FCC Test Report

Report No.:	RF200508C01-3
FCC ID:	DMOCX400TW1R
Test Model:	CX400TW1 R
Received Date:	May 08, 2020
Test Date:	May 13 ~ May 21, 2020
Issued Date:	Jun. 05, 2020
Applicant:	Sennheiser electronic GmbH & Co. KG
Address:	Am Labor 1, D-30900 Wedemark, Germany
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF200508C01-3	Original Release	Jun. 05, 2020

1 Certificate of Conformity

Product:	CX True Wireless (CX400TW1)
Brand:	SENNHEISER
Test Model:	CX400TW1 R
Sample Status:	Engineering Sample
Applicant:	Sennheiser electronic GmbH & Co. KG
Test Date:	May 13 ~ May 21, 2020
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 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 : Gina Liu , **Date:** Jun. 05, 2020

Gina Liu / Specialist

Approved by : , **Date:** Jun. 05, 2020

Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -11.71 dB at 0.17000 MHz.
15.205 & 209	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -8.37 dB at 33.88 MHz.
15.247(d)	Band Edge Measurement	Pass	Meet the requirement of limit.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Reference only
15.247(b)	Conducted Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

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) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.79 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	CX True Wireless (CX400TW1)
Brand	SENNHEISER
Test Model	CX400TW1 R
Status of EUT	Engineering Sample
Power Supply Rating	5Vdc from USB interface 3.7Vdc from battery (a) Earbuds: 54-60mAh (b) Charging Case: 400-420mAh
Modulation Type	GFSK
Transfer Rate	LE 4.0: 1 Mbps LE 5.1: 2 Mbps
Operating Frequency	2402 ~ 2480 MHz
Number of Channel	40
Output Power	LE 4.0: 7.656 mW LE 5.1: 7.745 mW
Antenna Type	MONOPOLE antenna with -1.08 dBi gain
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	0.2m shielded USB cable without core

Note:

1. The EUT system CX True wireless (CX400TW1), contain the following devices:

Item	Brand	Device Model
Right Earbud	SENNHEISER	CX400TW1 R
Left Earbud	SENNHEISER	CX400TW1 L
Charging Case	SENNHEISER	CX400TW1 C

   * CX400TW1 R and CX400TW1 L with BT & BT LE TX/RX function
   * Charging case is solely used for charging CX400TW1 R and CX400TW1 L only

2. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or User's Manual.

3.2 Description of Test Modes

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

3.2.1 Test Mode Applicability and Tested Channel Detail

<LE 4.0>

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	-	√	EUT (Right Earbud (main battery cell))
B	-	√	-	-	EUT (Right Earbud (alternative battery cell))
C	-	√	√	-	EUT (Left Earbud + Right Earbud + Charging case (main battery))
D	-	√	√	-	EUT (Left Earbud + Right Earbud + Charging case (alternative battery))

Where **RE≥1G:** Radiated Emission above 1 GHz **RE<1G:** Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
Note: "-"means no effect.

Radiated Emission Test (Above 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A	0 to 39	0, 19, 39	GFSK	1

Radiated Emission Test (Below 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A, B, C, D	0 to 39	39	GFSK	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	Modulation Type	Data Rate (Mbps)
C, D	0 to 39	39	GFSK	1

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ 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	Modulation Type	Data Rate (Mbps)
A	0 to 39	0, 19, 39	GFSK	1

<LE 5.1>

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	-	√	EUT (Left Earbud (main battery cell))
B	-	√	-	-	EUT (Left Earbud (alternative battery cell))
C	-	√	√	-	EUT (Left Earbud + Right Earbud + Charging case (main battery))
D	-	√	√	-	EUT (Left Earbud + Right Earbud + Charging case (alternative battery))

Where **RE≥1G:** Radiated Emission above 1 GHz **RE<1G:** Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
Note: "-"means no effect.

Radiated Emission Test (Above 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A	0 to 39	0, 19, 39	GFSK	2

Radiated Emission Test (Below 1 GHz):

☒ 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	Modulation Type	Data Rate (Mbps)
A, B, C, D	0 to 39	39	GFSK	2

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	Modulation Type	Data Rate (Mbps)
C, D	0 to 39	39	GFSK	2

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ 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	Modulation Type	Data Rate (Mbps)
A	0 to 39	0, 19, 39	GFSK	2

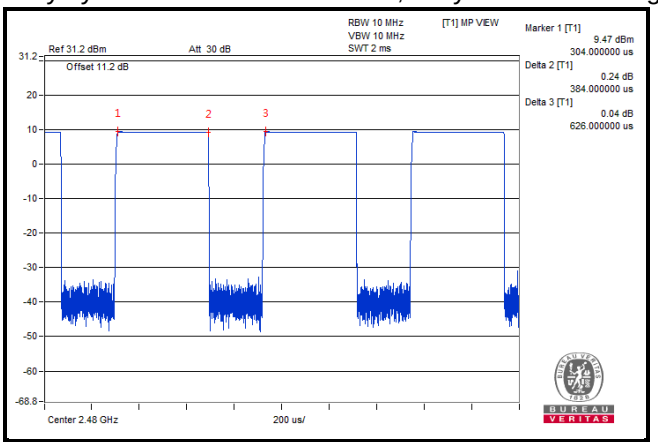
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	3.7 Vdc	Getaz Yang
RE<1G	25 deg. C, 65 % RH	3.7 Vdc, 120 Vac, 60Hz	Tim Chen, Getaz Yang
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang
APCM	25 deg. C, 65 % RH	3.7 Vdc	Wayne Lin

3.3 Duty Cycle of Test Signal

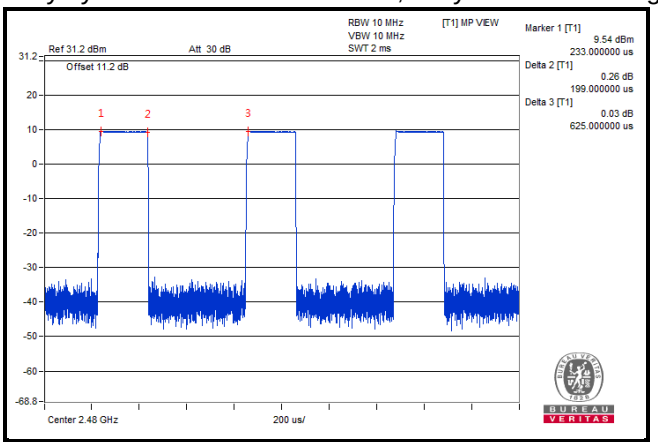
<LE 4.0>

Duty cycle = 0.384/0.626 = 0.613, Duty factor = 10 * log(1/0.613) = 2.12



<LE 5.1>

Duty cycle = 0.199/0.625 = 0.318, Duty factor = 10 * log(1/0.318) = 4.97



3.4 Description of Support Units

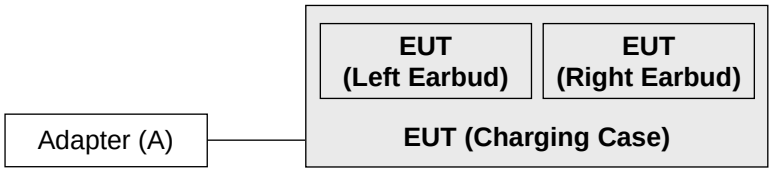
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
1.	Adapter	ASUS	AD827M	NA	NA	-

3.4.1 Configuration of System under Test

Test Mode A, B

Test Mode C, D



3.5 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart C (15.247)
ANSI C63.10-2013

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 18, 2020	Mar. 17, 2021
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 12, 2019	Dec. 11, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 16, 2020	Apr. 15, 2021
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 24, 2019	Nov. 23, 2020
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 08, 2019	Nov. 07, 2020
MXG Vector signal generator Agilent	N5182B	MY53050430	Oct. 25, 2019	Oct. 24, 2020
Loop Antenna	EM-6879	269	Sep. 16, 2019	Sep. 15, 2020
Preamplifier EMCI	EMC001340	980201	Oct. 14, 2019	Oct. 13, 2020
Preamplifier EMCI	EMC 012645	980115	Oct. 08, 2019	Oct. 07, 2020
Preamplifier EMCI	EMC 184045	980116	Oct. 08, 2019	Oct. 07, 2020
Preamplifier EMCI	EMC 330H	980112	Oct. 08, 2019	Oct. 07, 2020
Power Meter Anritsu	ML2495A	1012010	Sep. 04, 2019	Sep. 03, 2020
Power Sensor Anritsu	MA2411B	1315050	Sep. 04, 2019	Sep. 03, 2020
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8000&3000	140811+170717	Oct. 08, 2019	Oct. 07, 2020
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 08, 2019	Oct. 07, 2020
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 08, 2019	Oct. 07, 2020
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	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 Chamber 10.

4.1.3 Test Procedures

For Radiated Emission below 30 MHz

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.

Note:

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

For Radiated Emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) 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.
f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

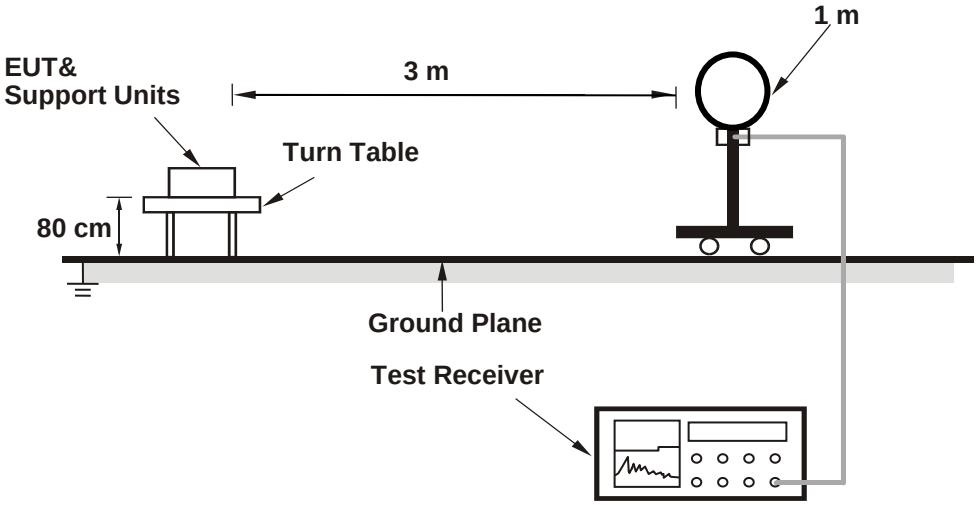
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz. (RBW = 1 MHz, VBW = 3 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

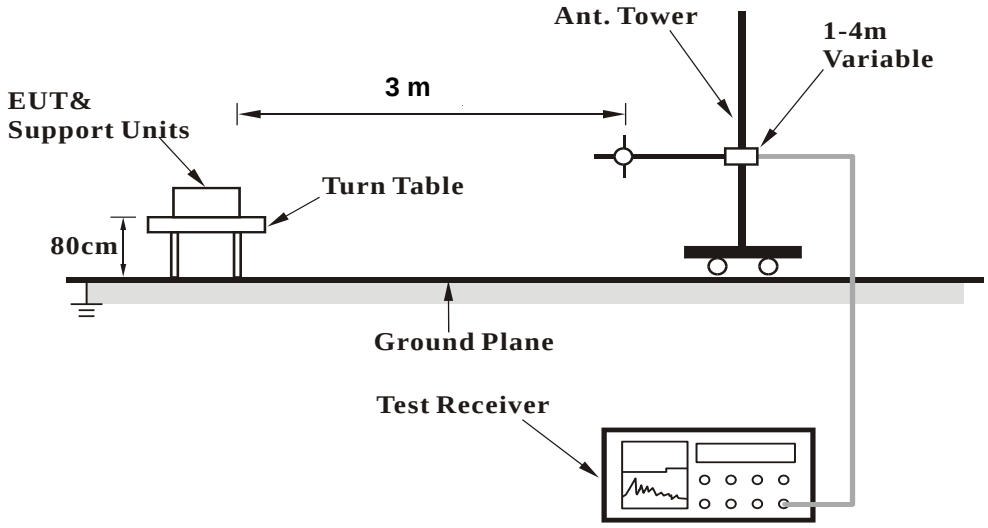
No deviation.

4.1.5 Test Set Up

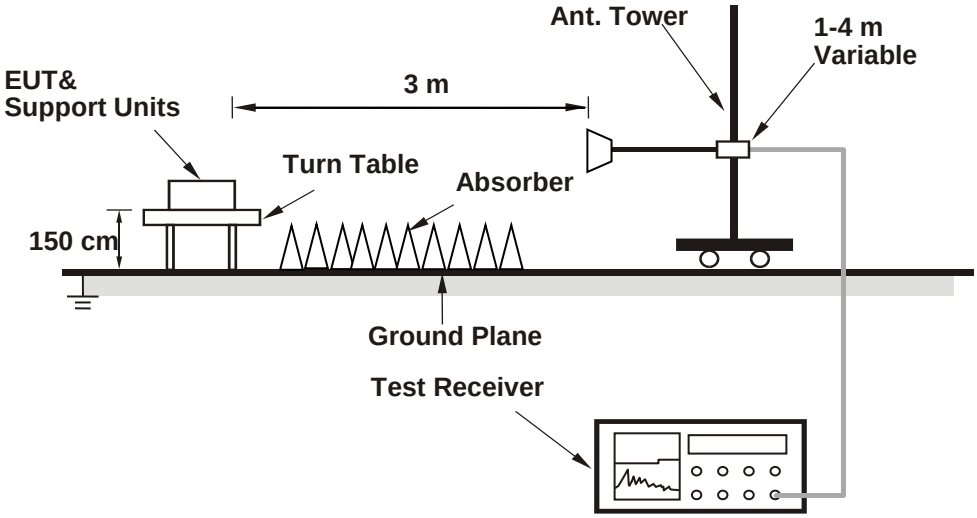
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1 GHz Data:

<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.51	42.43	-5.92	54	-17.49	100	12	Average
2390	45.3	51.22	-5.92	74	-28.7	100	12	Peak
2402	93.61	99.55	-5.94	------	------	100	12	Average
2402	94.53	100.47	-5.94	------	------	100	12	Peak
4804	32.62	48.26	-15.64	54	-21.38	138	239	Average
4804	42.88	58.52	-15.64	74	-31.12	138	239	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.69	42.61	-5.92	54	-17.31	120	247	Average
2390	46.22	52.14	-5.92	74	-27.78	120	247	Peak
2402	97.73	103.67	-5.94	------	------	120	247	Average
2402	98.63	104.57	-5.94	------	------	120	247	Peak
4804	34.49	50.13	-15.64	54	-19.51	138	30	Average
4804	44.46	60.1	-15.64	74	-29.54	138	30	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2402 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.57	42.49	-5.92	54	-17.43	133	20	Average
2390	46.37	52.29	-5.92	74	-27.63	133	20	Peak
2440	95.27	101.15	-5.88	------	------	133	20	Average
2440	96.11	101.99	-5.88	------	------	133	20	Peak
2483.5	36.56	42.26	-5.7	54	-17.44	133	20	Average
2483.5	46.18	51.88	-5.7	74	-27.82	133	20	Peak
4880	32.86	48.42	-15.56	54	-21.14	134	237	Average
4880	43.07	58.63	-15.56	74	-30.93	134	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.7	42.62	-5.92	54	-17.3	144	246	Average
2390	46.34	52.26	-5.92	74	-27.66	144	246	Peak
2440	97.63	103.51	-5.88	------	------	144	246	Average
2440	98.86	104.74	-5.88	------	------	144	246	Peak
2483.5	36.73	42.43	-5.7	54	-17.27	144	246	Average
2483.5	46.19	51.89	-5.7	74	-27.81	144	246	Peak
4880	35.11	50.67	-15.56	54	-18.89	132	18	Average
4880	44.95	60.51	-15.56	74	-29.05	132	18	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2440 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2480	95.49	101.19	-5.7	------	------	161	8	Average
2480	96.23	101.93	-5.7	------	------	161	8	Peak
2483.5	37.65	43.35	-5.7	54	-16.35	161	8	Average
2483.5	47.09	52.79	-5.7	74	-26.91	161	8	Peak
4960	32.74	48.19	-15.45	54	-21.26	144	242	Average
4960	44.22	59.67	-15.45	74	-29.78	144	242	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2480	96.49	102.19	-5.7	------	------	148	237	Average
2480	97.35	103.05	-5.7	------	------	148	237	Peak
2483.5	37.96	43.66	-5.7	54	-16.04	148	237	Average
2483.5	47.72	53.42	-5.7	74	-26.28	148	237	Peak
4960	34.88	50.33	-15.45	54	-19.12	132	18	Average
4960	46.34	61.79	-15.45	74	-27.66	132	18	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2480 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.25	42.17	-5.92	54	-17.75	100	42	Average
2390	45.45	51.37	-5.92	74	-28.55	100	42	Peak
2402	91.93	97.87	-5.94	------	------	100	42	Average
2402	94.36	100.3	-5.94	------	------	100	42	Peak
4804	32.65	48.29	-15.64	54	-21.35	126	228	Average
4804	43.49	59.13	-15.64	74	-30.51	126	228	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.61	42.53	-5.92	54	-17.39	145	241	Average
2390	46.01	51.93	-5.92	74	-27.99	145	241	Peak
2402	96.38	102.32	-5.94	------	------	145	241	Average
2402	98.52	104.46	-5.94	------	------	145	241	Peak
4804	35.1	50.74	-15.64	54	-18.9	142	25	Average
4804	44.54	60.18	-15.64	74	-29.46	142	25	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2402 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 19	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.51	42.43	-5.92	54	-17.49	136	12	Average
2390	45.56	51.48	-5.92	74	-28.44	136	12	Peak
2440	93.56	99.44	-5.88	------	------	136	12	Average
2440	95.99	101.87	-5.88	------	------	136	12	Peak
2483.5	36.6	42.3	-5.7	54	-17.4	136	12	Average
2483.5	45.87	51.57	-5.7	74	-28.13	136	12	Peak
4880	33.18	48.74	-15.56	54	-20.82	131	234	Average
4880	43.35	58.91	-15.56	74	-30.65	131	234	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2390	36.68	42.6	-5.92	54	-17.32	131	237	Average
2390	46.28	52.2	-5.92	74	-27.72	131	237	Peak
2440	95.78	101.66	-5.88	------	------	131	237	Average
2440	98.13	104.01	-5.88	------	------	131	237	Peak
2483.5	36.45	42.15	-5.7	54	-17.55	131	237	Average
2483.5	45.68	51.38	-5.7	74	-28.32	131	237	Peak
4880	35.48	51.04	-15.56	54	-18.52	146	29	Average
4880	45.4	60.96	-15.56	74	-28.6	146	29	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2440 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2480	93.98	99.68	-5.7	------	------	140	27	Average
2480	96.35	102.05	-5.7	------	------	140	27	Peak
2483.5	42.81	48.51	-5.7	54	-11.19	140	27	Average
2483.5	50.58	56.28	-5.7	74	-23.42	140	27	Peak
4960	32.99	48.44	-15.45	54	-21.01	122	243	Average
4960	42.56	58.01	-15.45	74	-31.44	122	243	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
2480	95.39	101.09	-5.7	------	------	145	246	Average
2480	97.61	103.31	-5.7	------	------	145	246	Peak
2483.5	43.33	49.03	-5.7	54	-10.67	145	246	Average
2483.5	50.73	56.43	-5.7	74	-23.27	145	246	Peak
4960	35.79	51.24	-15.45	54	-18.21	154	53	Average
4960	45.13	60.58	-15.45	74	-28.87	154	53	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. 2480 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

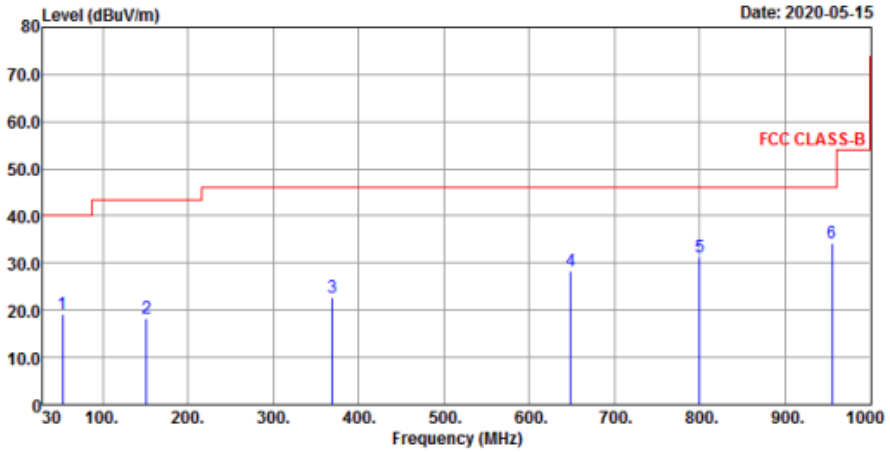
30 MHz ~ 1 GHz Worst-Case Data:

Mode A

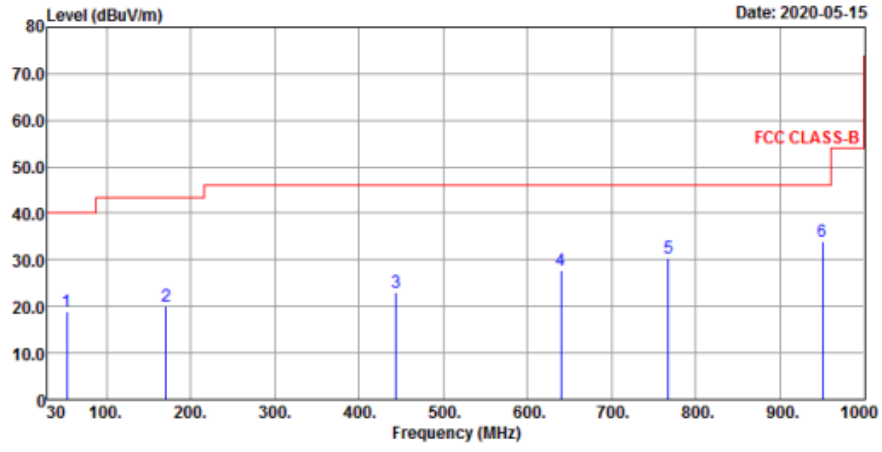
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
53.28	19.29	31.14	-11.85	40	-20.71	197	333	Peak
151.25	18.27	29.98	-11.71	43.5	-25.23	144	65	Peak
369.5	22.59	31.63	-9.04	46	-23.41	106	344	106
648.86	28.46	30.08	-1.62	46	-17.54	111	129	Peak
800.18	31.44	29.78	1.66	46	-14.56	161	206	Peak
955.38	34.3	30.59	3.71	46	-11.7	145	65	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
53.28	18.95	30.8	-11.85	40	-21.05	134	140	Peak
170.65	20.12	32.46	-12.34	43.5	-23.38	167	73	Peak
444.19	22.95	29.52	-6.57	46	-23.05	194	115	Peak
640.13	27.82	29.52	-1.7	46	-18.18	128	133	Peak
767.2	30.55	29.37	1.18	46	-15.45	192	167	Peak
950.53	33.92	30.23	3.69	46	-12.08	155	163	Peak

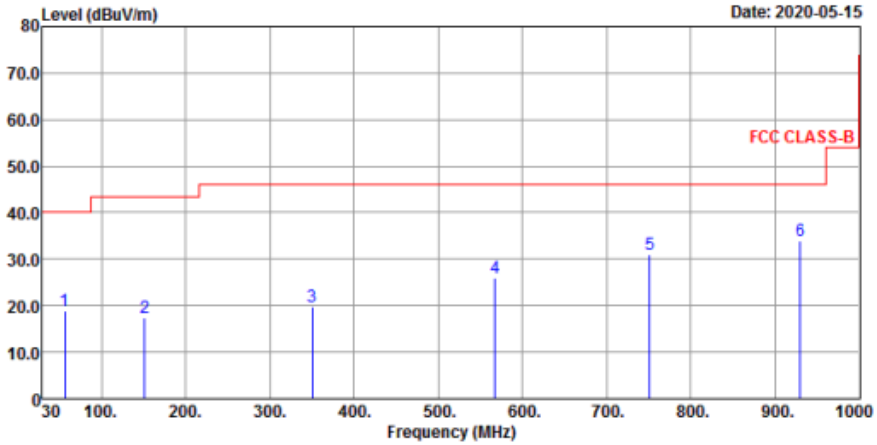
Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

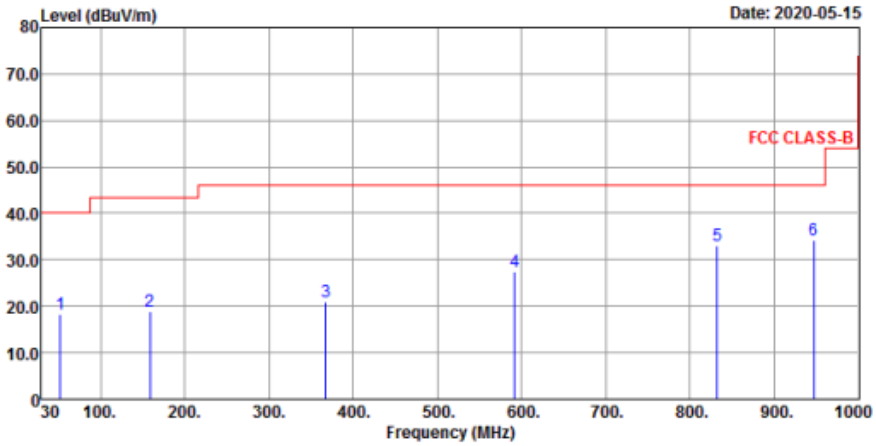
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
56.19	18.76	30.7	-11.94	40	-21.24	188	280	Peak
151.25	17.29	29	-11.71	43.5	-26.21	195	94	Peak
350.1	19.79	29.57	-9.78	46	-26.21	110	16	Peak
567.38	26.09	29.94	-3.85	46	-19.91	179	355	Peak
750.71	30.91	29.93	0.98	46	-15.09	152	192	Peak
930.16	34.01	30.58	3.43	46	-11.99	133	199	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
52.31	18.44	30.26	-11.82	40	-21.56	199	267	Peak
159.01	18.81	30.52	-11.71	43.5	-24.69	183	134	Peak
367.56	20.95	30.07	-9.12	46	-25.05	153	341	Peak
591.63	27.53	30.52	-2.99	46	-18.47	164	208	Peak
832.19	33.07	30.81	2.26	46	-12.93	171	250	Peak
946.65	34.29	30.63	3.66	46	-11.71	167	245	Peak

Remarks:

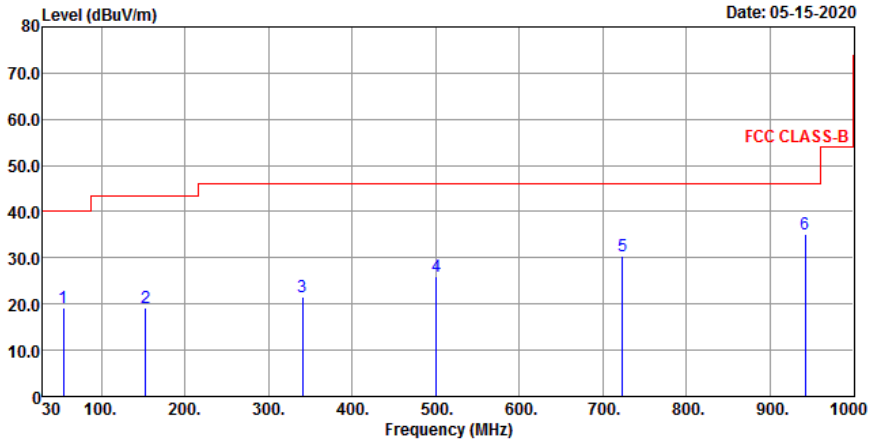
1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

Mode B

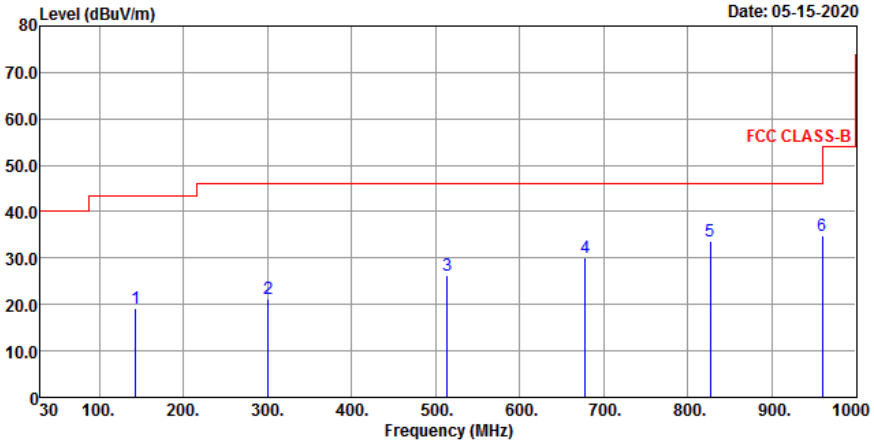
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
54.25	19.2	31.18	-11.98	40	-20.8	102	214	Peak
153.19	19.3	30.99	-11.69	43.5	-24.2	132	265	Peak
340.4	21.53	31.49	-9.96	46	-24.47	111	158	Peak
500.45	26.05	31.49	-5.44	46	-19.95	147	152	Peak
723.55	30.43	30.48	-0.05	46	-15.57	132	265	Peak
941.8	35.13	31.59	3.54	46	-10.87	111	147	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
143.49	19.25	31.16	-11.91	43.5	-24.25	102	231	Peak
300.63	21.26	32.42	-11.16	46	-24.74	162	251	Peak
514.03	26.38	31.58	-5.2	46	-19.62	145	285	Peak
677.96	30.1	31.2	-1.1	46	-15.9	132	214	Peak
826.37	33.76	31.54	2.22	46	-12.24	162	258	Peak
960.23	34.93	31.22	3.71	54	-19.07	102	231	Peak

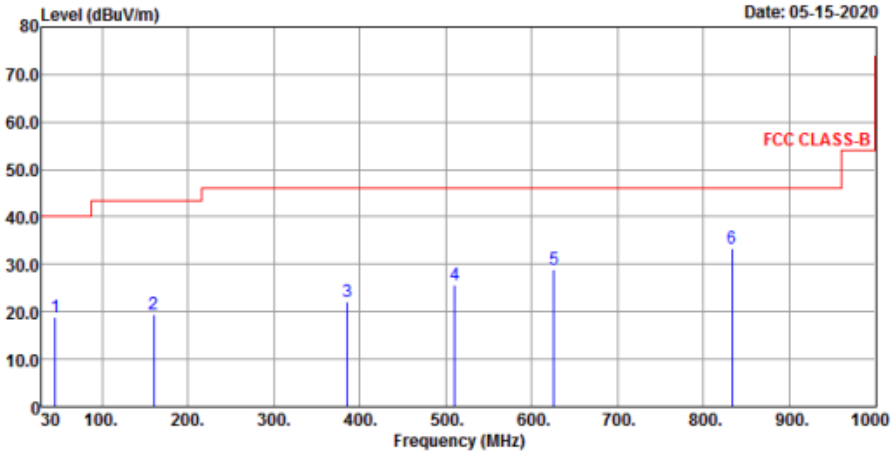
Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

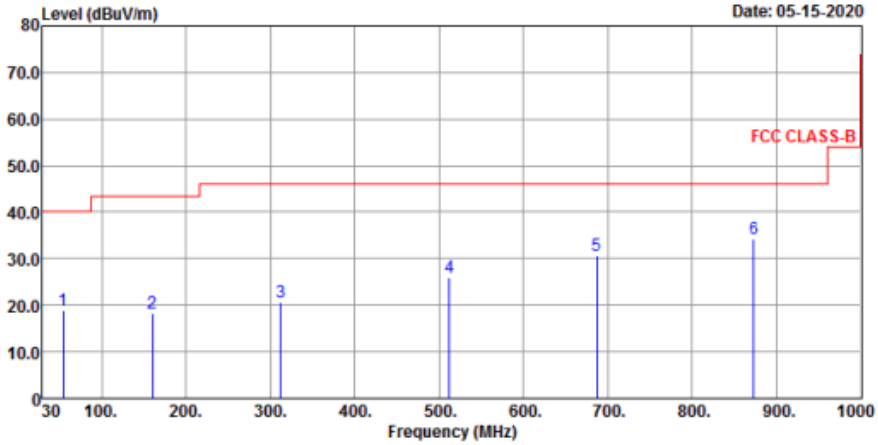
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
45.52	18.91	30.69	-11.78	40	-21.09	111	132	Peak
159.98	19.54	31.16	-11.62	43.5	-23.96	111	265	Peak
385.02	22.2	30.84	-8.64	46	-23.8	102	285	Peak
510.15	25.62	30.89	-5.27	46	-20.38	145	132	Peak
625.58	28.99	30.87	-1.88	46	-17.01	132	265	Peak
833.16	33.3	31.04	2.26	46	-12.7	192	285	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
54.25	18.96	30.94	-11.98	40	-21.04	102	285	Peak
159.98	18.3	29.92	-11.62	43.5	-25.2	132	214	Peak
312.27	20.75	31.45	-10.7	46	-25.25	111	192	Peak
512.09	25.9	31.14	-5.24	46	-20.1	128	145	Peak
686.69	30.73	31.66	-0.93	46	-15.27	103	251	Peak
872.93	34.27	31.55	2.72	46	-11.73	164	251	Peak

Remarks:

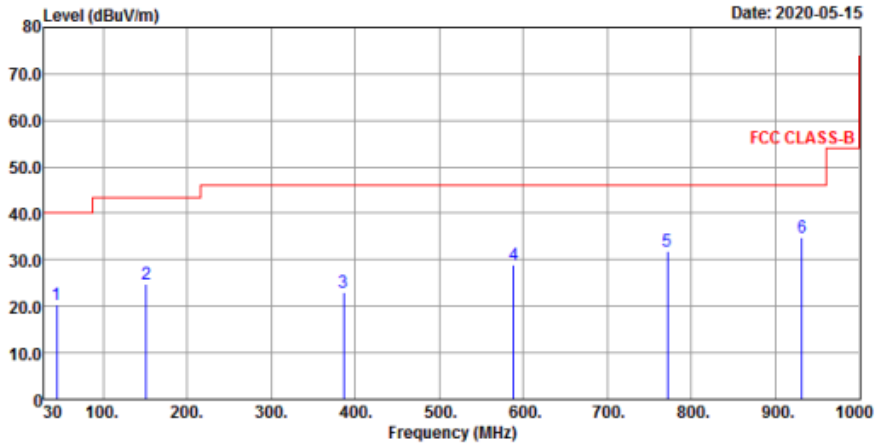
1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

Mode C

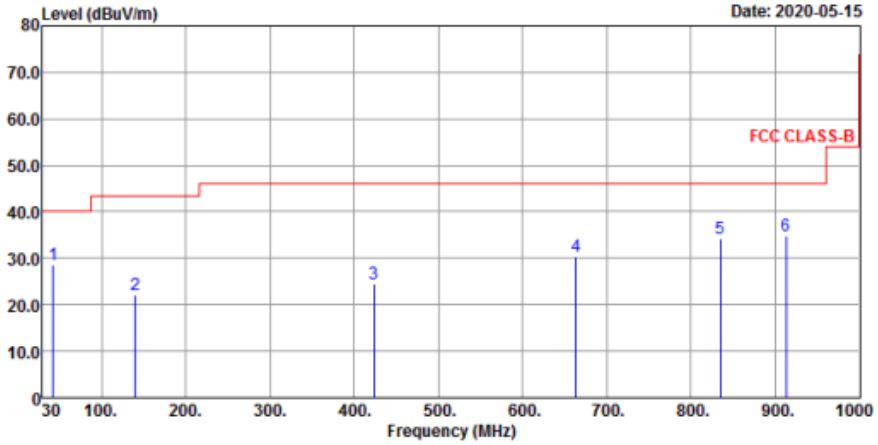
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
44.55	20.33	32.2	-11.87	40	-19.67	154	122	Peak
151.25	24.81	36.52	-11.71	43.5	-18.69	132	155	Peak
385.99	23.03	31.66	-8.63	46	-22.97	166	36	Peak
588.72	28.82	31.9	-3.08	46	-17.18	112	352	Peak
771.08	31.88	30.61	1.27	46	-14.12	147	87	Peak
931.13	34.83	31.4	3.43	46	-11.17	111	121	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
42.61	28.78	40.76	-11.98	40	-11.22	171	74	Peak
139.61	22.14	34.29	-12.15	43.5	-21.36	146	166	Peak
423.82	24.55	31.9	-7.35	46	-21.45	188	163	Peak
663.41	30.54	31.96	-1.42	46	-15.46	142	144	Peak
835.1	34.18	31.9	2.28	46	-11.82	181	156	Peak
912.7	34.8	31.59	3.21	46	-11.2	177	192	Peak

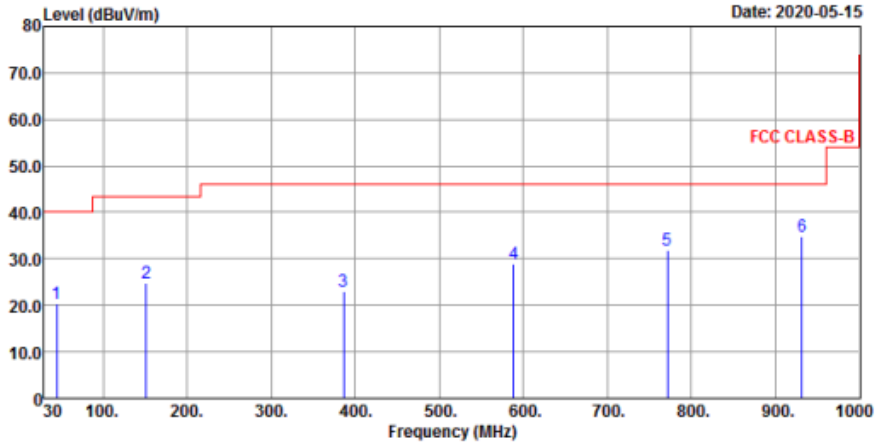
Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

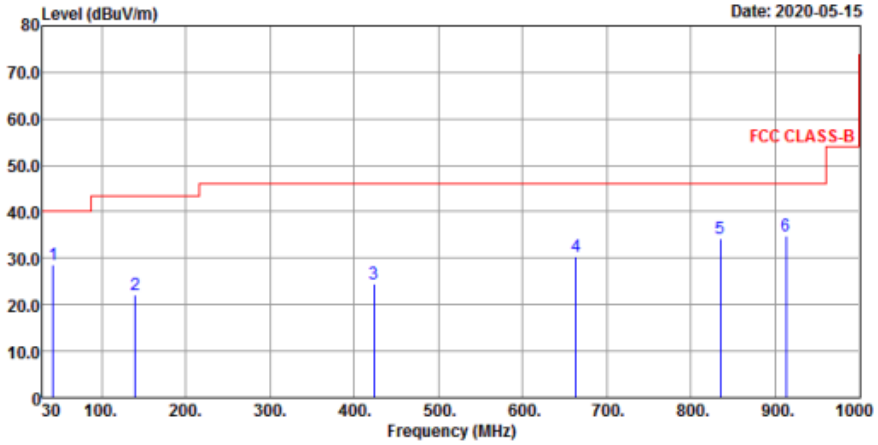
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
44.55	20.33	32.2	-11.87	40	-19.67	154	122	Peak
151.25	24.81	36.52	-11.71	43.5	-18.69	132	155	Peak
385.99	23.03	31.66	-8.63	46	-22.97	166	36	Peak
588.72	28.82	31.9	-3.08	46	-17.18	112	352	Peak
771.08	31.88	30.61	1.27	46	-14.12	147	87	Peak
931.13	34.83	31.4	3.43	46	-11.17	111	121	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
42.61	28.78	40.76	-11.98	40	-11.22	171	74	Peak
139.61	22.14	34.29	-12.15	43.5	-21.36	146	166	Peak
423.82	24.55	31.9	-7.35	46	-21.45	188	163	Peak
663.41	30.54	31.96	-1.42	46	-15.46	142	144	Peak
835.1	34.18	31.9	2.28	46	-11.82	181	156	Peak
912.7	34.8	31.59	3.21	46	-11.2	177	192	Peak

Remarks:

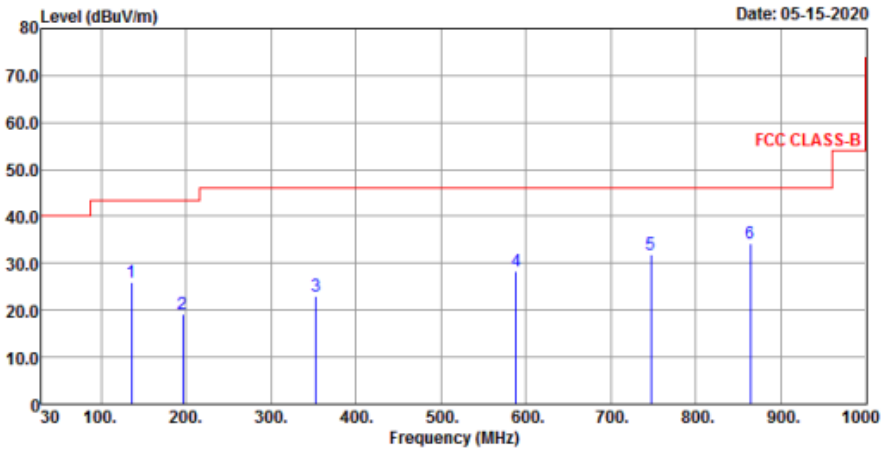
1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

Mode D

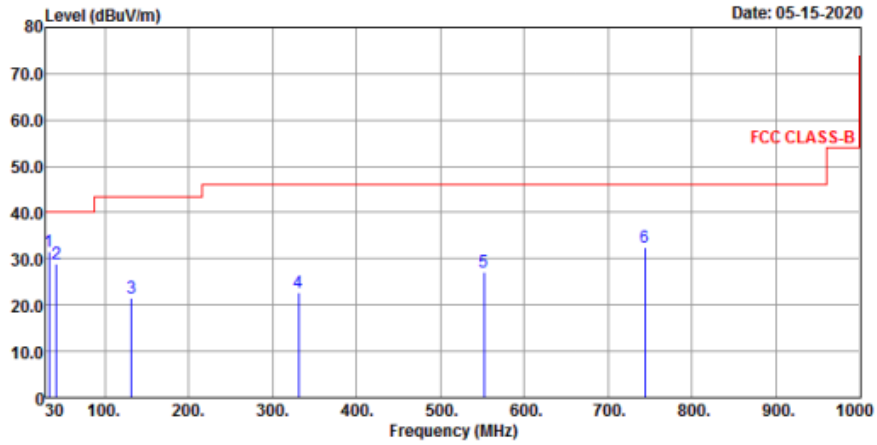
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
135.73	25.93	38.29	-12.36	43.5	-17.57	145	152	Peak
195.87	19.15	34.14	-14.99	43.5	-24.35	102	231	Peak
353.01	22.9	32.57	-9.67	46	-23.1	165	295	Peak
588.72	28.44	31.52	-3.08	46	-17.56	147	152	Peak
746.83	31.94	30.99	0.95	46	-14.06	111	132	Peak
864.2	34.26	31.65	2.61	46	-11.74	158	256	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
33.88	**31.63**	**44.5**	**-12.87**	**40**	**-8.37**	**145**	**125**	**Peak**
42.61	28.98	40.96	-11.98	40	-11.02	145	285	Peak
131.85	21.49	34.31	-12.82	43.5	-22.01	132	265	Peak
330.7	22.79	32.79	-10	46	-23.21	111	142	Peak
551.86	27.14	31.55	-4.41	46	-18.86	185	147	Peak
743.92	32.49	31.56	0.93	46	-13.51	102	231	Peak

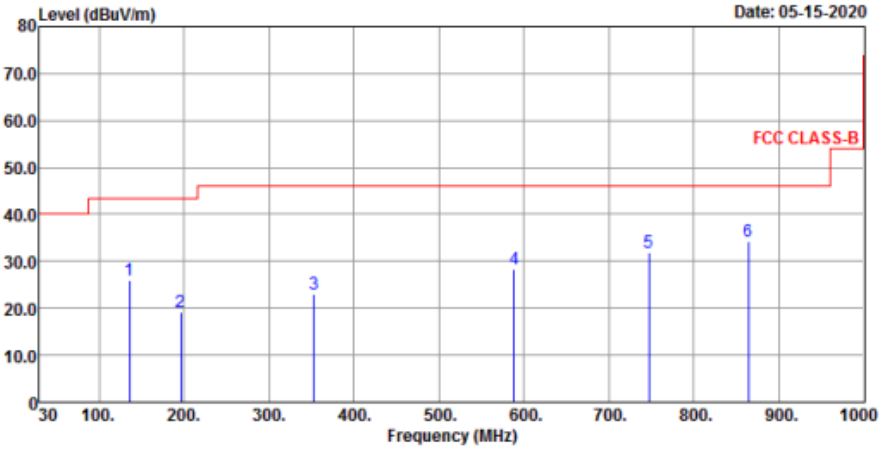
Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

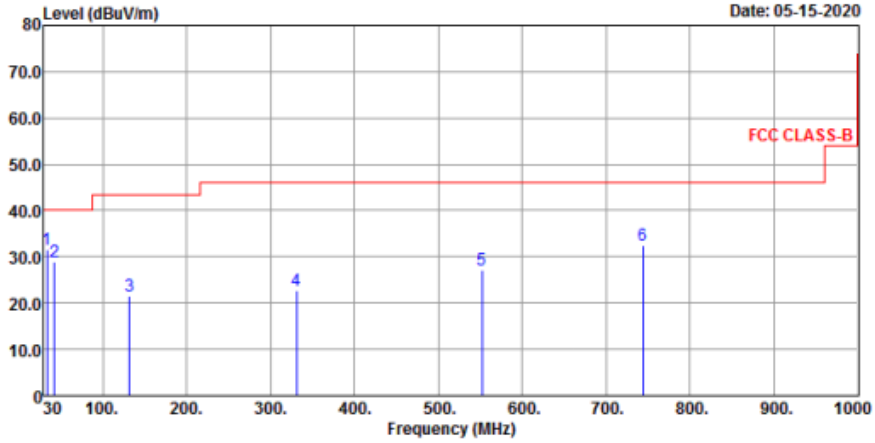
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
135.73	25.93	38.29	-12.36	43.5	-17.57	145	152	Peak
195.87	19.15	34.14	-14.99	43.5	-24.35	102	231	Peak
353.01	22.9	32.57	-9.67	46	-23.1	165	295	Peak
588.72	28.44	31.52	-3.08	46	-17.56	147	152	Peak
746.83	31.94	30.99	0.95	46	-14.06	111	132	Peak
864.2	34.26	31.65	2.61	46	-11.74	158	256	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
33.88	**31.63**	**44.5**	**-12.87**	**40**	**-8.37**	**145**	**125**	**Peak**
42.61	28.98	40.96	-11.98	40	-11.02	145	285	Peak
131.85	21.49	34.31	-12.82	43.5	-22.01	132	265	Peak
330.7	22.79	32.79	-10	46	-23.21	111	142	Peak
551.86	27.14	31.55	-4.41	46	-18.86	185	147	Peak
743.92	32.49	31.56	0.93	46	-13.51	102	231	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit.

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 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019	Sep. 04, 2020
LISN/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
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.
3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

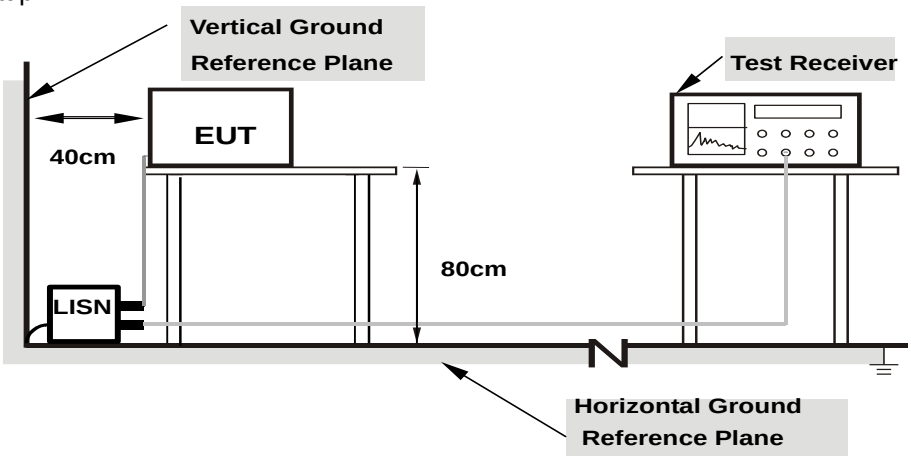
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.2.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7 Test Results

CONDUCTED WORST-CASE DATA

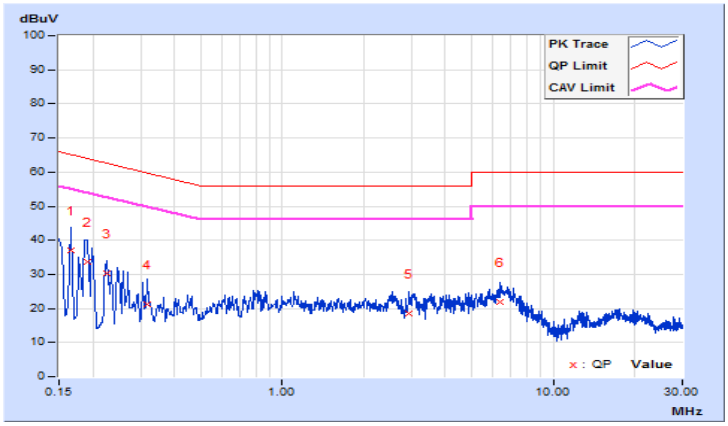
<LE4.0>

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode C		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16600	9.63	27.54	25.95	37.17	35.58	65.16	55.16	-27.99	-19.58
2	0.19000	9.62	23.99	20.38	33.61	30.00	64.04	54.04	-30.43	-24.04
3	0.22565	9.62	20.67	17.53	30.29	27.15	62.61	52.61	-32.32	-25.46
4	0.31800	9.64	11.48	10.38	21.12	20.02	59.76	49.76	-38.64	-29.74
5	2.95000	9.76	8.66	5.11	18.42	14.87	56.00	46.00	-37.58	-31.13
6	6.37000	9.82	12.03	10.00	21.85	19.82	60.00	50.00	-38.15	-30.18

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

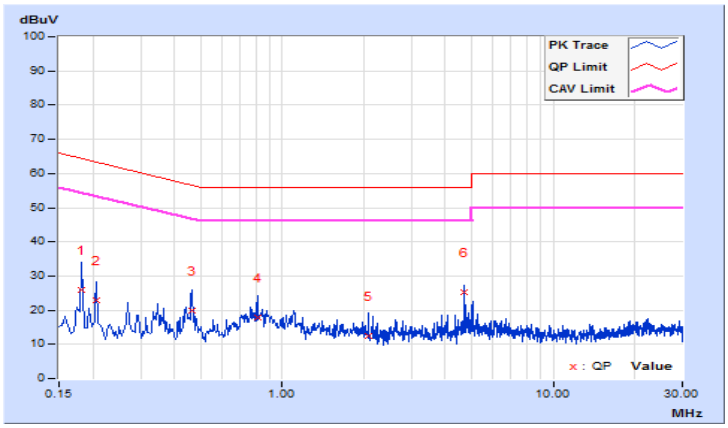


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode C		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18200	9.65	16.26	13.18	25.91	22.83	64.39	54.39	-38.48	-31.56
2	0.20600	9.64	13.23	10.16	22.87	19.80	63.37	53.37	-40.50	-33.57
3	0.46200	9.67	10.12	8.28	19.79	17.95	56.66	46.66	-36.87	-28.71
4	0.81000	9.69	8.05	6.21	17.74	15.90	56.00	46.00	-38.26	-30.10
5	2.07400	9.76	2.83	1.54	12.59	11.30	56.00	46.00	-43.41	-34.70
6	4.67400	9.83	15.50	13.05	25.33	22.88	56.00	46.00	-30.67	-23.12

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



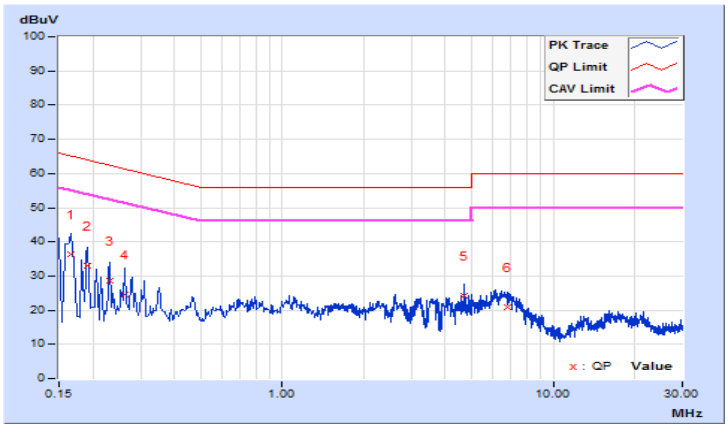
<LE 5.1>

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode C		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16579	9.63	26.78	21.64	36.41	31.27	65.17	55.17	-28.76	-23.90
2	0.19000	9.62	23.39	20.16	33.01	29.78	64.04	54.04	-31.03	-24.26
3	0.23000	9.62	19.09	12.65	28.71	22.27	62.45	52.45	-33.74	-30.18
4	0.26200	9.63	15.05	11.54	24.68	21.17	61.37	51.37	-36.69	-30.20
5	4.67400	9.80	14.28	10.46	24.08	20.26	56.00	46.00	-31.92	-25.74
6	6.80200	9.83	10.90	8.50	20.73	18.33	60.00	50.00	-39.27	-31.67

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

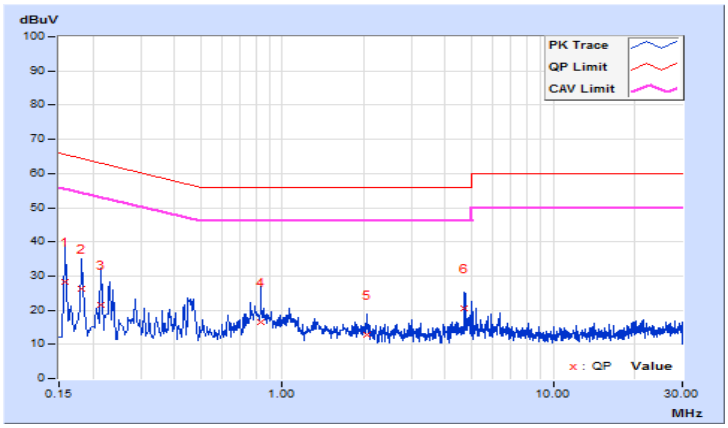


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode C		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.66	18.58	13.78	28.24	23.44	65.57	55.57	-37.33	-32.13
2	0.18200	9.65	16.75	14.99	26.40	24.64	64.39	54.39	-37.99	-29.75
3	0.21400	9.64	11.75	10.92	21.39	20.56	63.05	53.05	-41.66	-32.49
4	0.83400	9.69	6.93	5.12	16.62	14.81	56.00	46.00	-39.38	-31.19
5	2.06600	9.76	3.01	1.57	12.77	11.33	56.00	46.00	-43.23	-34.67
6	4.67800	9.83	10.67	8.23	20.50	18.06	56.00	46.00	-35.50	-27.94

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



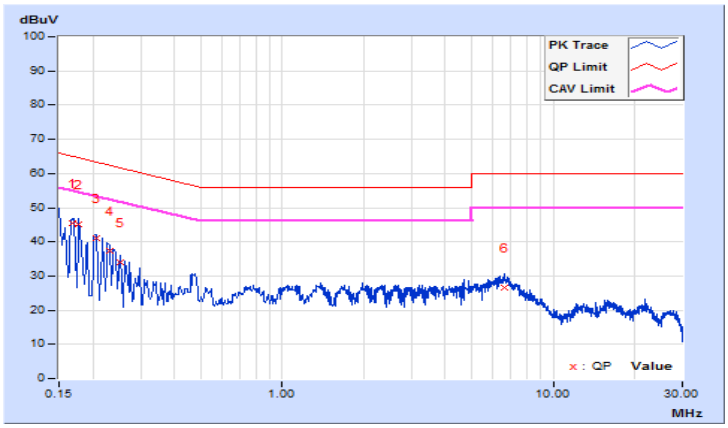
<LE 4.0>

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode D		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16799	9.63	35.74	27.52	45.37	37.15	65.06	55.06	-19.69	-17.91
2	0.17800	9.62	35.39	27.04	45.01	36.66	64.58	54.58	-19.57	-17.92
3	0.20577	9.62	31.57	28.36	41.19	37.98	63.37	53.37	-22.18	-15.39
4	0.23000	9.62	27.64	21.02	37.26	30.64	62.45	52.45	-25.19	-21.81
5	0.25400	9.63	24.45	21.63	34.08	31.26	61.63	51.63	-27.55	-20.37
6	6.61000	9.82	16.76	11.04	26.58	20.86	60.00	50.00	-33.42	-29.14

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

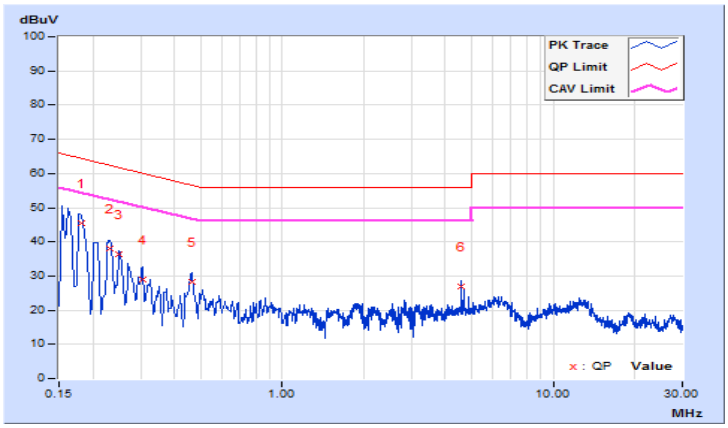


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode D		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18200	9.65	35.76	30.95	45.41	40.60	64.39	54.39	-18.98	-13.79
2	0.22985	9.64	28.49	24.80	38.13	34.44	62.46	52.46	-24.33	-18.02
3	0.25000	9.65	26.66	23.98	36.31	33.63	61.76	51.76	-25.45	-18.13
4	0.30600	9.66	19.25	15.83	28.91	25.49	60.08	50.08	-31.17	-24.59
5	0.46200	9.67	18.56	13.49	28.23	23.16	56.66	46.66	-28.43	-23.50
6	4.57000	9.83	16.94	12.19	26.77	22.02	56.00	46.00	-29.23	-23.98

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



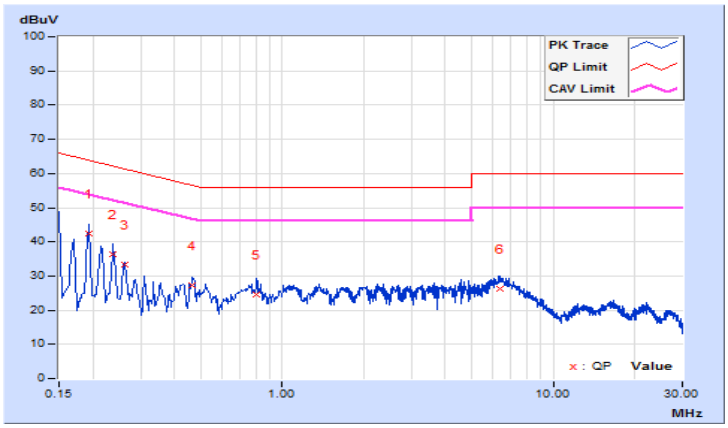
<LE 5.1>

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode D		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19400	9.62	32.96	30.49	42.58	40.11	63.86	53.86	-21.28	-13.75
2	0.23800	9.63	26.76	21.19	36.39	30.82	62.17	52.17	-25.78	-21.35
3	0.26200	9.63	23.71	20.85	33.34	30.48	61.37	51.37	-28.03	-20.89
4	0.46567	9.65	17.72	12.96	27.37	22.61	56.59	46.59	-29.22	-23.98
5	0.80200	9.67	15.06	11.16	24.73	20.83	56.00	46.00	-31.27	-25.17
6	6.36200	9.82	16.42	10.50	26.24	20.32	60.00	50.00	-33.76	-29.68

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

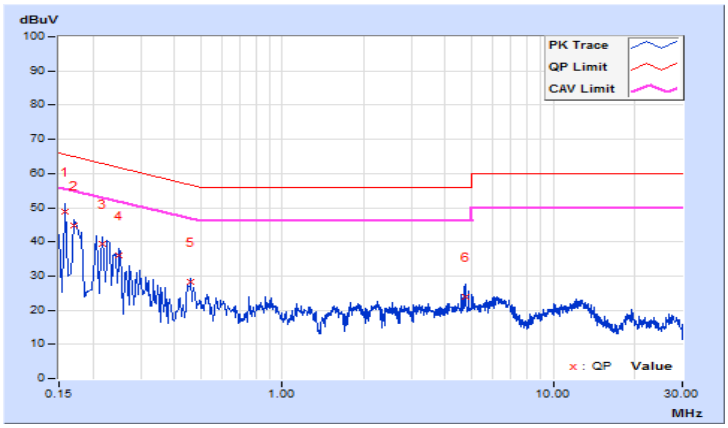


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Jisyong Wang	Test Date	2020/5/13
Test Mode	Mode D		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.66	39.05	31.53	48.71	41.19	65.57	55.57	-16.86	-14.38
2	**0.17000**	**9.65**	**35.09**	**33.60**	**44.74**	**43.25**	**64.96**	**54.96**	**-20.22**	**-11.71**
3	0.21800	9.64	29.77	23.96	39.41	33.60	62.89	52.89	-23.48	-19.29
4	0.25000	9.65	26.31	23.95	35.96	33.60	61.76	51.76	-25.80	-18.16
5	0.45800	9.67	18.46	15.18	28.13	24.85	56.73	46.73	-28.60	-21.88
6	4.77400	9.83	13.95	11.44	23.78	21.27	56.00	46.00	-32.22	-24.73

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

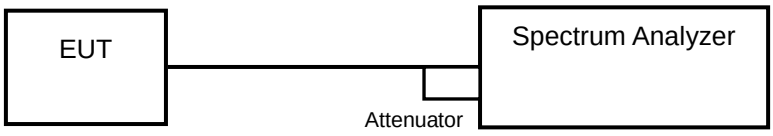


4.3 6 dB Bandwidth Measurement

4.3.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

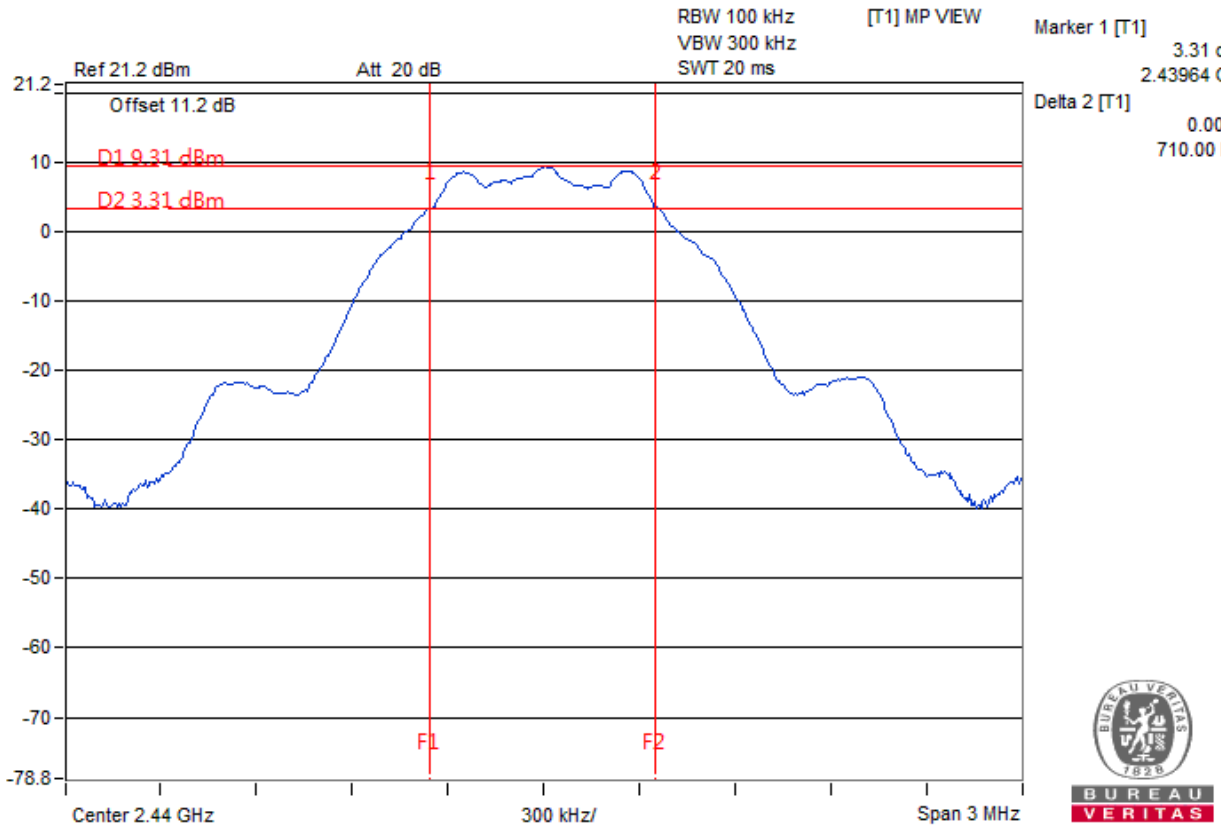
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

<LE 4.0>

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.73	0.5	Pass
19	2440	0.71	0.5	Pass
39	2480	0.73	0.5	Pass

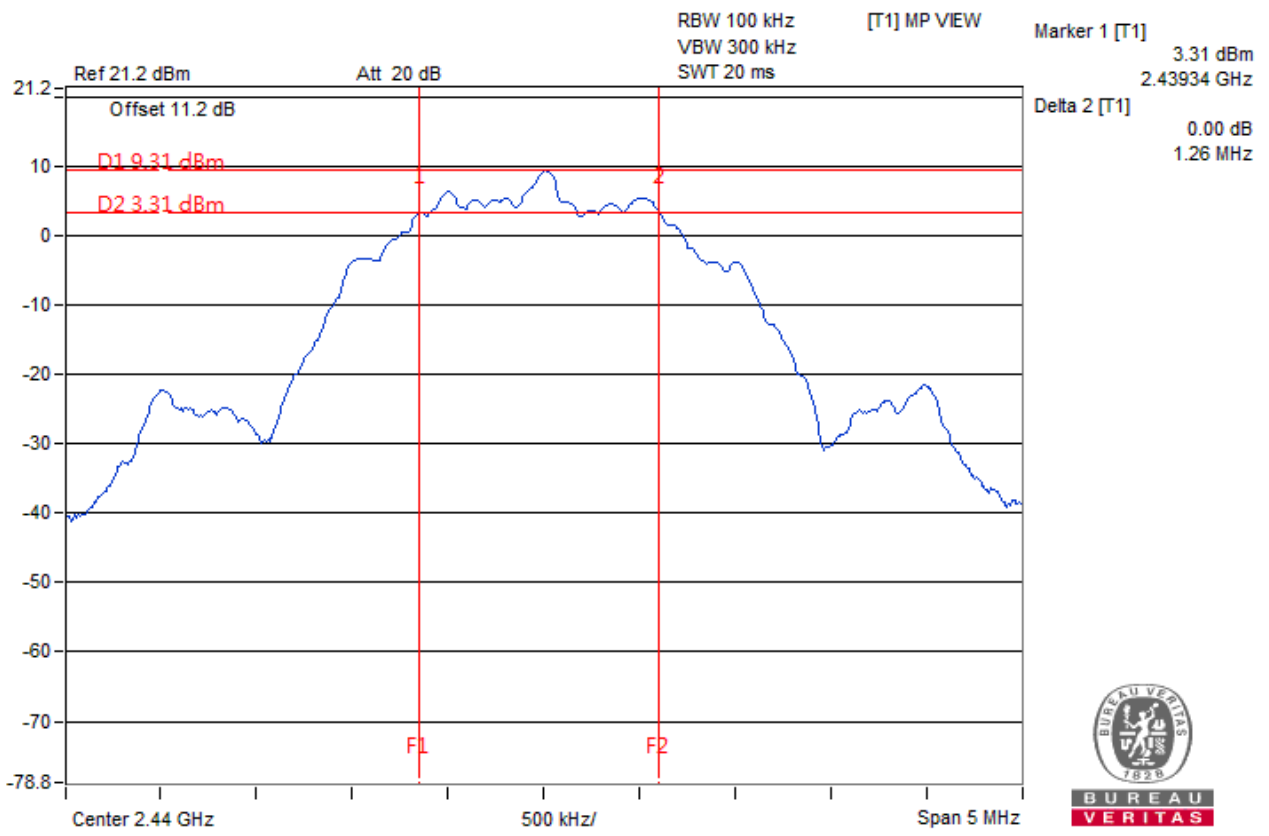
Spectrum Plot of Worst Value



<LE 5.1>

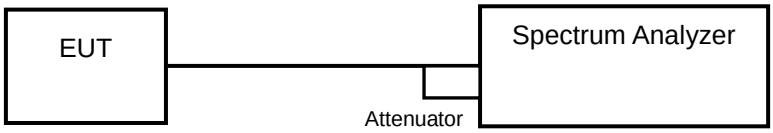
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	1.27	0.5	Pass
19	2440	1.26	0.5	Pass
39	2480	1.26	0.5	Pass

Spectrum Plot of Worst Value



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1 % to 5 % of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Deviation from Test Standard

No deviation.

4.4.5 EUT Operating Conditions

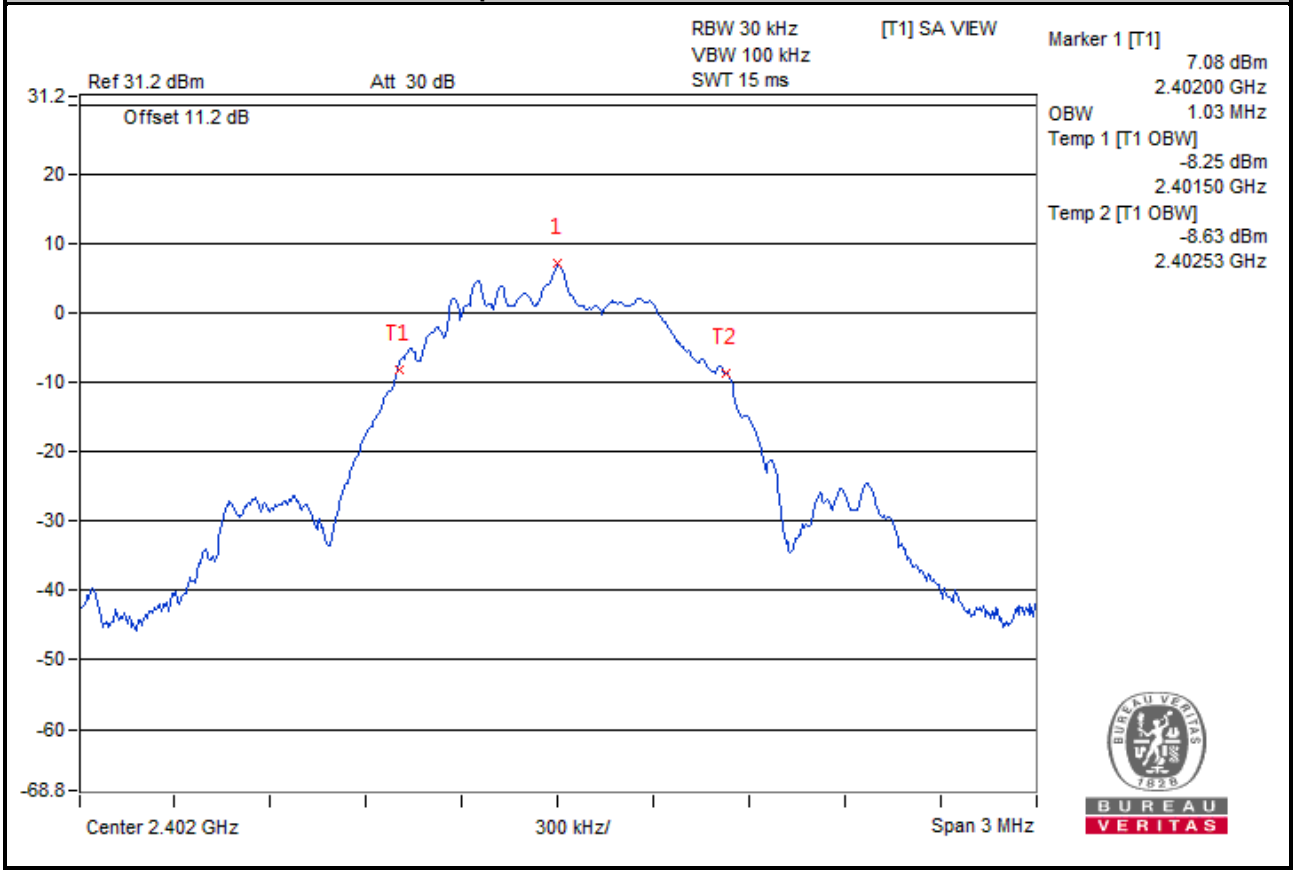
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.4.6 Test Results

<LE 4.0>

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
0	2402	1.03	Pass
19	2440	1.03	Pass
39	2480	1.02	Pass

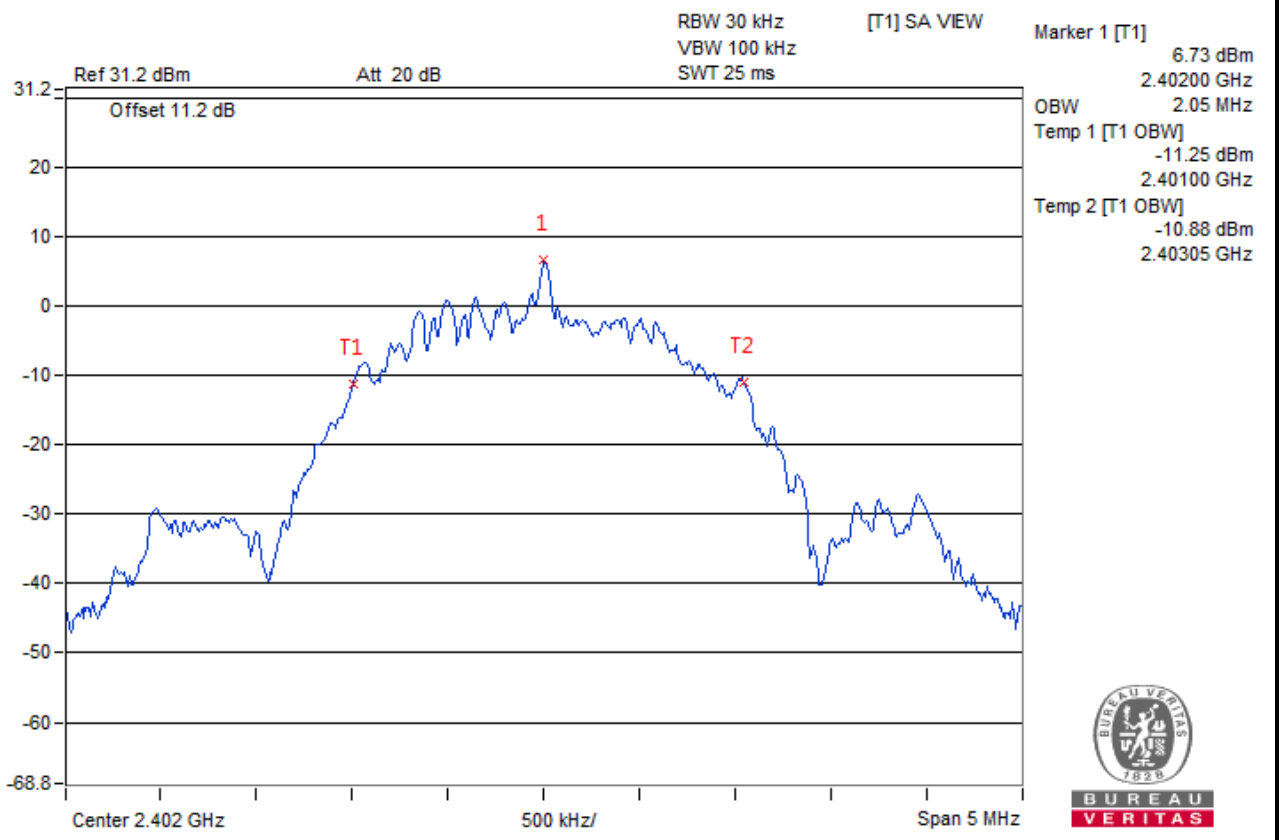
Spectrum Plot of Worst Value



<LE 5.1>

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
0	2402	2.05	Pass
19	2440	2.05	Pass
39	2480	2.05	Pass

Spectrum Plot of Worst Value

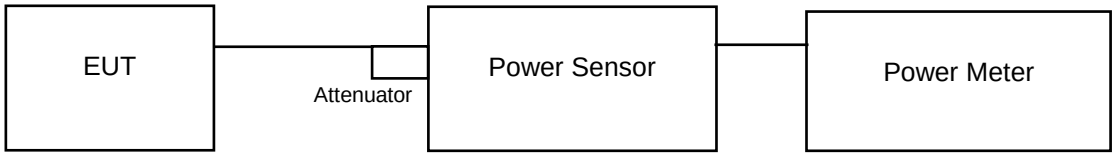


4.5 Conducted Output Power Measurement

4.5.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.5.7 Test Results

<LE 4.0>

Channel	Freq. (MHz)	Peak Power		Average Power		Power Limit (dBm)	Pass / Fail
		(mW)	(dBm)	(mW)	(dBm)		
0	2402	7.328	8.65	7.194	8.57	30	Pass
19	2440	7.551	8.78	7.413	8.70	30	Pass
39	2480	7.656	8.84	7.516	8.76	30	Pass

<LE 5.1>

Channel	Freq. (MHz)	Peak Power		Average Power		Power Limit (dBm)	Pass / Fail
		(mW)	(dBm)	(mW)	(dBm)		
0	2402	7.278	8.62	7.161	8.55	30	Pass
19	2440	7.674	8.85	7.551	8.78	30	Pass
39	2480	7.745	8.89	7.621	8.82	30	Pass

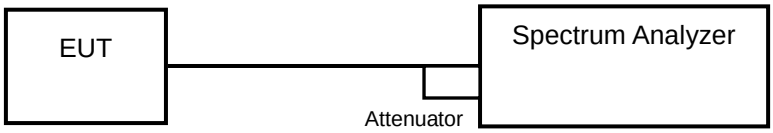
4.6 Power Spectral Density Measurement

4.6.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz band during any time interval of continuous transmission.

.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

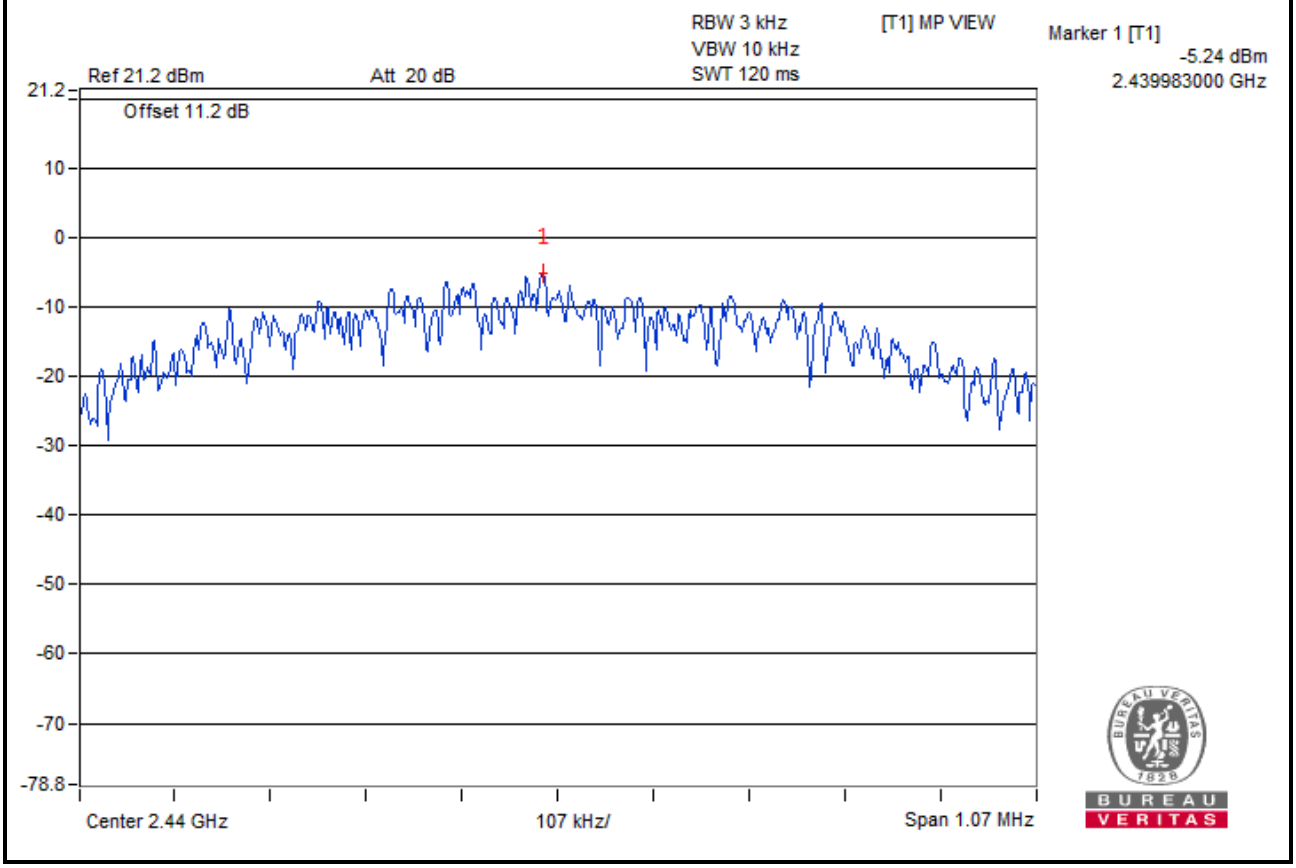
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.6.7 Test Results

<LE 4.0>

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-5.45	8	Pass
19	2440	-5.24	8	Pass
39	2480	-5.34	8	Pass

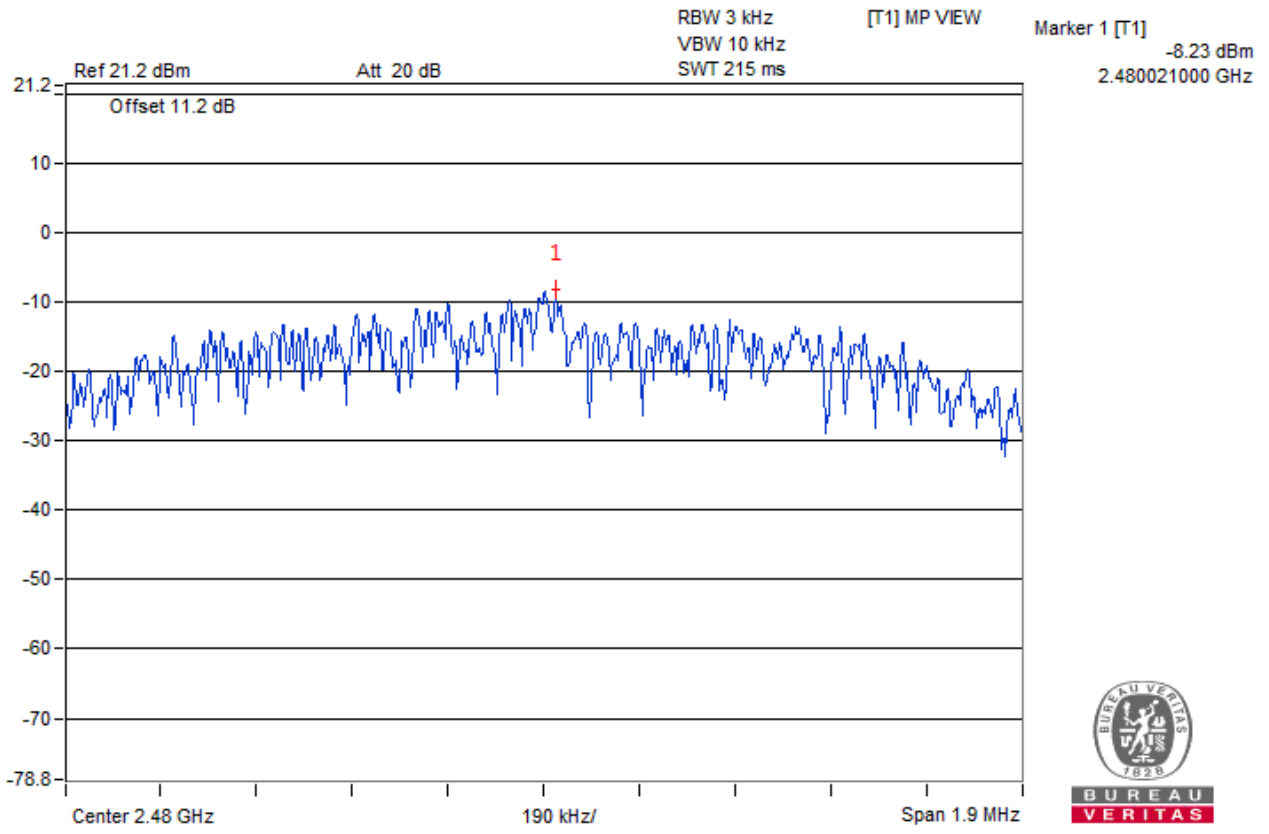
Spectrum Plot of Worst Value



<LE 5.1>

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-8.47	8	Pass
19	2440	-8.31	8	Pass
39	2480	-8.23	8	Pass

Spectrum Plot of Worst Value

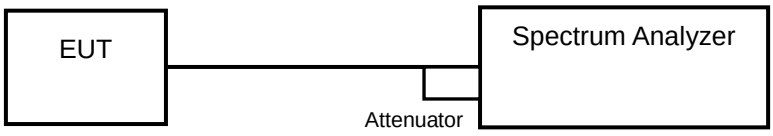


4.7 Conducted Out of Band Emission Measurement

4.7.1 Limits of Conducted Out of Band Emission Measurement

Below –20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

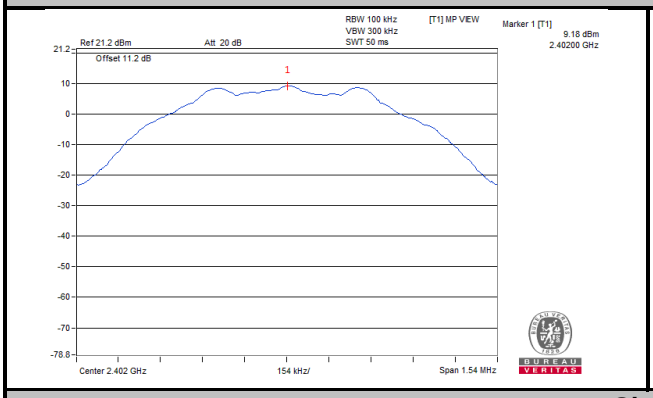
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

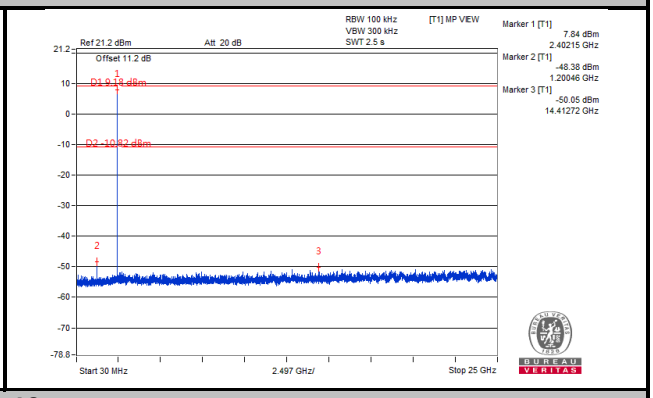
4.7.7 Test Results

The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20 dB offset below D1. It shows compliance with the requirement.

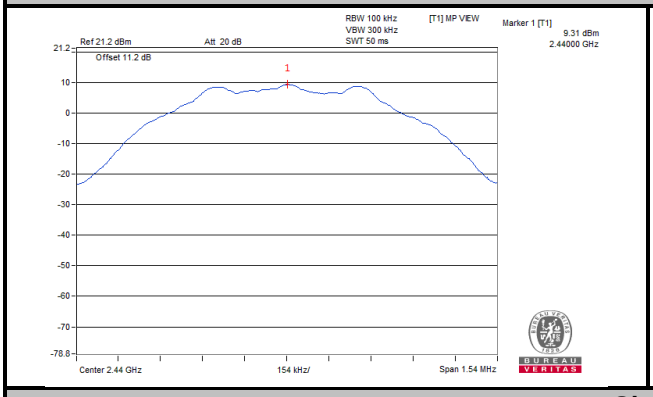
<LE 4.0>

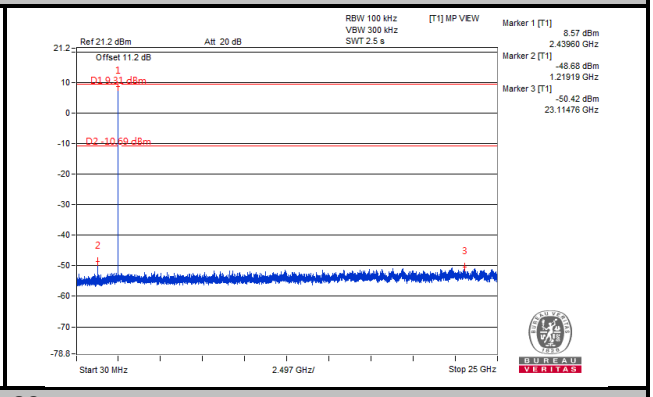
Ch 0



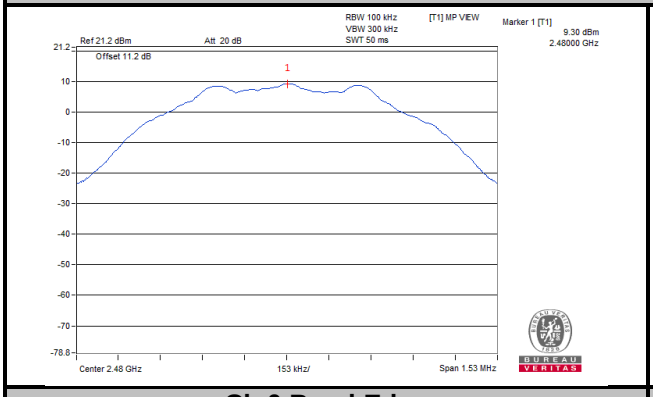


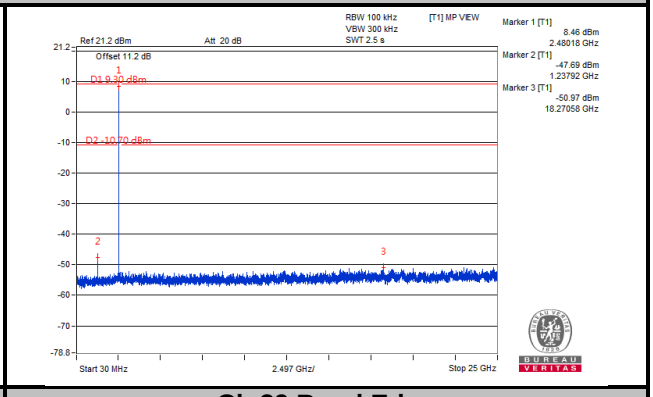
Ch 19



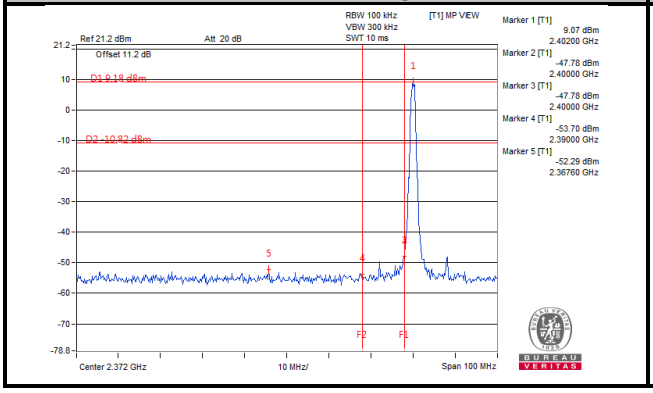


Ch 39

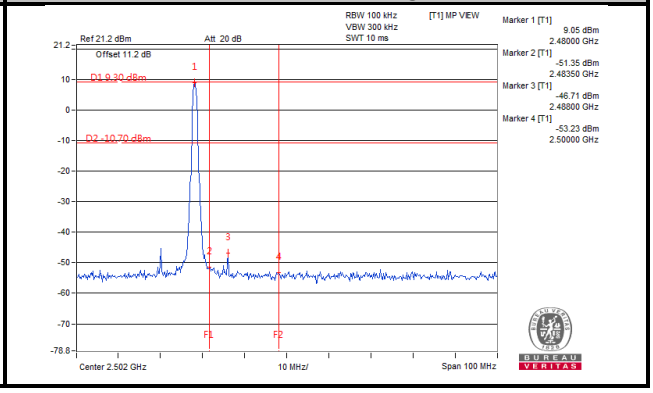




Ch 0 Band Edge

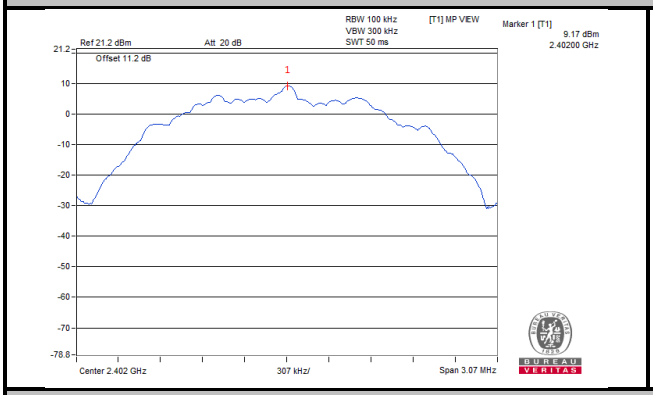


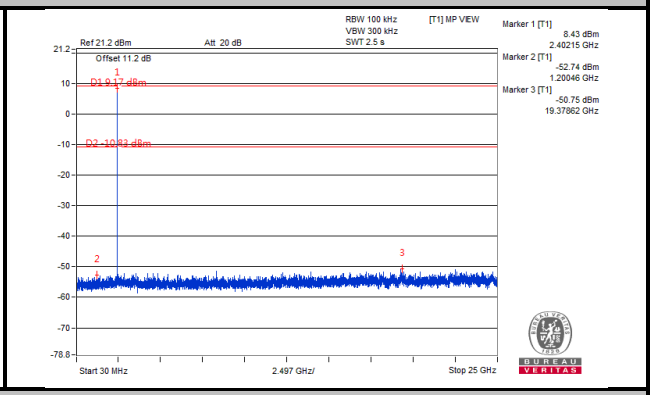
Ch 39 Band Edge



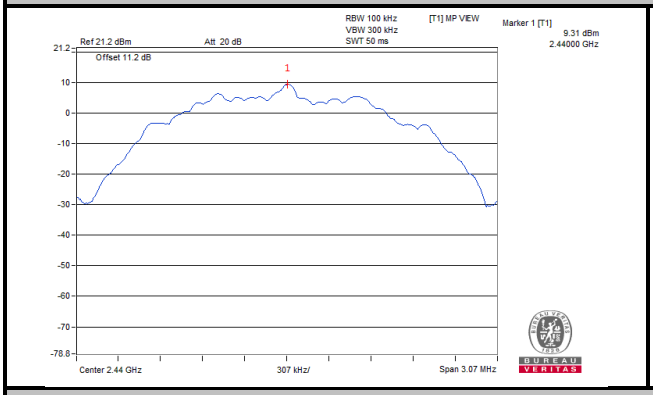
<LE 5.1>

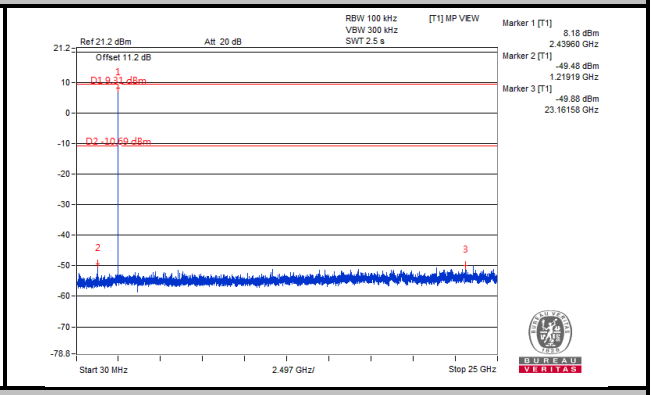
Ch 0



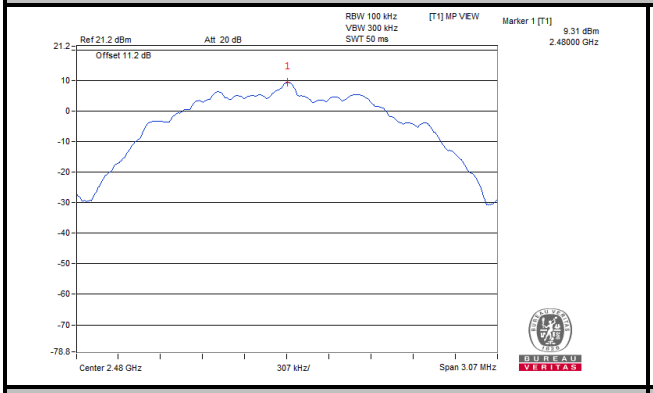


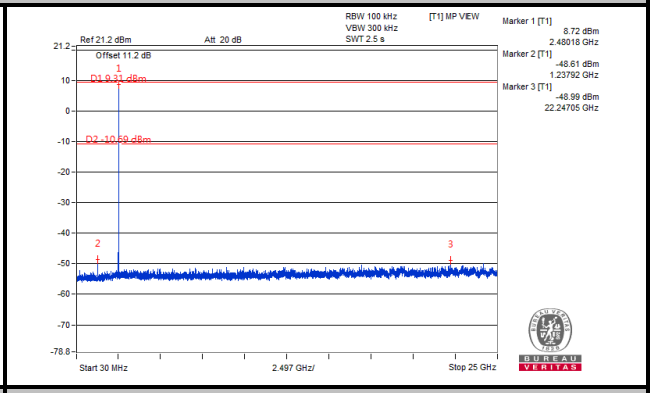
Ch 19



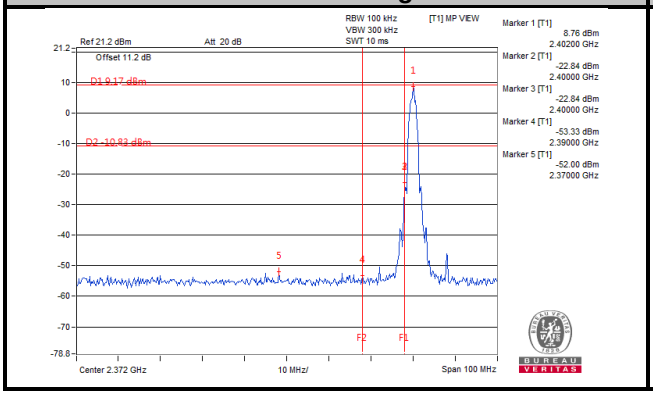


Ch 39

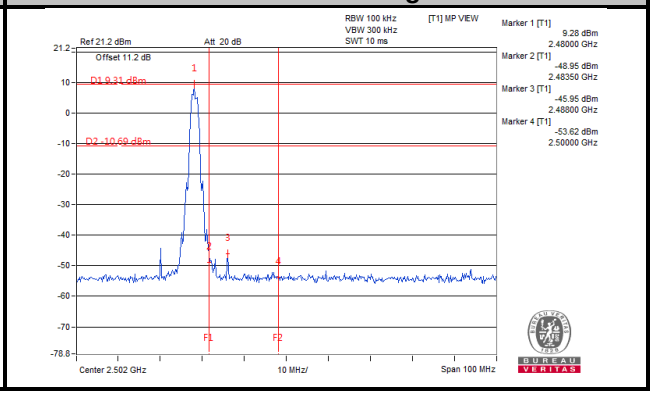




Ch 0 Band Edge



Ch 39 Band Edge



5 Photographs of the Test Configuration

Please refer to the attached file (Reference no.: RF200508C01 (TSup photo_right earbud)).

6 Construction Photos of EUT

Please refer to the attached file (200508C01 (EUT 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 according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---