



CERTIFICATION TEST REPORT

Report Number. : 4790302422-E1V1

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

Model : SM-A136M/DS, SM-A136M

FCC ID : A3LSMA136M

EUT Description : GSM/WCDMA/LTE/5G NR Phone + BT/BLE and DTS/UNII a/b/g/n/ac

Test Standard(s) : FCC 47 CFR PART 15 SUBPART B

Date Of Issue:
2022-04-05

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ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-04-05	Initial issue	Steven(Sangyun) Kim

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION.....	6
4.2. SAMPLE CALCULATION.....	6
4.3. MEASUREMENT UNCERTAINTY	6
4.4. DECISION RULE	6
5. EQUIPMENT UNDER TEST	7
5.1. DESCRIPTION OF EUT.....	7
5.2. TEST MODE	7
5.3. WORST-CASE ORIENTATION AND MODE.....	7
5.1. MODIFICATIONS.....	8
5.2. DETAILS OF TESTED SYSTEM.....	8
6. TEST AND MEASUREMENT EQUIPMENT	12
7. TEST RESULTS.....	13
7.1. RADIATED EMISSIONS	13
7.1.1. RADIATED EMISSIONS 30 TO 1000 MHz	14
7.1.2. RADIATED EMISSIONS 1 GHz to 18 GHz	18
7.2. CONDUCTED EMISSIONS.....	22
7.2.1. CONDUCTED EMISSIONS	23

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE/5G NR Phone + BT/BLE and DTS/UNII a/b/g/n/ac
MODEL NUMBER: SM-A136M/DS, SM-A136M
SERIAL NUMBER: R3CT206QXGH (RADIATED)
DATE TESTED: 2022-03-31 ~ 2022-04-01;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15B	Complies

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:



Seokhwan Hong
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. 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	
☒	Chamber 1(3m semi-anechoic chamber)
☐	Chamber 2(3m semi-anechoic chamber)
☐	Chamber 3(3m semi-anechoic chamber)
☐	Chamber 4(3m Full-anechoic chamber)
☐	Chamber 5(3m Full-anechoic chamber)

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:

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

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

(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

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

The EUT is a GSM/WCDMA/LTE/5G NR Phone + BT/BLE and DTS/UNII a/b/g/n/ac.

This report covers the Samsung models SM-A136M/DS and SM-A136M.
These models are identical in hardware except SM-A136M has single SIM tray.
With some pre-scan, model SM-A136M/DS was set for final test.

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
List of frequencies generated or used by the EUT	30 GHz (5th harmonic of the frequency of 5GHz UNII)

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
Test Case 4	USB Data Communication with PC

Note: All descriptions were tested under simultaneous operation.
Receiver Mode (Licensed Band within 30-960MHz) test result refer to FCC Report Receiver mode(CXX).

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, all final radiated testing was performed with the EUT in X 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	P15S	PF1ARJSC	DoC
AC/DC Adapter	Lenovo	ADLX65YDC3D	8SSA10R16870D1SG09E04YX	N/A
Mouse	LENOVO	MSU1175	4G084D5273B	DoC
Data Cable	SAMSUNG	EP-DR140AWE	GH39-01999A	N/A
Charger	SAMSUNG	EP-TA200	R37KC6F39T1SE3	N/A
Earphone	SAMSUNG	GH59-15055A	EHS64AVFWE	N/A
Micro SD Card	SAMSUNG	MB-MC256GA	-	-

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	Earphone	1	Earjack	Shielded	0.7m	From Earphone to EUT
4	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	Earjack	Shielded	0.7m	From Earphone to EUT
2	Micro SD Slot	1	-	-	Direct	Fitted In EUT

* Radiated Test Only

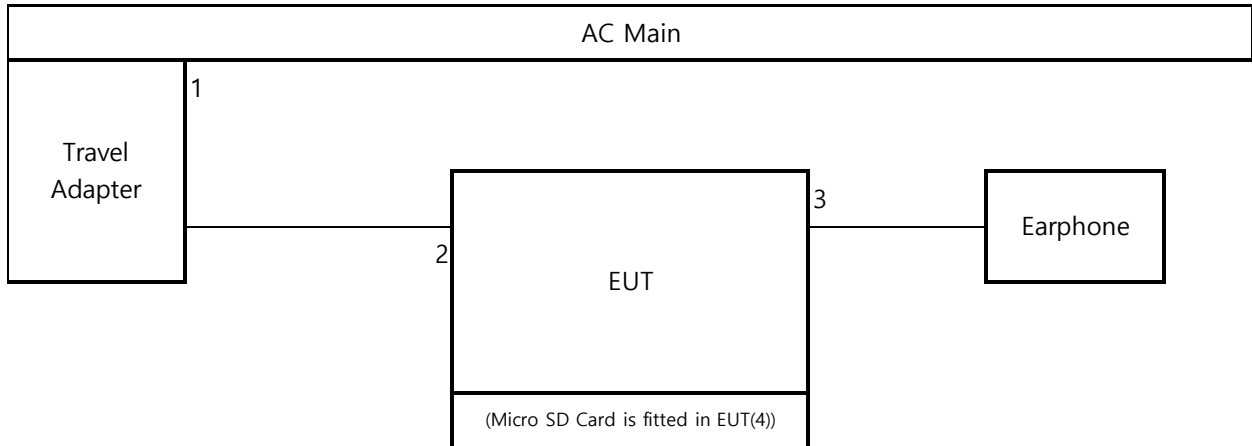
[DIAGRAM 4]

I/O Cable List						
Cable No	Port	# of identical ports	Connect or Type	Cable Type	Cable Length(m)	Remarks
1	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	Ethernet	1	RJ45	Unshielded	1.5m	From Laptop to Router in out of test site
6	Micro SD Slot	1	-	-	Direct	Fitted In EUT
7	Earphone	1	Type C	Shielded	0.7m	From Earphone to EUT

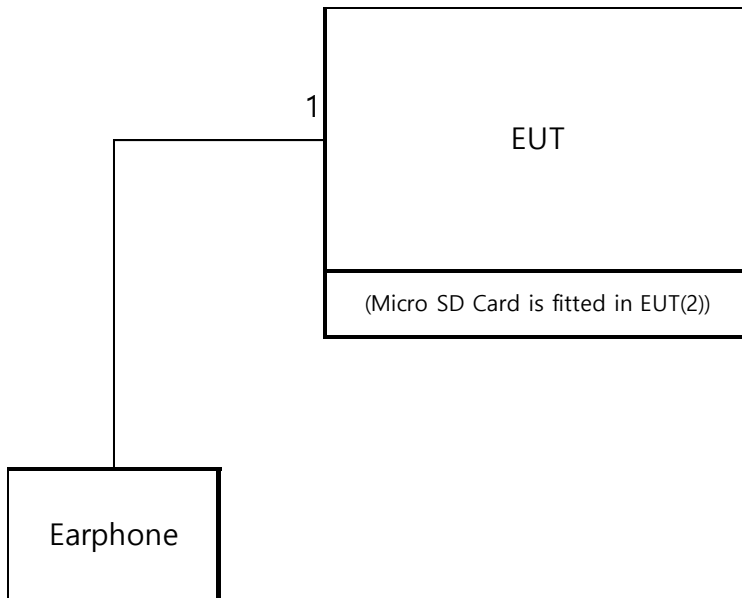
TEST SETUP

The EUT is installed in a typical configuration. Copy files from PC to EUT fitted Micro sd card.
Video and sound play on EUT.

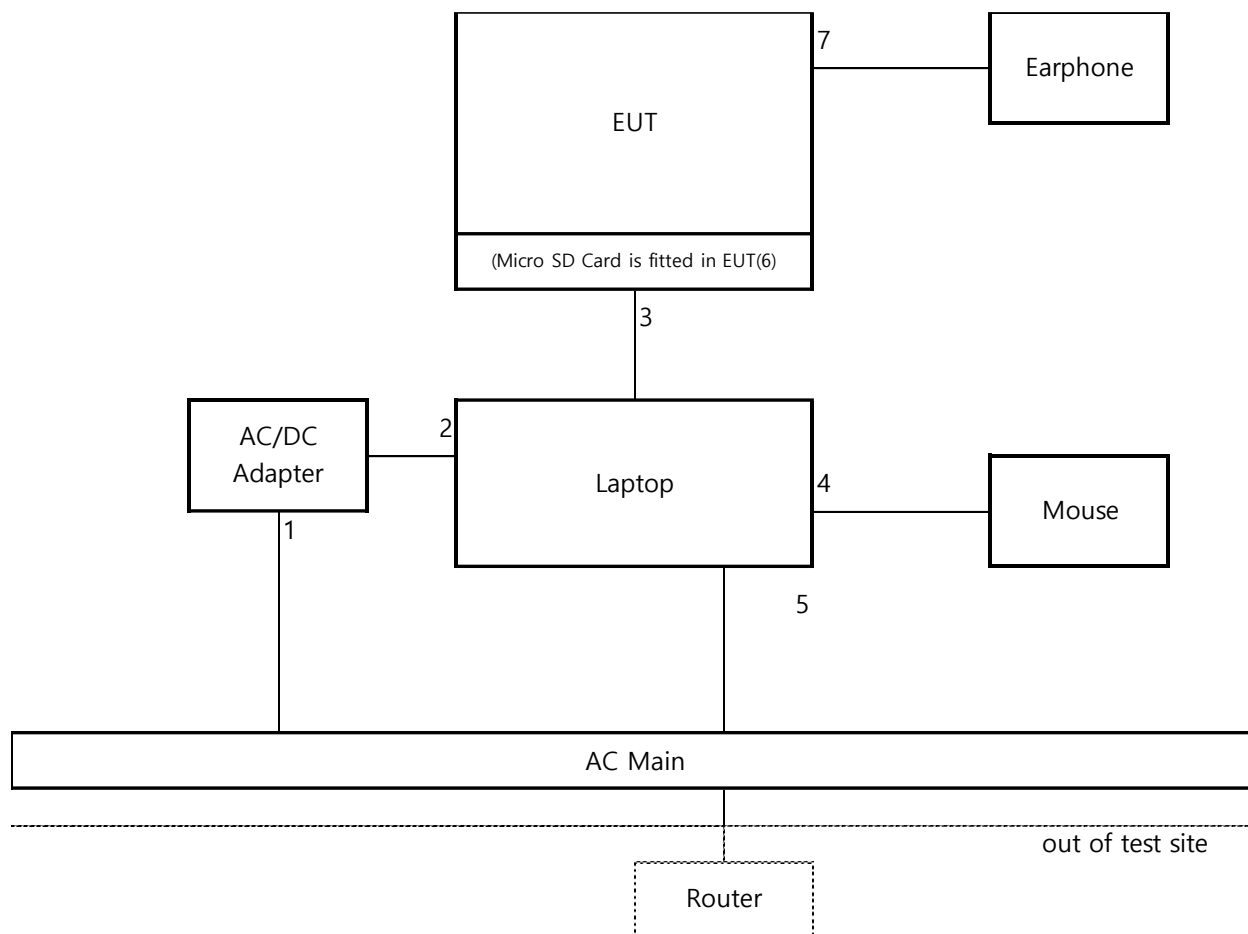
TEST SETUP DIAGRAM 1 for Test Case 1 and 2



TEST SETUP DIAGRAM 2 for Test Case 3



TEST SETUP DIAGRAM 3 for Test case 4



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	2023-10-13
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
Antenna, Horn, 18 GHz	ETS	3117	00218597	2023-01-15
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, 44 GHz	R&S	ESW44	101590	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
Communications Test Set	R&S	CMW500	169796	2023-01-07
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	80108-0004	N/A
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	2022-08-03
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.

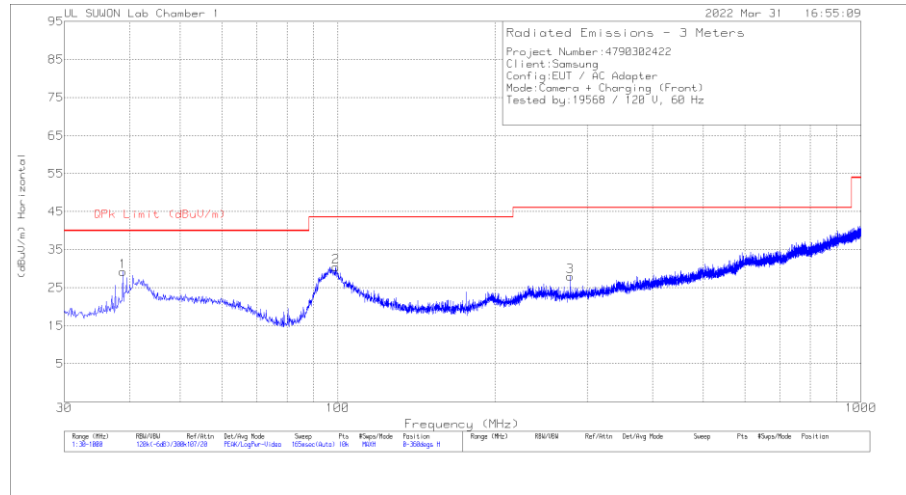
LIMIT

§15.109 (a) 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:

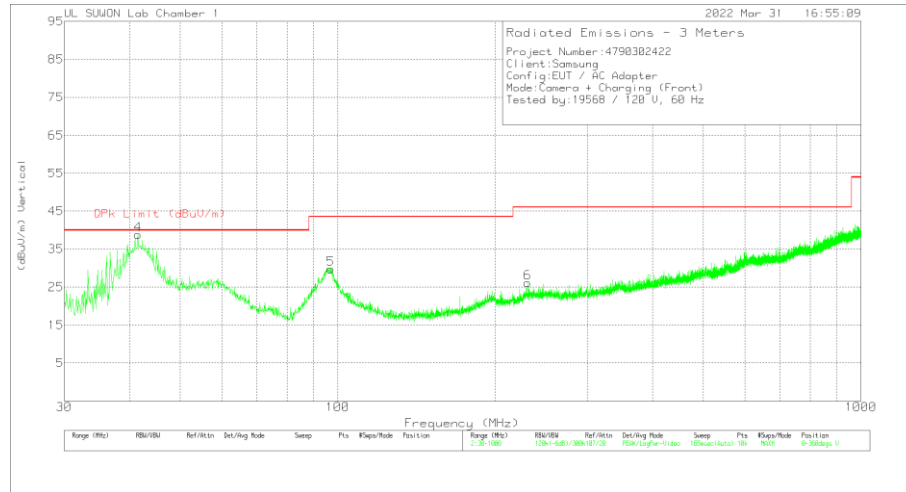
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dBμV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

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

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



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	38.827	42.06	Pk	18.3	-31.1	29.26	40	-10.74	0-360	200	H
2	99.161	42.84	Pk	17.8	-30.2	30.44	43.52	-13.08	0-360	200	H
3	278.417	37.76	Pk	18.9	-28.7	27.96	46.02	-18.06	0-360	100	H
4	41.543	50.82	Pk	19	-31	38.82	40	-1.18	0-360	101	V
5	96.93	42.46	Pk	17.6	-30.3	29.76	43.52	-13.76	0-360	101	V
6	230.596	36.97	Pk	18.3	-29.2	26.07	46.02	-19.95	0-360	101	V

Pk - Peak detector

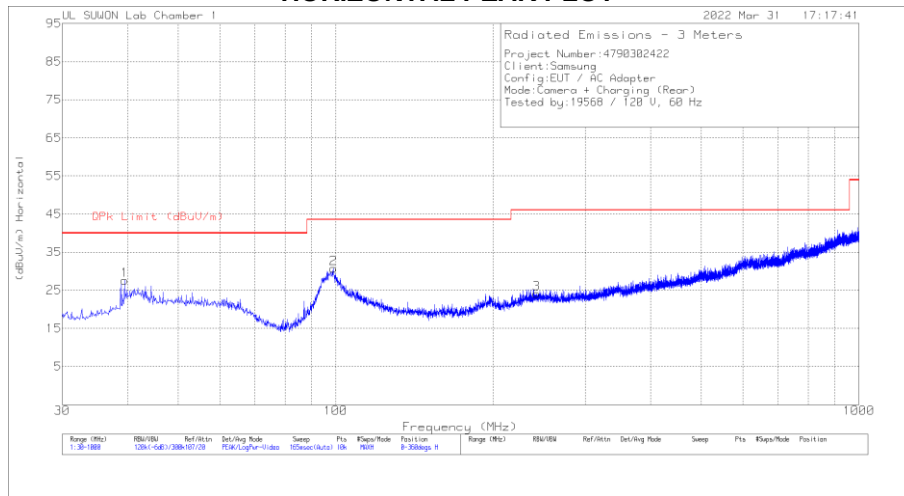
Radiated Emissions

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
41.543	44.49	Qp	19	-31	32.49	40	-7.51	94	101	V

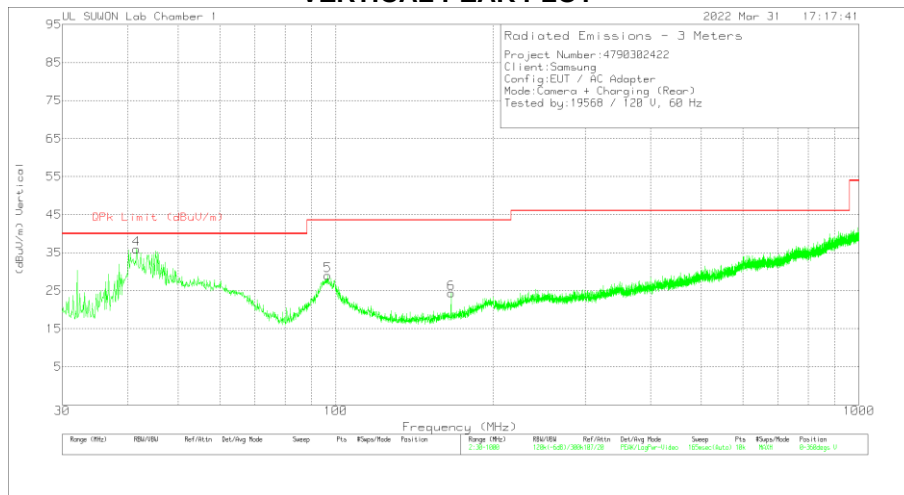
Qp - Quasi-Peak detector

[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	39.506	40.14	Pk	18.5	-31	27.64	40	-12.36	0-360	200	H
2	99.064	43.09	Pk	17.8	-30.2	30.69	43.52	-12.83	0-360	200	H
3	242.042	34.36	Pk	18.7	-28.9	24.16	46.02	-21.86	0-360	100	H
4	41.64	47.9	Pk	19.1	-31.1	35.9	40	-4.1	0-360	200	V
5	96.445	41.74	Pk	17.5	-30.2	29.04	43.52	-14.48	0-360	200	V
6	166.188	39.19	Pk	14.8	-29.6	24.39	43.52	-19.13	0-360	400	V

Pk - Peak detector

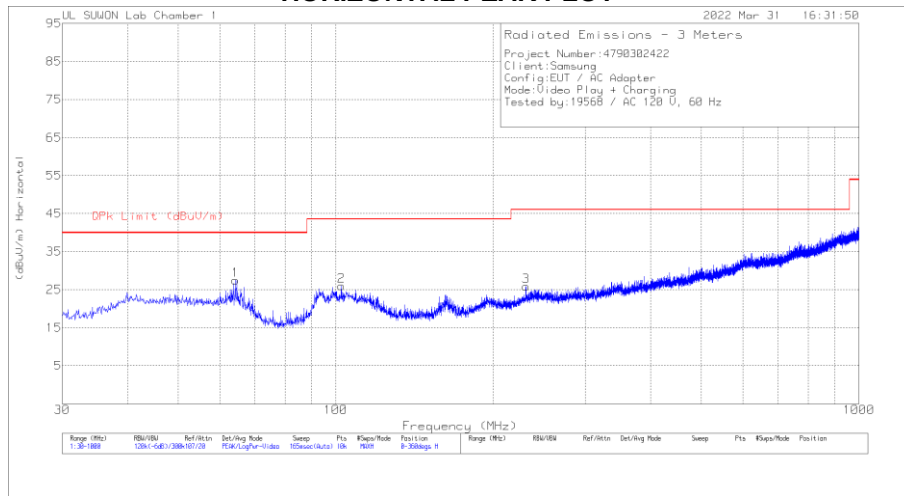
Radiated Emissions

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
41.64	40.48	Qp	19.1	-31.1	28.48	40	-11.52	113	100	V

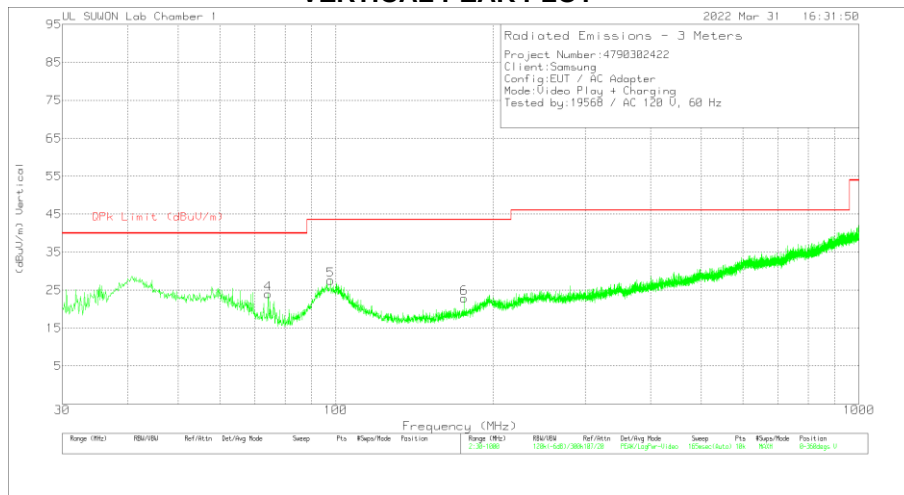
Qp - Quasi-Peak detector

[Test case 3]

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

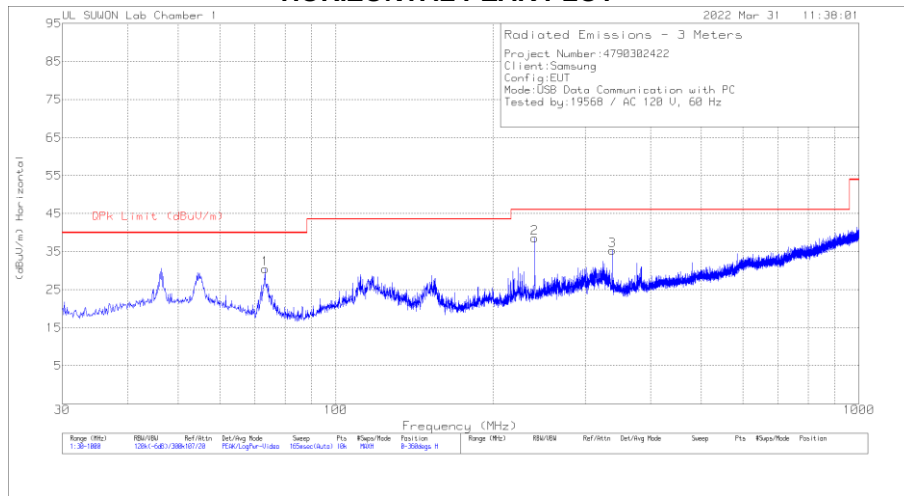
Trace Markers

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	64.241	40.61	Pk	17.5	-30.6	27.51	40	-12.49	0-360	200	H
2	102.459	38.35	Pk	17.9	-30.3	25.95	43.52	-17.57	0-360	200	H
3	230.887	36.54	Pk	18.3	-29	25.84	46.02	-20.18	0-360	100	H
4	74.232	40.69	Pk	13.8	-30.5	23.99	40	-16.01	0-360	200	V
5	97.803	39.95	Pk	17.7	-30.1	27.55	43.52	-15.97	0-360	200	V
6	175.888	37.32	Pk	15.1	-29.5	22.92	43.52	-20.6	0-360	200	V

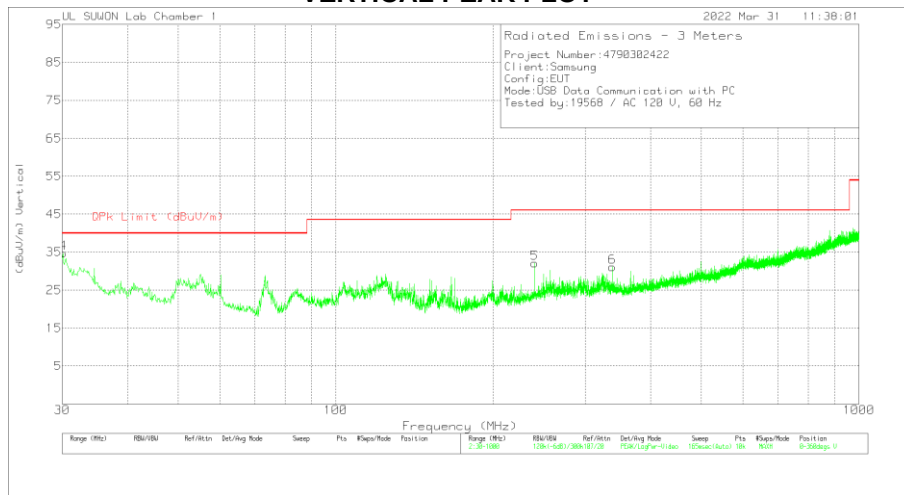
Pk - Peak detector

[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	73.262	46.91	Pk	14.2	-30.6	30.51	40	-9.49	0-360	200	H
2	240.005	48.87	Pk	18.6	-28.9	38.57	46.02	-7.45	0-360	100	H
3	337.49	43.36	Pk	20.5	-28.5	35.36	46.02	-10.66	0-360	100	H
4	30.097	49.91	Pk	16.1	-31.3	34.71	40	-5.29	0-360	100	V
5	240.005	42.34	Pk	18.6	-28.9	32.04	46.02	-13.98	0-360	100	V
6	337.49	39.06	Pk	20.5	-28.5	31.06	46.02	-14.96	0-360	200	V

Pk - Peak detector

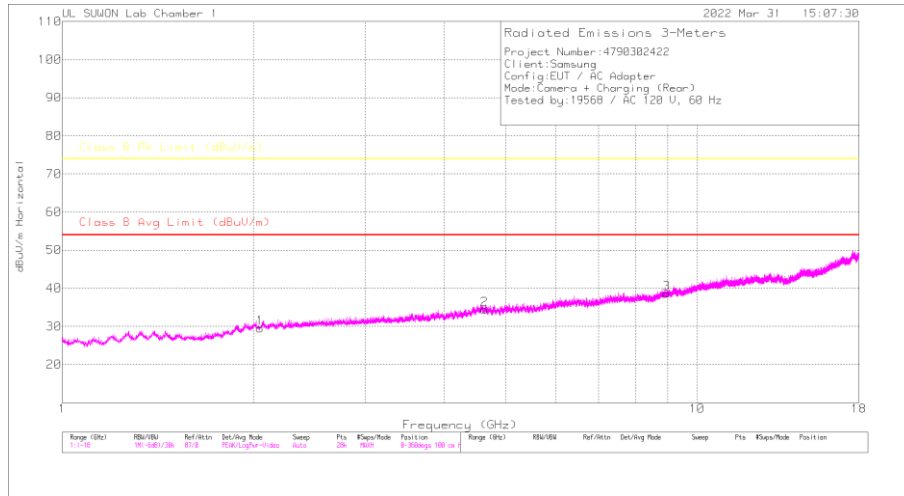
Radiated Emissions

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
73.262	42.02	Qp	14.2	-30.6	25.62	40	-14.38	158	390	H
30.097	44.57	Qp	16.1	-31.3	29.37	40	-10.63	103	112	V

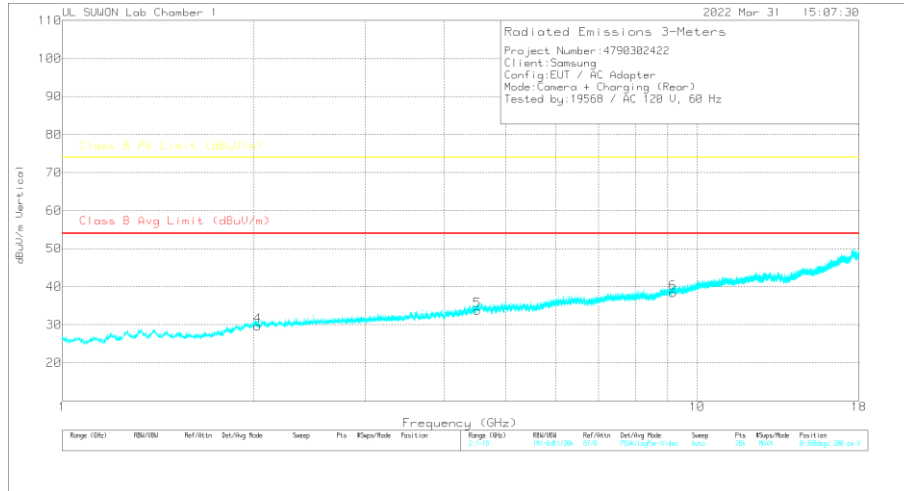
Qp - Quasi-Peak detector

[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

Radiated Emissions

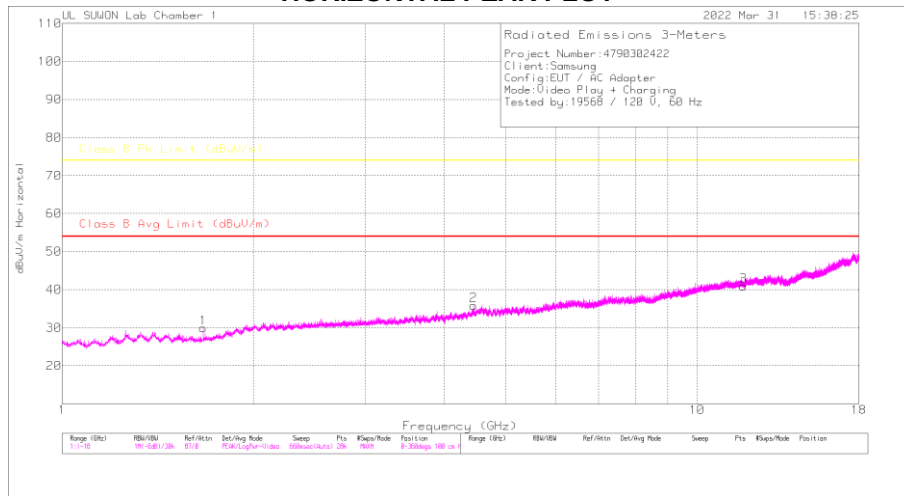
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.04964	42.59	Pk	31.6	-35.6	38.59	-	-28.52	74	-35.41	0	100	H
2.04964	29.48	Ca	31.6	-35.6	25.48	54	-	-	-	0	100	H
4.62668	39.79	Pk	34.2	-31.9	42.09	-	-	74	-31.91	0	100	H
4.62668	27.49	Ca	34.2	-31.9	29.79	54	-24.21	-	-	0	100	H
8.96244	36.06	Pk	36.5	-25	47.56	-	-	74	-26.44	0	100	H
8.96244	23.34	Ca	36.5	-25	34.84	54	-19.16	-	-	0	100	H
2.03203	41.5	Pk	31.5	-35.6	37.4	-	-	74	-36.6	0	100	V
2.03203	29.81	Ca	31.5	-35.6	25.71	54	-28.29	-	-	0	100	V
4.50891	40.38	Pk	34.2	-32.1	42.48	-	-	74	-31.52	0	100	V
4.50891	28.05	Ca	34.2	-32.1	30.15	54	-23.85	-	-	0	100	V
9.16459	34.63	Pk	36.6	-24.6	46.63	-	-	74	-27.37	0	100	V
9.16459	23.16	Ca	36.6	-24.6	35.16	54	-18.84	-	-	0	100	V

Pk - Peak detector

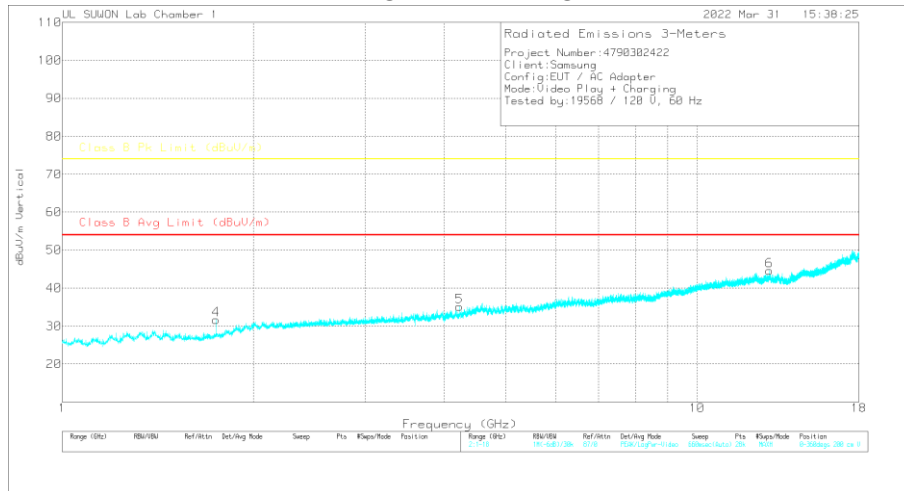
Ca - CISPR average detection

[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

Radiated Emissions

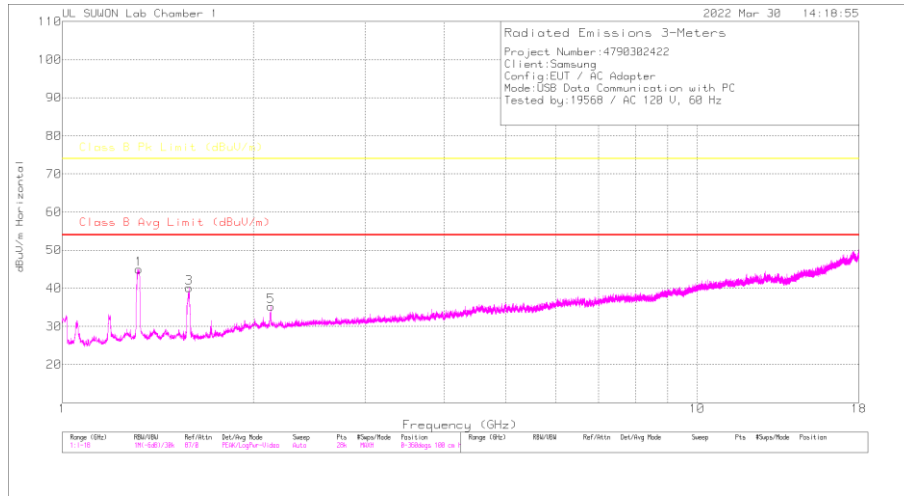
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.66779	45.45	Pk	28.4	-36.4	37.45	-	-	74	-36.55	48	119	H
1.66779	33.03	Ca	28.4	-36.4	25.03	54	-28.97	-	-	48	119	H
4.44881	40.48	Pk	34.1	-32.2	42.38	-	-	74	-31.62	0	100	H
4.44881	28.36	Ca	34.1	-32.2	30.26	54	-23.74	-	-	0	100	H
11.83695	34.15	Pk	38.4	-22.7	49.85	-	-	74	-24.15	0	100	H
11.83695	22.06	Ca	38.4	-22.7	37.76	54	-16.24	-	-	0	100	H
1.74731	42.71	Pk	29	-36.3	35.41	-	-	74	-38.59	231	257	V
1.74731	30.76	Ca	29	-36.3	23.46	54	-30.54	-	-	231	257	V
4.22601	40.47	Pk	33.6	-32.4	41.67	-	-	74	-32.33	360	100	V
4.22601	28.31	Ca	33.6	-32.4	29.51	54	-24.49	-	-	360	100	V
13.01893	33.97	Pk	38.9	-23.1	49.77	-	-	74	-24.23	360	100	V
13.01893	22.28	Ca	38.9	-23.1	38.08	54	-15.92	-	-	360	100	V

Pk - Peak detector

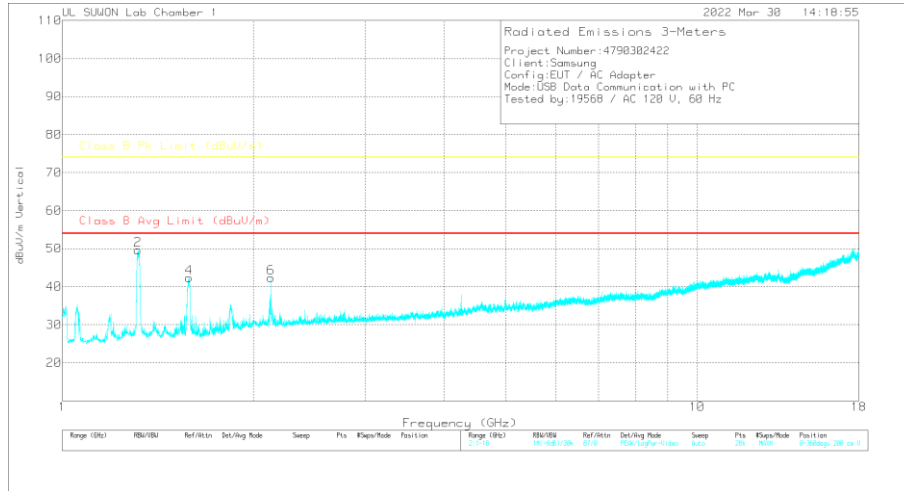
Ca - CISPR average detection

[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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	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
1.32114	59.08	Pk	29.5	-37.2	51.38	-	-	74	-22.62	8	100	H
1.32114	44.6	Ca	29.5	-37.2	36.9	54	-17.1	-	-	8	100	H
1.58401	54.57	Pk	28.5	-36.6	46.47	-	-	74	-27.53	289	113	H
1.58401	40.48	Ca	28.5	-36.6	32.38	54	-21.62	-	-	289	113	H
2.13099	49.81	Pk	31.6	-35.3	46.11	-	-	74	-27.89	315	284	H
2.13099	30.22	Ca	31.6	-35.3	26.52	54	-27.48	-	-	315	284	H
1.31507	63.92	Pk	29.5	-37.2	56.22	-	-	74	-17.78	338	223	V
1.31507	48.46	Ca	29.5	-37.2	40.76	54	-13.24	-	-	338	223	V
1.5834	58.55	Pk	28.5	-36.6	50.45	-	-	74	-23.55	336	229	V
1.5834	44	Ca	28.5	-36.6	35.9	54	-18.1	-	-	336	229	V
2.13099	48.04	Pk	31.6	-35.3	44.34	-	-	74	-29.66	353	387	V
2.13099	30.05	Ca	31.6	-35.3	26.35	54	-27.65	-	-	353	387	V

Pk - Peak detector

Ca - CISPR average detection

7.2. CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4-2014

LIMIT

§15.107 (a) 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 μ 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 μ 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.		

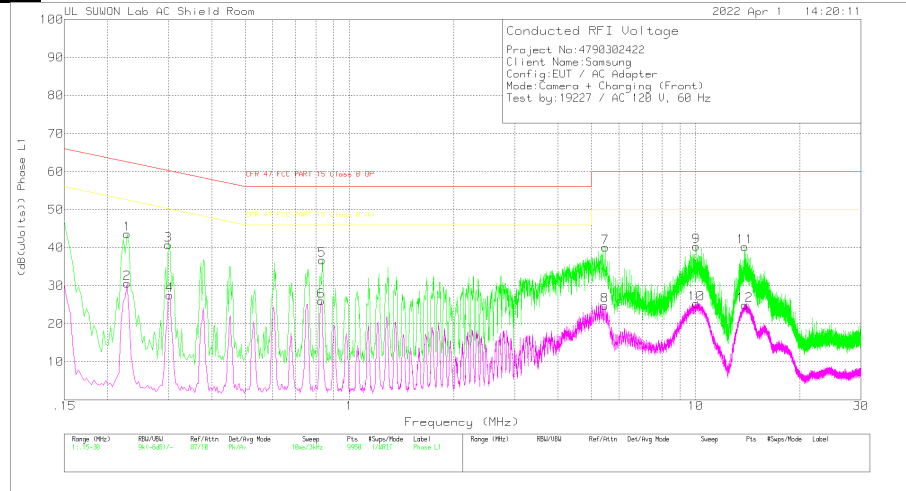
7.2.1. CONDUCTED EMISSIONS

[Test case 1]

6 WORST EMISSIONS

Line-L1 .15 – 30 MHz

LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

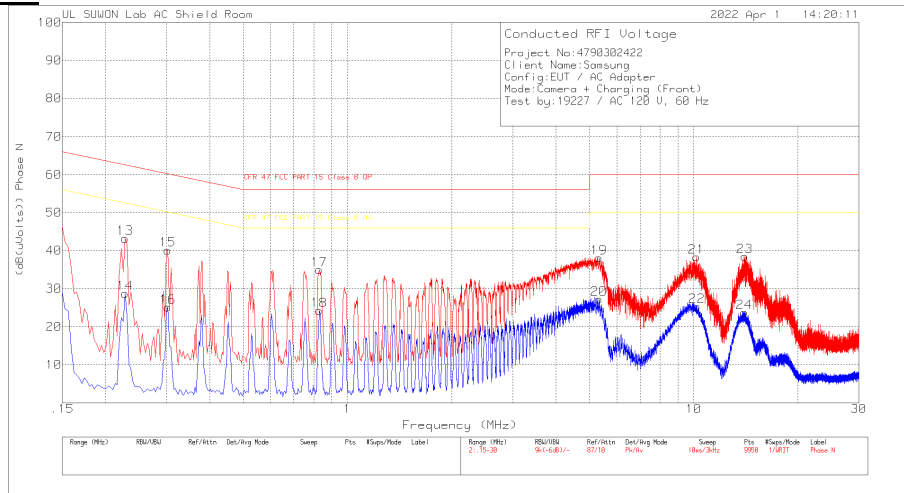
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.228	33.64	Pk	9.7	.2	43.54	62.52	-18.98	-	-
2	.228	20.68	Av	9.7	.2	30.58	-	-	52.52	-21.94
3	.3	30.8	Pk	9.7	.2	40.7	60.24	-19.54	-	-
4	.303	17.64	Av	9.7	.2	27.54	-	-	50.16	-22.62
5	.834	26.6	Pk	9.8	.3	36.7	56	-19.3	-	-
6	.828	15.87	Av	9.8	.3	25.97	-	-	46	-20.03
7	5.472	30.07	Pk	9.7	.3	40.07	60	-19.93	-	-
8	5.466	14.74	Av	9.7	.3	24.74	-	-	50	-25.26
9	10.038	30.09	Pk	9.9	.4	40.39	60	-19.61	-	-
10	10.044	14.92	Av	9.9	.4	25.22	-	-	50	-24.78
11	13.86	29.86	Pk	10	.4	40.26	60	-19.74	-	-
12	13.869	14.49	Av	10	.4	24.89	-	-	50	-25.11

Pk - Peak detector

Av - Average detection

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	.228	33.36	Pk	9.7	.2	43.26	62.52	-19.26	-	-
14	.228	18.89	Av	9.7	.2	28.79	-	-	52.52	-23.73
15	.303	30.25	Pk	9.7	.2	40.15	60.16	-20.01	-	-
16	.303	15.21	Av	9.7	.2	25.11	-	-	50.16	-25.05
17	.828	24.9	Pk	9.8	.3	35	56	-21	-	-
18	.828	14.12	Av	9.8	.3	24.22	-	-	46	-21.78
19	5.331	28.14	Pk	9.7	.3	38.14	60	-21.86	-	-
20	5.331	17.3	Av	9.7	.3	27.3	-	-	50	-22.7
21	10.191	28	Pk	9.9	.4	38.3	60	-21.7	-	-
22	10.209	15.12	Av	9.9	.4	25.42	-	-	50	-24.58
23	14.034	28.08	Pk	10	.4	38.48	60	-21.52	-	-
24	14.007	13.39	Av	10	.4	23.79	-	-	50	-26.21

Pk - Peak detector

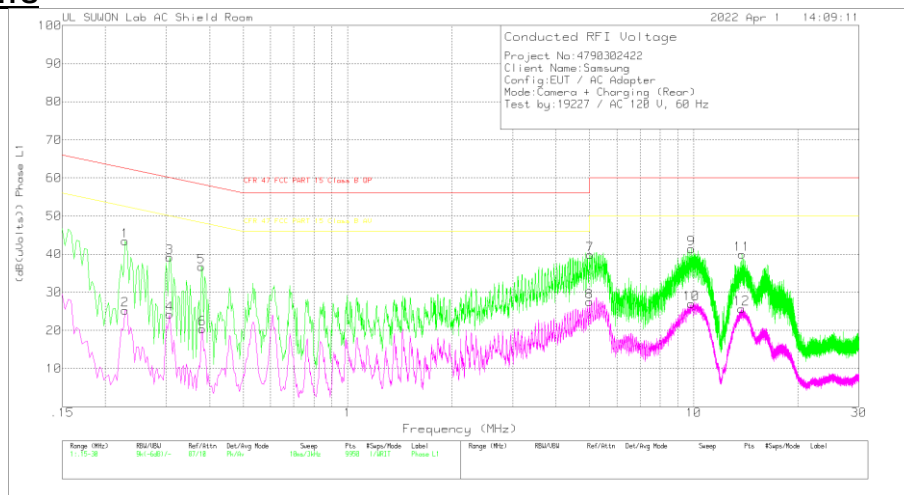
Av - Average detection

[Test case 2]

6 WORST EMISSIONS

Line-L1 .15 – 30 MHz

LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

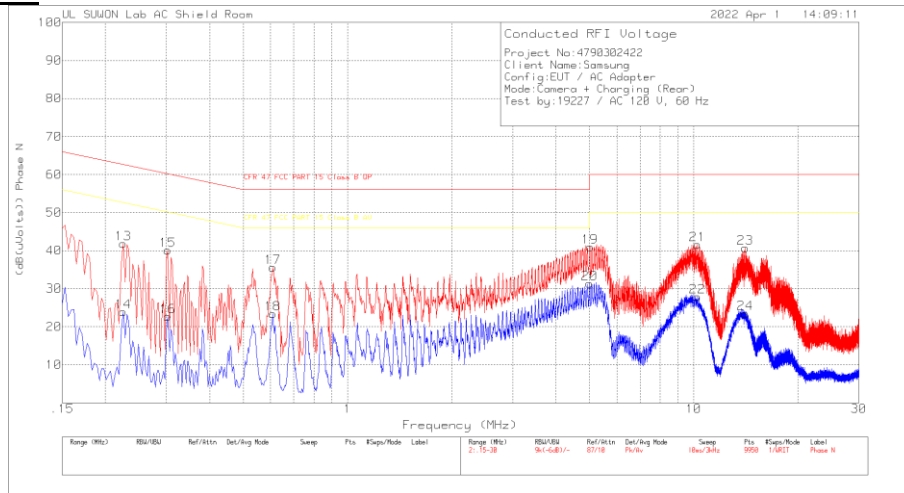
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.228	33.53	Pk	9.7	.2	43.43	62.52	-19.09	-	-
2	.228	15.42	Av	9.7	.2	25.32	-	-	52.52	-27.2
3	.306	29.31	Pk	9.7	.2	39.21	60.08	-20.87	-	-
4	.306	14.33	Av	9.7	.2	24.23	-	-	50.08	-25.85
5	.378	26.76	Pk	9.8	.2	36.76	58.32	-21.56	-	-
6	.381	10.37	Av	9.8	.2	20.37	-	-	48.26	-27.89
7	5.016	29.84	Pk	9.7	.3	39.84	60	-20.16	-	-
8	5.004	17.53	Av	9.7	.3	27.53	-	-	50	-22.47
9	9.843	31.2	Pk	9.8	.4	41.4	60	-18.6	-	-
10	9.849	16.79	Av	9.8	.4	26.99	-	-	50	-23.01
11	13.764	29.53	Pk	10	.4	39.93	60	-20.07	-	-
12	13.746	15.29	Av	10	.4	25.69	-	-	50	-24.31

Pk - Peak detector

Av - Average detection

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	.225	31.88	Pk	9.7	.2	41.78	62.63	-20.85	-	-
14	.225	14.01	Av	9.7	.2	23.91	-	-	52.63	-28.72
15	.303	30.14	Pk	9.7	.2	40.04	60.16	-20.12	-	-
16	.303	12.75	Av	9.7	.2	22.65	-	-	50.16	-27.51
17	.609	25.57	Pk	9.8	.2	35.57	56	-20.43	-	-
18	.609	13.44	Av	9.8	.2	23.44	-	-	46	-22.56
19	5.016	30.97	Pk	9.7	.3	40.97	60	-19.03	-	-
20	5.007	21.36	Av	9.7	.3	31.36	-	-	50	-18.64
21	10.263	31.3	Pk	9.9	.4	41.6	60	-18.4	-	-
22	10.254	17.57	Av	9.9	.4	27.87	-	-	50	-22.13
23	14.1	30.26	Pk	10	.4	40.66	60	-19.34	-	-
24	14.088	13.08	Av	10	.4	23.48	-	-	50	-26.52

Pk - Peak detector

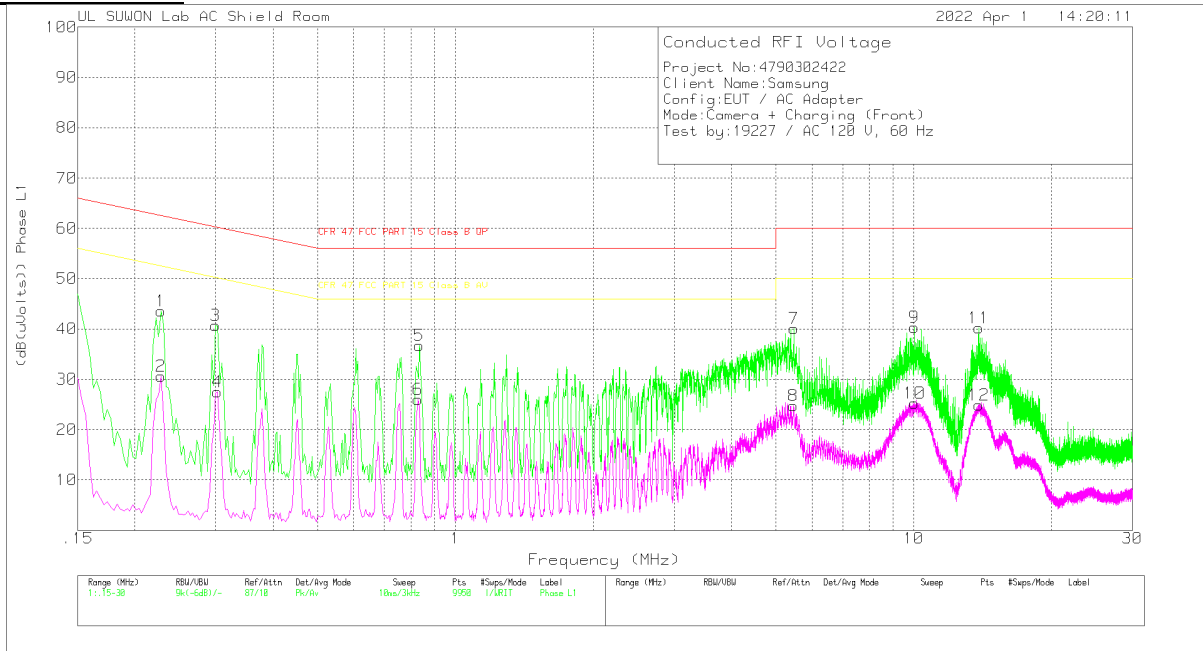
Av - Average detection

[Test case 4]

6 WORST EMISSIONS

Line-L1 .15 – 30 MHz

LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

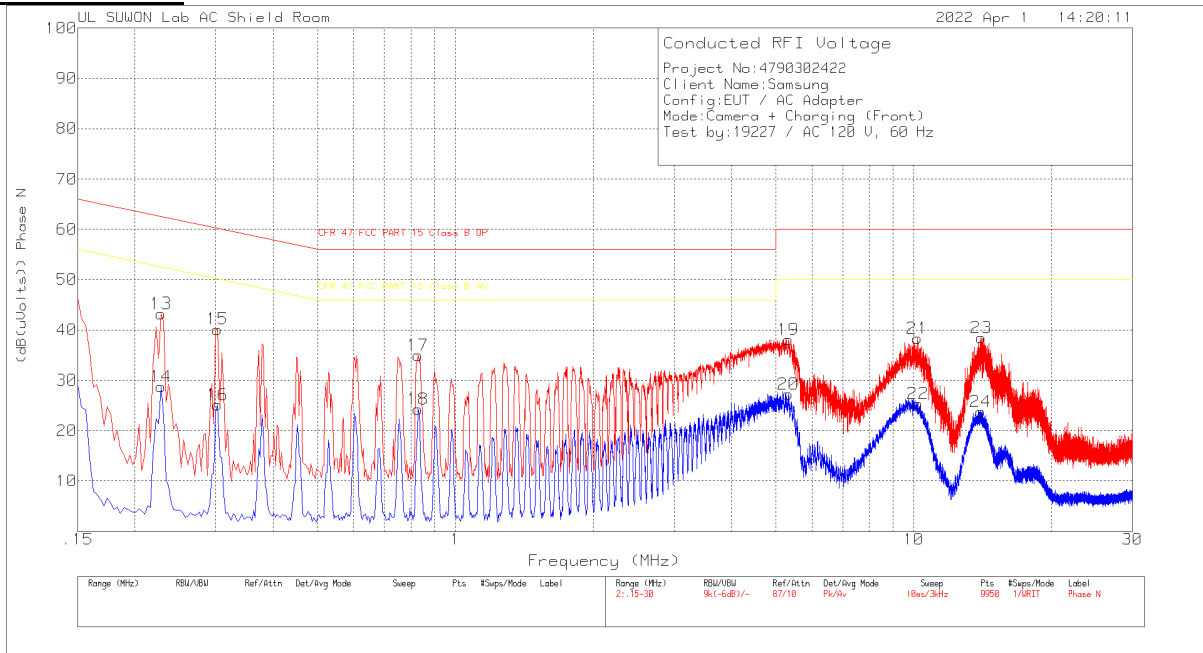
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.228	33.64	Pk	9.7	.2	43.54	62.52	-18.98	-	-
2	.228	20.68	Av	9.7	.2	30.58	-	-	52.52	-21.94
3	.3	30.8	Pk	9.7	.2	40.7	60.24	-19.54	-	-
4	.303	17.64	Av	9.7	.2	27.54	-	-	50.16	-22.62
5	.834	26.6	Pk	9.8	.3	36.7	56	-19.3	-	-
6	.828	15.87	Av	9.8	.3	25.97	-	-	46	-20.03
7	5.472	30.07	Pk	9.7	.3	40.07	60	-19.93	-	-
8	5.466	14.74	Av	9.7	.3	24.74	-	-	50	-25.26
9	10.038	30.09	Pk	9.9	.4	40.39	60	-19.61	-	-
10	10.044	14.92	Av	9.9	.4	25.22	-	-	50	-24.78
11	13.86	29.86	Pk	10	.4	40.26	60	-19.74	-	-
12	13.869	14.49	Av	10	.4	24.89	-	-	50	-25.11

Pk - Peak detector

Av - Average detection

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	.228	33.36	Pk	9.7	.2	43.26	62.52	-19.26	-	-
14	.228	18.89	Av	9.7	.2	28.79	-	-	52.52	-23.73
15	.303	30.25	Pk	9.7	.2	40.15	60.16	-20.01	-	-
16	.303	15.21	Av	9.7	.2	25.11	-	-	50.16	-25.05
17	.828	24.9	Pk	9.8	.3	35	56	-21	-	-
18	.828	14.12	Av	9.8	.3	24.22	-	-	46	-21.78
19	5.331	28.14	Pk	9.7	.3	38.14	60	-21.86	-	-
20	5.331	17.3	Av	9.7	.3	27.3	-	-	50	-22.7
21	10.191	28	Pk	9.9	.4	38.3	60	-21.7	-	-
22	10.209	15.12	Av	9.9	.4	25.42	-	-	50	-24.58
23	14.034	28.08	Pk	10	.4	38.48	60	-21.52	-	-
24	14.007	13.39	Av	10	.4	23.79	-	-	50	-26.21

Pk - Peak detector

Av - Average detection

END OF TEST REPORT

Page 28 of 28