



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

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Report No.: SZEM170900938301
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FCC Test Report

Application No.: SZEM1709009383CR(GZEM1708005147CR)
Applicant: birde Pty Ltd
Address of Applicant: PO BOX 265 St Leonards 1590 Australia
Manufacturer: birde Pty Ltd
Address of Manufacturer: PO BOX 265 St Leonards 1590 Australia
Factory: Foshan Sun Cupid Electronics FTY Ltd.
Address of Factory: Block 7, No. 127, Zhangcha 1st Rd, Changcheng District, Foshan City, Guangdong, China.

Equipment Under Test (EUT):

EUT Name: Wireless charge base
Model No.: BB800
FCC ID: 2ANOV-BC02
Standards: 47 CFR PART 18: 2016
Date of Receipt: 2017-09-05
Date of Test: 2017-09-14 to 2017-09-22
Date of Issue: 2017-09-29

Test Result :	PASS*
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* In the configuration tested, the EUT 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		2017-09-29		Original

Authorized for issue by:				
		<i>Vincent Chen</i>		
		Vincent Chen /Project Engineer		
		<i>Eric Fu</i>		
		Eric Fu /Reviewer		



2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150 kHz to 30 MHz)	47 CFR PART 18: 2016	FCC OST/ MP-5:1986	18.307(a)	Pass
Radiated Emission (9 kHz to 1GHz)	47 CFR PART 18: 2016	FCC OST/ MP-5:1986	18.305(b)	Pass

N/A: Not applicable



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4 General Information

4.1 General Description of EUT

Product Name:	Wireless charge base
Model No.:	BB800
Sample Type:	Fix production
Wireless Charging Operation Frequency:	110kHz-205kHz
Antenna Type:	Loop antenna
Modulation type:	Load modulation
Power Supply:	Input: DC 5V, 2A from USB port Output: DC 5V, 1A
USB Cable:	100cm unshielded

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Foshan Sun Cupid Electronics FTY Ltd.	IN-CA-09	NA
Speaker	Foshan Sun Cupid Electronics FTY Ltd.	BC800	NA
USB cable	Foshan Sun Cupid Electronics FTY Ltd.	NA	NA
NFC card	Foshan Sun Cupid Electronics FTY Ltd.	NA	NA

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction emission	3.0dB (150kHz to 30MHz)
2	Radiated emission	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)
3	Temperature test	1 °C
4	Humidity test	3%

4.4 Details of Test Mode

mode a	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.



5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
LISN	ETS-LINDGREN	3816/2	SEM007-02	2017-04-14	2018-04-13
8-Wire ISN CAT 6	SCHWARZBECK MESS- ELEKTRONIK	NTFM 8158	EMC2123	2017-06-23	2018-06-22
CAT5 8158 ISN 8Wire	SCHWARZBECK MESS- ELEKTRONIK	CAT5 8158	EMC2124	2017-06-23	2018-06-22
8-Wire ISN CAT 3	SCHWARZBECK MESS- ELEKTRONIK	CAT3 8158	EMC2126	2017-06-23	2018-06-22
Coaxial Cable	SGS	N/A	SEM024-01	2017-07-13	2018-07-12

Radiated Emissions(9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2017-05-10	2018-05-10
Measurement Software	AUDIX	e3 V8.2014- 6-27	N/A	N/A	N/A
EMI Test Receiver (9kHz-3GHz)	Rohde & Schwarz	ESCI	SEM004-01	2017-04-14	2018-04-13
Trilog-Broadband Antenna(30MHz-1GHz)	Schwarzbeck	VULB9168	SEM003-17	2016-01-26	2019-01-26
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2017-06-05	2018-06-04
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
Coaxial Cable	SGS	N/A	SEM029-01	2017-07-13	2018-07-12



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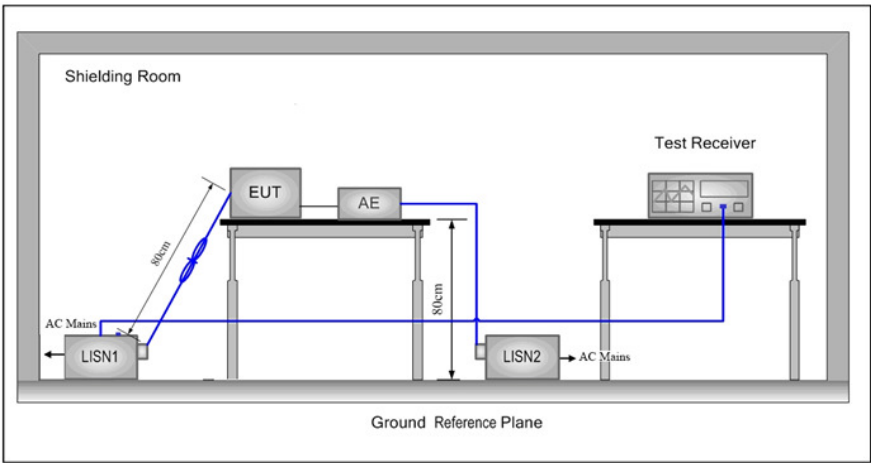
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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Shanghai 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 Conducted Emissions

Test Requirement:	47 CFR PART 18		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.		

Test Setup:	
Test Mode:	1) Less than 1% of current 2) Less than 50% of current 3) 100% full of current
Instruments Used:	Refer to section 5 for details
Test Results:	Pass

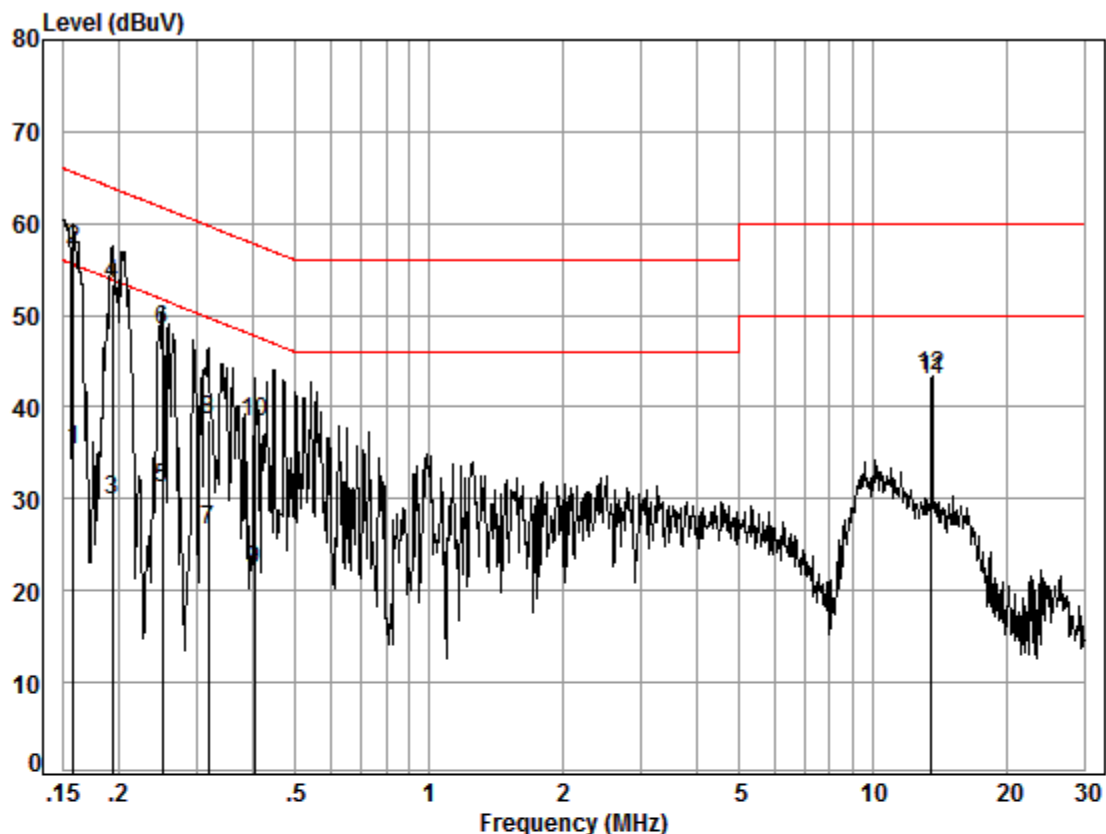
Measurement Data

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

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.



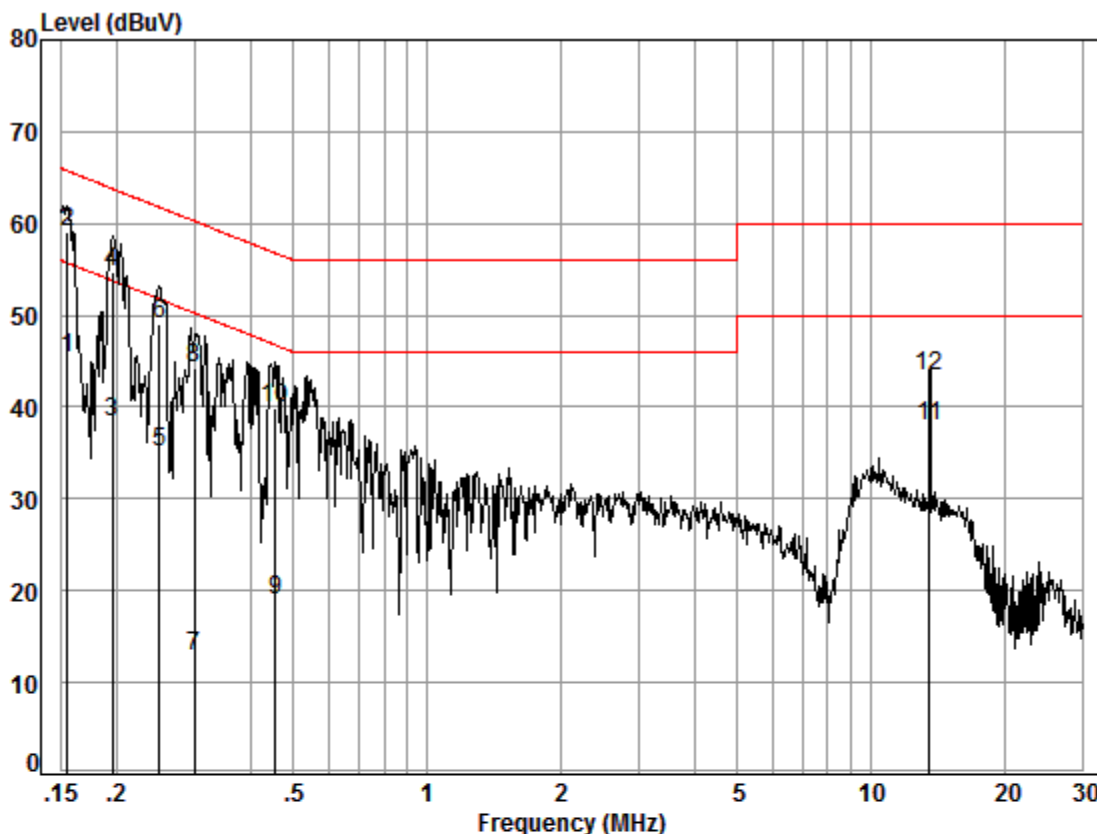
Live Line:



Site : Shielding Room
Condition: Line
Job No. : 09383CR
Test mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.16	0.02	9.64	25.66	35.32	55.56	-20.24	Average
2	0.16	0.02	9.64	47.55	57.21	65.56	-8.35	QP
3	0.19	0.02	9.63	20.20	29.85	53.89	-24.04	Average
4	0.19	0.02	9.63	43.78	53.43	63.89	-10.46	QP
5	0.25	0.01	9.63	21.55	31.19	51.73	-20.54	Average
6	0.25	0.01	9.63	38.76	48.40	61.73	-13.33	QP
7	0.32	0.01	9.63	17.06	26.70	49.75	-23.05	Average
8	0.32	0.01	9.63	29.02	38.66	59.75	-21.09	QP
9	0.40	0.01	9.63	12.66	22.30	47.77	-25.47	Average
10	0.40	0.01	9.63	28.80	38.44	57.77	-19.33	QP
11	13.56	0.01	9.94	32.95	42.90	50.00	-7.10	Average
12	13.56	0.01	9.94	33.46	43.41	60.00	-16.59	QP

Neutral Line:



Site : Shielding Room
Condition: Neutral
Job No. : 09383CR
Test mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15	0.02	9.64	35.64	45.30	55.74	-10.44	Average
2	0.15	0.02	9.64	49.46	59.12	65.74	-6.62	QP
3	0.20	0.02	9.63	28.67	38.32	53.80	-15.48	Average
4	0.20	0.02	9.63	44.99	54.64	63.80	-9.16	QP
5	0.25	0.01	9.63	25.48	35.12	51.78	-16.66	Average
6	0.25	0.01	9.63	39.47	49.11	61.78	-12.67	QP
7	0.30	0.01	9.63	3.19	12.83	50.28	-37.45	Average
8	0.30	0.01	9.63	34.65	44.29	60.28	-15.99	QP
9	0.46	0.01	9.63	9.43	19.07	46.76	-27.69	Average
10	0.46	0.01	9.63	30.33	39.97	56.76	-16.79	QP
11	13.56	0.01	9.94	27.96	37.91	50.00	-12.09	Average
12	13.56	0.01	9.94	33.47	43.42	60.00	-16.58	QP

6.2 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	53.0	Quasi-peak	10
	30MHz-88MHz	40.0	Quasi-peak	3
	88MHz-216MHz	43.5	Quasi-peak	3
	216MHz-1000MHz	46.0	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); According to the clause 18.305(c), the EUT belongs to Consumer equipment.				
Test Setup:				

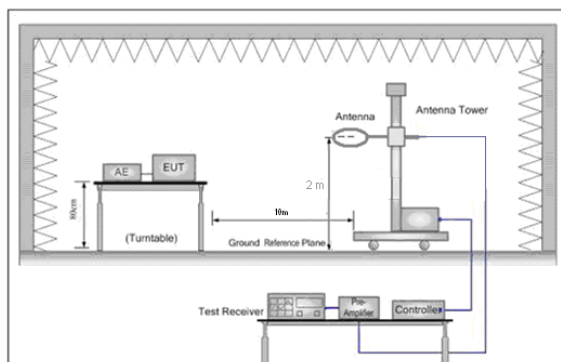


Figure 1. Below 30MHz

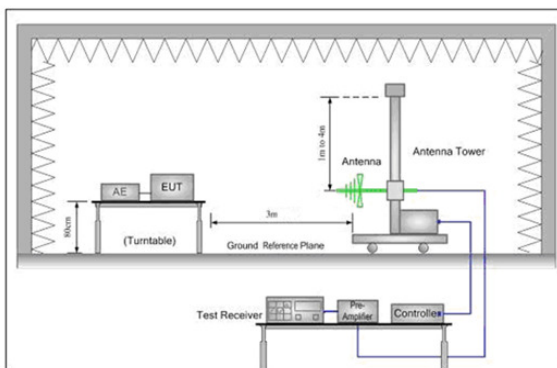


Figure 2. 30MHz to 1GHz

Test Procedure:	a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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. b. The EUT was set 3 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. c. 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. 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.
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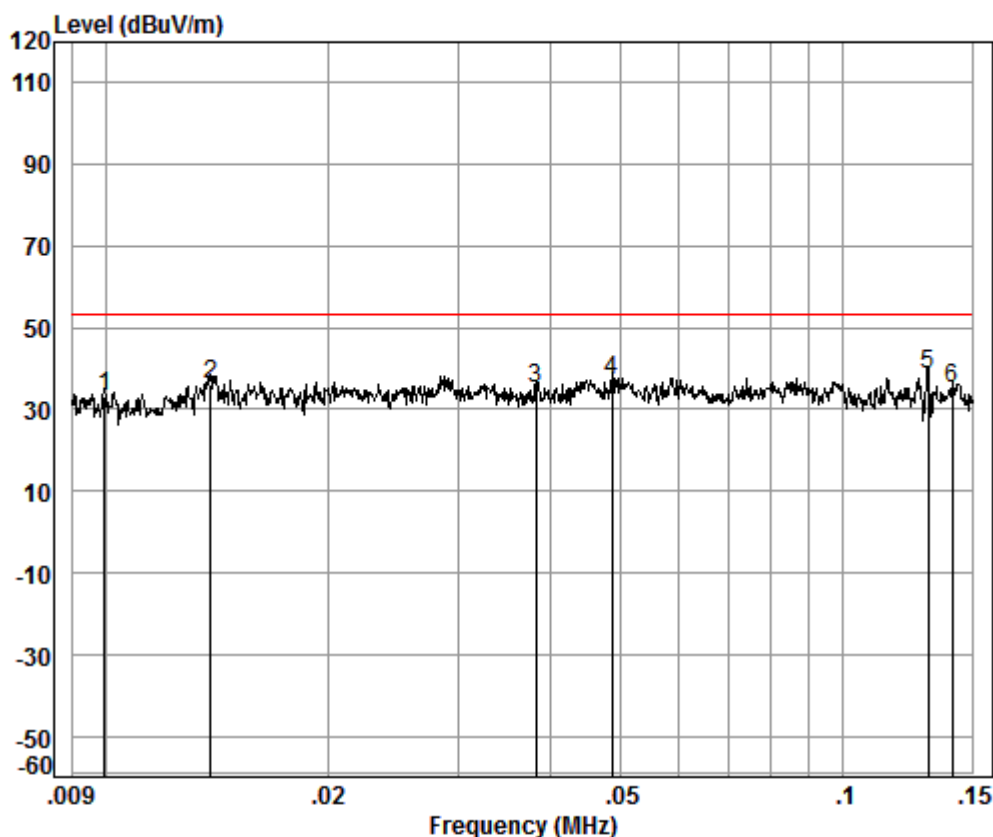
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	e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 2 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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. h. Repeat above procedures until all frequencies measured was complete. i. Measurement Requirement: According to the clause 18.305(c)notes 2. At frequencies at or above 30MHz: $\text{Limit3m(dBuV)} = \text{Limitxm(dBuV)} + 20\log(\text{xm}/3\text{m})$ At frequencies below 30MHz: $\text{Limit10m(dBuV)} = \text{Limitxm(dBuV)} + 20\log(\text{xm}/3\text{m})$ Remark: x replace the number 10,30,300.
Test Mode:	1) Less than 1% of current 2) Less than 50% of current 3) 100% full of current
Instruments Used:	Refer to section 5 for details
Test Results:	Pass



0.009MHz-0.15MHz
Mode: a;



Condition: 10m

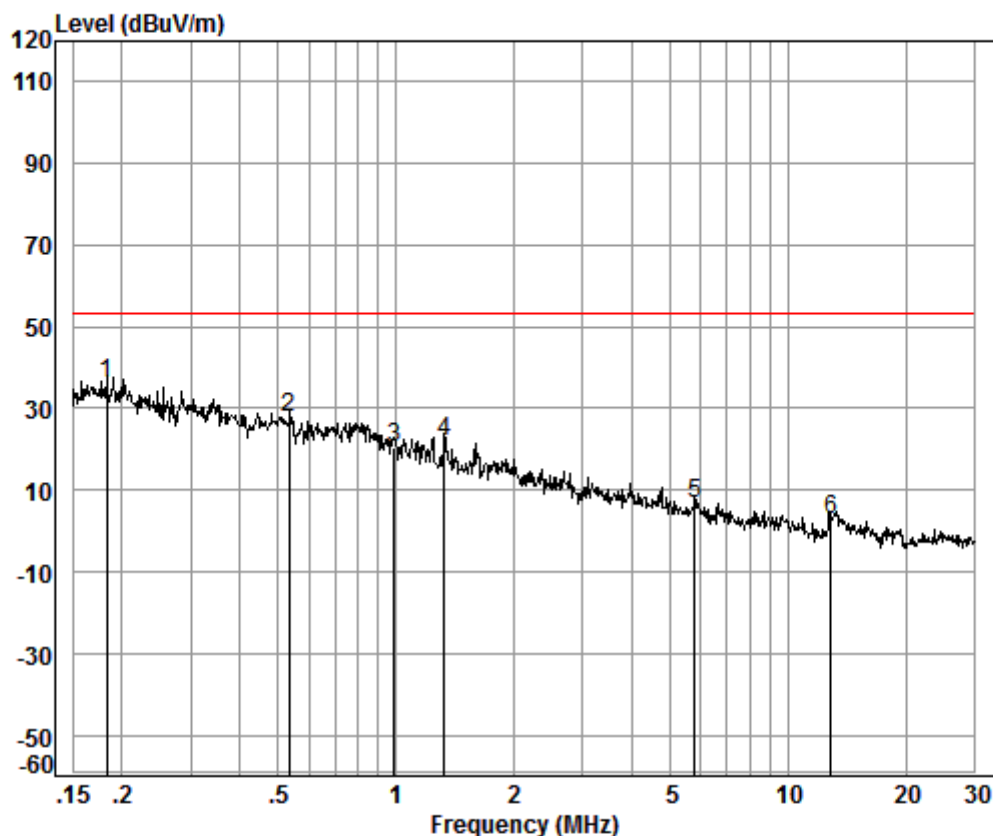
Job No. : 09383CR

Test Mode: a

	Freq	Cable	Ant	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	0.01	0.29	19.33	32.46	45.82	32.98	53.06 -20.08
2	0.01	0.26	17.27	32.49	51.33	36.37	53.06 -16.69
3	0.04	0.15	13.15	32.50	54.47	35.27	53.06 -17.79
4	0.05	0.12	12.48	32.51	56.94	37.03	53.06 -16.03
5 pp	0.13	0.06	11.80	32.51	58.99	38.34	53.06 -14.72
6	0.14	0.06	11.75	32.50	55.80	35.11	53.06 -17.95



0.15MHz-30MHz



Condition: 10m

Job No. : 09383CR

Test Mode: a

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	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	32.98	-29.54	3.44	23.52	Pass
0.01	36.37	-29.54	6.83	23.52	Pass
0.04	35.27	-29.54	5.73	23.52	Pass
0.05	37.03	-29.54	7.49	23.52	Pass
0.13	38.34	-29.54	8.8	23.52	Pass
0.14	35.11	-29.54	5.57	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	6.5	-29.54	-23.04	23.52	Pass
12.92	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:According to the clause 2.3 of MP-5:1986, the highest frequency is 205kHz, So the Range of frequency measurements is 9kHz to 30MHz.