

**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:** Pen Tablet

**Brand Name:** Wacom

**Model No.:** CTC4110WL

**Model Difference:** N/A

**Marketing Name:** CTC4110WL\*\*\*\*\* ( "\*" may be English Alphabet a to z or digital numeral serial no, 0-9 or blank)

**Report Number:** TERF2302000198ER

**FCC ID** HV4CTC4110WL

**Date of EUT Received:** January 16, 2023

**Date of Test:** February 08, 2023 ~ March 03, 2023

**Issue Date:** March 30, 2023

Approved By

CHUN-CHIEH, CHEN

**CHUN-CHIEH, CHEN**

**We hereby certify that:**

The above equipment was verified by SGS Taiwan Ltd. Central RF Lab. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

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

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Revision History					
Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2302000198ER	00	Original.	March 30, 2023	Tiffany Kao	

**Note:**

- 1、The remark "" indicates modification of the report upon requests from certification body.

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SGS Taiwan Ltd.

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# 1 GENERAL INFORMATION

## 1.1 Product Description

Product Name:	Pen Tablet
Brand Name:	Wacom
Model No.:	CTC4110WL
Model Difference:	N/A
Marketing Name:	CTC4110WL***** ( "*" may be English Alphabet a to z or digital numeral serial no, 0-9 or blank)
Hardware Version:	PWB-E545-B
Firmware Version:	BT (0x0013) / MCU (0x0008)
EUT Series No.:	2KHS1F1000011
Power Supply:	3.8Vdc from Rechargeable Battery or 5Vdc from USB Port
Test Software (Name/Version)	Default

## 1.2 RF specification

Operating Frequency	531.25kHz,562.5kHz,593.75kHz
Transmit Power	9.64 dBuV/m at 30m.
Number of Channels	3
Modulation Type	ASK
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	IC CAB identifier
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	TW3702
		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				
<p><b>Note:</b> 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.</p>				

### 1.5 Special Accessories

There is no other accessory attached. This is the worst case condition.

### 1.6 Equipment Modifications

There was no modification incorporated into the EUT.

### 1.7 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.

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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 Conducted Emissions

The EUT is a placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Radiated Emissions

The EUT is a 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 electric field radiated emissions above 1 GHz the EUT 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.

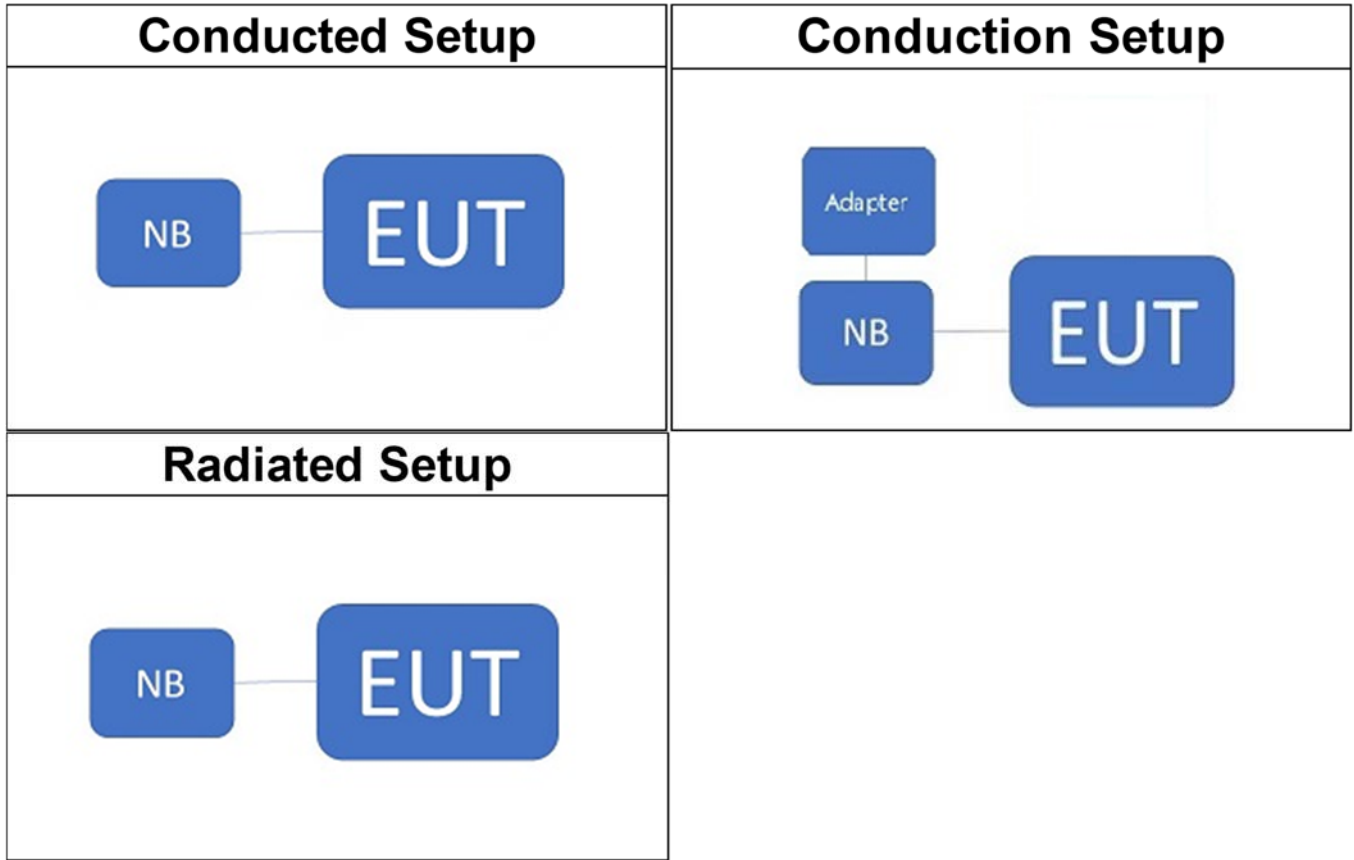
#### 2.3.3 Remarks:

1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of 3 meters.
3. Distance extrapolation factor = 40 log (required distance/ test distance) (dB);
4. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of §15.205.
5. 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.

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## 2.4 Test Configuration



## 2.5 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	PC-1S9NT5 19/07	N/A	N/A
Adapter	Lenovo	ADLX45YCC3D	N/A	N/A	N/A
Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	L480	PC-1S9NT5 19/07	N/A	N/A
Conducted Emission Test Site: Conducted 2					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	Lenovo	T440P	PC-014TAK	N/A	N/A
H-Loop Near Field Antenna	EMCI	LF-R 400	02-1637	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
§15.221(a)	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 with 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	+/- 2.32 dB
Frequency Stability	+/- 1.53 Hz
Emission Bandwidth	+/- 1.53 Hz
Temperature	+/- 0.7 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty		
<b>Polarization: Vertical</b>	+/- 2.8 dB	9kHz~30MHz
	+/- 4.82 dB	30MHz - 1000MHz
	+/- 4.37 dB	1GHz - 18GHz
	+/- 4.21 dB	18GHz - 40GHz
<b>Polarization: Horizontal</b>	+/- 2.8 dB	9kHz~30MHz
	+/- 4.54 dB	30MHz - 1000MHz
	+/- 4.37 dB	1GHz - 18GHz
	+/- 4.21 dB	18GHz - 40GHz

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

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## 6 MEASUREMENT EQUIPMENT USED

### 6.1 Emission from AC power line

AC Power-Line Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESR 7	102525	02/17/2022	02/16/2023
Pulse Limiter	SCHWARZBECK	VTSD 9561F-N	793	06/22/2022	06/21/2023
LISN	SCHWARZBECK	NSLK 8127	01040	08/23/2022	08/22/2023
Coaxial Cables	EMC Instruments Corp.	EMCCFD300-BM-BM-3000	161207	06/22/2022	06/21/2023
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R

### 6.2 Emission Bandwidth Measurement

Conducted Emission Test Site: Conducted 2					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071541	07/14/2022	07/13/2023
DC Block	Mini-Circuits	BLK-18-S+	1	12/13/2022	12/12/2023

### 6.3 Radiated Measurement

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/15/2022	08/14/2023
Loop Antenna	ETS.LINDGREN	6502	148045	10/05/2022	10/04/2023
PXA Spectrum Analyzer	Agilent	N9030A	MY53120760	04/27/2022	04/26/2023
EMI Test Receiver	R&S	ESCI 7	100759	08/22/2022	08/21/2023
Pre-Amplifier	HP	8447D	2944A07676	12/13/2022	12/12/2023
Attenuator	Mini-Circuit	BW-S10W2+	4	12/13/2022	12/12/2023
Coaxial Cable	Huber Suhner	SUCOFLEX 104PEA	MY4251/4PEA	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-500	221104	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-8000	221109	12/13/2022	12/12/2023
Site Cal	SGS	SAC 3	N/A	01/01/2023	12/31/2023
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R

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## 7 CONDUCTED EMISSIONS TEST

### 7.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

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

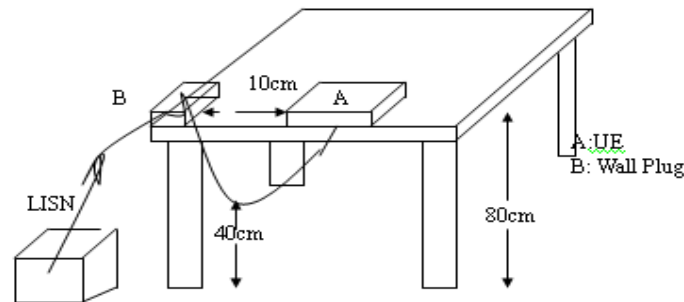
Note

- 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 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. Sweep frequency starting from 150 kHz to 30 MHz for phase L1.
4. Repeating the measurement as lists above for phase neutral.

### 7.3 Test SET-UP (Block Diagram of Configuration)



### 7.4 Measurement Result:

Note: Refer to next page for measurement data and plots.

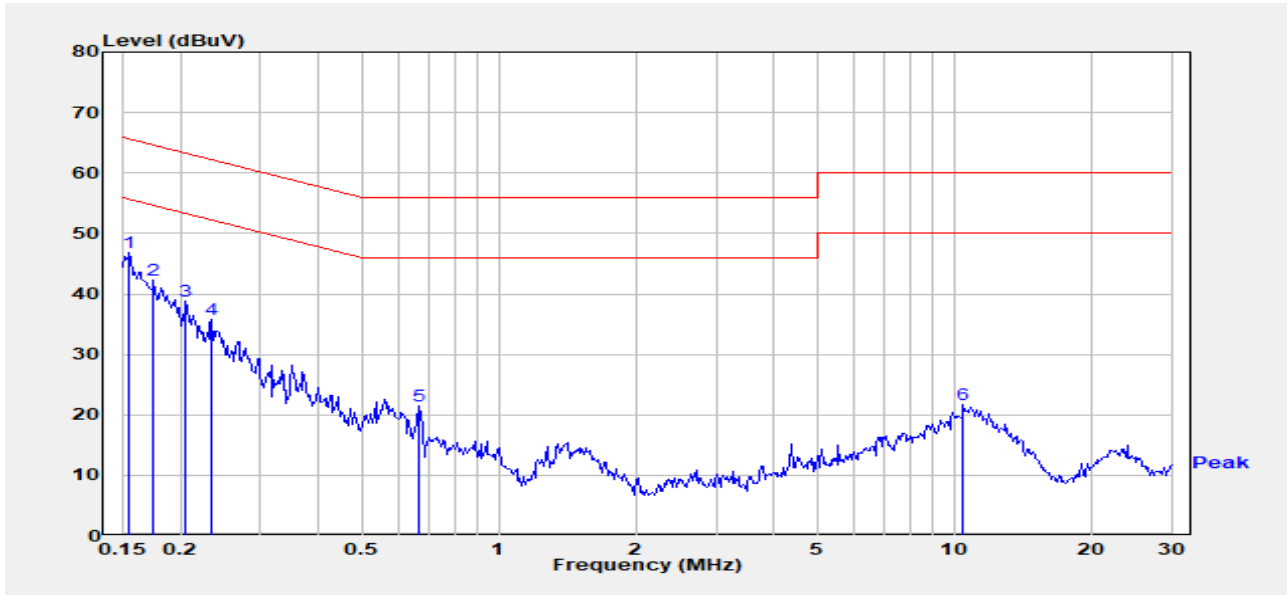
Note2: The \* reveals the worst-case results that closest to the limit.

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Report Number :TERF2302000198ER  
 Test Mode :Operation (EMR)  
 Power :120V/60Hz  
 Probe :L  
 Note :

Test Site :Conduction 1  
 Test Date :2023-02-08  
 Temp./Humi. :24.3/65  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V	Limit dB $\mu$ V	Margin dB
0.155	Peak	46.83	0.05	46.88	65.74	-18.86
0.175	Peak	42.27	0.05	42.32	64.72	-22.41
0.206	Peak	38.71	0.05	38.76	63.39	-24.62
0.234	Peak	35.75	0.05	35.80	62.30	-26.50
0.665	Peak	21.45	0.06	21.50	56.00	-34.50
10.477	Peak	21.24	0.36	21.60	60.00	-38.40

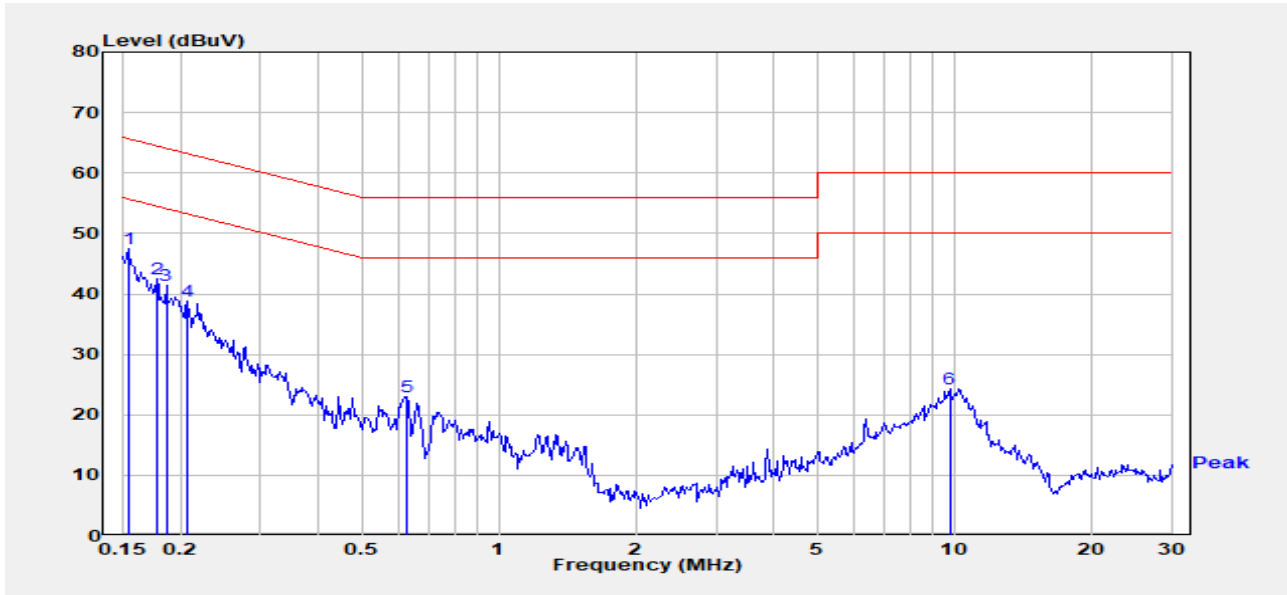
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Report Number :TERF2302000198ER  
 Test Mode :Operation (EMR)  
 Power :120V/60Hz  
 Probe :N  
 Note :

Test Site :Conduction 1  
 Test Date :2023-02-08  
 Temp./Humi. :24.3/65  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V	Limit dB $\mu$ V	Margin dB
0.153	Peak	47.42	0.05	47.47	65.81	-18.34
0.178	Peak	42.41	0.05	42.46	64.60	-22.14
0.186	Peak	41.27	0.05	41.32	64.21	-22.89
0.207	Peak	38.82	0.05	38.87	63.32	-24.46
0.626	Peak	23.01	0.05	23.06	56.00	-32.94
9.778	Peak	24.03	0.33	24.36	60.00	-35.64

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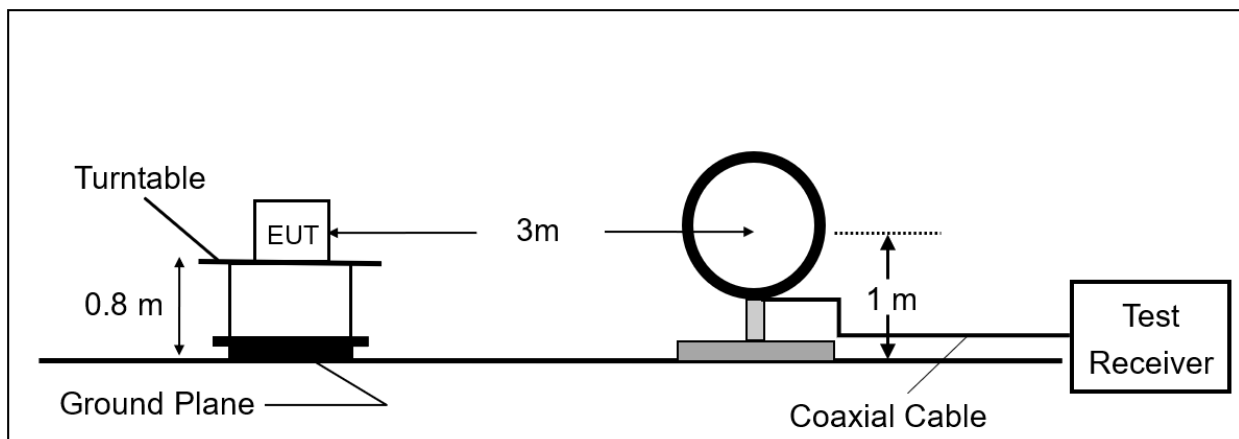
## 8 RADIATED EMISSION TEST

### 8.1 Measurement Procedure

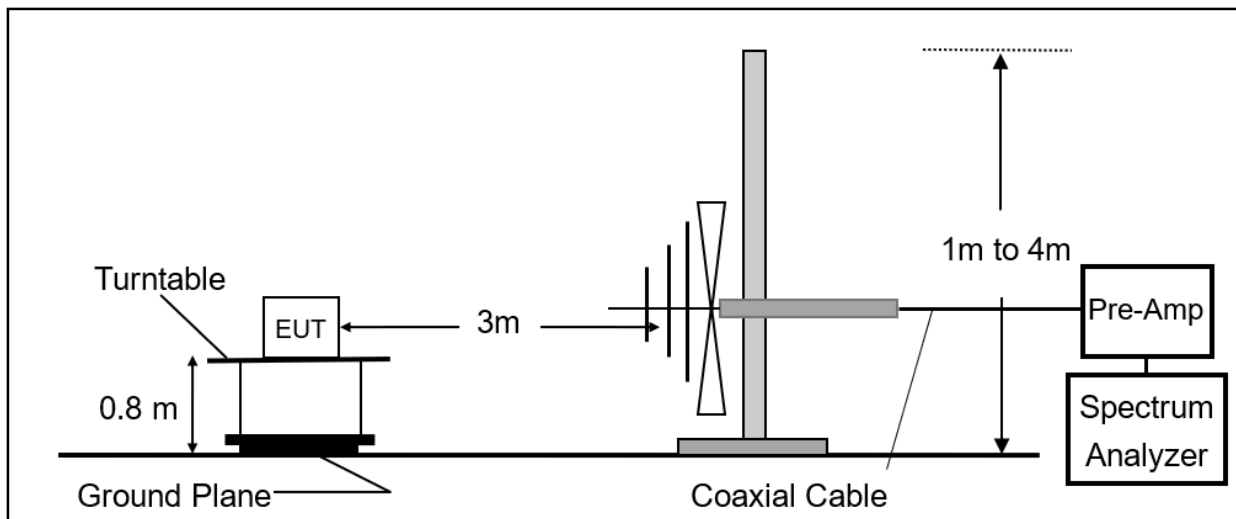
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

### 8.2 Test SET-UP (Block Diagram of Configuration)

(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 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

### 8.4 Field Strength of Fundamental Emission

#### 8.4.1 Limit

##### Carrier 562.5kHz

24000/562.5 (uV/m at 30m)=42.6667 uV/m at 30m =32.60 dBuV/m at 30m

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

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**Note:**

1. Emission level in  $\text{dB}\mu\text{V}/\text{m} = 20 \log (\mu\text{V}/\text{m})$
2. Distance extrapolation factor =  $40 \log (\text{required distance}/ \text{test distance})$  (dB)
3. The lower limit shall apply at the transition frequencies.
4. The measurement was undertaken in closer distance at 3m, where extrapolation factor is offset to convert the limit of the measurement.
5. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of §15.205.
6. 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.
7. Actual FS( $\text{dB}\mu\text{V}/\text{m}$ ) = Spectrum. Reading level( $\text{dB}\mu\text{V}$ ) + Factor(dB)  
Below 30 MHz of Factor(dB) = Antenna Factor( $\text{dB}\mu\text{V}/\text{m}$ ) + Cable Loss(dB) – Distance Factor(dB)  
Above 30 MHz of Factor(dB) = Antenna Factor( $\text{dB}\mu\text{V}/\text{m}$ ) + Cable Loss(dB) – Pre\_Amp Gain(dB)

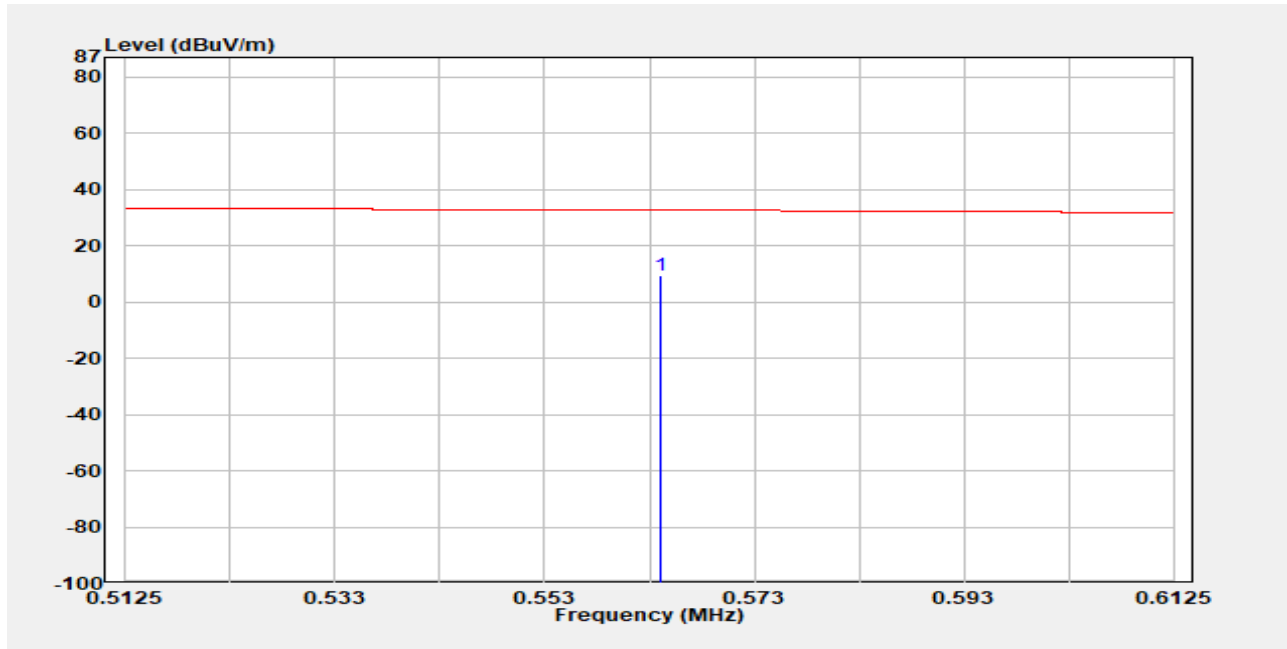
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### 8.5 Field Strength of Fundamental Emission

Report Number	:TERF2302000198ER	Test Site	:SAC 3
Operation Mode	:EMR	Test Date	:2023-02-08
Test Frequency	:562.5 kHz	Temp./Humi.	:23.3/58
Test Mode	:Main	Antenna Pol.	:Vertical
EUT Pol	:H Plane	Engineer	:Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
0.564	Peak	36.72	-27.08	9.64	32.59	-22.95

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.

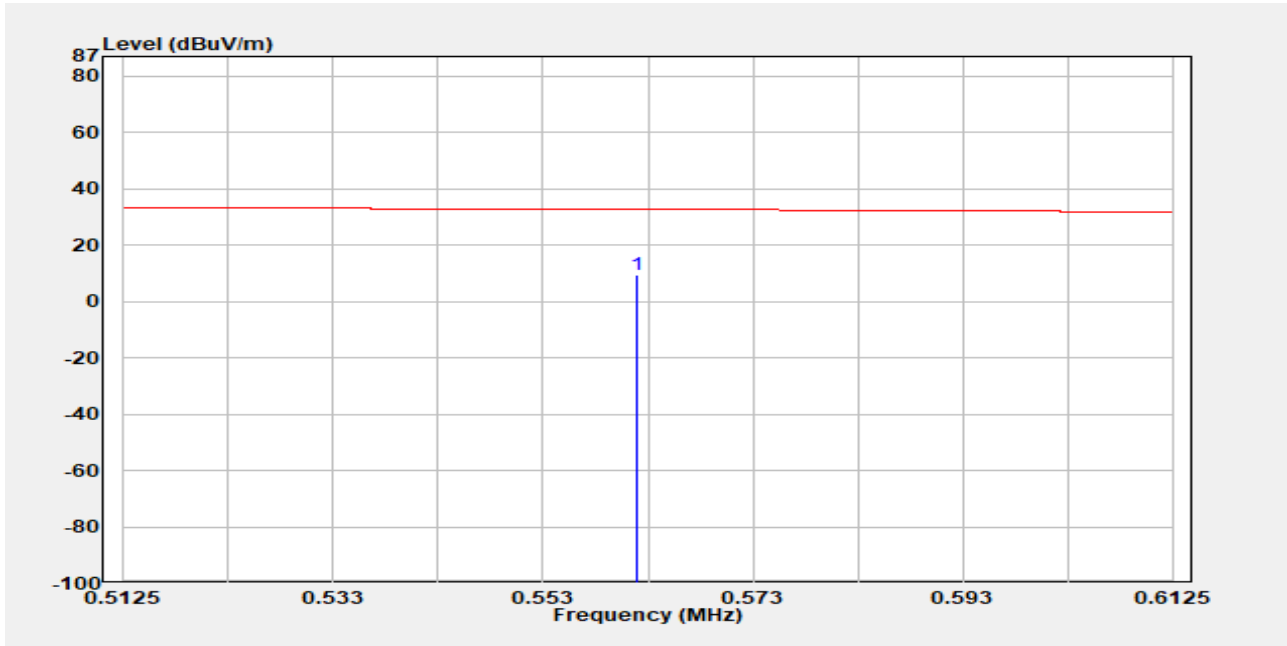
Field strength (dBuV/m) at 30m,within the band 490 kHz - 30 MHz.

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Report Number :TERF2302000198ER  
 Operation Mode :EMR  
 Test Frequency :562.5 kHz  
 Test Mode :Main  
 EUT Pol :H Plane

Test Site :SAC 3  
 Test Date :2023-02-08  
 Temp./Humi. :23.3/58  
 Antenna Pol. :Horizontal  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
0.561	Peak	36.41	-27.08	9.33	32.63	-23.29

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.

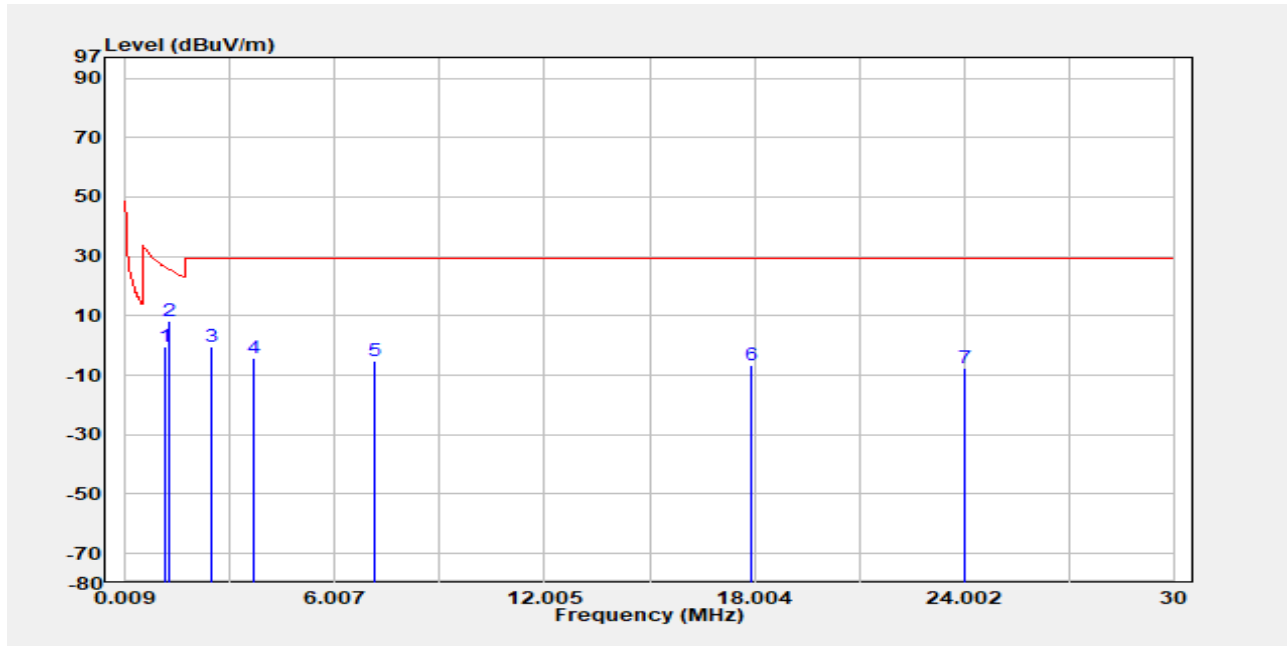
Field strength (dBuV/m) at 30m,within the band 490 kHz - 30 MHz.

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### 8.6 Radiated Spurious Emission Measurement Result

Report Number	:TERF2302000198ER	Test Site	:SAC 3
Operation Mode	:EMR	Test Date	:2023-02-08
Test Frequency	:562.5 kHz	Temp./Humi.	:23.3/58
Test Mode	:Tx	Antenna Pol.	:Vertical
EUT Pol	:H Plane	Engineer	:Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
1.125	Peak	26.81	-27.02	-0.21	26.59	-26.79
1.239	Peak	35.43	-27.06	8.38	25.75	-17.37
2.468	Peak	26.86	-27.34	-0.48	29.54	-30.02
3.698	Peak	23.33	-27.49	-4.16	29.54	-33.70
7.147	Peak	22.34	-27.32	-4.98	29.54	-34.52
17.944	Peak	21.62	-28.30	-6.68	29.54	-36.22
24.002	Peak	21.36	-29.06	-7.71	29.54	-37.25

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.

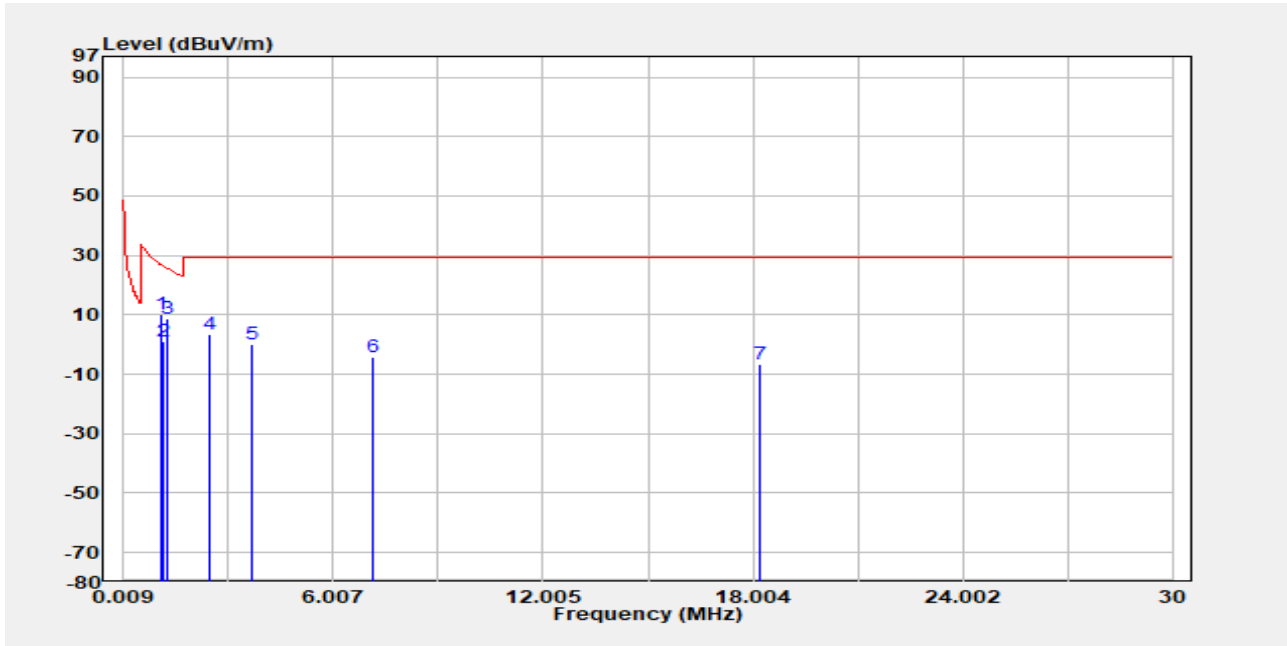
Field strength (dBUV/m) at 30m,within the band 490 kHz - 30 MHz.

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Report Number :TERF2302000198ER  
 Operation Mode :EMR  
 Test Frequency :562.5 kHz  
 Test Mode :Tx  
 EUT Pol :H Plane

Test Site :SAC 3  
 Test Date :2023-02-08  
 Temp./Humi. :23.3/58  
 Antenna Pol. :Horizontal  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
1.059	Peak	37.05	-26.99	10.06	27.11	-17.05
1.125	Peak	28.14	-27.02	1.12	26.59	-25.46
1.239	Peak	35.63	-27.06	8.57	25.75	-17.18
2.468	Peak	30.74	-27.34	3.40	29.54	-26.14
3.698	Peak	27.51	-27.49	0.02	29.54	-29.52
7.117	Peak	22.95	-27.33	-4.38	29.54	-33.92
18.214	Peak	21.50	-28.33	-6.84	29.54	-36.38

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.

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.

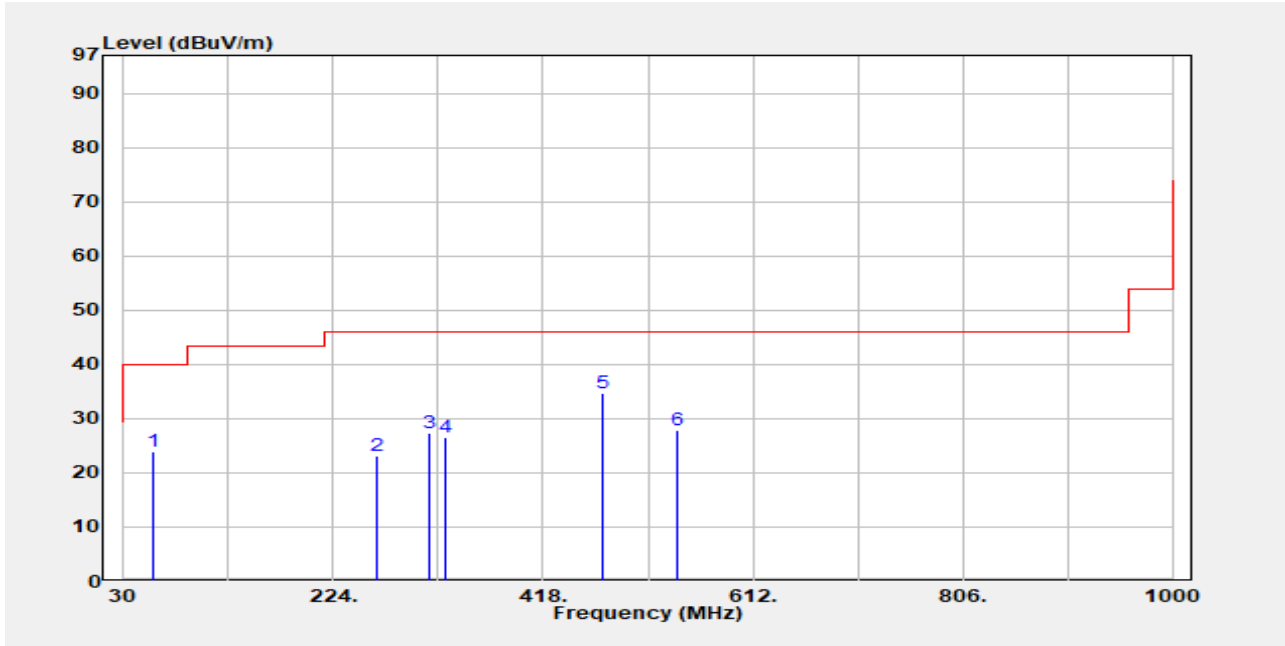
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**8.6.1 Above 30MHz test result**

Report Number :TERF2302000198ER  
 Operation Mode :EMR  
 Test Frequency :562.5 kHz  
 Test Mode :Tx  
 EUT Pol :H Plane

Test Site :SAC 3  
 Test Date :2023-02-08  
 Temp./Humi. :23.3/58  
 Antenna Pol. :Vertical  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
58.130	Peak	33.00	-9.05	23.95	40.00	-16.05
263.770	Peak	31.22	-7.96	23.25	46.00	-22.75
312.270	Peak	33.97	-6.51	27.46	46.00	-18.54
327.790	Peak	32.91	-6.26	26.65	46.00	-19.35
472.320	Peak	38.42	-3.61	34.81	46.00	-11.19
542.160	Peak	30.08	-2.26	27.81	46.00	-18.19

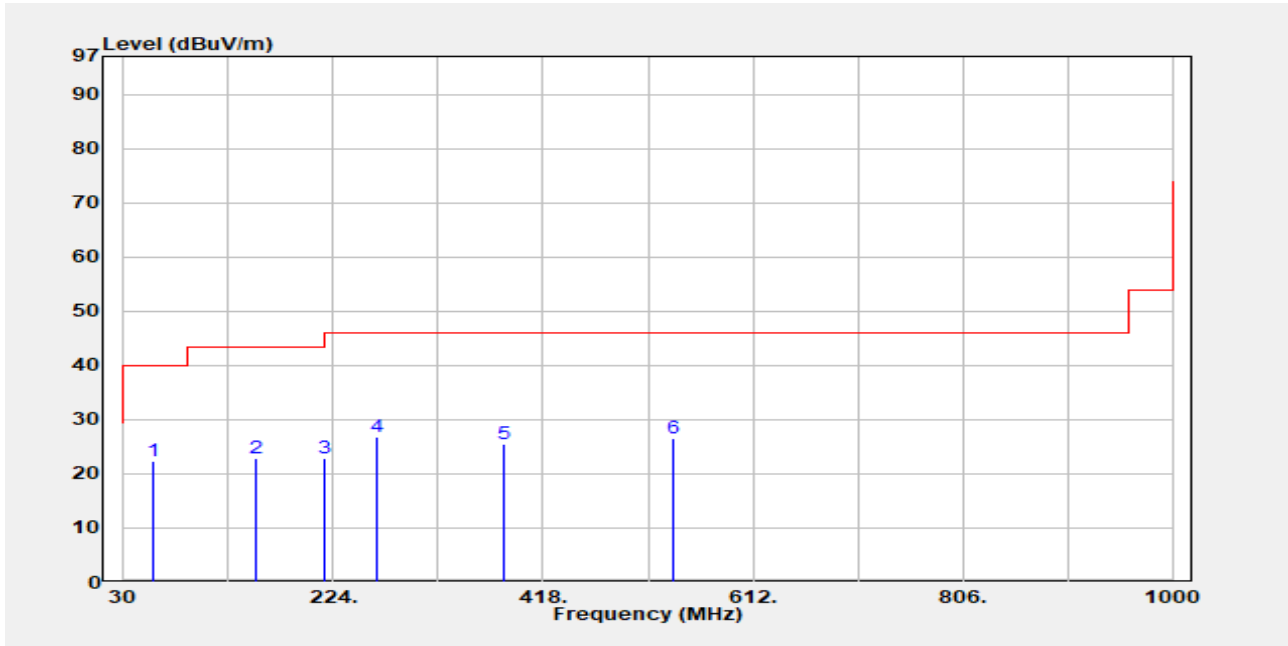
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Report Number :TERF2302000198ER  
 Operation Mode :EMR  
 Test Frequency :562.5 kHz  
 Test Mode :Tx  
 EUT Pol :H Plane

Test Site :SAC 3  
 Test Date :2023-02-08  
 Temp./Humi. :23.3/58  
 Antenna Pol. :Horizontal  
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
58.130	Peak	31.52	-9.05	22.47	40.00	-17.53
152.220	Peak	31.00	-8.17	22.83	43.50	-20.67
216.240	Peak	33.89	-11.05	22.84	46.00	-23.16
263.770	Peak	34.86	-7.96	26.89	46.00	-19.11
381.140	Peak	30.92	-5.34	25.58	46.00	-20.42
538.280	Peak	28.83	-2.37	26.47	46.00	-19.53

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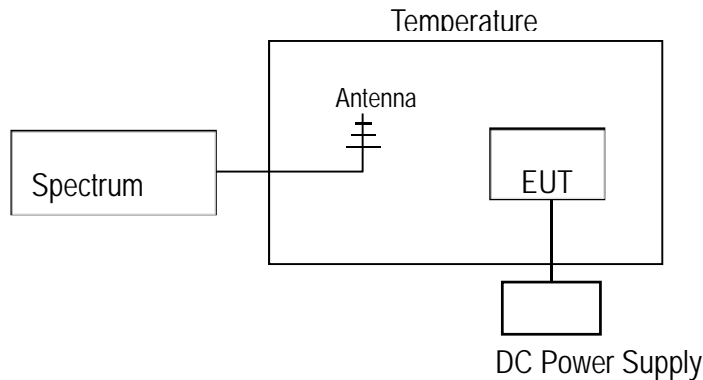
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## 9 EMISSION BANDWIDTH MEASUREMENT

### 9.1 Standard Applicable:

The 20 dB bandwidth shall be specified in operating frequency band.

### 9.2 Test Set-up



### 9.3 Measurement Procedure

1. Placed the EUT on the testing table.
2. Set the EUT under transmission condition continuously at specific channel frequency.
3. The resolution bandwidth of 3 kHz and the video bandwidth of 9 kHz were used.
4. Measured the spectrum width with power higher than 20dB below carrier and Turn on the 99% bandwidth function, max reading.

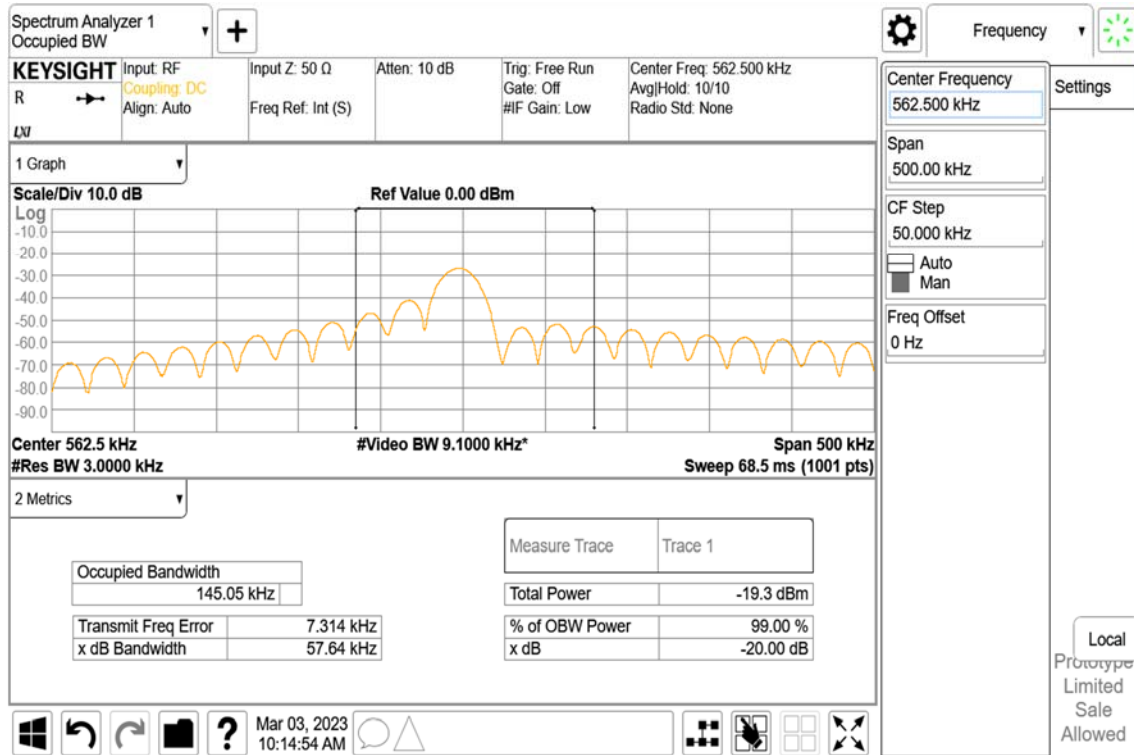
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## 9.5 Measurement Result

### Emission Bandwidth

20dB Bandwidth(kHz)
57.64



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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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