



# CERTIFICATION TEST REPORT

**Report Number.** : 4790101669-E1V2

**Applicant** : SAMSUNG ELECTRONICS CO., LTD.  
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,  
GYEONGGI-DO, 16677, KOREA

**Model** : SM-X900

**FCC ID** : A3LSMX900

**IC** : 649E-SMX900

**EUT Description** : DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT

**Test Standard(s)** : FCC 47 CFR PART 15 SUBPART B  
ICES-003 ISSUE 7

**Date Of Issue:**

2021-12-11

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ACCREDITED

**Testing Laboratory**

**TL-637**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	2021-12-02	Initial issue	Steven(Sangyun) Kim
V2	2021-12-11	Updated to address TCB's question	Steven(Sangyun) Kim

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.  
**EUT DESCRIPTION:** DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT  
**MODEL NUMBER:** SM-X900  
**SERIAL NUMBER:** R32RB00BDPR (RADIATED);  
**DATE TESTED:** 2021-11-15 ~ 2021-12-02;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15B	Pass
ICES-003 ISSUE 7	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For  
UL Korea, Ltd. By:



Junwhan Lee  
Suwon Lab Engineer  
UL Korea, Ltd.

Tested By:



Steven(Sangyun) Kim  
Suwon Lab Engineer  
UL Korea, Ltd.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. ICES-003 ISSUE 7
4. ANSI C63.4-2014

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
<input checked="" type="checkbox"/>	Chamber 1
<input type="checkbox"/>	Chamber 2
<input type="checkbox"/>	Chamber 3

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$EIRP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$

$ERP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)}$

(Path loss = Signal generator output – PSA reading with substitution antenna)

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.02 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.05 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.78 dB
Radiated Disturbance, Above 18 GHz	5.58 dB

Uncertainty figures are valid to a confidence level of 95%.

### 4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2007.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT.

#### GENERAL INFORMATION

Type of device	Class B personal computers and peripherals Other Class B digital devices & peripherals
Personal Computer power requirements	100-240 VAC / 50-60 Hz, 1.8 A
Travel Adapter power requirements	100-240 VAC / 50-60 Hz, 0.7 A
The highest frequencies generated or used by the EUT	7.115 GHz from WIFI 6E
Test Voltage	120 Vac / 60 Hz

### 5.2. TEST MODE

Mode	Description
Test Case 1	Camera(Front) + Charging
Test Case 2	Camera(Rear) + Charging
Test Case 3	Video and Audio Play + Earphone
Test Case 4	Video and Audio Play + Display Out
Test Case 5	USB Data Communication with PC
Test Case 6	USB Data Communication with PC + Keyboard
Test Case 7	With Keyboard continuous input Key("H" Pattern) + charging

### 5.3. WORST-CASE ORIENTATION AND MODE

The EUT was investigated in three orthogonal orientations X, Y, Z it was determined that X orientation with data transfer was worst-case; therefore, Test case 1 to 5 radiated testing was performed with the EUT in X and the Test case 5 and 6 EUT with keyboard was stand up orientation with data transfer.

## 5.1. MODIFICATIONS

No modifications were made during testing.

## 5.2. DETAILS OF TESTED SYSTEM

### SUPPORT EQUIPMENT & PERIPHERALS

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID/DoC
Laptop PC	Lenovo	T480s	PC0VHHJR	DoC
AC/DC Adapter	Lenovo	ADLX65YDC3A	8SSA10M13946D1SG862021R	N/A
Mouse	SAMSUNG	AA-MW1D5WB	CN57BA5904489BDV8JN9W1756	N/A
Data Cable	SAMSUNG	EP-DW767JWE	GH39-02071A	N/A
Charger	SAMSUNG	EP-TA800	R37R8YN0CD1RC3	N/A
Earphone	SAMSUNG	-	GH59-15252A	N/A
Micro SD Card	SAMSUNG	MB-MC256GA	-	-
Monitor	DELL	U2417H	CN-0767T7-WS200-74M-C4SL-A03	N/A
SPEN	SAMSUNG	-	1386600000549	N/A
Keyboard Cover	SAMSUNG	EF-DX900	-	N/A

**I/O CABLES**

[DIAGRAM 1 and 2]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	AC Power	1	Power	-	Direct	From AC/DC Adapter to AC Main
2	Type C	1	Power	Unshielded	0.7m	From AD/DC Adapter to EUT
3	Micro SD Slot	1	-	-	Direct	Fitted In EUT

[DIAGRAM 3]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	Earphone	1	Type C	Shielded	0.7m	From Earphone to EUT
2	Micro SD Slot	1	-	-	Direct	Fitted In EUT

\* Radiated Test Only

[DIAGRAM 4]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	Type C	1	DP	Shielded	1.5m	From LCD Monitor to EUT
2	Micro SD Slot	1	-	-	Direct	Fitted In EUT

\* Radiated Test Only

[DIAGRAM 5]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	AC Power	1	Power	Unshielded	1.5m	From AD/DC Adapter to AC Main
2	DC Power	1	Type C	Shielded	0.7m	From Laptop to AC/DC Adapter
3	USB	1	USB	Shielded	1.5m	From Laptop to EUT
4	AC Power	1	Type C	Unshielded	1.0m	From Mouse to Laptop
5	Micro SD Slot	1	-	-	Direct	Fitted In EUT
6	Ethernet	1	RJ45	Unshielded	1.5m	From Laptop to Router in out of test site

[DIAGRAM 6]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	AC Power	1	Power	Unshielded	1.5m	From AD/DC Adapter to AC Main
2	DC Power	1	Type C	Shielded	0.7m	From Laptop to AC/DC Adapter
3	USB	1	USB	Shielded	1.5m	From Laptop to EUT
4	AC Power	1	Type C	Unshielded	1.0m	From Mouse to Laptop
5	Micro SD Slot	1	-	-	Direct	Fitted In EUT
6	Ethernet	1	RJ45	Unshielded	1.5m	From Laptop to Router in out of test site
7	Keyboard	1	3pin	-	Direct	Fitted In EUT

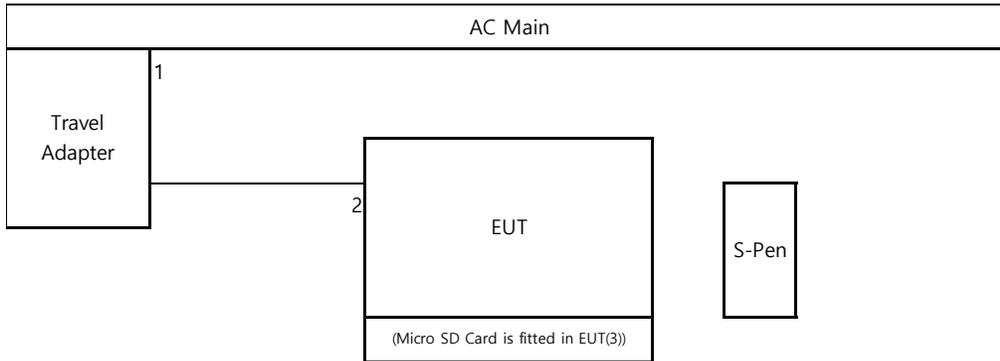
[DIAGRAM 7]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	AC Power	1	Power	Unshielded	1.5m	From AD/DC Adapter to AC Main
2	USB	1	USB	Shielded	1.5m	From Laptop to EUT
3	Micro SD Slot	1	-	-	Direct	Fitted In EUT
4	Keyboard	1	3pin	-	Direct	Fitted In EUT

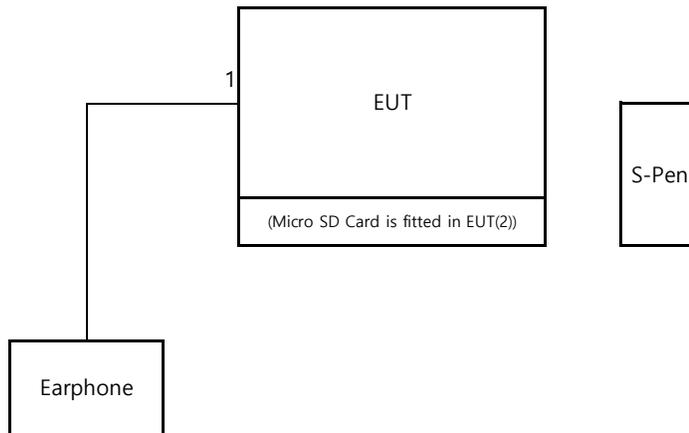
**TEST SETUP**

The EUT is installed in a typical configuration. Copy files from PC to EUT fitted Micro sd card.  
Video and sound on EUT send to the LCD Monitor from DP cable.

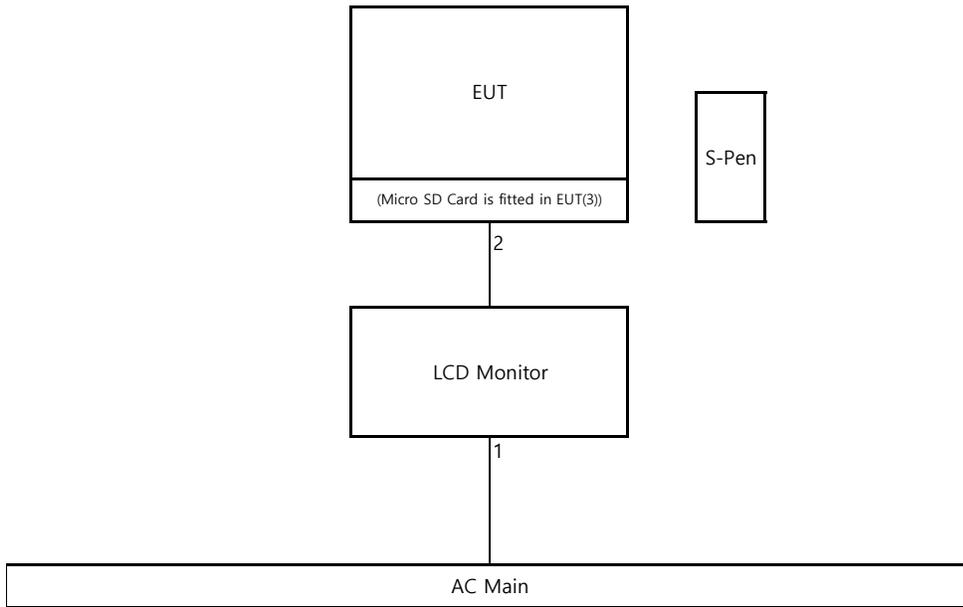
**TEST SETUP DIAGRAM 1 for Test Case 1 and 2**



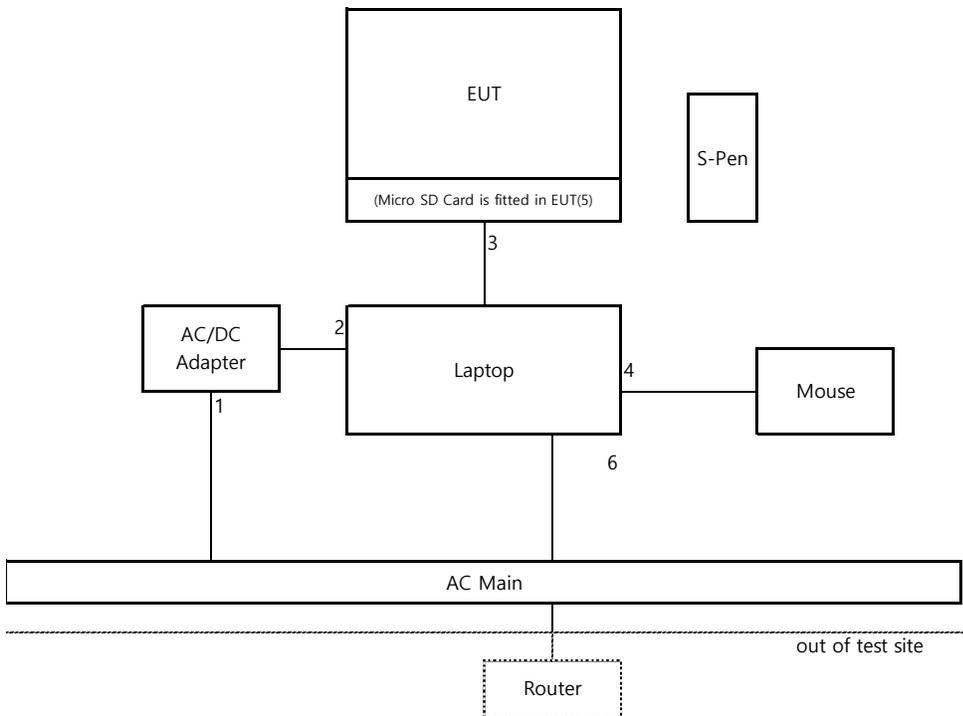
**TEST SETUP DIAGRAM 2 for Test Case 3**



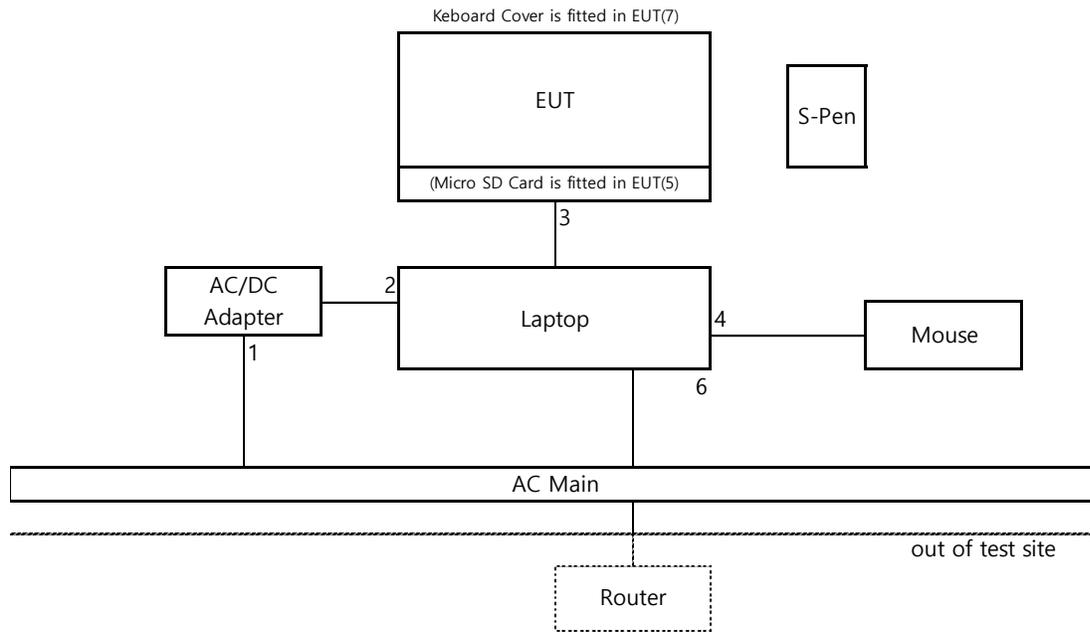
**TEST SETUP DIAGRAM 3 for Test case 4**



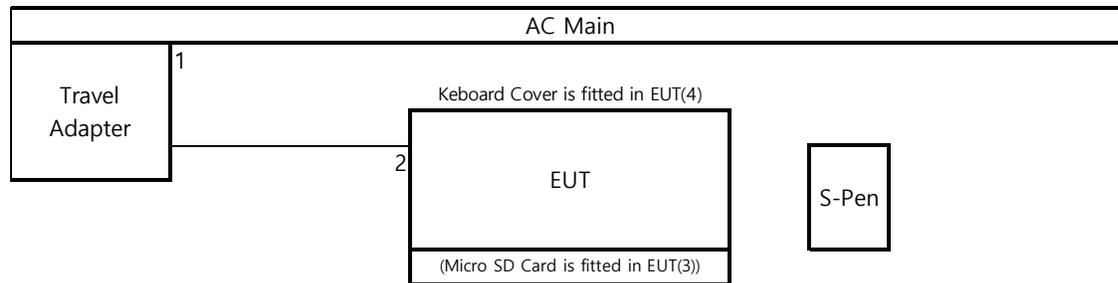
**TEST SETUP DIAGRAM 4 for Test case 5**



**TEST SETUP DIAGRAM 5 for Test case 6**



**TEST SETUP DIAGRAM 6 for Test case 7**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2022-08-04
Antenna, Horn, 40 GHz	ETS	3116C	00168645	2022-08-04
Preamplifier	ETS	3116C-PA	00168841	2022-08-04
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2022-08-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2022-08-13
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2022-08-13
Antenna, Horn, 18 GHz	ETS	3115	00167211	2022-07-27
Antenna, Horn, 18 GHz	ETS	3115	00161451	2022-08-15
Antenna, Horn, 18 GHz	ETS	3117	00168724	2022-07-27
Antenna, Horn, 18 GHz	ETS	3117	00168717	2022-08-15
Preamplifier, 1000 MHz	Sonoma	310N	341282	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029168	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022-08-02
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2022-08-02
LISN	R&S	ENV-216	101836	2022-08-05
LISN	R&S	ENV-216	101837	2022-08-05
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

## 7. TEST RESULTS

### 7.1. RADIATED EMISSIONS

#### TEST PROCEDURE

ANSI C63.4-2014

The highest clock frequency generated or used in the EUT is 40 GHz therefore the frequency range was investigated from 30 MHz to 40 GHz.

#### LIMIT

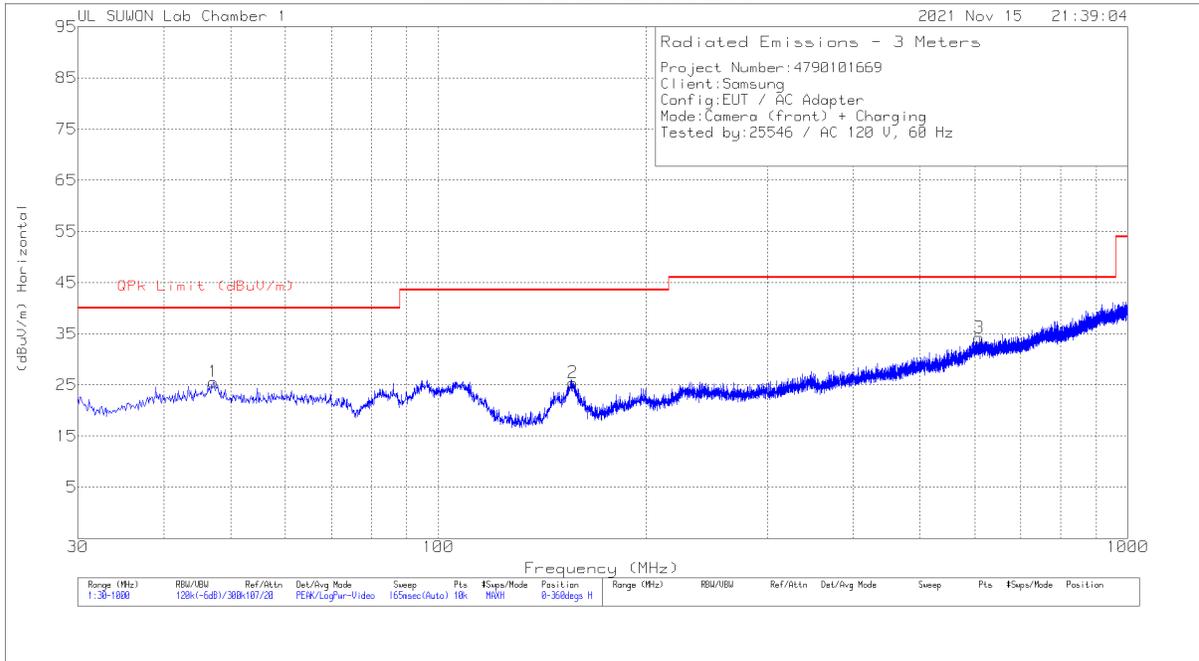
§15.109 (a) and ICES-003 Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB $\mu$ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

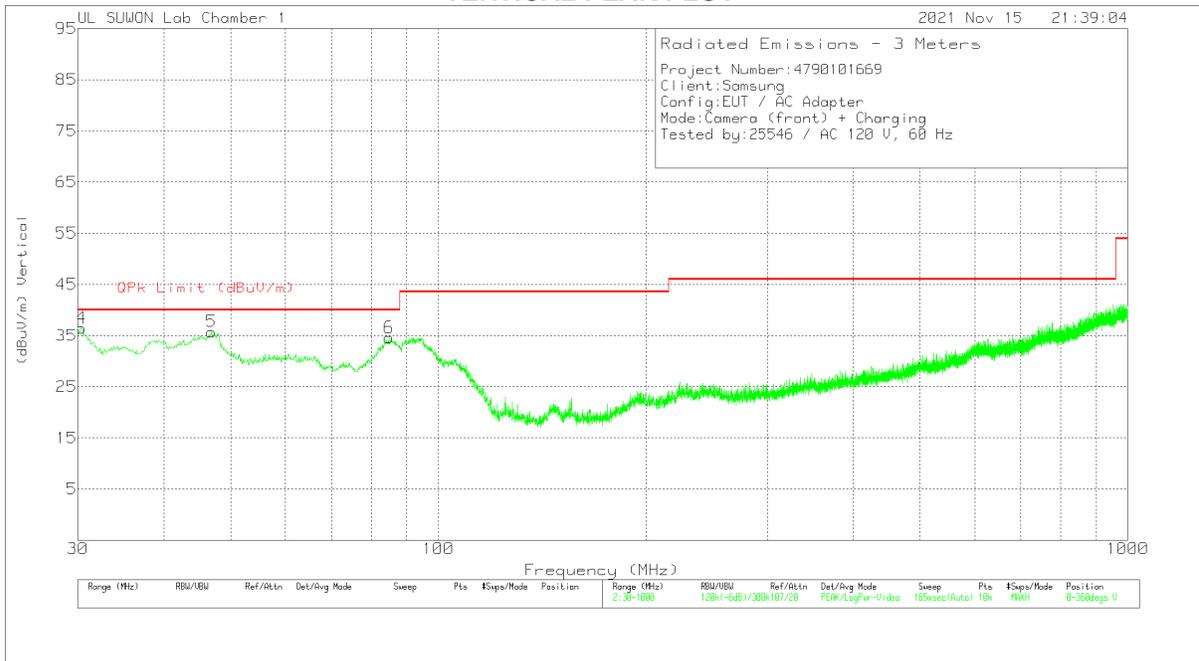
Note: The lower limit shall apply at the transition frequency.

### 7.1.1. RADIATED EMISSIONS 30 TO 1000 MHz [Test case 1]

#### HORIZONTAL PEAK PLOT



#### VERTICAL PEAK PLOT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.169	36.7	Pk	19.8	-30.9	25.6	40	-14.4	0-360	200	H
2	156.876	40.74	Pk	14.3	-29.6	25.44	43.52	-18.08	0-360	200	H
3	608.896	36.03	Pk	25.3	-27.1	34.23	46.02	-11.79	0-360	100	H
4	30.388	51.66	Pk	16	-31.2	36.46	40	-3.54	0-360	200	V
5	46.878	46.74	Pk	19.8	-30.8	35.74	40	-4.26	0-360	200	V
6	84.805	51.3	Pk	13.6	-30.3	34.6	40	-5.4	0-360	200	V

Pk - Peak detector

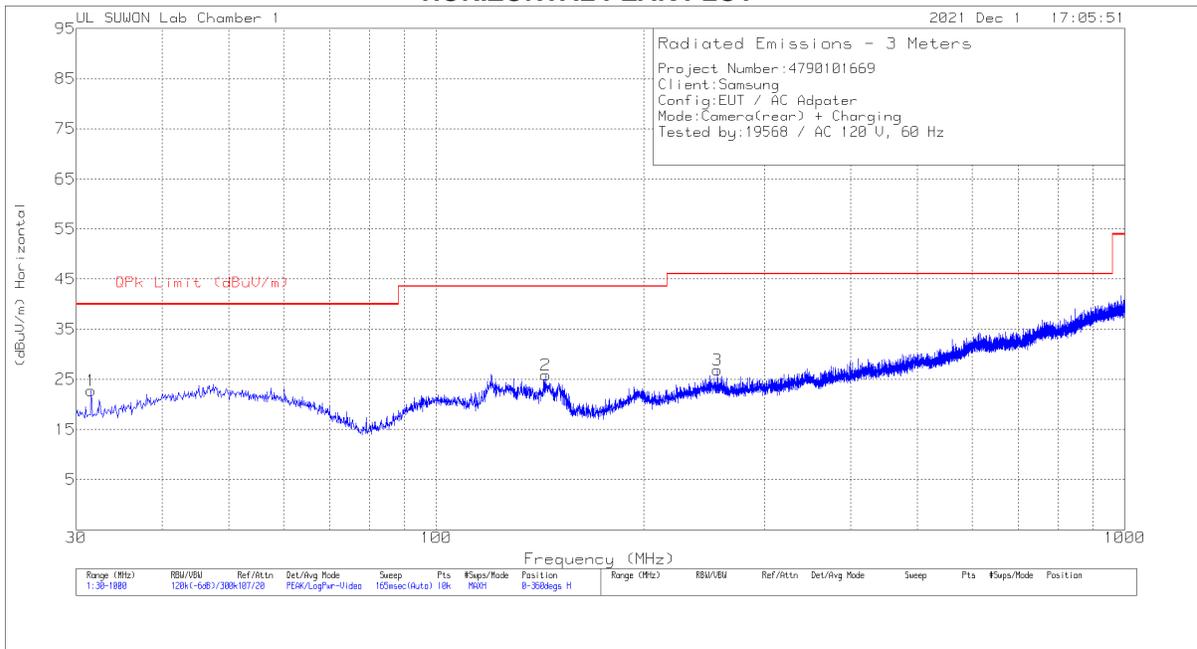
Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
30.338	48.95	Qp	16	-31.3	33.65	40	-6.35	2	100	V
46.878	43.51	Qp	19.8	-30.8	32.51	40	-7.49	22	100	V

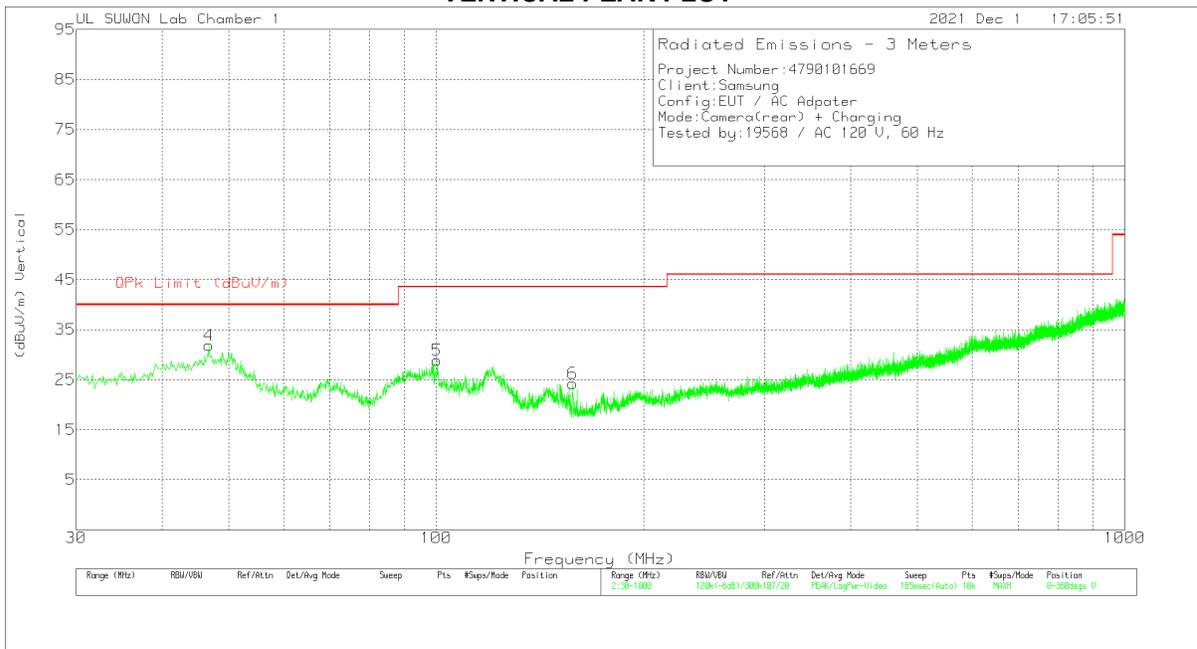
Qp - Quasi-Peak detector

[Test case 2]

**HORIZONTAL PEAK PLOT**



**VERTICAL PEAK PLOT**



**DATA**

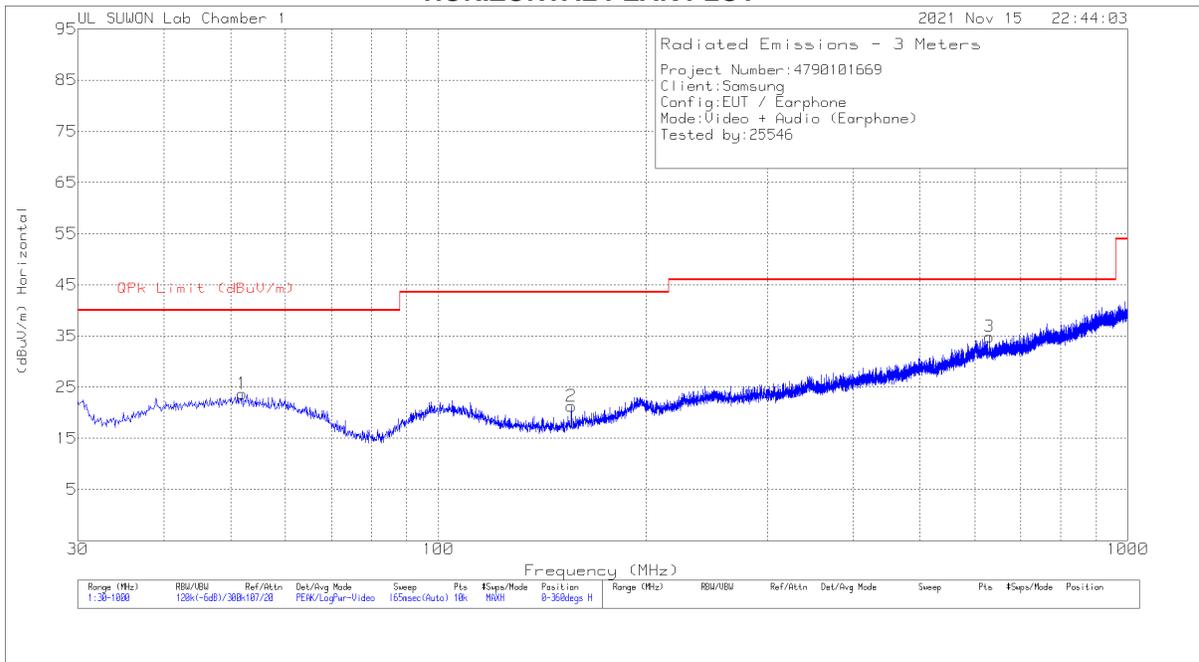
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.552	38.2	Pk	15.7	-31.2	22.7	40	-17.3	0-360	100	H
2	144.169	41.51	Pk	14.1	-29.8	25.81	43.52	-17.71	0-360	100	H
3	256.01	36.56	Pk	19.1	-28.8	26.86	46.02	-19.16	0-360	100	H
4	46.781	42.99	Pk	19.8	-30.9	31.89	40	-8.11	0-360	200	V
5	100.228	41.21	Pk	17.8	-30.1	28.91	43.52	-14.61	0-360	200	V
6	157.846	39.62	Pk	14.3	-29.7	24.22	43.52	-19.3	0-360	200	V

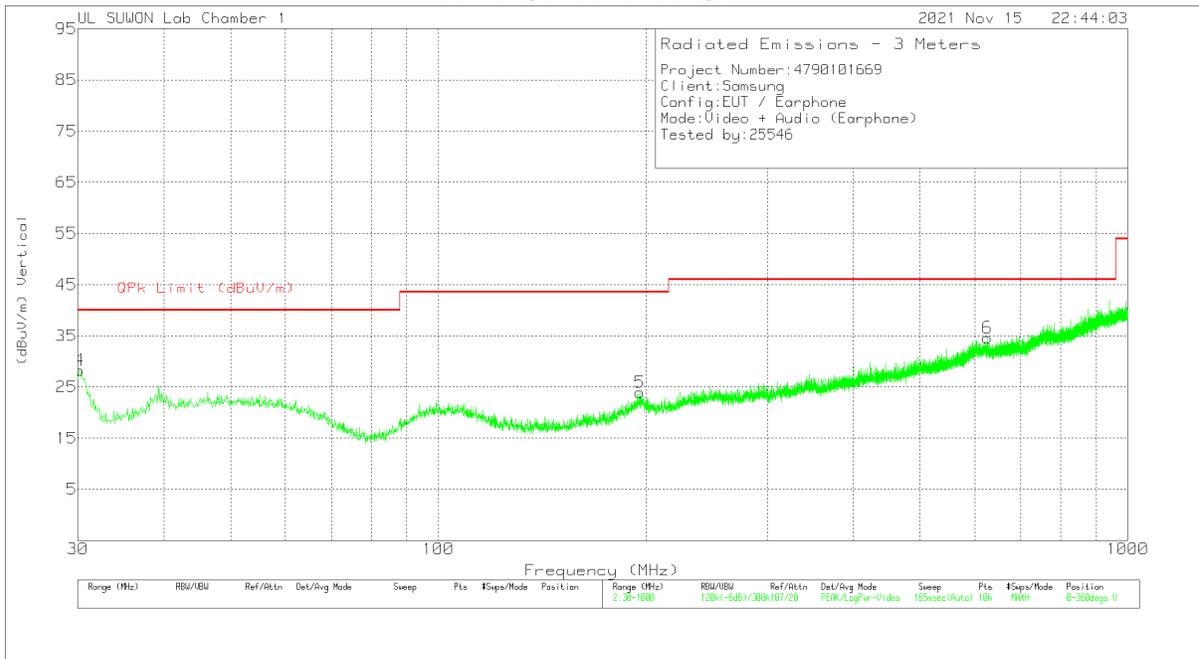
Pk - Peak detector

[Test case 3]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



**DATA**

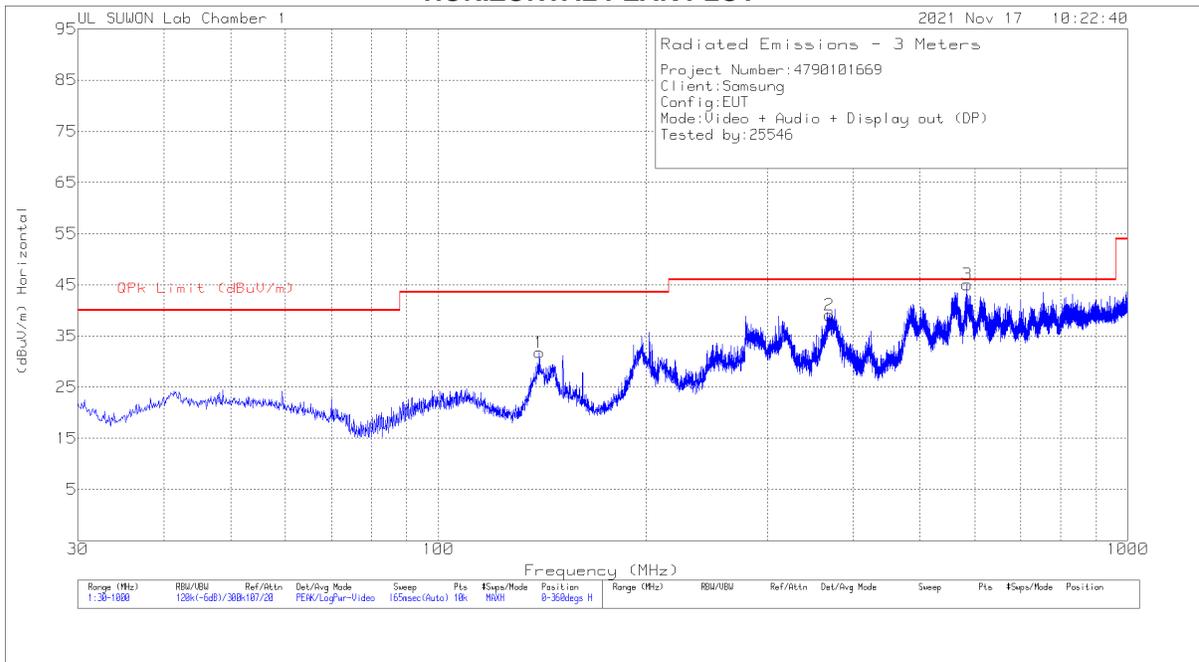
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	51.922	34.93	Pk	19.7	-30.9	23.73	40	-16.27	0-360	100	H
2	156.003	36.79	Pk	14.2	-29.7	21.29	43.52	-22.23	0-360	200	H
3	630.139	36.59	Pk	25.3	-27	34.89	46.02	-11.13	0-360	200	H
4	30.194	43.48	Pk	16	-31.2	28.28	40	-11.72	0-360	200	V
5	196.161	35.14	Pk	18.2	-29.4	23.94	43.52	-19.58	0-360	200	V
6	626.259	36.21	Pk	25.4	-27	34.61	46.02	-11.41	0-360	200	V

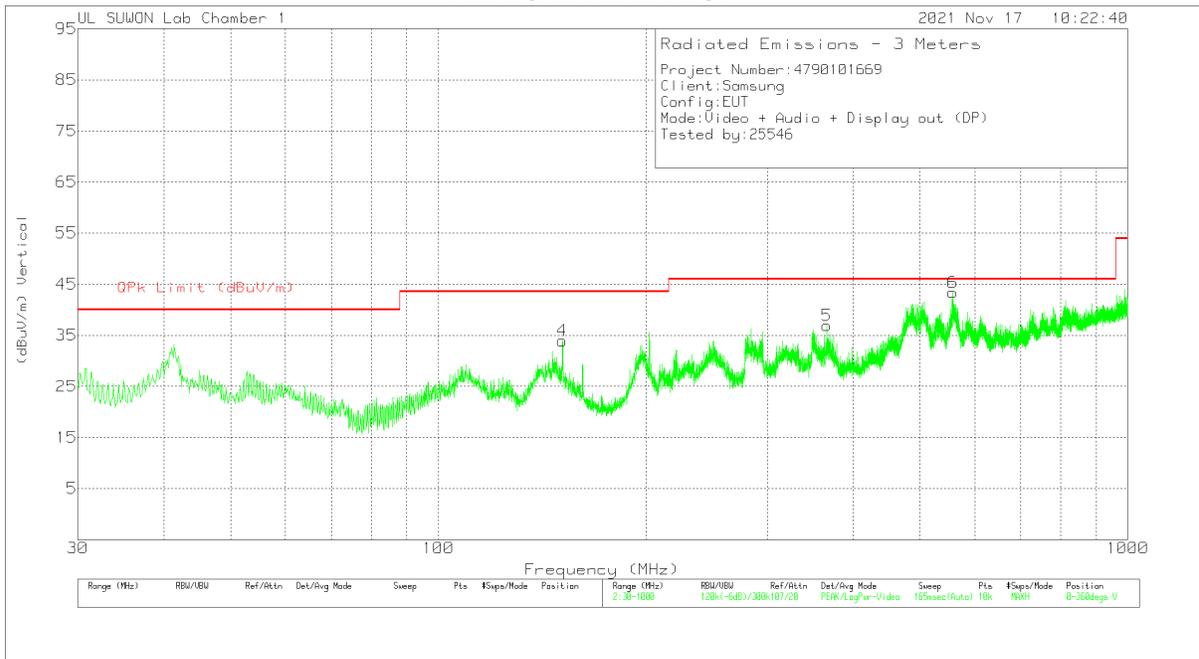
Pk - Peak detector

[Test case 4]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



**DATA**

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	140.192	47.55	Pk	14.1	-29.9	31.75	43.52	-11.77	0-360	100	H
2	369.403	46.38	Pk	20.8	-28.1	39.08	46.02	-6.94	0-360	100	H
3	585.034	47.46	Pk	24.8	-27.2	45.06	46.02	-.96	0-360	100	H
4	151.444	49.54	Pk	14.1	-29.7	33.94	43.52	-9.58	0-360	200	V
5	365.911	44.6	Pk	20.6	-28.3	36.9	46.02	-9.12	0-360	200	V
6	557.583	46.58	Pk	24.2	-27.4	43.38	46.02	-2.64	0-360	200	V

Pk - Peak detector

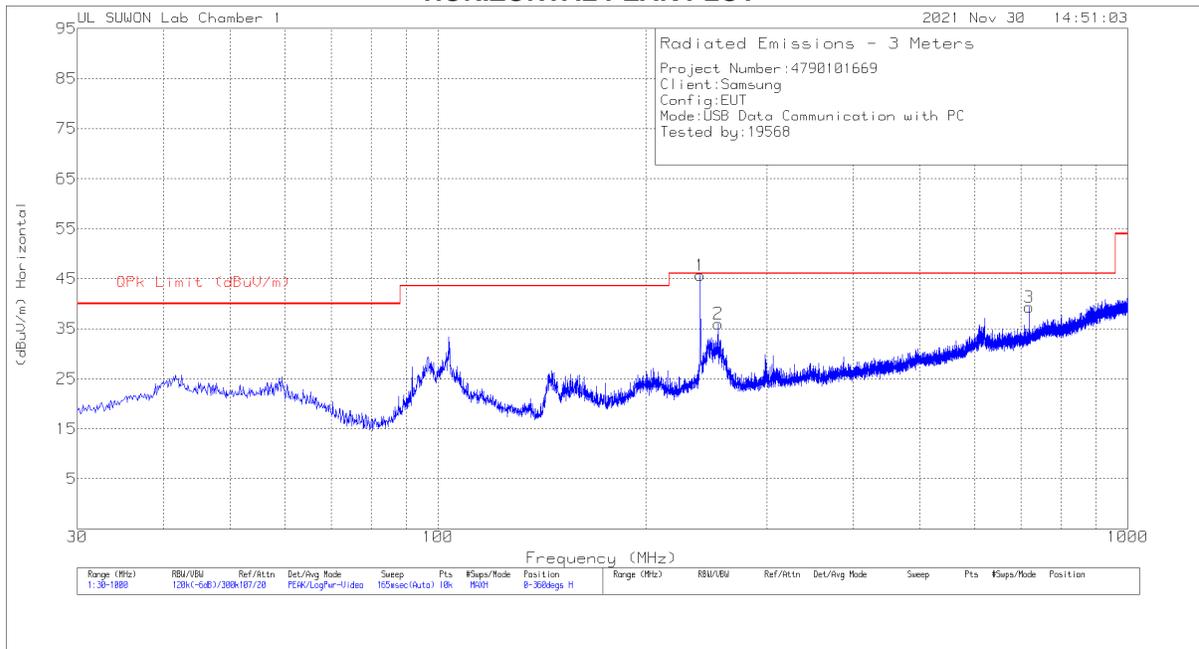
Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
585.034	42.99	Qp	24.8	-27.2	40.59	46.02	-5.43	119	196	H
557.583	41.44	Qp	24.2	-27.4	38.24	46.02	-7.78	220	101	V

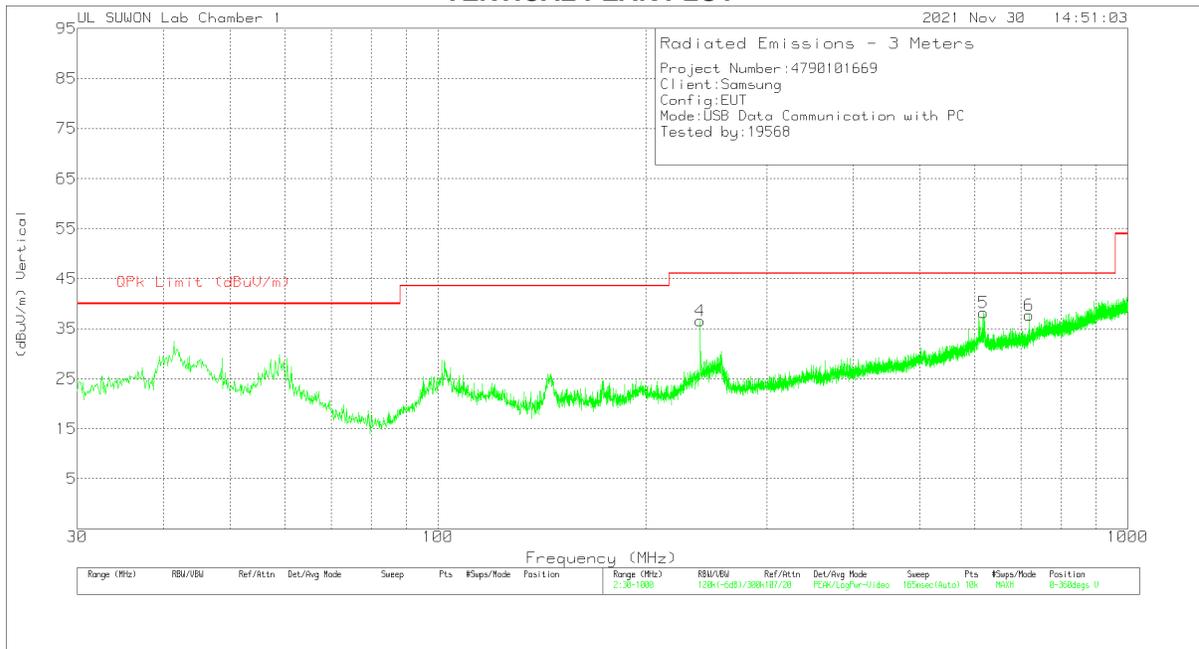
Qp - Quasi-Peak detector

[Test case 5]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



**DATA**

**Trace Markers**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	240.005	56	Pk	18.6	-28.9	45.7	46.02	-.32	0-360	100	H
2	254.749	45.62	Pk	19.2	-28.8	36.02	46.02	-10	0-360	100	H
3	720.058	39.9	Pk	26	-26.6	39.3	46.02	-6.72	0-360	100	H
4	240.005	46.84	Pk	18.6	-28.9	36.54	46.02	-9.48	0-360	200	V
5	618.499	39.75	Pk	25.5	-27.1	38.15	46.02	-7.87	0-360	200	V
6	720.058	38.29	Pk	26	-26.6	37.69	46.02	-8.33	0-360	200	V

Pk - Peak detector

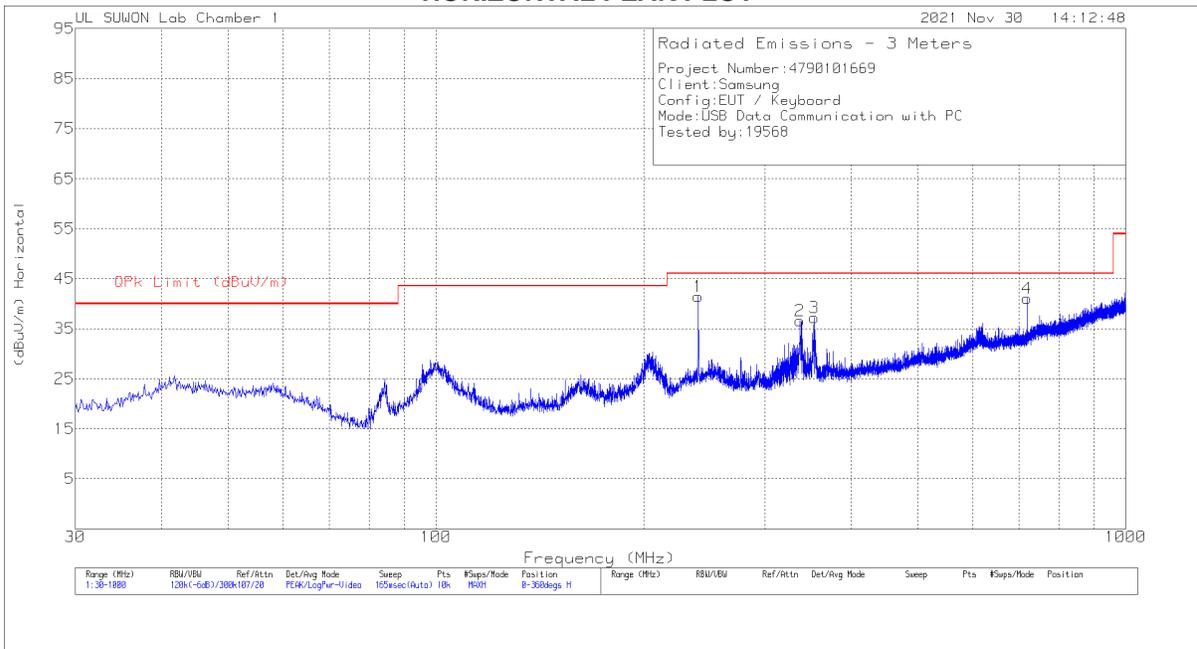
**Radiated Emissions**

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
240.005	49.6	Qp	18.6	-28.9	39.3	46.02	-6.72	292	123	H

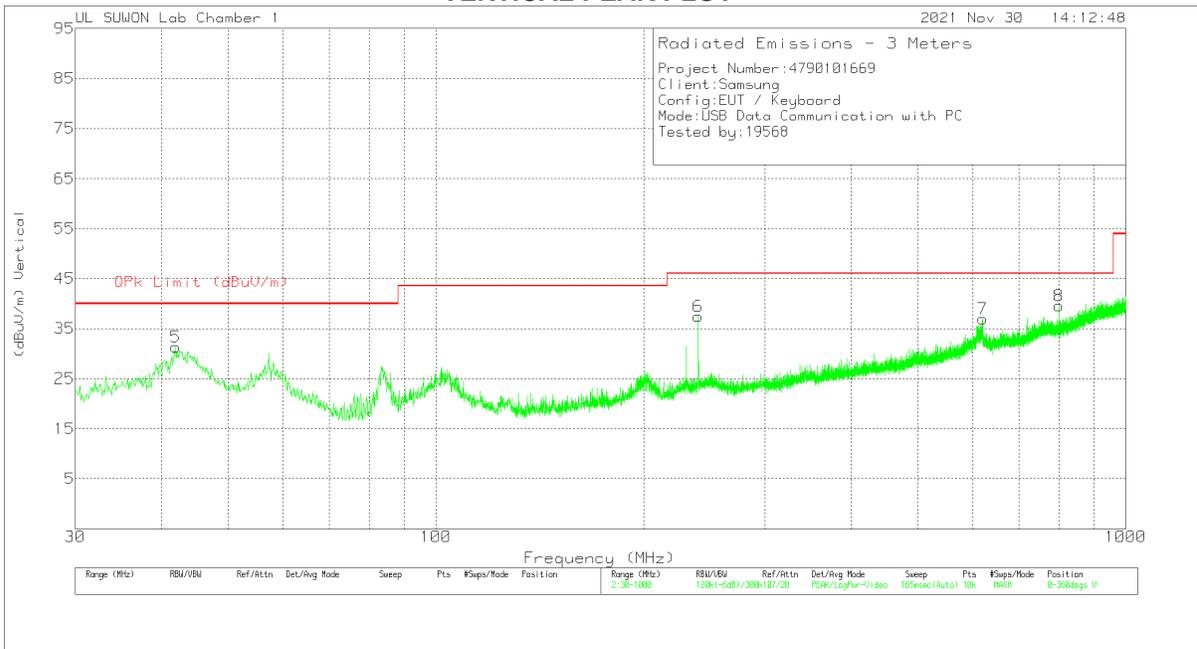
Qp - Quasi-Peak detector

[Test case 6]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



**DATA**

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	240.005	51.69	Pk	18.6	-28.9	41.39	46.02	-4.63	0-360	100	H
2	337.199	44.53	Pk	20.5	-28.4	36.63	46.02	-9.39	0-360	100	H
3	353.301	44.89	Pk	20.5	-28.2	37.19	46.02	-8.83	0-360	100	H
4	720.058	41.67	Pk	26	-26.6	41.07	46.02	-4.95	0-360	100	H
5	41.931	43.39	Pk	19.1	-31.1	31.39	40	-8.61	0-360	200	V
6	240.005	47.81	Pk	18.6	-28.9	37.51	46.02	-8.51	0-360	200	V
7	620.924	38.58	Pk	25.5	-27.1	36.98	46.02	-9.04	0-360	200	V
8	800.083	38.73	Pk	26.9	-26.1	39.53	46.02	-6.49	0-360	200	V

Pk - Peak detector

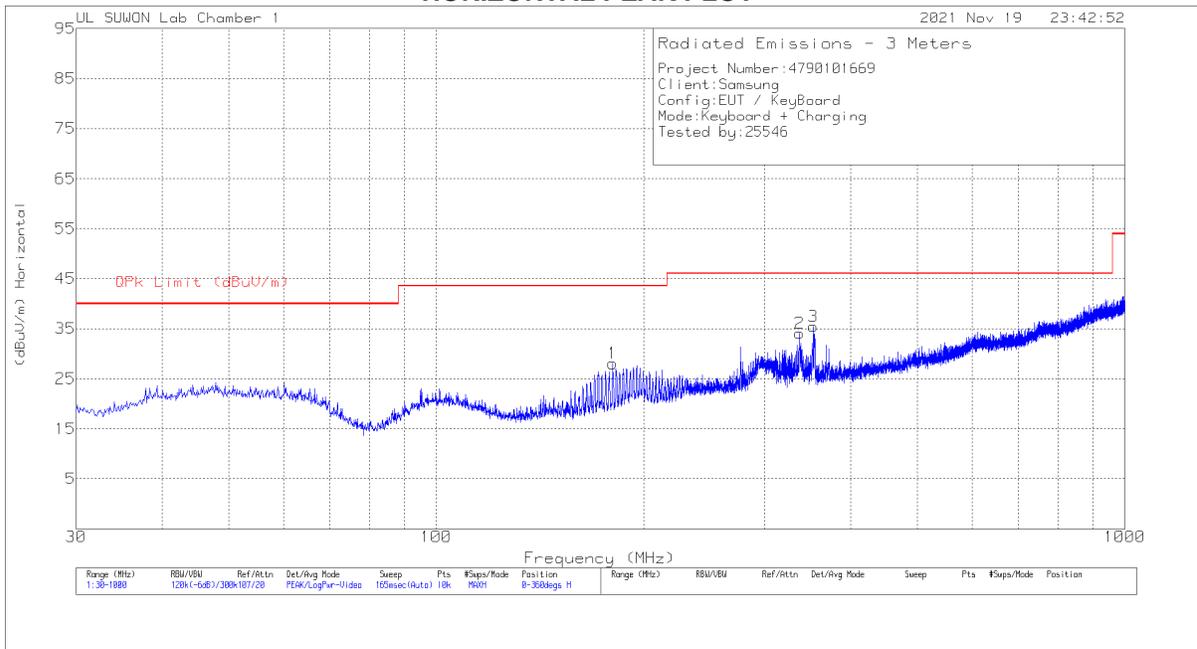
Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
240.005	50.16	Qp	18.6	-28.9	39.86	46.02	-6.16	320	127	H
720.058	39.01	Qp	26	-26.6	38.41	46.02	-7.61	104	100	H

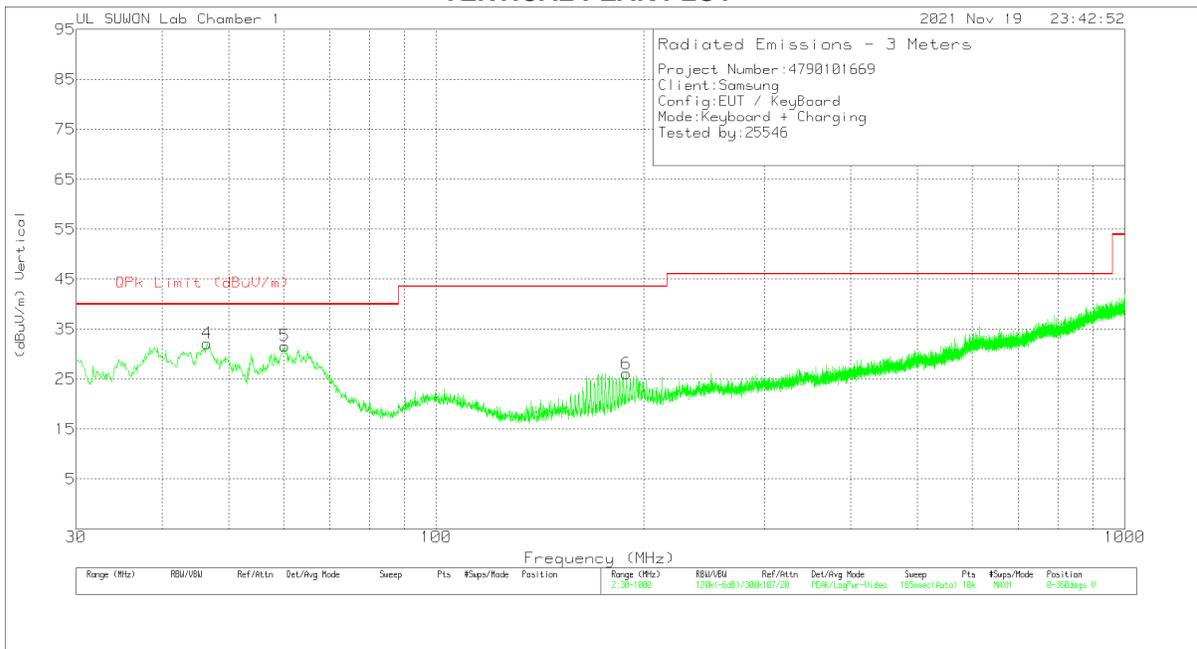
Qp - Quasi-Peak detector

[Test case 7]

**HORIZONTAL PEAK PLOT**



**VERTICAL PEAK PLOT**



**DATA**

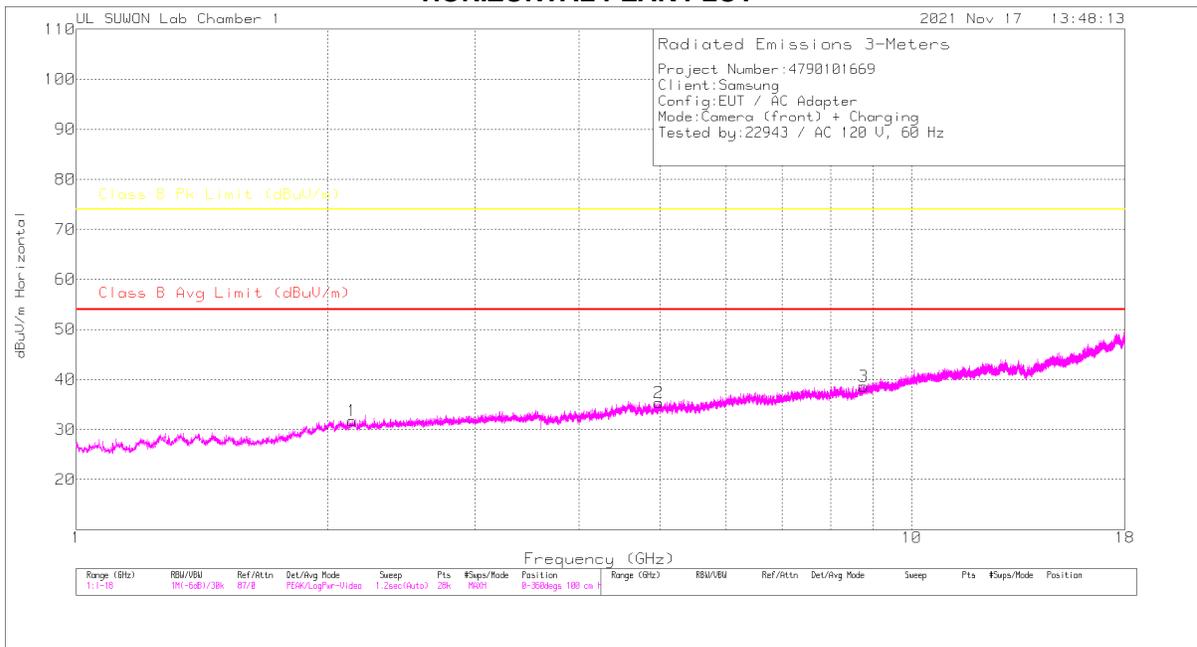
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	180.447	41.85	Pk	15.7	-29.5	28.05	43.52	-15.47	0-360	100	H
2	337.005	41.98	Pk	20.5	-28.4	34.08	46.02	-11.94	0-360	100	H
3	352.913	43.18	Pk	20.6	-28.3	35.48	46.02	-10.54	0-360	100	H
4	46.49	43.46	Pk	19.7	-31	32.16	40	-7.84	0-360	200	V
5	60.264	43.76	Pk	18.5	-30.6	31.66	40	-8.34	0-360	200	V
6	188.789	38.75	Pk	16.8	-29.4	26.15	43.52	-17.37	0-360	200	V

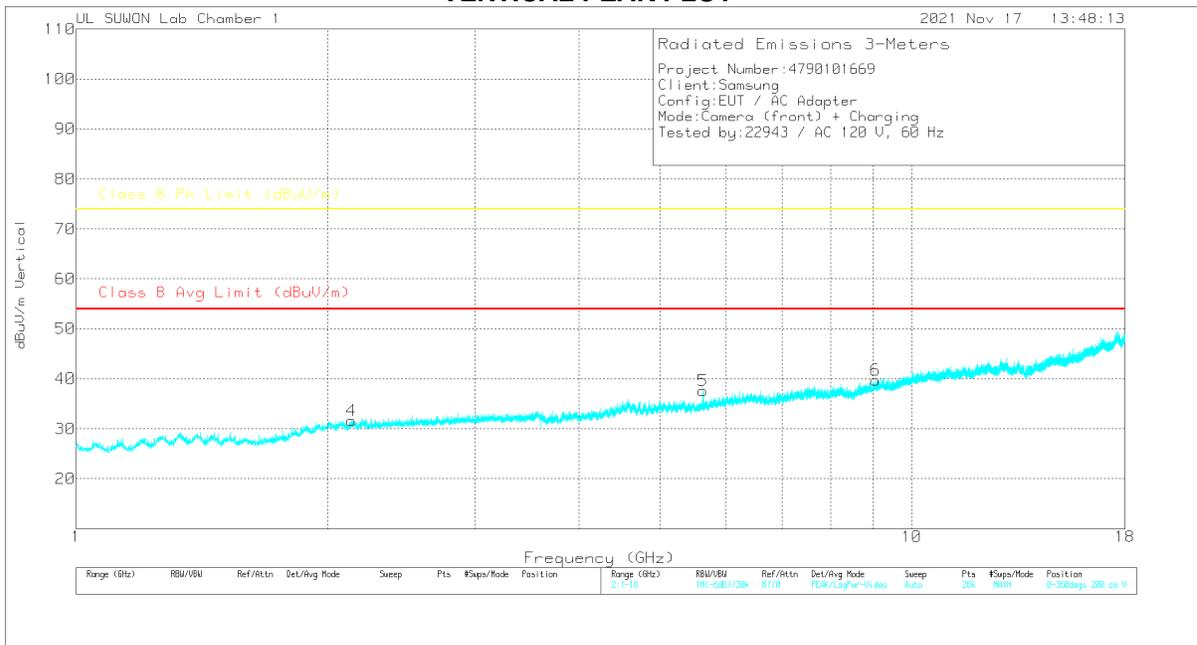
Pk - Peak detector

## 7.1.2. RADIATED EMISSIONS 1 GHz to 18 GHz [Test case 1]

### HORIZONTAL PEAK PLOT



### VERTICAL PEAK PLOT



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**DATA**

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.1407	35.53	PK	31.6	-35.4	31.73	-	-	74	-42.27	0-360	100	H
2	4.98425	32.78	PK	34.1	-31.5	35.38	-	-	74	-38.62	0-360	100	H
3	8.75846	27.56	PK	36.4	-25.3	38.66	-	-	74	-35.34	0-360	100	H
4	2.13463	35.41	PK	31.6	-35.4	31.61	-	-	74	-42.39	0-360	200	V
5	5.6314	33.87	PK	34.7	-30.9	37.67	-	-	74	-36.33	0-360	200	V
6	9.05168	27.94	PK	36.6	-24.8	39.74	-	-	74	-34.26	0-360	200	V

PK – Peak Detector

**Radiated Emissions**

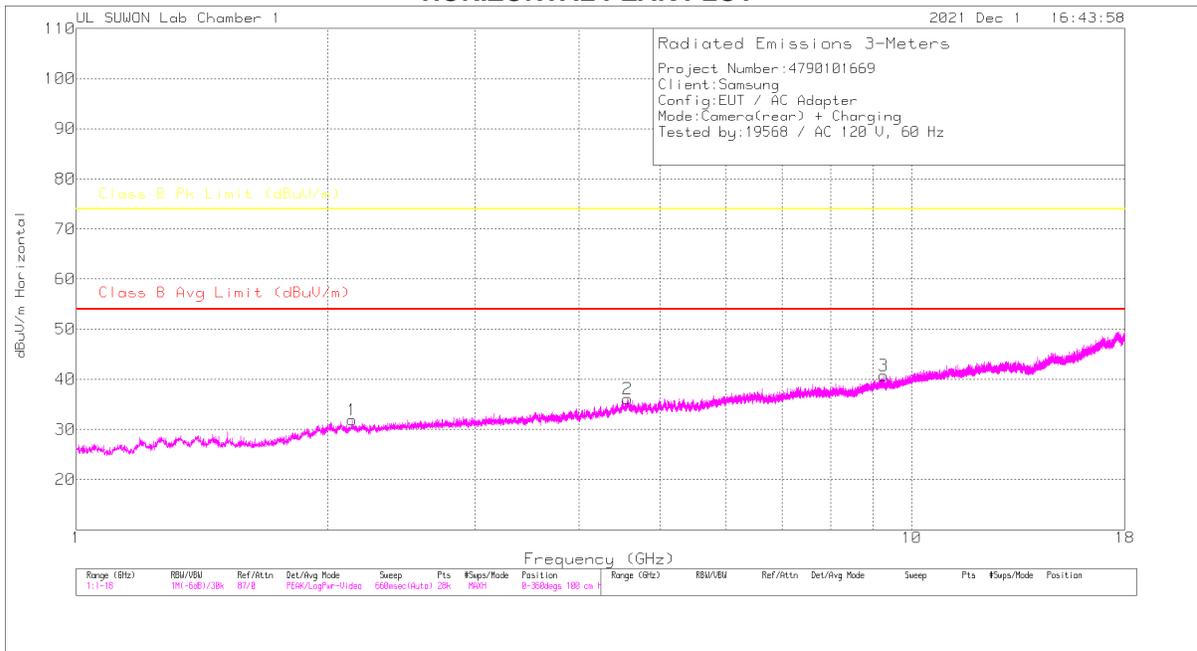
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.1407	42.38	Pk	31.6	-35.4	38.58	-	-	74	-35.42	317	366	H
2.1407	30.51	Ca	31.6	-35.4	26.71	54	-27.29	-	-	317	366	H
2.1407	42.72	Pk	31.6	-35.4	38.92	-	-	74	-35.08	360	100	V
2.1407	30.52	Ca	31.6	-35.4	26.72	54	-27.28	-	-	360	100	V
4.98425	40.52	Pk	34.1	-31.5	43.12	-	-	74	-30.88	360	100	H
4.98425	28.15	Ca	34.1	-31.5	30.75	54	-23.25	-	-	360	100	H
4.98425	40.62	Pk	34.1	-31.5	43.22	-	-	74	-30.78	360	100	V
4.98425	28.16	Ca	34.1	-31.5	30.76	54	-23.24	-	-	360	100	V
8.75846	35.51	Pk	36.4	-25.3	46.61	-	-	74	-27.39	360	100	H
8.75846	23.1	Ca	36.4	-25.3	34.2	54	-19.8	-	-	360	100	H
8.75846	35.18	Pk	36.4	-25.3	46.28	-	-	74	-27.72	360	100	V
8.75846	23.1	Ca	36.4	-25.3	34.2	54	-19.8	-	-	360	100	V

Pk - Peak detector

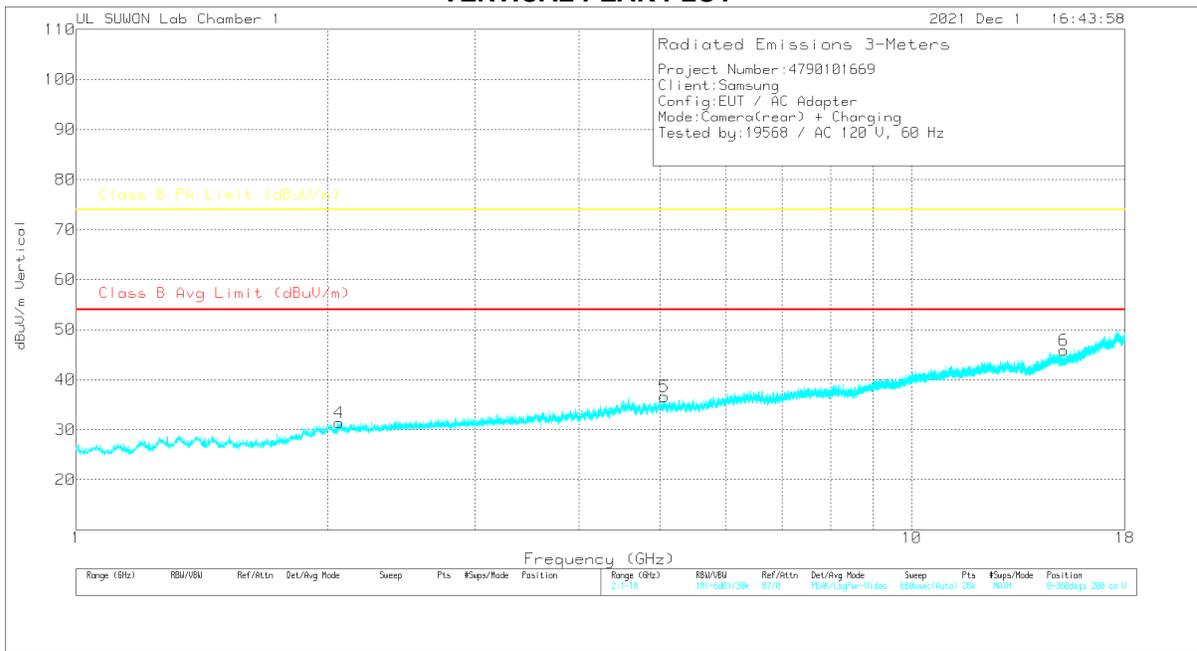
Ca - CISPR average detection

[Test case 2]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.13949	35.67	PK	31.6	-35.4	31.87	-	-	74	-42.13	0-360	100	H
2	4.57144	33.94	PK	34.2	-32	36.14	-	-	74	-37.86	0-360	100	H
3	9.25262	28.51	PK	36.7	-24.5	40.71	-	-	74	-33.29	0-360	100	H
4	2.06542	35.44	PK	31.6	-35.6	31.44	-	-	74	-42.56	0-360	200	V
5	5.0571	33.9	PK	34.2	-31.5	36.6	-	-	74	-37.4	0-360	200	V
6	15.21352	28.13	PK	40	-22.3	45.83	-	-	74	-28.17	0-360	200	V

PK – Peak Detector

Radiated Emissions

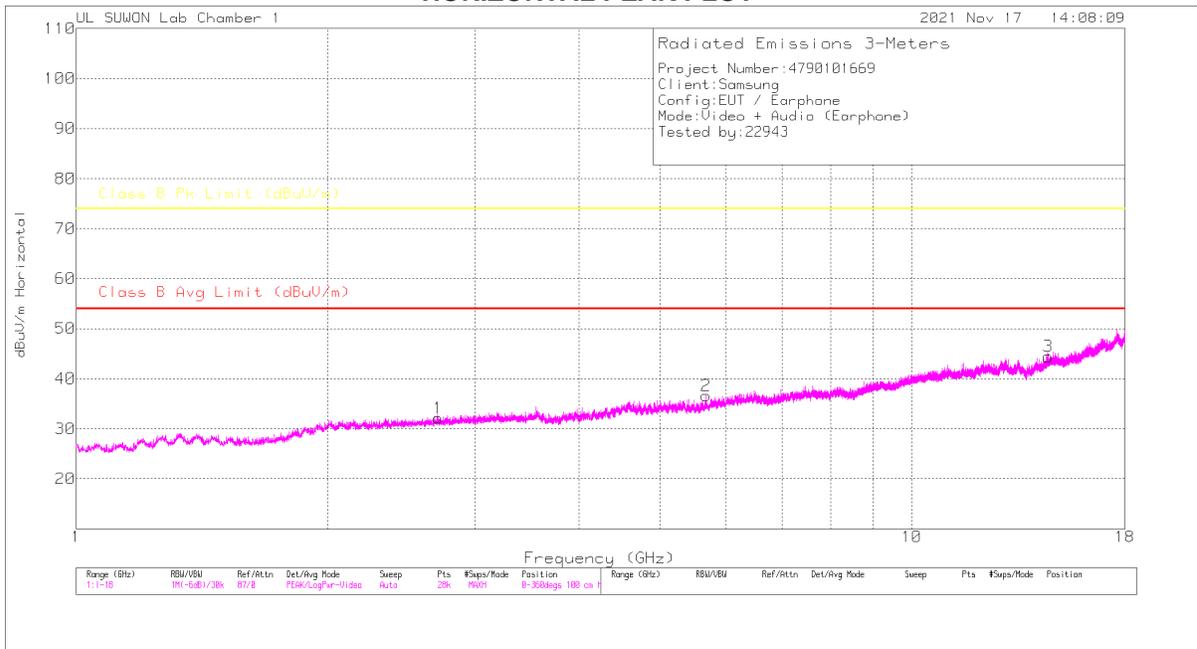
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.13949	41.87	Pk	31.6	-35.4	38.07	-	-	74	-35.93	360	100	H
2.13949	30.17	Ca	31.6	-35.4	26.37	54	-27.63	-	-	360	100	H
4.57144	40.25	Pk	34.2	-32	42.45	-	-	74	-31.55	360	100	H
4.57144	28.09	Ca	34.2	-32	30.29	54	-23.71	-	-	360	100	H
9.25262	35.33	Pk	36.7	-24.5	47.53	-	-	74	-26.47	360	100	H
9.25262	22.77	Ca	36.7	-24.5	34.97	54	-19.03	-	-	360	100	H
2.06542	41.8	Pk	31.6	-35.6	37.8	-	-	74	-36.2	360	100	V
2.06542	30.27	Ca	31.6	-35.6	26.27	54	-27.73	-	-	360	100	V
5.0571	40.36	Pk	34.2	-31.5	43.06	-	-	74	-30.94	360	100	V
5.0571	28.08	Ca	34.2	-31.5	30.78	54	-23.22	-	-	360	100	V
15.21352	33.73	Pk	40	-22.3	51.43	-	-	74	-22.57	360	100	V
15.21352	22.2	Ca	40	-22.3	39.9	54	-14.1	-	-	360	100	V

Pk - Peak detector

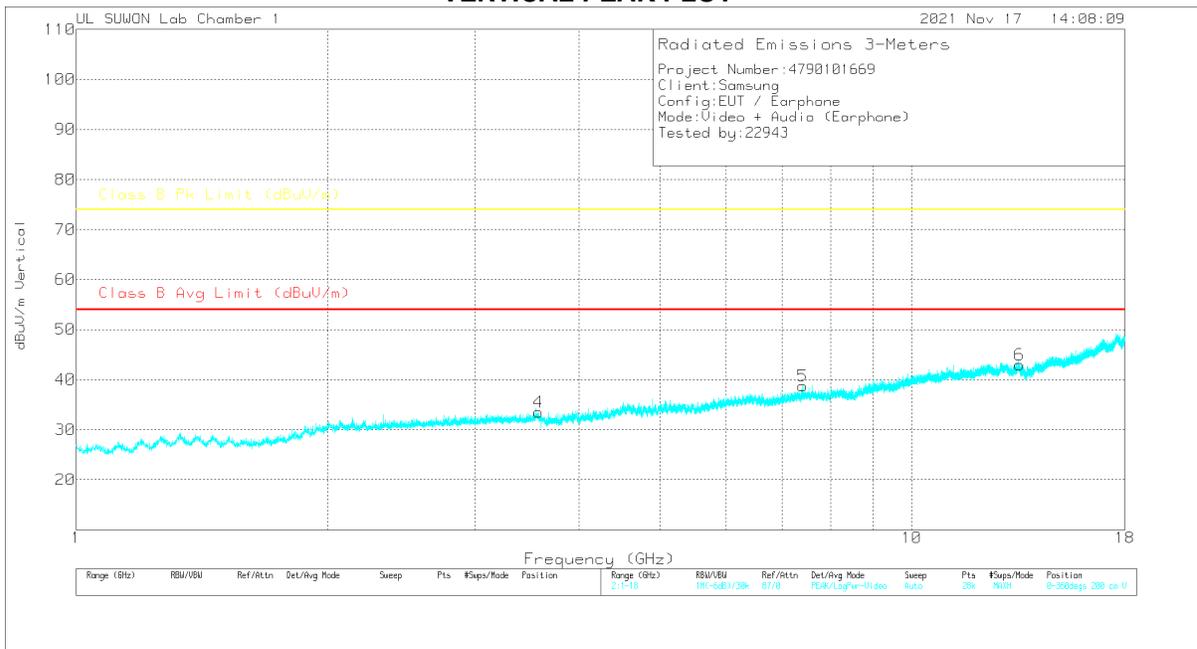
Ca - CISPR average detection

[Test case 3]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.71135	34.38	PK	32.1	-34.3	32.18	-	-	74	-41.82	0-360	100	H
2	5.67329	32.76	PK	34.8	-30.9	36.66	-	-	74	-37.34	0-360	100	H
3	14.57305	26.92	PK	39.8	-22.3	44.42	-	-	74	-29.58	0-360	100	H
4	3.57522	33.76	PK	33	-33.2	33.56	-	-	74	-40.44	0-360	200	V
5	7.40832	30.52	PK	35.8	-27.6	38.72	-	-	74	-35.28	0-360	200	V
6	13.46938	27.57	PK	38.5	-23.1	42.97	-	-	74	-31.03	0-360	200	V

PK – Peak Detector

Radiated Emissions

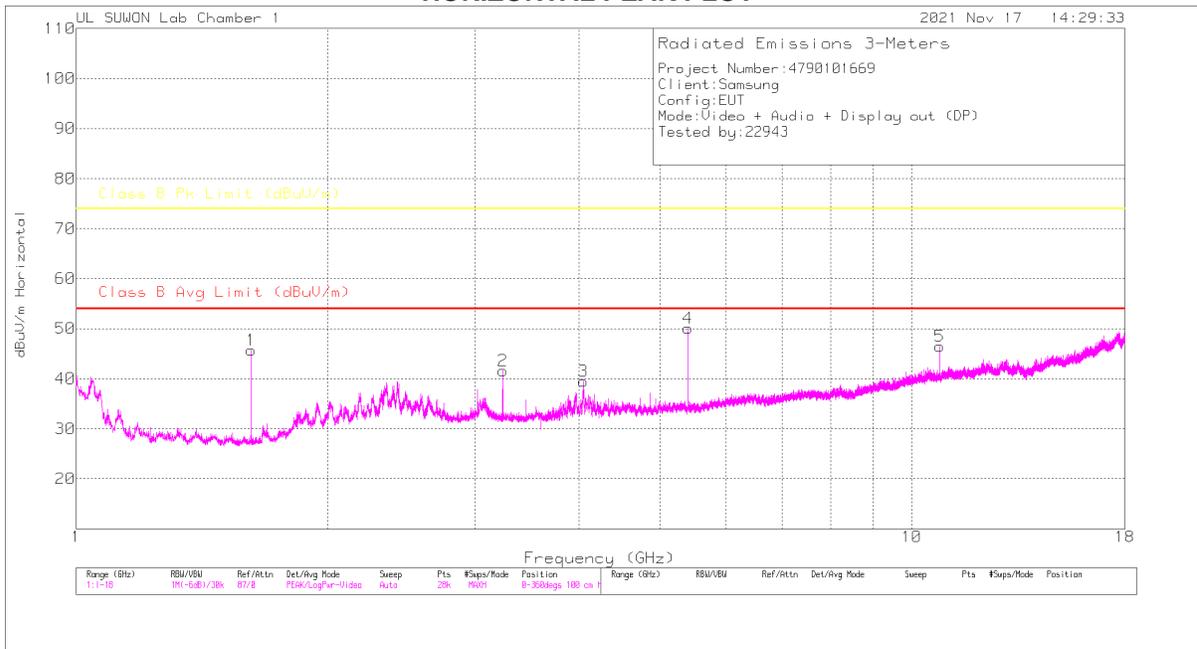
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.71135	41.47	Pk	32.1	-34.3	39.27	-	-	74	-34.73	360	100	H
2.71135	29.23	Ca	32.1	-34.3	27.03	54	-26.97	-	-	360	100	H
3.57522	40.21	Pk	33	-33.2	40.01	-	-	74	-33.99	360	100	V
3.57522	28.39	Ca	33	-33.2	28.19	54	-25.81	-	-	360	100	V
5.67329	38.3	Pk	34.8	-30.9	42.2	-	-	74	-31.8	360	100	H
5.67329	26.93	Ca	34.8	-30.9	30.83	54	-23.17	-	-	360	100	H
7.40832	36.53	Pk	35.8	-27.6	44.73	-	-	74	-29.27	360	100	V
7.40832	24.51	Ca	35.8	-27.6	32.71	54	-21.29	-	-	360	100	V
14.57305	34.35	Pk	39.8	-22.3	51.85	-	-	74	-22.15	360	100	H
14.57305	22.18	Ca	39.8	-22.3	39.68	54	-14.32	-	-	360	100	H
13.46938	35.86	Pk	38.5	-23.1	51.26	-	-	74	-22.74	360	100	V
13.46938	23.11	Ca	38.5	-23.1	38.51	54	-15.49	-	-	360	100	V

Pk - Peak detector

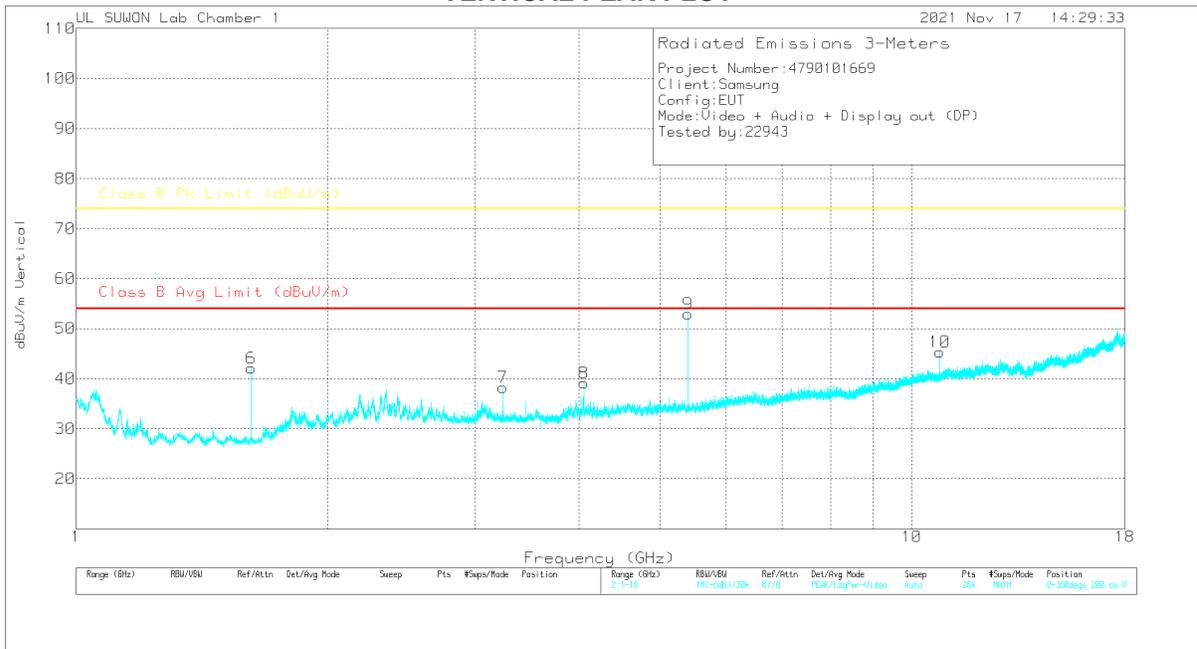
Ca - CISPR average detection

[Test case 4]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.61983	53.83	PK	28.4	-36.5	45.73	-	-	74	-28.27	0-360	100	H
2	3.24012	42.75	PK	32.7	-33.8	41.65	-	-	74	-32.35	0-360	100	H
3	4.04753	38.54	PK	33.5	-32.5	39.54	-	-	74	-34.46	0-360	100	H
4	5.40071	46.7	PK	34.5	-31.1	50.1	-	-	74	-23.9	0-360	100	H
5	10.80188	30.9	PK	38.1	-22.5	46.5	-	-	74	-27.5	0-360	100	H
6	1.61983	50.22	PK	28.4	-36.5	42.12	-	-	74	-31.88	0-360	200	V
7	3.24012	39.35	PK	32.7	-33.8	38.25	-	-	74	-35.75	0-360	200	V
8	4.05057	38.07	PK	33.5	-32.5	39.07	-	-	74	-34.93	0-360	200	V
9	5.40071	49.56	PK	34.5	-31.1	52.96	-	-	74	-21.04	0-360	200	V
10	10.80188	29.75	PK	38.1	-22.5	45.35	-	-	74	-28.65	0-360	200	V

PK – Peak Detector

Radiated Emissions

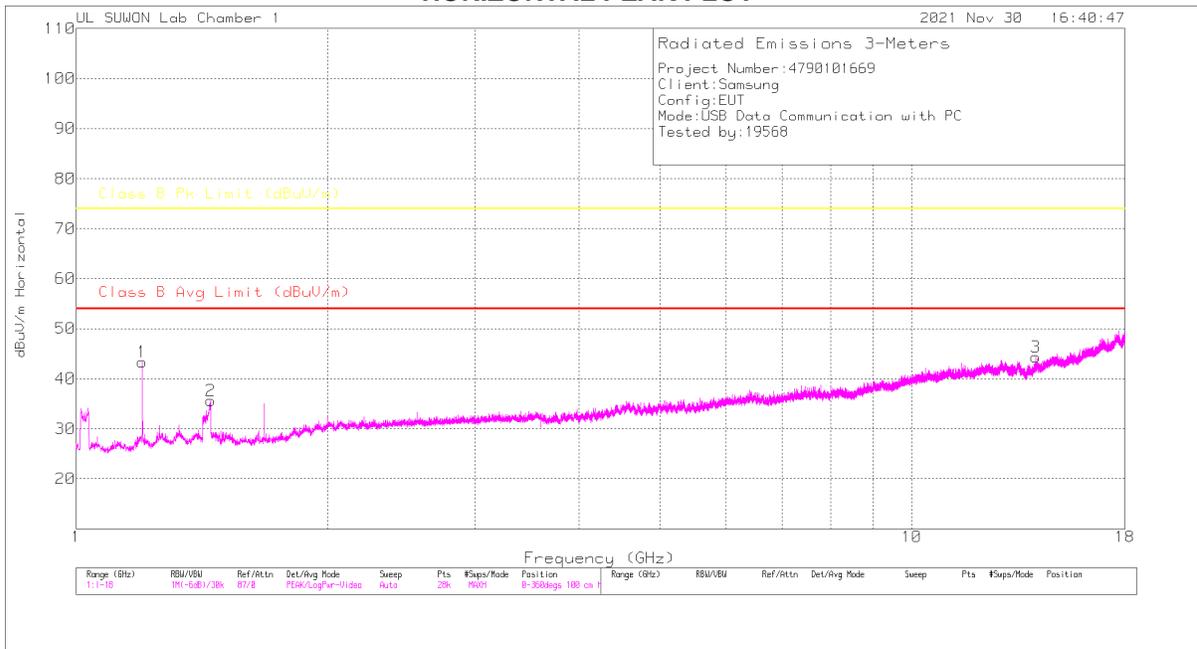
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.61983	55.2	Pk	28.4	-36.5	47.1	-	-	74	-26.9	257	100	H
1.61983	52.42	Ca	28.4	-36.5	44.32	54	-9.68	-	-	257	100	H
1.61983	53.17	PK	28.4	-36.5	45.07	-	-	74	-28.93	239	142	V
1.61983	48.47	Ca	28.4	-36.5	40.37	54	-13.63	-	-	239	142	V
3.24012	48.06	Pk	32.7	-33.8	46.96	-	-	74	-27.04	236	115	H
3.24012	41.93	Ca	32.7	-33.8	40.83	54	-13.17	-	-	236	115	H
3.24012	44.68	Pk	32.7	-33.8	43.58	-	-	74	-30.42	220	100	V
3.24012	34.57	Ca	32.7	-33.8	33.47	54	-20.53	-	-	220	100	V
4.04753	47.99	Pk	33.5	-32.5	48.99	-	-	74	-25.01	231	227	H
4.04753	34.07	Ca	33.5	-32.5	35.07	54	-18.93	-	-	231	227	H
4.05057	45.95	Pk	33.5	-32.5	46.95	-	-	74	-27.05	238	106	V
4.05057	38.29	Ca	33.5	-32.5	39.29	54	-14.71	-	-	238	106	V
5.40071	50.31	Pk	34.5	-31.1	53.71	-	-	74	-20.29	246	113	H
5.40071	46.68	Ca	34.5	-31.1	50.08	54	-3.92	-	-	246	113	H
5.40071	51.54	Pk	34.5	-31.1	54.94	-	-	74	-19.06	159	366	V
5.40071	48.58	Ca	34.5	-31.1	51.98	54	-2.02	-	-	159	366	V
10.80188	39.36	Pk	38.1	-22.5	54.96	-	-	74	-19.04	249	106	H
10.80188	30.06	Ca	38.1	-22.5	45.66	54	-8.34	-	-	249	106	H
10.80188	37.78	Pk	38.1	-22.5	53.38	-	-	74	-20.62	211	371	V
10.80188	27.26	Ca	38.1	-22.5	42.86	54	-11.14	-	-	211	371	V

Pk - Peak detector

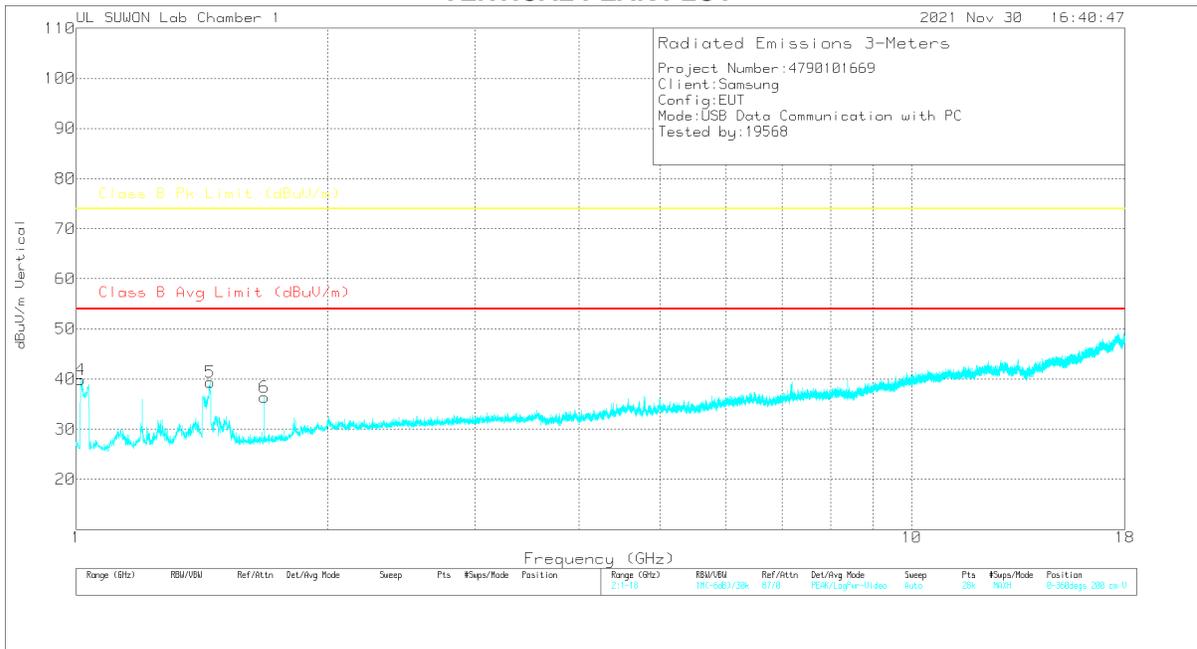
Ca - CISPR average detection

[Test case 5]

**HORIZONTAL PEAK PLOT**



**VERTICAL PEAK PLOT**



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**DATA**

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.19973	52.26	PK	28.5	-37.4	43.36	-	-	74	-30.64	0-360	100	H
2	1.44863	43.29	PK	29.2	-36.9	35.59	-	-	74	-38.41	0-360	100	H
3	14.08557	27.89	PK	39.2	-22.7	44.39	-	-	74	-29.61	0-360	100	H
4	1.01214	49.65	PK	28.1	-37.9	39.85	-	-	74	-34.15	0-360	200	V
5	1.4456	47.06	PK	29.2	-36.9	39.36	-	-	74	-34.64	0-360	200	V
6	1.67993	44.25	PK	28.5	-36.4	36.35	-	-	74	-37.65	0-360	200	V

PK – Peak Detector

**Radiated Emissions**

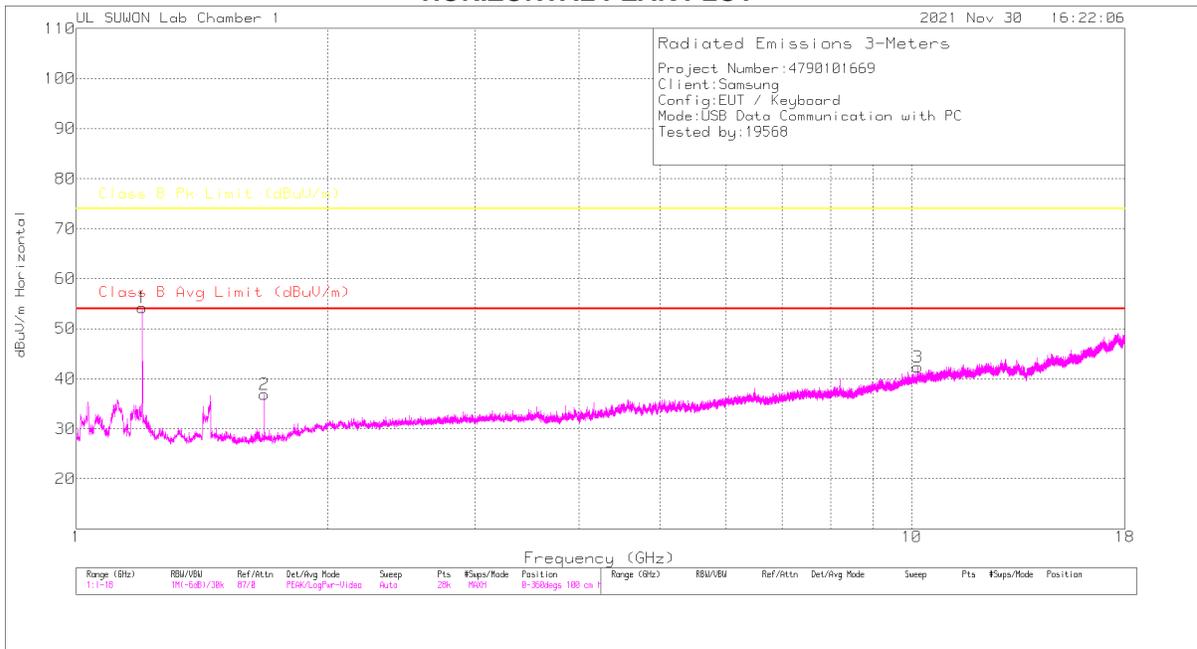
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.19973	49.91	Pk	28.5	-37.4	41.01	-	-	74	-32.99	46	100	H
1.19973	34.67	Ca	28.5	-37.4	25.77	54	-28.23	-	-	46	100	H
1.19973	50.7	Pk	28.5	-37.4	41.8	-	-	74	-32.2	195	127	V
1.19973	35.01	Ca	28.5	-37.4	26.11	54	-27.89	-	-	195	127	V
1.44863	43.77	Pk	29.2	-36.9	36.07	-	-	74	-37.93	38	362	H
1.44863	31.3	Ca	29.2	-36.9	23.6	54	-30.4	-	-	38	362	H
1.44863	60.22	Pk	29.2	-36.9	52.52	-	-	74	-21.48	13	200	V
1.44863	34.4	Ca	29.2	-36.9	26.7	54	-27.3	-	-	13	200	V
14.08557	35.44	Pk	39.2	-22.7	51.94	-	-	74	-22.06	260	100	H
14.08557	22.45	Ca	39.2	-22.7	38.95	54	-15.05	-	-	260	100	H
14.08557	35.97	Pk	39.2	-22.7	52.47	-	-	74	-21.53	260	100	V
14.08557	22.47	Ca	39.2	-22.7	38.97	54	-15.03	-	-	260	100	V

Pk - Peak detector

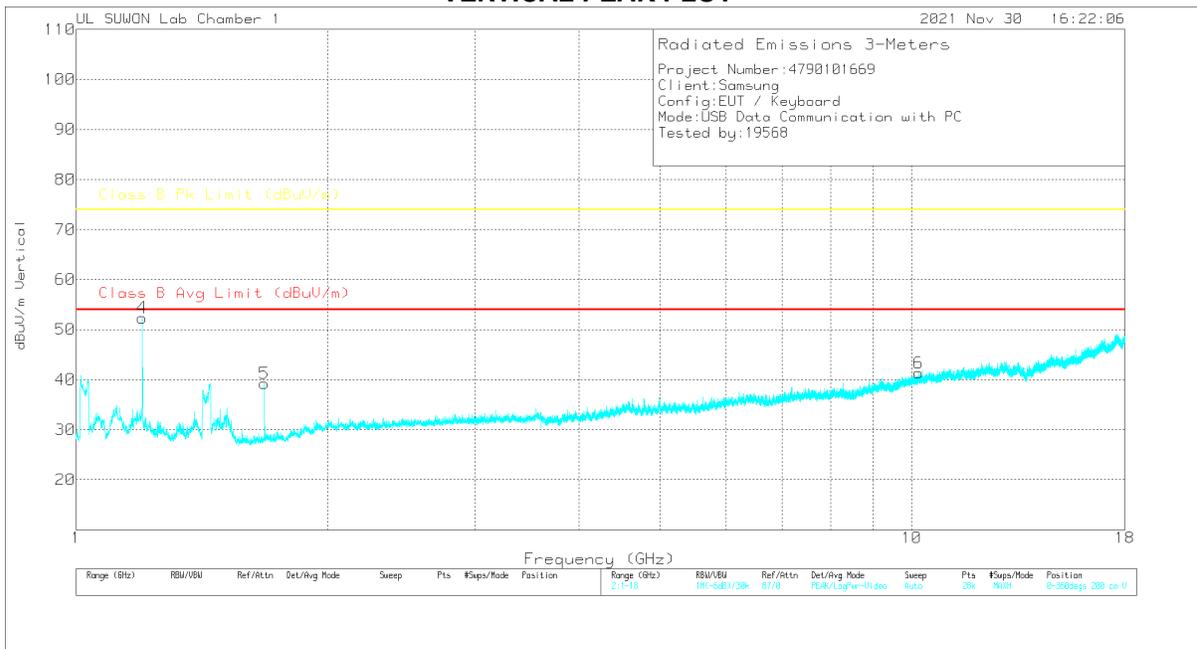
Ca - CISPR average detection

[Test case 6]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.19973	63.14	PK	28.5	-37.4	54.24	-	-	74	-19.76	0-360	100	H
2	1.67993	44.77	PK	28.5	-36.4	36.87	-	-	74	-37.13	0-360	100	H
3	10.16809	27.49	PK	37.8	-22.9	42.39	-	-	74	-31.61	0-360	100	H
4	1.19973	61.29	PK	28.5	-37.4	52.39	-	-	74	-21.61	0-360	200	V
5	1.67993	47.15	PK	28.5	-36.4	39.25	-	-	74	-34.75	0-360	200	V
6	10.20027	26.41	PK	37.8	-22.8	41.41	-	-	74	-32.59	0-360	200	V

PK – Peak Detector

Radiated Emissions

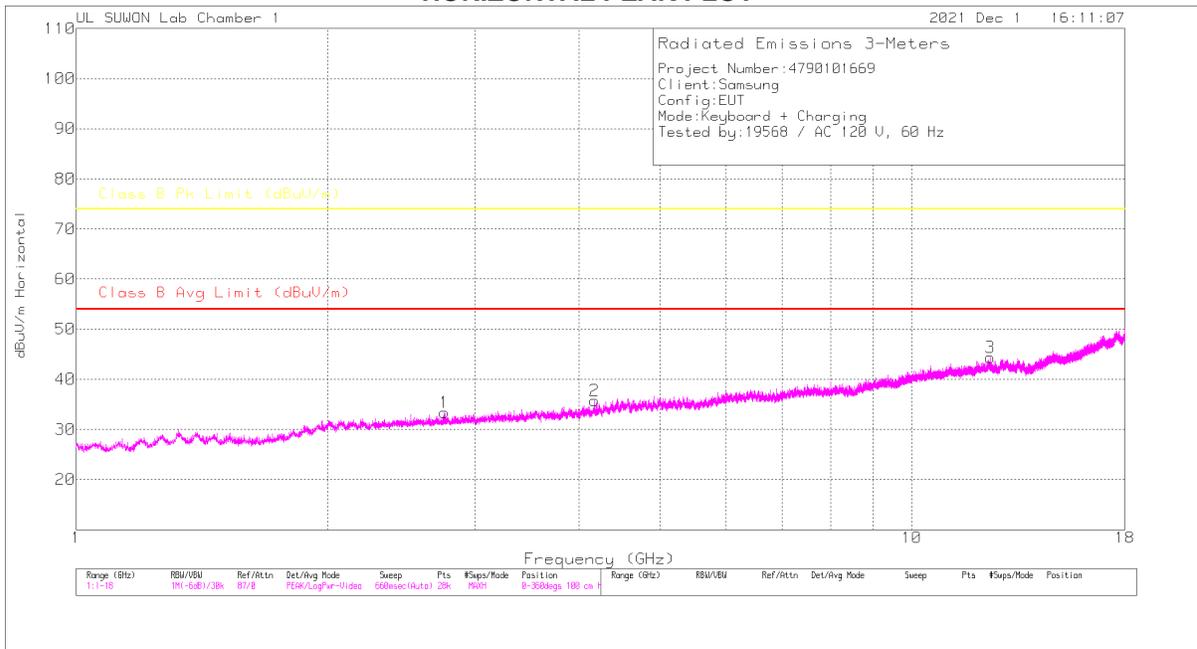
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.19973	50.01	Pk	28.5	-37.4	41.11	-	-	74	-32.89	46	101	H
1.19973	34.63	Ca	28.5	-37.4	25.73	54	-28.27	-	-	46	101	H
1.19973	50.28	Pk	28.5	-37.4	41.38	-	-	74	-32.62	194	128	V
1.19973	34.96	Ca	28.5	-37.4	26.06	54	-27.94	-	-	194	128	V
1.67993	42.92	Pk	28.5	-36.4	35.02	-	-	74	-38.98	235	377	H
1.67993	31.07	Ca	28.5	-36.4	23.17	54	-30.83	-	-	235	377	H
1.67993	43.4	Pk	28.5	-36.4	35.5	-	-	74	-38.5	6	346	V
1.67993	31.08	Ca	28.5	-36.4	23.18	54	-30.82	-	-	6	346	V
10.16809	33.94	Pk	37.8	-22.9	48.84	-	-	74	-25.16	360	100	H
10.16809	21.64	Ca	37.8	-22.9	36.54	54	-17.46	-	-	360	100	H
10.16809	33.73	PK	37.8	-22.9	48.63	-	-	74	-25.37	360	100	V
10.16809	21.64	Ca	37.8	-22.9	36.54	54	-17.46	-	-	360	100	V

Pk - Peak detector

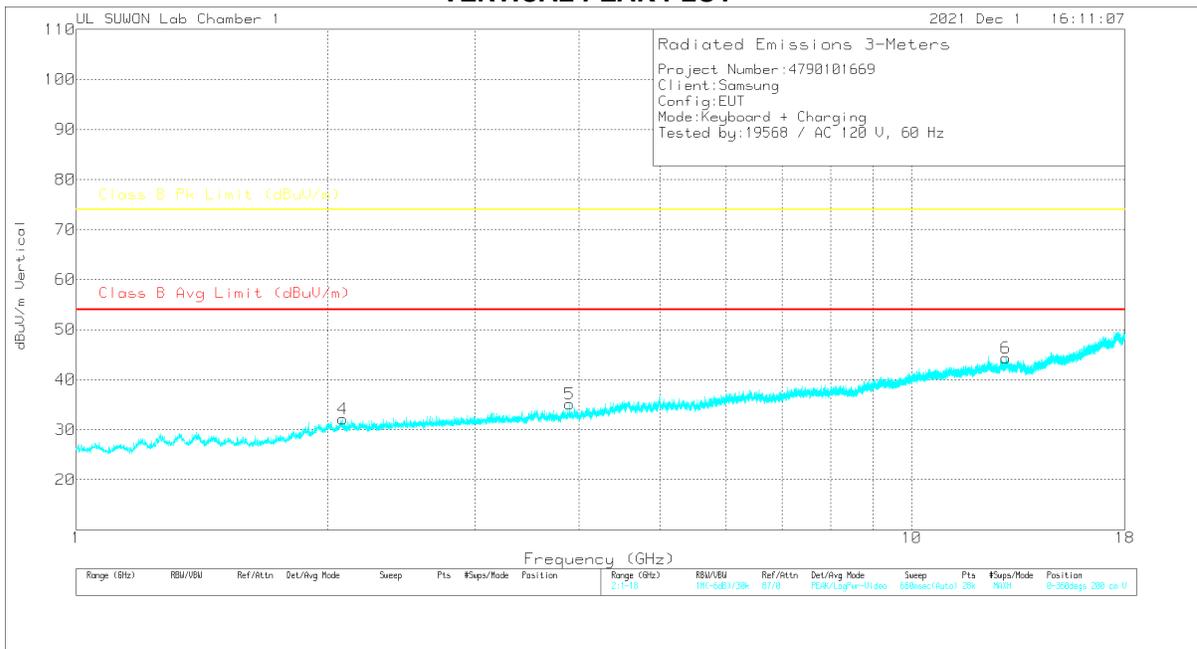
Ca - CISPR average detection

[Test case 7]

**HORIZONTAL PEAK PLOT**



**VERTICAL PEAK PLOT**



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.75749	35.34	PK	32.2	-34.2	33.34	-	-	74	-40.66	0-360	100	H
2	4.17502	34.51	PK	33.6	-32.3	35.81	-	-	74	-38.19	0-360	100	H
3	12.42885	27.71	PK	38.9	-22.2	44.41	-	-	74	-29.59	0-360	100	H
4	2.08424	36.03	PK	31.6	-35.5	32.13	-	-	74	-41.87	0-360	200	V
5	3.89819	34.38	PK	33.4	-32.7	35.08	-	-	74	-38.92	0-360	200	V
6	12.97279	28.34	PK	39	-23	44.34	-	-	74	-29.66	0-360	200	V

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.75749	40.61	Pk	32.2	-34.2	38.61	-	-	74	-35.39	360	100	H
2.75749	29.21	Ca	32.2	-34.2	27.21	54	-26.79	-	-	360	100	H
4.17502	41.88	Pk	33.6	-32.3	43.18	-	-	74	-30.82	360	100	H
4.17502	28.48	Ca	33.6	-32.3	29.78	54	-24.22	-	-	360	100	H
12.42885	34.75	Pk	38.9	-22.2	51.45	-	-	74	-22.55	360	100	H
12.42885	22.08	Ca	38.9	-22.2	38.78	54	-15.22	-	-	360	100	H
2.08424	43.03	Pk	31.6	-35.5	39.13	-	-	74	-34.87	360	100	V
2.08424	30.45	Ca	31.6	-35.5	26.55	54	-27.45	-	-	360	100	V
3.89819	40.18	Pk	33.4	-32.7	40.88	-	-	74	-33.12	360	100	V
3.89819	28.33	Ca	33.4	-32.7	29.03	54	-24.97	-	-	360	100	V
12.97279	34.77	Pk	39	-23	50.77	-	-	74	-23.23	360	100	V
12.97279	22.54	Ca	39	-23	38.54	54	-15.46	-	-	360	100	V

Pk - Peak detector

Ca - CISPR average detection

## 7.2. CONDUCTED EMISSIONS

### TEST PROCEDURE

ANSI C63.4-2014

### LIMIT

§15.107 (a) and ICES-003 Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dB $\mu$ V)	
	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

Notes:  
 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.

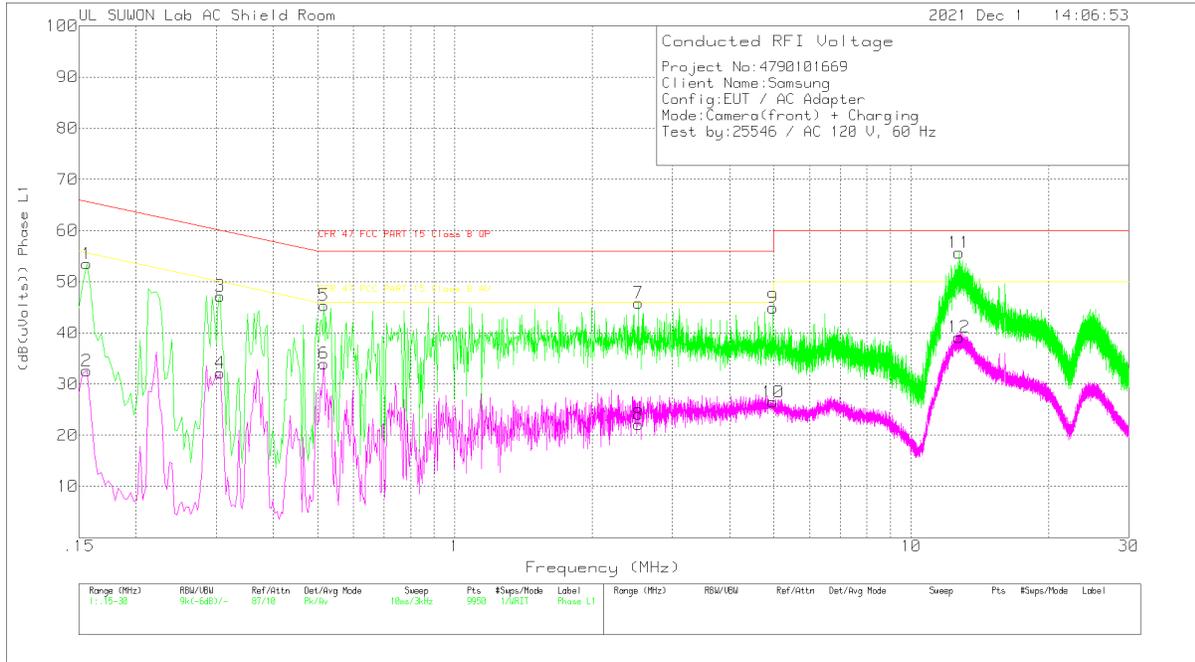
## 7.2.1. CONDUCTED EMISSIONS

[Test case 1]

### 6 WORST EMISSIONS

Line-L1 .15 – 30 MHz

### LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.156	43.63	Pk	9.8	.1	53.53	65.67	-12.14	-	-
2	.156	22.69	Av	9.8	.1	32.59	-	-	55.67	-23.08
3	.306	37.3	Pk	9.7	.2	47.2	60.08	-12.88	-	-
4	.306	22.25	Av	9.7	.2	32.15	-	-	50.08	-17.93
5	.516	35.26	Pk	9.9	.2	45.36	56	-10.64	-	-
6	.516	23.92	Av	9.9	.2	34.02	-	-	46	-11.98
7	2.529	35.85	Pk	9.7	.3	45.85	56	-10.15	-	-
8	2.529	12.13	Av	9.7	.3	22.13	-	-	46	-23.87
9	4.983	34.93	Pk	9.7	.3	44.93	56	-11.07	-	-
10	4.983	16.51	Av	9.7	.3	26.51	-	-	46	-19.49
11	12.732	45.49	Pk	9.9	.3	55.69	60	-4.31	-	-
12	12.732	28.96	Av	9.9	.3	39.16	-	-	50	-10.84

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

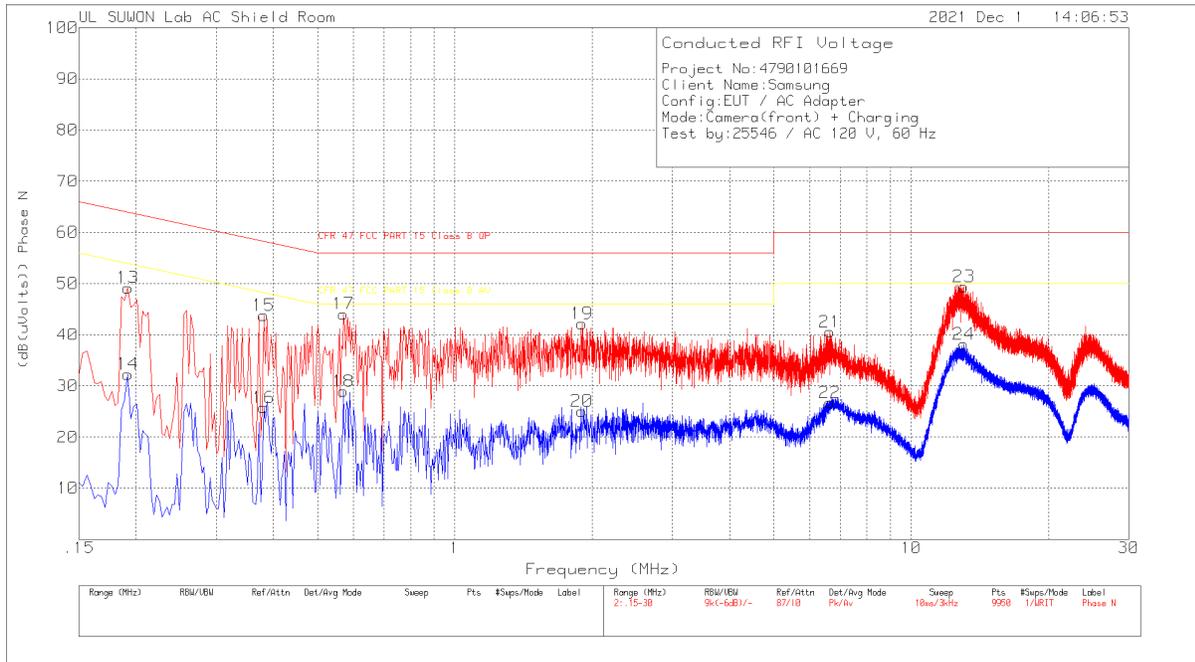
Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
12.7313	34.19	Qp	9.9	.3	44.39	60	-15.61	-	-

Qp - Quasi-Peak detector

**Line-L2 .15 – 30 MHz**

**LINE 2 RESULTS**



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.192	39.09	Pk	9.9	.2	49.19	63.95	-14.76	-	-
14	.192	22.19	Av	9.9	.2	32.29	-	-	53.95	-21.66
15	.381	33.76	Pk	9.8	.2	43.76	58.26	-14.5	-	-
16	.381	15.76	Av	9.8	.2	25.76	-	-	48.26	-22.5
17	.57	33.95	Pk	9.9	.2	44.05	56	-11.95	-	-
18	.57	18.83	Av	9.9	.2	28.93	-	-	46	-17.07
19	1.899	32.17	Pk	9.7	.3	42.17	56	-13.83	-	-
20	1.899	15.05	Av	9.7	.3	25.05	-	-	46	-20.95
21	6.639	30.44	Pk	9.8	.3	40.54	60	-19.46	-	-
22	6.639	16.62	Av	9.8	.3	26.72	-	-	50	-23.28
23	13.05	39	Pk	10	.4	49.4	60	-10.6	-	-
24	13.05	27.73	Av	10	.4	38.13	-	-	50	-11.87

Pk - Peak detector

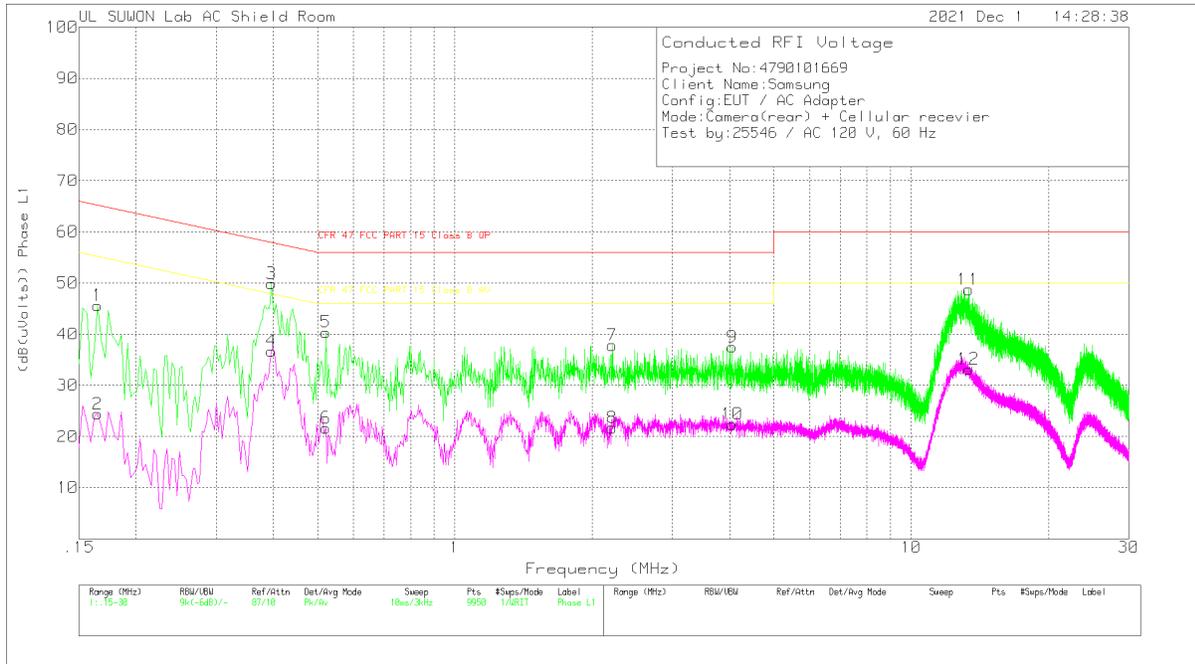
Av - Average detection

[Test case 2]

**6 WORST EMISSIONS**

**Line-L1 .15 – 30 MHz**

**LINE 1 RESULTS**



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.165	35.6	Pk	9.9	.1	45.6	65.21	-19.61	-	-
2	.165	14.4	Av	9.9	.1	24.4	-	-	55.21	-30.81
3	.396	39.9	Pk	9.8	.2	49.9	57.94	-8.04	-	-
4	.396	26.7	Av	9.8	.2	36.7	-	-	47.94	-11.24
5	.522	30.28	Pk	9.9	.2	40.38	56	-15.62	-	-
6	.522	11.53	Av	9.9	.2	21.63	-	-	46	-24.37
7	2.214	27.82	Pk	9.7	.3	37.82	56	-18.18	-	-
8	2.214	11.69	Av	9.7	.3	21.69	-	-	46	-24.31
9	4.053	27.51	Pk	9.7	.3	37.51	56	-18.49	-	-
10	4.053	12.4	Av	9.7	.3	22.4	-	-	46	-23.6
11	13.356	38.31	Pk	10	.4	48.71	60	-11.29	-	-
12	13.356	22.74	Av	10	.4	33.14	-	-	50	-16.86

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

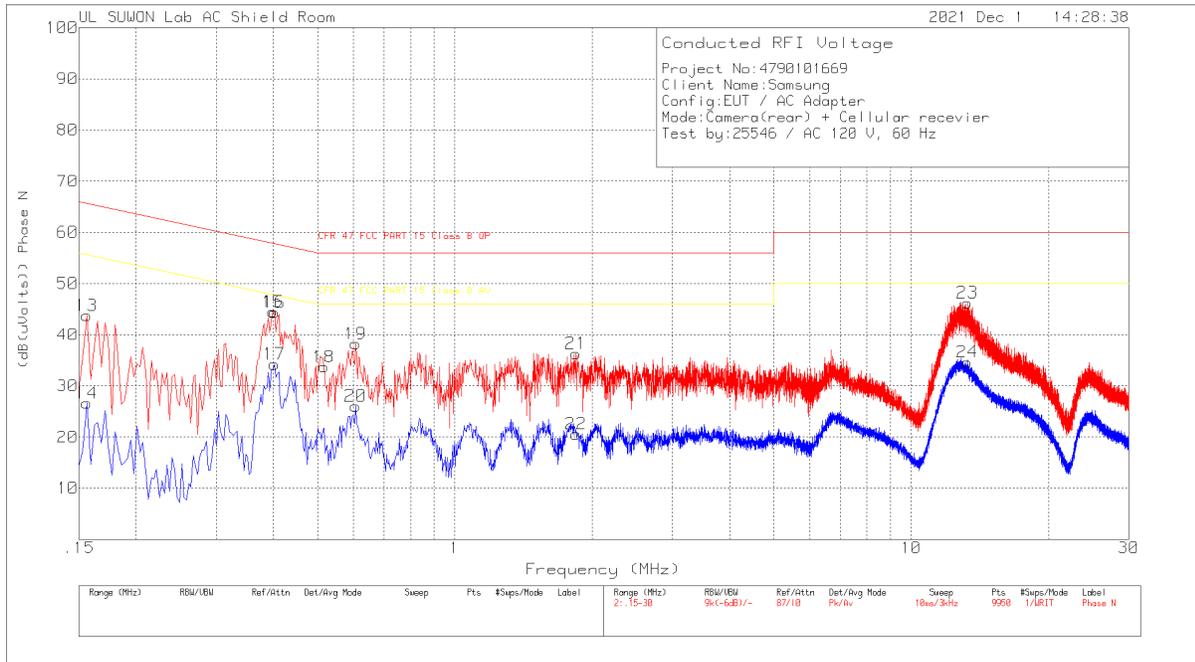
Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.39675	34.14	Qp	9.8	.2	44.14	57.92	-13.78	-	-

Qp - Quasi-Peak detector

**Line-L2 .15 – 30 MHz**

**LINE 2 RESULTS**



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.156	33.83	Pk	9.8	.1	43.73	65.67	-21.94	-	-
14	.156	16.7	Av	9.8	.1	26.6	-	-	55.67	-29.07
15	.399	34.47	Pk	9.8	.2	44.47	57.87	-13.4	-	-
16	.402	34.38	Pk	9.8	.2	44.38	57.81	-13.43	-	-
17	.402	24.25	Av	9.8	.2	34.25	-	-	47.81	-13.56
18	.516	23.6	Pk	9.9	.2	33.7	56	-22.3	-	-
19	.606	28.23	Pk	9.8	.2	38.23	56	-17.77	-	-
20	.606	16.06	Av	9.8	.2	26.06	-	-	46	-19.94
21	1.842	26.33	Pk	9.7	.3	36.33	56	-19.67	-	-
22	1.842	10.6	Av	9.7	.3	20.6	-	-	46	-25.4
23	13.29	35.84	Pk	10	.4	46.24	60	-13.76	-	-
24	13.29	24.23	Av	10	.4	34.63	-	-	50	-15.37

Pk - Peak detector

Av - Average detection



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.174	52.34	Pk	10	.2	62.54	64.77	-2.23	-	-
2	.174	37.14	Av	10	.2	47.34	-	-	54.77	-7.43
3	.813	23.99	Pk	9.8	.2	33.99	56	-22.01	-	-
4	.813	19.54	Av	9.8	.2	29.54	-	-	46	-16.46
5	1.629	27.87	Pk	9.7	.3	37.87	56	-18.13	-	-
6	1.629	20.66	Av	9.7	.3	30.66	-	-	46	-15.34
7	4.191	33.15	Pk	9.7	.3	43.15	56	-12.85	-	-
8	4.167	15.13	Av	9.7	.3	25.13	-	-	46	-20.87
9	4.89	33.55	Pk	9.7	.3	43.55	56	-12.45	-	-
10	4.89	16.23	Av	9.7	.3	26.23	-	-	46	-19.77
11	11.181	30.17	Pk	9.9	.3	40.37	60	-19.63	-	-
12	11.175	19.27	Av	9.9	.3	29.47	-	-	50	-20.53

Pk - Peak detector  
 Av - Average detection

Quasi-Peak Emissions

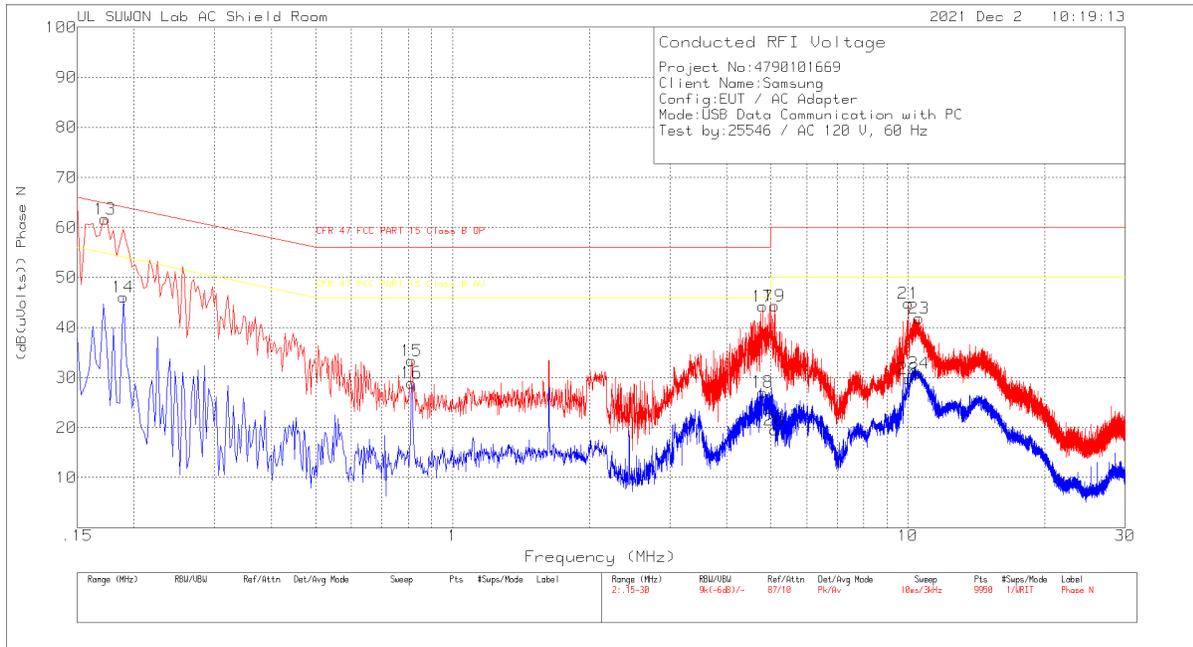
Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.17415	45.51	Qp	10	.2	55.71	64.76	-9.05	-	-

Qp - Quasi-Peak detector

**Line-L2 .15 – 30 MHz**

**LINE 2 RESULTS**



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.1725	51.43	Pk	10	.2	61.63	64.84	-3.21	-	-
14	.189	35.92	Av	9.9	.2	46.02	-	-	54.08	-8.06
15	.813	23.35	Pk	9.8	.2	33.35	56	-22.65	-	-
16	.813	18.93	Av	9.8	.2	28.93	-	-	46	-17.07
17	4.806	34.15	Pk	9.7	.3	44.15	56	-11.85	-	-
18	4.806	17.06	Av	9.7	.3	27.06	-	-	46	-18.94
19	5.103	34.33	Pk	9.7	.3	44.33	60	-15.67	-	-
20	5.103	9.47	Av	9.7	.3	19.47	-	-	50	-30.53
21	10.038	34.52	Pk	9.9	.4	44.82	60	-15.18	-	-
22	10.038	19.4	Av	9.9	.4	29.7	-	-	50	-20.3
23	10.59	31.53	Pk	9.9	.4	41.83	60	-18.17	-	-
24	10.59	20.59	Av	9.9	.4	30.89	-	-	50	-19.11

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.17175	45.7	Qp	10	.2	55.9	64.88	-8.98	-	-

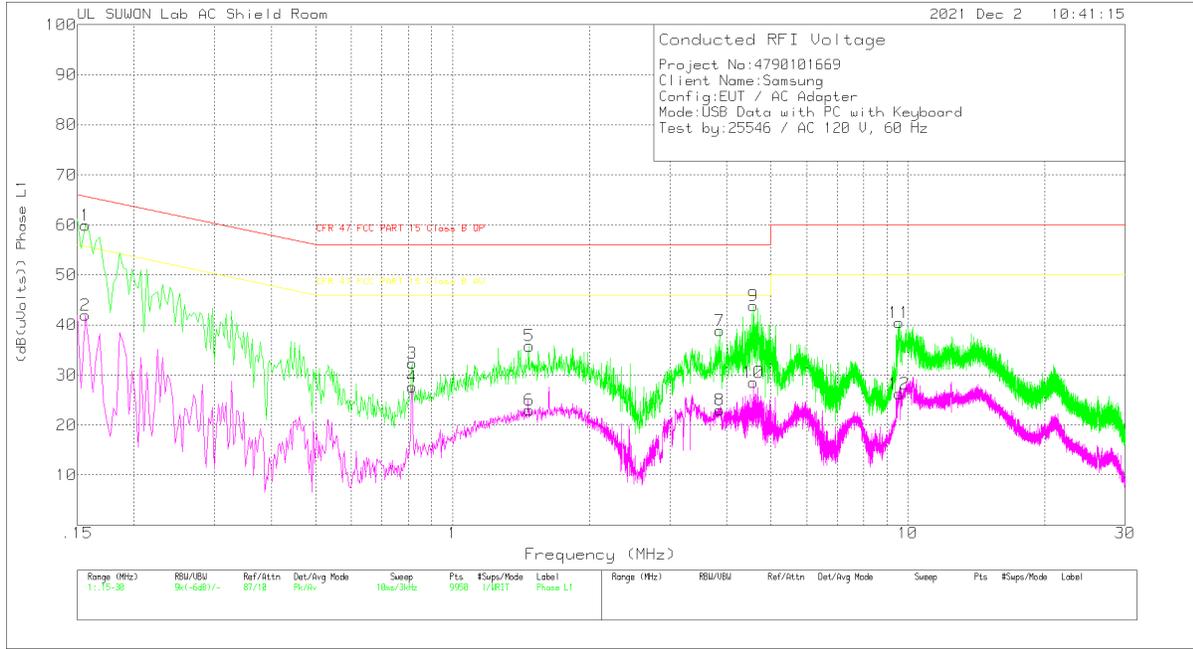
Qp - Quasi-Peak detector

[Test case 6]

**6 WORST EMISSIONS**

**Line-L1 .15 – 30 MHz**

**LINE 1 RESULTS**



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.156	49.97	Pk	9.8	.1	59.87	65.67	-5.8	-	-
2	.156	32.03	Av	9.8	.1	41.93	-	-	55.67	-13.74
3	.816	22.34	Pk	9.8	.2	32.34	56	-23.66	-	-
4	.816	17.57	Av	9.8	.2	27.57	-	-	46	-18.43
5	1.473	25.79	Pk	9.7	.3	35.79	56	-20.21	-	-
6	1.473	12.97	Av	9.7	.3	22.97	-	-	46	-23.03
7	3.858	28.79	Pk	9.7	.3	38.79	56	-17.21	-	-
8	3.858	13.04	Av	9.7	.3	23.04	-	-	46	-22.96
9	4.584	33.84	Pk	9.7	.3	43.84	56	-12.16	-	-
10	4.584	18.55	Av	9.7	.3	28.55	-	-	46	-17.45
11	9.567	30.24	Pk	9.8	.4	40.44	60	-19.56	-	-
12	9.567	16.06	Av	9.8	.4	26.26	-	-	50	-23.74

Pk - Peak detector  
 Av - Average detection

Quasi-Peak Emissions

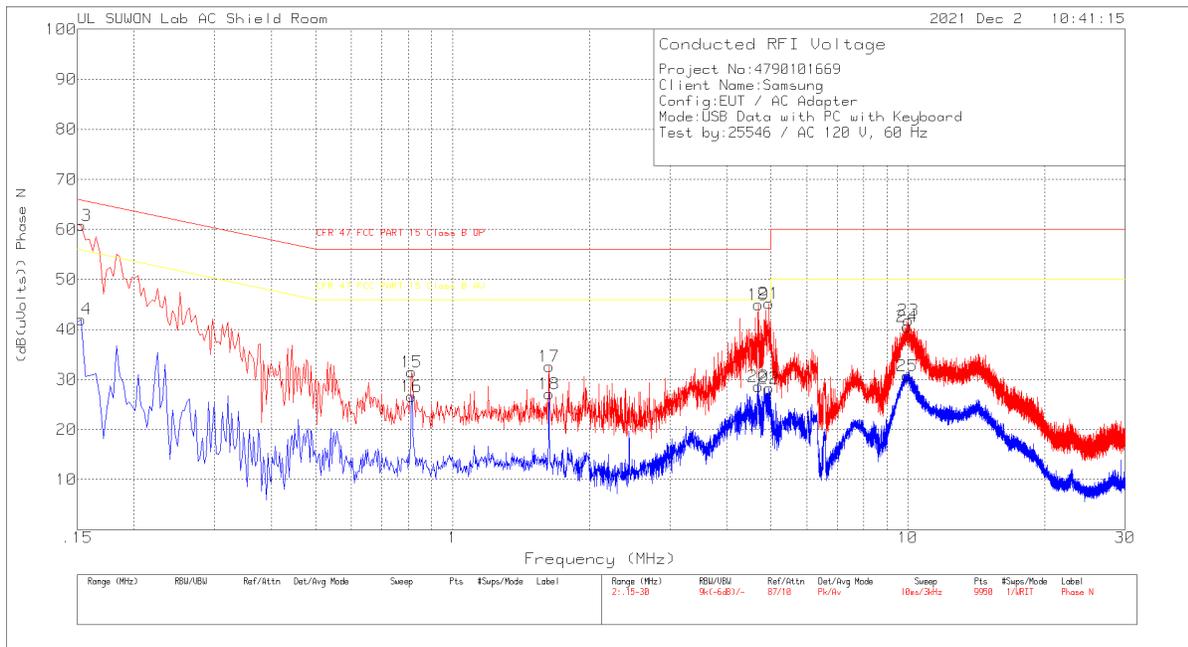
Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.15525	45.08	Qp	9.8	.1	54.98	65.71	-10.73	-	-

Qp - Quasi-Peak detector

**Line-L2 .15 – 30 MHz**

**LINE 2 RESULTS**



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.153	50.92	Pk	9.8	.1	60.82	65.84	-5.02	-	-
14	.153	32.12	Av	9.8	.1	42.02	-	-	55.84	-13.82
15	.813	21.48	Pk	9.8	.2	31.48	56	-24.52	-	-
16	.813	16.62	Av	9.8	.2	26.62	-	-	46	-19.38
17	1.629	22.56	Pk	9.7	.3	32.56	56	-23.44	-	-
18	1.629	17.09	Av	9.7	.3	27.09	-	-	46	-18.91
19	4.701	34.92	Pk	9.7	.3	44.92	56	-11.08	-	-
20	4.701	18.62	Av	9.7	.3	28.62	-	-	46	-17.38
21	4.95	35.14	Pk	9.7	.3	45.14	56	-10.86	-	-
22	4.95	18.26	Av	9.7	.3	28.26	-	-	46	-17.74
23	10.02	31.51	Pk	9.9	.4	41.81	60	-18.19	-	-
24	9.957	30.31	Pk	9.9	.4	40.61	60	-19.39	-	-
25	9.957	20.48	Av	9.9	.4	30.78	-	-	50	-19.22

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.15225	45.67	Qp	9.7	.1	55.47	65.88	-10.41	-	-

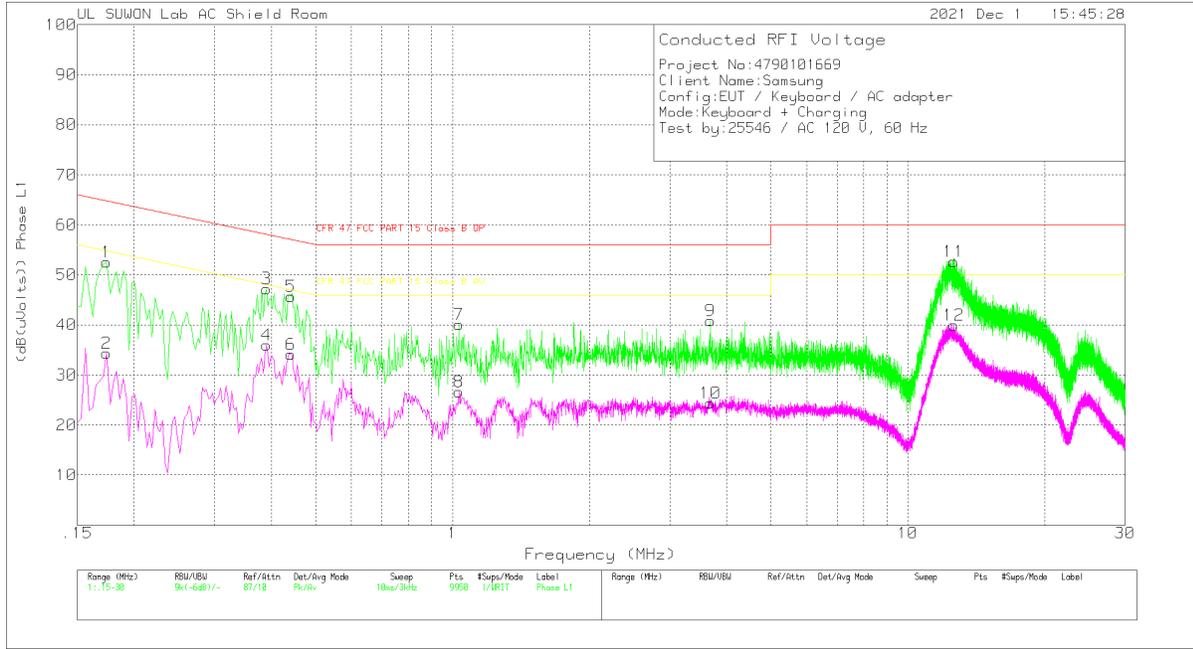
Qp - Quasi-Peak detector

[Test case 7]

**6 WORST EMISSIONS**

**Line-L1 .15 – 30 MHz**

**LINE 1 RESULTS**



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.171	42.25	Pk	10	.2	52.45	64.91	-12.46	-	-
2	.174	22.55	Av	10	.2	32.75	-	-	54.77	-22.02
3	.393	37.51	Pk	9.8	.2	47.51	58	-10.49	-	-
4	.408	27.99	Av	9.8	.2	37.99	-	-	47.69	-9.7
5	.597	28.04	Pk	9.8	.2	38.04	56	-17.96	-	-
6	.615	16.22	Av	9.8	.2	26.22	-	-	46	-19.78
7	1.245	27.44	Pk	9.7	.3	37.44	56	-18.56	-	-
8	1.29	12.36	Av	9.7	.3	22.36	-	-	46	-23.64
9	6.912	26.98	Pk	9.8	.3	37.08	60	-22.92	-	-
10	6.909	12.85	Av	9.8	.3	22.95	-	-	50	-27.05
11	12.321	41.17	Pk	9.9	.3	51.37	60	-8.63	-	-
12	12.312	28.57	Av	9.9	.3	38.77	-	-	50	-11.23

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.40725	35.33	Qp	9.8	.2	45.33	57.7	-12.37	-	-
12.3218	35.39	Qp	9.9	.3	45.59	60	-14.41	-	-

Qp - Quasi-Peak detector

**Line-L2 .15 – 30 MHz**

**LINE 2 RESULTS**

Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[dB]	CABLELOSS (dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.186	41.45	Pk	9.9	.2	51.55	64.21	-12.66	-	-
14	.186	20.4	Av	9.9	.2	30.5	-	-	54.21	-23.71
15	.405	37.47	Pk	9.8	.2	47.47	57.75	-10.28	-	-
16	.405	27.23	Av	9.8	.2	37.23	-	-	47.75	-10.52
17	.591	28.42	Pk	9.9	.2	38.52	56	-17.48	-	-
18	.588	14.87	Av	9.9	.2	24.97	-	-	46	-21.03
19	1.563	26.48	Pk	9.7	.3	36.48	56	-19.52	-	-
20	1.575	12.57	Av	9.7	.3	22.57	-	-	46	-23.43
21	6.906	24.43	Pk	9.8	.3	34.53	60	-25.47	-	-
22	6.918	14.79	Av	9.8	.3	24.89	-	-	50	-25.11
23	12.585	37.96	Pk	10	.3	48.26	60	-11.74	-	-
24	12.579	27.39	Av	10	.3	37.69	-	-	50	-12.31

Pk - Peak detector

Av - Average detection

**END OF TEST REPORT**