

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT



Applicant: Wacom Co., Ltd.
2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148 Japan
Manufacturer: Wacom Co., Ltd.
2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148 Japan
Product Name: Creative Pen Tablet
Brand Name: Wacom
Model No.: PTK470
Family Model No.: PTK470*****(* may be alphanumeric/symbol or blank)
Model Difference: For marketing purpose
Report Number: TERF2406001823E2
FCC ID HV4PTK470
Date of EUT Received: May 27, 2024
Date of Test: July 8, 2024~August 7, 2024
Issue Date: September 13, 2024

Arno Hsieh

Approved By

Arno Hsieh

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT comply with FCC rule part §15C.

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2406001823E2	00	Original	Aug. 22, 2024	Candice Li	
TERF2406001823E2	01	Updated FCC Rule Part	Sep. 13, 2024	Candice Li	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.
And are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).

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1 GENERAL INFORMATION

1.1 Product Description

Product Name:	Creative Pen Tablet
Brand Name:	Wacom
Model No.:	PTK470
Family Model No.:	PTK470*****(* may be alphanumeric/symbol or blank)
Model Difference:	For marketing purpose
EUT Series No.:	4EHS1J1000095
Power Supply:	3.7 Vdc from Rechargeable Battery or 5 Vdc from USB Port
Test Software (Name/Version)	Default

1.2 RF Specification

Technology:	EMR
Operating Frequency	666.67kHz, 531.25kHz, 562.5kHz, 593.75kHz
FCC Transmit Power	6.79 dBuV/m at 30m.
Number of Channels	4
Antenna Type	Coil

Note: Antenna information is provided by the applicant.

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1.3 Test Methodology

FCC Part 15, Subpart C

ANSI C63.10:2013

1.4 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation number
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027
		SAC 2	
		SAC 3	
		Conduction 1	
		Conducted 1	
		Conducted 2	
		Conducted 3	
		Conducted 4	
		Conducted 5	
		Conducted 6	
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028
		SAC C	
		SAC D	
		SAC G	
		Conducted A	
		Conducted B	
		Conducted C	
		Conducted D	
		Conducted E	
		Conducted F	
		Conducted G	
Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.			

1.5 Special Accessories

There is no special accessory used while test was conducted.

1.6 Equipment Modifications

There was no modification incorporated into the EUT.

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2 SYSTEM TEST CONFIGURATION

2.1 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.

2.2 EUT Exercise

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

2.3 Test Procedure

2.3.1 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for radiated emissions, measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

2.3.2 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

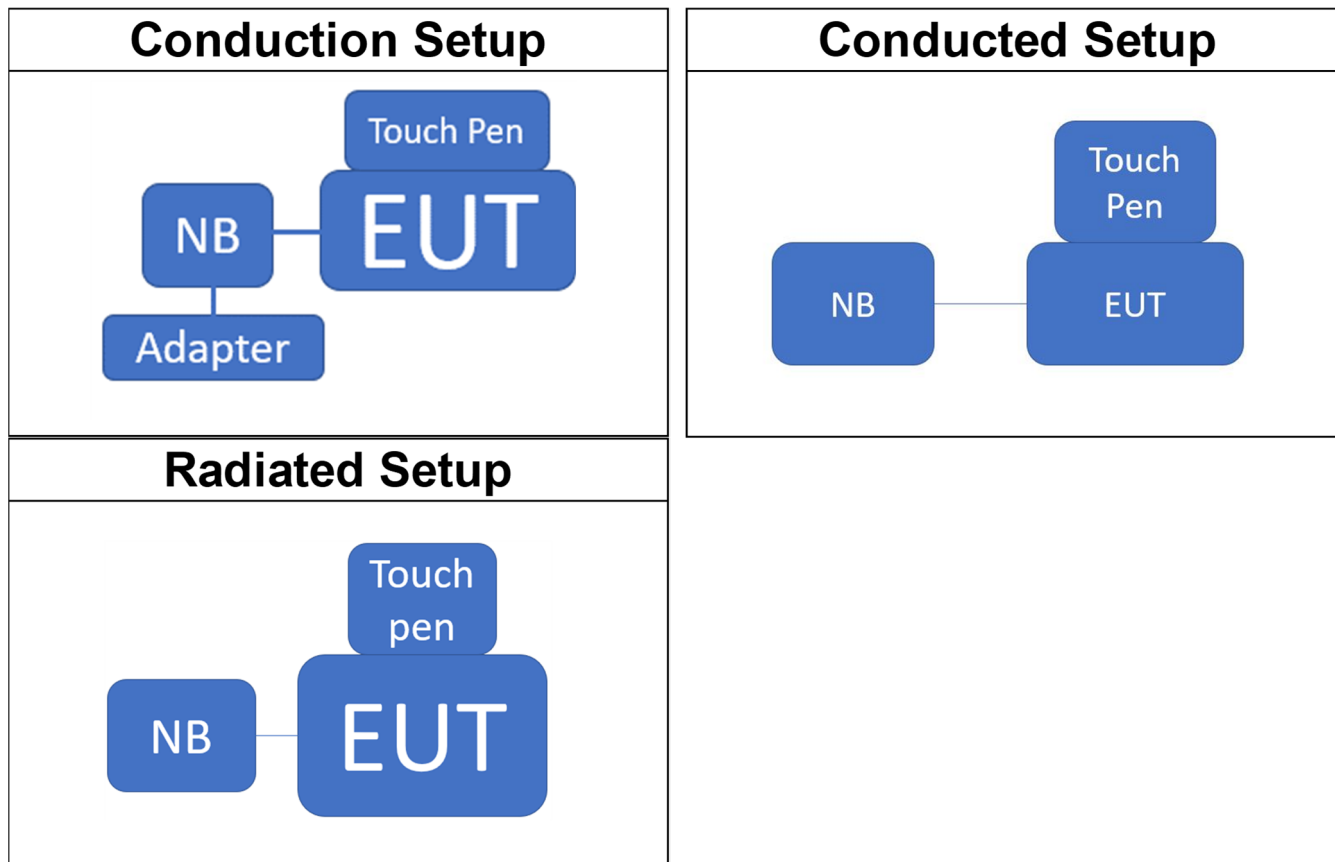
Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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2.4 Test Configuration



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2.5 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	HP	HSN-Q35C-4	N/A	N/A	N/A
Adapter	HP	TPN-LA16	N/A	N/A	N/A
Touch Pen	Wacom	ACP-500-02	N/A	N/A	N/A
Touch Pen	Wacom	ACP-501E-00	N/A	N/A	N/A
Touch Pen	Wacom	CP-923-031B-2	N/A	N/A	N/A
USB Cable	ACON	STJ-A434	N/A	N/A	N/A
Conducted Emission Test Site: Conducted C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L420	S0011721	N/A	N/A
Touch Pen	Wacom	ACP-500-02	N/A	N/A	N/A
Touch Pen	Wacom	ACP-501E-00	N/A	N/A	N/A
Touch Pen	Wacom	CP-923-031B-2	N/A	N/A	N/A
USB Cable	ACON	STJ-A434	N/A	N/A	N/A
Radiated Emission Test Site: SAC C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	HP	HSN-Q35C-4	N/A	N/A	N/A
Touch Pen	Wacom	ACP-500-02	N/A	N/A	N/A
Touch Pen	Wacom	ACP-501E-00	N/A	N/A	N/A
Touch Pen	Wacom	CP-923-031B-2	N/A	N/A	N/A
USB Cable	ACON	STJ-A434	N/A	N/A	N/A

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3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.209	Radiated Emission Limits, general requirement	Compliant
§15.215 (c)	Emission Bandwidth	Compliant
§15.203	Antenna Requirement	Compliant

4 DESCRIPTION OF TEST MODES

The EUT stay in continuous transmitting mode. The frequency is the default channel to test, where it is the only manipulative channel as this application supports.

The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty		
AC Power Line Conducted Emission	+/-	1.54	dB
Frequency Stability	+/-	1.48	Hz
Emission Bandwidth	+/-	1.38	Hz
Temperature	+/-	0.6	°C
Humidity	+/-	3	%
DC / AC Power Source	+/-	1	%

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	1.89 dB	9kHz~30MHz
	+/-	4.15 dB	30MHz - 1000MHz
	+/-	3.43 dB	1GHz - 18GHz
	+/-	3.86 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	1.89 dB	9kHz~30MHz
	+/-	4.02 dB	30MHz - 1000MHz
	+/-	3.43 dB	1GHz - 18GHz
	+/-	3.86 dB	18GHz - 40GHz
Radiated Spurious Emission	+/-	2 dB	33GHz-50GHz
	+/-	1.59 dB	50GHz-60GHz
	+/-	1.7 dB	60GHz-90GHz
	+/-	1.64 dB	90GHz-140GHz
	+/-	3.83 dB	140GHz-220GHz

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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6 MEASUREMENT EQUIPMENT USED

6.1 Conducted AC Power line

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Coaxial Cable	EC Lab	RF-HY-CAB-250	RF-HY-CAB-250-01	03/27/2024	03/26/2025
EMI Test Receiver	R&S	ESCI	101342	04/29/2024	04/28/2025
LISN	SCHWARZBECK Mess-Elektronik	NSLK8127	973	04/22/2024	04/21/2025
Pulse Limiter	EC Lab	VTSD 9561F-N	485	03/27/2024	03/26/2025
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R

6.2 Emission Bandwidth

Conducted Emission Test Site: Conducted C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
DC Block	PASTERNAK	PE8210	RF155	11/15/2023	11/14/2024
Spectrum Analyzer	KEYSIGHT	N9010B	MY59071573	05/24/2024	05/23/2025
H-Loop Near Field Antenna	LANGER EMV- Technik	LF-R 400	02-1597	N.C.R	N.C.R

6.3 Radiated Measurement

Radiated Emission Test Site: SAC C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
3m Site NSA	SGS	966 chamber C	N/A	03/02/2024	03/01/2025
Active Loop Antenna	COM-POWER	AL-130R	10160105	12/04/2023	12/03/2024
Broadband Antenna	SCHWARZBECK	VULB 9168	9168-300	11/02/2023	11/01/2024
Coaxial Cable	Huber+Suhner	RG 214/U	W22.03	11/15/2023	11/14/2024
EMI Test Receiver	R&S	ESCI	101342	04/29/2024	04/28/2025
Pre-Amplifier	EMC Instruments	EMC330	980096	11/15/2023	11/14/2024
Spectrum Analyzer	KEYSIGHT	N9010A	MY57120290	04/10/2024	04/09/2025
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R

NOTE: N.C.R refers to Not Calibrated Required.

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7 CONDUCTED EMISSIONS TEST

7.1 Limitation

According to section 15.207(a) Conducted Emission Limits as following.

Frequency range MHz	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

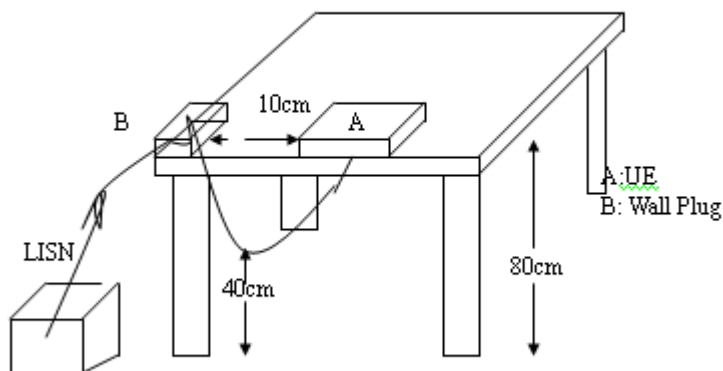
Note

- 1.The lower limit shall apply at the transition frequencies
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

7.2 EUT Setup:

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

7.3 Test SET-UP (Block Diagram of Configuration)



7.4 Measurement Procedure

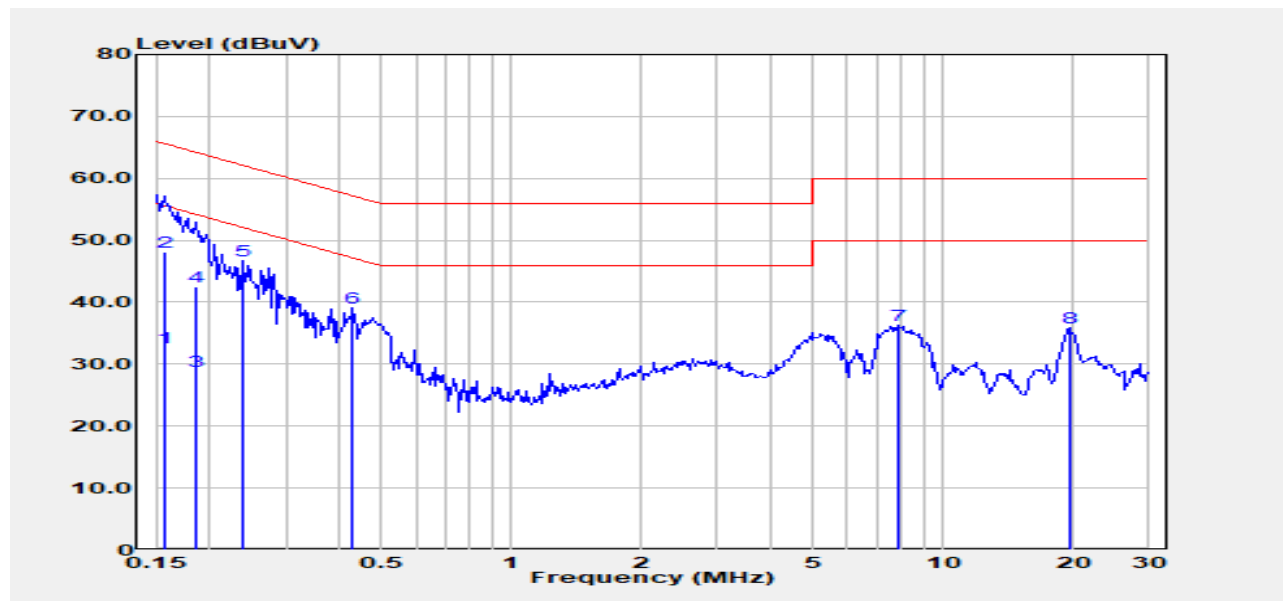
1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

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7.5 Measurement Result:

Report Number	:TERF2406001823E2	Test Site	:Conduction C
Test Mode	:EMR	Test Date	:2024-07-15
Power	:120V/60Hz	Temp./Humi.	:23.4°C/50%
Probe	:L1	Engineer	:Howard Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.157	Average	21.90	10.69	32.59	55.65	-23.06
0.157	QP	37.40	10.69	48.09	65.65	-17.56
0.185	Average	18.20	10.68	28.88	54.24	-25.35
0.185	QP	31.80	10.68	42.48	64.24	-21.75
0.237	Peak	36.00	10.67	46.67	62.19	-15.52
0.430	Peak	28.41	10.64	39.05	57.26	-18.21
7.843	Peak	25.29	10.97	36.26	60.00	-23.74
19.622	Peak	24.80	11.15	35.94	60.00	-24.06

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Report Number :TERF2406001823E2

Test Site :Conduction C

Test Mode :EMR

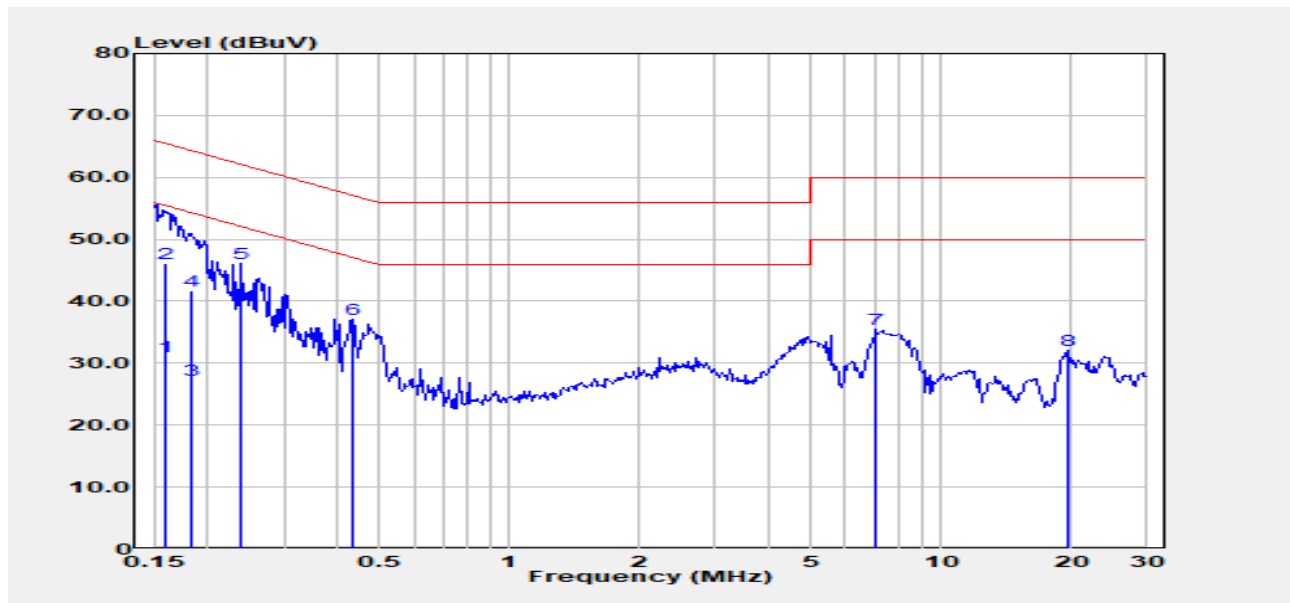
Test Date :2024-07-15

Power :120V/60Hz

Temp./Humi. :23.4℃/50%

Probe :N

Engineer :Howard Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.159	Average	20.40	10.67	31.07	55.51	-24.44
0.159	QP	35.40	10.67	46.07	65.51	-19.44
0.184	Average	16.50	10.67	27.17	54.31	-27.14
0.184	QP	31.10	10.67	41.77	64.31	-22.54
0.239	Peak	35.51	10.66	46.17	62.12	-15.95
0.434	Peak	26.46	10.62	37.08	57.18	-20.10
7.083	Peak	24.47	10.99	35.46	60.00	-24.54
19.789	Peak	20.84	11.24	32.08	60.00	-27.92

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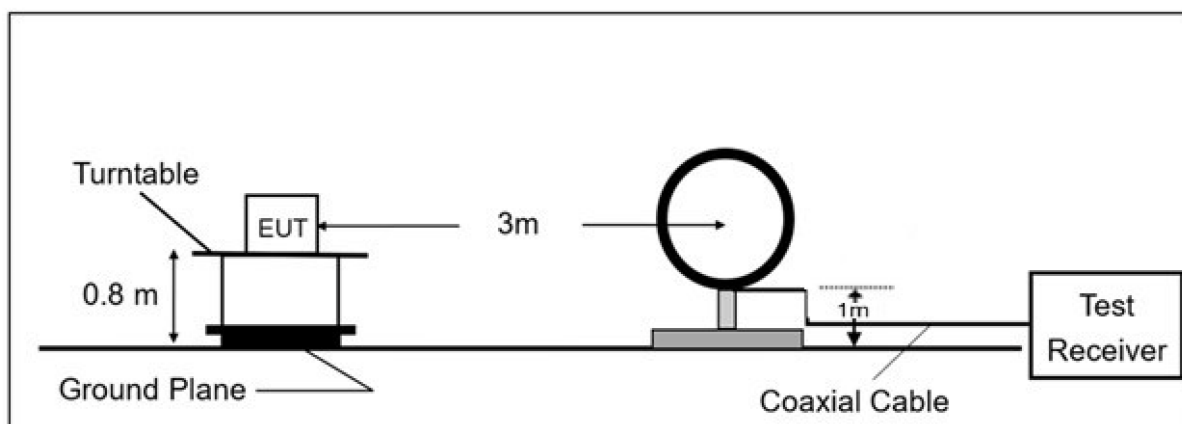
8 RADIATED EMISSION TEST

8.1 Measurement Procedure

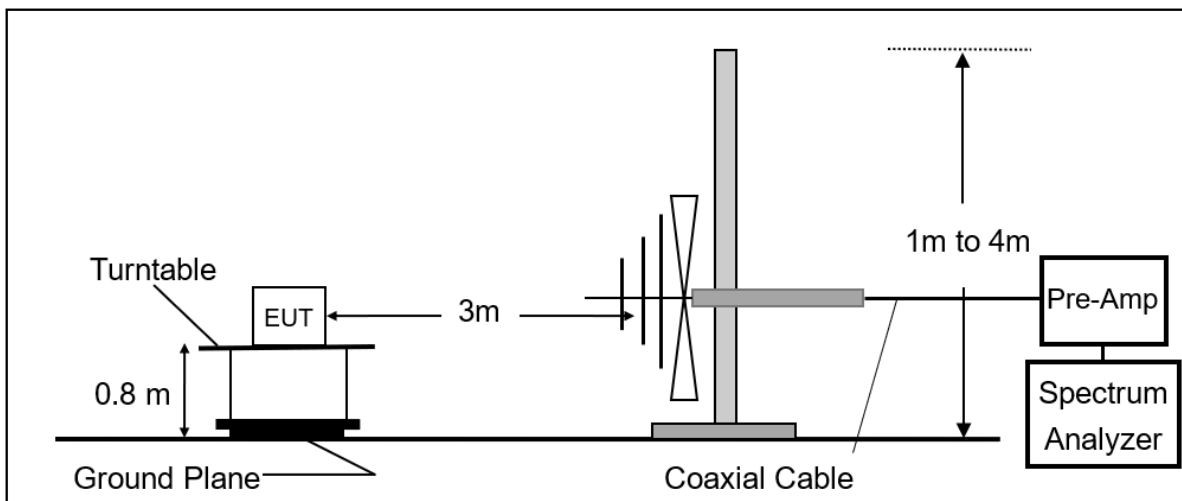
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

8.2 Test Setup

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



(B) Radiated Emission Test Set-Up, Frequency From 30MHz to 1000MHz.



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8.3 Applicable Standard

The field strength of any emissions appearing outside of operation frequency shall not exceed the general radiated emission limits in section 15.209 as below.

Frequency (MHz)	Field strength (μV/m)	Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Note:

1. Emission level in $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$
2. Distance extrapolation factor = $40 \log (\text{required distance/ test distance})$ (dB)
3. $20 \cdot \log(30\mu\text{V/m}) + 40\text{dB} = 69.54 \text{ dB}\mu\text{V/m}$
4. The lower limit shall apply at the transition frequencies.
5. The measurement was undertaken in closer distance at 3m, where extrapolation factor is offset to convert the limit of the measurement.
6. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of §15.205.
7. The general radiated emission limits in §15.209 apply for the spurious emission generate from UE, except for the fundamental emission where the respective section specifies otherwise.
8. Actual FS($\text{dB}\mu\text{V/m}$) = Spectrum. Reading level($\text{dB}\mu\text{V}$) + Factor(dB)
Factor(dB) = Antenna Factor(dB) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note:

1. The more stringent limit applies at the transition frequency.
2. Measurements are demonstrated in SAC with distance at 3m.
3. Actual FS($\text{dB}\mu\text{V/m}$) = Spectrum. Reading level($\text{dB}\mu\text{V}$) + Factor(dB)
Factor(dB) = Antenna Factor(dB) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

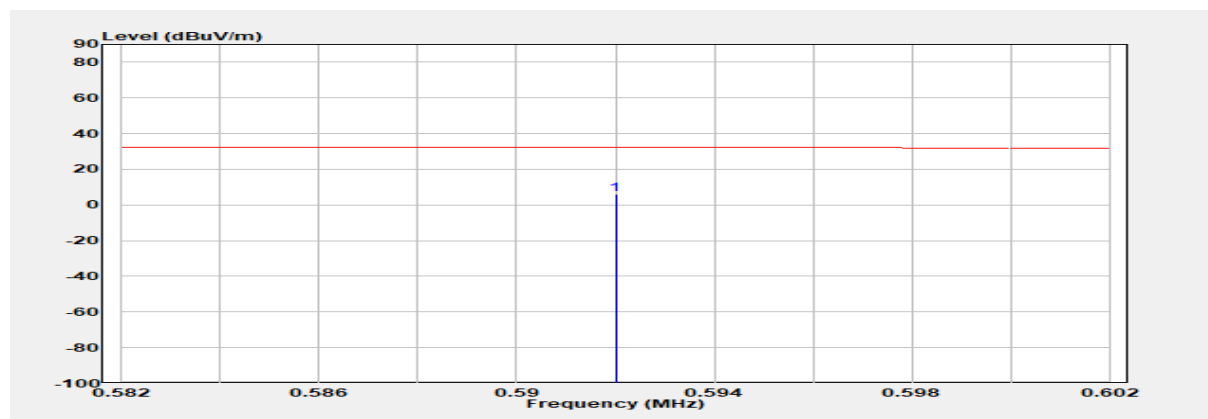
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8.4 Test Result

8.4.1 Field Strength of Fundamental Emission

Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Main	Antenna Pol.	:Vertical
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual	Limit	Margin
MHz	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
0.593	Peak	32.74	-26.62	6.12	32.16	-26.04

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain – distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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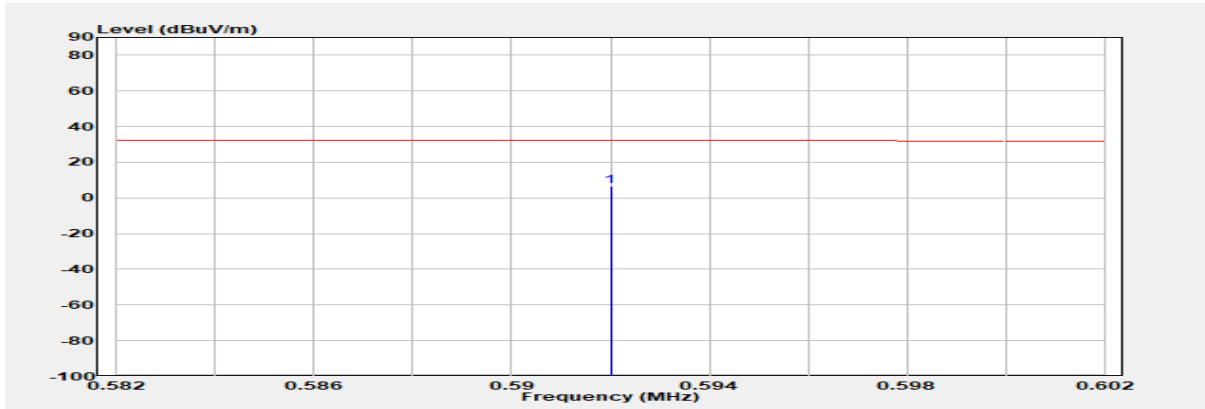
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Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Main	Antenna Pol.	:Horizontal
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level				
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
0.593	Peak	33.42	-26.62	6.79	32.16	-25.37

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain – distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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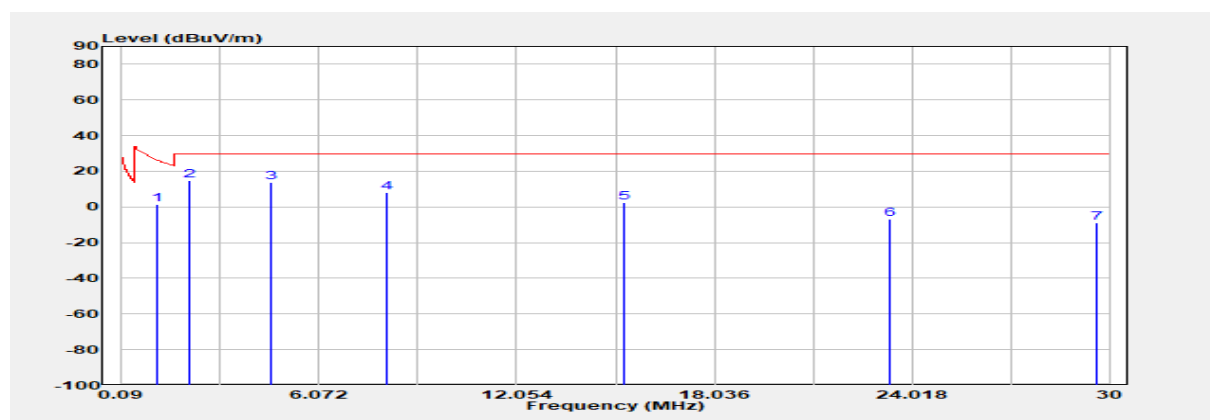
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8.4.2 Radiated Spurious Emission Below 30 MHz Result

Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Tx	Antenna Pol.	:Vertical
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual dBμV/m	Limit dBμV/m	Margin dB
1.187	Peak	27.59	-26.32	1.27	26.14	-24.86
2.124	Peak	40.70	-26.03	14.67	29.54	-14.87
4.606	Peak	39.37	-25.42	13.95	29.54	-15.59
8.106	Peak	32.95	-24.88	8.07	29.54	-21.47
15.284	Peak	27.04	-24.61	2.43	29.54	-27.11
23.330	Peak	18.82	-25.42	-6.60	29.54	-36.14
29.611	Peak	18.14	-26.94	-8.79	29.54	-38.33

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain – distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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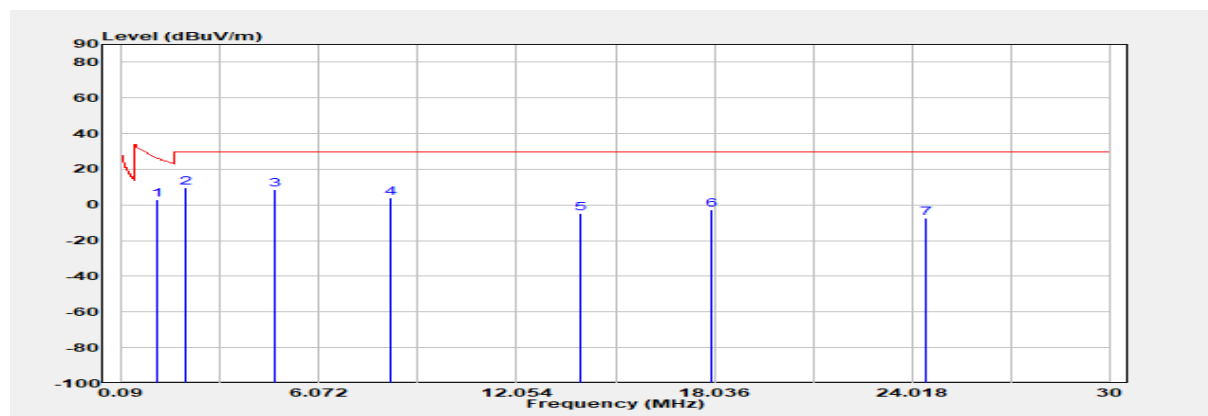
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Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Tx	Antenna Pol.	:Horizontal
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level				
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
1.187	Peak	29.39	-26.32	3.08	26.14	-23.06
2.034	Peak	35.82	-26.05	9.76	29.54	-19.78
4.726	Peak	34.03	-25.40	8.63	29.54	-20.91
8.226	Peak	28.65	-24.86	3.79	29.54	-25.75
13.998	Peak	19.74	-24.60	-4.87	29.54	-34.41
17.976	Peak	21.72	-24.61	-2.89	29.54	-32.43
24.437	Peak	18.53	-25.69	-7.15	29.54	-36.69

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain — distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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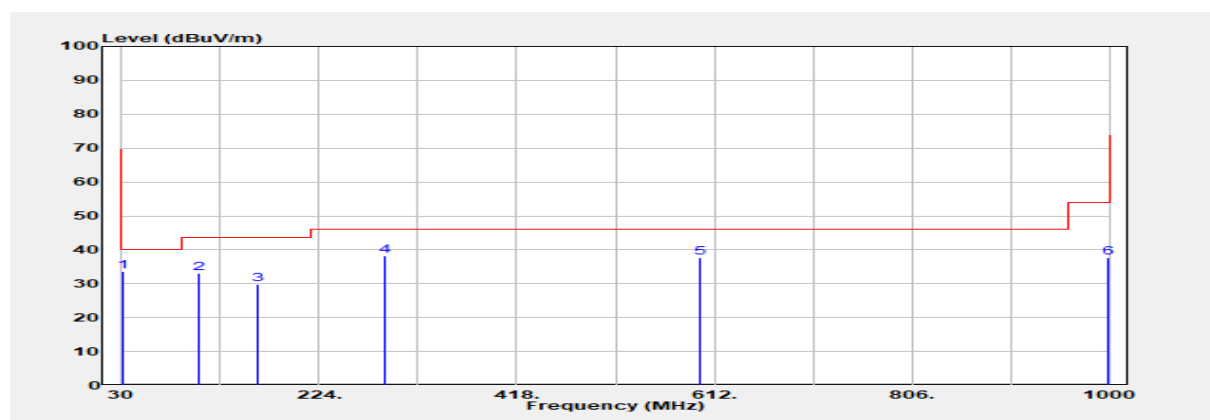
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8.4.3 Radiated Spurious Emission Above 30MHz Result

Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Tx	Antenna Pol.	:Vertical
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual dBμV/m	Limit dBμV/m	Margin dB
31.940	QP	50.82	-17.32	33.50	40.00	-6.50
106.630	Peak	52.74	-19.74	33.00	43.50	-10.50
162.890	Peak	45.70	-15.86	29.84	43.50	-13.66
288.020	Peak	53.26	-15.14	38.12	46.00	-7.88
598.420	Peak	44.92	-7.24	37.69	46.00	-8.31
999.030	Peak	38.66	-0.92	37.74	54.00	-16.26

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain – distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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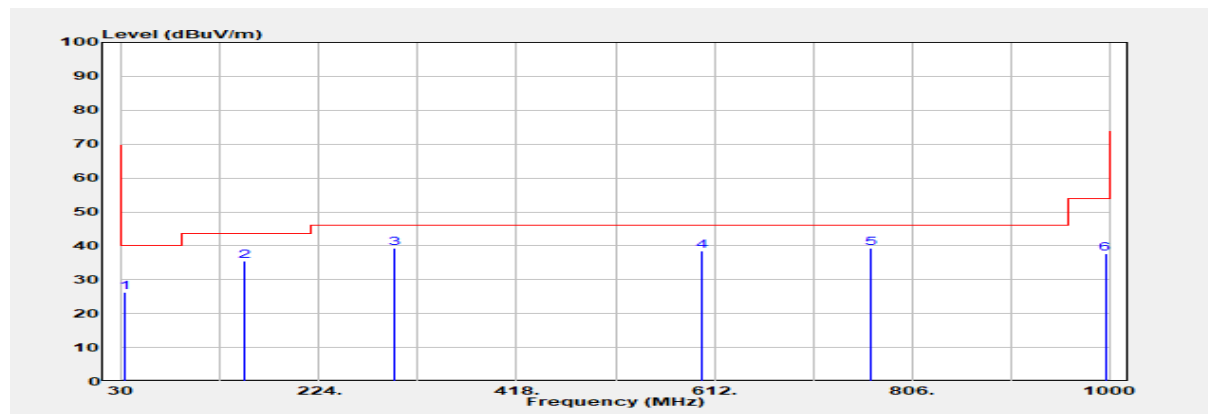
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Report Number	:TERF2406001823E2	Test Site	:SAC C
Operation Mode	:EMR	Test Date	:2024-07-15
Test Frequency	:593.75 kHz	Temp./Humi.	:23.5°C/54%
Test Mode	:Tx	Antenna Pol.	:Horizontal
EUT Pol	:E2 Plane	Engineer	:Howard Huang



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual dBμV/m	Limit dBμV/m	Margin dB
32.910	QP	43.90	-17.56	26.34	40.00	-13.66
151.250	Peak	50.94	-15.54	35.40	43.50	-8.10
298.690	Peak	54.59	-15.22	39.37	46.00	-6.63
599.390	Peak	45.69	-7.22	38.47	46.00	-7.53
765.260	Peak	42.93	-3.70	39.22	46.00	-6.78
996.120	Peak	38.62	-0.95	37.67	54.00	-16.33

Actual level = Reading level + Factor

Factor = Antenna factor + cable loss – Pre_Amplifier Gain – distance factor

Test distance= 3m

For Actual level and limit:

Field strength (dBuV/m) at 300m, within the band 9 kHz - 490 kHz.

Field strength (dBuV/m) at 30m, within the band 490 kHz - 30 MHz.

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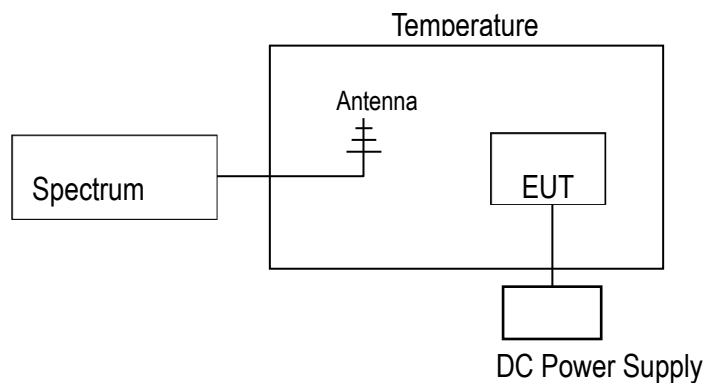
9 20 dB OCCUPIED BANDWIDTH MEASUREMENT

9.1 Standard Applicable:

§2.1049 & §15.215 (c)

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

9.2 Test SET-UP (Block Diagram of Configuration)



9.3 Measurement Procedure

20dB bandwidth

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak mode.
2. 20dB Bandwidth the resolution bandwidth of 1kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.

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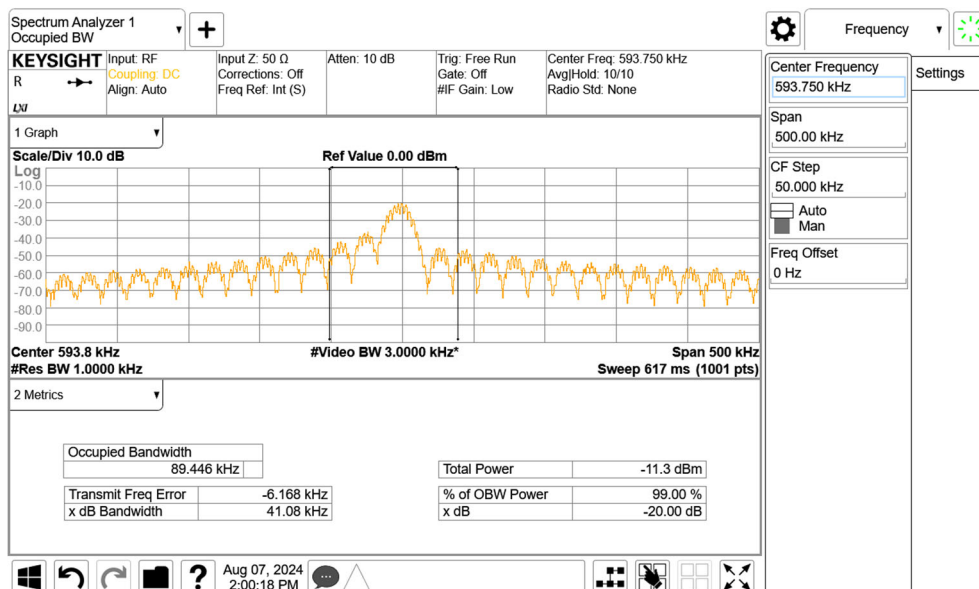
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9.4 Measurement Result

20dB Bandwidth(kHz)
41.08



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10 ANTENNA REQUIREMENT

10.1 Standard Applicable:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

10.2 Antenna Connected Construction:

The antenna complies with this requirement and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

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