Partial FCC Test Report

(PART 27)

Report No.:	RFBHTZ-WTW-P22090089-4
FCC ID:	PPQ202008EG91NAXD
Test Model:	EG91NAXD
Received Date:	Sep. 16, 2022
Test Date:	Feb. 09, 2023
Issued Date:	Mar. 14, 2023
Applicant:	LITE-ON Technology Corp.
Address:	Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City 23585, Taiwan (R.O.C.)
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

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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Release Control Record

Issue No.	Description	Date Issued
RFBHTZ-WTW-P22090089-4	Original Release	Mar. 14, 2023

1 Certificate of Conformity

Product:	EG91NAXD
Brand:	LITEON
Test Model:	EG91NAXD
Sample Status:	Engineering Sample
Applicant:	LITE-ON Technology Corp.
Test Date:	Feb. 09, 2023
Standards:	FCC Part 27, Subpart C, L

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 : Gina Liu , **Date:** Mar. 14, 2023

Gina Liu / Specialist

Approved by : Jeremy Lin , **Date:** Mar. 14, 2023

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (WCDMA Band 4 & LTE 4)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(d)	Equivalent Isotropically radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation characteristics	N/A	Refer to Note
2.1055 27.54	Frequency Stability	N/A	Refer to Note
2.1049	Emission Bandwidth	N/A	Refer to Note
2.1051 27.53(h)	Out of Band Emission Measurements	N/A	Refer to Note
27.50(d)(5)	Peak To Average Ratio	N/A	Refer to Note
2.1051 27.53(h)	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -18.27 dB at 45.52 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 12)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(c)	Equivalent radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation characteristics	N/A	Refer to Note
2.1055 27.54	Frequency Stability	N/A	Refer to Note
2.1049	Emission Bandwidth	N/A	Refer to Note
2.1051 27.53(g)	Out of Band Emission Measurements	N/A	Refer to Note
--	Peak To Average Ratio	N/A	Refer to Note
2.1051 27.53(g)	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -21.20 dB at 44.55 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 13)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(b)	Equivalent radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation characteristics	N/A	Refer to Note
2.1055 27.54	Frequency Stability	N/A	Refer to Note
2.1049	Emission Bandwidth	N/A	Refer to Note
2.1051 27.53(c)	Out of Band Emission Measurements	N/A	Refer to Note
--	Peak To Average Ratio	N/A	Refer to Note
2.1051 27.53(c)(f)	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 27.53(c)(f))	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -24.08 dB at 73.65 MHz.

Note:

1. This report is a partial report, only test item of Effective Isotropic Radiated Power, Equivalent radiated power & Radiated Emissions were performed for this report. Other testing data please refer to TA Technology (Shanghai) Co., Ltd. report no.: R2006A0379-R5.
2. 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	2.44 dB
	30 MHz ~ 200 MHz	2.95 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 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	NA	NA
Turn Table Max-Full	MFT-201SS	NA	NA	NA
Turn Table Controller Max-Full	MG-7802	NA	NA	NA
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 27, 2022	Apr. 26, 2023
Signal Analyzer Agilent	N9010A	MY52220207	Jan. 03, 2023	Jan. 02, 2024
Pre-amplifier EMCI	EMC001340	980201	Sep. 23, 2022	Sep. 22, 2023
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	Jan. 07, 2023	Jan. 06, 2024
Pre-Ammlifier EMCI	EMC 330H	980112	Oct. 01, 2022	Sep. 30, 2023
Bi_Log Antenna Schwarzbeck	VULB9168	9168-472	Oct. 21, 2022	Oct. 20, 2023
RF Coaxial Cable WORKEN	8D-FB	Cable-Ch10-01	Oct. 01, 2022	Sep. 30, 2023
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	Nov. 13, 2022	Nov. 12, 2023
Pre-Amplifier EMCI	EMC 012645	980115	Oct. 01, 2022	Sep. 30, 2023
RF Coaxial Cable EMCI	EMC104-SM-SM- 8000+3000	171005	Oct. 01, 2022	Sep. 30, 2023
RF Coaxial Cable HUBER SUHNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 01, 2022	Sep. 30, 2023
RF FLITER MICRO-TRONICS	BRM50716	060	Jan. 11, 2023	Jan. 10, 2024
RF FLITER MICRO-TRONICS	BRM17690	004	Jan. 11, 2023	Jan. 10, 2024
Boresight antenna tower fixture BV	BAF-02	7	NA	NA
Pre-Ammlifier EMCI	EMC 184045	980116	Oct. 01, 2022	Sep. 30, 2023
Horn Antenna Schwarzbeck	BBHA 9170	148	Nov. 13, 2022	Nov. 12, 2023
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Jul. 09, 2022	Jul. 08, 2023
RF Coaxial Cable EMCI	EMC102-KM-KM- 3000	150929	Jul. 09, 2022	Jul. 08, 2023
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 26, 2021	Aug. 25, 2023

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 test was performed in HY - 966 chamber 5.

3 General Information

3.1 General Description of EUT

Product	EG91NAXD		
Brand	LITEON		
Test Model	EG91NAXD		
Status of EUT	Engineering Sample		
Power Supply Rating	208- 240Vac		
Modulation Type	WCDMA	QPSK	
	LTE	QPSK, 16QAM	
Frequency Range	WCDMA Band 4	1712.4 ~ 1752.6 MHz	
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz	
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz	
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz	
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz	
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz	
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz	
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz	
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz	
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz	
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz	
	LTE Band 13 (Channel Bandwidth: 5 MHz)	779.5 ~ 784.5 MHz	
	LTE Band 13 (Channel Bandwidth: 10 MHz)	782.0 MHz	
Max. ERP Power		QPSK	16QAM
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	69.502 mW (18.42dBm)	53.333 mW (17.27dBm)
	LTE Band 12 (Channel Bandwidth: 3 MHz)	74.817 mW (18.74dBm)	58.479 mW (17.67dBm)
	LTE Band 12 (Channel Bandwidth: 5 MHz)	81.096 mW (19.09dBm)	62.951 mW (17.99dBm)
	LTE Band 12 (Channel Bandwidth: 10 MHz)	87.700 mW (19.43dBm)	68.234 mW (18.34dBm)
	LTE Band 13 (Channel Bandwidth: 5 MHz)	170.216 mW (22.31dBm)	133.660 mW (21.26Bm)
	LTE Band 13 (Channel Bandwidth: 10 MHz)	172.982 mW (22.38dBm)	137.088 mW (21.37dBm)
Max. EIRP Power	WCDMA Band 4	254.097 mW (24.05dBm)	
		QPSK	16QAM
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	222.844 mW (23.48dBm)	177.828 mW (22.50dBm)
	LTE Band 4 (Channel Bandwidth: 3 MHz)	242.103 mW (23.84dBm)	190.985 mW (22.81dBm)
	LTE Band 4 (Channel Bandwidth: 5 MHz)	262.422 mW (24.19dBm)	207.970 mW (23.18dBm)
	LTE Band 4 (Channel Bandwidth: 10 MHz)	283.139 mW (24.52dBm)	224.388 mW (23.51dBm)

	LTE Band 4 (Channel Bandwidth: 15 MHz)	308.319 mW (24.89dBm)	244.343 mW (23.88Bm)
	LTE Band 4 (Channel Bandwidth: 20 MHz)	332.660 mW (25.22dBm)	263.027 mW (24.20dBm)
Antenna Type	Monopole Coupling		
Antenna Gain	WCDMA Band 4	2 dBi	
	LTE Band 4	2 dBi	
	LTE Band 12	1.9 dBi	
	LTE Band 13	1.7 dBi	
Accessory Device	Refer to Note as below		
Data Cable Supplied	Refer to Note as below		

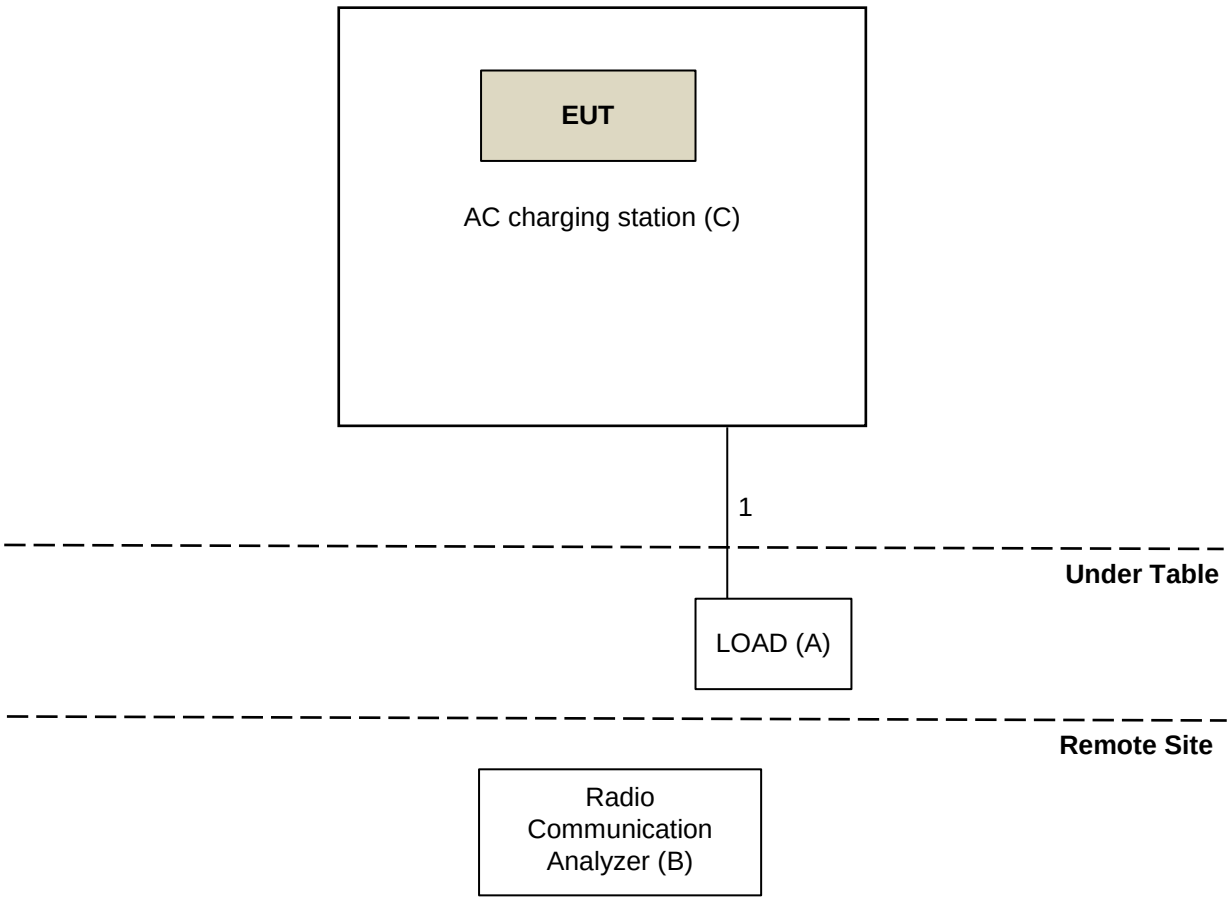
Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to TA Technology (Shanghai) Co., Ltd. report no.: R2006A0379-R5. The difference compared with original report are adding end-product and antenna (Brand: Auden / Model: D32788-30). Therefore, only test item of Effective Isotropic Radiated Power & Radiated Emissions were performed for this report. Other testing data please refer to original report.
2. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Model	W1-UC168-0MK1ER
LTE module (FCC: PPQ202008EG91NAXD)	✓
Wi-Fi module (FCC: PPQLILYW131)	✓
RFID module (FCC: PPQRYORR2L)	✓
Ethernet	✓
LCD module	✓

3. Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.
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 Configuration of System under Test



3.2.1 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	Remarks
A	LOAD	NA	NA	NA	NA	Provided by Lab
B	Radio Communication Analyzer	Anritsu	MT8820C	6201300640	N/A	Provided by Lab
C	AC charging station	LITEON	EX-1193-M,	NA	NA	Provided by Client

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	**Remarks**
1.	RJ-45 Cable	2	1.8	N	0	Provided by Lab

Note:

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

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	Radiated Emission
WCDMA Band 4	Z-Axis
LTE Band 4	Z-Axis
LTE Band 12	Z-Axis
LTE Band 13	Z-Axis

WCDMA Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
-	Radiated Emission	1312 to 1513	1413	WCDMA

Note: For radiated emission, select the worst radiated emission channel (original report) for final testing.

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Radiated Emission	20050 to 20300	20175	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP, had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission, select the worst radiated emission channel (original report) for final testing.

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Radiated Emission	23060 to 23130	23095	10 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.

For radiated emission, select the worst radiated emission channel (original report) for final testing.

LTE Band 13

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Radiated Emission	23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission, select the worst radiated emission channel (original report) for final testing.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 60 % RH	120 Vac, 60 Hz	Vincent Chen
Radiated Emission	25 deg. C, 72 % RH	120 Vac, 60 Hz	Vincent Chen

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards and references

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

Test Standard:
FCC 47 CFR Part 2
FCC 47 CFR Part 27
ANSI 63.26-2015

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

References Test Guidance:
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI/TIA/EIA-603-E 2016

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For WCDMA Band 4, LTE Band 4:
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator (Built-in power meter). The power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is
given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

4.1.3 Test Setup

Conducted Power Measurement:

4.1.4 Test Results

Conducted Output Power (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	21.76	22.05	21.92
HSDPA Subtest-1	20.96	21.27	21.06
HSDPA Subtest-2	20.92	21.23	21.11
HSDPA Subtest-3	20.47	20.79	20.51
HSDPA Subtest-4	20.44	20.76	20.52
DC-HSDPA Subtest-1	20.87	21.19	21.06
DC-HSDPA Subtest-2	20.82	21.16	21.21
DC-HSDPA Subtest-3	20.35	20.72	20.45
DC-HSDPA Subtest-4	20.32	20.68	20.71
HSUPA Subtest-1	20.85	21.22	21.08
HSUPA Subtest-2	18.80	19.17	19.06
HSUPA Subtest-3	19.87	20.26	19.99
HSUPA Subtest-4	18.92	19.18	19.05
HSUPA Subtest-5	20.82	21.11	21.21

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	23.02	**23.22**	23.15
		1	50	22.92	23.10	23.00
		1	99	22.71	22.97	22.83
		50	0	21.91	22.10	22.05
		50	25	21.73	21.91	21.87
		50	50	21.66	21.76	21.82
		100	0	21.80	22.11	22.05
20M	16QAM	1	0	21.98	22.20	22.14
		1	50	21.87	22.04	22.01
		1	99	21.71	21.86	21.75
		50	0	20.74	21.00	20.99
		50	25	20.65	20.83	20.77
		50	50	20.63	20.81	20.68
		100	0	20.81	21.01	20.90
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	22.65	22.89	22.78
		1	37	22.60	22.75	22.67
		1	74	22.36	22.64	22.47
		36	0	21.56	21.75	21.68
		36	19	21.38	21.57	21.54
		36	39	21.32	21.39	21.50
		75	0	21.45	21.76	21.69
15M	16QAM	1	0	21.63	21.88	21.82
		1	37	21.51	21.72	21.67
		1	74	21.34	21.50	21.39
		36	0	20.42	20.63	20.67
		36	19	20.32	20.49	20.41
		36	39	20.29	20.49	20.35
		75	0	20.44	20.65	20.53

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	22.35	22.52	22.47
		1	24	22.21	22.37	22.32
		1	49	22.05	22.28	22.14
		25	0	21.24	21.38	21.40
		25	12	21.04	21.22	21.16
		25	25	20.99	21.09	21.09
		50	0	21.10	21.43	21.32
10M	16QAM	1	0	21.27	21.51	21.45
		1	24	21.18	21.38	21.29
		1	49	20.99	21.18	21.05
		25	0	20.02	20.32	20.26
		25	12	20.00	20.18	20.07
		25	25	19.97	20.11	19.97
		50	0	20.11	20.35	20.20
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	21.99	22.19	22.14
		1	12	21.86	22.02	21.98
		1	24	21.69	21.95	21.81
		12	0	20.88	21.06	21.05
		12	6	20.69	20.90	20.82
		12	13	20.66	20.73	20.72
		25	0	20.73	21.06	20.98
5M	16QAM	1	0	20.93	21.18	21.11
		1	12	20.82	21.02	20.95
		1	24	20.65	20.85	20.69
		12	0	19.70	19.95	19.93
		12	6	19.63	19.81	19.73
		12	13	19.59	19.74	19.62
		25	0	19.78	20.02	19.89

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	21.68	21.84	21.73
		1	7	21.52	21.64	21.63
		1	14	21.34	21.64	21.44
		8	0	20.56	20.70	20.72
		8	3	20.35	20.55	20.47
		8	7	20.33	20.42	20.38
		15	0	20.41	20.77	20.63
3M	16QAM	1	0	20.61	20.81	20.77
		1	7	20.52	20.66	20.64
		1	14	20.37	20.51	20.39
		8	0	19.33	19.62	19.60
		8	3	19.31	19.48	19.39
		8	7	19.28	19.40	19.29
		15	0	19.45	19.62	19.51
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	21.28	21.48	21.42
		1	2	21.16	21.35	21.31
		1	5	21.03	21.26	21.11
		3	0	20.20	20.35	20.36
		3	1	20.03	20.18	20.16
		3	3	19.94	20.06	20.02
		6	0	20.08	20.42	20.26
1.4M	16QAM	1	0	20.21	20.50	20.41
		1	2	20.21	20.32	20.32
		1	5	20.01	20.11	20.03
		3	0	19.00	19.28	19.25
		3	1	18.95	19.09	19.04
		3	3	18.92	19.07	18.90
		6	0	19.05	19.28	19.16

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	19.55	**19.68**	19.54
		1	24	19.41	19.53	19.42
		1	49	19.20	19.33	19.25
		25	0	18.41	18.57	18.38
		25	12	18.21	18.40	18.20
		25	25	18.10	18.23	18.04
		50	0	18.33	18.57	18.35
10M	16QAM	1	0	18.46	18.59	18.47
		1	24	18.42	18.48	18.41
		1	49	18.20	18.44	18.21
		25	0	17.45	17.36	17.42
		25	12	17.26	17.24	17.19
		25	25	17.20	17.17	17.16
		50	0	17.31	17.40	17.31
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	19.22	19.34	19.20
		1	12	19.07	19.18	19.06
		1	24	18.83	18.99	18.92
		12	0	18.08	18.23	18.01
		12	6	17.86	18.07	17.87
		12	13	17.73	17.90	17.71
		25	0	18.01	18.21	18.02
5M	16QAM	1	0	18.10	18.24	18.15
		1	12	18.10	18.14	18.08
		1	24	17.85	18.11	17.89
		12	0	17.10	17.04	17.05
		12	6	16.90	16.88	16.83
		12	13	16.88	16.83	16.80
		25	0	16.95	17.04	16.96

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	18.87	18.99	18.87
		1	7	18.73	18.86	18.68
		1	14	18.48	18.64	18.54
		8	0	17.77	17.84	17.67
		8	3	17.51	17.69	17.50
		8	7	17.45	17.53	17.32
		15	0	17.63	17.84	17.65
3M	16QAM	1	0	17.77	17.92	17.77
		1	7	17.77	17.77	17.71
		1	14	17.52	17.78	17.54
		8	0	16.76	16.70	16.74
		8	3	16.59	16.56	16.52
		8	7	16.52	16.50	16.46
		15	0	16.60	16.70	16.58
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	18.56	18.67	18.55
		1	2	18.35	18.45	18.32
		1	5	18.15	18.29	18.19
		3	0	17.35	17.51	17.37
		3	1	17.12	17.38	17.20
		3	3	17.05	17.19	16.96
		6	0	17.25	17.50	17.30
1.4M	16QAM	1	0	17.42	17.52	17.38
		1	2	17.44	17.46	17.41
		1	5	17.17	17.46	17.19
		3	0	16.41	16.28	16.37
		3	1	16.21	16.17	16.16
		3	3	16.19	16.17	16.07
		6	0	16.21	16.36	16.27

LTE Band 13						
BW	MCS Index	RB Size	RB Offset		Mid	
		Channel			23230	
		Frequency (MHz)			782	
10M	QPSK	1	0		**22.83**	
		1	24		22.73	
		1	49		22.57	
		25	0		21.69	
		25	12		21.49	
		25	25		21.36	
		50	0		21.61	
10M	16QAM	1	0		21.82	
		1	24		21.63	
		1	49		21.53	
		25	0		20.57	
		25	12		20.49	
		25	25		20.34	
		50	0		20.65	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	22.57	22.76	22.63
		1	12	22.47	22.61	22.49
		1	24	22.27	22.40	22.32
		12	0	21.48	21.60	21.49
		12	6	21.30	21.42	21.31
		12	13	21.15	21.27	21.15
		25	0	21.43	21.66	21.48
5M	16QAM	1	0	21.49	21.71	21.61
		1	12	21.47	21.57	21.44
		1	24	21.22	21.39	21.41
		12	0	20.36	20.52	20.44
		12	6	20.24	20.40	20.28
		12	13	20.15	20.32	20.16
		25	0	20.36	20.55	20.36

ERP Power (dBm)

LTE Band 12						
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**23060**	**23095**	**23130**
		Frequency (MHz)		**704**	**707.5**	**711**
10M	QPSK	1	0	19.30	19.43	19.29
		1	24	19.16	19.28	19.17
		1	49	18.95	19.08	19.00
		25	0	18.16	18.32	18.13
		25	12	17.96	18.15	17.95
		25	25	17.85	17.98	17.79
		50	0	18.08	18.32	18.10
10M	16QAM	1	0	18.21	18.34	18.22
		1	24	18.17	18.23	18.16
		1	49	17.95	18.19	17.96
		25	0	17.20	17.11	17.17
		25	12	17.01	16.99	16.94
		25	25	16.95	16.92	16.91
		50	0	17.06	17.15	17.06
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**23035**	**23095**	**23155**
		Frequency (MHz)		**701.5**	**707.5**	**713.5**
5M	QPSK	1	0	18.97	19.09	18.95
		1	12	18.82	18.93	18.81
		1	24	18.58	18.74	18.67
		12	0	17.83	17.98	17.76
		12	6	17.61	17.82	17.62
		12	13	17.48	17.65	17.46
		25	0	17.76	17.96	17.77
5M	16QAM	1	0	17.85	17.99	17.90
		1	12	17.85	17.89	17.83
		1	24	17.60	17.86	17.64
		12	0	16.85	16.79	16.80
		12	6	16.65	16.63	16.58
		12	13	16.63	16.58	16.55
		25	0	16.70	16.79	16.71

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	18.62	18.74	18.62
		1	7	18.48	18.61	18.43
		1	14	18.23	18.39	18.29
		8	0	17.52	17.59	17.42
		8	3	17.26	17.44	17.25
		8	7	17.20	17.28	17.07
		15	0	17.38	17.59	17.40
3M	16QAM	1	0	17.52	17.67	17.52
		1	7	17.52	17.52	17.46
		1	14	17.27	17.53	17.29
		8	0	16.51	16.45	16.49
		8	3	16.34	16.31	16.27
		8	7	16.27	16.25	16.21
		15	0	16.35	16.45	16.33
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	18.31	18.42	18.30
		1	2	18.10	18.20	18.07
		1	5	17.90	18.04	17.94
		3	0	17.10	17.26	17.12
		3	1	16.87	17.13	16.95
		3	3	16.80	16.94	16.71
		6	0	17.00	17.25	17.05
1.4M	16QAM	1	0	17.17	17.27	17.13
		1	2	17.19	17.21	17.16
		1	5	16.92	17.21	16.94
		3	0	16.16	16.03	16.12
		3	1	15.96	15.92	15.91
		3	3	15.94	15.92	15.82
		6	0	15.96	16.11	16.02

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 13						
BW	MCS Index	RB Size	RB Offset		Mid	
		Channel			23230	
		Frequency (MHz)			782	
10M	QPSK	1	0		22.38	
		1	24		22.28	
		1	49		22.12	
		25	0		21.24	
		25	12		21.04	
		25	25		20.91	
		50	0		21.16	
10M	16QAM	1	0		21.37	
		1	24		21.18	
		1	49		21.08	
		25	0		20.12	
		25	12		20.04	
		25	25		19.89	
		50	0		20.20	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	22.12	22.31	22.18
		1	12	22.02	22.16	22.04
		1	24	21.82	21.95	21.87
		12	0	21.03	21.15	21.04
		12	6	20.85	20.97	20.86
		12	13	20.70	20.82	20.70
		25	0	20.98	21.21	21.03
5M	16QAM	1	0	21.04	21.26	21.16
		1	12	21.02	21.12	20.99
		1	24	20.77	20.94	20.96
		12	0	19.91	20.07	19.99
		12	6	19.79	19.95	19.83
		12	13	19.70	19.87	19.71
		25	0	19.91	20.10	19.91

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

EIRP Power (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	23.76	24.05	23.92
HSDPA Subtest-1	22.96	23.27	23.06
HSDPA Subtest-2	22.92	23.23	23.11
HSDPA Subtest-3	22.47	22.79	22.51
HSDPA Subtest-4	22.44	22.76	22.52
DC-HSDPA Subtest-1	22.87	23.19	23.06
DC-HSDPA Subtest-2	22.82	23.16	23.21
DC-HSDPA Subtest-3	22.35	22.72	22.45
DC-HSDPA Subtest-4	22.32	22.68	22.71
HSUPA Subtest-1	22.85	23.22	23.08
HSUPA Subtest-2	20.80	21.17	21.06
HSUPA Subtest-3	21.87	22.26	21.99
HSUPA Subtest-4	20.92	21.18	21.05
HSUPA Subtest-5	22.82	23.11	23.21

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	25.02	25.22	25.15
		1	50	24.92	25.10	25.00
		1	99	24.71	24.97	24.83
		50	0	23.91	24.10	24.05
		50	25	23.73	23.91	23.87
		50	50	23.66	23.76	23.82
		100	0	23.80	24.11	24.05
20M	16QAM	1	0	23.98	24.20	24.14
		1	50	23.87	24.04	24.01
		1	99	23.71	23.86	23.75
		50	0	22.74	23.00	22.99
		50	25	22.65	22.83	22.77
		50	50	22.63	22.81	22.68
		100	0	22.81	23.01	22.90
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	24.65	24.89	24.78
		1	37	24.60	24.75	24.67
		1	74	24.36	24.64	24.47
		36	0	23.56	23.75	23.68
		36	19	23.38	23.57	23.54
		36	39	23.32	23.39	23.50
		75	0	23.45	23.76	23.69
15M	16QAM	1	0	23.63	23.88	23.82
		1	37	23.51	23.72	23.67
		1	74	23.34	23.50	23.39
		36	0	22.42	22.63	22.67
		36	19	22.32	22.49	22.41
		36	39	22.29	22.49	22.35
		75	0	22.44	22.65	22.53

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	24.35	24.52	24.47
		1	24	24.21	24.37	24.32
		1	49	24.05	24.28	24.14
		25	0	23.24	23.38	23.40
		25	12	23.04	23.22	23.16
		25	25	22.99	23.09	23.09
		50	0	23.10	23.43	23.32
10M	16QAM	1	0	23.27	23.51	23.45
		1	24	23.18	23.38	23.29
		1	49	22.99	23.18	23.05
		25	0	22.02	22.32	22.26
		25	12	22.00	22.18	22.07
		25	25	21.97	22.11	21.97
		50	0	22.11	22.35	22.20
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	23.99	24.19	24.14
		1	12	23.86	24.02	23.98
		1	24	23.69	23.95	23.81
		12	0	22.88	23.06	23.05
		12	6	22.69	22.90	22.82
		12	13	22.66	22.73	22.72
		25	0	22.73	23.06	22.98
5M	16QAM	1	0	22.93	23.18	23.11
		1	12	22.82	23.02	22.95
		1	24	22.65	22.85	22.69
		12	0	21.70	21.95	21.93
		12	6	21.63	21.81	21.73
		12	13	21.59	21.74	21.62
		25	0	21.78	22.02	21.89

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	23.68	23.84	23.73
		1	7	23.52	23.64	23.63
		1	14	23.34	23.64	23.44
		8	0	22.56	22.70	22.72
		8	3	22.35	22.55	22.47
		8	7	22.33	22.42	22.38
		15	0	22.41	22.77	22.63
3M	16QAM	1	0	22.61	22.81	22.77
		1	7	22.52	22.66	22.64
		1	14	22.37	22.51	22.39
		8	0	21.33	21.62	21.60
		8	3	21.31	21.48	21.39
		8	7	21.28	21.40	21.29
		15	0	21.45	21.62	21.51
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	23.28	23.48	23.42
		1	2	23.16	23.35	23.31
		1	5	23.03	23.26	23.11
		3	0	22.20	22.35	22.36
		3	1	22.03	22.18	22.16
		3	3	21.94	22.06	22.02
		6	0	22.08	22.42	22.26
1.4M	16QAM	1	0	22.21	22.50	22.41
		1	2	22.21	22.32	22.32
		1	5	22.01	22.11	22.03
		3	0	21.00	21.28	21.25
		3	1	20.95	21.09	21.04
		3	3	20.92	21.07	20.90
		6	0	21.05	21.28	21.16

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

4.2 Radiated Emission Measurement

4.2.1 Limits of Radiated Emission Measurement

For WCDMA band 4, LTE Band 4:
According to FCC 27.53(h), for operations in the 1695-1710MHz, 1710-1755MHz, 1755-1780 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log (P) dB.

4.2.2 Test Procedure

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 (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

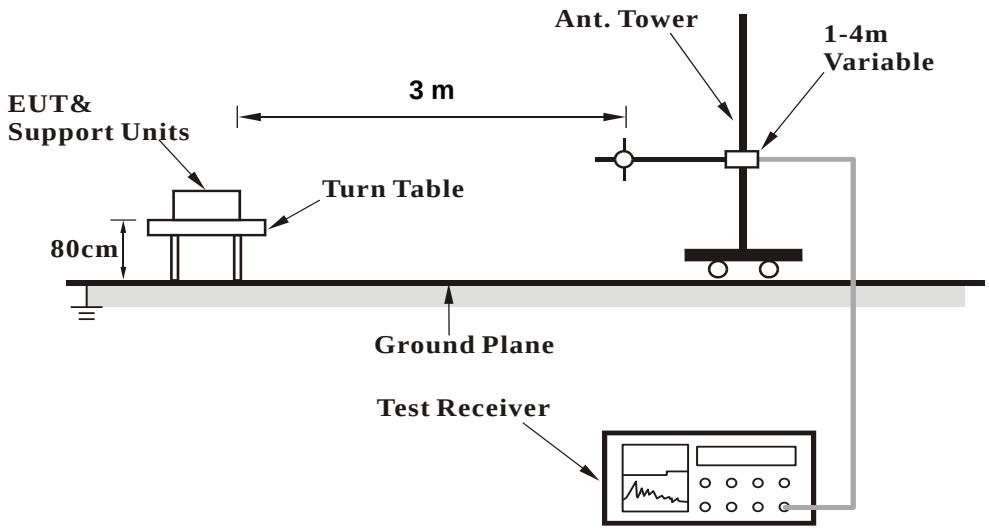
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.2.3 Deviation from Test Standard

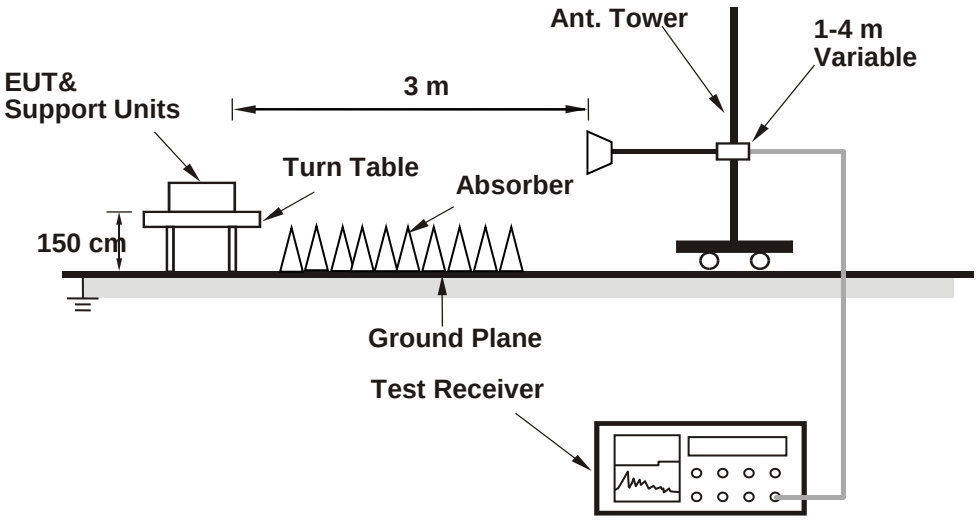
No deviation.

4.2.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

4.2.5 Test Results

Below 1 GHz

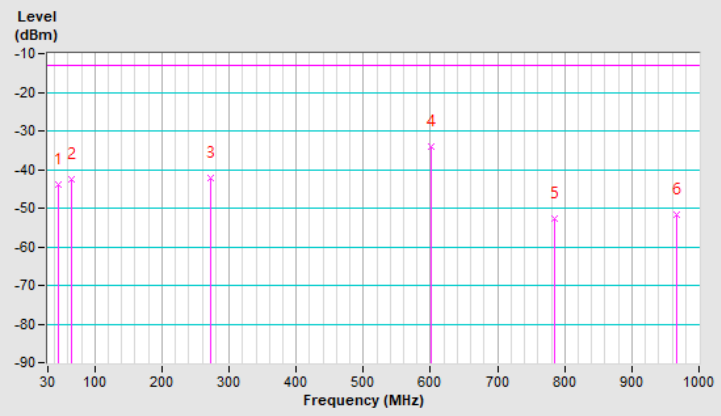
WCDMA Band 4:

RF Mode	TX WCDMA Band IV	Channel	CH 1413：1732.6 MHz
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	45.52	-43.94	-13.00	-30.94	1.50 H	192	63.52	-107.46
2	65.89	-42.63	-13.00	-29.63	1.00 H	334	66.39	-109.02
3	272.50	-42.26	-13.00	-29.26	1.00 H	206	65.59	-107.85
4	600.36	-34.08	-13.00	-21.08	1.50 H	355	66.55	-100.63
5	785.63	-52.67	-13.00	-39.67	2.00 H	2	44.15	-96.82
6	966.05	-51.72	-13.00	-38.72	1.00 H	2	43.65	-95.37

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

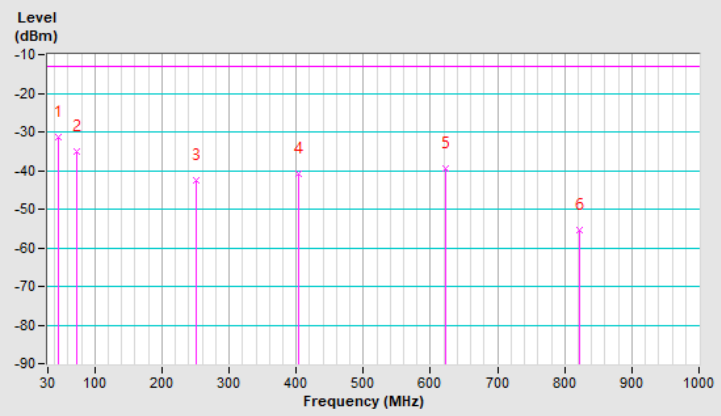


RF Mode	TX WCDMA Band IV	Channel	CH 1413：1732.6 MHz
Frequency Range	30MHz ~ 1GHz		

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	**45.52**	**-31.27**	**-13.00**	**-18.27**	**1.50 V**	**229**	**76.19**	**-107.46**
2	73.65	-35.05	-13.00	-22.05	1.50 V	84	75.32	-110.37
3	251.16	-42.40	-13.00	-29.40	1.00 V	49	66.44	-108.84
4	404.42	-40.98	-13.00	-27.98	1.00 V	340	63.73	-104.71
5	621.70	-39.56	-13.00	-26.56	2.00 V	338	60.50	-100.06
6	822.49	-55.54	-13.00	-42.54	1.00 V	283	41.18	-96.72

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



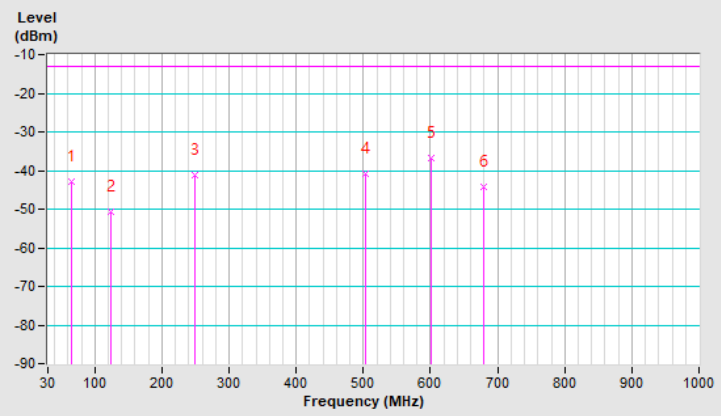
LTE Band 4

RF Mode	TX LTE Band 4-20MHz	Channel	CH 20175：1732.5 MHz
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	65.89	-42.81	-13.00	-29.81	1.00 H	321	66.21	-109.02
2	123.12	-50.65	-13.00	-37.65	1.50 H	229	58.60	-109.25
3	248.25	-41.12	-13.00	-28.12	2.00 H	201	67.81	-108.93
4	503.36	-40.73	-13.00	-27.73	2.00 H	55	61.33	-102.06
5	600.36	-36.70	-13.00	-23.70	1.50 H	83	63.93	-100.63
6	679.90	-44.09	-13.00	-31.09	1.00 H	47	55.11	-99.20

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

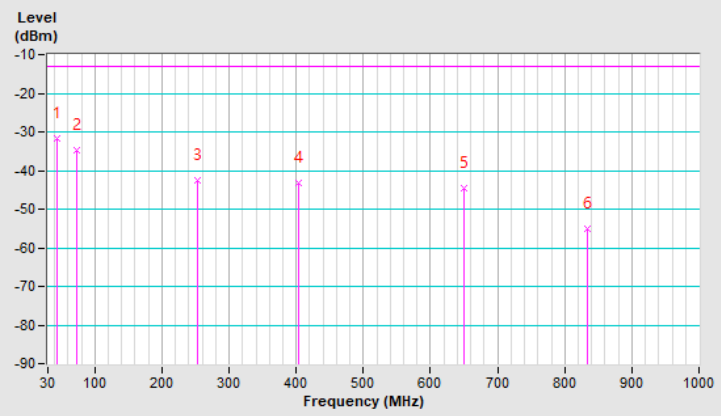


RF Mode	TX LTE Band 4-20MHz	Channel	CH 20175：1732.5 MHz
Frequency Range	30MHz ~ 1GHz		

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	44.55	-31.69	-13.00	-18.69	1.50 V	227	75.86	-107.55
2	73.65	-34.72	-13.00	-21.72	1.00 V	97	75.65	-110.37
3	252.13	-42.43	-13.00	-29.43	1.00 V	18	66.37	-108.80
4	404.42	-43.12	-13.00	-30.12	1.00 V	339	61.59	-104.71
5	650.80	-44.56	-13.00	-31.56	2.00 V	228	55.05	-99.61
6	834.13	-55.09	-13.00	-42.09	2.00 V	202	41.65	-96.74

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

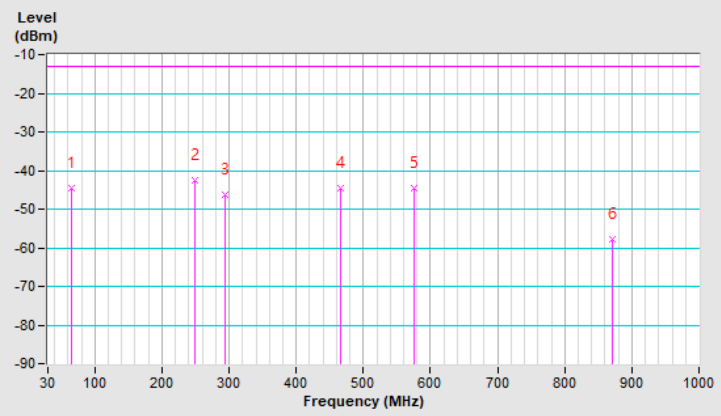


RF Mode	TX LTE Band 12-10MHz	Channel	CH 23095：707.5 MHz
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	65.89	-44.66	-13.00	-31.66	1.50 H	334	66.51	-111.17
2	248.25	-42.63	-13.00	-29.63	1.00 H	208	68.45	-111.08
3	294.81	-46.19	-13.00	-33.19	2.00 H	215	63.12	-109.31
4	465.53	-44.43	-13.00	-31.43	1.00 H	285	60.69	-105.12
5	576.11	-44.53	-13.00	-31.53	1.50 H	66	58.76	-103.29
6	870.02	-57.94	-13.00	-44.94	1.50 H	345	40.91	-98.85

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The ERP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

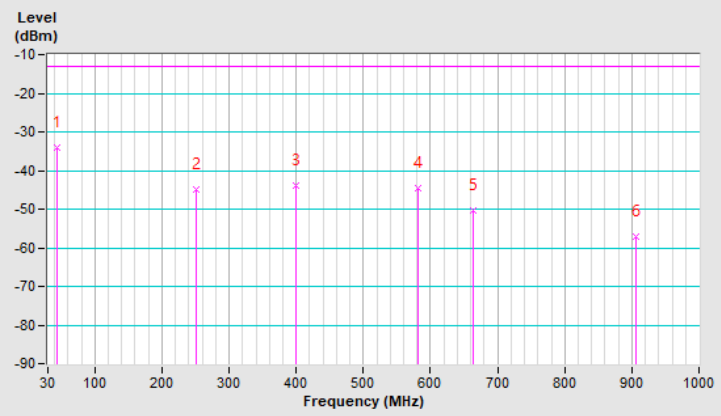


RF Mode	TX LTE Band 12-10MHz	Channel	CH 23095：707.5 MHz
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	44.55	-34.20	-13.00	-21.20	1.00 V	242	75.50	-109.70
2	250.19	-44.96	-13.00	-31.96	1.50 V	45	66.07	-111.03
3	399.57	-43.98	-13.00	-30.98	1.00 V	9	62.96	-106.94
4	581.93	-44.65	-13.00	-31.65	2.00 V	227	58.52	-103.17
5	664.38	-50.19	-13.00	-37.19	1.00 V	324	51.45	-101.64
6	906.88	-57.16	-13.00	-44.16	1.50 V	28	41.19	-98.35

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The ERP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

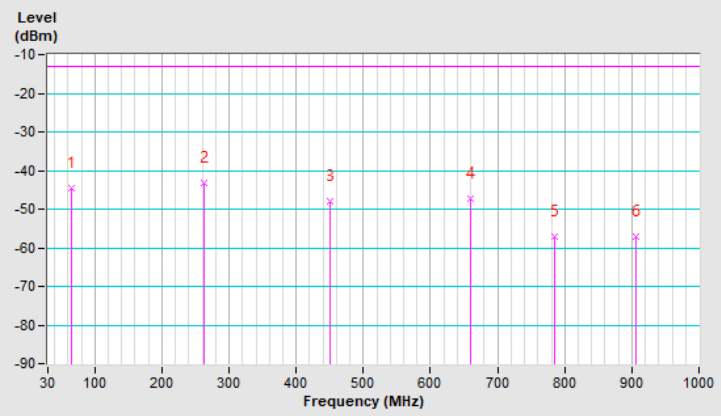


RF Mode	TX LTE Band 13-10MHz	Channel	CH 23230：782 MHz
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	65.89	-44.70	-13.00	-31.70	1.00 H	317	66.47	-111.17
2	261.83	-43.35	-13.00	-30.35	2.00 H	195	67.19	-110.54
3	450.01	-47.80	-13.00	-34.80	1.00 H	195	57.66	-105.46
4	660.50	-47.18	-13.00	-34.18	1.50 H	42	54.55	-101.73
5	785.63	-57.07	-13.00	-44.07	1.00 H	18	41.90	-98.97
6	906.88	-57.02	-13.00	-44.02	1.50 H	94	41.33	-98.35

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The ERP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

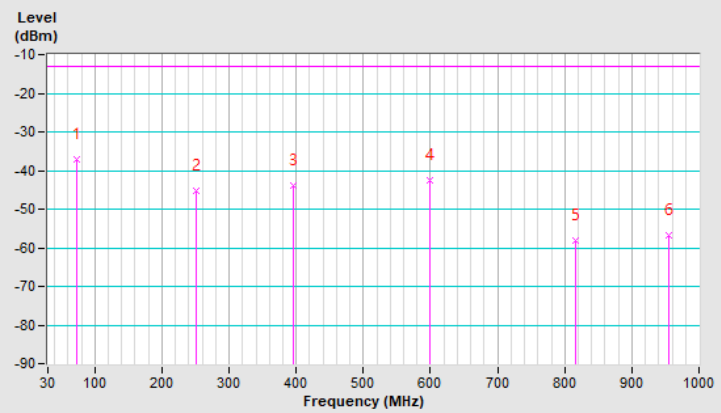


RF Mode	TX LTE Band 13-10MHz	Channel	CH 23230：782 MHz
Frequency Range	30MHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	73.65	-37.08	-13.00	-24.08	1.00 V	90	75.44	-112.52
2	251.16	-45.21	-13.00	-32.21	1.50 V	26	65.78	-110.99
3	395.69	-43.98	-13.00	-30.98	1.00 V	51	63.02	-107.00
4	599.39	-42.43	-13.00	-29.43	2.00 V	212	60.37	-102.80
5	816.67	-58.13	-13.00	-45.13	1.00 V	47	40.77	-98.90
6	954.41	-56.80	-13.00	-43.80	1.50 V	315	40.96	-97.76

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The ERP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Above 1GHz

WCDMA Band 4

RF Mode	TX WCDMA Band IV	Channel	CH 1413：1732.6 MHz
Frequency Range	1GMHz ~ 18GHz		

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	3465.20	-43.19	-13.00	-30.19	1.62 H	332	66.26	-109.45
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	3465.20	-43.82	-13.00	-30.82	1.32 V	332	65.63	-109.45

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

LTE Band 4

RF Mode	LTE Band 4 Channel Bandwidth: 20MHz	Channel	CH 20175：1732.5 MHz
Frequency Range	1 GHz ~ 18 GHz		

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	3465.00	-43.15	-13.00	-30.15	1.69 H	320	66.31	-109.46
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	3465.00	-43.78	-13.00	-30.78	1.37 V	338	65.68	-109.46

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) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

LTE Band 12

RF Mode	LTE Band 12 Channel Bandwidth: 10MHz	Channel	CH 23095：707.5 MHz
Frequency Range	1 GHz ~ 18 GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-47.90	-13.00	-34.90	1.52 H	139	69.92	-117.82
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1415.00	-54.52	-13.00	-41.52	1.28 V	325	63.30	-117.82

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 13

RF Mode	LTE Band 13 Channel Bandwidth: 10MHz	Channel	CH 23230：782 MHz
Frequency Range	1 GHz ~ 18 GHz		

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	3765.00	-50.55	-13.00	-37.55	1.52 H	197	58.45	-109.00
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	3765.00	-51.16	-13.00	-38.16	1.86 V	168	57.84	-109.00

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) + 20log(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:

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Hsin Chu EMC/RF/Telecom Lab
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Tel: 886-3-3183232
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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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