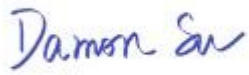
TEST REPORT

Application No.:	SZEM2004002848CR
Applicant:	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address of Applicant:	NO.18 HaiBin Road, Wusha Village, Chang An Town, DongGuan City，GuangDong,China
Manufacturer:	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address of Manufacturer:	NO.18 HaiBin Road, Wusha Village, Chang An Town, DongGuan City，GuangDong,China
Factory:	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
Address of Factory:	NO.18 HaiBin Road, Wusha Village, Chang An Town, DongGuan City，GuangDong,China
Equipment Under Test (EUT):	
EUT Name:	OPPO Watch
Model No.:	OW19W12
FCC ID:	R9C-OW19W12
Trade Mark:	OPPO
Standard(s) :	47 CFR Part 15, Subpart B
Date of Receipt:	2020-04-21
Date of Test:	2020-04-24 to 2020-05-12
Date of Issue:	2020-05-12
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2020-05-12		Original

Authorized for issue by:				
				
		Damon Su /Project Engineer		
				
		Eric Fu /Reviewer		

2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass

Internal Source	Upper Frequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

3 Contents

Page

4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 3.7V and recharged by DC 5V.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	L480	PF-1N6C3V
Adapter	Apple	A1357 W010A051	REF.No.SEA0500

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.45dB (9kHz to 150kHz)
		± 3.0dB (150kHz to 30MHz)
2	Radiated Emission	± 3.1dB (9kHz-30MHz)
		± 4.5dB (30MHz-1GHz)
		± 4.8dB (1GHz-6GHz)
3	Radiated Emission (2m Loop antenna)	± 3.26dB (9kHz-30MHz)
4	Temperature test	± 1°C
5	Humidity test	± 3%

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2019-06-13	2022-06-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2019-07-11	2020-07-10
LISN	Rohde & Schwarz	ENV216	SEM007-01	2019-09-24	2020-09-23
LISN	ETS-LINDGREN	3816/2	SEM007-02	2020-04-01	2021-03-31
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2020-03-24	2021-03-23

Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018-03-31	2021-03-30
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2019-07-11	2020-07-10
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2019-12-16	2020-12-15
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2019-08-08	2022-08-07
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2020-04-09	2021-04-08

Radiated Emissions (above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019-07-11	2020-07-10
EXA Spectrum Analyzer	AgilentTechnologies Inc	N9010A	SEM004-12	2020-04-09	2021-04-08
Horn Antenna	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2019-09-24	2020-09-23

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General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2019-09-26	2020-09-25
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2020-04-07	2021-04-06

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6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

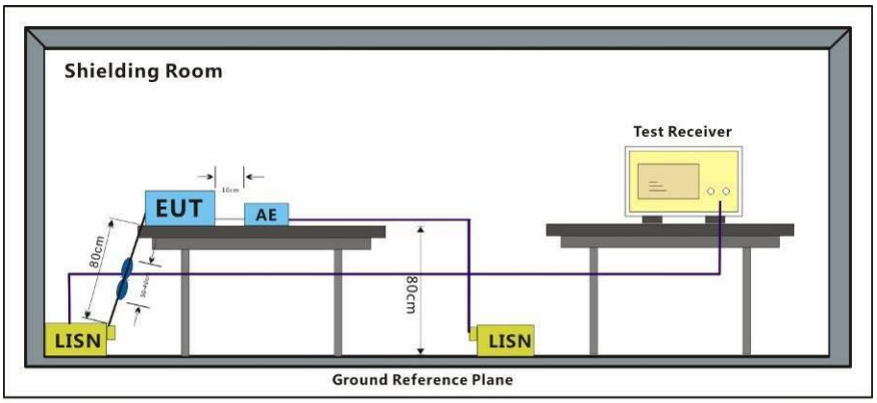
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.6 °C Humidity: 58.1 % RH Atmospheric Pressure: 1015 mbar

Pretest these modes to find the worst case:	f: Telecom Idle+BT+WLAN+NFC+GPS Rx+Lighting+USB cable+adapter g: Charging mode_keep EUT charging.
The worst case for final test:	g: Charging mode_keep EUT charging.

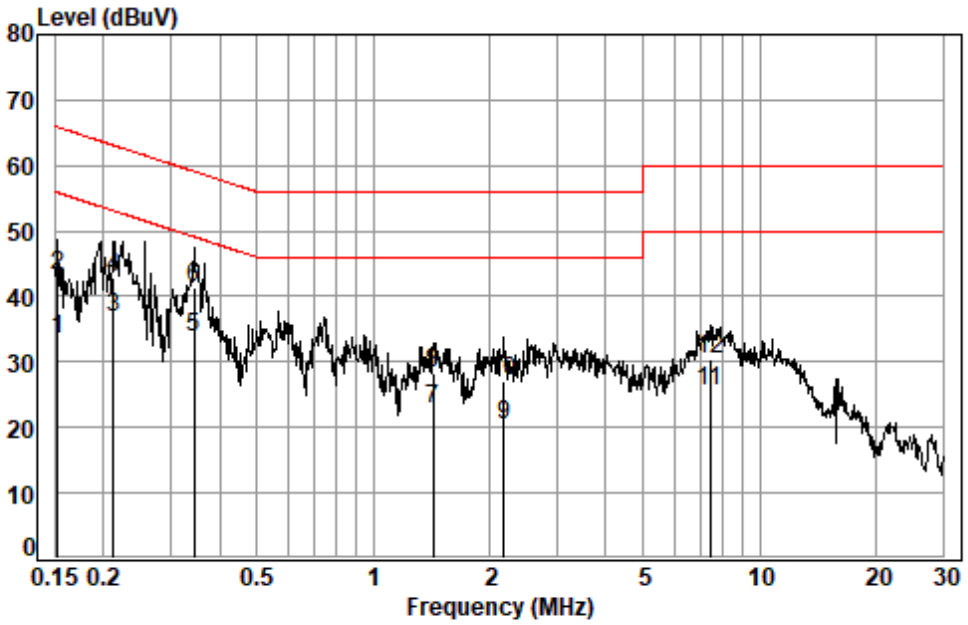
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

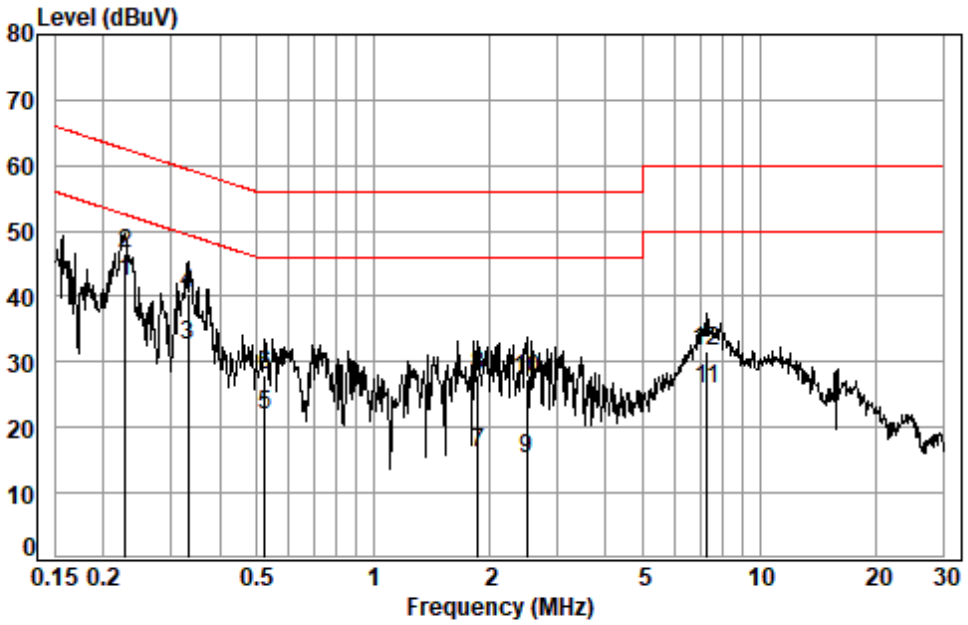
Mode:g; Line:Live Line



Site : Shielding Room
Condition: Line
Job No. : 02848CR
Test mode: g

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1524	0.01	9.59	23.96	33.56	55.87	-22.31	Average
2	0.1524	0.01	9.59	33.58	43.18	65.87	-22.69	QP
3	0.2128	0.02	9.59	27.05	36.66	53.10	-16.44	Average
4	0.2128	0.02	9.59	33.16	42.77	63.10	-20.33	QP
5	0.3428	0.04	9.59	24.09	33.72	49.13	-15.41	Average
6	0.3428	0.04	9.59	31.86	41.49	59.13	-17.64	QP
7	1.4333	0.13	9.61	12.95	22.69	46.00	-23.31	Average
8	1.4333	0.13	9.61	18.65	28.39	56.00	-27.61	QP
9	2.1783	0.16	9.63	10.72	20.51	46.00	-25.49	Average
10	2.1783	0.16	9.63	17.25	27.04	56.00	-28.96	QP
11	7.4465	0.17	9.74	15.49	25.40	50.00	-24.60	Average
12	7.4465	0.17	9.74	20.56	30.47	60.00	-29.53	QP

Mode:g; Line:Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 02848CR
Test mode: g

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.2280	0.03	9.54	32.84	42.41	52.52	-10.11	Average
2	0.2280	0.03	9.54	37.04	46.61	62.52	-15.91	QP
3	0.3321	0.04	9.54	22.98	32.56	49.40	-16.84	Average
4	0.3321	0.04	9.54	31.00	40.58	59.40	-18.82	QP
5	0.5238	0.06	9.54	12.36	21.96	46.00	-24.04	Average
6	0.5238	0.06	9.54	18.36	27.96	56.00	-28.04	QP
7	1.8680	0.15	9.56	6.38	16.09	46.00	-29.91	Average
8	1.8680	0.15	9.56	18.26	27.97	56.00	-28.03	QP
9	2.5000	0.16	9.57	5.52	15.25	46.00	-30.75	Average
10	2.5000	0.16	9.57	17.59	27.32	56.00	-28.68	QP
11	7.3290	0.17	9.71	16.05	25.93	50.00	-24.07	Average
12	7.3290	0.17	9.71	21.73	31.61	60.00	-28.39	QP

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6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	30MHz to 1GHz
Measurement Distance:	10m
Limit:	
30MHz -88MHz	29.5(dBμV/m) quasi-peak
88MHz-216MHz	33.1(dBμV/m) quasi-peak
216MHz-960MHz	35.6(dBμV/m) quasi-peak
960MHz-1000MHz	43.5(dBμV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

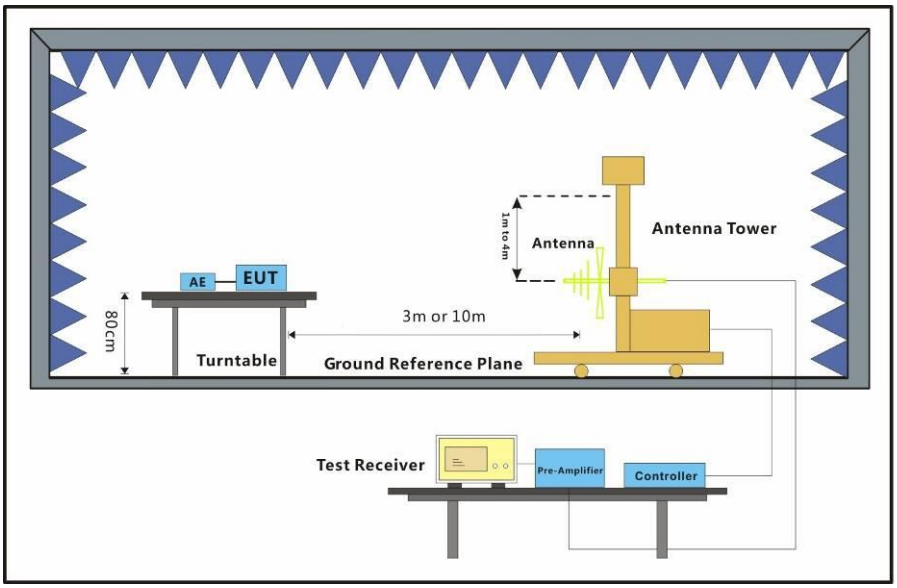
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1015 mbar

Pretest these modes to find the worst case:	f: Telecom Idle+BT+WLAN+NFC+GPS Rx+Lighting+USB cable+adapter g: Charging mode_keep EUT charging. h: Keep the EUT Lighting
The worst case for final test:	f: Telecom Idle+BT+WLAN+NFC+GPS Rx+Lighting+USB cable+adapter g: Charging mode_keep EUT charging. h: Keep the EUT Lighting

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

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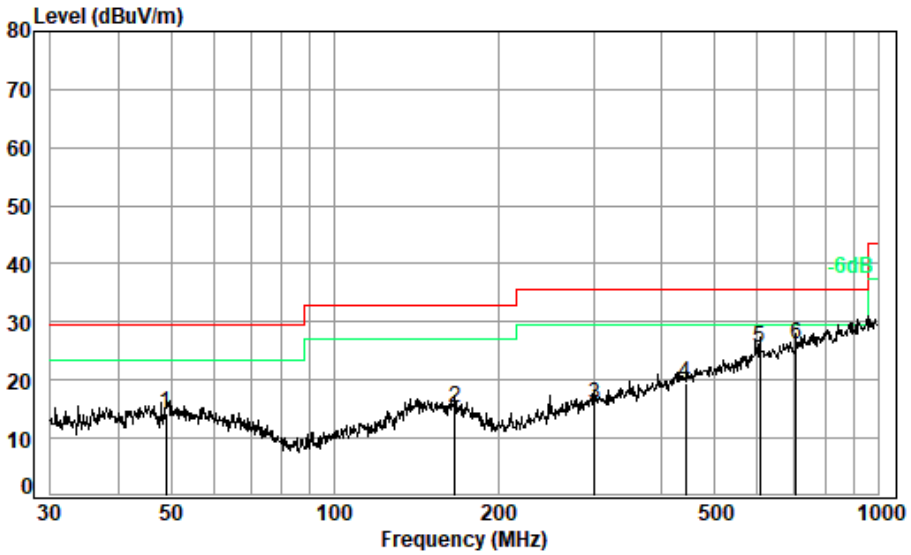
Mode:f; Polarization:Horizontal



Condition: 10m HORIZONTAL
Job No. : 02848CR
Test Mode: f

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	49.014	20.25	32.46	0.98	25.68	14.45	29.50	-15.05	QP
2	166.651	19.46	32.30	1.52	26.51	15.19	33.00	-17.81	QP
3	300.367	19.51	32.31	2.06	26.60	15.86	35.60	-19.74	QP
4	443.294	23.17	32.27	2.68	25.95	19.53	35.60	-16.07	QP
5	605.659	26.33	32.04	3.16	28.04	25.49	35.60	-10.11	QP
6 pp	706.700	27.17	32.23	3.25	27.85	26.04	35.60	-9.56	QP

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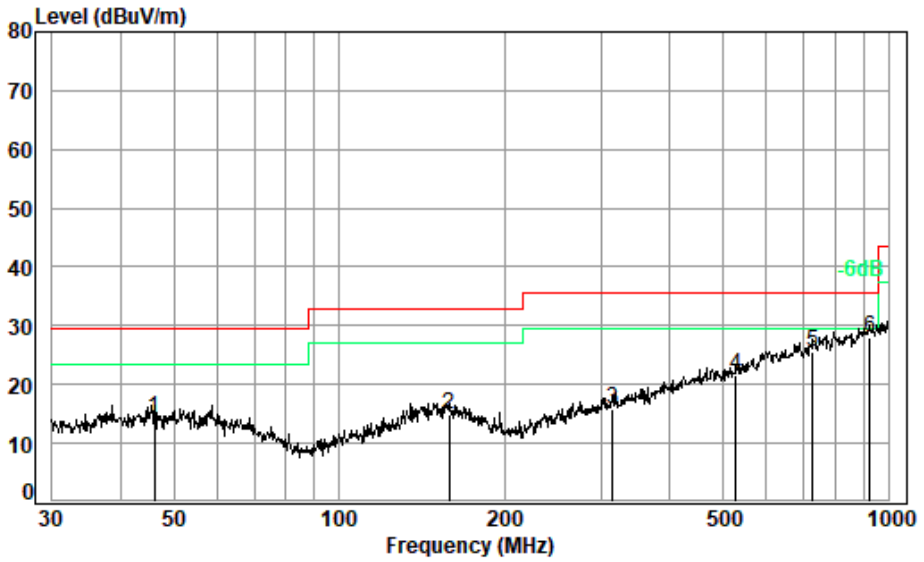
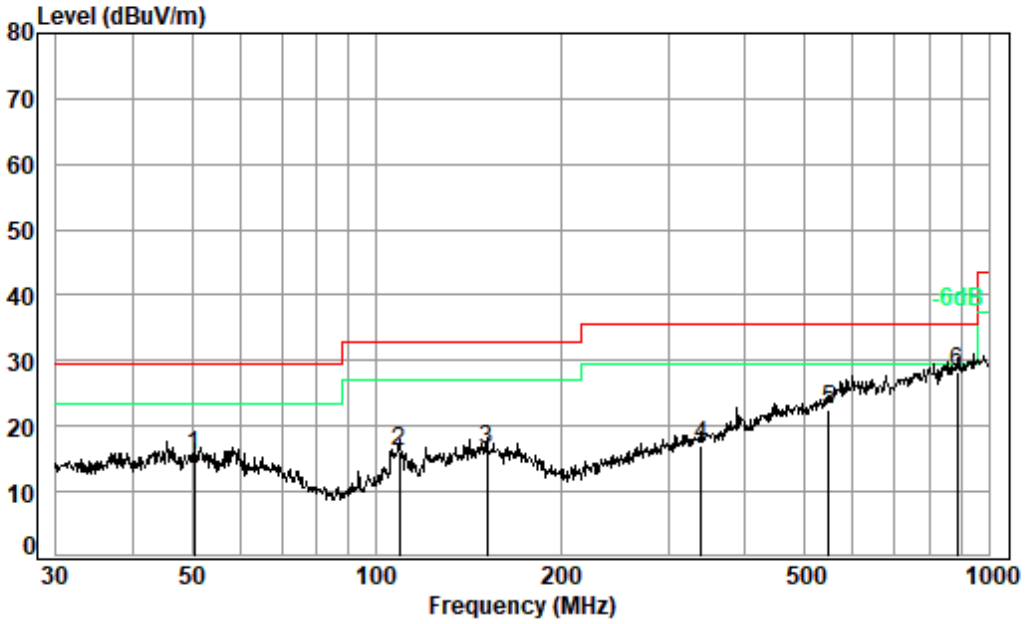
Mode:f; Polarization:Vertical



Condition: 10m VERTICAL
Job No. : 02848CR
Test Mode: f

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	46.178	20.47	32.45	0.97	25.44	14.43	29.50	-15.07	QP
2	158.668	19.85	32.30	1.50	25.83	14.88	33.00	-18.12	QP
3	314.377	20.02	32.27	2.12	25.96	15.83	35.60	-19.77	QP
4	528.246	24.38	32.34	3.05	26.41	21.50	35.60	-14.10	QP
5	729.358	27.88	32.15	3.26	26.69	25.68	35.60	-9.92	QP
6 pp	925.756	29.80	31.38	3.45	26.24	28.11	35.60	-7.49	QP

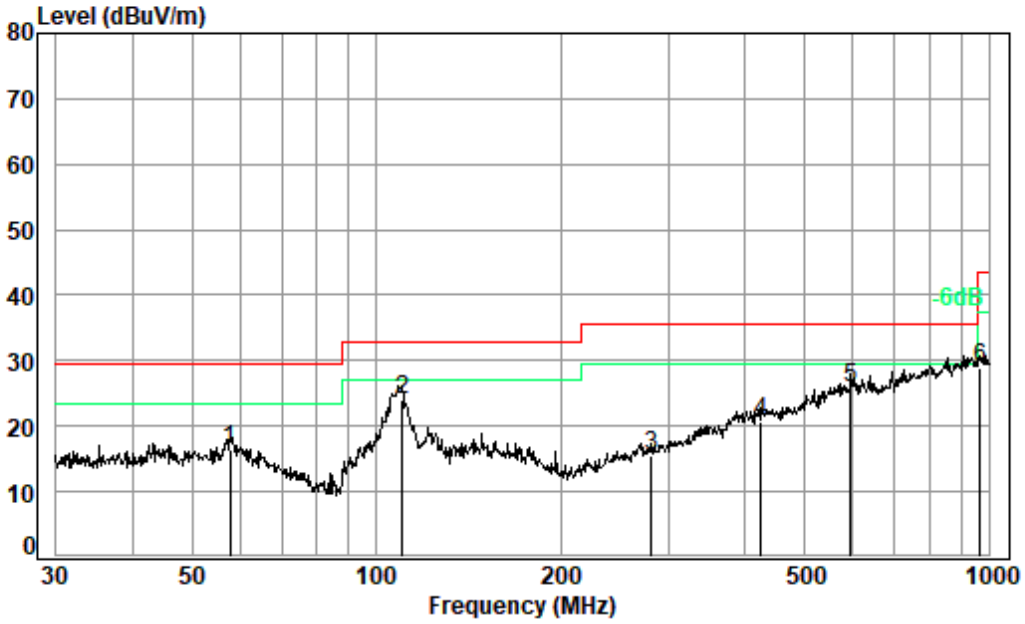
Mode:g; Polarization:Horizontal



Condition: 10m HORIZONTAL
Job No. : 02848CR
Test Mode: g

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	50.409	20.22	32.46	0.99	26.70	15.45	29.50	-14.05	QP
2	109.029	16.22	32.31	1.29	30.81	16.01	33.00	-16.99	QP
3	151.597	20.13	32.30	1.48	27.09	16.40	33.00	-16.60	QP
4	339.589	20.50	32.22	2.22	26.61	17.11	35.60	-18.49	QP
5	547.098	24.64	32.25	3.13	27.06	22.58	35.60	-13.02	QP
6 pp	887.610	29.18	31.57	3.41	27.40	28.42	35.60	-7.18	QP

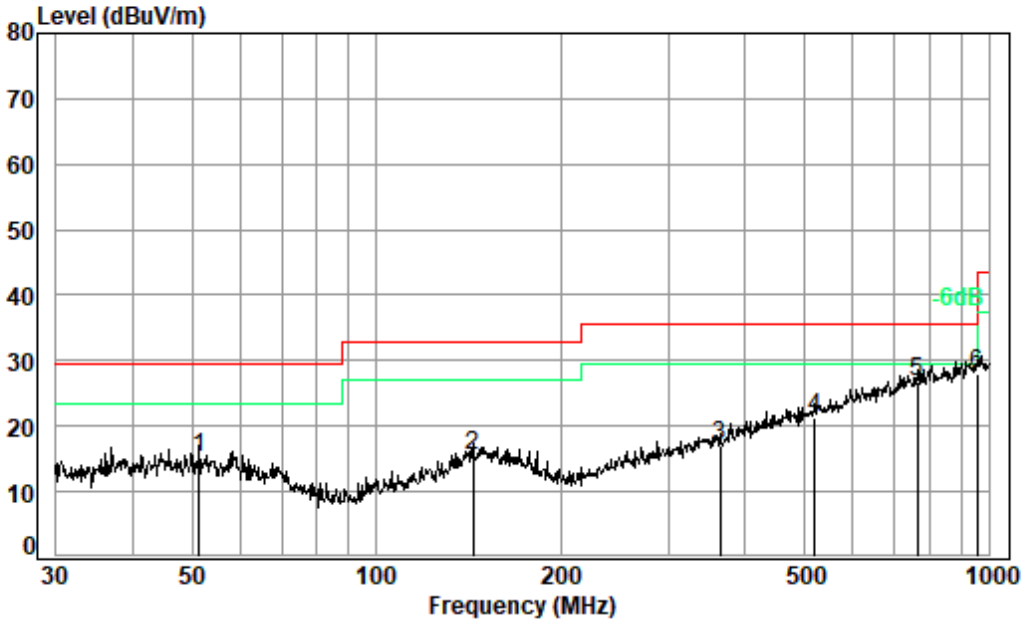
Mode:g; Polarization:Vertical



Condition: 10m VERTICAL
Job No. : 02848CR
Test Mode: g

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	57.796	19.68	32.43	1.03	28.06	16.34	29.50	-13.16	QP
2 pp	110.182	16.32	32.31	1.29	38.83	24.13	33.00	-8.87	QP
3	281.008	19.22	32.31	2.02	26.56	15.49	35.60	-20.11	QP
4	425.028	22.50	32.19	2.63	27.76	20.70	35.60	-14.90	QP
5	595.133	25.91	32.05	3.16	28.86	25.88	35.60	-9.72	QP
6	968.934	30.03	31.16	3.56	26.33	28.76	43.50	-14.74	QP

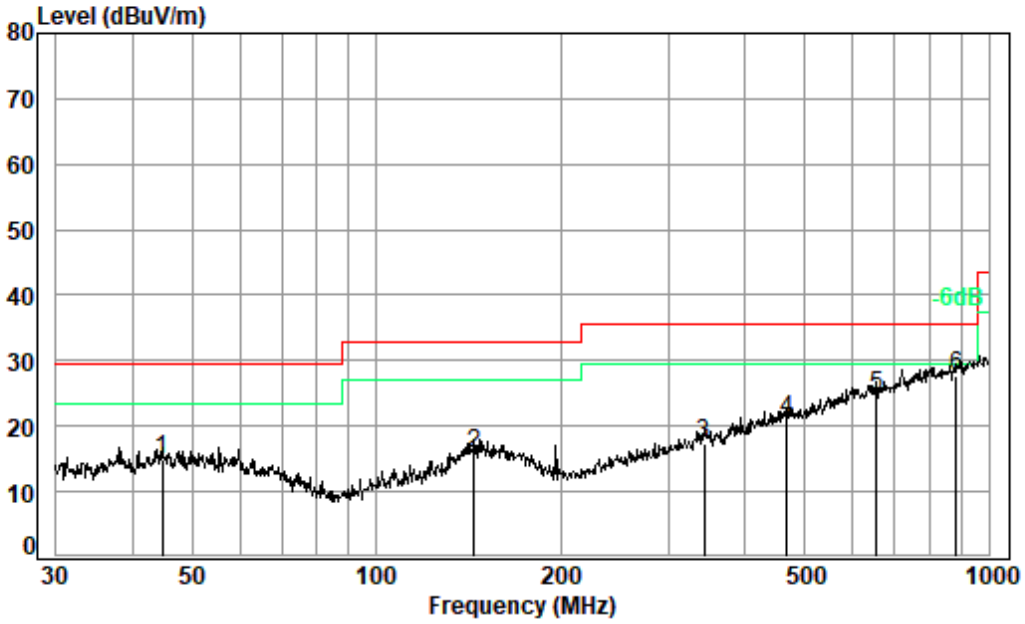
Mode:h; Polarization:Horizontal



Condition: 10m HORIZONTAL
Job No. : 02848CR
Test Mode: h

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	51.301	20.04	32.45	1.00	26.50	15.09	29.50	-14.41	QP
2	143.830	19.90	32.30	1.45	26.39	15.44	33.00	-17.56	QP
3	364.260	20.97	32.16	2.35	25.73	16.89	35.60	-18.71	QP
4	519.065	24.29	32.38	3.01	26.50	21.42	35.60	-14.18	QP
5	763.376	28.32	32.04	3.27	27.12	26.67	35.60	-8.93	QP
6 pp	955.438	29.88	31.22	3.51	25.80	27.97	35.60	-7.63	QP

Mode:h; Polarization:Vertical



Condition: 10m VERTICAL
Job No. : 02848CR
Test Mode: h

	Freq	Ant Factor	Preamp Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	44.743	20.38	32.44	0.96	25.87	14.77	29.50	-14.73	QP
2	144.335	19.92	32.30	1.45	26.88	15.95	33.00	-17.05	QP
3	343.180	20.50	32.21	2.23	26.91	17.43	35.60	-18.17	QP
4	467.235	23.67	32.35	2.78	26.78	20.88	35.60	-14.72	QP
5	656.530	26.50	32.16	3.21	27.11	24.66	35.60	-10.94	QP
6 pp	884.503	29.15	31.58	3.41	26.68	27.66	35.60	-7.94	QP

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6.3 Radiated Emissions (above 1GHz)

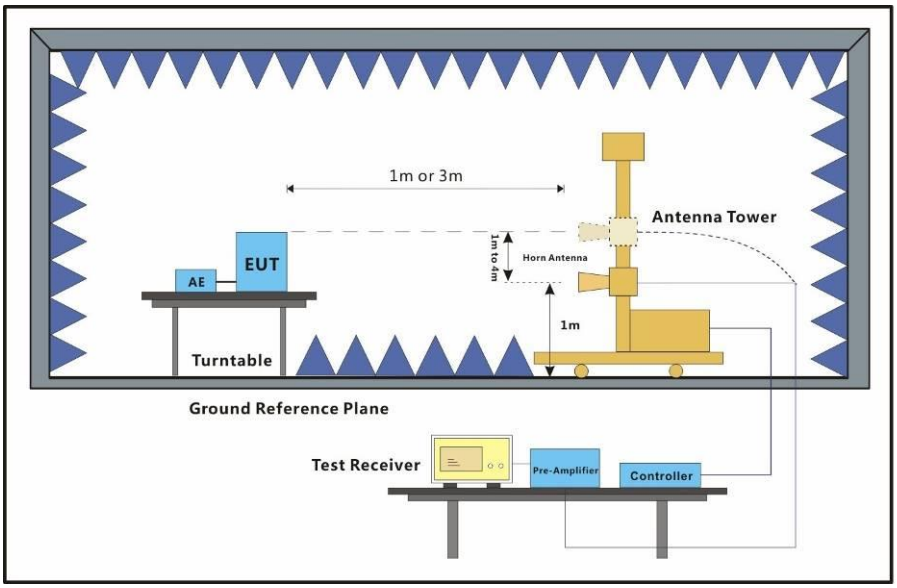
Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
Above 1GHz	74(dBμV/m) peak, 54(dBμV/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature:	23.5 °C Humidity: 56.3 % RH Atmospheric Pressure: 1015 mbar
Pretest these modes to find the worst case:	f: Telecom Idle+BT+WLAN+NFC+GPS Rx+Lighting+USB cable+adapter g: Charging mode_keep EUT charging. h: Keep the EUT Lighting
The worst case for final test:	g: Charging mode_keep EUT charging.

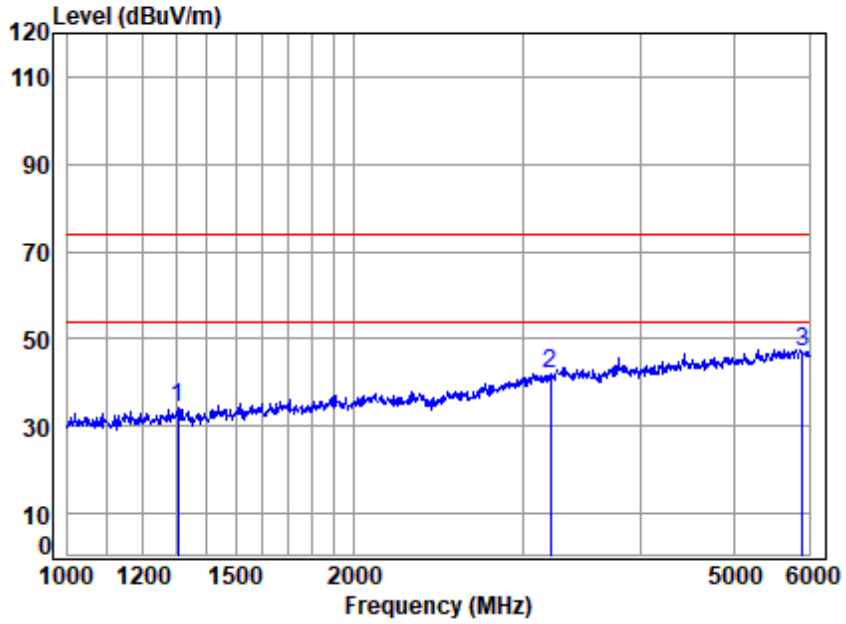
6.3.2 Test Setup Diagram



6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

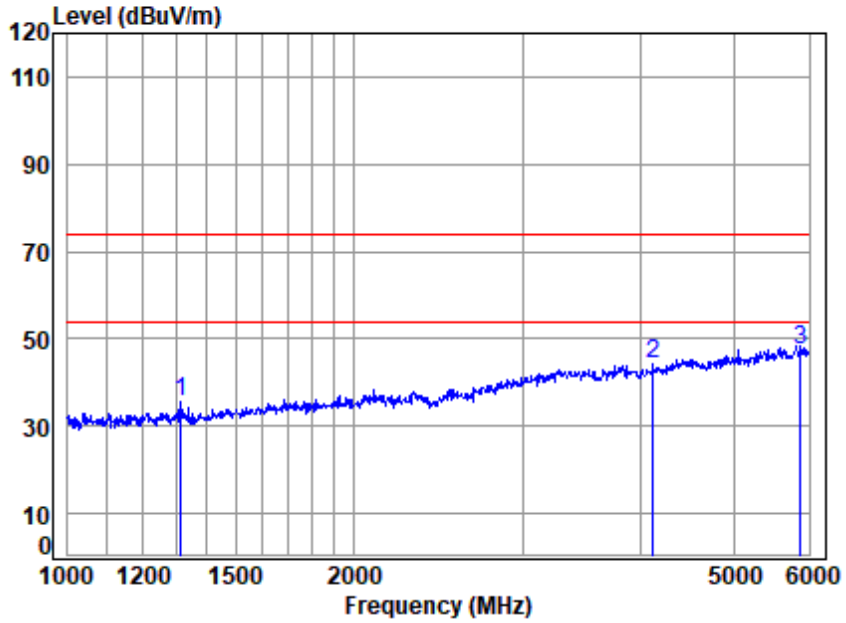
Mode:g; Polarization:Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No : 02848CR
Mode : g
Note :

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1303.666	2.88	25.04	40.37	46.61	34.16	74.00	-39.84	Peak
2	3210.528	5.36	31.25	41.43	46.94	42.12	74.00	-31.88	Peak
3	5904.021	7.12	35.01	42.30	46.95	46.78	74.00	-27.22	Peak

Mode:g; Polarization:Vertical



Site : chamber
Condition: 3m VERTICAL
Job No : 02848CR
Mode : g
Note :

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1313.043	2.83	25.08	40.37	48.08	35.62	74.00	-38.38	Peak
2	4118.504	6.02	32.92	42.25	47.59	44.28	74.00	-29.72	Peak
3	5872.370	7.08	34.98	42.32	47.49	47.23	74.00	-26.77	Peak

7 Photographs

7.1 Test Setup

Please refer to setup photo.

7.2 EUT Constructional Details (EUT Photos)

Please refer to external and internal photos for details.

- End of the Report -