FCC Test Report

(Co-Located)

Report No.:	RF191231C03-6
FCC ID:	UK7-C1N
Test Model:	C1NF1
Received Date:	Dec. 31, 2019
Test Date:	Jul. 23, 2020
Issued Date:	Jul. 23, 2020
Applicant:	Fossil Group, Inc.
Address:	901 S. Central Expy, Richardson, Texas, United States, 75080
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF191231C03-6	Original Release	Jul. 23, 2020

1 Certificate of Conformity

Product:	Smart Watch
Brand:	FOSSIL
Test Model:	C1NF1
Sample Status:	Identical Prototype
Applicant:	Fossil Group, Inc.
Test Date:	Jul. 23, 2020
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) FCC Part 24, Subpart E FCC Part 27, Subpart C, H, F, L 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 : Shelly Hsueh , **Date:** Jul. 23, 2020

Shelly Hsueh / Specialist

Approved by : , **Date:** Jul. 23, 2020

Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247) Applied Standard: FCC Part 24 & Part 2 Applied Standard: FCC Part 27 & Part 2 (LTE 4)			
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 -3.76 dB at 2484.35 MHz.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -40.65 dB at 3800 MHz.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -30.02 dB at 5160 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	Smart Watch			
Brand	FOSSIL			
Test Model	C1NF1			
Status of EUT	Identical Prototype			
Power Supply Rating	3.85 Vdc (Li-ion battery)			
Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM		
	BT EDR	GFSK, π/4-DQPSK, 8DPSK		
	LTE	QPSK, 16QAM		
Operating Frequency	WLAN	2412 ~ 2472 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 MHz	1717.5 ~ 1747.5 MHz
			Channel Bandwidth: 20 MHz	1720.0 ~ 1745.0 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
		LTE Band 13	Channel Bandwidth: 5 MHz	779.5 ~ 784.5 MHz
			Channel Bandwidth: 10 MHz	782.0 MHz
	BT EDR	2402 ~ 2480 MHz		
Number of Channel	**2.4 GHz:** 13 for 802.11b, 802.11g, 802.11n (HT20) **BT EDR:** 79			
Antenna Type	**2.4 GHz:** Loop antenna with -5.15 dBi gain **BT EDR:** Loop antenna with -5.15 dBi gain **LTE Band 2:** Loop Antenna with -7.1 dBi gain **LTE Band 4:** Loop Antenna with -6.87 dBi gain **LTE Band 12:** Loop Antenna with -11.71 dBi gain **LTE Band 13:** Loop Antenna with -10.57 dBi gain			
Antenna Connector	N/A			
Accessory Device	Refer to Note as below			
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
802.11n (HT20)	1TX

2. The module doesn’t support 10M-16QAM, 15M-16QAM, 20M-16QAM. 16QAM only supports up to 5M-25RB.
3. 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.
4. 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:

13 channels are provided for 802.11b, 802.11g and 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		

BT EDR:

79 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

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

Note: 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 + LTE Band 2 + BT	2402 ~ 2462、1860.0 ~ 1900.0 、2402 ~ 2480 MHz	1 to 13、18700 to 19100、0 to 78	12 + 19100 + 39	OFDM 、QPSK 、GFSK
	802.11b + LTE Band 4 + BT	2402 ~ 2462、1720.0 ~ 1745.0、2402 ~ 2480 MHz	1 to 13、20050 to 20300、0 to 78	12 + 20050 + 39	OFDM 、QPSK 、GFSK

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 + LTE Band 2 + BT	2402 ~ 2462、1860.0 ~ 1900.0 、2402 ~ 2480 MHz	1 to 13、18700 to 19100、0 to 78	12 + 19100 + 39	OFDM
-	802.11b + LTE Band 4 + BT	2402 ~ 2462、1720.0 ~ 1745.0、2402 ~ 2480 MHz	1 to 13、20050 to 20300、0 to 78	12 + 20050 + 39	OFDM

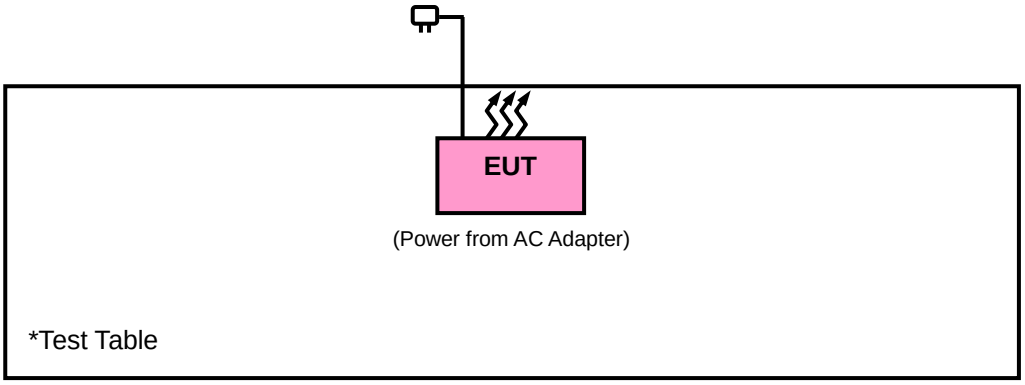
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	3.85Vdc	Karl Lee,
RE<1G	25 deg. C, 65 % RH	3.85Vdc	Karl Lee

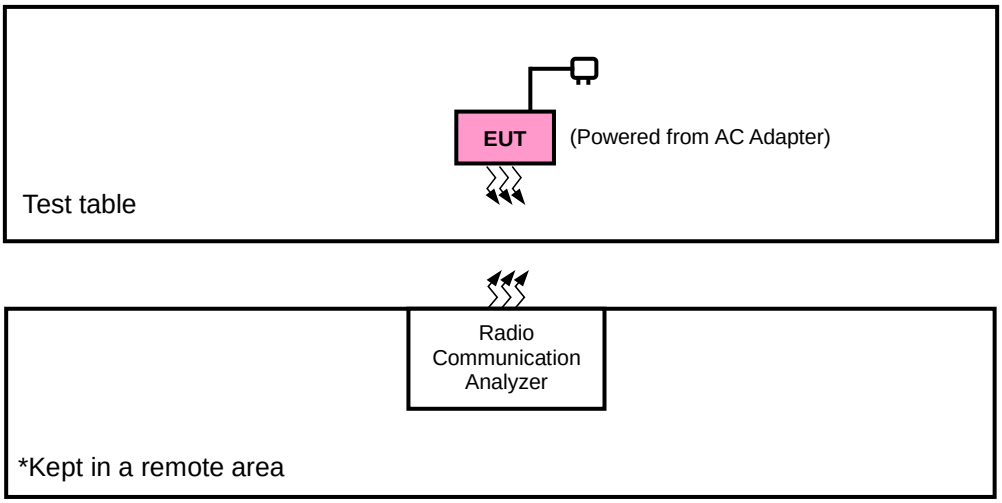
3.3 Description of Support Units

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:

Test Standard:
FCC Part 15, Subpart C (15.247)
\ANSI C63.10-2013
FCC 47 CFR Part 2
FCC 47 CFR Part 24
FCC 47 CFR Part 27
ANSI 63.26-2015

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

References Test Guidance:

KDB 558074 D01 Meas Guidance v05r02
KDB 558074 D01 15.247 Meas Guidance v05r02
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI/TIA/EIA-603-E 2016

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

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

For WLAN & BT

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 ROHDE & SCHWARZ (Above 1GHz)	ESR7	101471	Mar. 11, 2020	Mar. 10, 2021
Spectrum Analyzer Agilent	E4446A	MY51100039	Sep. 05, 2019	Sep. 04, 2020
BILOG Antenna SCHWARZBECK	VULB9168	9168-149	Nov. 07, 2019	Nov. 06, 2020
RF signal cable (with 5dB PAD) Times	LMR-400 (18M)	CABLE-CH2-01	Mar. 23, 2020	Mar. 22, 2021
HORN Antenna (with 4dB PAD) SCHWARZBECK	BBHA 9120 D	9120D-405	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier Agilent (Above 1GHz)	8449B	3008A01961	Sep. 05, 2019	Sep. 04, 2020
Software BV ADT	BV ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Controller BV ADT	SC100	SC93021702	NA	NA
BandPass Filter (2.4G) MICRO-TRONICS	BRM17690-01	003	Sep. 05, 2019	Sep. 04, 2020
BandPass Filter (5G) MICRO-TRONICS	BRM50716-01	G011	Sep. 05, 2019	Sep. 04, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-1000	170819	Oct. 08, 2019	Oct. 07, 2020
RF Coaxial Cable Rosnol	K1K50-UP0279-K1K50-3000	181129-1	Oct. 08, 2019	Oct. 07, 2020
RF Coaxial Cable JUNFLON+EMC	JUNFLON+EMC104-SM-SM-6000	Cable-CH2-02(MWX3221308G003+130710)	Jan. 18, 2020	Jan. 17, 2021
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 05, 2019	Sep. 04, 2020
HORN Antenna (with 3dB PAD) SCHWARZBECK	BBHA 9170	148	Nov. 24, 2019	Nov. 23, 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 2 (966 Chamber 1).

4.1.3 Test Procedures

For WLAN &BT

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.

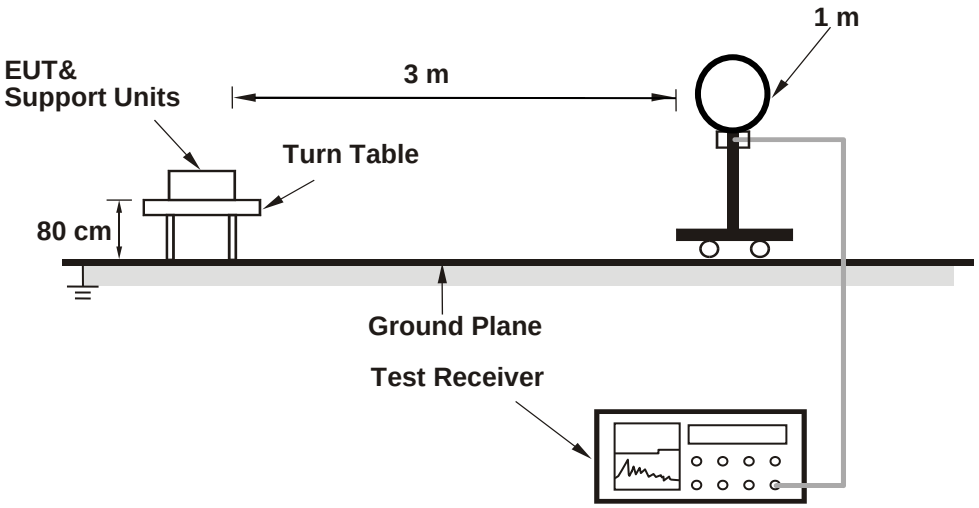
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.1.4 Deviation from Test Standard

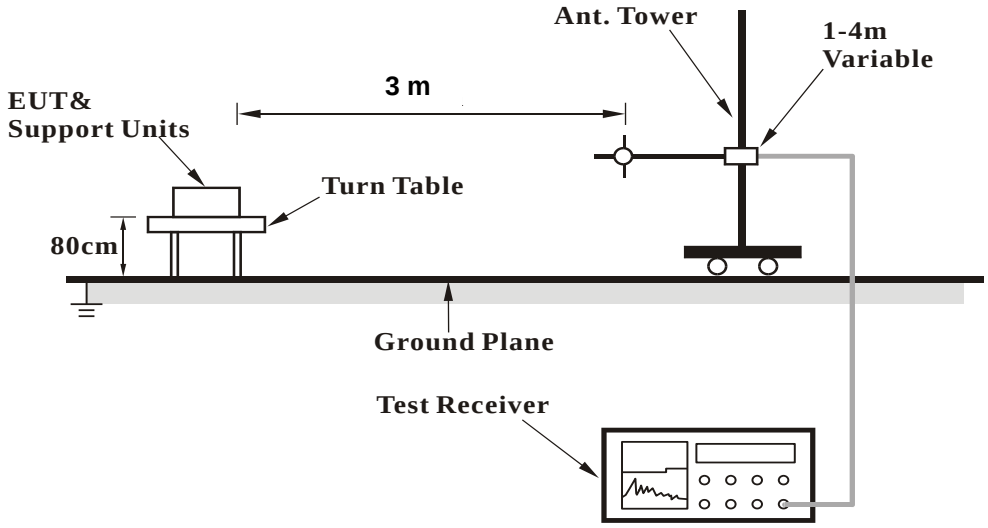
No deviation.

4.1.5 Test Set Up

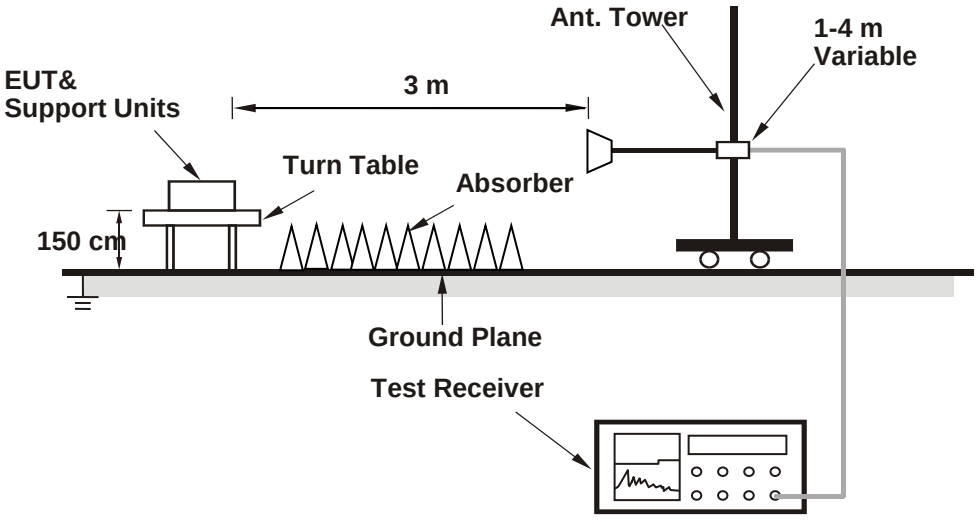
<Radiated Emission below 30 MHz>



<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.

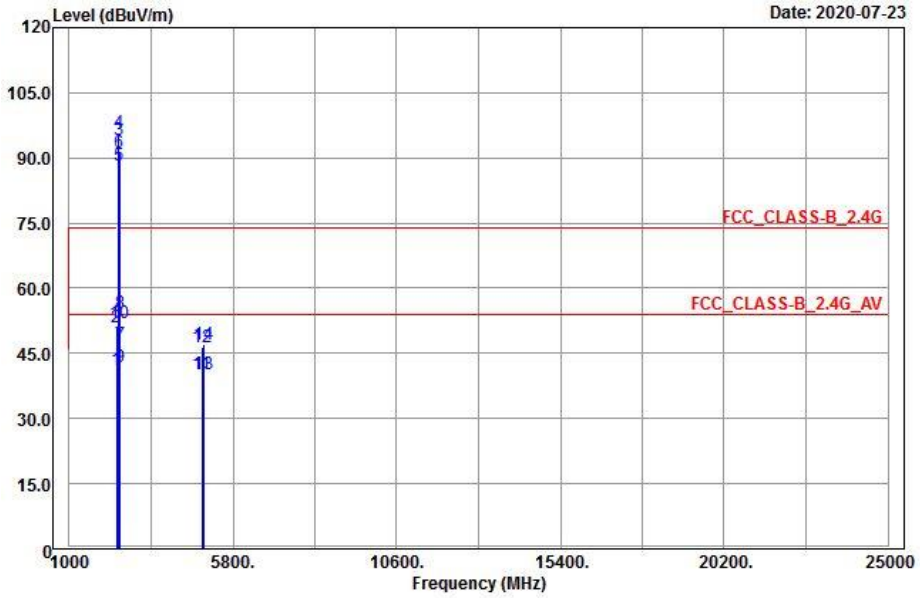
4.1.7 Test Results

Above 1 GHz Data：

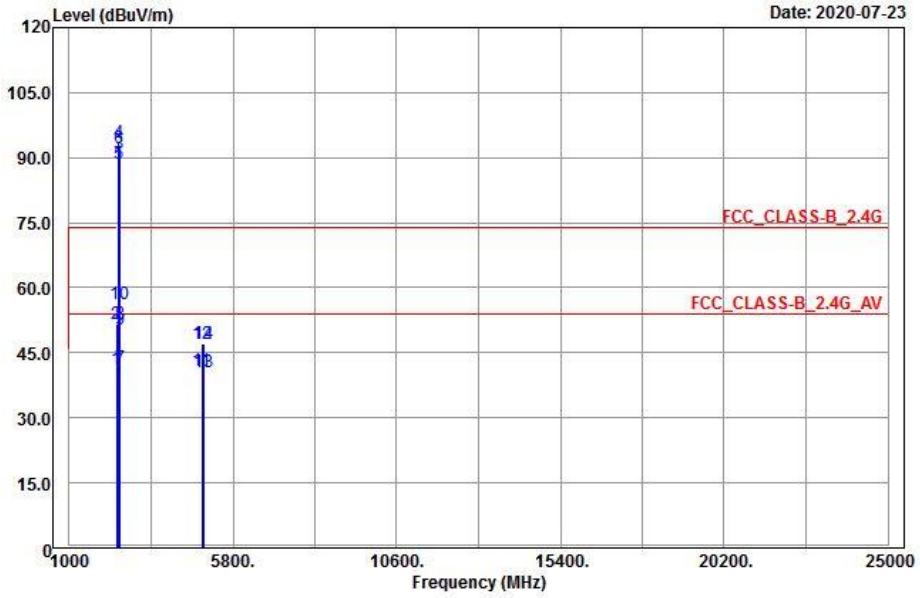
802.11b + LTE Band 2 + BT

EUT Test Condition		Measurement Detail	
Channel	Channel 12 + BT	**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**	Harry Hsueh

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**
2384.97	41.21	36.74	4.47	54	-12.79	179	359	Average
2384.97	51.01	46.54	4.47	74	-22.99	179	359	Peak
2441	94.31	89.73	4.58			179	359	Average
2441	95.94	91.36	4.58			179	359	Peak
2467	88.14	83.51	4.63			105	165	Average
2467	91.25	86.62	4.63			105	165	Peak
2484.1	47.24	42.58	4.66	54	-6.76	105	165	Average
2484.1	54.12	49.46	4.66	74	-19.88	105	165	Peak
2490.12	41.76	37.08	4.68	54	-12.24	179	359	Average
2490.12	52.1	47.42	4.68	74	-21.9	179	359	Peak
4882	40.29	30.85	9.44	54	-13.71	163	178	Average
4882	46.58	37.14	9.44	74	-27.42	163	178	Peak
4934	40.12	30.63	9.49	54	-13.88	135	165	Average
4934	47.12	37.63	9.49	74	-26.88	135	165	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**
2384.61	41.1	36.63	4.47	54	-12.9	219	360	Average
2384.61	51.74	47.27	4.47	74	-22.26	219	360	Peak
2441	90.87	86.29	4.58			219	360	Average
2441	93.49	88.91	4.58			219	360	Peak
2467	88.57	83.94	4.63			142	165	Average
2467	92.12	87.49	4.63			142	165	Peak
2484.12	41.6	36.94	4.66	54	-12.4	219	360	Average
2484.12	51.56	46.9	4.66	74	-22.44	219	360	Peak
2484.35	50.24	45.58	4.66	54	-3.76	105	133	Average
2484.35	56.21	51.55	4.66	74	-17.79	105	133	Peak
4882	41.03	31.59	9.44	54	-12.97	137	81	Average
4882	47.16	37.72	9.44	74	-26.84	137	81	Peak
4934	40.62	31.13	9.49	54	-13.38	166	135	Average
4934	47.24	37.75	9.49	74	-26.76	166	135	Peak

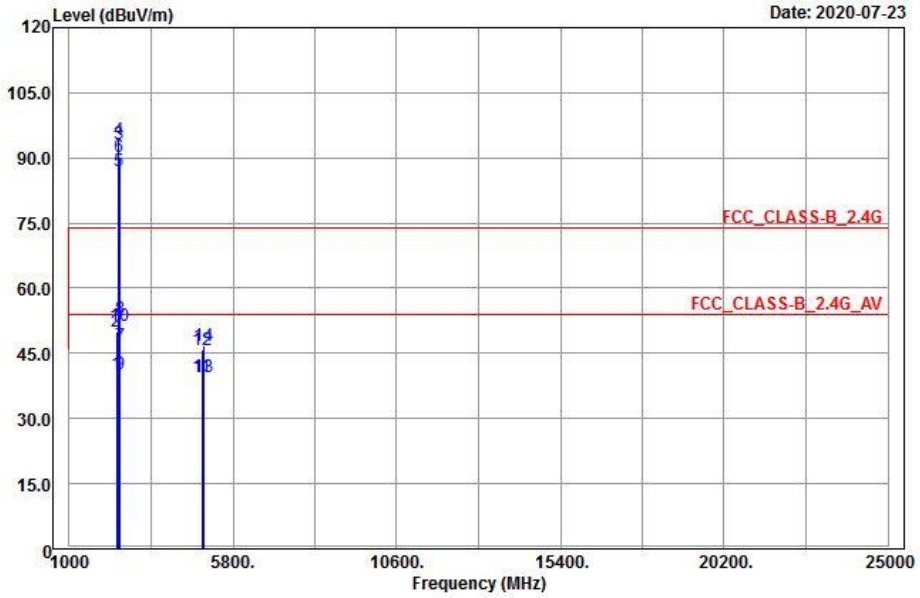
Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2441, 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

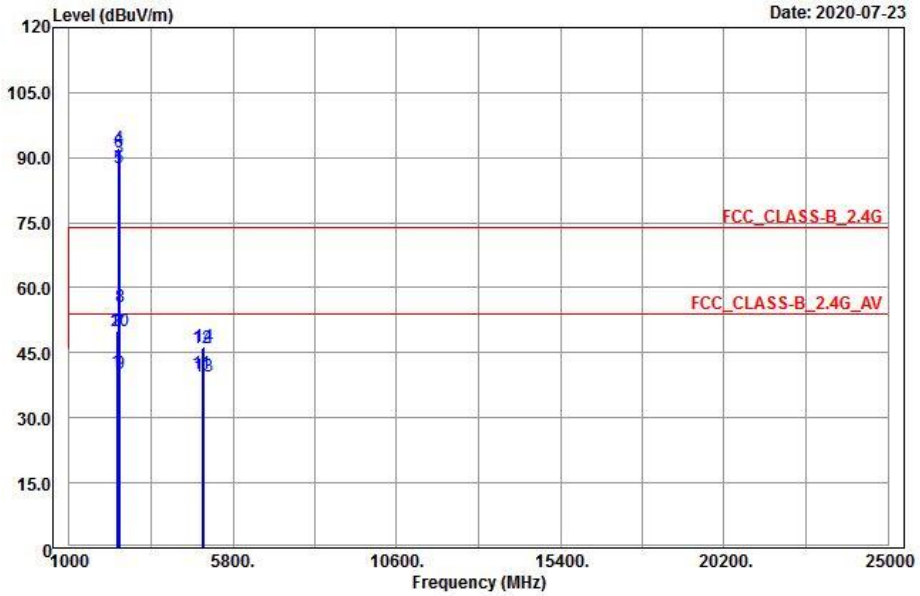
802.11b + LTE Band 4 + BT

EUT Test Condition		Measurement Detail	
Channel	Channel 12 + BT	**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**	Harry Hsueh

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**
2385.68	40.24	35.75	4.49	54	-13.76	168	142	Average
2385.68	50.12	45.63	4.49	74	-23.88	168	142	Peak
2441	93.24	88.66	4.58			165	135	Average
2441	94.21	89.63	4.58			165	135	Peak
2467	87.12	82.49	4.63			144	197	Average
2467	90.24	85.61	4.63			144	197	Peak
2483.66	46.66	42	4.66	54	-7.34	165	197	Average
2483.66	53.12	48.46	4.66	74	-20.88	165	197	Peak
2486.65	40.25	35.59	4.66	54	-13.75	166	195	Average
2486.65	51.21	46.55	4.66	74	-22.79	166	195	Peak
4882	39.58	30.14	9.44	54	-14.42	159	165	Average
4882	45.66	36.22	9.44	74	-28.34	159	165	Peak
4934	39.57	30.08	9.49	54	-14.43	163	165	Average
4934	46.86	37.37	9.49	74	-27.14	163	165	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**
2383.57	40.52	36.05	4.47	54	-13.48	149	167	Average
2383.57	50.13	45.66	4.47	74	-23.87	149	167	Peak
2441	89.76	85.18	4.58			161	142	Average
2441	92.25	87.67	4.58			161	142	Peak
2467	87.57	82.94	4.63			108	165	Average
2467	91.25	86.62	4.63			108	165	Peak
2484.66	49.57	44.91	4.66	54	-4.43	108	197	Average
2484.66	55.52	50.86	4.66	74	-18.48	108	197	Peak
2485.75	40.14	35.48	4.66	54	-13.86	145	174	Average
2485.75	50.12	45.46	4.66	74	-23.88	145	174	Peak
4882	40.13	30.69	9.44	54	-13.87	146	172	Average
4882	46.12	36.68	9.44	74	-27.88	146	172	Peak
4934	39.57	30.08	9.49	54	-14.43	157	185	Average
4934	46.59	37.1	9.49	74	-27.41	157	185	Peak

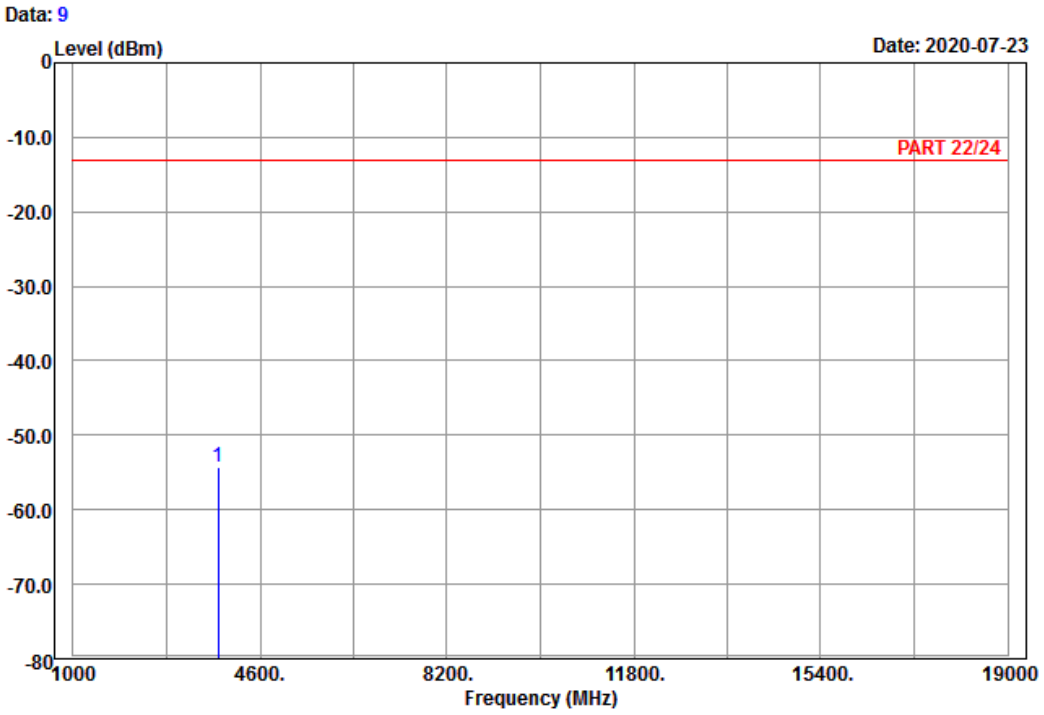
Remarks:

1. Emission Level = Read Level + Factor
   Margin value = Emission level – Limit value
2. 2441, 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

Above 1 GHz Data：

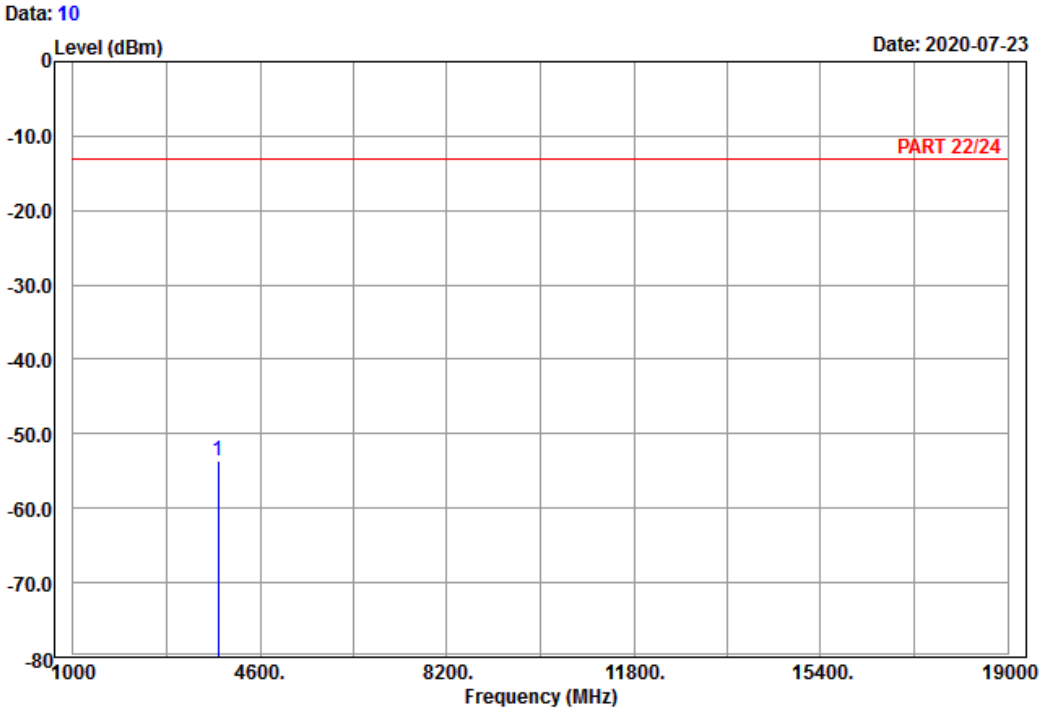
LTE Band 2

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3800.00	-54.24	-70.65	-13.00	-41.24	16.41	Peak

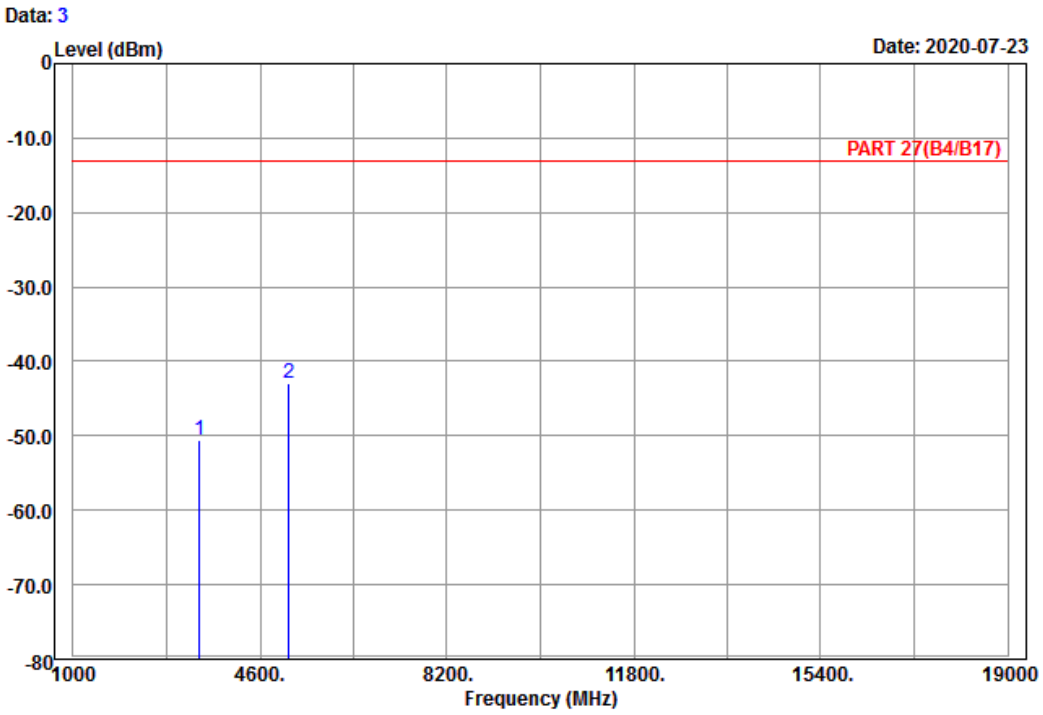


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_H-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	3800.00	-53.65	-70.06	-13.00	-40.65	16.41	Peak

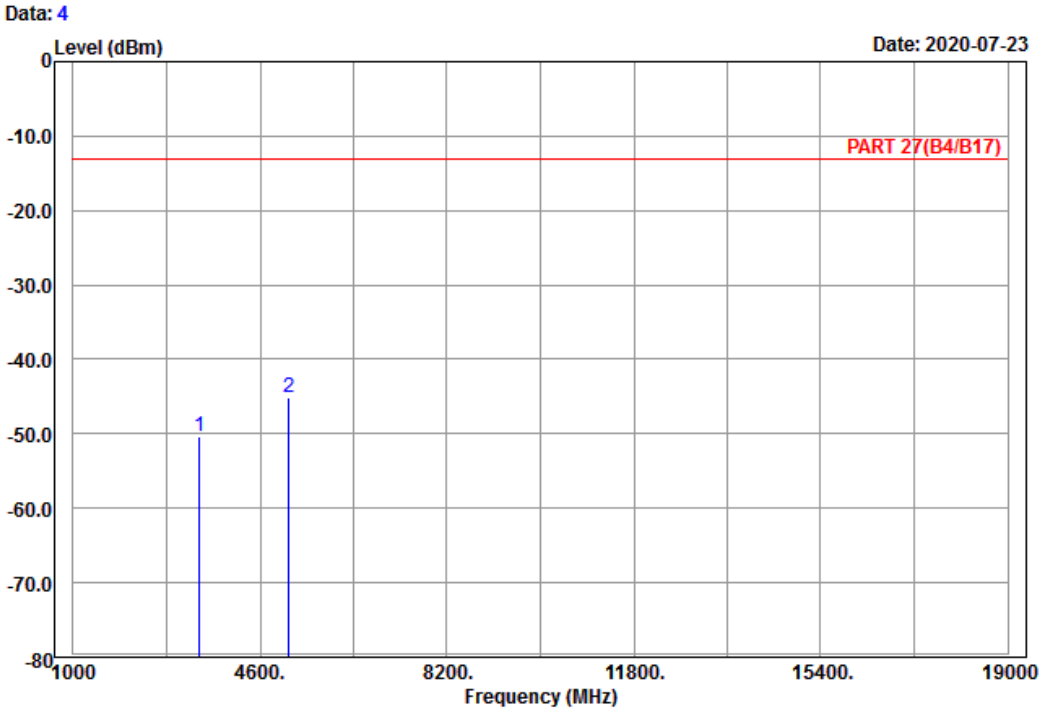
LTE Band 4

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	3440.00	-50.58	-64.93	-13.00	-37.58	14.35	Peak
2 pp	5160.00	-43.02	-62.94	-13.00	-30.02	19.92	Peak



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_L-Ch
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	3440.00	-50.46	-64.81	-13.00	-37.46	14.35	Peak
2 pp	5160.00	-45.05	-64.97	-13.00	-32.05	19.92	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 + LTE Band 2 + BT

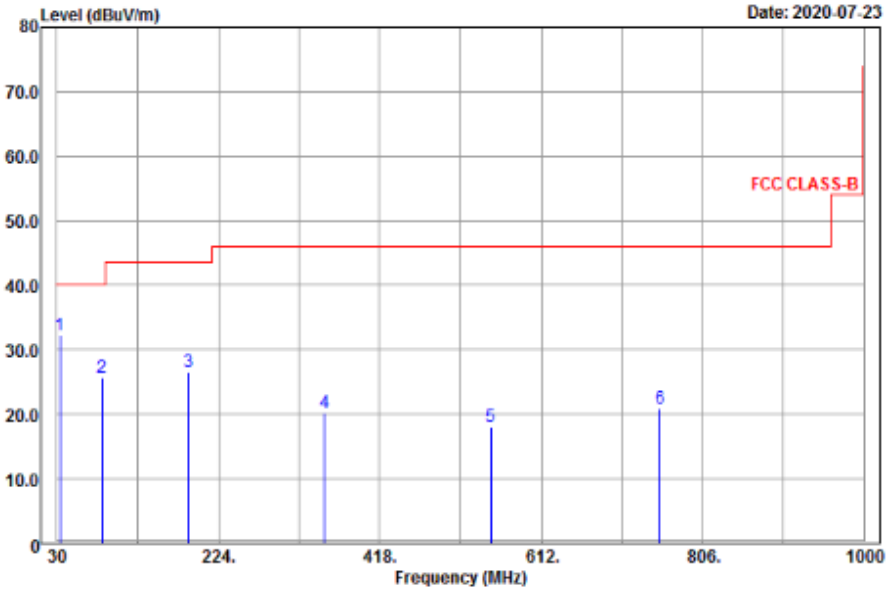
EUT Test Condition		Measurement Detail	
Channel	Channel 12 + BT	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

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**
33.51	32.26	50.15	-17.89	40	-7.74	106	168	Peak
84.54	25.64	46.18	-20.54	40	-14.36	142	157	Peak
188.49	26.68	45.57	-18.89	43.5	-16.82	108	195	Peak
351.8	20.26	34.96	-14.7	46	-25.74	145	168	Peak
552	18.08	29.62	-11.54	46	-27.92	105	198	Peak
755	20.86	29.27	-8.41	46	-25.14	135	127	Peak
Antenna Polarity & Test Distance: Vertical at 3 m								
Frequency (MHz)	**Emission Level (dBuV/m)**	**Read Level (dBuV)**	**Factor (dB/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (cm)**	**Table Angle (Degree)**	**Remark**
42.15	28.73	44.46	-15.73	40	-11.27	166	198	Peak
123.42	22.98	42.75	-19.77	43.5	-20.52	165	195	Peak
211.44	25.1	43.21	-18.11	43.5	-18.4	108	175	Peak
463.1	16.21	29.3	-13.09	46	-29.79	145	188	Peak
623.4	23.34	33.69	-10.35	46	-22.66	105	174	Peak
799.1	24.74	32.35	-7.61	46	-21.26	132	127	Peak

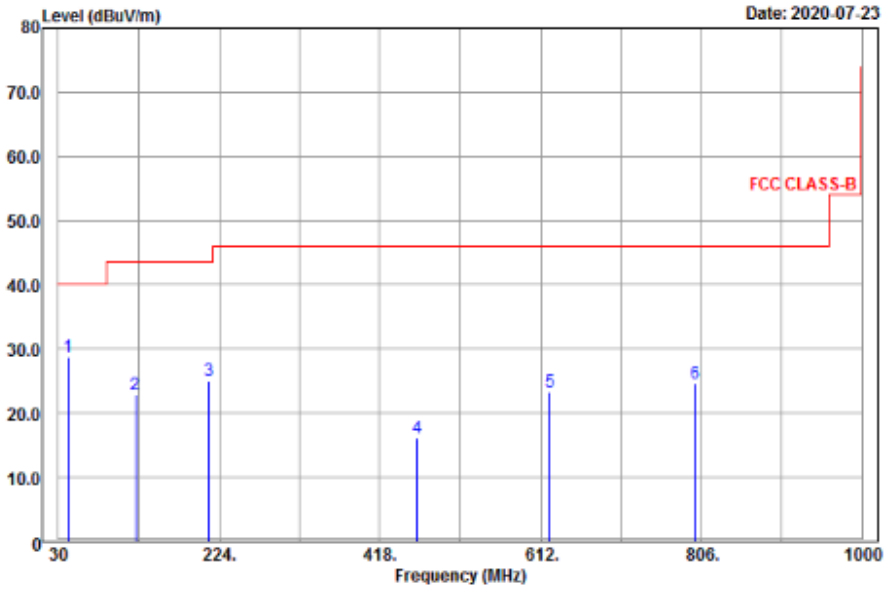
Remarks:

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



Vertical



802.11b + LTE Band 4 + BT

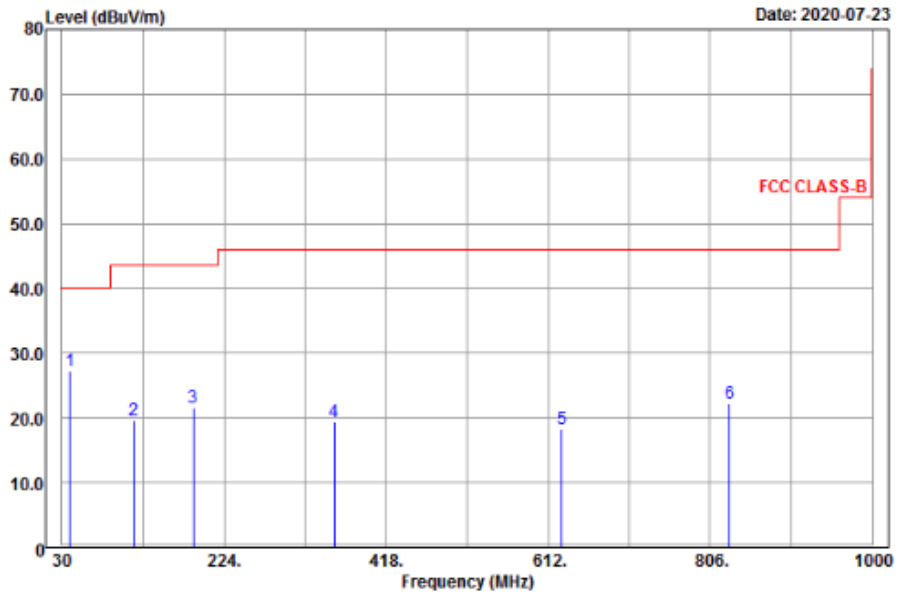
EUT Test Condition		Measurement Detail	
Channel	Channel 12 + BT	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Karl Lee

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**
39.45	27.19	43.5	-16.31	40	-12.81	134	117	Peak
116.13	19.7	38.22	-18.52	43.5	-23.8	155	34	Peak
187.14	21.55	40.52	-18.97	43.5	-21.95	186	204	Peak
356	19.42	34.06	-14.64	46	-26.58	131	72	Peak
628.3	18.39	28.79	-10.4	46	-27.61	168	129	Peak
829.2	22.21	29.33	-7.12	46	-23.79	120	146	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**
68.88	27.73	46.87	-19.14	40	-12.27	112	170	Peak
155.82	20.28	41.04	-20.76	43.5	-23.22	145	176	Peak
240.33	23.64	40.67	-17.03	46	-22.36	188	128	Peak
402.2	17.5	31.39	-13.89	46	-28.5	185	134	Peak
641.6	25.63	35.88	-10.25	46	-20.37	152	59	Peak
899.9	27.93	33.87	-5.94	46	-18.07	127	111	Peak

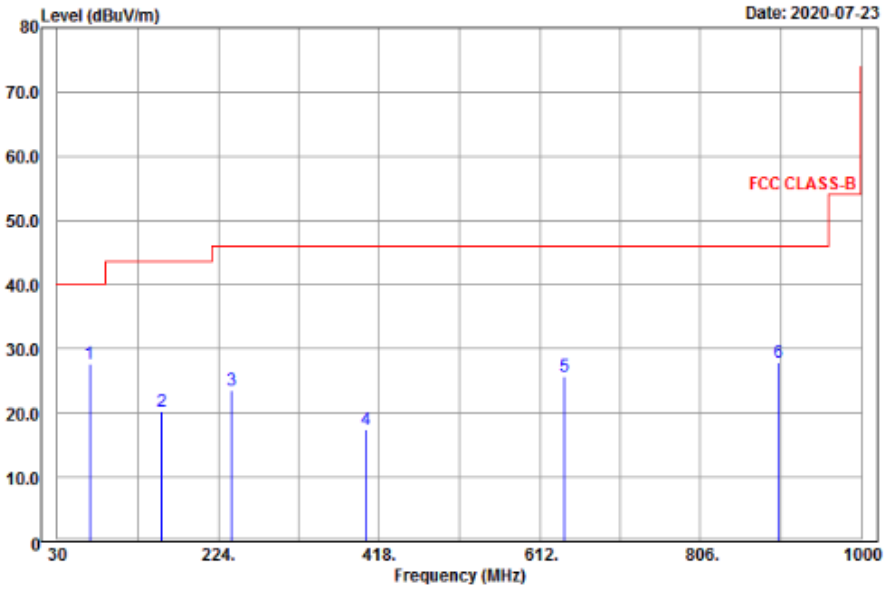
Remarks:

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

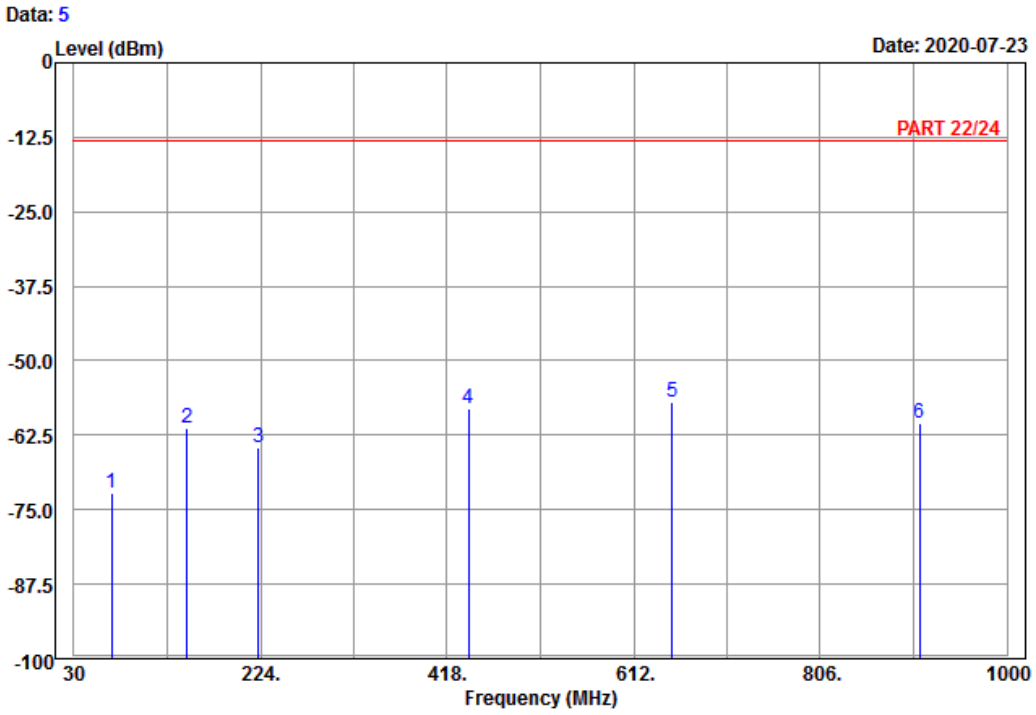


Vertical



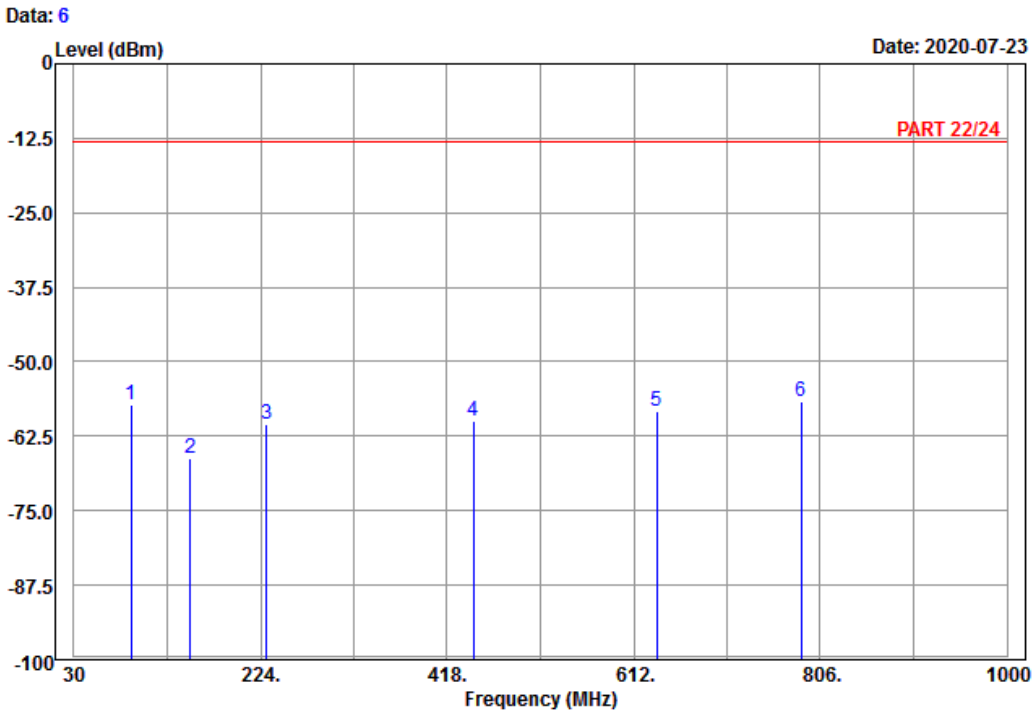
LTE Band 2

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_LF
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dBm	dB	dBm	dB	cm	deg	
1	69.15	-72.13	-59.31	-12.82	-13.00	-59.13	200	0	Peak
2	147.99	-61.32	-53.42	-7.90	-13.00	-48.32	200	0	Peak
3	221.70	-64.64	-58.76	-5.88	-13.00	-51.64	200	0	Peak
4	440.70	-58.10	-54.47	-3.63	-13.00	-45.10	100	0	Peak
5 pp	652.10	-56.89	-56.75	-0.14	-13.00	-43.89	100	0	Peak
6	909.70	-60.62	-63.94	3.32	-13.00	-47.62	100	0	Peak

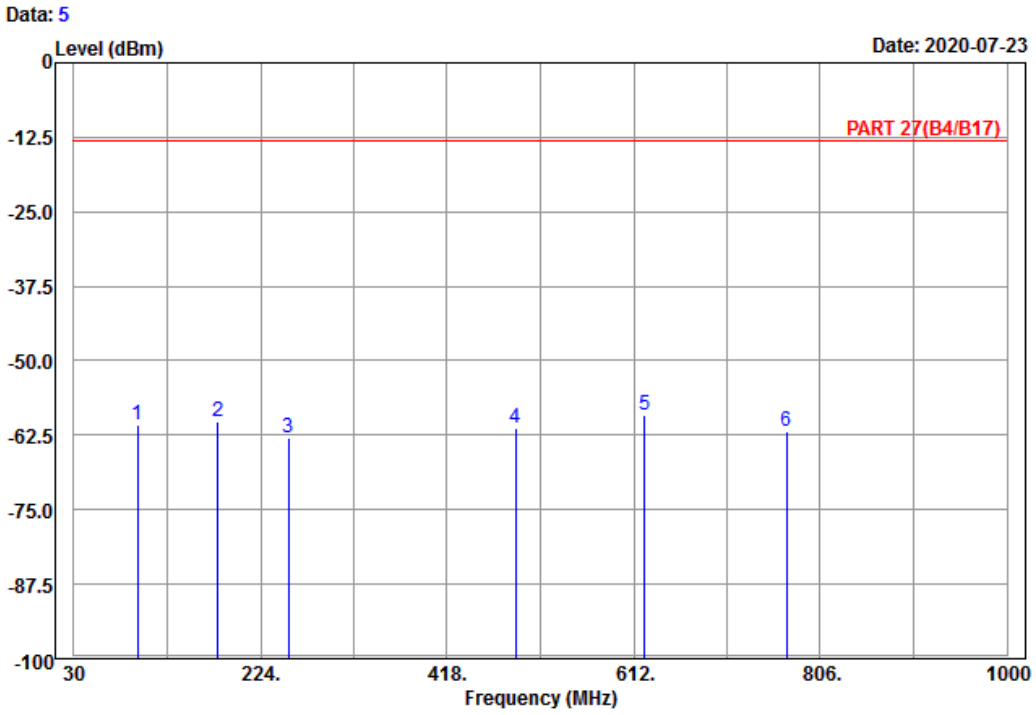


Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_LF
Tested by: Charles Hsiao

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dBm	dB	dBm	dB	cm	deg	
1	89.13	-57.10	-46.32	-10.78	-13.00	-44.10	200	0	Peak
2	150.96	-66.20	-58.28	-7.92	-13.00	-53.20	200	0	Peak
3	230.07	-60.50	-54.72	-5.78	-13.00	-47.50	200	0	Peak
4	445.60	-59.85	-56.11	-3.74	-13.00	-46.85	100	0	Peak
5	636.00	-58.30	-58.32	0.02	-13.00	-45.30	100	0	Peak
6 pp	785.80	-56.80	-57.85	1.05	-13.00	-43.80	100	0	Peak

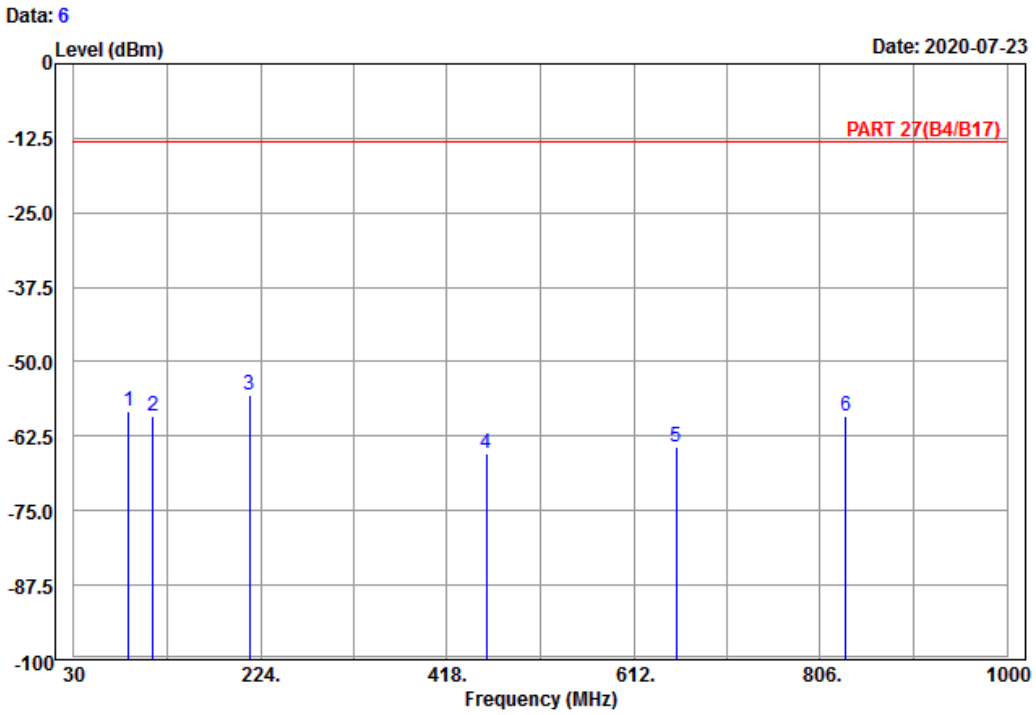
LTE Band 4

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 27(B4/B17) Horizontal
Remark : LTE_Band 4_Link_LF
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dBm	dB	dBm	dB	cm	deg	
1	96.15	-60.63	-50.29	-10.34	-13.00	-47.63	200	0	Peak
2	179.85	-60.29	-54.61	-5.68	-13.00	-47.29	200	0	Peak
3	252.75	-63.06	-57.53	-5.53	-13.00	-50.06	200	0	Peak
4	489.00	-61.33	-56.38	-4.95	-13.00	-48.33	100	0	Peak
5 pp	623.40	-59.26	-59.42	0.16	-13.00	-46.26	100	0	Peak
6	771.10	-61.73	-61.82	0.09	-13.00	-48.73	100	0	Peak



Site : 966 chamber 1
Condition: PART 27(B4/B17) Vertical
Remark : LTE_Band 4_Link_LF
Tested by: Karl Lee

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dBm	dB	dBm	dB	cm	deg	
1	86.70	-58.40	-47.29	-11.11	-13.00	-45.40	200	0	Peak
2	112.35	-59.16	-50.40	-8.76	-13.00	-46.16	200	0	Peak
3 pp	212.52	-55.69	-49.68	-6.01	-13.00	-42.69	200	0	Peak
4	458.90	-65.35	-61.26	-4.09	-13.00	-52.35	100	0	Peak
5	656.30	-64.35	-64.18	-0.17	-13.00	-51.35	100	0	Peak
6	832.70	-59.24	-60.88	1.64	-13.00	-46.24	100	0	Peak

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.

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

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Fax: 886-2-26051924

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Fax: 886-3-3270892

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

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

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