

FCC Test Report

FCC ID: 2AFKNF300W

Product: WIRELESS CHARGER

Trade Mark:  **SPIGEN**

Model Number: F300W

Serial Model: N/A

Report No.: NTEK-2017NT07134854F

Prepared for

Spigen Korea Co., Ltd.
NO. 1709 STX-V Tower, 371-37, Gasan-Dong, GeumCheon-Gu,
Seoul, South Korea

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street,
Bao'an District, Shenzhen 518126 P.R. China
Tel.: +86-755-6115 9388 Fax.: +86-755-6115 6599
Website:<http://www.ntek.org.cn>

TEST RESULT CERTIFICATION

Applicant's name: Spigen Korea Co., Ltd.
Address: NO. 1709 STX-V Tower, 371-37, Gasan-Dong, GeumCheon-Gu, Seoul, South Korea
Manufacturer's Name: Shenzhen Fang Xin Technology Co., Ltd.
Address: Rm 2406, 24F, Tower A, Xinghe World, No. 1, Yabao Rd, Bantian St, Longgang Dist, Shenzhen, China 518129

Product description

Product name.....: WIRELESS CHARGER
Model and/or type reference .: F300W

Standards: FCC part 15C:2016
ANSI C63.10:2013

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personnel only, and shall be noted in the revision of the document.

Date of Test.....:
Date (s) of performance of tests.....: 13 Jul.2017 ~ 01 Aug.2017
Date of Issue.....: 01 Aug.2017
Test Result.....: **Pass**

Testing Engineer : Lebron Wang
(Lebron Wang)

Technical Manager : Jason Chen
(Jason Chen)

Authorized Signatory : Sam Chen
(Sam Chen)

Table of Contents	Page
1 . TEST SUMMARY	4
1.1 TEST FACILITY	5
1.2 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST SETUP	9
2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	10
2.4 MEASUREMENT INSTRUMENTS LIST	11
3 . EMC EMISSION TEST	13
3.1 CONDUCTED EMISSION MEASUREMENT	13
3.1.1 POWER LINE CONDUCTED EMISSION	13
3.1.2 TEST PROCEDURE	14
3.1.3 TEST SETUP	14
3.1.4 EUT OPERATING CONDITIONS	14
3.1.5 TEST RESULTS	15
3.2 RADIATED EMISSION MEASUREMENT	19
3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT	19
3.2.2 TEST PROCEDURE	20
3.2.3 TEST SETUP	21
3.2.4 TEST RESULTS	22
4 . BANDWIDTH TEST	31
4.1 TEST PROCEDURE	31
4.2 DEVIATION FROM STANDARD	31
4.3 TEST SETUP	31
4.4 TEST RESULTS	32
5 . ANTENNA APPLICATION	35
5.1 ANTENNA REQUIREMENT	35
5.2 RESULT	35

1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission					
Standard	Test Item	FCC Rules	Limit	Judgment	Remark
FCC part 15C:2016 FCC part 2:2016 ANSI C63.10:2013	Conducted Emission	§15.207	Class B	PASS	
	Radiated Emission	§15.209	Class B	PASS	
	ANTENNA APPLICATION	§15.203	/	PASS	
	Occupied Bandwidth	§2.1049	/	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd
 Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.
 FCC Registration Number:463705; IC Registration Number:9270A-1
 CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

A. Conducted Measurement :


Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Feature and Specification	
Equipment	WIRELESS CHARGER
Trade Mark	
FCC ID	2AFKNF300W
Model No.	F300W
Serial Model	N/A
Model Difference	N/A
Operating Frequency	110KHz~205KHz
Modulation Technique	GFSK
Antenna Type	coil antenna
Power supply	<input checked="" type="checkbox"/> DC supply: DC 5V
	<input type="checkbox"/> AC supply:
HW Version	V1.0
SW Version	V1.0

2.1.1 DESCRIPTION OF TEST MODES

EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

The EUT performs a pre-test of all modes, with only the worst test results reported.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

Test Cases	
Test Item	Data Rate/ Modulation
AC Conducted Emission	Mode 1: Charging+ Wireless-charging the auxiliary device(cell phone) (Full load)*
Radiated Test Cases	Mode 1: Wireless-charging the auxiliary device(cell phone) (Full load)*

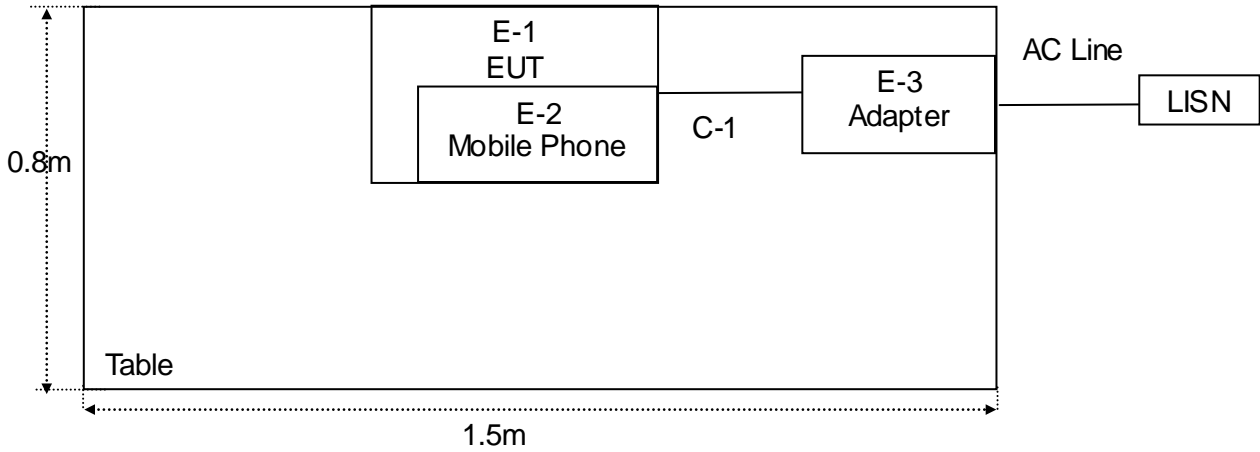
(*)EUT can give different mobile phone to wirelessly charge, because the mobile phone is different, the load size is different, the test has evaluated high, medium, low three kinds of load situation. Only the worst-case mode is recorded in the report

Carrier Frequency and Channel list:

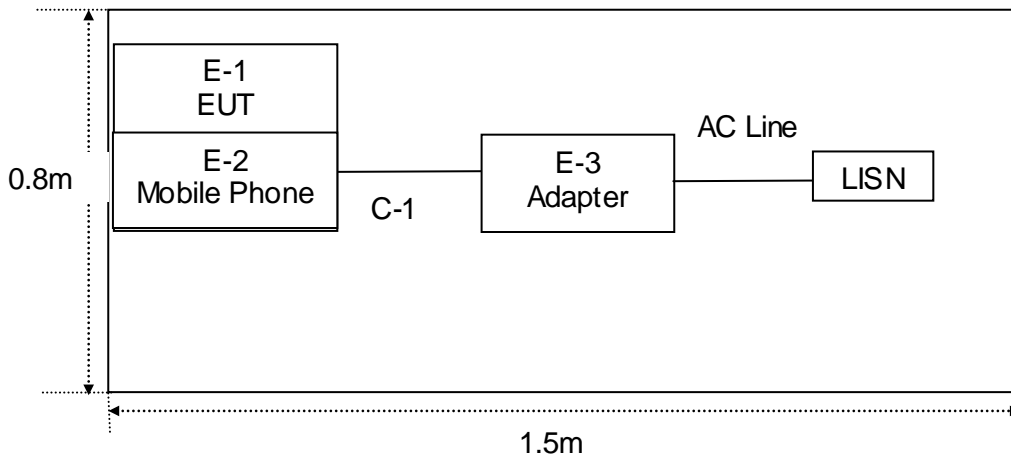
Channel	Frequency(MHz)
1	0.110
2	0.157
3	0.205

2.2 DESCRIPTION OF TEST SETUP

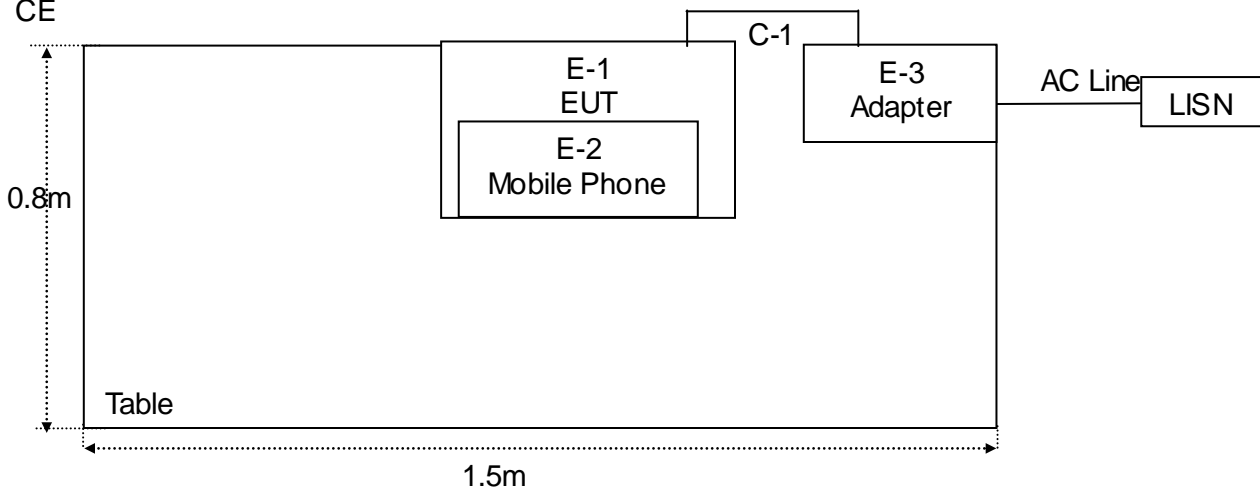
RE(9KHz-30MHz)(Wireless-charging the auxiliary device(cell phone))



RE(30MHz-1GHz) (Wireless-charging the auxiliary device(cell phone))




CE



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	WIRELESS CHARGER		F300W	N/A	EUT
E-2	Mobile Phone	HUAWEI	Honor 8	N/A	Peripherals
E-3	Adapter	N/A	THX-050200KC	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	NO	1.2m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.
- (4) The mobile phone as the EUT's load is connected to the phone by charging the receiving end.

2.4 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2017.06.06	2018.06.05	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2016.11.10	2017.11.09	1 year
3	EMI Test Receiver	Agilent	N9038A	MY53227146	2017.06.06	2018.06.05	1 year
4	Test Receiver	R&S	ESPI	101318	2017.06.06	2018.06.05	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2017.04.09	2018.04.08	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2017.06.06	2018.06.05	1 year
7	Horn Antenna	EM	EM-AH-10180	2011071402	2017.04.09	2018.04.08	1 year
8	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2017.07.06	2018.07.05	1 year
9	Amplifier	EMC	EMC051835SE	980246	2016.08.09	2017.08.08	1 year
10	Amplifier	MITEQ	TTA 1840-35-HG	177156	2017.06.06	2018.06.05	1 year
11	Loop Antenna	ARA	PLA-1030/B	1029	2017.06.06	2018.06.05	1 year
12	Power Meter	DARE	RPR3006W	15100041SN084	2016.08.09	2017.08.08	1 year
13	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
14	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
16	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2017.06.06	2018.06.05	1 year
2	LISN	R&S	ENV216	101313	2017.04.19	2018.04.18	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2017.06.06	2018.06.05	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2017.06.06	2018.06.05	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year

6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

Note: Each piece of equipment is scheduled for calibration once a year.

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

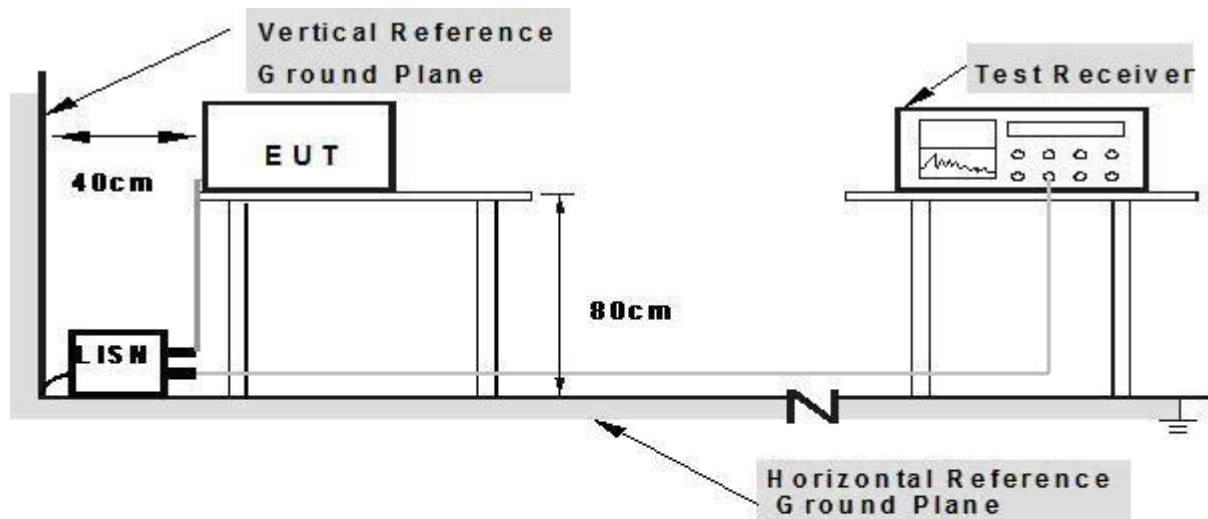
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



- Note: 1. Support units were connected to second LISN.**
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

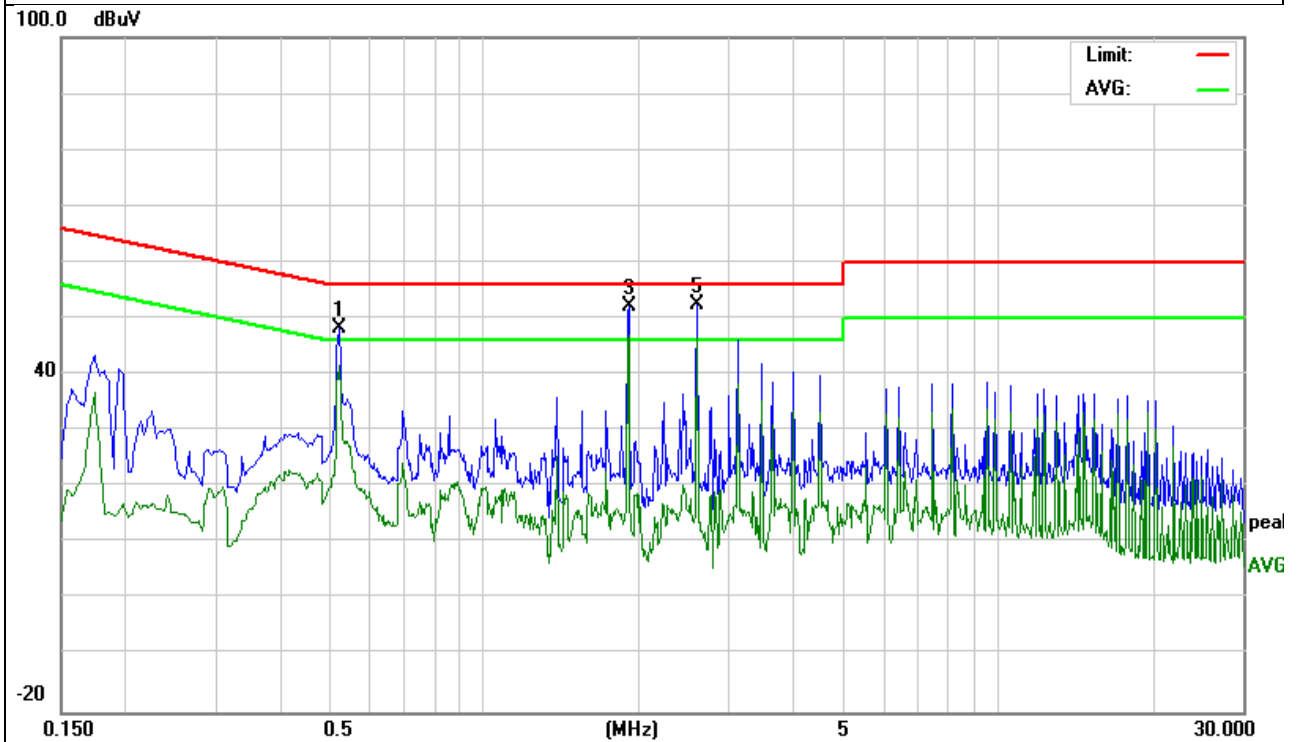
3.1.5 TEST RESULTS

EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2017-7-13
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from Adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure- Value (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.5220	38.37	9.81	48.18	56.00	-7.82	QP
0.5220	31.94	9.81	41.75	46.00	-4.25	AVG
1.9100	42.20	9.83	52.03	56.00	-3.97	QP
1.9100	33.09	9.83	42.92	46.00	-3.08	AVG
2.6020	42.68	9.84	52.52	56.00	-3.48	QP
2.6020	28.46	9.84	38.30	46.00	-7.70	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

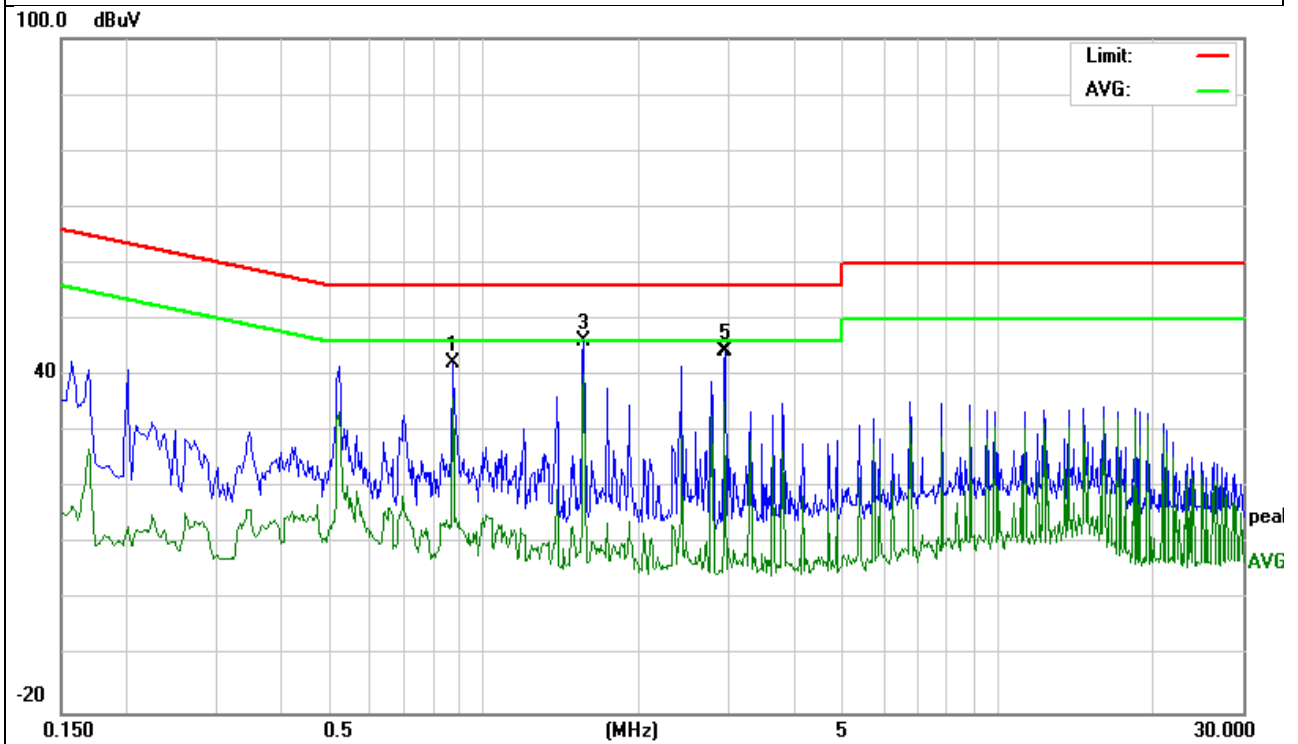


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2017-7-13
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from Adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure- Value (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.8700	32.32	9.82	42.14	56.00	-13.86	QP
0.8700	26.14	9.82	35.96	46.00	-10.04	AVG
1.5620	36.28	9.83	46.11	56.00	-9.89	QP
1.5620	30.42	9.83	40.25	46.00	-5.75	AVG
2.9500	34.37	9.85	44.22	56.00	-11.78	QP
2.9500	25.56	9.85	35.41	46.00	-10.59	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

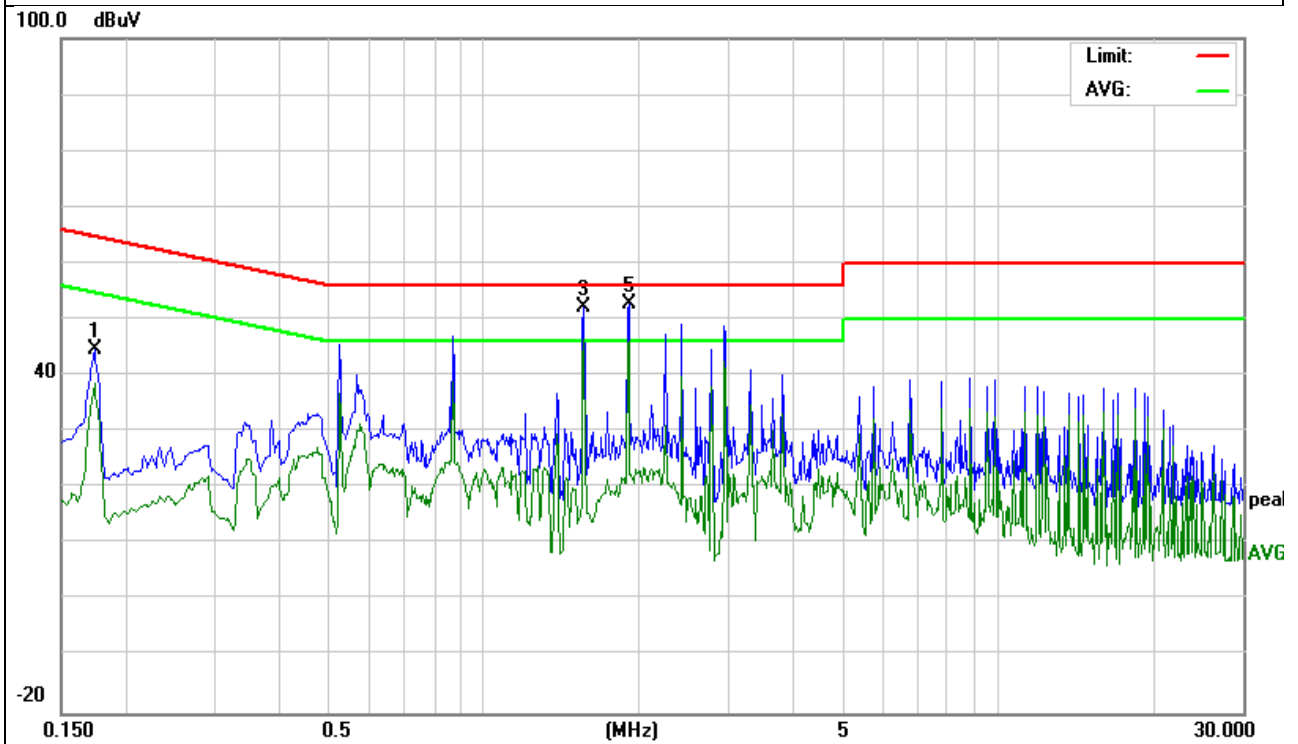


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2017-7-13
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from Adapter AC 240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure- Value (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1740	34.99	9.70	44.69	64.76	-20.07	QP
0.1740	28.90	9.70	38.60	54.76	-16.16	AVG
1.5620	42.44	9.77	52.21	56.00	-3.79	QP
1.5620	27.03	9.77	36.80	46.00	-9.20	AVG
1.9100	42.88	9.74	52.62	56.00	-3.38	QP
1.9100	33.52	9.74	43.26	46.00	-2.74	AVG

Remark:

- All readings are Quasi-Peak and Average values.
- Factor = Insertion Loss + Cable Loss.

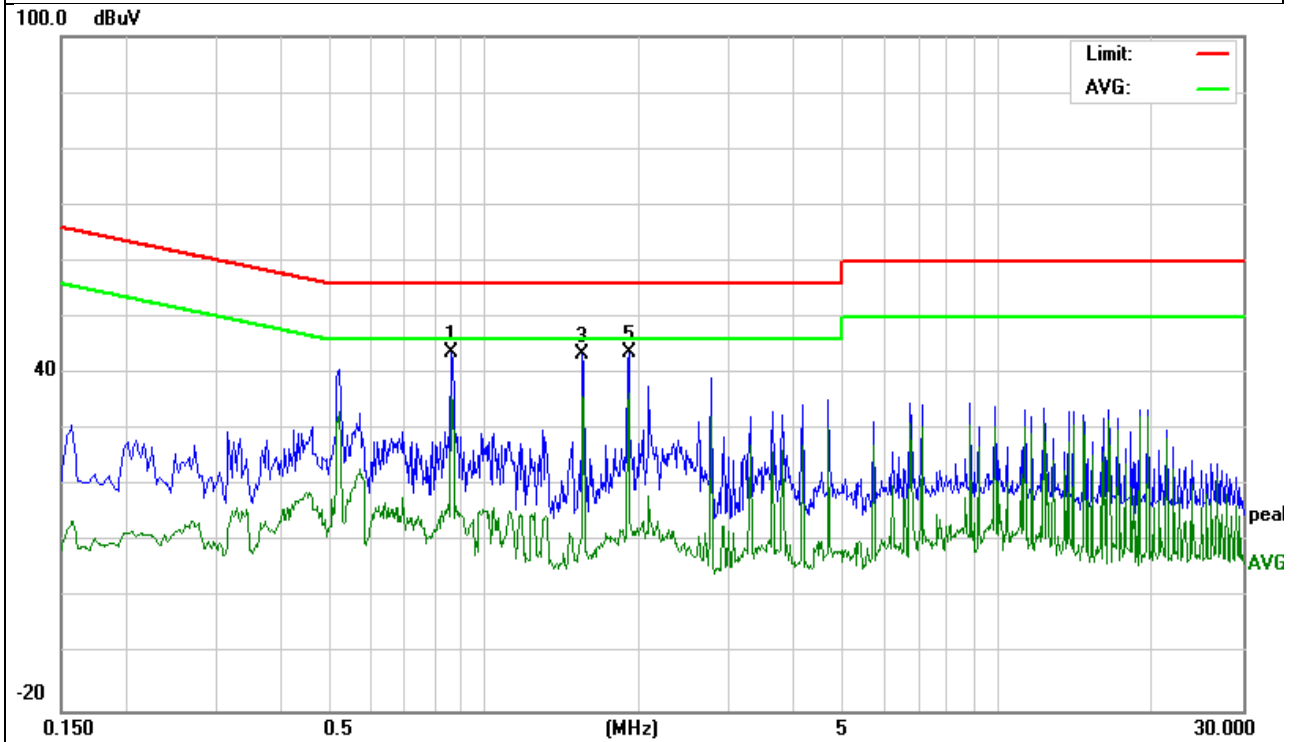


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2017-7-13
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from Adapter AC 240V/60Hz		

Frequency (MHz)	Reading Level (dB μ V)	Correct Factor (dB)	Measure- Value (dB μ V)	Limits (dB μ V)	Margin (dB)	Remark
0.8660	33.82	9.82	43.64	56.00	-12.36	QP
0.8660	26.19	9.82	36.01	46.00	-9.99	AVG
1.5580	33.52	9.83	43.35	56.00	-12.65	QP
1.5580	26.01	9.83	35.84	46.00	-10.16	AVG
1.9100	33.91	9.83	43.74	56.00	-12.26	QP
1.9100	26.71	9.83	36.54	46.00	-9.46	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation Frequency tion at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Notes:

- (1) Measurement was performed at an antenna to the closed point of EUT distance of meters.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. 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 is a broadband antenna, and its 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Note: For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Use the following receiver/spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW=200Hz for 9KHz to 150KHz,

RBW=9kHz for 150KHz to 30MHz,

RBW=120KHz for 30MHz to 1GHz

VBW \geq 3*RBW

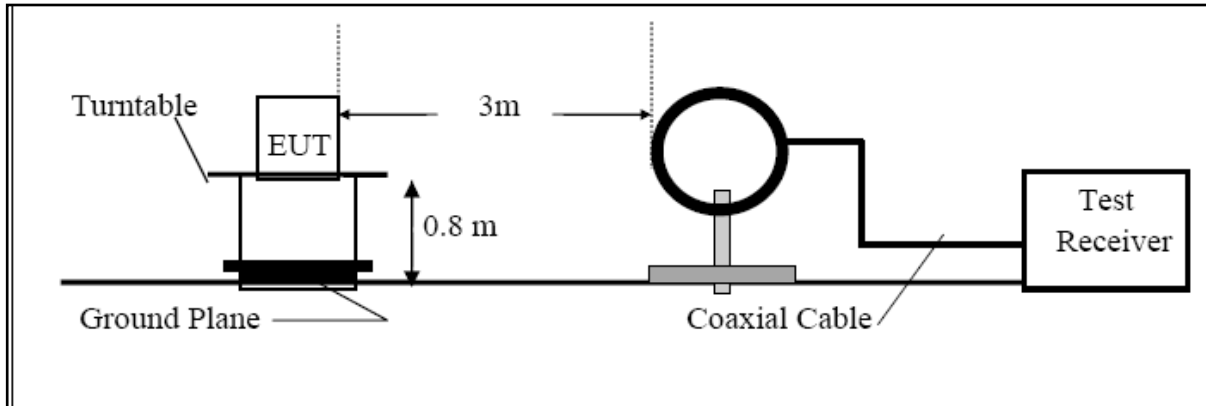
Sweep = auto

Detector function = QP

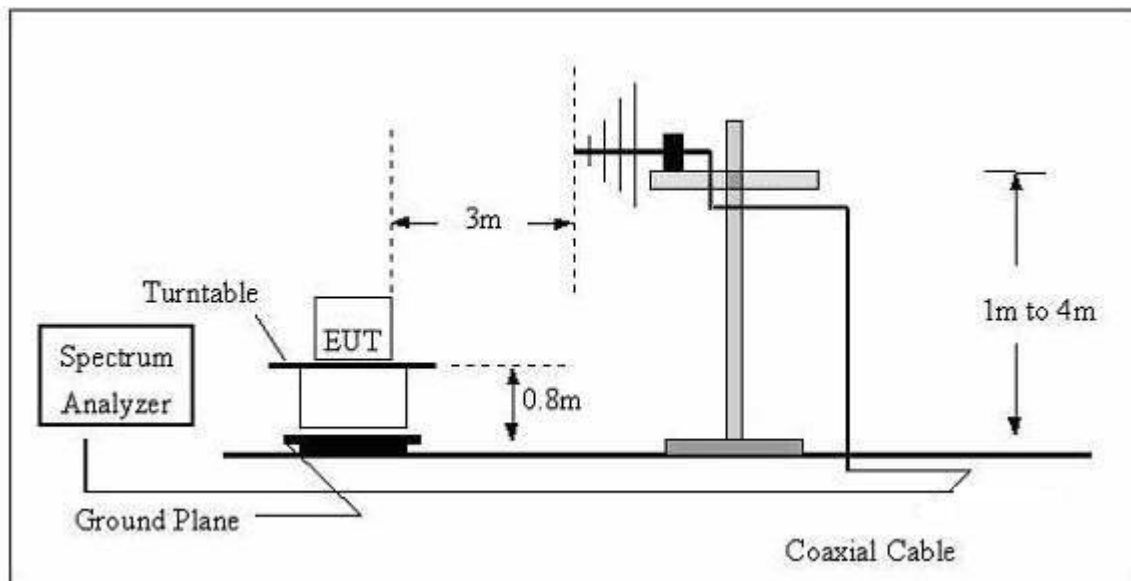
Trace = max hold

3.2.3 TEST SETUP

For Radiated Emission Test Set-Up, Frequency Below 30MHz



For Radiated Emission 30~1000MHz



3.2.4 TEST RESULTS

TEST RESULTS (9KHz~30MHz)

EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Low frequency/Max Load	Polarization :	X
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Frequency (MHz)	Ant.Pol.	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.034	X	40.654	116.975	-76.32	PK
0.110	X	81.646	106.776	-25.13	PK(fundamental frequency)
0.565	X	47.790	72.563	-24.77	QP
1.568	X	38.090	63.697	-25.61	QP
3.284	X	34.242	69.542	-35.30	QP
21.614	X	35.034	69.542	-34.51	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Mid frequency/Max Load	Polarization :	X
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Frequency (MHz)	Ant.Pol.	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.037	X	39.862	116.1934	-76.33	PK
0.157	X	82.024	103.6862	-21.66	PK(fundamental frequency)
0.568	X	38.148	72.517	-34.37	QP
1.432	X	37.268	64.485	-27.22	QP
3.345	X	35.326	69.542	-34.22	QP
23.654	X	34.715	69.542	-34.83	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	High frequency/Max Load	Polarization :	X
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Frequency (MHz)	Ant. Pol.	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.038	X	39.645	115.9176	-76.27	PK
0.205	X	81.058	101.3691	-20.31	PK(fundamental frequency)
0.548	X	38.364	72.829	-34.46	QP
1.324	X	37.529	65.166	-27.64	QP
5.785	X	35.192	69.542	-34.35	QP
21.895	X	35.048	69.542	-34.49	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

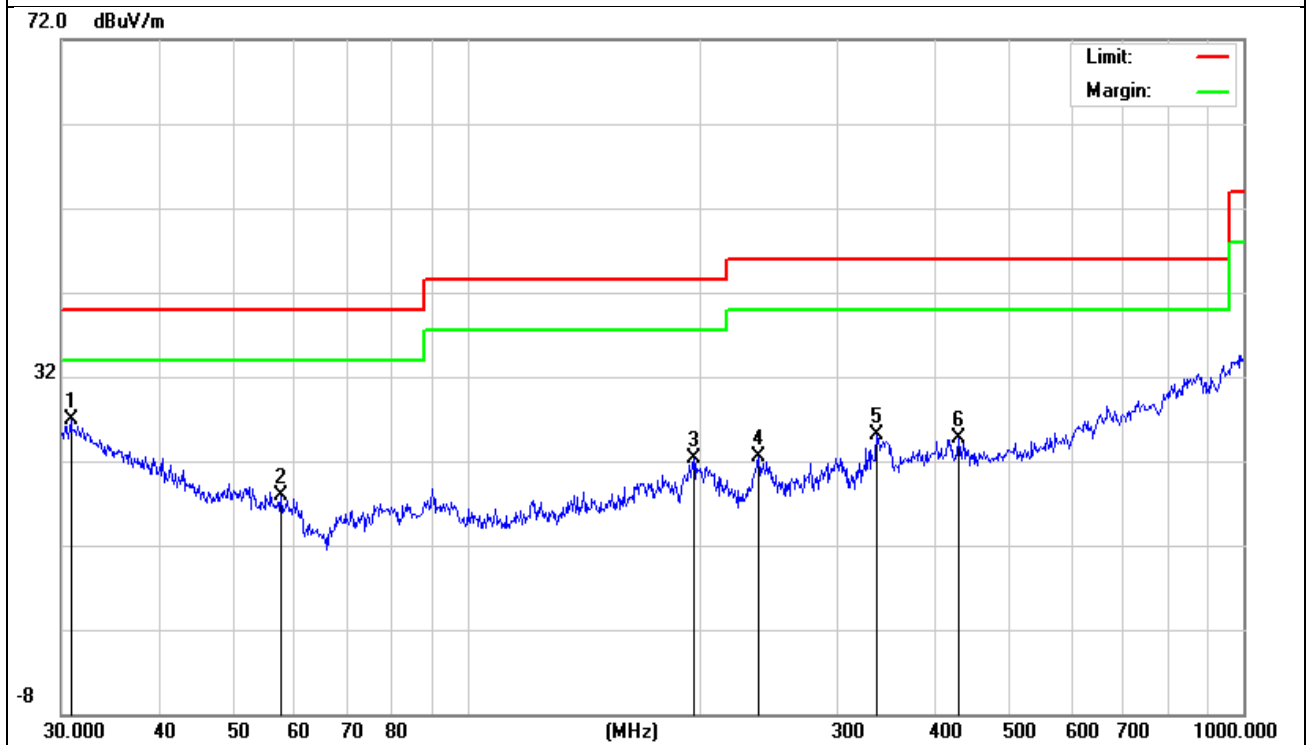
TEST RESULTS (30MHz ~1000MHz)

EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Low frequency/Max Load	Polarization :	Horizontal
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	30.8535	6.15	20.84	26.99	40.00	-13.01	QP
H	57.5939	6.22	11.78	18.00	40.00	-22.00	QP
H	195.8220	8.51	13.74	22.25	43.50	-21.25	QP
H	237.4758	10.43	12.01	22.44	46.00	-23.56	QP
H	337.2155	10.90	14.15	25.05	46.00	-20.95	QP
H	429.5228	7.97	16.65	24.62	46.00	-21.38	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

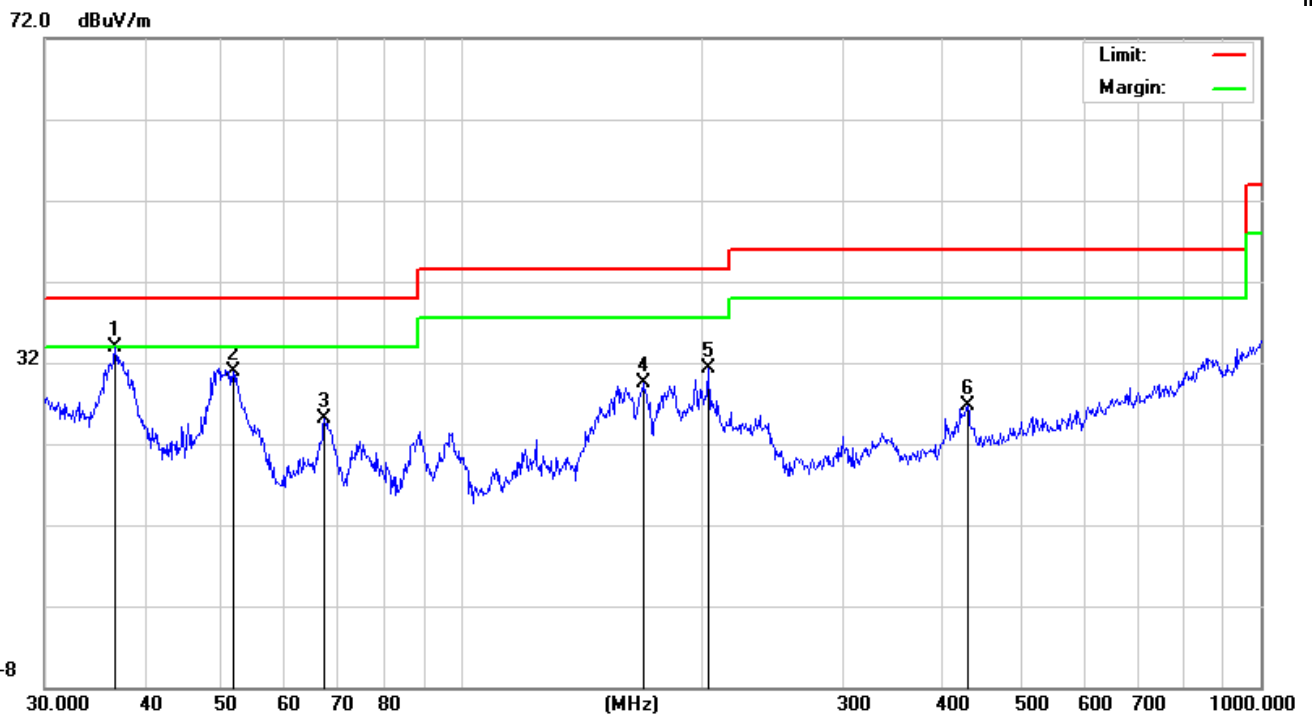


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Low frequency/Max Load	Polarization :	Vertical
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	36.7662	15.74	18.09	33.83	40.00	-6.17	QP
V	51.6616	17.66	13.27	30.93	40.00	-9.07	QP
V	67.2022	16.27	8.89	25.16	40.00	-14.84	QP
V	168.4138	16.85	12.60	29.45	43.50	-14.05	QP
V	203.5228	17.36	13.85	31.21	43.50	-12.29	QP
V	429.5228	10.05	16.65	26.70	46.00	-19.30	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

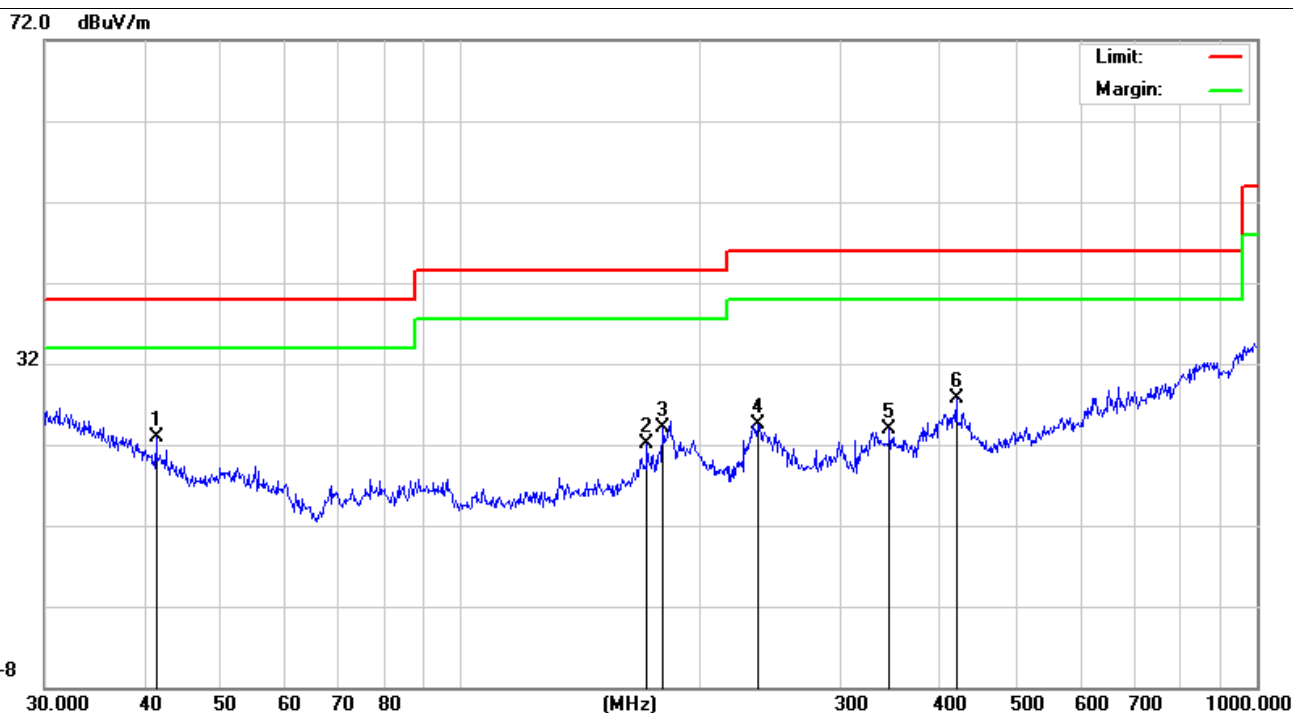


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Middle frequency/Max Load	Polarization :	Horizontal
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	41.4215	7.21	15.73	22.94	40.00	-17.06	QP
H	171.3925	9.45	12.65	22.10	43.50	-21.40	QP
H	179.3863	11.41	12.73	24.14	43.50	-19.36	QP
H	236.6447	12.49	12.03	24.52	46.00	-21.48	QP
H	345.5951	9.63	14.31	23.94	46.00	-22.06	QP
H	419.1081	11.14	16.59	27.73	46.00	-18.27	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

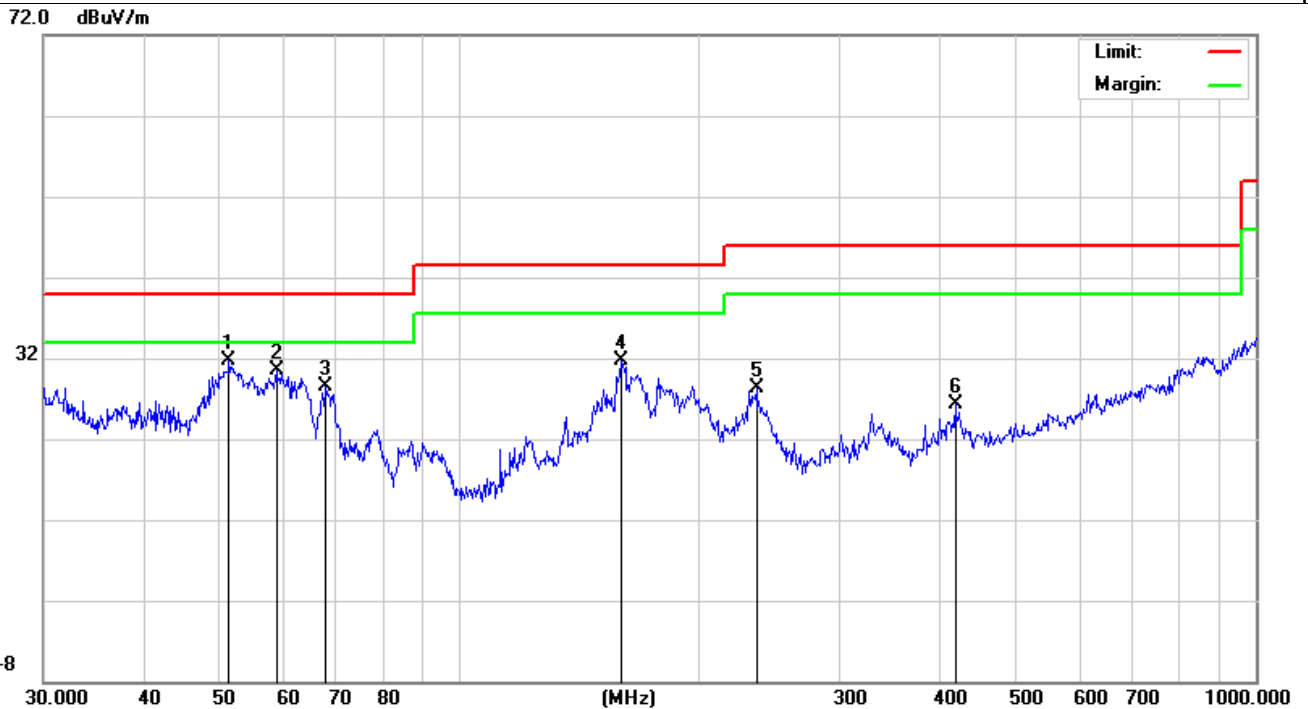


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	Middle frequency/Max Load	Polarization :	Vertical
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	51.3004	18.48	13.29	31.77	40.00	-8.23	QP
V	58.8185	18.96	11.60	30.56	40.00	-9.44	QP
V	67.9128	18.83	9.74	28.57	40.00	-11.43	QP
V	159.2250	19.63	12.10	31.73	43.50	-11.77	QP
V	235.8163	16.19	12.03	28.22	46.00	-17.78	QP
V	419.1080	9.75	16.59	26.34	46.00	-19.66	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



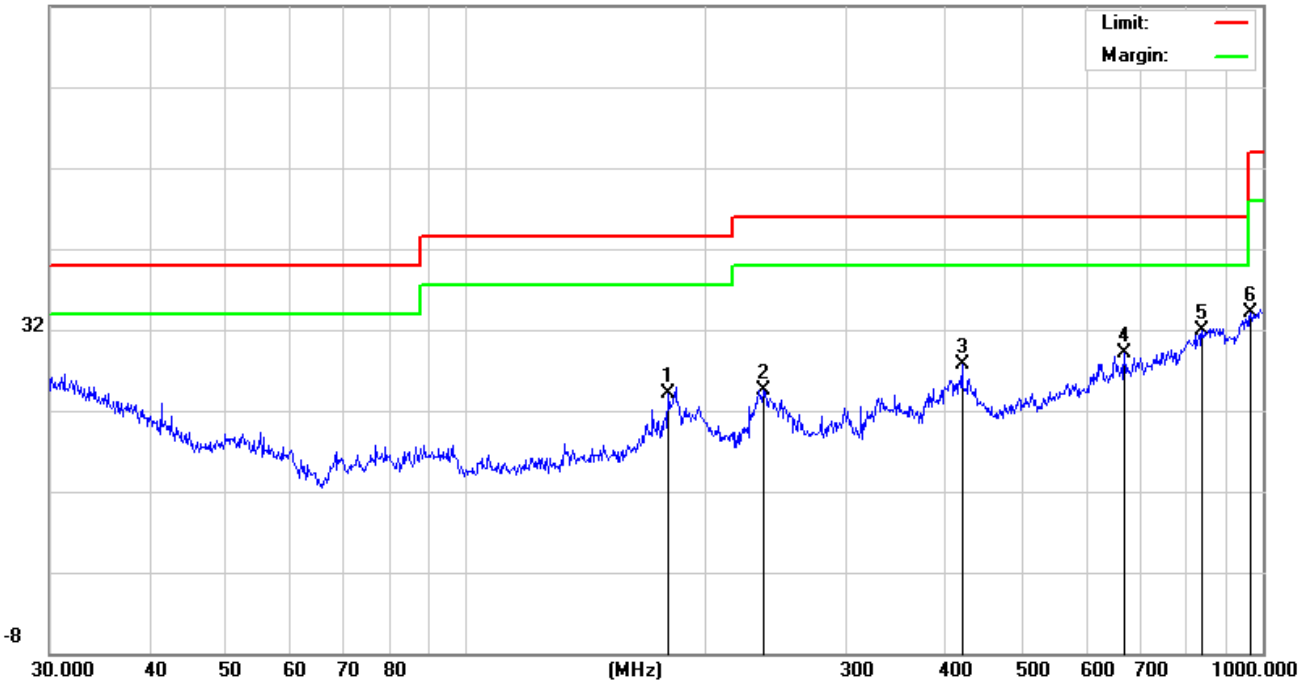
EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	High frequency/Max Load	Polarization :	Horizontal
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	179.3864	11.41	12.73	24.14	43.50	-19.36	QP
H	236.6447	12.49	12.03	24.52	46.00	-21.48	QP
H	419.1080	11.14	16.59	27.73	46.00	-18.27	QP
H	670.4891	8.02	21.00	29.02	46.00	-16.98	QP
H	839.1816	6.41	25.58	31.99	46.00	-14.01	QP
H	965.5421	7.00	27.10	34.10	54.00	-19.90	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

72.0 dBuV/m

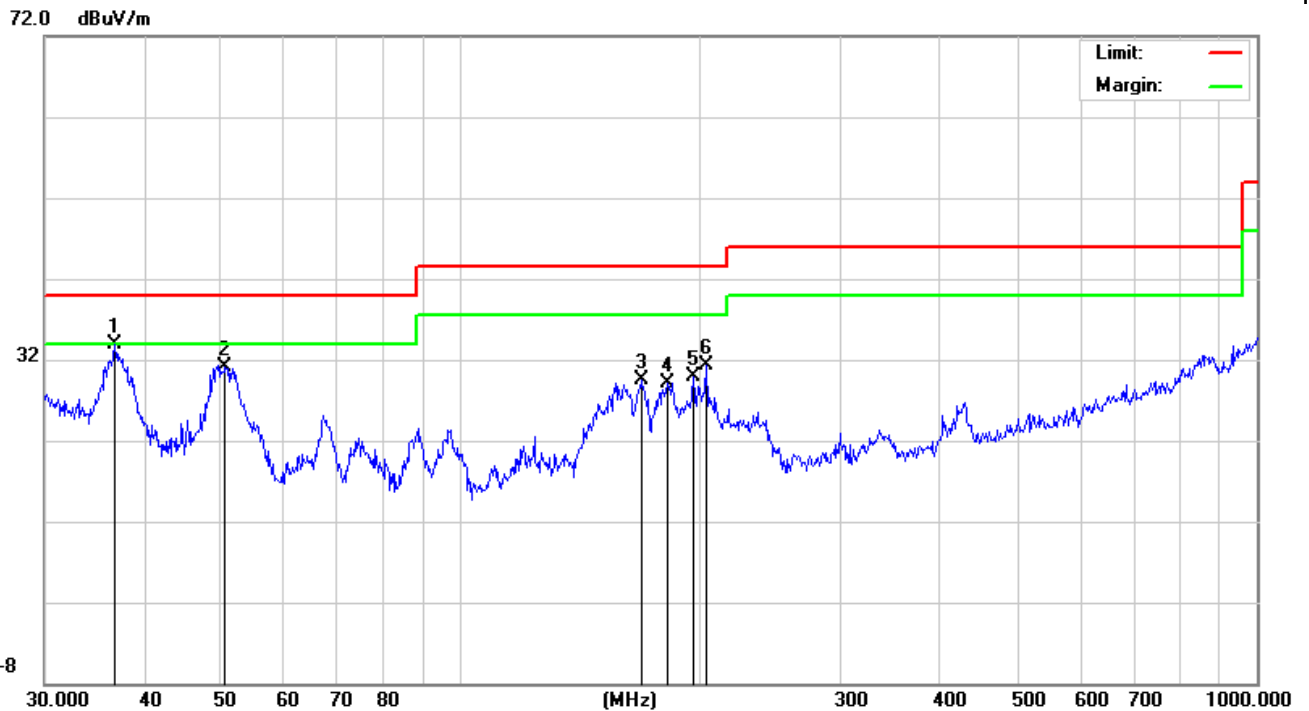


EUT:	WIRELESS CHARGER	Model Name. :	F300W
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2017-7-13
Test Mode :	High frequency/Max Load	Polarization :	Vertical
Test Power :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	36.7661	15.78	18.09	33.87	40.00	-6.13	QP
V	50.5859	17.82	13.32	31.14	40.00	-8.86	QP
V	168.4138	16.85	12.60	29.45	43.50	-14.05	QP
V	181.9199	16.39	12.73	29.12	43.50	-14.38	QP
V	195.8220	16.09	13.74	29.83	43.50	-13.67	QP
V	203.5226	17.36	13.85	31.21	43.50	-12.29	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



4. BANDWIDTH TEST

4.1 TEST PROCEDURE

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

(i) Transmitters designed for other types of modulation—when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

4.2 DEVIATION FROM STANDARD

No deviation.

4.3 TEST SETUP

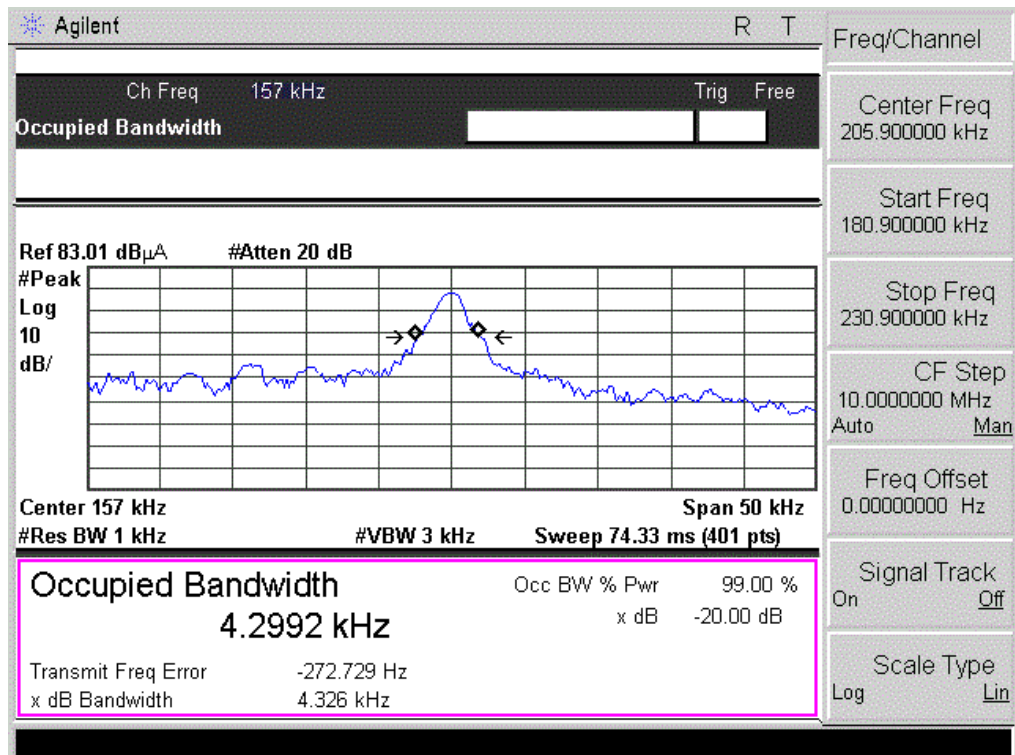
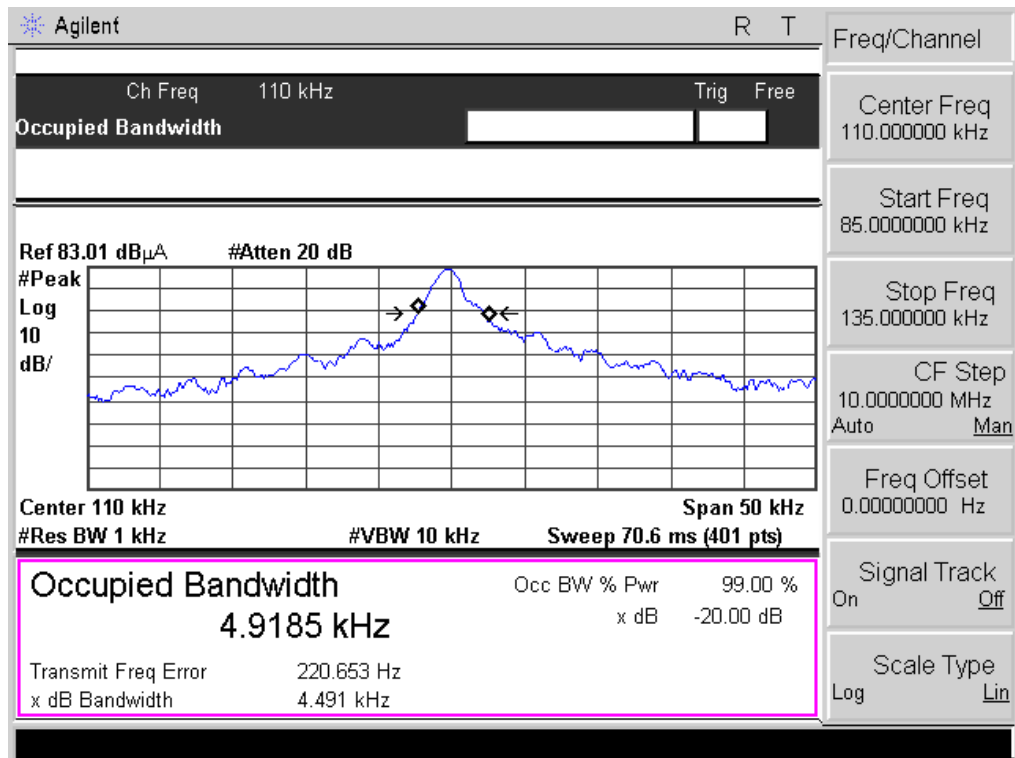


4.4 TEST RESULTS

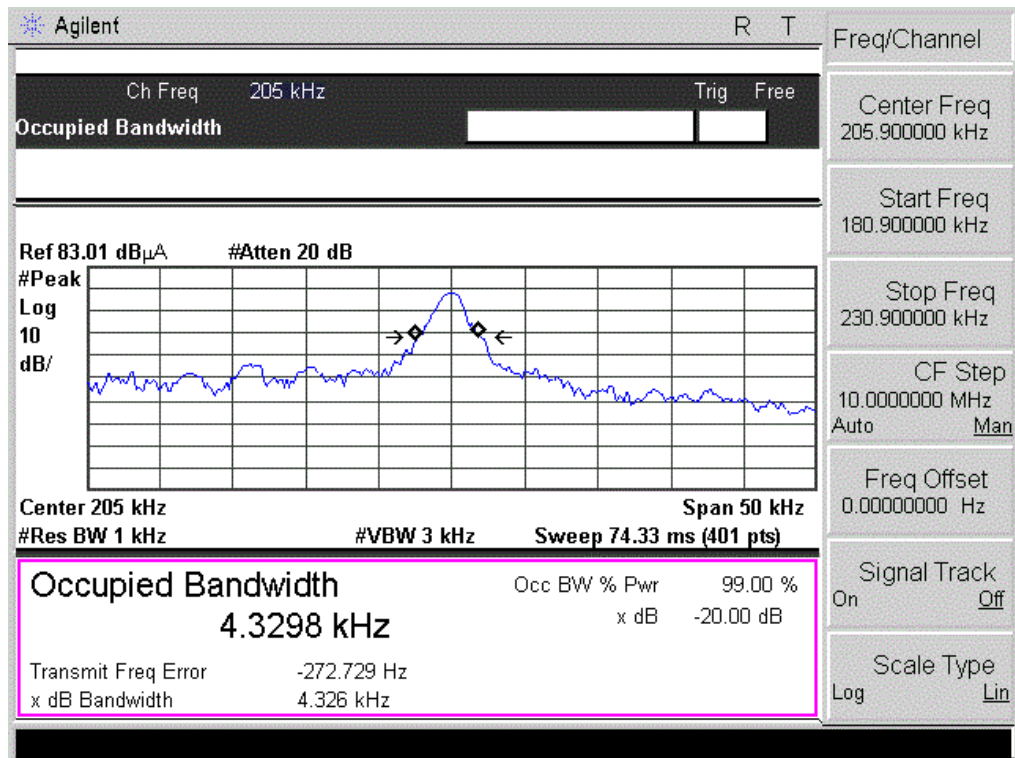
EUT :	WIRELESS CHARGER	Model Name. :	F300W
Temperature :	26 °C	Relative Humidity :	53%
Pressure :	1020 hPa	Test Power :	DC 5V from Adapter
Test Mode :	TX		

Test Channel	Frequency (KHz)	99% Bandwidth (KHz)	Limit (kHz)
CH01	110	4.9185	/
CH02	157	4.2992	/
CH03	205	4.3298	/

CH 01



CH 02



5. ANTENNA APPLICATION

5.1 ANTENNA REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

5.2 RESULT

The EUT antenna is permanent attached coil antenna (Gain: 1 dBi). It complies with the standard requirement.

END REPORT