

FCC Test Report (Co-Located)

Report No.: RFBFMG-WTW-P22010752-10

FCC ID: B32E2351

Test Model: e235-4G-1

Received Date: Jan. 24, 2022

Test Date: Jun. 28 ~ Jun. 29, 2022

Issued Date: Jul. 22, 2022

Applicant: Verifone, Inc.

Address: 1400 West Stanford Ranch Road Suite 150 Rocklin CA 95765 USA

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: B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231,
Taiwan

**FCC Registration /
Designation Number:** 427177 / TW0011



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Release Control Record

Issue No.	Description	Date Issued
RFBFMG-WTW-P22010752-10	Original Release	Jul. 22, 2022

1 Certificate of Conformity

Product: Point of Sale Terminal

Brand: Verifone

Test Model: e235-4G-1

Sample Status: Engineering Sample

Applicant: Verifone, Inc.

Test Date: Jun. 28 ~ Jun. 29, 2022

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)

ANSI C63.10:2013

FCC Part 27, Subpart C, M

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:

Jul. 22, 2022

Lena Wang / Specialist

Approved by :

Jeremy Lin

Date:

Jul. 22, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013 FCC Part 27, Subpart C, M			
FCC Clause	Test Item	Result	Remarks
15.205 & 209	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -12.89 dB at 2390.00 MHz.
2.1053 27.53 (m)(4)(6)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -9.96 dB at 10240.00 MHz.

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~ 1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Point of Sale Terminal			
Brand	Verifone			
Test Model	e235-4G-1			
Status of EUT	Engineering Sample			
Power Supply Rating	5.0 Vdc (adapter) 3.7 Vdc (battery)			
Modulation Type	BT EDR	GFSK, $\pi/4$ -DQPSK, 8DPSK		
	LTE	QPSK, 16QAM		
Operating Frequency	BT EDR	2402 ~ 2480 MHz		
	LTE	LTE Band 7	(Channel Bandwidth 5MHz)	2502.5 ~ 2567.5MHz
			(Channel Bandwidth 10MHz)	2505.0 ~ 2565.0MHz
			(Channel Bandwidth 15MHz)	2507.5 ~ 2562.5MHz
(Channel Bandwidth 20MHz)			2510.0 ~ 2560.0MHz	
Number of Channel	BT EDR: 79			
Antenna Type	Refer to Note as below			
Antenna Connector	N/A			
Accessory Device	Refer to Note as below			
Data Cable Supplied	Refer to Note as below			

Note:

1. The antenna information is listed as below.

WWAN Antenna	
Antenna Type: monopole	
Band	LTE 7
Gain (dBi)	2.5

WLAN Antenna	
Antenna Type	Antenna Gain (dBi)
	BT
Dipole	2.2

2. The above Antenna information refers to the manufacturer's antenna specifications, the laboratory shall not be held responsible.

3. The EUT's accessories list refers to Ext. Pho.

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

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 \geq 1G	RE<1G	
-	√	√	-

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

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
-	BT EDR + LTE Band 7	2402 ~ 2480 ∙ 2502.5 ~ 2567.5	0 to 78 ∙ 20850 to 21350	0 + 21350	GFSK ∙ QPSK
-	LTE Band 7 + BT EDR	2502.5 ~ 2567.5 ∙ 2402 ~ 2480	20850 to 21350 ∙ 0 to 78	21350 + 0	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
	BT EDR + LTE Band 7	2402 ~ 2480 ∙ 2502.5 ~ 2567.5	0 to 78 ∙ 20850 to 21350	0 + 21350	OFDM ∙ QPSK
	LTE Band 7 + BT EDR	2502.5 ~ 2567.5 ∙ 2402 ~ 2480	20850 to 21350 ∙ 0 to 78	21350 + 0	GFSK ∙ QPSK

Test Condition:

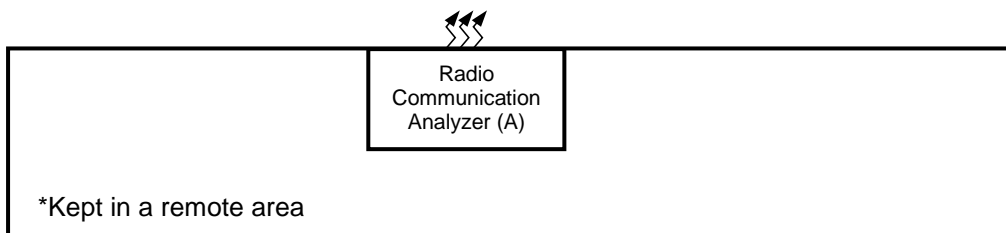
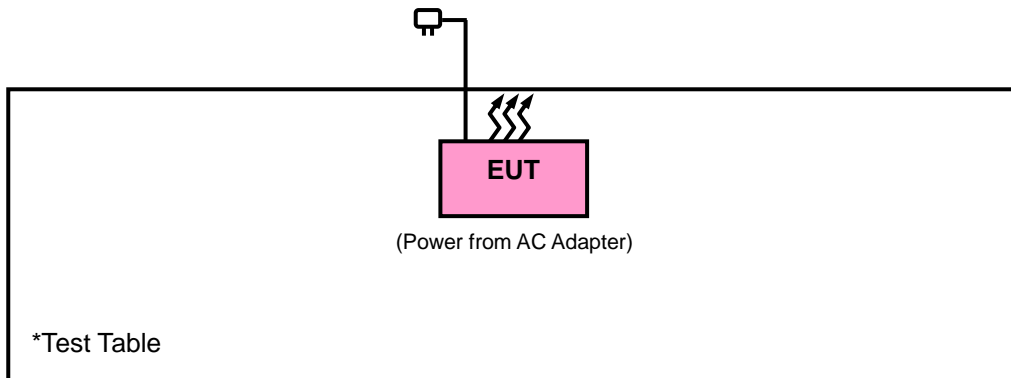
Applicable To	Environmental Conditions	Input Power	Tested by
RE \geq 1G	25 deg. C, 60 % RH	120 Vac, 60 Hz	Karl Lee
RE<1G	25 deg. C, 60 % RH	120 Vac, 60 Hz	Karl Lee

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
A	Radio Communication Analyzer	Anritsu	MT8820C	6201240432	NA

3.4 Configuration of System under Test



3.5 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)

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI C63.10-2013

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 971168 D01 Power Meas License Digital Systems v03r01

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 BT

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

In the FCC 27.53(m)(4), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to -25dBm..

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Sep. 01, 2021	Aug. 31, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 11, 2022	Apr. 10, 2023
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 14, 2021	Nov. 13, 2022
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Oct. 27, 2021	Oct. 26, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 14, 2021	Nov. 13, 2022
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 05, 2022	Apr. 04, 2023
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent	310N	187226	Jun. 14, 2022	Jun. 13, 2023
Preamplifier Agilent	83017A	MY39501357	Jun. 14, 2022	Jun. 13, 2023
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 14, 2022	Jun. 13, 2023
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 14, 2022	Jun. 13, 2023
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 26, 2021	Aug. 25, 2022
Preamplifier EMCI	EMC 184045	980116	Oct. 05, 2021	Oct. 04, 2022

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 HsinTien Chamber 6.

4.1.3 Test Procedures

For 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) and Average detection (AV) at frequency above 1 GHz.
3. For Fundamental frequency and band edge & harmonic:
The average value of fundamental frequency is :average value = peak value + 20*log(Duty cycle) where the duty cycle correction factor is calculated from following formula:
 $20 \cdot \text{Log}(\text{Duty cycle}) = 20 \cdot \log(0.02887) = -30.79 \text{ dB}$, please refer to the plotted duty (see BV CPS report no.: RFBFMG-WTW-P22010752-4 section 3.3)
4. All modes of operation were investigated and the worst-case emissions are reported.

For LTE

- a. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) 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 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. 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.
- c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- d. Following C63.26 section 5.5 and 5.2.7
 - $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
 - $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:

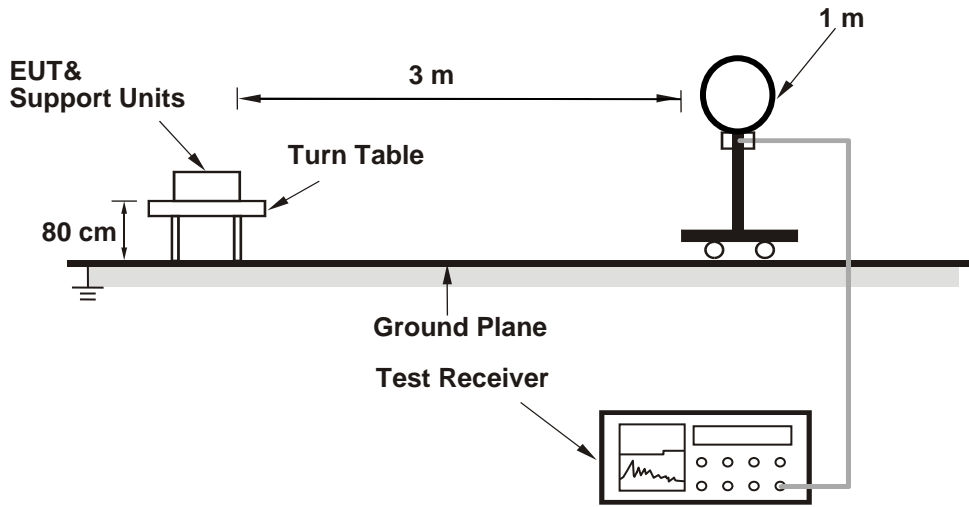
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.1.4 Deviation from Test Standard

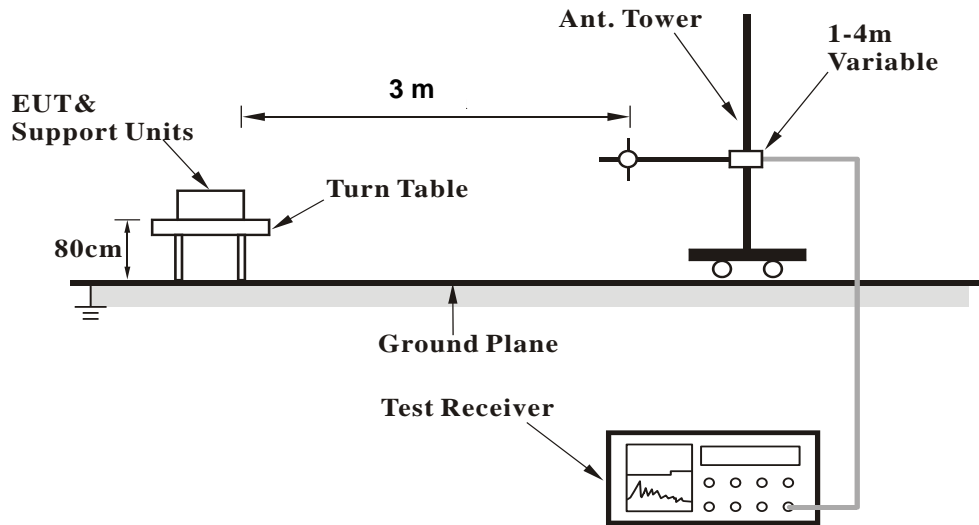
No deviation.

4.1.5 Test Set Up

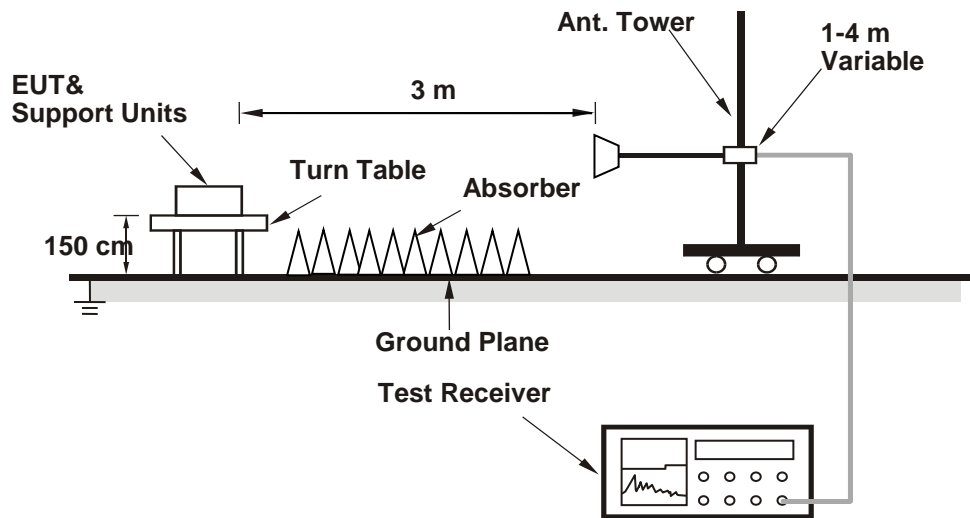
<Radiated Emission below 30 MHz>



<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 :
BT EDR + LTE Band 7

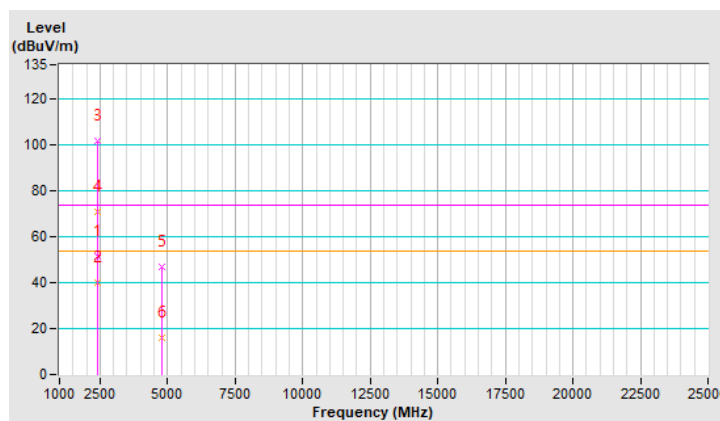
RF Mode	BT EDR + LTE Band 7	Channel	Channel 0 + Channel 21350
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	51.55 PK	74.00	-22.45	2.36 H	131	47.54	4.01
2	2390.00	40.22 AV	54.00	-13.78	2.36 H	131	36.21	4.01
3	*2402.00	101.67 PK			2.36 H	131	65.13	36.54
4	*2402.00	70.88 AV			2.36 H	131	34.34	36.54
5	4804.00	47.08 PK	74.00	-26.92	1.35 H	28	38.25	8.83
6	4804.00	16.29 AV	54.00	-37.71	1.35 H	28	7.46	8.83

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. For Fundamental frequency and bandedge & harmonic:

The average value of fundamental frequency is: average value = peak value + 20log(Duty cycle)
where the duty factor is calculated from following formula: $20\text{Log}(\text{Duty cycle}) = 20 \log (2.887\text{ms} \cdot 1/100) = -30.79\text{dB}$.



RF Mode	BT EDR + LTE Band 7	Channel	Channel 0 + Channel 21350
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

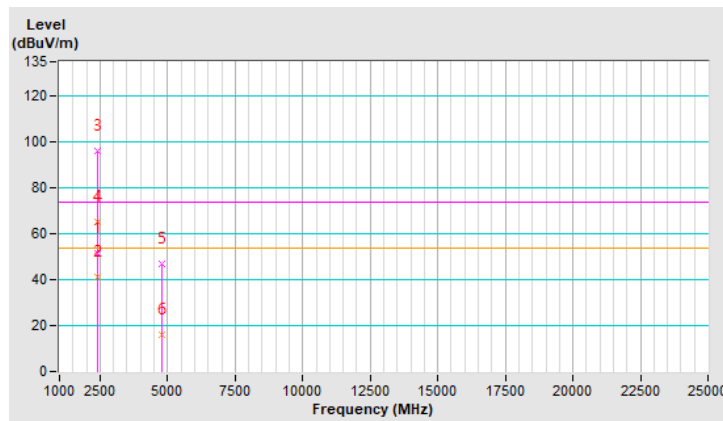
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	51.69 PK	74.00	-22.31	1.19 V	162	47.68	4.01
2	2390.00	41.11 AV	54.00	-12.89	1.19 V	162	37.10	4.01
3	*2402.00	96.09 PK			1.19 V	162	59.55	36.54
4	*2402.00	65.30 AV			1.19 V	162	28.76	36.54
5	4804.00	46.99 PK	74.00	-27.01	1.56 V	322	38.16	8.83
6	4804.00	16.20 AV	54.00	-37.80	1.56 V	322	7.37	8.83

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. For Fundamental frequency and bandedge & harmonic:

The average value of fundamental frequency is: average value = peak value + 20log(Duty cycle)

where the duty factor is calculated from following formula: $20\text{Log}(\text{Duty cycle}) = 20 \log (2.887\text{ms} \times 1/100) = -30.79\text{dB}$.



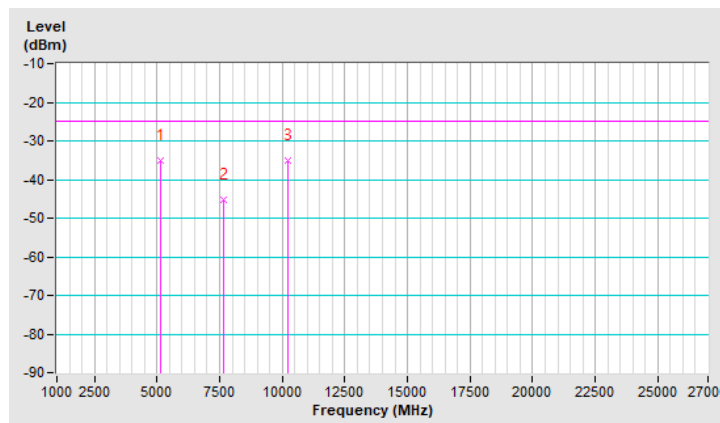
LTE Band 7 + BT EDR

RF Mode	LTE Band 7 + BT EDR	Channel	Channel 21350 + Channel 0
Frequency Range	1GMHz ~ 27GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5120.00	-35.04	-25.00	-10.04	1.34 H	208	-47.22	12.18
2	7680.00	-45.16	-25.00	-20.16	1.59 H	271	-59.75	14.59
3	10240.00	-34.96	-25.00	-9.96	1.03 H	284	-52.23	17.27

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

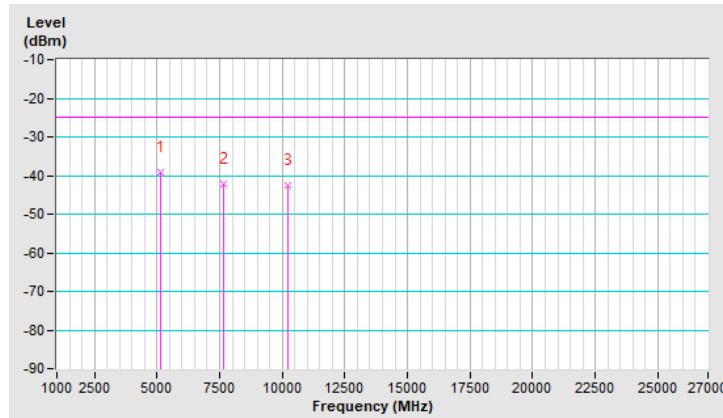


RF Mode	LTE Band 7 + BT EDR	Channel	Channel 21350 + Channel 0
Frequency Range	1GMHz ~ 27GHz		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5120.00	-39.22	-25.00	-14.22	1.24 V	81	-51.40	12.18
2	7680.00	-42.06	-25.00	-17.06	1.25 V	49	-56.65	14.59
3	10240.00	-42.69	-25.00	-17.69	2.01 V	136	-59.96	17.27

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



9 kHz ~ 30 MHz Data:

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

30 MHz ~ 1 GHz Worst-Case Data:

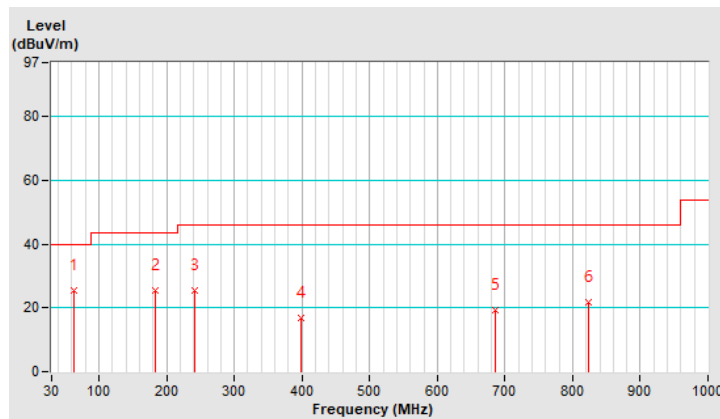
BT EDR + LTE Band 7

RF Mode	BT EDR + LTE Band 7	Channel	Channel 0 + Channel 21350
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	62.26	25.40 QP	40.00	-14.60	1.24 H	196	43.44	-18.04
2	182.93	25.41 QP	43.50	-18.09	2.04 H	163	43.94	-18.53
3	241.31	25.37 QP	46.00	-20.63	1.31 H	198	43.38	-18.01
4	399.41	16.84 QP	46.00	-29.16	1.54 H	169	30.06	-13.22
5	686.39	19.37 QP	46.00	-26.63	1.94 H	82	27.10	-7.73
6	824.15	21.73 QP	46.00	-24.27	1.36 H	225	27.21	-5.48

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

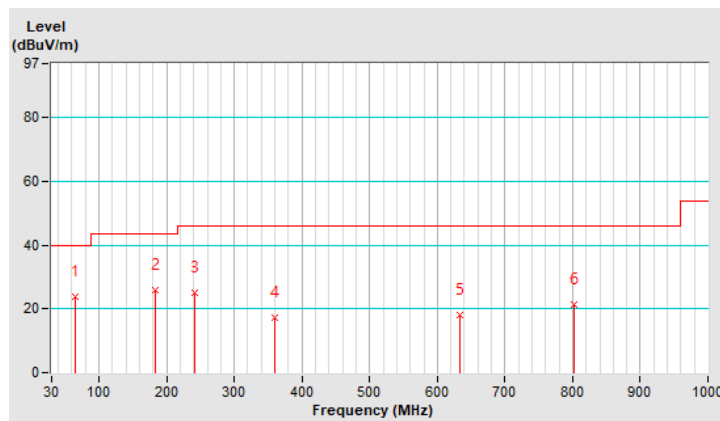


RF Mode	BT EDR + LTE Band 7	Channel	Channel 0 + Channel 21350
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	64.26	23.91 QP	40.00	-16.09	1.94 V	221	42.09	-18.18
2	183.92	25.71 QP	43.50	-17.79	1.24 V	93	44.36	-18.65
3	242.34	25.22 QP	46.00	-20.78	1.41 V	203	43.19	-17.97
4	359.65	17.25 QP	46.00	-28.75	1.44 V	203	31.62	-14.37
5	632.55	18.16 QP	46.00	-27.84	2.50 V	134	26.52	-8.36
6	802.12	21.39 QP	46.00	-24.61	1.12 V	64	27.27	-5.88

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



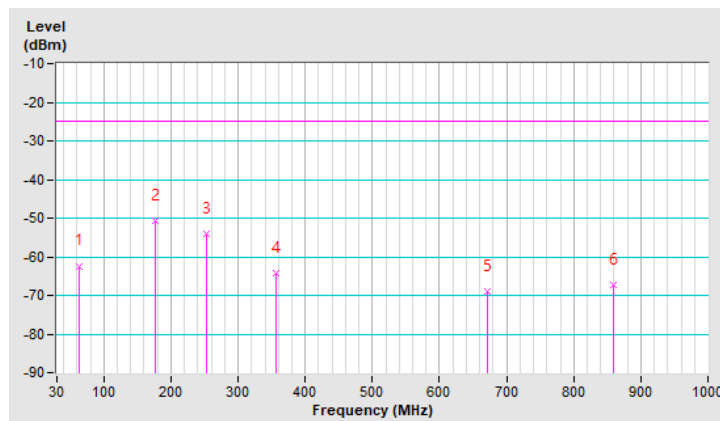
LTE Band 7 + BT EDR

RF Mode	LTE Band 7 + BT EDR	Channel	Channel 21350 + Channel 0
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	62.65	-62.37	-25.00	-37.37	1.26 H	97	-44.27	-18.10
2	176.32	-50.65	-25.00	-25.65	2.74 H	141	-32.97	-17.68
3	253.36	-54.12	-25.00	-29.12	1.98 H	27	-36.44	-17.68
4	356.28	-64.25	-25.00	-39.25	1.74 H	223	-49.83	-14.42
5	671.95	-69.02	-25.00	-44.02	1.34 H	203	-60.92	-8.10
6	859.36	-67.24	-25.00	-42.24	1.35 H	197	-62.25	-4.99

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

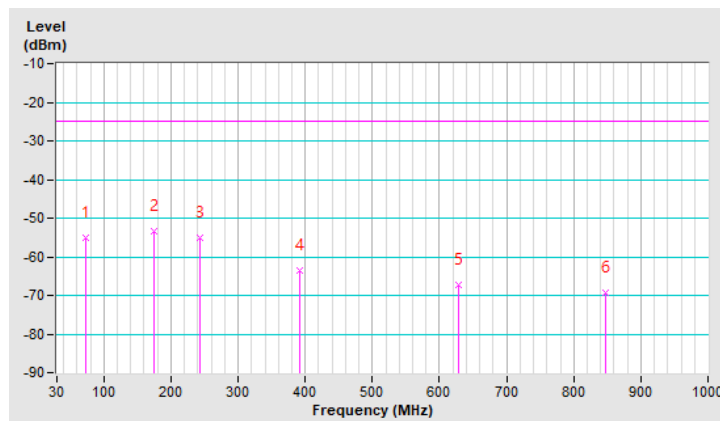


RF Mode	LTE Band 7 + BT EDR	Channel	Channel 21350 + Channel 0
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	73.41	-54.92	-25.00	-29.92	1.39 V	220	-34.68	-20.24
2	175.26	-53.39	-25.00	-28.39	1.25 V	162	-35.83	-17.56
3	243.96	-55.06	-25.00	-30.06	2.04 V	127	-37.15	-17.91
4	392.30	-63.69	-25.00	-38.69	2.03 V	211	-50.30	-13.39
5	628.35	-67.39	-25.00	-42.39	2.20 V	127	-59.00	-8.39
6	846.72	-69.32	-25.00	-44.32	2.11 V	6	-64.15	-5.17

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



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:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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