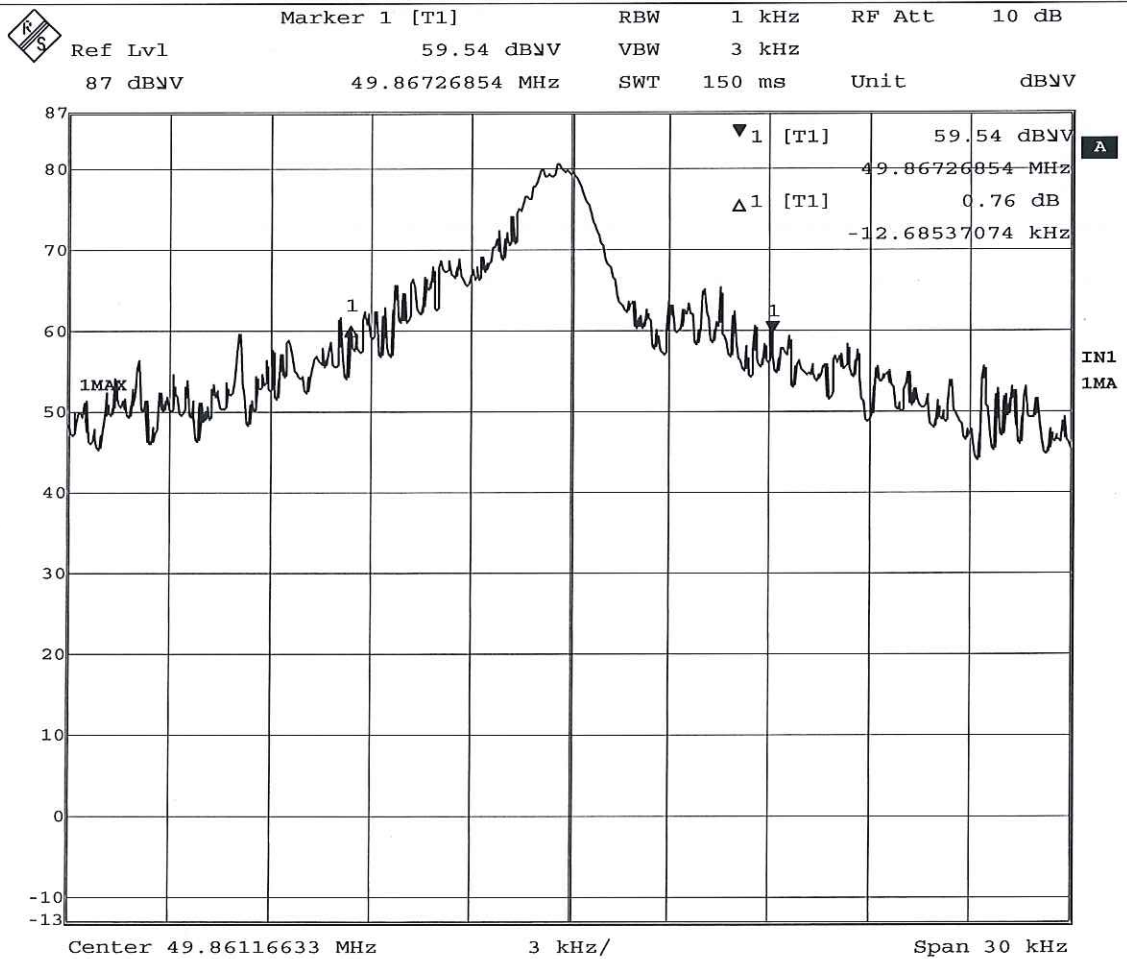
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Limits for 20dB Bandwidth of Fundamental Emission:

| Frequency Range<br>[MHz] | 20dB Bandwidth<br>[kHz] | FCC Limits<br>[MHz] |
|--------------------------|-------------------------|---------------------|
| 49.86                    | 12.685                  | within 49.82-49.90  |

### 20dB Bandwidth of Fundamental Emission



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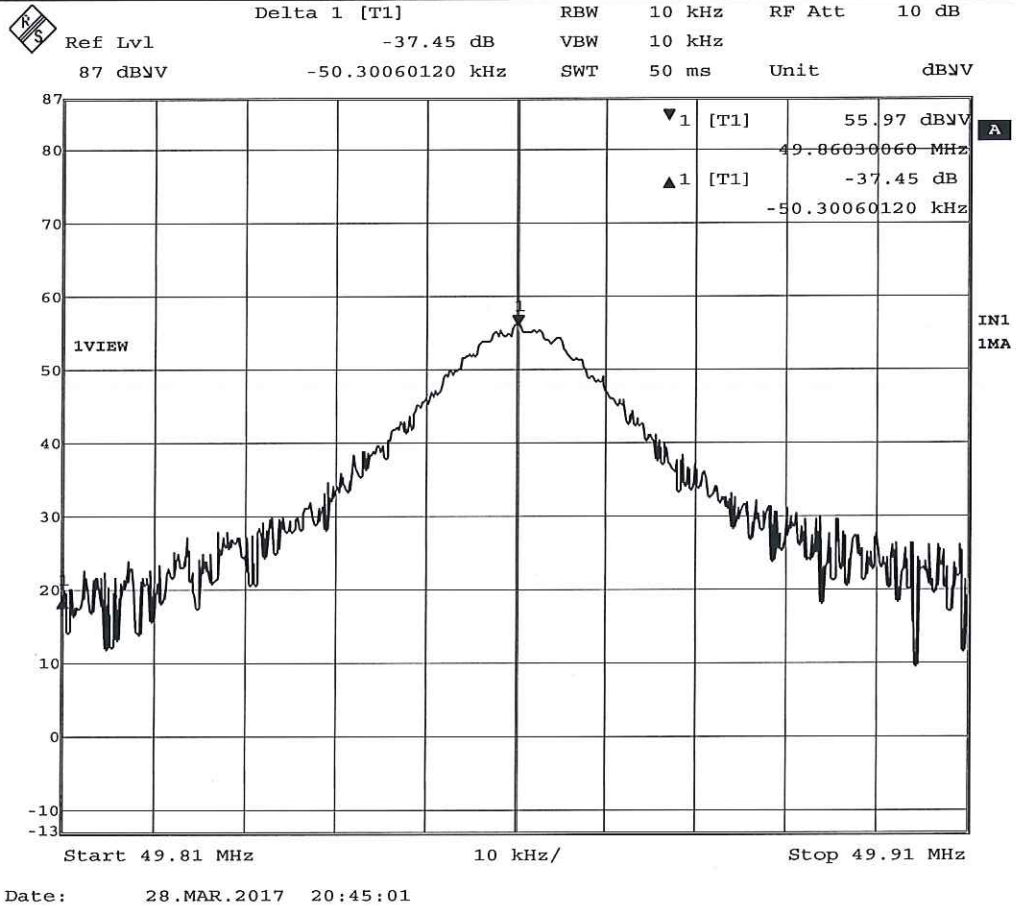
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### 26 dB Level Reduction at Band Edge



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### Appendix A

#### List of Measurement Equipment

##### Radiated Emission

| EQP NO. | DESCRIPTION                  | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL   | DUE CAL    |
|---------|------------------------------|--------------|-----------|------------|------------|------------|
| EM215   | MULTIDEVICE CONTROLLER       | EMCO         | 2090      | 00024676   | N/A        | N/A        |
| EM216   | MINI MAST SYSTEM             | EMCO         | 2075      | 00026842   | N/A        | N/A        |
| EM217   | ELECTRIC POWERED<br>TURNABLE | EMCO         | 2088      | 00029144   | N/A        | N/A        |
| EM218   | ANECHOIC CHAMBER             | ETS-LINDGREN | FACT-3    | --         | 2016/04/24 | 2017/04/24 |
| EM354   | BICONILOG ANTENNA            | ETS-LINDGREN | 3143B     | 00142073   | 2016/02/29 | 2018/02/29 |
| EM229   | EMI TEST RECEIVER            | R&S          | ESIB40    | 100248     | 2016/06/01 | 2017/06/01 |
| EM353   | LOOP ANTENNA                 | ETS_LINDGREN | 6502      | 00206533   | 2016/03/16 | 2018/03/16 |

#### Remarks:-

CM Corrective Maintenance

N/A Not Applicable

TBD To Be Determined

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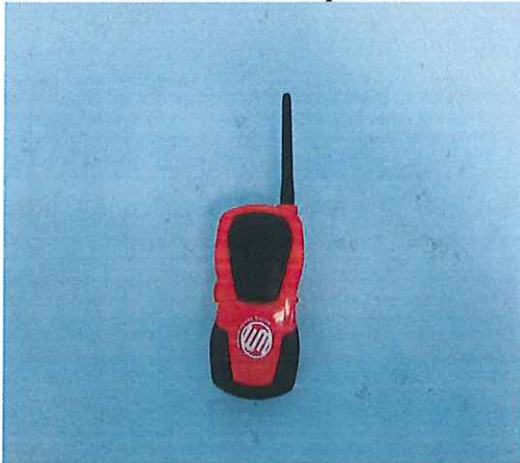
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### Appendix B Photographs of EUT

Front View of the product



Back View of the product



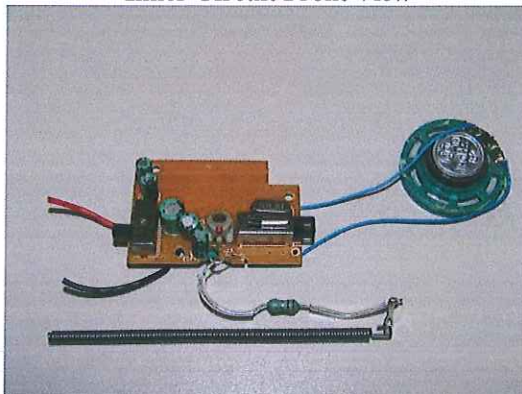
Interior View of the product



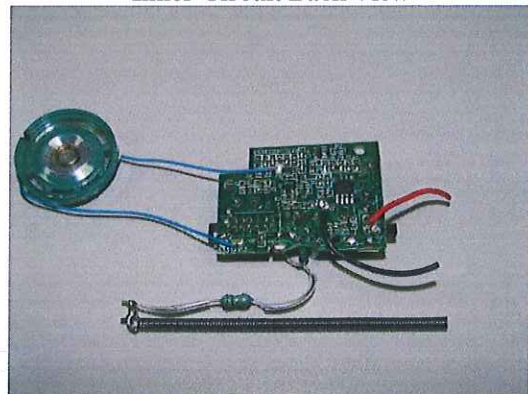
Interior View of the product



Inner Circuit Front View



Inner Circuit Back View



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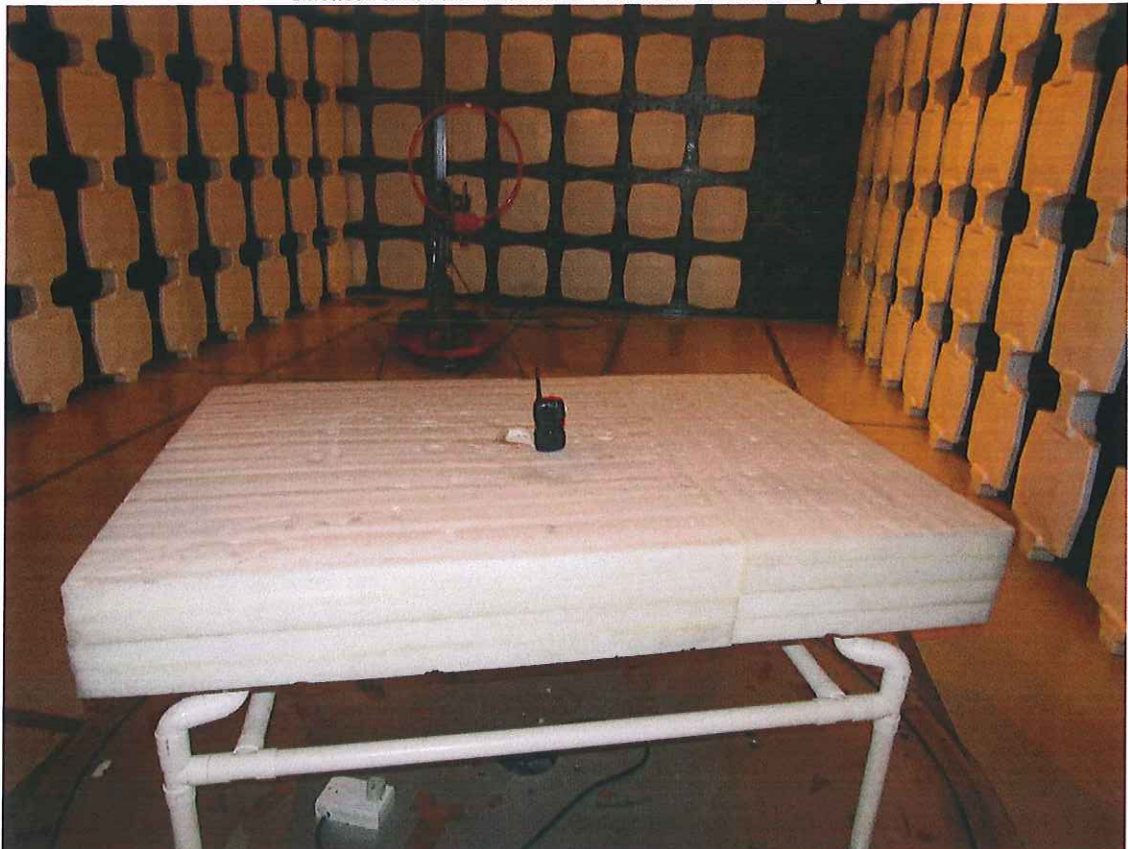
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### **Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**



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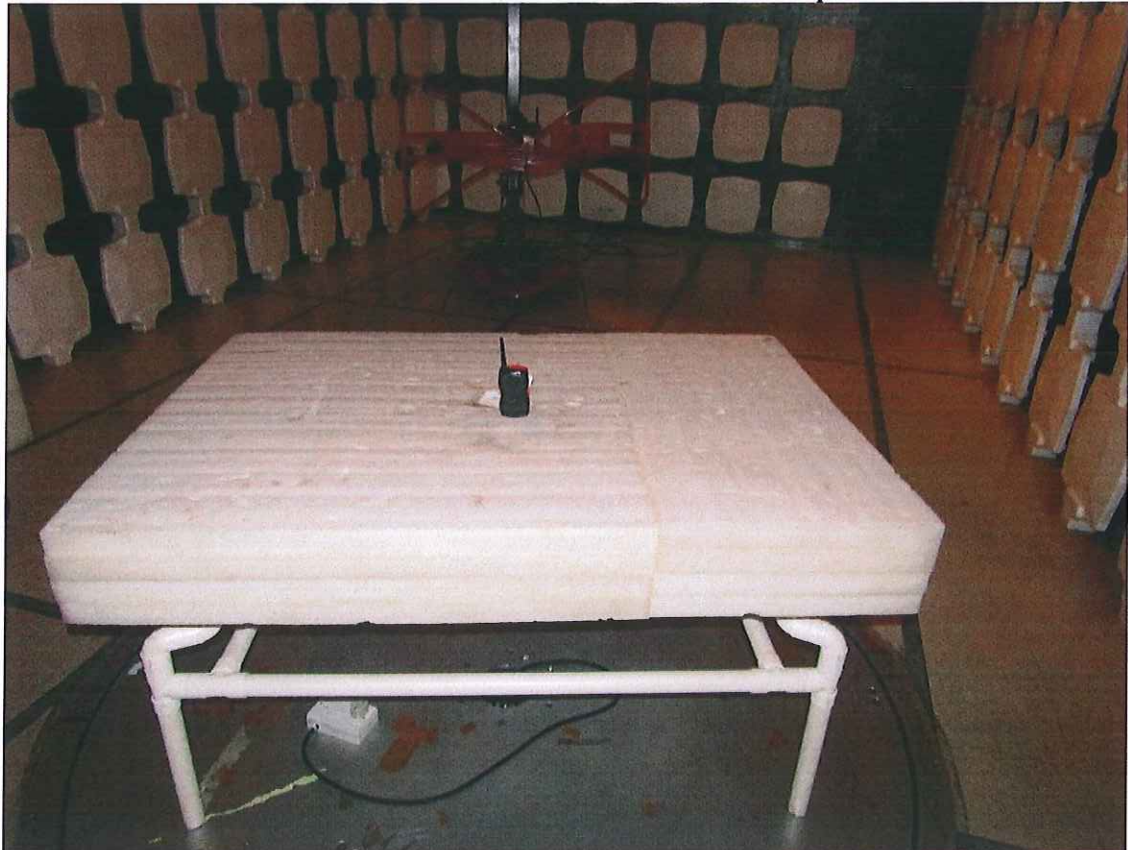
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### **Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**



**\*\*\*\*\* End of Test Report \*\*\*\*\***

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