FCC Test Report

(Co-Located)

Report No.:	RF191119C05-7
FCC ID:	LHJ-BL28NA003
Test Model:	BL28NA-003
Received Date:	Nov. 19, 2019
Test Date:	Feb. 07, 2020 ~ Feb. 25, 2020
Issued Date:	Feb. 26, 2020
Applicant:	Continental Automotive Systems, Inc.
Address:	21440 West Lake Cook Road Deer Park, IL 60010 United States
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

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Release Control Record

Issue No.	Description	Date Issued
RF191119C05-7	Original Release	Feb. 26, 2020

1 Certificate of Conformity

Product:	Module with Mulit-Band LTE, WCDMA,GSM
Brand:	Continental
Test Model:	BL28NA-003
Sample Status:	Identical Prototype
Applicant:	Continental Automotive Systems, Inc.
Test Date:	Feb. 07, 2020 ~ Feb. 25, 2020
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart C, H 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 : Lena Wang , **Date:** Feb. 26, 2020

Lena Wang / Specialist

Approved by : , **Date:** Feb. 26, 2020

Dylan Chiou / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart H			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.38 dB at 2483.5 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.89 dB at 5150 MHz.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -34.62 dB at 36.79 MHz.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -39.08 dB at 34.85 MHz.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -23.88 dB at 5020.00 MHz.

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. This test report shows that colocation requirements are investigated and no emissions were recorded over the appropriate limits.

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) (±)
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	Module with Mulit-Band LTE, WCDMA,GSM			
Brand	Continental			
Test Model	BL28NA-003			
Status of EUT	Identical Prototype			
Power Supply Rating	12 Vdc (Power Supply)			
Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM		
	GSM/GPRS	GMSK		
	WCDMA	QPSK		
	LTE	QPSK, 16QAM		
Operating Frequency	WLAN	2412 ~ 2462 MHz 5180 ~ 5240 MHz, 5745 ~ 5825 MHz		
	GSM/GPRS/EDGE	GSM 850: 824.2 ~ 848.8 MHz DCS 1900: 1850.2 ~ 1909.8 MHz		
	WCDMA	WCDMA Band II	1852.4 ~ 1907.6 MHz	
		WCDMA Band IV	1712.4 ~ 1752.6 MHz	
		WCDMA Band V	826.4 ~ 846.6 MHz	
	LTE	LTE Band 2	Channel Bandwidth: 1.4 MHz	1850.7 ~ 1909.3 MHz
			Channel Bandwidth: 3 MHz	1851.5 ~ 1908.5 MHz
			Channel Bandwidth: 5 MHz	1852.5 ~ 1907.5 MHz
			Channel Bandwidth: 10 MHz	1855.0 ~ 1905.0 MHz
			Channel Bandwidth: 15 MHz	1857.5 ~ 1902.5 MHz
			Channel Bandwidth: 20 MHz	1860.0 ~ 1900.0 MHz
		LTE Band 4	Channel Bandwidth: 1.4 MHz	1710.7 ~ 1754.3 MHz
			Channel Bandwidth: 3 MHz	1711.5 ~ 1753.5 MHz
			Channel Bandwidth: 5 MHz	1712.5 ~ 1752.5 MHz
			Channel Bandwidth: 10 MHz	1715.0 ~ 1750.0 MHz
			Channel Bandwidth: 15	1717.5 ~ 1747.5 MHz

			MHz	
			Channel Bandwidth: 20 MHz	1720.0 ~ 1745.0 MHz
		LTE Band 5	Channel Bandwidth: 1.4 MHz	824.7 ~ 848.3 MHz
			Channel Bandwidth: 3 MHz	825.5 ~ 847.5 MHz
			Channel Bandwidth: 5 MHz	826.5 ~ 846.5 MHz
			Channel Bandwidth: 10 MHz	829 ~ 844 MHz
		LTE Band 7	Channel Bandwidth: 5 MHz	2502.5 ~ 2567.5 MHz
			Channel Bandwidth: 10 MHz	2505 ~ 2565 MHz
			Channel Bandwidth: 15 MHz	2507.5 ~ 2562.5 MHz
			Channel Bandwidth: 20 MHz	2510 ~ 2560 MHz
		LTE Band 12	Channel Bandwidth: 1.4 MHz	699.7 ~ 715.3 MHz
			Channel Bandwidth: 3 MHz	700.5 ~ 714.5 MHz
			Channel Bandwidth: 5 MHz	701.5 ~ 713.5 MHz
			Channel Bandwidth: 10 MHz	704.0 ~ 711.0 MHz
Number of Channel	**2.4 GHz:** 11 for 802.11b, 802.11g, 802.11n (HT20), **5 GHz:** 5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)			
Antenna Type	Refer to Note as below			
Antenna Connector	N/A			
Accessory Device	N/A			
Data Cable Supplied	N/A			

Note:

1. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

Modulation Mode	Tx Function
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX
802.11ac (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The antenna information is listed as below.

Antenna Type	WLAN Antenna Gain (dBi)		
	WLAN 2.4GHz	WLAN 5.18 ~ 5.24GHz	WLAN 5.745 ~ 5.825GHz
PCB	3.14	0.68	1.94

Antenna Type	WWAN Antenna Gain (dBi)	
	WCDMA II/IV/V LTE 2/4/5/7/12	WCDMA V LTE 5
Fixed External	2	1

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

WLAN 2.4GHz:

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442		

WLAN 5GHz:

For 5180 ~ 5240 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency (MHz)
42	5210

For 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To		Description
	RE≥1G	RE<1G	
-	√	√	-

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

2. Radiated Emission and Conducted Out-Band Emission test items chosen the worst maximum power 2.4G and 5G Radio channel.

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	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	802.11b + GSM850	2402 ~ 2462、824 ~ 849	1 to 11、128 to 251	11 +128	OFDM 、GMSK
	802.11b + LTE Band 7	2402 ~ 2462、2510 ~ 2560	1 to 11、20850 to 21350	11 + 20850	OFDM 、QPSK
	802.11b + DCS 1900	2402 ~ 2462、1850.2 ~ 1909.8	1 to 11、512 to 810	11 + 661	OFDM 、GMSK
	802.11a + GSM850	5180-5825、824 ~ 849	36 to 165、128 to 251	36 +128	OFDM 、GMSK
	802.11a + LTE Band 7	5180-5825、2510 ~ 2560	36 to 165、20850 to 21350	36 +20850	OFDM 、QPSK
	802.11a + DCS 1900	5180-5825、1850.2 ~ 1909.8	36 to 165、512 to 810	36 +661	OFDM 、GMSK

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	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	802.11b + GSM850	2402 ~ 2462、824 ~ 849	1 to 11、128 to 251	11 +128	OFDM 、GMSK
	802.11b + LTE Band 7	2402 ~ 2462、2510 ~ 2560	1 to 11、20850 to 21350	11 + 20850	OFDM 、QPSK
	802.11b + DCS 1900	2402 ~ 2462、1850.2 ~ 1909.8	1 to 11、512 to 810	11 + 661	OFDM 、GMSK
	802.11a + GSM850	5180-5825、824 ~ 849	36 to 165、128 to 251	36 +128	OFDM 、GMSK
	802.11a + LTE Band 7	5180-5825、2510 ~ 2560	36 to 165、20850 to 21350	36 +20850	OFDM 、QPSK
	802.11a + DCS 1900	5180-5825、1850.2 ~ 1909.8	36 to 165、512 to 810	36 +661	OFDM 、GMSK

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
RE<1G	25 deg. C, 65 % RH	12 Vdc	Tim Chen

3.3 Description of Support Units

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

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	DC Power Supply	Torward	33010D	807748	N/A
2.	Controller	N/A	N/A	N/A	N/A
3.	WWAN Ant.*2	N/A	N/A	N/A	N/A
4.	GPS Ant.	N/A	N/A	N/A	N/A

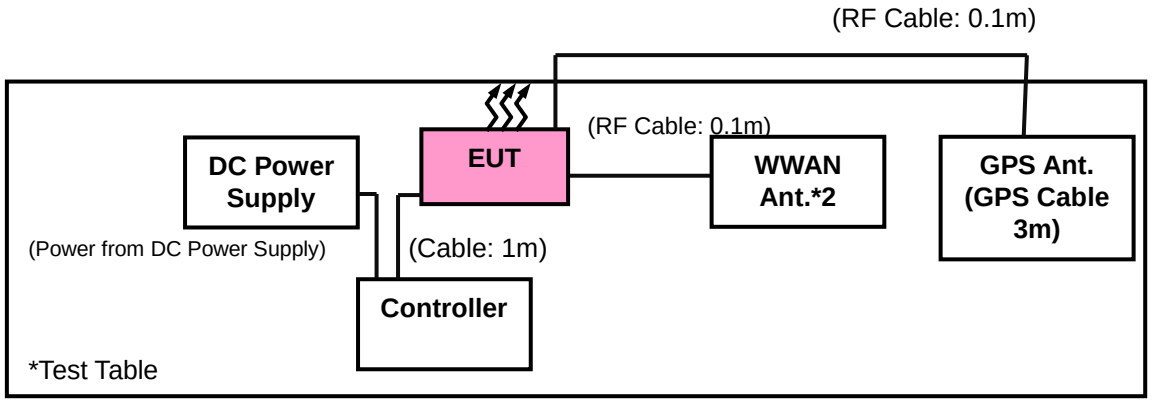
No.	Signal Cable Description of The Above Support Units
1.	RF Cable: 0.1m
2.	RF Cable: 0.1m
3.	Cable: 1m

Note:

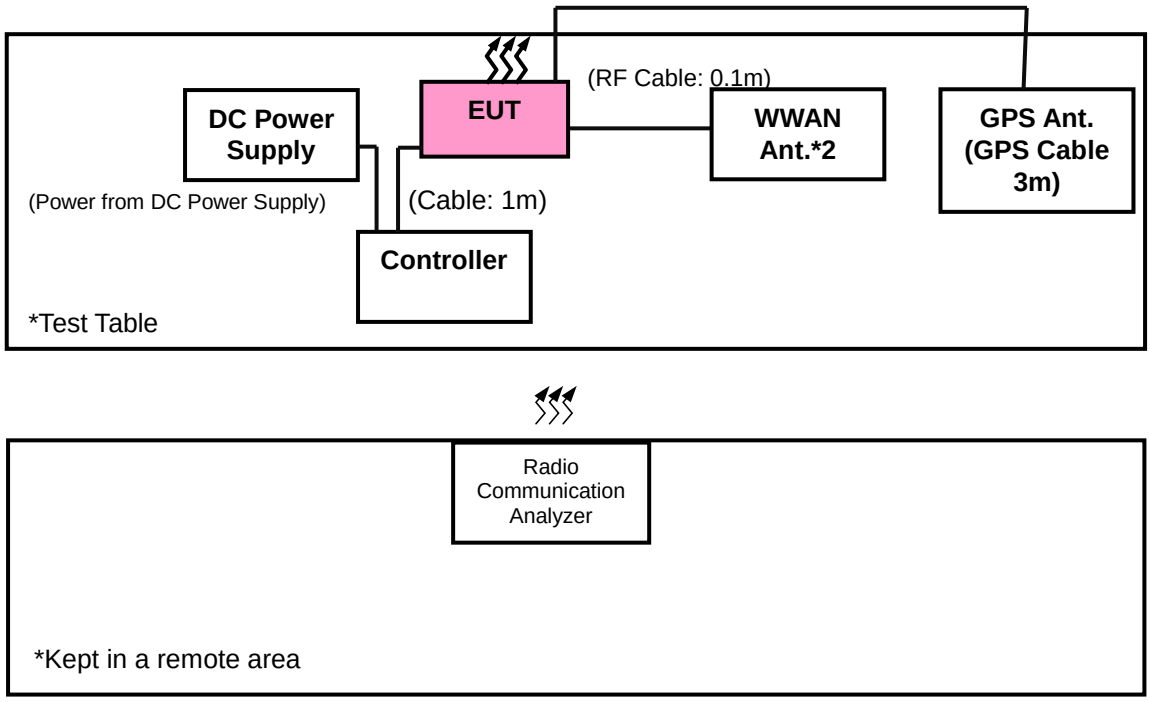
1. All power cords of the above support units are non-shielded (1.8m).
2. DC Power Supply under test table

3.3.1 Configuration of System under Test

For WLAN



For WWAN



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
FCC Part 15, Subpart E (15.407)
FCC 47 CFR Part 24
FCC 47 CFR Part 27
ANSI 63.26-2015
ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

For WLAN

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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.

For LTE

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to -13 dBm.

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, 2019	Mar. 17, 2020
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 12, 2019	Dec. 11, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 15, 2019	Apr. 14, 2020
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
Fixed Attenuator WORKEN	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 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 Worken	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
DC Power Supply Topward	33010D	807748	NA	NA

Communications Tester-Wireless Agilent	8960 Series 10	MY53201073	Jul. 01, 2019	Jun. 30, 2021
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 19, 2019	Aug. 18, 2021
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 06, 2019	Sep. 05, 2020

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 WLAN

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.
4. All modes of operation were investigated and the worst-case emissions are reported.

For LTE

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.

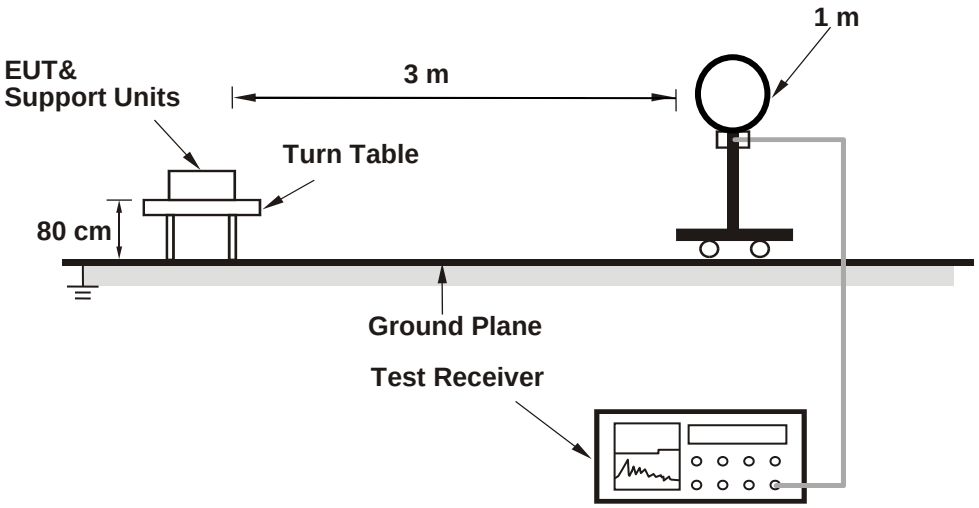
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.1.4 Deviation from Test Standard

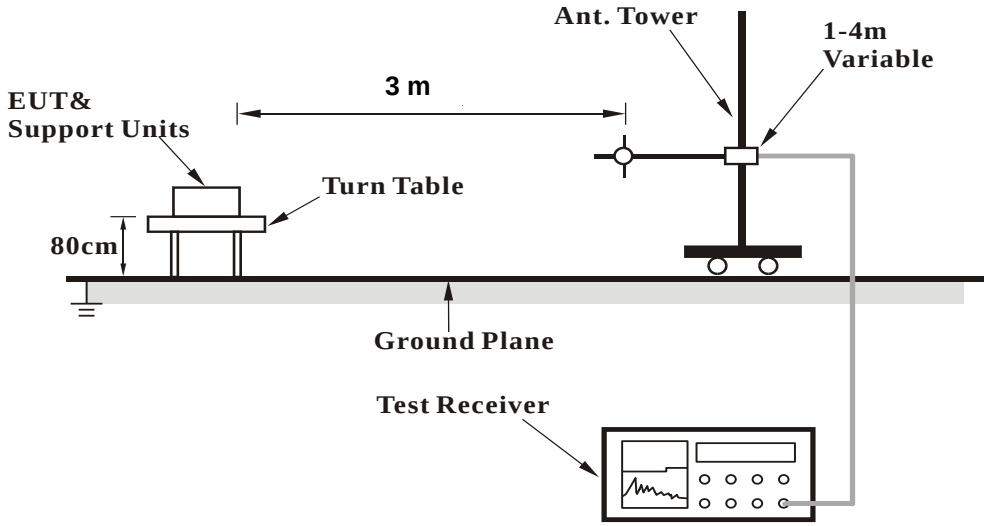
No deviation.

4.1.5 Test Set Up

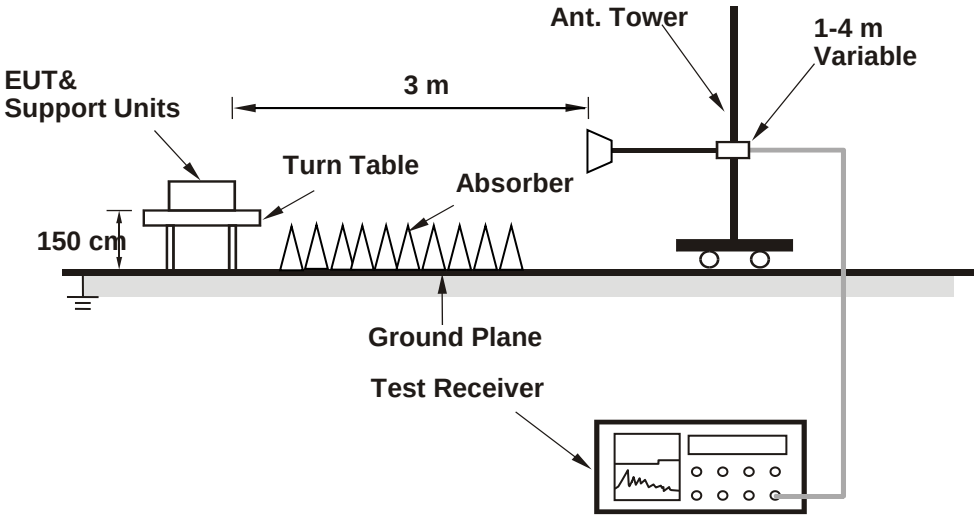
<Radiated Emission below 30 MHz>



<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 a testing table.
b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

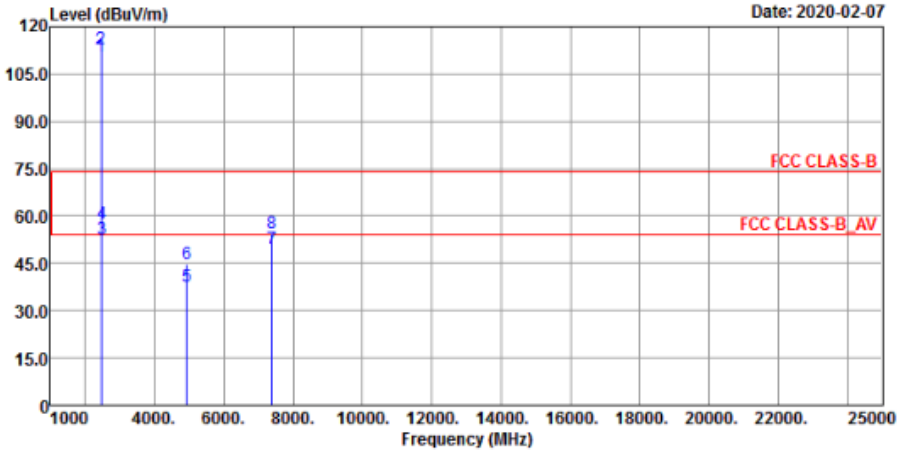
4.1.7 Test Results

Above 1 GHz Data：

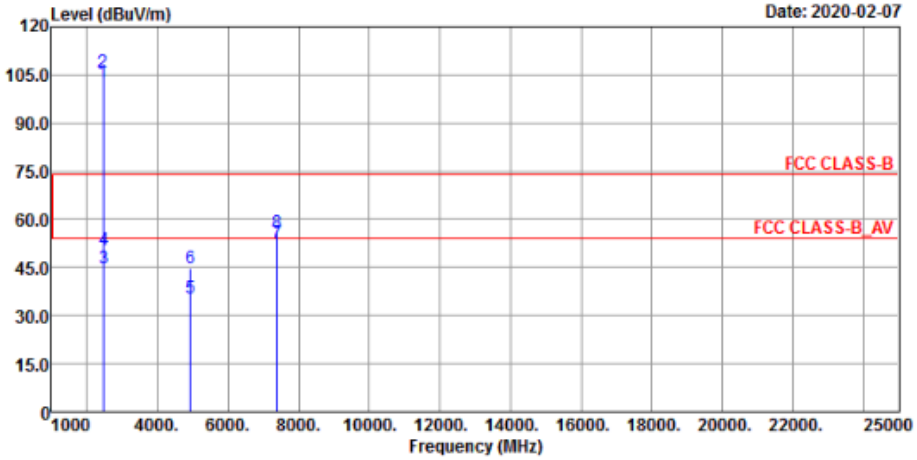
802.11b + GSM850

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**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**	Getax Yang

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**
2462	110.76	115.67	-4.91			138	126	Average
2462	112.81	117.72	-4.91			138	126	Peak
2483.5	**52.62**	**57.47**	**-4.85**	**54**	**-1.38**	**138**	**126**	**Average**
2483.5	57.77	62.62	-4.85	74	-16.23	138	126	Peak
4924	37.57	51.53	-13.96	54	-16.43	125	81	Average
4924	44.87	58.83	-13.96	74	-29.13	125	81	Peak
7386	49.57	55.94	-6.37	54	-4.43	100	62	Average
7386	54.43	60.8	-6.37	74	-19.57	100	62	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**
2462	102.67	107.58	-4.91			111	201	Average
2462	105.84	110.75	-4.91			111	201	Peak
2483.5	44.94	49.79	-4.85	54	-9.06	111	201	Average
2483.5	50.63	55.48	-4.85	74	-23.37	111	201	Peak
4924	35.57	49.53	-13.96	54	-18.43	135	242	Average
4924	44.75	58.71	-13.96	74	-29.25	135	242	Peak
7386	52.57	58.94	-6.37	54	-1.43	133	205	Average
7386	55.62	61.99	-6.37	74	-18.38	133	205	Peak

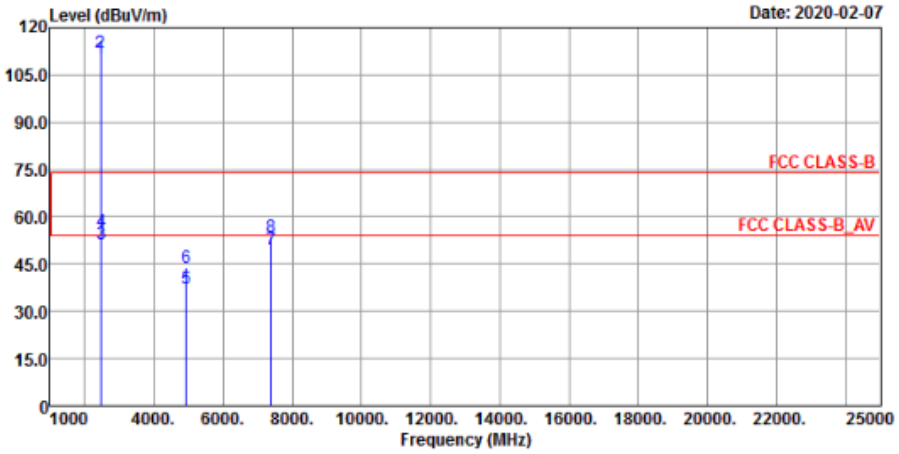
Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

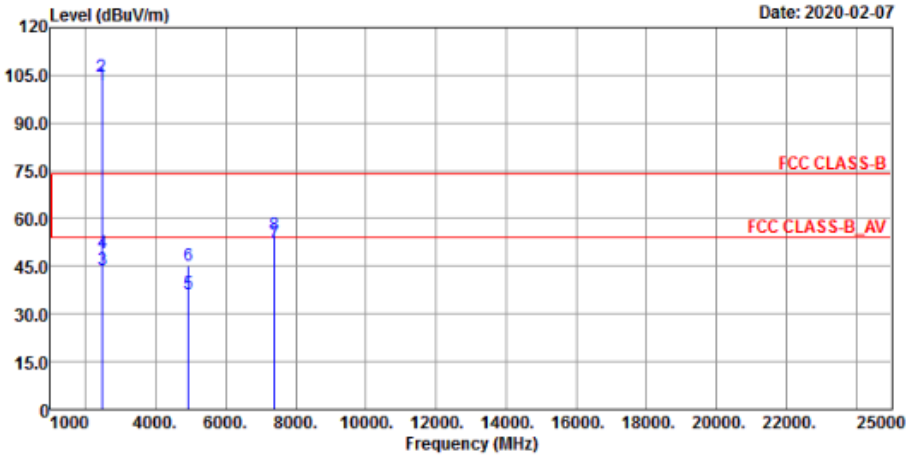
802.11b + LTE Band 7

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**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**	Getax Yang

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**
2462	110.26	115.17	-4.91			135	115	Average
2462	112.11	117.02	-4.91			135	115	Peak
2483.52	51.23	56.08	-4.85	54	-2.77	135	115	Average
2483.52	55.35	60.2	-4.85	74	-18.65	135	115	Peak
4924	37.28	51.24	-13.96	54	-16.72	126	72	Average
4924	43.82	57.78	-13.96	74	-30.18	126	72	Peak
7386	49.51	55.88	-6.37	54	-4.49	101	62	Average
7386	53.55	59.92	-6.37	74	-20.45	101	62	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**
2462	101.87	106.78	-4.91			105	184	Average
2462	104.68	109.59	-4.91			105	184	Peak
2482	43.92	48.77	-4.85	54	-10.08	105	184	Average
2482	49.33	54.18	-4.85	74	-24.67	105	184	Peak
4924	36.15	50.11	-13.96	54	-17.85	139	230	Average
4924	45.3	59.26	-13.96	74	-28.7	139	230	Peak
7386	52.16	58.53	-6.37	54	-1.84	128	205	Average
7386	55.09	61.46	-6.37	74	-18.91	128	205	Peak

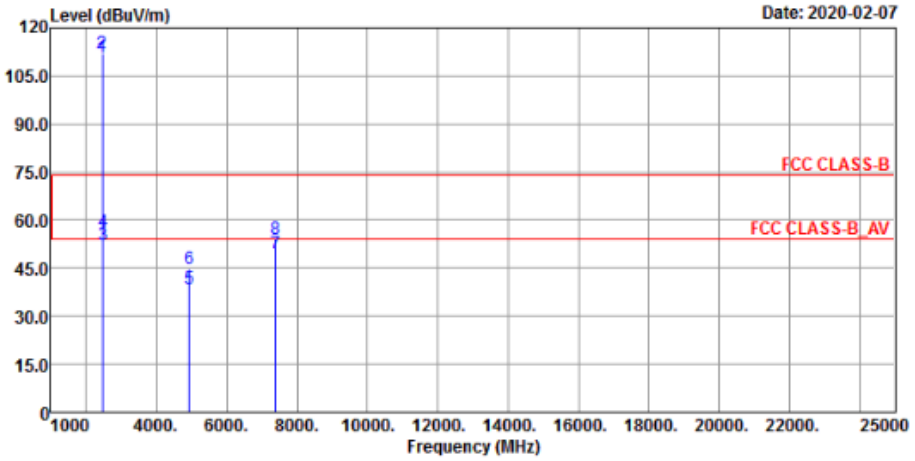
Remarks:

4. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
5. 2437 MHz: Fundamental frequency.
6. The emission levels of other frequencies were very low against the limit.

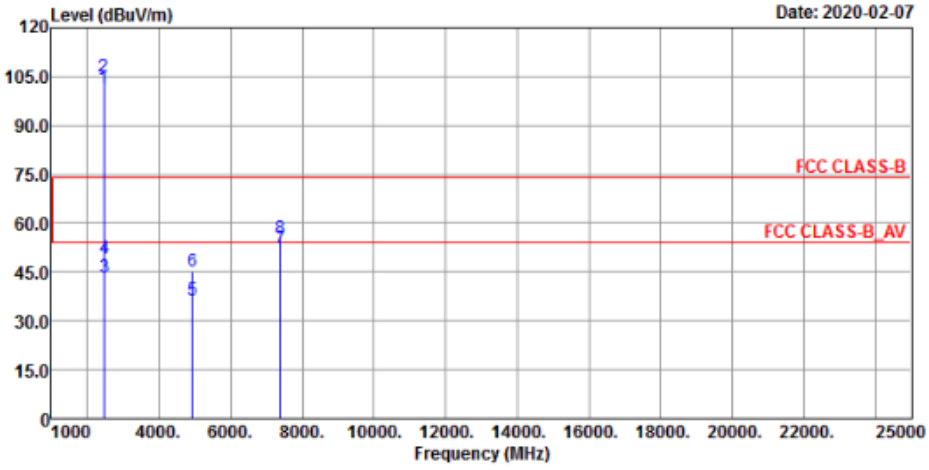
802.11b + DCS 1900

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**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**	Getax Yang

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**
2462	110.74	115.65	-4.91			133	126	Average
2462	112.18	117.09	-4.91			133	126	Peak
2481	52.23	57.08	-4.85	54	-1.77	133	126	Average
2481	56.41	61.26	-4.85	74	-17.59	133	126	Peak
4924	38.51	52.47	-13.96	54	-15.49	125	81	Average
4924	44.87	58.83	-13.96	74	-29.13	125	81	Peak
7386	49.52	55.89	-6.37	54	-4.48	106	59	Average
7386	54.19	60.56	-6.37	74	-19.81	106	59	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**
2462	101.25	106.16	-4.91			108	200	Average
2462	104.92	109.83	-4.91			108	200	Peak
2483.5	43.45	48.3	-4.85	54	-10.55	108	200	Average
2483.5	49.12	53.97	-4.85	74	-24.88	108	200	Peak
4924	36.12	50.08	-13.96	54	-17.88	134	233	Average
4924	45.03	58.99	-13.96	74	-28.97	134	233	Peak
7386	52.11	58.48	-6.37	54	-1.89	129	210	Average
7386	55.16	61.53	-6.37	74	-18.84	129	210	Peak

Remarks:

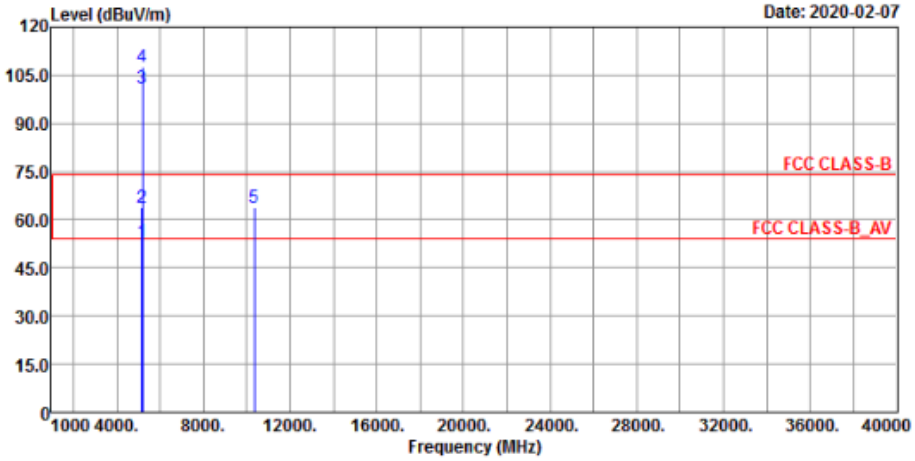
7. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
8. 2437 MHz: Fundamental frequency.
9. The emission levels of other frequencies were very low against the limit.

Above 1 GHz Data：

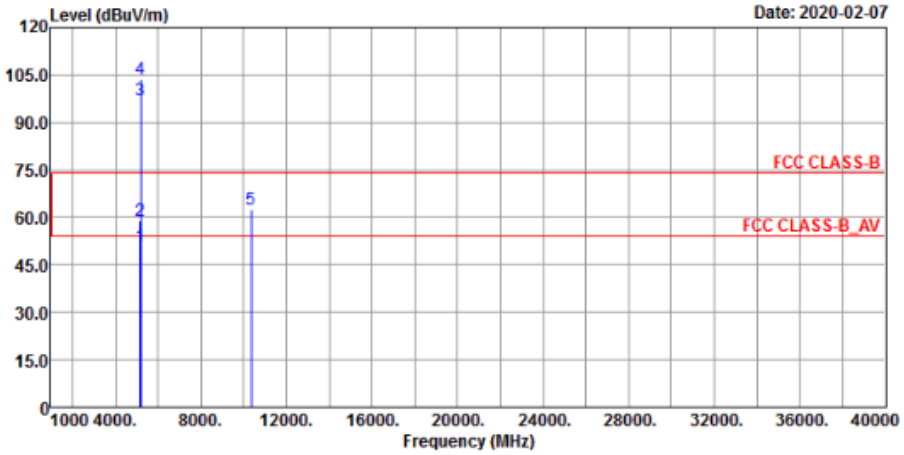
802.11a + GSM850

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
5150	**53.11**	**51.58**	**1.53**	**54**	**-0.89**	**177**	**165**	**Average**
5150	63.8	62.27	1.53	74	-10.2	177	165	Peak
5180	100.76	99.23	1.53			177	165	Average
5180	107.69	106.16	1.53			177	165	Peak
*10360	63.65	66.49	-2.84	68.2	-4.55	201	255	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**
5150	50.97	49.44	1.53	54	-3.03	211	102	Average
5150	58.89	57.36	1.53	74	-15.11	211	102	Peak
5180	96.76	95.23	1.53			211	102	Average
5180	103.81	102.28	1.53			211	102	Peak
*10360	62.58	65.42	-2.84	68.2	-5.62	205	198	Peak

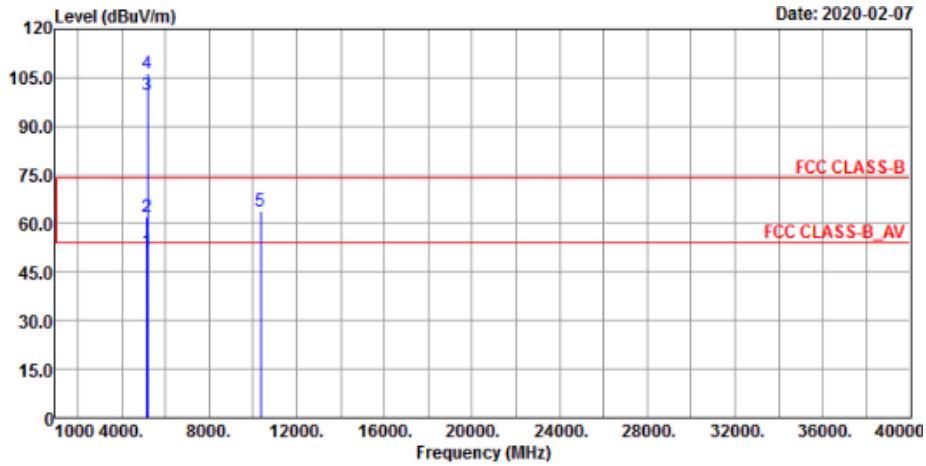
Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency
3. The emission levels of other frequencies were very low against the limit

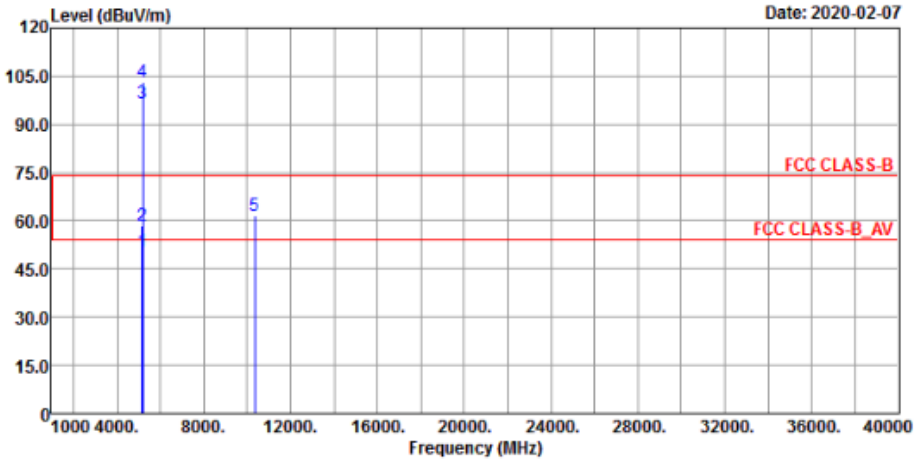
802.11a + LTE Band 7

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
5149.49	51.23	49.7	1.53	54	-2.77	182	163	Average
5149.49	62.19	60.66	1.53	74	-11.81	182	163	Peak
5180	99.76	98.23	1.53			182	163	Average
5180	106.28	104.75	1.53			182	163	Peak
*10360	63.69	66.53	-2.84	68.2	-4.51	200	281	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**
5149.8	50.41	48.88	1.53	54	-3.59	211	116	Average
5149.8	58.31	56.78	1.53	74	-15.69	211	116	Peak
5180	96.71	95.18	1.53			211	116	Average
5180	103.03	101.5	1.53			211	116	Peak
*10360	61.55	64.39	-2.84	68.2	-6.65	215	198	Peak

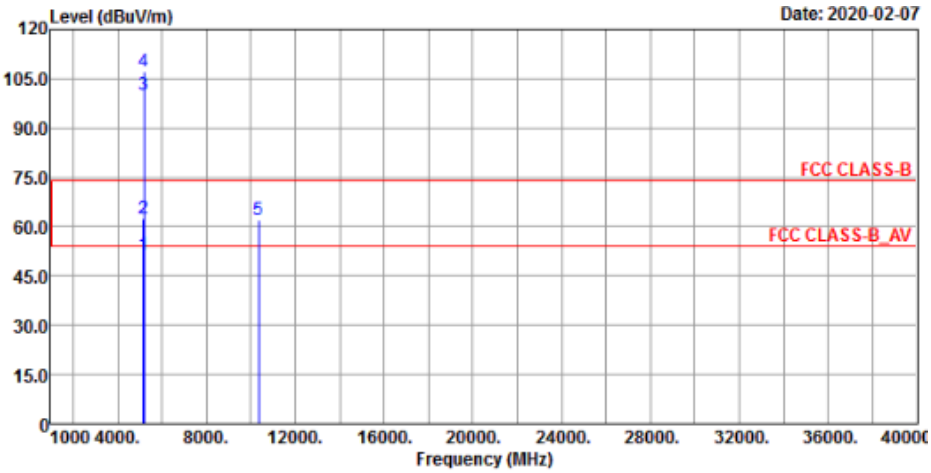
1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 5180 MHz: Fundamental Frequency

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

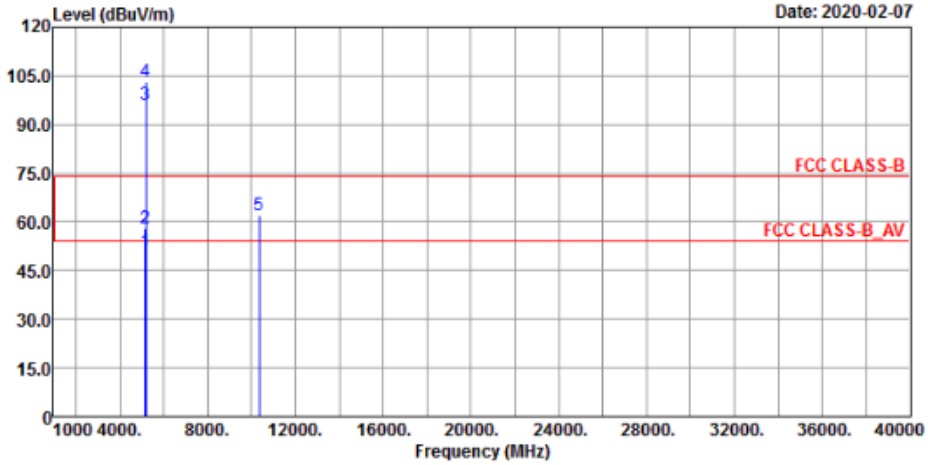
802.11a + DCS 1900

EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
5149.33	51.33	49.8	1.53	54	-2.67	164	197	Average
5149.33	62.33	60.8	1.53	74	-11.67	164	197	Peak
5180	99.89	98.36	1.53			164	197	Average
5180	106.98	105.45	1.53			164	197	Peak
*10360	62.17	65.01	-2.84	68.2	-6.03	203	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**
5149.5	50.92	49.39	1.53	54	-3.08	206	108	Average
5149.5	58.13	56.6	1.53	74	-15.87	206	108	Peak
5180	96.25	94.72	1.53			206	108	Average
5180	103.19	101.66	1.53			206	108	Peak
*10360	61.88	64.72	-2.84	68.2	-6.32	222	182	Peak

Remarks:

1. Emission Level = Read Level + Factor

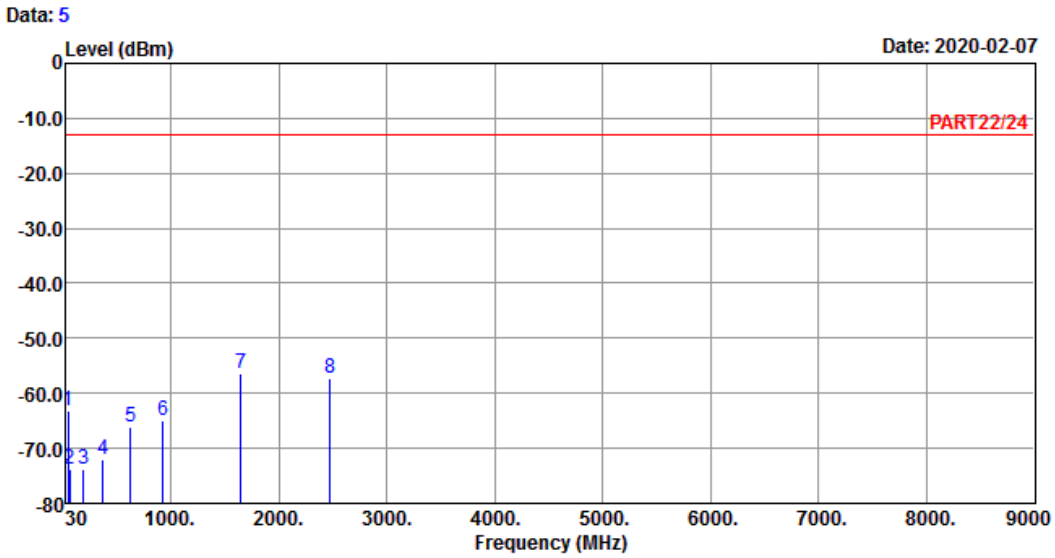
   Margin value = Emission level – Limit value

2. 5180 MHz: Fundamental Frequency

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

GSM850 + 802.11a

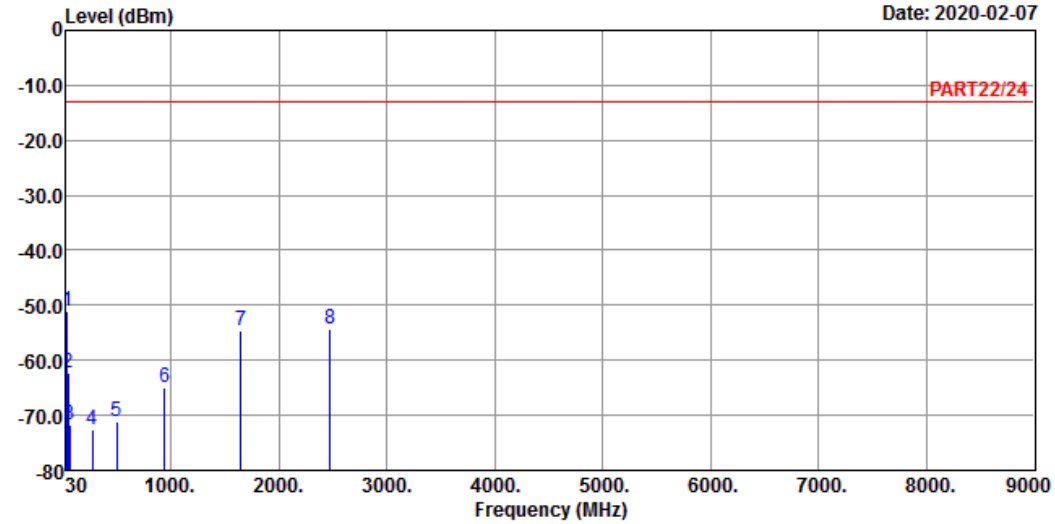
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : 11A_TX_CH36+GSM 850 Link_L-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	44.55	-63.24	-61.25	-13.00	-1.99	-50.24	Peak
2	62.01	-73.92	-66.11	-13.00	-7.81	-60.92	Peak
3	188.11	-73.81	-66.66	-13.00	-7.15	-60.81	Peak
4	367.56	-71.95	-65.81	-13.00	-6.14	-58.95	Peak
5	625.58	-66.21	-65.39	-13.00	-0.82	-53.21	Peak
6	926.28	-65.09	-66.31	-13.00	1.22	-52.09	Peak
7 pp	1648.40	-56.28	-42.54	-13.00	-13.74	-43.28	Peak
8	2472.60	-57.38	-47.36	-13.00	-10.02	-44.38	Peak

Data: 6

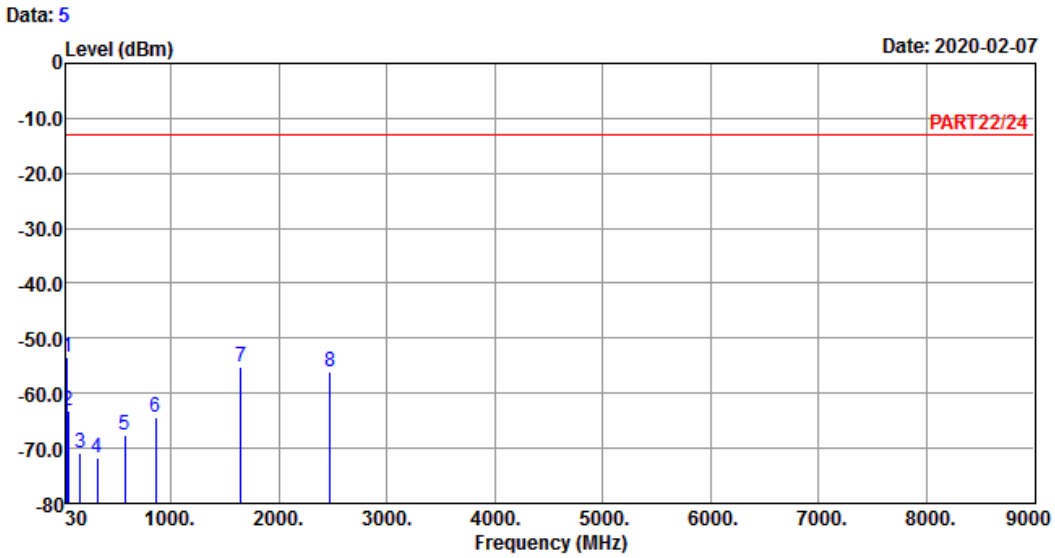


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : 11A_TX_CH36+GSM 850 Link_L-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	37.76	-50.95	-50.51	-13.00	-0.44	-37.95	Peak
2	45.52	-62.36	-59.86	-13.00	-2.50	-49.36	Peak
3	61.04	-71.72	-63.98	-13.00	-7.74	-58.72	Peak
4	271.53	-72.61	-66.18	-13.00	-6.43	-59.61	Peak
5	496.57	-71.05	-66.37	-13.00	-4.68	-58.05	Peak
6	937.92	-64.83	-66.34	-13.00	1.51	-51.83	Peak
7	1648.40	-54.66	-40.92	-13.00	-13.74	-41.66	Peak
8	2472.60	-54.34	-44.32	-13.00	-10.02	-41.34	Peak

GSM850 + 802.11b

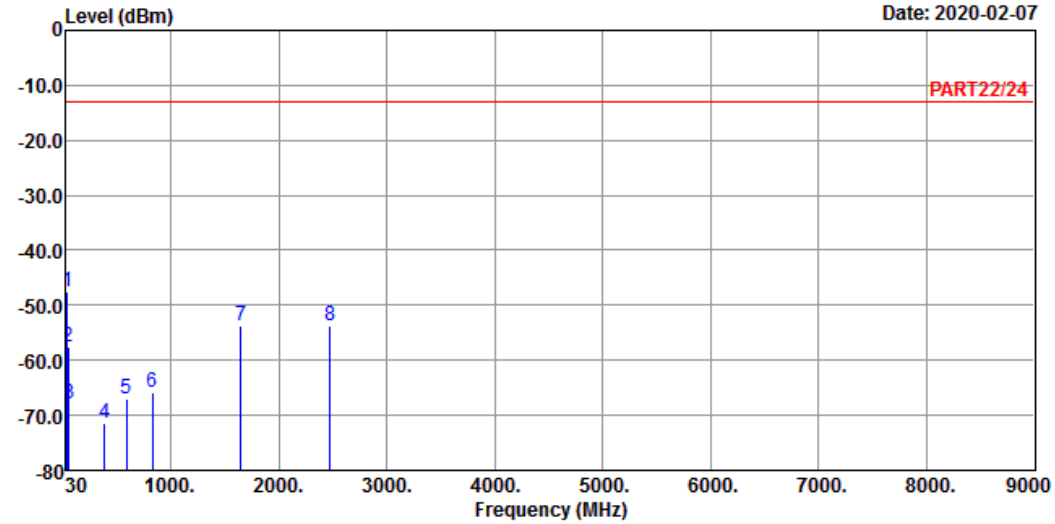
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : 11B_TX_CH11+GSM 850 Link_L-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	38.73	-53.51	-53.61	-13.00	0.10	-40.51	Peak
2	44.55	-63.24	-61.25	-13.00	-1.99	-50.24	Peak
3	159.01	-70.85	-65.73	-13.00	-5.12	-57.85	Peak
4	315.18	-71.85	-65.07	-13.00	-6.78	-58.85	Peak
5	575.14	-67.73	-65.93	-13.00	-1.80	-54.73	Peak
6	858.38	-64.41	-64.75	-13.00	0.34	-51.41	Peak
7	1648.40	-55.33	-41.59	-13.00	-13.74	-42.33	Peak
8	2472.60	-56.22	-46.20	-13.00	-10.02	-43.22	Peak

Data: 6

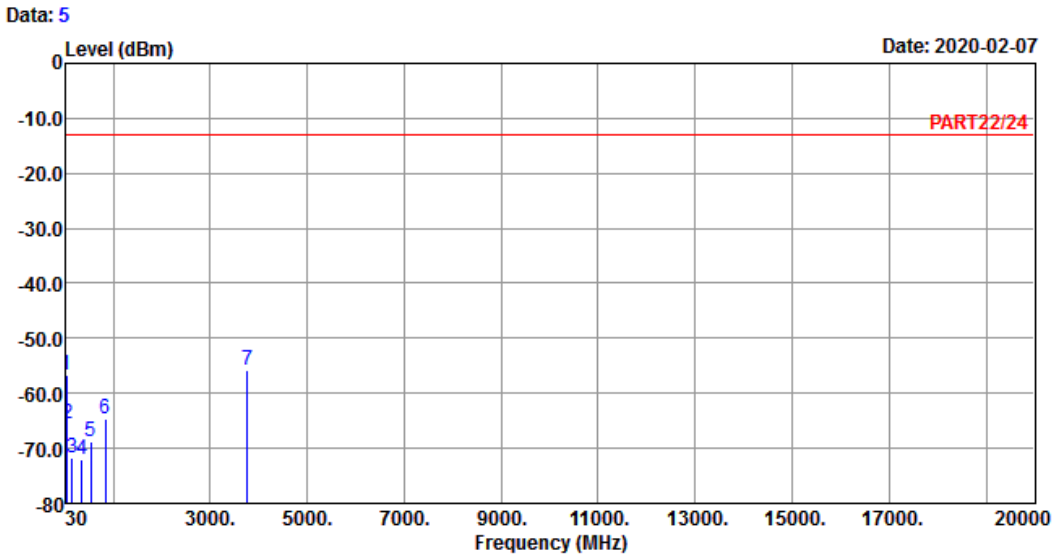


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : 11B_TX_CH11+GSM 850 Link_L-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	36.79	-47.62	-46.63	-13.00	-0.99	-34.62	Peak
2	44.55	-57.51	-55.52	-13.00	-1.99	-44.51	Peak
3	55.22	-67.82	-61.48	-13.00	-6.34	-54.82	Peak
4	386.96	-71.55	-65.53	-13.00	-6.02	-58.55	Peak
5	588.72	-67.00	-65.76	-13.00	-1.24	-54.00	Peak
6	825.40	-65.94	-66.45	-13.00	0.51	-52.94	Peak
7	1648.40	-53.75	-40.01	-13.00	-13.74	-40.75	Peak
8	2472.60	-53.68	-43.66	-13.00	-10.02	-40.68	Peak

DCS 1900 + 802.11a

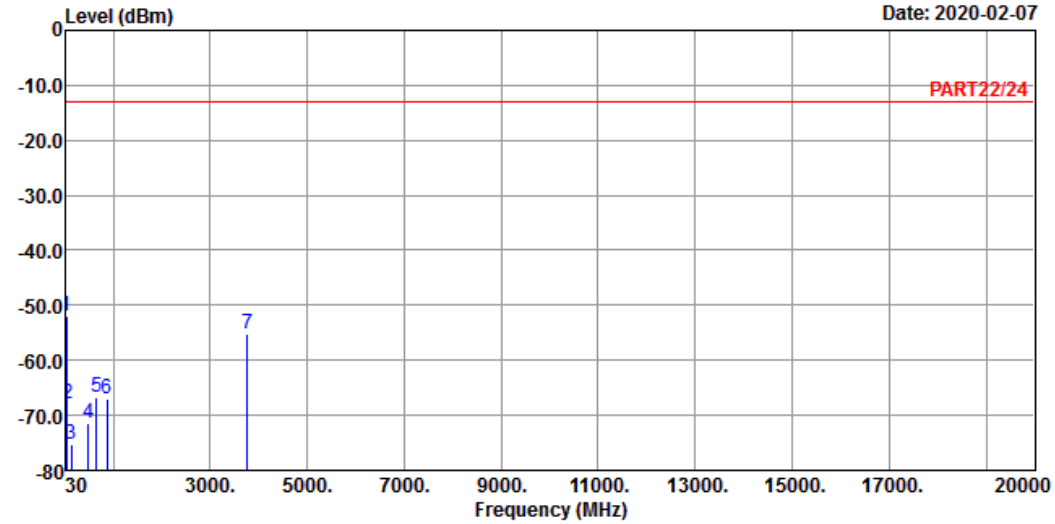
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : 11A_TX_CH36+PCS 1900 Link_M-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	36.79	-56.72	-55.73	-13.00	-0.99	-43.72	Peak
2	45.52	-65.41	-62.91	-13.00	-2.50	-52.41	Peak
3	158.04	-71.62	-66.23	-13.00	-5.39	-58.62	Peak
4	353.98	-71.89	-65.67	-13.00	-6.22	-58.89	Peak
5	538.28	-68.71	-65.45	-13.00	-3.26	-55.71	Peak
6	837.04	-64.71	-65.11	-13.00	0.40	-51.71	Peak
7 pp	3760.00	-55.84	-49.19	-13.00	-6.65	-42.84	Peak

Data: 6

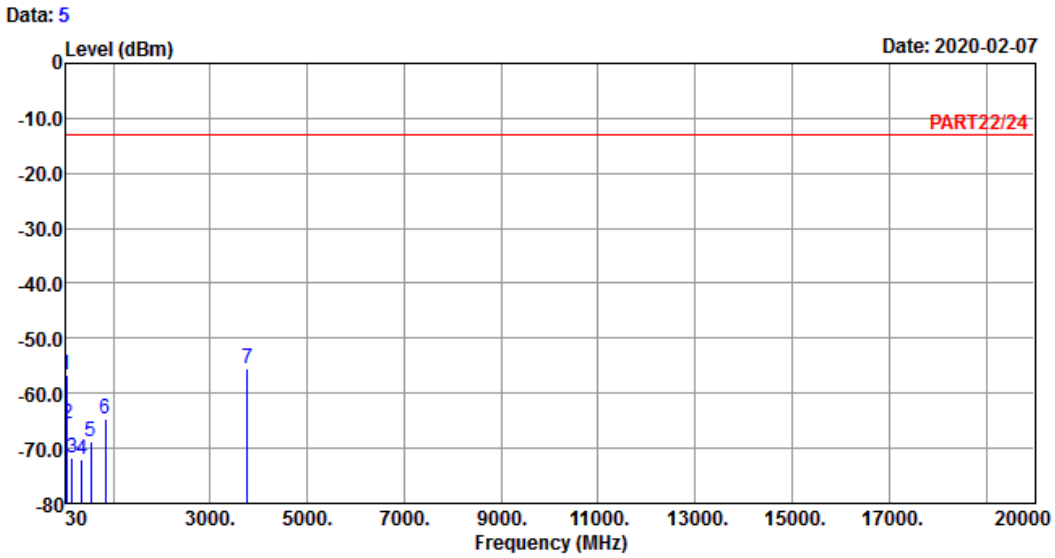


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : 11A_TX_CH36+PCS 1900 Link_M-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	34.85	-52.08	-50.01	-13.00	-2.07	-39.08	Peak
2	46.49	-67.79	-64.79	-13.00	-3.00	-54.79	Peak
3	141.55	-75.33	-66.87	-13.00	-8.46	-62.33	Peak
4	493.66	-71.30	-66.56	-13.00	-4.74	-58.30	Peak
5	648.86	-66.80	-65.92	-13.00	-0.88	-53.80	Peak
6	867.11	-66.88	-67.27	-13.00	0.39	-53.88	Peak
7	3760.00	-55.19	-48.54	-13.00	-6.65	-42.19	Peak

DCS 1900 + 802.11b

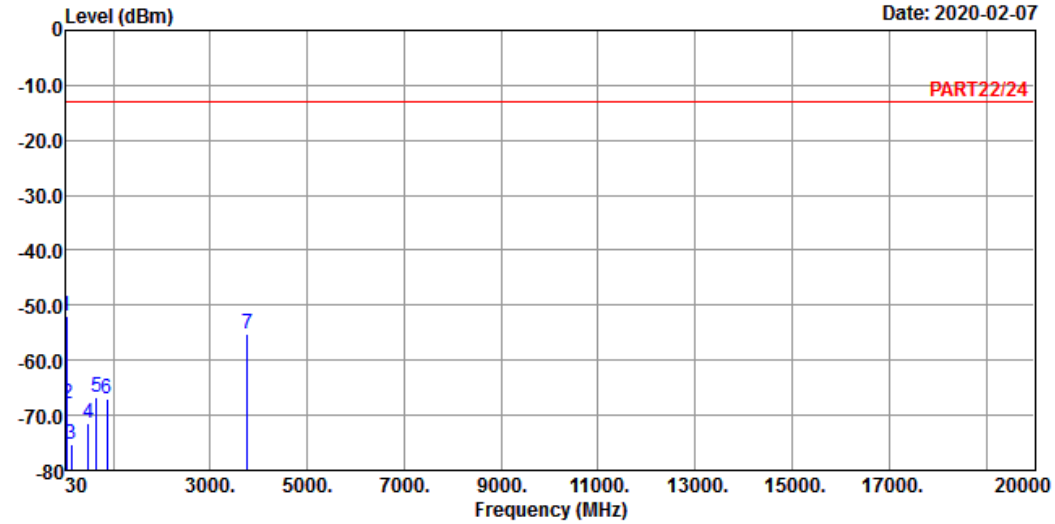
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : 11B_TX_CH11+PCS 1900 Link_M-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	36.79	-56.72	-55.73	-13.00	-0.99	-43.72	Peak
2	45.52	-65.41	-62.91	-13.00	-2.50	-52.41	Peak
3	158.04	-71.62	-66.23	-13.00	-5.39	-58.62	Peak
4	353.98	-71.89	-65.67	-13.00	-6.22	-58.89	Peak
5	538.28	-68.71	-65.45	-13.00	-3.26	-55.71	Peak
6	837.04	-64.71	-65.11	-13.00	0.40	-51.71	Peak
7 pp	3760.00	-55.63	-48.98	-13.00	-6.65	-42.63	Peak

Data: 6

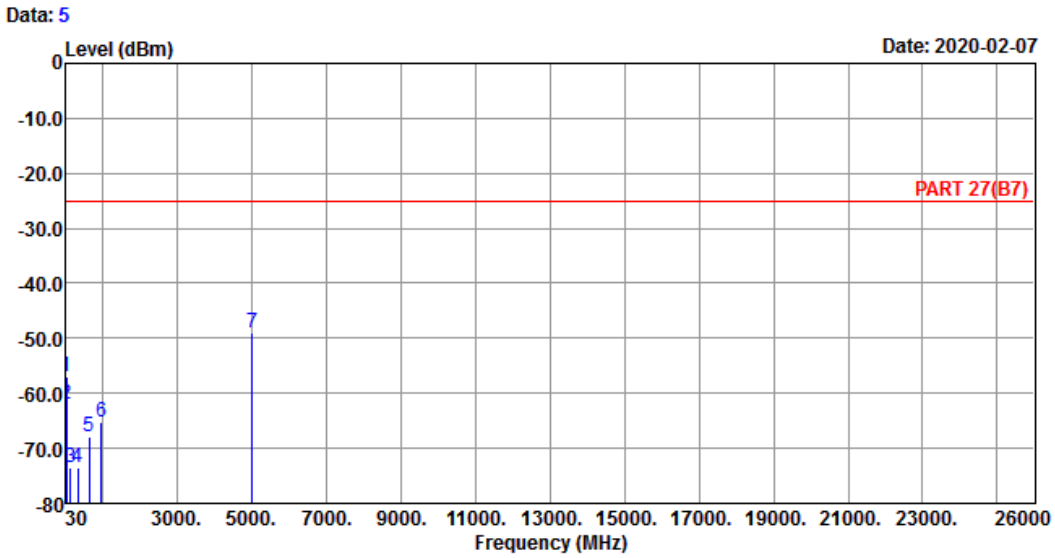


Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : 11B_TX_CH11+PCS 1900 Link_M-CH
Tested by: tim-chen

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	34.85	-52.08	-50.01	-13.00	-2.07	-39.08	Peak
2	46.49	-67.79	-64.79	-13.00	-3.00	-54.79	Peak
3	141.55	-75.33	-66.87	-13.00	-8.46	-62.33	Peak
4	493.66	-71.30	-66.56	-13.00	-4.74	-58.30	Peak
5	648.86	-66.80	-65.92	-13.00	-0.88	-53.80	Peak
6	867.11	-66.88	-67.27	-13.00	0.39	-53.88	Peak
7	3760.00	-55.24	-48.59	-13.00	-6.65	-42.24	Peak

LTE Band 7 + 802.11a (BW: 20MHz)

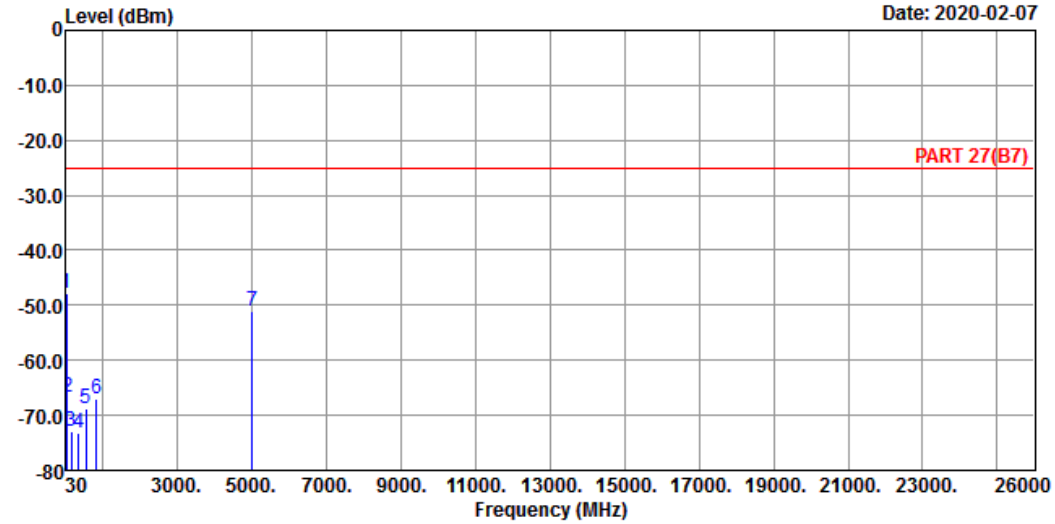
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : 11A_TX_CH36+LTE Band 7 QPSK 20M L-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	35.82	-56.97	-55.44	-13.00	-1.53	-43.97	Peak
2	44.55	-62.10	-60.11	-13.00	-1.99	-49.10	Peak
3	152.22	-73.65	-66.62	-13.00	-7.03	-60.65	Peak
4	352.04	-73.50	-67.27	-13.00	-6.23	-60.50	Peak
5	644.01	-67.98	-67.11	-13.00	-0.87	-54.98	Peak
6	965.08	-65.13	-67.48	-13.00	2.35	-52.13	Peak
7 pp	5020.00	-48.91	-46.59	-25.00	-2.32	-23.91	Peak

Data: 6

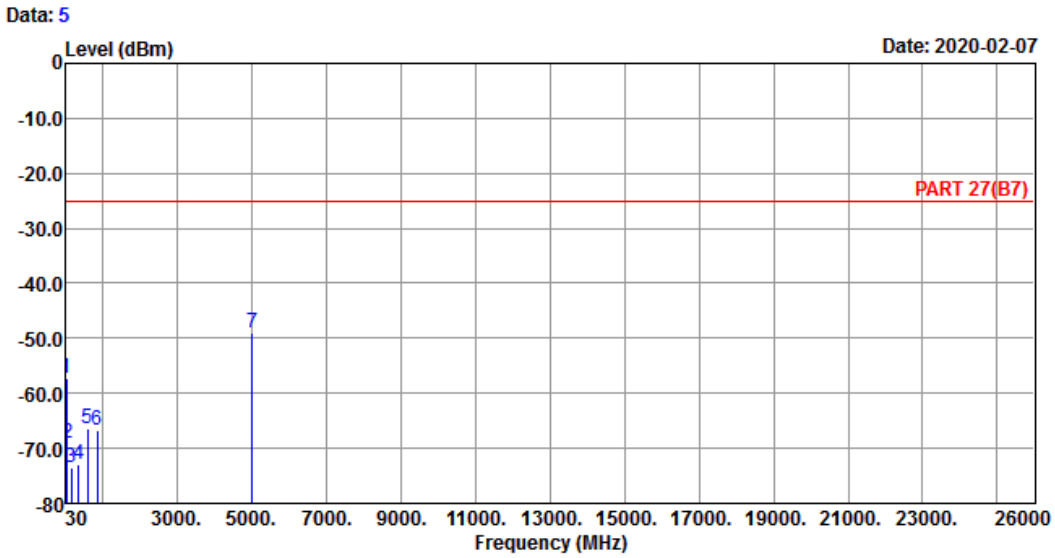


Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : 11A_TX_CH36+LTE Band 7 QPSK 20M L-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	35.82	-47.77	-46.24	-13.00	-1.53	-34.77	Peak
2	52.31	-66.74	-61.20	-13.00	-5.54	-53.74	Peak
3	160.95	-73.01	-68.10	-13.00	-4.91	-60.01	Peak
4	367.56	-73.07	-66.93	-13.00	-6.14	-60.07	Peak
5	564.47	-68.71	-66.47	-13.00	-2.24	-55.71	Peak
6	848.68	-66.92	-67.22	-13.00	0.30	-53.92	Peak
7 pp	5020.00	-51.12	-48.80	-25.00	-2.32	-26.12	Peak

LTE Band 7 + 802.11b (BW: 20MHz)

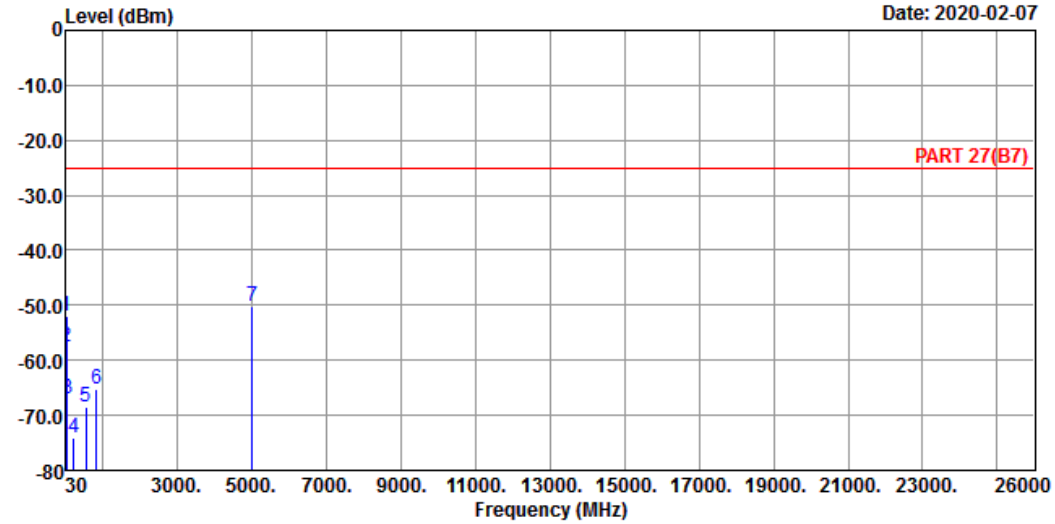
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition: PART 27(B7) HORIZONTAL
Remak : 11B_TX_CH11+LTE Band 7 QPSK_20M L-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	39.70	-57.39	-58.03	-13.00	0.64	-44.39	Peak
2	55.22	-68.94	-62.60	-13.00	-6.34	-55.94	Peak
3	171.62	-73.46	-67.59	-13.00	-5.87	-60.46	Peak
4	362.71	-72.95	-66.79	-13.00	-6.16	-59.95	Peak
5	594.54	-66.47	-65.48	-13.00	-0.99	-53.47	Peak
6	853.53	-66.80	-67.11	-13.00	0.31	-53.80	Peak
7 pp	5020.00	-48.88	-46.56	-25.00	-2.32	-23.88	Peak

Data: 6



Site : 966 Chamber 5
Condition: PART 27(B7) VERTICAL
Remak : 11B_TX_CH11+LTE Band 7 QPSK 20M L-CH
Tested by: Getaz Yang

	Freq	Level	Read Level	Limit Line	Factor	Over Limit	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	34.85	-51.86	-49.79	-13.00	-2.07	-38.86	Peak
2	44.55	-57.57	-55.58	-13.00	-1.99	-44.57	Peak
3	55.22	-67.02	-60.68	-13.00	-6.34	-54.02	Peak
4	225.94	-74.15	-67.18	-13.00	-6.97	-61.15	Peak
5	560.59	-68.41	-66.00	-13.00	-2.41	-55.41	Peak
6	851.59	-65.21	-65.51	-13.00	0.30	-52.21	Peak
7 pp	5020.00	-50.16	-47.84	-25.00	-2.32	-25.16	Peak

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:

802.11b + GSM850

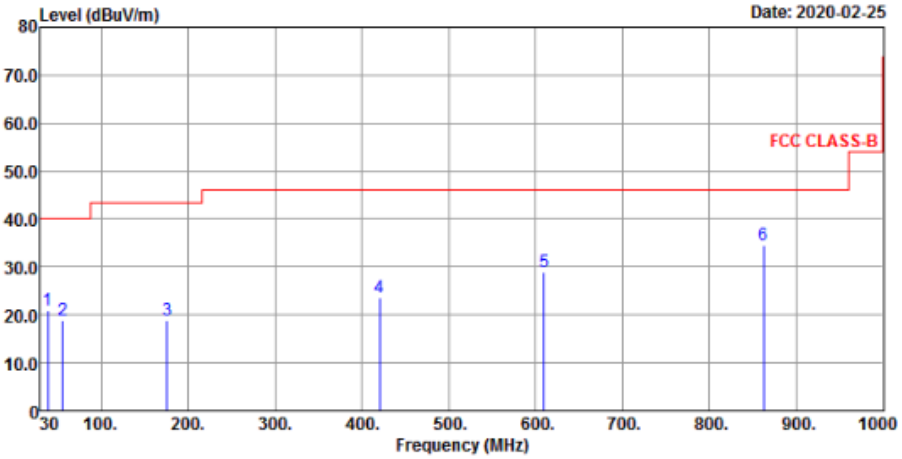
EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
38.73	20.99	33.36	-12.37	40	-19.01	116	15	Peak
55.22	19	30.93	-11.93	40	-21	101	216	Peak
175.5	18.86	31.7	-12.84	43.5	-24.64	128	243	Peak
419.94	23.6	31.12	-7.52	46	-22.4	124	8	Peak
610.06	28.98	31.42	-2.44	46	-17.02	127	76	Peak
862.26	34.65	32.05	2.6	46	-11.35	110	180	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**
37.76	28.26	40.53	-12.27	40	-11.74	109	81	Peak
52.31	20.31	32.13	-11.82	40	-19.69	128	13	Peak
186.17	16.93	31.05	-14.12	43.5	-26.57	119	221	Peak
436.43	24.87	31.67	-6.8	46	-21.13	119	29	Peak
677.96	30.21	31.31	-1.1	46	-15.79	126	20	Peak
923.37	34.65	31.32	3.33	46	-11.35	127	285	Peak

Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit

Horizontal



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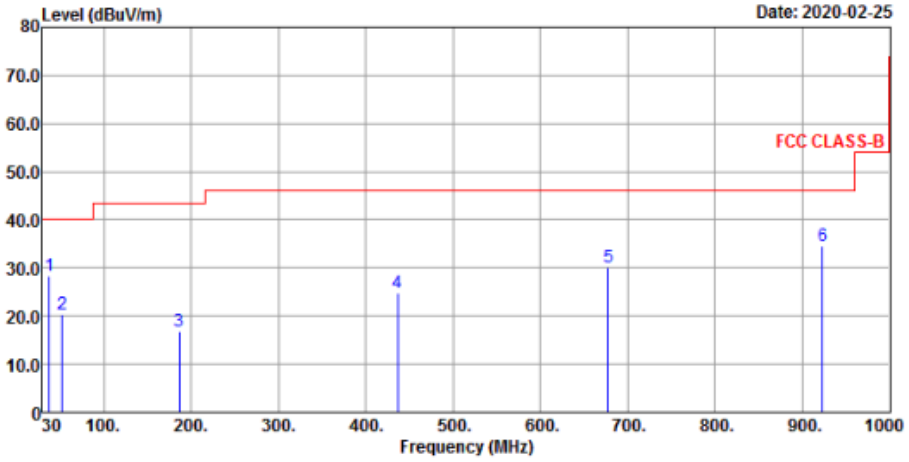


802.11b + LTE Band 7

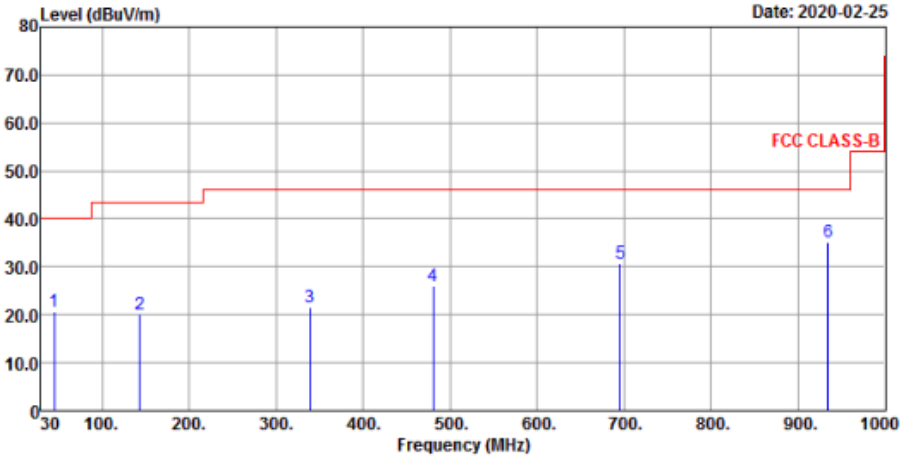
EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
44.55	20.78	32.65	-11.87	40	-19.22	129	36	Peak
143.49	19.94	31.85	-11.91	43.5	-23.56	117	181	Peak
339.43	21.52	31.48	-9.96	46	-24.48	129	189	Peak
480.08	26.06	31.87	-5.81	46	-19.94	123	8	Peak
695.42	30.76	31.49	-0.73	46	-15.24	117	66	Peak
935.01	35.1	31.67	3.43	46	-10.9	123	56	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**
35.82	31.47	44.22	-12.75	40	-8.53	125	168	Peak
101.78	18.22	33.98	-15.76	43.5	-25.28	123	87	Peak
246.31	17.91	31.03	-13.12	46	-28.09	110	73	Peak
413.15	23.6	31.53	-7.93	46	-22.4	108	83	Peak
634.31	29.52	31.26	-1.74	46	-16.48	133	1	Peak
831.22	33.86	31.62	2.24	46	-12.14	112	119	Peak

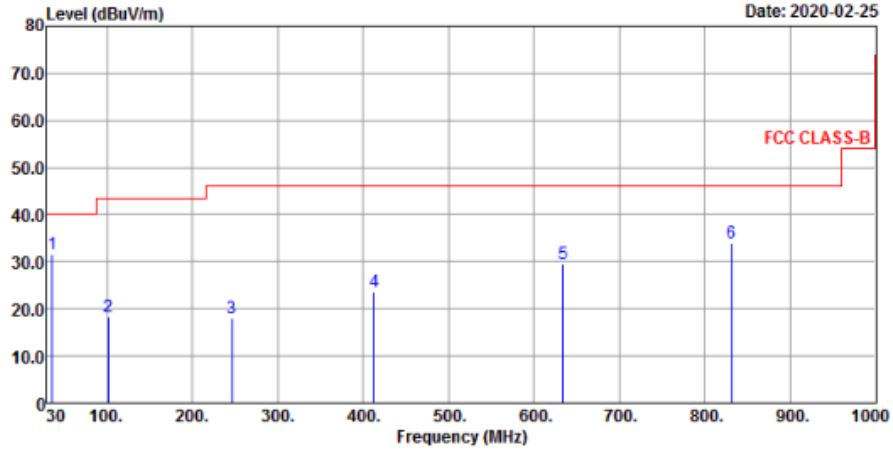
Remarks:

3. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
4. The emission levels of other frequencies were very low against the limit

Horizontal



Vertical



802.11b + DCS 1900

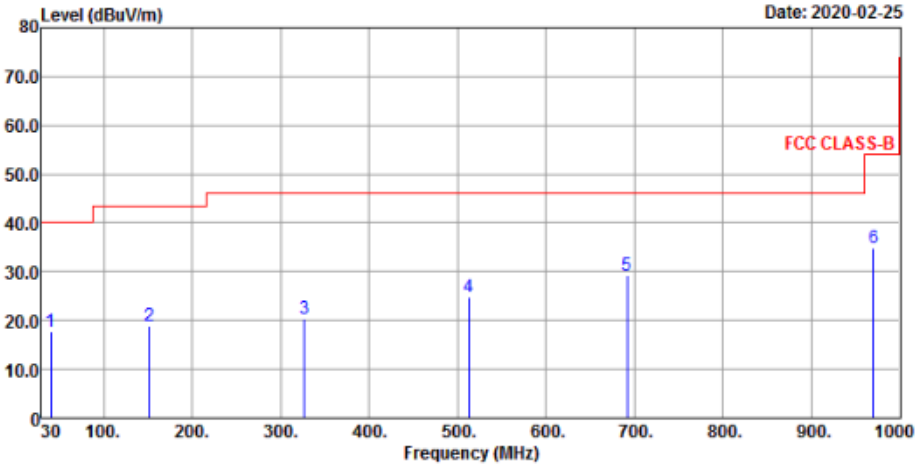
EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
39.7	17.65	29.9	-12.25	40	-22.35	135	114	Peak
151.25	18.81	30.52	-11.71	43.5	-24.69	129	187	Peak
326.82	20.26	30.39	-10.13	46	-25.74	114	309	Peak
513.06	24.83	30.05	-5.22	46	-21.17	124	92	Peak
691.54	29.17	30.02	-0.85	46	-16.83	130	341	Peak
970.9	34.85	31.04	3.81	54	-19.15	140	29	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**
38.73	27.79	40.16	-12.37	40	-12.21	126	136	Peak
148.34	18.34	30.13	-11.79	43.5	-25.16	101	205	Peak
366.59	21.01	30.17	-9.16	46	-24.99	105	15	Peak
533.43	25.51	30.41	-4.9	46	-20.49	121	181	Peak
657.59	28.8	30.31	-1.51	46	-17.2	119	4	Peak
942.77	33.68	30.11	3.57	46	-12.32	122	355	Peak

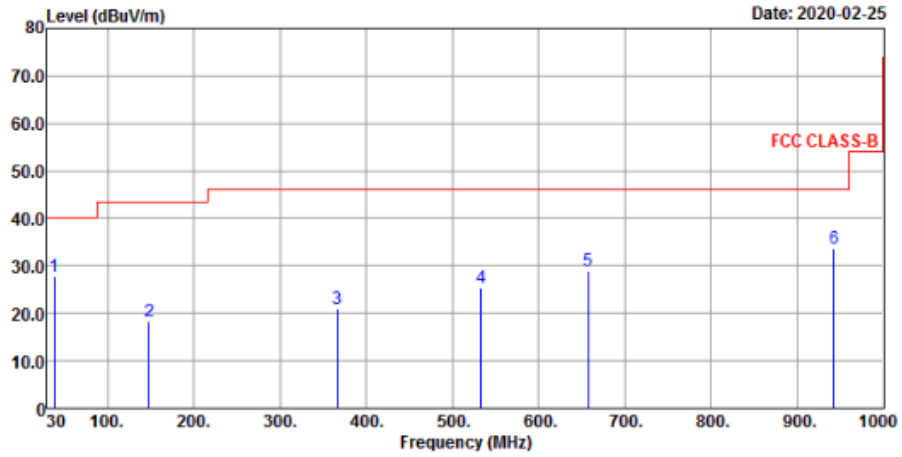
Remarks:

5. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
6. The emission levels of other frequencies were very low against the limit

Horizontal



Vertical



802.11a + GSM850

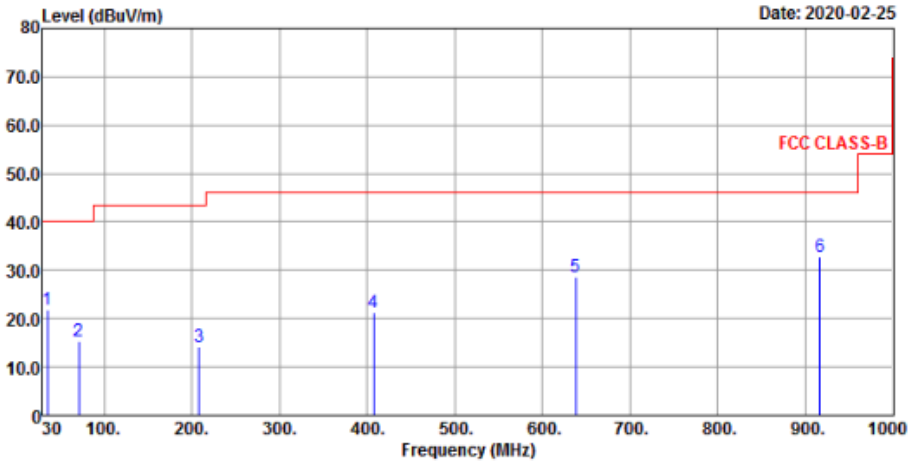
EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
34.85	21.86	34.46	-12.6	40	-18.14	100	303	Peak
70.74	15.37	29.37	-14	40	-24.63	123	222	Peak
208.48	14.05	29.14	-15.09	43.5	-29.45	121	35	Peak
407.33	21.19	29.36	-8.17	46	-24.81	114	208	Peak
638.19	28.53	30.24	-1.71	46	-17.47	127	273	Peak
916.58	32.78	29.52	3.26	46	-13.22	117	170	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**
37.76	27.5	39.77	-12.27	40	-12.5	102	92	Peak
53.28	18.9	30.75	-11.85	40	-21.1	100	2	Peak
169.68	17.28	29.63	-12.35	43.5	-26.22	117	335	Peak
464.56	23.59	29.74	-6.15	46	-22.41	136	247	Peak
670.2	28.61	29.91	-1.3	46	-17.39	126	155	Peak
887.48	33.27	30.51	2.76	46	-12.73	130	69	Peak

Remarks:

7. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
8. The emission levels of other frequencies were very low against the limit

Horizontal



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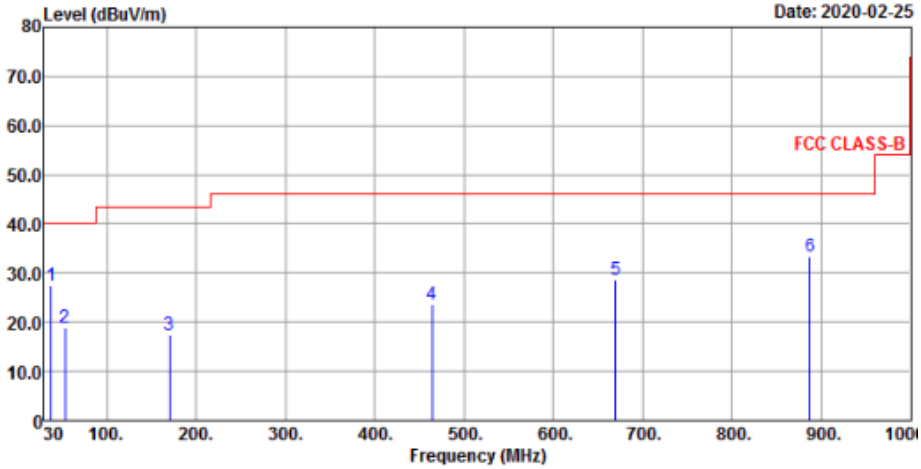


802.11a + LTE Band 7

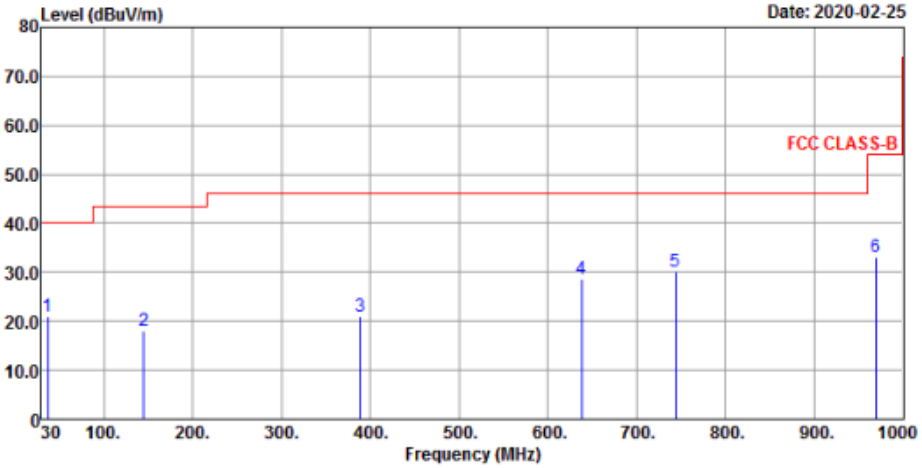
EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Getaz Yang

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**
36.79	20.94	33.48	-12.54	40	-19.06	109	352	Peak
144.46	17.97	29.81	-11.84	43.5	-25.53	110	103	Peak
388.9	21.02	29.62	-8.6	46	-24.98	134	235	Peak
638.19	28.53	30.24	-1.71	46	-17.47	136	332	Peak
743.92	30.07	29.14	0.93	46	-15.93	129	58	Peak
969.93	33.17	29.36	3.81	54	-20.83	102	213	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**
34.85	29.82	42.42	-12.6	40	-10.18	119	262	Peak
61.04	17.88	30.38	-12.5	40	-22.12	108	193	Peak
255.04	16.48	29.37	-12.89	46	-29.52	136	211	Peak
559.62	25.39	29.55	-4.16	46	-20.61	102	135	Peak
739.07	30.62	29.79	0.83	46	-15.38	113	268	Peak
903.97	33	29.93	3.07	46	-13	129	232	Peak

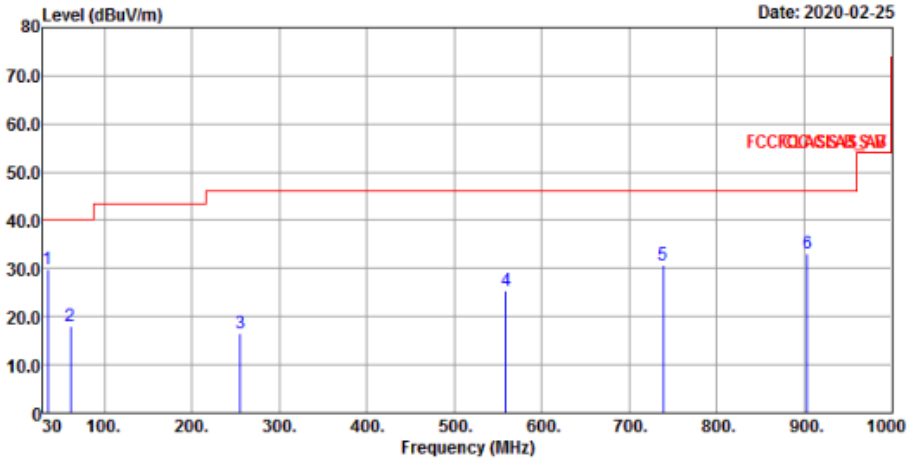
Remarks:

9. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
10. The emission levels of other frequencies were very low against the limit

Horizontal



Vertical



802.11a + DCS 1900

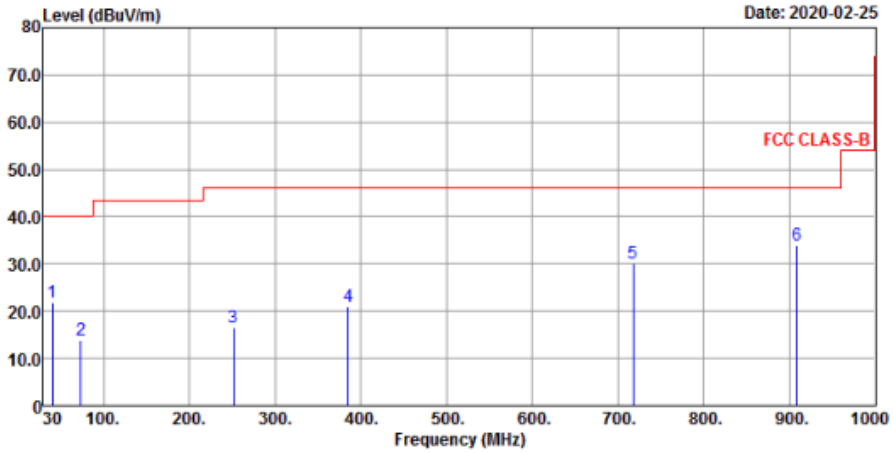
EUT Test Condition		Measurement Detail	
Channel	Channel 36	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Tim Chen

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**
39.7	21.87	34.12	-12.25	40	-18.13	112	12	Peak
73.65	14.01	28.84	-14.83	40	-25.99	112	119	Peak
251.16	16.49	29.47	-12.98	46	-29.51	140	44	Peak
385.02	20.88	29.52	-8.64	46	-25.12	117	14	Peak
717.73	30.21	30.5	-0.29	46	-15.79	127	119	Peak
908.82	34.03	30.89	3.14	46	-11.97	121	161	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**
37.76	27.5	39.77	-12.27	40	-12.5	111	64	Peak
114.39	18.01	32.33	-14.32	43.5	-25.49	104	53	Peak
256.01	16.84	29.69	-12.85	46	-29.16	107	117	Peak
529.55	24.02	28.99	-4.97	46	-21.98	132	306	Peak
740.04	30.55	29.69	0.86	46	-15.45	139	198	Peak
974.78	33.9	30.1	3.8	54	-20.1	120	198	Peak

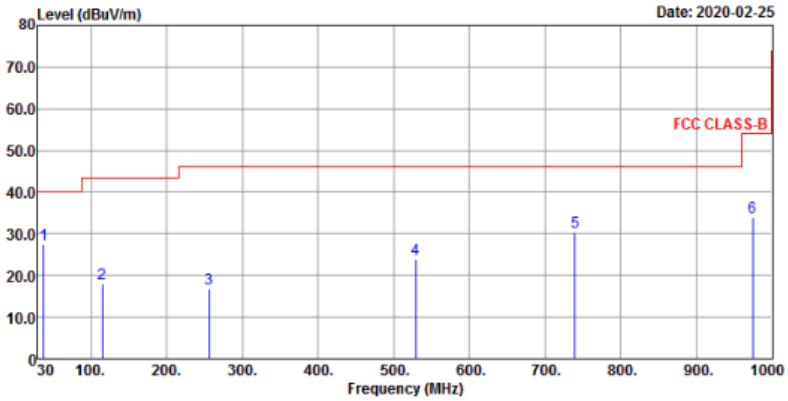
Remarks:

11. Emission Level = Read Level + Factor
    Margin value = Emission level – Limit value
12. The emission levels of other frequencies were very low against the limit

Horizontal



Vertical



5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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