

TEST REPORT

Application No.: SZEM1906015096AT
Applicant: Brand Addition Ltd
Address of Applicant: Trafford Wharf Road, Manchester, M17 1DD, Manchester, United Kingdom
Manufacturer: Brand Addition Ltd
Address of Manufacturer: Trafford Wharf Road, Manchester, M17 1DD, Manchester, United Kingdom
Factory: Casun Technologies Co., Ltd
Address of Factory: 4/F, B Building, No.8 Eastern Zone, Shangxue Technology Park, Bantian, Shenzhen, China

Equipment Under Test (EUT):

EUT Name: Wireless Charger
Model No.: 2951299
Trade mark: TOMMY HILFINGER
FCC ID: 2ALSK2951299
Standard(s) : 47 CFR Part 18
Date of Receipt: 2019-06-13
Date of Test: 2019-06-13 to 2019-07-23
Date of Issue: 2019-07-25

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

Keny Xu

Keny Xu
EMC Laboratory Manager



Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-07-25		Original

Authorized for issue by:			
			
		Peter Geng /Project Engineer	
			
		Eric Fu /Reviewer	



2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted disturbance	47 CFR Part 18	FCC MP-5	Part 18.307	Pass
Radiated emission	47 CFR Part 18	FCC MP-5	Part 18.305	Pass



3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 DETAILS OF E.U.T.	5
4.2 DESCRIPTION OF SUPPORT UNITS	5
4.3 MEASUREMENT UNCERTAINTY	5
4.4 TEST LOCATION.....	6
4.5 TEST FACILITY.....	6
4.6 DEVIATION FROM STANDARDS.....	6
4.7 ABNORMALITIES FROM STANDARD CONDITIONS	6
5 EQUIPMENT LIST.....	7
6 RADIO SPECTRUM MATTER TEST RESULTS.....	8
6.1 CONDUCTED DISTURBANCE.....	8
6.1.1 <i>E.U.T. Operation</i>	8
6.1.2 <i>Test Setup Diagram</i>	8
6.1.3 <i>Measurement Procedure and Data</i>	8
6.2 RADIATED EMISSION	11
6.2.1 <i>E.U.T. Operation</i>	12
6.2.2 <i>Test Setup Diagram</i>	12
6.2.3 <i>Measurement Procedure and Data</i>	12
7 PHOTOGRAPHS.....	15
7.1 TEST SETUP.....	15
7.2 EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS).....	15



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4 General Information

4.1 Details of E.U.T.

Power supply:	Input: DC 5V/1.5A Output: DC 5V/1A
Antenna Type:	Loop Antenna
Modulation Type:	Load Modulation
Operation Frequency:	103.57kHz to 184.13kHz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Apple	A1357 W010A051	REF. No.SEA0500
iPhone 8	Apple	A1863	F4GVQ656JC6D
Micro USB Cable	PHILIPS	SWR2101	REF. No.SEA0700

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Conduction emission	$\pm 3.0\text{dB}$
3	Radiated Spurious emission test	$\pm 4.5\text{dB}$
4	Temperature test	$\pm 1^\circ\text{C}$
5	Humidity test	$\pm 3\%$
6	Supply voltages	$\pm 1.5\%$
7	Time	$\pm 3\%$

4.4 Test Location

All tests were performed at:

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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 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



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5 Equipment List

Conducted disturbance					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2019-06-13	2024-06-12
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	2018-09-25	2019-09-24
LISN	ETS-LINDGREN	3816/2	SEM007-02	2019-04-01	2020-03-31
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2019-04-01	2020-03-31

Radiated emission					
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
EMI Test Receiver (9kHz-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2019-04-01	2020-03-31
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2019-04-12	2020-04-11
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21

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	2018-09-27	2019-09-26
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2018-09-27	2019-09-26
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2018-09-27	2019-09-26
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2019-04-04	2020-04-03



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6 Radio Spectrum Matter Test Results

6.1 Conducted disturbance

Test Requirement Part 18.307
Test Method: FCC MP-5
Limit:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	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.

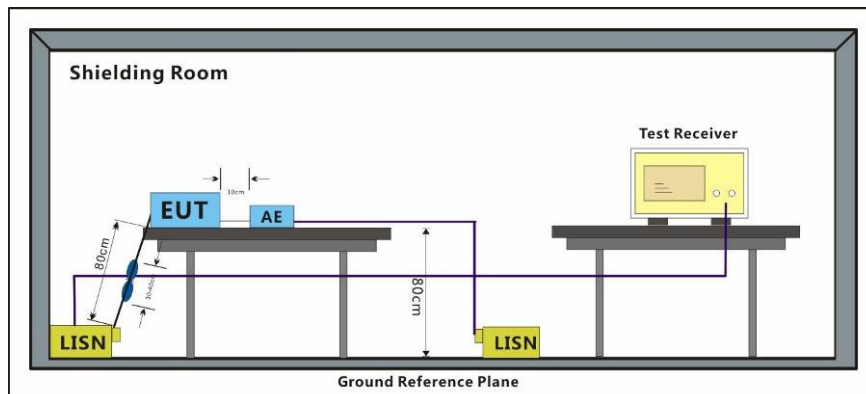
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C Humidity: 54 % RH Atmospheric Pressure: 1005 mbar

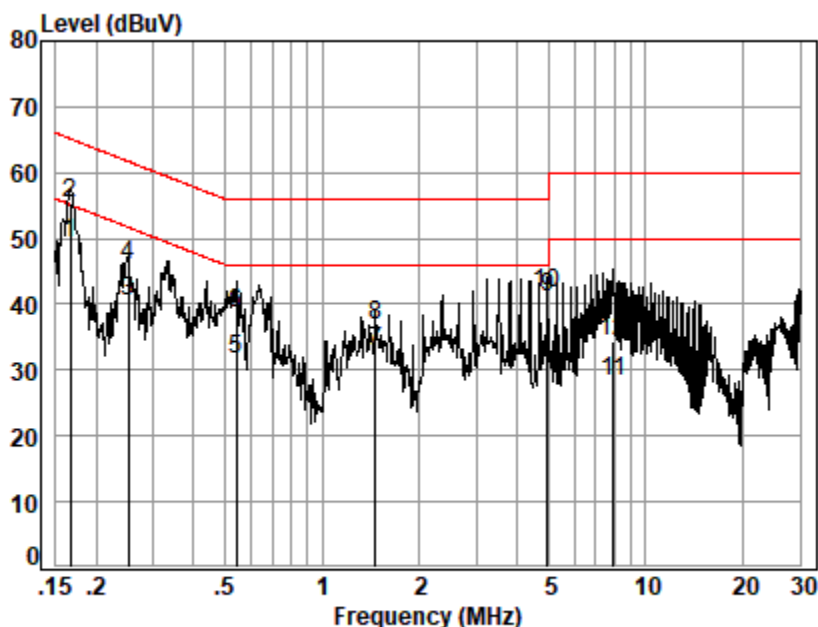
Test mode a:Charge mode_Keep the EUT charging

6.1.2 Test Setup Diagram



6.1.3 Measurement Procedure and Data

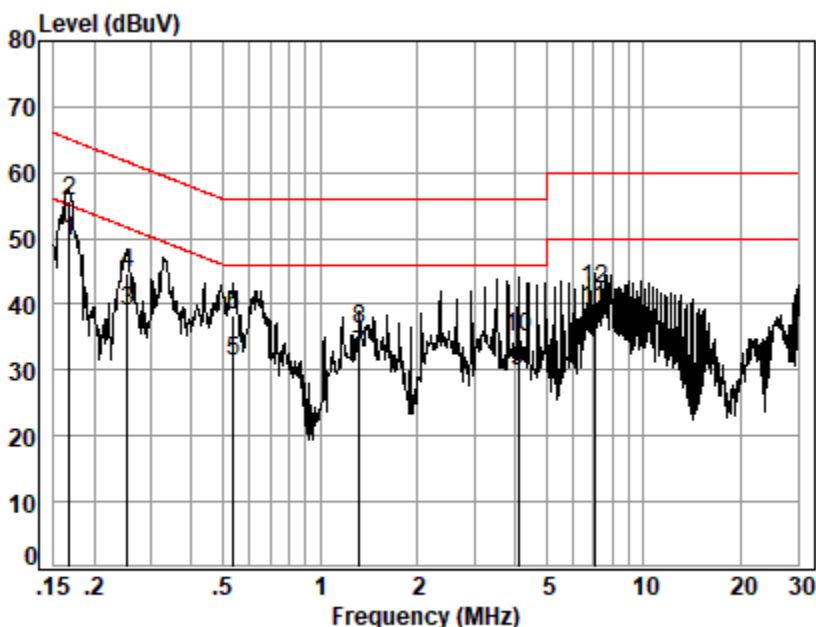
Mode:a; Line:Live Line



Site : Shielding Room
Condition: Line
Job No. : 15096AT
Test mode: a

	Freq	Cable	LISN	Read	Limit	Over	
	MHz	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.1659	0.01	9.66	39.75	49.42	55.16	-5.74 Average
2	0.1659	0.01	9.66	45.68	55.35	65.16	-9.81 QP
3	0.2508	0.03	9.67	30.88	40.58	51.73	-11.15 Average
4	0.2508	0.03	9.67	36.20	45.90	61.73	-15.83 QP
5	0.5436	0.06	9.67	21.86	31.59	46.00	-14.41 Average
6	0.5436	0.06	9.67	28.84	38.57	56.00	-17.43 QP
7	1.4640	0.13	9.73	23.03	32.89	46.00	-13.11 Average
8	1.4640	0.13	9.73	26.90	36.76	56.00	-19.24 QP
9	4.9782	0.17	9.74	31.03	40.94	46.00	-5.06 Average
10	4.9782	0.17	9.74	31.89	41.80	56.00	-14.20 QP
11	7.9353	0.17	9.80	18.35	28.32	50.00	-21.68 Average
12	7.9353	0.17	9.80	24.40	34.37	60.00	-25.63 QP

Mode:a; Line:Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 15096AT
Test mode: a

	Freq	Cable	LISN	Read	Limit	Over	
	MHz	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB
1	0.1677	0.01	9.64	40.08	49.73	55.08	-5.35 Average
2	0.1677	0.01	9.64	45.89	55.54	65.08	-9.54 QP
3	0.2535	0.03	9.64	29.20	38.87	51.64	-12.77 Average
4	0.2535	0.03	9.64	35.01	44.68	61.64	-16.96 QP
5	0.5407	0.06	9.64	21.53	31.23	46.00	-14.77 Average
6	0.5407	0.06	9.64	28.62	38.32	56.00	-17.68 QP
7	1.3168	0.12	9.70	22.35	32.17	46.00	-13.83 Average
8	1.3168	0.12	9.70	26.38	36.20	56.00	-19.80 QP
9	4.0920	0.16	9.69	19.96	29.81	46.00	-16.19 Average
10	4.0920	0.16	9.69	25.21	35.06	56.00	-20.94 QP
11	7.0249	0.17	9.76	29.34	39.27	50.00	-10.73 Average
12	7.0249	0.17	9.76	32.32	42.25	60.00	-17.75 QP

6.2 Radiated emission

Test Requirement Part 18.305
Test Method: FCC MP-5
Measurement Distance: 3m
Limit:

(b) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500	25	300
		500 or more	$25 \times \text{SQRT}(\text{power}/500)$	¹ 300
	Any non-ISM frequency	Below 500	15	300
		500 or more	$15 \times \text{SQRT}(\text{power}/500)$	¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency	Any	25	300
	Any non-ISM frequency	Any	15	300
Ultrasonic	Below 490 kHz	Below 500	2,400/F(kHz)	300
		500 or more	$2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	³ 300
	490 to 1,600 kHz	Any	24,000/F(kHz)	30
	Above 1,600 kHz	Any	15	30
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30
	On or above 90 kHz	Any	300	⁴ 30

¹Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

²Reduced to the greatest extent possible.

³Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

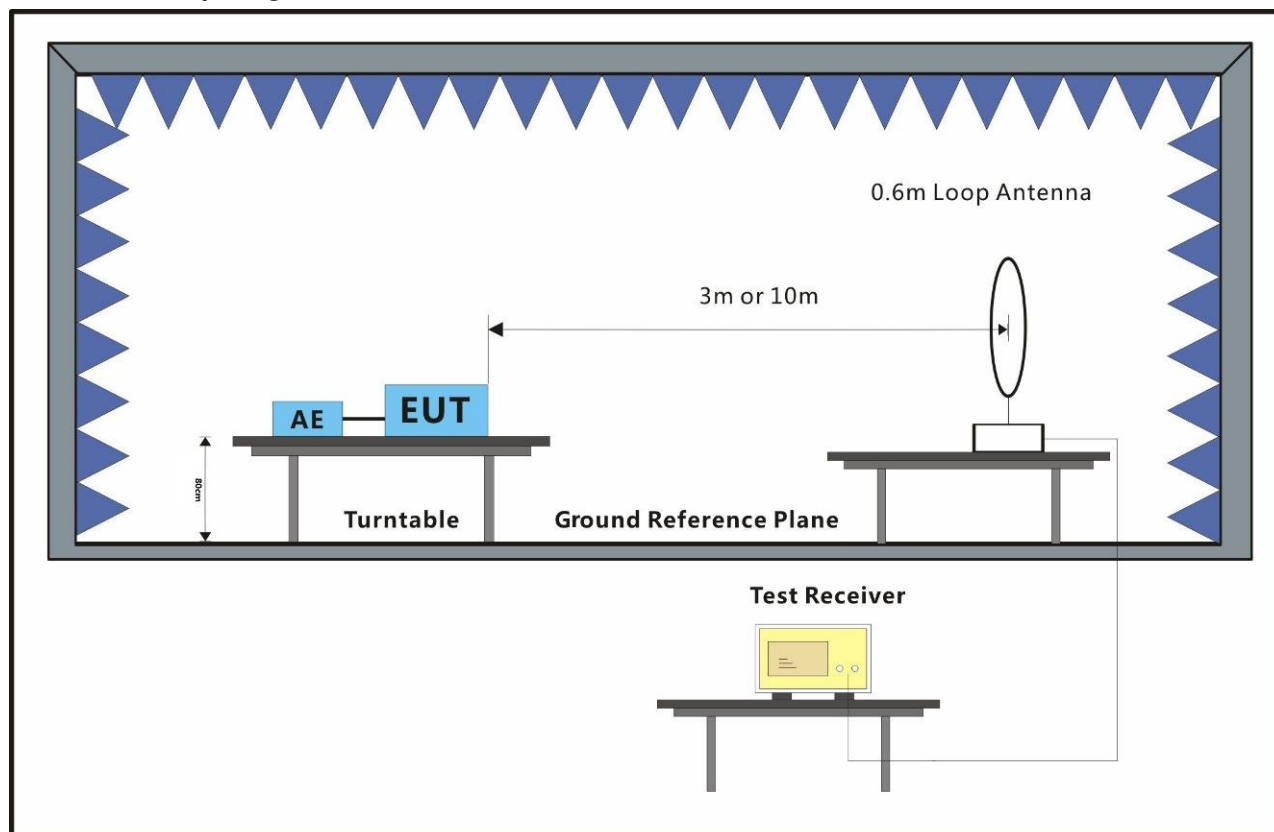
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

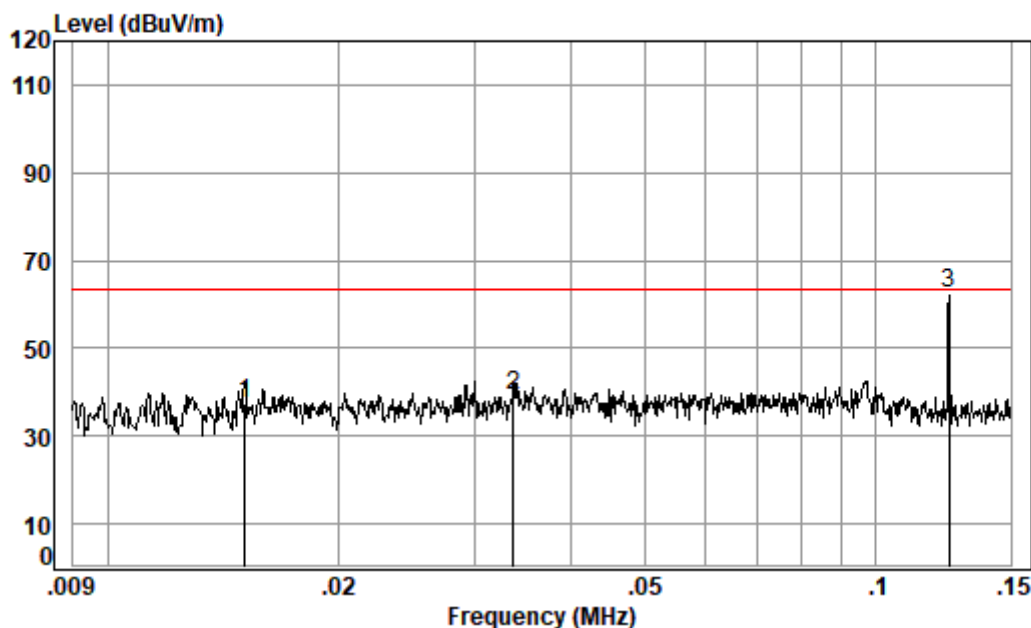
Test mode a: Charge mode_Keep the EUT charging

6.2.2 Test Setup Diagram



6.2.3 Measurement Procedure and Data

Mode a:
9kHz-150kHz



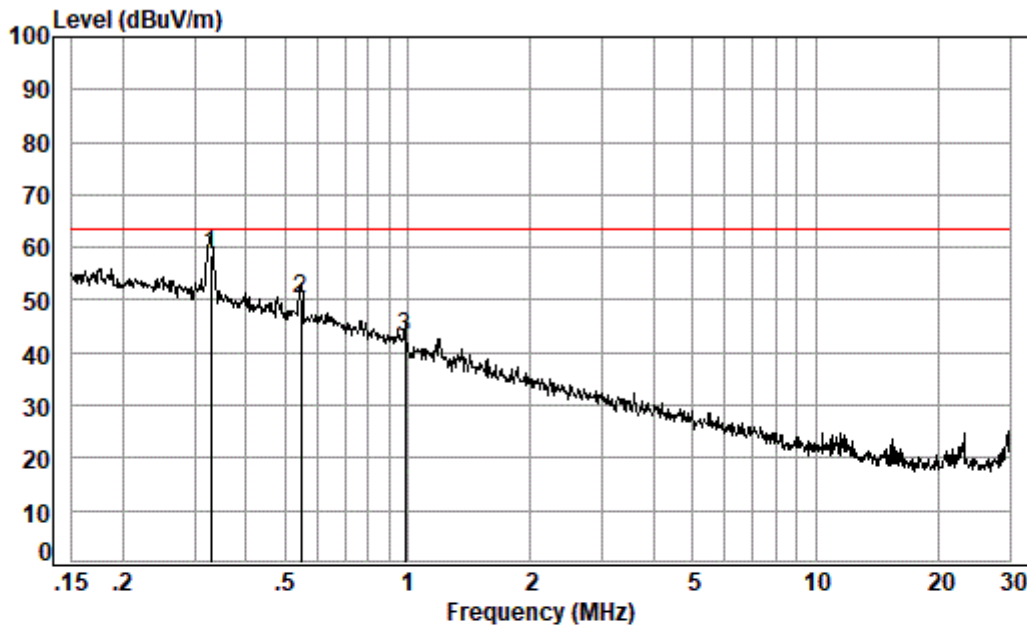
Condition: 3m

Job No. : 15096AT

Test Mode: wireless charge

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	0.02	0.25	16.76	32.55	53.11	37.57	63.52	-25.95	QP
2 qp	0.03	0.16	13.51	32.56	58.02	39.13	63.52	-24.39	QP
3 pp	0.12	0.06	11.84	32.56	83.30	62.64	63.52	-0.88	Average

150kHz-30MHz



Condition: 3m

Job No. : 15096AT

Test Mode: wireless charge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	0.33	0.09	11.88	32.56	78.96	58.37	63.52	-5.15	QP
2	0.55	0.13	11.77	32.56	70.88	50.22	63.52	-13.30	QP
3	0.98	0.23	12.00	32.56	63.35	43.02	63.52	-20.50	QP





7 Photographs

7.1 Test Setup

Refer to Setup Photos

7.2 EUT Constructional Details (EUT Photos)

Refer to EUT external and internal photos

- End of the Report -



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