FCC Test Report
(Part 24)

Report No.: RF180523C10-1 R1

FCC ID: 2AJOTTA-1082

Test Model: TA-1082

Received Date: May 23, 2018

Test Date: Jun. 20 ~ Jun. 29, 2018

Issued Date: Oct. 24, 2018

Applicant: HMD Global Oy

Address: Bertel Jungin aukio 9, 02600 Espoo, Finland

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.)

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies

Table of Contents

Release Control Record **3**

1 Certificate of Conformity **4**

2 Summary of Test Results **5**

2.1 Measurement Uncertainty 5
2.2 Test Site and Instruments 6

3 General Information **7**

3.1 General Description of EUT 7
3.2 Configuration of System under Test 8
3.2.1 Description of Support Units 8
3.3 Test Mode Applicability and Tested Channel Detail 9
3.4 EUT Operating Conditions 9
3.5 General Description of Applied Standards 9

4 Test Types and Results **10**

4.1 Radiated Emission Measurement 10
4.1.1 Limits of Radiated Emission Measurement 10
4.1.2 Test Procedure 10
4.1.3 Deviation from Test Standard 10
4.1.4 Test Setup 11
4.1.5 Test Results 12

5 Pictures of Test Arrangements **13**

Appendix – Information on the Testing Laboratories **14**

Annex A – Test Report for TA-1087 (Dual SIM) **15**

Release Control Record

Issue No.	Description	Date Issued
RF180523C10-1	Original release	Jul. 02, 2018
RF180523C10-1 R1	Revised applicant's address	Oct. 24, 2018

1 Certificate of Conformity

Product: Smart Phone

Brand: NOKIA

Test Model: TA-1082

Sample Status: Production Unit

Applicant: HMD Global Oy

Test Date: Jun. 20 ~ Jun. 29, 2018

Standards: FCC Part 24, Subpart E

This report is issued as a supplementary report to BV CPS report no.: RF180523C09-1. This report shall be used by combining with its original report.

Prepared by : Pettie Chen , **Date:** Oct. 24, 2018

Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Oct. 24, 2018

Bruce Chen / Project Engineer

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	N/A	Refer to Note
2.1046 24.232(d)	Peak To Average Ratio	N/A	Refer to Note
2.1047	Modulation characteristics	N/A	Refer to Note
2.1055 24.235	Frequency Stability	N/A	Refer to Note
2.1049 24.238(b)	Occupied Bandwidth	N/A	Refer to Note
24.238(b)	Band Edge Measurements	N/A	Refer to Note
2.1051 24.238	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -36.0dB at 87.23MHz.

Note: Only Radiated Spurious Emissions test had been performed for the addendum. Refer to original report for other test data.

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	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 11, 2018	Apr. 10, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 12, 2017	Dec. 11, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01638	Feb. 22, 2018	Feb. 21, 2019
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2018	Jan. 14, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2017	Aug. 07, 2018
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 01, 2017	Jul. 31, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Temperature And Humidity Chamber TERCHY	HRM-120RF	931022	Nov. 20, 2017	Nov. 19, 2018
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Radio Communication Analyzer	MT8821C	6261786083	Dec. 21, 2017	Dec. 20, 2018

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is IC 7450F-9.

3 General Information

3.1 General Description of EUT

Product	SmartPhone			
Brand	NOKIA			
Test Model	TA-1082			
Sample Status	Production Unit			
Power Supply Rating	5.0 Vdc or 9 Vdc or 12 Vdc (adapter) 5.0 Vdc (host equipment) 3.85 Vdc (Li-ion battery)			
Modulation Type	PCS, GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM			
Operating Frequency	PCS/GPRS/ EDGE	1850.2MHz ~ 1909.8MHz		
	WCDMA	1852.4MHz ~ 1907.6MHz		
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1909.3MHz		
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1908.5MHz		
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1907.5MHz		
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1905.0MHz		
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1902.5MHz		
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1900.0MHz		
Max. EIRP Power	PCS/GPRS	1230.269mW (30.9dBm)		
	EDGE	389.045mW (25.9dBm)		
	WCDMA	575.440mW (27.6dBm)		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	380.189mW (25.8dBm)	309.030mW (24.9dBm)	275.423mW (24.4dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	346.737mW (25.4dBm)	281.838mW (24.5dBm)	263.027mW (24.2dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	363.078mW (25.6dBm)	281.838mW (24.5dBm)	263.027mW (24.2dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	371.535mW (25.7dBm)	309.030mW (24.9dBm)	281.838mW (24.5dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	407.380mW (26.1dBm)	316.228mW (25.0dBm)	301.995mW (24.8dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	398.107mW (26.0dBm)	323.594mW (25.1dBm)	309.030mW (24.9dBm)

Emission Designator	PCS/GPRS	260KGXW		
	EDGE	260KGXW		
	WCDMA	4M15F9W		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09W7D	1M09W7D
	LTE Band 2 (Channel Bandwidth 3MHz)	2M69G7D	2M69W7D	2M68W7D
	LTE Band 2 (Channel Bandwidth 5MHz)	4M46G7D	4M46W7D	4M48W7D
	LTE Band 2 (Channel Bandwidth 10MHz)	8M93G7D	8M90W7D	8M96W7D
	LTE Band 2 (Channel Bandwidth 15MHz)	13M4G7D	13M4W7D	13M4W7D
	LTE Band 2 (Channel Bandwidth 20MHz)	17M9G7D	18M0W7D	17M9W7D
Antenna Type	Main Ant.: Fixed Internal antenna with 0.2dBi gain Aux. Ant.: Fixed Internal antenna with -1.3dBi gain (Brand: TongDa Electrics, Model: MEAOP61010A)			
Accessory Device	Refer to Note as below			
Data Cable Supplied	Refer to Note as below			

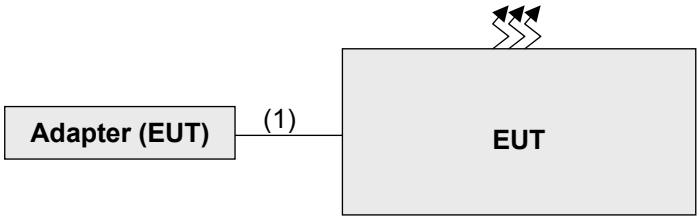
Note:

1. This report is issued as a supplementary to BV CPS report no.: RF180523C09-1. The difference is listed as below. Only Effective radiated power & radiated emissions test was verified for this report.

Report No.	FCC ID	Model	Difference
RF180523C09-1	2AJOTTA-1087	TA-1087	Dual SIM
RF180523C10-1	2AJOTTA-1082	TA-1082	Single SIM
* The models have the same layout, circuit, and components, but different SIM tray.			

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

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.	USB cable	1	1.0	N	0	Accessory Device

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 on X-plane. Following channel(s) was (were) selected for the final test as listed below:

PCS Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	Radiated Emission Below 1GHz	512 to 810	512(1850.2MHz)	PCS
-	Radiated Emission Above 1GHz	512 to 810	512(1850.2MHz)	PCS

Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	Han Wu

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 Radiated Emission Measurement

4.1.1 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.

4.1.2 Test Procedure

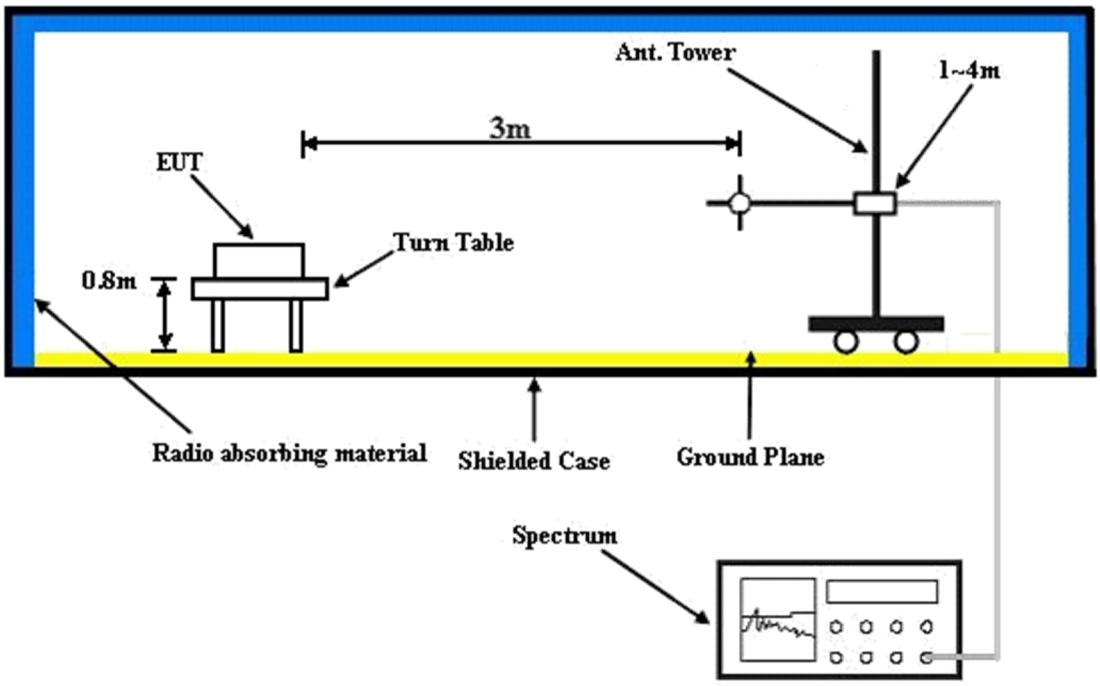
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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.

4.1.3 Deviation from Test Standard

No deviation.

4.1.4 Test Setup



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

4.1.5 Test Results

Below 1GHz
PCS Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	**87.23**	**-41.8**	**-48.9**	**-0.1**	**-49.0**	**-13.0**	**-36.0**
2	139.61	-53.1	-55.8	-3.1	-58.9	-13.0	-45.9
3	187.14	-46.2	-51.7	-2.7	-54.4	-13.0	-41.4
4	258.92	-53.9	-57.4	-1.5	-58.9	-13.0	-45.9
5	327.79	-54.4	-62.4	4.2	-58.2	-13.0	-45.2
6	385.02	-60.7	-65.1	3.5	-61.6	-13.0	-48.6
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	33.88	-43.9	-37.4	-17.1	-54.5	-13.0	-41.5
2	55.22	-54.0	-55.5	-5.4	-60.9	-13.0	-47.9
3	90.14	-50.6	-56.7	-0.2	-56.9	-13.0	-43.9
4	167.74	-58.7	-59.0	-2.9	-61.9	-13.0	-48.9
5	280.26	-66.4	-61.6	-1.6	-63.2	-13.0	-50.2
6	328.76	-64.2	-68.6	4.1	-64.5	-13.0	-51.5

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
PCS Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3700.40	-64.1	-55.6	1.4	-54.2	-13.0	-41.2
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	3700.40	-64.7	-56.5	1.4	-55.1	-13.0	-42.1

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:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

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

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

--- END ---

Annex A – Test Report for TA-1087 (Dual SIM)

FCC Test Report
(Part 24)

Report No.: RF180523C09-1 R1

FCC ID: 2AJOTTA-1087

Test Model: TA-1087

Received Date: May 23, 2018

Test Date: Jun. 07 ~ Jun. 15, 2018

Issued Date: Oct. 24, 2018

Applicant: HMD Global Oy

Address: Bertel Jungin aukio 9, 02600 Espoo, Finland

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.)

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

This report is 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. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, 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. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.
The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies

Table of Contents

Release Control Record **4**

1 Certificate of Conformity **5**

2 Summary of Test Results **6**

2.1 Measurement Uncertainty 6
2.2 Test Site and Instruments 7

3 General Information **8**

3.1 General Description of EUT 8
3.2 Configuration of System under Test 9
3.2.1 Description of Support Units 9
3.3 Test Mode Applicability and Tested Channel Detail 10
3.4 EUT Operating Conditions 14
3.5 General Description of Applied Standards 14

4 Test Types and Results **15**

4.1 Output Power Measurement 15
4.1.1 Limits of Output Power Measurement 15
4.1.2 Test Procedures 15
4.1.3 Test Setup 16
4.1.4 Test Results 17
4.2 Modulation Characteristics Measurement 45
4.2.1 Limits of Modulation Characteristics 45
4.2.2 Test Procedure 45
4.2.3 Test Setup 45
4.2.4 Test Results 46
4.3 Frequency Stability Measurement 48
4.3.1 Limits of Frequency Stability Measurement 48
4.3.2 Test Procedure 48
4.3.3 Test Setup 48
4.3.4 Test Results 49
4.4 Occupied Bandwidth Measurement 50
4.4.1 Test Procedure 50
4.4.2 Test Setup 50
4.4.3 Test Result 51
4.5 Band Edge Measurement 57
4.5.1 Limits of Band Edge Measurement 57
4.5.2 Test Setup 57
4.5.3 Test Procedures 57
4.5.4 Test Results 58
4.6 Peak to Average Ratio 65
4.6.1 Limits of Peak to Average Ratio Measurement 65
4.6.2 Test Setup 65
4.6.3 Test Procedures 65
4.6.4 Test Results 66
4.7 Conducted Spurious Emissions 70
4.7.1 Limits of Conducted Spurious Emissions Measurement 70
4.7.2 Test Setup 70
4.7.3 Test Procedure 70
4.7.4 Test Results 71
4.8 Radiated Emission Measurement 98
4.8.1 Limits of Radiated Emission Measurement 98
4.8.2 Test Procedure 98
4.8.3 Deviation from Test Standard 98
4.8.4 Test Setup 99
4.8.5 Test Results 100

5 Pictures of Test Arrangements 127

Appendix – Information on the Testing Laboratories 128

Release Control Record

Issue No.	Description	Date Issued
RF180523C09-1	Original release	Jun. 20, 2018
RF180523C09-1 R1	Revised applicant's address	Oct. 24, 2018

1 Certificate of Conformity

Product: Smart Phone

Brand: NOKIA

Test Model: TA-1087

Sample Status: Production Unit

Applicant: HMD Global Oy

Test Date: Jun. 07 ~ Jun. 15, 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 : Pettie Chen , **Date:** Oct. 24, 2018

Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Oct. 24, 2018

Bruce Chen / Project Engineer

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 -27.1dB at 31.94MHz.

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	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 11, 2018	Apr. 10, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 12, 2017	Dec. 11, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01638	Feb. 22, 2018	Feb. 21, 2019
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2018	Jan. 14, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2017	Aug. 07, 2018
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 01, 2017	Jul. 31, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Temperature And Humidity Chamber TERCHY	HRM-120RF	931022	Nov. 20, 2017	Nov. 19, 2018
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Radio Communication Analyzer	MT8821C	6261786083	Dec. 21, 2017	Dec. 20, 2018

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is IC 7450F-9.

3 General Information

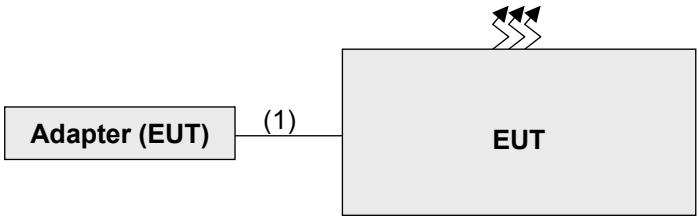
3.1 General Description of EUT

Product	SmartPhone			
Brand	NOKIA			
Test Model	TA-1087			
Sample Status	Production Unit			
Power Supply Rating	5.0 Vdc or 9 Vdc or 12 Vdc (adapter) 5.0 Vdc (host equipment) 3.85 Vdc (Li-ion battery)			
Modulation Type	PCS, GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM			
Operating Frequency	PCS/GPRS/ EDGE	1850.2MHz ~ 1909.8MHz		
	WCDMA	1852.4MHz ~ 1907.6MHz		
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1909.3MHz		
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1908.5MHz		
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1907.5MHz		
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1905.0MHz		
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1902.5MHz		
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1900.0MHz		
Max. EIRP Power	PCS/GPRS	1230.269mW (30.9dBm)		
	EDGE	389.045mW (25.9dBm)		
	WCDMA	575.440mW (27.6dBm)		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	380.189mW (25.8dBm)	309.030mW (24.9dBm)	275.423mW (24.4dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	346.737mW (25.4dBm)	281.838mW (24.5dBm)	263.027mW (24.2dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	363.078mW (25.6dBm)	281.838mW (24.5dBm)	263.027mW (24.2dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	371.535mW (25.7dBm)	309.030mW (24.9dBm)	281.838mW (24.5dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	407.380mW (26.1dBm)	316.228mW (25.0dBm)	301.995mW (24.8dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	398.107mW (26.0dBm)	323.594mW (25.1dBm)	309.030mW (24.9dBm)

Emission Designator	PCS/GPRS	260KGXW		
	EDGE	260KGXW		
	WCDMA	4M15F9W		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09W7D	1M09W7D
	LTE Band 2 (Channel Bandwidth 3MHz)	2M69G7D	2M69W7D	2M68W7D
	LTE Band 2 (Channel Bandwidth 5MHz)	4M46G7D	4M46W7D	4M48W7D
	LTE Band 2 (Channel Bandwidth 10MHz)	8M93G7D	8M90W7D	8M96W7D
	LTE Band 2 (Channel Bandwidth 15MHz)	13M4G7D	13M4W7D	13M4W7D
	LTE Band 2 (Channel Bandwidth 20MHz)	17M9G7D	18M0W7D	17M9W7D
Antenna Type	Main Ant.: Fixed Internal antenna with 0.2dBi gain Aux. Ant.: Fixed Internal antenna with -1.3dBi gain (Brand: TongDa Electrics, Model: MEAOP61010A)			
Accessory Device	Refer to Note as below			
Data Cable Supplied	Refer to Note as below			

Note: The EUT's accessories list refers to Ext. Pho.

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.	USB cable	1	1.0	N	0	Accessory Device

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 on X-plane. Following channel(s) was (were) selected for the final test as listed below:

PCS Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
-	Modulation characteristics	512 to 810	661(1880.0MHz)	PCS, EDGE
-	Frequency Stability	512 to 810	661(1880.0MHz)	PCS
-	Occupied Bandwidth	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
-	Band Edge	512 to 810	512(1850.2MHz), 810(1909.8MHz)	PCS, EDGE
-	Peak To Average Ratio	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
-	Conducted Emission	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
-	Radiated Emission Below 1GHz	512 to 810	512(1850.2MHz)	PCS, EDGE
-	Radiated Emission Above 1GHz	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE

WCDMA Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
-	Modulation characteristics	9262 to 9538	9400(1880.0MHz)	WCDMA
-	Frequency Stability	9262 to 9538	9400(1880.0MHz)	WCDMA
-	Occupied Bandwidth	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
-	Band Edge	9262 to 9538	9262(1852.4MHz), 9538(1907.6MHz)	WCDMA
-	Peak To Average Ratio	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
-	Conducted Emission	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
-	Radiated Emission Below 1GHz	9262 to 9538	9262(1852.4MHz)	WCDMA
-	Radiated Emission Above 1GHz	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
-	Modulation characteristics	18607 to 19193	18900(1880.00MHz)	1.4MHz	QPSK / 16QAM	1 RB / 5 RB Offset
		18700 to 19100	18900(1880.00MHz)	20MHz	QPSK / 16QAM	1 RB / 99 RB Offset
-	Frequency Stability	18607 to 19193	18900(1880.00MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
-	Occupied Bandwidth	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
-	Band Edge	18607 to 19193	18607(1850.70MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615(1851.50MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625(1852.50MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650(1855.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675(1857.50MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700(1860.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
-	Conducted Emission	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset
-	Radiated Emission Below 1GHz	18607 to 19193	18607(1850.70MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset
-	Radiated Emission Above 1GHz	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
-		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
-		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
-		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
-		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
-		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset

Note:
1. For radiated emission below 1GHz, low, mid and high channels were pre-tested in chamber with 1.4MHz mode. Low channel on mode A was found to be the worst case and therefore had been chosen for all final tests.
2. The conducted output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM and 64QAM mode. Therefore, only 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 (System)	Tested By
EIRP	22deg. C, 66%RH	120Vac, 60Hz	Han Wu
Modulation characteristics	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Frequency Stability	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Occupied Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Band Edge	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Peak To Average Ratio	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Radiated Emission	22deg. C, 66%RH 25deg. C, 65%RH	120Vac, 60Hz	Han Wu Greg Lin

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.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 1MHz for PCS, 5MHz for WCDMA mode and 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 - 2.15dB.

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.

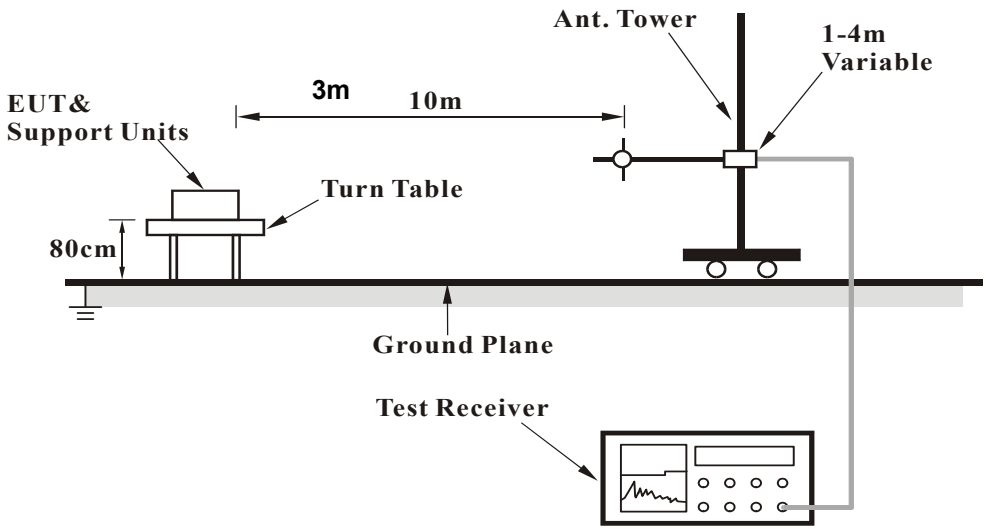
Conducted Power Measurement:

The EUT was set up for the maximum power with PCS, 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.

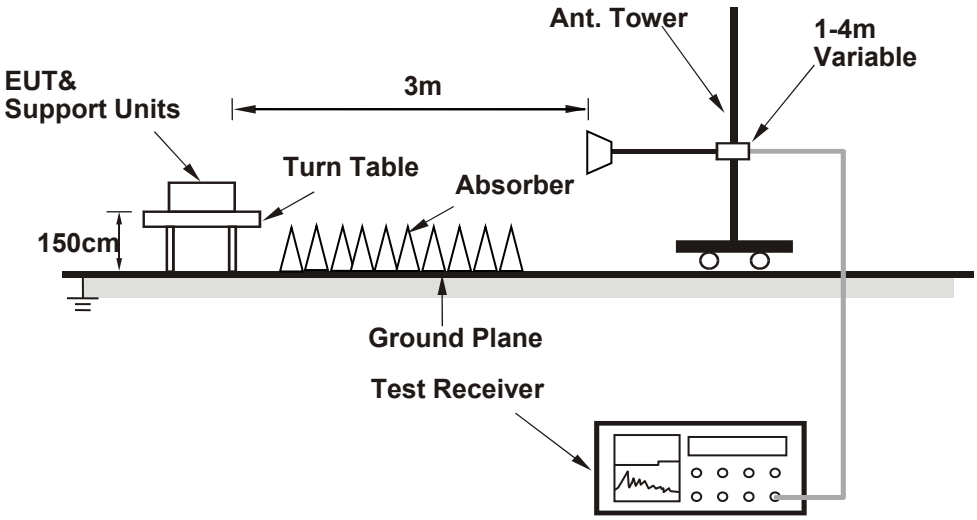
4.1.3 Test Setup

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)

Band	PCS1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PCS	29.94	**30.09**	30.06
GPRS 1Tx Slot	29.80	29.95	29.92
GPRS 2Tx Slot	26.57	26.72	26.69
GPRS 3Tx Slot	25.32	25.47	25.44
GPRS 4Tx Slot	23.99	24.14	24.11
EDGE 1Tx Slot (MCS9)	25.03	25.18	25.15
EDGE 2Tx Slot (MCS9)	22.47	22.62	22.59
EDGE 3Tx Slot (MCS9)	21.35	21.50	21.47
EDGE 4Tx Slot (MCS9)	20.13	20.28	20.25

Band	WCDMA Band II		
TX Channel	9262	9400	9538
Rx Channel	9662	9800	9938
Frequency (MHz)	1852.4	1880	1907.6
RMC 12.2K	23.08	**23.18**	23.12
HSDPA Subtest-1	22.15	22.25	22.19
HSDPA Subtest-2	22.10	22.20	22.14
HSDPA Subtest-3	21.67	21.77	21.71
HSDPA Subtest-4	21.64	21.74	21.68
DC-HSDPA Subtest-1	22.11	22.22	22.16
DC-HSDPA Subtest-2	22.06	22.17	22.13
DC-HSDPA Subtest-3	21.63	21.71	21.69
DC-HSDPA Subtest-4	21.60	21.68	21.65
HSUPA Subtest-1	22.18	22.28	22.22
HSUPA Subtest-2	20.19	20.29	20.23
HSUPA Subtest-3	21.21	21.31	21.25
HSUPA Subtest-4	20.18	20.28	20.22
HSUPA Subtest-5	22.20	22.30	22.24

Conducted Output Power (dBm)

LTE Band 2						
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**18700**	**18900**	**19100**
		Frequency (MHz)		**1860**	**1880**	**1900**
20M	QPSK	1	0	22.57	**22.76**	22.70
		1	50	22.36	22.55	22.49
		1	99	22.22	22.41	22.35
		50	0	21.49	21.68	21.62
		50	25	21.40	21.59	21.53
		50	50	21.32	21.51	21.45
		100	0	21.41	21.60	21.54
	16QAM	1	0	21.54	21.73	21.63
		1	50	21.30	21.49	21.45
		1	99	21.18	21.32	21.34
		50	0	20.40	20.63	20.54
		50	25	20.40	20.49	20.47
		50	50	20.24	20.43	20.37
		100	0	20.33	20.60	20.44
	64QAM	1	0	20.54	20.68	20.68
		1	50	20.29	20.54	20.41
		1	99	20.21	20.39	20.28
		50	0	19.44	19.68	19.61
		50	25	19.31	19.50	19.48
		50	50	19.27	19.48	19.43
		100	0	19.33	19.50	19.49

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	22.56	22.72	22.68
		1	37	22.26	22.46	22.49
		1	74	22.12	22.38	22.29
		36	0	21.43	21.67	21.56
		36	19	21.30	21.58	21.45
		36	39	21.31	21.46	21.44
		75	0	21.38	21.51	21.46
	16QAM	1	0	21.45	21.56	21.54
		1	37	21.23	21.42	21.41
		1	74	21.18	21.26	21.24
		36	0	20.33	20.51	20.54
		36	19	20.31	20.51	20.41
		36	39	20.23	20.34	20.36
		75	0	20.28	20.47	20.42
	64QAM	1	0	20.49	20.58	20.66
		1	37	20.21	20.49	20.39
		1	74	20.14	20.31	20.31
		36	0	19.38	19.65	19.53
		36	19	19.26	19.46	19.40
		36	39	19.25	19.44	19.35
		75	0	19.31	19.51	19.51

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	22.33	22.66	22.55
		1	24	22.21	22.52	22.38
		1	49	22.01	22.36	22.13
		25	0	21.32	21.55	21.52
		25	12	21.31	21.39	21.35
		25	25	21.10	21.34	21.36
		50	0	21.37	21.39	21.31
	16QAM	1	0	21.43	21.55	21.50
		1	24	21.19	21.27	21.25
		1	49	21.06	21.27	21.21
		25	0	20.17	20.52	20.52
		25	12	20.21	20.48	20.50
		25	25	20.28	20.28	20.21
		50	0	20.32	20.43	20.33
	64QAM	1	0	20.40	20.54	20.57
		1	24	20.19	20.34	20.44
		1	49	20.13	20.29	20.18
		25	0	19.26	19.59	19.56
		25	12	19.16	19.44	19.28
		25	25	19.05	19.31	19.21
		50	0	19.19	19.41	19.49

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	22.47	22.64	22.52
		1	12	22.23	22.47	22.28
		1	24	22.04	22.19	22.15
		12	0	21.28	21.60	21.37
		12	6	21.22	21.40	21.35
		12	13	21.28	21.38	21.22
		25	0	21.35	21.40	21.40
	16QAM	1	0	21.49	21.56	21.57
		1	12	21.30	21.33	21.34
		1	24	21.07	21.24	21.19
		12	0	20.36	20.45	20.46
		12	6	20.22	20.37	20.42
		12	13	20.17	20.41	20.19
		25	0	20.14	20.29	20.23
	64QAM	1	0	20.47	20.54	20.48
		1	12	20.10	20.35	20.26
		1	24	20.08	20.28	20.18
		12	0	19.30	19.42	19.50
		12	6	19.23	19.40	19.36
		12	13	19.12	19.45	19.41
		25	0	19.30	19.31	19.38

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	22.33	22.60	22.59
		1	7	22.24	22.50	22.34
		1	14	22.10	22.19	22.15
		8	0	21.27	21.61	21.57
		8	3	21.24	21.50	21.39
		8	7	21.25	21.34	21.41
		15	0	21.21	21.42	21.40
	16QAM	1	0	21.36	21.59	21.47
		1	7	21.12	21.41	21.32
		1	14	21.09	21.20	21.20
		8	0	20.27	20.52	20.44
		8	3	20.27	20.41	20.27
		8	7	20.11	20.38	20.24
		15	0	20.28	20.45	20.25
	64QAM	1	0	20.32	20.57	20.56
		1	7	20.24	20.48	20.38
		1	14	20.04	20.23	20.12
		8	0	19.35	19.56	19.44
		8	3	19.18	19.47	19.31
		8	7	19.11	19.37	19.27
		15	0	19.23	19.44	19.34

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	22.49	22.58	22.56
		1	2	22.20	22.45	22.26
		1	5	22.10	22.32	22.31
		3	0	22.32	22.57	22.47
		3	1	22.30	22.49	22.45
		3	3	22.23	22.47	22.31
		6	0	21.22	21.54	21.37
	16QAM	1	0	21.43	21.63	21.44
		1	2	21.21	21.36	21.37
		1	5	21.03	21.17	21.29
		3	0	21.28	21.44	21.55
		3	1	21.25	21.43	21.36
		3	3	21.11	21.33	21.19
		6	0	20.27	20.33	20.44
	64QAM	1	0	20.36	20.53	20.48
		1	2	20.17	20.47	20.32
		1	5	19.98	20.11	20.17
		3	0	20.26	20.51	20.52
		3	1	20.34	20.37	20.33
		3	3	20.18	20.24	20.33
		6	0	19.14	19.36	19.33

EIRP Power (dBm)
PCS Mode

MODE		TX channel 512					
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	1850.20	-9.4	30.8	0.1	**30.9**	33.0	-2.1
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	1850.20	-13.1	27.3	0.1	27.4	33.0	-5.6

MODE		TX channel 661					
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	1880.00	-10.0	30.5	0.0	30.5	33.0	-2.5
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	1880.00	-12.4	28.2	0.0	28.2	33.0	-4.8

MODE		TX channel 810					
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	1909.80	-11.5	29.1	-0.1	29.0	33.0	-4.0
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	1909.80	-13.0	27.8	-0.1	27.7	33.0	-5.3

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

EDGE Mode

MODE		TX channel 512					
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	1850.20	-14.4	25.8	0.1	25.9	33.0	-7.1
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	1850.20	-18.0	22.4	0.1	22.5	33.0	-10.5

MODE		TX channel 661					
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	1880.00	-15.1	25.4	0.0	25.4	33.0	-7.6
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	1880.00	-17.5	23.1	0.0	23.1	33.0	-9.9

MODE		TX channel 810					
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	1909.80	-16.5	24.1	-0.1	24.0	33.0	-9.0
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	1909.80	-18.0	22.8	-0.1	22.7	33.0	-10.3

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

WCDMA Mode

MODE		TX channel 9262					
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	1852.40	-13.4	26.8	0.1	26.9	33.0	-6.1
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	1852.40	-18.5	21.9	0.1	22.0	33.0	-11.0

MODE		TX channel 9400					
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	1880.00	-13.0	27.5	0.0	27.5	33.0	-5.5
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	1880.00	-16.6	24.0	0.0	24.0	33.0	-9.0

MODE		TX channel 9538					
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	1907.60	-13.0	27.7	-0.1	**27.6**	33.0	-5.4
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	1907.60	-17.1	23.7	-0.1	23.6	33.0	-9.4

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

Modulation Type: QPSK

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-15.8	24.4	0.1	24.5	33.0	-8.5
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	1850.70	-20.8	19.6	0.1	19.7	33.0	-13.3

MODE		TX channel 18900					
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	1880.00	-15.7	24.8	0.0	24.8	33.0	-8.2
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	1880.00	-20.6	20.0	0.0	20.0	33.0	-13.0

MODE		TX channel 19193					
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	1909.30	-14.8	25.9	-0.1	**25.8**	33.0	-7.2
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	1909.30	-18.9	21.9	-0.1	21.8	33.0	-11.2

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

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-15.7	24.5	0.1	24.6	33.0	-8.4
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	1851.50	-20.3	20.1	0.1	20.2	33.0	-12.8

MODE		TX channel 18900					
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	1880.00	-15.8	24.7	0.0	24.7	33.0	-8.3
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	1880.00	-20.6	20.0	0.0	20.0	33.0	-13.0

MODE		TX channel 19185					
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	1908.50	-15.2	25.5	-0.1	**25.4**	33.0	-7.6
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	1908.50	-20.1	20.7	-0.1	20.6	33.0	-12.4

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

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-15.2	25.0	0.1	25.1	33.0	-7.9
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	1852.50	-20.4	20.0	0.1	20.1	33.0	-12.9

MODE		TX channel 18900					
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	1880.00	-15.3	25.2	0.0	25.2	33.0	-7.8
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	1880.00	-20.3	20.3	0.0	20.3	33.0	-12.7

MODE		TX channel 19175					
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	1907.50	-15.0	25.7	-0.1	**25.6**	33.0	-7.4
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	1907.50	-19.8	21.0	-0.1	20.9	33.0	-12.1

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

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-15.0	25.3	0.0	25.3	33.0	-7.7
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	1855.00	-20.0	20.5	0.0	20.5	33.0	-12.5

MODE		TX channel 18900					
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	1880.00	-14.8	25.7	0.0	25.7	33.0	-7.3
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	1880.00	-19.7	20.9	0.0	20.9	33.0	-12.1

MODE		TX channel 19150					
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	1905.00	-14.9	25.8	-0.1	25.7	33.0	-7.3
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	1905.00	-20.0	20.8	-0.1	20.7	33.0	-12.3

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

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-14.8	25.5	0.0	25.5	33.0	-7.5
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	1857.50	-19.8	20.7	0.0	20.7	33.0	-12.3

MODE		TX channel 18900					
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	1880.00	-14.6	25.9	0.0	25.9	33.0	-7.1
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	1880.00	-19.5	21.1	0.0	21.1	33.0	-11.9

MODE		TX channel 19125					
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	1902.50	-14.5	26.2	-0.1	**26.1**	33.0	-6.9
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	1902.50	-19.6	21.2	-0.1	21.1	33.0	-11.9

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

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-14.8	25.5	0.0	25.5	33.0	-7.5
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	1860.00	-19.9	20.6	0.0	20.6	33.0	-12.4

MODE		TX channel 18900					
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	1880.00	-14.7	25.8	0.0	25.8	33.0	-7.2
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	1880.00	-19.8	20.8	0.0	20.8	33.0	-12.2

MODE		TX channel 19100					
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	1900.00	-14.6	26.1	-0.1	**26.0**	33.0	-7.0
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	1900.00	-19.7	21.1	-0.1	21.0	33.0	-12.0

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

Modulation Type: 16QAM

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-16.6	23.6	0.1	23.7	33.0	-9.3
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	1850.70	-21.6	18.8	0.1	18.9	33.0	-14.1

MODE		TX channel 18900					
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	1880.00	-16.7	23.8	0.0	23.8	33.0	-9.2
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	1880.00	-21.6	19.0	0.0	19.0	33.0	-14.0

MODE		TX channel 19193					
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	1909.30	-15.7	25.0	-0.1	24.9	33.0	-8.1
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	1909.30	-19.8	21.0	-0.1	20.9	33.0	-12.1

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

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-16.5	23.7	0.1	23.8	33.0	-9.2
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	1851.50	-21.2	19.2	0.1	19.3	33.0	-13.7

MODE		TX channel 18900					
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	1880.00	-16.9	23.6	0.0	23.6	33.0	-9.4
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	1880.00	-21.7	18.9	0.0	18.9	33.0	-14.1

MODE		TX channel 19185					
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	1908.50	-16.1	24.6	-0.1	24.5	33.0	-8.5
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	1908.50	-21.0	19.8	-0.1	19.7	33.0	-13.3

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

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-16.3	23.9	0.1	24.0	33.0	-9.0
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	1852.50	-21.5	18.9	0.1	19.0	33.0	-14.0

MODE		TX channel 18900					
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	1880.00	-16.3	24.2	0.0	24.2	33.0	-8.8
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	1880.00	-21.3	19.3	0.0	19.3	33.0	-13.7

MODE		TX channel 19175					
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	1907.50	-16.1	24.6	-0.1	24.5	33.0	-8.5
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	1907.50	-20.9	19.9	-0.1	19.8	33.0	-13.2

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

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-15.8	24.5	0.0	24.5	33.0	-8.5
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	1855.00	-20.8	19.7	0.0	19.7	33.0	-13.3

MODE		TX channel 18900					
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	1880.00	-15.9	24.6	0.0	24.6	33.0	-8.4
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	1880.00	-20.8	19.8	0.0	19.8	33.0	-13.2

MODE		TX channel 19150					
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	1905.00	-15.7	25.0	-0.1	24.9	33.0	-8.1
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	1905.00	-20.9	19.9	-0.1	19.8	33.0	-13.2

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

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-15.8	24.5	0.0	24.5	33.0	-8.5
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	1857.50	-20.7	19.8	0.0	19.8	33.0	-13.2

MODE		TX channel 18900					
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	1880.00	-15.5	25.0	0.0	25.0	33.0	-8.0
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	1880.00	-20.4	20.2	0.0	20.2	33.0	-12.8

MODE		TX channel 19125					
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	1902.50	-15.6	25.1	-0.1	25.0	33.0	-8.0
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	1902.50	-20.7	20.1	-0.1	20.0	33.0	-13.0

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

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-15.7	24.6	0.0	24.6	33.0	-8.4
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	1860.00	-20.8	19.7	0.0	19.7	33.0	-13.3

MODE		TX channel 18900					
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	1880.00	-15.7	24.8	0.0	24.8	33.0	-8.2
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	1880.00	-20.8	19.8	0.0	19.8	33.0	-13.2

MODE		TX channel 19100					
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	1900.00	-15.5	25.2	-0.1	25.1	33.0	-7.9
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	1900.00	-20.6	20.2	-0.1	20.1	33.0	-12.9

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

Modulation Type: 64QAM

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-16.9	23.3	0.1	23.4	33.0	-9.6
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	1850.70	-22.3	18.1	0.1	18.2	33.0	-14.8

MODE		TX channel 18900					
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	1880.00	-17.18	23.31	-0.01	23.30	33.00	-9.70
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	1880.00	-21.98	18.61	-0.01	18.60	33.00	-14.40

MODE		TX channel 19193					
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	1909.30	-16.15	24.52	-0.12	24.40	33.00	-8.60
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	1909.30	-20.59	20.22	-0.12	20.10	33.00	-12.90

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

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-17.0	23.2	0.1	23.3	33.0	-9.7
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	1851.50	-21.2	19.2	0.1	19.3	33.0	-13.7

MODE		TX channel 18900					
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	1880.00	-17.28	23.21	-0.01	23.2	33.0	-9.8
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	1880.00	-22.2	18.4	0.0	18.4	33.0	-14.6

MODE		TX channel 19185					
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	1908.50	-16.4	24.3	-0.1	24.2	33.0	-8.8
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	1908.50	-21.4	19.4	-0.1	19.3	33.0	-13.7

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

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-16.5	23.7	0.1	23.8	33.0	-9.2
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	1852.50	-22.1	18.3	0.1	18.4	33.0	-14.6

MODE		TX channel 18900					
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	1880.00	-16.5	24.0	0.0	24.0	33.0	-9.0
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	1880.00	-21.5	19.1	0.0	19.1	33.0	-13.9

MODE		TX channel 19175					
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	1907.50	-16.4	24.3	-0.1	24.2	33.0	-8.8
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	1907.50	-21.4	19.4	-0.1	19.3	33.0	-13.7

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

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-16.1	24.2	0.0	24.2	33.0	-8.8
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	1855.00	-21.1	19.4	0.0	19.4	33.0	-13.6

MODE		TX channel 18900					
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	1880.00	-16.2	24.3	0.0	24.3	33.0	-8.7
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	1880.00	-21.3	19.3	0.0	19.3	33.0	-13.7

MODE		TX channel 19150					
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	1905.00	-16.1	24.6	-0.1	24.5	33.0	-8.5
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	1905.00	-21.1	19.7	-0.1	19.6	33.0	-13.4

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

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-16.0	24.3	0.0	24.3	33.0	-8.7
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	1857.50	-21.1	19.4	0.0	19.4	33.0	-13.6

MODE		TX channel 18900					
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	1880.00	-15.7	24.8	0.0	24.8	33.0	-8.2
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	1880.00	-20.6	20.0	0.0	20.0	33.0	-13.0

MODE		TX channel 19125					
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	1902.50	-15.9	24.8	-0.1	24.7	33.0	-8.3
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	1902.50	-21.1	19.7	-0.1	19.6	33.0	-13.4

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

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-15.9	24.4	0.0	24.4	33.0	-8.6
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	1860.00	-21.1	19.4	0.0	19.4	33.0	-13.6

MODE		TX channel 18900					
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	1880.00	-15.9	24.6	0.0	24.6	33.0	-8.4
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	1880.00	-21.3	19.3	0.0	19.3	33.0	-13.7

MODE		TX channel 19100					
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	1900.00	-15.7	25.0	-0.1	24.9	33.0	-8.1
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	1900.00	-21.0	19.8	-0.1	19.7	33.0	-13.3

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

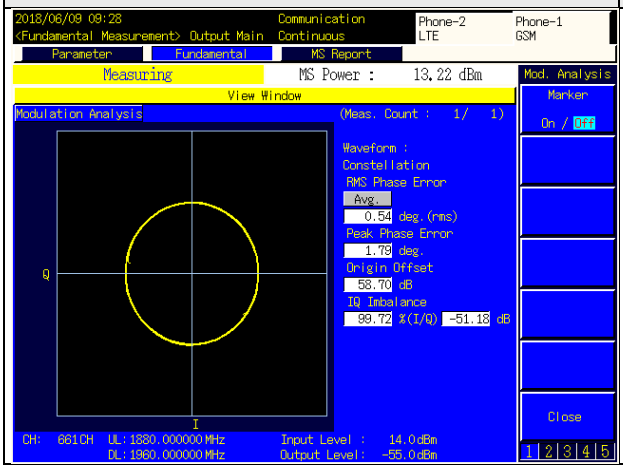
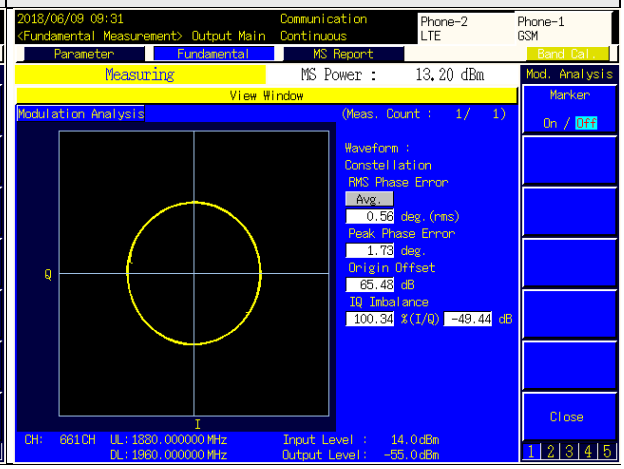
N/A

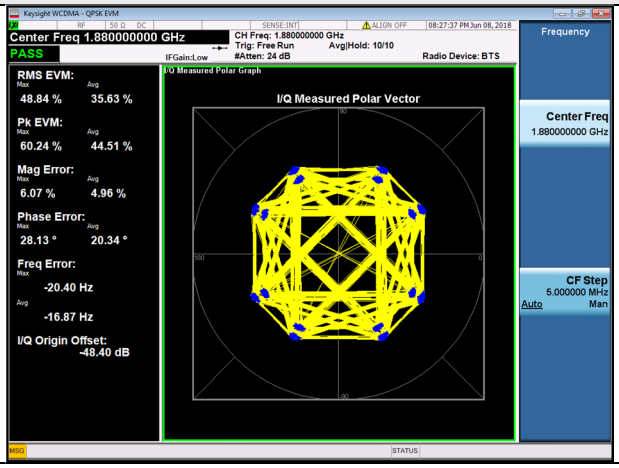
4.2.2 Test Procedure

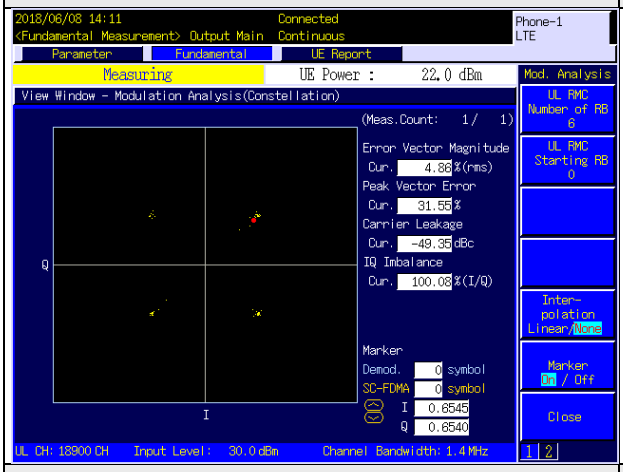
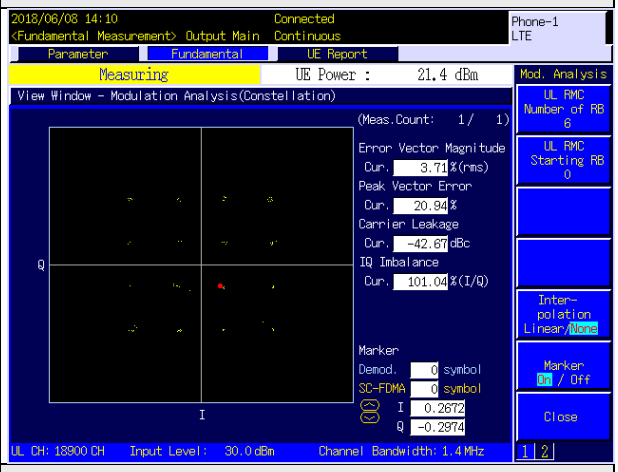
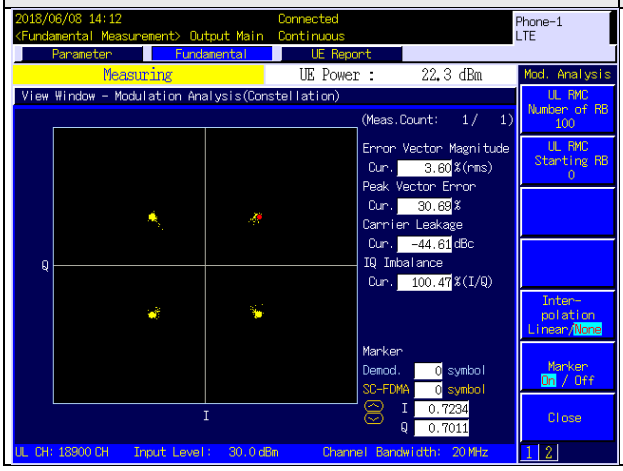
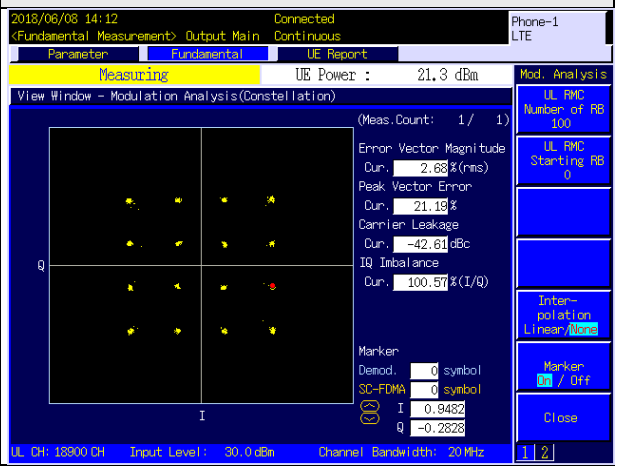
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.3 Test Setup

4.2.4 Test Results

Spectrum Plot of Measurement Value	
Channel: 661 / Frequency (MHz): 1880.0MHz	
PCS	EDGE
	

Spectrum Plot of Measurement Value
Channel: 9400 / Frequency (MHz): 1800.0MHz
WCDMA


LTE Band 2	
Spectrum Plot of Measurement Value	
Channel: 18900 / Frequency (MHz): 1880.0MHz	
Channel Bandwidth: 1.4MHz / QPSK	Channel Bandwidth: 1.4MHz / 16QAM
	
Channel Bandwidth: 20MHz / QPSK	Channel Bandwidth: 20MHz / 16QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

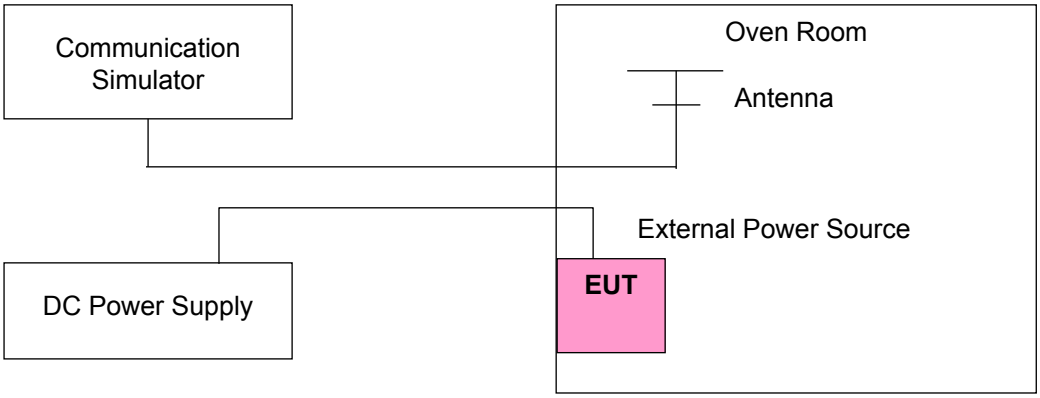
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

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 DC 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)
	PCS	WCDMA	LTE Band 2	
4.3	0.04521	0.03675	0.09102	2.5
3.8	0.01042	0.08156	0.02749	2.5
3.4	0.07762	0.06588	0.07739	2.5

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.3Vdc.

Frequency Error vs. Temperature.

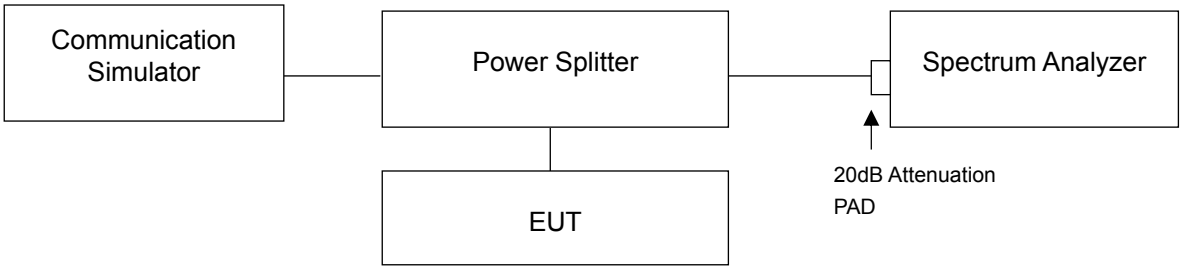
Temp. (℃)	Frequency Error (ppm)			Limit (ppm)
	PCS	WCDMA	LTE Band 2	
50	0.07062	0.00878	0.06852	2.5
40	0.10864	0.06089	0.00952	2.5
30	0.02791	0.01381	0.02701	2.5
20	0.04430	0.05554	0.00505	2.5
10	0.05271	0.06878	0.07099	2.5
0	0.11709	0.05597	0.01764	2.5
-10	0.02801	0.04581	0.01314	2.5
-20	0.00677	0.01075	0.08096	2.5
-30	0.05355	0.01286	0.11494	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.

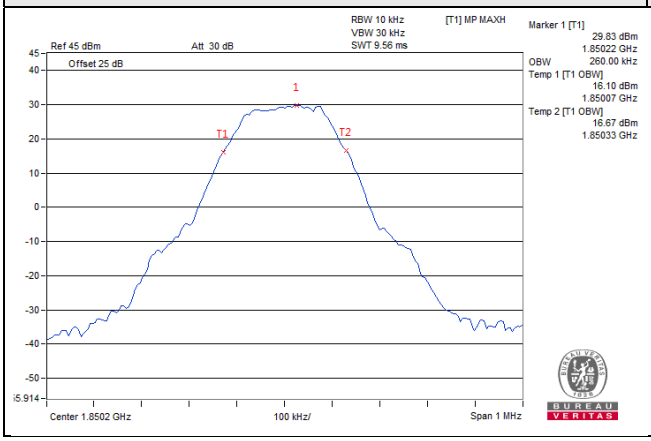
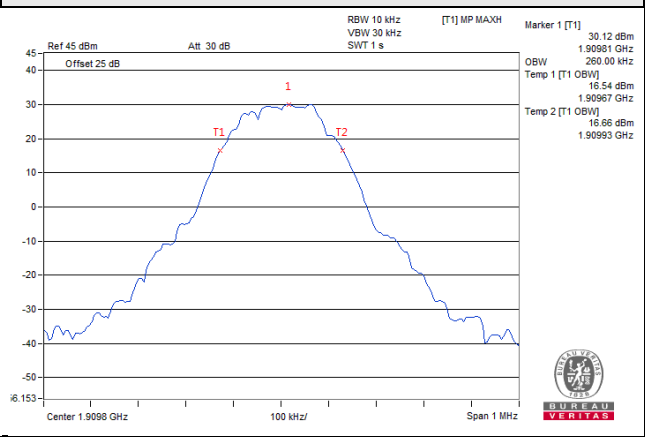
4.4.2 Test Setup



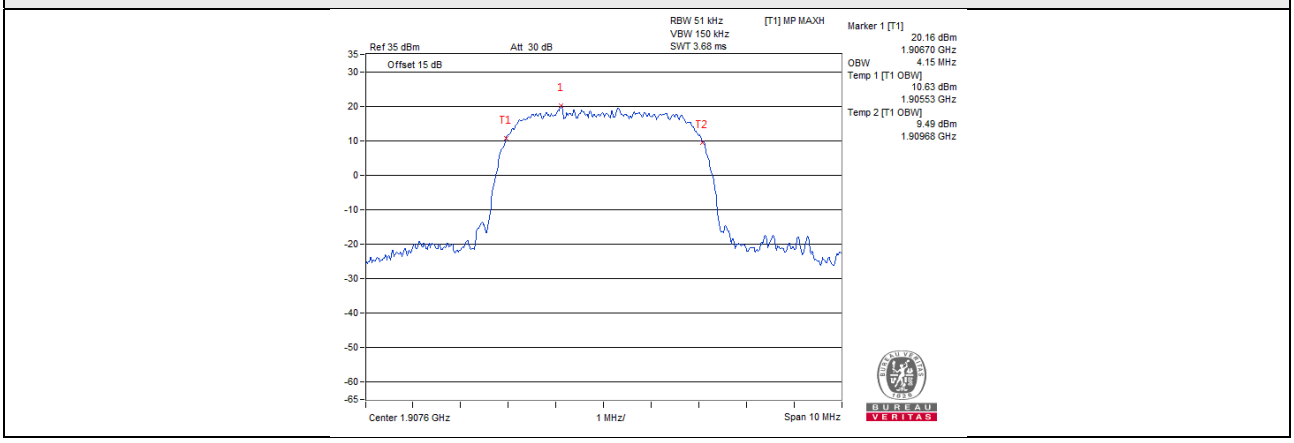
4.4.3 Test Result

Occupied Bandwidth

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	
		PCS	EDGE
512	1850.2	260	250
661	1880.0	260	250
810	1909.8	250	260

Spectrum Plot of Worst Value	
PCS	EDGE
	

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
		WCDMA
9262	1852.4	4.13
9400	1880.0	4.11
9538	1907.6	4.15

Spectrum Plot of Worst Value
WCDMA


LTE Band 2, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18607	1850.7	1.08	1.09	1.09
18900	1880.0	1.09	1.09	1.09
19193	1909.3	1.09	1.09	1.09

LTE Band 2, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18615	1851.5	2.68	2.68	2.68
18900	1880.0	2.68	2.68	2.68
19185	1908.5	2.69	2.69	2.67

LTE Band 2, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18625	1852.5	4.46	4.45	4.48
18900	1880.0	4.46	4.46	4.48
19175	1907.5	4.45	4.45	4.48

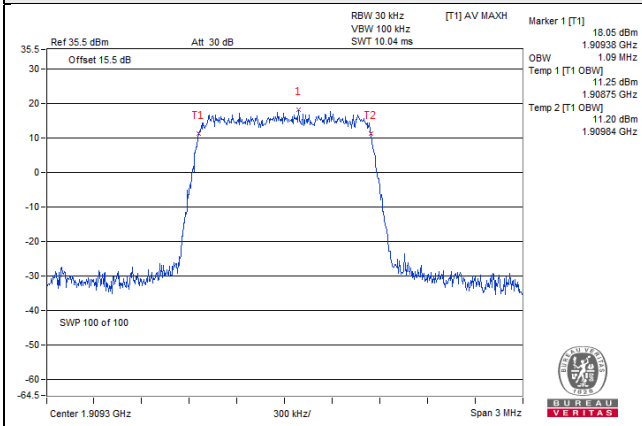
LTE Band 2, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18650	1855.0	8.93	8.90	8.96
18900	1880.0	8.93	8.90	8.93
19150	1905.0	8.93	8.90	8.96

LTE Band 2, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18675	1857.5	13.43	13.40	13.43
18900	1880.0	13.36	13.40	13.40
19125	1902.5	13.36	13.40	13.36

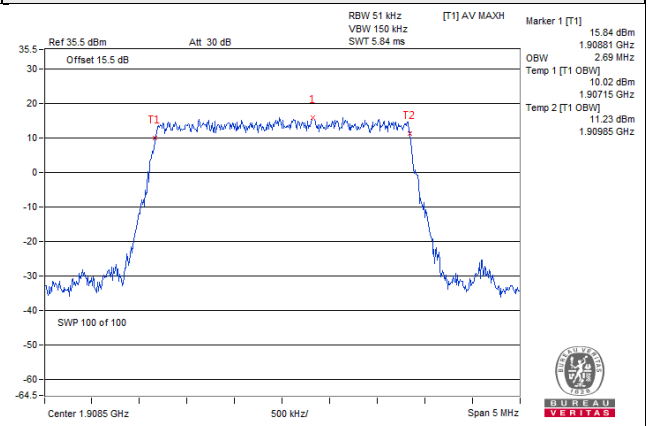
LTE Band 2, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18700	1860.0	17.93	17.93	17.93
18900	1880.0	17.93	17.93	17.93
19100	1900.0	17.86	18.00	17.86

Spectrum Plot of Worst Value

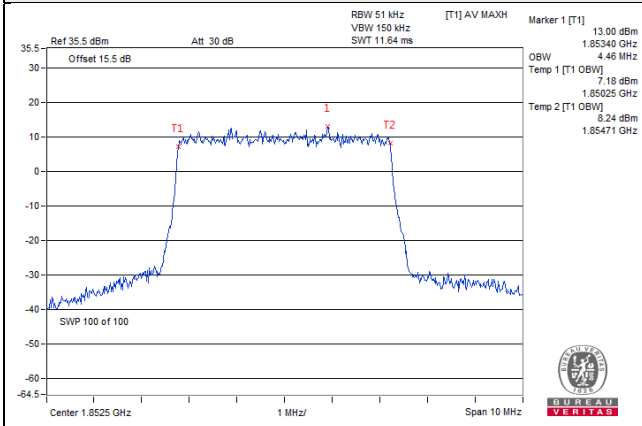
1.4MHz / QPSK



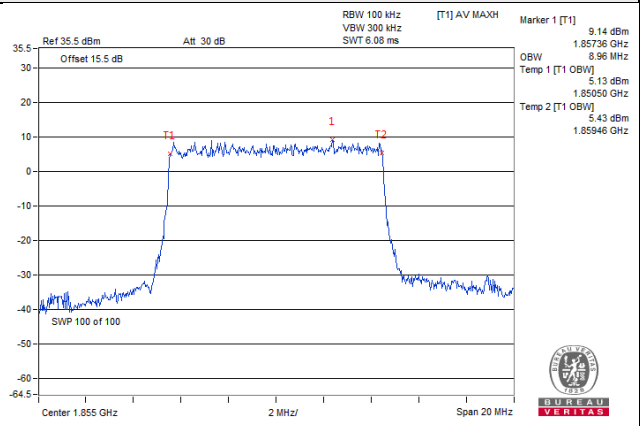
3MHz / QPSK



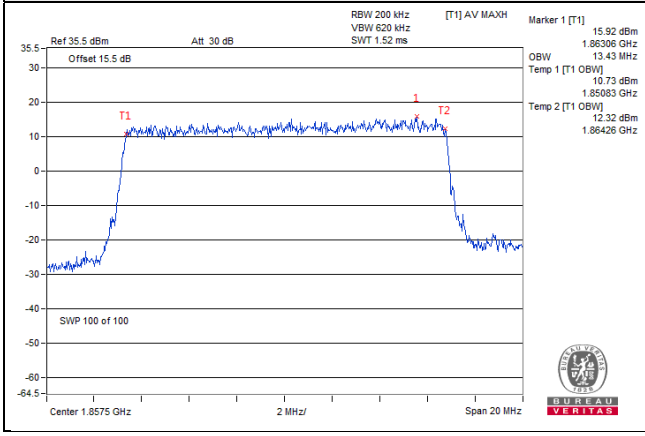
5MHz / QPSK



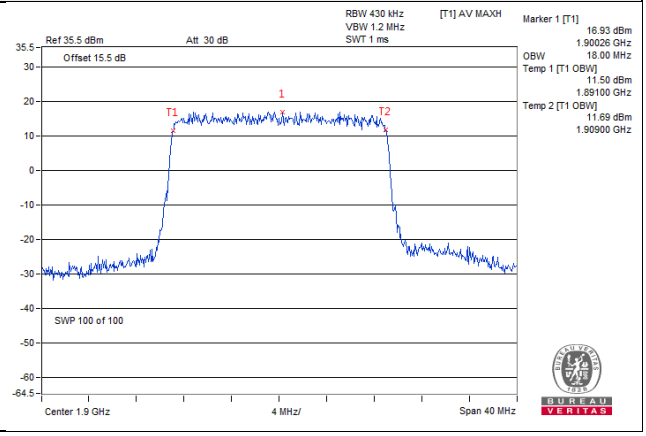
10MHz / 64QAM



15MHz / QPSK



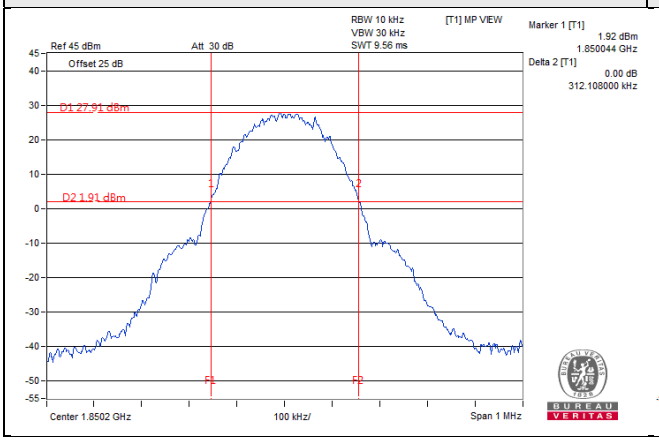
20MHz / 16QAM

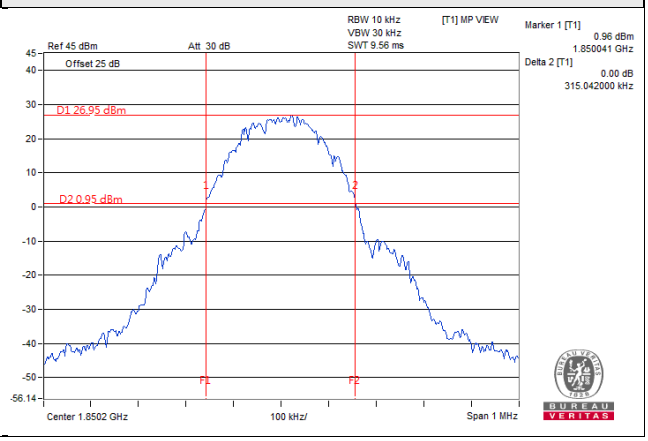


26dB Bandwidth

Channel	Frequency (MHz)	26dBc Bandwidth (kHz)	
		PCS	EDGE
512	1850.2	312.108	315.042
661	1880.0	310.970	311.084
810	1909.8	311.057	310.477

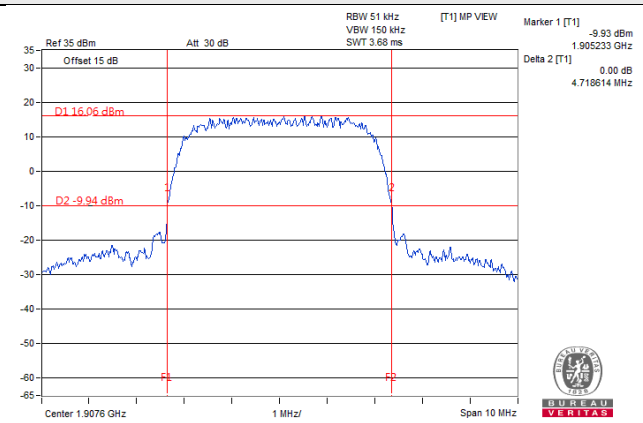
Spectrum Plot of Worst Value	
PCS	EDGE





Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
		WCDMA
9262	1852.4	4.698
9400	1880.0	4.676
9538	1907.6	4.719

Spectrum Plot of Worst Value
WCDMA



LTE Band 2, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18607	1850.7	1.239	1.234	1.235
18900	1880.0	1.232	1.242	1.239
19193	1909.3	1.218	1.223	1.235

LTE Band 2, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18615	1851.5	2.966	2.958	2.986
18900	1880.0	2.981	2.966	2.980
19185	1908.5	2.963	2.969	2.987

LTE Band 2, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18625	1852.5	4.863	4.868	4.858
18900	1880.0	4.853	4.887	4.938
19175	1907.5	4.898	4.861	4.920

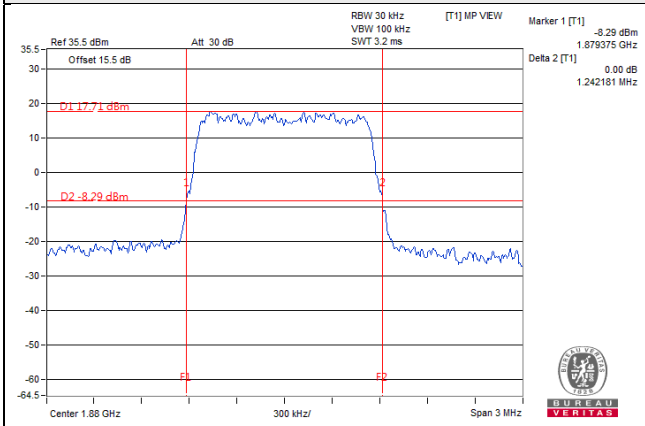
LTE Band 2, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18650	1855.0	9.742	9.561	9.633
18900	1880.0	9.605	9.610	9.563
19150	1905.0	9.566	9.575	9.623

LTE Band 2, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18675	1857.5	14.453	14.409	14.520
18900	1880.0	14.530	14.506	14.521
19125	1902.5	14.531	14.435	14.523

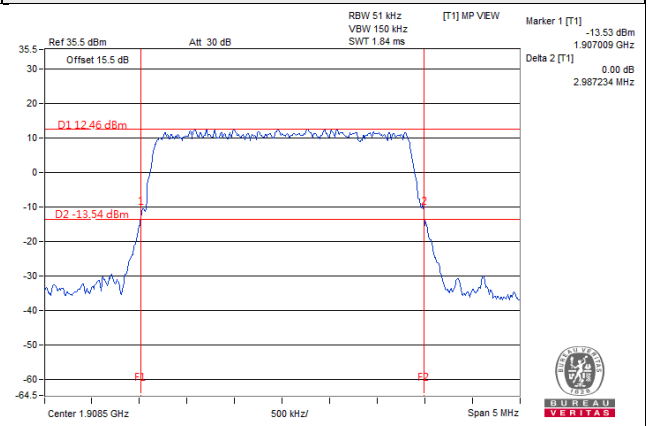
LTE Band 2, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM
18700	1860.0	19.558	19.604	19.512
18900	1880.0	19.493	19.486	19.571
19100	1900.0	19.496	19.450	19.445

Spectrum Plot of Worst Value

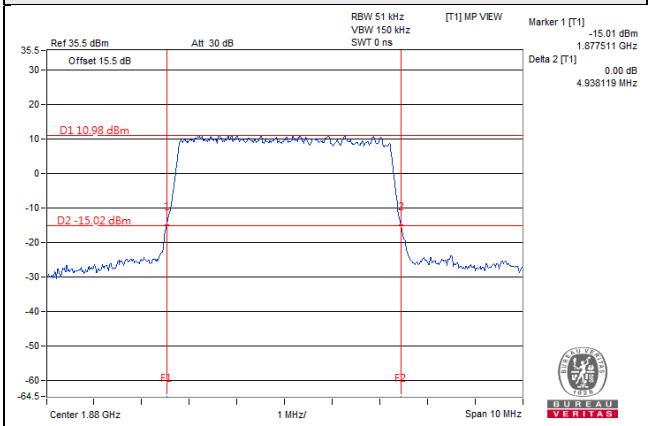
1.4MHz / 16QAM



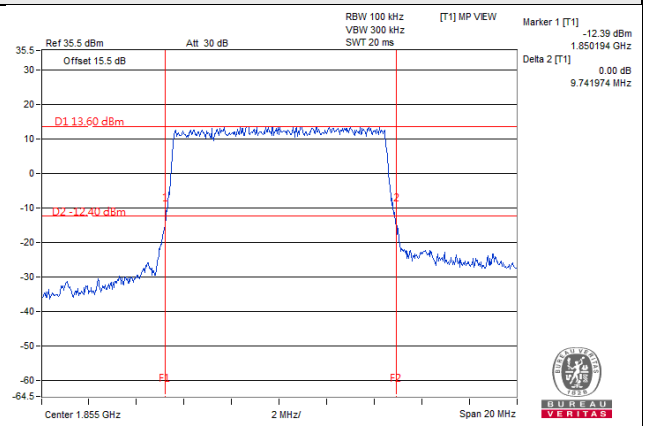
3MHz / 64QAM



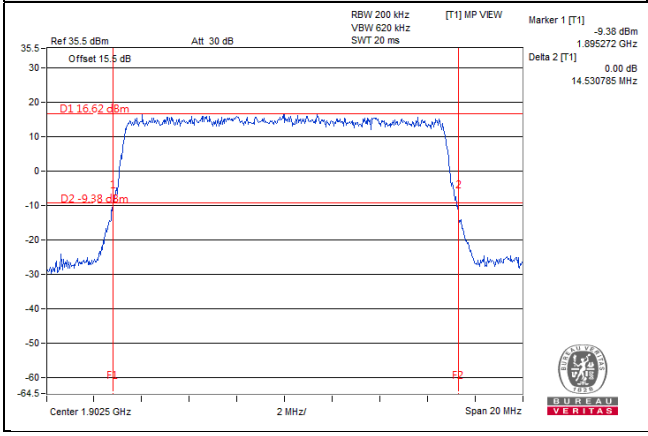
5MHz / 64QAM



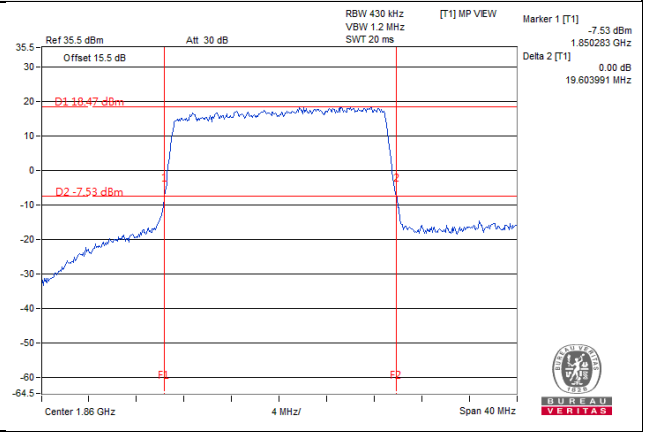
10MHz / QPSK



15MHz / QPSK



20MHz / 16QAM

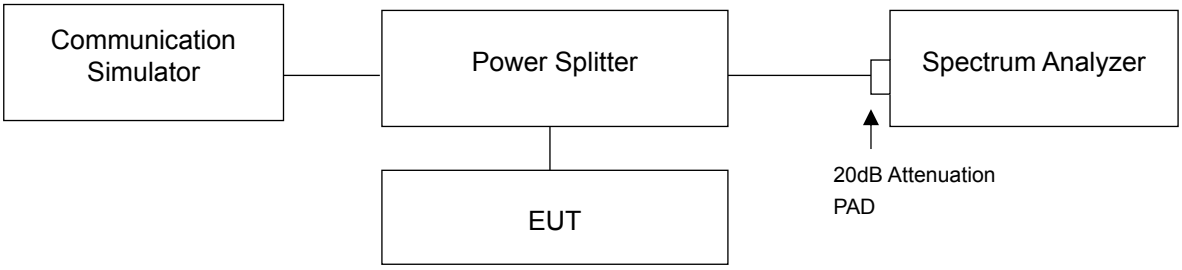


4.5 Band Edge Measurement

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.

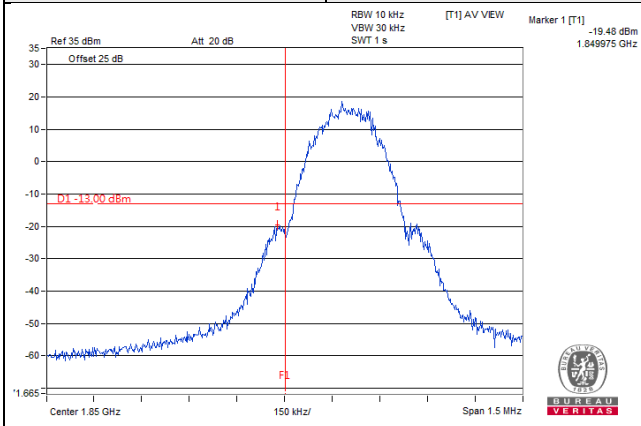
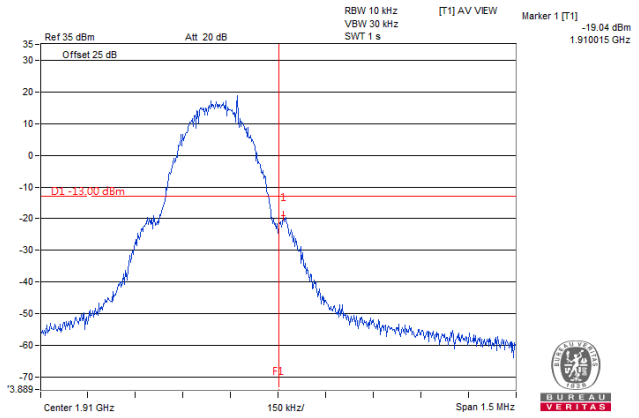
4.5.2 Test Setup

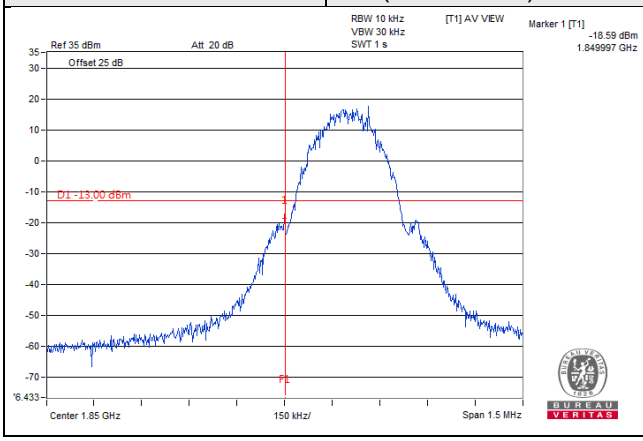
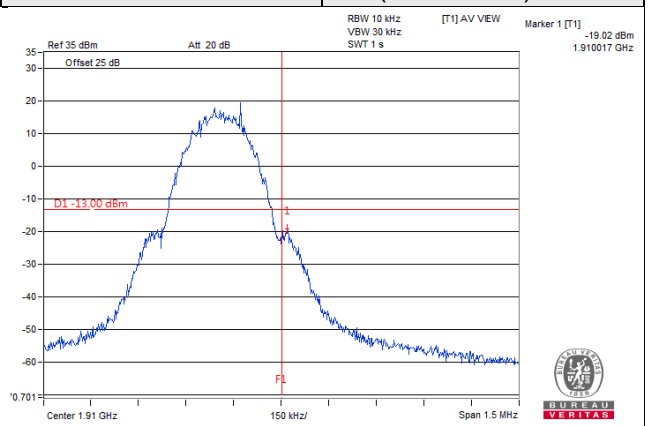


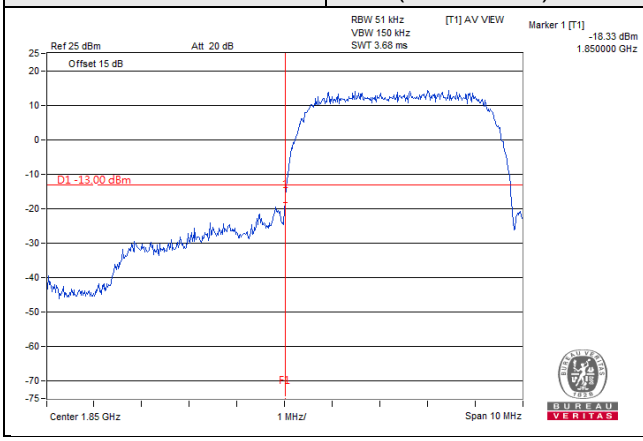
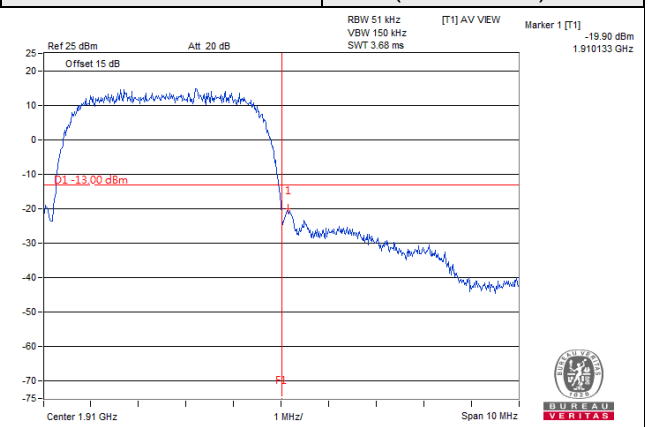
4.5.3 Test Procedures

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 10kHz and VB of the spectrum is 30kHz (PCS / EDGE).
c. 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 (WCDMA).
d. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 1.4MHz).
e. 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 3MHz and 5MHz).
f. 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).
g. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Channel Bandwidth 15MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 430kHz and VB of the spectrum is 1200kHz (LTE Channel Bandwidth 20MHz).
i. Record the max trace plot into the test report.

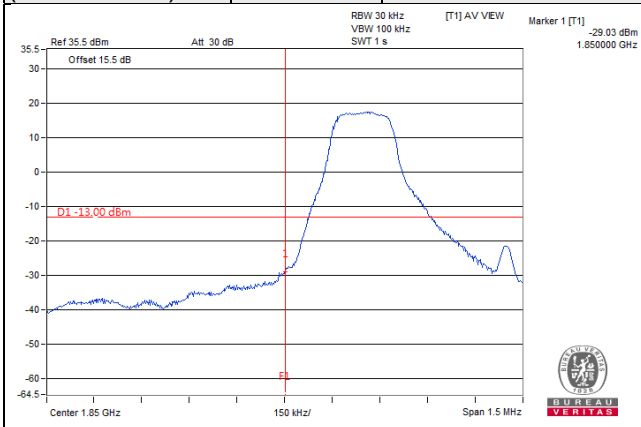
4.5.4 Test Results

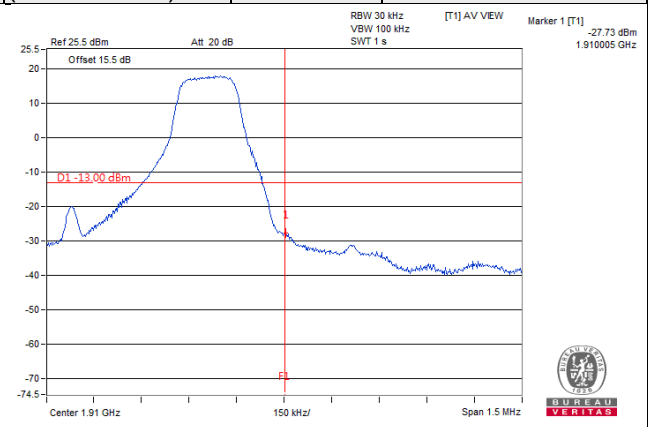
PCS			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)
			

EDGE			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)
			

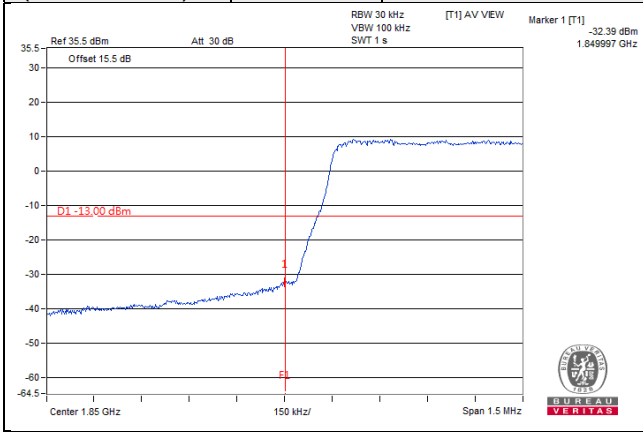
WCDMA			
Channel	9262 (1852.4MHz)	Channel	9538 (1907.6MHz)
			

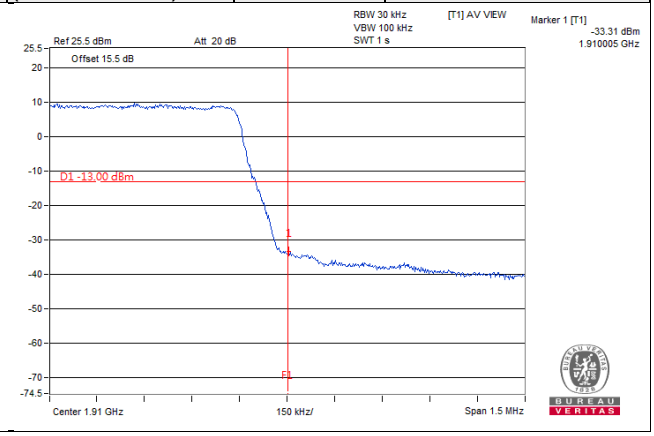
LTE Band 2, Channel Bandwidth 1.4MHz					
Channel 18607 (1850.70MHz)	QPSK	1 RB / 0 RB Offset	Channel 19193 (1909.30MHz)	QPSK	1 RB / 5 RB Offset

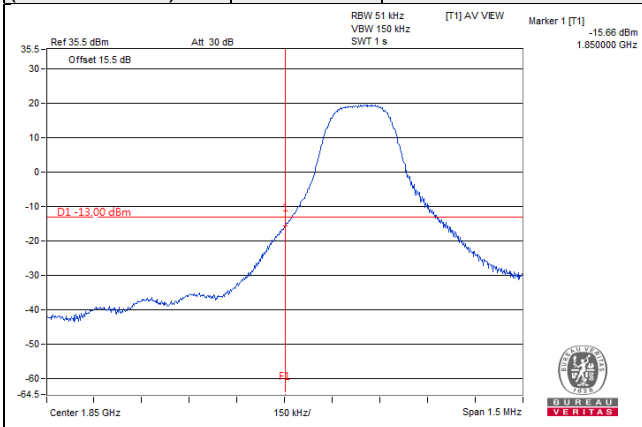
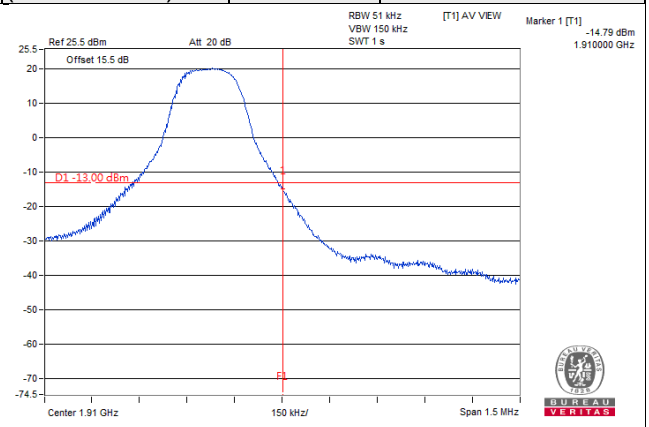
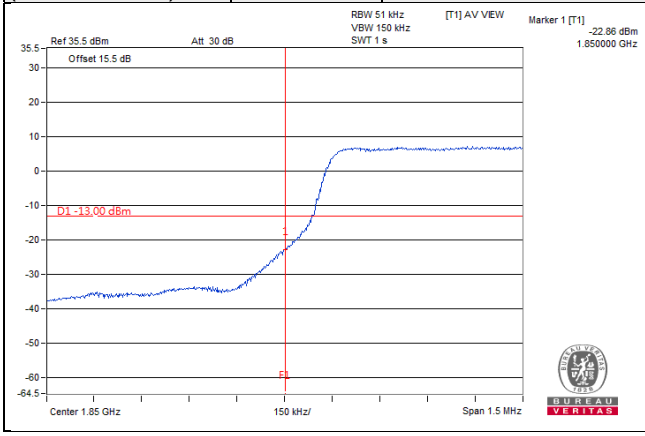
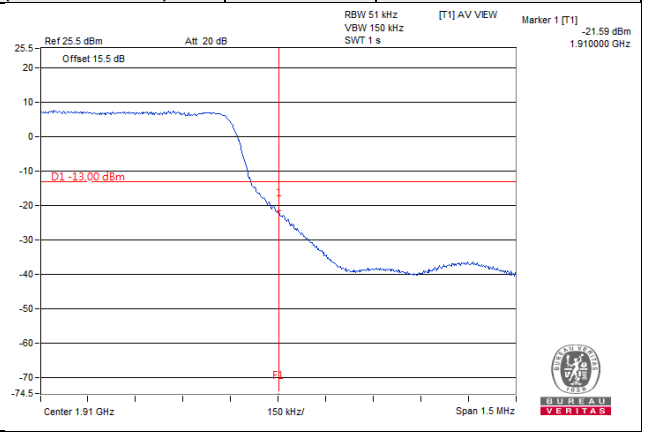


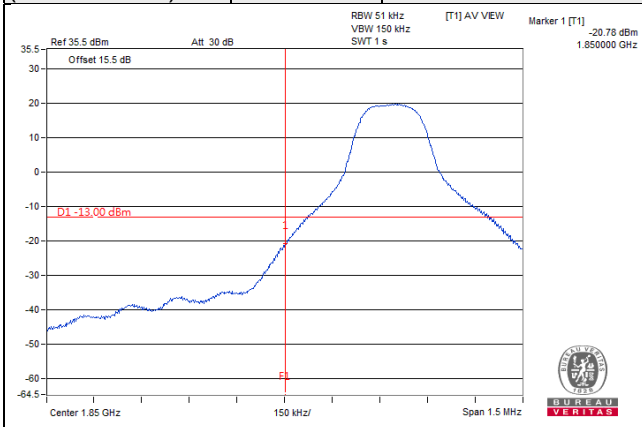
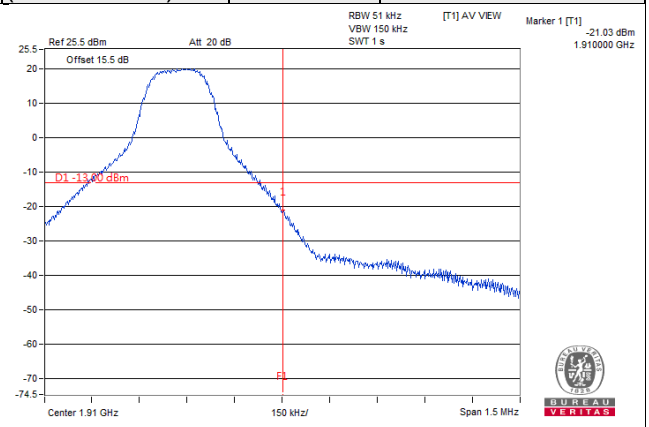
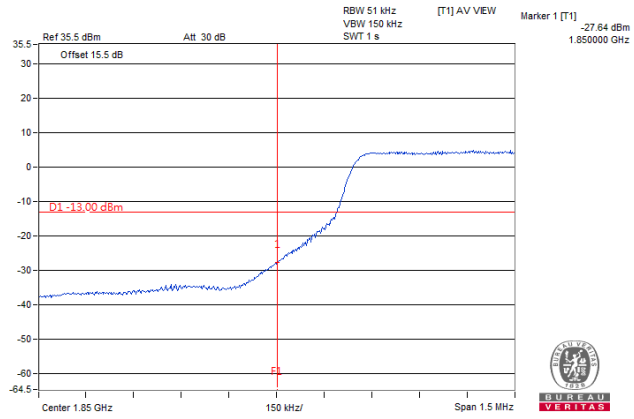
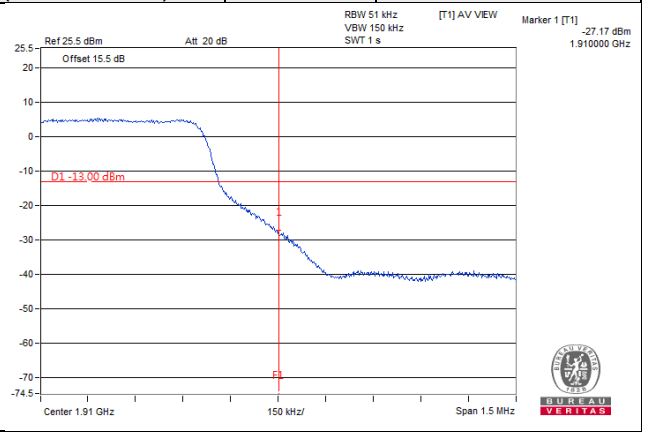


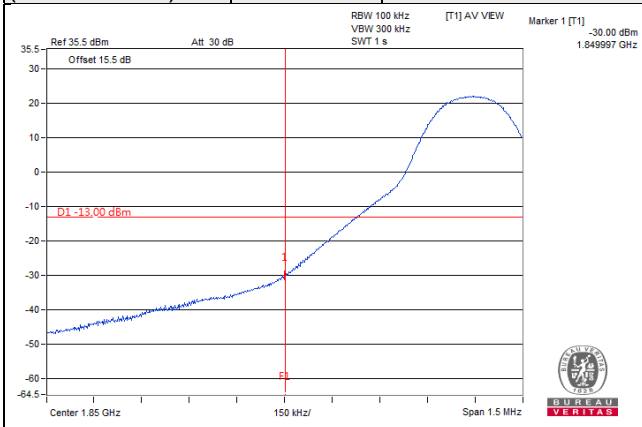
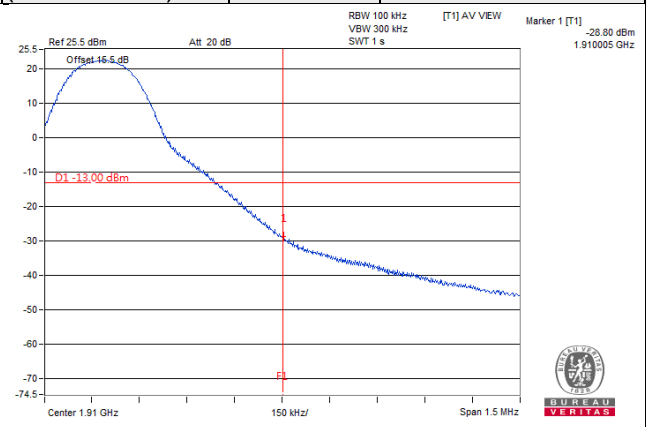
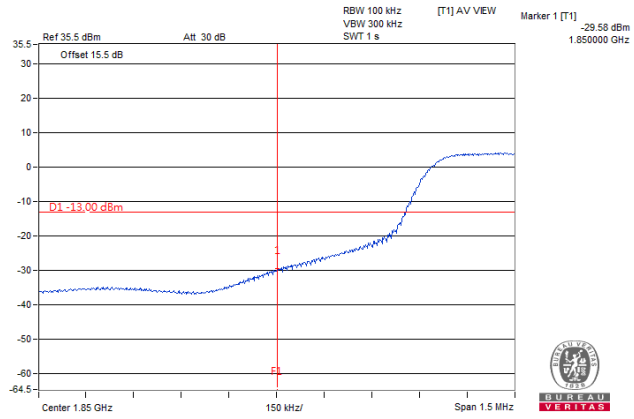
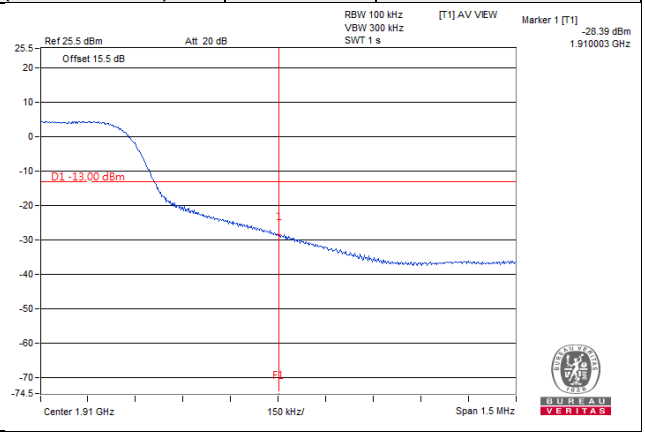
Channel 18607 (1850.70MHz)	QPSK	6 RB / 0 RB Offset	Channel 19193 (1909.30MHz)	QPSK	6 RB / 0 RB Offset



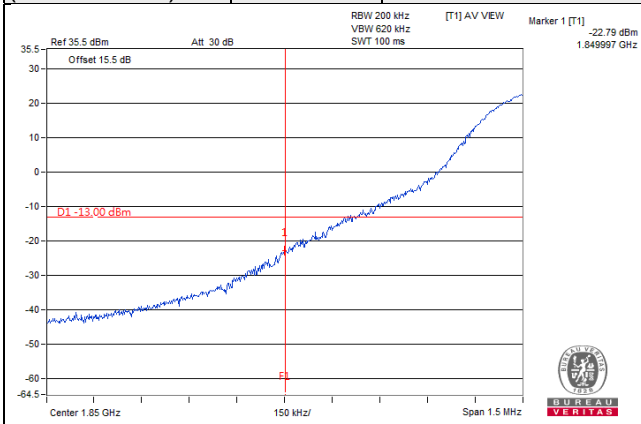


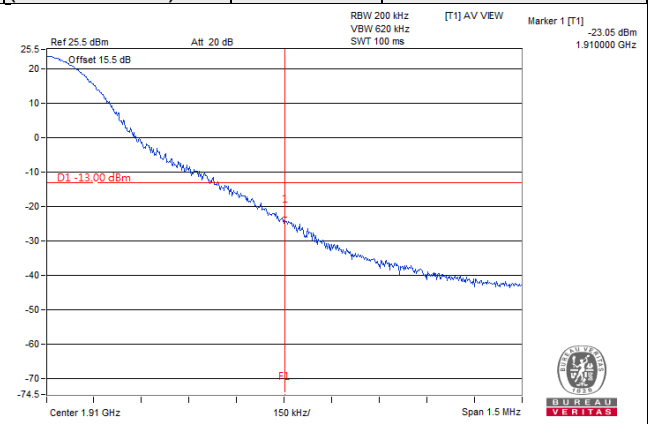
LTE Band 2, Channel Bandwidth 3MHz					
Channel 18615 (1851.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19185 (1908.50MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 18615 (1851.50MHz)	QPSK	15 RB / 0 RB Offset	Channel 19185 (1908.50MHz)	QPSK	15 RB / 0 RB Offset
					

LTE Band 2, Channel Bandwidth 5MHz					
Channel 18625 (1852.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19175 (1907.50MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 18625 (1852.50MHz)	QPSK	25 RB / 0 RB Offset	Channel 19175 (1907.50MHz)	QPSK	25 RB / 0 RB Offset
					

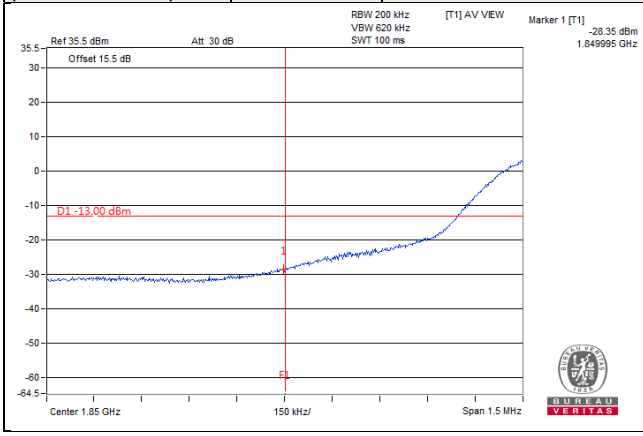
LTE Band 2, Channel Bandwidth 10MHz					
Channel 18650 (1855.00MHz)	QPSK	1 RB / 0 RB Offset	Channel 19150 (1905.00MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 18650 (1855.00MHz)	QPSK	50 RB / 0 RB Offset	Channel 19150 (1905.00MHz)	QPSK	50 RB / 0 RB Offset
					

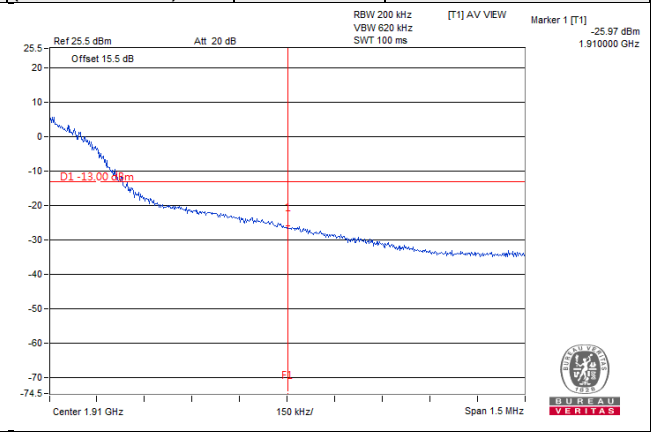
LTE Band 2, Channel Bandwidth 15MHz					
Channel 18675 (1857.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19125 (1902.50MHz)	QPSK	1 RB / 74 RB Offset



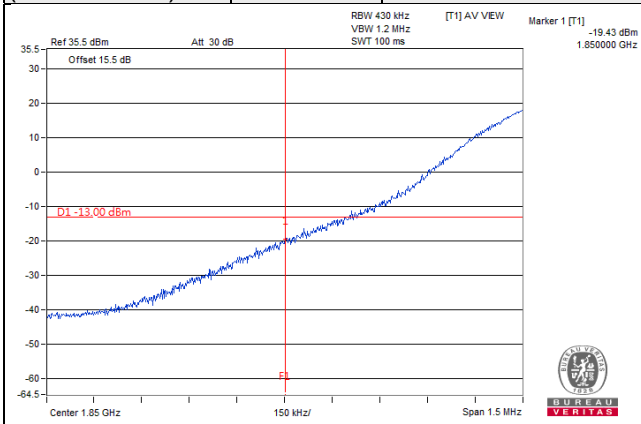


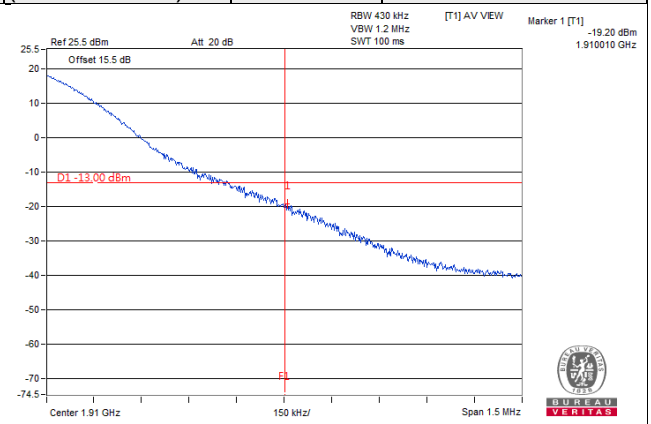
Channel 18675 (1857.50MHz)	QPSK	75 RB / 0 RB Offset	Channel 19125 (1902.50MHz)	QPSK	75 RB / 0 RB Offset



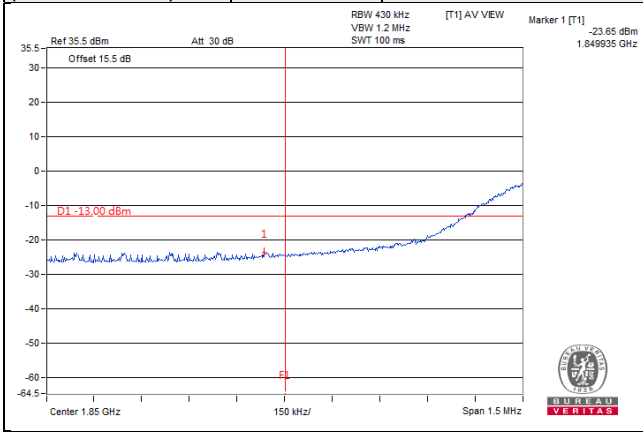


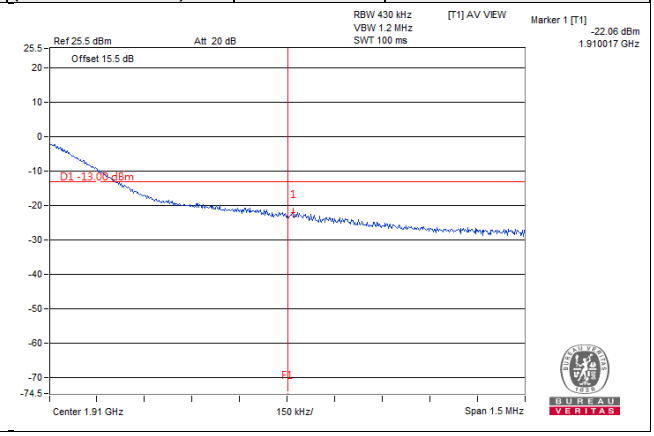
LTE Band 2, Channel Bandwidth 20MHz					
Channel 18700 (1860.00MHz)	QPSK	1 RB / 0 RB Offset	Channel 19100 (1900.00 MHz)	QPSK	1 RB / 99 RB Offset





Channel 18700 (1860.00MHz)	QPSK	100 RB / 0 RB Offset	Channel 19100 (1900.00 MHz)	QPSK	100 RB / 0 RB Offset



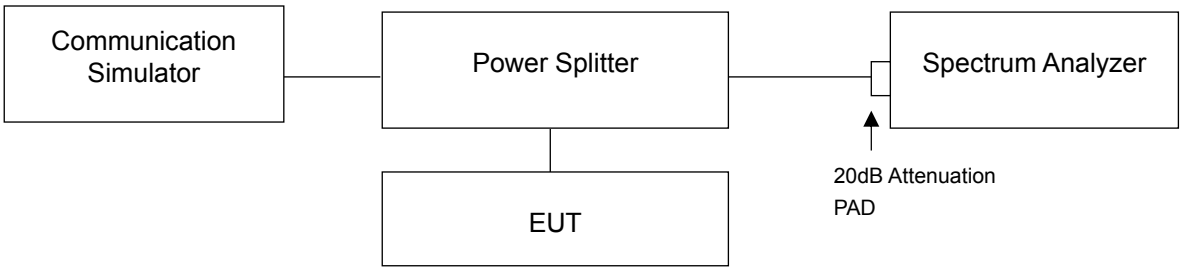


4.6 Peak to Average Ratio

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

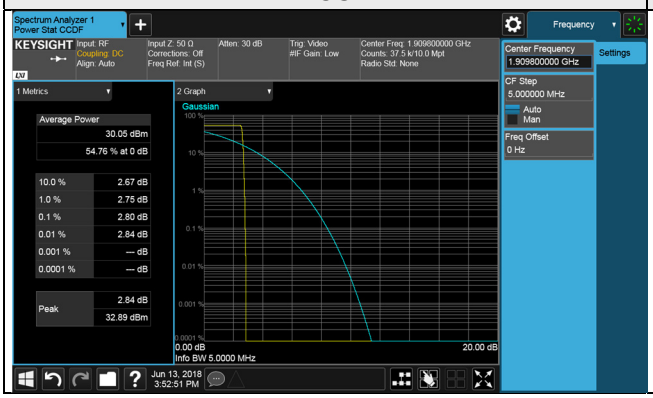
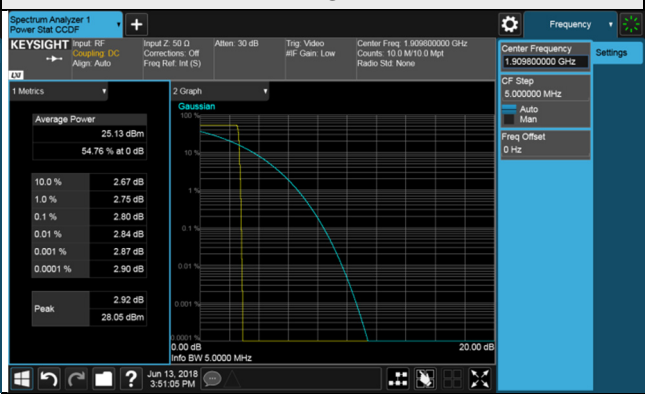


4.6.3 Test Procedures

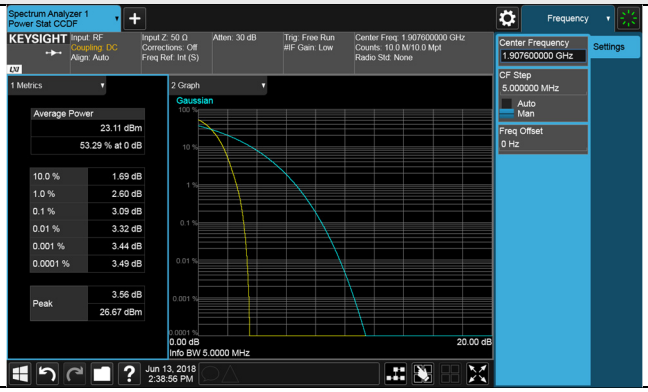
a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		PCS	EDGE
512	1850.2	2.70	2.78
661	1880.0	2.79	2.79
810	1909.8	2.80	2.80

Spectrum Plot Of Worst Value	
PCS	EDGE
	

Channel	Frequency (MHz)	Peak To Average Ratio (dB)
		WCDMA
9262	1852.4	3.04
9400	1880.0	3.08
9538	1907.6	3.09

WCDMA


LTE Band 2, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18607	1850.7	4.93	4.93	5.00
18900	1880.0	4.72	4.72	4.69
19193	1909.3	4.93	4.93	4.98

LTE Band 2, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18615	1851.5	4.77	4.77	4.79
18900	1880.0	4.60	4.61	4.57
19185	1908.5	4.76	4.75	4.74

LTE Band 2, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18625	1852.5	4.92	4.92	4.93
18900	1880.0	4.69	4.69	4.67
19175	1907.5	4.85	4.85	4.90

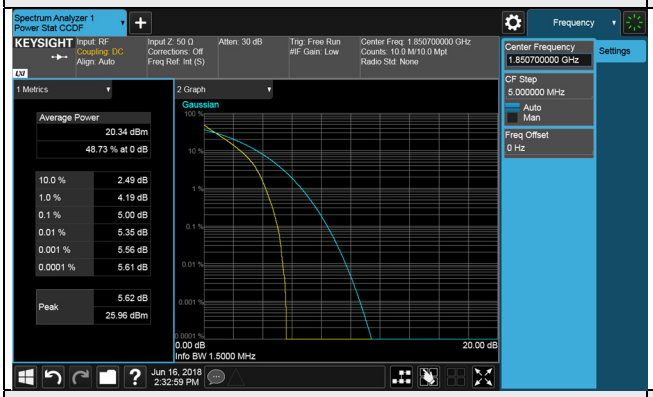
LTE Band 2, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18650	1855.0	4.94	4.96	4.94
18900	1880.0	4.71	4.72	4.69
19150	1905.0	4.87	4.86	4.94

LTE Band 2, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18675	1857.5	4.92	4.92	4.89
18900	1880.0	4.69	4.70	4.73
19125	1902.5	4.81	4.80	4.85

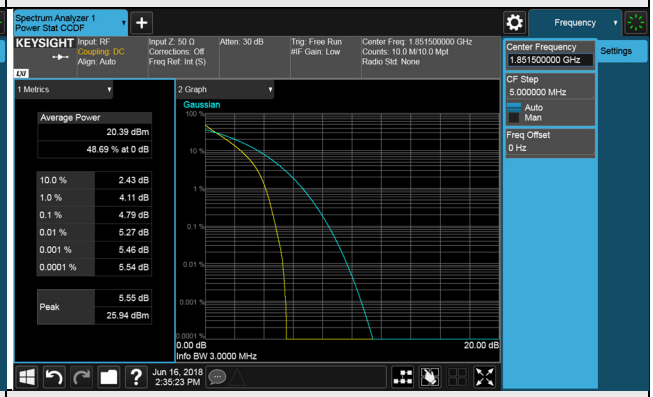
LTE Band 2, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18700	1860.0	4.89	4.89	4.85
18900	1880.0	4.68	4.69	4.77
19100	1900.0	4.76	4.76	4.74

Spectrum Plot Of Worst Value

1.4MHz / 64QAM

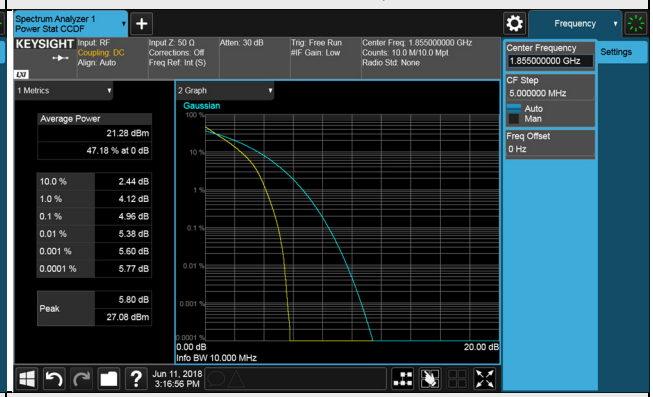


3MHz / 64QAM

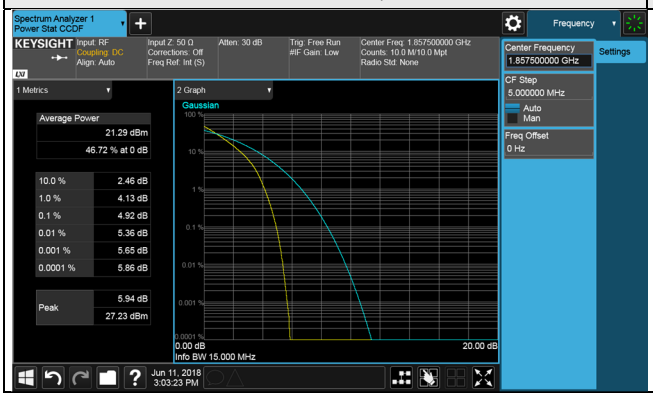


5MHz / 64QAM

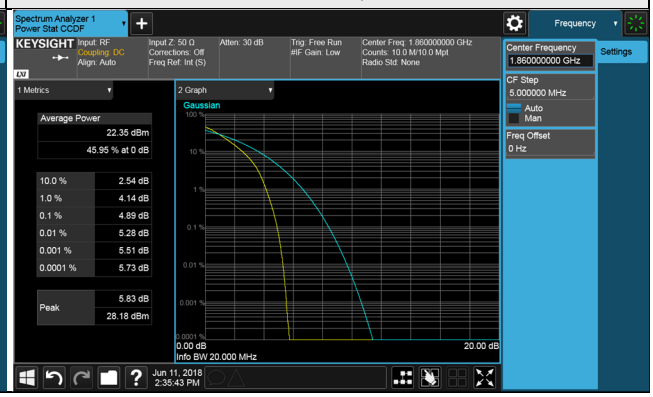
10MHz / 16QAM



15MHz / 16QAM



20MHz / QPSK

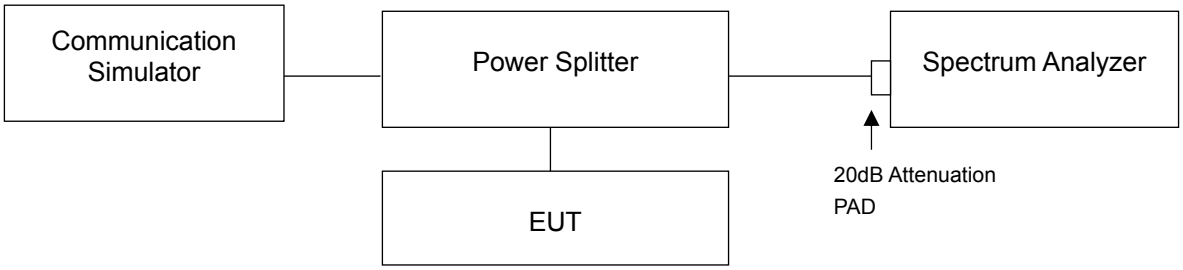


4.7 Conducted Spurious Emissions

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.

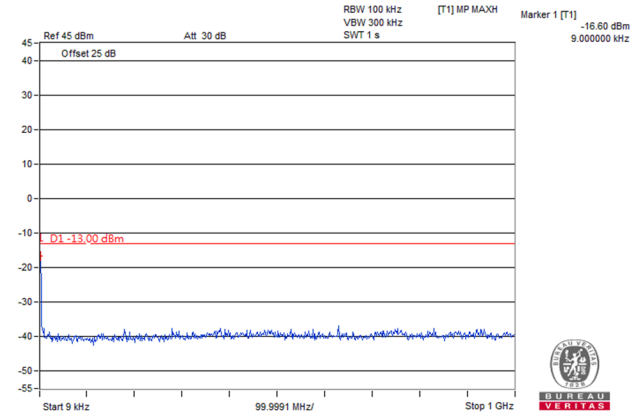
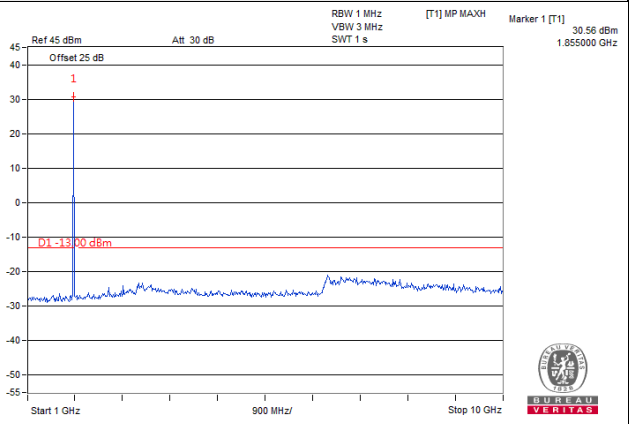
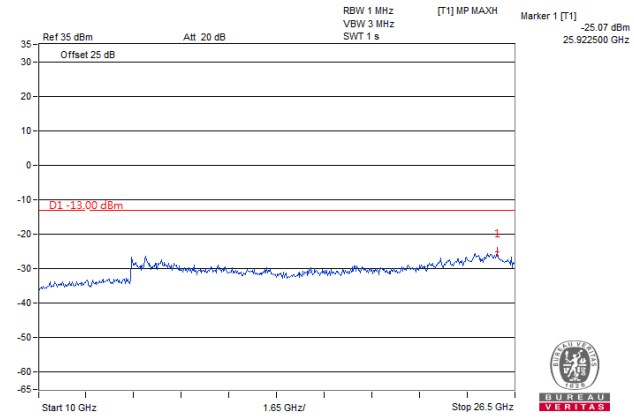
4.7.2 Test Setup

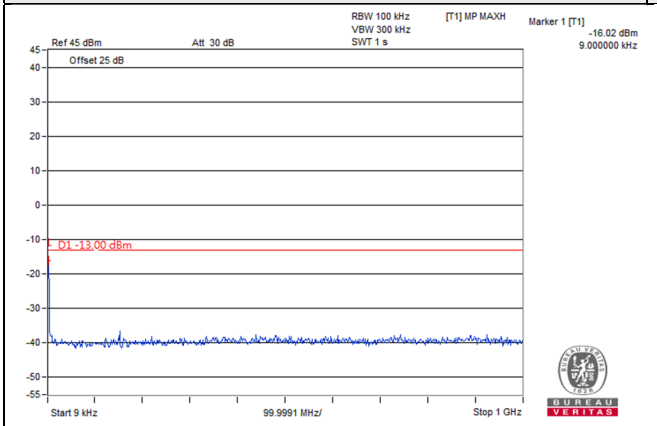
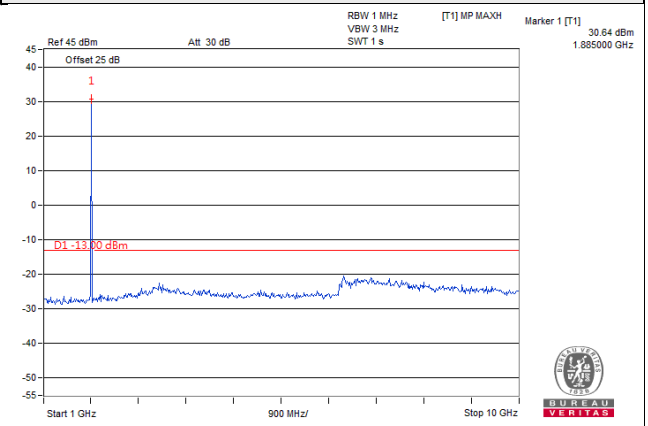
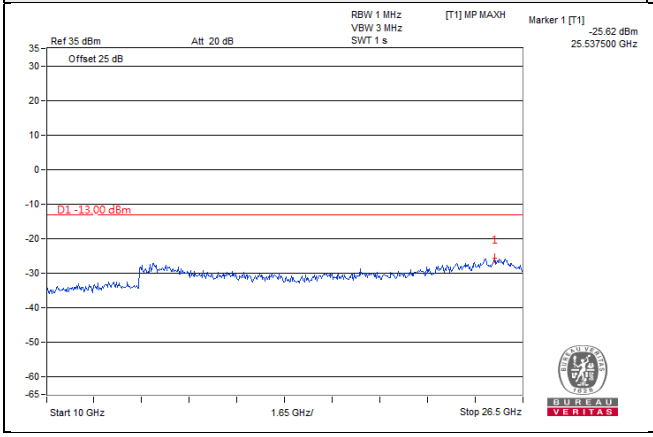


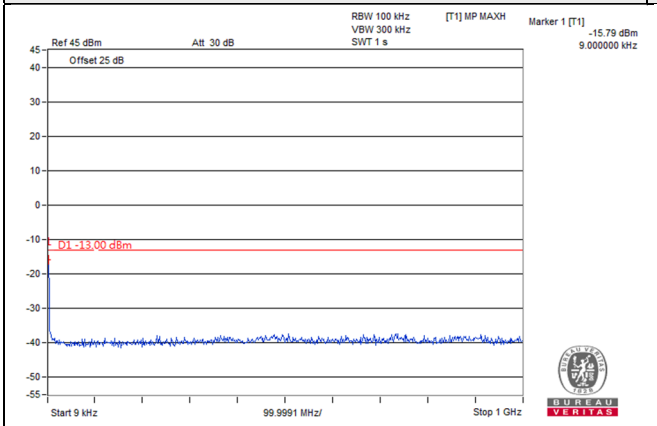
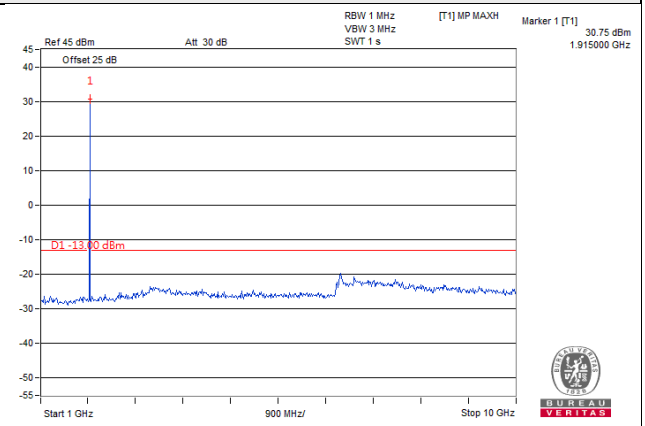
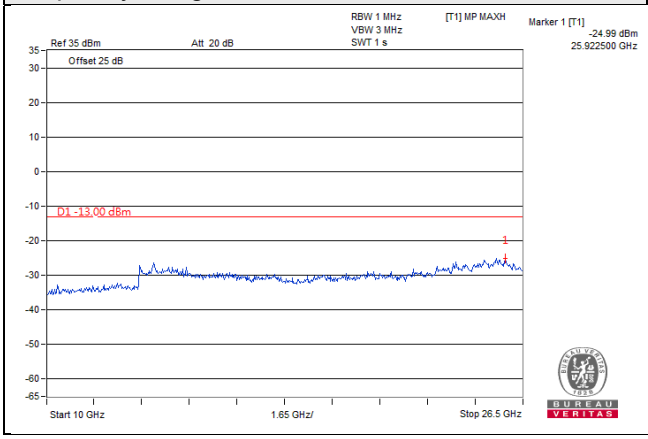
4.7.3 Test Procedure

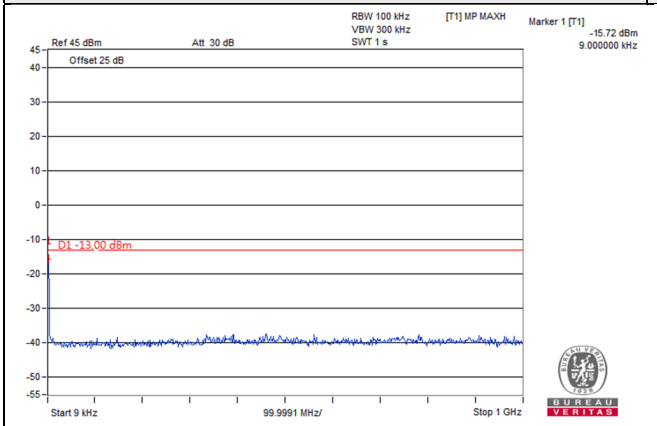
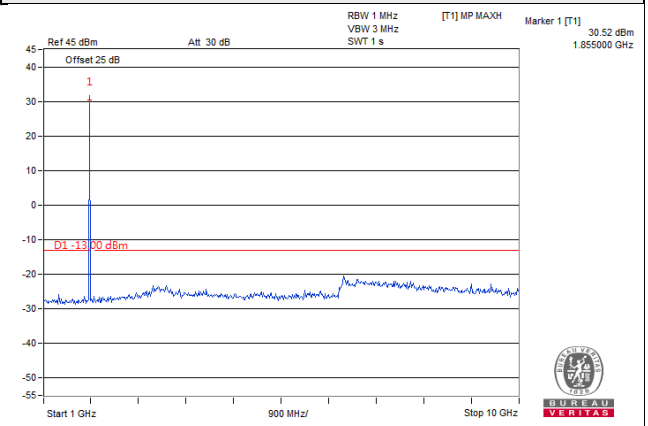
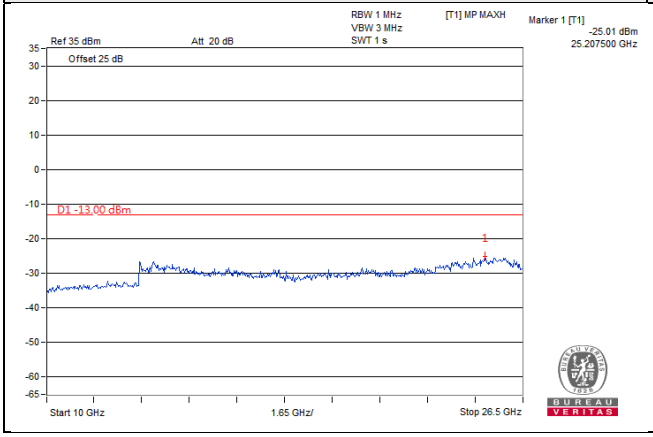
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 1GHz. 20dB attenuation pad is connected with spectrum. RBW=100kHz and VBW=300kHz is used for conducted emission measurement.
c. Measuring frequency range is from 1GHz 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

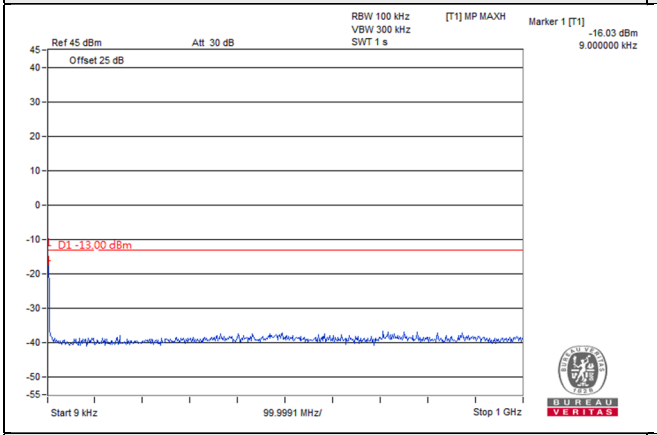
PCS	
Channel 512 (1850.2MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

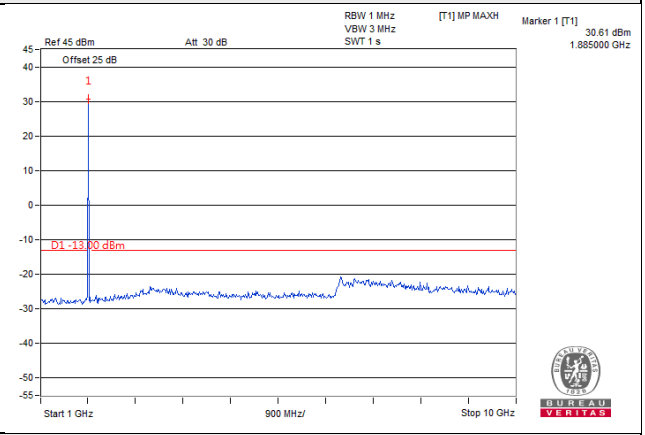
PCS	
Channel 661 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

PCS	
Channel 810 (1909.8MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

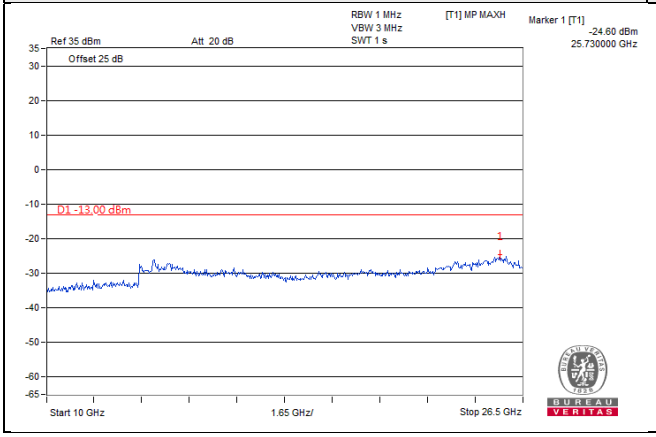
EDGE	
Channel 512 (1850.2MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

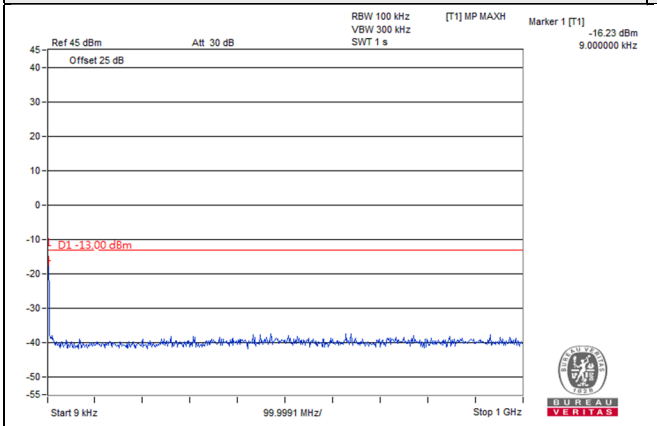
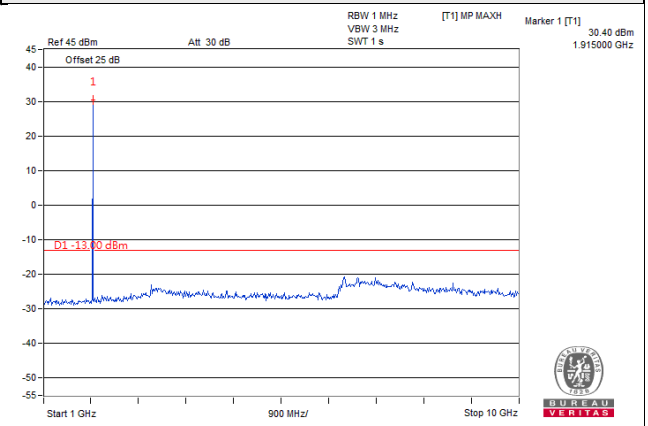
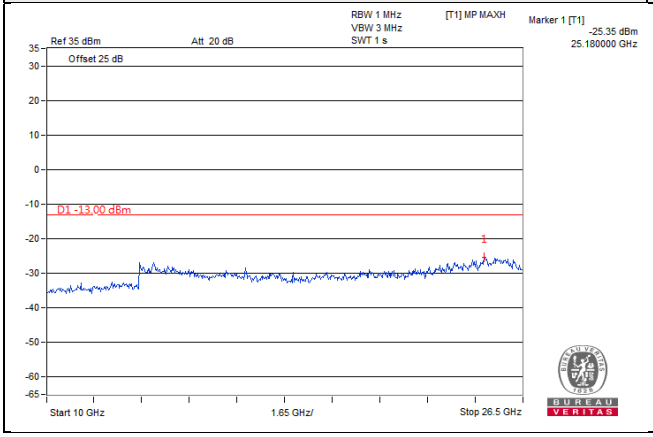
EDGE	
Channel 661 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz



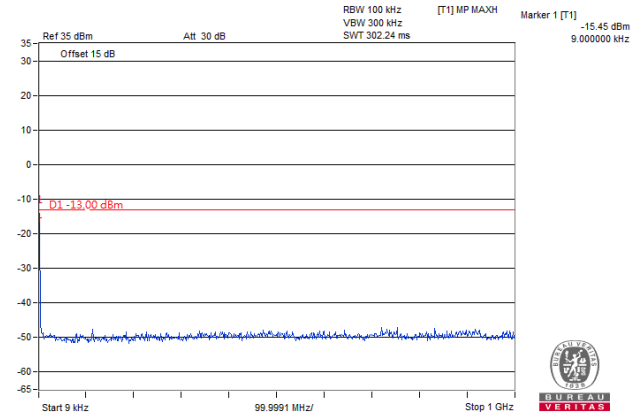


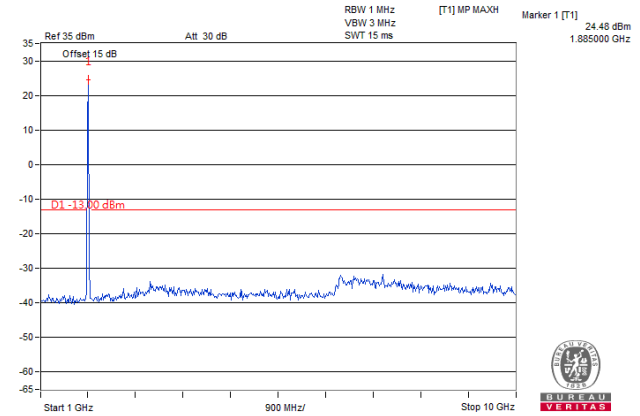
Frequency Range : 10GHz~26.5GHz	



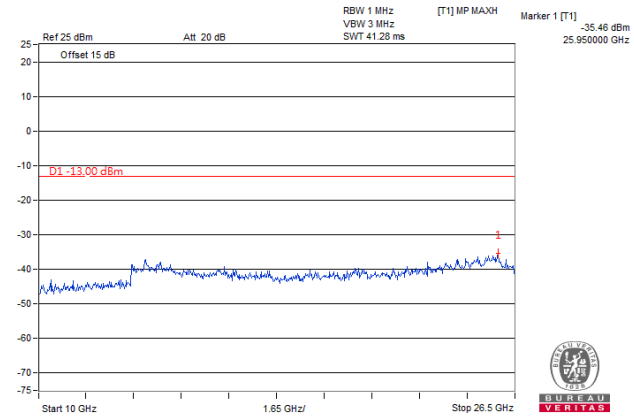
EDGE	
Channel 810 (1909.8MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

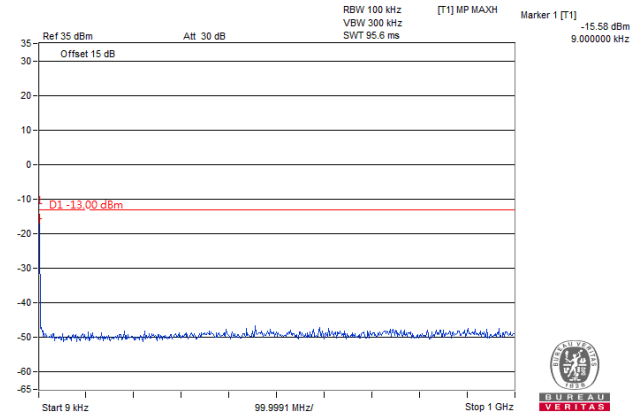
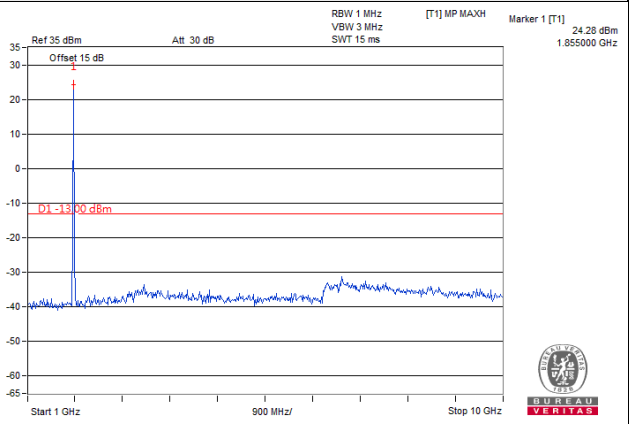
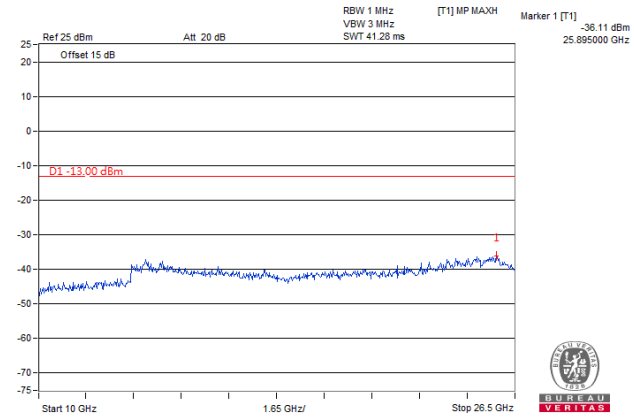
WCDMA	
Channel 9262 (1852.4MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz



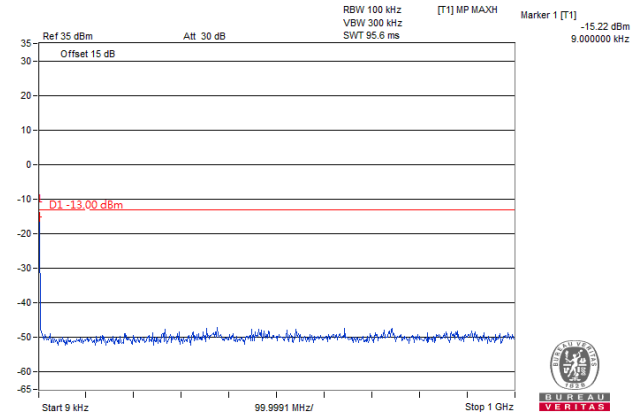


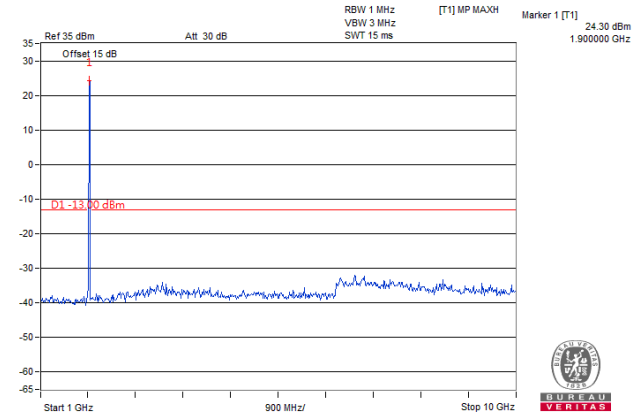
Frequency Range : 10GHz~26.5GHz	



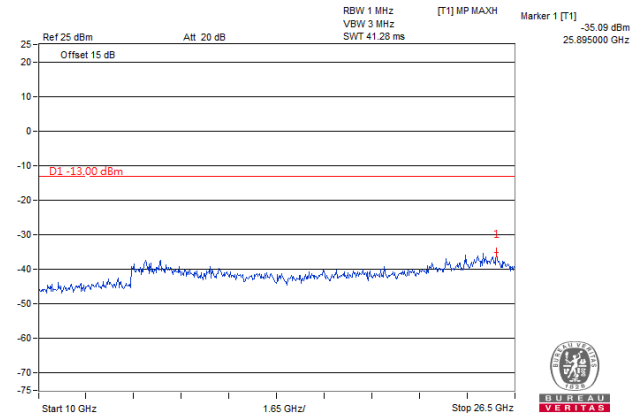
WCDMA	
Channel 9400 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

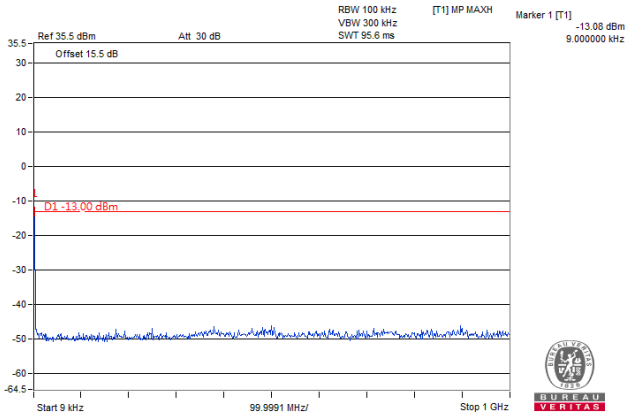
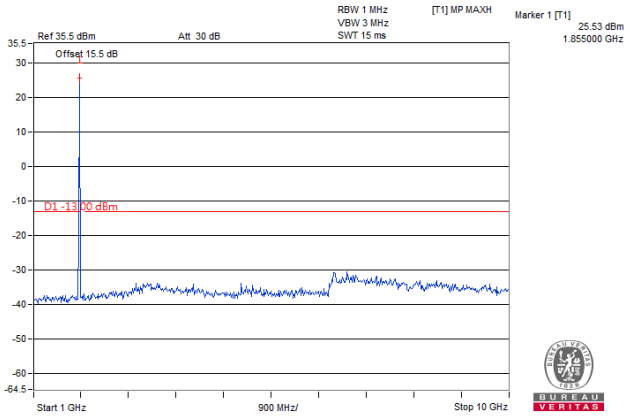
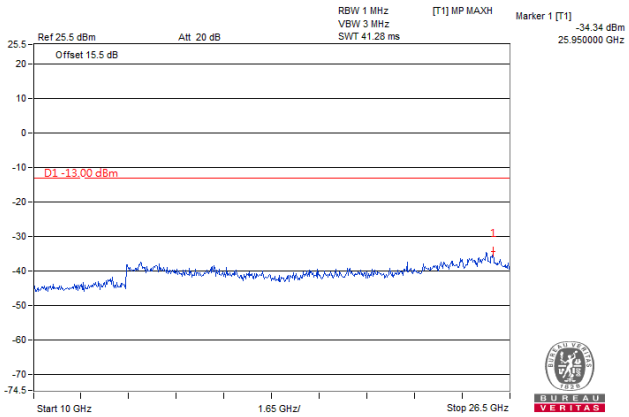
WCDMA	
Channel 9538 (1907.6MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz

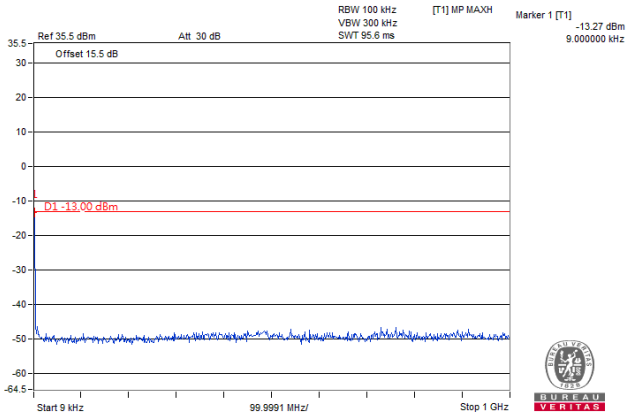
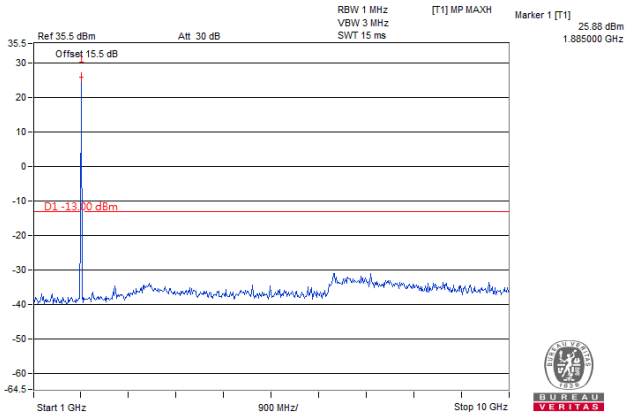
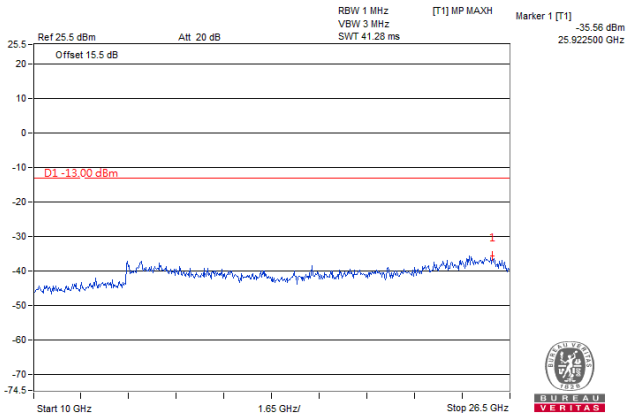


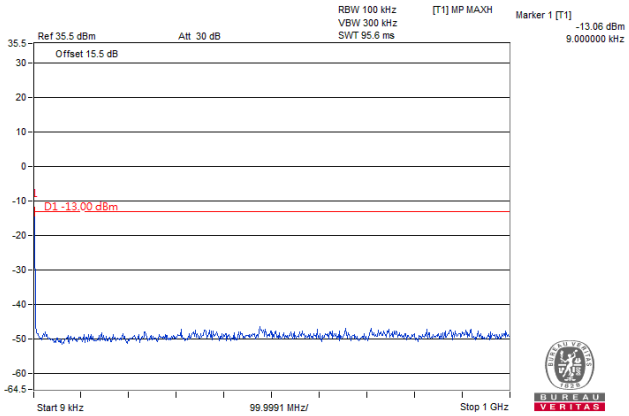
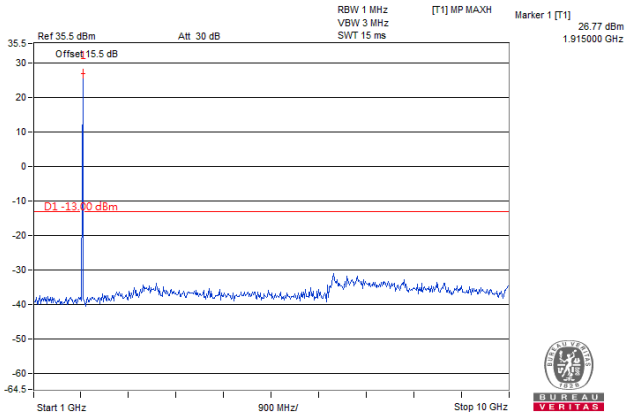
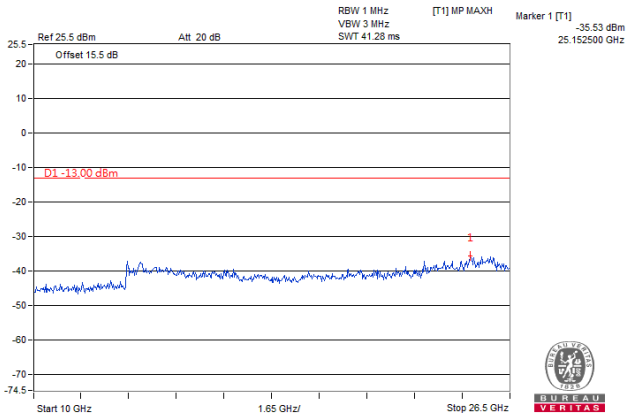


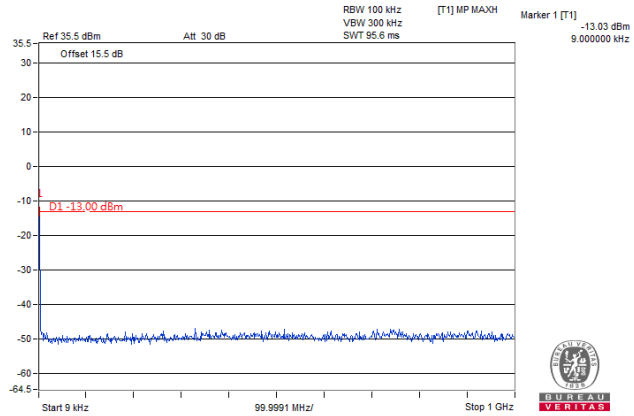
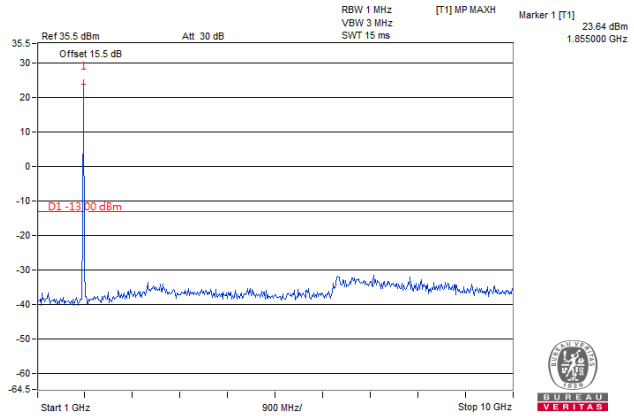
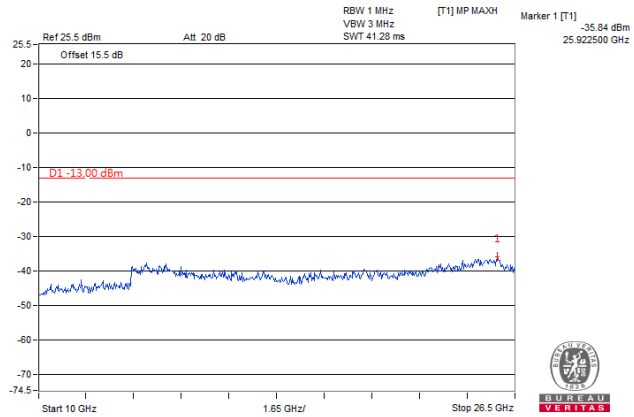
Frequency Range : 10GHz~26.5GHz	

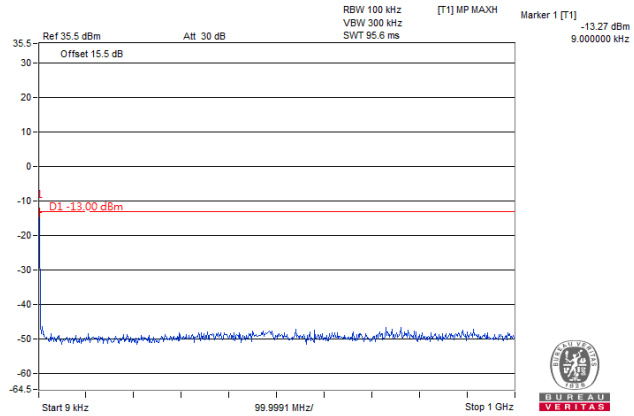
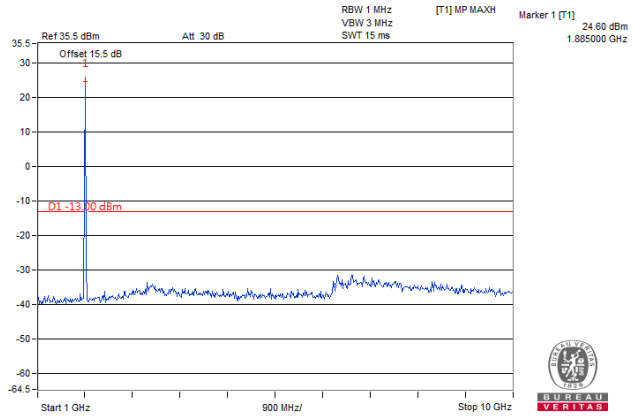
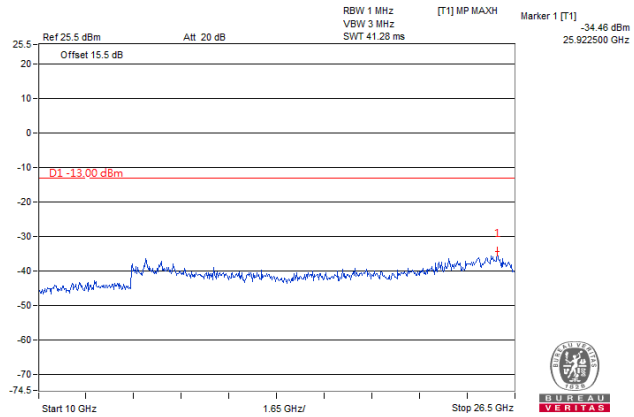


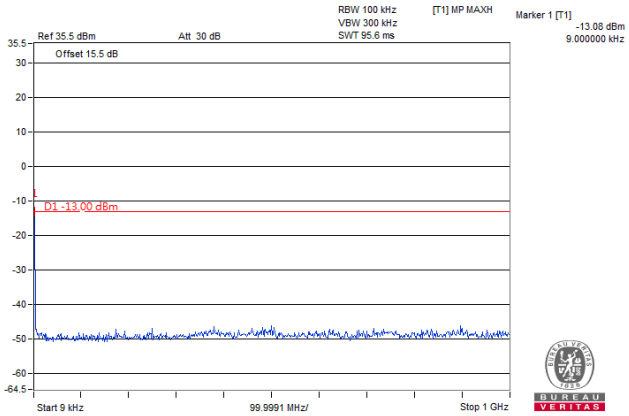
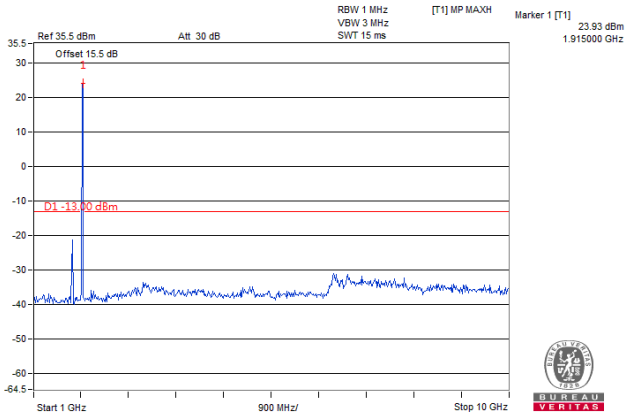
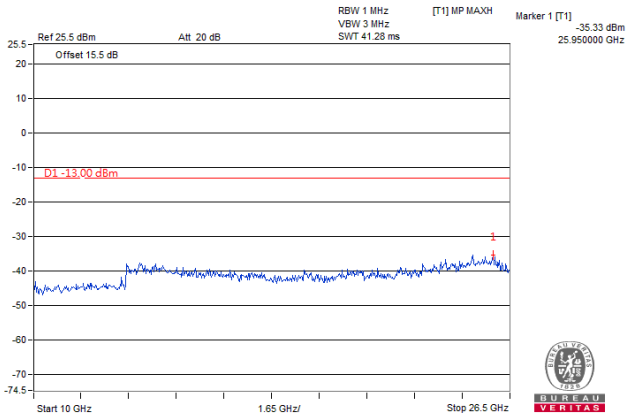
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 18607 (1850.70MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

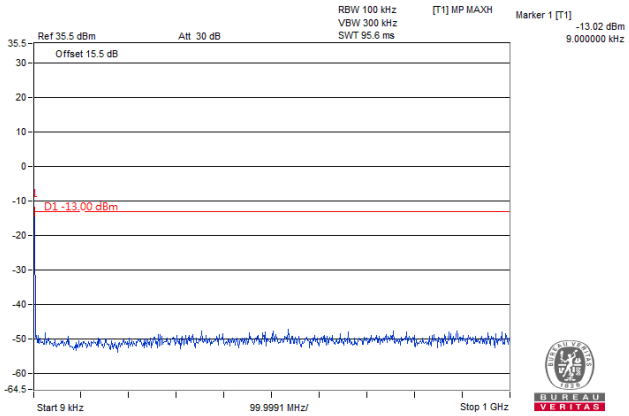
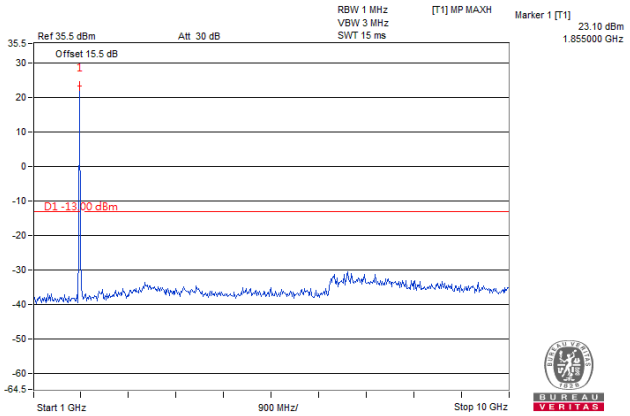
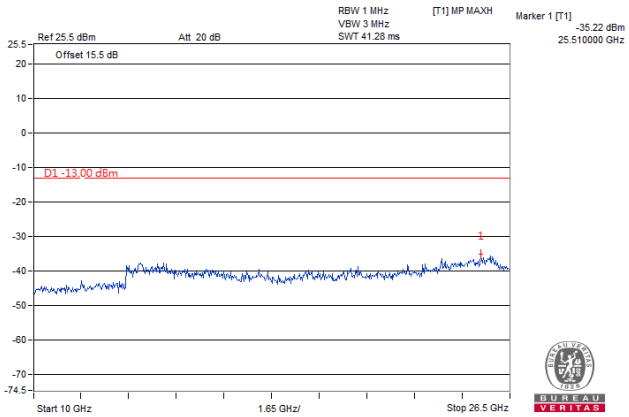
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

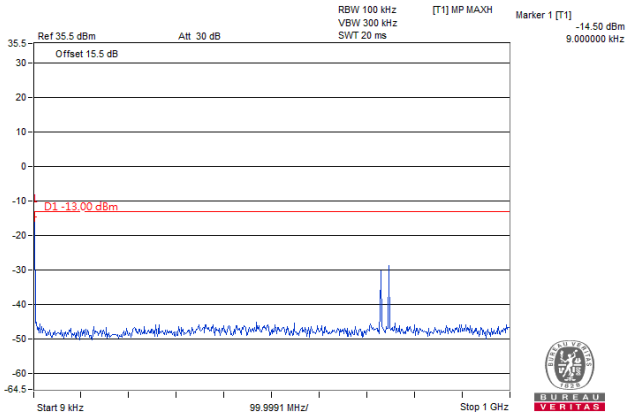
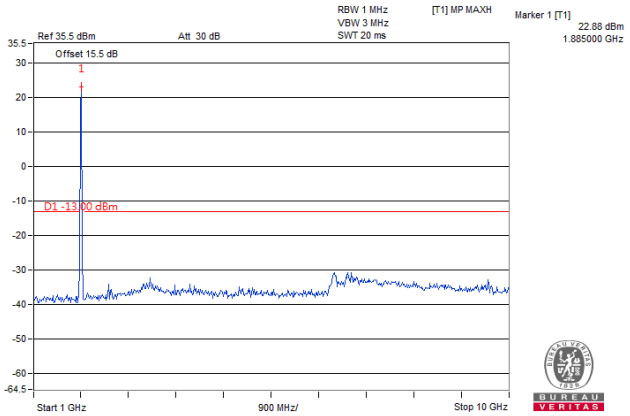
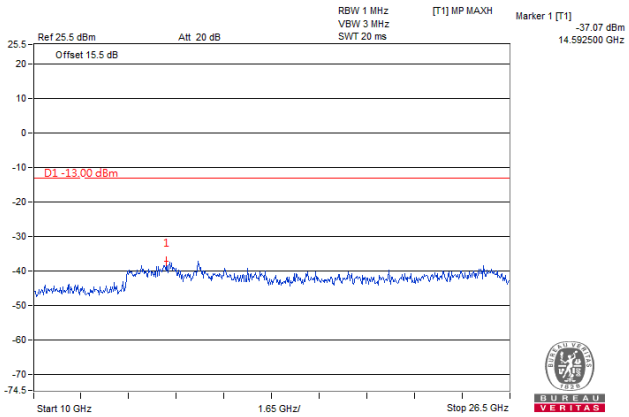
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 19193 (1909.30MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

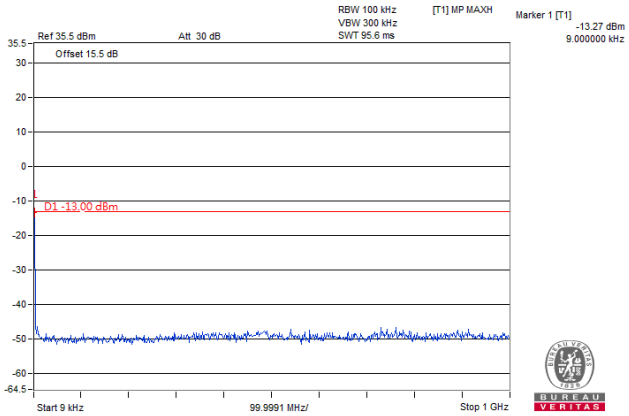
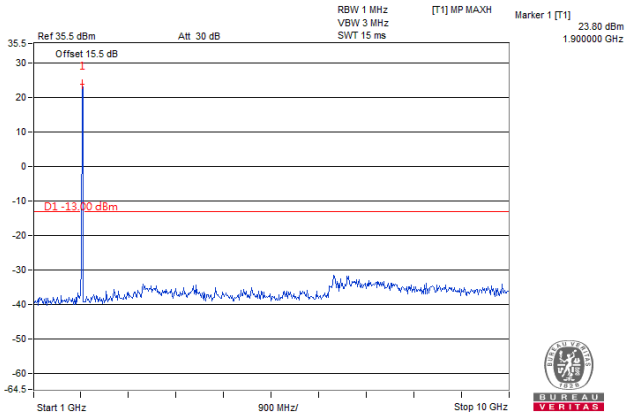
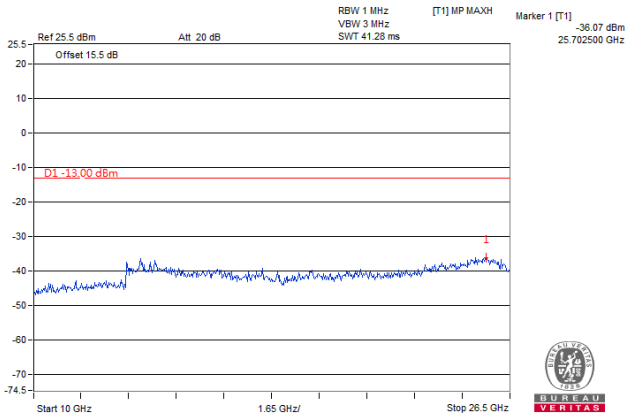
LTE Band 2, Channel Bandwidth 3MHz	
Channel 18615 (1851.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

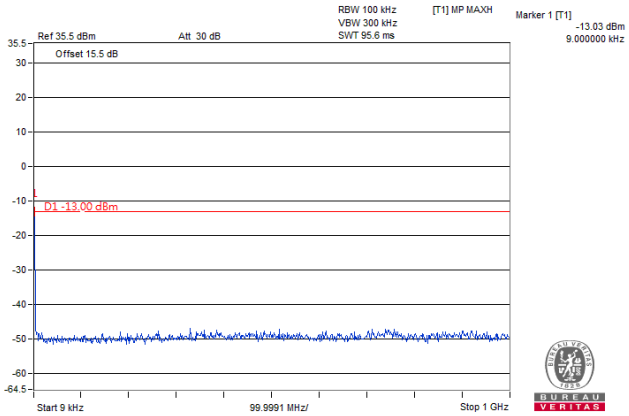
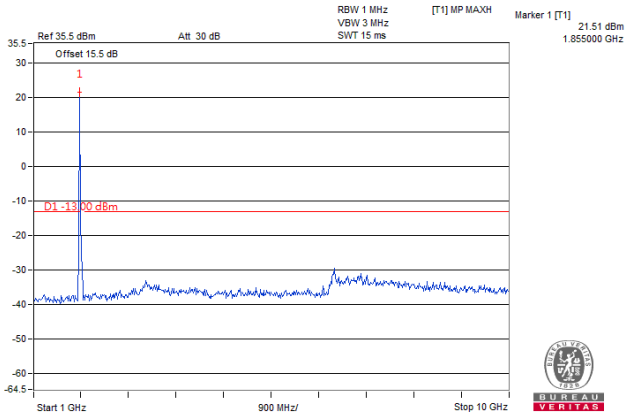
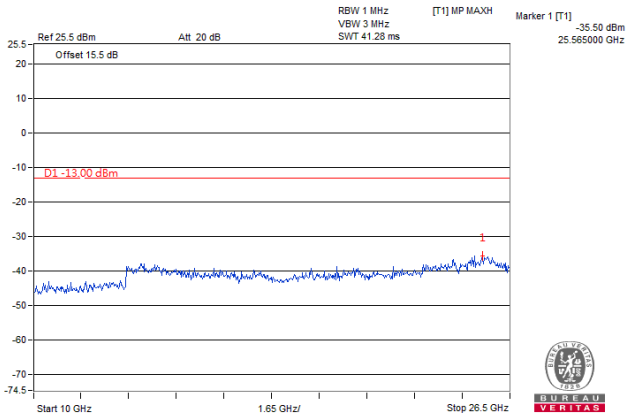
LTE Band 2, Channel Bandwidth 3MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

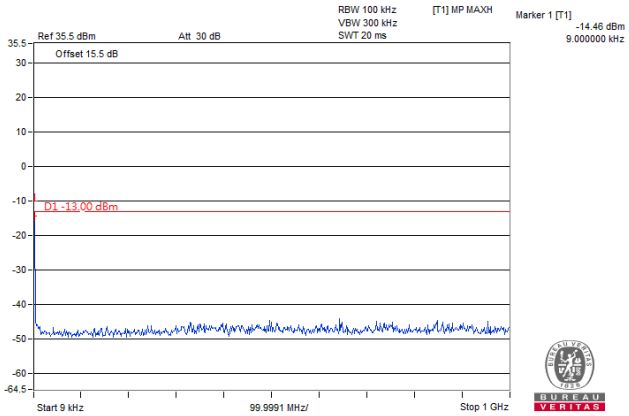
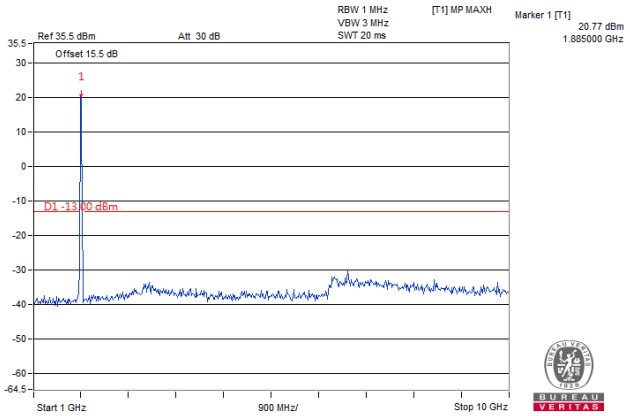
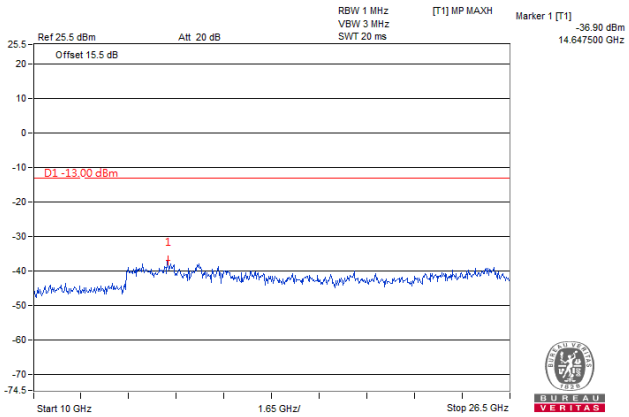
LTE Band 2, Channel Bandwidth 3MHz	
Channel 19185 (1908.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

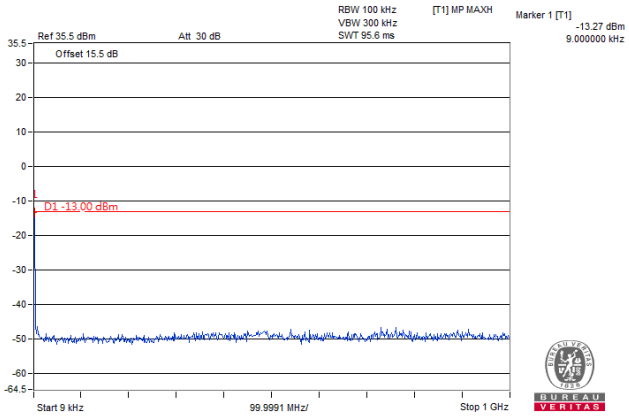
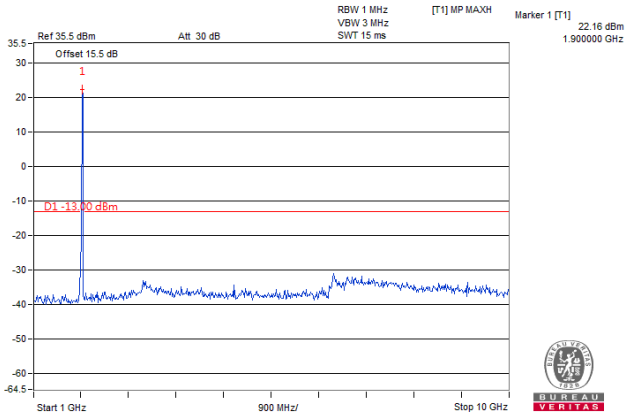
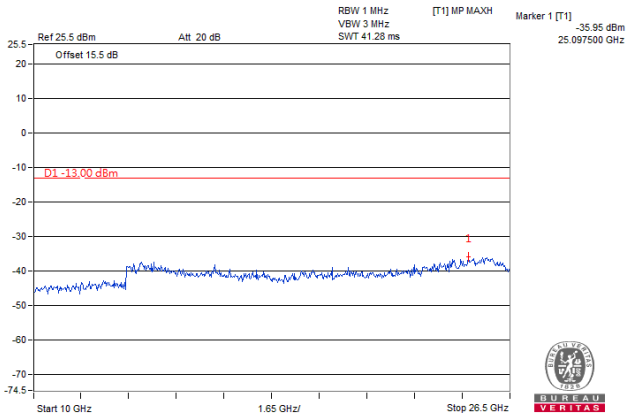
LTE Band 2, Channel Bandwidth 5MHz	
Channel 18625 (1852.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

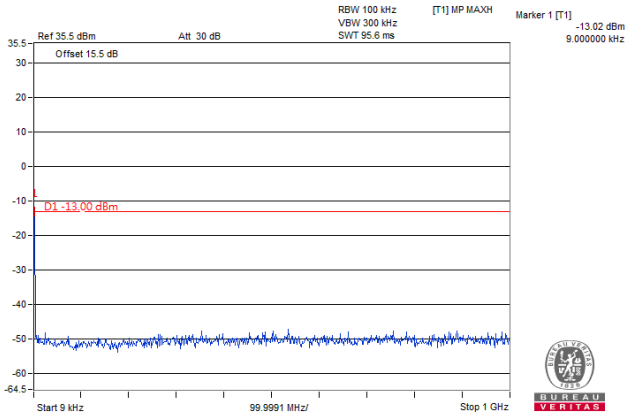
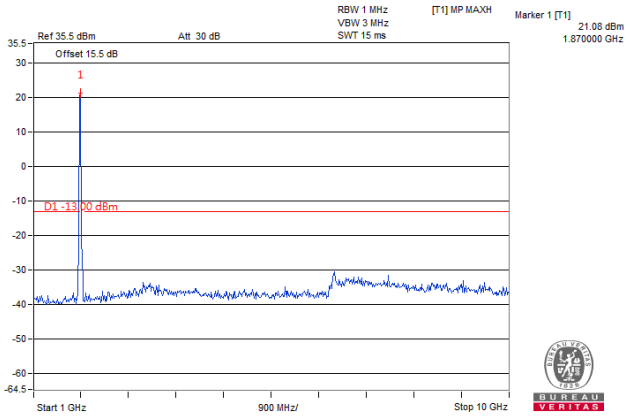
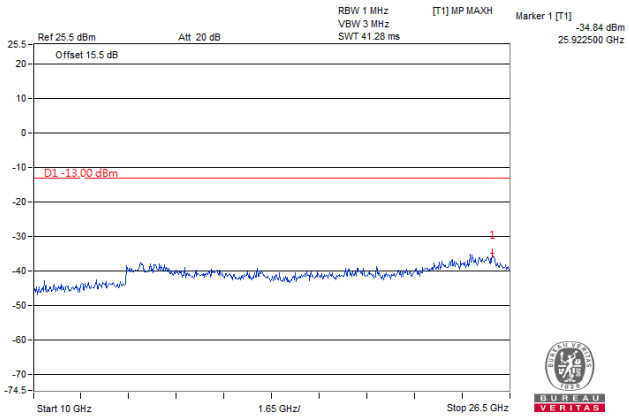
LTE Band 2, Channel Bandwidth 5MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

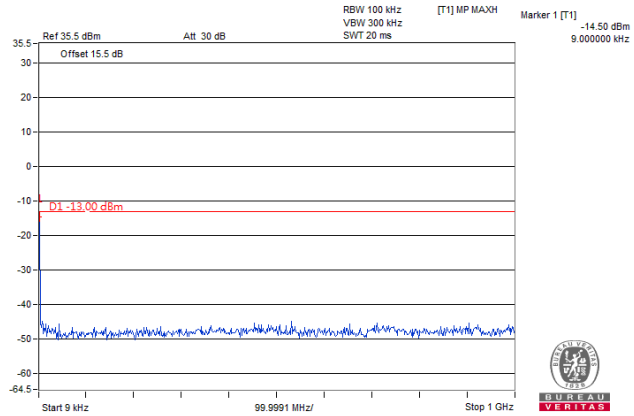
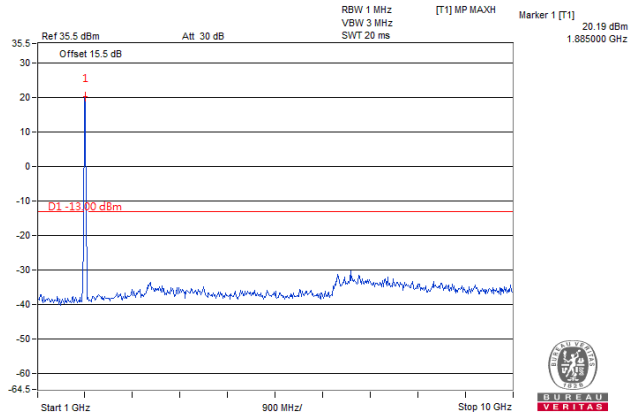
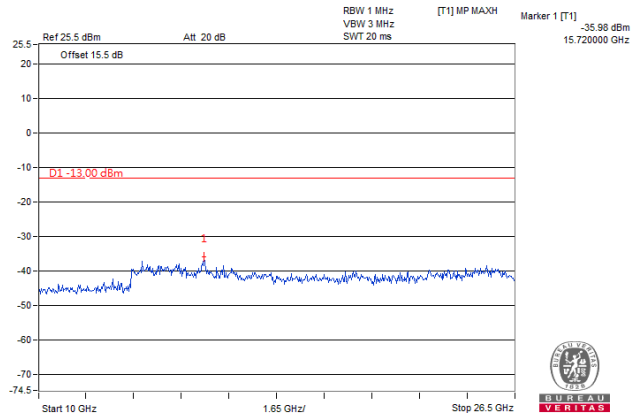
LTE Band 2, Channel Bandwidth 5MHz	
Channel 19175 (1907.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

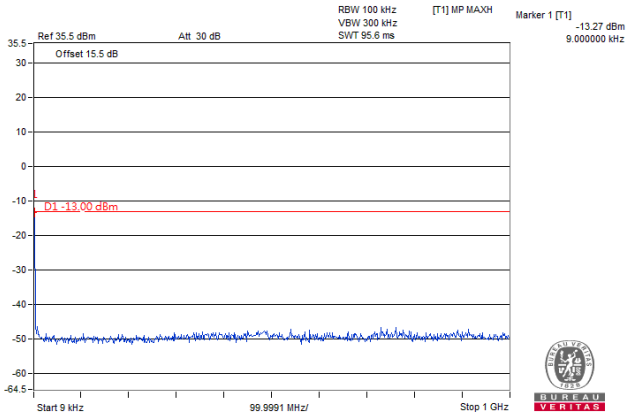
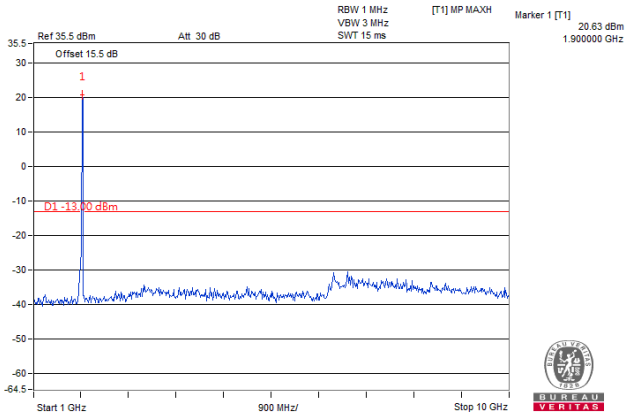
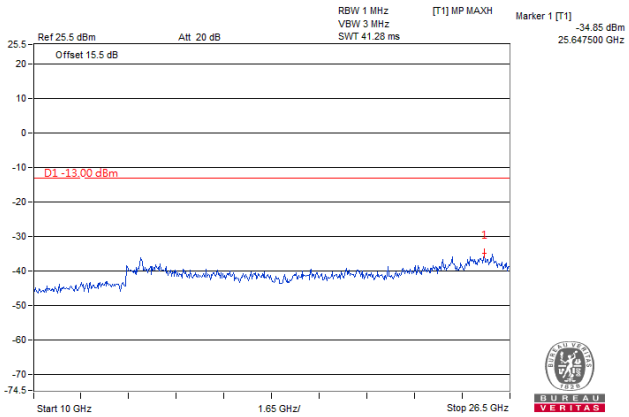
LTE Band 2, Channel Bandwidth 10MHz	
Channel 18650 (1855.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

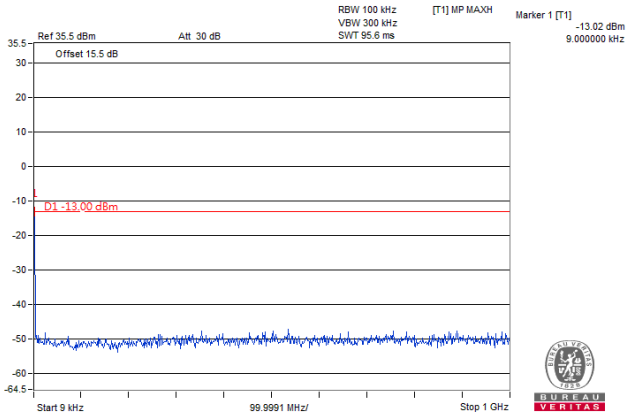
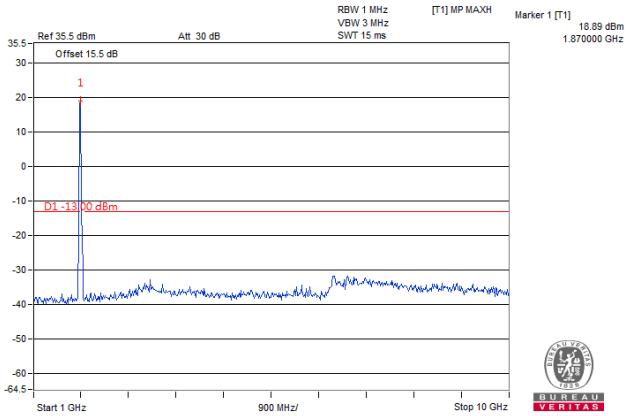
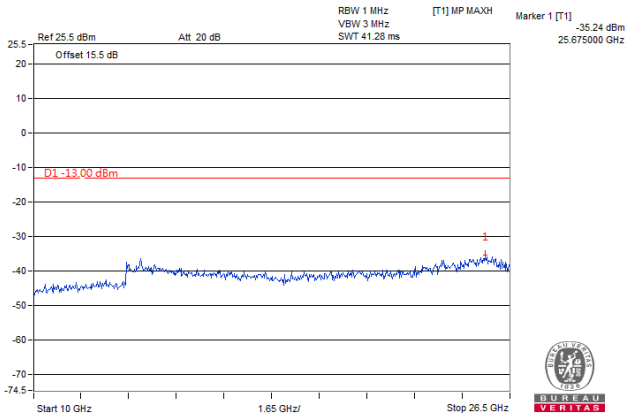
LTE Band 2, Channel Bandwidth 10MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

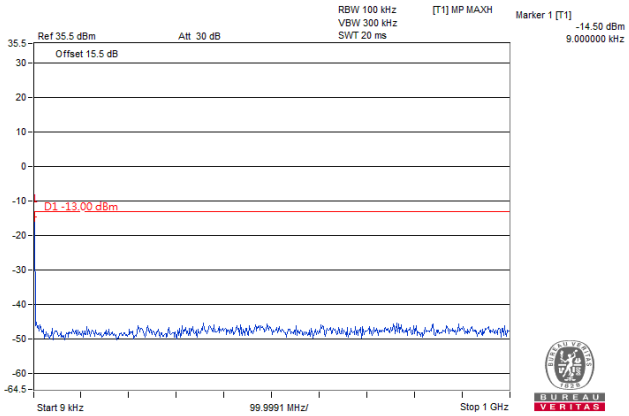
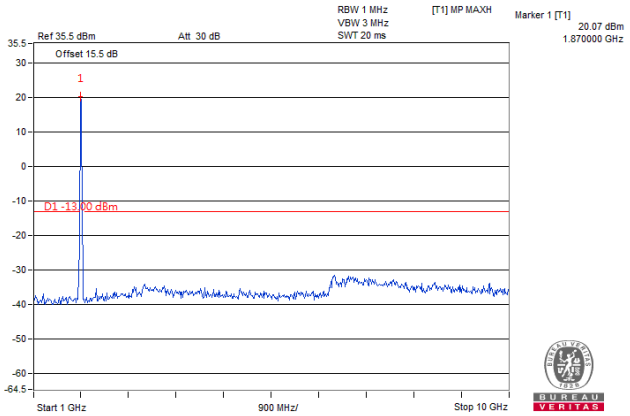
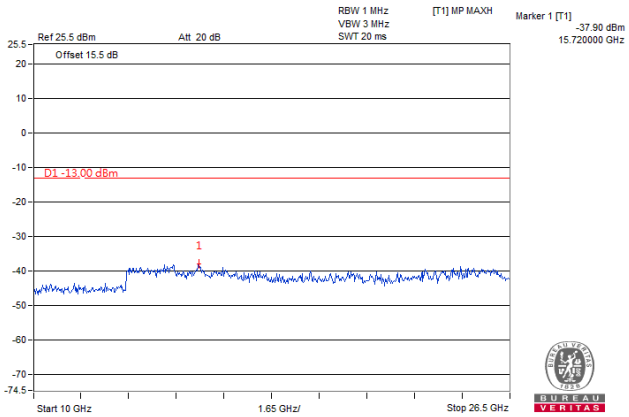
LTE Band 2, Channel Bandwidth 10MHz	
Channel 19150 (1905.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

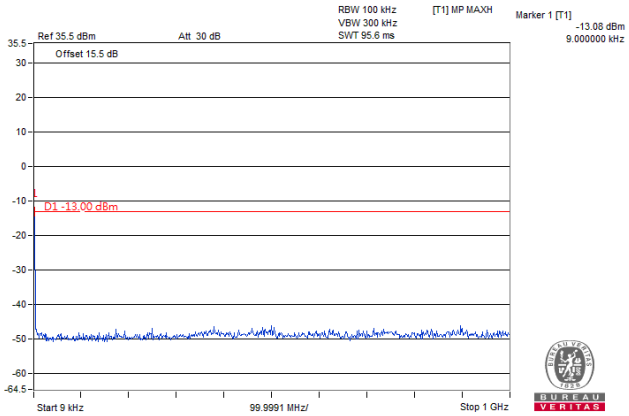
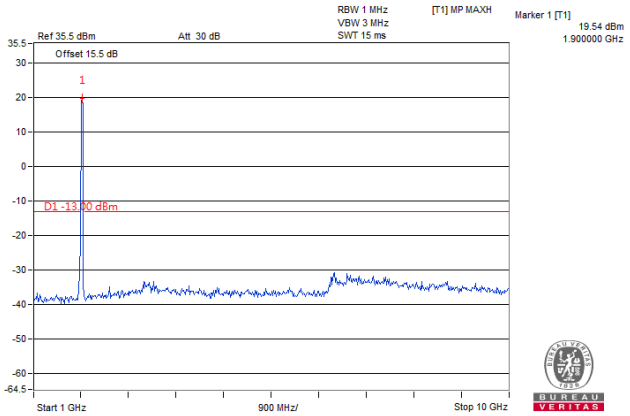
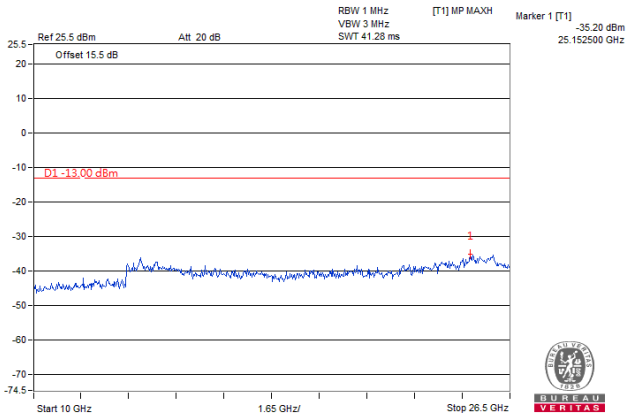
LTE Band 2, Channel Bandwidth 15MHz	
Channel 18675 (1857.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 15MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 15MHz	
Channel 19125 (1902.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 18700 (1860.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 19100 (1900.00MHz)	
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

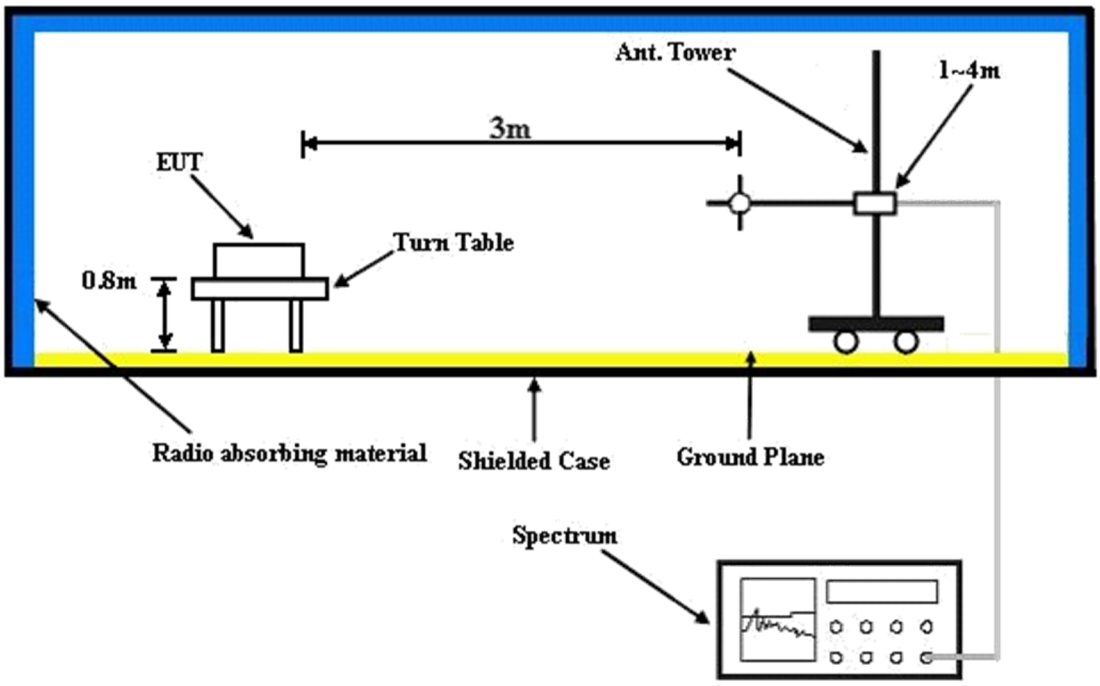
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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
PCS Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	70.74	-61.6	-67.4	-0.4	-67.8	-13.0	-54.8
2	108.57	-53.7	-59.2	-2.4	-61.6	-13.0	-48.6
3	235.64	-55.6	-61.3	-1.5	-62.8	-13.0	-49.8
4	401.51	-63.1	-67.1	3.3	-63.8	-13.0	-50.8
5	550.89	-64.7	-68.1	3.8	-64.3	-13.0	-51.3
6	674.08	-63.9	-64.8	3.6	-61.2	-13.0	-48.2
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	34.85	-44.5	-38.2	-16.5	-54.7	-13.0	-41.7
2	91.11	-52.9	-59.1	-0.4	-59.5	-13.0	-46.5
3	145.43	-65.3	-64.2	-3.1	-67.3	-13.0	-54.3
4	267.65	-65.7	-62.6	-1.6	-64.2	-13.0	-51.2
5	389.87	-63.9	-67.9	3.4	-64.5	-13.0	-51.5
6	538.28	-65.6	-68.2	3.8	-64.4	-13.0	-51.4

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

EDGE Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	60.07	-62.9	-64.3	-3.4	-67.7	-13.0	-54.7
2	139.61	-53.1	-55.8	-3.1	-58.9	-13.0	-45.9
3	385.02	-60.7	-65.1	3.5	-61.6	-13.0	-48.6
4	736.16	-62.3	-61.9	3.7	-58.2	-13.0	-45.2
5	826.37	-66.9	-64.0	3.9	-60.1	-13.0	-47.1
6	945.68	-65.8	-61.3	3.8	-57.5	-13.0	-44.5
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	60.07	-53.9	-57.3	-3.4	-60.7	-13.0	-47.7
2	112.45	-61.4	-66.3	-2.5	-68.8	-13.0	-55.8
3	199.75	-63.9	-62.6	-2.4	-65.0	-13.0	-52.0
4	316.15	-62.8	-66.8	4.0	-62.8	-13.0	-49.8
5	832.19	-60.8	-57.4	3.8	-53.6	-13.0	-40.6
6	932.10	-66.2	-61.1	3.7	-57.4	-13.0	-44.4

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

WCDMA Mode

Mode	TX channel 9262 (1852.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	56.19	-65.9	-63.9	-5.1	-69.0	-13.0	-56.0
2	96.93	-49.7	-57.4	-1.2	-58.6	-13.0	-45.6
3	133.79	-56.1	-58.8	-3.3	-62.1	-13.0	-49.1
4	273.47	-59.2	-62.0	-1.6	-63.6	-13.0	-50.6
5	306.45	-55.7	-63.9	3.9	-60.0	-13.0	-47.0
6	426.73	-66.8	-70.7	3.5	-67.2	-13.0	-54.2
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	36.79	-50.6	-44.9	-15.2	-60.1	-13.0	-47.1
2	82.38	-46.8	-51.7	0.4	-51.3	-13.0	-38.3
3	152.22	-62.9	-62.0	-2.8	-64.8	-13.0	-51.8
4	255.04	-65.7	-63.9	-1.4	-65.3	-13.0	-52.3
5	410.24	-64.3	-68.1	3.3	-64.8	-13.0	-51.8
6	467.47	-66.0	-69.7	3.5	-66.2	-13.0	-53.2

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 2, Channel Bandwidth: 1.4MHz

Mode	TX channel 18607 (1850.70MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-48.2	-24.8	-19.4	-44.2	-13.0	-31.2
2	80.44	-40.3	-45.7	0.5	-45.2	-13.0	-32.2
3	174.53	-49.0	-53.7	-2.8	-56.5	-13.0	-43.5
4	285.11	-53.3	-55.6	-1.6	-57.2	-13.0	-44.2
5	494.63	-59.2	-63.2	3.8	-59.4	-13.0	-46.4
6	722.58	-63.3	-63.5	3.6	-59.9	-13.0	-46.9
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	**31.94**	**-29.6**	**-21.8**	**-18.3**	**-40.1**	**-13.0**	**-27.1**
2	82.38	-40.4	-45.3	0.4	-44.9	-13.0	-31.9
3	164.83	-47.2	-47.5	-2.9	-50.4	-13.0	-37.4
4	296.75	-47.9	-46.3	-1.8	-48.1	-13.0	-35.1
5	655.65	-62.8	-60.9	3.6	-57.3	-13.0	-44.3
6	837.04	-65.8	-62.3	3.8	-58.5	-13.0	-45.5

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 2, Channel Bandwidth: 3MHz

Mode	TX channel 18615 (1851.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	44.55	-44.5	-32.3	-10.9	-43.2	-13.0	-30.2
2	159.01	-48.1	-50.4	-2.8	-53.2	-13.0	-40.2
3	325.85	-52.9	-60.9	4.1	-56.8	-13.0	-43.8
4	409.27	-57.5	-61.0	3.2	-57.8	-13.0	-44.8
5	710.94	-61.9	-62.3	3.5	-58.8	-13.0	-45.8
6	978.66	-67.4	-62.1	3.5	-58.6	-13.0	-45.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	42.61	-35.6	-32.5	-11.8	-44.3	-13.0	-31.3
2	87.23	-43.1	-49.2	-0.1	-49.3	-13.0	-36.3
3	187.14	-52.5	-52.2	-2.7	-54.9	-13.0	-41.9
4	295.78	-54.9	-53.1	-1.8	-54.9	-13.0	-41.9
5	494.63	-58.4	-62.3	3.8	-58.5	-13.0	-45.5
6	956.35	-68.6	-63.1	3.9	-59.2	-13.0	-46.2

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 2, Channel Bandwidth: 5MHz

Mode	TX channel 18625 (1852.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.97	-48.0	-25.5	-18.8	-44.3	-13.0	-31.3
2	82.38	-38.5	-44.3	0.4	-43.9	-13.0	-30.9
3	162.89	-46.2	-49.1	-2.9	-52.0	-13.0	-39.0
4	296.75	-47.8	-48.8	-1.8	-50.6	-13.0	-37.6
5	705.12	-61.3	-61.8	3.5	-58.3	-13.0	-45.3
6	957.32	-66.1	-61.4	3.8	-57.6	-13.0	-44.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-35.2	-25.7	-19.4	-45.1	-13.0	-32.1
2	84.32	-40.7	-46.1	0.4	-45.7	-13.0	-32.7
3	296.75	-47.7	-46.1	-1.8	-47.9	-13.0	-34.9
4	654.68	-62.5	-60.5	3.6	-56.9	-13.0	-43.9
5	839.95	-66.5	-63.0	3.8	-59.2	-13.0	-46.2
6	956.35	-67.8	-62.3	3.9	-58.4	-13.0	-45.4

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 2, Channel Bandwidth: 10MHz

Mode	TX channel 18650 (1855.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-46.5	-23.1	-19.4	-42.5	-13.0	-29.5
2	84.32	-40.3	-46.7	0.4	-46.3	-13.0	-33.3
3	302.57	-51.6	-59.8	3.7	-56.1	-13.0	-43.1
4	450.01	-60.2	-63.7	3.4	-60.3	-13.0	-47.3
5	676.99	-61.9	-62.9	3.6	-59.3	-13.0	-46.3
6	922.40	-68.2	-63.7	3.6	-60.1	-13.0	-47.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	81.41	-41.4	-46.5	0.5	-46.0	-13.0	-33.0
2	173.56	-49.7	-50.5	-2.8	-53.3	-13.0	-40.3
3	320.03	-57.3	-61.5	4.0	-57.5	-13.0	-44.5
4	679.90	-63.2	-61.1	3.5	-57.6	-13.0	-44.6
5	896.21	-66.5	-61.7	3.5	-58.2	-13.0	-45.2
6	994.18	-69.0	-62.3	3.4	-58.9	-13.0	-45.9

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 2, Channel Bandwidth: 15MHz

Mode	TX channel 18675 (1857.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	34.85	-52.5	-32.9	-16.5	-49.4	-13.0	-36.4
2	106.63	-47.3	-53.1	-2.2	-55.3	-13.0	-42.3
3	166.77	-45.5	-49.3	-2.9	-52.2	-13.0	-39.2
4	460.68	-58.8	-62.2	3.4	-58.8	-13.0	-45.8
5	709.00	-61.6	-62.0	3.5	-58.5	-13.0	-45.5
6	957.32	-66.3	-61.6	3.8	-57.8	-13.0	-44.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-32.4	-22.9	-19.4	-42.3	-13.0	-29.3
2	81.41	-41.2	-46.3	0.5	-45.8	-13.0	-32.8
3	172.59	-48.5	-49.1	-2.9	-52.0	-13.0	-39.0
4	296.75	-47.6	-46.0	-1.8	-47.8	-13.0	-34.8
5	650.80	-61.9	-60.0	3.6	-56.4	-13.0	-43.4
6	990.30	-68.2	-61.8	3.4	-58.4	-13.0	-45.4

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 2, Channel Bandwidth: 20MHz

Mode	TX channel 18700 (1860.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.97	-46.5	-24.0	-18.8	-42.8	-13.0	-29.8
2	81.41	-38.7	-44.3	0.5	-43.8	-13.0	-30.8
3	161.92	-45.9	-48.5	-2.9	-51.4	-13.0	-38.4
4	296.75	-47.9	-48.9	-1.8	-50.7	-13.0	-37.7
5	705.12	-61.5	-62.0	3.5	-58.5	-13.0	-45.5
6	1000.00	-67.0	-61.2	3.2	-58.0	-13.0	-45.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-36.2	-29.1	-17.7	-46.8	-13.0	-33.8
2	84.32	-42.0	-47.4	0.4	-47.0	-13.0	-34.0
3	161.92	-50.2	-50.2	-2.9	-53.1	-13.0	-40.1
4	362.71	-58.0	-62.3	3.9	-58.4	-13.0	-45.4
5	671.17	-62.9	-61.1	3.6	-57.5	-13.0	-44.5
6	957.32	-68.1	-62.6	3.8	-58.8	-13.0	-45.8

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
PCS Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3700.40	-63.6	-55.1	1.4	-53.7	-13.0	-40.7
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	3700.40	-63.5	-55.3	1.4	-53.9	-13.0	-40.9

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 661 (1880.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-63.3	-54.8	1.3	-53.5	-13.0	-40.5
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	3760.00	-63.1	-54.8	1.3	-53.5	-13.0	-40.5

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 810 (1909.8MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3819.60	-64.2	-55.9	1.4	-54.5	-13.0	-41.5
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	3819.60	-62.5	-54.3	1.4	-52.9	-13.0	-39.9

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

EDGE Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3700.40	-62.4	-53.9	1.4	-52.5	-13.0	-39.5
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	3700.40	-63.4	-55.2	1.4	-53.8	-13.0	-40.8

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 661 (1880.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-62.7	-54.2	1.3	-52.9	-13.0	-39.9
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	3760.00	-63.5	-55.2	1.3	-53.9	-13.0	-40.9

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 810 (1909.8MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3819.60	-62.4	-54.1	1.4	-52.7	-13.0	-39.7
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	3819.60	-63.3	-55.1	1.4	-53.7	-13.0	-40.7

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

WCDMA Mode

Mode	TX channel 9262 (1852.4MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3704.80	-63.4	-54.9	1.4	-53.5	-13.0	-40.5
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	3704.80	-63.7	-55.5	1.4	-54.1	-13.0	-41.1

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 9400 (1880.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-63.5	-55.0	1.3	-53.7	-13.0	-40.7
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	3760.00	-63.6	-55.3	1.3	-54.0	-13.0	-41.0

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 9538 (1907.6MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3815.20	-64.2	-56.0	1.5	-54.5	-13.0	-41.5
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	3815.20	-63.8	-56.2	1.5	-54.7	-13.0	-41.7

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 2, Channel Bandwidth: 1.4MHz

Mode	TX channel 18607 (1850.70MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3701.40	-53.3	-44.8	1.4	-43.4	-13.0	-30.4
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	3701.40	-53.8	-45.6	1.4	-44.2	-13.0	-31.2

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.9	-44.4	1.3	-43.1	-13.0	-30.1
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	3760.00	-53.7	-45.4	1.3	-44.1	-13.0	-31.1

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 19193 (1909.30MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3818.60	-52.6	-44.3	1.4	-42.9	-13.0	-29.9
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	3818.60	-53.5	-45.3	1.4	-43.9	-13.0	-30.9

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 2, Channel Bandwidth: 3MHz

Mode	TX channel 18615 (1851.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3703.00	-52.6	-44.1	1.4	-42.7	-13.0	-29.7
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	3703.00	-53.3	-45.1	1.4	-43.7	-13.0	-30.7

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.4	-43.9	1.3	-42.6	-13.0	-29.6
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	3760.00	-53.2	-44.9	1.3	-43.6	-13.0	-30.6

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 19185 (1908.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3817.00	-52.5	-44.2	1.4	-42.8	-13.0	-29.8
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	3817.00	-53.4	-45.2	1.4	-43.8	-13.0	-30.8

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 2, Channel Bandwidth: 5MHz

Mode	TX channel 18625 (1852.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3705.00	-52.3	-43.8	1.4	-42.4	-13.0	-29.4
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	-53.3	-45.1	1.4	-43.7	-13.0	-30.7

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.4	-43.9	1.3	-42.6	-13.0	-29.6
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	3760.00	-53.2	-44.9	1.3	-43.6	-13.0	-30.6

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 19175 (1907.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3815.00	-52.4	-44.1	1.4	-42.7	-13.0	-29.7
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	3815.00	-53.5	-45.3	1.4	-43.9	-13.0	-30.9

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 2, Channel Bandwidth: 10MHz

Mode	TX channel 18650 (1855.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	-52.5	-44.0	1.4	-42.6	-13.0	-29.6
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	3710.00	-53.2	-45.0	1.4	-43.6	-13.0	-30.6

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.2	-43.7	1.3	-42.4	-13.0	-29.4
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	3760.00	-53.6	-45.3	1.3	-44.0	-13.0	-31.0

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 19150 (1905.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3810.00	-52.8	-44.4	1.3	-43.1	-13.0	-30.1
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	3810.00	-53.7	-45.4	1.3	-44.1	-13.0	-31.1

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 2, Channel Bandwidth: 15MHz

Mode	TX channel 18675 (1857.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3715.00	-52.6	-44.1	1.4	-42.7	-13.0	-29.7
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	3715.00	-53.6	-45.4	1.4	-44.0	-13.0	-31.0

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.5	-44.0	1.3	-42.7	-13.0	-29.7
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	3760.00	-53.3	-45.0	1.3	-43.7	-13.0	-30.7

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 19125 (1902.50MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3805.00	-52.7	-44.3	1.3	-43.0	-13.0	-30.0
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	3805.00	-53.7	-45.5	1.3	-44.2	-13.0	-31.2

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 2, Channel Bandwidth: 20MHz

Mode	TX channel 18700 (1860.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3720.00	-52.3	-43.8	1.4	-42.4	-13.0	-29.4
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	3720.00	-53.2	-45.0	1.4	-43.6	-13.0	-30.6

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 18900 (1880.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-52.4	-43.9	1.3	-42.6	-13.0	-29.6
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	3760.00	-53.2	-44.9	1.3	-43.6	-13.0	-30.6

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 19100 (1900.00MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3800.00	-52.5	-44.1	1.3	-42.8	-13.0	-29.8
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	3800.00	-53.3	-45.1	1.3	-43.8	-13.0	-30.8

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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