FCC Test Report

Client Information:

Applicant:	Canon Electronic Business Machines (H.K.) Co., Ltd.
Applicant add.:	Floor 17, Tower 1, Ever Gain Plaza, 82-100 Container Port Road, Kwai Chung, Hong Kong

Product Information:

Product Name:	Wireless Receiver (D30A)
Model No.:	D30A
Brand Name:	Canon
FCC ID:	Y7J-D30A

Applied Standard: FCC Part 15 Subpart B: 2017

Prepared By:

Dongguan Yaxu (AiT) Technology Limited

Add. : No.22, Jinqianling Third Street, Jitigang, Huangjiang, Dongguan, Guangdong, China

Date of Receipt:	Feb. 22, 2017	Date of Test:	Feb. 23~ Mar. 20, 2017
Date of Issue:	Mar. 21 2017	Test Result:	Pass

This device described above has been tested by Dongguan Yaxu (AiT) Technology Limited, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of Dongguan Yaxu (AiT) Technology Limited.

Reviewed by: Seal-Chen **Approved by:**

1 Contents

2 Test Summary

Test	Test Requirement	Test Method	Criterion	Result
Mains Terminals Disturbance Voltage, 150kHz to 30MHz	FCC Part 15 Subpart B: 2017	ANSI C63.4: 2014	Limits	PASS
Radiated Emissions 30MHz to 1GHz	FCC Part 15 Subpart B: 2017	ANSI C63.4: 2014	Limits	PASS
Radiated Emissions 1G Hz to 25GHz	FCC Part 15 Subpart B: 2017	ANSI C63.4: 2014	Limits	PASS

Note:

N/A

2.1 Measurement Uncertainty

The report uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty Multiplied by a coverage factor of **k=2** , providing a level of confidence of approximately 95% .

No.	Item	Frequency Range	U , Value
1	Power Line Conducted Emission	150KHz~30MHz	1.20 dB
2	Radiated Emission Test	30MHz~1GHz	3.30 dB
3	Radiated Emission Test	1GHz~25GHz	3.30 dB

3 Test Facility

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

.CNAS- Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2005 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on Apr. 18, 2013

.FCC- Registration No: 248337

The 3m Semi-Anechoic Chamber, 3m/10m Open Area Test Site and Shielding Room of Dongguan Yaxu (AiT) Technology Limited have been registered by Federal Communications Commission (FCC) on Aug.29, 2014.

.Industry Canada(IC)-Registration No: IC6819A-1

The 3m Semi-Anechoic Chamber and 3m/10m Open Area Test Site of Dongguan Yaxu (AiT) Technology Limited have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing on Oct. 12, 2014.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None

4 General Information

4.1 General Description of EUT

Manufacturer:	LOGITECHNOLOGY (LONGNAN) INC.
Manufacturer Address:	DA LUO INDUSTRIAL PARK, LONGNAN ECONOMIC & TECHNOLOGICAL DEVELOPMENT ZONE, GANZHOU CITY, JIANGXI, CHINA. Postal code: 341700.
EUT Name:	Wireless Receiver (D30A)
Model No:	D30A
Brand Name:	Canon
Highest operating frequency:	2.473 GHz
Power Supply Range:	DC 5V
Power Supply:	DC 5V from Laptop
Power Cord:	N/A
Signal Cable:	N/A

4.2 Test Location

All tests were performed at:

Dongguan Yaxu (AiT) Technology Limited
No.22, Jinqianling Third Street, Jitigang, Huangjiang,Dongguan, Guangdong, China
Tel.: +86.769.82020499 Fax.: +86.769.82020495

4.3 Description of Test setup

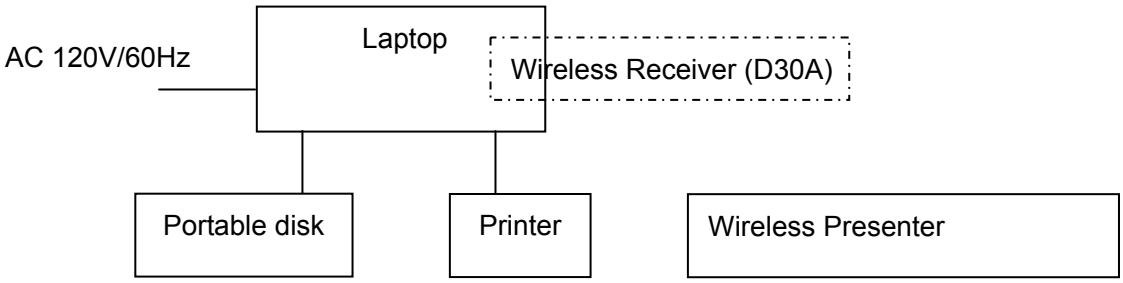
4.3.1 EUT Test Mode

Mode 1	The EUT is in Normal working mode.

EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration

Mode 1:



4.4 EUT Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	WIRELESS PRESENTER ,	LOGITECHNOLOGY (LONGNAN) INC.	N/A	PR5-G	N/A	N/A	N/A

4.4 Test Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	Laptop	ASUA	FCC	X401A	N/A	N/A	N/A
2	Portable disk	ALUMINUM	FCC	3.5 HDD Storage Box	N/A	1.8m	1.2m
3	Printer	EPSON	FCC	STYLUSC45	N/A	1.8m	1.2m

5 Equipments List for All Test Items

☒ Radiation Test Equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101660	2016.06.29	2017.06.28
2	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2016.06.29	2017.06.28
3	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2016.06.29	2017.06.28
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.06.29	2017.06.28
5	Spectrum Analyzer	ADVANTEST	R3182	150900201	2016.06.29	2017.06.28
6	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2016.06.29	2017.06.28
7	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	452	2016.06.29	2017.06.28
8	Radiated Cable 1#（30MHz-1GHz）	FUJIKURA	5D-2W	01	2016.06.29	2017.06.28
9	Radiated Cable 2# (1GHz -25GHz)	FUJIKURA	10D2W	02	2016.06.29	2017.06.28

☒ Conduction Test equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Test Receiver	R&S	ESCI	100124	2016.06.29	2017.06.28
2	LISN	Kyoritsu	KNW-242	8-837-4	2016.06.29	2017.06.28
3	LISN	Kyoritsu	KNW-407	8-1789-3	2016.06.29	2017.06.28
4	Pulse limiter	R&S	ESH3-Z2	0357.8810.54	2016.06.29	2017.06.28
5	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.06.29	2017.06.28
6	Conducted Cable 1# (9KHz-30MHz)	FUJIKURA	1D-2W	01	2016.06.29	2017.06.28

Note:

1. ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

6 Emission Test Results

6.1 Mains Terminals Disturbance Voltage Measurement

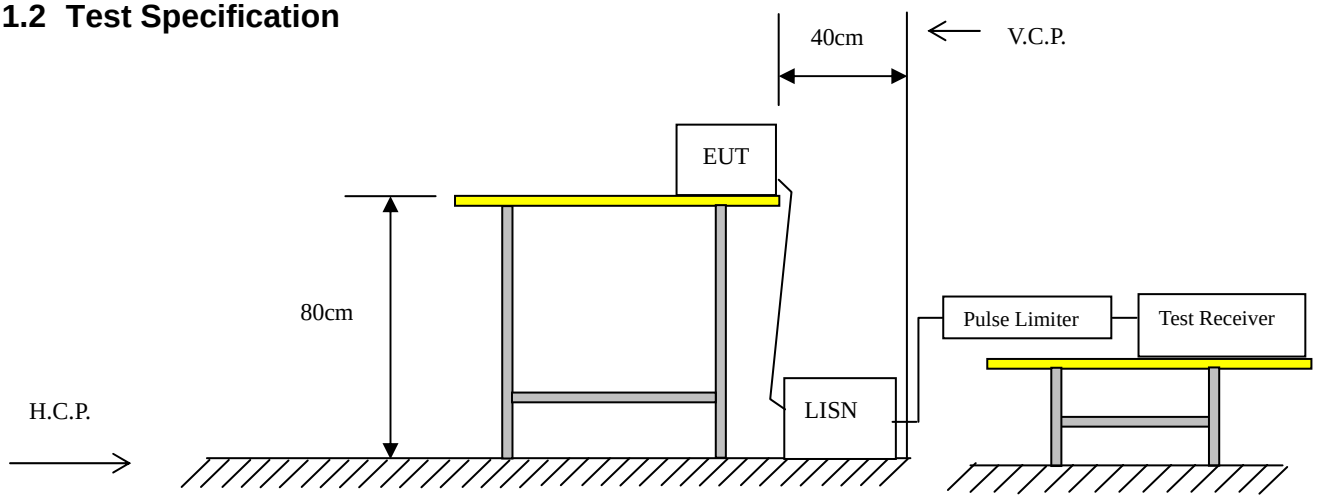
Frequency (MHz)	☐ Class A (dBμV)		☒ Class B (dBμV)	
	Q.P. (Quasi-Peak)	A.V. (Average)	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 ~ 0.50	79	66	66 to 56	56 to 46
0.50 ~ 5.0	73	60	56	46
5.0 ~ 30	73	60	60	50

Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximized peak within 6dB of Average Limit

6.1.1 E.U.T. Operation

Temperature:	25°C	Humidity:	54% RH	Atmospheric Pressure:	101	Kpa
Test Mode:	Mode 1					

6.1.2 Test Specification



EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF output port of the AMN. Both average and quasi-peak value were detected.

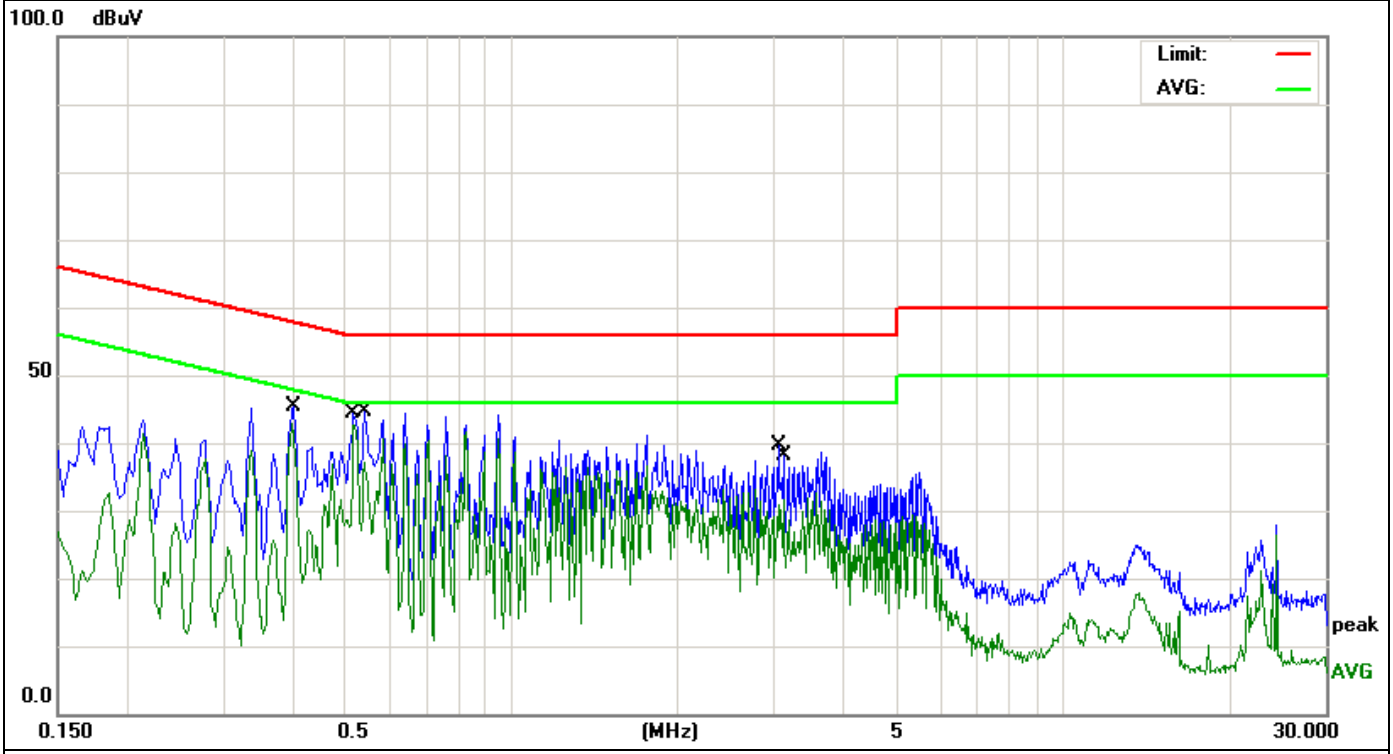
6.1.3 Measurement Data

An initial pre-scan was performed on the live and neutral lines.

Quasi-peak or average measurements were performed at the frequency which maximum peak emissions were detected.

Please refer to the attached quasi-peak & average measurement data for reference.

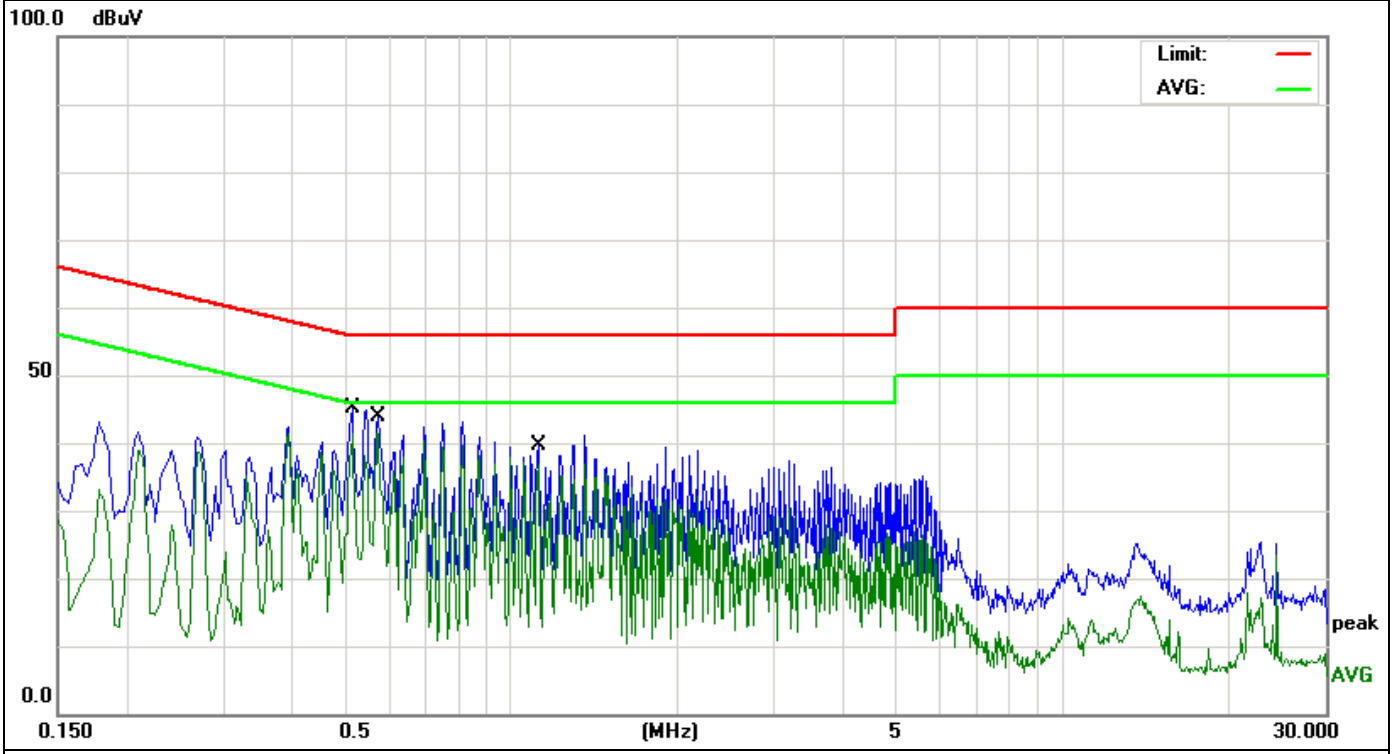
Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Phase :	Line
Test Voltage:	AC 120V/60Hz for Laptop		



Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3980	32.62	10.13	42.75	47.89	-5.14	AVG
2		0.4020	35.30	10.12	45.42	57.81	-12.39	QP
3	*	0.5180	32.74	10.01	42.75	46.00	-3.25	AVG
4		0.5420	34.58	10.00	44.58	56.00	-11.42	QP
5		3.0460	29.50	10.03	39.53	56.00	-16.47	QP
6		3.1099	21.68	10.03	31.71	46.00	-14.29	AVG

Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Phase :	Neutral
Test Voltage:	AC 120V/60Hz for Laptop		



Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.5140	35.03	10.01	45.04	56.00	-10.96	QP
2		0.5140	31.28	10.01	41.29	46.00	-4.71	AVG
3	*	0.5700	31.50	10.00	41.50	46.00	-4.50	AVG
4		0.5740	33.91	10.00	43.91	56.00	-12.09	QP
5		1.1180	29.68	9.94	39.62	56.00	-16.38	QF
6		1.1180	26.99	9.94	36.93	46.00	-9.07	AVG

6.1.4 Test Setup Photograph

6.2 Radiated Emission Measurement

Limits of Radiated Emission Measurement (Below 1 GHz)

Frequency (MHz)	☐ Class A (10m)	☒ Class B (3m)
	Quasi-Peak dB(μV/m)	Quasi-Peak dB(μV/m)
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Limits of Radiated Emission Measurement (Above 1 GHz)

Frequency of emission (GHz)	Average limit (3m) dB(μV/m)	Peak limit (3m) dB(μV/m)
Above 1000	54	74

Remark: In the above table, the tighter limit applies at the band edges

Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximum peak within 6dB of limit

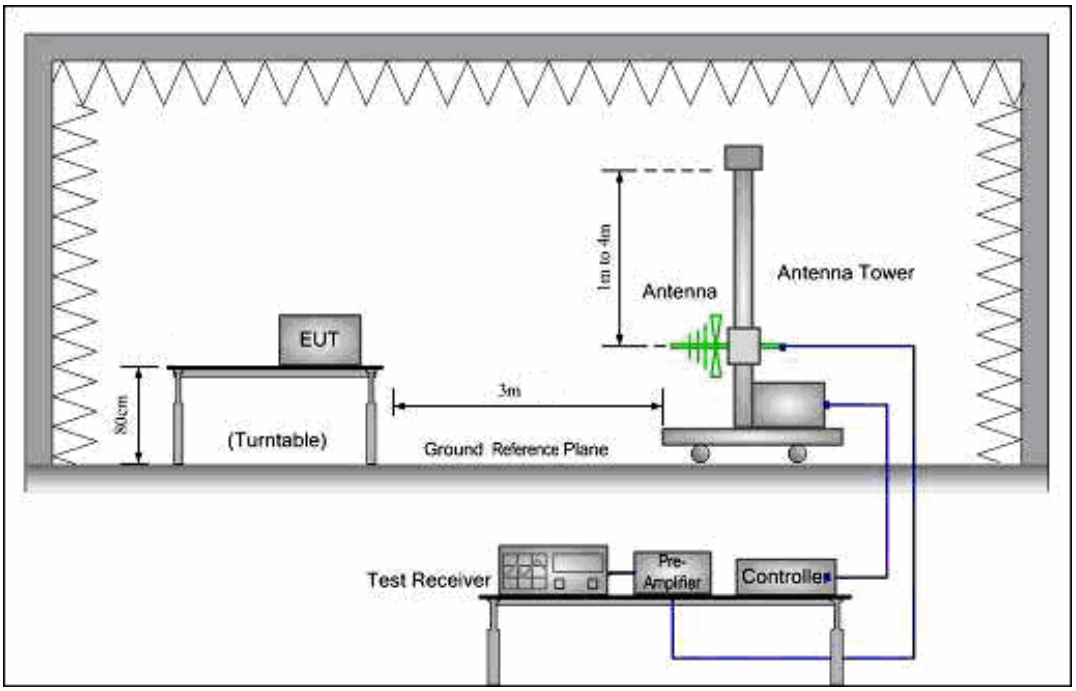
6.2.1 E.U.T. Operation

Temperature:	25°C	Humidity:	55% RH	Atmospheric Pressure:	101	Kpa
Test Mode:	Mode 1					

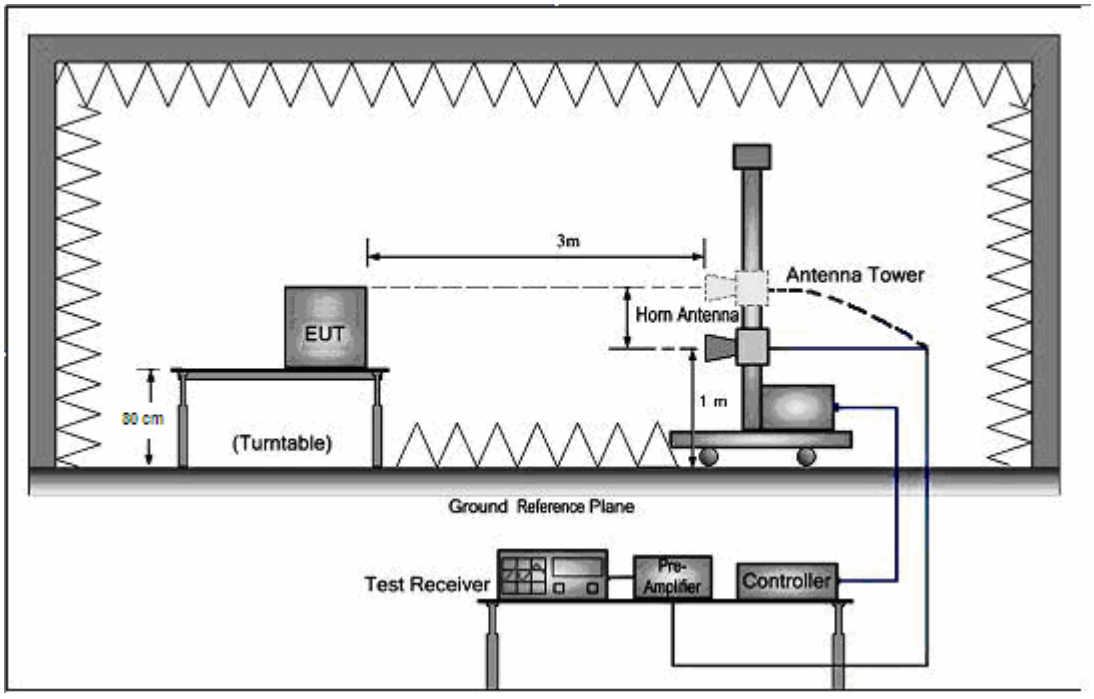
6.2.2 Test Specification

EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

30 MHz to 1 GHz emissions:



1 GHz to 25 GHz emissions:



6.2.3 Measurement Data

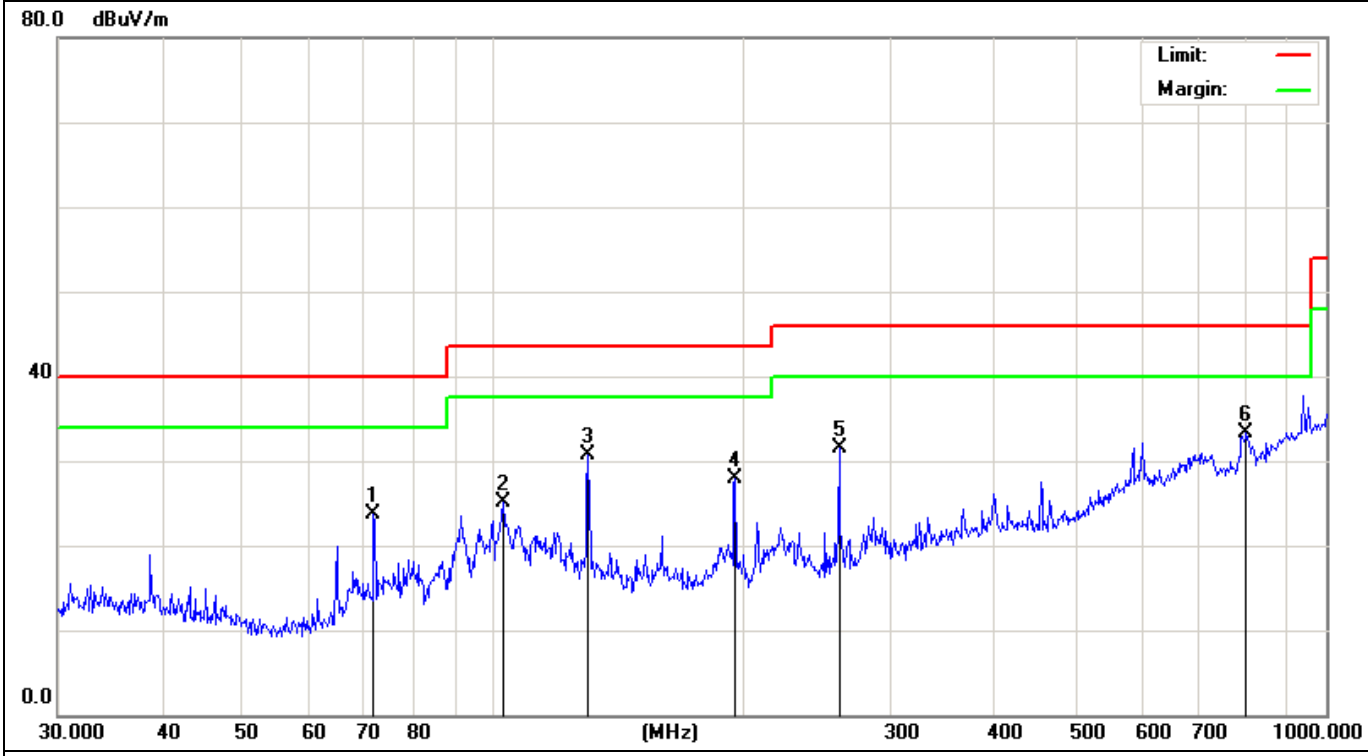
An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.

.

Radiated Emission 30MHz-1GHz

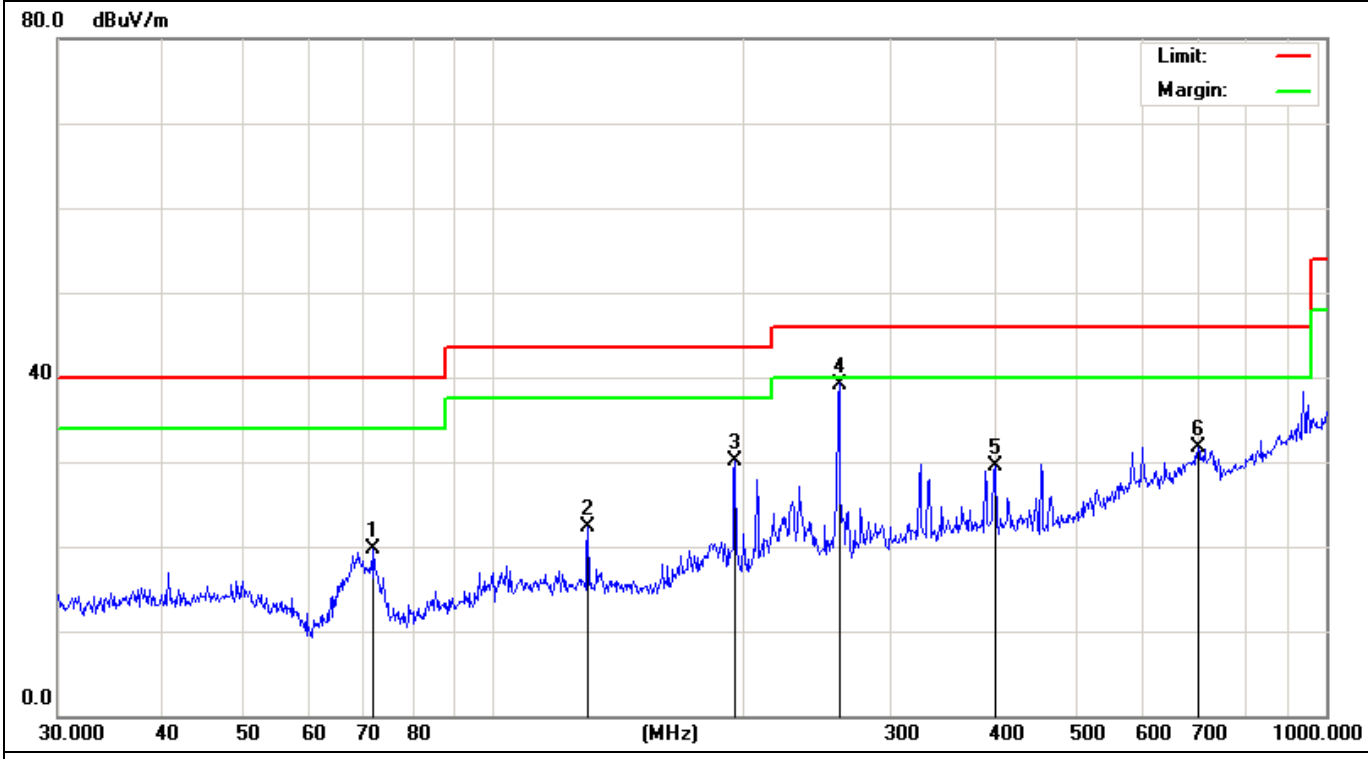
Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Polarization :	Vertical
Test Voltage:	AC 120V/60Hz for laptop		



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		71.8320	42.78	-19.07	23.71	40.00	-16.29	QP
2		102.7192	38.80	-13.76	25.04	43.50	-18.46	QP
3		129.9226	45.56	-14.93	30.63	43.50	-12.87	QP
4		195.1365	44.26	-16.36	27.90	43.50	-15.60	QP
5		260.1444	44.24	-12.82	31.42	46.00	-14.58	QP
6	*	801.7863	29.96	3.30	33.26	46.00	-12.74	QP

Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Polarization :	Horizontal
Test Voltage:	AC 120V/60Hz for laptop		

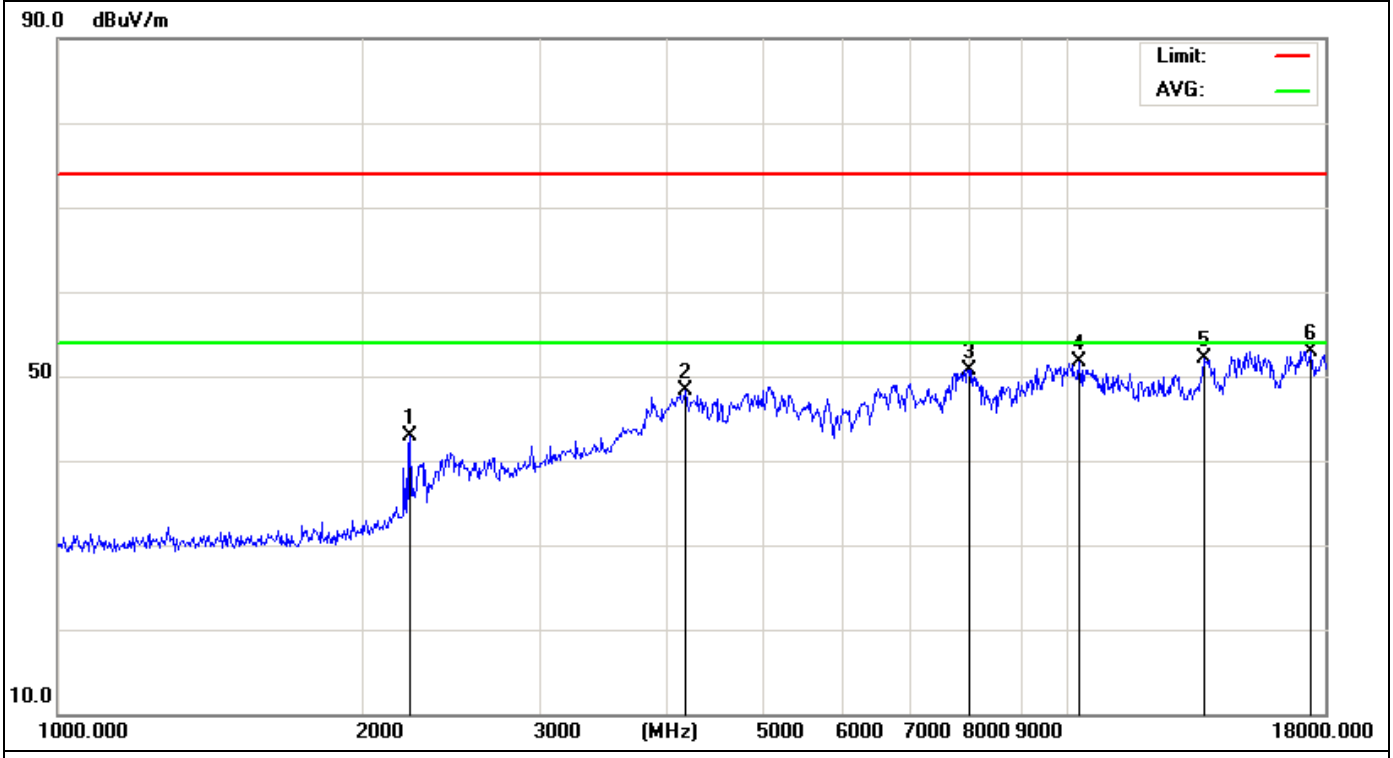


Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		71.8320	38.58	-18.96	19.62	40.00	-20.38	QP
2		129.9226	37.33	-14.93	22.40	43.50	-21.10	QP
3		195.1365	45.81	-15.76	30.05	43.50	-13.45	QP
4	*	260.1444	52.02	-12.82	39.20	46.00	-6.80	QP
5		400.4319	36.30	-6.89	29.41	46.00	-16.59	QP
6		701.7610	31.37	0.32	31.69	46.00	-14.31	QP

Radiated Emission 1GHz-25GHz

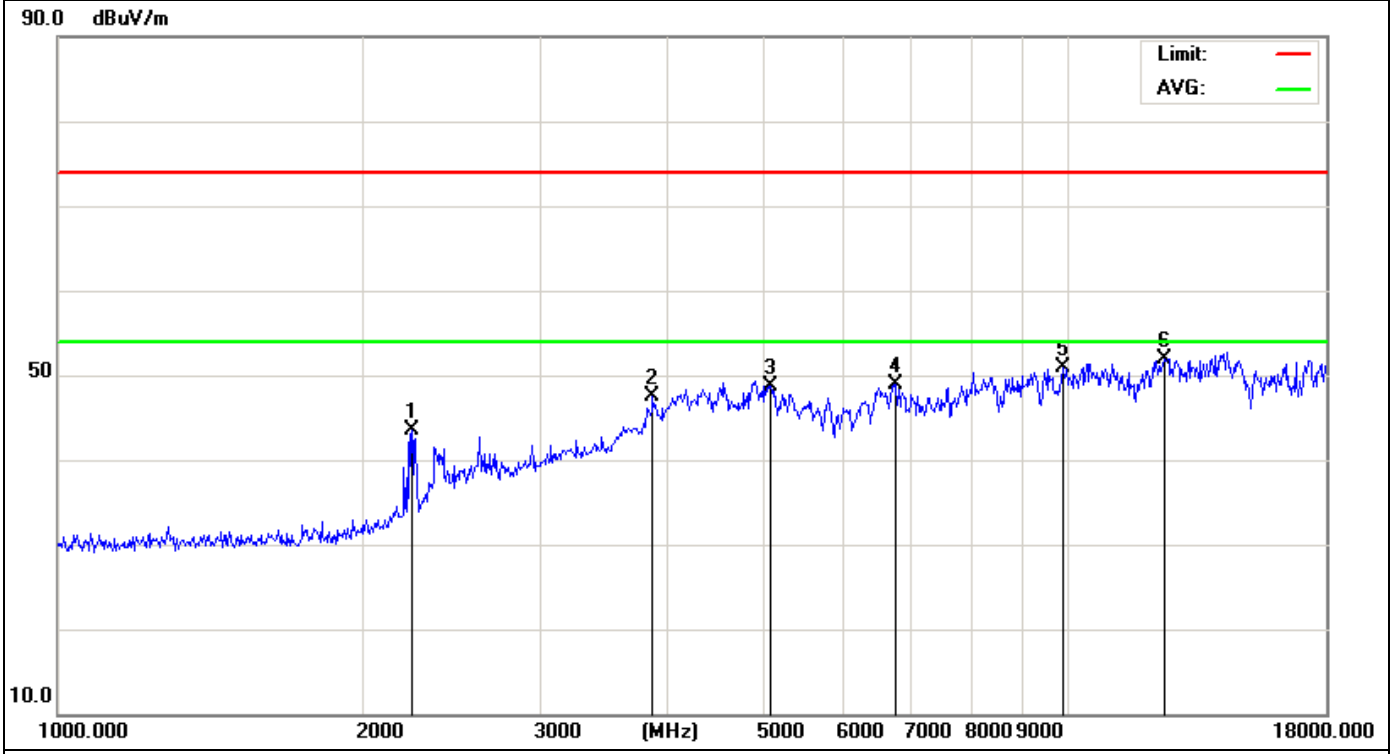
Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Polariztion :	Vertical
Test Voltage:	AC 120V/60Hz for laptop		



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2233.396	49.97	-7.12	42.85	74.00	-31.15	peak
2		4181.768	44.27	4.11	48.38	74.00	-25.62	peak
3		7989.892	40.46	10.34	50.80	74.00	-23.20	peak
4		10274.23	39.24	12.46	51.70	74.00	-22.30	peak
5		13677.96	36.22	15.98	52.20	74.00	-21.80	peak
6	*	17386.38	28.26	24.74	53.00	74.00	-21.00	peak

Model name:	D30A	Test Date :	2017-03-19
Test Mode:	Mode 1	Polariztion :	Horizontal
Test Voltage:	AC 120V/60Hz for laptop		



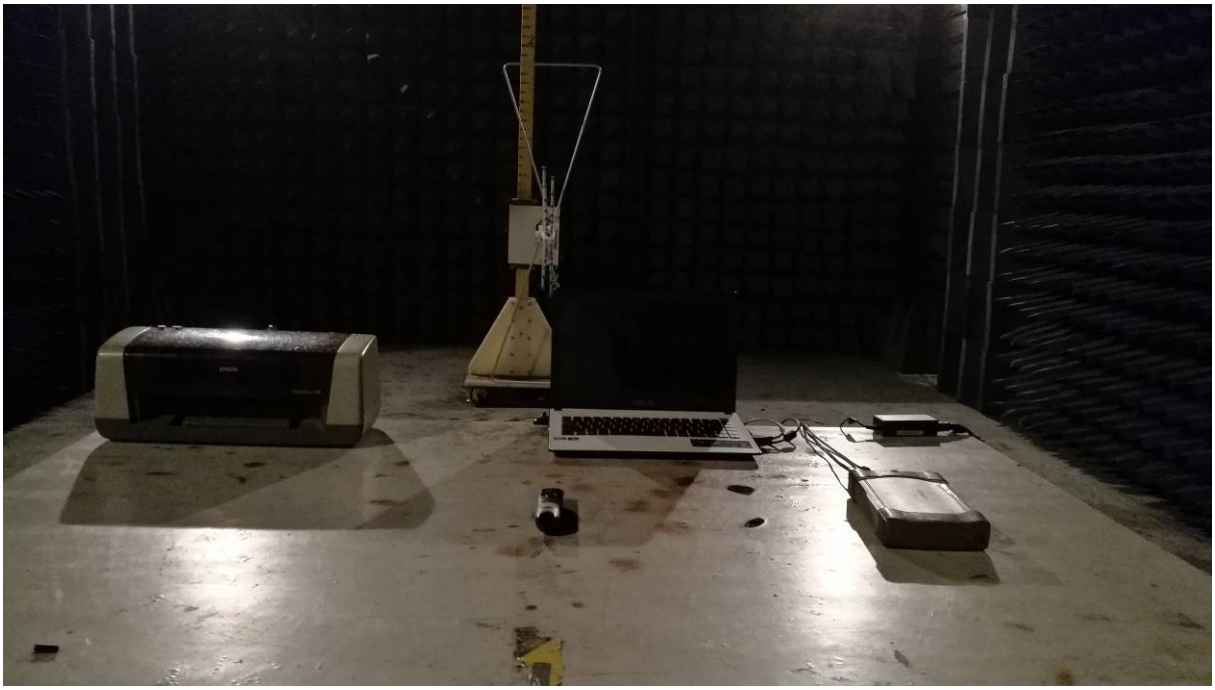
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

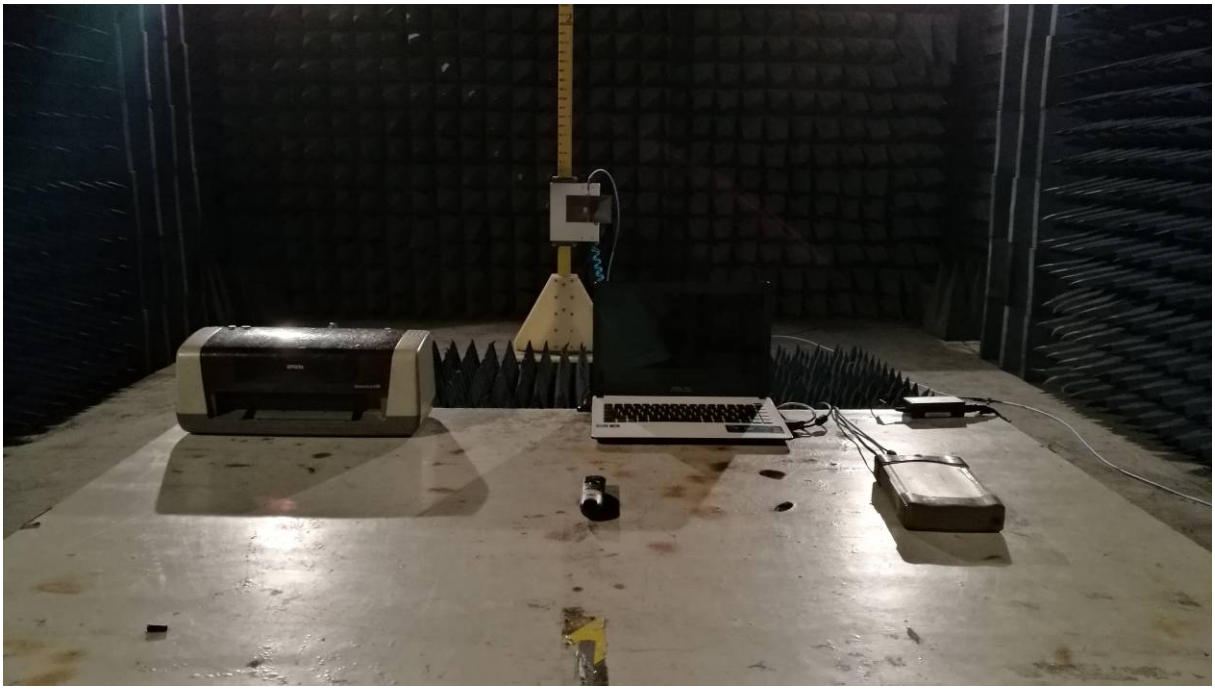
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2239.861	50.51	-7.07	43.44	74.00	-30.56	peak
2		3879.027	44.48	2.95	47.43	74.00	-26.57	peak
3		5075.317	43.72	5.02	48.74	74.00	-25.26	peak
4		6756.708	42.94	6.02	48.96	74.00	-25.04	peak
5		9895.349	38.89	12.01	50.90	74.00	-23.10	peak
6	*	12433.62	32.41	19.59	52.00	74.00	-22.00	peak

Remark:

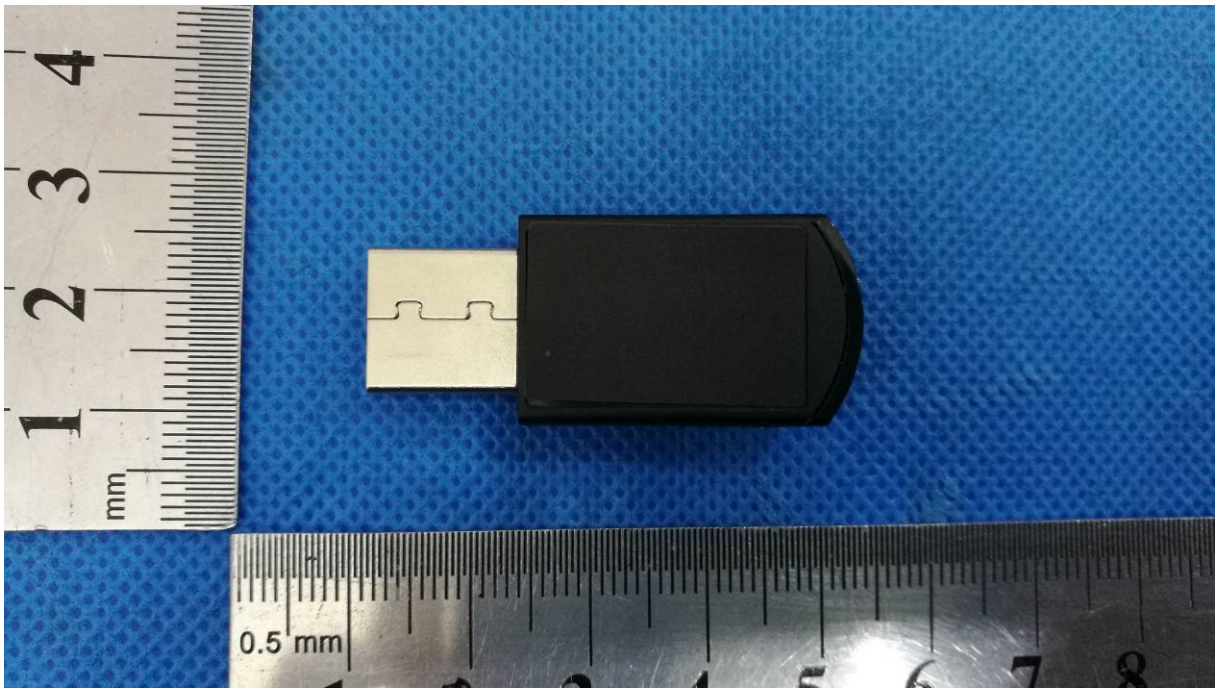
1. Average measurement was not performed if peak level lower than average limit.
2. No any other emissions level within 1-25GHz which are attenuated less than 20dB below the limit.

6.2.4 Test Setup photograph



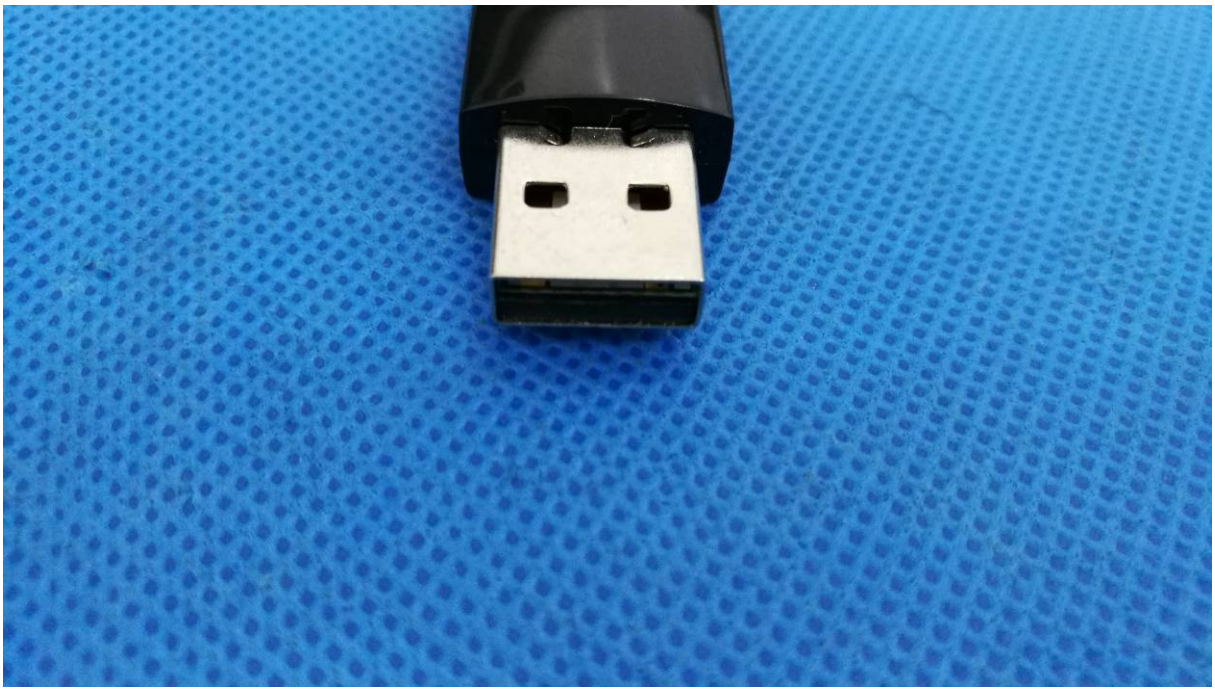


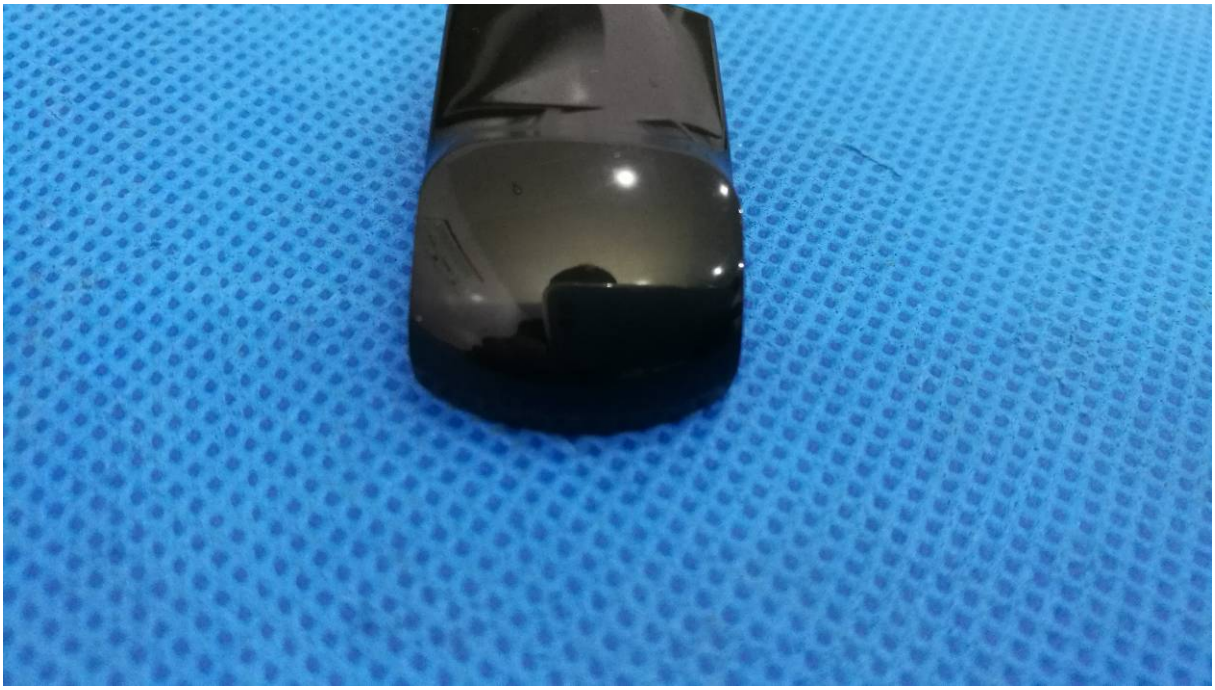
7 APPENDIX-Photographs of EUT Constructional Details

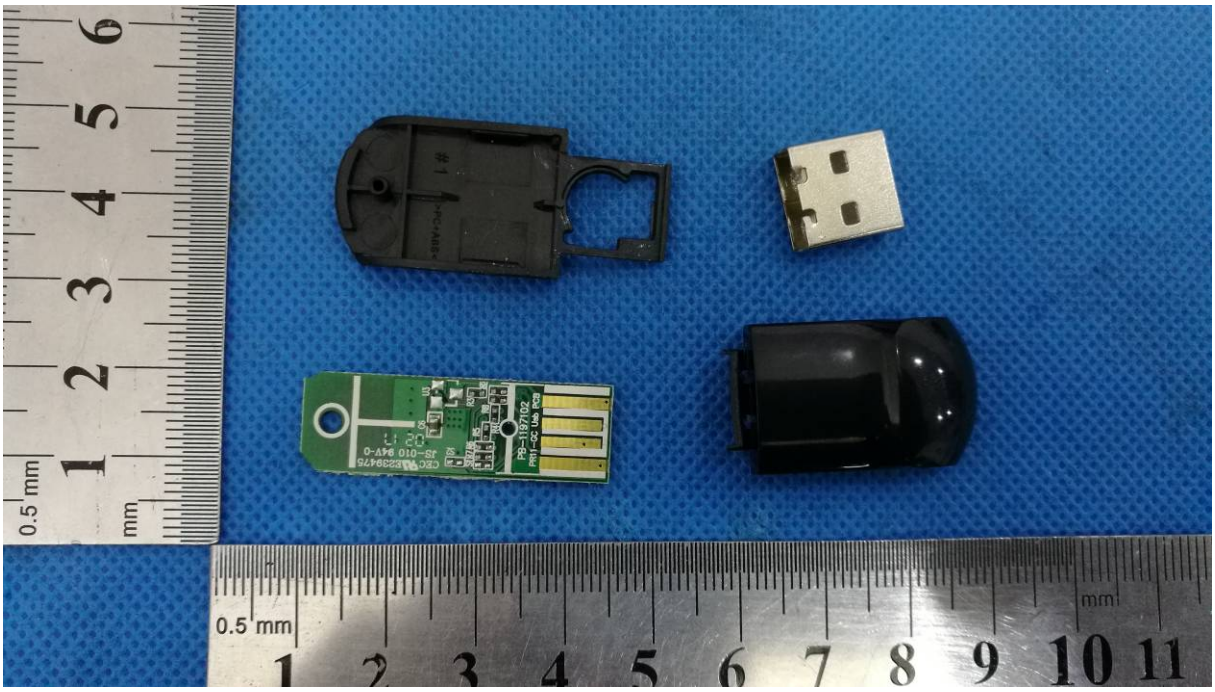


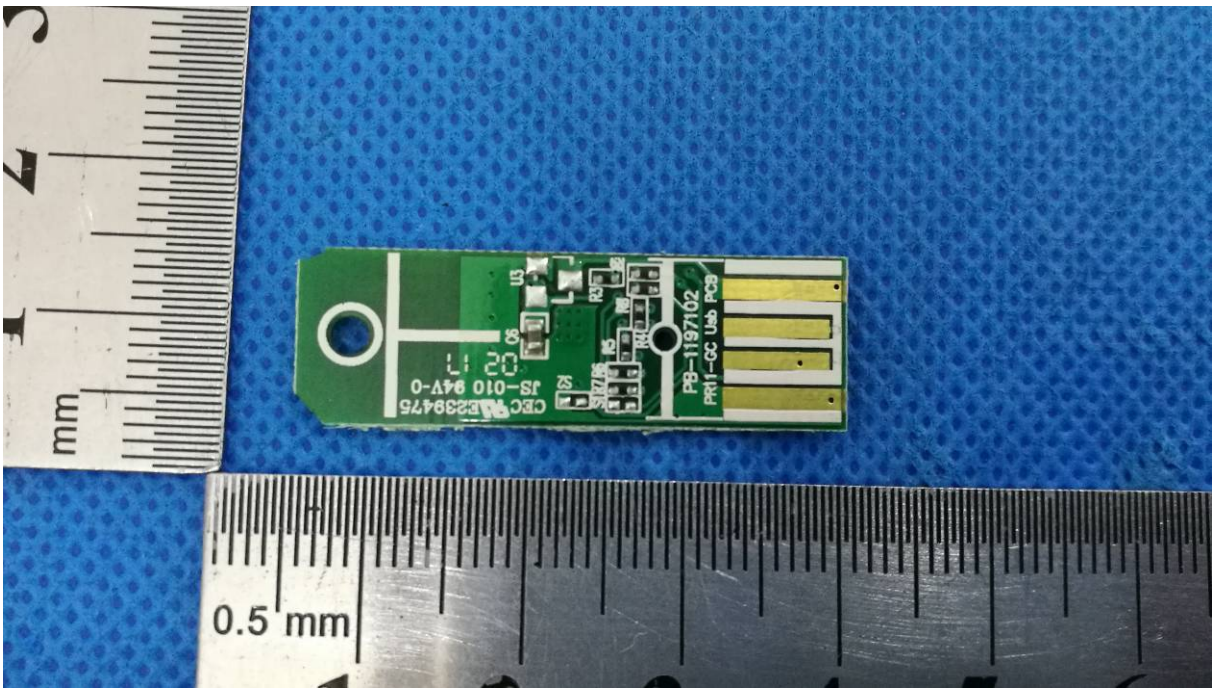

0.5 mm
1 2 3 4 5 6 7 8

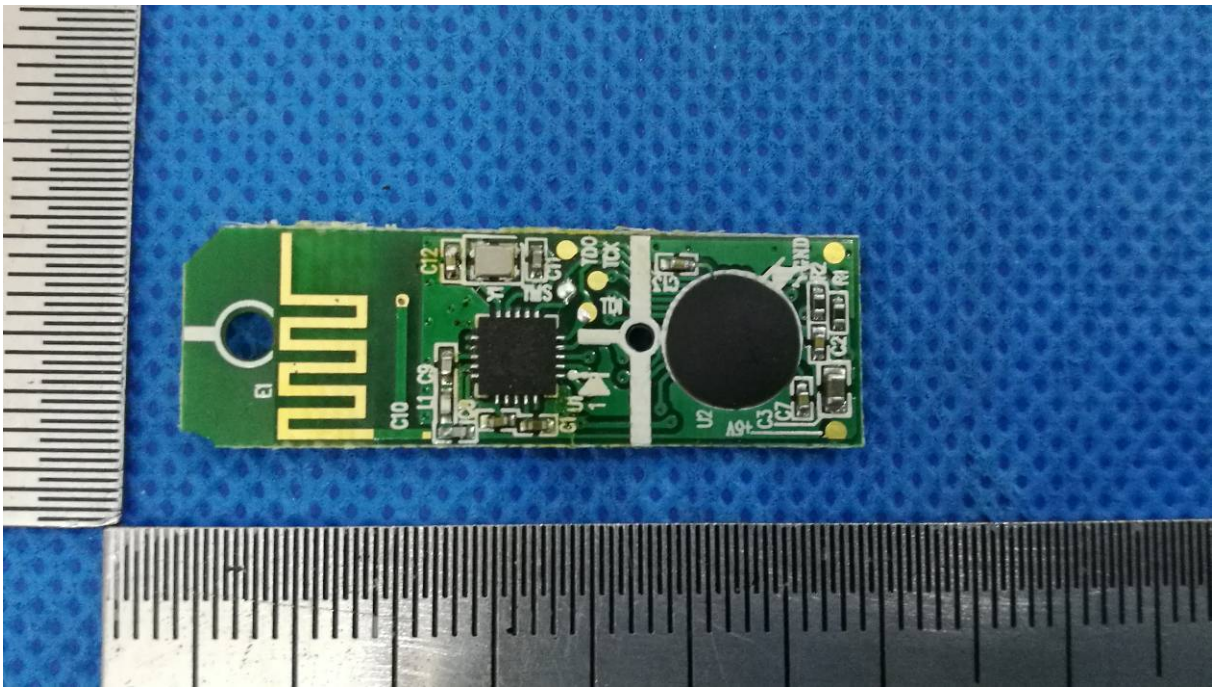

0.5 mm
1 2 3 4 5 6 7 8











****End of report****