FCC TEST REPORT
FCC ID:2A2L9-CATCH2

Report Number	**ZKT-2106283040E**
Date of Test	Jun. 28, 2021 to Jul. 02, 2021
Date of issue	Jul. 02, 2021
Total number of pages	21
Test Result	PASS
Testing Laboratory	**Shenzhen ZKT Technology Co., Ltd.**
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name	**Very Great, Inc d/b/a Courant**
Address	52 Mercer Street, #3, New York 10013
Manufacturer's name	**Shenzhen Future Charger Tech Co., Ltd**
Address	Yongfengtian Industrial Garden, the 3rd Industrial Park of fenghuang, Fuyong, Town, BaoAn District, Shenzhen, China 518103
Test specification:	
Standard	FCC CFR Title 47 Part 15 Subpart C
Test procedure	/
Non-standard test method	N/A
Test Report Form No.	TRF-EL-107_V0
Test Report Form(s) Originator	ZKT Testing
Master TRF:	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name	**Multi-Device Wireless Charger**
Trademark	COURANT
Model/Type reference	CATCH:2 CLASSICS CR-C2-BK-BK, CR-C2-GR-GR, CR-C2-WH-SL, CR-C2-RS-RS, CR-C2-BL-SL, CR-C2-TN-PG
Ratings	Input: DC 9V,3A ;DC 5V,3A Wireless: 5W/7.5W/10W*2

Testing procedure and testing location:

Testing Laboratory	:	**Shenzhen ZKT Technology Co., Ltd.**
Address	:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature)	:	Alen He Alen He
Reviewer (name + signature)	:	Joe Liu Joe Liu
Approved (name + signature)	:	Lake Xie Lake Xie

Shenzhen ZKT Technology Co., Ltd. Approved

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1. VERSION

Report No.	Version	Description	Approved
ZKT-2106283040E	Rev.01	Initial issue of report	Jul. 02, 2021

2. TEST SUMMARY

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.209(a)(f)	Pass
20dB Bandwidth	15.215	Pass

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	3m camber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃
9	Radiated disturbance(30MHz-1000MHz)	U=4.8dB
10	Radiated disturbance(1GHz-6GHz)	U=4.9dB
11	Radiated disturbance(1GHz-18GHz)	U=5.0dB

3. GENERAL INFORMATION

3.1GENERAL DESCRIPTION OF EUT

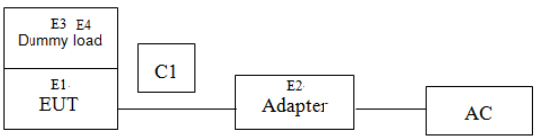
Product Name:	Multi-Device Wireless Charger
Model No.:	CATCH:2 CLASSICS CR-C2-BK-BK, CR-C2-GR-GR, CR-C2-WH-SL, CR-C2-RS-RS, CR-C2-BL-SL, CR-C2-TN-PG
Model Difference:	Only for different model name.
Serial No.:	N/A
Hardware version:	H1.0
Software version:	S1.0
Operation Frequency:	115kHz ~ 205KHz
Modulation type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi
Power supply:	Input: DC 9V,3A ;DC 5V,3A Wireless: 5W/7.5W/10W*2

3.2 Test mode

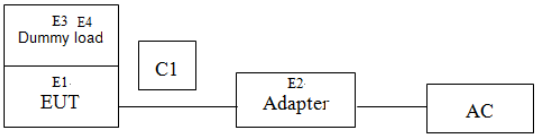
Transmitting mode	Keep the EUT in continuously transmitting mode Mode1: Coil A+ Coil B Mode2: Coil A Mode3: Coil B (Note: This product is a dual-charge wireless charging product with a total output power of 20W, 10W+10W respectively. The product total has 5 coils, coils 1, 2, and 3 compose group A. coils 4 and 5 compose group B. When the RX is placed on group A, only one of the three coils 1, 2, and 3 can transmit power, the other two coils will be automatically turned off. When the RX is placed on group B, only one of the coils 4 and 5 can transmit power, and the other coil will be automatically truned off. When both groups A and B are put RX on them, group A can only have one coil transmitting power, and group B can only have one coil transmitting power.)
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

3.3 Block Diagram of EUT

ConfigurationConducted Emission



Radiated Emission



3.4 Test Conditions

Temperature: 23~26℃

Relative Humidity: 54~63 %

3.5 Description Of Support Units

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	Mfr/Brand	Model/Type No.	Series No.	Note
E1	Multi-Device Wireless Charger	COURANT	CATCH:2 CLASSICS	N/A	EUT
E2	Adapter	N/A	ZKT-002	N/A	Auxiliary
E3	Dummy load	N/A	DL01	N/A	Auxiliary
E4	Dummy load	N/A	DL02	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	DC cable unshielded

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” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 22, 2020	Sep. 21, 2021
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 22, 2020	Sep. 21, 2021
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 22, 2020	Sep. 21, 2021
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 22, 2020	Sep. 21, 2021
5	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1541	Sep. 22, 2020	Sep. 21, 2021
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 22, 2020	Sep. 21, 2021
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 22, 2020	Sep. 21, 2021
8	Amplifier (1GHz-40GHz)	全聚达	DLE-161	097	Sep. 22, 2020	Sep. 21, 2021
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Sep. 22, 2020	Sep. 21, 2021
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 22, 2020	Sep. 21, 2021
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 22, 2020	Sep. 21, 2021
13	CMW500 Test	R&S	CMW500	106504	Sep. 22, 2020	Sep. 21, 2021
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 22, 2020	Sep. 21, 2021
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 22, 2020	Sep. 21, 2021
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 22, 2020	Sep. 21, 2021
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 22, 2020	Sep. 21, 2021
3	Test Cable	N/A	C01	N/A	Sep. 22, 2020	Sep. 21, 2021
4	Test Cable	N/A	C02	N/A	Sep. 22, 2020	Sep. 21, 2021
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 22, 2020	Sep. 21, 2021
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 22, 2020	Sep. 21, 2021

4. CONDUCTED EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.11 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas -peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

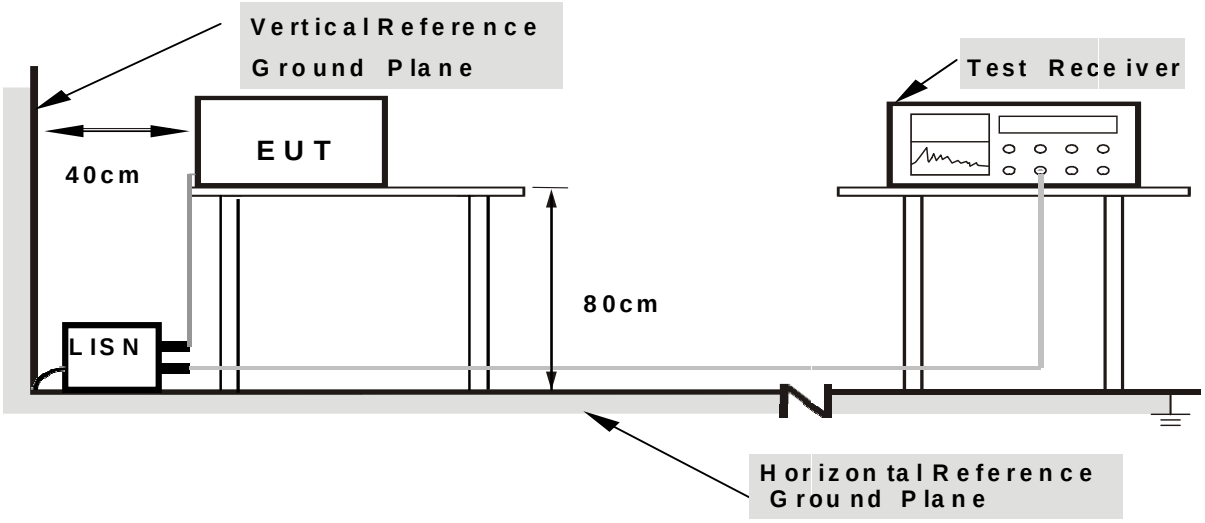
4.1.2 TEST PROCEDURE

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.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 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 from other units and other metal planes

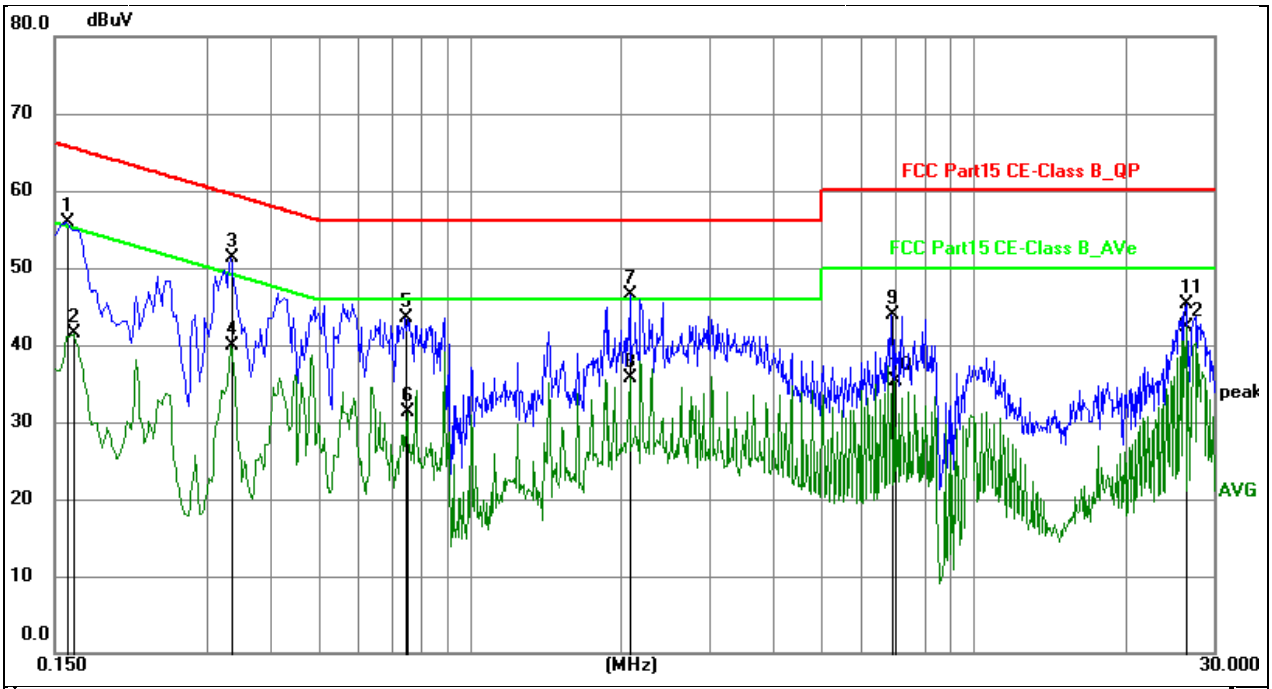
4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

4.6 Test Result

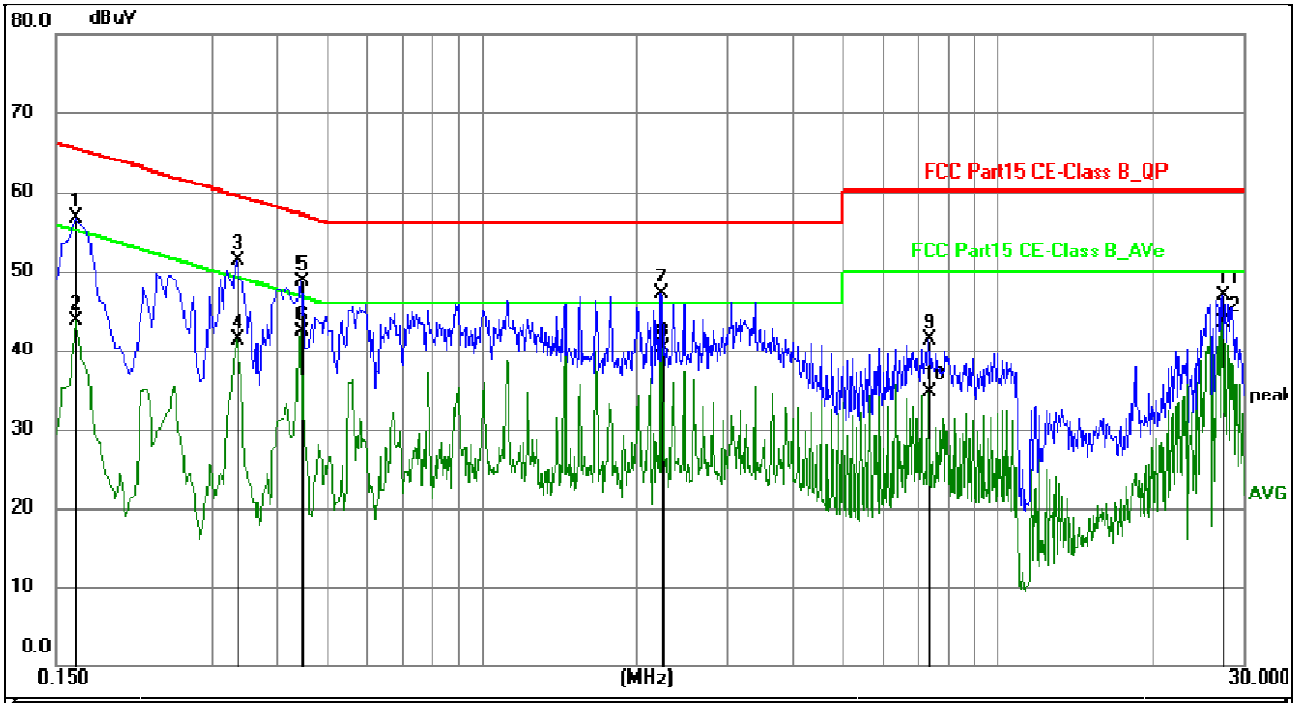
Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Phase :	L
Test Voltage ：	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1590	43.10	12.81	55.91	65.52	-9.61	QP	P	
2	0.1635	28.74	12.71	41.45	55.28	-13.83	AVG	P	
3	0.3345	40.02	11.30	51.32	59.34	-8.02	QP	P	
4	0.3345	28.66	11.30	39.96	49.34	-9.38	AVG	P	
5	0.7440	33.07	10.49	43.56	56.00	-12.44	QP	P	
6	0.7530	20.72	10.49	31.21	46.00	-14.79	AVG	P	
7	2.0805	36.41	10.17	46.58	56.00	-9.42	QP	P	
8	2.0805	25.55	10.17	35.72	46.00	-10.28	AVG	P	
9	6.8910	35.26	8.57	43.83	60.00	-16.17	QP	P	
10	7.0080	26.80	8.57	35.37	50.00	-14.63	AVG	P	
11	26.4210	35.32	9.92	45.24	60.00	-14.76	QP	P	
12	26.4210	32.31	9.92	42.23	50.00	-7.77	AVG	P	

Notes:
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Mesurement Level = Reading level + Correct Factor
4. The Mode1: Coil A+ Coil B, Mode2: Coil A and Mode3: Coil B have test, the worst Coil A+ Coil B have record and report.

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Phase :	N
Test Voltage ：	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1635	43.99	12.71	56.70	65.28	-8.58	QP	P	
2	0.1635	30.95	12.71	43.66	55.28	-11.62	AVG	P	
3	0.3345	39.99	11.30	51.29	59.34	-8.05	QP	P	
4	0.3345	30.00	11.30	41.30	49.34	-8.04	AVG	P	
5	0.4470	38.00	10.79	48.79	56.93	-8.14	QP	P	
6	0.4470	31.55	10.79	42.34	46.93	-4.59	AVG	P	
7	2.2335	37.04	10.13	47.17	56.00	-8.83	QP	P	
8	2.2380	30.17	10.13	40.30	46.00	-5.70	AVG	P	
9	7.3545	32.69	8.56	41.25	60.00	-18.75	QP	P	
10	7.3545	26.05	8.56	34.61	50.00	-15.39	AVG	P	
11	27.2715	36.91	9.93	46.84	60.00	-13.16	QP	P	
12	27.2715	33.50	9.93	43.43	50.00	-6.57	AVG	P	

Notes:
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Mesurement Level = Reading level + Correct Factor
4. The Mode1: Coil A+ Coil B, Mode2: Coil A and Mode3: Coil B have test, the worst Coil A+ Coil B have record and report.

5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 1GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

5.1Radiated Emission Limits

Limits for frequency below 30MHz

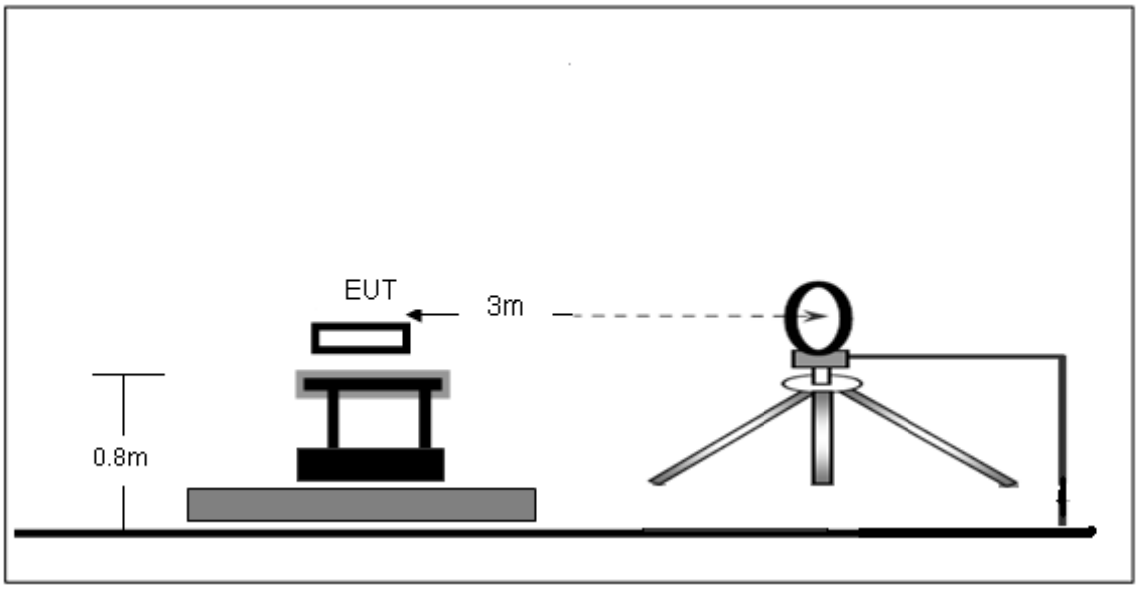
Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Quasi-peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Limits for frequency Above 30MHz

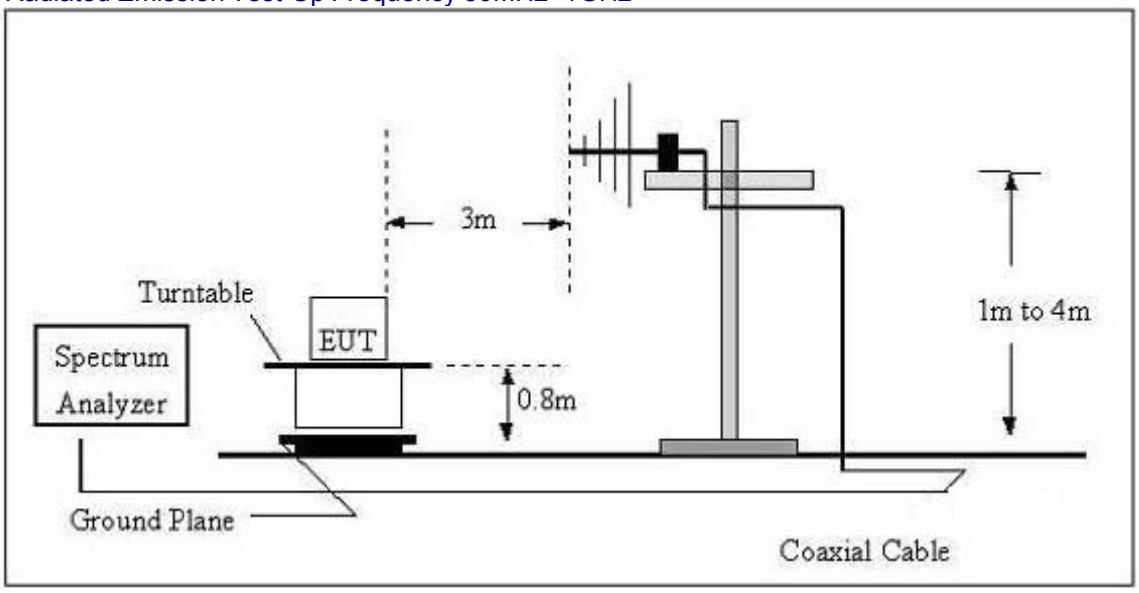
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

5.2 Anechoic Chamber Test Setup Diagram

（A） Radiated Emission Test-Up Frequency Below 30MHz



（B） Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

5.3 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5 Test Result

Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80
Limit dBuV/m @3m = Limit dBuV/m @30m + 40

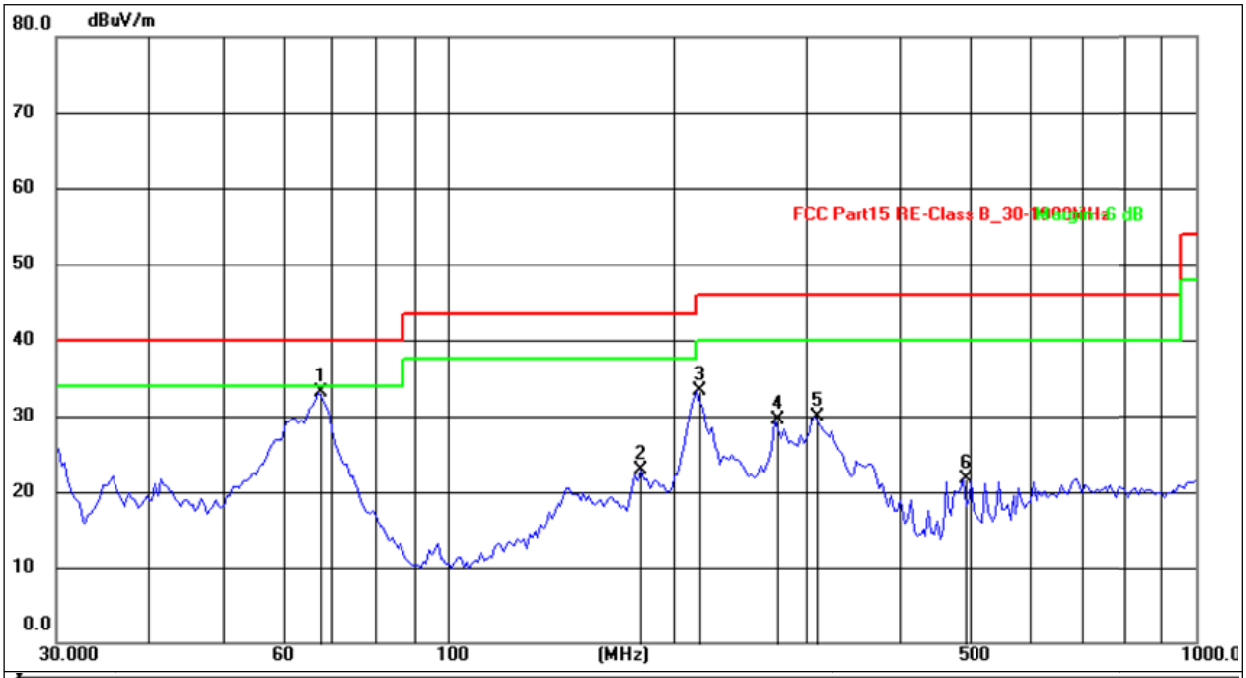
9 kHz~30 MHz

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(kHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
24.9000	39.85	20.15	60.00	139.72	-79.72	PK
24.9000	36.42	20.15	56.57	119.72	-63.15	AV
56.7500	51.03	20.33	71.36	132.53	-61.17	PK
56.7500	45.22	20.33	65.55	112.53	-46.98	AV
122.3000	67.25	20.55	87.80	125.91	-38.11	PK
122.3000	62.41	20.55	82.96	105.91	-22.95	AV
686.1200	32.65	20.64	53.29	70.89	-17.60	QP
965.7400	36.24	21.26	57.50	67.91	-10.41	QP
1222.3500	25.17	22.32	47.49	65.86	-18.37	QP

Note:
Pre-scan in the all of mode, the worst case in of was recorded.
Factor = antenna factor + cable loss – pre-amplifier.
Margin = Emission Level- Limit.
The Mode1: Coil A+ Coil B, Mode2: Coil A and Mode3: Coil B have test, the worst Coil A+ Coil B have record and report.

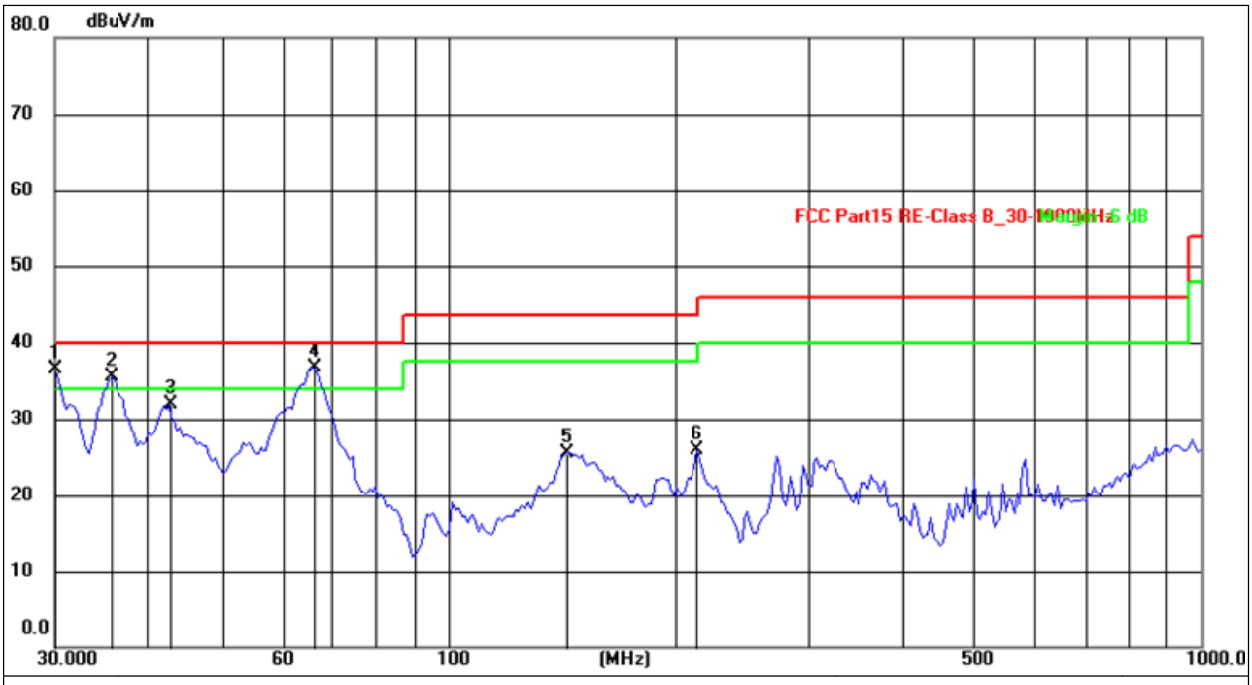
30MHz-1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	67.2022	49.34	-16.15	33.19	40.00	-6.81	QP
2	180.9658	41.50	-18.69	22.81	43.50	-20.69	QP
3	215.6456	52.53	-19.16	33.37	43.50	-10.13	QP
4	273.2341	46.05	-16.48	29.57	46.00	-16.43	QP
5	308.9126	48.90	-18.95	29.95	46.00	-16.05	QP
6	487.3151	35.98	-14.26	21.72	46.00	-24.28	QP

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.0000	54.97	-18.44	36.53	40.00	-3.47	QP
2	35.7490	52.93	-17.49	35.44	40.00	-4.56	QP
3	42.6000	48.88	-16.98	31.90	40.00	-8.10	QP
4	66.6156	55.77	-19.00	36.77	40.00	-3.23	QP
5	144.0819	46.83	-21.23	25.60	43.50	-17.90	QP
6	213.7634	47.47	-21.62	25.85	43.50	-17.65	QP

Remarks:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The Mode1: Coil A+ Coil B, Mode2: Coil A and Mode3: Coil B have test, the worst Coil A+ Coil B have record and report.

6. BANDWIDTH TEST

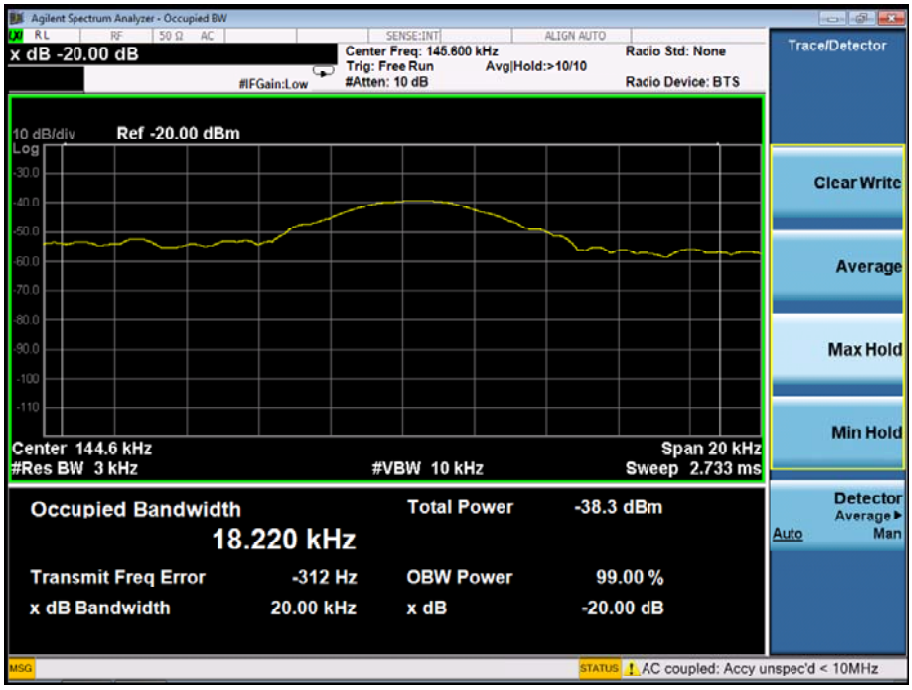
1. Set RBW = 3 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa		

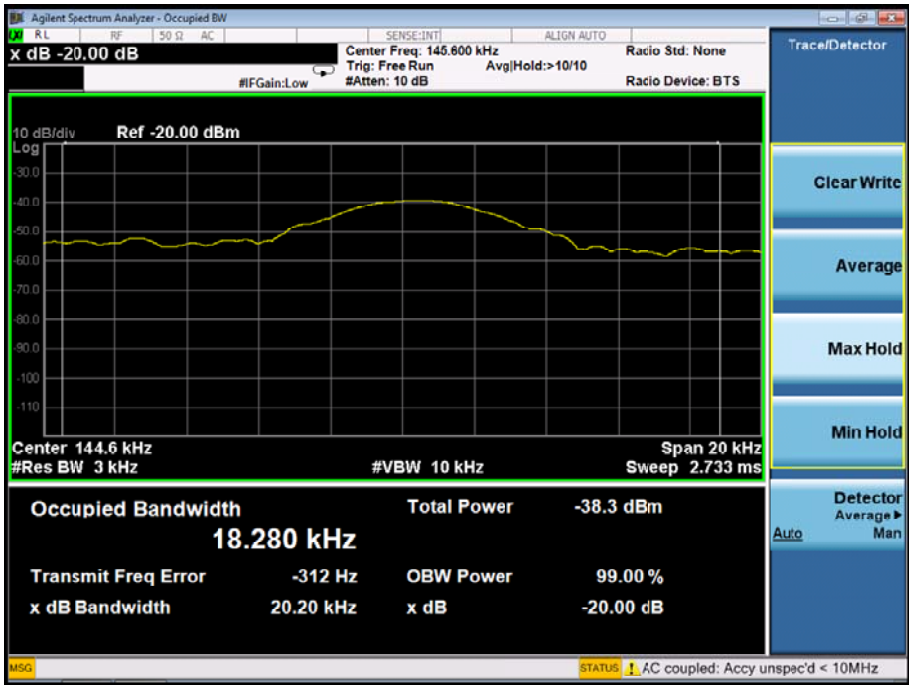
Coil A (coils 1, 2, and 3 Have test, the worst coils 1 have record and report.)

Frequency (KHz)	20dB bandwidth (KHz)	99% bandwidth (KHz)	Result
144.6	20.00	18.220	Pass



Coil B(coils 4, and 5 Have test, the worst coils 4 have record and report.)

Frequency (KHz)	20dB bandwidth (KHz)	99% bandwidth (KHz)	Result
144.6	20.20	18.280	Pass



7. TEST SETUP PHOTO

Reference to the appendix I for details.

8. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※**END OF REPORT** ※※※※※