



FCC Test Report

FCC ID : ZE9-TCAW7CM
Product : Magnetic Charging Cable
Trade mark : S A T E C H I
Model Name : ST-TCAW7CM
Applicant : SARIANA LLC
Date of Issue : July 21, 2020
Standard(s) : FCC Part 15 Subpart C
Report No : S20080601405001

Prepared for

SARIANA LLC

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name..... : SARIANA LLC
 Address..... : 7365 Mission Gorge Road Suite G, San Diego, CA 92120
 U.S.A.
Manufacturer's Name..... : SARIANA LLC
 Address..... : 7365 Mission Gorge Road Suite G, San Diego, CA 92120
 U.S.A.

Product description

Product name..... : Magnetic Charging Cable
 Model and/or type reference : ST-TCAW7CM
 Standards..... : FCC Rules and Regulations Part 15 Subpart C Section
 15.207, 15.209, 15.203
 ANSI C63.10:2013

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., 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. This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

The test results of this report relate only to the tested sample identified in this report.

Date of Test..... :
 Date (s) of performance of tests..... : July 17.2020 ~ July 21.2020
 Date of Issue..... : July 21.2020
 Test Result..... : **Pass**

Testing Engineer : Eder Zhan
 (Eder Zhan)

Technical Manager : Jason Chen
 (Jason Chen)

Authorized Signatory : Sam Chen
 (Sam Chen)

Report Revise Record

Report No	Revise Time	Issued Date	Valid Version	Notes
S20080601405001	/	July 21, 2020	Valid	Initial Release

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission					
Standard	Test Item	FCC Rules	Limit	Judgment	Remark
FCC part 15C ANSI C63.10:2013	Conducted Emission	§15.207	Class B	PASS	
	Radiated Emission	§15.209	Class B	PASS	
	ANTENNA APPLICATION	§15.203	/	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 FACILITIES AND ACCREDITATIONS

All measurement facilities used to collect the measurement data are located at 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

1.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

- The Laboratory has been assessed and proved to be in compliance with
- CNAS-Lab. : CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
 The Certificate Registration Number is L5516.
- IC-Registration : The Certificate Registration Number is 9270A-1.
- FCC- Accredited : Test Firm Registration Number: 463705.
 Designation Number: CN1184
- A2LA-Lab. : The Certificate Registration Number is 4298.01
 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.
 This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).
- Name of Firm : Shenzhen NTEK Testing Technology Co., Ltd.
- Site Location : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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 %.

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	Magnetic Charging Cable
Test Model	ST-TCAW7CM
Operating Frequency	124.5KHz
Modulation Technique	Induction
Antenna Type	Induction coil
Power supply	Output :DC 5V,Input Adapter AC 120/60Hz
HW Version	1.0
SW Version	1.0

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

MODE	TEST MODE DESCRIPTION
1	Wireless charging Mode(Full load)
2	Wireless charging Mode(half load)
3	Wireless charging Mode(Null load)

Note:

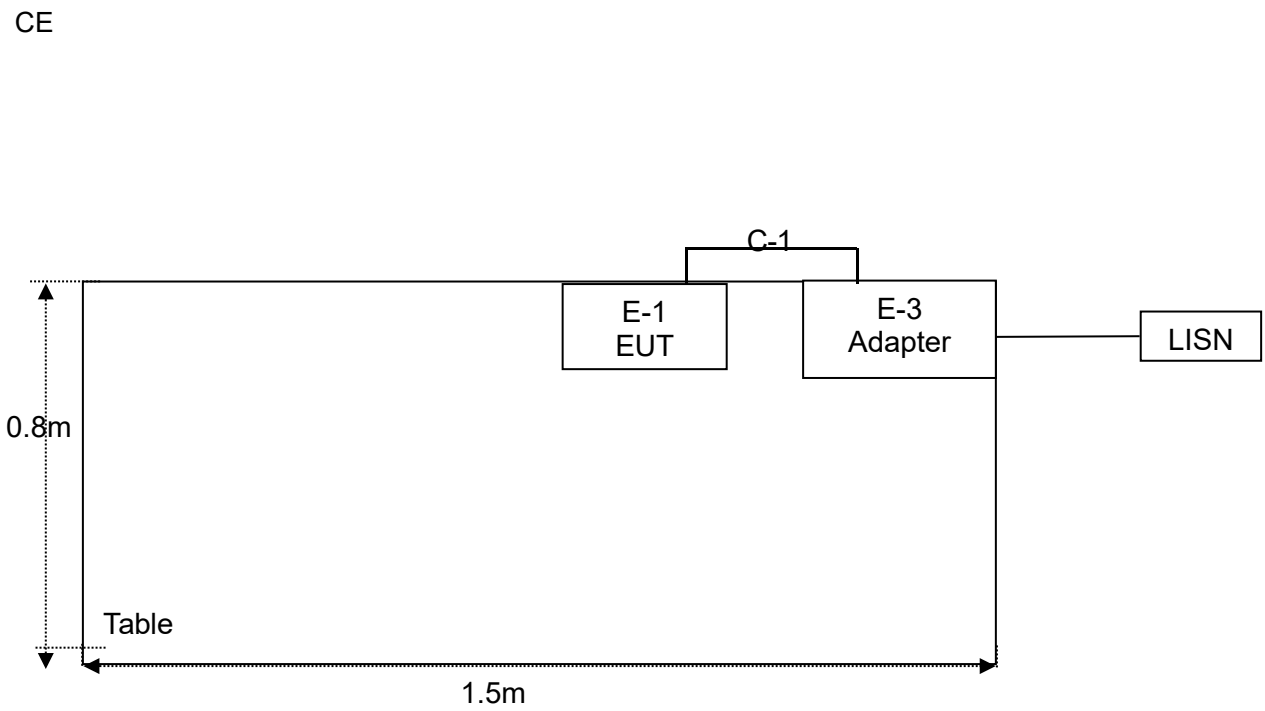
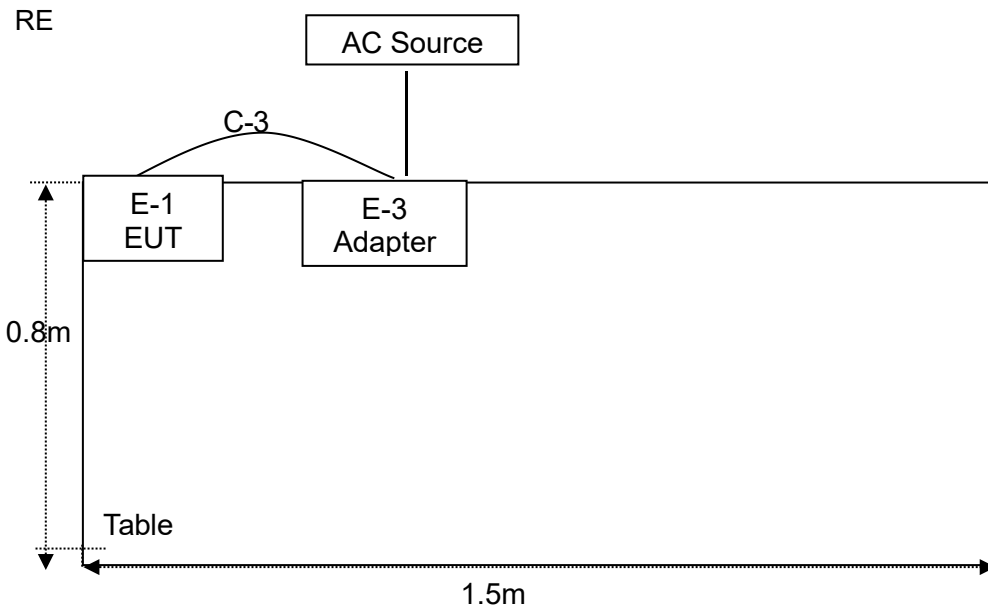
1. The mode 1 was the worst case and only the data of the worst case record in this report.

(*)EUT can only access the specified load, can not adjust the size of the load

Carrier Frequency and Channel list:

Channel	Frequency(MHz)
1	0.1110
2	0.1245
3	0.2040

2.3 DESCRIPTION OF TEST SETUP



2.4 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	Magnetic Charging Cable	S ▲ T E C H I	ST-TCAW7CM	N/A	EUT
E-2	Adapter	N/A	HTY24-0902660U	DC 5V 1A	AE
E-3	Load	N/A	N/A	N/A	AE

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note

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”.

2.5 MEASUREMENT INSTRUMENTS LIST
Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2020.06.05	2021.06.04	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2019.10.26	2020.10.25	1 year
4	Test Receiver	R&S	ESPI	101318	2020.06.05	2021.06.04	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.08	2021.04.07	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.06.05	2021.06.04	1 year
7	Amplifier	EMC	EMC051835SE	980246	2019.08.09	2020.08.08	1 year
8	Amplifier	MITEQ	TTA1840-35-HG	177156	2020.06.05	2021.06.04	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2020.06.05	2021.06.04	1 year
10	Test Cable (9KHz-30M Hz)	N/A	R-01	N/A	2020.04.21	2023.04.20	3 year
11	Test Cable (30MHz-1G Hz)	N/A	R-02	N/A	2020.04.21	2023.04.20	3 year

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	2020.06.05	2021.06.04	1 year
2	LISN	R&S	ENV216	101313	2020.04.18	2021.04.17	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2020.06.05	2021.06.04	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2020.06.05	2021.06.04	1 year
5	Test Cable (9KHz-30M Hz)	N/A	C01	N/A	2020.04.21	2023.04.20	3 year
6	Test Cable (9KHz-30M Hz)	N/A	C02	N/A	2020.04.21	2023.04.20	3 year
7	Test Cable (9KHz-30M Hz)	N/A	C03	N/A	2020.04.21	2023.04.20	3 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	limit	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	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.

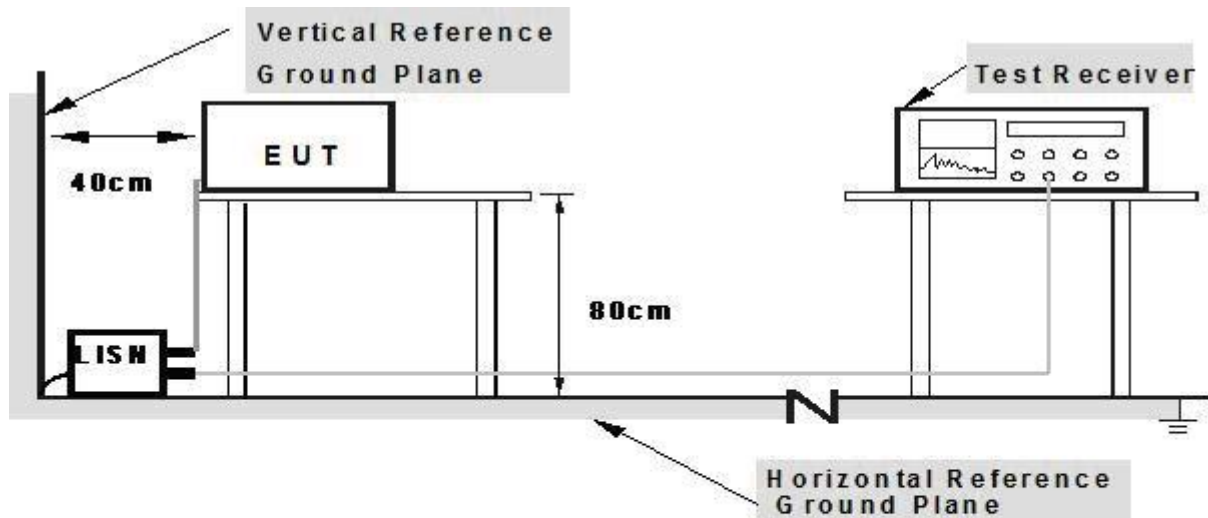
The following table is the setting of the receiver

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

3.1.1 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.

3.1.2 TEST SETUP



Note: 1. Support units were connected to second LISN.

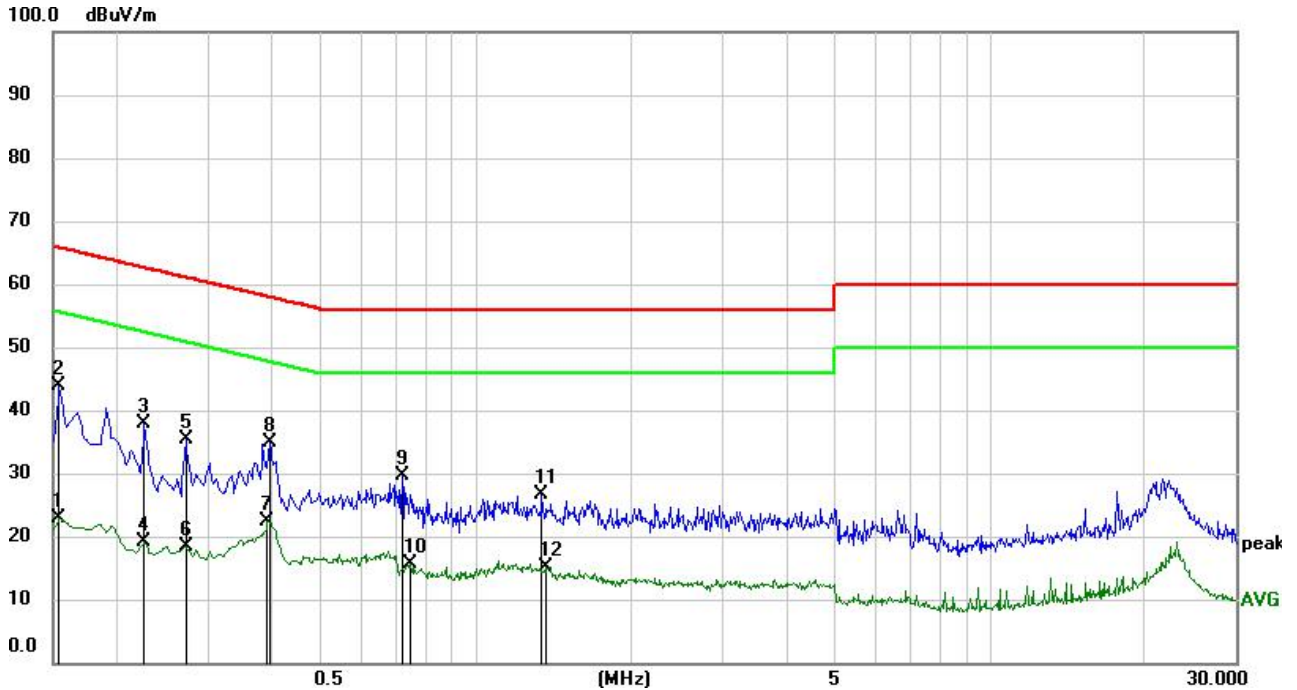
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.3 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.

3.1.4 TEST RESULTS

EUT :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	25.3 °C	Relative Humidity:	53.6%
Pressure:	1010hPa	Test Date:	2020-07-17
Test Mode:	Mode 1	Phase :	L
Test Voltage:	Output :DC 5V,Input Adapter AC 120/60Hz		

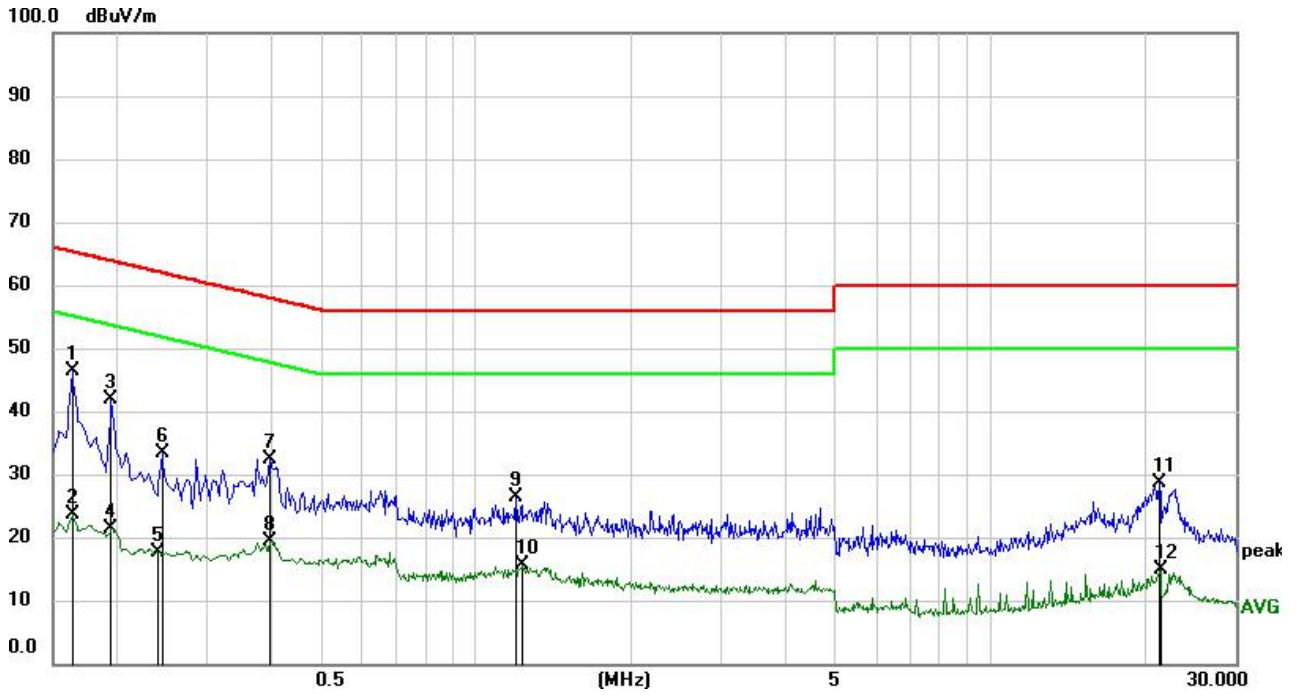


Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		0.1544	12.92	9.94	22.86	55.76	-32.90	AVG	
2	*	0.1545	33.92	9.94	43.86	65.75	-21.89	QP	
3		0.2265	27.87	9.90	37.77	62.58	-24.81	QP	
4		0.2265	9.19	9.90	19.09	52.58	-33.49	AVG	
5		0.2714	25.36	9.91	35.27	61.07	-25.80	QP	
6		0.2714	8.54	9.91	18.45	51.07	-32.62	AVG	
7		0.3930	12.38	9.92	22.30	48.00	-25.70	AVG	
8		0.3975	25.02	9.92	34.94	57.91	-22.97	QP	
9		0.7170	19.70	9.95	29.65	56.00	-26.35	QP	
10		0.7439	5.77	9.95	15.72	46.00	-30.28	AVG	
11		1.3425	16.72	9.99	26.71	56.00	-29.29	QP	
12		1.3604	5.10	9.99	15.09	46.00	-30.91	AVG	

EUT :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	23 °C	Relative Humidity:	52%
Pressure:	1010hPa	Test Date:	2020-07-17
Test Mode:	Mode 1	Phase :	N
Test Voltage:	Output :DC 5V,Input Adapter AC 120/60Hz		



Remark:

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

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1 *	0.1635	36.49	9.93	46.42	65.28	-18.86	QP	
2	0.1635	13.67	9.93	23.60	55.28	-31.68	AVG	
3	0.1949	32.01	9.90	41.91	63.83	-21.92	QP	
4	0.1949	11.42	9.90	21.32	53.83	-32.51	AVG	
5	0.2404	7.73	9.90	17.63	52.08	-34.45	AVG	
6	0.2445	23.55	9.90	33.45	61.94	-28.49	QP	
7	0.3975	22.36	9.93	32.29	57.91	-25.62	QP	
8	0.3975	9.44	9.93	19.37	47.91	-28.54	AVG	
9	1.1940	16.40	9.98	26.38	56.00	-29.62	QP	
10	1.2300	5.66	9.98	15.64	46.00	-30.36	AVG	
11	21.3720	15.80	12.75	28.55	60.00	-31.45	QP	
12	21.4035	2.08	12.74	14.82	50.00	-35.18	AVG	

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):

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
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

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.
- (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector

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(Blow 30M, use loop 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.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. 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 height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

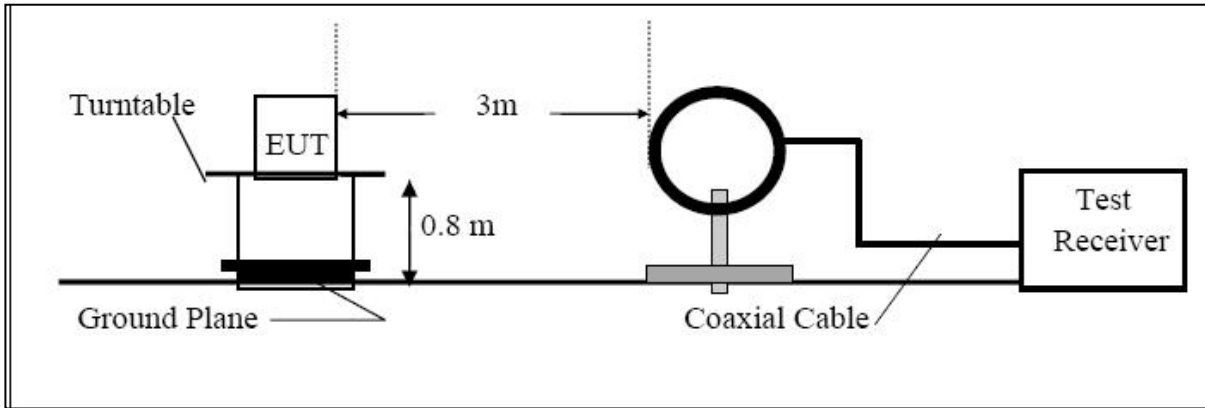
Sweep = auto

Detector function = QP

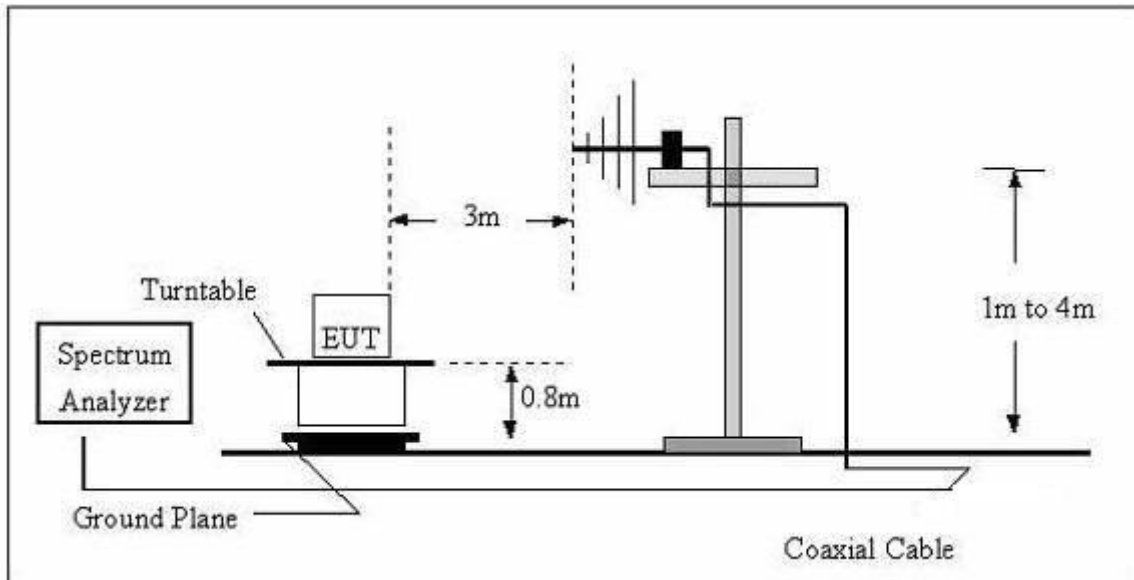
Trace = max hold

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 :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	23 .3℃	Relative Humidity:	53.9%
Pressure:	1010 hPa	Test Date :	2020-07-17
Test Mode :	Mode 1 (Full load)	Polarization :	X
Test Power :	Output :DC 5V,Input Adapter AC 120/60Hz		

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

Frequency (MHz)	Ant. Pol.	Reading Level (dBuV/m)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.1000	X	38.995	10.513	49.508	107.604	-58.10	QP
0.1245	X	80.344	10.589	90.933	105.701	-14.77	PK(fundamental frequency)
0.4108	X	36.084	10.645	46.730	75.332	-28.60	PK
2.0520	X	27.469	11.660	39.128	61.361	-22.23	QP
3.2824	X	23.896	13.156	37.052	69.542	-32.49	QP
9.5699	X	23.091	13.124	36.215	69.542	-33.33	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 :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	23.3 °C	Relative Humidity:	53.8%
Pressure:	1010 hPa	Test Date :	2020-07-17
Test Mode :	Mode 2 (half load)	Polarization :	X
Test Power :	Output :DC 5V,Input Adapter AC 120/60Hz		

Remark:
Factor = Antenna Factor + Cable Loss - Amplifier.

Frequency (MHz)	Ant.Pol.	Reading Level (dBuV/m)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.051	X	37.134	9.935	47.069	113.448	-66.38	PK
0.111	X	52.988	10.417	63.406	106.698	-43.29	PK(fundamental frequency)
0.828	X	37.105	11.180	48.285	69.248	-20.96	QP
4.469	X	30.272	12.007	42.279	54.599	-12.32	QP
7.661	X	32.075	12.515	44.590	69.542	-24.95	QP
20.096	X	23.375	15.169	38.544	69.542	-31.00	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 :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	23.3 °C	Relative Humidity:	53.8%
Pressure:	1010 hPa	Test Date :	2020-07-17
Test Mode :	Mode 3 (Null load)	Polarization :	X
Test Power :	Output :DC 5V,Input Adapter AC 120/60Hz		

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

Frequency (MHz)	Ant.Pol.	Reading Level (dBuV/m)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.071	X	34.761	9.389	44.150	110.5291	-66.38	QP
0.204	X	70.412	10.142	80.554	101.4116	-20.86	PK(fundamental frequency)
1.025	X	33.226	10.938	44.164	67.390	-23.23	QP
2.050	X	25.845	12.167	38.012	61.368	-23.36	QP
5.125	X	26.516	12.351	38.866	69.542	-30.68	QP
10.247	X	25.900	12.863	38.763	69.542	-30.78	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.

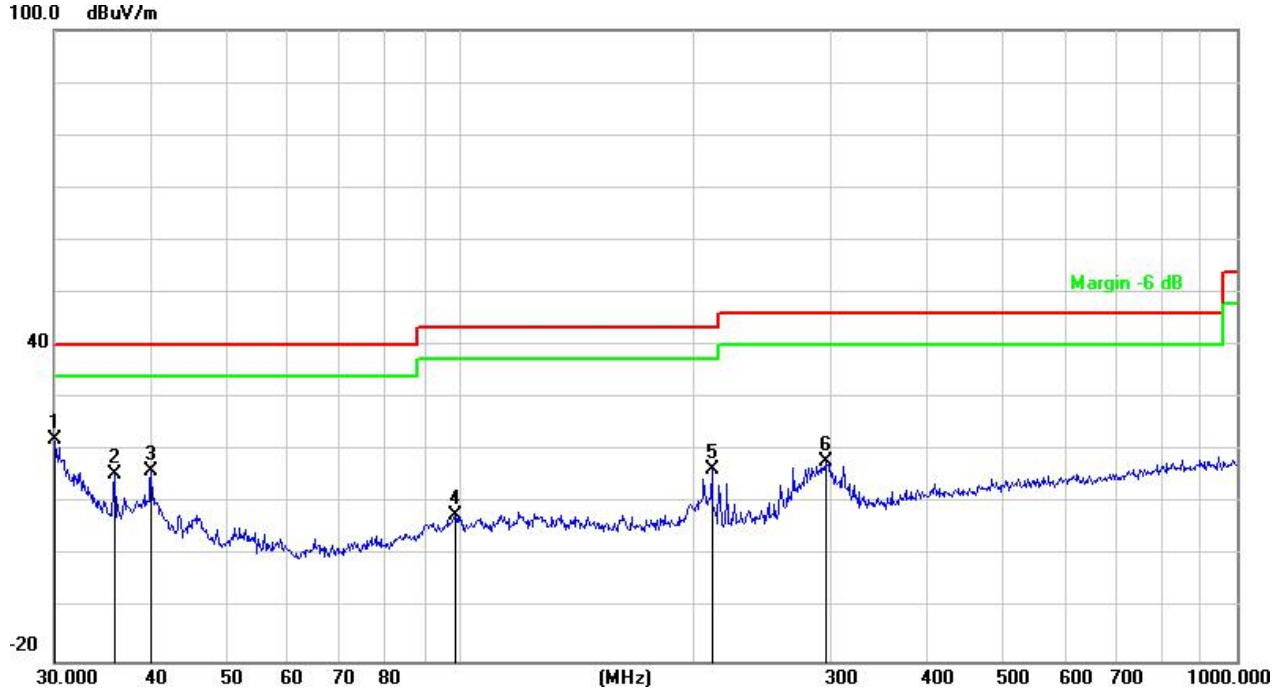
X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

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 :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	24.3 °C	Relative Humidity:	54.6%
Pressure:	1010 hPa	Test Date :	2020-07-17
Test Mode :	Mode1	Polarization :	Horizontal
Test Power :	Output :DC 5V,Input Adapter AC 120/60Hz		

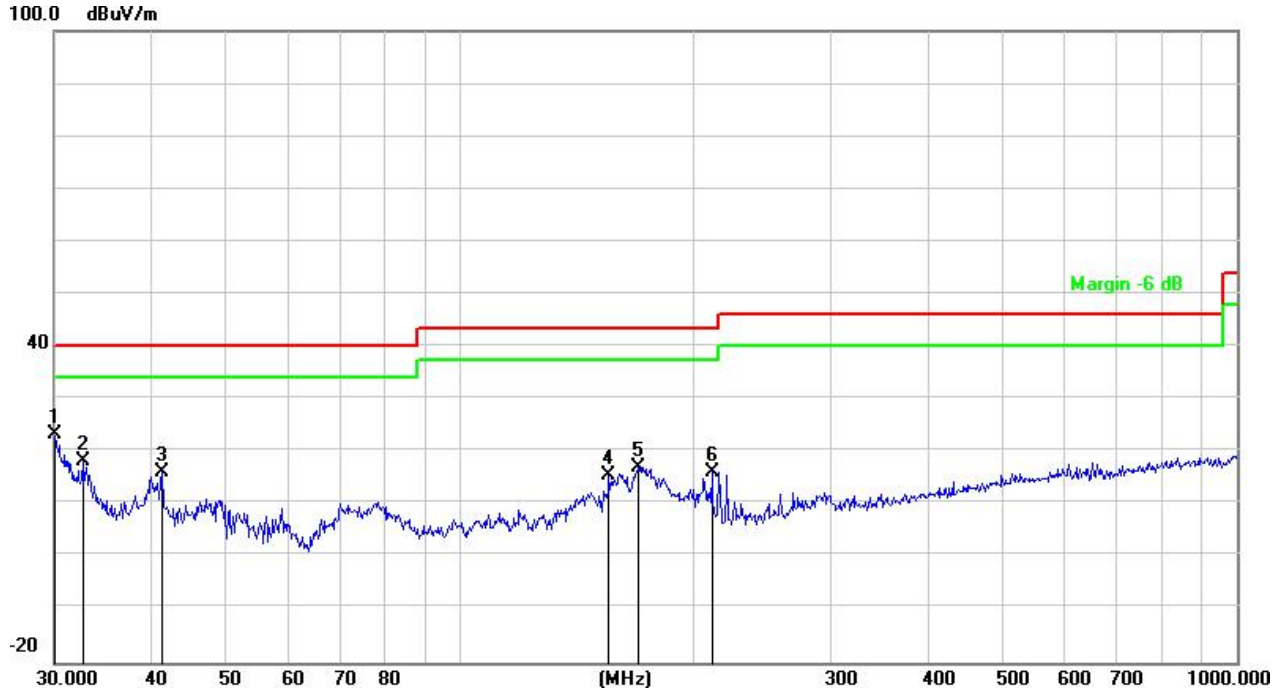


Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	30.0000	41.83	-19.70	22.13	40.00	-17.87	QP	
2		35.8746	38.94	-23.47	15.47	40.00	-24.53	QP	
3		39.9942	41.42	-25.36	16.06	40.00	-23.94	QP	
4		98.4866	33.70	-25.91	7.79	43.50	-35.71	QP	
5		210.7860	42.77	-26.40	16.37	43.50	-27.13	QP	
6		295.1469	41.67	-23.66	18.01	46.00	-27.99	QP	

EUT :	Magnetic Charging Cable	Model Name. :	ST-TCAW7CM
Temperature:	25.2 °C	Relative Humidity:	53%
Pressure:	1010 hPa	Test Date :	2020-07-17
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	Output :DC 5V,Input Adapter AC 120/60Hz		



Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	30.0000	43.52	-20.30	23.22	40.00	-16.78	QP	
2		32.6340	40.26	-21.98	18.28	40.00	-21.72	QP	
3		41.2765	41.43	-25.31	16.12	40.00	-23.88	QP	
4		155.3644	41.46	-25.95	15.51	43.50	-27.99	QP	
5		169.5990	43.01	-25.83	17.18	43.50	-26.32	QP	
6		210.7860	42.76	-26.49	16.27	43.50	-27.23	QP	

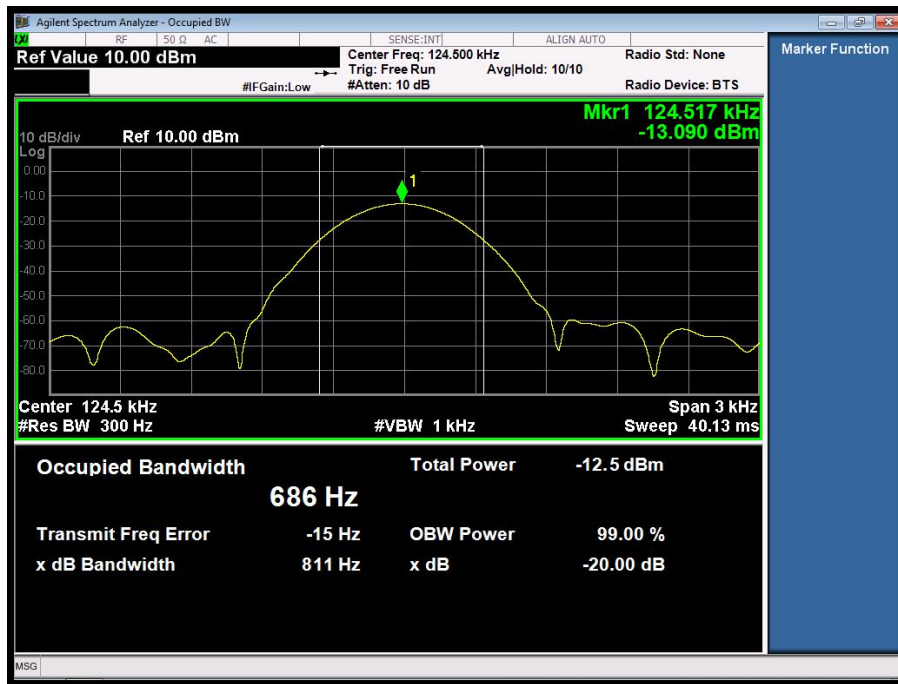
4. BANDWIDTH

4.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2, Set the EUT Work on operation frequency.
3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a channel
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

4.2. MEASUREMENT RESULTS

Frequency (KHz)	Test Data (Hz) 99% Bandwidth	Test Data (Hz) -20dB Bandwidth	Criteria
124.5	686	811	PASS



Note: All channels have been tested and the worst mode data is recorded in the report

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 antenna. It comply with the standard requirement.

-----END REPORT-----