

FCC Test Report (Co-Located)

Report No.: RF170302D08-3

FCC ID: P2713245

Test Model: 13245

Received Date: Mar. 2, 2017

Test Date: Apr. 18 ~ 26, 2017

Issued Date: May 4, 2017

Applicant: Sercomm Corp.

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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
RF170302D08-3	Original release.	May 4, 2017

1 Certificate of Conformity

Product: Verizon LTE

Brand: Verizon

Test Model: 13245

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Apr. 18 ~ 26, 2017

Standard: FCC Part 22, Subpart H
FCC Part 24, Subpart E
FCC Part 27, Subpart C

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 EMC characteristics under the conditions specified in this report.

Prepared by :



Date: May 4, 2017

Celia Chen / Supervisor

Approved by :



Date: May 4, 2017

Rex Lai / Assistant Manager

2 Summary of Test Results

FCC Part 22, FCC Part 24, FCC Part 27, FCC Part 2			
FCC Clause	Test Item	Result	Remarks
2.1053 22.917 24.238 2.1051 27.53(h)(c)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -12.21dB at 4492.00MHz.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	1GHz ~ 40GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Verizon LTE			
Brand	Verizon			
Test Model	13245			
Status of EUT	Engineering sample			
Power Supply Rating	12Vdc (adapter)			
Modulation Type	QPSK, 16QAM, 64QAM			
Operating Frequency	LTE Band 2	Channel Bandwidth 5MHz	1932.5MHz ~ 1987.5MHz	
		Channel Bandwidth 10MHz	1935MHz ~ 1985MHz	
		Channel Bandwidth 15MHz	1937.5MHz ~ 1982.5MHz	
		Channel Bandwidth 20MHz	1940MHz ~ 1980MHz	
	LTE Band 5	Channel Bandwidth 5MHz	871.5MHz ~ 891.5MHz	
		Channel Bandwidth 10MHz	874MHz ~ 889MHz	
		Channel Bandwidth 15MHz	876.5MHz ~ 886.5MHz	
		Channel Bandwidth 20MHz	879MHz ~ 884MHz	
	LTE Band 4	Channel Bandwidth 5MHz	2112.5MHz ~ 2152.5MHz	
		Channel Bandwidth 10MHz	2115MHz ~ 2150MHz	
		Channel Bandwidth 15MHz	2117.5MHz ~ 2147.5MHz	
		Channel Bandwidth 20MHz	2120MHz ~ 2145MHz	
	LTE Band 13	Channel Bandwidth 5MHz	748.5MHz ~ 753.5MHz	
		Channel Bandwidth 10MHz	751MHz	
	Max. ERP Power	LTE Band 5	Channel Bandwidth 5MHz	180.717mW (22.57dBm)
			Channel Bandwidth 10MHz	183.231mW (22.63dBm)
Channel Bandwidth 15MHz			185.780mW (22.69dBm)	
Channel Bandwidth 20MHz			194.536mW (22.89dBm)	
LTE Band 13		Channel Bandwidth 5MHz	201.372mW (23.04dBm)	
		Channel Bandwidth 10MHz	199.986mW (23.01dBm)	
Max. EIRP Power	LTE Band 2	Channel Bandwidth 5MHz	179.887mW (22.55dBm)	
		Channel Bandwidth 10MHz	190.985mW (22.81dBm)	
		Channel Bandwidth 15MHz	187.931mW (22.74dBm)	
		Channel Bandwidth 20MHz	193.642mW (22.87dBm)	
	LTE Band 4	Channel Bandwidth 5MHz	203.235mW (23.08dBm)	
		Channel Bandwidth 10MHz	193.642mW (22.87dBm)	
		Channel Bandwidth 15MHz	197.242mW (22.95dBm)	
		Channel Bandwidth 20MHz	207.491mW (23.17dBm)	
Antenna Type	LTE Band 2	Dipole antenna with 1.7dBi gain		
	LTE Band 5	Dipole antenna with 1.2dBi gain		
	LTE Band 4	Dipole antenna with 1.7dBi gain		
	LTE Band 13	Dipole antenna with 1.2dBi gain		
Antenna Connector	SMA			
Accessory Device	Adapter			
Data Cable Supplied	N/A			

Note:

1. The EUT uses following adapter.

Adapter	
Brand	PHIHONG
Model	PSA120U-120L6
Input Power	100-240Vac, 1.6A, 50-60Hz
Output Power	12Vdc, 9A
Power cord	Non-shielded AC 3 Pin (1.8m) Non-shielded DC (1m) with one ferrite core

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

3.2 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE ³ 1G	RE<1G	
-	√	√	-

Where **RE³1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz

Radiated Emission Test (Above 1GHz):

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

EUT CONFIGURE MODE	MODE
-	LTE Band 2 (CBW: 10MHz) + LTE Band 5 (CBW: 10MHz)
-	LTE Band 2 (CBW: 20MHz) + LTE Band 5 (CBW: 10MHz)
-	LTE Band 4 (CBW: 10MHz) + LTE Band 13 (CBW: 10MHz)
-	LTE Band 4 (CBW: 20MHz) + LTE Band 13 (CBW: 10MHz)

Radiated Emission Test (Below 1GHz):

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

EUT CONFIGURE MODE	MODE
-	LTE Band 2 (CBW: 10MHz) + LTE Band 5 (CBW: 10MHz)
-	LTE Band 2 (CBW: 20MHz) + LTE Band 5 (CBW: 10MHz)
-	LTE Band 4 (CBW: 10MHz) + LTE Band 13 (CBW: 10MHz)
-	LTE Band 4 (CBW: 20MHz) + LTE Band 13 (CBW: 10MHz)

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE ³ 1G	20deg. C, 73%RH	120Vac, 60Hz	Dalen Dal
RE<1G	20deg. C, 73%RH	120Vac, 60Hz	Dalen Dal

3.3 Description of Support Units

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

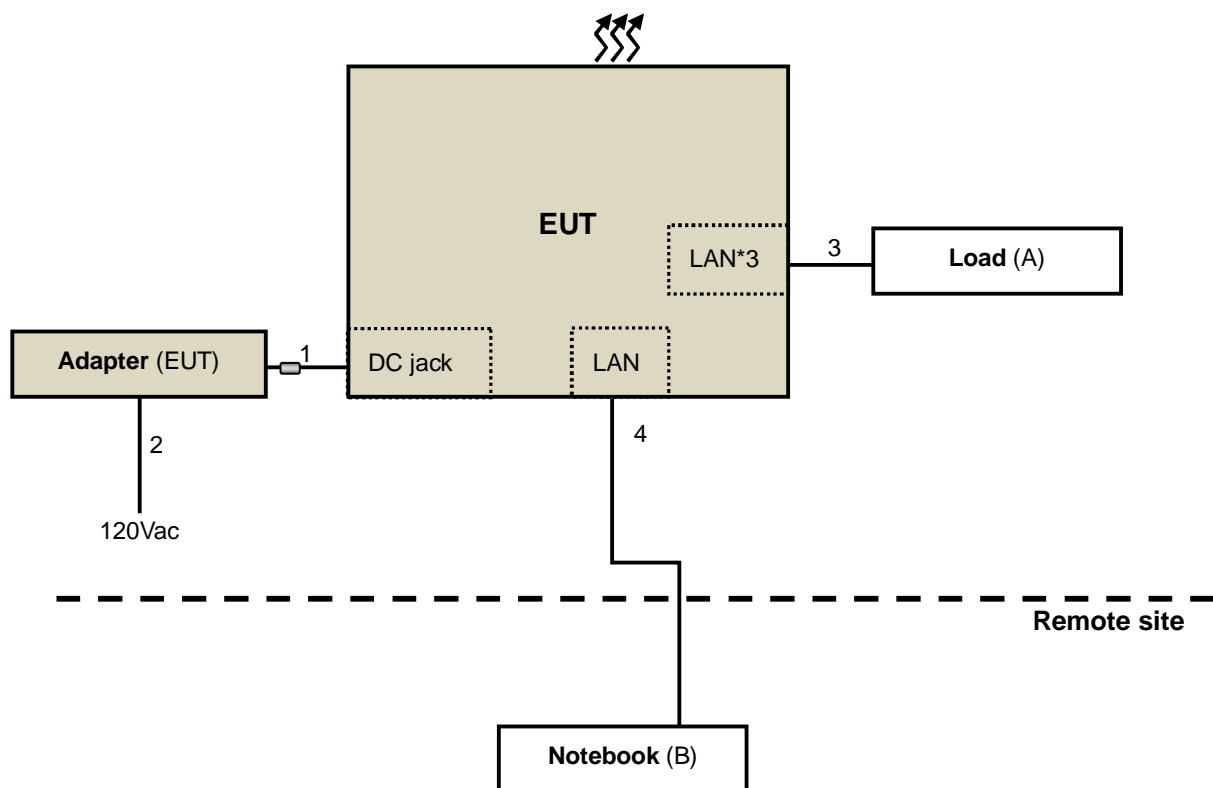
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Load	N/A	N/A	N/A	N/A	Provided by Lab
B.	Notebook PC	DELL	E6530	9331GV1	FCC DoC Approved	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.0	N	1	Supplied by client
2.	AC power cord	1	1.8	N	0	Supplied by client
3.	LAN cable	3	1.0	N	0	Provided by Lab
4.	LAN cable	1	10.0	N	0	Provided by Lab

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standard

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 22, Subpart H

FCC Part 24, Subpart E

FCC Part 27, Subpart C

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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 equal to -13dBm .

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	886.57D	2432A03504	Feb. 21, 2017	Feb. 20, 2018
HP Preamplifier	886.59B	3008A01201	Feb. 22, 2017	Feb. 21, 2018
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2017	Feb. 20, 2018
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 08, 2017	Feb. 07, 2018
Schwarzbeck Antenna	VULB 9168	139	Dec. 13, 2016	Dec. 12, 2017
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2015	May 28, 2017
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 30, 2016	Dec. 29, 2017
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 27, 2016	Dec. 26, 2017
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF104	CABLE-CH6	Aug. 15, 2016	Aug. 14, 2017
SUHNER RF cable With 3dB PAD	SF102	Cable-CH8-3.6m	Aug. 15, 2016	Aug. 14, 2017
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	May 25, 2016	May 24, 2017
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 26, 2016	Jul. 25, 2017
Loop Antenna EMCI	LPA600	270	Aug. 20, 2015	Aug. 19, 2017
EMCO Horn Antenna	3115	00028257	Dec. 15, 2016	Dec. 14, 2017
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 30, 2016	Sep. 29, 2017
Anritsu Power Sensor	MA2411B	0738404	Apr. 24, 2016	Apr. 23, 2017
			Apr. 24, 2017	Apr. 23, 2018
Anritsu Power Meter	ML2495A	0842014	Apr. 24, 2016	Apr. 23, 2017
			Apr. 24, 2017	Apr. 23, 2018

- NOTE:**
1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
 2. The horn antenna and HP preamplifier (model: 886.59B) are used only for the measurement of emission frequency above 1GHz if tested.
 3. The test was performed in Chamber No. 6.
 4. The Industry Canada Reference No. IC 7450E-6.
 5. The FCC Site Registration No. is 447212.

4.1.3 Test Procedure

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect 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:

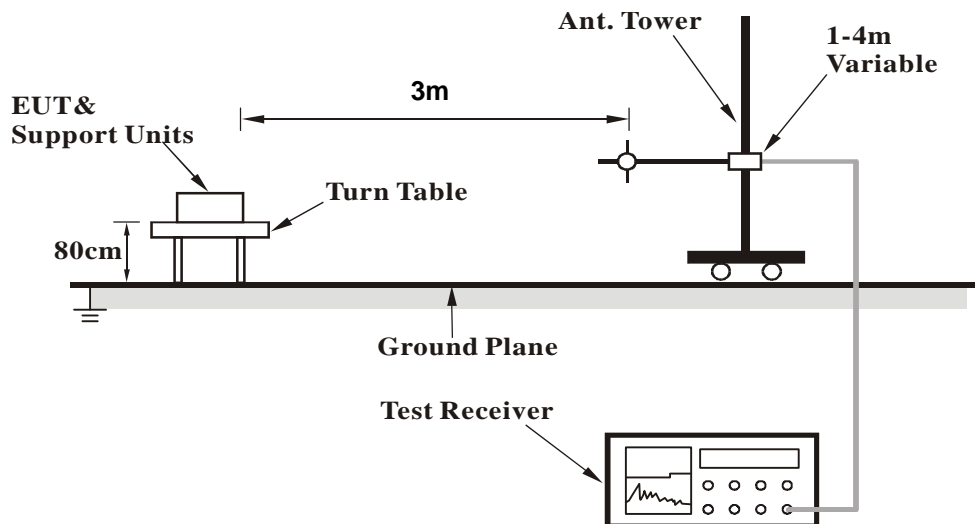
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

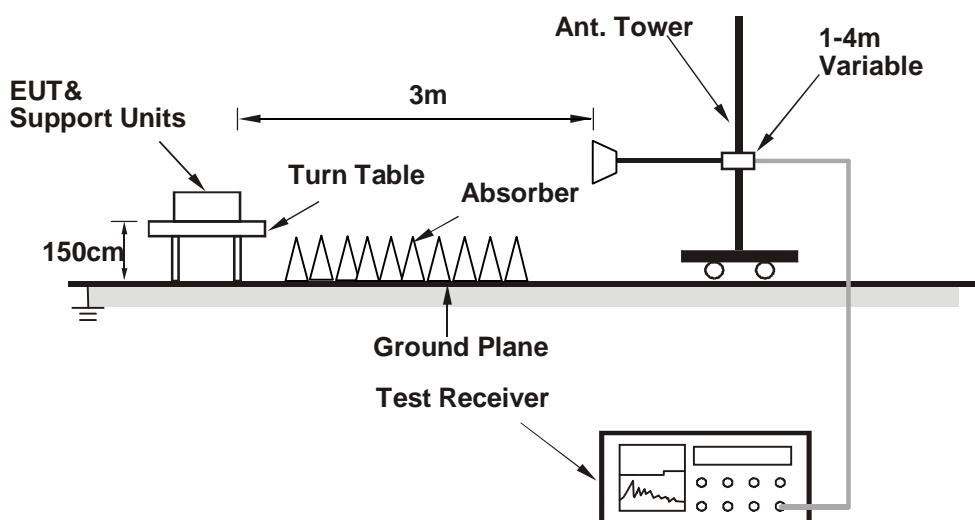
No deviation.

4.1.5 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Condition

- Placed the EUT on the testing table.
- Prepared notebook to act as communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

ABOVE 1GHz DATA

LTE Band 2 (CBW: 10MHz) + LTE Band 5 (CBW: 10MHz)

FREQUENCY RANGE	1GHz ~ 25GHz	DETECTOR FUNCTION	Peak (PK)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3538.00 (PK)	-52.46	-66.92	17.47	-49.45	-13.00	-36.45
2	4411.00 (PK)	-37.53	-55.00	20.86	-34.14	-13.00	-21.14
3	5293.00 (PK)	-54.24	-69.97	21.85	-48.12	-13.00	-35.12
4	5869.00 (PK)	-56.22	-71.39	22.81	-48.58	-13.00	-35.58
5	7048.00 (PK)	-57.81	-75.17	25.20	-49.97	-13.00	-36.97
6	9802.00 (PK)	-54.78	-72.71	29.57	-43.14	-13.00	-30.14

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3529.00 (PK)	-48.83	-63.54	17.55	-45.99	-13.00	-32.99
2	4402.00 (PK)	-33.41	-50.59	20.85	-29.74	-13.00	-16.74
3	5284.00 (PK)	-48.77	-64.49	21.82	-42.67	-13.00	-29.67
4	5878.00 (PK)	-50.25	-65.54	22.81	-42.73	-13.00	-29.73
5	7831.00 (PK)	-49.72	-67.13	26.83	-40.30	-13.00	-27.30
6	9793.00 (PK)	-51.19	-69.17	29.56	-39.61	-13.00	-26.61

LTE Band 2 (CBW: 20MHz) + LTE Band 5 (CBW: 10MHz)

FREQUENCY RANGE	1GHz ~ 25GHz	DETECTOR FUNCTION	Peak (PK)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3538.00 (PK)	-51.94	-66.40	17.47	-48.93	-13.00	-35.93
2	4411.00 (PK)	-37.84	-55.31	20.86	-34.45	-13.00	-21.45
3	5293.00 (PK)	-54.24	-69.97	21.85	-48.12	-13.00	-35.12
4	5869.00 (PK)	-56.30	-71.47	22.81	-48.66	-13.00	-35.66
5	6175.00 (PK)	-55.69	-71.28	23.28	-48.00	-13.00	-35.00
6	9793.00 (PK)	-56.84	-74.76	29.56	-45.20	-13.00	-32.20

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3925.00 (PK)	-46.46	-62.42	19.00	-43.42	-13.00	-30.42
2	4411.00 (PK)	-33.36	-50.49	20.86	-29.63	-13.00	-16.63
3	5284.00 (PK)	-48.98	-64.70	21.82	-42.88	-13.00	-29.88
4	6184.00 (PK)	-53.57	-69.39	23.31	-46.08	-13.00	-33.08
5	7831.00 (PK)	-53.77	-71.18	26.83	-44.35	-13.00	-31.35
6	9802.00 (PK)	-54.23	-72.21	29.57	-42.64	-13.00	-29.64

LTE Band 4 (CBW: 10MHz) + LTE Band 13 (CBW: 10MHz)

FREQUENCY RANGE	1GHz ~ 25GHz	DETECTOR FUNCTION	Peak (PK)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3007.00 (PK)	-49.44	-62.43	15.56	-46.87	-13.00	-33.87
2	3745.00 (PK)	-30.65	-46.20	18.50	-27.70	-13.00	-14.70
3	4267.00 (PK)	-45.08	-62.18	20.28	-41.90	-13.00	-28.90
4	4492.00 (PK)	-29.15	-46.20	20.99	-25.21	-13.00	-12.21
5	8533.00 (PK)	-50.05	-68.71	28.19	-40.52	-13.00	-27.52

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	2998.00 (PK)	-44.97	-58.30	15.56	-42.74	-13.00	-29.74
2	3745.00 (PK)	-31.74	-47.35	18.50	-28.85	-13.00	-15.85
3	4267.00 (PK)	-39.23	-56.11	20.28	-35.83	-13.00	-22.83
4	4492.00 (PK)	-32.35	-49.10	20.99	-28.11	-13.00	-15.11
5	6400.00 (PK)	-47.27	-63.85	23.72	-40.13	-13.00	-27.13
6	8533.00 (PK)	-48.26	-66.93	28.19	-38.74	-13.00	-25.74

LTE Band 4 (CBW: 20MHz) + LTE Band 13 (CBW: 10MHz)

FREQUENCY RANGE	1GHz ~ 25GHz	DETECTOR FUNCTION	Peak (PK)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	3745.00 (PK)	-32.56	-48.11	18.50	-29.61	-13.00	-16.61
2	4492.00 (PK)	-33.89	-50.94	20.99	-29.95	-13.00	-16.95

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	2998.00 (PK)	-43.73	-57.06	15.56	-41.50	-13.00	-28.50
2	3745.00 (PK)	-34.74	-50.35	18.50	-31.85	-13.00	-18.85
3	4276.00 (PK)	-44.43	-61.36	20.37	-40.99	-13.00	-27.99
4	4492.00 (PK)	-32.12	-48.87	20.99	-27.88	-13.00	-14.88
5	6409.00 (PK)	-48.77	-65.38	23.74	-41.64	-13.00	-28.64
6	8524.00 (PK)	-49.12	-67.80	28.17	-39.63	-13.00	-26.63

BELOW 1GHz DATA

LTE Band 2 (CBW: 10MHz) + LTE Band 5 (CBW: 10MHz)

FREQUENCY RANGE	30MHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	77.53	-57.80	-76.47	10.80	-65.67	-13.00	-52.67
2	250.19	-56.75	-76.64	14.23	-62.41	-13.00	-49.41
3	414.12	-67.33	-88.11	19.13	-68.98	-13.00	-55.98
4	500.45	-58.81	-80.18	21.31	-58.87	-13.00	-45.87
5	585.81	-66.01	-87.57	23.20	-64.37	-13.00	-51.37
6	959.26	-67.72	-89.27	28.81	-60.46	-13.00	-47.46

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	79.47	-58.79	-77.65	10.53	-67.12	-13.00	-54.12
2	167.74	-64.76	-81.96	14.40	-67.56	-13.00	-54.56
3	433.52	-58.78	-80.28	19.93	-60.35	-13.00	-47.35
4	500.45	-63.69	-85.69	21.31	-64.38	-13.00	-51.38
5	547.98	-62.86	-84.43	22.17	-62.26	-13.00	-49.26
6	800.18	-65.83	-87.69	26.60	-61.09	-13.00	-48.09

LTE Band 2 (CBW: 20MHz) + LTE Band 5 (CBW: 10MHz)

FREQUENCY RANGE	30MHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	100.81	-61.49	-78.98	10.46	-68.52	-13.00	-55.52
2	250.19	-57.90	-77.79	14.23	-63.56	-13.00	-50.56
3	428.67	-67.04	-88.32	19.74	-68.58	-13.00	-55.58
4	500.45	-59.51	-80.88	21.31	-59.57	-13.00	-46.57
5	624.61	-65.94	-88.07	24.12	-63.95	-13.00	-50.95
6	800.18	-66.09	-87.48	26.60	-60.88	-13.00	-47.88

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	105.66	-62.36	-78.77	11.13	-67.64	-13.00	-54.64
2	173.56	-65.47	-83.06	14.05	-69.01	-13.00	-56.01
3	392.78	-65.28	-85.64	18.53	-67.11	-13.00	-54.11
4	500.45	-63.10	-85.10	21.31	-63.79	-13.00	-50.79
5	640.13	-66.32	-88.85	24.36	-64.49	-13.00	-51.49
6	746.83	-65.32	-88.51	26.20	-62.31	-13.00	-49.31

LTE Band 4 (CBW: 10MHz) + LTE Band 13 (CBW: 10MHz)

FREQUENCY RANGE	30MHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	77.53	-58.83	-77.50	10.80	-66.70	-13.00	-53.70
2	250.19	-58.74	-78.63	14.23	-64.40	-13.00	-51.40
3	500.45	-59.86	-81.23	21.31	-59.92	-13.00	-46.92
4	564.47	-63.48	-85.37	22.53	-62.84	-13.00	-49.84
5	668.26	-62.95	-85.03	24.59	-60.44	-13.00	-47.44
6	917.55	-66.98	-88.59	28.44	-60.15	-13.00	-47.15

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	104.69	-62.18	-78.89	11.05	-67.84	-13.00	-54.84
2	151.25	-67.26	-83.62	15.04	-68.58	-13.00	-55.58
3	427.70	-66.99	-88.29	19.70	-68.59	-13.00	-55.59
4	500.45	-64.22	-86.22	21.31	-64.91	-13.00	-51.91
5	624.61	-67.18	-89.62	24.12	-65.50	-13.00	-52.50
6	874.87	-64.37	-86.34	27.67	-58.67	-13.00	-45.67

LTE Band 4 (CBW: 20MHz) + LTE Band 13 (CBW: 10MHz)

FREQUENCY RANGE	30MHz ~ 1GHz	DETECTOR FUNCTION	Quasi-Peak (QP)
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	99.84	-60.51	-78.07	10.38	-67.69	-13.00	-54.69
2	229.82	-58.69	-77.10	12.40	-64.70	-13.00	-51.70
3	310.33	-65.31	-84.72	16.55	-68.17	-13.00	-55.17
4	500.45	-59.67	-81.04	21.31	-59.73	-13.00	-46.73
5	605.21	-64.51	-86.09	23.82	-62.27	-13.00	-49.27
6	874.87	-65.13	-86.91	27.67	-59.24	-13.00	-46.24

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	104.69	-60.88	-77.59	11.05	-66.54	-13.00	-53.54
2	168.71	-64.49	-81.72	14.34	-67.38	-13.00	-54.38
3	439.34	-66.60	-88.28	20.14	-68.14	-13.00	-55.14
4	565.44	-67.49	-89.13	22.53	-66.60	-13.00	-53.60
5	641.10	-66.44	-88.97	24.36	-64.61	-13.00	-51.61
6	874.87	-66.16	-88.13	27.67	-60.46	-13.00	-47.46

5 Pictures of Test Arrangements

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

Appendix – Information on 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 accredited and approved according to ISO/IEC 17025.

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

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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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