

# ***FCC TEST REPORT***

**FCC ID** : WC2DS-955R  
**Applicant** : Wonders Technology Co., Ltd.  
**Address** : DOSS Industrial Zone, Qiping Kengdu Industrial Area Guihua Village,  
Guanlan Town Baoan District, ShenZhen, China

**Equipment Under Test (EUT) :**

Product Name : Wireless Speaker  
Model No. : DS-955 , 4015112

**Standards** : FCC PART15 SUBPART B

**Date of Test** : August 05, 2009

**Test Engineer** : Zero.Zhou

**Reviewed By** : 

<b>Test Result :</b>	<b>PASS *</b>
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PERPARED BY:

**Waltek Services (Shenzhen) Co., Ltd.**

1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District, Shenzhen 518105, China.

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\*The sample detailed above has been tested to the requirements of Council Directives ANSI C63.4:2003.  
The test results have been reviewed against the Directives above and found to meet their essential requirements

## 2 Test Summary

<b>Test</b>	<b>Test Requirement</b>	<b>Test Method</b>	<b>Class / Severity</b>	<b>Result</b>
Radiated Emission (30MHz to 5GHz)	FCC PART15:2007	ANSI C63.4: 2003	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART15:2007	ANSI C63.4: 2003	Class B	N/A

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## **4 General Information**

### **4.1 Client Information**

Applicant: Wonders Technology Co., Ltd.  
Address of Applicant: DOSS Industrial Zone, Qiping Kengdu Industrial Area Guihua Village, Guanlan Town Baoan District, ShenZhen, China

Manufacturer: Wonders Technology Co., Ltd.  
Address of Manufacturer: DOSS Industrial Zone, Qiping Kengdu Industrial Area Guihua Village, Guanlan Town Baoan District, ShenZhen, China

### **4.2 General Description of E.U.T.**

Product Name: Wireless Speaker  
Model No.: DS-955 , 4015112  
Medel difference: The components of PCB and circuit of EUT are identical except the color and appearance of EUT. DS-955 is the test sample.

### **4.3 Details of E.U.T.**

Power Supply: 7.4V ,800mAh

### **4.4 Description of Support Units**

The customer requested IC tests for an Wireless Speaker as a receiver.

The standard used was FCC PART15 SUBPART B Rules.

### **4.5 Test Facility**

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

- **IC – Registration No.: 7760A**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration No.:7760A.

- **FCC – Registration No.: 880581**

Waltek Services(Shenzhen) Co., Ltd. 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.:880581, June 24, 2008. compliance.

#### **4.6 Test Location**

All Emission tests were performed at:-

Waltek Services(Shenzhen) Co., Ltd. at 1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District, Shenzhen 518105, China.

## 5 Equipment Used during Test

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
EMC Analyzer	Agilent/ E7405A	MY451149 43	W2008001	9k-26.5GHz	Aug-08	Aug-09	Wws20 081596	±1dB
Trilog Broadband Antenne 30-3000 MHz	SCHWARZBE CK MESS- ELEKTROM/ VULB9163	336	W2008002	30-3000 MHz	Aug-08	Aug-09		±1dB
Broad-band Horn Antenna 1-18 GHz	SCHWARZBE CK MESS- ELEKTROM/ VULB9163	667	W2008003	1-18GHz	Aug-08	Aug-09		f < 10 GHz : ±1dB 10GHz < f < 18 GHz : ±1.5dB
Broadband Preamplifier 0.5-18 GHz	SCHWARZBE CK MESS- ELEKTROM/ BBV 9718	9718-148	W2008004	0.5-18GHz	Aug-08	Aug-09		±1.2dB
10m Coaxial Cable with N-male Connectors usable up to 18GHz,	SCHWARZBE CK MESS- ELEKTROM/ AK 9515 H	-	-	-	Aug-08	Aug-09		-
10m 50 Ohm Coaxial Cable with N-plug, individual length, usable up to 3(5)GHz, Connector	SCHWARZBE CK MESS- ELEKTROM/ AK 9513				Aug-08	Aug-09		
Positioning Controller	C&C LAB/ CC-C-IF				N/A	N/A		
Color Monitor	SUNSPO/ SP-14C				N/A	N/A		
Test Receiver	ROHDE&SCH WARZ/ ESPI	101155	W2005001	9k-3GHz	Aug-08	Aug-09	Wws20 080942	±1dB
EMI Receiver	Beijingkehuan	KH3931		9k-1GHz	Aug-08	Aug-09		
Two-Line V-Network	ROHDE&SCH WARZ/ ENV216	100115	W2005002	50Ω/50μH	Aug-08	Aug-09	Wws20 080941	±10%
V – LISN	SCHWARZBE CK MESS – ELEKTRONIK	NSLK 8128	8128-259	9k-30MHz	Aug-08	Aug-09		
Absorbing Clamp	ROHDE&SCH WARZ/ MDS-21	100205	W2005003	impandance5 0Ω loss : 17 dB	Aug-08	Aug-09	Wws20 080943	±1dB

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
10m 50 Ohm Coaxial Cable with N-plug, individual length, usable up to 3(5)GHz, Connectors	SCHWARZBECK MESS-ELEKTROM/ AK 9514				Aug-08	Aug-09		

**5.1 Conduction Emissions, 0.15MHz to 30MHz**

Test Requirement:	FCC PART15 B
Test Method:	ANSI C63.4: 2003
Test Result:	N/A
Frequency Range:	150kHz to 30MHz
Class:	Class B
Limit:	66-56 dB $\mu$ V/m between 0.15MHz & 0.5MHz 56 dB $\mu$ V/m between 0.5MHz & 5MHz 60 dB $\mu$ V/m between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

Remark:Due to the EUT works with battery,the test was not performed in this test report.



## 5.2 Radiated Emissions, 30MHz to 5GHz

Test Requirement:	FCC PART15 B
Test Method:	ANSI C63.4: 2003
Test Date:	PASS
Frequency Range:	30MHz to 5GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB $\mu$ V/m between 30MHz & 88MHz 43.5 dB $\mu$ V/m between 88MHz & 216MHz 46.0 dB $\mu$ V/m between 216MHz & 960MHz 54.0 dB $\mu$ V/m zbove 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

### 5.2.1 E.U.T Operation

Operating Environment:	
Temperature:	25.5 °C
Humidity:	51 % RH
Atmospheric Pressure:	1012 mbar

#### EUT Operation :

The EUT was placed on the test table in receiving mode,Channel 1,Channel 2 and Channel 3 were tested and the worst case was channel 1,so the data were shown as follow.

### 5.2.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4: 2003, The specification used in this report was the FCC PART15 B limits.

### 5.2.3 Spectrum Analyzer Setup

According to FCC PART15 B Rules, the system was tested to 5GHz.

Below 1GHz

Start Frequency .....	30 MHz
Stop Frequency .....	1000 MHz
Sweep Speed	Auto
IF Bandwidth.....	120KHz
Video Bandwidth .....	100KHz
Quasi-Peak Adapter Bandwidth .....	120 KHz
Quasi-Peak Adapter Mode.....	Normal
Resolution Bandwidth .....	100KHz

Above 1GHz

Start Frequency .....	1GHz
Stop Frequency .....	5GHz
Sweep Speed	Auto
IF Bandwidth.....	120KHz
Video Bandwidth .....	1000KHz
Quasi-Peak Adapter Bandwidth .....	120 KHz
Quasi-Peak Adapter Mode.....	Normal
Resolution Bandwidth .....	1000KHz

### 5.2.4 Test procedure

For the radiated emissions test. ANSI STANDARD C63.4-2003 12.1.1.2 OTHER TYPES OF RECEIVERS: A typical signal or an unmodulated CW signal at the operating frequency of the EUT shall be supplied to the EUT for all measurements. Such a signal may be supplied by either a signal generator and an antenna in close proximity to the EUT or directly conducted into the antenna terminals of the EUT. The signal level shall be sufficient to the local oscillator of the EUT.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB $\mu$ V of specification limits), and are

distinguished with a "Qp" in the data table.

The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

### 5.2.5 Measurement Uncertainty

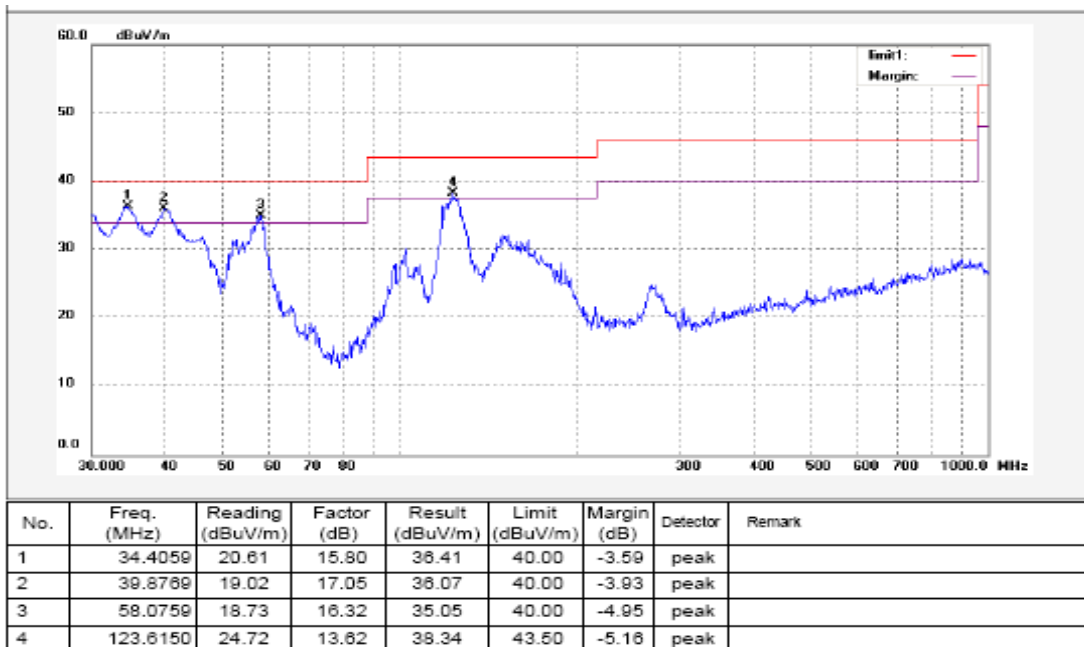
All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Waltek EMC Lab is  $\pm 5.03\text{dB}$ .

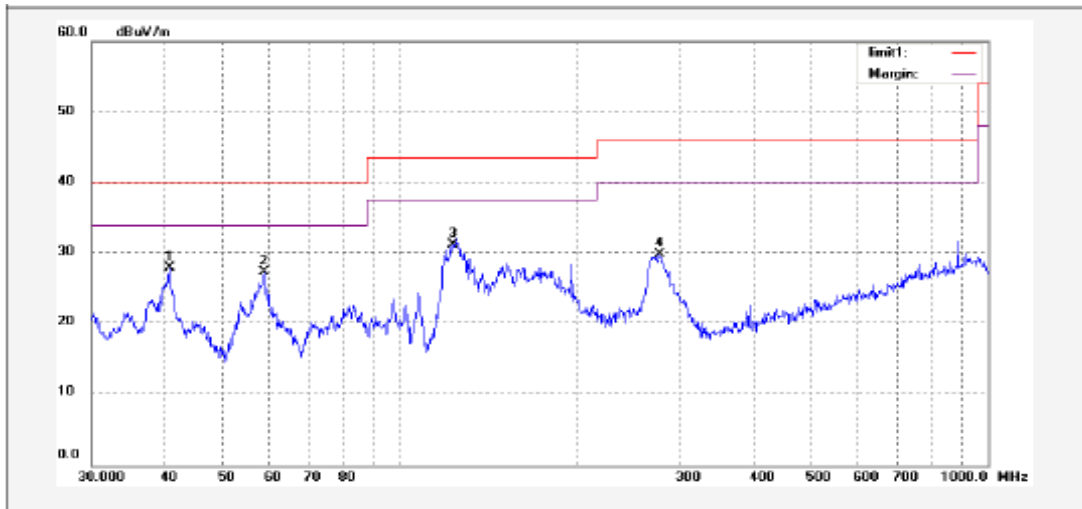
### 5.2.6 Radiated Emissions Test Data

#### Below 1GHz

#### Antenna Polarization: Vertical



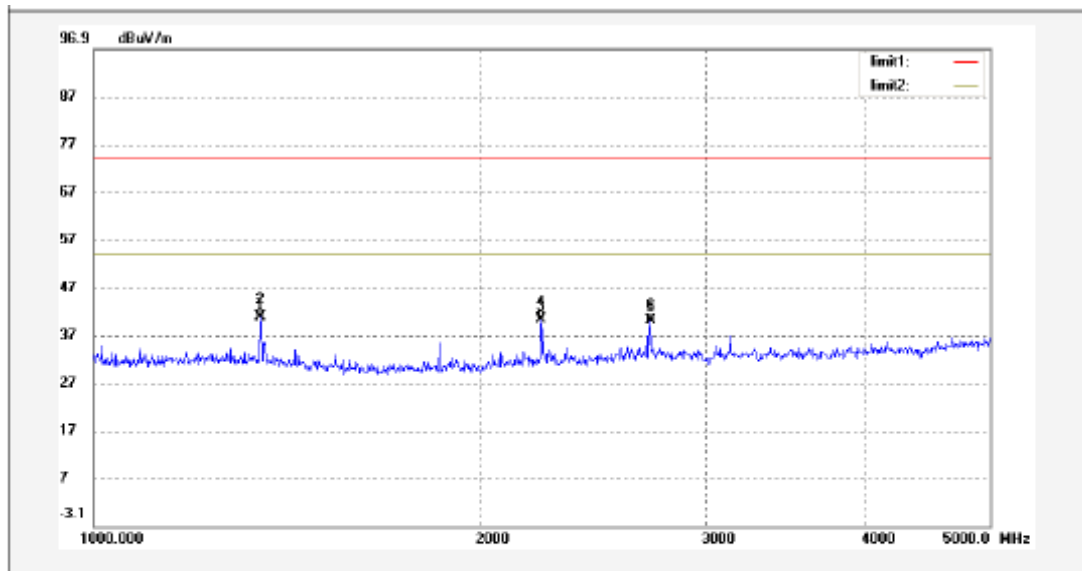
**Antenna Polarization:Horizontal**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	40.7265	13.41	14.62	28.03	40.00	-11.97	peak	
2	58.8979	12.99	14.40	27.39	40.00	-12.61	peak	
3	123.6150	19.78	11.53	31.31	43.50	-12.19	peak	
4	276.3818	14.73	15.24	29.97	46.00	-16.03	peak	

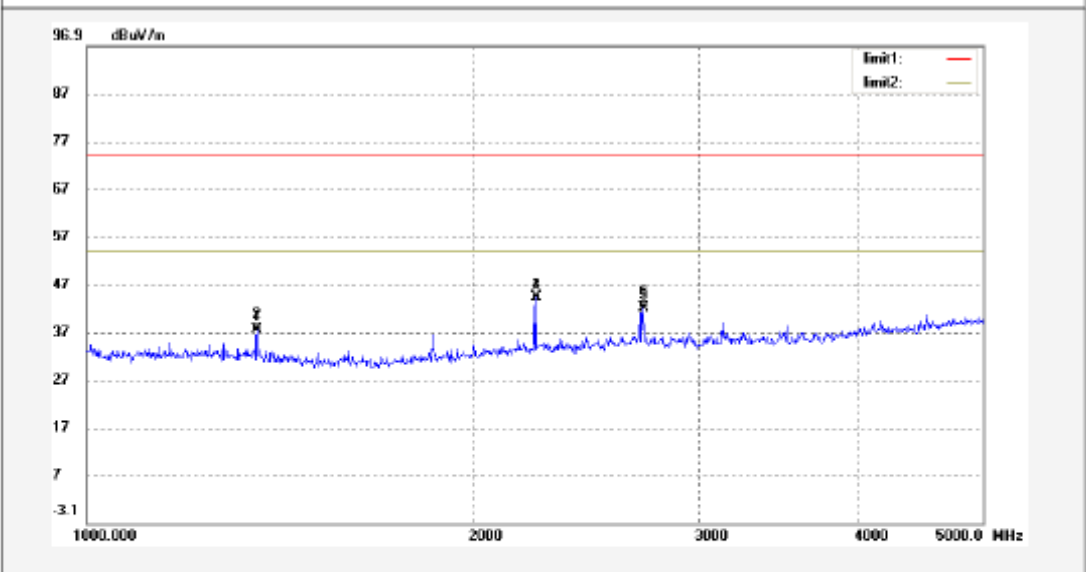
**Above 1GHz**

**Antenna Polarization:Vertical**



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1349.393	48.60	-7.89	40.71	74.00	-33.29	peak	
2	1349.393	48.60	-7.89	40.71	54.00	-13.29	AVG	
3	2230.671	47.97	-7.60	40.37	74.00	-33.63	peak	
4	2230.671	47.80	-7.60	40.20	54.00	-13.80	AVG	
5	2715.159	47.33	-7.24	40.09	74.00	-33.91	peak	
6	2715.159	48.80	-7.24	39.56	54.00	-14.44	AVG	

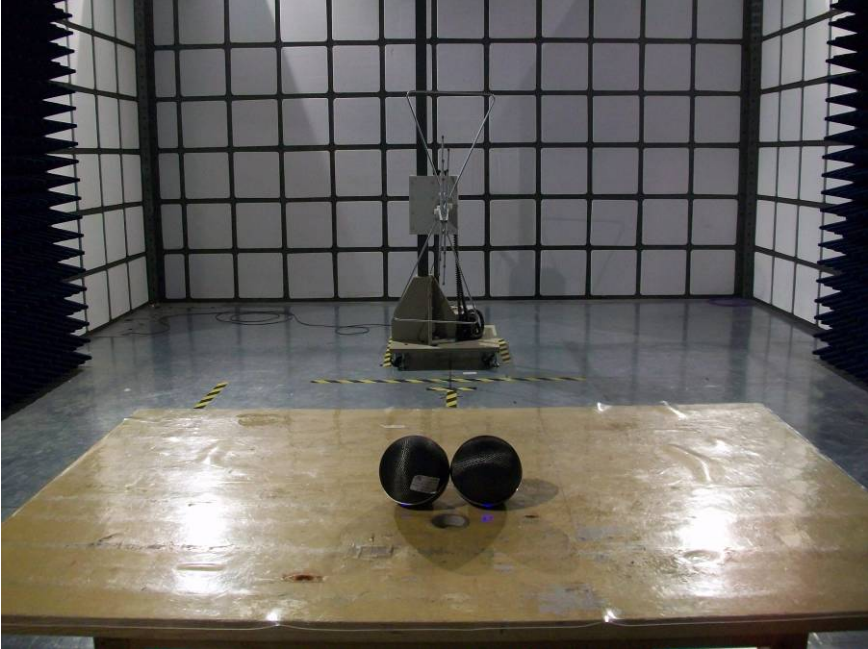
**Antenna Polarization:Horizontal**



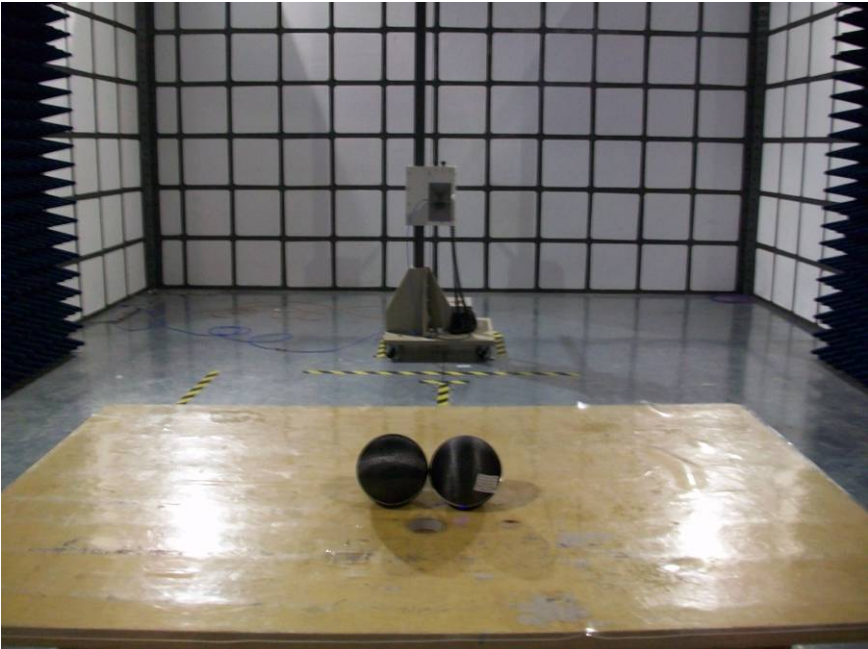
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1358.117	45.27	-7.81	37.46	74.00	-36.54	peak	
2	1358.117	44.80	-7.81	36.99	54.00	-17.01	AVG	
3	2241.478	50.10	-5.87	44.23	74.00	-29.77	peak	
4	2241.478	49.20	-5.87	43.33	54.00	-10.67	AVG	
5	2715.159	47.41	-5.32	42.09	74.00	-31.91	peak	
6	2715.159	47.00	-5.32	41.68	54.00	-12.32	AVG	

**5.2.7 Photograph- Radiated Emission Test Setup**

**Below 1GHz**

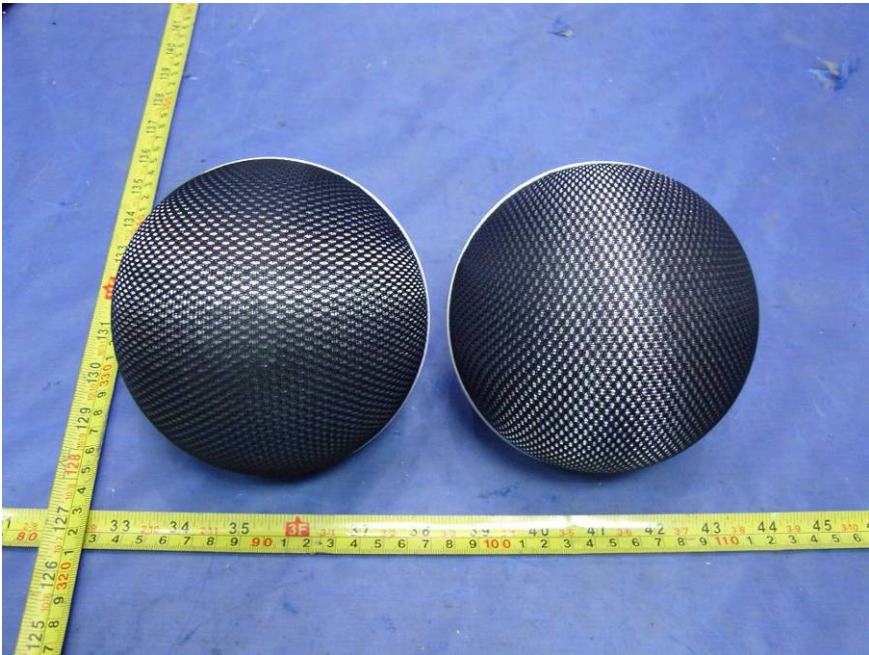


**Above 1GHz**



## 6 Photographs - Constructional Details

### 6.1 EUT –Component View



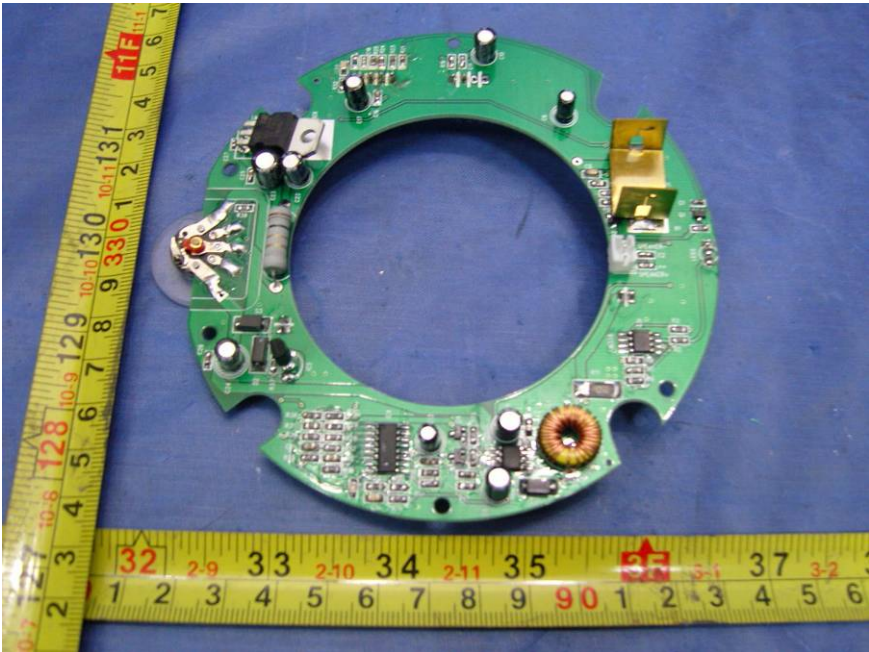
### 6.2 EUT - Back View



### 6.3 EUT – Open View

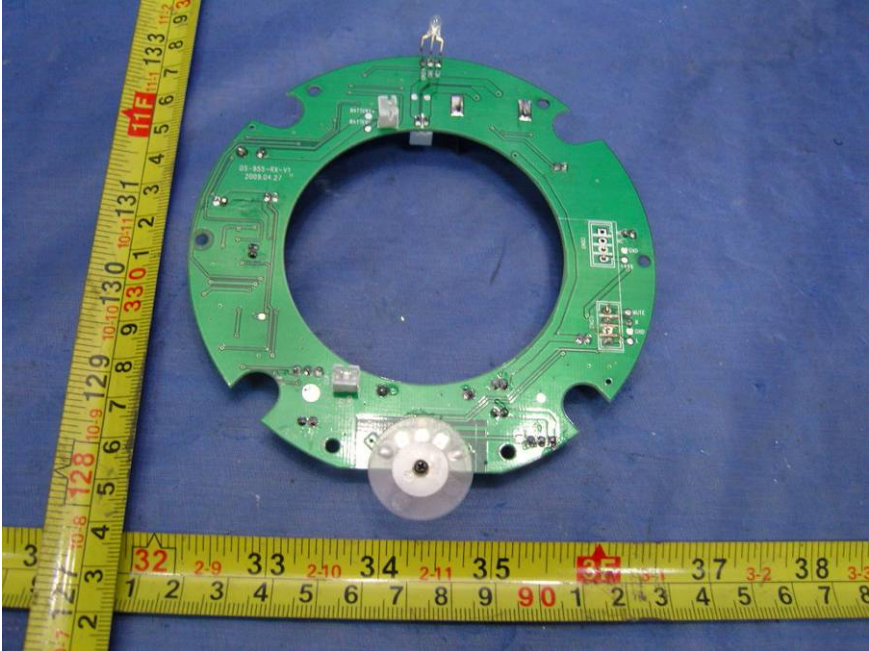


**6.4 EUT – PCB1-Front View**

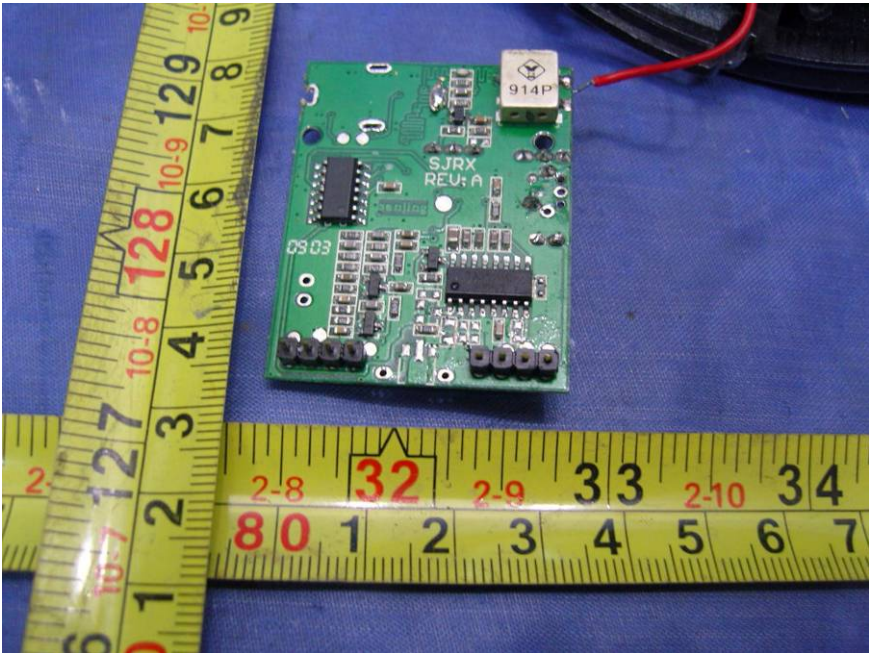




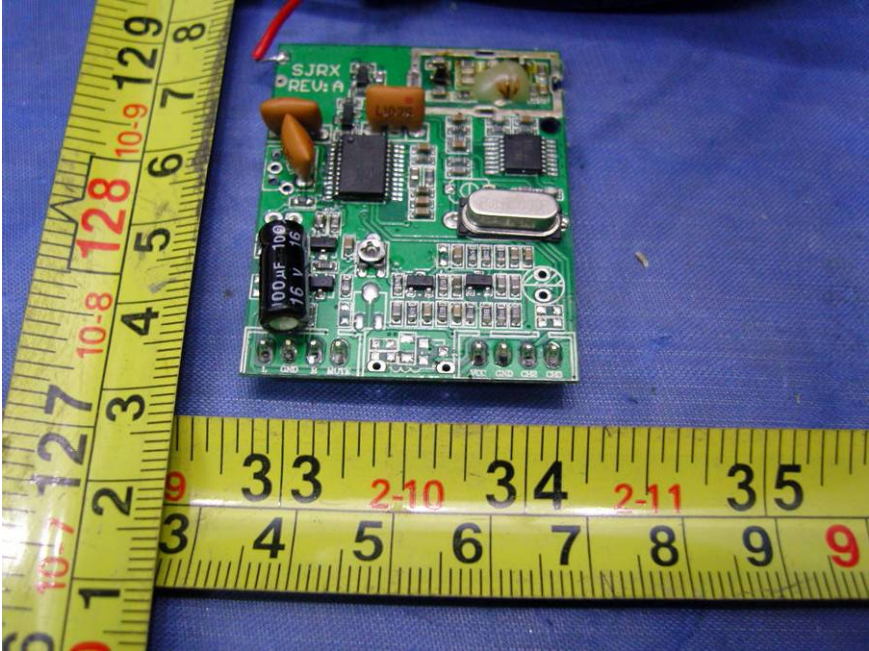
6.5 EUT – PCB1-Back View



6.6 EUT – PCB2-Front View



6.7 EUT – PCB2-Back View



**7 FCC ID Label**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT  
EUT Bottom View/proposed FCC Mark Location

