

FCC Test Report

Report No.: RFBHBR-WTW-P21030508

FCC ID: M72-PS21

Test Model: Poly Studio P21

Received Date: Mar. 15, 2021

Test Date: Mar. 17 ~ Mar. 26, 2021

Issued Date: Apr. 13, 2021

Applicant: Polycom Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RFBHBR-WTW-P21030508	Original release	Apr. 13, 2021

1 Certificate of Conformity

Product: Personal Meeting Display

Brand: Poly

Test Model: Poly Studio P21

Sample Status: Engineering sample

Applicant: Polycom Inc.

Test Date: Mar. 17 ~ Mar. 26, 2021

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.209)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Polly Chien , **Date:** Apr. 13, 2021
Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Apr. 13, 2021
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.209)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -8.28dB at 0.46200MHz.
15.209	Radiated Emission Test	Pass	Meet the requirement of limit. Minimum passing margin is -7.0dB at 363.17MHz

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Personal Meeting Display
Brand	Poly
Test Model	Poly Studio P21
Sample Status	Engineering sample
Power Supply Rating	19.0Vdc (adapter)
Modulation Type	ASK
Operating Frequency	110~190kHz
Antenna Type	Coil antenna (The Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible)
Field Strength	-1.5dBuV/m
Accessory Device	Refer to note
Data Cable Supplied	1.45m Shielded Type-C cable without core

Note:

1. The EUT contains following adapter.

Adapter	
Brand	MASS POWER
Model	E096-1A190421B3
Input Power	100-240Vac, 50/60Hz, 1.5A
Output Power	19.0Vdc, 4.21A, 79.99W
Power cable	AC: 2.62m non-shielding AC cable without core DC: 1.45m shielding DC cable without core

3.2 Description of Test Modes

Tested Frequency (kHz)
153.7

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT configure mode	Applicable to		Description
	RE<1G	PLC	
A	√	√	Charging Mode
B	√	√	Standby Mode

Where **RE<1G**: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

Radiated Emission Test (9kHz ~ 30MHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel
A	1	1

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel
A, B	1	1

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel
A, B	1	1

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE<1G	23 deg. C, 66% RH	120Vac, 60Hz	Titan Hsu
PLC	23 deg. C, 69% RH	120Vac, 60Hz	Edison Lee

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	WPC Load	U-Way	UNIQR-0110	NA	NA	Provided by client
B.	Notebook	HP	15-DK0166TX	NB-HP-15-DK0166TX	NA	Provided by client
C.	USB Flash	SANDISK	SDCZ43	SDCZ430-03	NA	Provided by client
D.	USB Flash	HP	v250W	09	NA	-
E.	Earphone	Plantronics	Blackwire 5220	C-207576-01	NA	Provided by client

Note:

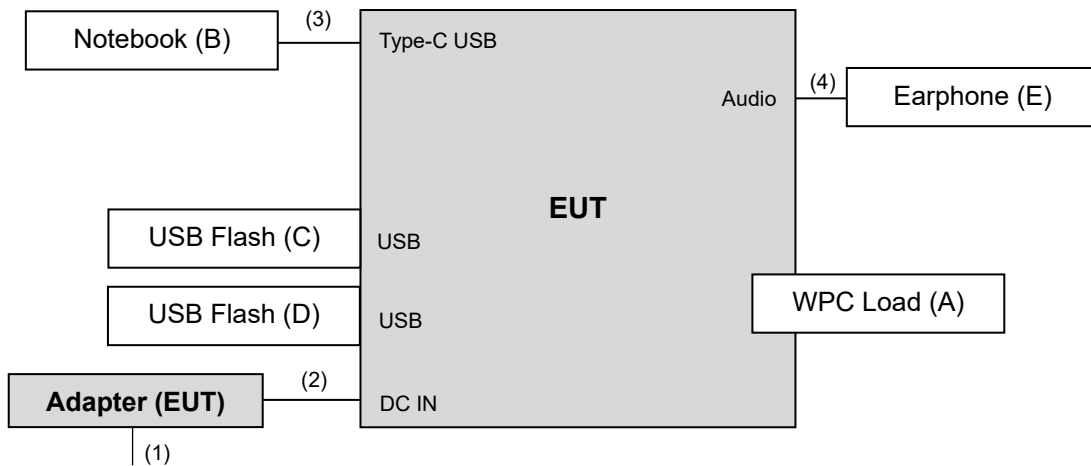
1. All power cords of the above support units are non-shielded (1.8m).
2. Items B acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC cable	1	2.62	N	0	Accessory of EUT
2.	DC cable	1	1.45	Y	0	Accessory of EUT
3.	Type-C cable	1	1.45	Y	0	Accessory of EUT
4.	Audio cable	1	1.2	Y	0	-

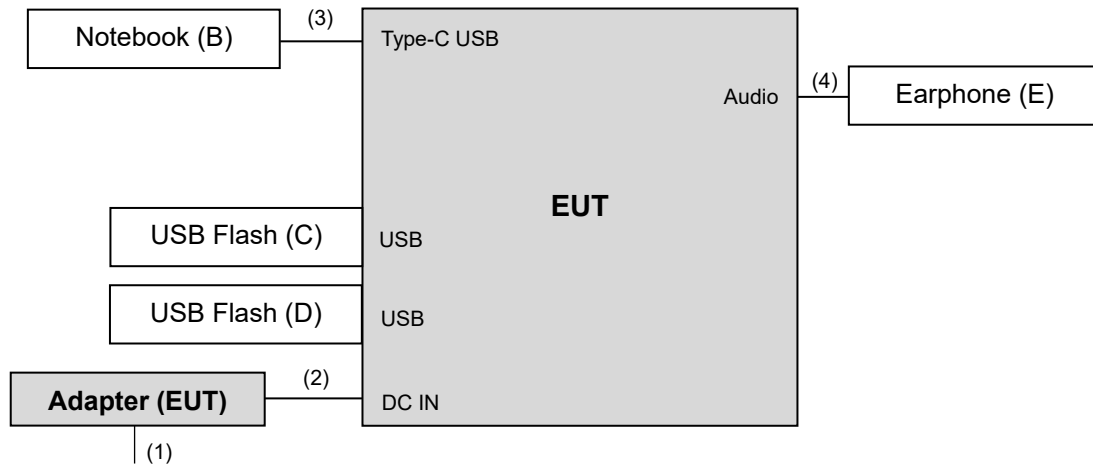
3.3.1 Configuration of System under Test

Charging Mode:

Mode A



Standby Mode:
Mode B



3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.209)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

FOR FREQUENCY BELOW 30MHz

Frequency (MHz)	Field Strength (dBuV/m)		Measurement Distance (meters)
	uV/m	dBuV/m	
0.009 – 0.490	$2400 / F \text{ (kHz)}$	48.52-13.80	300
0.490 – 1.705	$24000 / F \text{ (kHz)}$	33.80-22.97	30
1.705 – 30.0	30	29.54	30

FOR FREQUENCY BETWEEN 30-1000MHz

Frequency (MHz)	Measurement Distance (at 3m)	
	uV/m	dBuV/m
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
			Mar. 22, 2021	Mar. 21, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM-S M-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and Ground-Parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9kHz-90kHz, 110kHz-490kHz) set to average detect function and peak detect function.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Note:

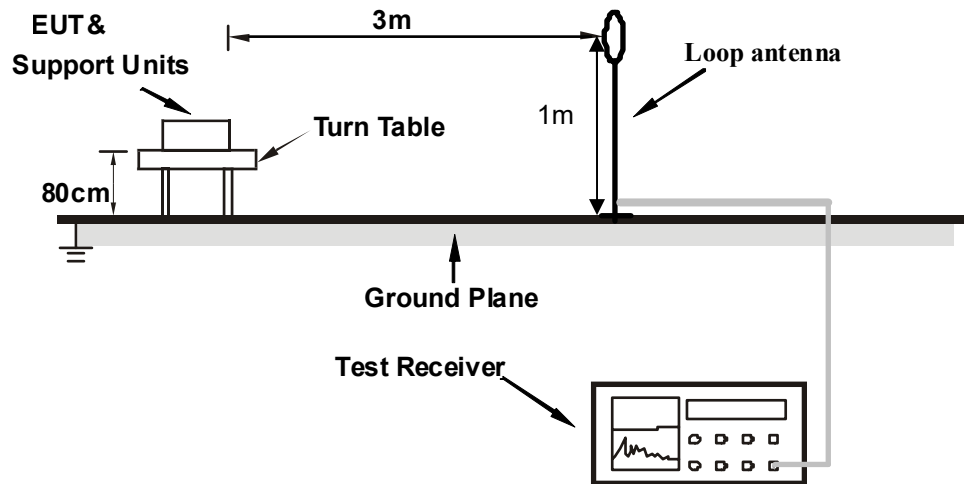
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

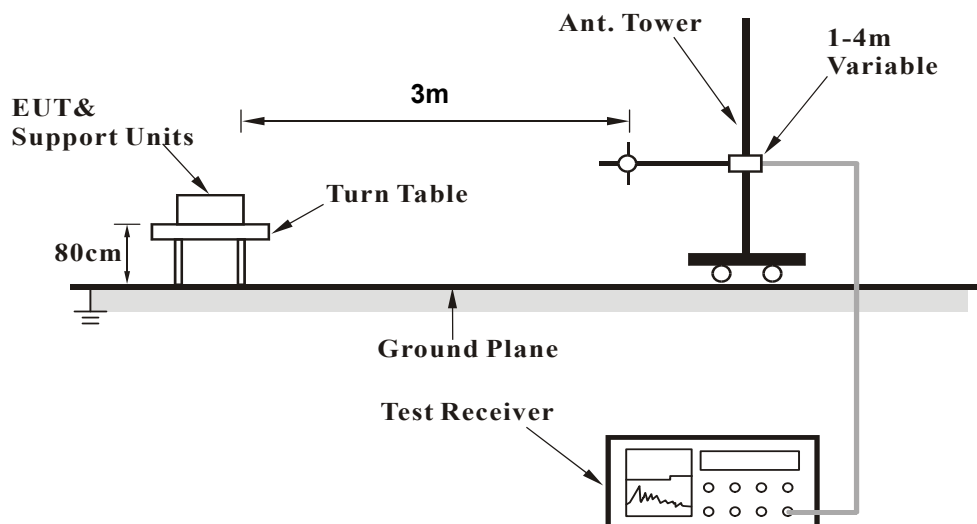
No deviation.

4.1.5 Test Set Up

For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

Charging Mode:

Mode A

- The EUT powered by adapter.
- EUT linked with notebook via type-C cable.
- WPC Load was charging with EUT's wireless charging.

Standby Mode:

Mode B

- The EUT powered by adapter.
- EUT linked with notebook via type-C cable.

4.1.7 Test Results

Below 30MHz Data:

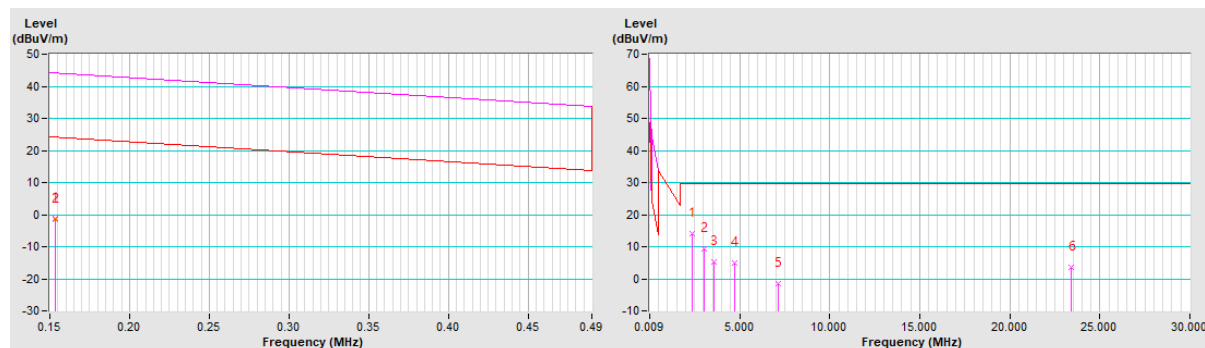
Charging Mode

Channel	TX Channel 1	Detector Function	Average (AV)
Frequency Range	9 kHz ~ 30 MHz		Peak (PK) Quasi-Peak (QP)
Test Mode	A		

Antenna Polarity & Test Distance: Loop antenna Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*0.1537	-1.3 PK	43.9	-45.2	1.00	283	59.3	-60.6
2	*0.1537	-1.5 AV	23.9	-25.4	1.00	283	59.1	-60.6
3	2.36	14.2 QP	29.5	-15.3	1.00	111	34.7	-20.5
4	3.05	9.3 QP	29.5	-20.2	1.00	30	30.0	-20.7
5	3.57	5.4 QP	29.5	-24.1	1.00	3	25.9	-20.5
6	4.75	4.9 QP	29.5	-24.6	1.00	110	24.9	-20.0
7	7.14	-1.5 QP	29.5	-31.0	1.00	110	17.9	-19.4
8	23.44	3.4 QP	29.5	-26.1	1.00	277	21.7	-18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$

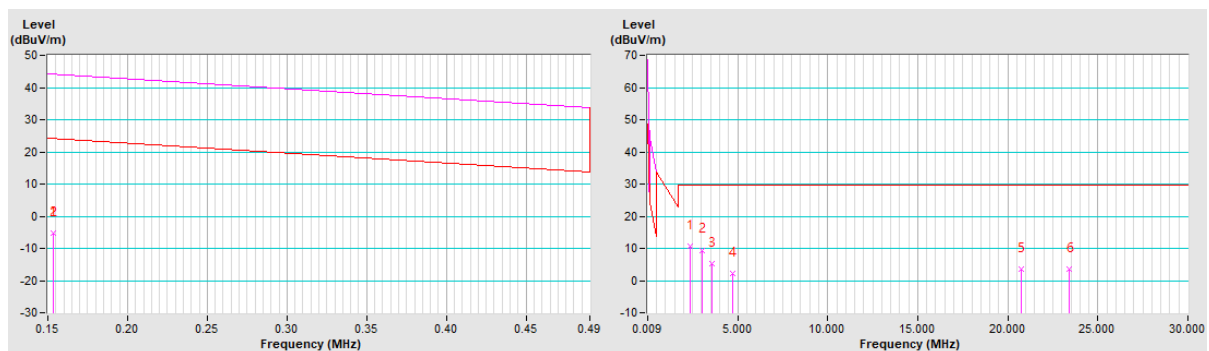


Channel	TX Channel 1	Detector Function	Average (AV)
Frequency Range	9 kHz ~ 30 MHz		Peak (PK) Quasi-Peak (QP)
Test Mode	A		

Antenna Polarity & Test Distance: Loop antenna Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*0.1537	-5.2 PK	43.9	-49.1	1.00	10	55.4	-60.6
2	*0.1537	-5.4 AV	23.9	-29.3	1.00	10	55.2	-60.6
3	2.36	10.8 QP	29.5	-18.7	1.00	153.7	31.3	-20.5
4	3.05	9.5 QP	29.5	-20.0	1.00	216	30.2	-20.7
5	3.57	5.3 QP	29.5	-24.2	1.00	346	25.8	-20.5
6	4.75	2.3 QP	29.5	-27.2	1.00	153.7	22.3	-20.0
7	20.74	3.6 QP	29.5	-25.9	1.00	123	22.0	-18.4
8	23.44	3.5 QP	29.5	-26.0	1.00	156	21.8	-18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$

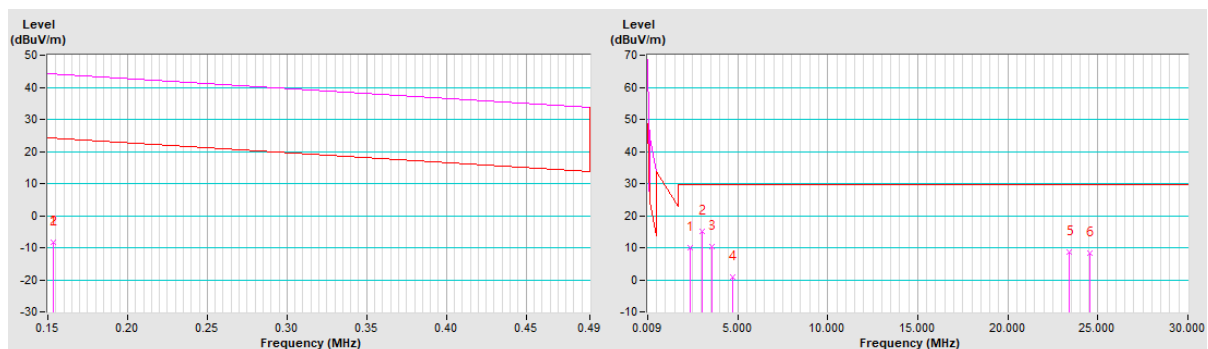


Channel	TX Channel 1	Detector Function	Average (AV)
Frequency Range	9 kHz ~ 30 MHz		Peak (PK) Quasi-Peak (QP)
Test Mode	A		

Antenna Polarity & Test Distance: Loop antenna Ground-Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*0.1537	-8.2 PK	43.9	-52.1	1.00	288	52.4	-60.6
2	*0.1537	-8.4 AV	23.9	-32.3	1.00	288	52.2	-60.6
3	2.36	10.1 QP	29.5	-19.4	1.00	93	30.6	-20.5
4	3.05	15.0 QP	29.5	-14.5	1.00	21	35.7	-20.7
5	3.57	10.2 QP	29.5	-19.3	1.00	43	30.7	-20.5
6	4.75	0.7 QP	29.5	-28.8	1.00	93	20.7	-20.0
7	23.44	8.7 QP	29.5	-20.8	1.00	143	27.0	-18.3
8	24.57	8.3 QP	29.5	-21.2	1.00	78	26.6	-18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. 0.009 ~ 0.49MHz, the measured field strength was extrapolated to distance 300 meters Distance factor@3m = $40 \cdot \log(3/300) = -80\text{dB}$
For 0.49 ~ 30MHz, the measured field strength was extrapolated to distance 30 meters Distance factor@3m = $40 \cdot \log(3/30) = -40\text{dB}$



Below 1GHz Data:

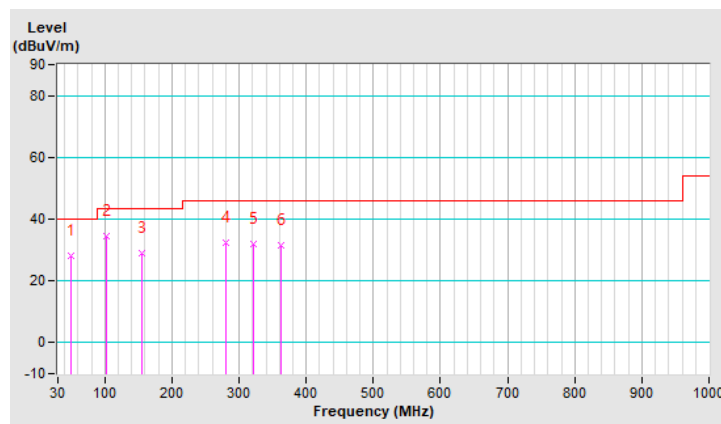
Charging Mode

Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	A		

Antenna Polarity & Test Distance: Horizontal At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.68	28.3 QP	40.0	-11.7	1.99 H	52	37.4	-9.1
2	103.10	34.3 QP	43.5	-9.2	1.99 H	120	47.0	-12.7
3	155.12	29.0 QP	43.5	-14.5	1.99 H	11	37.5	-8.5
4	280.23	32.4 QP	46.0	-13.6	1.00 H	178	39.3	-6.9
5	321.00	31.9 QP	46.0	-14.1	1.00 H	16	38.0	-6.1
6	363.17	31.6 QP	46.0	-14.4	1.00 H	288	36.9	-5.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

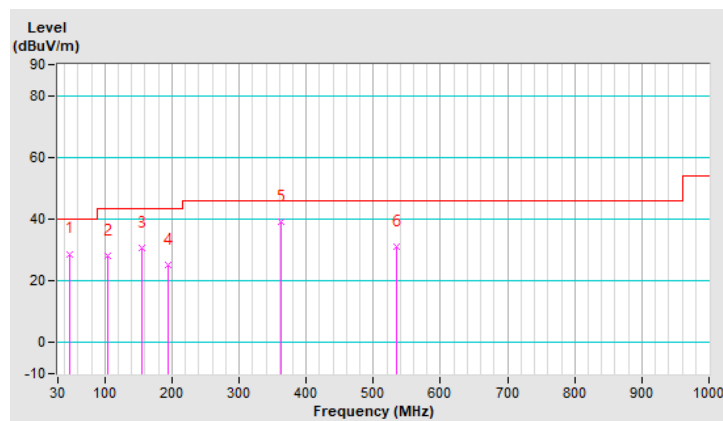


Channel	TX Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	A		

Antenna Polarity & Test Distance: Vertical At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	48.28	28.8 QP	40.0	-11.2	1.49 V	251	37.9	-9.1
2	104.51	28.0 QP	43.5	-15.5	1.00 V	186	40.5	-12.5
3	155.12	30.8 QP	43.5	-12.7	1.00 V	161	39.3	-8.5
4	194.48	25.0 QP	43.5	-18.5	1.00 V	198	36.2	-11.2
5	363.17	39.0 QP	46.0	-7.0	1.00 V	9	44.3	-5.3
6	534.68	31.1 QP	46.0	-14.9	1.49 V	203	32.7	-1.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



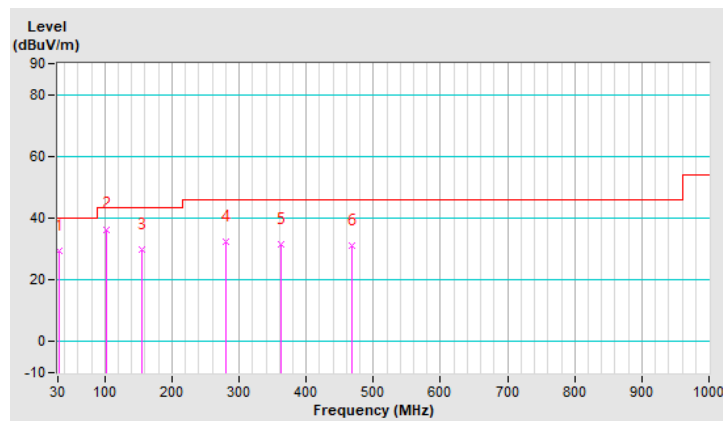
Standby Mode

Channel	Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	B		

Antenna Polarity & Test Distance: Horizontal At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	32.81	29.4 QP	40.0	-10.6	1.99 H	103	40.3	-10.9
2	103.10	36.4 QP	43.5	-7.1	1.49 H	164	49.1	-12.7
3	155.12	29.7 QP	43.5	-13.8	1.99 H	52	38.2	-8.5
4	280.23	32.4 QP	46.0	-13.6	1.00 H	181	39.3	-6.9
5	363.17	31.6 QP	46.0	-14.4	1.49 H	16	36.9	-5.3
6	468.61	31.1 QP	46.0	-14.9	1.49 H	45	34.0	-2.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

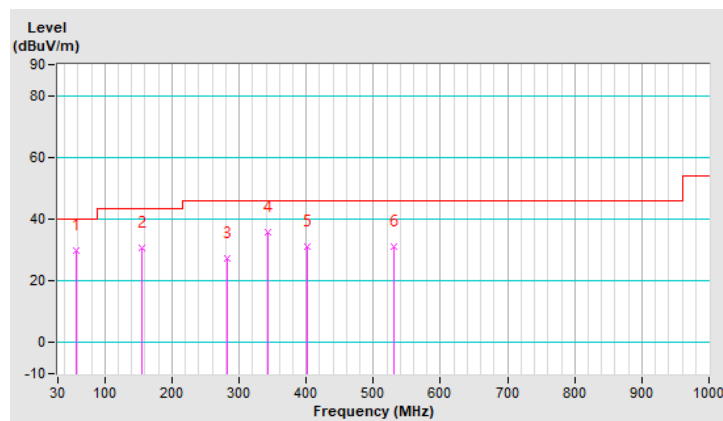


Channel	Channel 1	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	B		

Antenna Polarity & Test Distance: Vertical At 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	56.71	30.0 QP	40.0	-10.0	1.00 V	15	39.3	-9.3
2	155.12	30.6 QP	43.5	-12.9	1.00 V	145	39.1	-8.5
3	281.64	27.5 QP	46.0	-18.5	1.51 V	234	34.4	-6.9
4	342.09	35.9 QP	46.0	-10.1	1.51 V	178	41.6	-5.7
5	401.13	31.3 QP	46.0	-14.7	1.00 V	15	36.0	-4.7
6	530.46	31.1 QP	46.0	-14.9	1.51 V	34	32.7	-1.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Tested date: Mar. 26, 2021

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 04, 2020	Dec. 03, 2021
RF signal cable Woken	5D-FB	Cable-cond1-01	Jan. 16, 2021	Jan. 15, 2022
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 25, 2021	Feb. 24, 2022
V-LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).

3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

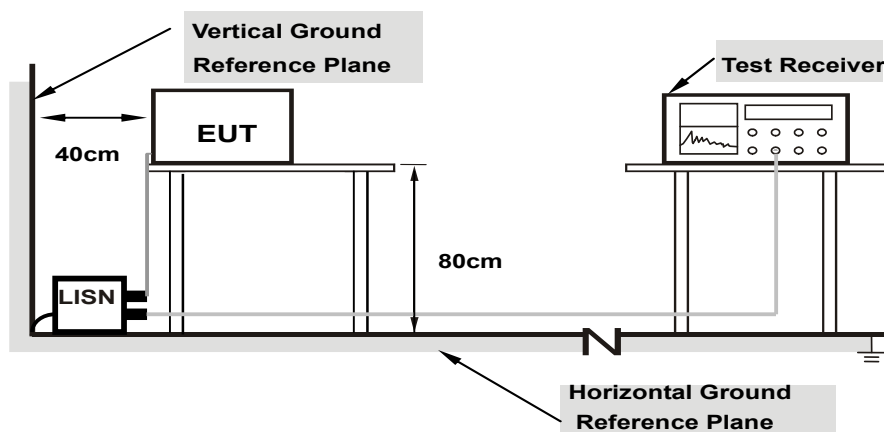
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

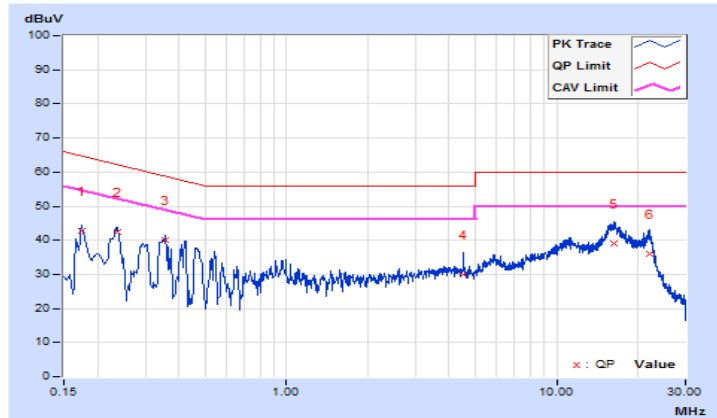
Charging Mode

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17400	9.71	32.99	25.00	42.70	34.71	64.77	54.77	-22.07	-20.06
2	0.23800	9.71	32.67	26.47	42.38	36.18	62.17	52.17	-19.79	-15.99
3	0.35782	9.73	30.41	22.63	40.14	32.36	58.78	48.78	-18.64	-16.42
4	4.52200	9.80	20.21	10.33	30.01	20.13	56.00	46.00	-25.99	-25.87
5	16.31400	9.83	29.31	22.06	39.14	31.89	60.00	50.00	-20.86	-18.11
6	22.15000	9.81	26.38	19.27	36.19	29.08	60.00	50.00	-23.81	-20.92

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

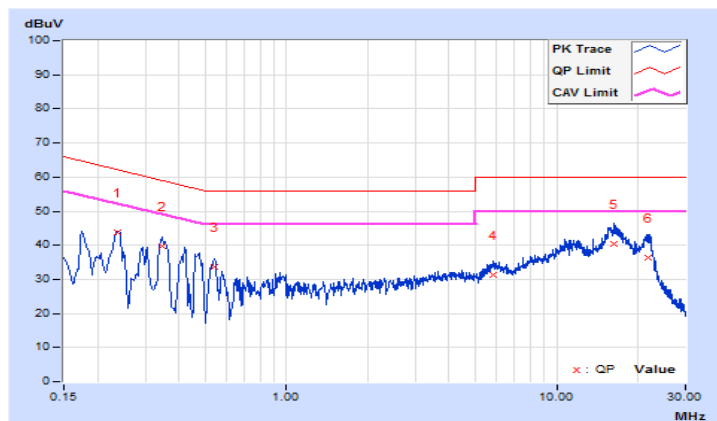


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.23723	9.77	34.01	28.13	43.78	37.90	62.19	52.19	-18.41	-14.29
2	0.34577	9.78	29.93	22.57	39.71	32.35	59.06	49.06	-19.35	-16.71
3	0.53970	9.80	24.00	11.43	33.80	21.23	56.00	46.00	-22.20	-24.77
4	5.82200	9.87	21.48	13.43	31.35	23.30	60.00	50.00	-28.65	-26.70
5	16.40600	9.96	30.55	22.46	40.51	32.42	60.00	50.00	-19.49	-17.58
6	21.89400	9.99	26.21	19.93	36.20	29.92	60.00	50.00	-23.80	-20.08

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



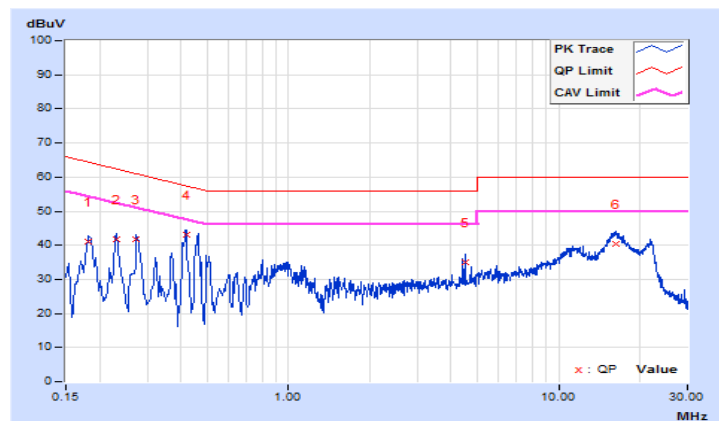
Standby Mode

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18200	9.71	31.49	24.69	41.20	34.40	64.39	54.39	-23.19	-19.99
2	0.22985	9.71	31.92	28.03	41.63	37.74	62.46	52.46	-20.83	-14.72
3	0.27400	9.72	31.91	26.80	41.63	36.52	61.00	51.00	-19.37	-14.48
4	0.41799	9.73	33.25	28.61	42.98	38.34	57.49	47.49	-14.51	-9.15
5	4.52200	9.80	25.27	10.54	35.07	20.34	56.00	46.00	-20.93	-25.66
6	16.20600	9.83	30.69	20.30	40.52	30.13	60.00	50.00	-19.48	-19.87

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

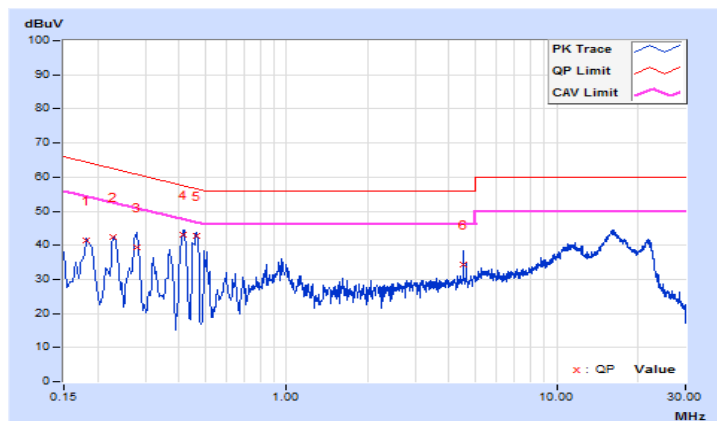


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18200	9.77	31.58	24.88	41.35	34.65	64.39	54.39	-23.04	-19.74
2	0.22924	9.77	32.58	28.73	42.35	38.50	62.48	52.48	-20.13	-13.98
3	0.27800	9.78	29.58	26.50	39.36	36.28	60.88	50.88	-21.52	-14.60
4	0.41400	9.79	33.26	28.67	43.05	38.46	57.57	47.57	-14.52	-9.11
5	0.46200	9.79	32.81	28.59	42.60	38.38	56.66	46.66	-14.06	-8.28
6	4.52600	9.86	24.51	9.87	34.37	19.73	56.00	46.00	-21.63	-26.27

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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