



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

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

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

Report No.: SZEM161100940001
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TEST REPORT

Application No.: SZEM1611009400RG (SZEM1611009495CR)
Applicant: Huawei Technologies Co., Ltd.
Address of Applicant: Administration Building, Huawei Technologies Co., Ltd. Bantian, Longgang District, Shenzhen, P. R. China
Manufacturer: Huawei Technologies Co., Ltd.
Address of Manufacturer: Administration Building, Huawei Technologies Co., Ltd. Bantian, Longgang District, Shenzhen, P. R. China

Equipment Under Test (EUT):
EUT Name: Mobile WiFi
Model No.: HWD35
Trade mark: HUAWEI
FCC ID QISHWD35
Standards: 47 CFR PART 15, Subpart B:2015
Date of Receipt: 2016-11-10
Date of Test: 2016-11-14 to 2016-11-15
Date of Issue: 2016-11-29

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Test Summary

Item	Standard	Method	Class	Result
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass
Radiated Disturbance (30MHz-1GHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass
Radiated Disturbance (above 1GHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass



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4 General Information

4.1 Details of E.U.T.

Power Supply: Adaptor: Model No.: HW-050200U01
Input: AC100-240V 50/60Hz 0.5A
Output:DC5V 2.0A
3.8V DC (1 x 3.8V Rechargeable battery) 2750mAh
Battery: Charge by DC 5V
Cable: USB cable: 100cm shielded.

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Standards Applicable for Testing

Table 1 : Tests Carried Out Under 47 CFR PART 15,Subpart B:2015

Method	Item	Status
ANSI C63.4:2014	Conducted Disturbance at Mains Terminals (150kHz-30MHz)	√
ANSI C63.4:2014	Radiated Disturbance(30MHz-1GHz)	√
ANSI C63.4:2014	Radiated Disturbance(above 1GHz)	√

× Indicates that the test is not applicable
√ Indicates that the test is applicable



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:

•CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab 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) for the competence in the field of testing.

• 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 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC – Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 No.: 556682.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Disturbance at Mains Terminals(150kHz-30MHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2016-05-13	2017-05-13
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
4	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2016-04-25	2017-04-25

Radiated Disturbance(30MHz-1GHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	10m Semi- Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2016-05-13	2017-05-13
2	EMI Test Receiver (9KHz- 7GHz)	Rohde & Schwarz	ESR	SEM004-03	2016-04-25	2017-04-25
3	Trilog-Broadband Antenna(30M- 1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-29
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2016-07-06	2017-07-06

Radiated Disturbance(above 1GHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	3m Semi- Anechoic Chamber	AUDIX	N/A	SEM001-02	2016-05-13	2017-05-13
2	EXA Spectrum Analyzer	AgilentTechnolo gies Inc	N9010A	SEM004-09	2016-07-19	2017-07-19
3	Horn Antenna(1- 18GHz)	Rohde & Schwarz	HF907	SEM003-06	2015-06-14	2018-06-14
4	Low Noise Amplifier	Black Diamond Series	BDLNA-0118- 352810	SEM005-05	2016-10-09	2017-10-09



General used equipment						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
2	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2016-10-12	2017-10-12
3	Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2016-10-12	2017-10-12
4	Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2016-05-18	2017-05-18

6 Emission Test Results

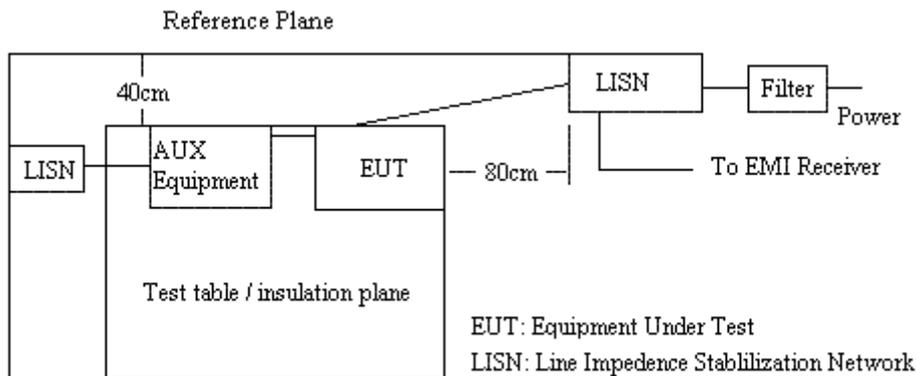
6.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz)

Test Requirement:	47 CFR PART 15,Subpart B:2015
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:	25.0 °C	Humidity:	56 % RH	Atmospheric Pressure:	1010 mbar
Pretest these mode to find the worst case:	a:charge mode,keep EUT work with adapter. b: single play mode, keep EUT working normally.				
The worst case for final test:	a:charge mode,keep EUT work with adapter.				

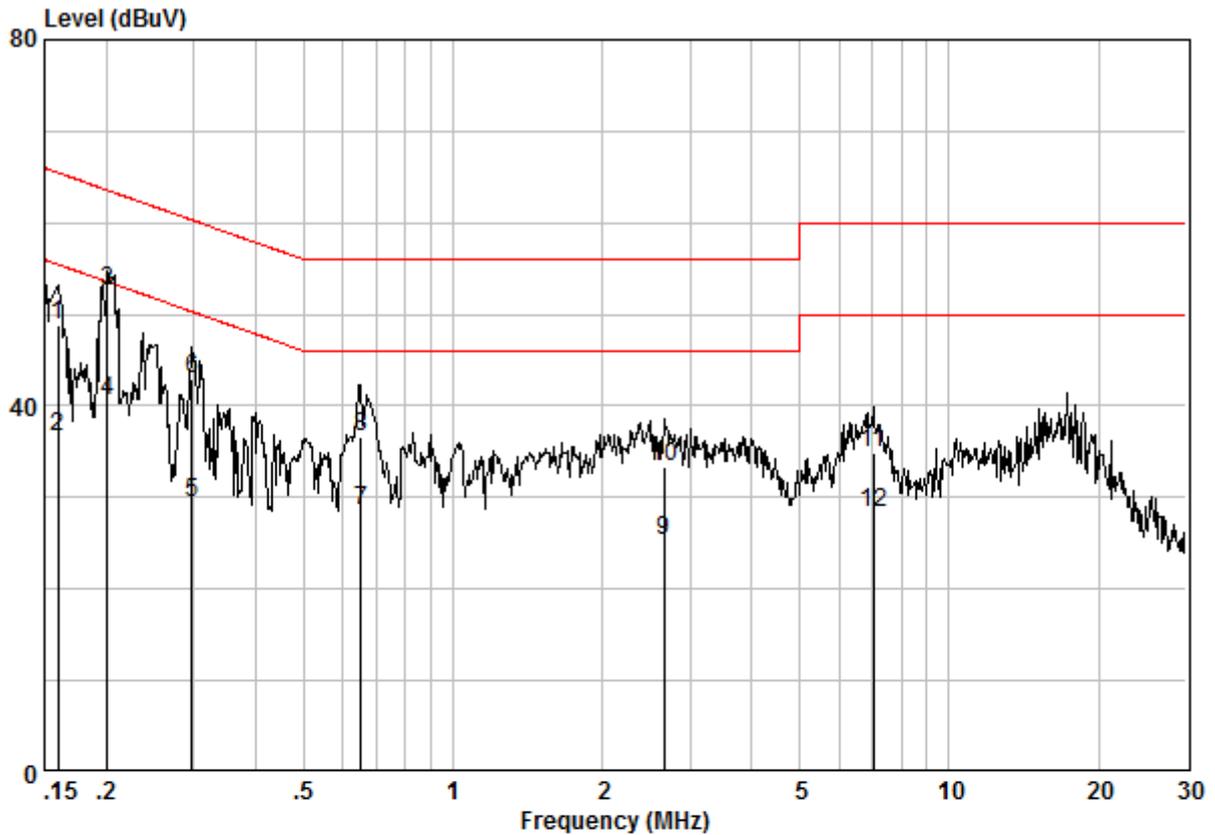
6.1.2 Test Setup



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.

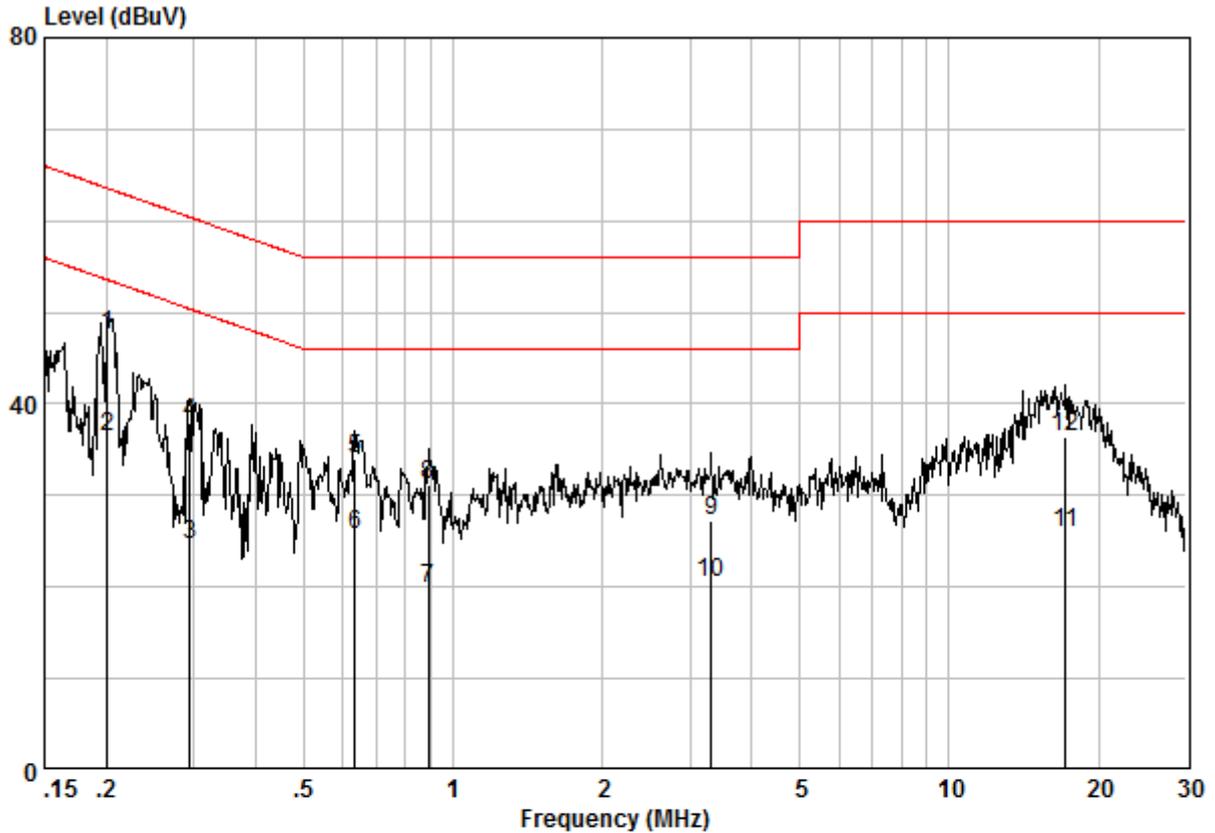
Mode:a;Line:Live Line



Site : Shielding Room
 Condition : CE LINE
 Job No. : 9400RG
 Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15985	0.02	9.60	39.25	48.86	65.47	-16.61	QP
2	0.15985	0.02	9.60	26.95	36.57	55.47	-18.91	AVERAGE
3 @	0.20075	0.02	9.60	42.91	52.53	63.58	-11.05	QP
4 @	0.20075	0.02	9.60	30.84	40.46	53.58	-13.12	AVERAGE
5	0.29711	0.02	9.59	19.74	29.35	50.32	-20.98	AVERAGE
6	0.29711	0.02	9.59	33.30	42.91	60.32	-17.41	QP
7	0.65084	0.02	9.61	18.99	28.62	46.00	-17.38	AVERAGE
8	0.65084	0.02	9.61	26.90	36.53	56.00	-19.47	QP
9	2.664	0.03	9.62	15.66	25.31	46.00	-20.69	AVERAGE
10	2.664	0.03	9.62	23.75	33.40	56.00	-22.60	QP
11	7.025	0.08	9.68	25.22	34.98	60.00	-25.02	QP
12	7.025	0.08	9.68	18.58	28.34	50.00	-21.66	AVERAGE

Mode:a;Line:Neutral Line



Site : Shielding Room
 Condition : CE NEUTRAL
 Job No. : 9400RG
 Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1 @	0.20075	0.02	9.62	37.98	47.62	63.58	-15.96 QP
2	0.20075	0.02	9.62	26.66	36.30	53.58	-17.28 AVERAGE
3	0.29398	0.02	9.62	14.90	24.54	50.41	-25.87 AVERAGE
4	0.29398	0.02	9.62	28.26	37.90	60.41	-22.51 QP
5	0.63383	0.02	9.63	24.31	33.96	56.00	-22.04 QP
6	0.63383	0.02	9.63	16.00	25.65	46.00	-20.35 AVERAGE
7	0.88969	0.03	9.63	10.20	19.86	46.00	-26.14 AVERAGE
8	0.88969	0.03	9.63	21.46	31.12	56.00	-24.88 QP
9	3.310	0.02	9.67	17.62	27.32	56.00	-28.68 QP
10	3.310	0.02	9.67	10.77	20.47	46.00	-25.53 AVERAGE
11	17.199	0.16	9.94	15.93	26.03	50.00	-23.97 AVERAGE
12	17.199	0.16	9.94	26.30	36.40	60.00	-23.60 QP



6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement:	47 CFR PART 15,Subpart B:2015
Test Method:	ANSI C63.4:2014
Frequency Range:	30MHz to 1GHz
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

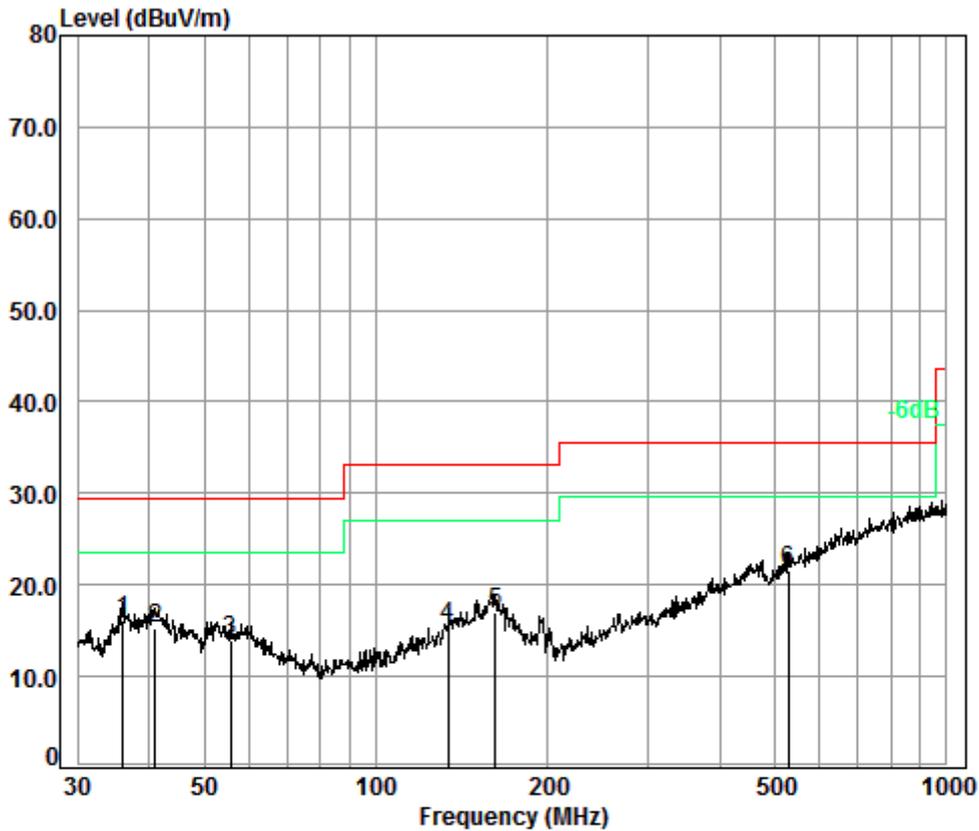
Operating Environment:					
Temperature:	25.0 °C	Humidity:	55 % RH	Atmospheric Pressure:	1005 mbar
Pretest these mode to find the worst case:	a:charge mode,keep EUT work with adapter. b: single play mode, keep EUT working normally.				
The worst case for final test:	a:charge mode,keep EUT work with adapter.				

6.2.2 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.



Mode:a;Polarization:Horizontal



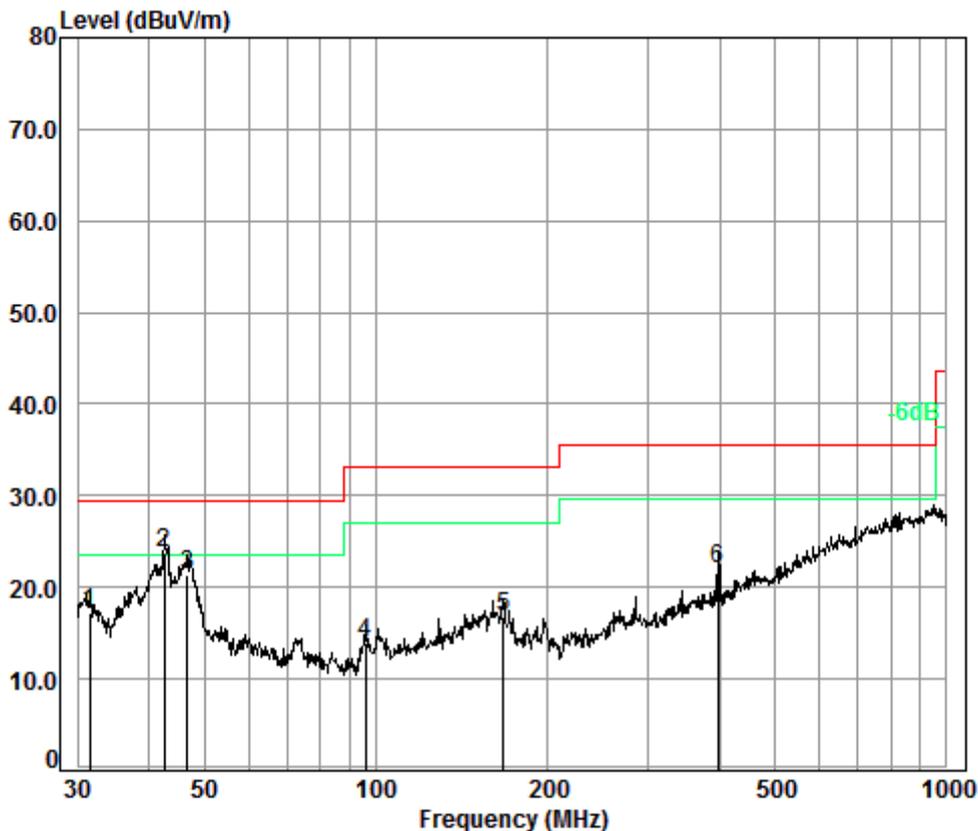
Condition: 10m HORIZONTAL

Job No. : 9400RG

Test Mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	36.00	6.72	12.78	32.98	29.59	16.11	29.50	-13.39
2	41.13	6.80	13.22	32.99	28.33	15.36	29.50	-14.14
3	55.61	7.00	12.33	32.97	27.60	13.96	29.50	-15.54
4	134.09	7.37	12.34	32.76	28.51	15.46	33.10	-17.64
5	162.04	7.50	13.19	32.73	29.07	17.03	33.10	-16.07
6	528.25	8.72	17.33	32.60	28.14	21.59	35.60	-14.01

Mode:a;Polarization:Vertical



Condition: 10m VERTICAL

Job No. : 9400RG

Test Mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.51	6.70	12.52	32.97	31.08	17.33	29.50	-12.17
2 pp	42.60	6.80	13.10	32.99	36.80	23.71	29.50	-5.79
3	46.67	6.83	12.86	33.00	34.75	21.44	29.50	-8.06
4	96.10	7.20	9.13	32.81	30.42	13.94	33.10	-19.16
5	167.24	7.50	12.68	32.73	29.34	16.79	33.10	-16.31
6	397.63	8.30	14.82	32.60	31.45	21.97	35.60	-13.63



6.3 Radiated Disturbance(above 1GHz)

Test Requirement: 47 CFR PART 15,Subpart B:2015
 Test Method: ANSI C63.4:2014
 Frequency Range: Above 1GHz
 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

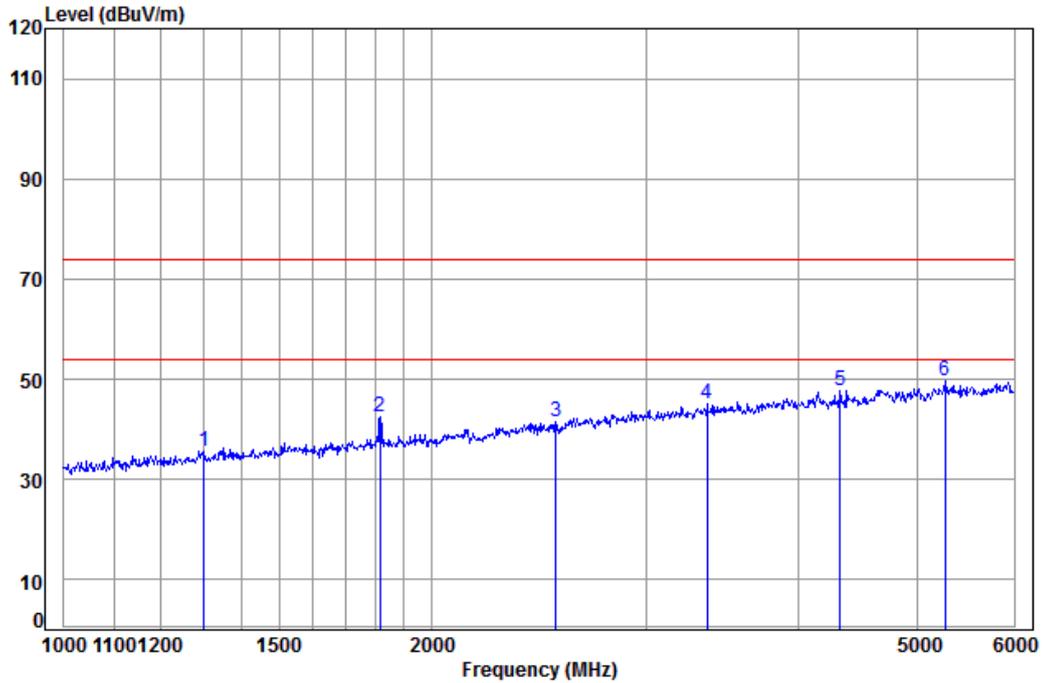
Operating Environment:							
Temperature:	25.0	°C	Humidity:	55	% RH	Atmospheric Pressure:	1010 mbar
Pretest these mode to find the worst case:	a:charge mode,keep EUT work with adapter. b: single play mode, keep EUT working normally.						
The worst case for final test:	a:charge mode,keep EUT work with adapter.						

6.3.2 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.



Mode:a;Polarization:Horizontal



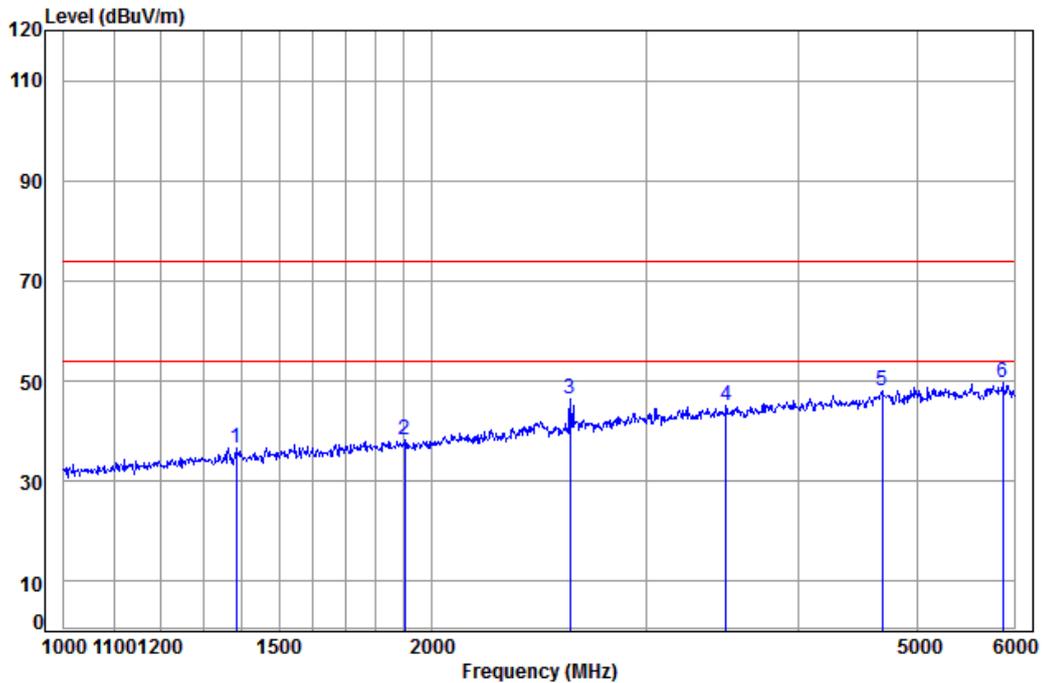
Condition: 3m HORIZONTAL

Job No: : 9400RG

Mode: : a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	1301.332	4.22	24.96	38.04	44.50	35.64	74.00	-38.36
2	1816.036	4.83	27.13	38.09	48.78	42.65	74.00	-31.35
3	2529.778	5.45	29.52	38.16	44.78	41.59	74.00	-32.41
4	3363.631	6.20	31.97	38.40	45.33	45.10	74.00	-28.90
5	4322.645	7.08	33.60	38.84	45.82	47.66	74.00	-26.34
6 pp	5264.368	8.14	34.45	39.07	46.15	49.67	74.00	-24.33

Mode:a;Polarization:Vertical



Condition: 3m VERTICAL

Job No: : 9400RG

Mode: : a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	1383.074	4.33	25.32	38.05	45.15	36.75	74.00	-37.25
2	1902.639	4.92	27.45	38.09	43.86	38.14	74.00	-35.86
3	2598.691	5.53	29.80	38.16	49.41	46.58	74.00	-27.42
4	3486.354	6.29	32.18	38.46	44.97	44.98	74.00	-29.02
5	4677.225	7.54	33.93	38.98	45.42	47.91	74.00	-26.09
6 pp	5872.370	8.63	34.63	39.01	45.52	49.77	74.00	-24.23

Remark: The disturbance above 6GHz was very low, so only below 6GHz had been displayed



7 Photographs

7.1 EUT Test Setup Details

Refer to Appendix A - Photographs of EUT Test Setup for SZEM1611009400RG.