FCC Radio Test Report

FCC ID: 2AZSTIRPM01

The report concerns: Original Grant

Report Reference No.....:	21EFSS04019 03891
Date Sample(s) Received.....:	2021-03-10
Date of Tested.....:	From 2021-03-10 to 2021-05-18
Date of issue.....:	2021-05-18
Testing Laboratory.....:	DongGuanShuoXin Electronic Technology Co., Ltd.
Address.....:	Zone A, 1F, No. 6, XinGang Road YuanGang Street, XinAn District, ChangAn Town, DongGuan City, GuangDong, China
Applicant's name .....:	Shenzhen dilili trading co., ltd.
Address.....:	9ceng B1，zhiyuan dasha Bzuo, gongye balu 89hao,shekoudong tianhaiqu, shekou jiedao, nanshanqu shenzhen guangdong china
Manufacturer.....:	Hui Zhou Gaoshengda Technology Co., LTD
Equipment.....:	10W Wireless Charger
Trade Mark .....:	N/A
Model .....:	IR-PM-01
Ratings.....:	Input: 5Vdc, 2A / 9Vdc, 2A / 12Vdc 1.5A Output: 5W, 7.5W, 10W

Test Engineer:

Blue Qiu

Responsible Engineer :

Smile Wang

Authorized Signatory:

King Wang

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1. TEST REPORT DECLARE

Applicant	Shenzhen dilili trading co., ltd.
Address	9ceng B1，zhiyuan dasha Bzuo, gongye balu 89hao,shekoudong tianhaiqu, shekou jiedao, nanshanqu shenzhen guangdong china
Manufacturer	Same as applicant
Address	Same as applicant
Factory	SHENZHEN PUSHIDA ELECTRONIC TECHNOLOGY CO.,LTD
Address	1-4floor Block 1, Haosan Industrial Area,Heyi Community,Shajing Town,Bao'an District, Shenzhen, China
Equipment Name	10W Wireless Charger
Model No.	IR-PM-01
Trade Mark	N/A
Standard	FCC Part15, Subpart C

We Declare:

The equipment described above is tested by DongGuan ShuoXin Electronic Technology Co., Ltd(ATT). and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and DongGuan ShuoXin Electronic Technology Co., Ltd.(ATT) is assumed of full responsibility for the accuracy and completeness of these tests.

ATT is not responsible for the sampling stage, so the results only apply to the sample as received.

ATT's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. ATT shall have no liability for any declarations, inferences or generalizations drawn by the client or others from ATT issued reports.

2. SUMMARY OF TEST RESULTS

The EUT have been tested according to the applicable standards as referenced below:

Standard(s) Section		Test Item	Judgment	Remark
FCC	ISED			
15.207	-	AC Power Line Conducted Emissions	PASS	------
15.209(a)	-	Radiated Emissions	PASS	------
15.203	-	Antenna Requirement	PASS	Note(2)
15.215	-	20dB Bandwidth	PASS	

Note:

(1) “N/A” denotes test is not applicable to this device.

(2) The device what use a permanently attached antenna were considered sufficient tocomply with the provisions of 15.203.

2.1MEASUREMENT UNCERTAINTY

Test Item	Uncertainty
Uncertainty for Conductionemission test (9kHz-150kHz)	3.7 dB
Uncertainty for Conduction emission test (150kHz-30MHz)	3.3 dB
Uncertainty for Radiation Emission test (30MHz-200MHz)	4.60 dB (Polarize: V)
	4.60 dB (Polarize: H)
Uncertainty for Radiation Emission test (200MHz-1GHz)	6.10 dB (Polarize: V)
	5.08 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz-6GHz)	5.01 dB (Polarize: V)
	5.01 dB (Polarize: H)
Uncertainty for Radiation Emission test (6GHz-18GHz)	5.26 dB (Polarize: V)
	5.26 dB (Polarize: H)
Uncertainty for Radiation Emission test (18GHz-40GHz)	5.06 dB (Polarize: V)
	5.06 dB (Polarize: H)
Uncertainty for radio frequency	±0.048kHz
Uncertainty for conducted RF Power	±0.32dB

Note:

This uncertainty represents an expanded uncertainty expressed at approximately the 95%confidence level using a coverage factor of k=2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	10W Wireless Charger	
Brand Name	N/A	
Test Model	IR-PM-01	
Series Model	/	
Model Difference(s)	/	
Hardware Version	V1.0	
Software Version	V1.0	
PowerSource	Input: 5Vdc, 2A / 9Vdc, 2A/ 12Vdc 1.5A Output: 5W, 7.5W, 10W	
Operation Frequency	115kHz-205kHz	
Modulation Technology	FSK	
Antenna Information	Antenna Type: Coil	Maximum Peak Gain: 0dBi

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3.2DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	Charging

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 1	Charging

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 1	Charging

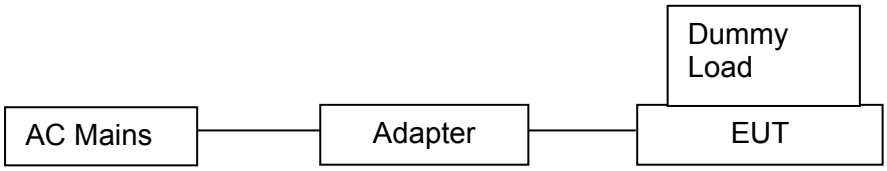
Conducted test	
Final Test Mode	Description
Mode 1	Charging

Note:

(1) The measurements are performed at the high, middle, low available channels.

(2) Output: 5W, 7.5W, 10W mode all have been tested,only worse case 10W mode is reported.

3.3BLOCKDIAGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



3.4SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
AE	Notebook	ACER	MS2367	32807810766

Item	Cable Type	Shielded Type	Ferrite Core	Length
C1	DC Cable	NO	NO	0.8m

3.5TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage
AC Power Line Conducted Emissions	25°C	53%	DC 9V
Radiated Emissions-9K-30MHz	25°C	60%	DC 9V
Radiated Emissions-30 MHz to 1GHz	24°C	68%	DC 9V
Bandwidth	24.8°C	40.9%	DC 9V

4.AC POWER LINE CONDUCTED EMISSIONS TEST

4.1LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.50	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

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

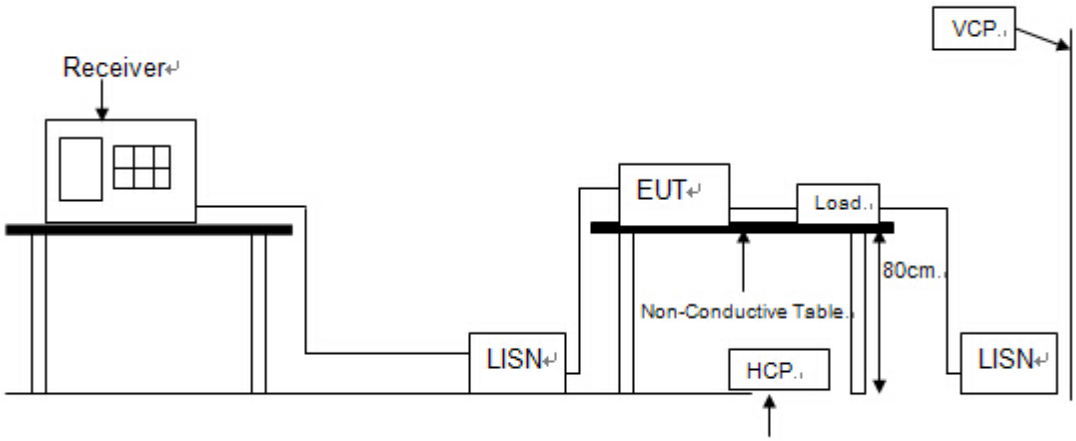
4.2TEST PROCEDURE

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 equipmentpowered 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 groundplane 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.

4.3MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	12/11/2021
2	EMI Test Receiver	R&S	ESCI	101308	12/12/2021
3	LISN	AFJ	LS16	16011103219	06/10/2021
4	LISN	Schwarzbeck	NSLK 8127	8127-432	12/11/2021
5	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

4.4TESTSETUP

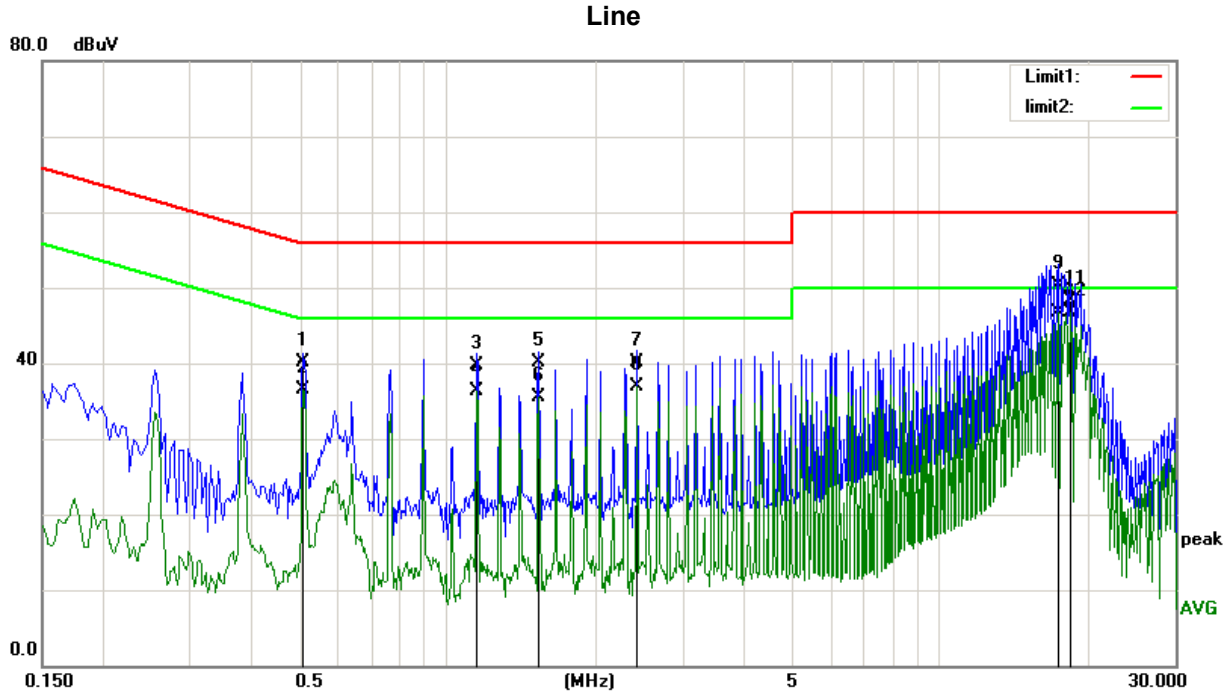


4.5EUT OPERATING CONDITIONS

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. Test voltage： AC 120V 60Hz

4.6 TEST RESULTS

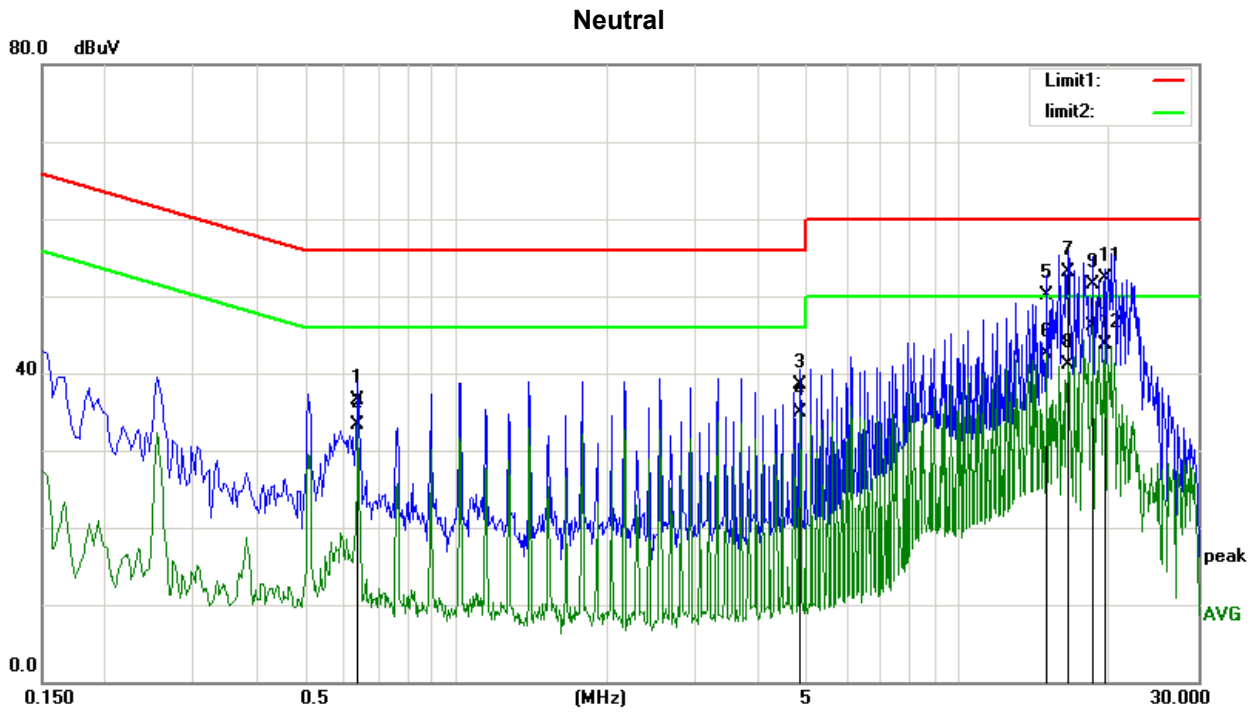
Test Mode:	Charging



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.5100	29.81	10.29	40.10	56.00	-15.90	QP
2	0.5100	26.14	10.29	36.43	46.00	-9.57	AVG
3	1.1460	29.45	10.21	39.66	56.00	-16.34	QP
4	1.1460	26.09	10.21	36.30	46.00	-9.70	AVG
5	1.5300	29.80	10.22	40.02	56.00	-15.98	QP
6	1.5300	25.24	10.22	35.46	46.00	-10.54	AVG
7	2.4219	29.91	10.22	40.13	56.00	-15.87	QP
8	2.4219	26.73	10.22	36.95	46.00	-9.05	AVG
9	17.4659	40.09	10.21	50.30	60.00	-9.70	QP
10	17.4659	36.46	10.21	46.67	50.00	-3.33	AVG
11	18.3579	38.13	10.22	48.35	60.00	-11.65	QP
12	18.3579	36.43	10.22	46.65	50.00	-3.35	AVG

Remarks:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode:	Charging



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.6380	26.33	10.26	36.59	56.00	-19.41	QP
2	0.6380	23.09	10.26	33.35	46.00	-12.65	AVG
3	4.8459	28.25	10.23	38.48	56.00	-17.52	QP
4	4.8459	24.77	10.23	35.00	46.00	-11.00	AVG
5	15.0419	39.80	10.22	50.02	60.00	-9.98	QP
6	15.0419	32.21	10.22	42.43	50.00	-7.57	AVG
7	16.5699	42.99	10.21	53.20	60.00	-6.80	QP
8	16.5699	30.97	10.21	41.18	50.00	-8.82	AVG
9	18.6099	41.21	10.22	51.43	60.00	-8.57	QP
10	18.6099	35.96	10.22	46.18	50.00	-3.82	AVG
11	19.6299	42.14	10.22	52.36	60.00	-7.64	QP
12	19.6299	33.47	10.22	43.69	50.00	-6.31	AVG

Remarks:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

5. RADIATED EMISSION TEST

5.1LIMIT

In case the emission fall within the restricted band specified on the 15.209(a) in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000MHz)

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

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-30 MHz)

Frequency (MHz)	Magnetic field strength (H-Field) (μA/m)	Measurement Distance (meters)
0.009-0.490	6.37/F(kHz)	300
0.490-1.705	6.37/F(kHz)	30
1.705-30.0	0.08	30

LIMITS OF RADIATED EMISSION MEASUREMENT (30 MHz-1000MHz)

Frequency (MHz)	Field Strength (μV/m at 3m)
30-88	100
88-216	150
216-960	200
Above 960	500

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

Note:

(1) The limit for radiated test was performed according to FCC PART 15C

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

5.2TEST PROCEDURE

a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. 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 find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. Measurement Value = Reading Level + Correct Factor.
Margin Level = Measurement Value - Limit Value.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

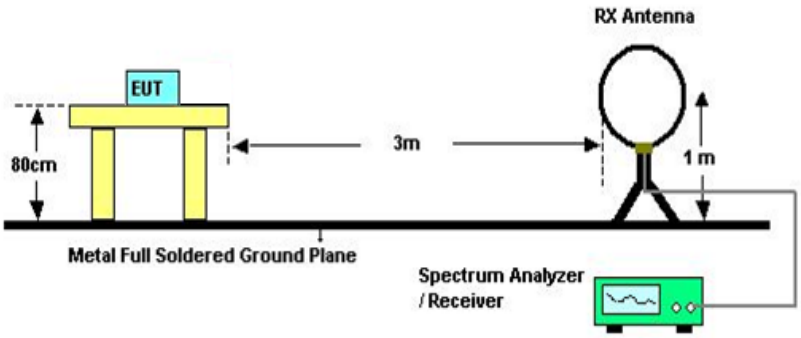
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

5.3MEASUREMENT INSTRUMENTS LIST

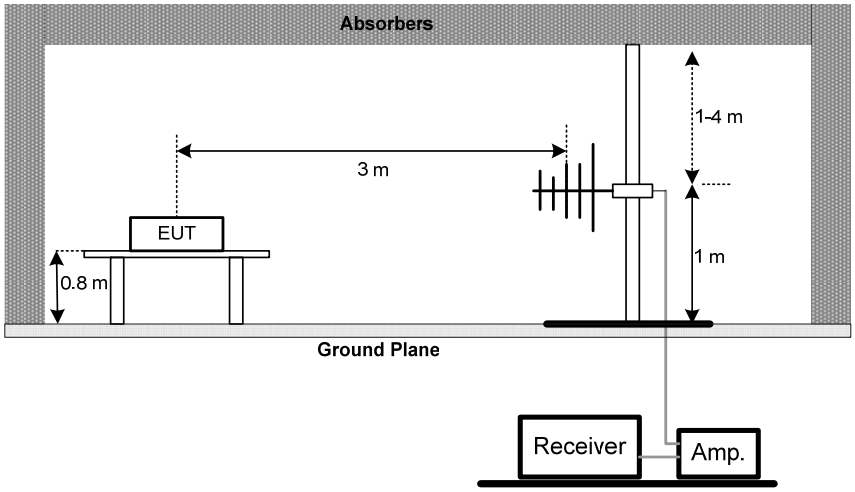
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	101307	12/12/2021
2	Spectrum Analyzer	Agilent	E4407B	US40240708	11/17/2021
3	Loop antenna	SCHWARZBECK K	FMZB1519	1519-062	12/14/2021
4	Broadband antenna	SCHWARZBECK	VULB9168	VULB9168-192	08/06/2021
5	HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D 1065	04/20/2022
6	Preamplifier Amplifier	HP	8447F	3113A05680	12/11/2021
7	PRE-AMPLIFIER	CY	EMC011830	980136	12/11/2021
8	RF Cable	R&S	Test Cable 4	4	12/11/2021
9	RF Cable	R&S	Test Cable 5	5	12/11/2021
10	RF Cable	R&S	Test Cable 9	9	04/20/2022
11	RF Cable	R&S	Test Cable 10	10	12/11/2021
12	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

5.4TESTSETUP

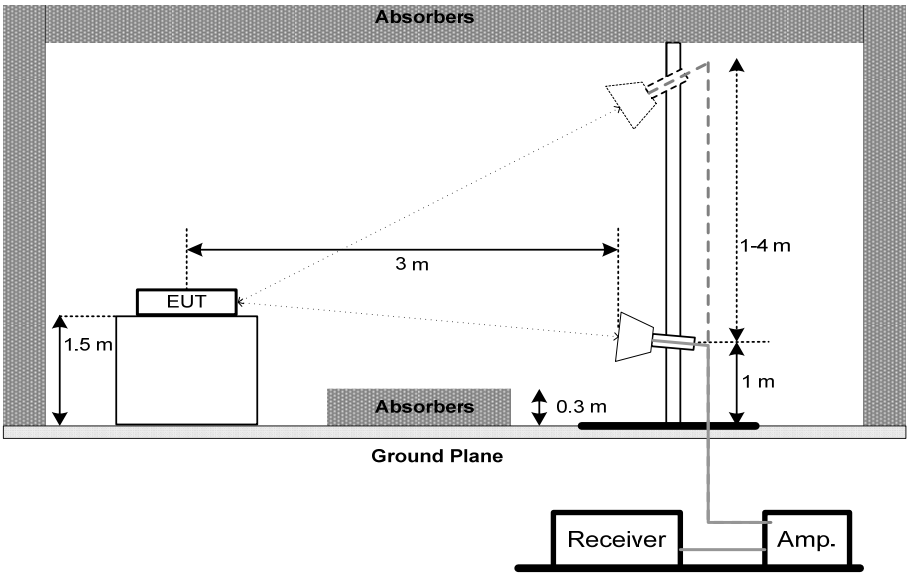
9 kHz-30 MHz



30 MHz to 1 GHz



Above 1 GHz



5.5EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

Remark: The test result is calculated as the following:

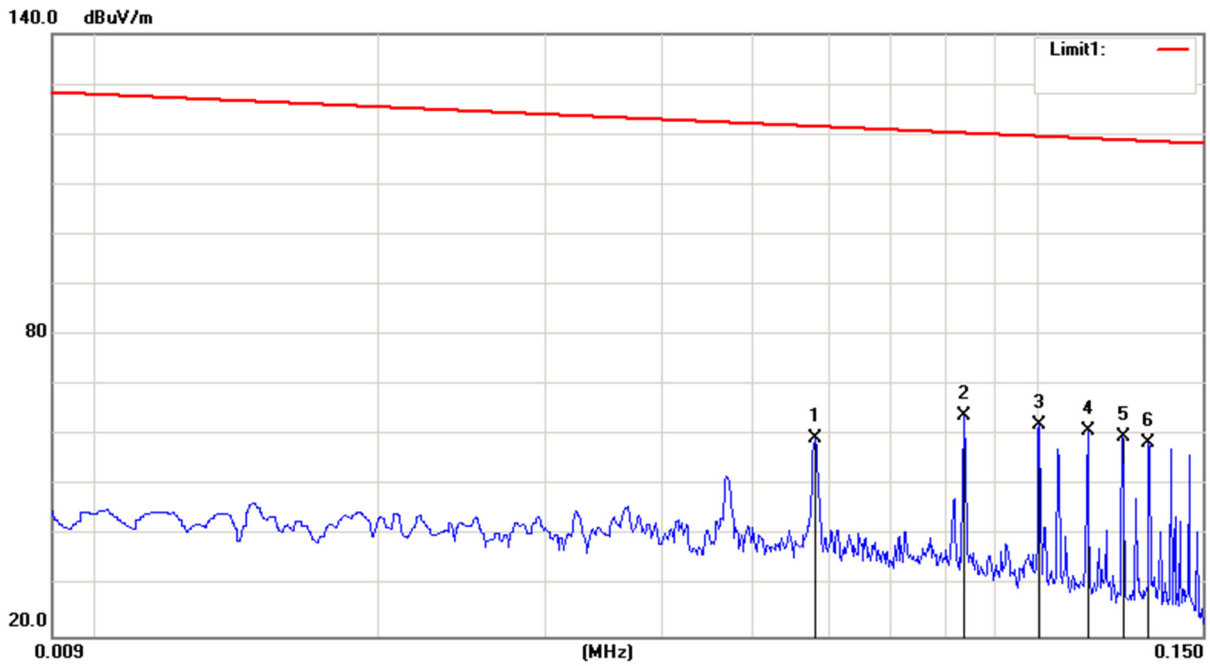
(1) Result = Reading + Correct Factor

(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator

(3) Margin = Result - Limit

5.6 TEST RESULT- 9kHz TO 30MHz

Test Mode :	TX Mode Coxial polarity



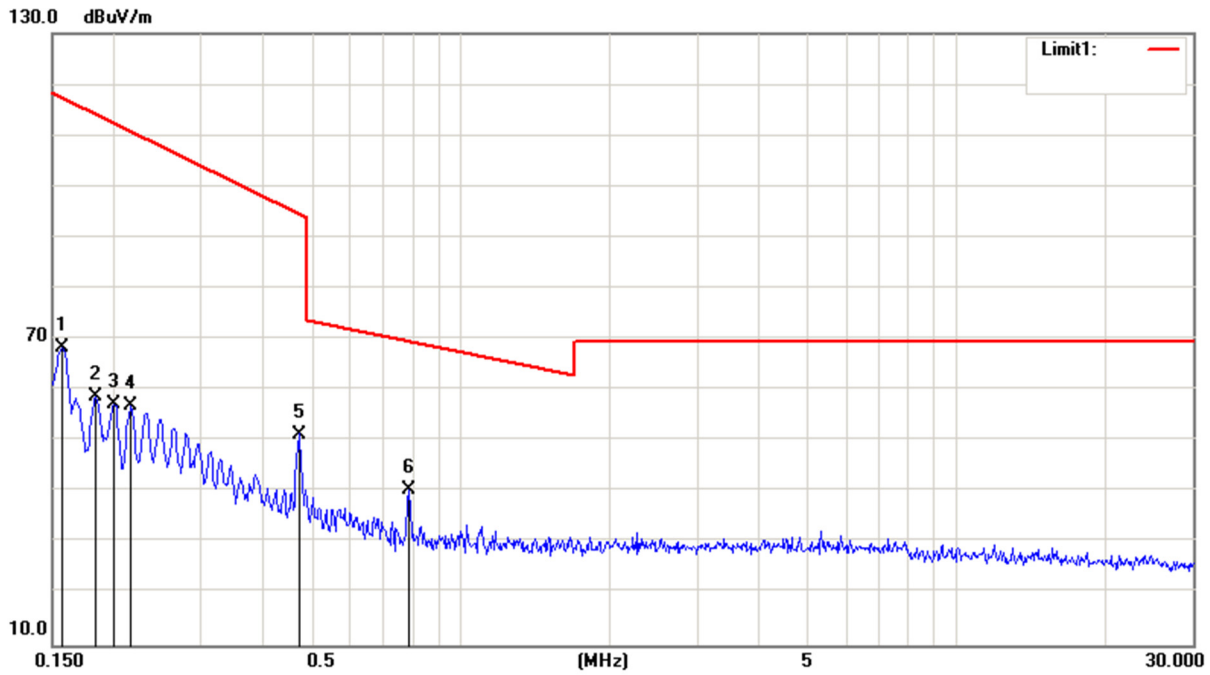
No.	Frequency (KHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0581	39.07	20.36	59.43	124.94	-65.51	peak
2	0.0837	43.91	20.16	64.07	123.10	-59.03	peak
3	0.1006	41.64	20.37	62.01	121.88	-59.87	peak
4	0.1132	40.40	20.48	60.88	120.97	-60.09	peak
5	0.1234	39.26	20.53	59.79	120.23	-60.44	peak
6	0.1317	37.91	20.54	58.45	119.64	-61.19	peak

Note:

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

Test Mode :	TX Mode Coxial polarity



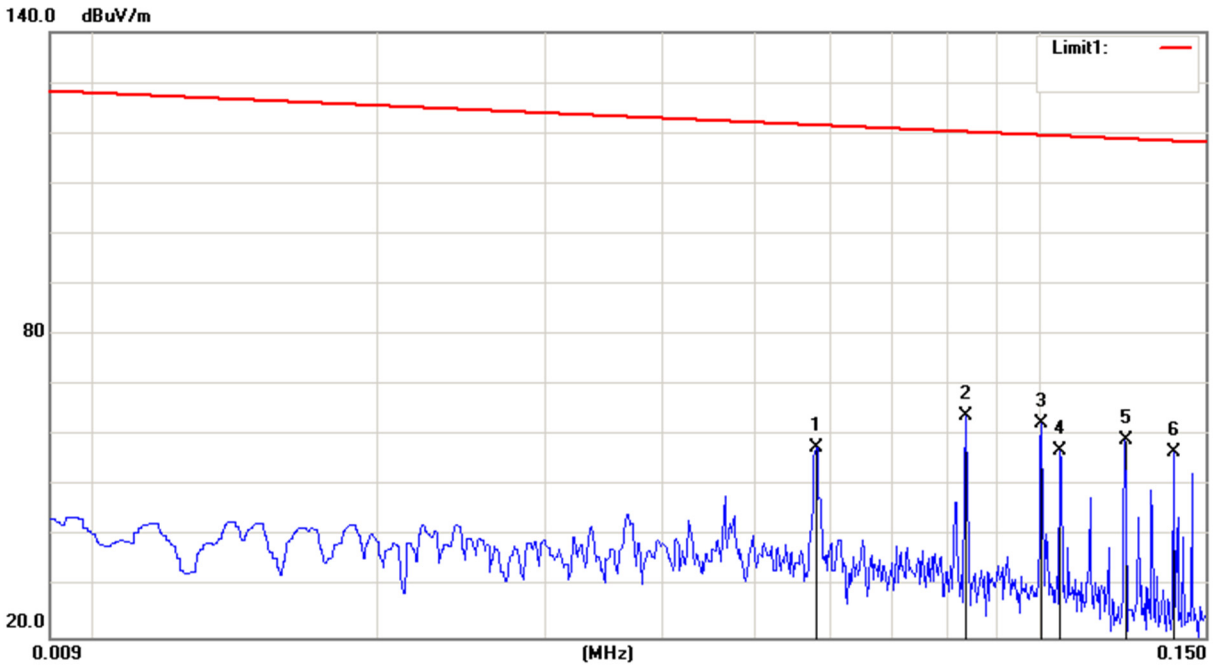
No.	Frequency (KHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1565	48.06	20.35	68.41	117.85	-49.44	peak
2	0.1835	38.31	20.33	58.64	115.90	-57.26	peak
3	0.1997	36.84	20.32	57.16	114.74	-57.58	peak
4	0.2162	36.69	20.31	57.00	113.55	-56.55	peak
5	0.4711	31.30	20.10	51.40	95.16	-43.76	peak
6	0.7835	20.40	19.94	40.34	71.17	-30.83	peak

Note:

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

Test Mode :	TX Mode coplanar polarity



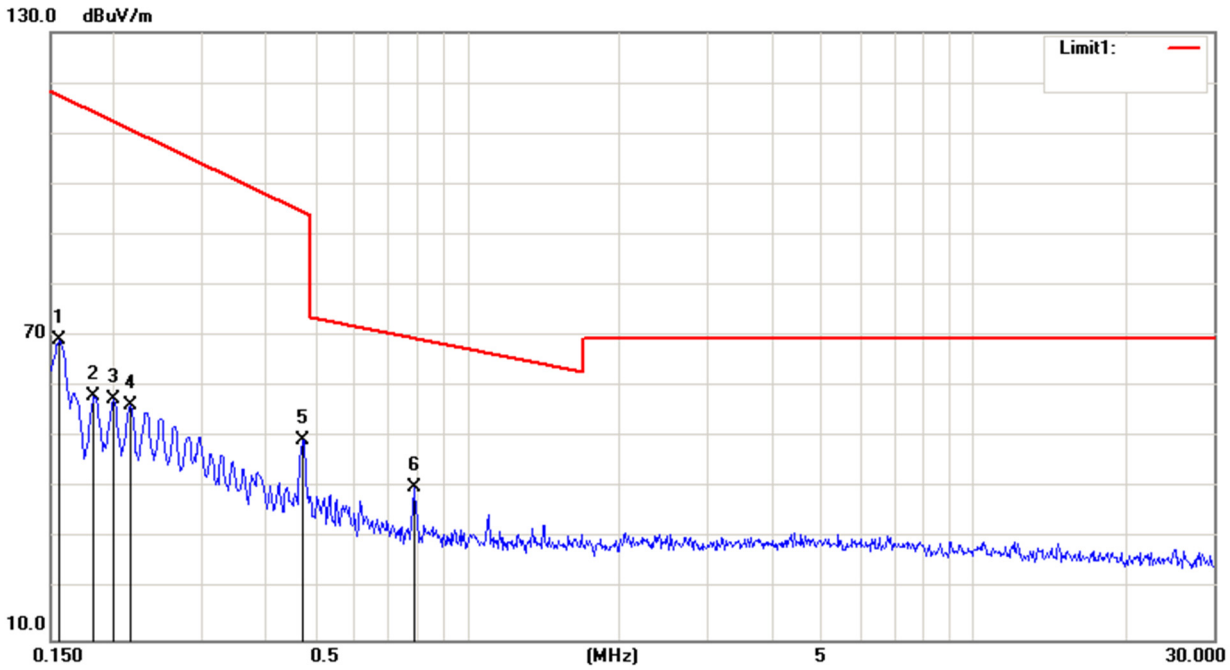
No.	Frequency (KHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0582	37.23	20.36	57.59	124.94	-67.35	peak
2	0.0837	43.75	20.16	63.91	123.10	-59.19	peak
3	0.1006	42.22	20.37	62.59	121.88	-59.29	peak
4	0.1054	36.61	20.41	57.02	121.54	-64.52	peak
5	0.1234	38.60	20.53	59.13	120.24	-61.11	peak
6	0.1389	36.35	20.47	56.82	119.12	-62.30	peak

Note:

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

Test Mode :	TX Mode coplanar polarity



No.	Frequency (KHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1556	48.99	20.36	69.35	117.92	-48.57	peak
2	0.1825	37.96	20.33	58.29	115.98	-57.69	peak
3	0.1997	37.10	20.32	57.42	114.74	-57.32	peak
4	0.2151	36.18	20.31	56.49	113.62	-57.13	peak
5	0.4736	29.36	20.10	49.46	94.98	-45.52	peak
6	0.7835	20.18	19.94	40.12	71.17	-31.05	peak

Note:

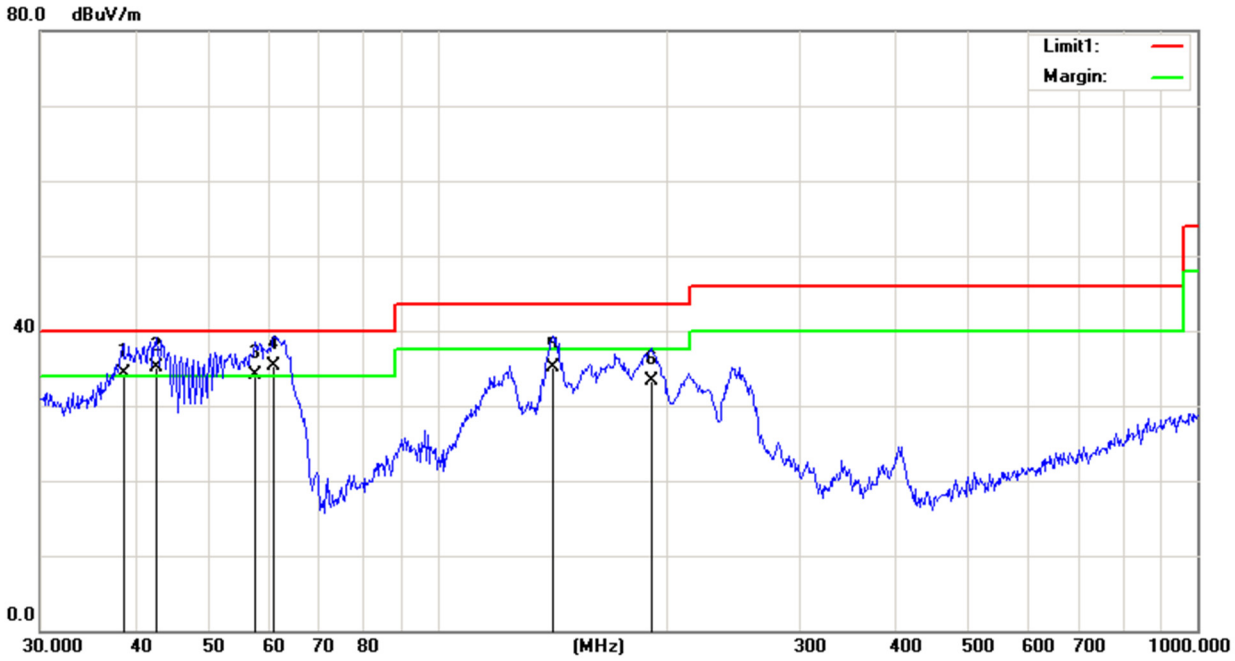
Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

5.7 TEST RESULT- 30MHz TO 1000MHz

Test Mode :	TX Mode

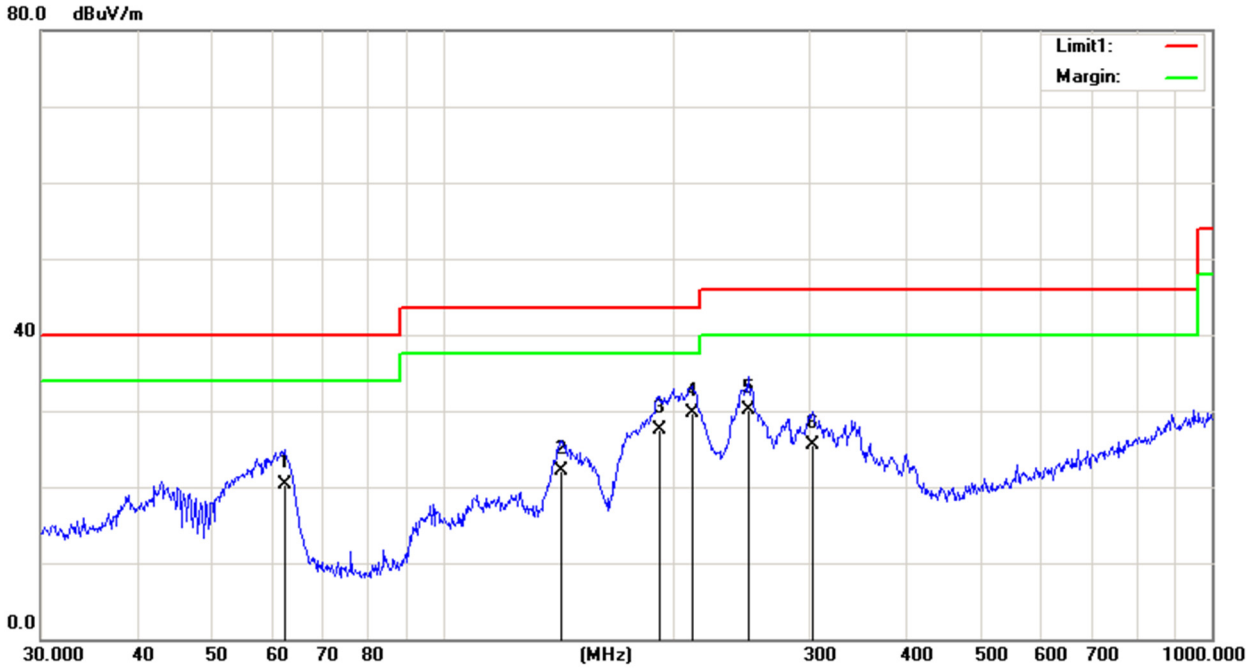
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	38.6160	47.26	-13.02	34.24	40.00	-5.76	QP
2	42.6000	48.54	-13.44	35.10	40.00	-4.90	QP
3	57.5938	46.88	-12.78	34.10	40.00	-5.90	QP
4	60.9176	48.12	-12.87	35.25	40.00	-4.75	QP
5	141.8262	47.88	-12.76	35.12	43.50	-8.38	QP
6	191.0738	44.76	-11.45	33.31	43.50	-10.19	QP

Test Mode :	TX Mode

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.2128	36.09	-15.74	20.35	40.00	-19.65	QP
2	142.3243	35.20	-13.04	22.16	43.50	-21.34	QP
3	191.7450	36.96	-9.49	27.47	43.50	-16.03	QP
4	210.7860	38.58	-8.89	29.69	43.50	-13.81	QP
5	249.4250	36.09	-6.07	30.02	46.00	-15.98	QP
6	302.4812	32.17	-6.72	25.45	46.00	-20.55	QP

6.20DB BANDWIDTH TEST

6.1LIMIT

The field strength of any emission appearing between the band edges and out of band shall be attenuated at least 20DdB below the level of the unmodulated carrier or to the general limits in
Section 15.209

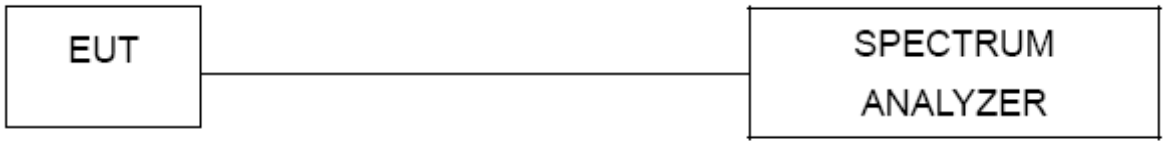
6.2TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting : RBW= 300 Hz, VBW=1 kHz, Sweep time = Auto.

6.3MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2021/05/24
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

6.4TEST SETUP

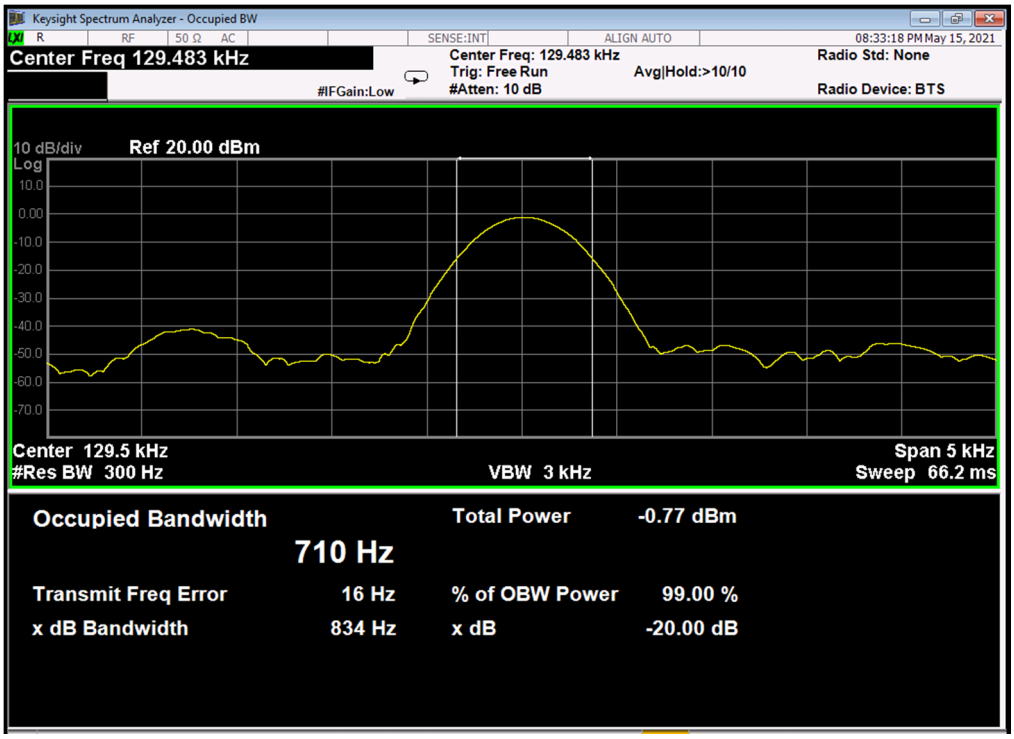


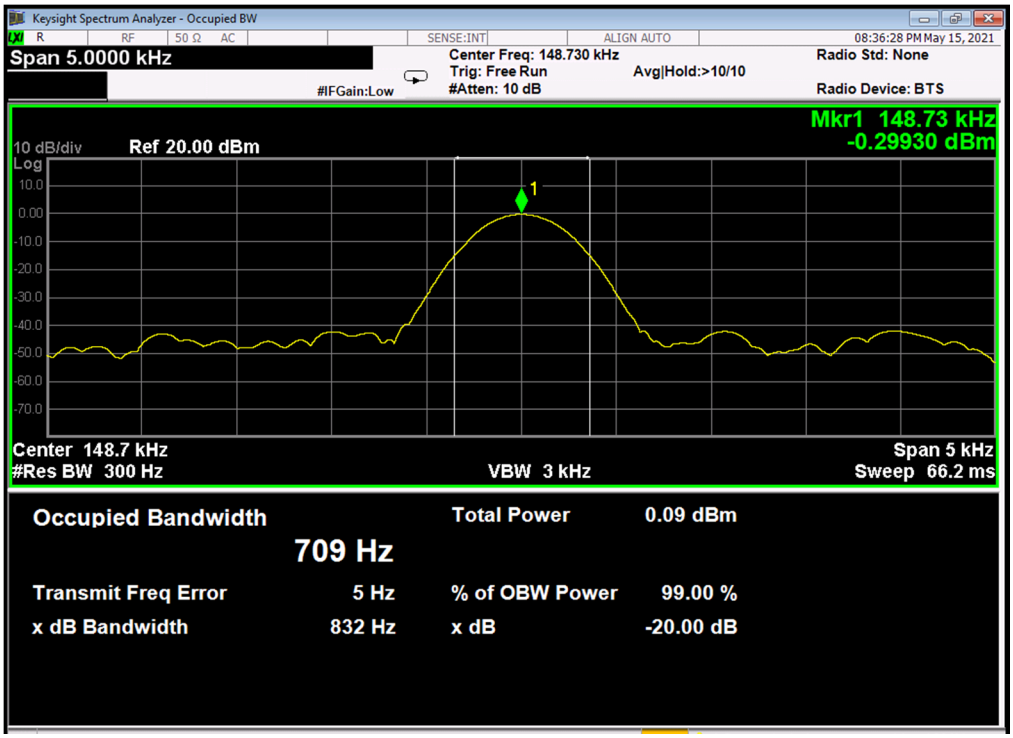
6.5EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

6.6TESTRESULTS

CHARGING MODE			
Frequency (kHz)	20 dB bandwidth (kHz)	99%OBW (kHz)	Result
129.5	0.834	0.710	PASS
148.7	0.832	0.709	PASS





END OF TEST REPORT