

FCC TEST REPORT
for
Shenzhen Dslrkit Photographic Equipment Co., Limited

DSLRKIT Camera Remote
Model No.: Camfly, Camfly 2, Trigfly, Camfly plus

Prepared for : Shenzhen Peilin Sports Technology Company Ltd.
Address : West 3rd Floor, Building 78, Majialong Industrial Park, Nanshan
Dist., Shenzhen, Guangdong, China

Prepared By : Coffee-T Electronics Technology Co Ltd
Address : Unit 12, 8F Honghai Building, Qianhai
Road, Nanshan, Shenzhen, China
+86-755-86622903
+86-755-86622819

Report Number : CTE13KR-201F
Date of Test : Nov. 12~ Dec. 10, 2013
Date of Report : Dec. 10, 2013

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TEST REPORT

Applicant : Shenzhen Dslrkit Photographic Equipment Co., Limited
Manufacturer : Shenzhen Dslrkit Photographic Equipment Co., Limited
EUT : DSLRKIT Camera Remote
Model No. : Camfly, Camfly 2, Trigfly, Camfly plus
Serial No. : N/A
Trade Mark : Camfly
Rating : DC 2.0-3.6V, 45mA-1uA

Measurement Procedure Used:

FCC Part15 Subpart C, Paragraph 15.207, 15.249 & 15.209

The device described above is tested by Coffee-T Electronics Technology Co Ltd to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Coffee-T Electronics Technology Co Ltd is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Coffee-T Electronics Technology Co Ltd.

Date of Test : Nov. 12~ Dec. 10, 2013

Angel Wu

Prepared by :

(Tested Engineer / Angel Wu)

Jason Chen

Reviewer :

(Project Manager /Jason Chen)

Sumy Li

Approved & Authorized Signer :

(Manager /Sumy Li)

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT	: DSLRKIT Camera Remote
Model Number	: Camfly, Camfly 2, Trigfly, Camfly plus (Note: All samples are the same except the model number & shape of appliances, so we prepare “Camfly” for EMC test only.)
Test Power Supply	: DC 5V
Frequency	: 2402-2480MHz
Channels	: 79
Modulation	: GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	: Internal
Antenna Gain	: 0 dBi
Applicant	: Shenzhen Dslrkit Photographic Equipment Co., Limited
Address	: 727, 3/Building West, Saige Industrial Park, Huaqiang Rd., Futian District, Shenzhen, Guangdong, China
Manufacturer	: Shenzhen Dslrkit Photographic Equipment Co., Limited
Address	: 727, 3/Building West, Saige Industrial Park, Huaqiang Rd., Futian District, Shenzhen, Guangdong, China
Date of receiver	: Nov. 12, 2013
Date of Test	: Nov. 12~ Dec. 10, 2013

1.2 Description of Test Facility

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

CNAS - LAB Code: L3503

Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021

Shenzhen Anbotek Compliance Laboratory Limited, 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 752021, July 10, 2013.

1.3 Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.3dB
Conduction Uncertainty	:	Uc = 3.4dB

2. Radiation Interference

2.1 Requirements (15.249, 15.209):

FIELD STRENGTH of Fundamental: 902-928 MHz 2.4-2.4835 GHz 94 dBμV/m @3m	FIELD STRENGTH of Harmonics 54 dBμV/m @3m	S15.209 30 - 88 MHz 88 - 216 MHz 216 - 960 MHz ABOVE 960 MHz	40 dBuV/m @3M 43.5 46 54dBuV/m
---	---	--	---

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.

2.2 Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of Shenzhen Anbotek Compliance Laboratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2009 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

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 stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS
20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

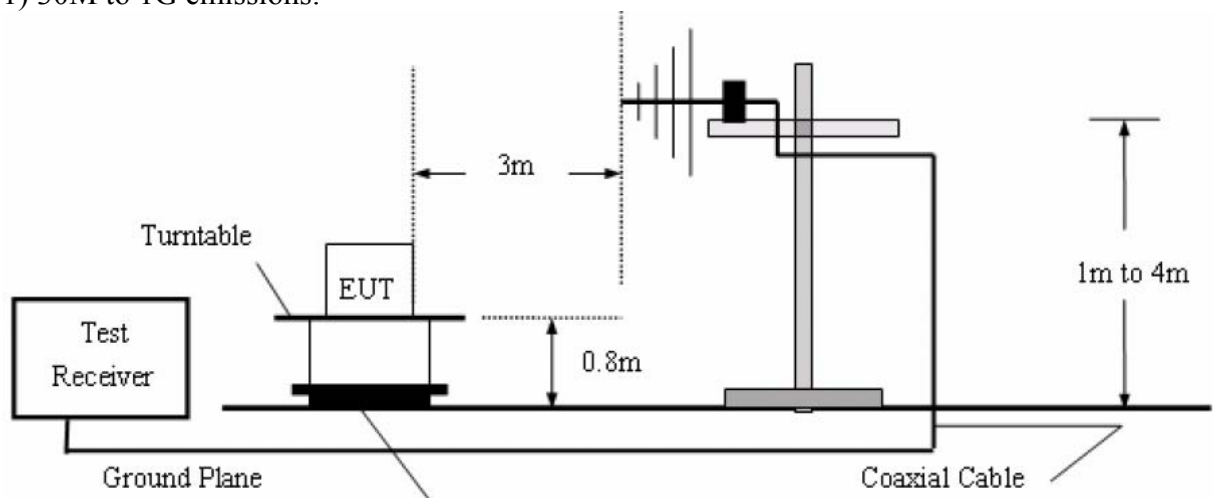
ANSI STANDARD C63.4-2009 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

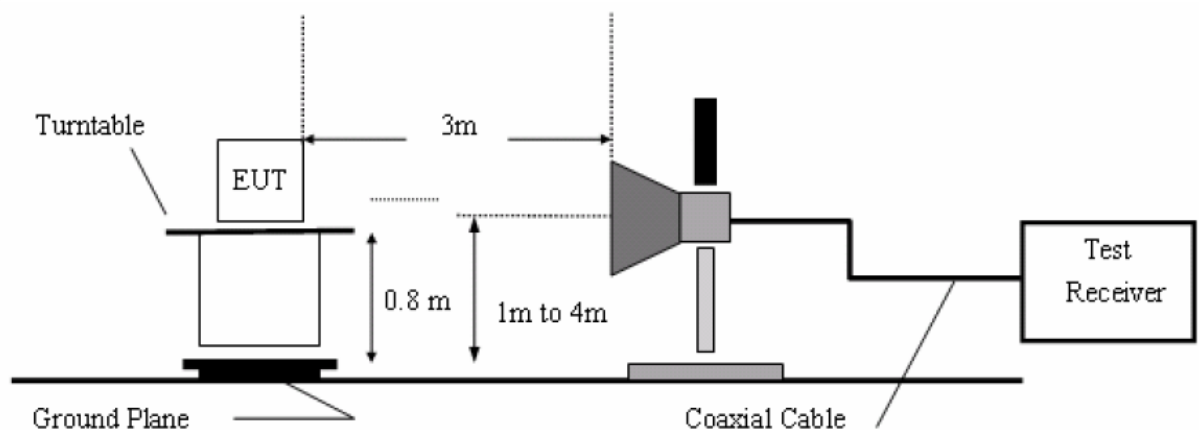
All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz. The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 2.3.

1) 30M to 1G emissions:



2) 1G to 40G emissions:



Test Equipment:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Aug. 09, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Aug. 09, 2013	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2013	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	3 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 23, 2013	1 Year

2.3 Test Results

PASS.

Please refer the following pages.

Data:
Below 1GHz:

Freq. (MHz)	Ant. Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Note
34.12	V	27.12	40.00	-12.88	PK
69.35	V	32.01	40.00	-7.99	PK
67.89	V	31.08	40.00	-8.92	PK
127.04	V	23.16	43.50	-20.34	PK
478.56	V	25.26	46.00	-20.74	PK
704.25	V	28.61	46.00	-17.39	PK
30.89	H	27.31	40.00	-12.69	PK
71.84	H	23.92	40.00	-16.08	PK
112.33	H	19.49	43.50	-24.01	PK
131.85	H	19.94	43.50	-23.56	PK
440.08	H	24.57	46.00	-21.43	PK
609.09	H	29.75	46.00	-16.25	PK

Horizontal
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
211.872	1.58	13.50	38.90	57.19	33.43	46.00	-11.19	QP
2402.00	2.17	31.21	35.30	86.76	92.75	114.0	-27.24	Peak
2402.00	2.17	31.21	35.30	84.74	89.28	94.0	-9.26	AV
4804.04	2.56	34.01	34.71	41.35	43.66	74.0	-32.65	Peak
4804.04	2.56	34.01	34.71	38.22	40.21	54.0	-15.78	AV
7207.98	2.98	36.16	35.15	38.94	42.54	74.0	-35.06	Peak
7207.98	2.98	36.16	35.15	28.21	39.76	54.0	-25.79	AV
9608.00	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---
---		.						

Vertical
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
42.89	1.43	12.13	38.45	53.19	28.13	40.00	-11.87	QP
2402.00	2.17	31.21	35.30	84.62	89.65	114.0	-24.35	Peak
2402.00	2.17	31.21	35.30	81.31	88.41	94.0	-5.59	AV
4804.10	2.56	34.01	34.71	41.07	42.27	74.0	-31.73	Peak
4804.10	2.56	34.01	34.71	38.45	40.65	54.0	-13.35	AV
7207.93	2.98	36.16	35.15	37.89	41.33	74.0	-32.67	Peak
7207.93	2.98	36.16	35.15	34.22	38.19	54.0	-15.81	AV
9608.00	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---

Horizontal
CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
316.33	1.60	13.52	38.82	56.25	32.65	46.00	-13.35	QP
2441.00	2.19	31.22	34.60	85.44	90.42	114.0	-23.58	Peak
2441.00	2.19	31.22	34.60	83.36	84.51	94.0	-9.49	AV
4882.08	2.57	35.00	34.58	39.27	42.79	74.0	-31.21	Peak
4882.08	2.57	35.00	34.58	37.68	40.02	54.0	-13.98	AV
7323.05	3.00	36.17	35.14	35.51	42.22	74.0	-31.78	Peak
7323.05	3.00	36.17	35.14	34.77	40.16	54.0	-13.84	AV
9764.00	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---

Vertical
CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
159.31	1.50	13.40	38.89	53.11	29.12	43.50	-14.38	QP
2441.01	2.19	31.22	34.60	81.46	91.07	114.0	-22.93	Peak
2441.01	2.19	31.22	34.60	82.25	86.35	94.0	-7.65	AV
4882.11	2.57	35.00	34.58	43.36	43.48	74.0	-30.52	Peak
4882.11	2.57	35.00	34.58	35.19	40.76	54.0	-13.24	AV
7323.02	3.00	36.17	35.14	37.05	42.21	74.0	-31.79	Peak
7323.02	3.00	36.17	35.14	38.44	40.44	54.0	-13.56	AV
9764.00	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---

Horizontal
CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
314.77	1.60	13.52	38.82	54.12	29.52	46.00	-16.48	QP
2480.00	2.20	31.65	36.00	97.78	90.41	114.0	-23.59	Peak
2480.00	2.20	31.65	36.00	88.51	85.76	94.0	-8.24	AV
4960.05	2.58	35.06	34.79	43.19	44.04	74.0	-29.96	Peak
4960.05	2.58	35.06	34.79	37.82	42.82	54.0	-11.18	AV
7439.99	3.02	36.19	34.90	41.37	43.84	74.0	-30.16	Peak
7439.99	3.02	36.20	35.20	37.40	41.92	54.0	-12.08	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14880.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

Vertical
CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
417.05	1.62	13.54	38.45	53.16	27.22	46.00	-18.78	QP
2480.00	2.20	31.65	36.00	83.79	91.45	114.0	-22.55	Peak
2480.00	2.20	31.65	36.00	82.12	86.17	94.0	-7.83	AV
4960.10	2.58	35.06	34.79	40.58	42.44	74.0	-31.56	Peak
4960.10	2.58	35.06	34.79	38.31	40.05	54.0	-13.95	AV
7439.96	3.02	36.19	34.90	38.68	42.76	74.0	-31.24	Peak
7439.96	3.02	36.20	35.20	36.91	40.21	54.0	-13.79	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14880.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

NOTE: “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

3. Occupied Bandwidth

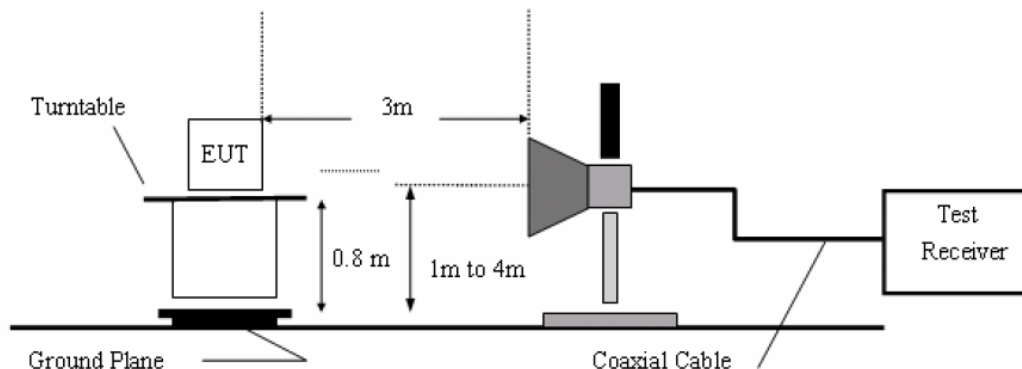
3.1 Requirements (15.249):

The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

3.2 Test Procedure

The EUT is placed on a turntable which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

3.3 Test Configuration:



Test Equipment:

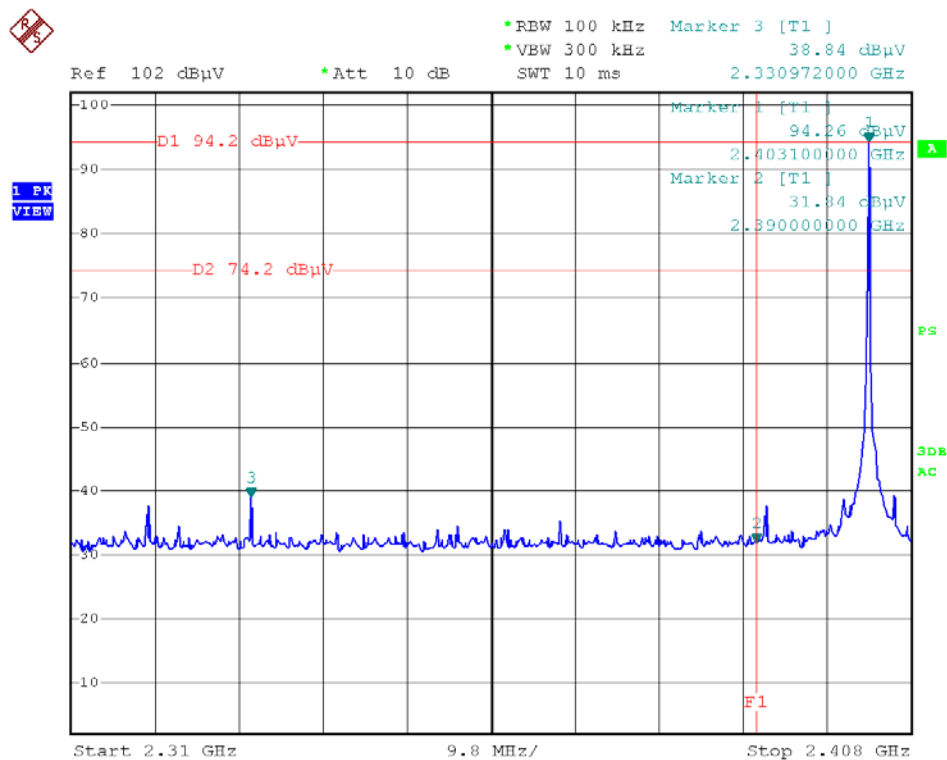
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Aug. 09, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Aug. 09, 2013	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2013	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	3 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 23, 2013	1 Year

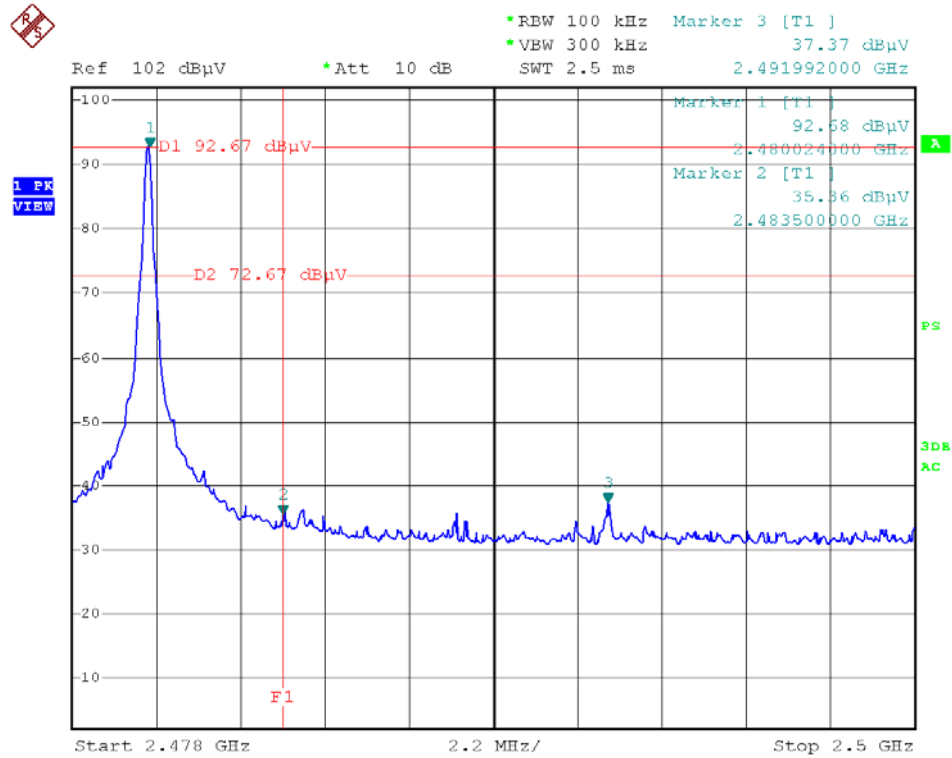
3.4 Test Results

Pass.

Please refer the following plot.

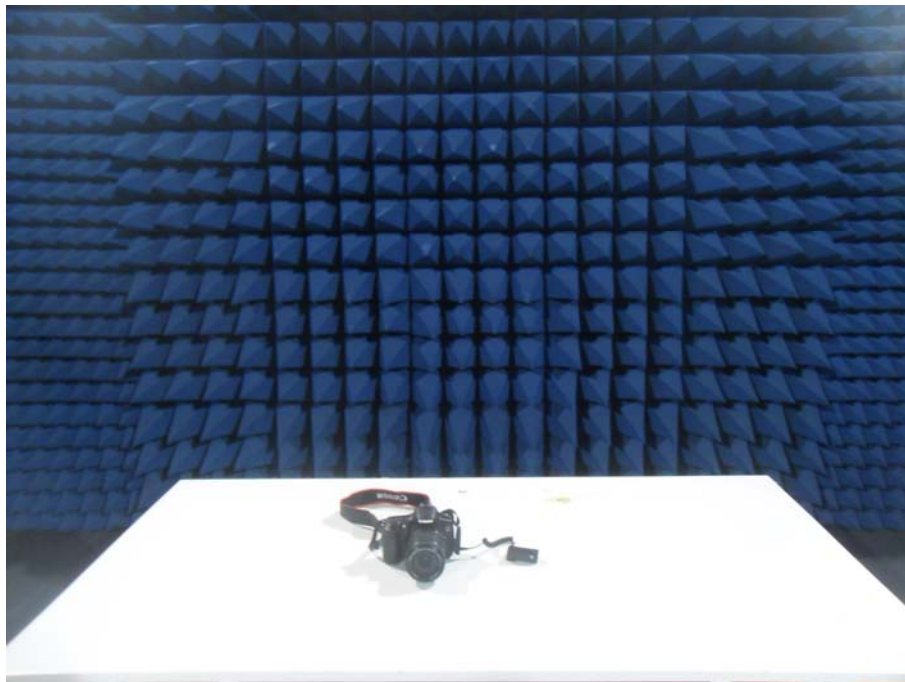
(Note: Marker 3 means the highest value in 2.31GHz~2.39GHz or 2.4835~2.5GHz)





4. PHOTOGRAPH

4.1 Photo of Radiation Emission Test



APPENDIX I (EXTERNAL PHOTOS)

Figure 1
The EUT-Overall View



Figure 2
The EUT-Front View



Figure 3
The EUT-Back View



Figure 4
The EUT-Port View



APPENDIX II (INTERNAL PHOTOS)

Figure 5
The EUT-Inside View



Figure 6
PCB of the EUT

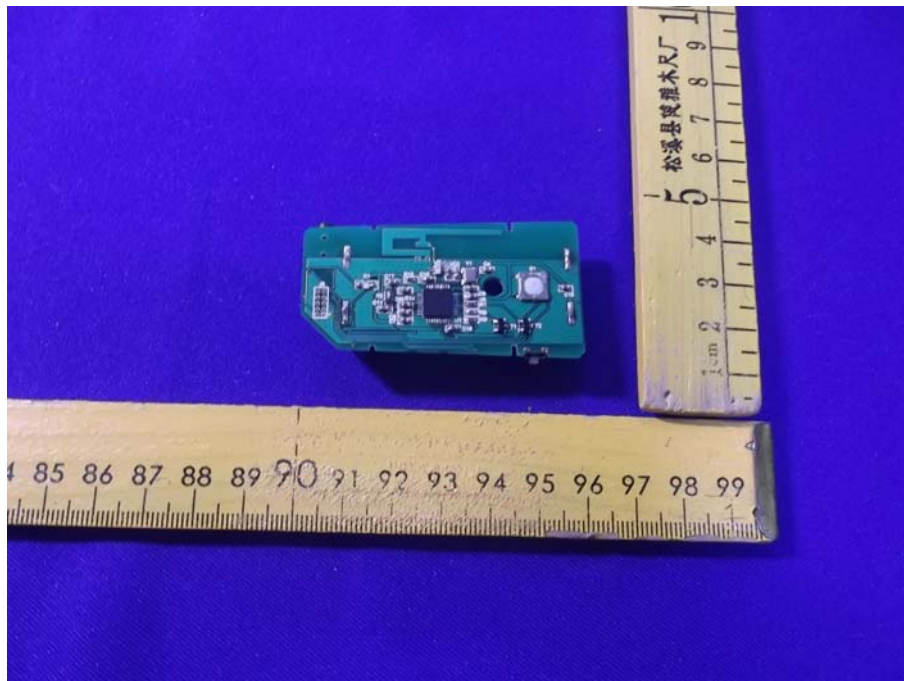


Figure 7
PCB of the EUT



Figure 8
BT Module

