

**SHAOXING SIYUAN KEJI CO.,LTD**

**The wireless receiving controller**

**Main Model: WR0702**  
**Serial Model: N/A**

**June 24, 2014**


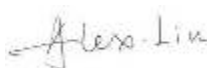

**Report No.: 14020545-FCC-E**

**(This report supersedes NONE)**



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

		
<b>Ted Ge</b> Compliance Engineer	<b>Alex Liu</b> Technical Manager	

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**Test result presented in this test report is applicable to the representative sample only.**

**EMC Test Report**

To: FCC Part 15 Subpart B Class B; 2013, ANSI C63.4: 2009

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## Laboratory Introduction

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### Accreditations for Conformity Assessment

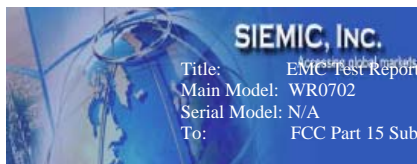
Country/Region	Scope
USA	EMC , RF/Wireless , Telecom
Canada	EMC, RF/Wireless , Telecom
Taiwan	EMC, RF, Telecom , Safety
Hong Kong	RF/Wireless ,Telecom
Australia	EMC, RF, Telecom , Safety
Korea	EMI, EMS, RF , Telecom, Safety
Japan	EMI, RF/Wireless, Telecom
Singapore	EMC , RF , Telecom
Europe	EMC, RF, Telecom , Safety

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## **1 EXECUTIVE SUMMARY & EUT INFORMATION**

**The purpose of this test programme was to demonstrate compliance of the SHAOXING SIYUAN KEJI CO.,LTD, The wireless receiving controller and Model: WR0702 against the current Stipulated Standards. The The wireless receiving controller has demonstrated compliance with the FCC Part 15 Subpart B Class B: 2013, ANSI C63.4: 2009.**

### **EUT Information**

<b>EUT Description</b>	<b>The wireless receiving controller</b>
<b>Main Model</b>	<b>WR0702</b>
<b>Serial Model</b>	<b>N/A</b>
<b>Input Power</b>	<b>12V/300mA</b>
<b>Classification Per Stipulated Test Standard</b>	<b>Class B Emission Product Per FCC Part 15 Subpart B Class B: 2013, ANSI C63.4: 2009</b>

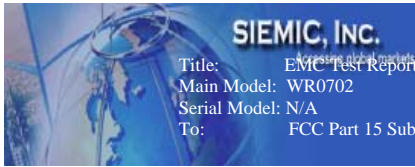


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## 2 TECHNICAL DETAILS

<b>Purpose</b>	<b>Compliance testing of The wireless receiving controller with stipulated standards</b>
<b>Applicant / Client</b>	<b>SHAOXING SIYUAN KEJI CO.,LTD The Cross Of Yueying Road And Qisheng Road,Paojiang Industrial Commercial Park,ShaoXing City</b>
<b>Manufacturer</b>	<b>SHAOXING SIYUAN KEJI CO.,LTD The Cross Of Yueying Road And Qisheng Road,Paojiang Industrial Commercial Park,ShaoXing City</b>
<b>Laboratory performing the tests</b>	<b>SIEMIC (Nanjing-China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel: +86(25)86730128/86730129 Fax: +86(25)86730127 Email: China@siemic.com.cn</b>
<b>Test report reference number</b>	<b>14020545-FCC-E</b>
<b>Date EUT received</b>	<b>June 11, 2014</b>
<b>Standard applied</b>	<b>FCC Part 15 Subpart B Class B: 2013, ANSI C63.4: 2009</b>
<b>Dates of test (from – to)</b>	<b>June 17 to June 19, 2014</b>
<b>Equipment Category</b>	<b>Class B Emission Product</b>
<b>No of Units</b>	<b>#1</b>
<b>Operated Frequency</b>	<b>RX: 433.776 MHz</b>
<b>Trade Name</b>	<b>N/A</b>
<b>FCC ID</b>	<b>RKWWR0702</b>



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### **3 MODIFICATION**

**NONE**

## 4 TEST SUMMARY

The product was tested in accordance with the following specifications.  
All testing has been performed according to below product classification:

**Class B Emission Product**

**Test Results Summary**

Emissions			
Test Standard	Description	Product Class	Pass / Fail
FCC Part 15 Subpart B Class B: 2013, ANSI C63.4: 2009	Conducted Emissions	See Above	Pass
FCC Part 15 Subpart B Class B: 2013, ANSI C63.4: 2009	Radiated Emissions	See Above	Pass

All measurement uncertainty is not taken into consideration for all presented test result.



## 5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 5.1 Conducted Emissions Test Result


Note:

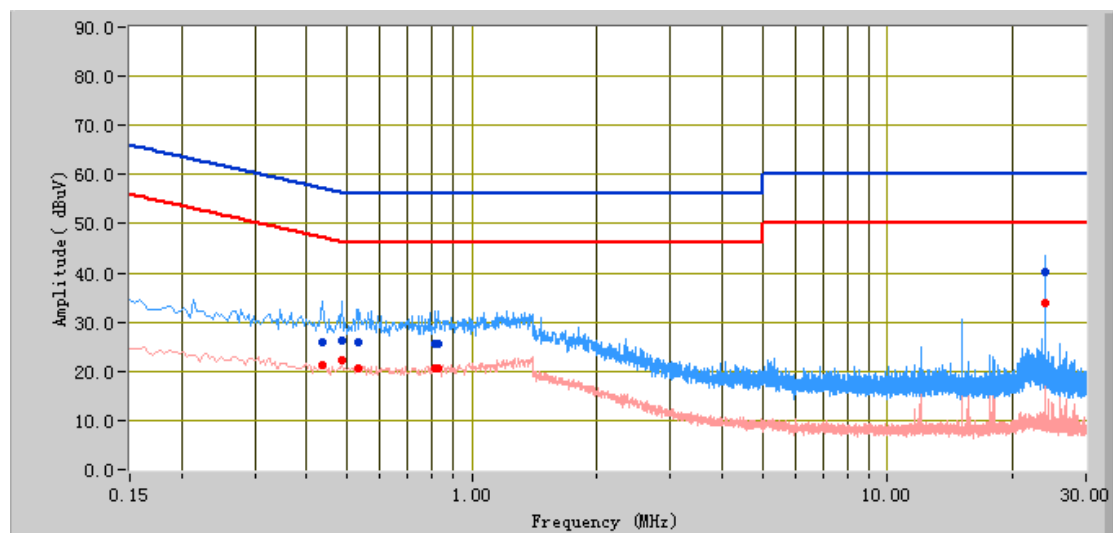
1. All possible modes of operation were investigated. Only the several worst case emissions measured, using the correct CISPR and Average detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Conducted Emissions Measurement Uncertainty  
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz – 30MHz (Average & Quasi-peak) is  $\pm 3.86\text{dB}$ .
4. Environmental Conditions

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1009mbar
5. Test date : June 19, 2014  
Tested By : Ted Ge

**Test Result: Pass**

<b>Test Mode:</b>	<b>Receiving Mode</b>
-------------------	-----------------------

**Peak Detector**       **Quasi Peak Limit**        
**Average Detector**       **Average Limit**      



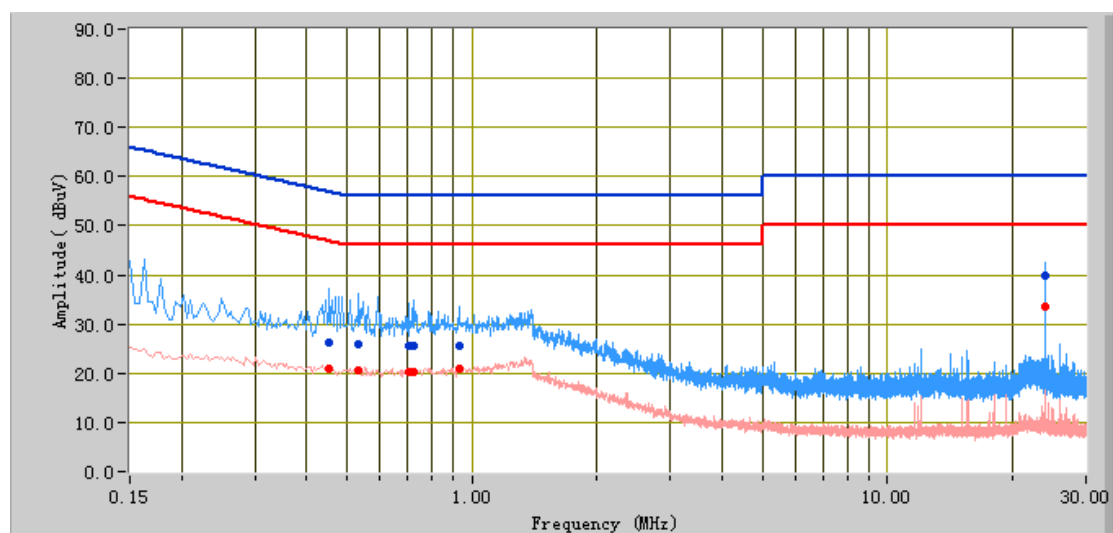
### Test Data

#### Phase Line Plot at 120V AC, 60Hz

Frequency (MHz)	Quasi Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Factors (dB)
24.01	40.26	60.00	-19.74	33.97	50.00	-16.03	11.67
0.49	26.20	56.24	-30.03	22.16	46.24	-24.07	11.11
0.43	26.01	57.18	-31.16	21.22	47.18	-25.96	11.18
0.53	25.77	56.00	-30.23	20.73	46.00	-25.27	11.06
0.81	25.45	56.00	-30.55	20.61	46.00	-25.39	10.83
0.83	25.54	56.00	-30.46	20.59	46.00	-25.41	10.82

<b>Test Mode:</b>	<b>Receiving Mode</b>
-------------------	-----------------------

**Peak Detector**       **Quasi Peak Limit**        
**Average Detector**       **Average Limit**      



### Test Data

#### Phase Natural Plot at 120V AC, 60Hz

Frequency (MHz)	Quasi Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Factors (dB)
24.01	39.74	60.00	-20.26	33.56	50.00	-16.44	11.70
0.45	26.09	56.80	-30.71	20.96	46.80	-25.85	11.13
0.53	25.86	56.00	-30.14	20.66	46.00	-25.34	11.03
0.73	25.43	56.00	-30.57	20.39	46.00	-25.61	10.90
0.70	25.43	56.00	-30.57	20.40	46.00	-25.60	10.91
0.93	25.60	56.00	-30.40	20.78	46.00	-25.22	10.75



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## **5.2 Radiated Emissions Test Result**



### **Note:**

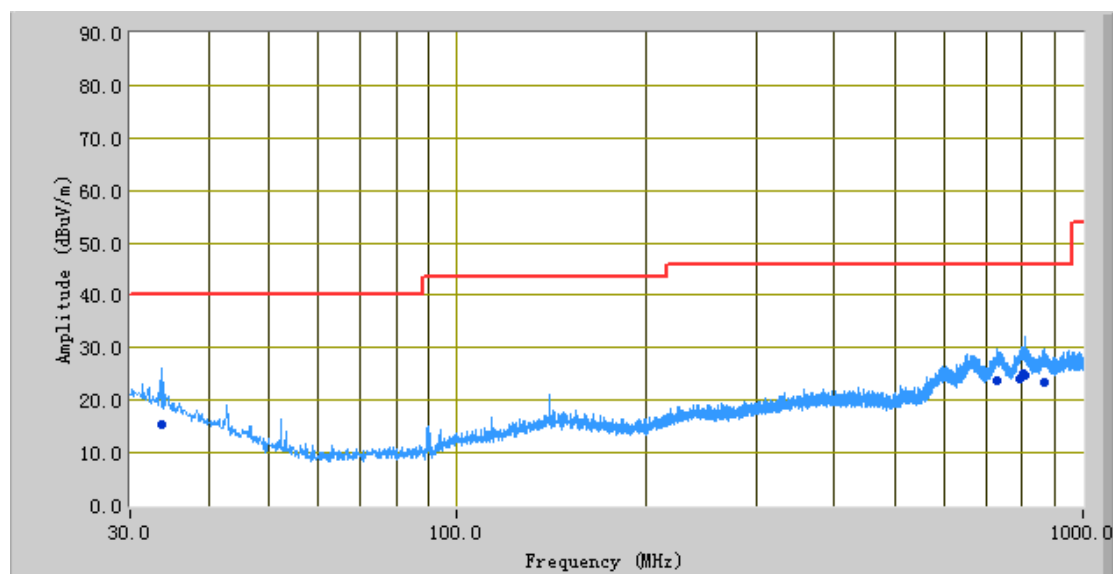
1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. **Radiated Emissions Measurement Uncertainty**  
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 1GHz (QP only @ 3m & 10m) is +6dB/-6dB (for EUTs < 0.5m X 0.5m).
4. Environmental Conditions      Temperature      20°C  
Relative Humidity      50%  
Atmospheric Pressure      1011mbar
5. Test date : June 17, 2014  
Tested By : Ted Ge

**Test Result: Pass**

<b>Test Mode:</b>	<b>Receiving Mode</b>
-------------------	-----------------------

### Below 1GHz

Peak Detector   
 Quasi Peak Limit 

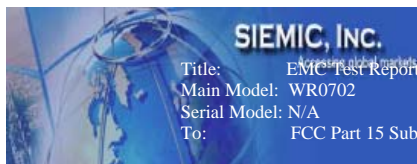


### Test Data

#### Vertical & Horizontal Polarity Plot at 3m

Frequency (MHz)	Quasi Peak (dBμV/m)	Azimuth	Polarity (H/V)	Height (cm)	Factors (dB)	Limit (dBμV/m)	Margin (dB)
33.62	15.55	48.00	H	336.00	-26.04	40.00	-24.45
806.60	24.81	141.00	V	261.00	-17.50	46.00	-21.19
801.19	25.05	336.00	H	164.00	-17.47	46.00	-20.95
865.24	23.44	94.00	V	364.00	-18.11	46.00	-22.56
726.62	23.64	304.00	H	286.00	-19.40	46.00	-22.36
790.92	24.09	104.00	H	181.00	-17.74	46.00	-21.91

Note: The data above 1 GHz which below 20 dB to the limit was not recorded.



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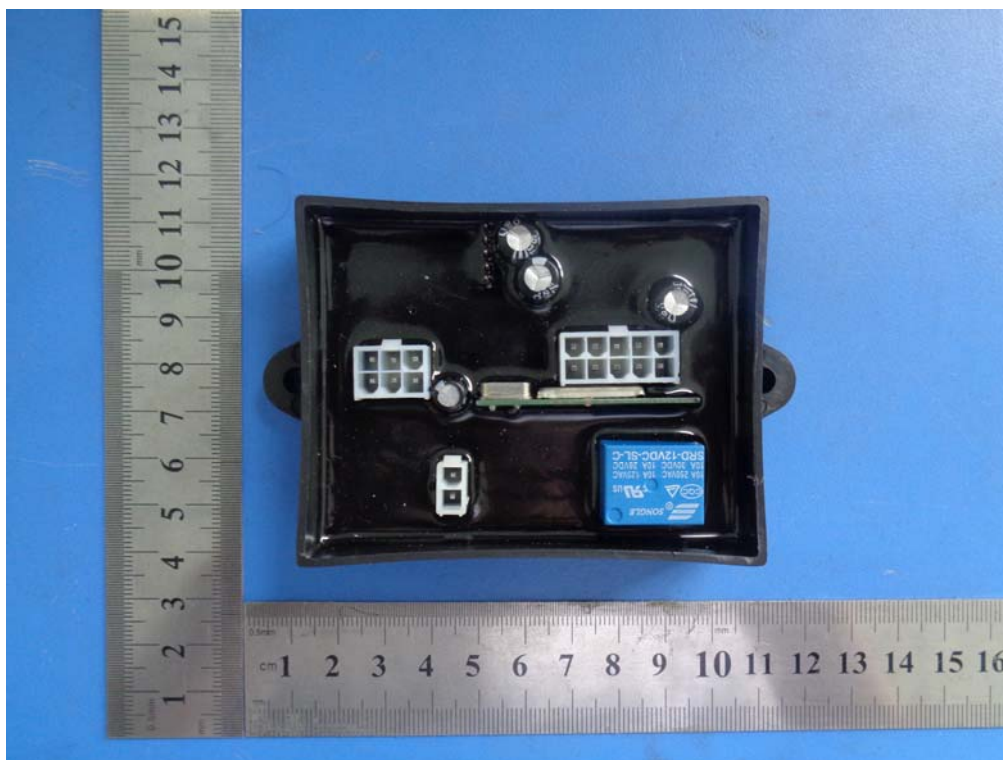
## **Annex A. TEST INSTRUMENTATION**

### **Annex A.i. TEST INSTRUMENTATION**

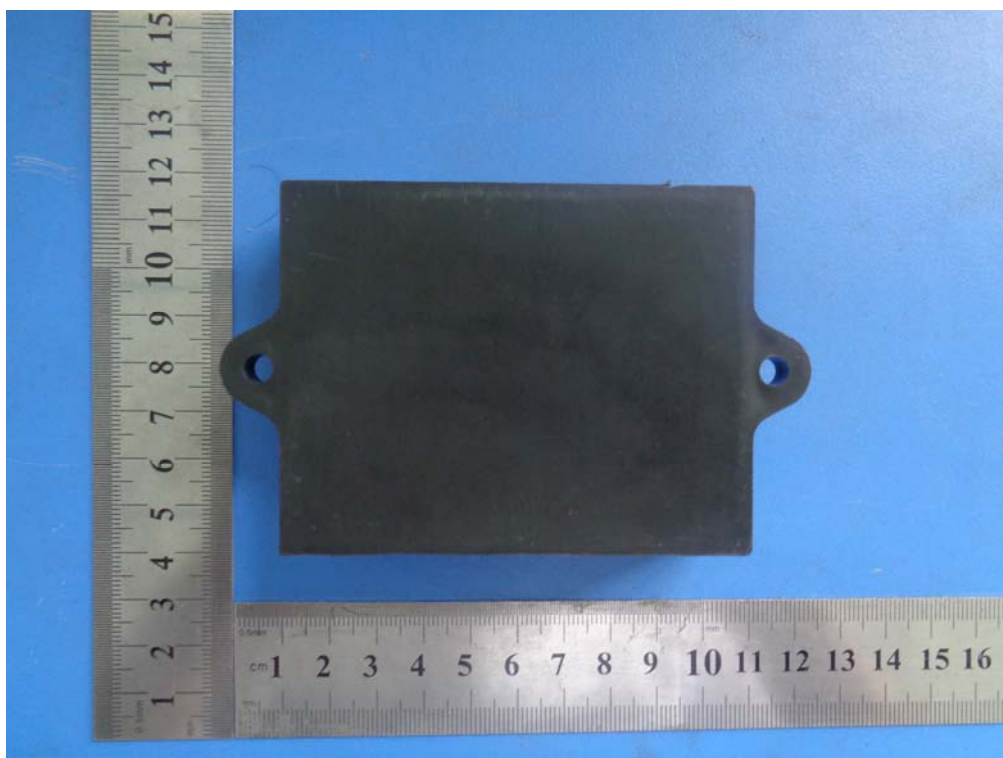
Instrument	Model	Serial #	Calibration Date	Calibration Due Date
<b>AC Line Conducted Emissions</b>				
R&S EMI Test Receiver	ESPI3	101216	09/27/2013	09/26/2014
ROHDE&SCHWARZ V-LISN	ESH3-Z5	838979/005	09/27/2013	09/26/2014
Com-Power Transient Limiter	LIT-153	531021	09/27/2013	09/26/2014
SIEMIC Labview Conducted Emissions software	V1.0	N/A	N/A	N/A
<b>Radiated Emissions</b>				
Hp Spectrum Analyzer	8563E	3821A09023	09/27/2013	09/26/2014
R&S EMI Receiver	ESPI3	101216	09/27/2013	09/26/2014
Antenna (30MHz~6GHz)	JB6	A121411	04/15/2014	04/14/2015
ETS-Lindgren Antenna (1 ~18GHz)	3115	N/A	10/09/2013	10/08/2014
A-INFOMW Antenna (1 ~18GHz)	JXTXLB-10180	J2031081120092	10/09/2013	10/08/2014
Hp Agilent Pre-Amplifier	8447F	1937A01160	10/27/2013	10/26/2014
MITEQ Pre-Amplifier (0.1 ~ 18GHz)	AMF-7D-00101800-30-10P	1451709	10/27/2013	10/26/2014
Chamber	3m	N/A	04/13/2014	04/12/2015
SIEMIC Labview Radiated Emissions software	V1.0	N/A	N/A	N/A

## **Annex B. EUT AND TEST SETUP PHOTOGRAPHS**

### **Annex B.i. Photograph : EUT External Photos**

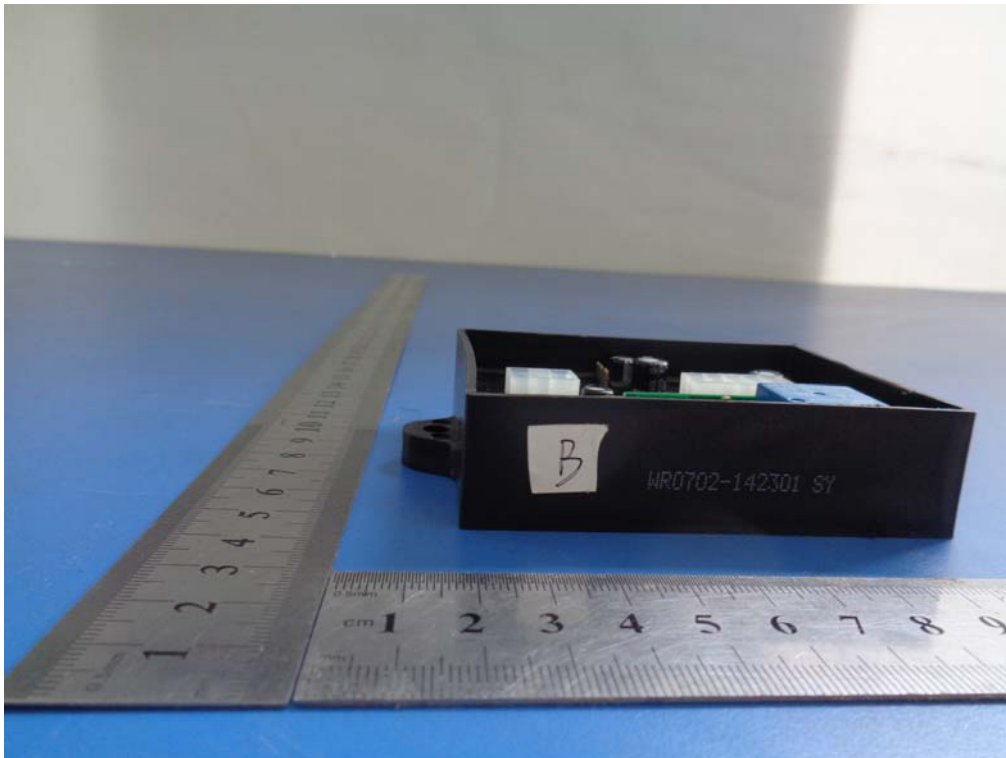


EUT – Front View

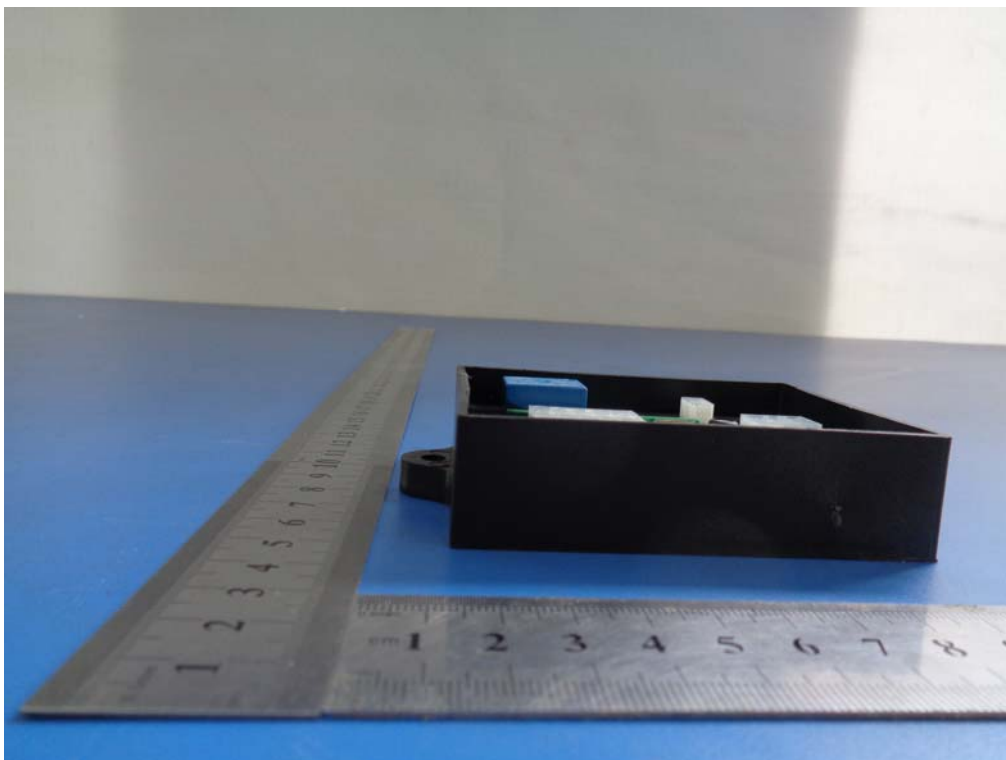


EUT – Rear View





EUT – Top View



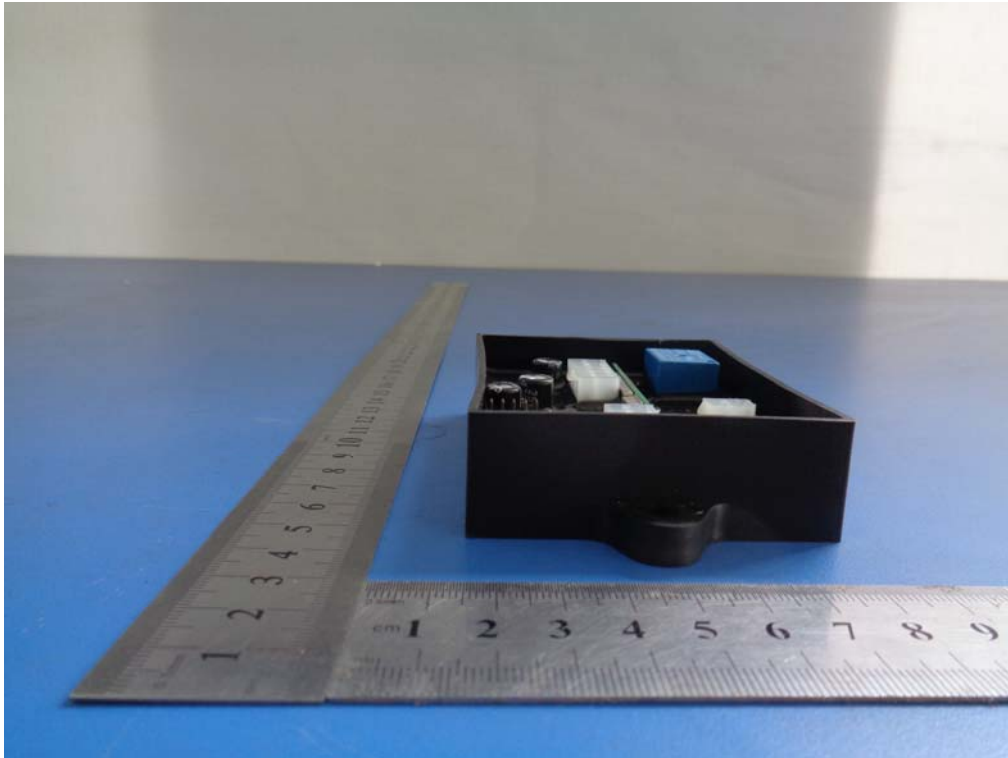
EUT – Bottom View



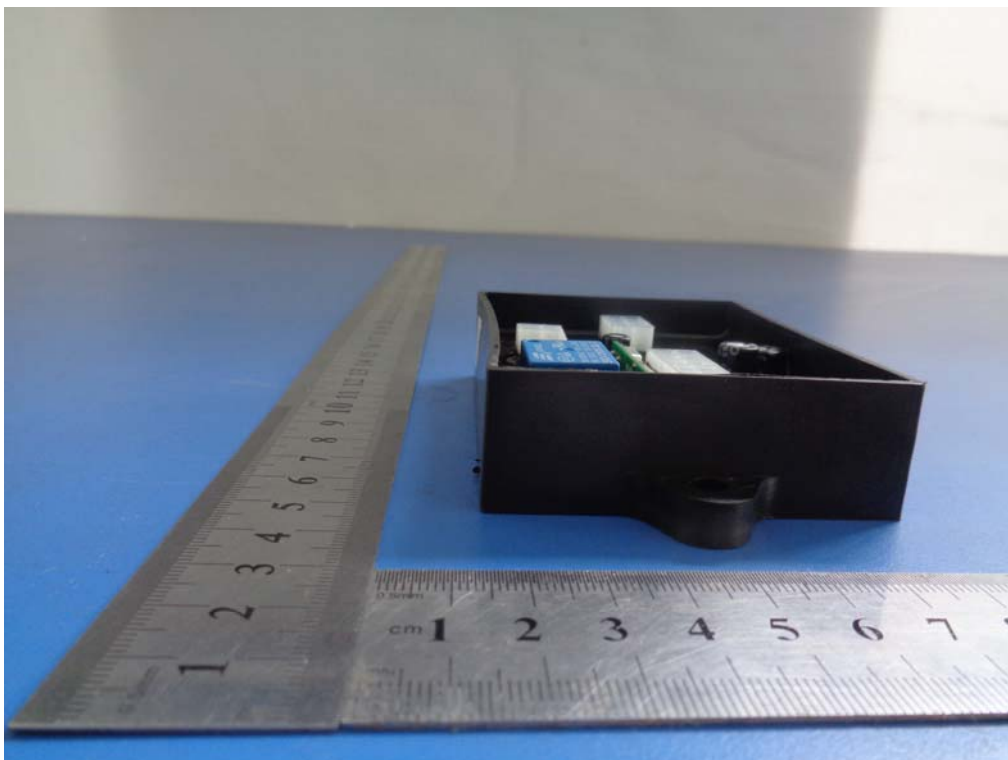


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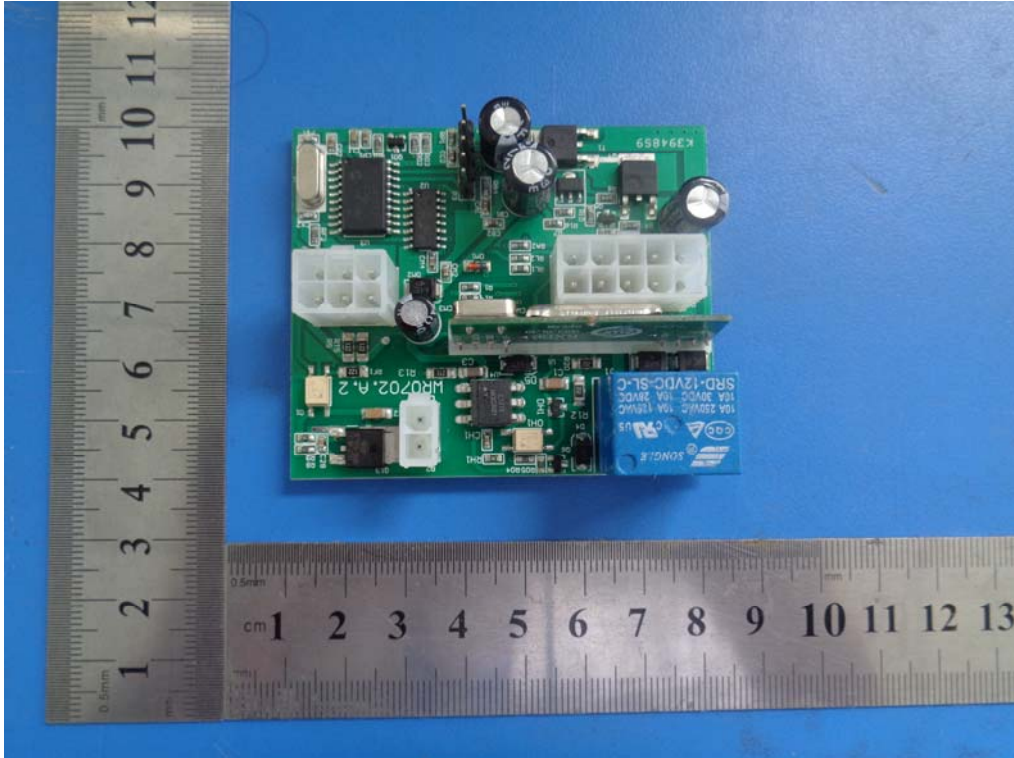


EUT – Left View

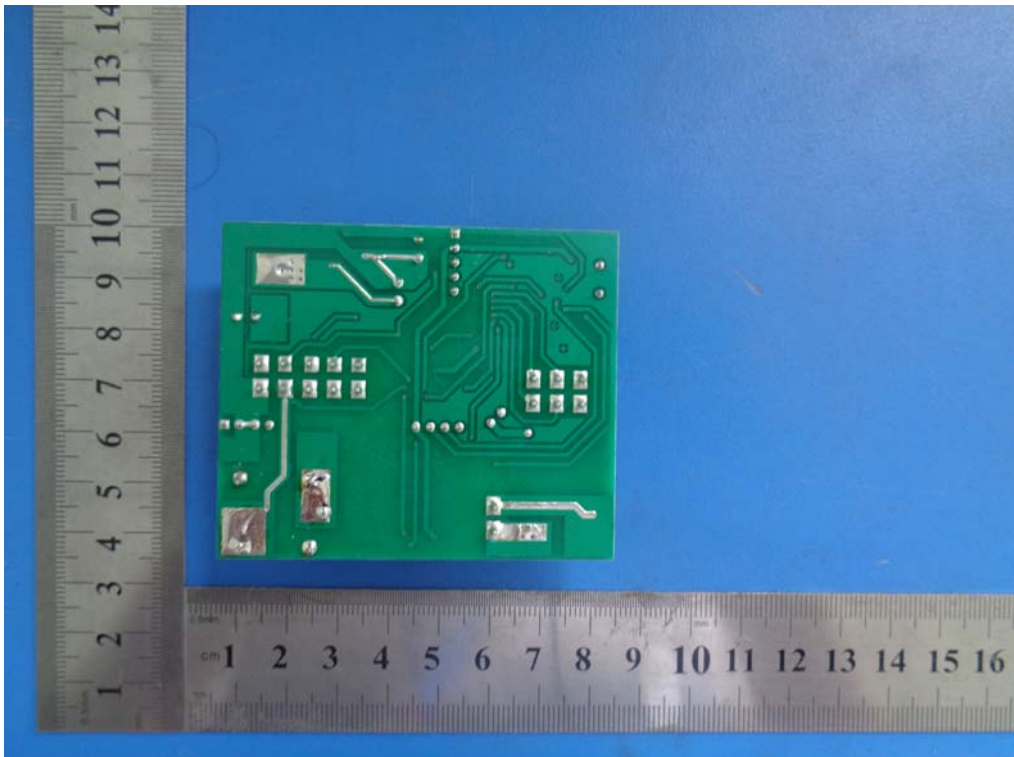


EUT – Right View

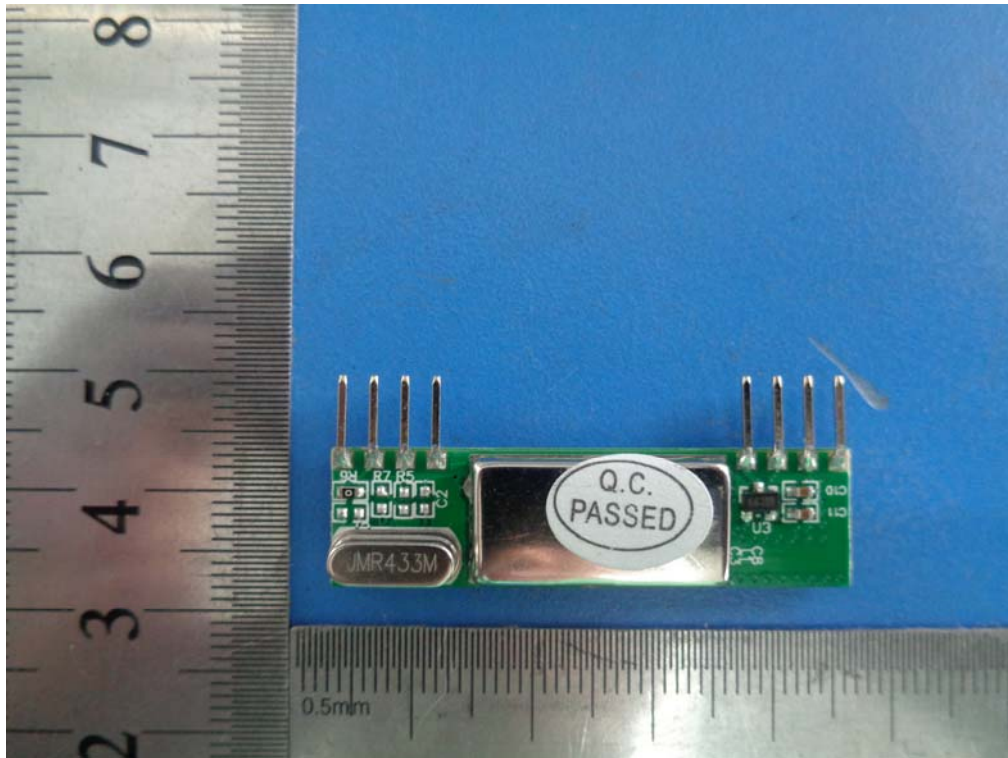
**Annex B.ii. Photograph : Internal Photos**



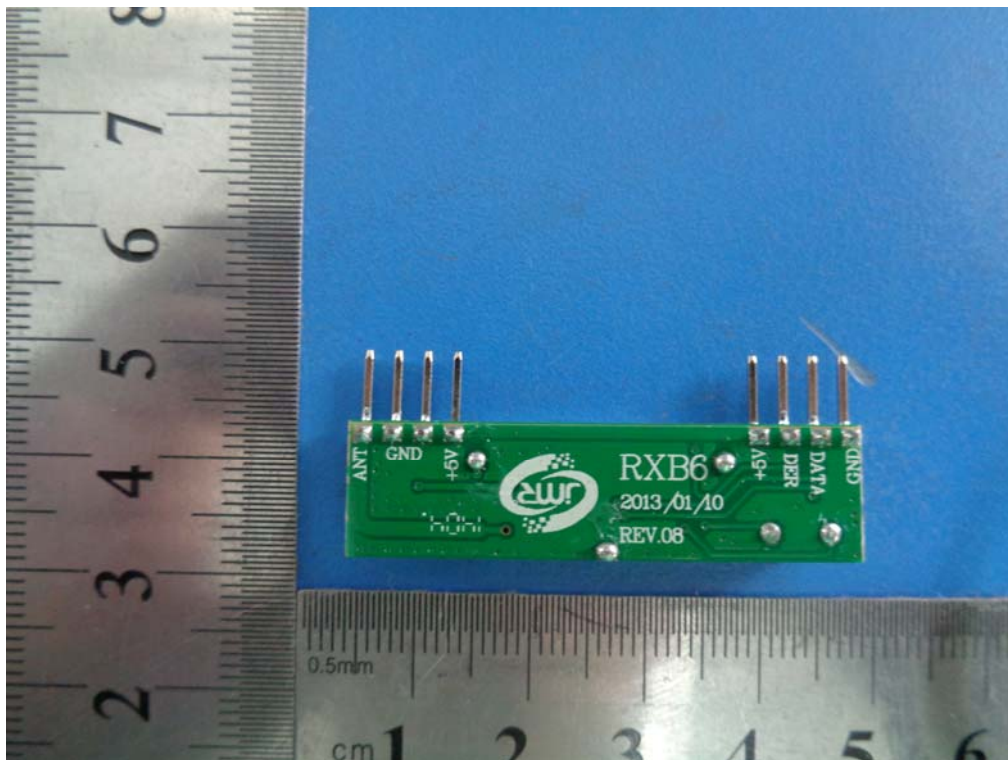
EUT –PCB 1 Front View



EUT –PCB 1 Rear View



EUT –PCB 2 Front View



EUT –PCB 2 Rear View





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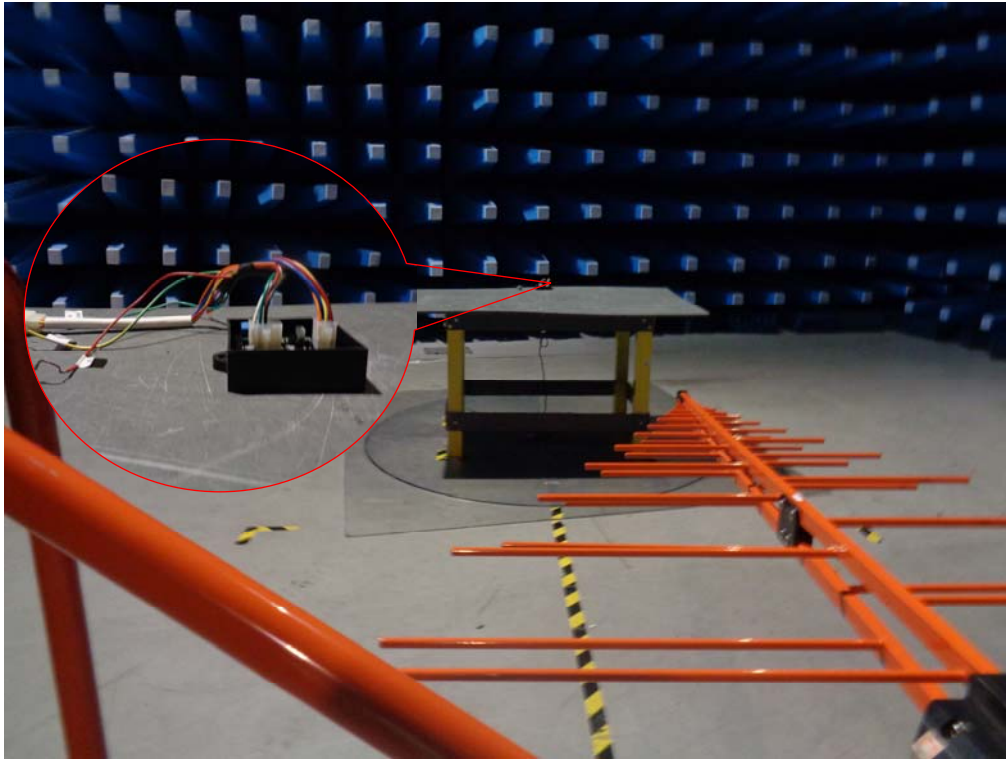
### **Annex B.iii. Photograph 3: Test Setup Photo**



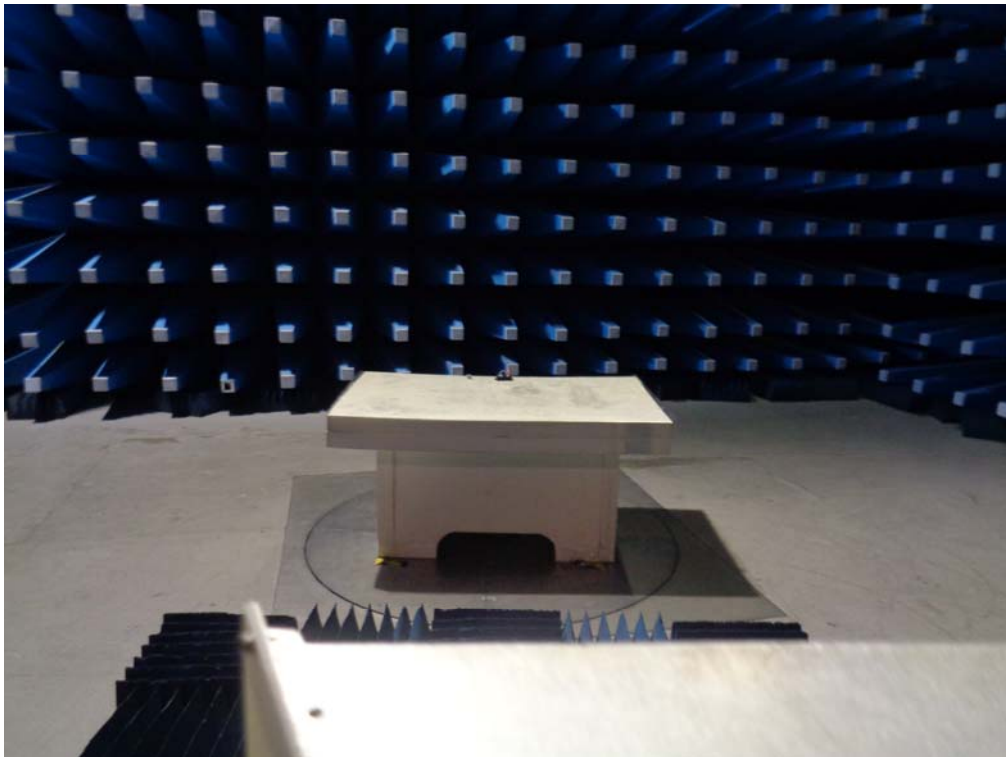
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Emissions Test Setup Below 1GHz - Front View



Radiated Emissions Test Setup Above 1GHz-Front View

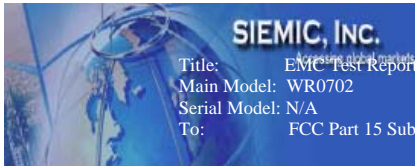
## **Annex C. TEST SETUP AND SUPPORTING EQUIPMENT**

### **EUT TEST CONDITIONS**

#### **Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION**

The following is a description of supporting equipment and details of cables used with the EUT.

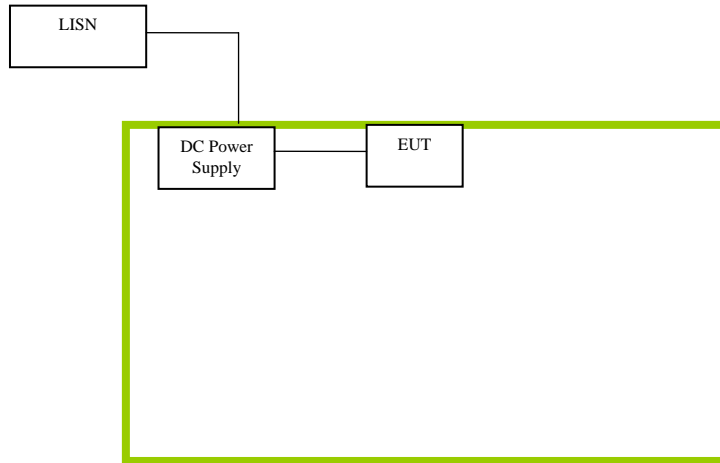
Manufacturer	Equipment Description (Including Brand Name)	Model	Calibration Date	Calibration Due Date
BK PRECISION	DC Power Supply	1786B	N/A	N/A



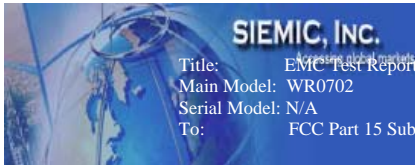
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## Block Configuration Diagram for Conducted Emissions



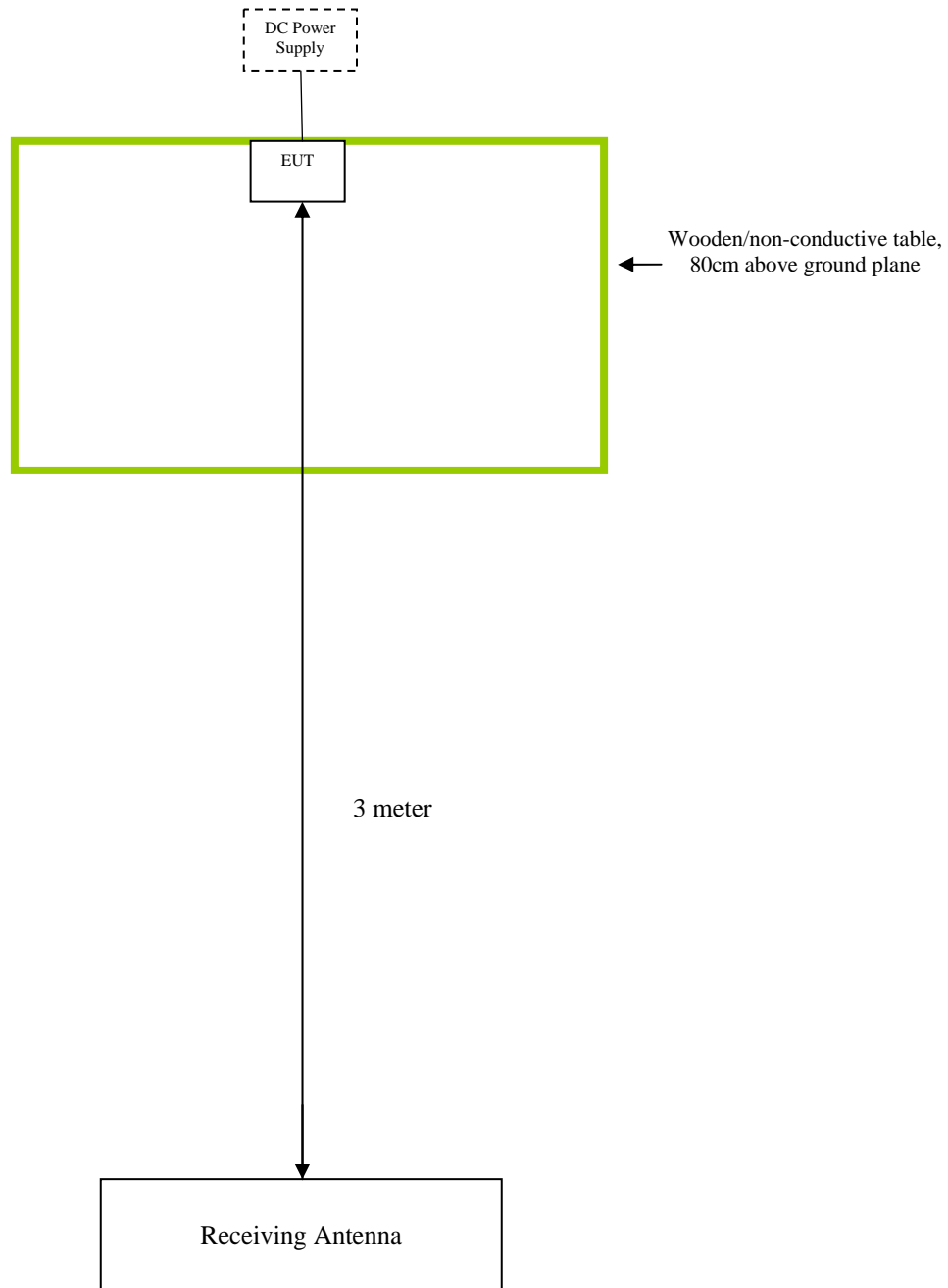
Wooden/non-conductive table,  
80cm above ground plane



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## Block Configuration Diagram for Radiated Emissions





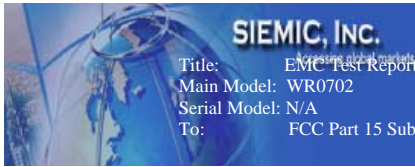
**Annex C.ii. EUT OPERATING CONDITIONS**

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions	Receiving Mode

## **Annex D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PART LIST**

**Please see attachment**



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## **Annex E. DECLARATION OF SIMILARITY**

N/A