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FCC Test Report

Application No.: SZEM1707007940CR
Applicant: Scosche Industries Inc.
Manufacturer: Shenzhen Powerqi Technology Co., Ltd.
Factory: Shenzhen Powerqi Technology Co., Ltd.
Equipment Under Test (EUT):
EUT Name: Wireless Car Charger
Model No.: QM5W
Trade Mark: SCOSCHE
FCC ID: IKQQM5W
Standards: 47 CFR PART 18: 2016
Date of Receipt: 2017-08-01
Date of Test: 2017-08-01 to 2017-09-12
Date of Issue: 2017-09-14

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

Authorized Signature:



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.



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2017-09-14		Original

Authorized for issue by:				
Tested By				
		<hr/>		
		Jacky Li/Project Engineer		Date
				2017-09-14
Checked By				
		<hr/>		
		Eric Fu /Reviewer		Date
				2017-09-14



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2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150 kHz to 30 MHz)	47 CFR PART 18: 2015	FCC OST/ MP-5:1986	18.307(a)	Pass
Radiated Emission (9 kHz to 1000MHz)	47 CFR PART 18: 2015	FCC OST/ MP-5:1986	18.305(b)	Pass



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4 General Information

4.1 Client Information

Applicant:	Scosche Industries Inc.
Address of Applicant:	1550 Pacific Ave., Oxnard, California, United States of America
Manufacturer:	Shenzhen Powerqi Technology Co., Ltd.
Address of Manufacturer:	14F No.12 Building, Zhonghaixin Science and Technology Park, Bulan Road, Buji Street, Longgang District, Shenzhen, China
Factory:	Shenzhen Powerqi Technology Co., Ltd.
Address of Factory:	14F No.12 Building, Zhonghaixin Science and Technology Park, Bulan Road, Buji Street, Longgang District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Wireless Car Charger
Model No.:	QM5W
Trade Mark:	SCOSCHE
Sample Type:	Fix production
Operation Frequency:	116KHz-176.3KHz
Power Supply:	DC 5.0V, 2.0A/ DC9.0V, 1.8A
Output power:	Max. 16.2W

4.3 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Serial No.
WPC Load	Shenzhen Powerqi Technology Co., Ltd.	/	/
Adapter	Scosche Industries Inc	QM5W	/

4.4 Details of Test Mode

mode 1	Wireless charge mode
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4.5 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.

4.6 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 –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.

- **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.

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.



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5 Equipment List

RE in Chamber(9kHz-30MHz)						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2017-05-10	2018-05-10
2	EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2017-04-14	2018-04-13
3	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-29
4	Pre-amplifier (9kHz-1GHz)	Sonoma Instrument Co	310N	SEM005-04	2017-06-05	2018-06-04
5	Loop Antenna (9kHz-30MHz)	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
6	Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
7	Coaxial Cable	SGS	N/A	SEM029-01	2017-07-13	2018-07-12

RE in Chamber(30-1000MHz)						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
2	MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2017-09-27	2018-09-27
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2017-03-05	2020-03-05
4	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13
5	Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
6	Coaxial Cable	SGS	N/A	SEM025-01	2017-07-13	2018-07-12



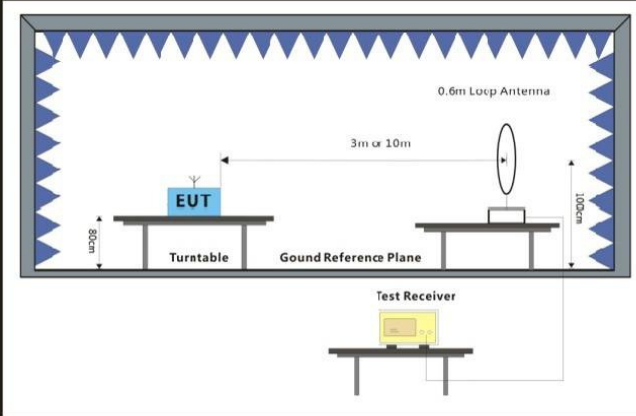
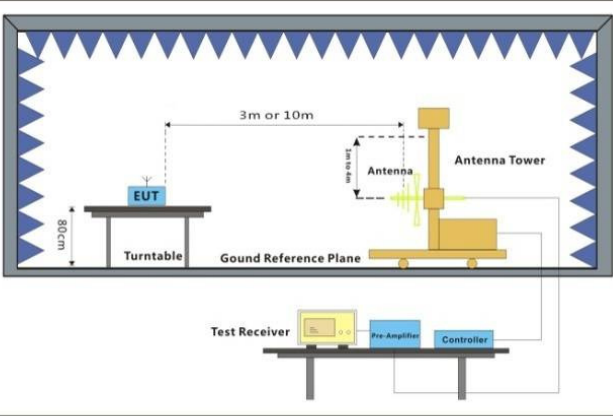
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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2016-10-12	2017-10-12
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-18

6 Test Results

6.1 Radiated Emissions

Test Requirement:	47 CFR PART 18			
Test Site:	Measurement Distance: 10m (Semi-Anechoic Chamber)			
Receiver Setup:	Frequency	Detector	RBW	VBW
	9kHz~150kHz	Quasi-peak	200Hz	≥RBW
	150kHz~30MHz	Quasi-peak	9kHz	≥RBW
	30MHz~1GHz	Quasi-peak	100kHz	≥RBW
Limit:	Frequency	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009-30MHz	53.06	Quasi-peak	10
	30MHz-88MHz	63.52	Quasi-peak	3
	88MHz-216MHz	63.52	Quasi-peak	3
	216MHz-1000MHz	63.52	Quasi-peak	3
Remark:According to the article 18.305(b), The operating frequency is non-ISM frequency;the RF Power generated by equipment is below 500(watts);				
Test Setup:				
 <p style="text-align: center;">Below 30MHz</p>		 <p style="text-align: center;">30MHz~1GHz</p>		
Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber(30MHz-1000MHz) and 10 meter semi-anechoic chamber(9kHz-30MHz). The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 10 meters(30MHz-1000MHz) and 10 meter(9kHz-30MHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. Above 30MHz:The Analyzer/Receiver scanned from 30MHz to 1000MHz.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 			



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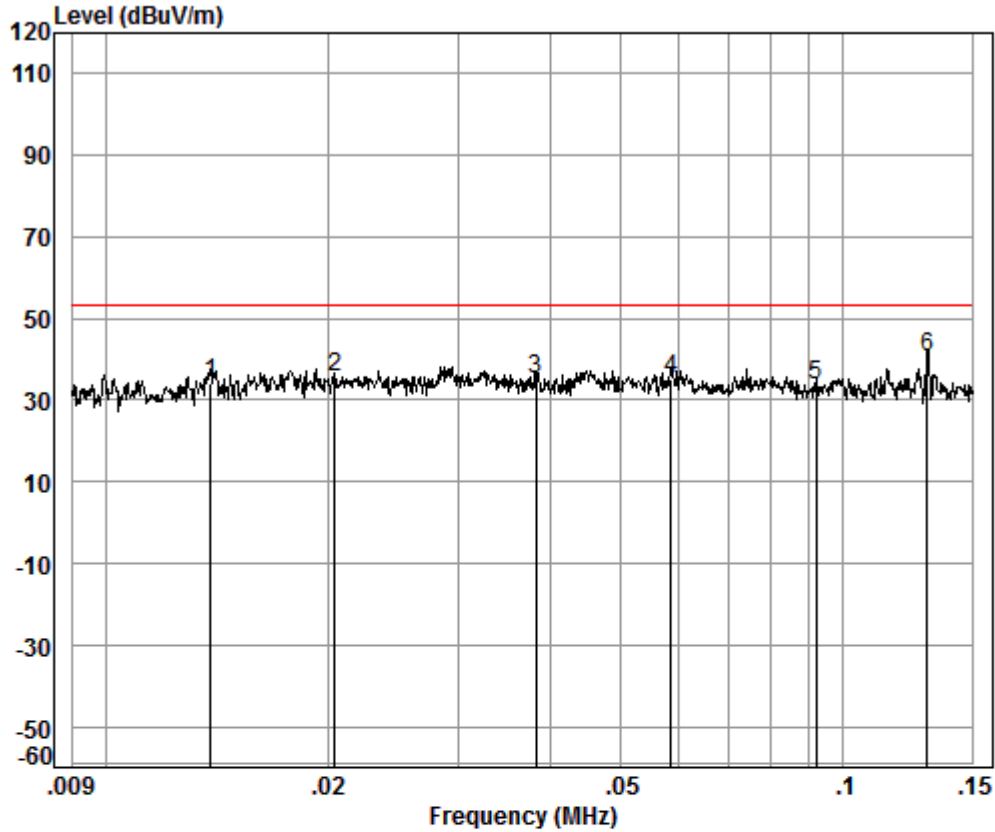
	<p>d. Below 30MHz: The Analyzer/Receiver scanned from 9kHz to 30MHz. The antenna height is 2 meters above the ground to determine the maximum value of the field strength.</p> <p>e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 2 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p>h. Repeat above procedures until all frequencies measured was complete.</p> <p>i. Measurement Requirement: According to the clause 18.305(c)notes 2. At frequencies at or above 30MHz: $Limit_{3m}(dBuV) = Limit_{xm}(dBuV) + 20\log(xm/3m)$ At frequencies below 30MHz: $Limit_{10m}(dBuV) = Limit_{xm}(dBuV) + 20\log(xm/3m)$ Remark: x replace the number 10,30,300.</p>
<p>Test Mode:</p>	<p>DC 5.0V</p> <ol style="list-style-type: none"> 1) Less than 1% of current 2) Less than 50% of current 3) 100% full of current <p>DC 9.0V</p> <ol style="list-style-type: none"> 1) Less than 1% of current 2) Less than 50% of current 3) 100% full of current
<p>Instruments Used:</p>	<p>Refer to section 5 for details</p>
<p>Test Results:</p>	<p>Pass</p>



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0.009MHz-30MHz



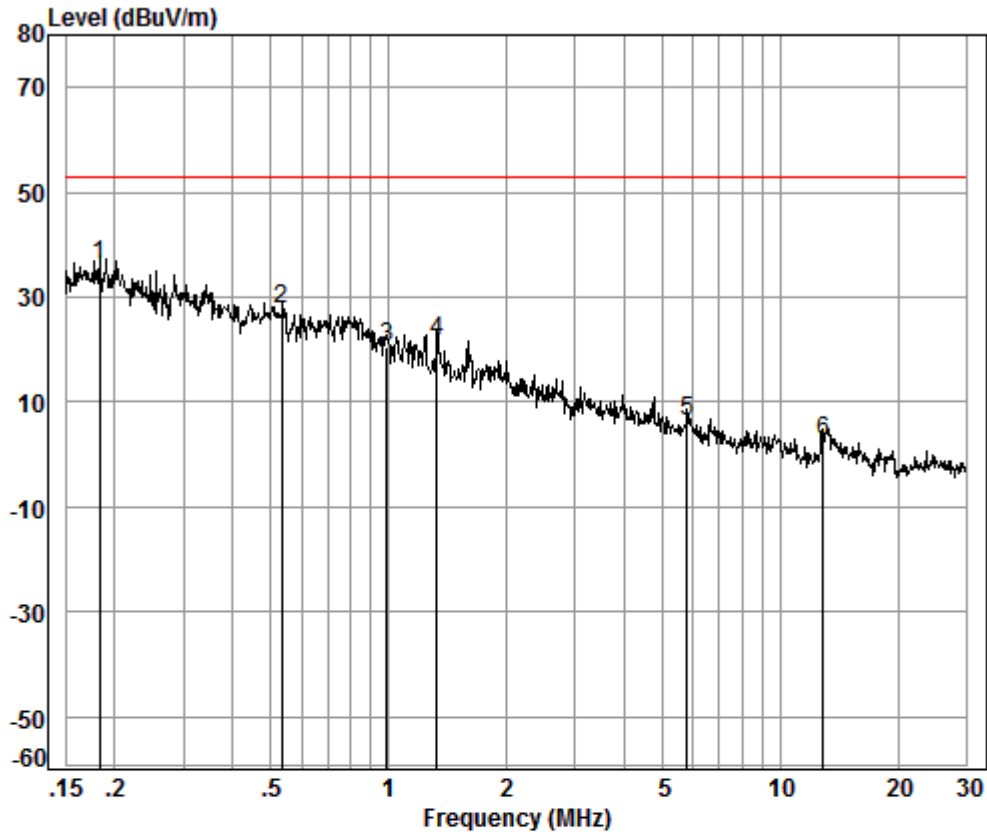
Condition: 10m
Job No. : 07940CR
Test Mode: a

	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	0.01	0.26	17.27	32.49	49.33	34.37	53.06	-18.69
2	0.02	0.21	14.93	32.49	52.75	35.40	53.06	-17.66
3	0.04	0.15	13.15	32.50	54.47	35.27	53.06	-17.79
4	0.06	0.11	12.28	32.51	55.35	35.23	53.06	-17.83
5	0.09	0.06	12.03	32.52	54.01	33.58	53.06	-19.48
6 pp	0.13	0.06	11.80	32.51	61.09	40.44	53.06	-12.62



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Condition: 10m
Job No. : 07940CR
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 pp	0.18	0.07	11.82	32.51	56.81	36.19	53.06	-16.87
2	0.53	0.12	11.75	32.49	48.34	27.72	53.06	-25.34
3	0.99	0.23	12.00	32.45	40.87	20.65	53.06	-32.41
4	1.33	0.28	12.04	32.45	41.89	21.76	53.06	-31.30
5	5.80	0.44	11.64	32.48	26.90	6.50	53.06	-46.56
6	12.92	0.56	10.51	32.50	24.17	2.74	53.06	-50.32



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Frequency (MHz)	Measured level at 10m (dBuV/m)	Creast factor (dB)	Result at 300m (dBuV/m)	Limit at 300m (dBuV/m)	Verdict
0.01	34.37	-29.54	4.83	23.52	Pass
0.02	35.40	-29.54	5.86	23.52	Pass
0.04	35.27	-29.54	5.73	23.52	Pass
0.06	35.23	-29.54	5.69	23.52	Pass
0.09	33.48	-29.54	3.94	23.52	Pass
0.13(Fundamental)	40.44	-29.54	10.9	23.52	Pass
0.18	36.19	-29.54	6.65	23.52	Pass
0.53	27.72	-29.54	-1.82	23.52	Pass
0.99	20.65	-29.54	-8.89	23.52	Pass
1.33	21.76	-29.54	-7.78	23.52	Pass
5.80	6.50	-29.54	-23.04	23.52	Pass
12.96	2.74	-29.54	-26.8	23.52	Pass

Remark:

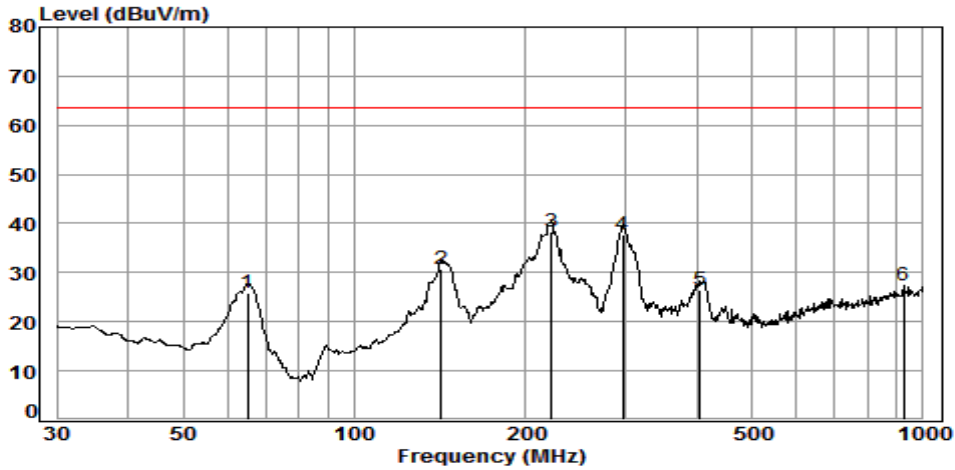
- 1.The loop antenna rotated about both Vertical and Horizontal to find the maximum emission,So only the worst position(Horizontal) was report.
- 2.All modes have been tested and only record the worst test result of DC 9.0V output with 100% current.



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30MHz-1000MHz
 Polarity: Horizontal



Condition: 3m HORIZONTAL
 Job No. : 07940CR
 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	64.89	0.80	7.05	27.26	45.23	25.82	63.52	-37.70
2	142.32	1.31	8.31	26.94	47.95	30.63	63.52	-32.89
3 pp	222.17	1.53	11.35	26.62	52.13	38.39	63.52	-25.13
4	296.18	1.88	13.73	26.41	48.66	37.86	63.52	-25.66
5	406.09	2.23	16.32	27.17	34.95	26.33	63.52	-37.19
6	925.76	3.63	23.30	26.64	27.19	27.48	63.52	-36.04

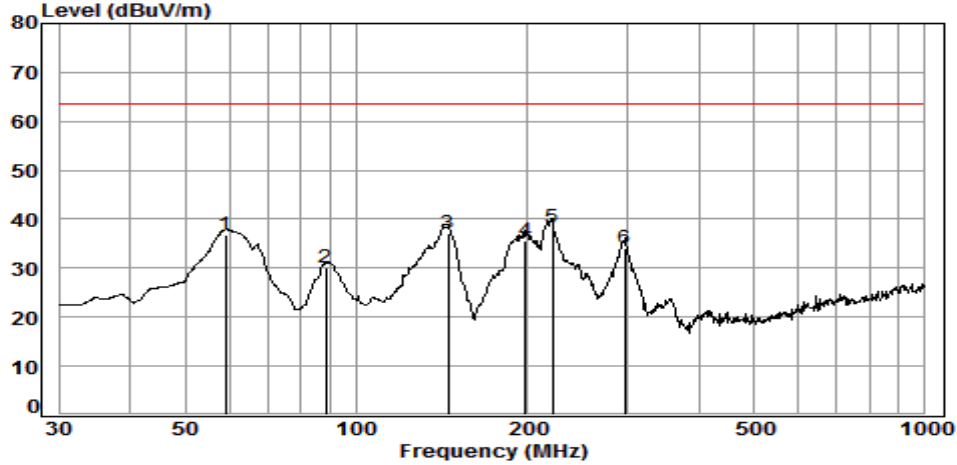
Frequency (MHz)	Polarity	Measured level at 10m (dBUV/m)	Creast factor (dB)	Result at 300m (dBUV/m)	Limit at 300m (dBUV/m)	Verdict
64.89	Horizontal	25.82	-40.00	-14.18	23.52	Pass
142.32	Horizontal	30.63	-40.00	-9.37	23.52	Pass
222.17	Horizontal	38.39	-40.00	-1.61	23.52	Pass
296.18	Horizontal	37.86	-40.00	-2.14	23.52	Pass
406.09	Horizontal	26.33	-40.00	-13.67	23.52	Pass
925.76	Horizontal	27.48	-40.00	-12.52	23.52	Pass



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Polarity: Vertical



Condition: 3m VERTICAL
Job No. : 07940CR
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	59.03	0.80	7.35	27.27	56.00	36.88	63.52	-26.64
2	88.34	1.10	8.53	27.22	47.70	30.11	63.52	-33.41
3	145.35	1.31	8.58	26.93	54.12	37.08	63.52	-26.44
4	198.59	1.40	10.19	26.70	50.83	35.72	63.52	-27.80
5 pp	221.39	1.53	11.31	26.62	52.08	38.30	63.52	-25.22
6	297.22	1.89	13.78	26.41	44.79	34.05	63.52	-29.47

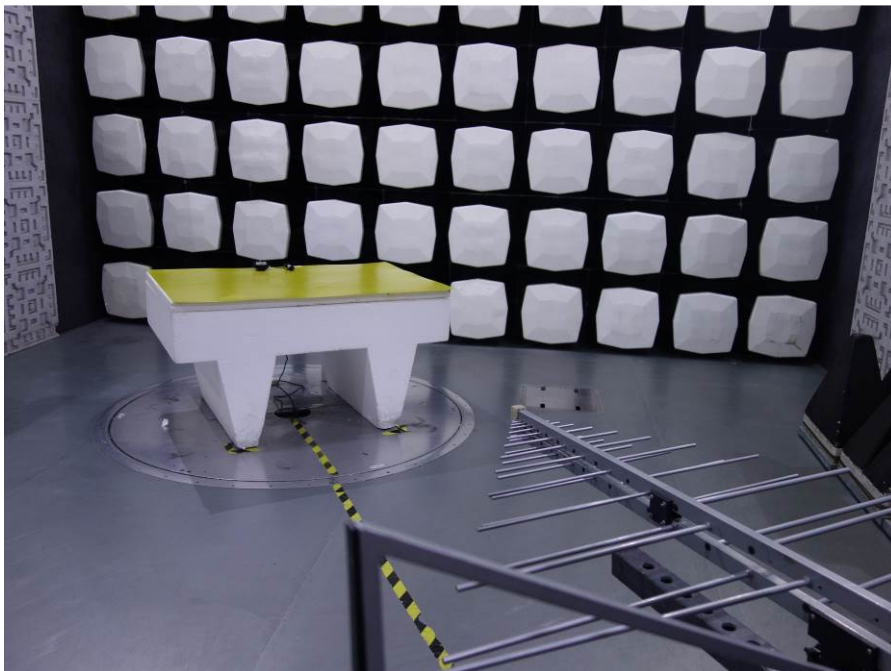
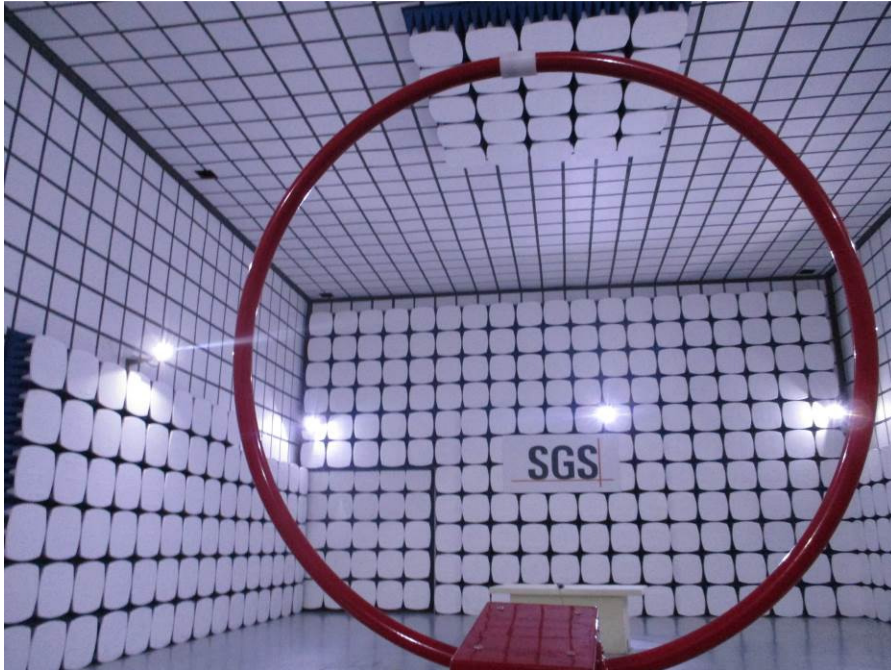
Frequency (MHz)	Polarity	Measured level at 10m (dBUV/m)	Creast factor (dB)	Result at 300m (dBUV/m)	Limit at 300m (dBUV/m)	Verdict
59.03	Vertical	36.88	-40.00	-3.12	23.52	Pass
88.34	Vertical	30.11	-40.00	-9.89	23.52	Pass
145.35	Vertical	37.08	-40.00	-2.92	23.52	Pass
198.59	Vertical	35.72	-40.00	-4.28	23.52	Pass
221.39	Vertical	38.30	-40.00	-1.7	23.52	Pass
297.22	Vertical	34.05	-40.00	-5.95	23.52	Pass

Note:

- 1.Level=Read Level+Cable loss+Ant Factor-Preamp Factor
- 2.All modes have been tested and only record the worst test result of DC 9.0V output with 100% current.

7 Photographs

7.1 Radiated Emission Test Setup



7.2 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM170700794001CR.