FCC Test Report
(Part 24: LTE Band 25)

Report No.:	RF180919D02-3
FCC ID:	P27-SOR4105T
Test Model:	SOR4105T
Received Date:	Sep. 19, 2018
Test Date:	Nov. 21 ~ 27, 2018
Issued Date:	Dec. 12, 2018
Applicant:	Sercomm Corp.
Address:	8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C. (NanKang Software Park)
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
FCC Registration / Designation Number:	198487 / TW2021

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Release Control Record

Issue No.	Description	Date Issued
RF180919D02-3	Original release	Dec. 12, 2018

1 Certificate of Conformity

Product:	Harman Magic Box
Brand:	Sprint & Harman Kardon
Test Model:	SOR4105T
Sample Status:	Engineering sample
Applicant:	Sercomm Corp.
Test Date:	Nov. 21 ~ 27, 2018
Standards:	FCC Part 24, Subpart E

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 : Annie Chang , **Date:** Dec. 12, 2018

Annie Chang / Senior Specialist

Approved by : Rex. Lai , **Date:** Dec. 12, 2018

Rex Lai / Associate Technical Manager

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective radiated power	Pass	Meet the requirement of limit.
2.1046 24.232(d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1047	Modulation characteristics	PASS	Meet the requirement
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -33.86dB at 3824.98MHz.

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	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.48 dB

2.2 Test Site and Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 21, 2018	Feb. 20, 2019
HP Preamplifier	8449B	3008A01201	Feb. 22, 2018	Feb. 21, 2019
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2018	Feb. 20, 2019
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 6, 2018	Feb. 5, 2019
Schwarzbeck Antenna	VULB 9168	139	Nov. 29, 2017	Nov. 28, 2018
Schwarzbeck Antenna	VHBA 9123	480	May 19, 2017	May 18, 2019
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 1, 2017	Nov. 30, 2018
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 1, 2017	Nov. 30, 2018
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	SF102	Cable-CH6-01	Aug. 13, 2018	Aug. 12, 2019
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Aug. 13, 2018	Aug. 12, 2019
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 4, 2018	Jun. 3, 2019
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Aug. 3, 2018	Aug. 2, 2019
Loop Antenna EMCI	LPA600	270	Aug. 11, 2017	Aug. 10, 2019
EMCO Horn Antenna	3115	00028257	Nov. 30, 2017	Nov. 29, 2018
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 27, 2018	Sep. 26, 2019
Anritsu Power Sensor	MA2411B	0738404	Apr. 26, 2018	Apr. 25, 2019
Anritsu Power Meter	ML2495A	0842014	Apr. 26, 2018	Apr. 25, 2019
Anritsu Radio Communication Analyzer	MT8820C	6201300638	Jun. 27, 2018	Jun. 8, 2019

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: 8449B) 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.

3 General Information

3.1 General Description of EUT

Product	Harman Magic Box
Brand	Sprint & Harman Kardon
Test Model	SOR4105T
Sample Status	Engineering sample
Power Supply Rating	12Vdc form Adapter
Modulation Type	QPSK, 16QAM, 64QAM
Operating Frequency	LTE Band 25 (Channel Bandwidth 5MHz): 1852.5 ~1912.5MHz LTE Band 25 (Channel Bandwidth 10MHz): 1855 ~ 1910MHz
Max. EIRP Power	LTE Band 25 (Channel Bandwidth 5MHz): 722.770mW (28.59dBm) LTE Band 25 (Channel Bandwidth 10MHz): 783.430mW (28.94Bm)
Antenna Type	Ant. 1: Dipole antenna with 5.41dBi gain Ant. 6: Dipole antenna with 5.37dBi gain
Antenna Connector	I-PEX
Accessory Device	Refer to user's manual
Data Cable Supplied	N/A

Note:

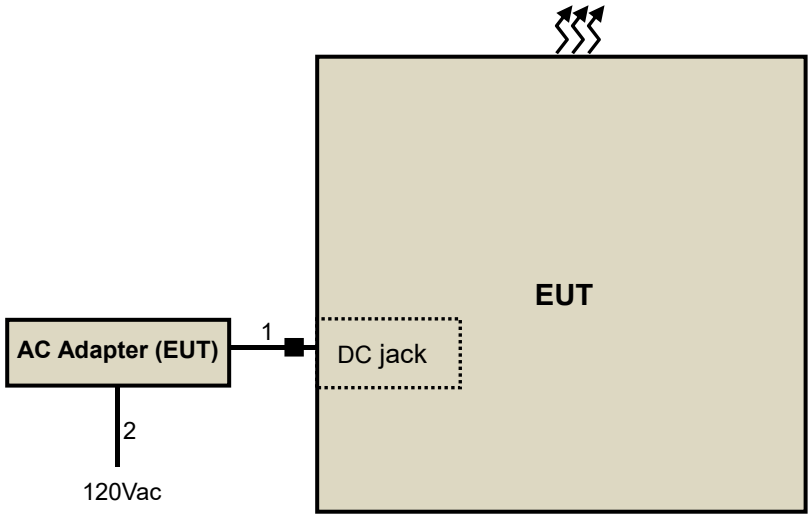
1. The EUT uses following adapter.

Brand	CWT
Model	2ABF060F
AC Input Power	100-240V, 50/60H, 1.7A
DC Output Power	12V, 5A
Power Line	Non-shielded AC 3-Pin cable (3.5m) Non-shielded DC cable (1.5m)

2. The Cross-Palarized antennas is as follows:

LTE Band 25	Antenna port	TX Function
Vertical	Ant. 6	CDD
Horizontal	Ant. 1	

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.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.5	N	1	Supplied by client
2.	AC cable	1	3.5	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

3.3 Test Mode Applicability and Tested Channel Detail

Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
EIRP	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910MHz)	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
Modulation characteristics	26065 to 26665	26065(1852.5MHz)	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
Frequency Stability	26065 to 26665	26065(1852.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
Occupied Bandwidth	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910 MHz)	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
Band Edge	26065 to 26665	26065(1852.5MHz), 26665(1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 25 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26640(1910MHz)	10MHz	QPSK	1 RB / 0 RB Offset 50 RB / 0 RB Offset
Peak to Average Ratio	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910MHz)	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
Conducted Emission	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910MHz)	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Below 1GHz	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910MHz)	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Above 1GHz	26065 to 26665	26065(1852.5MHz), 26365(1882.5MHz), 26665(1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090(1855MHz), 26365(1882.5MHz), 26640(1910MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Note: The conducted output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than other mode. Therefore, only EIRP, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25deg. C, 77%RH	120Vac, 60Hz	Dalen Dai
Modulation characteristics	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Frequency Stability	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Occupied Bandwidth	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Band Edge	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Peak To Average Ratio	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Conducted Emission	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
Radiated Emission	25deg. C, 77%RH	120Vac, 60Hz	Ian Chang

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

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

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. 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.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

Where:

$ERP/EIRP = P_{Meas} + G_T - L_C$

P_{Meas} : Measure transmitter output power.
G_T : Gain of the transmitting antenna.
L_C : signal attenuation in the connecting cable between the transmitter and antenna.

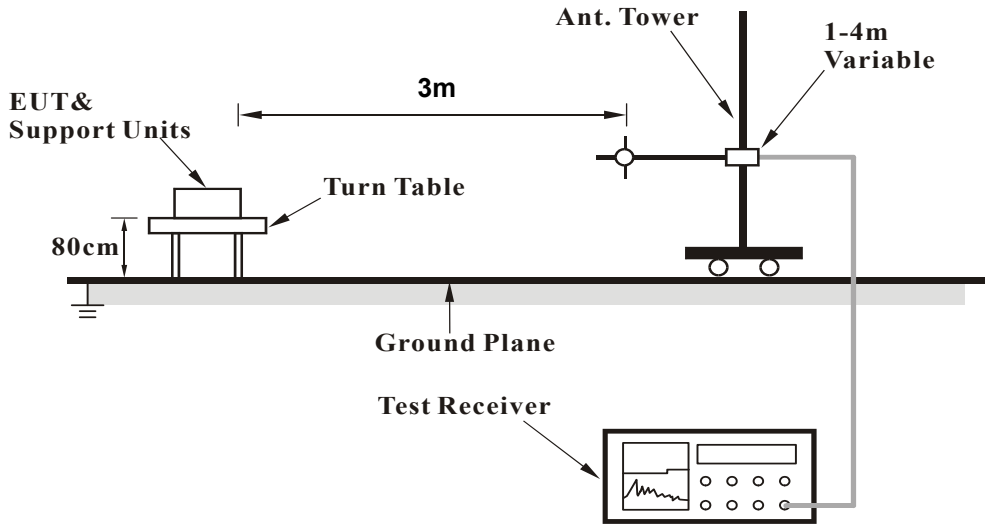
Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, WCDMA, LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

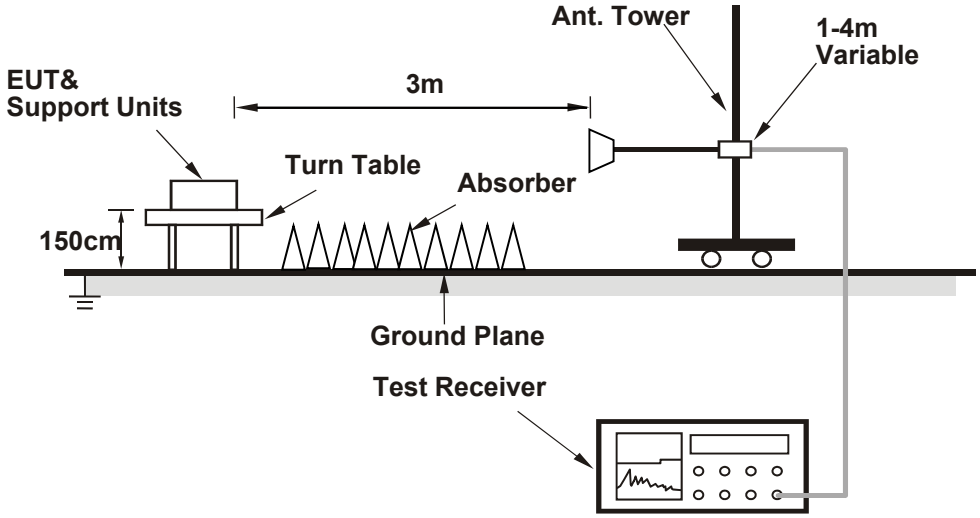
4.1.3 Test Setup

EIRP / ERP Measurement:

For Radiated Emission below or equal 1GHz

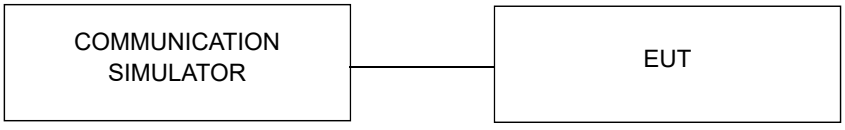


For Radiated Emission above 1GHz



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

Conducted Power Measurement:



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

4.1.4 Test Results

Conducted Output Power (dBm)

LTE Band 25												
BW	MCS Index	RB Size	RB Offset	Low			Mid			High		
		Channel		26065			26365			26665		
		Frequency (MHz)		1852.5			1882.5			1912.5		
		Antenna Part		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
5M	QPSK	1	0	19.57	19.60	22.60	19.59	19.62	22.62	19.52	19.56	22.55
		1	12	19.51	19.55	22.54	19.57	19.59	22.59	19.48	19.53	22.52
		1	24	19.51	19.57	22.55	19.56	19.61	22.60	19.51	19.54	22.54
		12	0	19.42	19.44	22.44	19.44	19.48	22.47	19.52	19.57	22.56
		12	6	19.45	19.47	22.47	19.49	19.53	22.52	19.47	19.48	22.49
		12	13	19.43	19.45	22.45	19.51	19.52	22.53	19.48	19.51	22.51
		25	0	19.54	19.58	22.57	19.61	19.58	22.61	19.48	19.55	22.53
	16QAM	1	0	19.39	19.41	22.41	19.42	19.47	22.46	19.35	19.37	22.37
		1	12	19.35	19.38	22.38	19.40	19.44	22.43	19.33	19.36	22.36
		1	24	19.34	19.40	22.38	19.39	19.45	22.43	19.34	19.36	22.36
		12	0	19.27	19.28	22.29	19.29	19.30	22.31	19.33	19.41	22.38
		12	6	19.27	19.32	22.31	19.33	19.37	22.36	19.29	19.33	22.32
		12	13	19.25	19.29	22.28	19.32	19.37	22.36	19.33	19.33	22.34
		25	0	19.32	19.43	22.39	19.41	19.47	22.45	19.31	19.36	22.35
	64QAM	1	0	19.34	19.39	22.38	19.37	19.37	22.38	19.29	19.35	22.33
		1	12	19.28	19.31	22.31	19.33	19.35	22.35	19.28	19.29	22.30
		1	24	19.30	19.35	22.34	19.33	19.41	22.38	19.30	19.34	22.33
		12	0	19.17	19.23	22.21	19.21	19.26	22.25	19.28	19.37	22.34
		12	6	19.21	19.24	22.24	19.26	19.29	22.29	19.26	19.28	22.28
		12	13	19.18	19.22	22.21	19.30	19.28	22.30	19.25	19.30	22.29
		25	0	19.31	19.34	22.34	19.36	19.38	22.38	19.27	19.34	22.32

LTE Band 25												
BW	MCS Index	RB Size	RB Offset	Low			Mid			High		
		Channel		26090			26365			26640		
		Frequency (MHz)		1855.0			1882.5			1910.0		
		Antenna Part		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
10M	QPSK	1	0	19.49	19.53	22.52	19.53	19.59	22.57	19.46	19.49	22.49
		1	12	19.48	19.49	22.50	19.49	19.52	22.52	19.42	19.47	22.46
		1	24	19.54	19.58	22.57	19.57	19.63	22.61	19.45	19.51	22.49
		12	0	19.46	19.51	22.50	19.45	19.51	22.49	19.41	19.46	22.45
		12	6	19.43	19.46	22.46	19.44	19.49	22.48	19.43	19.45	22.45
		12	13	19.52	19.54	22.54	19.48	19.52	22.51	19.42	19.48	22.46
		25	0	19.52	19.55	22.55	19.56	19.61	22.60	19.47	19.51	22.50
	16QAM	1	0	19.34	19.39	22.38	19.40	19.45	22.44	19.32	19.32	22.33
		1	12	19.32	19.32	22.33	19.35	19.36	22.37	19.25	19.34	22.31
		1	24	19.38	19.42	22.41	19.40	19.48	22.45	19.28	19.36	22.33
		12	0	19.33	19.38	22.37	19.31	19.36	22.35	19.25	19.30	22.29
		12	6	19.26	19.33	22.31	19.31	19.36	22.35	19.28	19.32	22.31
		12	13	19.35	19.37	22.37	19.35	19.36	22.37	19.28	19.34	22.32
		25	0	19.38	19.41	22.41	19.39	19.48	22.45	19.33	19.36	22.36
	64QAM	1	0	19.26	19.30	22.29	19.32	19.38	22.36	19.25	19.29	22.28
		1	12	19.27	19.27	22.28	19.26	19.32	22.30	19.19	19.27	22.24
		1	24	19.33	19.37	22.36	19.32	19.34	22.34	19.25	19.29	22.28
		12	0	19.24	19.29	22.28	19.23	19.28	22.27	19.19	19.24	22.23
		12	6	19.23	19.26	22.26	19.24	19.29	22.28	19.21	19.25	22.24
		12	13	19.32	19.34	22.34	19.28	19.33	22.32	19.22	19.27	22.26
		25	0	19.33	19.35	22.35	19.32	19.34	22.34	19.25	19.27	22.27

EIRP Power (dBm)
LTE Band 25, Channel Bandwidth: 5MHz

Modulation Type: QPSK

MODE		TX channel 26065					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1852.50	27.34	-9.48	38.07	28.59	33.00	-4.41

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	27.07	-10.01	38.50	28.49	33.00	-4.51

MODE		TX channel 26665					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1912.50	26.94	-10.32	38.87	**28.55**	33.00	-4.45

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 16QAM

MODE		TX channel 26065					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1852.50	27.21	-9.61	38.07	28.46	33.00	-4.54

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	26.97	-10.11	38.50	28.39	33.00	-4.61

MODE		TX channel 26665					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1912.50	26.80	-10.46	38.87	28.41	33.00	-4.59

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 64QAM

MODE		TX channel 26065					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1852.50	27.25	-9.57	38.07	28.50	33.00	-4.50

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	27.11	-9.97	38.50	28.53	33.00	-4.47

MODE		TX channel 26665					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1912.50	26.85	-10.41	38.87	28.46	33.00	-4.54

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 25, Channel Bandwidth: 10MHz

Modulation Type: QPSK

MODE		TX channel 26090					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1855.00	27.68	-9.16	38.10	**28.94**	33.00	-4.06

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	27.49	-9.59	38.50	28.91	33.00	-4.09

MODE		TX channel 26640					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1910.00	27.34	-9.92	38.85	28.93	33.00	-4.07

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 16QAM

MODE		TX channel 26090					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1855.00	27.59	-9.25	38.10	28.85	33.00	-4.15

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	27.46	-9.62	38.50	28.88	33.00	-4.12

MODE		TX channel 26640					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1910.00	27.25	-10.01	38.85	28.84	33.00	-4.16

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 64QAM

MODE		TX channel 26090					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1855.00	27.41	-9.43	38.10	28.67	33.00	-4.33

MODE		TX channel 26365					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1882.50	27.37	-9.71	38.50	28.79	33.00	-4.21

MODE		TX channel 26640					
Test Distance: 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1910.00	27.18	-10.08	38.85	28.77	33.00	-4.23

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

4.2 Modulation Characteristics Measurement

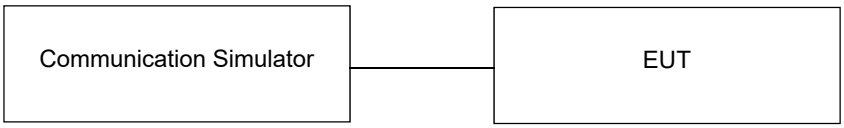
4.2.1 Limits of Modulation Characteristics

N/A

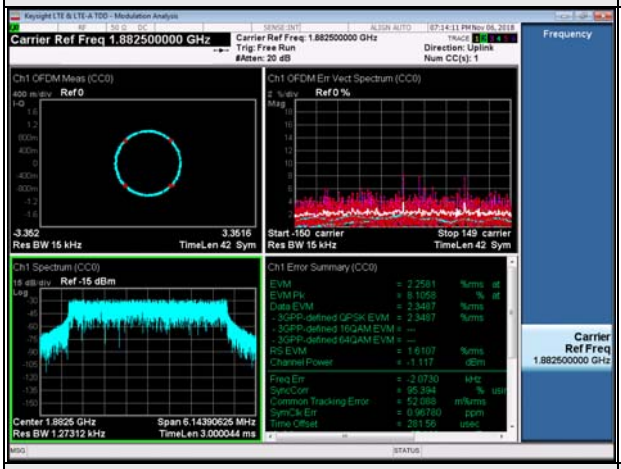
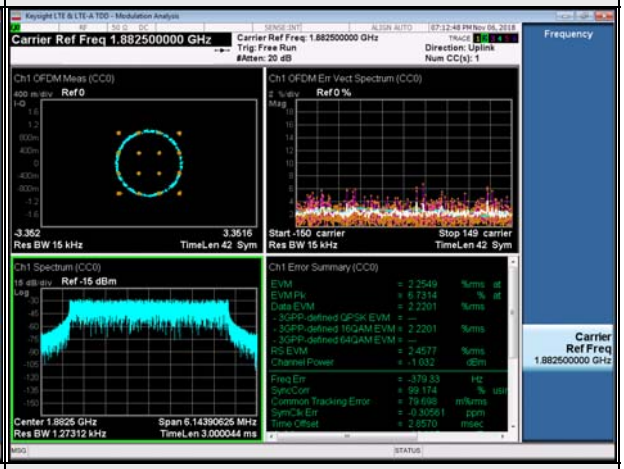
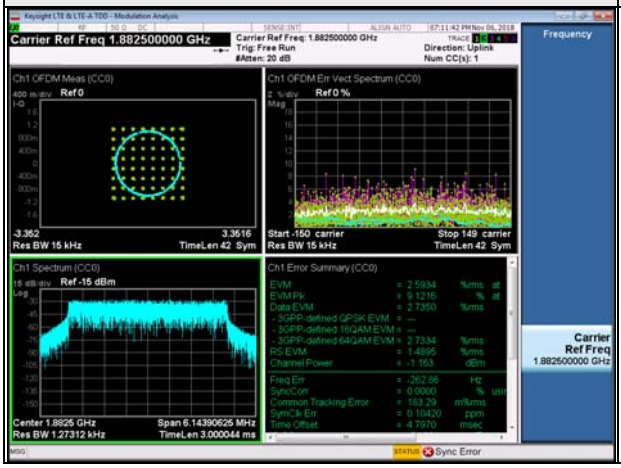
4.2.2 Test Procedure

Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.3 Test Setup



4.2.4 Test Results

LTE Band 25	
Spectrum Plot of Measurement Value	
Channel: 26065 / Frequency (MHz): 1852.5MHz	
Channel Bandwidth: 5MHz / QPSK	Channel Bandwidth: 5MHz / 16QAM
	
Channel Bandwidth: 5MHz / 64QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

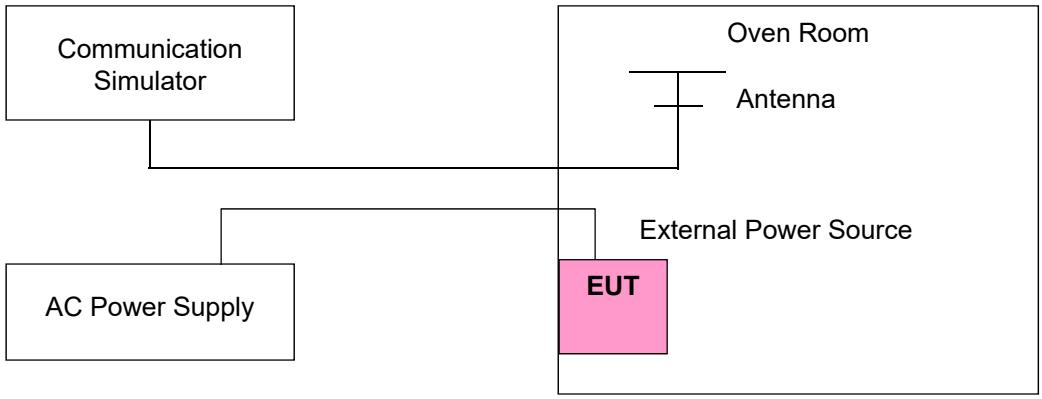
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (ppm)	Limit (ppm)
138	0.0233731739	2.5
120	0.0276228420	2.5
102	0.0207171315	2.5

Note: The applicant defined the normal working voltage is from 102Vac to 138Vac.

Frequency Error vs. Temperature.

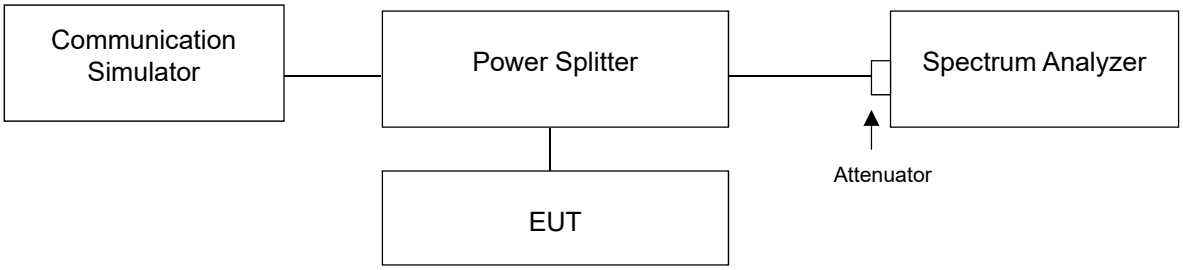
Temp. (℃)	Frequency Error (ppm)	Limit (ppm)
75	0.0217795485	2.5
70	0.0191235059	2.5
60	0.0169986719	2.5
50	0.0223107569	2.5
40	0.0244355910	2.5
30	0.0164674635	2.5
20	0.0239043825	2.5
10	0.0159362549	2.5
0	0.0180610889	2.5
-10	0.0175298805	2.5
-20	0.0185922975	2.5
-30	0.0154050465	2.5

4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.2 Test Setup



4.4.3 Test Result

Occupied Bandwidth

LTE Band 25, Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		QPSK		16QAM		64QAM	
		Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
26065	1852.5	4.4973	4.4963	4.5020	4.5009	4.5027	4.5044
26365	1882.5	4.4949	4.4966	4.5020	4.5016	4.5057	4.5010
26665	1912.5	4.4866	4.4901	4.4934	4.4962	**4.5356**	4.4979

LTE Band 25, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		QPSK		16QAM		64QAM	
		Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
26090	1855.0	8.9747	8.9720	9.0156	8.9770	8.9712	8.9749
26365	1882.5	8.9696	8.9683	**9.0171**	8.9759	8.9723	8.9728
26640	1910.0	8.9138	8.9146	8.9401	8.9159	8.9184	8.9199

Spectrum Plot Of Worst Value	
5MHz / 64QAM	10MHz / 16QAM
	

26dB Bandwidth

LTE Band 25, Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		QPSK		16QAM		64QAM	
		Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
26065	1852.5	4.925	4.923	**4.963**	4.960	4.921	4.948
26365	1882.5	4.917	4.920	4.953	4.959	4.934	4.946
26665	1912.5	4.834	4.857	4.904	4.898	4.944	4.921

LTE Band 25, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		QPSK		16QAM		64QAM	
		Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
26090	1855.0	9.533	9.530	9.587	9.541	9.538	9.532
26365	1882.5	9.546	9.549	**9.602**	9.542	9.537	9.537
26640	1910.0	9.505	9.497	9.517	9.500	9.488	9.475

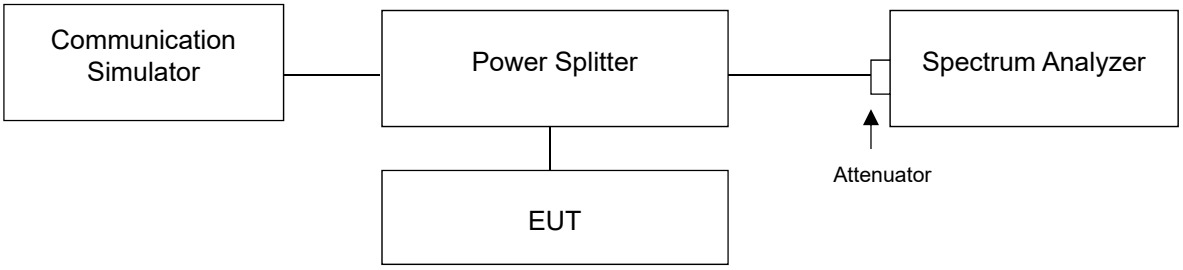
Spectrum Plot Of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	

4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 Test Setup

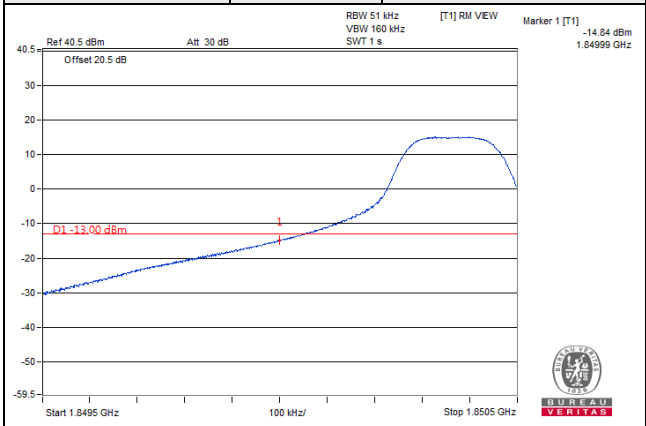
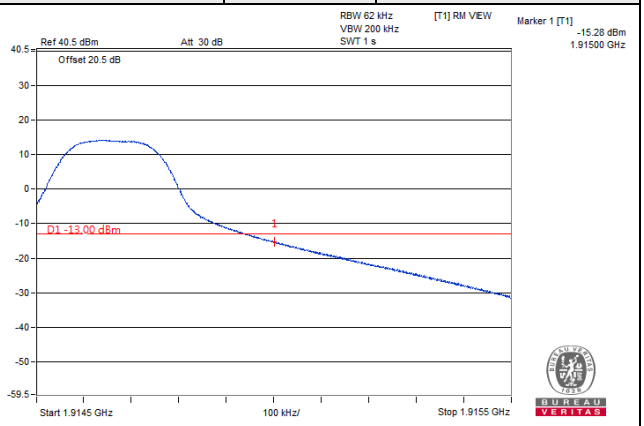
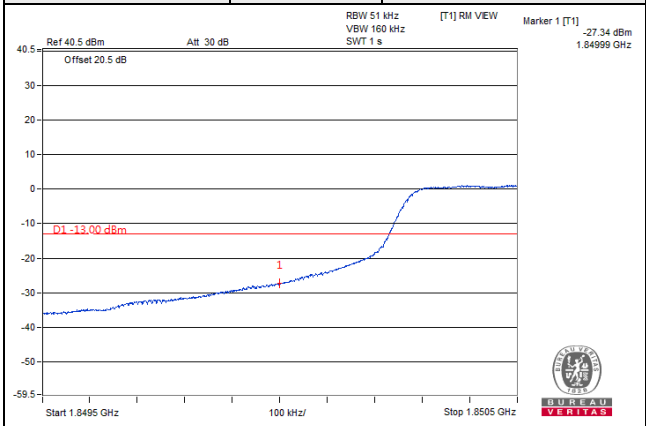
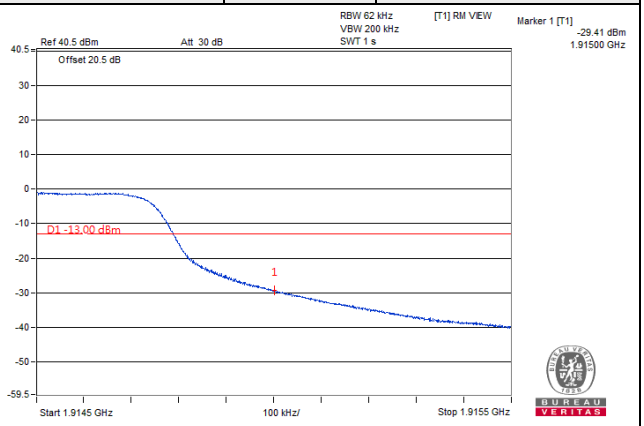


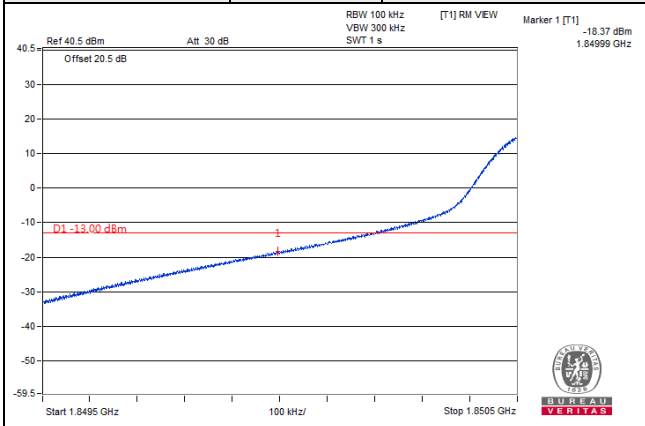
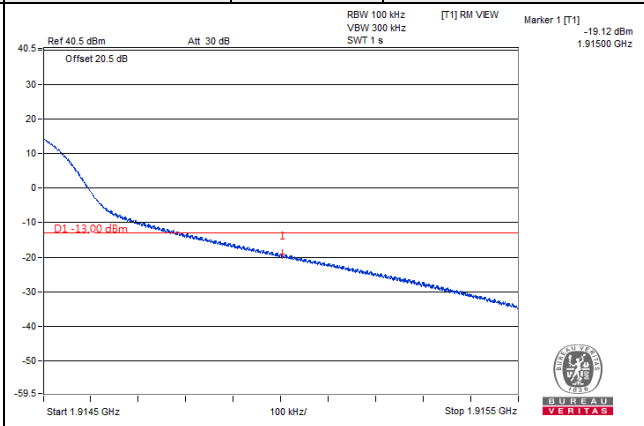
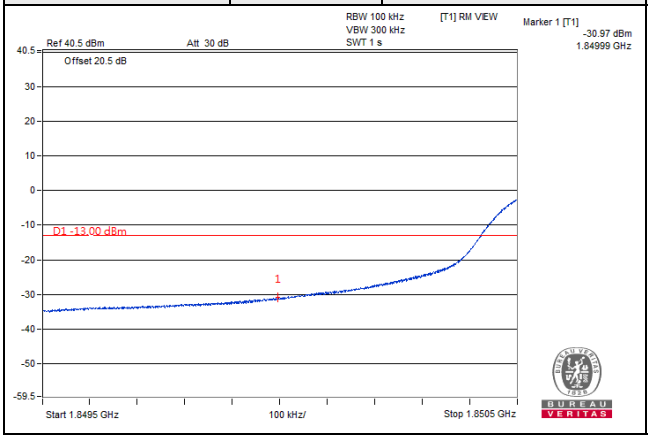
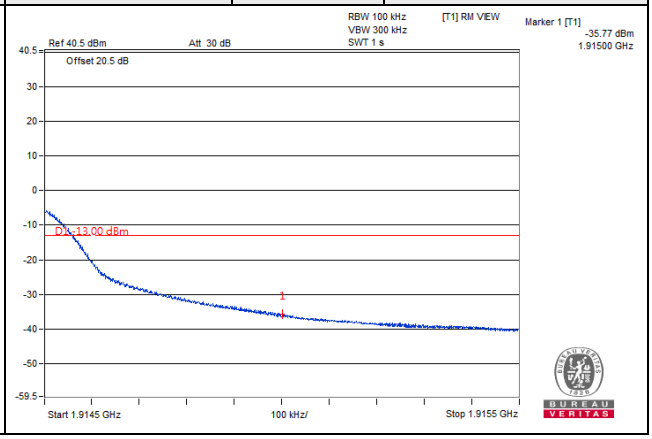
4.5.3 Test Procedures

a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 51kHz and VB of the spectrum is 150kHz (LTE Channel Bandwidth 5MHz).
c. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).

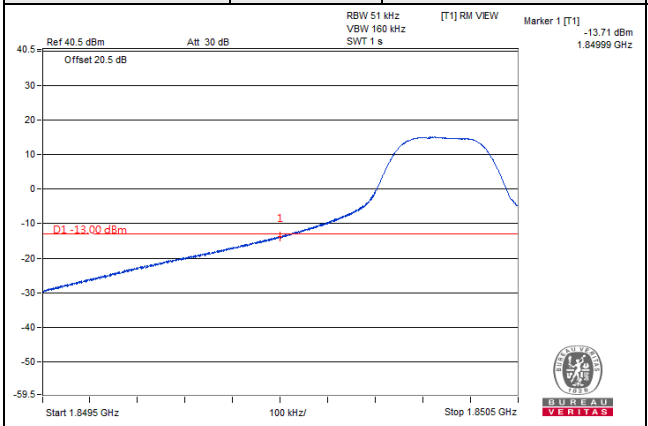
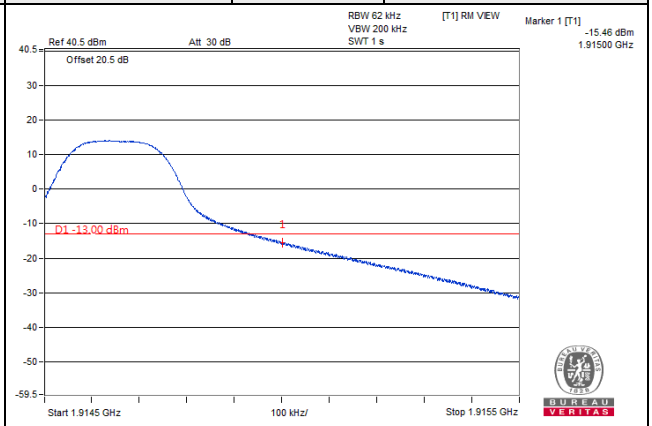
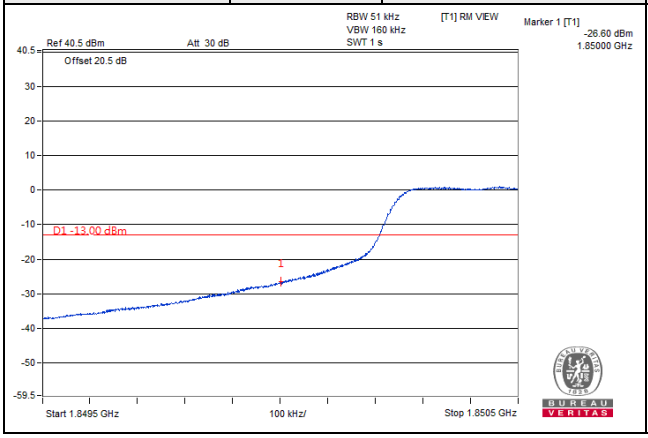
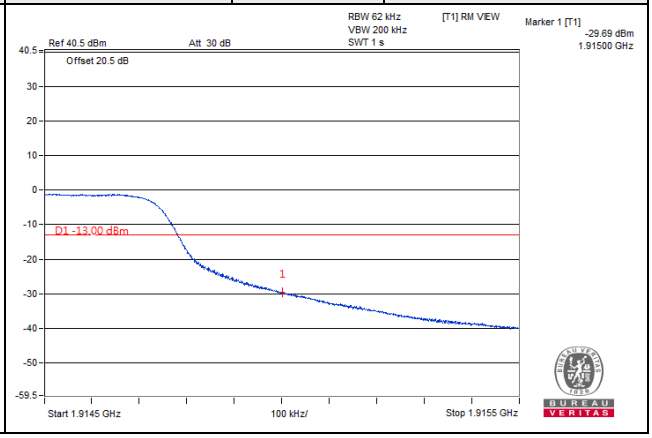
4.5.4 Test Results

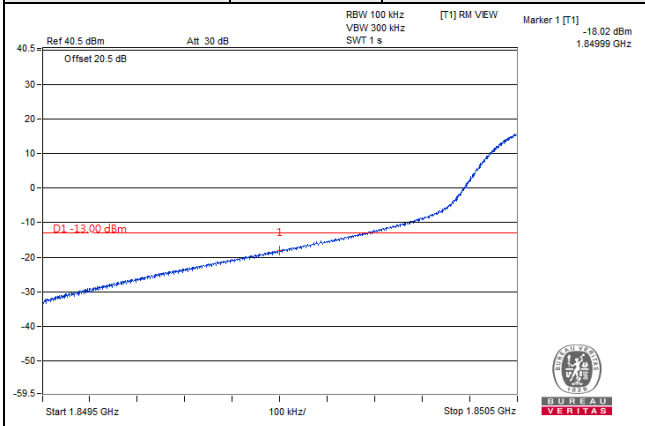
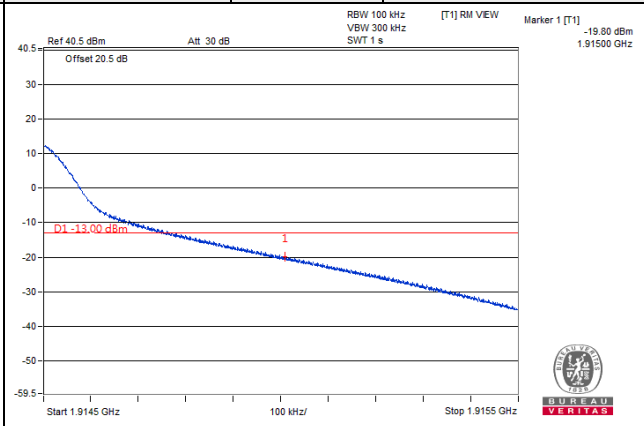
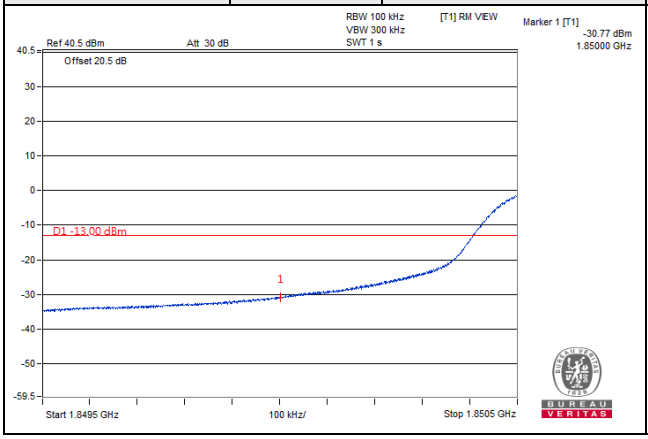
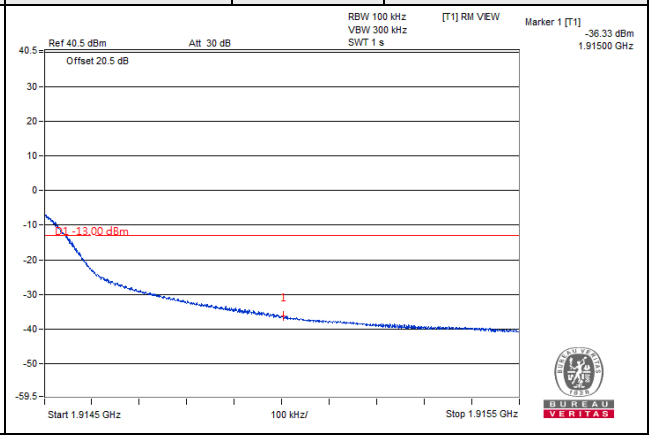
Chain 0

LTE Band 25, Channel Bandwidth 5MHz					
Channel 26065	QPSK	1 RB / 0 RB Offset	Channel 26665	QPSK	1 RB / 24 RB Offset
					
Channel 26065	QPSK	25 RB / 0 RB Offset	Channel 26665	QPSK	25 RB / 0 RB Offset
					

LTE Band 25, Channel Bandwidth 10MHz					
Channel 26090	QPSK	1 RB / 0 RB Offset	Channel 26640	QPSK	1 RB / 49 RB Offset
					
Channel 26090	QPSK	50 RB / 0 RB Offset	Channel 26640	QPSK	50 RB / 0 RB Offset
					

Chain 1

LTE Band 25, Channel Bandwidth 5MHz					
Channel 26065	QPSK	1 RB / 0 RB Offset	Channel 26665	QPSK	1 RB / 24 RB Offset
					
Channel 26065	QPSK	25 RB / 0 RB Offset	Channel 26665	QPSK	25 RB / 0 RB Offset
					

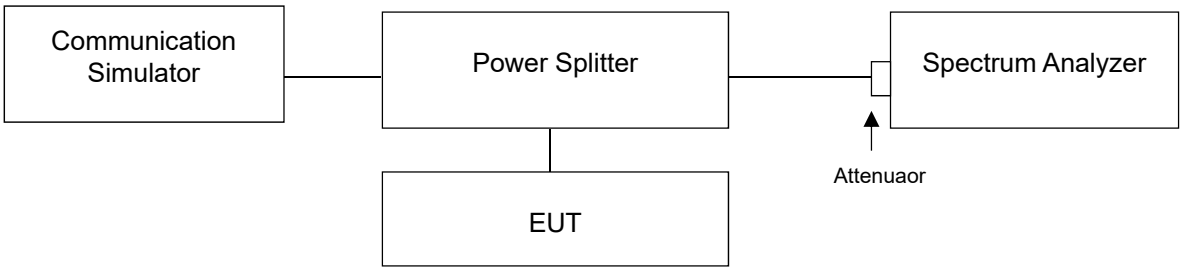
LTE Band 25, Channel Bandwidth 10MHz					
Channel 26090	QPSK	1 RB / 0 RB Offset	Channel 26640	QPSK	1 RB / 49 RB Offset
					
Channel 26090	QPSK	50 RB / 0 RB Offset	Channel 26640	QPSK	50 RB / 0 RB Offset
					

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup



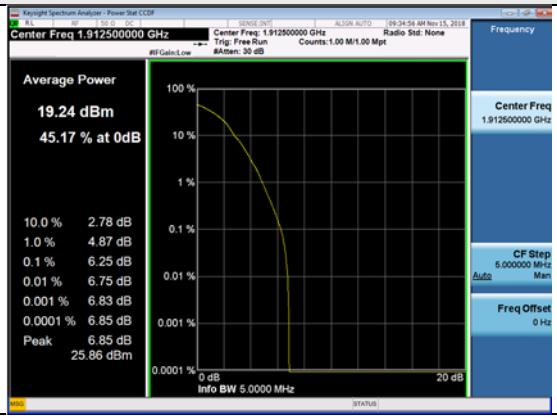
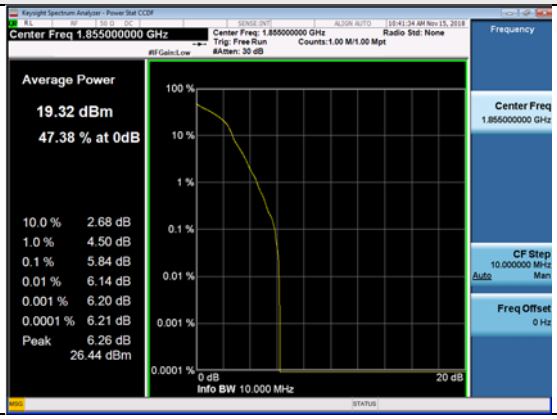
4.6.3 Test Procedures

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

LTE Band 25, Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)					
		QPSK		16QAM		64QAM	
		Chain0	Chain1	Chain0	Chain1	Chain0	Chain1
26065	1852.5	5.31	5.28	5.47	5.41	6.11	5.99
26365	1882.5	5.39	5.38	5.53	5.53	6.10	6.09
26665	1912.5	5.41	5.40	5.56	5.58	6.25	6.17

LTE Band 25, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)					
		QPSK		16QAM		64QAM	
		Chain0	Chain1	Chain0	Chain1	Chain0	Chain1
26090	1855.0	5.11	5.16	5.84	5.55	5.48	5.50
26365	1882.5	5.12	5.23	5.57	5.50	5.50	5.46
26640	1910.0	4.47	4.68	4.88	4.89	4.85	4.85

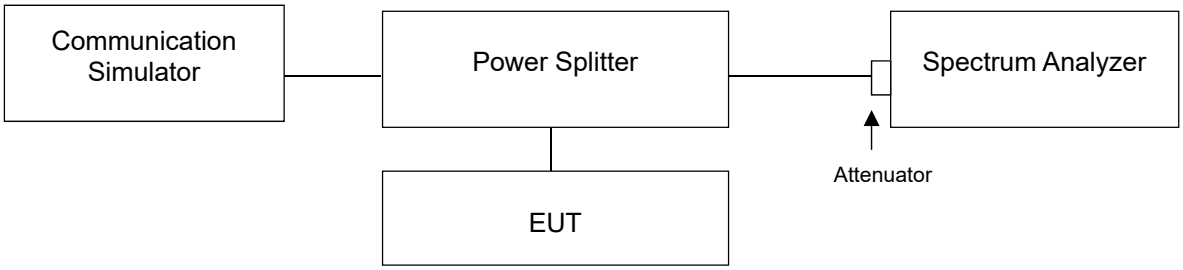
Spectrum Plot Of Worst Value	
5MHz / 64QAM	10MHz / 16QAM
	

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions 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.

4.7.2 Test Setup

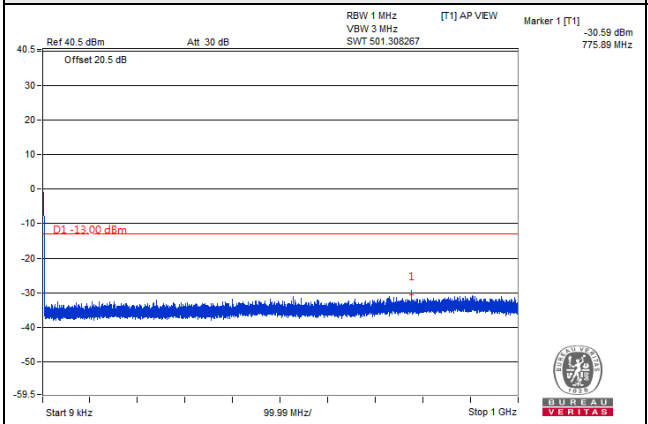
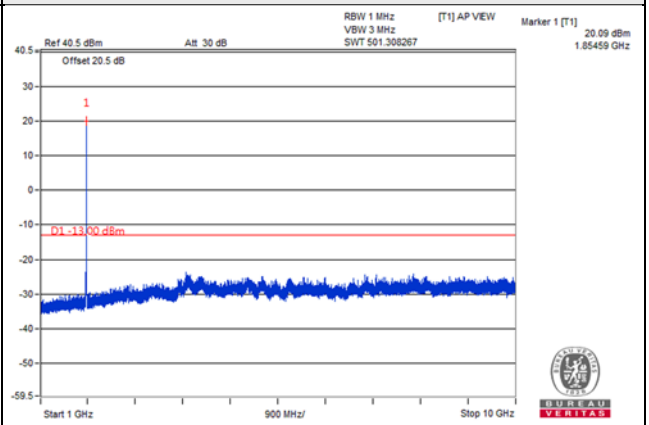
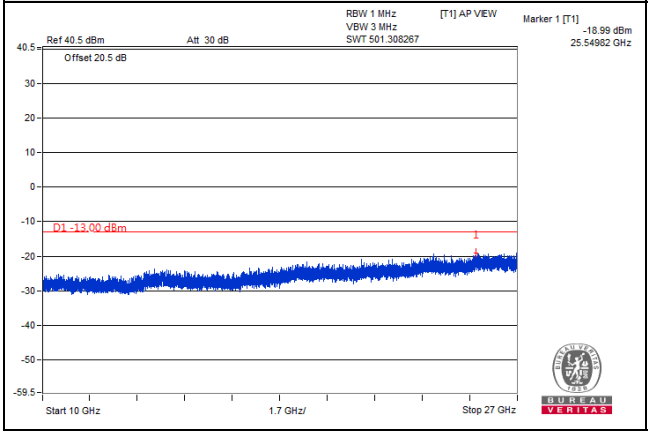


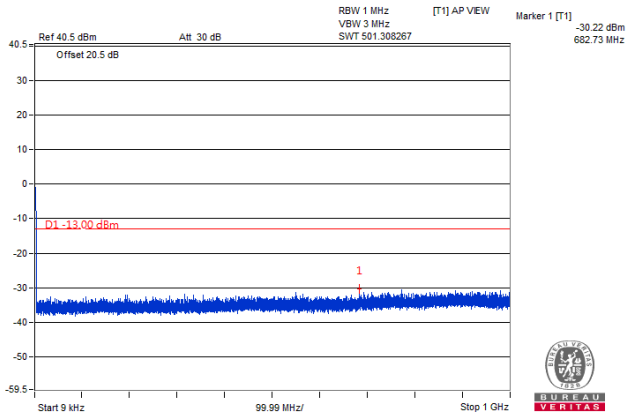
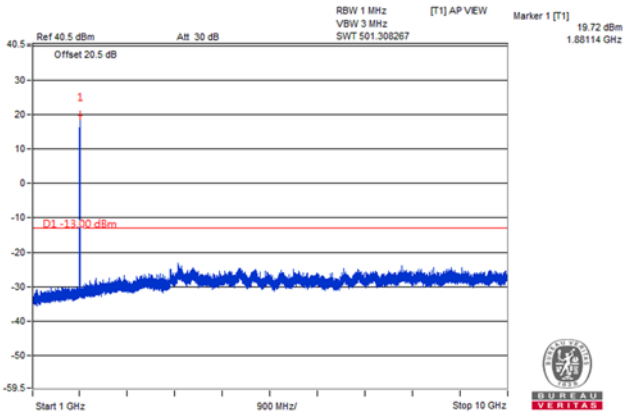
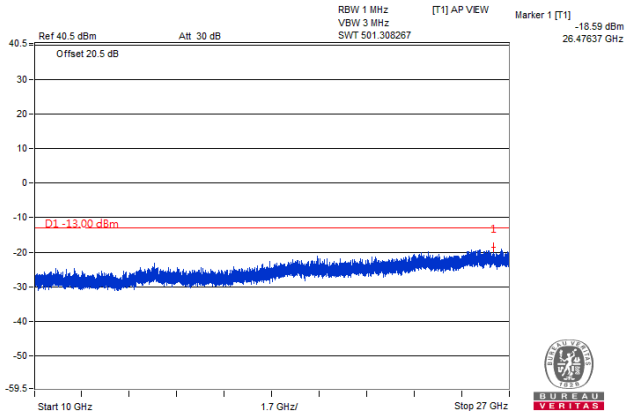
4.7.3 Test Procedure

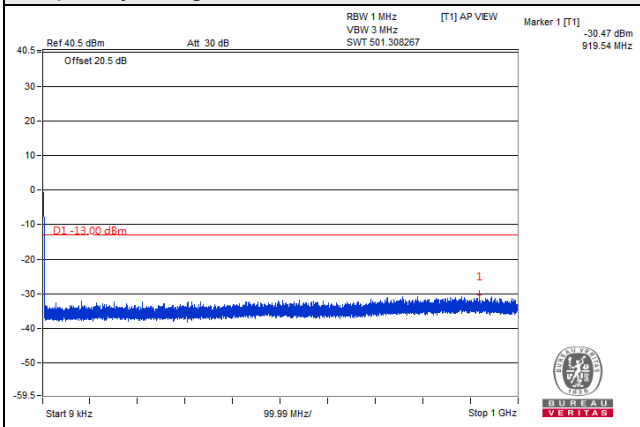
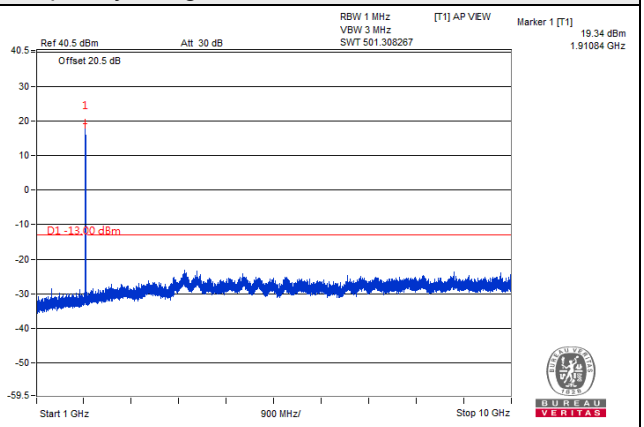
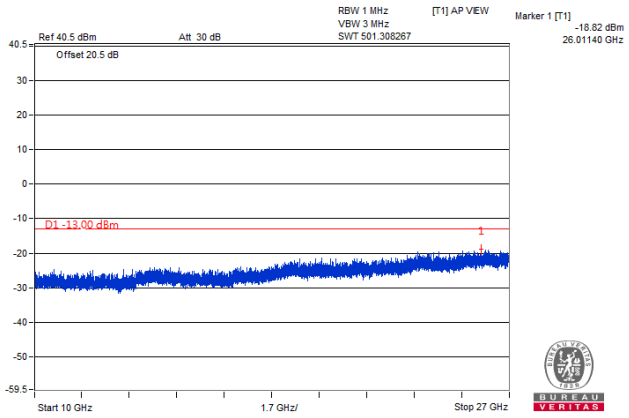
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9kHz to 26.5GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

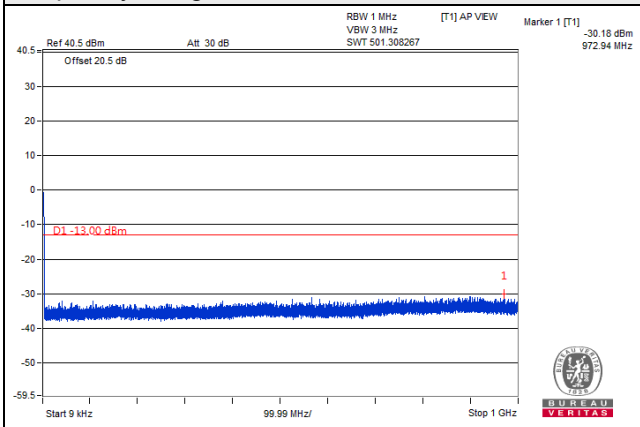
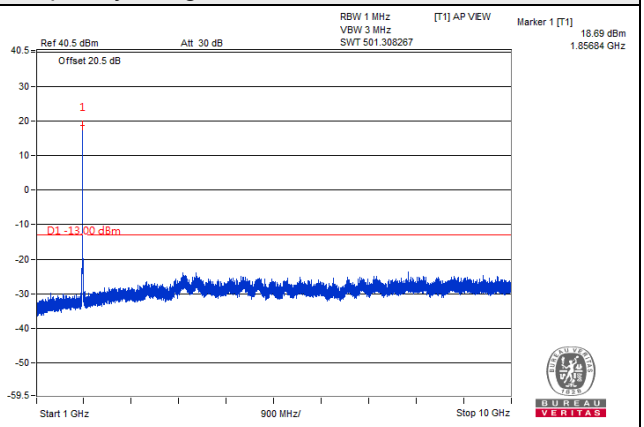
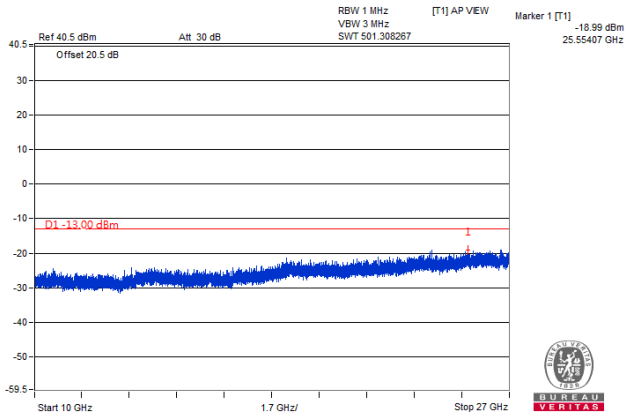
4.7.4 Test Results

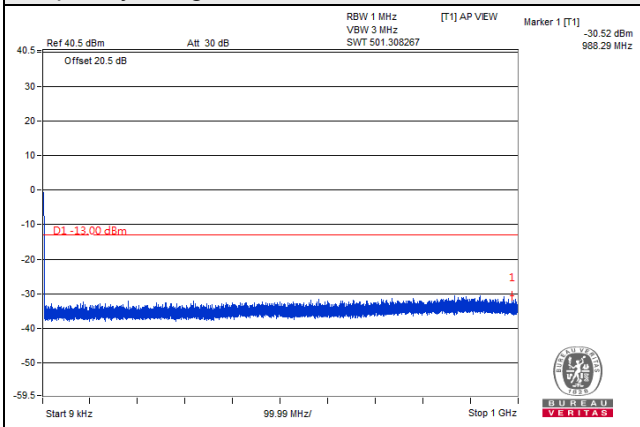
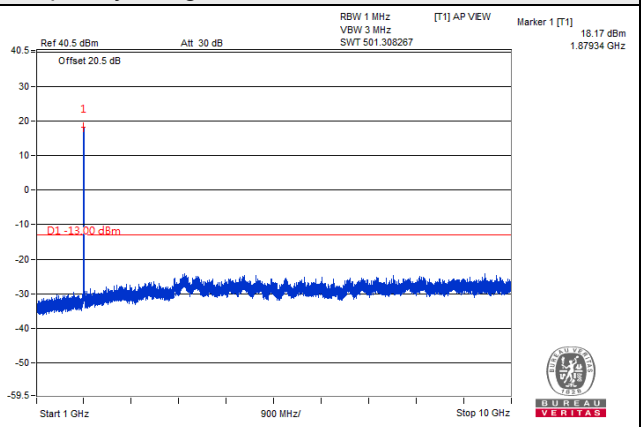
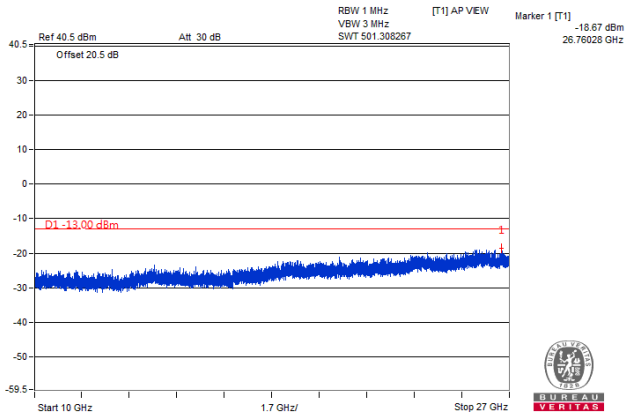
Chian 0

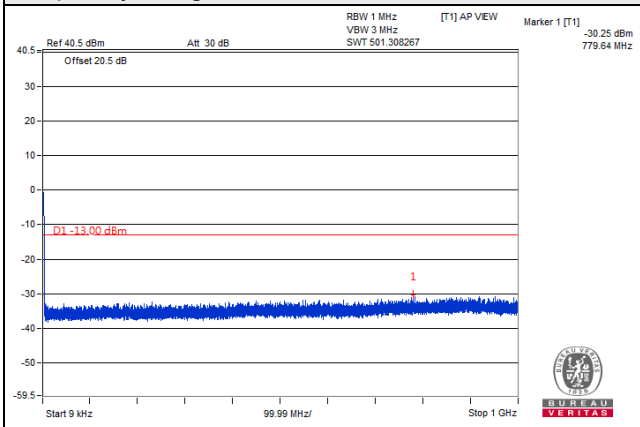
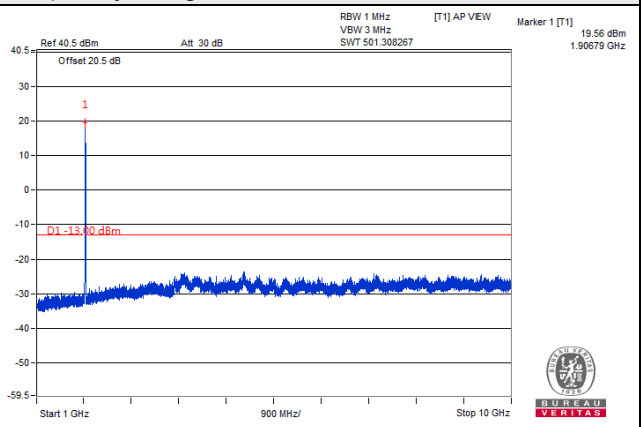
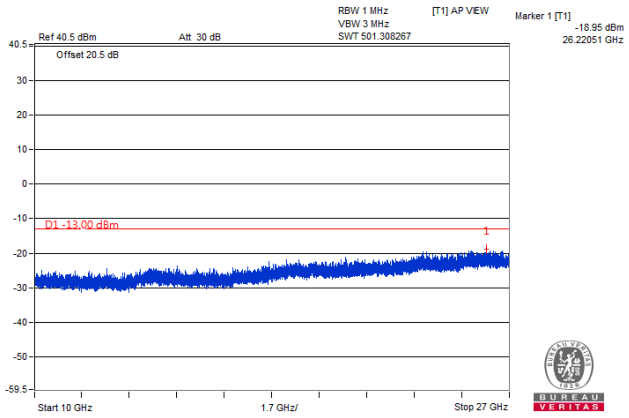
LTE Band 25, Channel Bandwidth 5MHz	
Channel 26065 (1852.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 5MHz	
Channel 26365 (1882.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 5MHz	
Channel 26665 (1912.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26090 (1855MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26365 (1882.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26640 (1910MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

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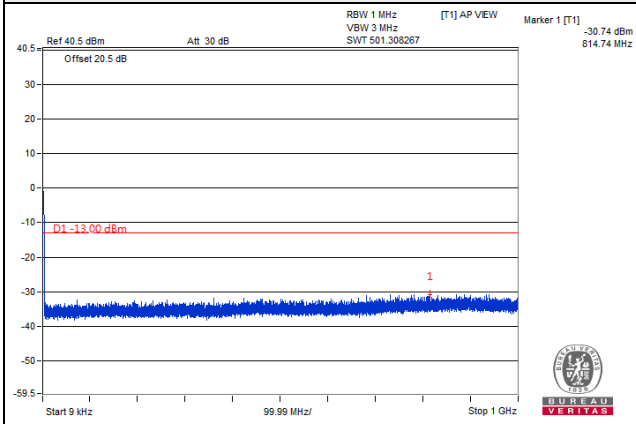
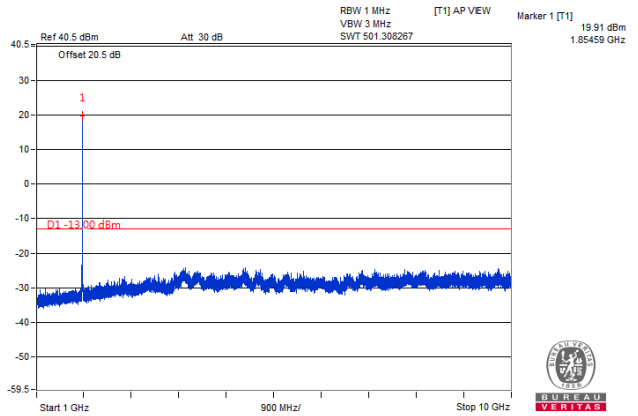
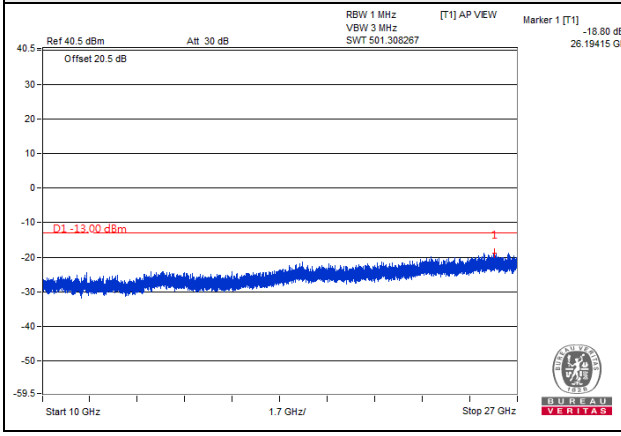
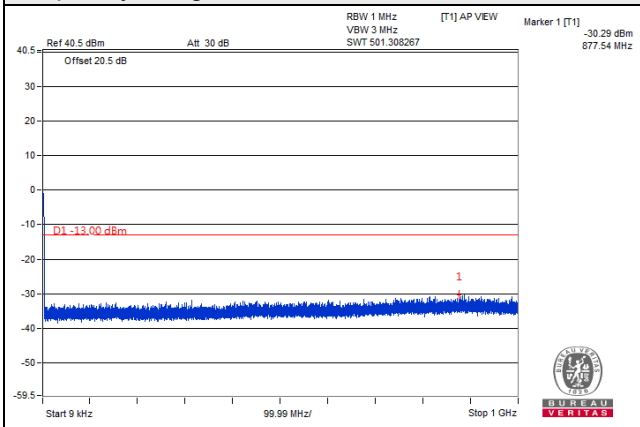
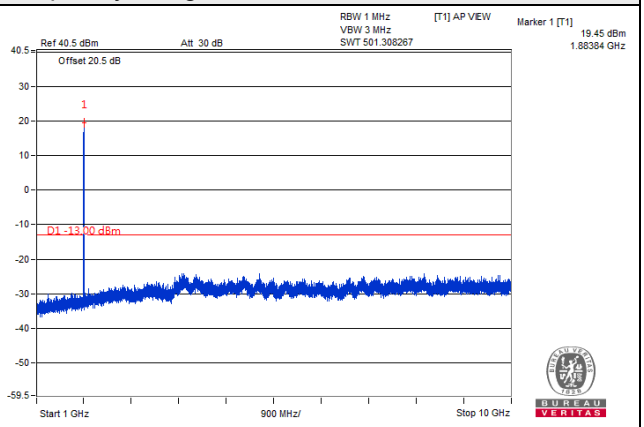
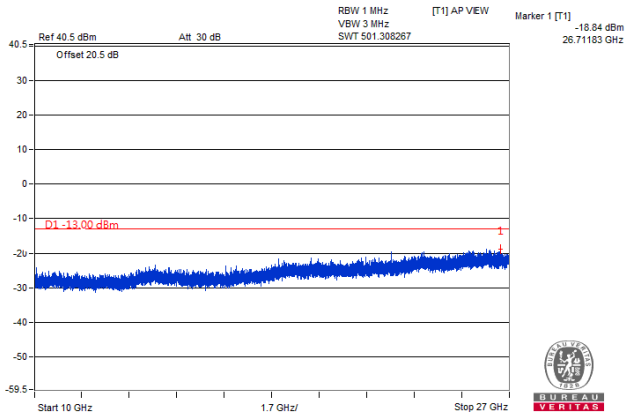
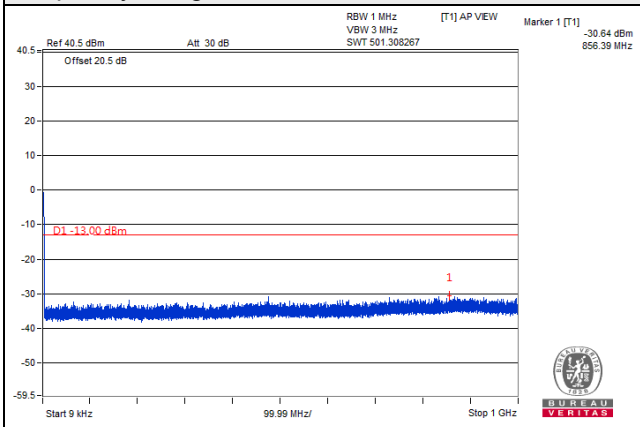
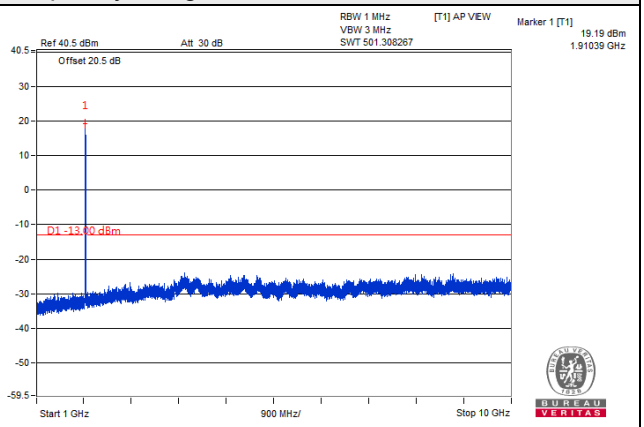
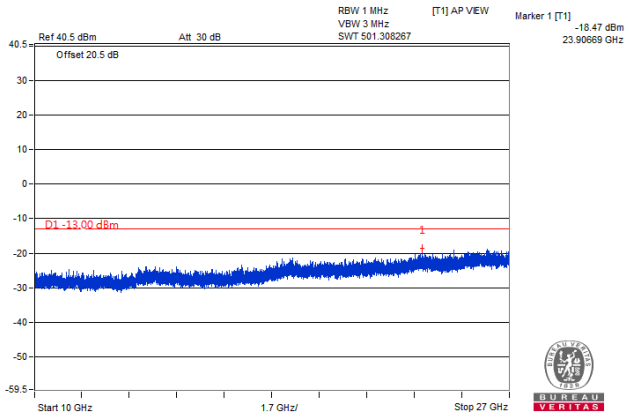
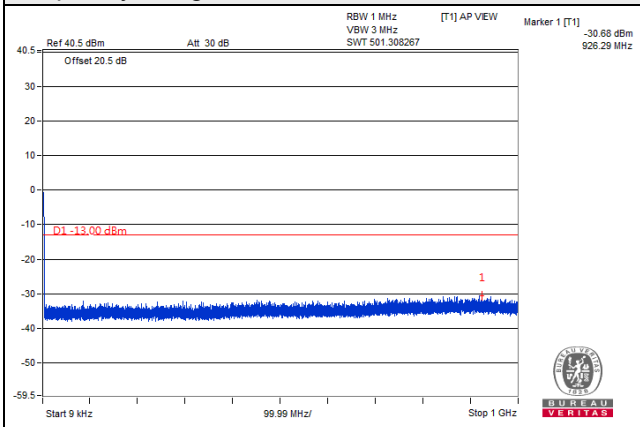
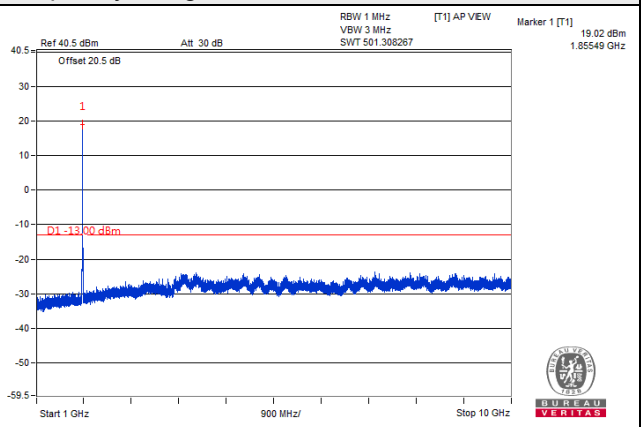
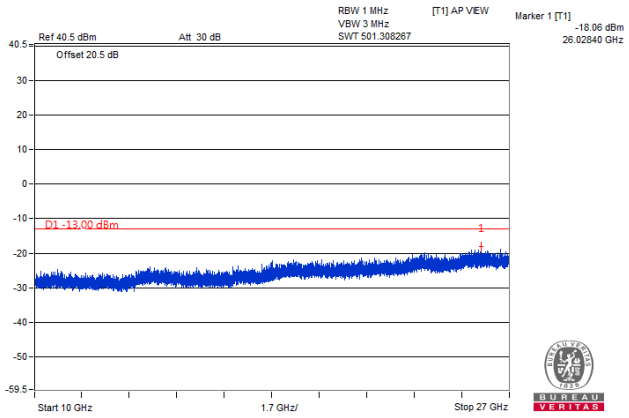
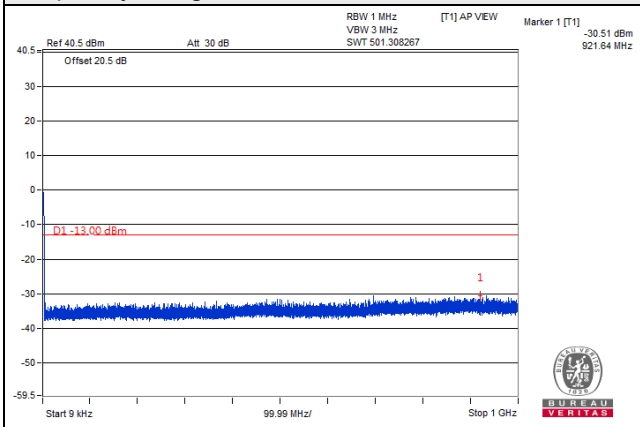
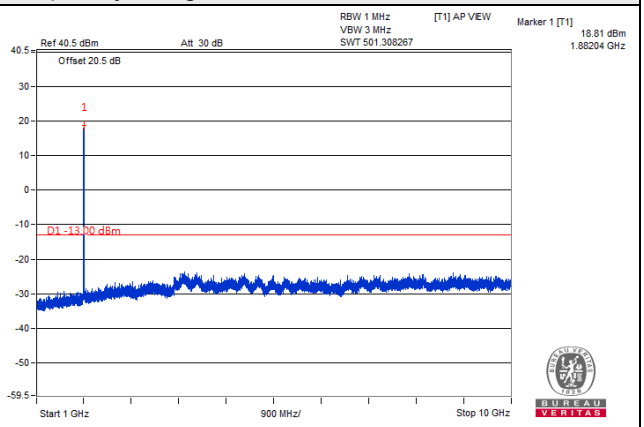
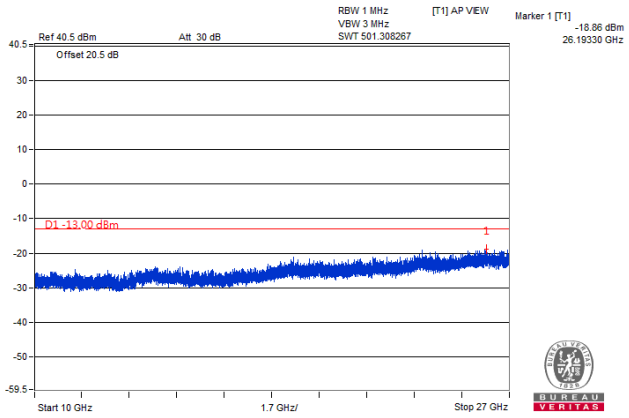
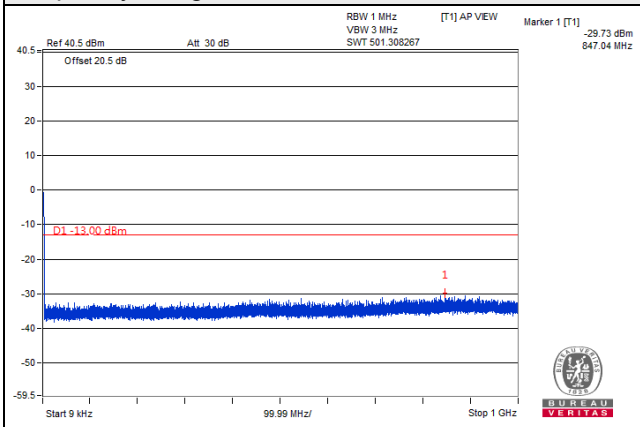
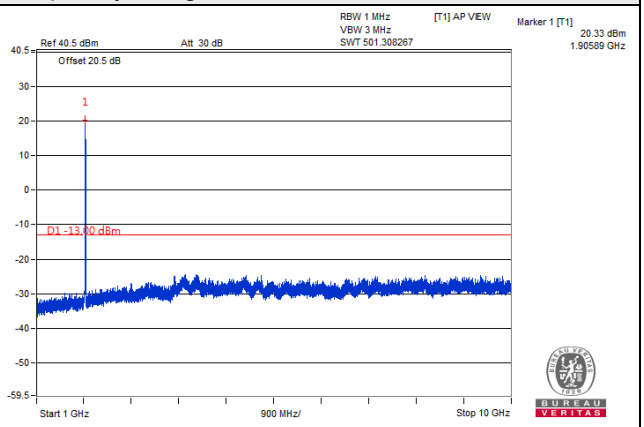
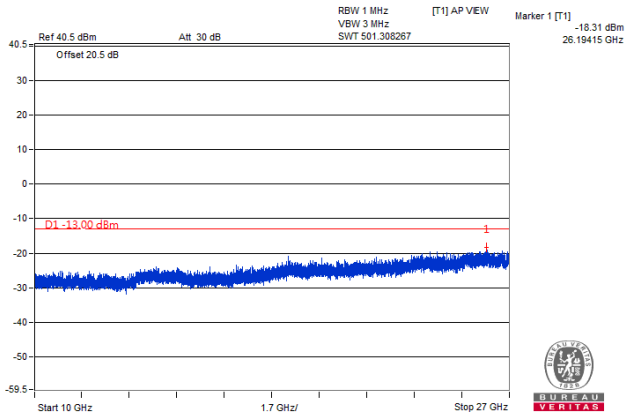
LTE Band 25, Channel Bandwidth 5MHz	
Channel 26065 (1852.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 5MHz	
Channel 26365 (1882.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 5MHz	
Channel 26665 (1912.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26090 (1855MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26365 (1882.5MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 25, Channel Bandwidth 10MHz	
Channel 26640 (1910MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission 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.

4.8.2 Test Procedure

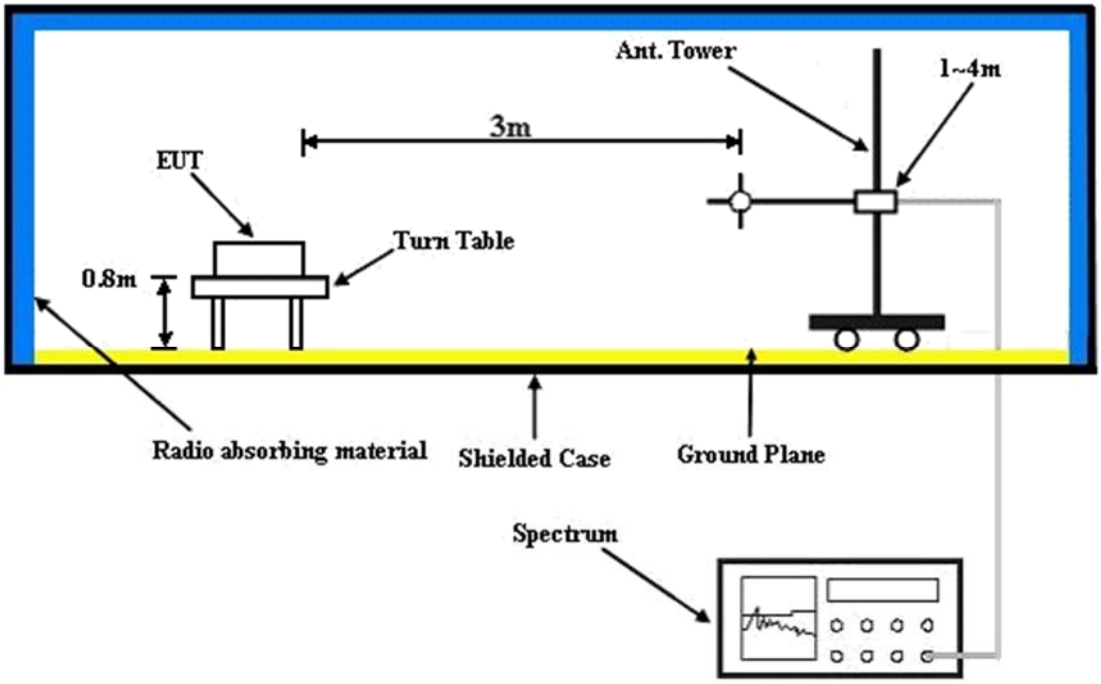
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from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

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.8.3 Deviation from Test Standard

No deviation.

4.8.4 Test Setup



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

4.8.5 Test Results

Below 1GHz
LTE Band 25, Channel Bandwidth: 5MHz

Mode	TX channel 26065 (1852.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.37	-61.00	-79.53	13.74	-65.79	-13.00	-52.79
2	128.82	-64.30	-82.48	13.48	-69.00	-13.00	-56.00
3	245.10	-63.33	-83.00	14.12	-68.88	-13.00	-55.88
4	368.29	-68.98	-89.50	18.07	-71.43	-13.00	-58.43
5	413.76	-68.98	-89.82	19.19	-70.63	-13.00	-57.63
6	489.42	-70.18	-91.66	21.14	-70.52	-13.00	-57.52
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.37	-58.38	-75.74	13.74	-62.00	-13.00	-49.00
2	123.48	-65.06	-82.27	13.06	-69.21	-13.00	-56.21
3	184.84	-66.12	-84.81	13.15	-71.66	-13.00	-58.66
4	366.35	-64.42	-84.56	17.99	-66.57	-13.00	-53.57
5	426.61	-67.10	-88.37	19.67	-68.70	-13.00	-55.70
6	536.46	-75.24	-97.06	22.10	-74.96	-13.00	-61.96

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26365 (1882.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.19	-70.69	-85.86	13.99	-71.87	-13.00	-58.87
2	125.18	-66.50	-84.27	13.15	-71.12	-13.00	-58.12
3	184.72	-62.81	-80.78	13.17	-67.61	-13.00	-54.61
4	244.85	-60.69	-80.35	14.11	-66.24	-13.00	-53.24
5	412.91	-65.62	-86.45	19.17	-67.28	-13.00	-54.28
6	465.41	-69.77	-91.48	20.74	-70.74	-13.00	-57.74
7	535.86	-73.23	-95.37	22.10	-73.27	-13.00	-60.27
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.49	-60.75	-77.79	13.76	-64.03	-13.00	-51.03
2	80.56	-60.49	-79.24	10.34	-68.90	-13.00	-55.90
3	184.72	-64.29	-82.97	13.17	-69.80	-13.00	-56.80
4	244.98	-59.78	-78.14	14.12	-64.02	-13.00	-51.02
5	366.83	-64.06	-84.21	18.01	-66.20	-13.00	-53.20
6	407.94	-64.24	-85.00	19.06	-65.94	-13.00	-52.94
7	537.79	-71.81	-93.59	22.10	-71.49	-13.00	-58.49

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26665 (1912.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.00	-61.78	-81.06	13.68	-67.38	-13.00	-54.38
2	124.45	-66.61	-84.32	13.11	-71.21	-13.00	-58.21
3	184.35	-65.51	-83.44	13.19	-70.25	-13.00	-57.25
4	244.61	-60.76	-80.40	14.10	-66.30	-13.00	-53.30
5	366.35	-68.33	-88.81	17.99	-70.82	-13.00	-57.82
6	418.85	-66.82	-87.78	19.35	-68.43	-13.00	-55.43
7	535.49	-72.43	-94.57	22.10	-72.47	-13.00	-59.47
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.12	-55.96	-73.97	13.70	-60.27	-13.00	-47.27
2	78.26	-60.14	-79.21	10.93	-68.28	-13.00	-55.28
3	184.47	-64.36	-83.01	13.19	-69.82	-13.00	-56.82
4	246.79	-60.13	-78.46	14.19	-64.27	-13.00	-51.27
5	368.29	-64.28	-84.48	18.07	-66.41	-13.00	-53.41
6	404.06	-63.57	-84.26	18.97	-65.29	-13.00	-52.29
7	535.73	-69.85	-91.69	22.10	-69.59	-13.00	-56.59

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

LTE Band 25, Channel Bandwidth: 10MHz

Mode	TX channel 26090 (1855.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.24	-58.55	-77.33	13.72	-63.61	-13.00	-50.61
2	123.12	-64.30	-81.94	13.06	-68.88	-13.00	-55.88
3	186.53	-64.71	-82.81	13.00	-69.81	-13.00	-56.81
4	246.55	-60.36	-80.14	14.19	-65.95	-13.00	-52.95
5	367.07	-64.42	-84.92	18.02	-66.90	-13.00	-53.90
6	407.81	-63.50	-84.26	19.06	-65.20	-13.00	-52.20
7	537.79	-71.07	-93.21	22.10	-71.11	-13.00	-58.11
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.12	-58.83	-76.84	13.70	-63.14	-13.00	-50.14
2	122.88	-65.62	-82.87	13.06	-69.81	-13.00	-56.81
3	244.85	-60.73	-79.08	14.11	-64.97	-13.00	-51.97
4	368.41	-65.12	-85.32	18.07	-67.25	-13.00	-54.25
5	404.18	-63.78	-84.47	18.97	-65.50	-13.00	-52.50
6	482.02	-70.34	-92.32	21.00	-71.32	-13.00	-58.32
7	539.49	-71.14	-92.87	22.10	-70.77	-13.00	-57.77

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26365 (1882.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.12	-57.07	-76.10	13.70	-62.40	-13.00	-49.40
2	184.84	-63.88	-81.85	13.15	-68.70	-13.00	-55.70
3	246.55	-59.42	-79.20	14.19	-65.01	-13.00	-52.01
4	305.24	-66.66	-85.98	16.46	-69.52	-13.00	-56.52
5	367.07	-63.57	-84.07	18.02	-66.05	-13.00	-53.05
6	405.75	-63.07	-83.80	19.01	-64.79	-13.00	-51.79
7	481.90	-72.03	-93.56	21.00	-72.56	-13.00	-59.56
8	536.34	-70.29	-92.43	22.10	-70.33	-13.00	-57.33
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.12	-56.48	-74.49	13.70	-60.79	-13.00	-47.79
2	79.71	-59.78	-78.69	10.54	-68.15	-13.00	-55.15
3	184.59	-65.22	-83.89	13.18	-70.71	-13.00	-57.71
4	245.10	-59.60	-77.95	14.12	-63.83	-13.00	-50.83
5	366.59	-63.74	-83.89	18.00	-65.89	-13.00	-52.89
6	407.45	-64.37	-85.11	19.04	-66.07	-13.00	-53.07
7	535.86	-71.39	-93.22	22.10	-71.12	-13.00	-58.12

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26640 (1910.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	39.70	-67.70	-83.47	13.93	-69.54	-13.00	-56.54
2	130.27	-67.05	-85.37	13.62	-71.75	-13.00	-58.75
3	184.72	-63.48	-81.45	13.17	-68.28	-13.00	-55.28
4	244.98	-62.02	-81.69	14.12	-67.57	-13.00	-54.57
5	368.41	-66.71	-87.23	18.07	-69.16	-13.00	-56.16
6	413.27	-65.77	-86.61	19.18	-67.43	-13.00	-54.43
7	532.10	-72.82	-94.87	22.01	-72.86	-13.00	-59.86
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.73	-60.67	-77.05	13.79	-63.26	-13.00	-50.26
2	124.58	-64.46	-81.66	13.11	-68.55	-13.00	-55.55
3	246.79	-59.74	-78.07	14.19	-63.88	-13.00	-50.88
4	366.11	-64.63	-84.75	17.97	-66.78	-13.00	-53.78
5	405.75	-63.01	-83.73	19.01	-64.72	-13.00	-51.72
6	537.79	-70.98	-92.76	22.10	-70.66	-13.00	-57.66

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Above 1GHz
LTE Band 25, Channel Bandwidth: 5MHz

Mode	TX channel 26065 (1852.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705.03	-52.86	-92.75	43.29	-49.46	-13.00	-36.46
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705.00	-53.39	-92.89	43.29	-49.60	-13.00	-36.60

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26365 (1882.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3765.02	-52.54	-92.41	43.64	-48.77	-13.00	-35.77
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3765.00	-52.09	-91.52	43.64	-47.88	-13.00	-34.88

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26665 (1912.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3824.87	-51.44	-91.38	43.86	-47.52	-13.00	-34.52
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	**3824.98**	**-51.25**	**-90.72**	**43.86**	**-46.86**	**-13.00**	**-33.86**

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

LTE Band 25, Channel Bandwidth: 10MHz

Mode	TX channel 26090 (1855.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3710.00	-51.66	-91.55	43.32	-48.23	-13.00	-35.23
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3710.03	-51.21	-90.70	43.32	-47.38	-13.00	-34.38

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26365 (1882.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3765.02	-51.72	-91.59	43.64	-47.95	-13.00	-34.95
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3765.00	-51.30	-90.73	43.64	-47.09	-13.00	-34.09

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 26640 (1910.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 77%RH	Input Power	120Vac, 60Hz
Tested By	Dalen Dai		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.87	-52.61	-92.54	43.86	-48.68	-13.00	-35.68
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.96	-52.15	-91.61	43.86	-47.75	-13.00	-34.75

Remarks:
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

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 FCC recognized accredited test firms and 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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