FCC TEST REPORT

FCC ID : SJ8CA610

Applicant : **RDI Technology (Shenzhen) Co., Ltd.**
Building C1 Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, P.R.C.

Equipment Under Test (EUT) :

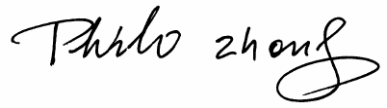
Product description : Wireless Digital Camera

Model No. : CA610

Standards : FCC 15 Paragraph 15.249

Date of Test : June 6, 2008

Test Engineer **: Nunu Deng**

Reviewed By **:** 

PERPARED BY:
Waltek Services (Shenzhen) Co., Ltd.

8C,West Tower, Aidi Building, No.5003 Binhe Rd, Futian District, Shenzhen518045, Guangdong, China.

Tel: 86-755-83551033

Fax: 86-755-83552400

2 Contents

3 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 25GHz)	FCC PART 15: 2003	ANSI C63.4: 2003	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15: 2003	ANSI C63.4: 2003	Class B	PASS

4 General Information

4.1 Client Information

Applicant:	**RDI Technology (Shenzhen) Co., Ltd.**
Address of Applicant:	Building C1 Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, P.R.C.
Manufacturer:	**RDI Technology (Shenzhen) Co., Ltd.**
Address:	Building C1 Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, P.R.C.

4.2 General Description of E.U.T.

Product description:	Wireless Digital Camera
Model No.:	CA610

4.3 Details of E.U.T.

Power Supply:	Adapter input: 120V AC 60Hz Adapter output: 9V DC

4.4 Description of Support Units

The EUT has been tested as an independent unit.

4.5 Standards Applicable for Testing

The customer requested FCC tests for a Wireless Digital Camera. The standards used were FCC 15 Paragraph 15.249, Paragraph 15.207, Paragraph 15.209, Paragraph 15.31, Paragraph 15.33, Paragraph 15.35.

4.6 Test Facility

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

- **FCC – Registration No.: 994117**

SEM. Test Compliance Service 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 994117, May 11, 2008.

4.7 Test Location

All Emissions tests were performed at:-

SEM. Test Complicance Service Co., Ltd. at 3/F., Jinbao Commerce Bldg., Xin'an Fanshen Rd., Bao'an District, Shenzhen, 518101, China

5 Equipment Used during Test

Items	Equipments	Manufacture	Model	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	ROHDE&SCHWARZ	ESPI	101206	2008/1/25	1 year
2	Spectrum Analyzer	Agilent	E4402B	US41192821	2008/1/25	1 year
3	L.I.S.N.	SCHWARZBECK	NSLK8126	8126-224	2008/1/25	1 year
4	L.I.S.N.	EMCO	3825/2	11967C	2008/1/25	1 year
5	RF LIMITER	Agilent	11867A	MY42241685	2008/1/25	1 year
6	Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008/1/25	1 year
7	Test Receiver	ROHDE&SCHWARZ	ESVB	825471/005	2008/1/25	1 year
8	Amplifier	Agilent	8447F	3113A06717	2008/1/25	1 year
9	RF Switch	EM	EMSW18	SW060023	2008/1/25	1 year
10	Positioning Controller	C&C	CC-C-1F	N/A	2008/1/25	1 year
11	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008/1/25	1 year
12	Horn Antenna	SCHWARZBECK	BBHA9120D	665	2008/1/25	1 year
13	Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008/1/25	1 year

6 Conducted Emission Test

Product Name:	Wireless Digital Camera
Test Requirement:	FCC Part15 Paragraph 15.207
Test Method:	Based on FCC Part15 Paragraph 15.207
Test Date:	June 6, 2008
Frequency Range:	150 kHz to 30MHz
Class:	Class B
Detector:	Peak for pre-scan (9 kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

6.1 Test Equipment

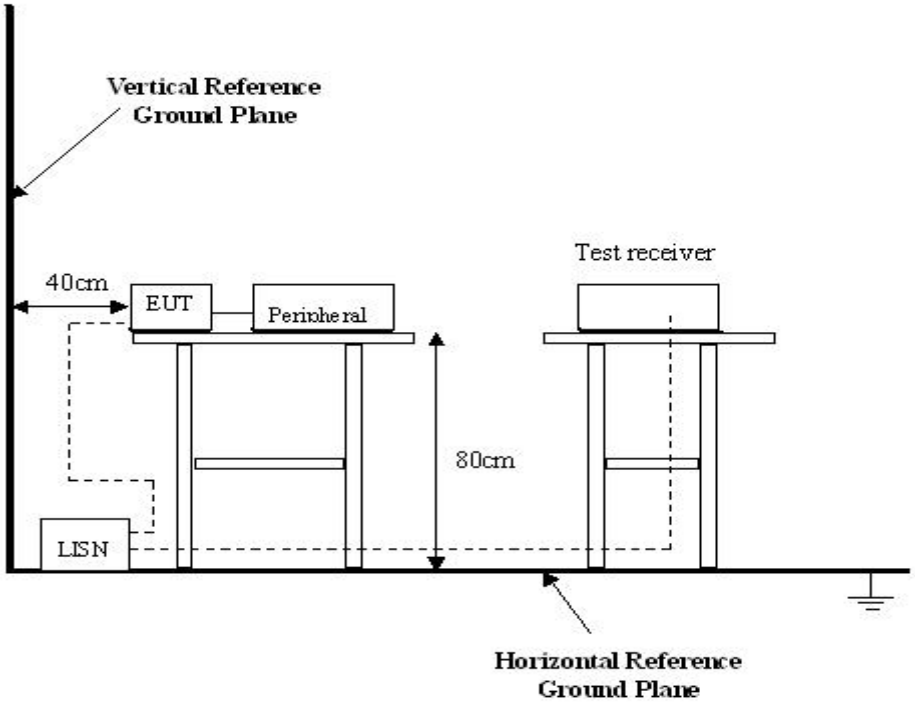
Please refer to Section 5 this report.

6.2 Test Procedure

1. The EUT was tested according to ANSI C63.4: 2003. The frequency spectrum from 150kHz to 30MHz was investigated.
2. The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.3 Conducted Test Setup

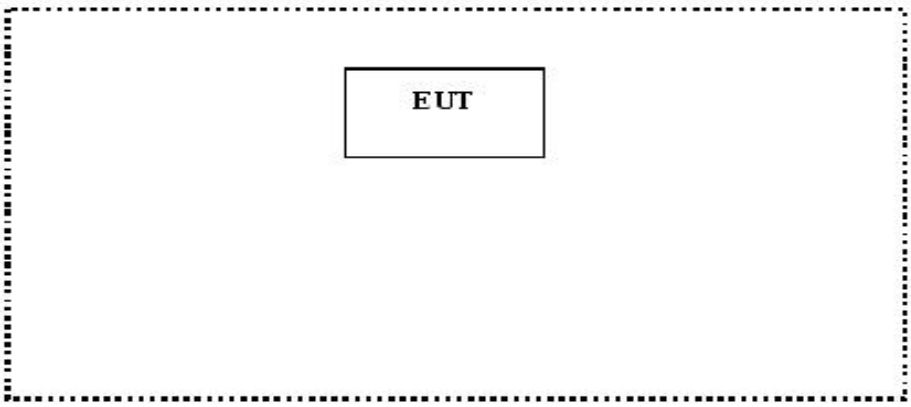
The conducted emission tests were performed using the setup accordance with the ANSI C63.4:2003, The specification used in this report was the FCC Part15 Paragraph 15.207 limits.



6.4 EUT Operating Condition

Operating condition is according to ANSI C63.4: 2003.

A. Setup the EUT and simulators as shown on follow.
B. Enable RF signal and confirm EUT active.
C. Modulate output capacity of EUT up to specification.



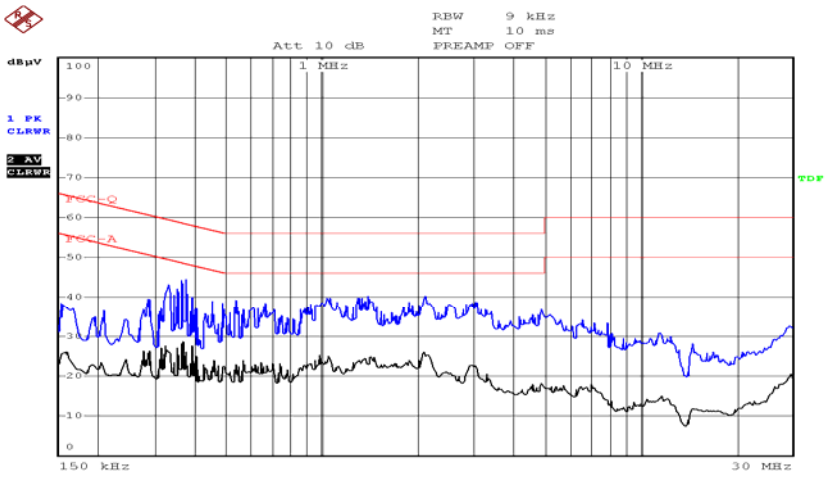
6.5 Conducted Emission Limits

66-56 dBμV/m between 0.15MHz & 0.5MHz
56 dBμV/m between 0.5MHz & 5MHz
60 dBμV/m between 5MHz & 30MHz

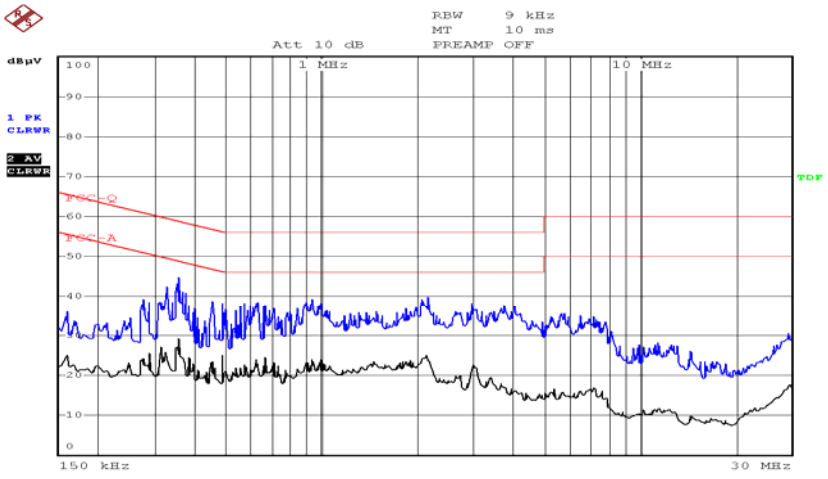
Note: In the above limits, the tighter limit applies at the band edges.

6.6 Conducted Emission Test Result

Live Line



Neutral Line



6.7 Conducted Emission Test Data

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
0.19	Live	30.00	64.04	34,04	21.80	56.44	35.36
0.35	Live	35.50	59.00	23.50	20.10	49.85	29.75
0.65	Neutral	37.18	54.00	16.82	21.63	44.00	22.37
1.89	Neutral	31.10	54.00	22.90	18.10	44.00	25.90

7 Radiation Emission Test

Product Name:	Wireless Digital Camera
Test Requirement:	FCC Part15 Paragraph 15.249
Test Method:	Based on FCC Part15 Paragraph 15.31 and Paragraph 15.33
Test Date:	June 6, 2008
Frequency Range:	30MHz to 25GHz
Measurement Distance:	3m
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

7.1 Test Equipment

Please refer to Section 5 this report.

7.2 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 centre variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on ANSI C63.4: 2003, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at SEM EMC Lab is +4.0 dB.

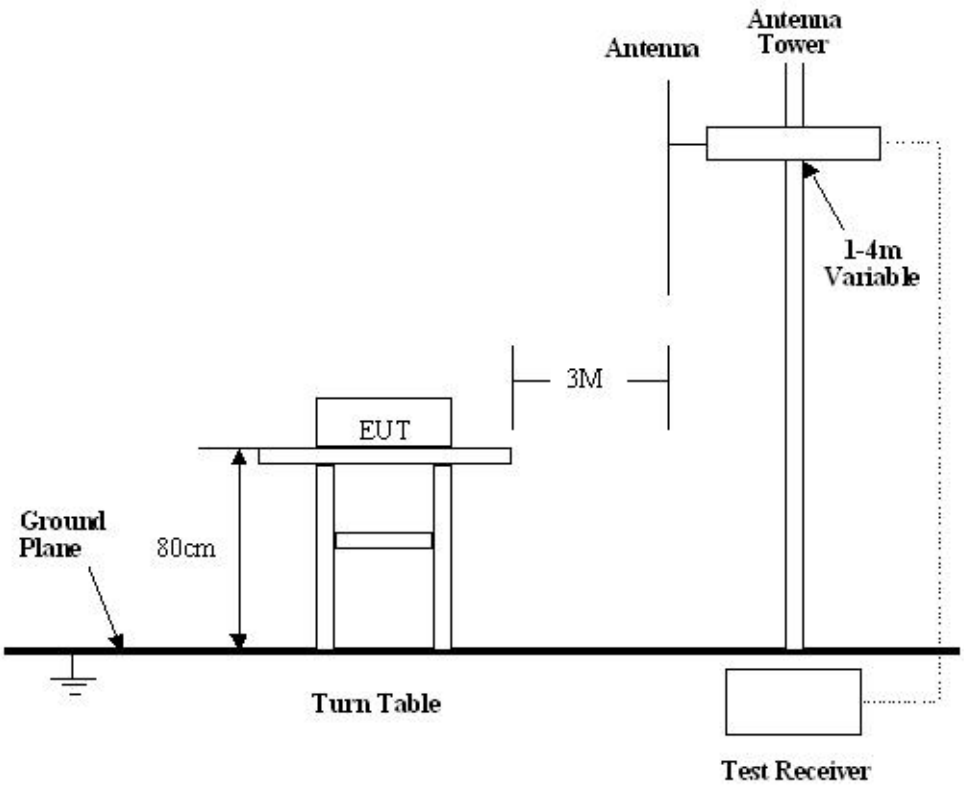
7.3 Test Procedure

1. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.
2. All data was recorded in the peak & average detection mode.
3. The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

7.4 Radiated Test 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 Paragraph 15.249 and Paragraph 15.209 limits.



7.5 Spectrum Analyzer Setup

According to FCC Part15 Paragraph 15.249 Rules, the system was tested to 25000 MHz.

Start Frequency..... 30 MHz
Stop Frequency..... 25000 MHz
Sweep Speed Auto
IF Bandwidth..... 100 kHz
Video Bandwidth..... 1 MHz
Quasi-Peak Adapter Bandwidth ..... 120 kHz
Quasi-Peak Adapter Mode ..... Normal
Resolution Bandwidth 1MHz

7.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Class B Limit

7.7 Summary of Test Results

According to the data in section 7.10, the EUT complied with the FCC Part15 Paragraph 15.249 standards.

7.8 EUT Operating Condition

Same as section 6.4 of this report.

7.9 Radiated Emissions Limit

A. FCC Part 15 subpart C Paragraph 15.249 Limit

Fundamental Frequency	Field Strength of Fundamental		Field Strength of Harmonics	
	mV/m	dBuV/m	uV/m	dBuV/m
902-928MHz	50	94	500	54
2400-2483.5 MHz	50	94	500	54
5725-5875 MHz	50	94	500	54
24.0-24.25GHz	250	108	2500	68

Note: (1) RF Voltage(dBuV)=20 log RF Voltage(uV)

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

(3)The emission limit in this paragraph is based on measurement instrumentaion employing an average detector.Measurement using instrumentation with a peak detector function,corresponding to 20dB above the maximum permitted average limit.

(4) Above 1GHz,do a Peak and average measurements for all emissions,Limit for peak is 94dBuvV/m,According to Part15.35(b) and average is 54BuvV/m.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209

Frequency(MHZ)	Distance(m)	Field strength(dBuV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: (1) RF Voltage(dBuV)=20 log RF Voltage(uV)

(2) In the Above Table,the tighter limit applies at the band edges.

(3) Distance refers to the distance in meters between the measuring instrument antenna.

7.10 Radiated Emissions Test Result

Formula of conversion factors: the field strength at 3m was established by adding
The meter reading of the spectrum analyzer (which is set to read in units of dBuV)
To the antenna correction factor supplied by the antenna manufacturer. The antenna
Correction factors are stared in terms of dB. The gain of the pressletor was accounted
For in the spectrum analyser meter reading.

Example:

Freq(MHz)	Meter Reading +ACF=FS
33	20dBuV+10.36dB=30.36dBuV/m @3m

Radiated Emission Test Data

Test Voltage:	AC 120V
Test Mode:	TX On
Temperature:	24 °C
Humidity:	52%RH
Test Result:	PASS

Remarks: 30-1000MHz radiation test no significant emissions above the equipment noise floor were detected.

1GHZ-25GHZ Radiated Emission Data

Frequency(MHz)	Detector	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
Low frequency							
2402.00	AV	Vertical	74.22	94.00	19.78	1.5	90
4804.00	AV	Vertical	36.73	54.00	17.27	1.5	90
7206.00	AV	Vertical	35.59	54.00	18.41	1.8	45
9608.00	AV	Vertical	36.88	54.00	17.12	1.5	90
12010.00	AV	Vertical	35.41	54.00	18.59	1.5	180
14412.00	AV	Vertical	36.34	54.00	17.66	1.8	45
16814.00	AV	Vertical	37.22	54.00	16.78	2.0	270
19216.00	AV	Vertical	38.59	54.00	15.41	1.0	180
21618.00	AV	Vertical	37.18	54.00	16.82	1.5	45
24020.00	AV	Vertical	36.45	54.00	17.55	1.8	100
2402.00	AV	Horizontal	73.86	94.00	20.14	1.5	90
4804.00	AV	Horizontal	35.59	54.00	18.41	1.2	120
7206.00	AV	Horizontal	35.42	54.00	18.58	1.0	60
9608.00	AV	Horizontal	36.71	54.00	17.29	2.0	180
12010.00	AV	Horizontal	34.44	54.00	19.56	1.0	120
14412.00	AV	Horizontal	35.55	54.00	18.45	1.8	100
16814.00	AV	Horizontal	36.89	54.00	17.11	1.5	45
19216.00	AV	Horizontal	38.41	54.00	15.59	1.0	60
21618.00	AV	Horizontal	37.02	54.00	16.98	1.5	180
24020.00	AV	Horizontal	35.88	54.00	18.12	1.2	200
2402.00	PK	Vertical	80.82	114.00	33.18	1.5	230
4804.00	PK	Vertical	41.75	74.00	32.25	1.6	60
7206.00	PK	Vertical	42.66	74.00	31.34	1.5	180
9608.00	PK	Vertical	40.83	74.00	33.17	1.8	45
12010.00	PK	Vertical	41.88	74.00	32.12	1.5	90
14412.00	PK	Vertical	42.48	74.00	31.52	1.8	90
16814.00	PK	Vertical	43.67	74.00	30.33	1.5	270
19216.00	PK	Vertical	43.04	74.00	30.96	1.6	90
21618.00	PK	Vertical	43.51	74.00	30.49	1.5	90
24020.00	PK	Vertical	42.83	74.00	31.17	1.5	90
2402.00	PK	Horizontal	79.41	114	34.59	1.5	180

4804.00	PK	Horizontal	40.72	74.00	33.28	1.8	45
7206.00	PK	Horizontal	41.52	74.00	32.48	1.5	230
9608.00	PK	Horizontal	41.89	74.00	32.11	1.5	60
12010.00	PK	Horizontal	42.62	74.00	31.38	1.8	180
14412.00	PK	Horizontal	41.32	74.00	32.68	1.6	90
16814.00	PK	Horizontal	42.88	74.00	31.12	1.5	90
19216.00	PK	Horizontal	41.46	74.00	32.54	1.5	90
21618.00	PK	Horizontal	42.54	74.00	31.46	1.0	100
24020.00	PK	Horizontal	43.35	74.00	30.65	1.5	120
Middle frequency							
2440.00	AV	Vertical	75.24	94	18.76	1.5	90
4880.00	AV	Vertical	35.21	54.00	18.79	4.5	90
7320.00	AV	Vertical	36.64	54.00	17.36	1.6	60
9760.00	AV	Vertical	35.77	54.00	18.23	1.8	90
12200.00	AV	Vertical	35.95	54.00	18.05	1.5	90
14640.00	AV	Vertical	36.48	54.00	17.52	1.5	90
17080.00	AV	Vertical	36.74	54.00	17.26	1.5	45
19520.00	AV	Vertical	37.11	54.00	16.89	1.5	250
21960.00	AV	Vertical	37.26	54.00	16.74	1.8	60
24400.00	AV	Vertical	37.12	54.00	16.88	1.5	90
2440.00	AV	Horizontal	74.46	94.00	19.54	1.6	180
4880.00	AV	Horizontal	35.01	54.00	18.99	1.8	90
7320.00	AV	Horizontal	36.24	54.00	17.76	2.0	180
9760.00	AV	Horizontal	35.25	54.00	18.75	1.5	100
12200.00	AV	Horizontal	35.48	54.00	18.52	4.5	180
14640.00	AV	Horizontal	35.79	54.00	18.21	1.2	60
17080.00	AV	Horizontal	36.50	54.00	17.50	1.5	45
19520.00	AV	Horizontal	36.87	54.00	17.13	2.0	90
21960.00	AV	Horizontal	37.03	54.00	16.97	1.5	100
24400.00	AV	Horizontal	37.11	54.00	16.89	1.0	180
2440.00	PK	Vertical	79.44	114.00	34.56	1.5	45
4880.00	PK	Vertical	40.44	74.00	33.56	1.5	80
7320.00	PK	Vertical	41.26	74.00	32.74	1.5	230
9760.00	PK	Vertical	42.15	74.00	31.85	1.5	250
12200.00	PK	Vertical	41.83	74.00	32.17	1.5	60
14640.00	PK	Vertical	43.63	74.00	30.37	1.5	90

17080.00	PK	Vertical	42.32	74.00	31.68	1.5	180
19520.00	PK	Vertical	43.51	74.00	30.49	1.8	60
21960.00	PK	Vertical	43.15	74.00	30.85	1.5	90
24400.00	PK	Vertical	42.88	74.00	31.12	1.6	180
2440.00	PK	Horizontal	78.32	114.00	35.68	1.8	90
4880.00	PK	Horizontal	40.12	74.00	33.88	1.5	90
7320.00	PK	Horizontal	41.18	74.00	32.82	1.5	60
9760.00	PK	Horizontal	42.04	74.00	31.96	1.0	90
12200.00	PK	Horizontal	41.75	74.00	32.25	2.0	90
14640.00	PK	Horizontal	43.22	74.00	30.78	1.0	100
17080.00	PK	Horizontal	42.11	74.00	31.89	1.2	180
19520.00	PK	Horizontal	43.25	74.00	30.75	1.5	45
21960.00	PK	Horizontal	43.05	74.00	30.95	1.0	60
24400.00	PK	Horizontal	42.78	74.00	31.22	2.0	90
High frequency							
2479.00	AV	Vertical	74.21	94.00	19.79	1.5	120
4958.00	AV	Vertical	36.22	54.00	17.78	1.5	60
7437.00	AV	Vertical	35.59	54.00	18.41	1.5	80
9916.00	AV	Vertical	36.71	54.00	17.29	1.5	90
12395.00	AV	Vertical	37.03	54.00	16.97	1.6	180
14874.00	AV	Vertical	35.51	54.00	18.49	1.8	90
17353.00	AV	Vertical	36.46	54.00	17.54	1.5	120
19832.00	AV	Vertical	35.27	54.00	18.73	1.5	45
22311.00	AV	Vertical	36.41	54.00	17.59	1.5	210
24790.00	AV	Vertical	36.14	54.00	17.86	1.5	230
2479.00	AV	Horizontal	73.23	94.00	20.77	1.6	250
4958.00	AV	Horizontal	35.54	54.00	18.46	1.5	60
7437.00	AV	Horizontal	35.10	54.00	18.90	1.5	45
9916.00	AV	Horizontal	35.42	54.00	18.58	1.0	60
12395.00	AV	Horizontal	36.85	54.00	17.15	1.2	90
14874.00	AV	Horizontal	35.11	54.00	18.89	2.0	100
17353.00	AV	Horizontal	35.21	54.00	18.79	1.5	120
19832.00	AV	Horizontal	35.11	54.00	18.89	1.0	180
22311.00	AV	Horizontal	35.52	54.00	18.48	1.2	200
24790.00	AV	Horizontal	35.76	54.00	18.24	2.0	180
2479.00	PK	Vertical	78.86	114.00	35.14	1.5	80

4958.00	PK	Vertical	41.03	74.00	32.97	1.5	270
7437.00	PK	Vertical	42.66	74.00	31.34	1.5	90
9916.00	PK	Vertical	42.54	74.00	31.46	1.5	80
12395.00	PK	Vertical	41.85	74.00	32.15	1.6	270
14874.00	PK	Vertical	43.48	74.00	30.52	1.5	90
17353.00	PK	Vertical	43.59	74.00	30.41	1.5	45
19832.00	PK	Vertical	42.55	74.00	31.45	1.8	250
22311.00	PK	Vertical	42.86	74.00	31.14	1.5	80
24790.00	PK	Vertical	43.78	74.00	30.22	1.5	230
2479.00	PK	Horizontal	78.51	114.00	35.49	1.6	90
4958.00	PK	Horizontal	40.64	74.00	33.36	1.5	60
7437.00	PK	Horizontal	42.59	74.00	31.41	1.0	90
9916.00	PK	Horizontal	42.34	74.00	31.66	1.2	180
12395.00	PK	Horizontal	41.72	74.00	32.28	1.5	100
14874.00	PK	Horizontal	42.88	74.00	31.12	2.0	120
17353.00	PK	Horizontal	42.61	74.00	31.39	1.5	180
19832.00	PK	Horizontal	42.14	74.00	31.86	1.0	90
22311.00	PK	Horizontal	41.77	74.00	32.23	1.2	60
24790.00	PK	Horizontal	43.64	74.00	30.36	1.5	45

Note: Above 1GHz, do a Peak and average measurements for all emissions, According to Part15.35(b), Limit for average is 54BuvV/m.

8 Band Edge

8.1 Test Equipment

Please refer to Section 5 this report.

8.2 Test Procedure

1. The EUT, peripherals were put on the turntable which table size is 1mX1.5m, table high 0.8m. All set up is according to ANSI C63.4: 2003.
2. The bandwidth of the fundamental frequency was measure by spectrum analyser with 1MHz RBW and 1MHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power 20dB.

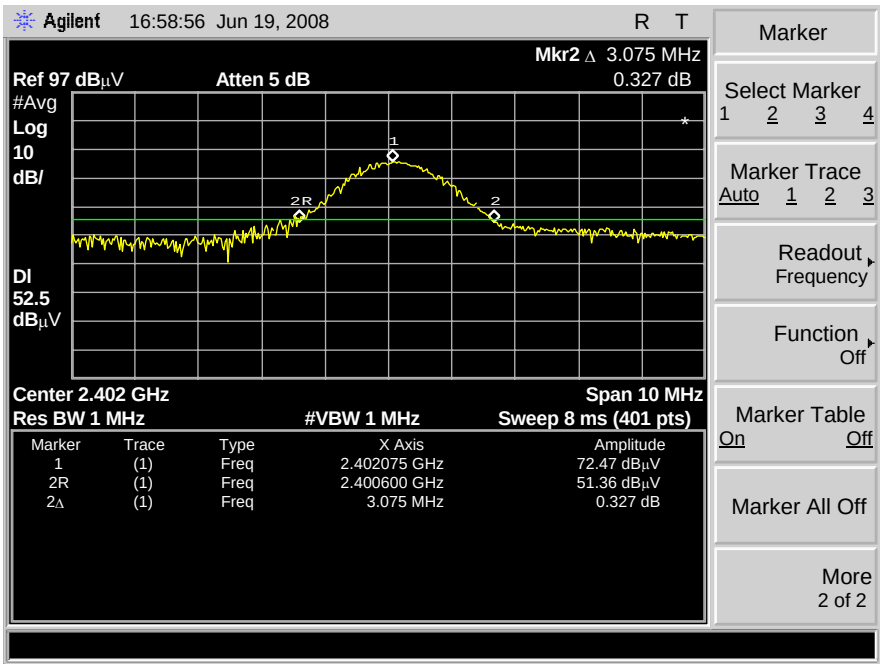
8.3 Band Edge

Requirements: FCC 15.249(d), the emission power at the START and STOP frequencies shall be at least 50dB below the level of the fundamental or to the general radiated emission limits in FCC 15.209.

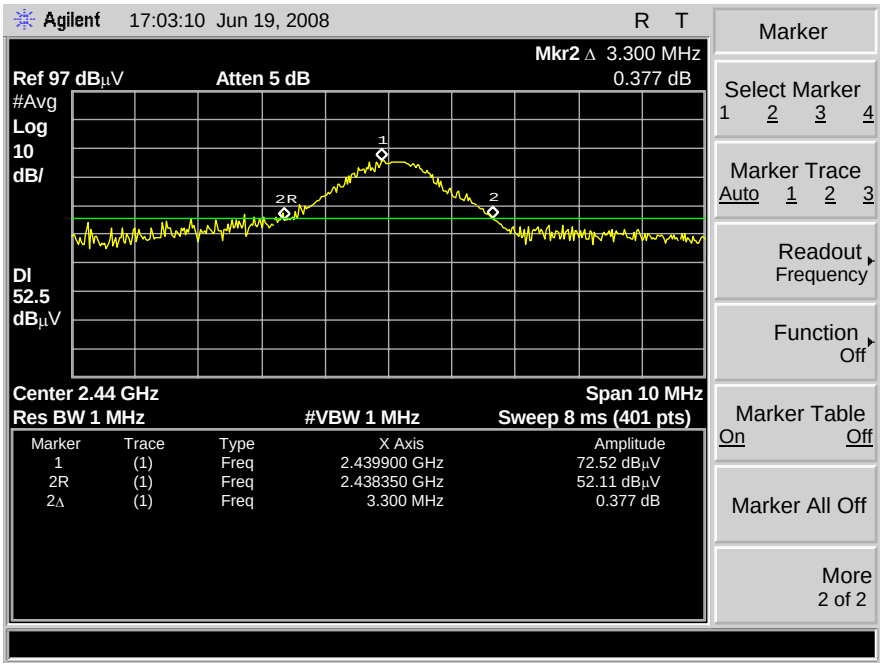
8.4 Band Edge Test Result

Product Name:	Wireless Pan and Tilt Camera
Test Item:	Band Edge Test
Test Voltage:	DC 9V
Test Mode:	TX On
Temperature:	24 °C
Humidity:	52%RH

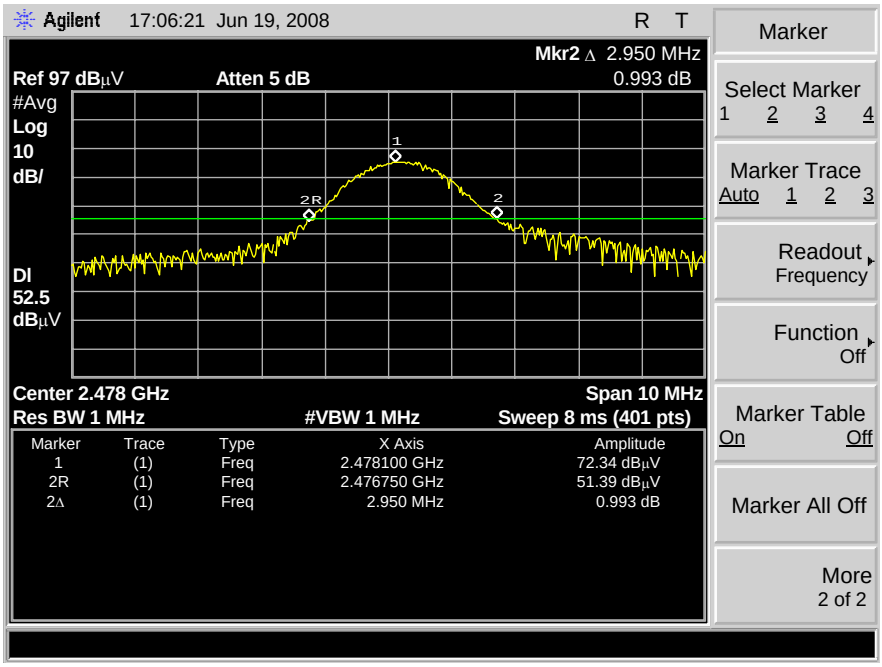
2402MHz



2440MHz



2479MHz



Note: (1) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

(2) This device does meet the FCC requirement.

8.5 Emissions radiated outside of the specified frequency bands

8.6 Test Equipment

Please refer to Section 5 this report.

8.7 Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below:

2. Emissions radiated outside of the specified frequency bands was measure by spectrum analyser with 1MHz RBW and 1MHz VBW..

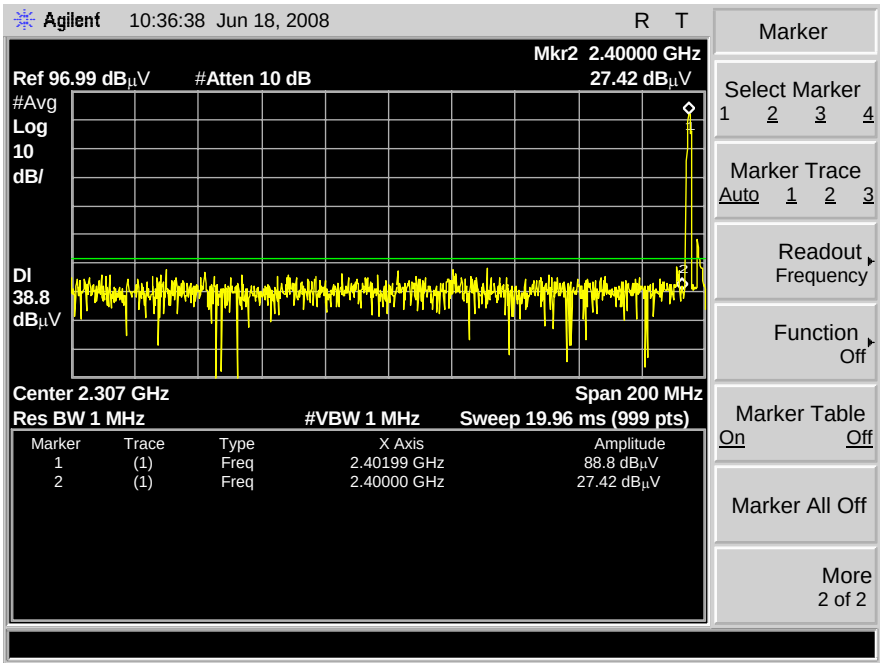
8.8 Applied Procedures/Limit

Requirements: FCC 15.249(d), the emission power at the START and STOP frequencies shall be at least 50dB below the level of the fundamental or to the general radiated emission limits in FCC 15.209.

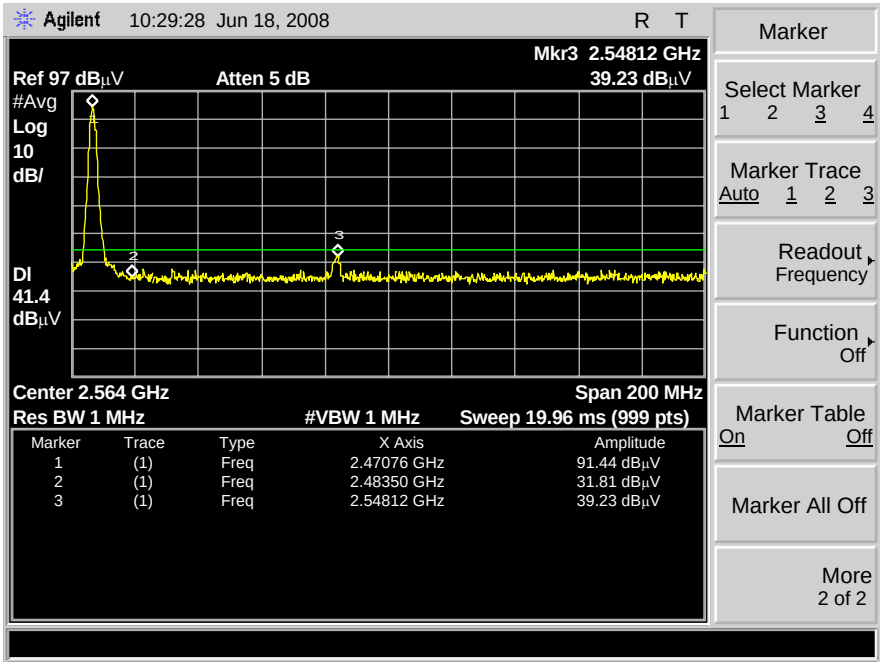
8.9 Test Result

Product Name:	Wireless Pan and Tilt Camera
Test Item:	Emissions radiated outside of the specified frequency bands
Test Voltage:	120VAC
Test Mode:	TX On
Temperature:	24 °C
Humidity:	52%RH

2402MHZ



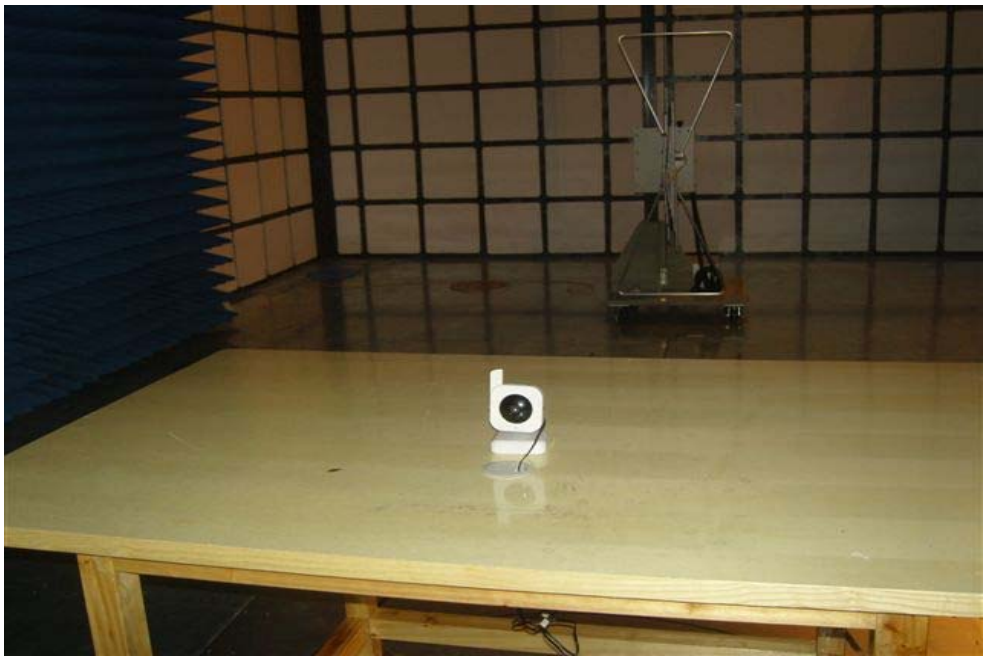
2479MHZ



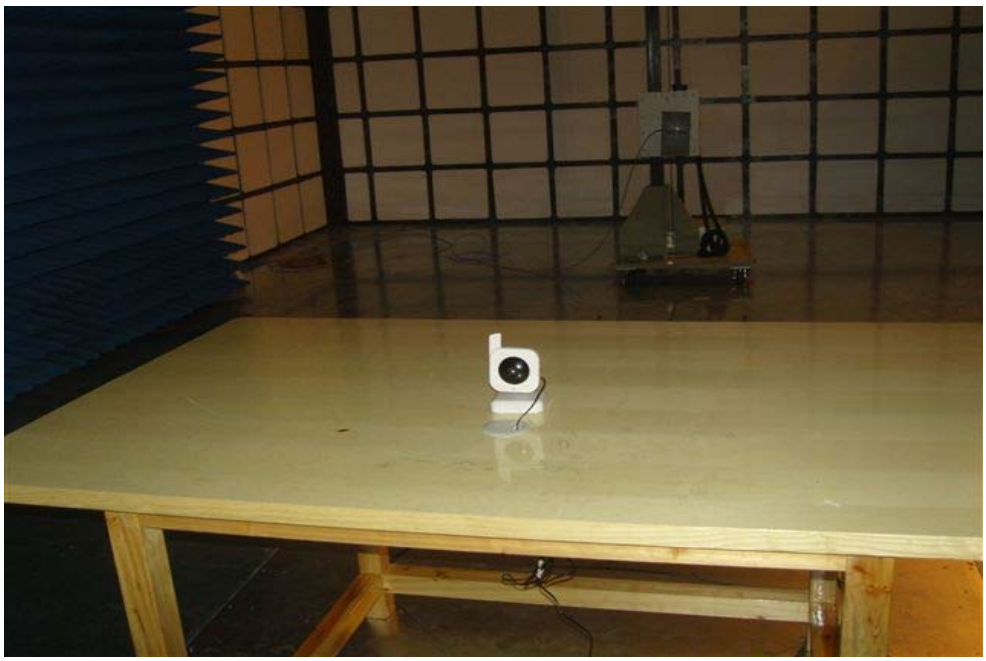
9 Photographs of Testing

9.1 Conduction Emission Test View

9.2 Radiation Emission Test View For 30MHz-1000MHz



9.3 Radiation Emission Test View For 1GHz-25GHz

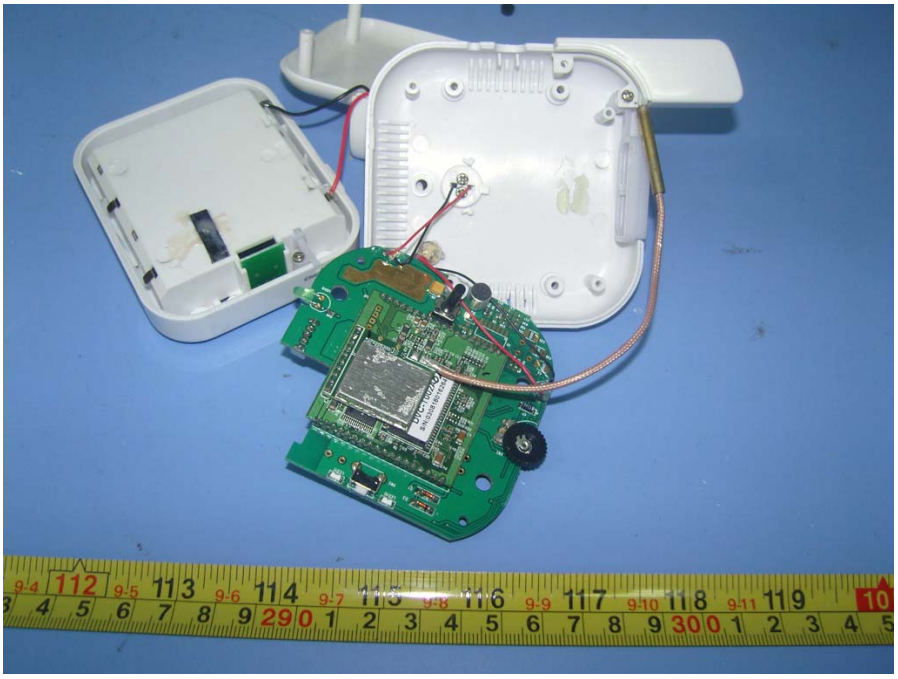


10 Photographs - Constructional Details

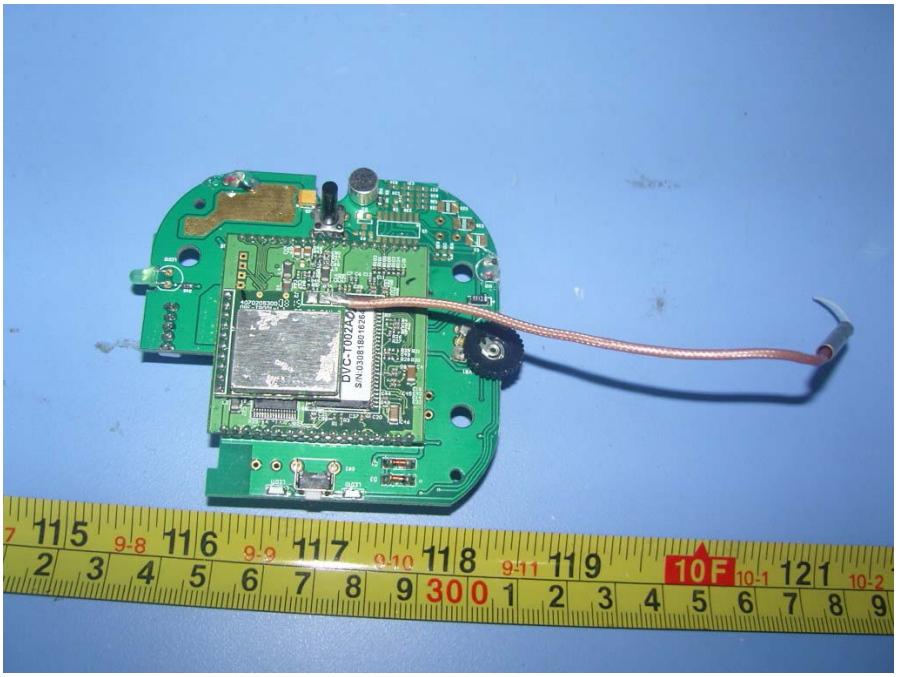
10.1 EUT - Front View

10.2 EUT - Back View

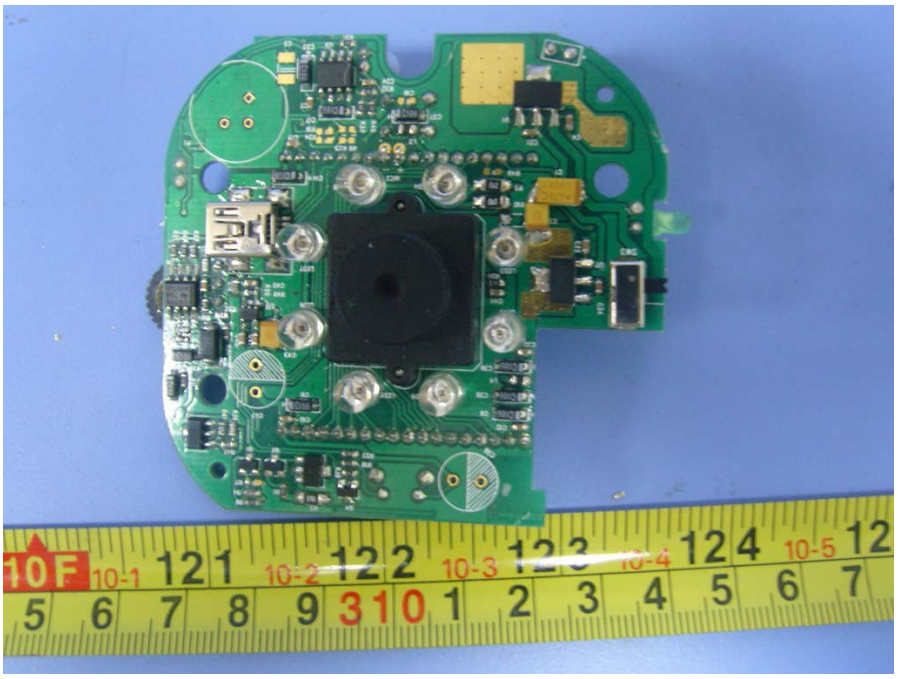
10.3 PCB - Open View



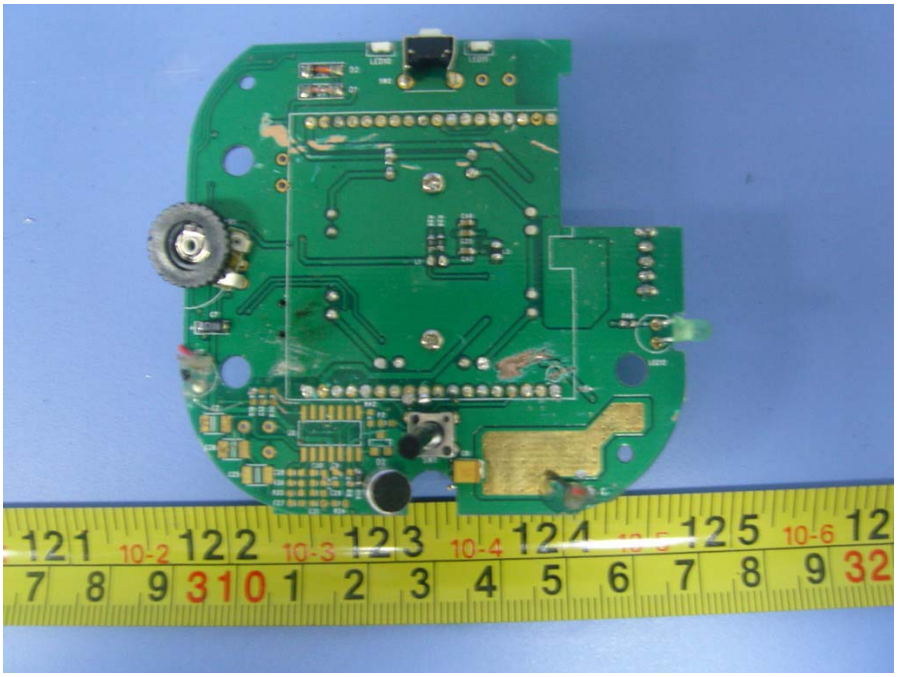
10.4 PCB - Configuration View



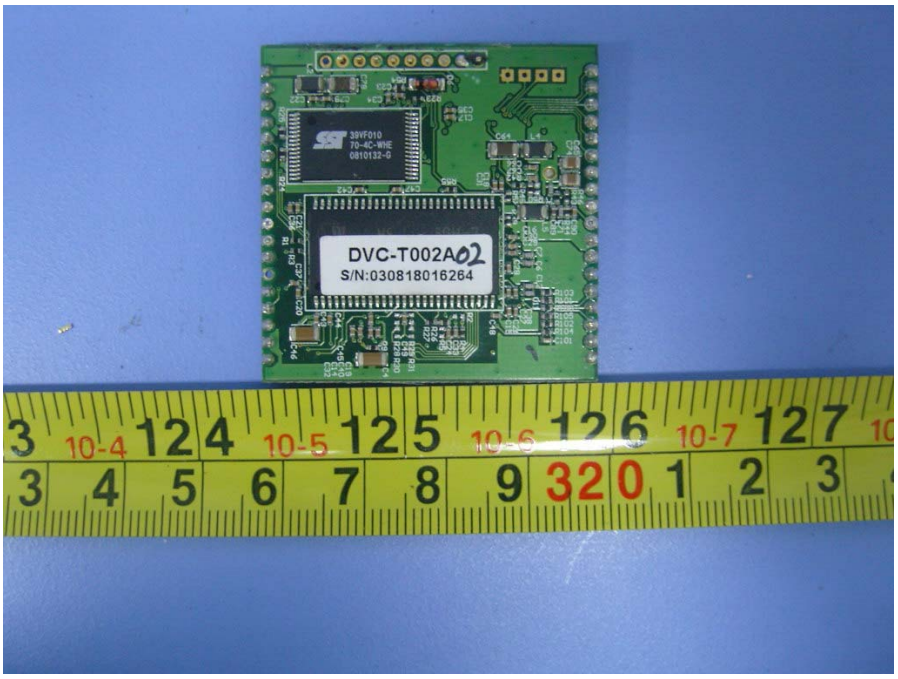
10.5 PCB 1 - Front View



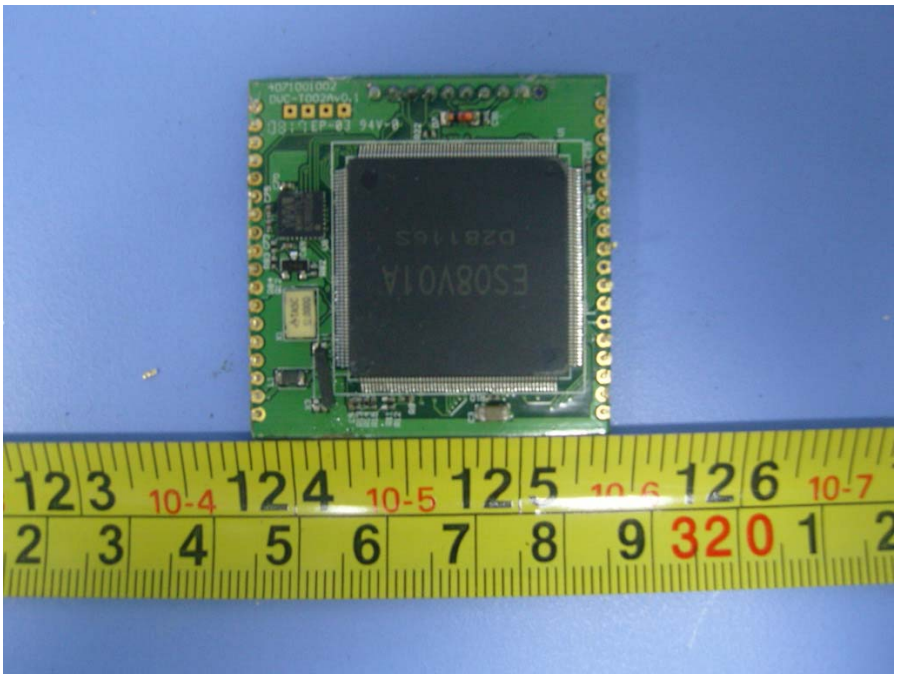
10.6 PCB 1 - Back View



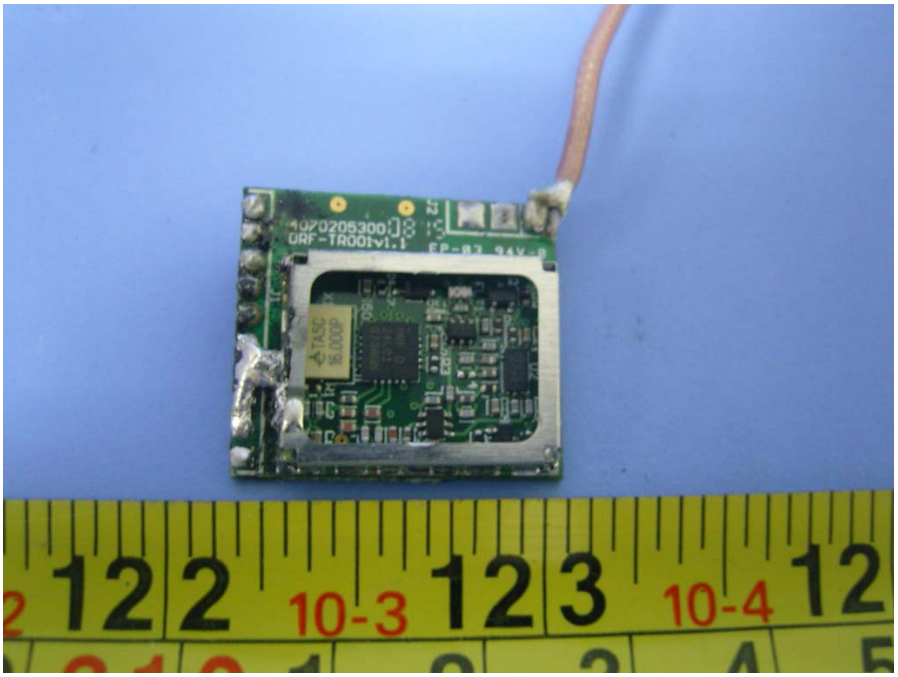
10.7 PCB 2 - Front View



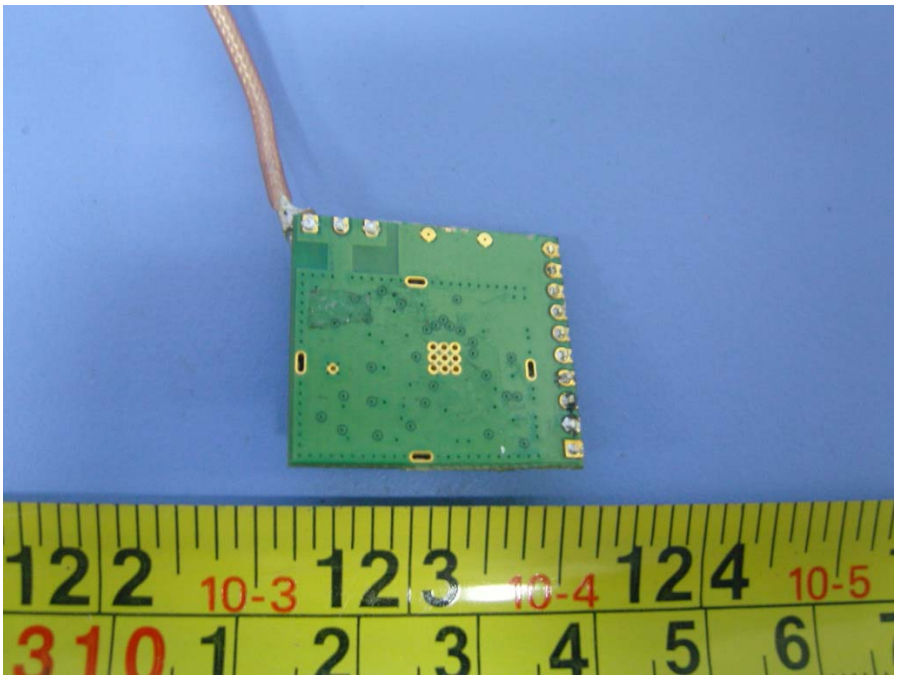
10.8 PCB 2 - Back View



10.9 PCB 3 - Front View



10.10 PCB 3 - Back View



11 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