

FCC Test Report

Report No.: RFBCEE-WTW-P20120260-3

FCC ID: DMOCX200TW1R

Model No.: CX200TW1 R

Received Date: Jan. 27, 2021

Test Date: Feb. 03 ~ Feb. 17, 2021

Issued Date: Feb. 23, 2021

Applicant: Sennheiser electronic GmbH & Co. KG

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
RFBCEE-WTW-P20120260-3	Original Release	Feb. 23, 2021

1 Certificate of Conformity

Product Name: CX True Wireless (CX200TW1)

Brand Name: SENNHEISER

Model No.: CX200TW1 R

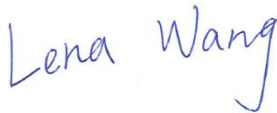
Sample Status: Engineering Sample

Applicant: Sennheiser electronic GmbH & Co. KG

Test Date: Feb. 03 ~ Feb. 17, 2021

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 : _____, **Date:** Feb. 23, 2021
Lena Wang / Specialist


Approved by : _____, **Date:** Feb. 23, 2021
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 -35.72 dB at 0.16579 MHz.
15.205 & 209	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -8.39 dB at 43.58 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:

- For 2.4G band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
- 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

Test Item Description	True Wireless Earphones
Product Name	CX True Wireless (CX200TW1)
Brand Name	SENNHEISER
Model No.	CX200TW1 R
Status of EUT	Engineering Sample
Power Ratings	Left earbud& Right earbud: 3.7Vdc, 55-72mAh (from battery) Charging Case: 5Vdc, 600 mA (from Type-C USB interface) 3.7Vdc, 400-420mAh (from battery)
Power Supply (Nominal & Testing)	5Vdc, 600 mA (from Type-C USB interface)
Operating Temperature range	0°C - +40°C
Modulation Type	GFSK
Transmission Technology	DSSS
Technology	Bluetooth
Operating Frequency	2402 - 2480MHz (for Frequency Band: 2400-2483.5MHz)
Channel Spacing	2MHz
Channel Bandwidth	80MHz
Data Transfer Rate	LE 4.0: 1Mbps LE 5.1: 2Mbps
Number of Channel	40
Maximum Output Power	LE 4.0: 6.383 mW LE 5.1: 6.237 mW
Antenna Type	MONOPOLE antenna
Antenna Gain	Max -2.30 dBi gain
HW Version	Earbuds: V0F Charging case: V0G
SW Version	Earbuds: 0.12.19 Charging case: 20.12.31
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Cable Supplied	0.25m Shielded USB cable without core

Note:

- The EUT system CX True Wireless (CX200TW1), contain the following devices:

Item	Brand	Device Model No.
Right Earbud	SENNHEISER	CX200TW1 R
Left Earbud	SENNHEISER	CX200TW1 L
Charging Case	SENNHEISER	CX200TW1 C

* CX200TW1 R and CX200TW1 L with BT & BT LE TX/RX function

* Charging case is solely used for charging CX200TW1 R and CX200TW1 L only

2. The above 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
3. 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 $\geq$ 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 $\geq$ 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 **Y-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	0	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	0	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 **Y-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

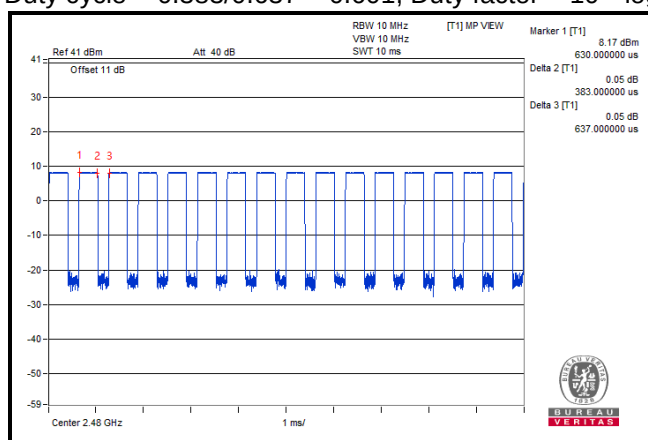
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	3.7 Vdc	Tim Chen
RE<1G	25 deg. C, 65 % RH	3.7 Vdc, 120 Vac, 60Hz	Tim ChenTim Chen
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Tim Chen
APCM	25 deg. C, 65 % RH	3.7 Vdc	Ivan Tseng

3.3 Duty Cycle of Test Signal

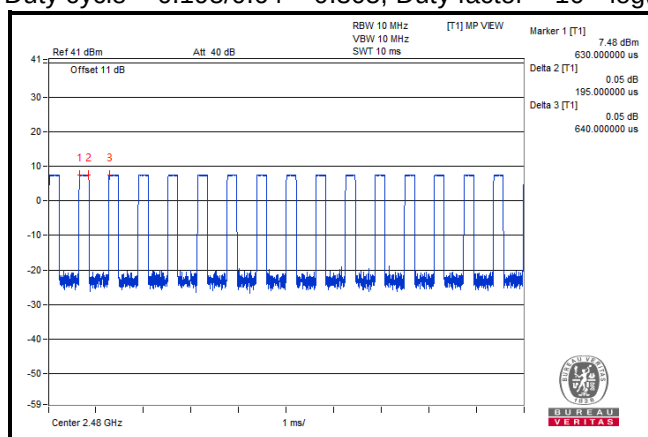
<LE 4.0>

Duty cycle = $0.383/0.637 = 0.601$, Duty factor = $10 * \log(1/0.601) = 2.21$



<LE 5.1>

Duty cycle = $0.195/0.64 = 0.305$, Duty factor = $10 * \log(1/0.305) = 5.16$



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.

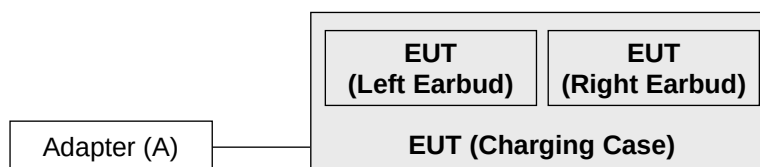
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
1.	Adapter	ASUS	AD827M	NA	NA	-

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. 07, 2020	Dec. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSV40	100980	Apr. 20, 2020	Apr. 19, 2021
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Nov. 06, 2020	Nov. 05, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
Loop Antenna	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
Preamplifier EMCI	EMC001340	980201	Oct. 21, 2020	Oct. 20, 2021
Preamplifier EMCI	EMC 012645	980115	Oct. 07, 2020	Oct. 06, 2021
Preamplifier EMCI	EMC 184045	980116	Oct. 07, 2020	Oct. 06, 2021
Preamplifier EMCI	EMC 330H	980112	Oct. 07, 2020	Oct. 06, 2021
Power Meter Anritsu	ML2495A	1012010	Sep. 01, 2020	Aug. 31, 2021
Power Sensor Anritsu	MA2411B	1315050	Sep. 01, 2020	Aug. 31, 2021
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 07, 2020	Oct. 06, 2021
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 07, 2020	Oct. 06, 2021
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:

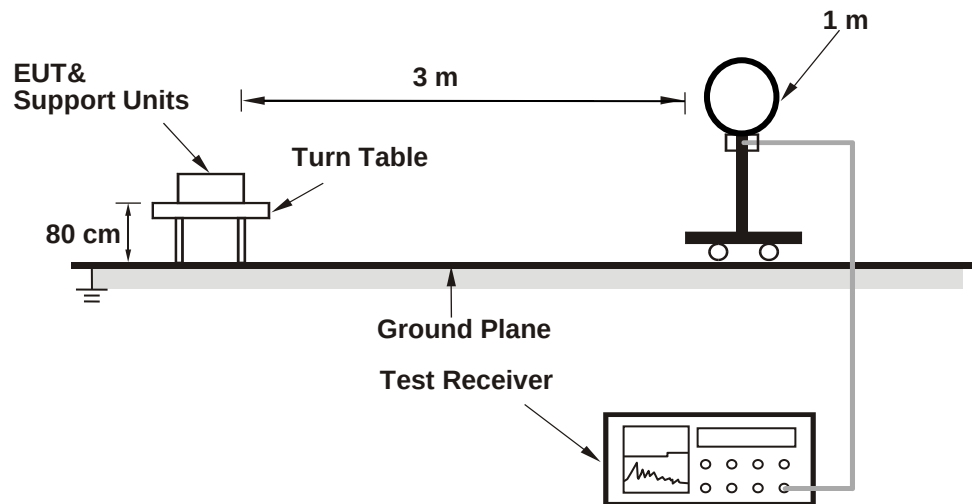
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz. (LE 4.0: RBW = 1 MHz, VBW = 3 kHz ; LE 5.1: RBW = 1 MHz, VBW = 5.2 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

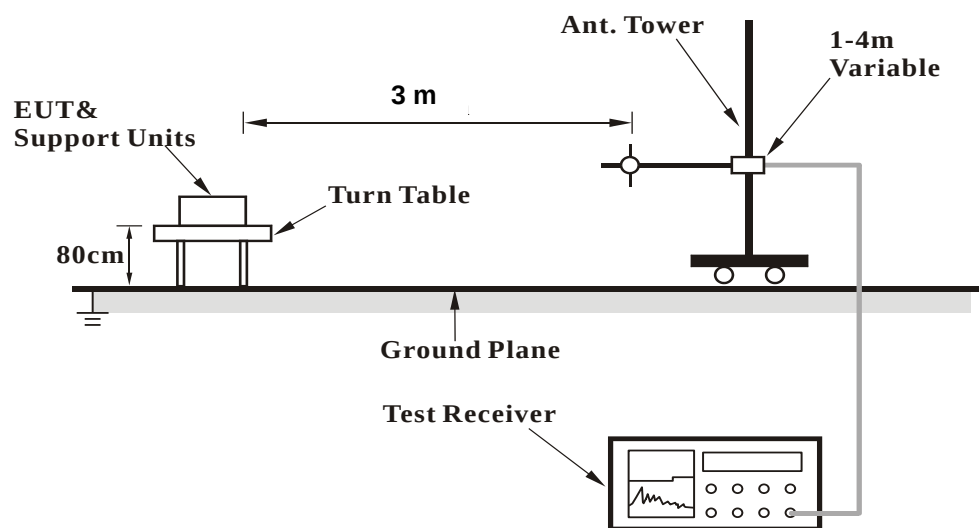
No deviation.

4.1.5 Test Set Up

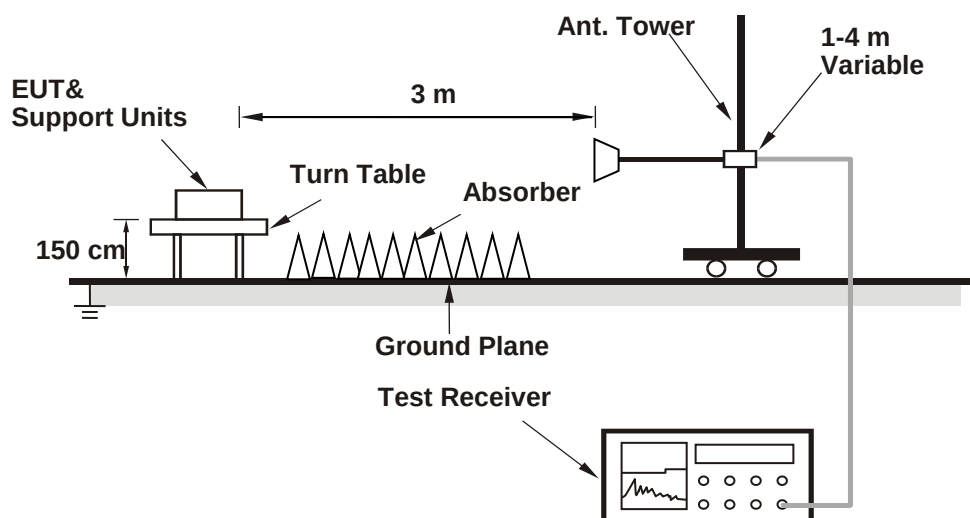
<Radiated Emission below 30 MHz>



<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

- Placed the EUT on the testing table.
- 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	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
2362	38.95	45.91	-6.96	54	-15.05	248	272	Average
2362	46.46	53.42	-6.96	74	-27.54	248	272	Peak
2402	94.6	101.65	-7.05	-----	-----	248	272	Average
2402	95.09	102.14	-7.05	-----	-----	248	272	Peak
4804	33.66	49.47	-15.81	54	-20.34	255	103	Average
4804	40.73	56.54	-15.81	74	-33.27	255	103	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
2362	36.61	43.57	-6.96	54	-17.39	298	63	Average
2362	44.77	51.73	-6.96	74	-29.23	298	63	Peak
2402	94.66	101.71	-7.05	-----	-----	298	63	Average
2402	95.67	102.72	-7.05	-----	-----	298	63	Peak
4804	34.12	49.93	-15.81	54	-19.88	179	243	Average
4804	41.2	57.01	-15.81	74	-32.8	179	243	Peak

Remarks:

- 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
- 2402 MHz: Fundamental frequency.
- 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	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
2360	37.36	44.32	-6.96	54	-16.64	100	271	Average
2360	44.72	51.68	-6.96	74	-29.28	100	271	Peak
2440	93.19	100.19	-7	-----	-----	100	271	Average
2440	93.63	100.63	-7	-----	-----	100	271	Peak
2483.5	35.09	41.95	-6.86	54	-18.91	100	271	Average
2483.5	44.03	50.89	-6.86	74	-29.97	100	271	Peak
4880	33.41	49.35	-15.94	54	-20.59	172	183	Average
4880	40.56	56.5	-15.94	74	-33.44	172	183	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
2360	35.98	42.94	-6.96	54	-18.02	294	70	Average
2360	44.32	51.28	-6.96	74	-29.68	294	70	Peak
2440	93.83	100.83	-7	-----	-----	294	70	Average
2440	94.33	101.33	-7	-----	-----	294	70	Peak
2483.5	35.26	42.12	-6.86	54	-18.74	294	70	Average
2483.5	43.92	50.78	-6.86	74	-30.08	294	70	Peak
4880	33.14	49.08	-15.94	54	-20.86	213	125	Average
4880	40.4	56.34	-15.94	74	-33.6	213	125	Peak

Remarks:

- 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
- 2440 MHz: Fundamental frequency.
- 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	95.47	102.33	-6.86	-----	-----	100	271	Average
2480	96.04	102.9	-6.86	-----	-----	100	271	Peak
2483.5	37.21	44.07	-6.86	54	-16.79	100	271	Average
2483.5	46.52	53.38	-6.86	74	-27.48	100	271	Peak
4960	34.64	50.34	-15.7	54	-19.36	132	284	Average
4960	42	57.7	-15.7	74	-32	132	284	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	95.26	102.12	-6.86	-----	-----	256	66	Average
2480	95.76	102.62	-6.86	-----	-----	256	66	Peak
2483.5	37.01	43.87	-6.86	54	-16.99	256	66	Average
2483.5	46.39	53.25	-6.86	74	-27.61	256	66	Peak
4960	35.01	50.71	-15.7	54	-18.99	260	104	Average
4960	42.32	58.02	-15.7	74	-31.68	260	104	Peak

Remarks:

- 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
- 2480 MHz: Fundamental frequency.
- 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	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
2362	38.99	45.95	-6.96	54	-15.01	248	271	Average
2362	45.45	52.41	-6.96	74	-28.55	248	271	Peak
2402	93.99	101.04	-7.05	-----	-----	248	271	Average
2402	95.81	102.86	-7.05	-----	-----	248	271	Peak
4804	33.88	49.69	-15.81	54	-20.12	276	143	Average
4804	41.01	56.82	-15.81	74	-32.99	276	143	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
2362	37.09	44.05	-6.96	54	-16.91	299	63	Average
2362	45.02	51.98	-6.96	74	-28.98	299	63	Peak
2402	94.36	101.41	-7.05	-----	-----	299	63	Average
2402	96.22	103.27	-7.05	-----	-----	299	63	Peak
4804	34.28	50.09	-15.81	54	-19.72	174	89	Average
4804	41.36	57.17	-15.81	74	-32.64	174	89	Peak

Remarks:

- 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
- 2402 MHz: Fundamental frequency.
- 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	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
2360	37	43.96	-6.96	54	-17	100	271	Average
2360	44.18	51.14	-6.96	74	-29.82	100	271	Peak
2440	92.39	99.39	-7	-----	-----	100	271	Average
2440	94.08	101.08	-7	-----	-----	100	271	Peak
2483.5	35.73	42.59	-6.86	54	-18.27	100	271	Average
2483.5	44.13	50.99	-6.86	74	-29.87	100	271	Peak
4880	33.3	49.24	-15.94	54	-20.7	149	74	Average
4880	40.49	56.43	-15.94	74	-33.51	149	74	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
2360	36.09	43.05	-6.96	54	-17.91	294	70	Average
2360	45.61	52.57	-6.96	74	-28.39	294	70	Peak
2440	92.86	99.86	-7	-----	-----	294	70	Average
2440	94.6	101.6	-7	-----	-----	294	70	Peak
2483.5	36.05	42.91	-6.86	54	-17.95	294	70	Average
2483.5	44.99	51.85	-6.86	74	-29.01	294	70	Peak
4880	33.6	49.54	-15.94	54	-20.4	217	136	Average
4880	40.68	56.62	-15.94	74	-33.32	217	136	Peak

Remarks:

- 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
- 2440 MHz: Fundamental frequency.
- 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	94.39	101.25	-6.86	-----	-----	100	271	Average
2480	96.18	103.04	-6.86	-----	-----	100	271	Peak
2483.5	43.27	50.13	-6.86	54	-10.73	100	271	Average
2483.5	50.47	57.33	-6.86	74	-23.53	100	271	Peak
4960	34.83	50.53	-15.7	54	-19.17	249	111	Average
4960	42.19	57.89	-15.7	74	-31.81	249	111	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	95.11	101.97	-6.86	-----	-----	102	109	Average
2480	96.86	103.72	-6.86	-----	-----	102	109	Peak
2483.5	43.94	50.8	-6.86	54	-10.06	102	109	Average
2483.5	50.76	57.62	-6.86	74	-23.24	102	109	Peak
4960	34.6	50.3	-15.7	54	-19.4	171	302	Average
4960	41.83	57.53	-15.7	74	-32.17	171	302	Peak

Remarks:

- 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
- 2480 MHz: Fundamental frequency.
- 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.

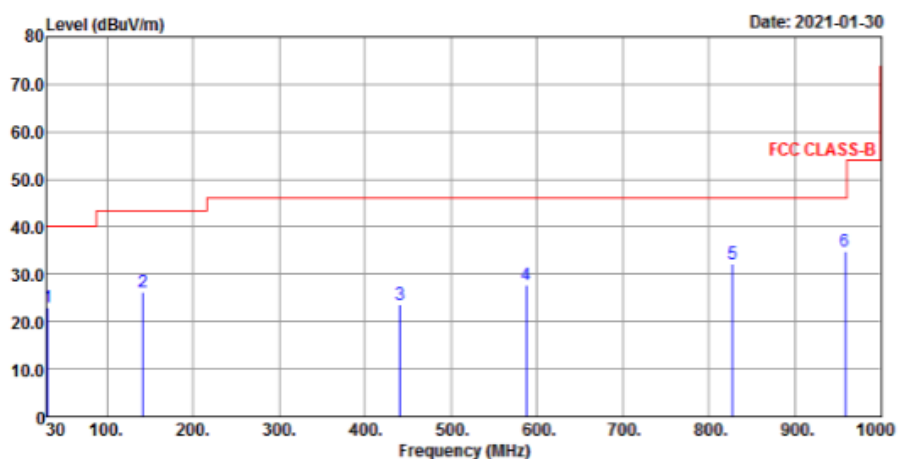
30 MHz ~ 1 GHz Worst-Case Data:

Mode A

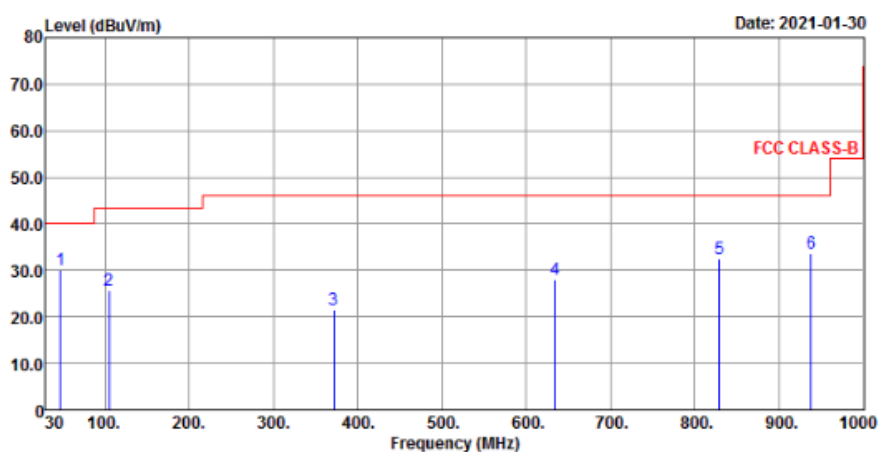
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EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

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
30.97	22.98	36.5	-13.52	40	-17.02	144	259	QP
141.55	26.17	38.77	-12.6	43.5	-17.33	106	39	QP
440.31	23.53	30.75	-7.22	46	-22.47	101	29	QP
587.75	27.75	30.94	-3.19	46	-18.25	166	162	QP
827.34	32.25	31.02	1.23	46	-13.75	194	334	QP
958.29	34.73	31.34	3.39	46	-11.27	182	293	QP
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
47.46	30	42.58	-12.58	40	-10	113	138	QP
104.69	25.61	41.08	-15.47	43.5	-17.89	141	154	QP
371.44	21.41	30.68	-9.27	46	-24.59	193	303	QP
634.31	28.05	30.05	-2	46	-17.95	155	67	QP
829.28	32.49	31.27	1.22	46	-13.51	129	288	QP
937.92	33.65	30.61	3.04	46	-12.35	168	35	QP

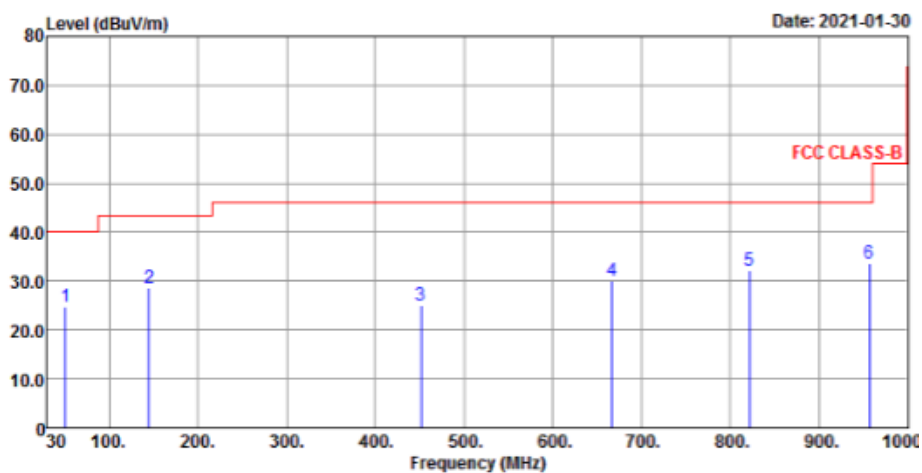
Remarks:

- 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
- The emission levels of other frequencies were very low against the limit.

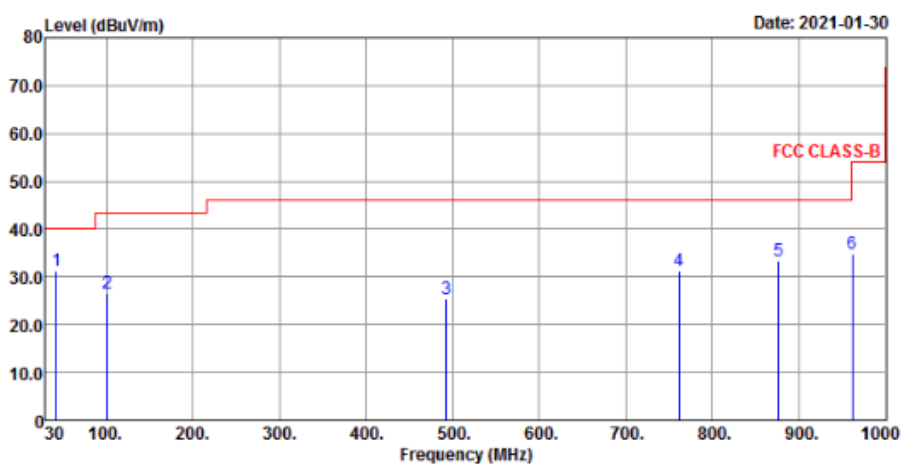
<LE 5.1>

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
50.37	24.94	37.5	-12.56	40	-15.06	161	240	QP
144.46	28.58	41.1	-12.52	43.5	-14.92	117	148	QP
450.98	24.99	31.82	-6.83	46	-21.01	188	288	QP
666.32	29.99	31.69	-1.7	46	-16.01	134	334	QP
821.52	32.07	30.85	1.22	46	-13.93	202	97	QP
956.35	33.54	30.19	3.35	46	-12.46	114	247	QP
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	31.29	43.98	-12.69	40	-8.71	193	23	QP
100.81	26.61	42.8	-16.19	43.5	-16.89	118	151	QP
492.69	25.5	31.3	-5.8	46	-20.5	227	49	QP
761.38	31.31	31.05	0.26	46	-14.69	113	92	QP
875.84	33.48	31.63	1.85	46	-12.52	105	308	QP
961.2	34.81	31.37	3.44	54	-19.19	144	308	QP

Remarks:

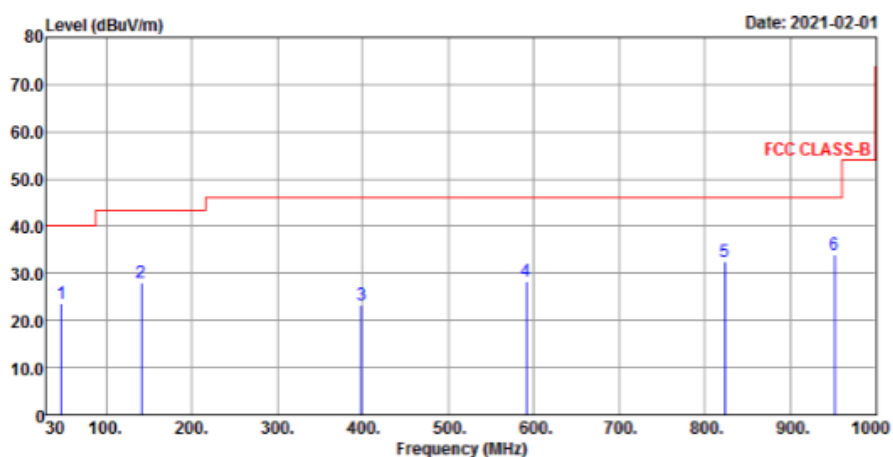
- Emission Level = Read Level + Factor
Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
Margin value = Emission level – Limit value
- The emission levels of other frequencies were very low against the limit.

Mode B

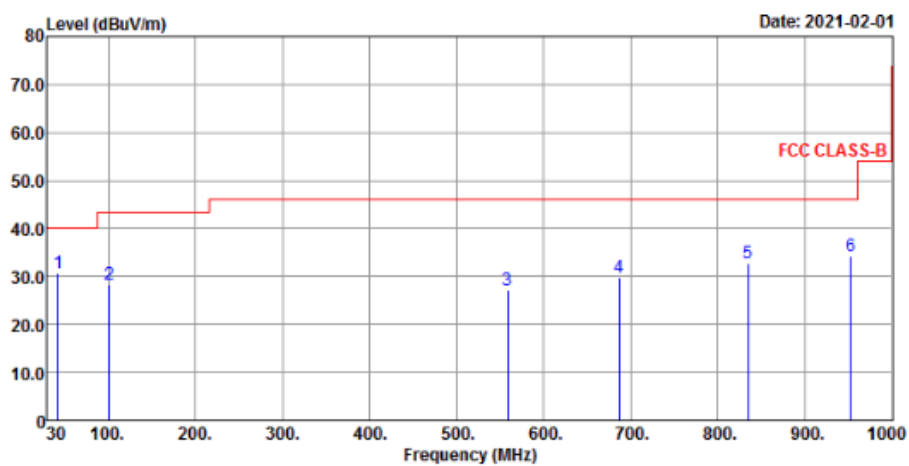
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EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

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
47.46	23.57	36.15	-12.58	40	-16.43	166	328	QP
140.58	28.07	40.82	-12.75	43.5	-15.43	152	189	QP
398.6	23.18	31.9	-8.72	46	-22.82	122	196	QP
590.66	28.25	31.36	-3.11	46	-17.75	138	184	QP
823.46	32.44	31.22	1.22	46	-13.56	154	299	QP
951.5	34.04	30.74	3.3	46	-11.96	191	121	QP
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	30.58	43.27	-12.69	40	-9.42	137	177	QP
100.81	28.48	44.67	-16.19	43.5	-15.02	132	45	QP
558.65	27.13	31.23	-4.1	46	-18.87	103	237	QP
686.69	29.68	31.02	-1.34	46	-16.32	189	132	QP
835.1	32.66	31.39	1.27	46	-13.34	111	77	QP
952.47	34.13	30.82	3.31	46	-11.87	144	345	QP

Remarks:

1. Emission Level = Read Level + Factor

Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).

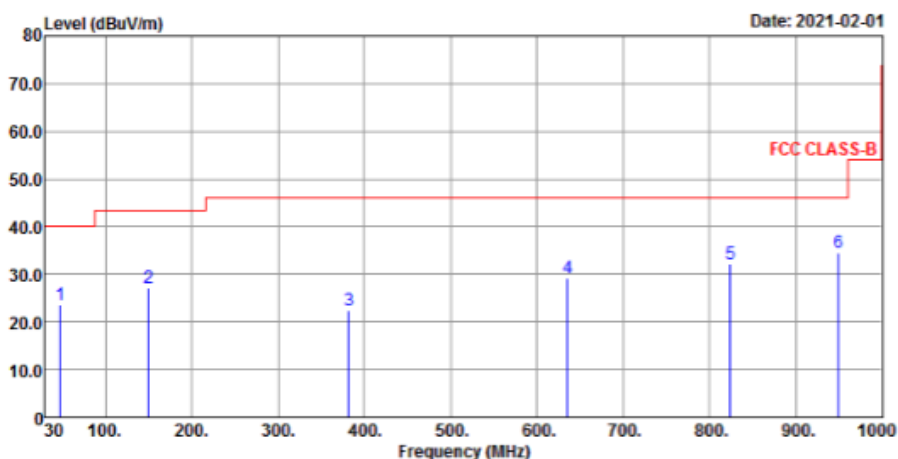
Margin value = Emission level – Limit value

2. The emission levels of other frequencies were very low against the limit.

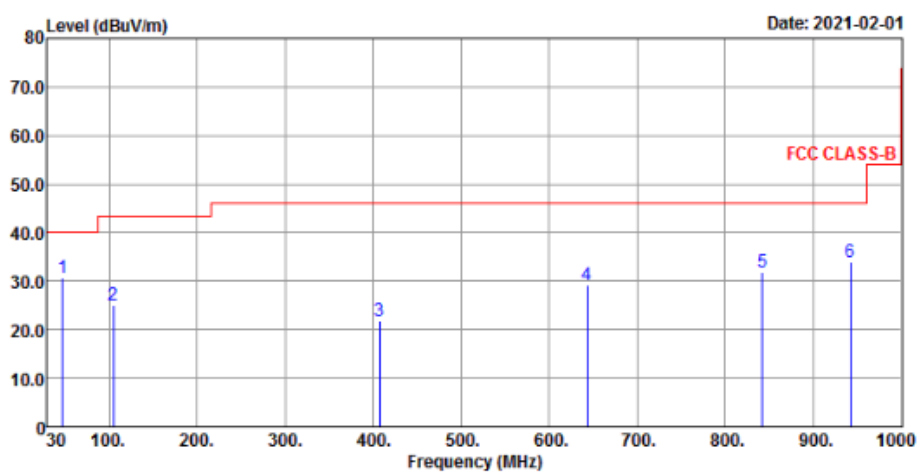
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EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

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
47.46	23.76	36.34	-12.58	40	-16.24	106	96	QP
149.31	27.21	39.59	-12.38	43.5	-16.29	162	35	QP
382.11	22.45	31.39	-8.94	46	-23.55	145	39	QP
635.28	29.3	31.31	-2.01	46	-16.7	114	288	QP
824.43	32.17	30.93	1.24	46	-13.83	111	63	QP
949.56	34.42	31.13	3.29	46	-11.58	178	242	QP
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
47.46	30.63	43.21	-12.58	40	-9.37	161	307	QP
104.69	24.95	40.42	-15.47	43.5	-18.55	122	291	QP
407.33	21.94	30.48	-8.54	46	-24.06	176	39	QP
643.04	29.36	31.25	-1.89	46	-16.64	108	144	QP
841.89	32	30.62	1.38	46	-14	100	153	QP
941.8	34.08	30.94	3.14	46	-11.92	133	322	QP

Remarks:

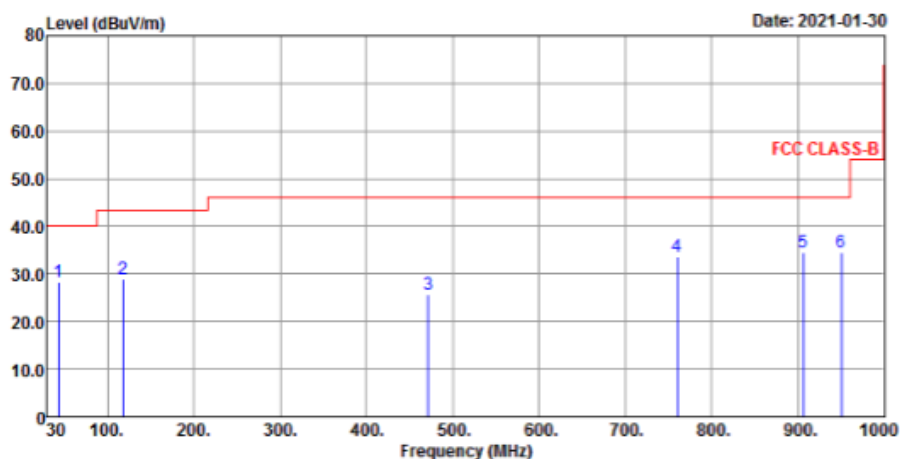
- Emission Level = Read Level + Factor
Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
Margin value = Emission level – Limit value
- The emission levels of other frequencies were very low against the limit.

Mode C

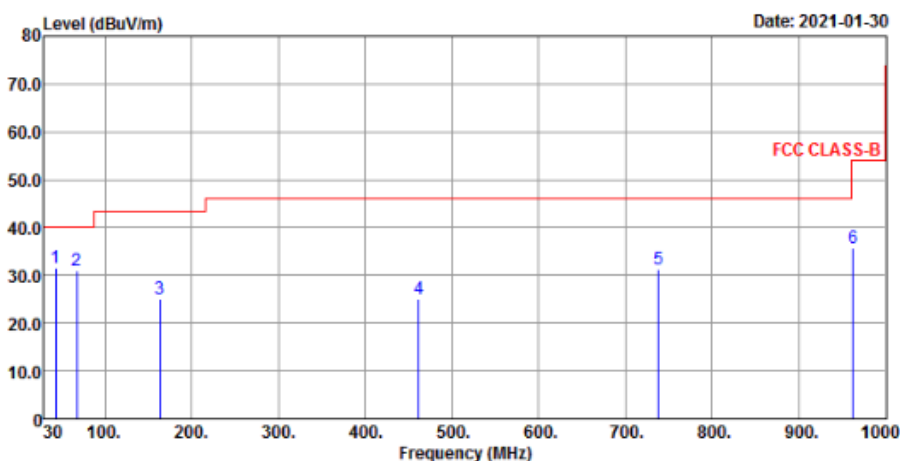
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EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Tim Chen

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
43.58	28.28	40.86	-12.58	40	-11.72	139	38	QP
118.27	28.99	42.89	-13.9	43.5	-14.51	144	252	QP
471.35	25.62	31.97	-6.35	46	-20.38	181	76	QP
760.41	33.55	33.31	0.24	46	-12.45	148	185	QP
905.91	34.6	32.24	2.36	46	-11.4	142	161	QP
950.53	34.66	31.37	3.29	46	-11.34	234	305	QP
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
43.58	31.61	44.19	-12.58	40	-8.39	162	54	QP
67.83	31.02	45.44	-14.42	40	-8.98	102	83	QP
163.86	25.03	38.16	-13.13	43.5	-18.47	152	101	QP
461.65	25.22	31.78	-6.56	46	-20.78	121	288	QP
738.1	31.41	31.48	-0.07	46	-14.59	136	302	QP
962.17	35.69	32.23	3.46	54	-18.31	182	155	QP

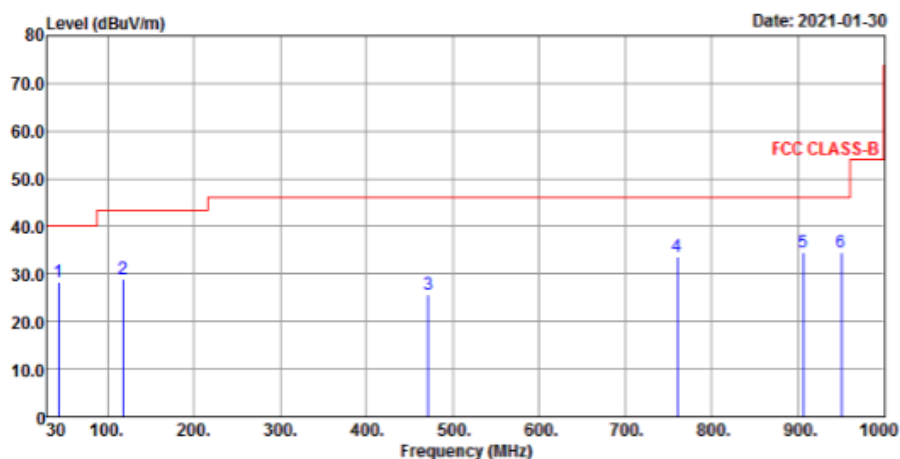
Remarks:

- 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
- The emission levels of other frequencies were very low against the limit.

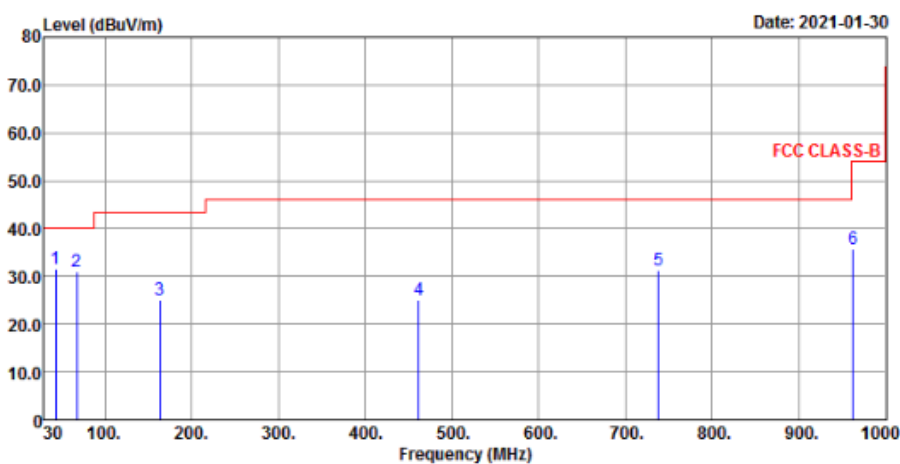
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	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
43.58	28.28	40.86	-12.58	40	-11.72	139	38	QP
118.27	28.99	42.89	-13.9	43.5	-14.51	144	252	QP
471.35	25.62	31.97	-6.35	46	-20.38	181	76	QP
760.41	33.55	33.31	0.24	46	-12.45	148	185	QP
905.91	34.6	32.24	2.36	46	-11.4	142	161	QP
950.53	34.66	31.37	3.29	46	-11.34	234	305	QP
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
43.58	31.61	44.19	-12.58	40	-8.39	162	54	QP
67.83	31.02	45.44	-14.42	40	-8.98	102	83	QP
163.86	25.03	38.16	-13.13	43.5	-18.47	152	101	QP
461.65	25.22	31.78	-6.56	46	-20.78	121	288	QP
738.1	31.41	31.48	-0.07	46	-14.59	136	302	QP
962.17	35.69	32.23	3.46	54	-18.31	182	155	QP

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

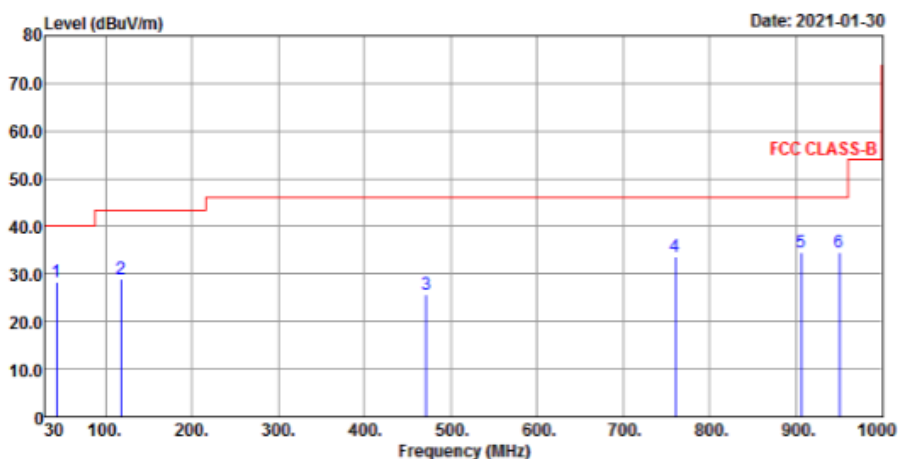
2. The emission levels of other frequencies were very low against the limit.

Mode D

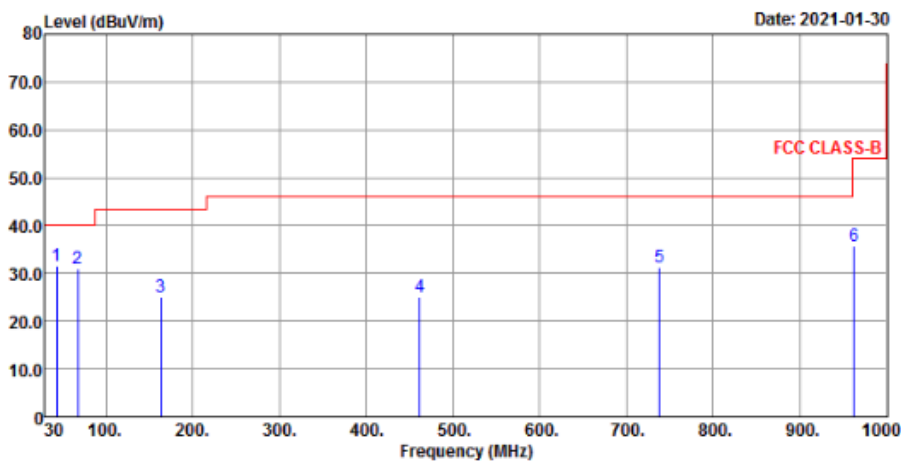
<LE 4.0>

EUT Test Condition		Measurement Detail	
Channel	Channel 0	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	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
43.58	28.28	40.86	-12.58	40	-11.72	139	38	QP
118.27	28.99	42.89	-13.9	43.5	-14.51	144	252	QP
471.35	25.62	31.97	-6.35	46	-20.38	181	76	QP
760.41	33.55	33.31	0.24	46	-12.45	148	185	QP
905.91	34.6	32.24	2.36	46	-11.4	142	161	QP
950.53	34.66	31.37	3.29	46	-11.34	234	305	QP
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
43.58	31.61	44.19	-12.58	40	-8.39	162	54	QP
67.83	31.02	45.44	-14.42	40	-8.98	102	83	QP
163.86	25.03	38.16	-13.13	43.5	-18.47	152	101	QP
461.65	25.22	31.78	-6.56	46	-20.78	121	288	QP
738.1	31.41	31.48	-0.07	46	-14.59	136	302	QP
962.17	35.69	32.23	3.46	54	-18.31	182	155	QP

Remarks:

1. Emission Level = Read Level + Factor

Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).

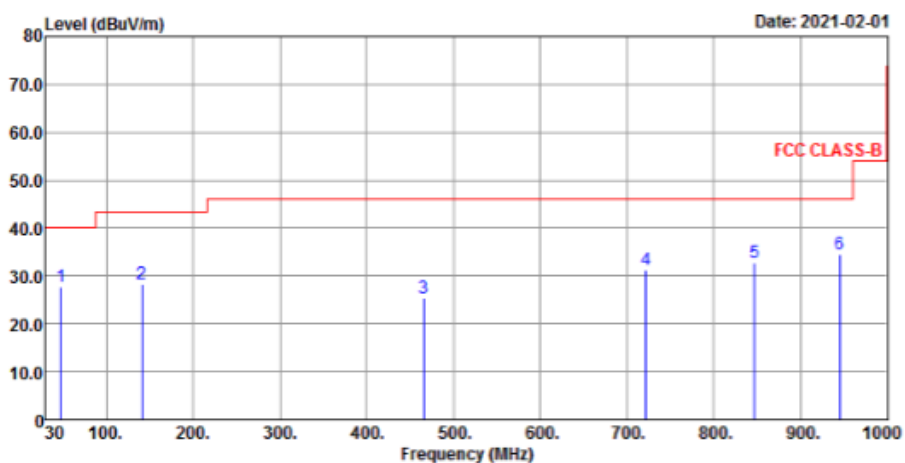
Margin value = Emission level – Limit value

2. The emission levels of other frequencies were very low against the limit.

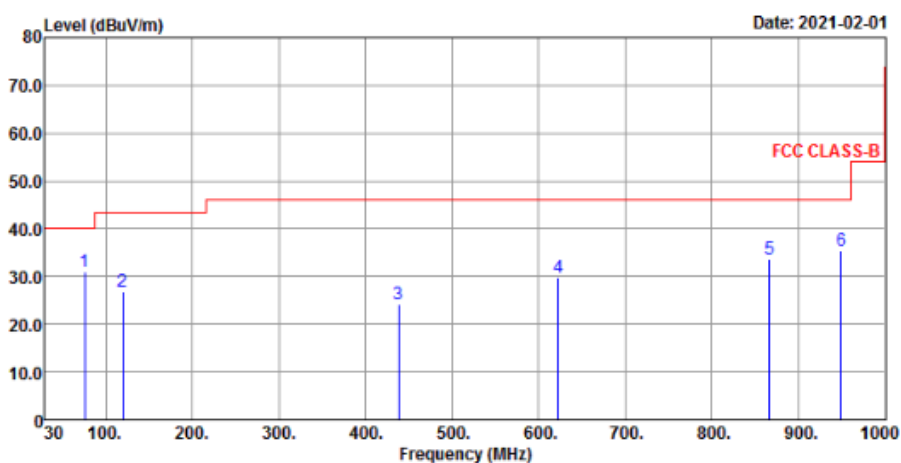
<LE 5.1>

EUT Test Condition		Measurement Detail	
Channel	Channel 39	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	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
47.46	27.72	40.3	-12.58	40	-12.28	114	90	QP
140.58	28.37	41.12	-12.75	43.5	-15.13	127	268	QP
465.53	25.52	32	-6.48	46	-20.48	161	135	QP
721.61	31.41	32.24	-0.83	46	-14.59	138	229	QP
846.74	32.87	31.46	1.41	46	-13.13	165	208	QP
945.68	34.45	31.2	3.25	46	-11.55	172	163	QP
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
75.59	30.87	47.18	-16.31	40	-9.13	107	55	QP
119.24	26.89	40.69	-13.8	43.5	-16.61	153	334	QP
438.37	24.2	31.51	-7.31	46	-21.8	108	107	QP
622.67	29.69	31.89	-2.2	46	-16.31	127	156	QP
866.14	33.77	32.12	1.65	46	-12.23	141	93	QP
949.56	35.29	32	3.29	46	-10.71	124	137	QP

Remarks:

- 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
- 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	ESR3	102783	Jan. 06, 2021	Jan. 05, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2020	Sep. 03, 2021
V-LISN/AMN SCHWARZBECK (EUT)	NNBL 8226-2	8226-142	Jul. 31, 2020	Jul. 30, 2021
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 18, 2020	Aug. 17, 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 2 (Conduction 2).
 3. The VCCI Site Registration No. is C-12047.

4.2.3 Test Procedures

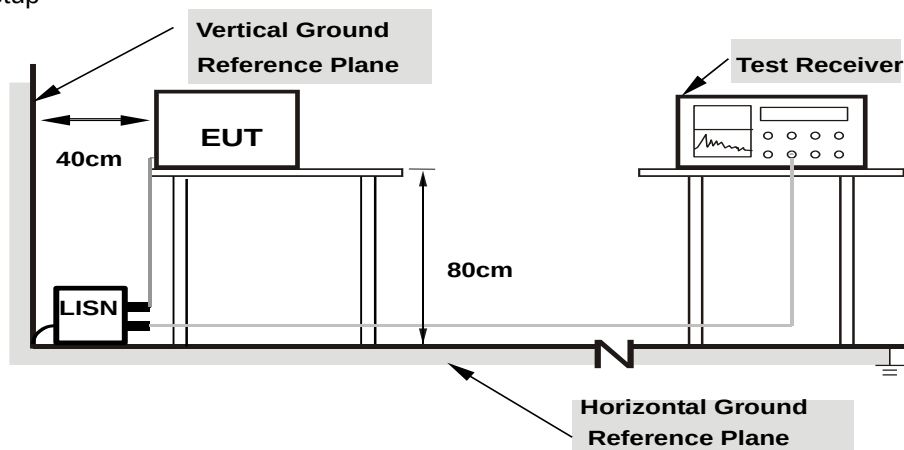
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 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

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

4.2.7 Test Results

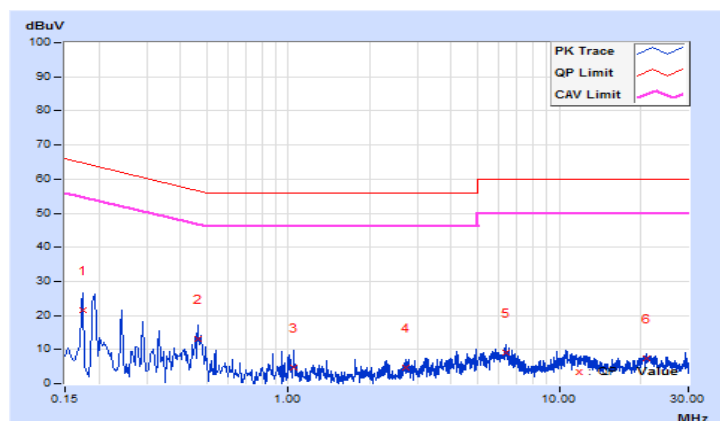
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Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode C		

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	0.17400	0.16	21.33	3.39	21.49	3.55	64.77	54.77	-43.28	-51.22
2	0.46200	0.25	12.85	2.00	13.10	2.25	56.66	46.66	-43.56	-44.41
3	1.05400	0.31	4.26	0.29	4.57	0.60	56.00	46.00	-51.43	-45.40
4	2.71000	0.38	4.18	0.85	4.56	1.23	56.00	46.00	-51.44	-44.77
5	6.38600	0.46	8.56	1.30	9.02	1.76	60.00	50.00	-50.98	-48.24
6	20.95000	0.66	6.70	1.23	7.36	1.89	60.00	50.00	-52.64	-48.11

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

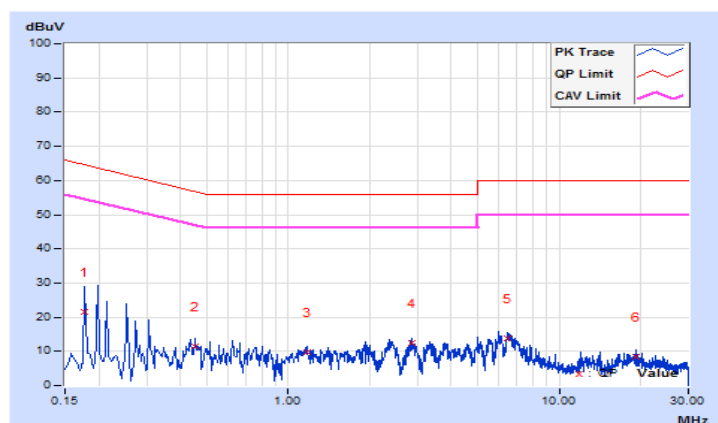


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode C		

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	0.17800	0.13	21.42	3.58	21.55	3.71	64.58	54.58	-43.03	-50.87
2	0.45400	0.24	11.24	1.51	11.48	1.75	56.80	46.80	-45.32	-45.05
3	1.17000	0.31	9.56	0.88	9.87	1.19	56.00	46.00	-46.13	-44.81
4	2.84200	0.40	12.09	1.17	12.49	1.57	56.00	46.00	-43.51	-44.43
5	6.45800	0.52	13.40	1.12	13.92	1.64	60.00	50.00	-46.08	-48.36
6	19.34200	0.90	7.47	0.65	8.37	1.55	60.00	50.00	-51.63	-48.45

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



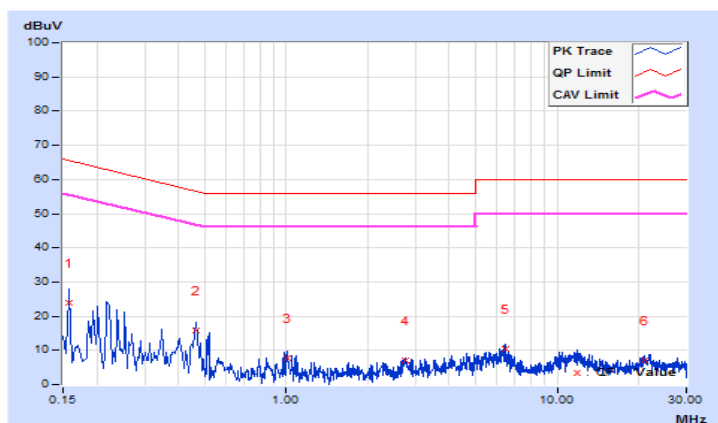
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Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode C		

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	0.15800	0.14	23.61	3.05	23.75	3.19	65.57	55.57	-41.82	-52.38
2	0.46600	0.25	15.42	2.48	15.67	2.73	56.58	46.58	-40.91	-43.85
3	1.00600	0.31	7.44	1.15	7.75	1.46	56.00	46.00	-48.25	-44.54
4	2.73800	0.39	6.64	0.81	7.03	1.20	56.00	46.00	-48.97	-44.80
5	6.41800	0.46	9.96	1.55	10.42	2.01	60.00	50.00	-49.58	-47.99
6	20.95800	0.66	6.46	0.98	7.12	1.64	60.00	50.00	-52.88	-48.36

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

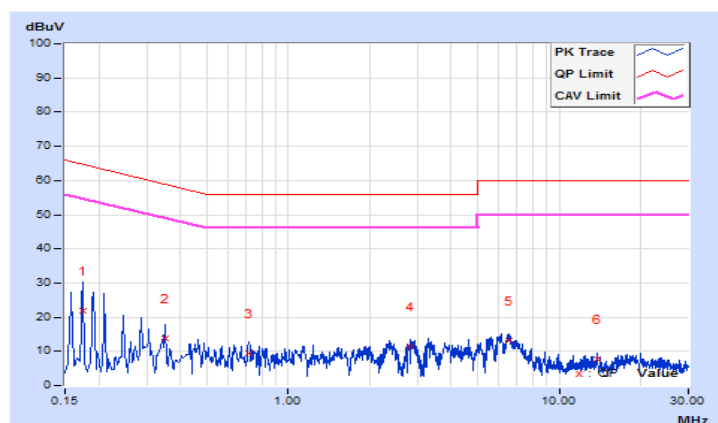


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode C		

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	0.17400	0.12	21.89	3.14	22.01	3.26	64.77	54.77	-42.76	-51.51
2	0.35000	0.21	13.62	2.92	13.83	3.13	58.96	48.96	-45.13	-45.83
3	0.71800	0.27	9.22	1.43	9.49	1.70	56.00	46.00	-46.51	-44.30
4	2.83400	0.40	11.13	2.16	11.53	2.56	56.00	46.00	-44.47	-43.44
5	6.56200	0.52	12.47	2.21	12.99	2.73	60.00	50.00	-47.01	-47.27
6	13.87800	0.74	6.85	1.25	7.59	1.99	60.00	50.00	-52.41	-48.01

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



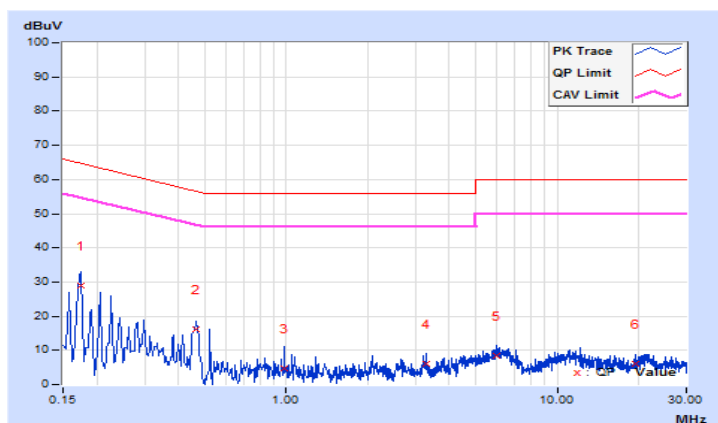
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Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode D		

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	0.17400	0.16	28.85	3.12	29.01	3.28	64.77	54.77	-35.76	-51.49
2	0.46567	0.25	15.82	2.37	16.07	2.62	56.59	46.59	-40.52	-43.97
3	0.98200	0.31	4.30	0.89	4.61	1.20	56.00	46.00	-51.39	-44.80
4	3.29000	0.41	5.64	0.96	6.05	1.37	56.00	46.00	-49.95	-44.63
5	6.00600	0.46	8.10	1.93	8.56	2.39	60.00	50.00	-51.44	-47.61
6	19.41400	0.66	5.40	0.81	6.06	1.47	60.00	50.00	-53.94	-48.53

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

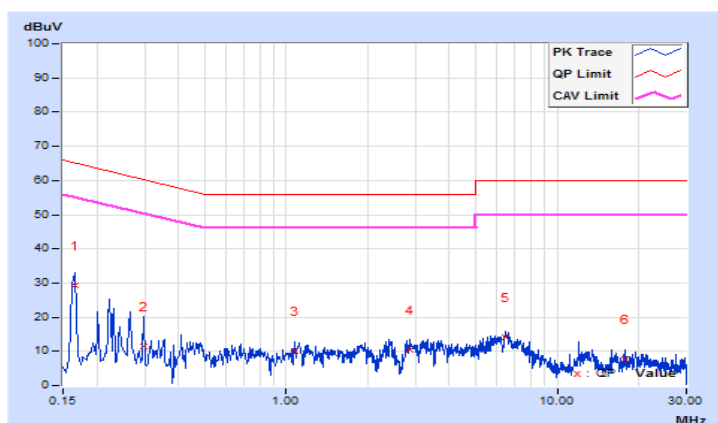


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode D		

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	0.16579	0.12	29.33	3.10	29.45	3.22	65.17	55.17	-35.72	-51.95
2	0.29800	0.19	11.21	2.61	11.40	2.80	60.30	50.30	-48.90	-47.50
3	1.07000	0.30	9.74	1.51	10.04	1.81	56.00	46.00	-45.96	-44.19
4	2.85000	0.40	10.18	2.60	10.58	3.00	56.00	46.00	-45.42	-43.00
5	6.42200	0.52	13.65	2.78	14.17	3.30	60.00	50.00	-45.83	-46.70
6	17.91400	0.86	7.04	1.17	7.90	2.03	60.00	50.00	-52.10	-47.97

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



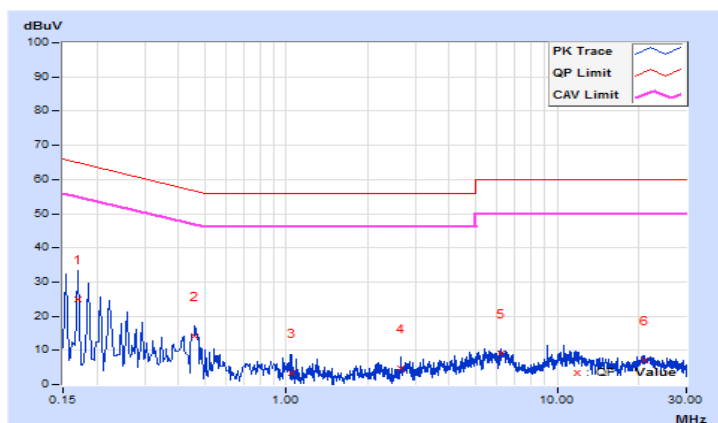
<LE 5.1>

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
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	0.17000	0.15	24.68	3.60	24.83	3.75	64.96	54.96	-40.13	-51.21
2	0.45800	0.25	13.75	2.73	14.00	2.98	56.73	46.73	-42.73	-43.75
3	1.05000	0.31	3.09	0.73	3.40	1.04	56.00	46.00	-52.60	-44.96
4	2.64200	0.38	4.36	0.81	4.74	1.19	56.00	46.00	-51.26	-44.81
5	6.18200	0.46	8.78	1.77	9.24	2.23	60.00	50.00	-50.76	-47.77
6	21.06200	0.66	6.37	1.27	7.03	1.93	60.00	50.00	-52.97	-48.07

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

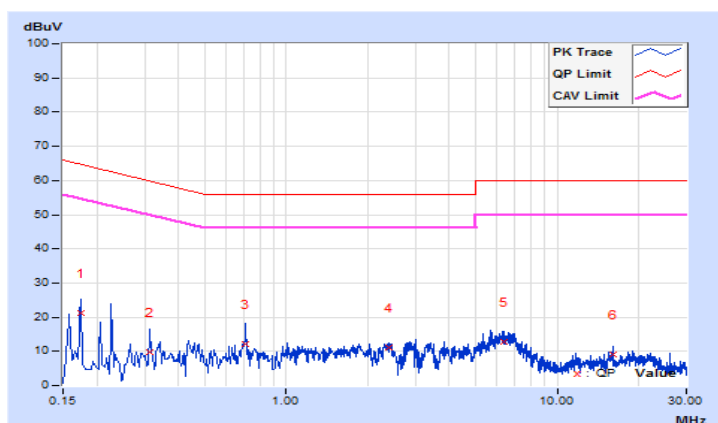


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 67%RH
Tested by	Tim Chen	Test Date	2021/2/4
Test Mode	Mode D		

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	0.17400	0.12	21.12	2.96	21.24	3.08	64.77	54.77	-43.53	-51.69
2	0.31400	0.20	9.62	1.21	9.82	1.41	59.86	49.86	-50.04	-48.45
3	0.70600	0.27	11.75	1.07	12.02	1.34	56.00	46.00	-43.98	-44.66
4	2.40600	0.38	10.60	1.46	10.98	1.84	56.00	46.00	-45.02	-44.16
5	6.39800	0.52	12.39	1.29	12.91	1.81	60.00	50.00	-47.09	-48.19
6	16.02200	0.80	8.25	1.53	9.05	2.33	60.00	50.00	-50.95	-47.67

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

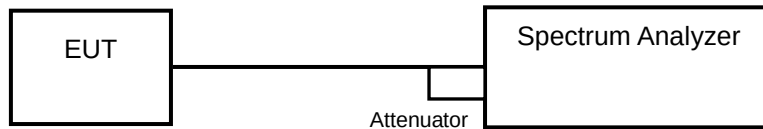


4.3 6 dB Bandwidth Measurement

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

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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.

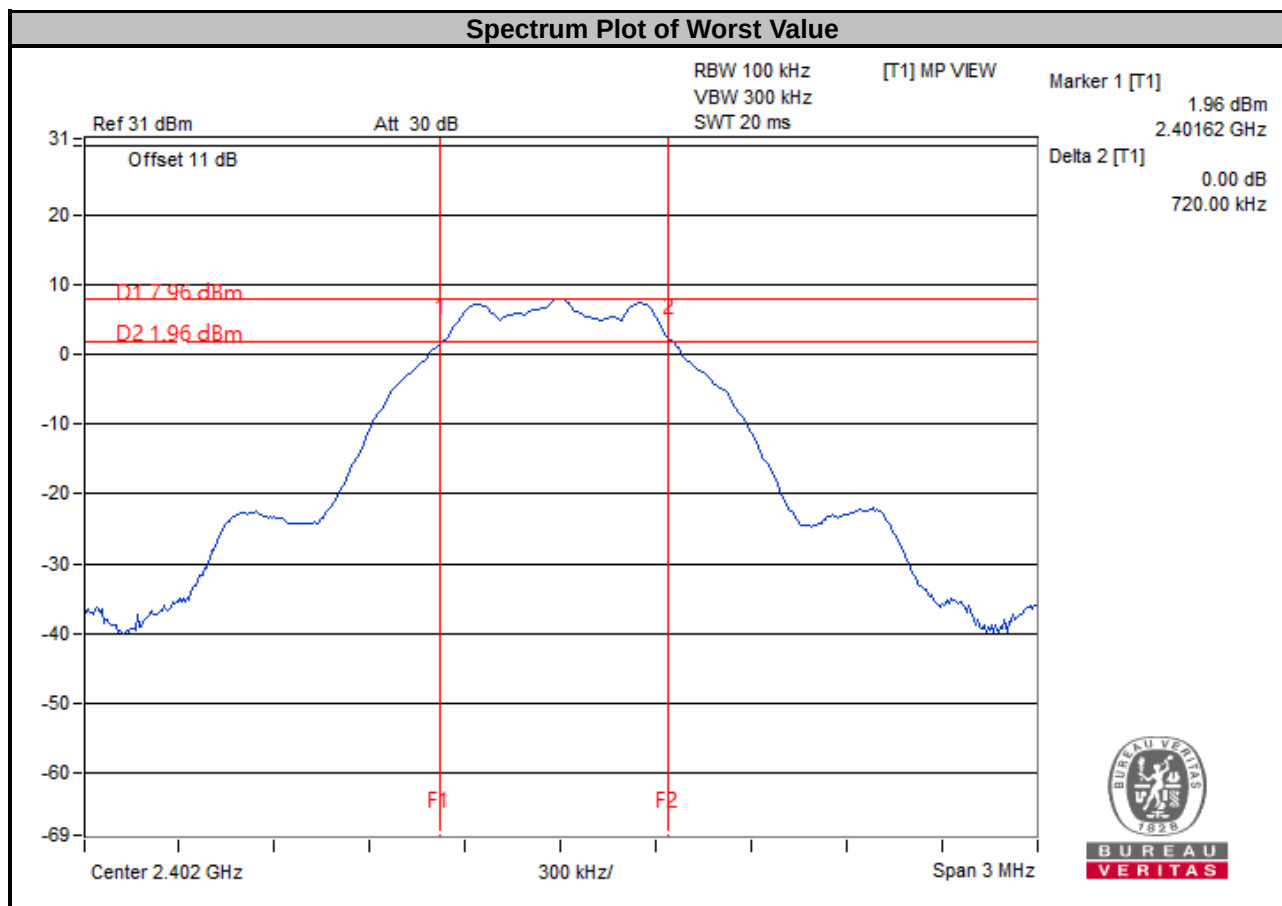
4.3.6 EUT Operating Conditions

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

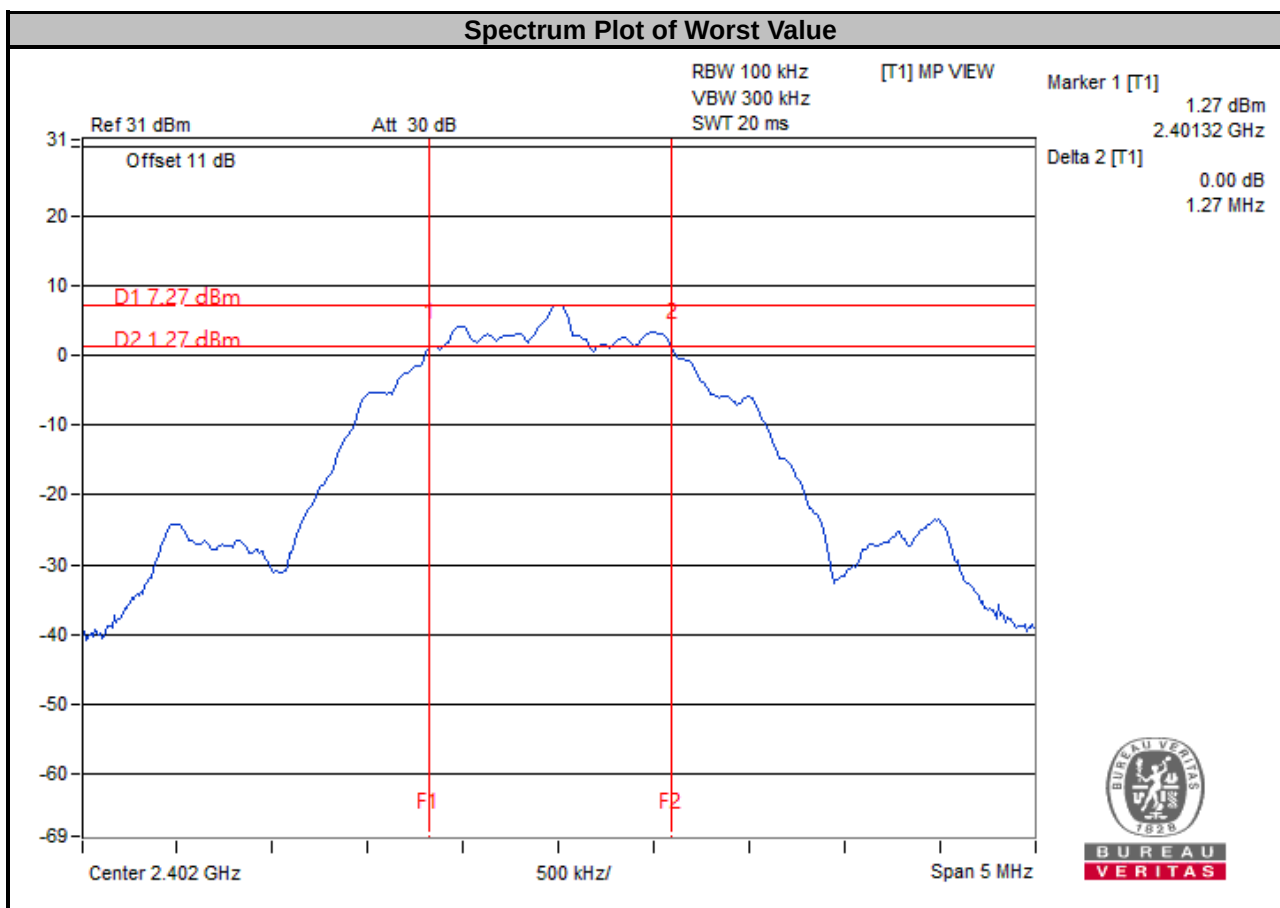
<LE 4.0>

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.72	0.5	Pass
19	2440	0.72	0.5	Pass
39	2480	0.72	0.5	Pass



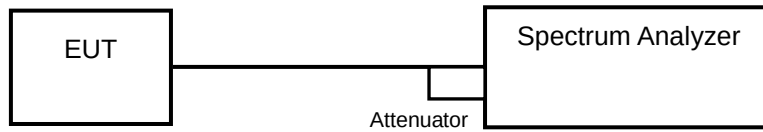
<LE 5.1>

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



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.

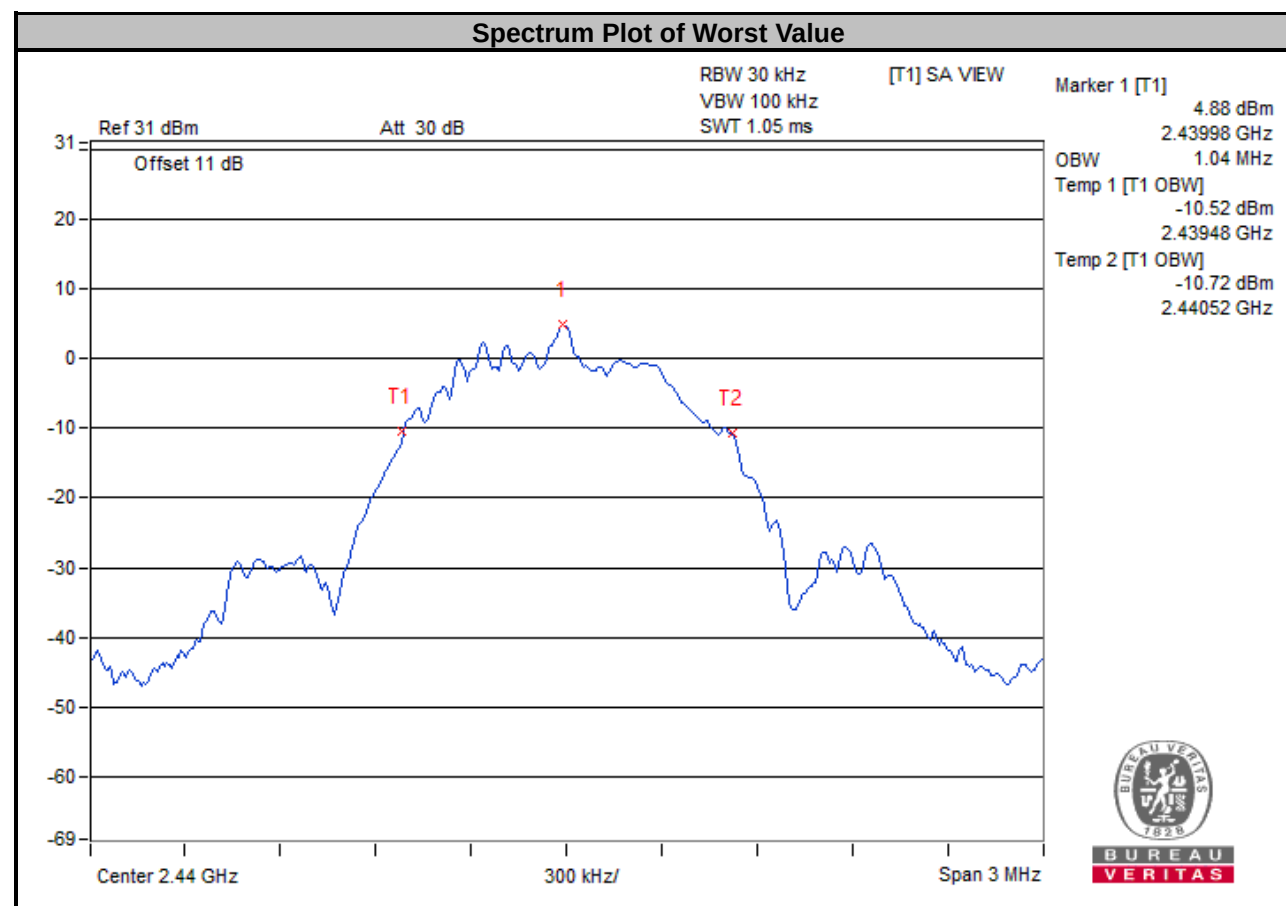
4.4.5 EUT Operating Conditions

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

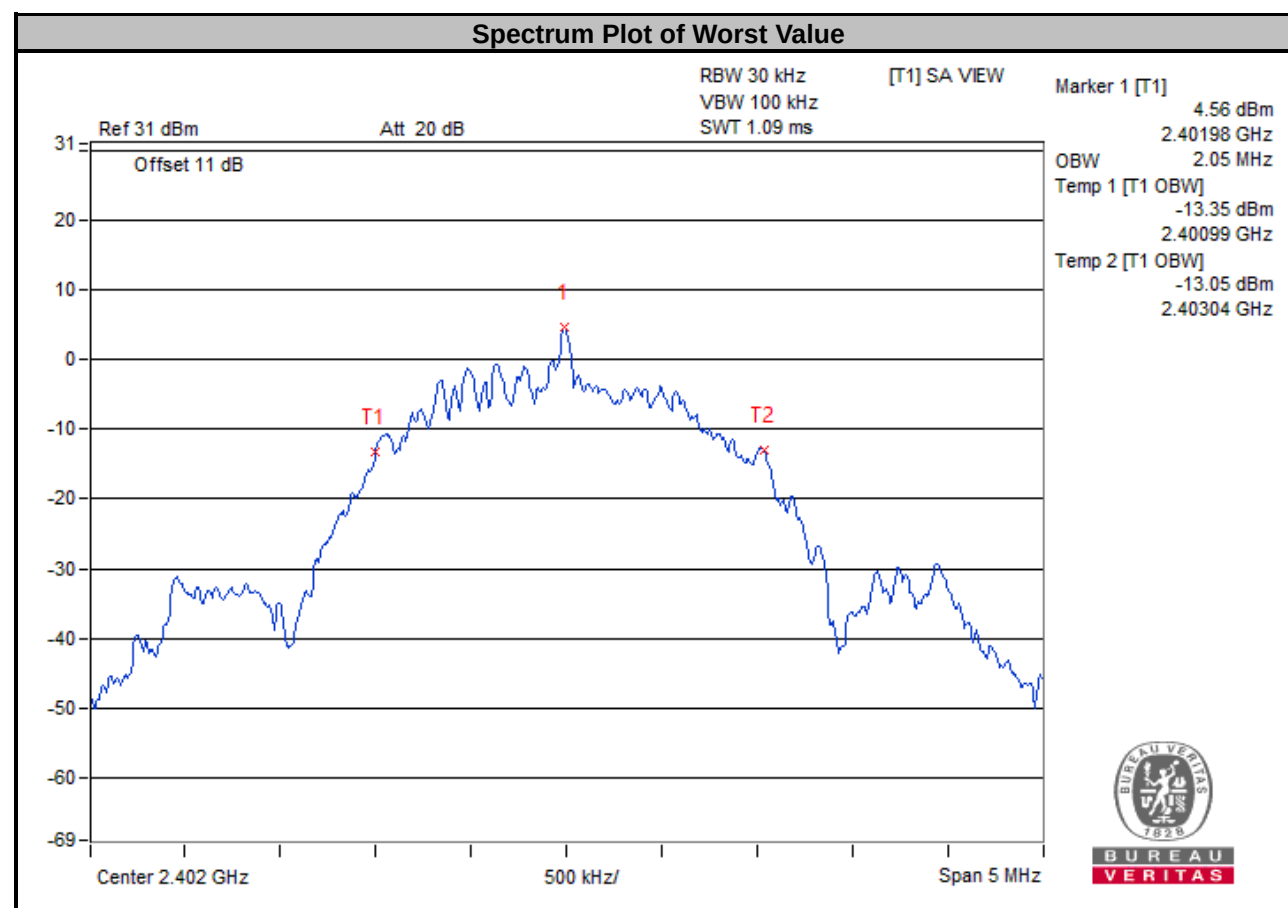
<LE 4.0>

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
0	2402	1.03	Pass
19	2440	1.04	Pass
39	2480	1.04	Pass



<LE 5.1>

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
0	2402	2.05	Pass
19	2440	2.04	Pass
39	2480	2.04	Pass

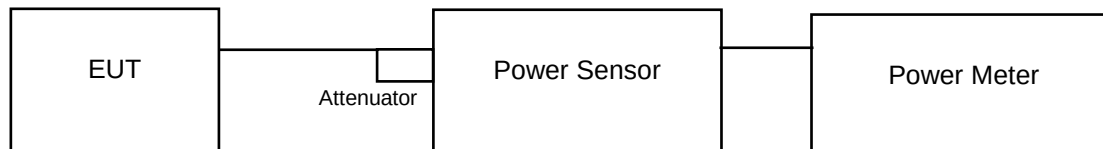


4.5 Conducted Output Power Measurement

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	6.383	8.05	6.295	7.99	30	Pass
19	2440	5.649	7.52	5.61	7.49	30	Pass
39	2480	5.188	7.15	5.152	7.12	30	Pass

<LE 5.1>

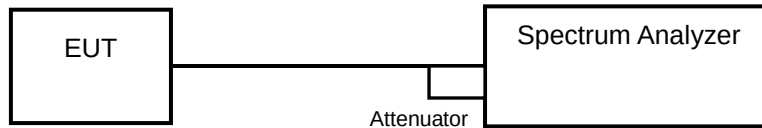
Channel	Freq. (MHz)	Peak Power		Average Power		Power Limit (dBm)	Pass / Fail
		(mW)	(dBm)	(mW)	(dBm)		
0	2402	6.237	7.95	6.18	7.91	30	Pass
19	2440	5.572	7.46	5.521	7.42	30	Pass
39	2480	5.284	7.23	5.2	7.16	30	Pass

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

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

4.6.5 Deviation from Test Standard

No deviation.

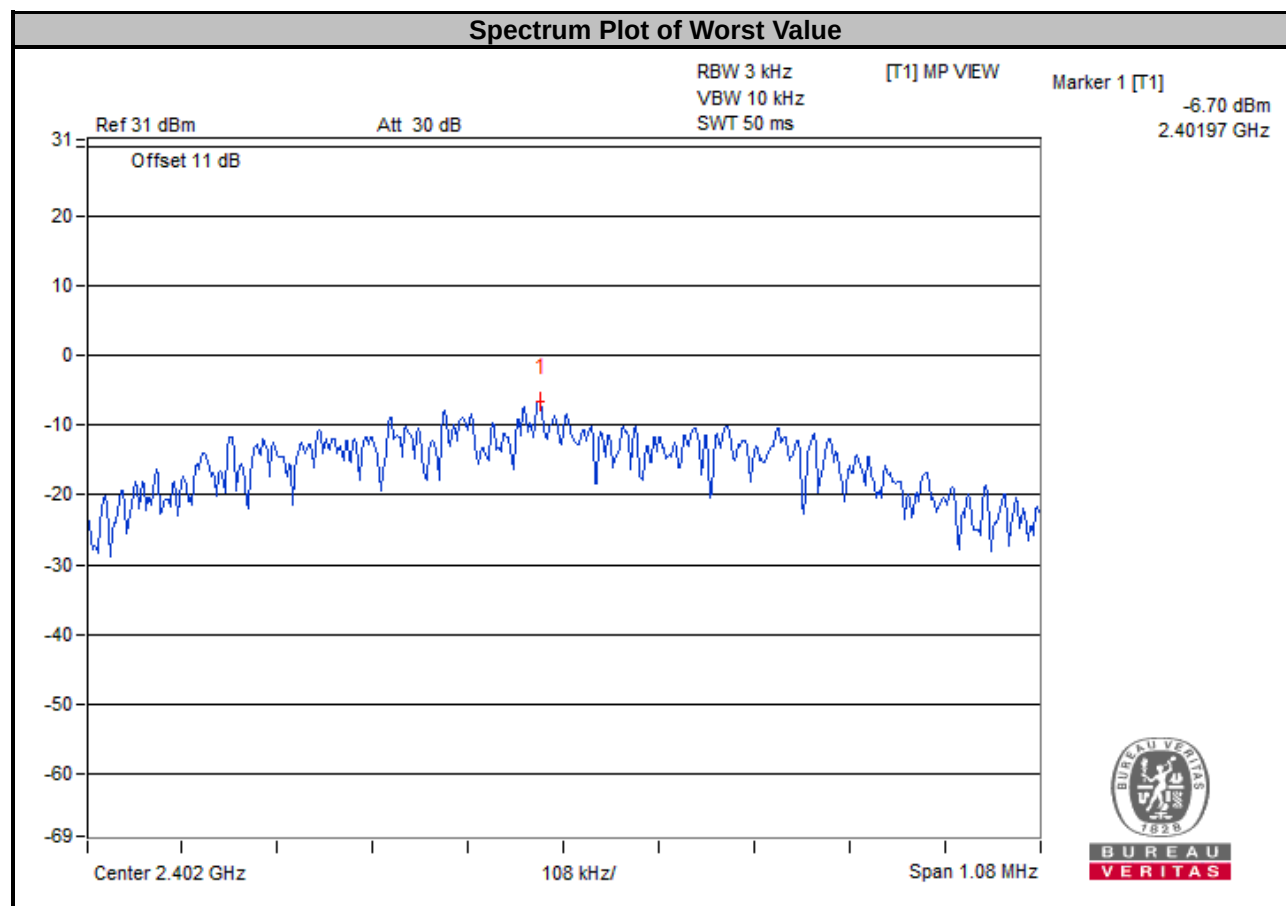
4.6.6 EUT Operating Condition

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

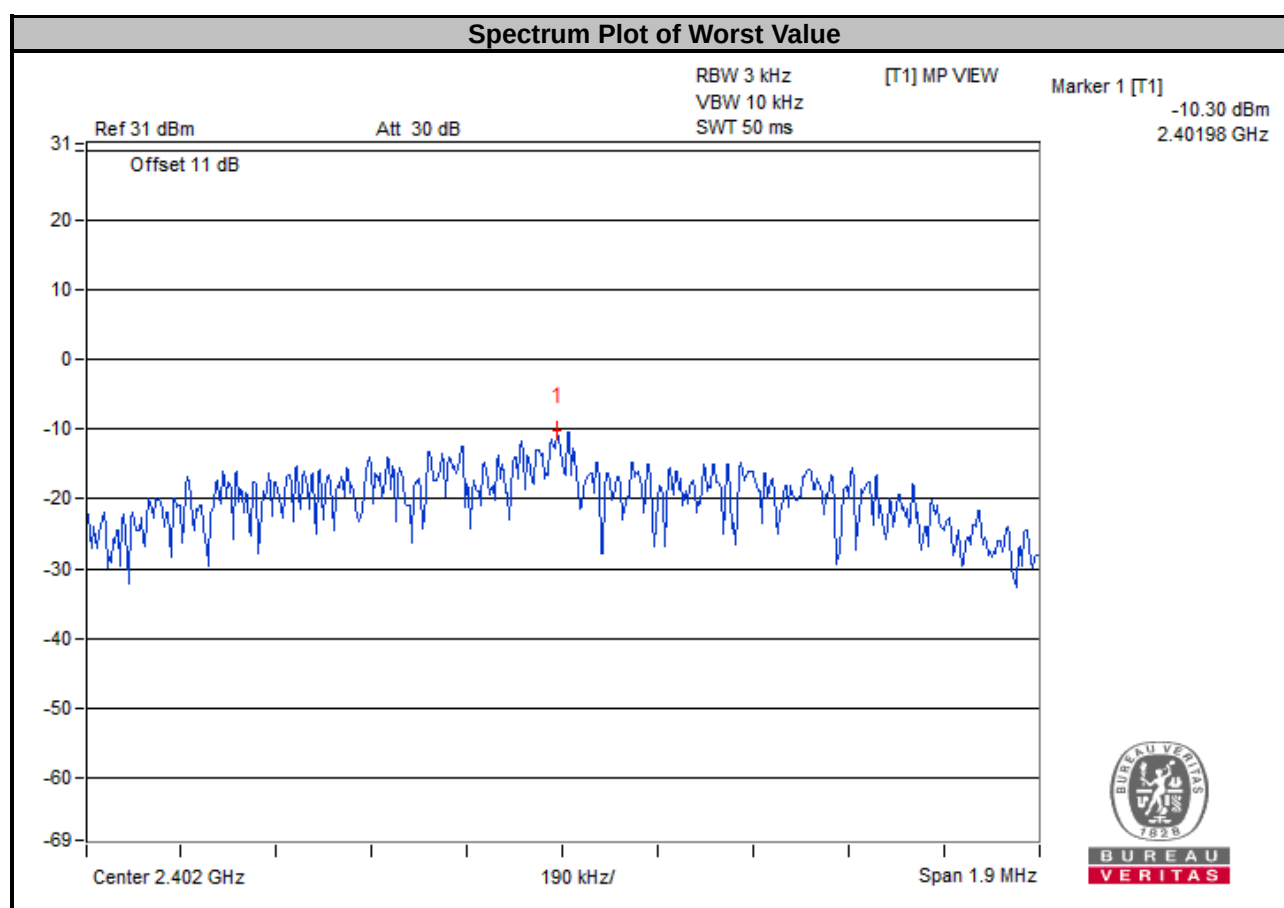
<LE 4.0>

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-6.70	8	Pass
19	2440	-7.58	8	Pass
39	2480	-7.17	8	Pass



<LE 5.1>

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
0	2402	-10.30	8	Pass
19	2440	-11.30	8	Pass
39	2480	-10.69	8	Pass

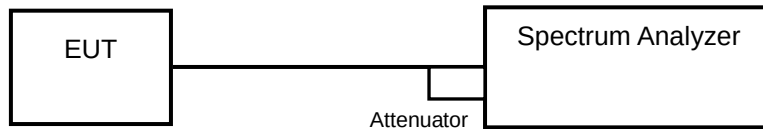


4.7 Conducted Out of Band Emission Measurement

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 $\geq$ 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 OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 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.

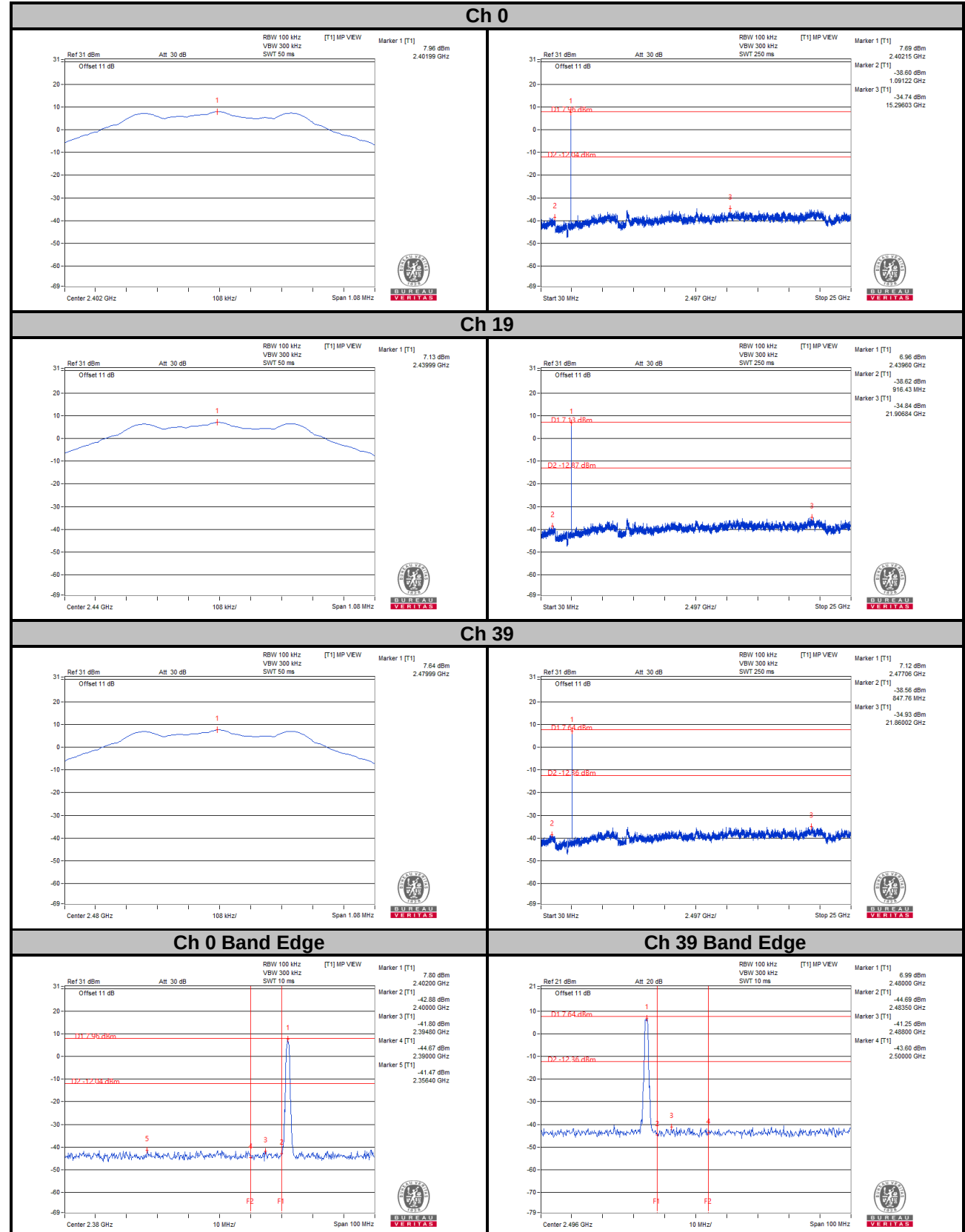
4.7.6 EUT Operating Condition

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

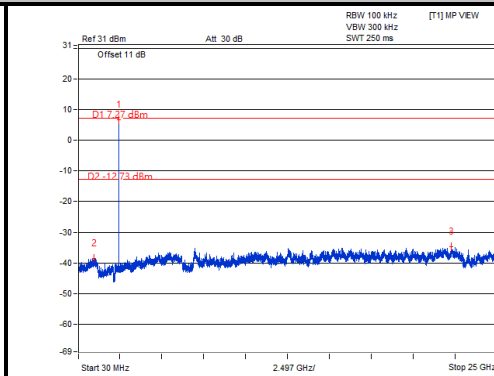
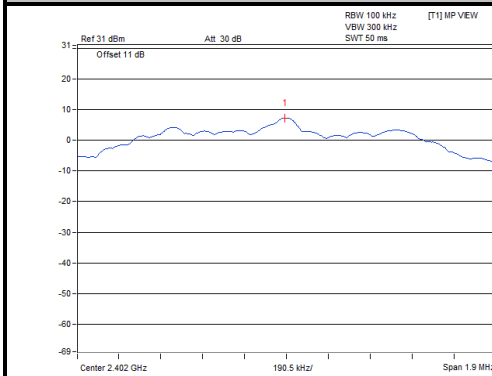
The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20 dB offset below D1. It shows compliance with the requirement.

<LE 4.0>

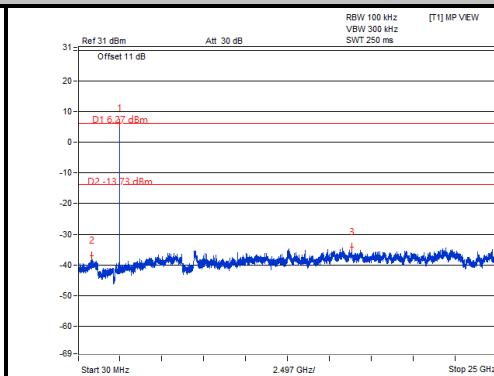
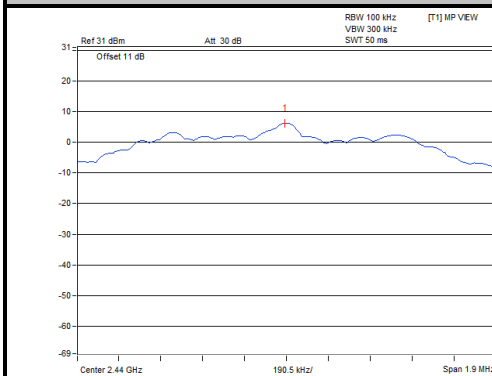


<LE 5.1>

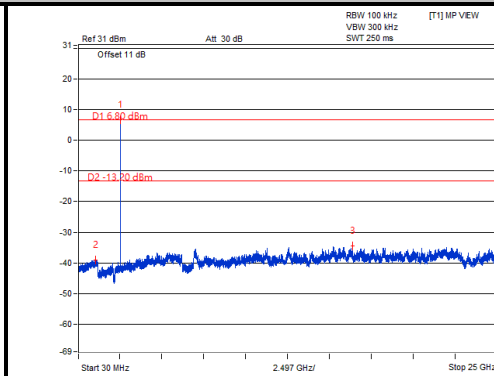
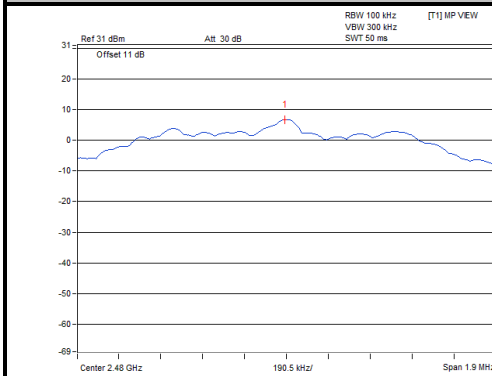
Ch 0



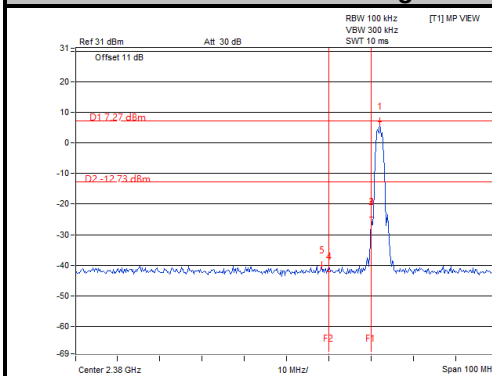
Ch 19



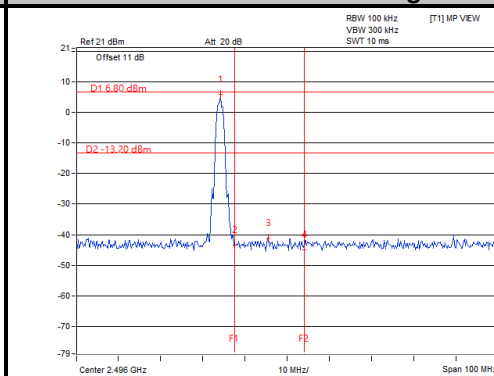
Ch 39



Ch 0 Band Edge



Ch 39 Band Edge



5 Photographs of the Test Configuration

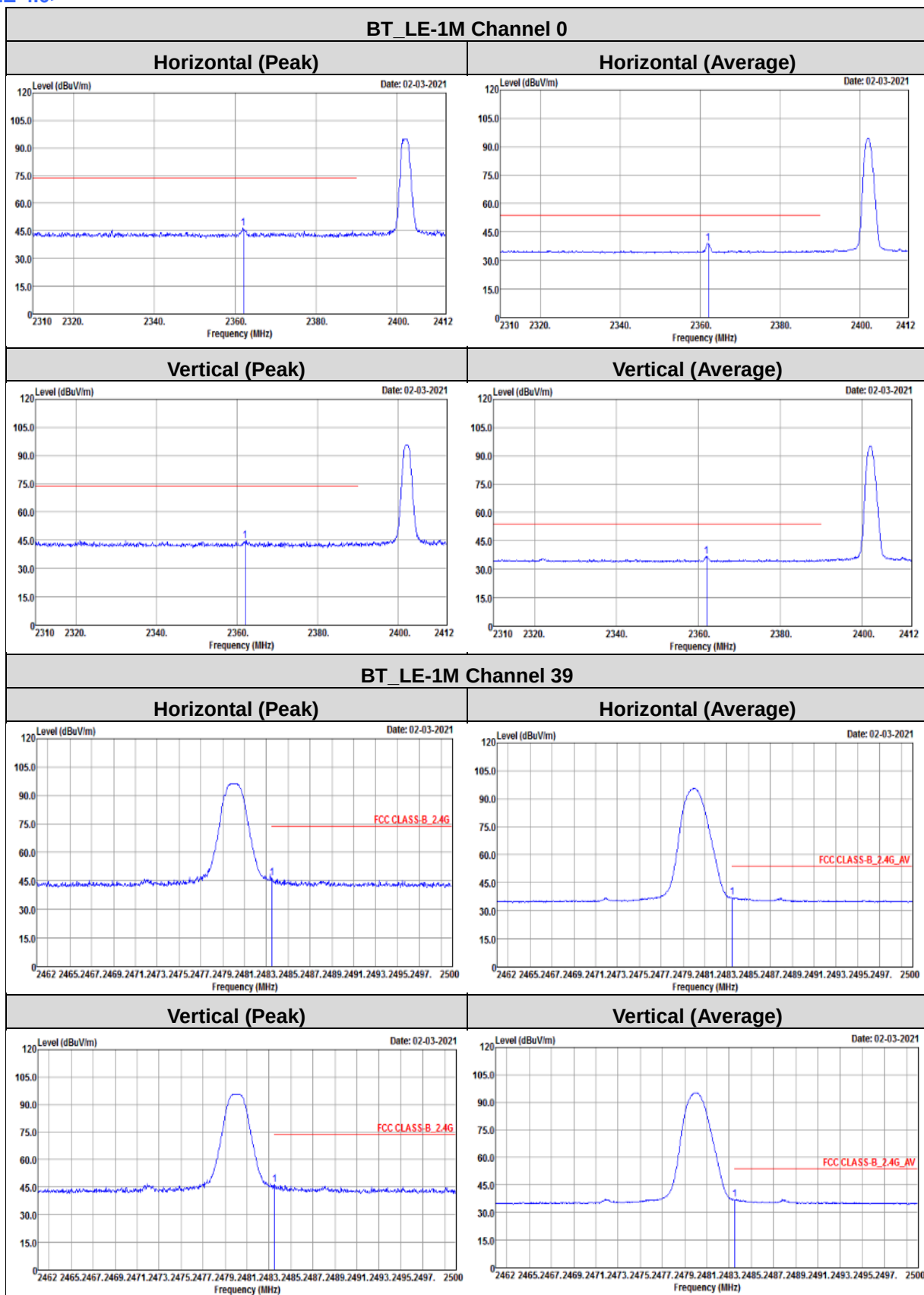
Please refer to the attached file (Reference no.: RFBCEE-WTW-P20120260-1 (TSup photo_right earbud)).

6 Construction Photos of EUT

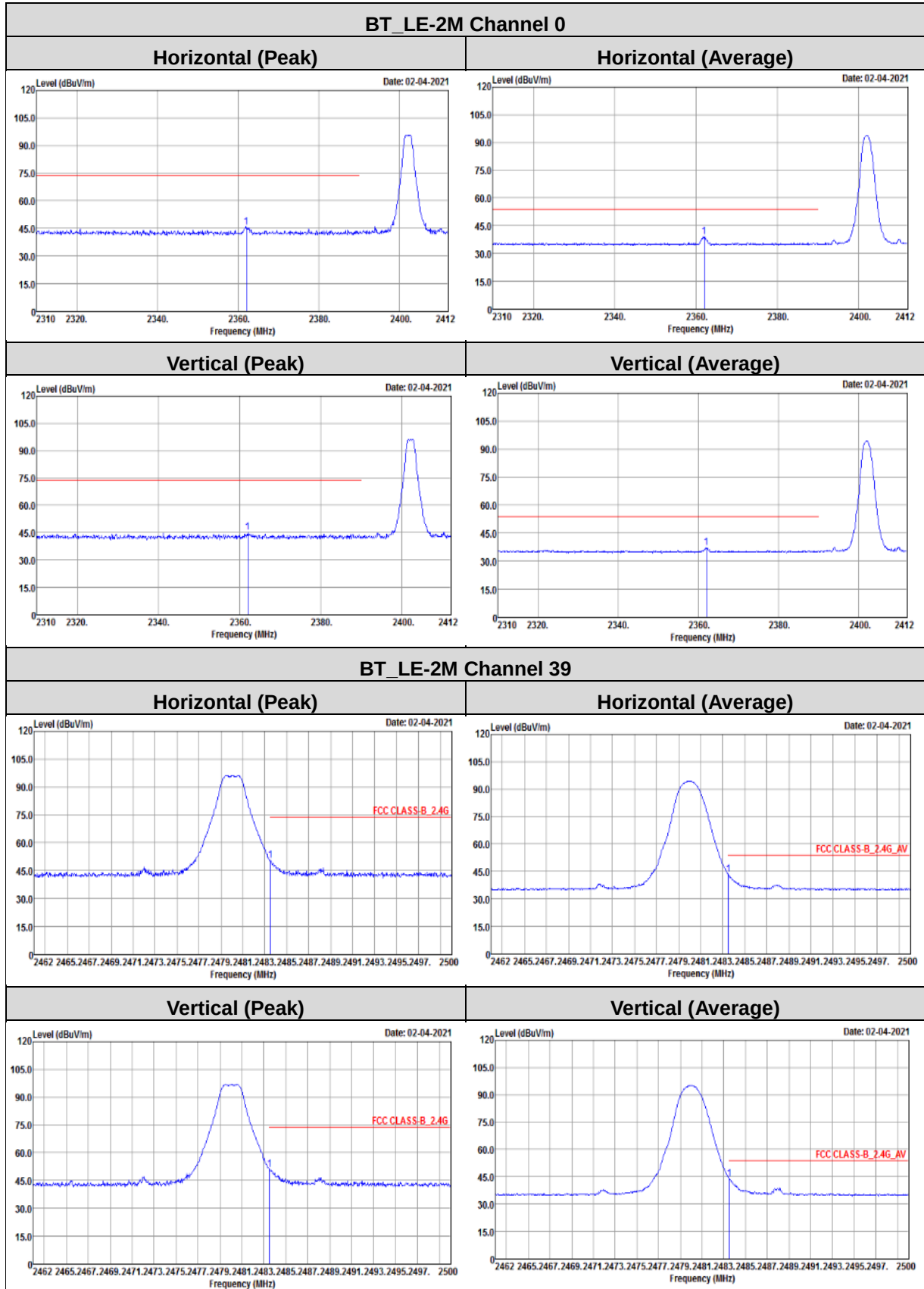
Please refer to the attached file (BCEE-WTW-P20120260 (EUT photo)).

Annex A- Band Edge Measurement

<LE 4.0>



<LE 5.1>



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:

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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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