

FCC TEST REPORT

FCC ID: 2AIWWPD-V8

Product	:	Microwave Sensor
Model Name	:	PD-V8
Brand	:	N/A
Report No.	:	PTCDQ07170500302-FC01
Prepared for		
Ningbo Pdlux Electronic Technology CO.,LTD		
17F, Commerce building of Ningbo, No 588, south Tiantong road,yinzhou district Ningbo, China		
Prepared by		
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1 TEST RESULT CERTIFICATION

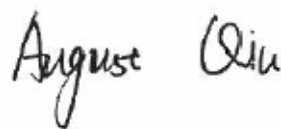
Applicant's name : Ningbo Pdlux Electronic Technology CO.,LTD.
Address : 17F, Commerce building of Ningbo, No 588, south Tiantong road,yinzhou district Ningbo, China
Manufacture's name : Ningbo Pdlux Electronic Technology CO.,LTD.
Address : 17F, Commerce building of Ningbo, No 588, south Tiantong road,yinzhou district Ningbo, China
Product name : Microwave Sensor
Model name : PD-V8
Standards : FCC CFR47 Part 15 Section 15.245
Test procedure : ANSI C63.10:2013
Test Date : May.08, 2017 ~ May.18, 2017
Date of Issue : May.18, 2017
Test Result : Pass

This device described above has been tested by PTS, 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.

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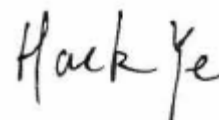
Testing Engineer

August Qiu




Technical Manager

Hack Ye



Authorized Signatory

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PRECISE TESTING

Report No.: PTCDQ07170500302-FC01

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2 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207	PASS
Radiated Spurious Emission	15.245(b) 15.209 15.205(a)	PASS
Field strength of fundamental	15.245(b)	PASS
Band Edge Emission	15.245(b3) 15.205 15.209	PASS
Antenna Requirement	15.203	PASS

Remark:

N/A: Not Applicable

3 General Information

3.1 General Description of E.U.T.

Product Name : Microwave Sensor

Model Name : PD-V8

Model Description : N/A

Operation Frequency: : 5792.41MHz

Antenna installation: : straight copper wire

Antenna Gain: : 1.0dBi

Type of Modulation : CW

The lowest oscillator : N/A

Power supply : DC 5V power by battery

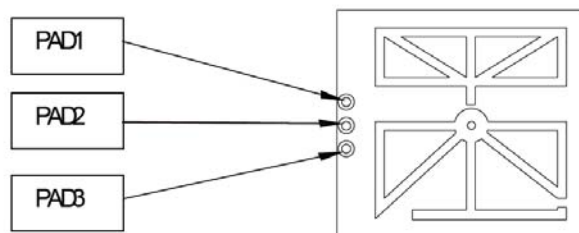
1. The Voltage range is 4.75 ~5.25V, Out of this range, The device cannot work normally

2. The module will be stick on the PCB, and then put into one shield shell.

3. Power Type:

- 1) Provide 5V DC on pad 1 (4.75V-5.25V)
- 2) Provide DC ground onto PAD3
- 3) Connect PAD 2 (IF) to the μ PC for signal processing
- 4) Operating temperature: -10-70°C

Remark :



4. More details please refer to the user manual.

4 Equipment During Test

4.1 Equipments List

Conducted Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMI Test Receiver	R&S	ESCI	101155	July 15, 2016	July 14, 2017	1 year
2	LISN	SCHWARZB ECK	NSLK 8128	8128-289	July 15, 2016	July 14, 2017	1 year
3	Cable	LARGE	RF300	-	July 15, 2016	July 14, 2017	1 year

Radiated Emissions							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 15, 2015	July 14, 2016	1 year
2	EMC Analyzer (9k~26.5GHz)	Agilent	E4407B	MY45109572	Aug.04, 2015	Aug.03, 2016	1 year
3	Trilog Broadband Antenna	SCHWARZB ECK	VULB9160	9160-3355	July 15, 2015	July 14, 2016	1 year
4	Amplifier	EM	EM-30180	060538	July 15, 2015	July 14, 2016	1 year
5	Horn Antenna	SCHWARZB ECK	BBHA9120 D	9120D-1246	July 15, 2015	July 14, 2016	1 year
6	Coaxial Cable(below 1GHz)	LARGE	CALB1	-	July 15, 2015	July 14, 2016	1 year
7	Coaxial Cable(above 1GHz)	LARGE	CALB2	-	July 15, 2015	July 14, 2016	1 year



4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~25GHz)	$\pm 4.74\text{dB}$

5 Conducted Emission

Test Requirement:	: FCC CFR 47 Part 15 Section 15.207
Test Method:	: ANSI C63.10:2013
Frequency Range:	: 150kHz to 30MHz
Class/Severity:	: Class B
Limit:	: 66-56 dB μ V between 0.15MHz & 0.5MHz
	: 56 dB μ V between 0.5MHz & 5MHz
	: 60 dB μ V between 5MHz & 30MHz
Detector:	: Peak for pre-scan (9kHz Resolution Bandwidth)

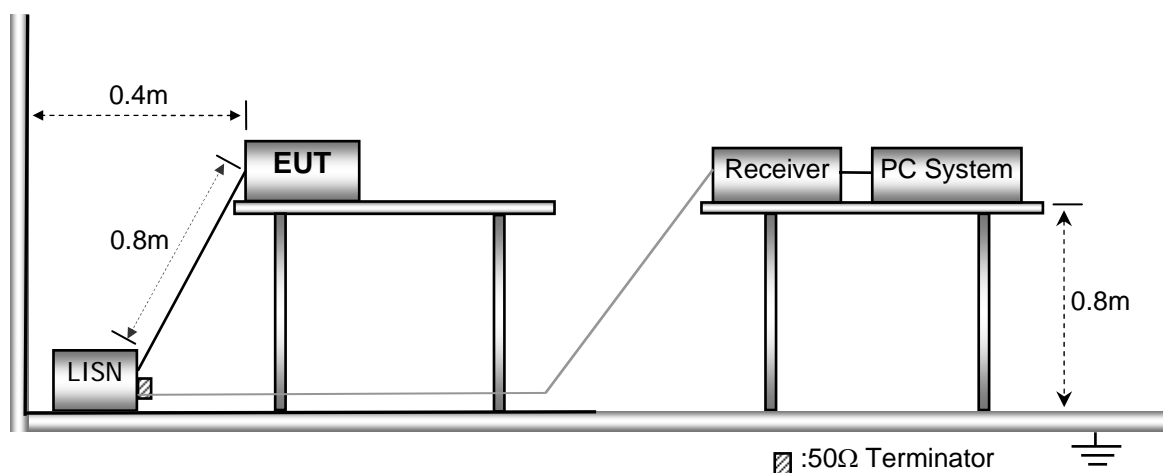
5.1 E.U.T. Operation

Operating Environment :

Temperature:	: 25.5 °C
Humidity:	: 51 % RH
Atmospheric Pressure:	: 101.2kPa
EUT Operation :	: Refer to section 3.3

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



5.3 Measurement Description

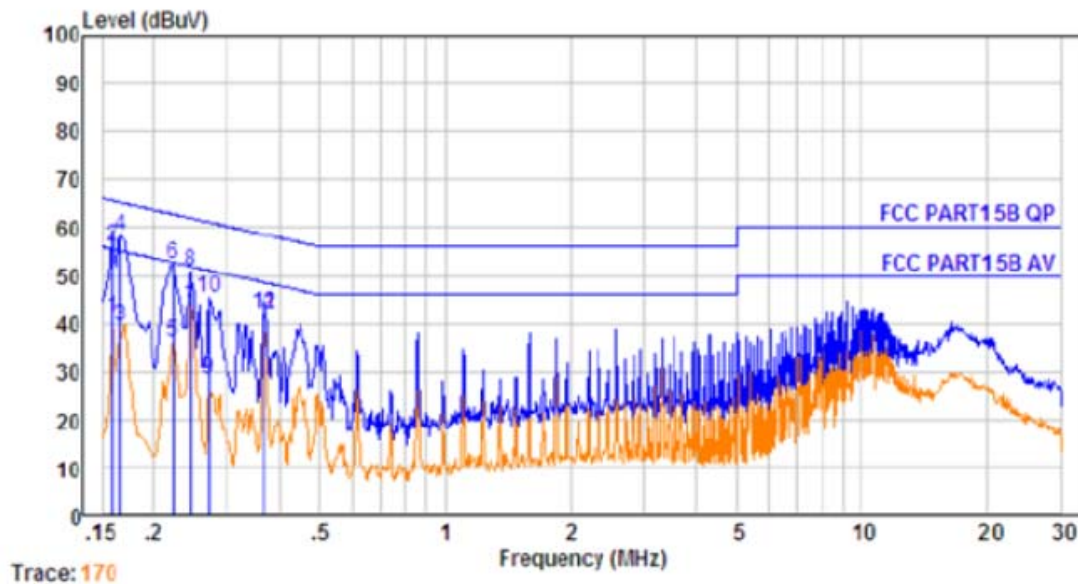
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.



5.4 Test Result

Live line:

AC120V , Test Mode: Transmitting

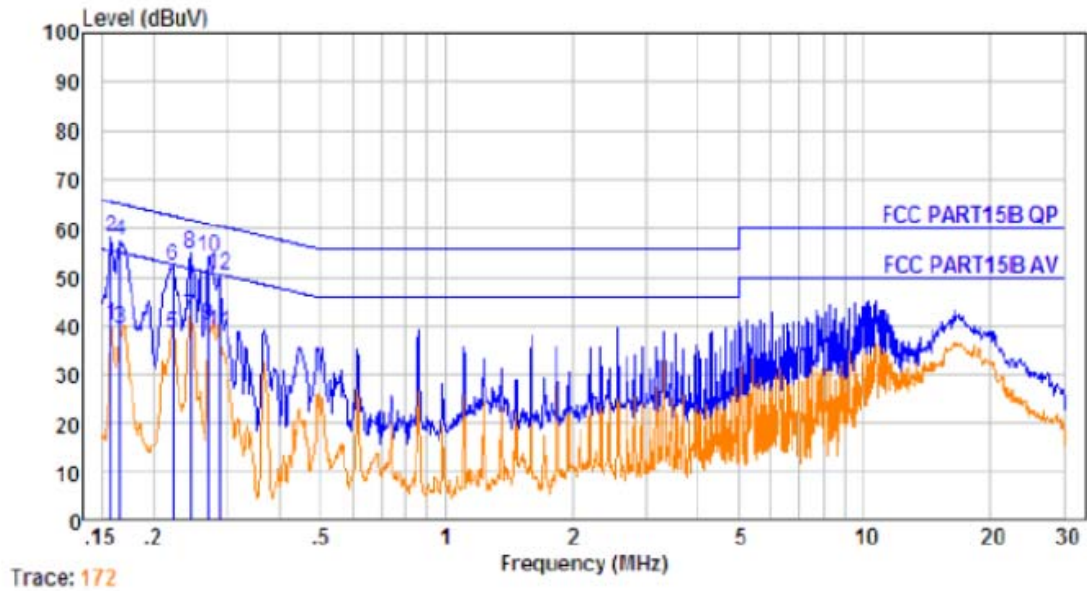


No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.158	10.60	0.60	30.00	41.20	55.56	-14.36	Average
2.	0.158	10.60	0.60	45.00	56.20	65.56	-9.36	QP
3.	0.166	10.60	0.60	28.22	39.42	55.16	-15.74	Average
4.	0.166	10.60	0.60	47.22	58.42	65.16	-6.74	QP
5.	0.222	10.61	0.60	25.04	36.25	52.74	-16.49	Average
6.	0.222	10.61	0.60	41.04	52.25	62.74	-10.49	QP
7.	0.246	10.62	0.60	31.84	43.06	51.91	-8.85	Average
8.	0.246	10.62	0.60	39.84	51.06	61.91	-10.85	QP
9.	0.270	10.62	0.60	17.06	28.28	51.12	-22.84	Average
10.	0.270	10.62	0.60	34.06	45.28	61.12	-15.84	QP
11.	0.369	10.63	0.60	31.00	42.23	48.52	-6.29	Average
12.	0.369	10.63	0.60	31.00	42.23	58.52	-16.29	QP



Neutral line:

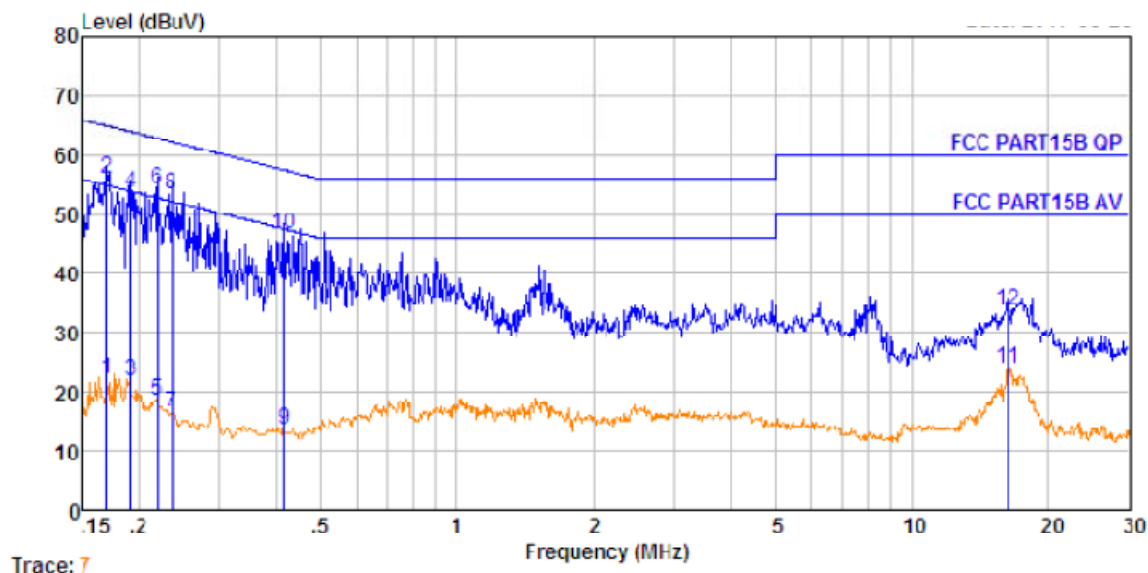
AC120V , Test Mode: Transmitting



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBUV	Emission Level dBUV	Limit dBUV	Over Limit dB	Remark
1.	0.158	10.60	0.60	29.17	40.37	55.56	-15.19	Average
2.	0.158	10.60	0.60	47.17	58.37	65.56	-7.19	QP
3.	0.166	10.60	0.60	28.22	39.42	55.16	-15.74	Average
4.	0.166	10.60	0.60	46.22	57.42	65.16	-7.74	QP
5.	0.222	10.61	0.60	27.04	38.25	52.74	-14.49	Average
6.	0.222	10.61	0.60	41.04	52.25	62.74	-10.49	QP
7.	0.246	10.62	0.60	30.84	42.06	51.91	-9.85	Average
8.	0.246	10.62	0.60	43.84	55.06	61.91	-6.85	QP
9.	0.270	10.62	0.60	29.06	40.28	51.12	-10.84	Average
10.	0.270	10.62	0.60	43.06	54.28	61.12	-6.84	QP
11.	0.286	10.63	0.60	27.42	38.65	50.63	-11.98	Average
12.	0.286	10.63	0.60	39.42	50.65	60.63	-9.98	QP

Live line:

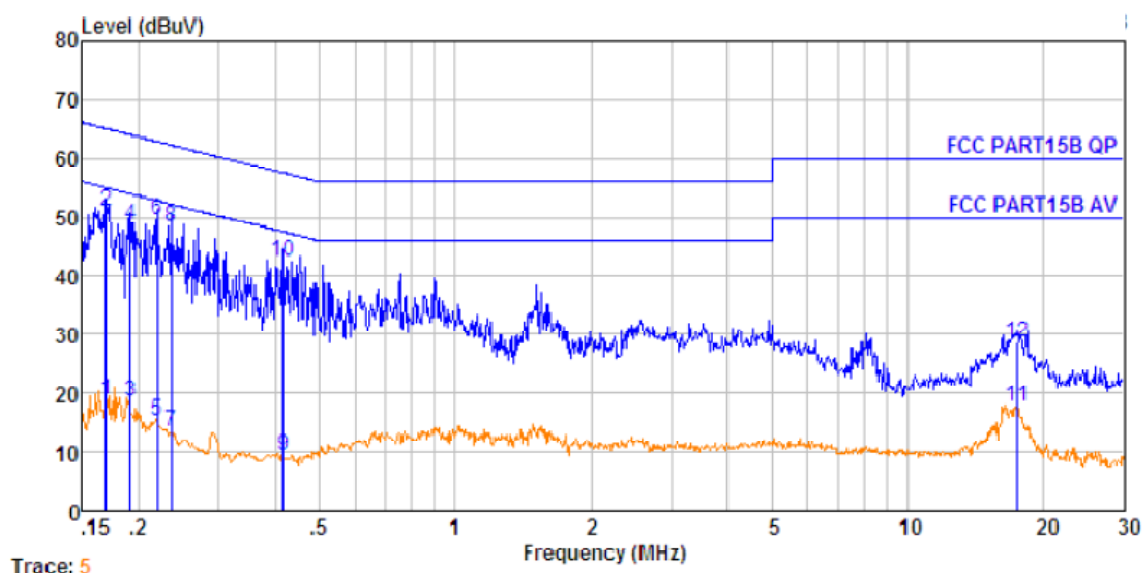
AC240V, Test Mode: Transmitting



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.169	10.60	0.60	10.82	22.02	54.99	-32.97	Average
2.	0.169	10.60	0.60	44.82	56.02	64.99	-8.97	QP
3.	0.191	10.61	0.60	10.51	21.72	53.98	-32.26	Average
4.	0.191	10.61	0.60	42.51	53.72	63.98	-10.26	QP
5.	0.220	10.61	0.60	7.24	18.45	52.83	-34.38	Average
6.	0.220	10.61	0.60	43.24	54.45	62.83	-8.38	QP
7.	0.235	10.62	0.60	5.26	16.48	52.26	-35.78	Average
8.	0.235	10.62	0.60	42.26	53.48	62.26	-8.78	QP
9.	0.417	10.64	0.60	2.30	13.54	47.51	-33.97	Average
10.	0.417	10.64	0.60	35.30	46.54	57.51	-10.97	QP
11.	16.226	10.78	0.60	12.39	23.77	50.00	-26.23	Average
12.	16.226	10.78	0.60	22.39	33.77	60.00	-26.23	QP

Neutral line:

AC240V, Test Mode: Transmitting



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.169	10.60	0.60	7.82	19.02	54.99	-35.97	Average
2.	0.169	10.60	0.60	39.82	51.02	64.99	-13.97	QP
3.	0.191	10.61	0.60	7.51	18.72	53.98	-35.26	Average
4.	0.191	10.61	0.60	37.51	48.72	63.98	-15.26	QP
5.	0.220	10.61	0.60	4.24	15.45	52.83	-37.38	Average
6.	0.220	10.61	0.60	38.24	49.45	62.83	-13.38	QP
7.	0.235	10.62	0.60	2.26	13.48	52.26	-38.78	Average
8.	0.235	10.62	0.60	37.26	48.48	62.26	-13.78	QP
9.	0.417	10.64	0.60	-1.70	9.54	47.51	-37.97	Average
10.	0.417	10.64	0.60	31.30	42.54	57.51	-14.97	QP
11.	17.383	10.78	0.60	6.29	17.67	50.00	-32.33	Average
12.	17.383	10.78	0.60	17.29	28.67	60.00	-31.33	QP

6 Radiated Spurious Emissions

Test Requirement: : FCC CFR47 Part 15 Section 15.245 & 15.207 & 15.205
 Test Method: : ANSI C63.10:2013
 Test Result: : PASS
 Measurement Distance: : 3m
 Limit: : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

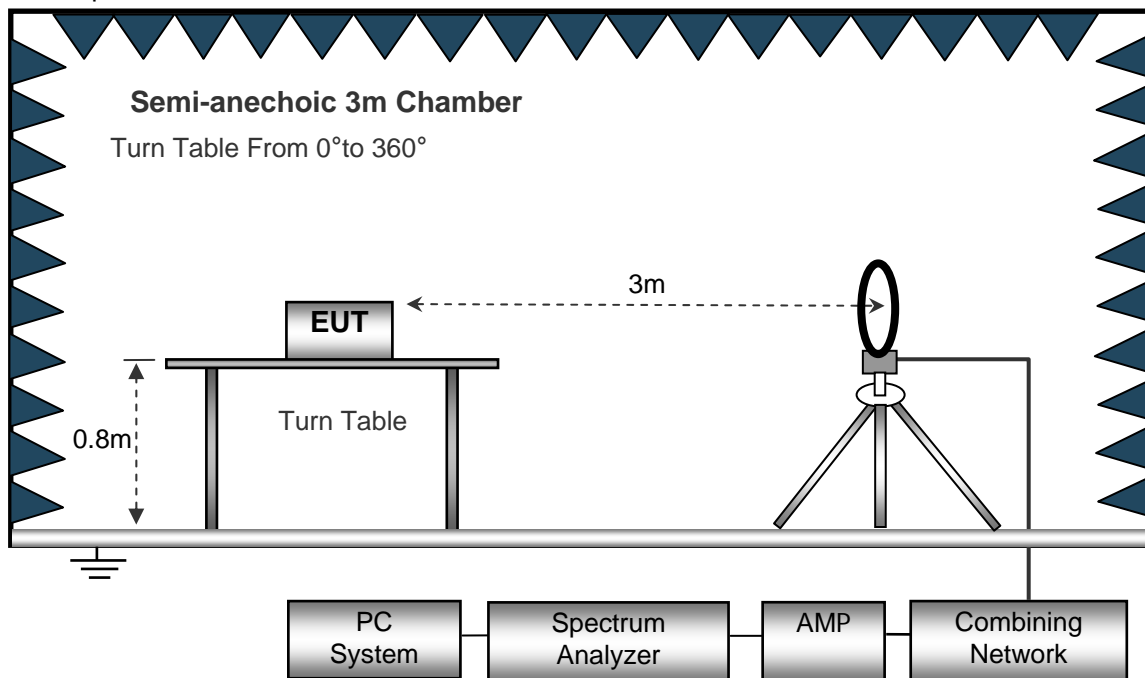
Operating Environment :

Temperature: : 23.5 °C
 Humidity: : 51.1 % RH
 Atmospheric Pressure: : 101.2kPa
 EUT Operation : : Refer to section 3.3

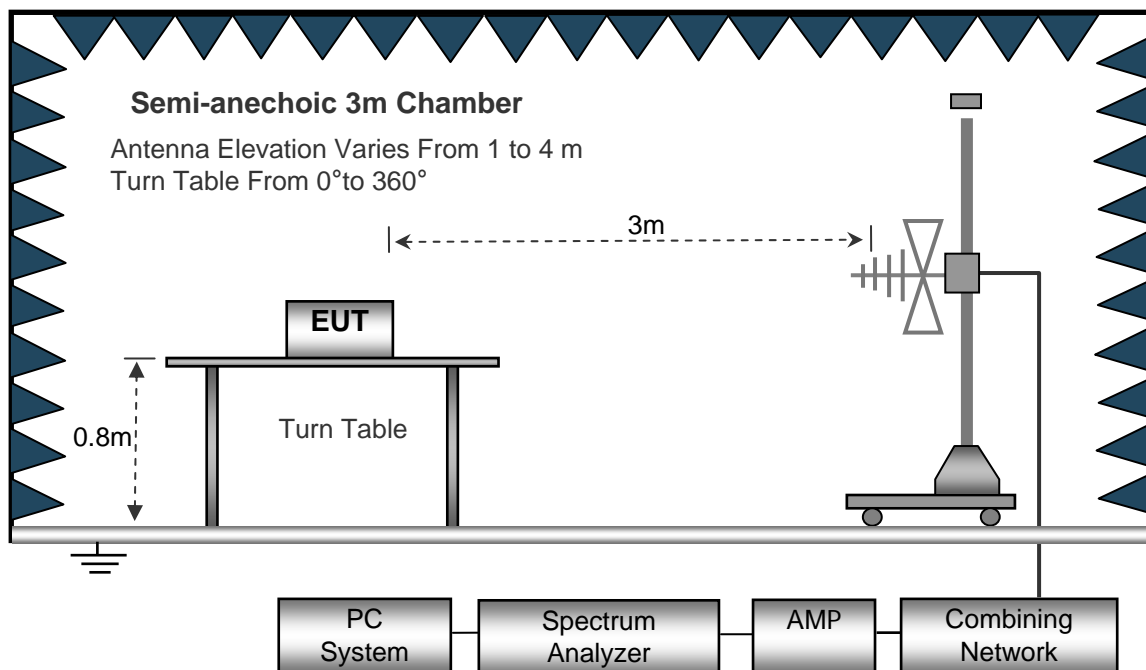
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

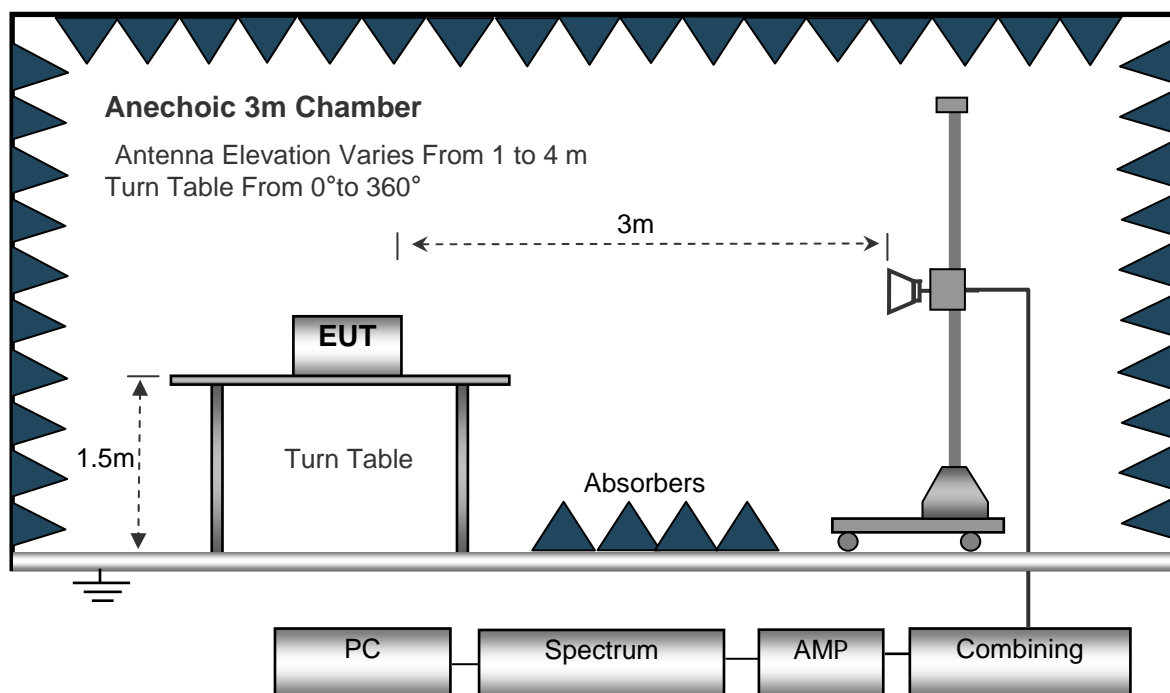
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



6.3 Spectrum Analyzer Setup

Below 30MHz

IF Bandwidth : 10kHz
Resolution Bandwidth 10kHz
Video Bandwidth 10kHz

30MHz ~ 1GHz

Detector : PK
Resolution Bandwidth : 100kHz
Video Bandwidth : 300kHz
Detector : QP
Resolution Bandwidth : 120kHz
Video Bandwidth : 300kHz

Above 1GHz

Detector : PK
Resolution Bandwidth : 1MHz
Video Bandwidth : 3MHz
Detector : AV
Resolution Bandwidth : 1MHz
Video Bandwidth : 10Hz

6.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m or 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.



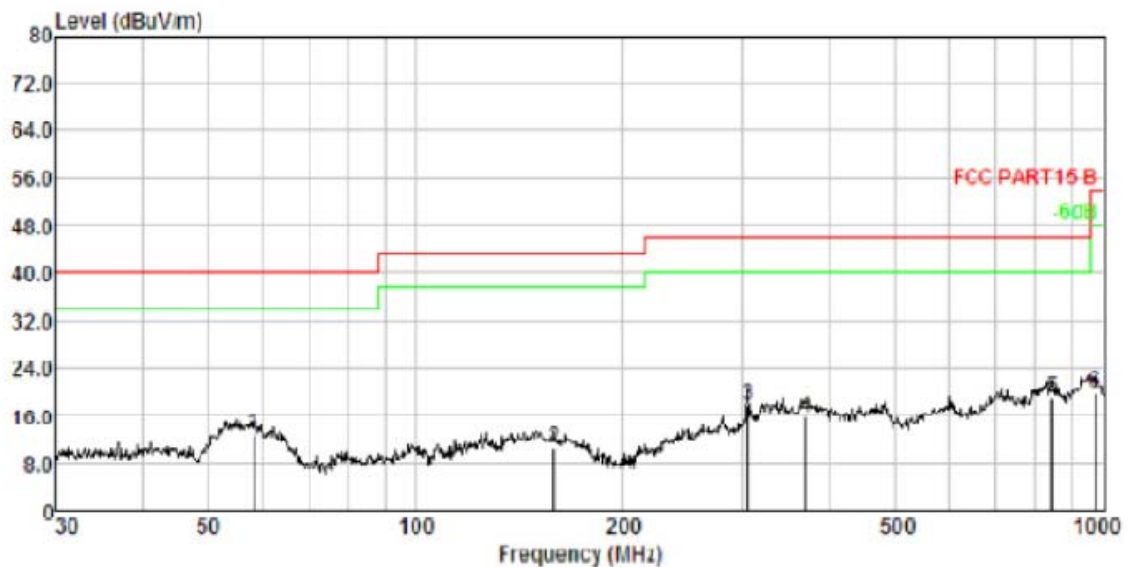
6.5 Summary of Test Results

Test Frequency: Below 30MHz

The low frequency, which started from 9KHz-30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Test Frequency: 30MHz ~ 1GHz

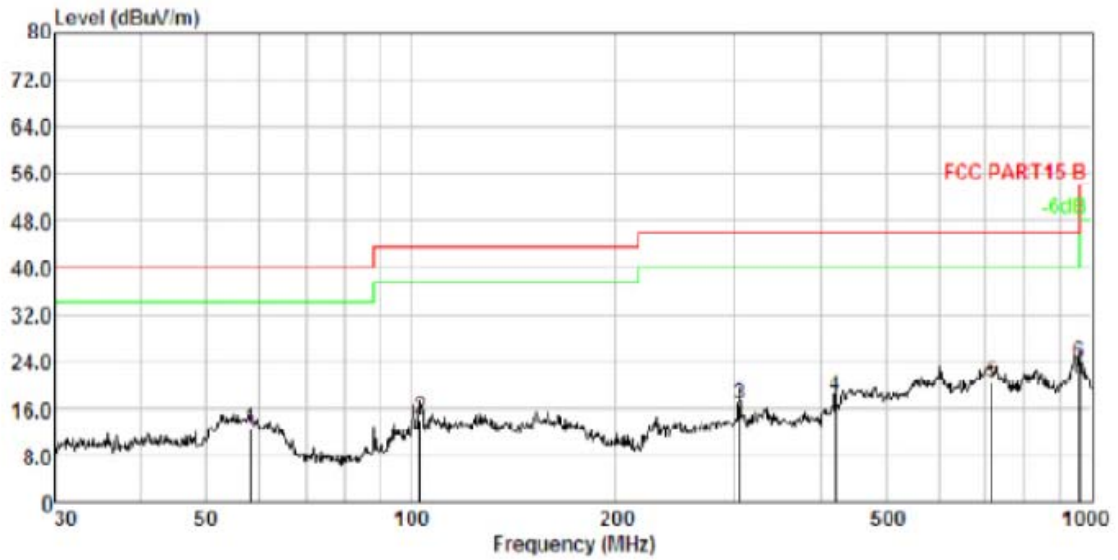
Antenna Polarization: Horizontal , Test Mode: Transmitting



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	58.203	1.66	12.08	29.09	30.20	12.63	40.00	-27.37	QP
2.	159.225	2.57	13.88	24.45	30.55	10.35	43.50	-33.15	QP
3.	304.610	3.15	13.30	31.93	30.78	17.60	46.00	-28.40	QP
4.	369.405	3.33	14.62	28.61	30.84	15.72	46.00	-30.28	QP
5.	842.130	4.07	22.02	23.94	31.13	18.90	46.00	-27.10	QP
6.	972.337	4.20	23.43	23.23	31.18	19.68	54.00	-34.32	QP



Antenna Polarization: Vertical , Test Mode: Transmitting

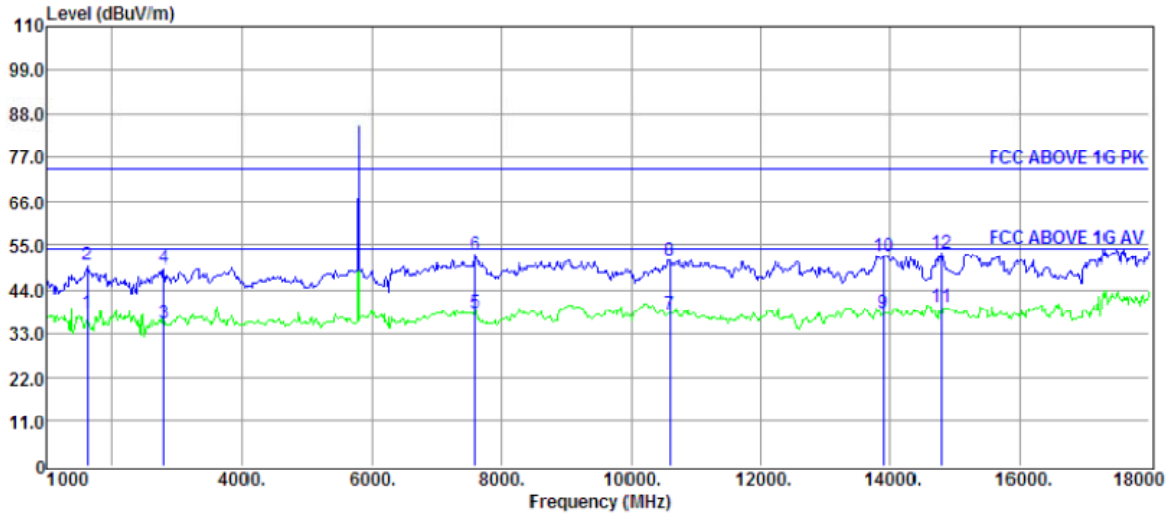


No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	58.203	1.66	12.08	28.85	30.20	12.40	40.00	-27.60	QP
2.	103.442	2.18	10.53	31.74	30.40	14.05	43.50	-29.45	QP
3.	304.610	3.15	13.30	30.93	30.78	16.60	45.00	-29.40	QP
4.	422.058	3.45	15.75	29.73	30.89	18.04	45.00	-27.96	QP
5.	716.682	3.93	20.45	27.06	31.07	20.37	45.00	-25.63	QP
6.	955.438	4.19	23.43	27.29	31.17	23.74	45.00	-22.26	QP



Test Frequency: 1GHz ~ 18GHz

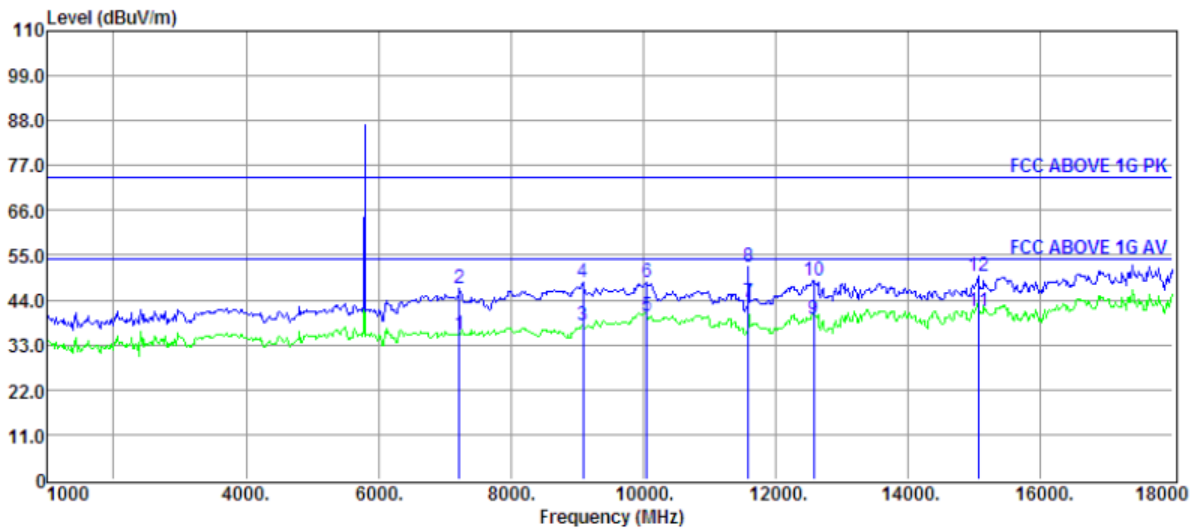
Antenna Polarization: Horizontal, Test Mode: Transmitting



No.	Freq	Cable Loss	Antenna Factor	Receiver Reading	Preamp Factor	Emission Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dBuV	dB	dBuV/m	dBuV/m	dB	
1.	1612.00	2.02	25.40	38.61	28.00	38.03	54.00	-15.97	Average
2.	1612.00	2.02	25.40	50.49	28.00	49.91	74.00	-24.09	Peak
3.	2785.00	3.06	28.36	32.30	28.00	35.72	54.00	-18.28	Average
4.	2785.00	3.06	28.36	45.80	28.00	49.22	74.00	-24.78	Peak
5.	7596.00	6.51	35.64	24.20	28.00	38.35	54.00	-15.65	Average
6.	7596.00	6.51	35.64	38.56	28.00	52.71	74.00	-21.29	Peak
7.	10605.00	8.38	38.88	18.50	28.00	37.76	54.00	-16.24	Average
8.	10605.00	8.38	38.88	31.92	28.00	51.18	74.00	-22.82	Peak
9.	13903.00	9.90	40.14	16.11	28.00	38.15	54.00	-15.85	Average
10.	13903.00	9.90	40.14	30.10	28.00	52.14	74.00	-21.86	Peak
11.	14787.00	10.25	10.43	16.90	28.00	39.58	54.00	-14.42	Average
12.	14787.00	10.25	40.43	30.14	28.00	52.82	74.00	-21.18	Peak



Antenna Polarization: Vertical , Test Mode: Transmitting



No.	Freq	Cable Loss	Antenna Factor	Receiver Reading	Preamp Factor	Emission Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dBuV	dB	dBuV/m	dBuV/m	dB	
1.	7222.00	6.23	35.10	22.30	28.00	35.63	54.00	-18.37	Average
2.	7222.00	6.23	35.10	33.68	28.00	47.01	74.00	-26.99	Peak
3.	9092.00	7.52	37.58	20.80	28.00	37.90	54.00	-16.10	Average
4.	9092.00	7.52	37.58	31.14	28.00	48.24	74.00	-25.76	Peak
5.	10061.00	8.09	38.63	21.40	28.00	40.12	54.00	-13.88	Average
6.	10061.00	8.09	38.63	29.73	28.00	48.45	74.00	-25.55	Peak
7.	11585.00	8.88	39.29	23.30	28.00	43.47	54.00	-10.53	Average
8.	11585.00	8.88	39.29	32.03	28.00	52.20	74.00	-21.80	Peak
9.	12577.00	9.34	39.67	18.20	28.00	39.21	54.00	-14.79	Average
10.	12577.00	9.34	39.67	27.78	28.00	48.79	74.00	-25.21	Peak
11.	15059.00	10.35	40.62	18.30	28.00	41.27	54.00	-12.73	Average
12.	15059.00	10.35	40.62	26.79	28.00	49.76	74.00	-24.24	Peak

Test Frequency: 18G-40GHz

Freq.	Ant. Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
11584.82	H	58.33	44.26	74	54	-15.67	-9.74
17377.23	H	57.04	43.26	74	54	-16.96	-10.74
23169.64	H	56.66	42.05	74	54	-17.34	-11.95
28962.05	H	55.04	41.92	74	54	-18.96	-12.08
34754.46	H	54.15	40.72	74	54	-19.85	-13.28
11584.82	V	58.36	45.69	74	54	-15.64	-8.31
17377.23	V	57.14	44.15	74	54	-16.86	-9.85
23169.64	V	56.06	43.62	74	54	-17.94	-10.38
28962.05	V	55.24	42.07	74	54	-18.76	-11.93
34754.46	V	54.72	41.76	74	54	-19.28	-12.24

7 Field strength of fundamental

Test Requirement: : FCC CFR47 Part 15 Section 15.245
 Test Method: : ANSI C63.10:2013
 Test Result: : PASS
 Measurement Distance: : 3m
 Limit: : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment :

Temperature: : 23.5 °C
 Humidity: : 51.1 % RH
 Atmospheric Pressure: : 101.2kPa
 EUT Operation : : Refer to section 3.3

7.2 Spectrum Analyzer Setup

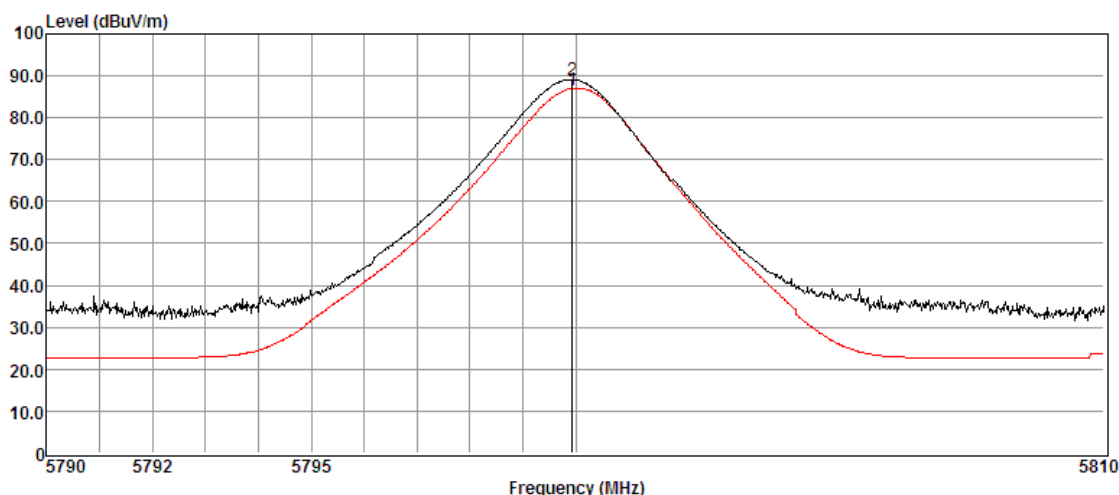
Detector : PK
 Resolution Bandwidth : 1MHz
 Video Bandwidth : 3MHz
 Detector : AV
 Resolution Bandwidth : 1MHz
 Video Bandwidth : 10Hz

7.3 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m or 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

7.4 Summary of Test Results

Antenna Polarization: Vertical



No.	Freq	Cable Loss	Antenna Factor	Receiver Reading	Preamplifier Factor	Emission Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dBuV	dB	dBuV/m	dBuV/m	dB	
1.	5792.41	5.00	32.88	76.80	28.00	86.68	94.00	-7.32	Average
2.	5792.41	5.00	32.88	79.29	28.00	89.17	114.00	-24.83	Peak
Remark: The max fundamental level was recorded.									



8 Band Edge Emission

Test Requirement	:	15.245(b3): 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..
Test Method	:	ANSI C63.10:2013
Test Limit	:	50 dB below the level of the fundamental or to the general radiated emission limits
Test Mode	:	Refer to section 3.3

8.1 Test Procedure

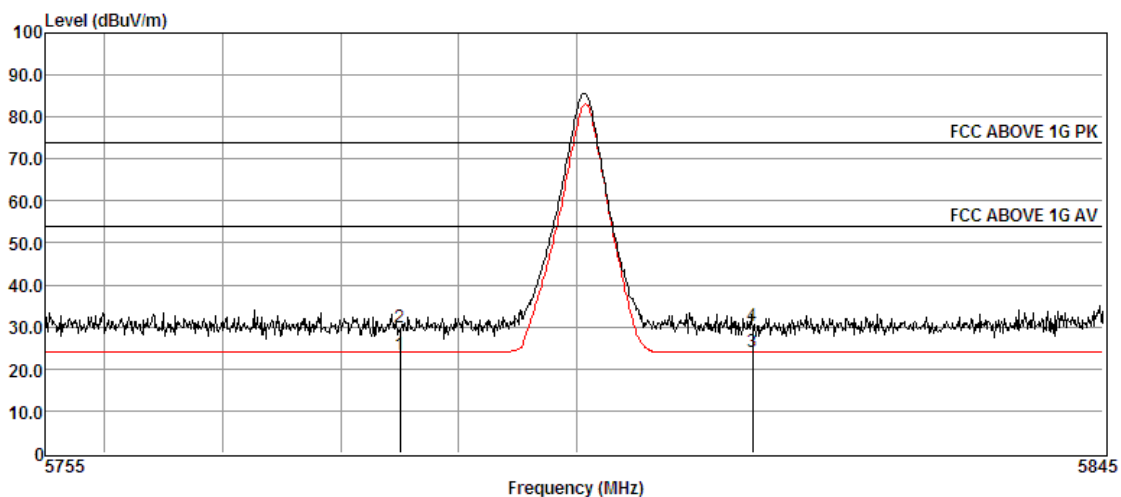
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold

8.2 Summary of Test Results

Antenna Polarization: Vertical



No.	Freq	Cable Loss	Antenna Factor	Receiver Reading	Preamplifier Factor	Emission Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dBuV	dB	dBuV/m	dBuV/m	dB	
1.	5785.000	4.99	32.86	13.62	28.00	23.47	54.00	-30.53	Average
2.	5785.000	4.99	32.86	19.90	28.00	29.75	74.00	-44.25	Peak
3.	5815.000	5.02	32.90	13.99	28.00	23.91	54.00	-30.09	Average
4.	5815.000	5.02	32.90	20.30	28.00	30.22	74.00	-43.78	Peak
Remark: The worst case was recorded.									

9 20dB Bandwidth Measurement

Test Requirement : FCC Part15.215
Test Method : ANSI C63.10:2013
Test Mode : Refer to section 3.3

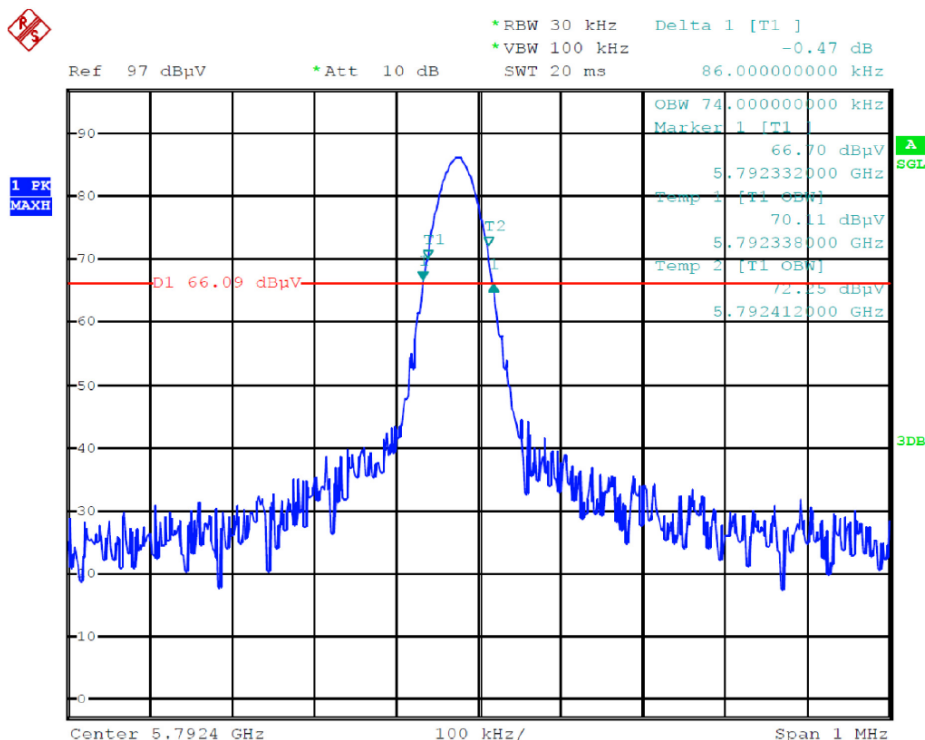
9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: For BLE, RBW = 30 kHz, VBW = 100kHz,

9.2 Test Result

Test Frequency (MHz)	Bandwidth (kHz)
5792.4	86.00kHz

Test plots

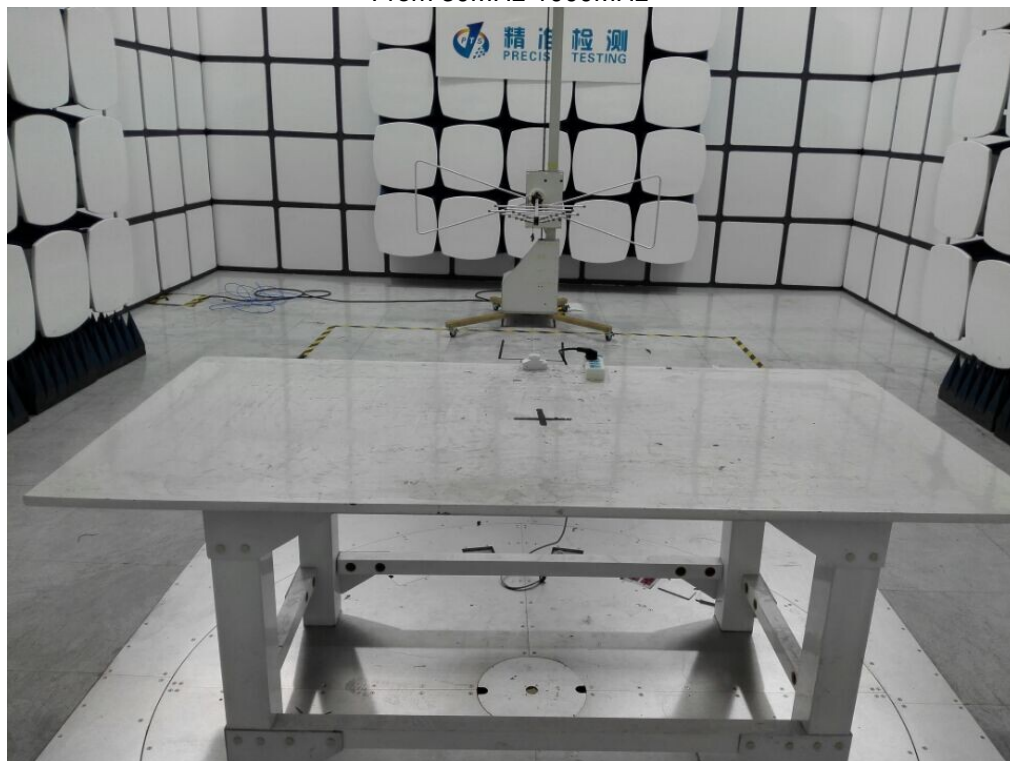


10 Antenna Requirement

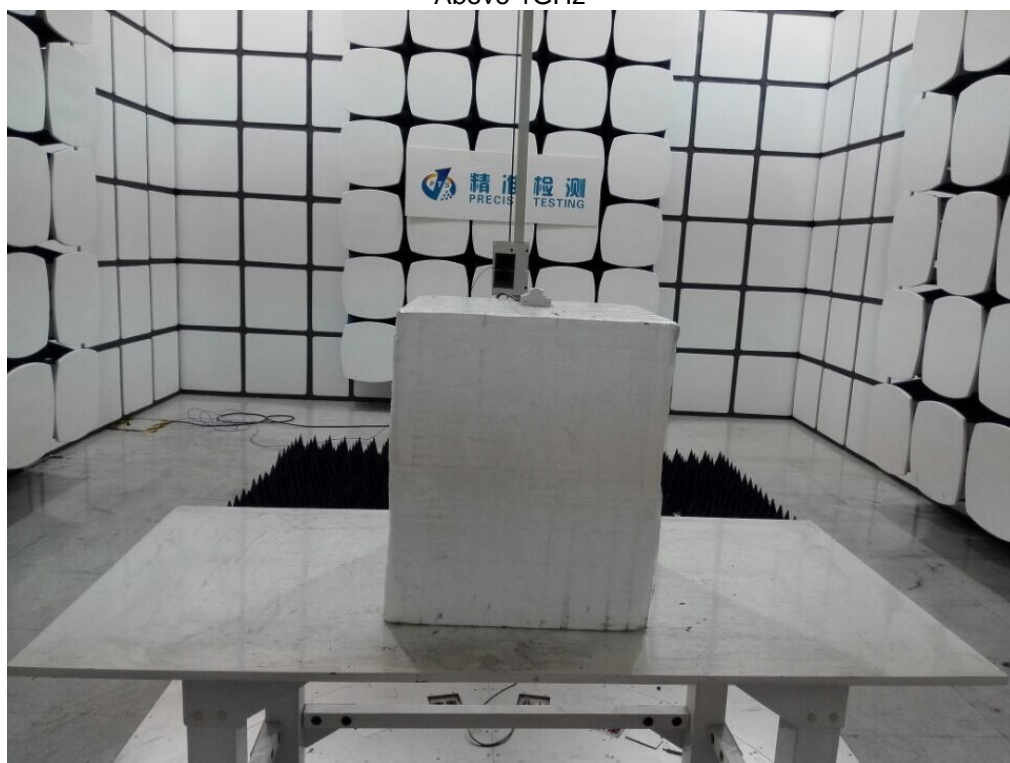
According to the FCC part15.203, a transmitter can only be sold or operated with antennas with which it was approved. This product has a straight copper wire which meet the requirement of this section.

11 Test Setup

Radiated Spurious Emissions From 30MHz-1000MHz



Above 1GHz

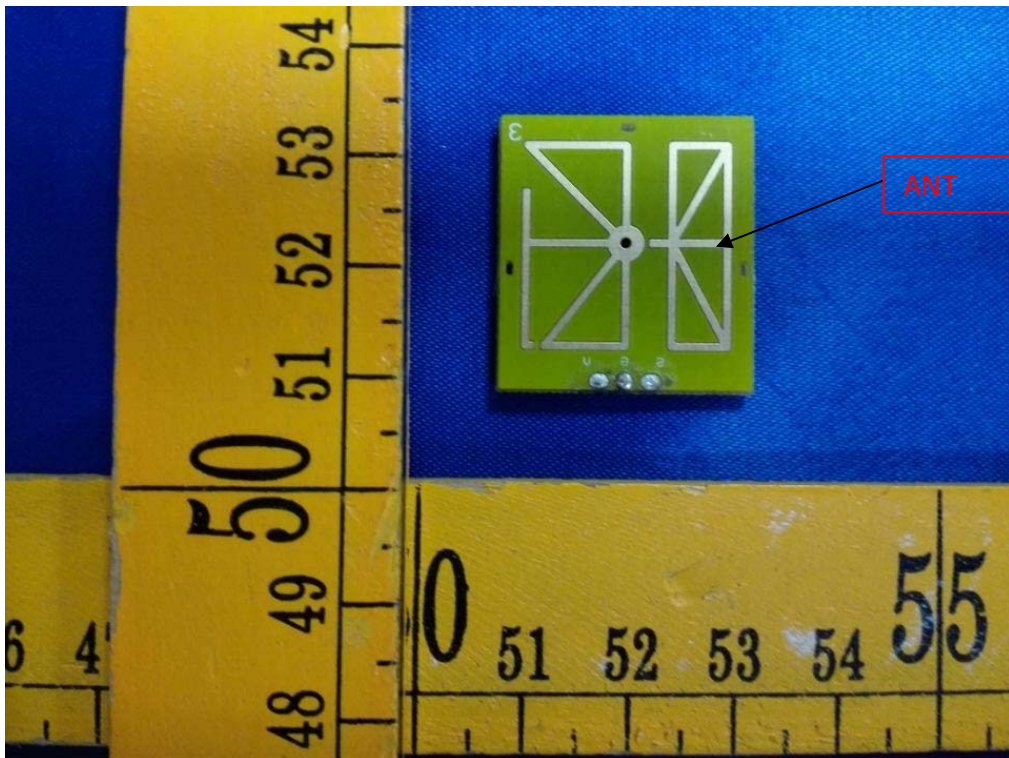
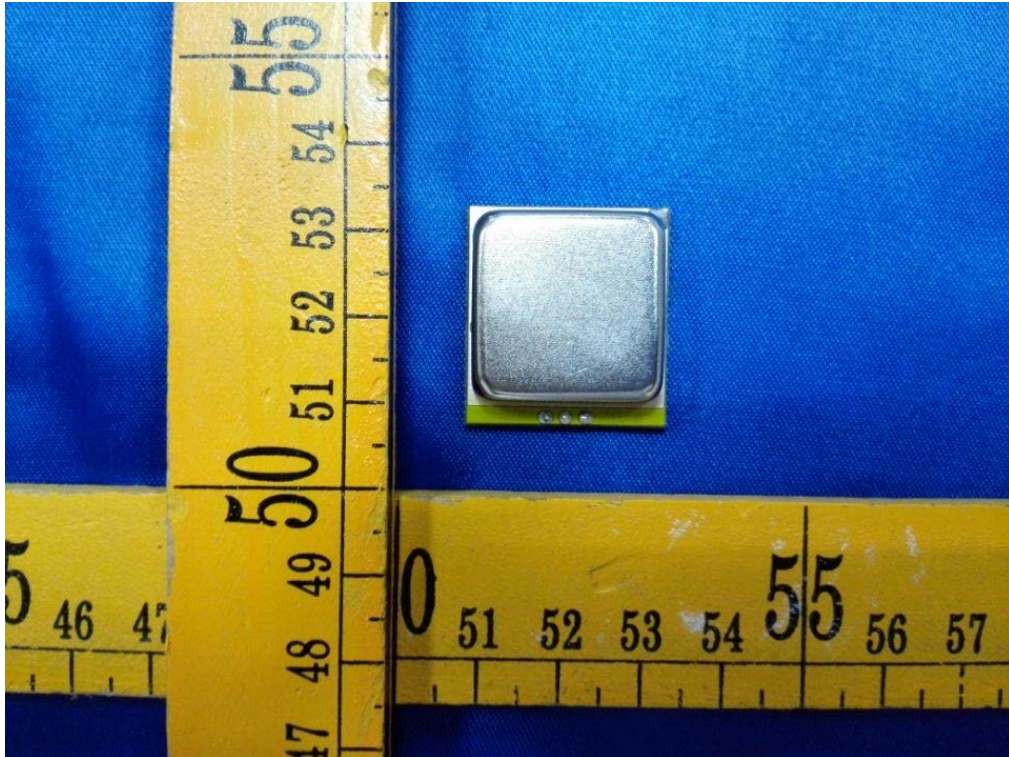


Conducted Emissions

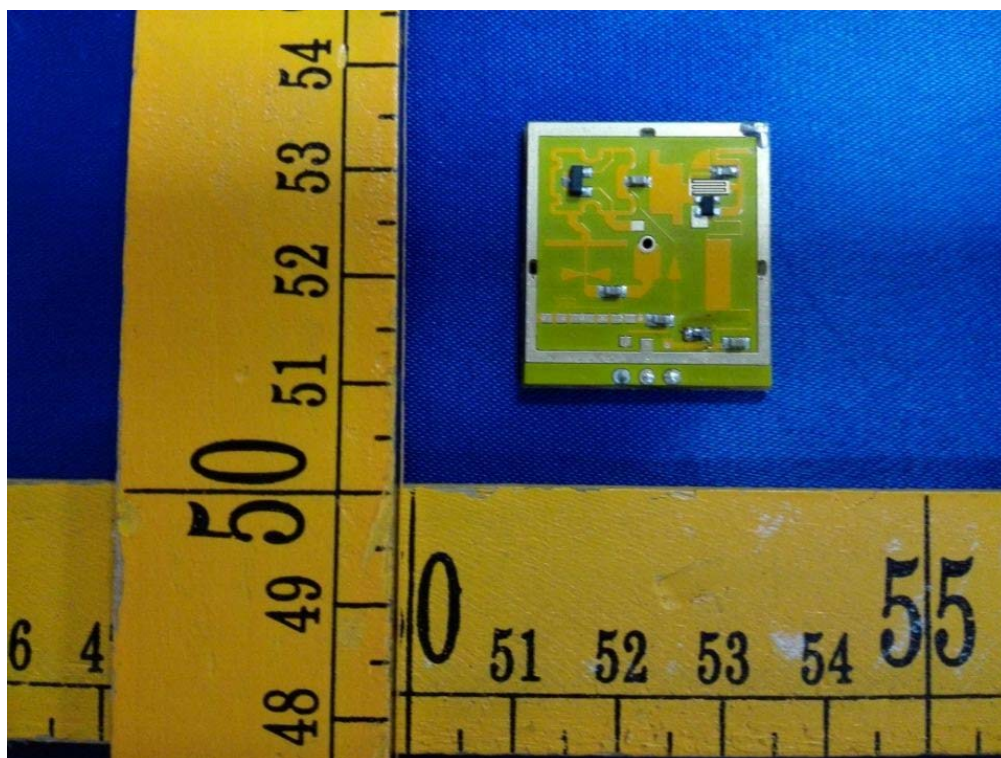
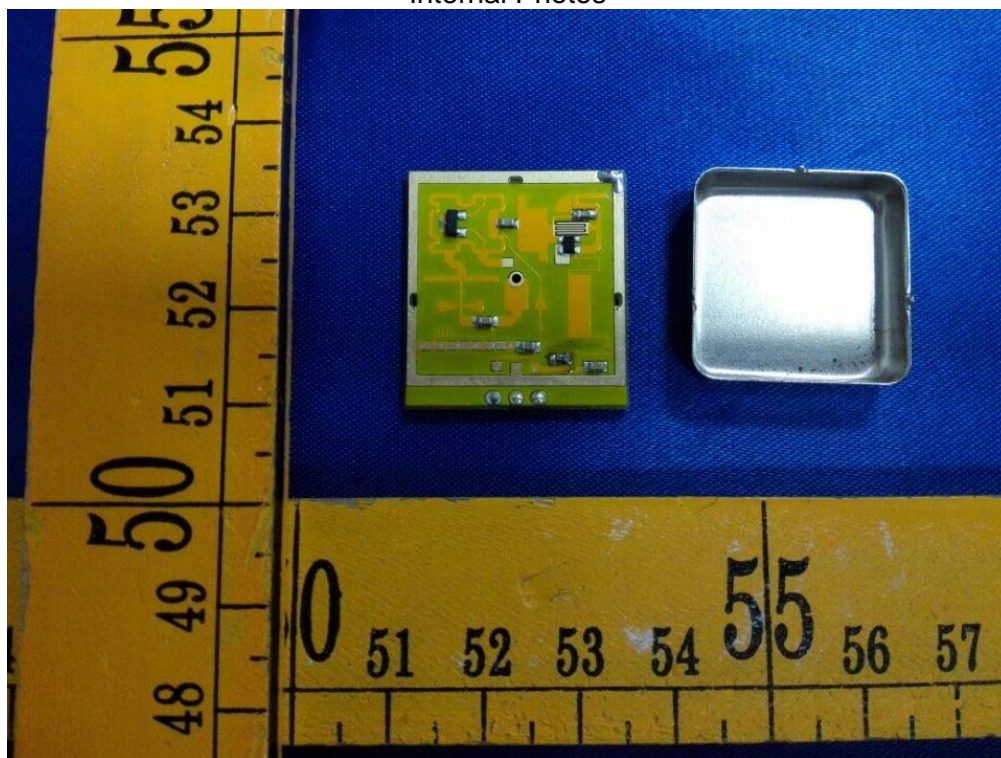


12 Module Photos

External Photos



Internal Photos



*****THE END REPORT*****