



Report No.: SZEM190801754401

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TEST REPORT

Application No.: SZEM1908017544CR Applicant: Spigen Korea Co., Ltd.

Address of Applicant: Spigen HQ-A, 446, Bongeunsa-ro, Gangnam-gu, Seoul, 06153, South

Korea

Manufacturer: Spigen Korea Co., Ltd.

446, Bongeunsa-ro, Gangnam-gu, Seoul, 06153, South Korea. Address of Manufacturer:

Factory: ShenZhen Fangxin Technology Co., Ltd.

Address of Factory: Rm 503, 5F, Hengbo Innovation Science and Technology Park, No.33,

Qingning Rd, Longhua St, Longhua Dist, Shenzhen, China

Equipment Under Test (EUT):

EUT Name: Flex Wireless Charger

Model No.: F316W

Trade mark: Spigen, Steadiboost FCC ID: 2AFKNF316W

47 CFR Part 15, Subpart C Standard(s):

Date of Receipt: 2019-08-15

2019-08-17 to 2019-08-20 **Date of Test:**

2019-08-26 Date of Issue:

Pass* **Test Result:**

Keny Xu **EMC Laboratory Manager**



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



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	Revision Record					
Version	Version Chapter Date Modifier					
01		2019-08-26		Original		

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



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Test Summary

Radio Spectrum Technical Requirement						
Item Standard Method Requirement Resul						
Antenna Requirement	47 CFR Part 15, Subpart C	N/A	47 CFR Part 15, Subpart C 15.203	Pass		

Radio Spectrum Matt	Radio Spectrum Matter Part							
Item	Standard	Method	Requirement	Result				
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass				
20dB Bandwidth	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.9.2	47 CFR Part 15, Subpart C 15.215	Pass				
Restricted Bands	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205	Pass				
Radiated Emissions (9kHz-30MHz)	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass				
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass				



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General Information

Details of E.U.T.

Power supply:	Input: DC5V, 3A or 9V, 2A or 12V, 1.5A,				
	Output: 5W/7.5W/10W/15W				
	Adapter Model: TY0U01QC				
	Input: AC 100-240V, 50/60Hz 0.8A				
	Output: DC (3.6V-6.5V), 3A or (6.5V-9V), 2A or (9V-12V), 1.5A				
Cable:	USB Cable(Unshielded, 120cm)				
Operation Frequency:	113.30kHz to 137.66kHz				
Modulation Type:	Load Modulation				
Antenna Type:	Loop Antenna				
Remark:	This device has been tested the worst status of intermediate load and horizontal placement, vertical placement had been tested and only the worst vertical placement had been recorded in the report. The device has been tested with mobile phone at zero charge, intermediate charge, and full charge.				

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Smart charger	Toye	TY0U01QC	N/A
iPhone 8	Apple	A1863	F4GVQ656JC6D
Mobile Phone	SAMSUNG	SM-G9500	R28J9140LPB

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	± 7.25 x 10 ⁻⁸
2	Conduction Emission	± 3.0dB (150kHz to 30MHz)
3	Occupied Bandwidth	± 3%
4	Dedicted Consists and action to at	± 4.5dB (Below 1GHz)
4	Radiated Spurious emission test	± 4.8dB (Above 1GHz)
5	Temperature test	± 1 ℃
6	Humidity test	± 3%
7	Supply voltages	± 1.5%
8	Time	± 3%



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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.

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

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

Abnormalities from Standard Conditions 4.7

None



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Equipment List 5

Radiated Emissions (9kHz-30MHz)						
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	

20dB Bandwidth						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2018-09-25	2019-09-24	
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2018-09-27	2019-09-26	
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM031-02	2018-07-12	2019-07-11	
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A	
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018-09-27	2019-09-26	
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2018-09-25	2019-09-24	

Restricted Bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2018-09-25	2019-09-24
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2018-09-27	2019-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2018-07-12	2019-07-11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018-09-27	2019-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2018-09-25	2019-09-24



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Radiated Emissions					
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 equipmen	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 Technical Requirement

Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.

Antenna location: Refer to Internal photos.



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7 **Radio Spectrum Matter Test Results**

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

47 CFR Part 15, Subpart C 15.207 Test Requirement Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of	Conducted limit(dBμV)				
emission(MHz)	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	of the frequency.				



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7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1000 mbar

Pretest these modes to find the worst case:

a:Charge mode_Keep the EUT charging(5W).

b:Charge mode_Keep the EUT charging(7.5W).

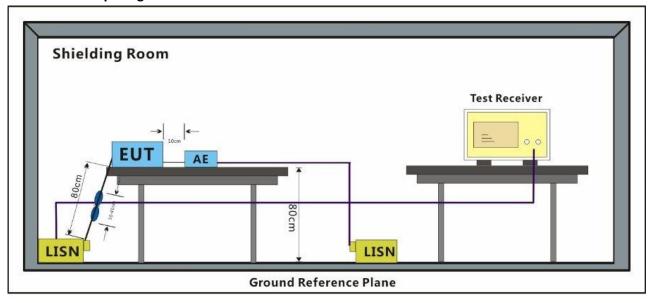
c:Charge mode_Keep the EUT charging(10W).

d:Charge mode_Keep the EUT charging(15W).

The worst case c:Charge mode_Keep the EUT charging(10W)

for final test:

7.1.2 Test Setup Diagram





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7.1.3 Measurement Procedure and Data

- 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 50ohm/50µH + 50hm 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 according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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Total Post-back Research

Total Post-back Research

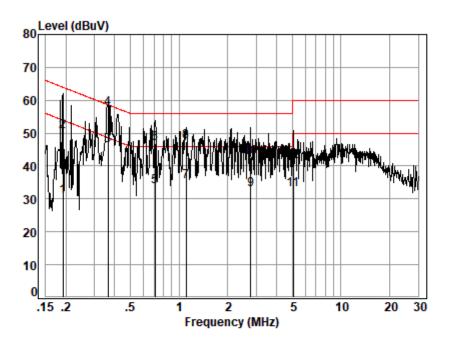
Total Post-back Research



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Mode:c; Line:Live Line



Site : Shielding Room

Condition: Line Job No. : 17544CR

Test mode: c

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19	0.02	9.66	21.15	30.83	53.98	-23.15	Average
2	0.19	0.02	9.66	40.70	50.38	63.98	-13.60	QP
3	0.37	0.05	9.67	36.40	46.12	48.61	-2.49	Average
4	0.37	0.05	9.67	47.90	57.62	58.61	-0.99	QP
5	0.71	0.08	9.69	23.93	33.70	46.00	-12.30	Average
6	0.71	0.08	9.69	37.04	46.81	56.00	-9.19	QP
7	1.11	0.10	9.73	25.45	35.28	46.00	-10.72	Average
8	1.11	0.10	9.73	37.49	47.32	56.00	-8.68	QP
9	2.76	0.16	9.71	23.11	32.98	46.00	-13.02	Average
10	2.76	0.16	9.71	32.62	42.49	56.00	-13.51	QP
11	5.06	0.17	9.74	22.81	32.72	50.00	-17.28	Average
12	5.06	0.17	9.74	31.52	41.43	60.00	-18.57	QP



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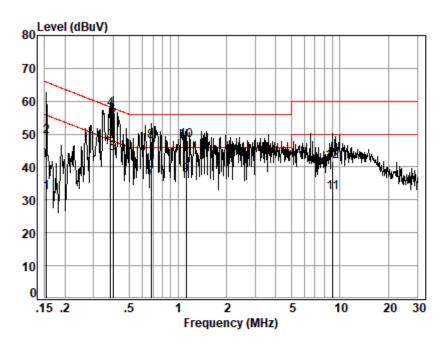
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Mode:c; Line:Neutral Line



: Shielding Room

Condition: Neutral Job No. : 17544CR

Test mode: c

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15	0.01	9.63	22.63	32.27	55.78	-23.51	Average
2	0.15	0.01	9.63	39.66	49.30	65.78	-16.48	QP
3	0.38	0.05	9.65	37.99	47.69	48.21	-0.52	Average
4	0.38	0.05	9.65	47.86	57.56	58.21	-0.65	QP
5	0.40	0.05	9.65	34.40	44.10	47.95	-3.85	Average
6	0.40	0.05	9.65	45.70	55.40	57.95	-2.55	QP
7	0.68	0.07	9.65	26.75	36.47	46.00	-9.53	Average
8	0.68	0.07	9.65	38.14	47.86	56.00	-8.14	QP
9	1.12	0.10	9.70	27.65	37.45	46.00	-8.55	Average
10	1.12	0.10	9.70	38.15	47.95	56.00	-8.05	QP
11	9.01	0.17	9.82	22.28	32.27	50.00	-17.73	Average
12	9.01	0.17	9.82	31.65	41.64	60.00	-18.36	QP



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7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215 Test Method: ANSI C63.10 (2013) Section 6.9.2

Limit:

7.2.1 E.U.T. Operation

Operating Environment:

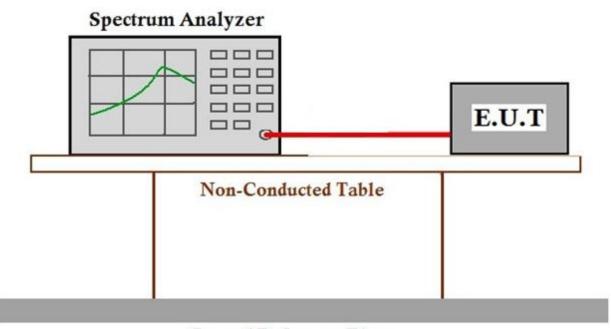
Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1000 mbar

a:Charge mode_Keep the EUT charging(5W).
b:Charge mode_Keep the EUT charging(7.5W).
c:Charge mode_Keep the EUT charging(10W).
d:Charge mode Keep the EUT charging(15W).

The worst case c:Charge mode_Keep the EUT charging(10W).

for final test:

7.2.2 Test Setup Diagram



Ground Reference Plane

7.2.3 Measurement Procedure and Data

Test Frequency(KHz)	20dB bandwidth (Hz)	Limit (Hz)	Results
114.000	26.122	N/A	Pass



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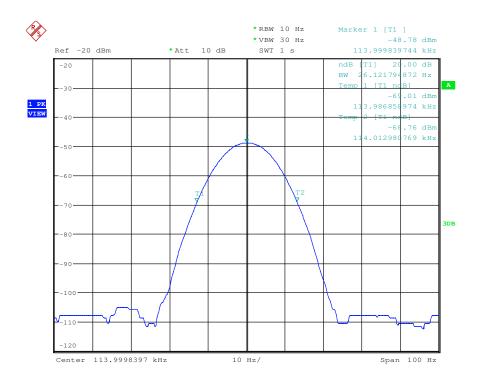
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7.3 Restricted Bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

The fundamental wave can not fall in the restricted band 90KHz-110KHz

7.3.1 E.U.T. Operation

Operating Environment:

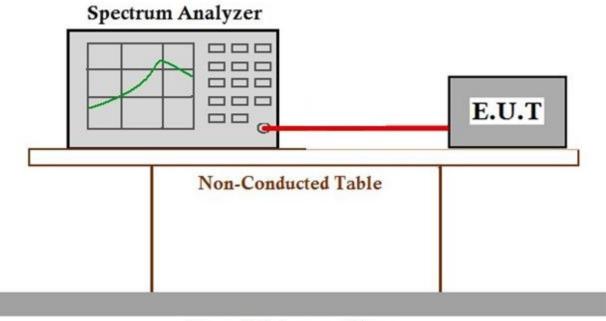
Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1000 mbar

a:Charge mode_Keep the EUT charging(5W).
b:Charge mode_Keep the EUT charging(7.5W).
c:Charge mode_Keep the EUT charging(10W).
d:Charge mode_Keep the EUT charging(15W).

The worst case c:Charge mode_Keep the EUT charging(10W).

for final test:

7.3.2 Test Setup Diagram



Ground Reference Plane

7.3.3 Measurement Procedure and Data



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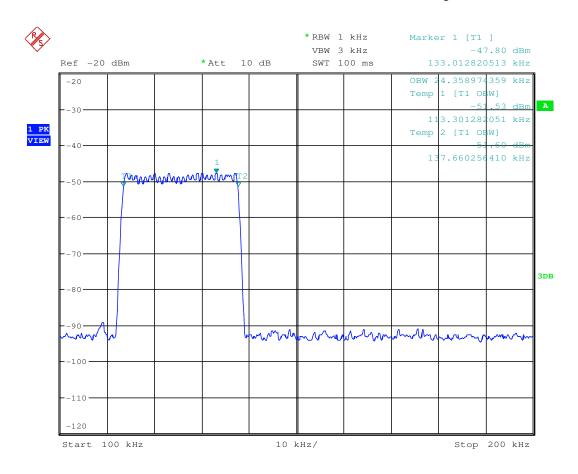
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According the test data of Radiated Emission(9-150KHz) in clause 7.4, the fundamental wave is not fall in the restricted band 90KHz-110KHz, the field strength also meet the 15.209 requirement, so this test is Pass.



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7.4 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $N2\pi$ and the limit distance is greater than $N2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40log\{d_{(near field)}/d_{(10m)}\} + 20log\{d_{(30/300m)}/d_{(near field)}\}$$
 (2)

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20log\{d_{(30/300m)}/d_{(10m)}\}$$
(3)

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40log\{d_{(30/300m)}/d_{(10m)}\}$$
(4)

Remark:

 $d_{near field} = 47.77 / f_{MHz}$

where f_{MHz} is the frequency of the emission being measured in MHz.



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7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1000 mbar

Pretest these modes to find the worst case:

a:Charge mode_Keep the EUT charging(5W).

b:Charge mode_Keep the EUT charging(7.5W).

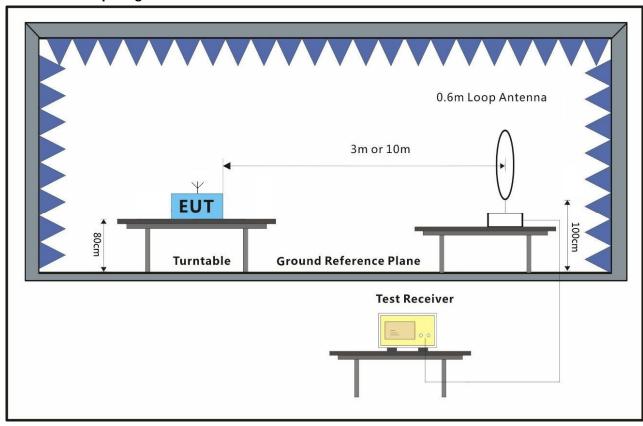
c:Charge mode_Keep the EUT charging(10W).

d:Charge mode Keep the EUT charging(15W).

The worst case c:Charge mode_Keep the EUT charging(10W).

for final test:

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



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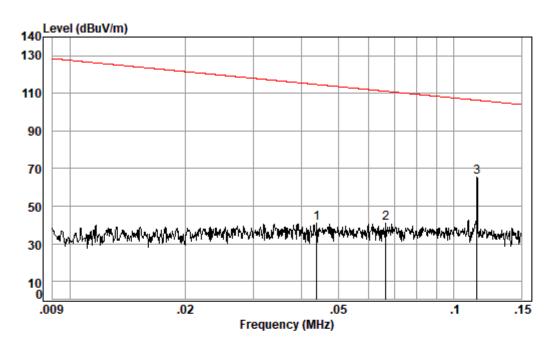
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Mode:c 9kHz-150KHz



Condition: 3m

Job No. : 17544CR

Test Mode: c

		Cable	Ant	Preamp	Read		Limit	0ver
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	0.044	0.14	12.77	32.56	60.40	40.75	114.76	-74.01
2	0.067	0.09	12.19	32.56	61.03	40.75	111.14	-70.39
3 рр	0.115	0.06	11.90	32.56	86.05	65.45	106.40	-40.95



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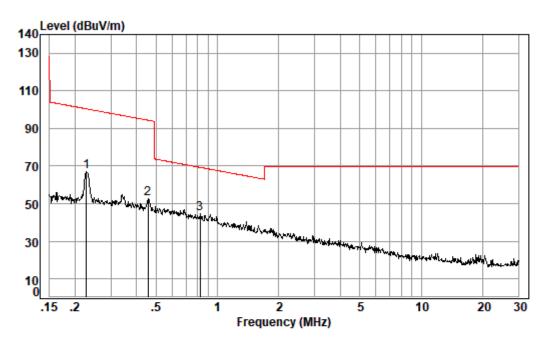
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150kHz-30MHz



Condition: 3m

Job No. : 17544CR

Test Mode: c

	Cable	e Ant	Preamp	Read		Limit	0ver
	Freq Loss	Factor	Factor	Level	Level	Line	Limit
	MHz dE	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0	.228 0.08	11.95	32.56	87.39	66.86	100.45	-33.59
2 0	.456 0.11	11.74	32.56	73.40	52.69	94.42	-41.73
3 pp 0	.822 0.20	12.00	32.56	64.87	44.51	69.31	-24.80
1 0 2	MHz dE	dB/m 3 11.95 11.74	dB 32.56 32.56	dBuV 87.39 73.40	dBuV/m 66.86 52.69	dBuV/m 100.45 94.42	-33. -41.



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7.5 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.5

Measurement Distance: 10m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.





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7.5.1 E.U.T. Operation

Operating Environment:

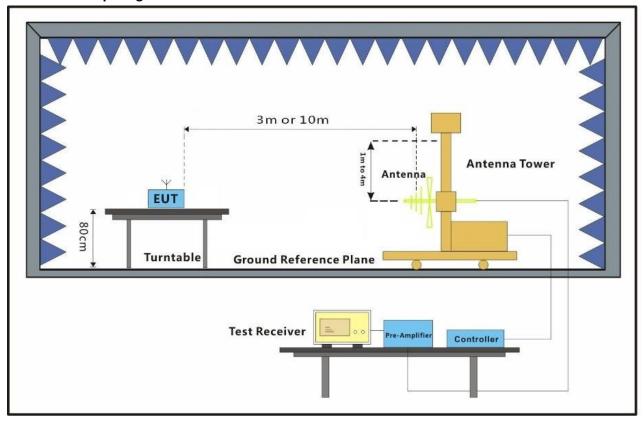
Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1000 mbar

a:Charge mode Keep the EUT charging(5W). Pretest these modes to find b:Charge mode_Keep the EUT charging(7.5W). the worst case: c:Charge mode_Keep the EUT charging(10W). d:Charge mode_Keep the EUT charging(15W).

c:Charge mode_Keep the EUT charging(10W). The worst case

for final test:

7.5.2 Test Setup Diagram





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7.5.3 Measurement Procedure and Data

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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. 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 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

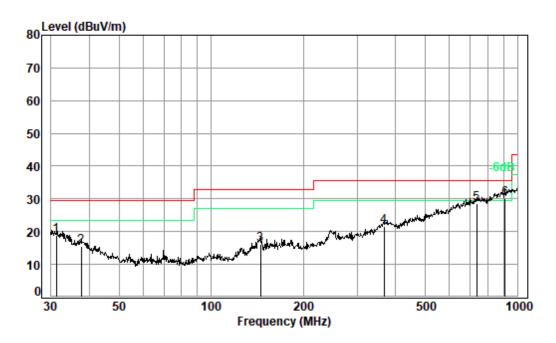




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Mode:c; Polarization:Horizontal



Condition: 10m HORIZONTAL

Job No. : 17544CR

Test Mode: c

		Cable	Ant	Preamp	Read		Limit	0ver
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.289	0.70	22.02	32.05	28.30	18.97	29.50	-10.53
2	37.680	0.75	19.28	32.04	27.50	15.49	29.50	-14.01
3	144.842	1.42	14.04	31.82	32.57	16.21	33.00	-16.79
4	366.823	2.30	22.04	31.50	28.63	21.47	35.60	-14.13
5	737.071	3.20	27.93	31.48	28.81	28.46	35.60	-7.14
6 pp	912.862	3.50	29.09	30.44	27.94	30.09	35.60	-5.51



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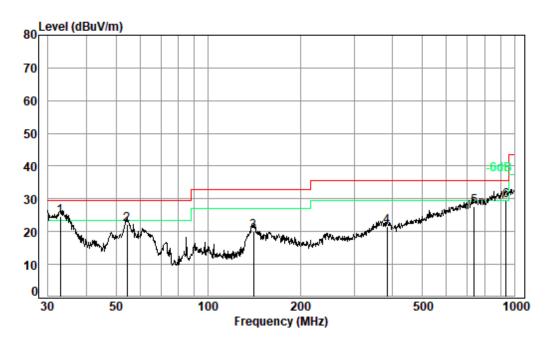
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Mode:c; Polarization:Vertical



Condition: 10m Vertical

Job No. : 17544CR

Test Mode: c

				Preamp				
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
-	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	32.864	0.70	21.24	32.04	34.69	24.59	29.50	-4.91
2	54.261	0.99	13.42	32.01	39.86	22.26	29.50	-7.24
3	140.835	1.40	13.51	31.83	37.10	20.18	33.00	-12.82
4	383.932	2.30	22.24	31.47	28.52	21.59	35.60	-14.01
5	739.661	3.20	27.99	31.48	28.10	27.81	35.60	-7.79
6	938.833	3.55	29.20	30.17	27.02	29.60	35.60	-6.00



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The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

 $L_3 / L_{10} = D_{10} / D_3$

Note:

L₃: Level @ 3m distance. Unit: uV/m; L₁₀: Level @ 10m distance. Unit: uV/m;

D₃: 3m distance. Unit: m D₁₀: 10m distance. Unit: m

The level at 3m test distance is below:

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
32.86	24.59	16.96	56.54	35.05	40.00	-4.95	V
54.26	22.26	12.97	43.24	32.72	40.00	-7.28	V
140.84	20.18	10.21	34.03	30.64	43.50	-12.86	V
383.93	21.59	12.01	40.03	32.05	46.00	-13.95	V
739.66	27.81	24.58	81.92	38.27	46.00	-7.73	V
938.83	29.60	30.20	100.67	40.06	46.00	-5.94	V
31.29	18.97	8.88	29.61	29.43	40.00	-10.57	Н
37.68	15.49	5.95	19.83	25.95	40.00	-14.05	Н
144.84	16.21	6.46	21.55	26.67	43.50	-16.83	Н
366.82	21.47	11.84	39.48	31.93	46.00	-14.07	Н
737.07	28.46	26.49	88.28	38.92	46.00	-7.08	Н
912.86	30.09	31.95	106.51	40.55	46.00	-5.45	Н



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8 **Photographs**

8.1 **Test Setup**

Please refer to setup photos.

8.2 EUT Constructional Details (EUT Photos)

Please refer to external and internal photos for details.

- End of the Report -



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