FCC Test Report

(PART 27)

Report No.:	RF200518C05-7
FCC ID:	B94HHF135P
Test Model:	TPC-F135P
Marketing Name:	HP Bridge
Received Date:	May 18, 2020
Test Date:	Jun. 16 ~ Sep. 12, 2020
Issued Date:	Oct. 08, 2020
Applicant:	HP Inc.
Address:	3390 East Harmony Road Fort Collins, Colorado 80528 United States
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

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.

Table of Contents

Release Control Record **4**

1 Certificate of Conformity **5**

2 Summary of Test Results **6**

2.1 Measurement Uncertainty 8
2.2 Test Site and Instruments 9

3 General Information **10**

3.1 General Description of EUT 10
3.2 Configuration of System under Test 12
3.2.1 Description of Support Units 12
3.3 Test Mode Applicability and Tested Channel Detail 12
3.4 EUT Operating Conditions 19
3.5 General Description of Applied Standards and references 19

4 Test Types and Results **20**

4.1 Output Power Measurement 20
4.1.1 Limits of Output Power Measurement 20
4.1.2 Test Procedures 20
4.1.3 Test Setup 21
4.1.4 Test Results 22
4.2 Modulation Characteristics Measurement 45
4.2.1 Limits of Modulation Characteristics 45
4.2.2 Test Setup 45
4.2.3 Test Procedure 45
4.2.4 Test Results 46
4.3 Frequency Stability Measurement 50
4.3.1 Limits of Frequency Stability Measurement 50
4.3.2 Test Procedure 50
4.3.3 Test Setup 50
4.3.4 Test Results 51
4.4 Occupied Bandwidth Measurement 70
4.4.1 Limits of Occupied Bandwidth Measurement 70
4.4.2 Test Procedure 70
4.4.3 Test Setup 70
4.4.4 Test Result 71
4.5 Band Edge Measurement 81
4.5.1 Limits of Band Edge Measurement 81
4.5.2 Test Setup 81
4.5.3 Test Procedures 81
4.5.4 Test Results 82
4.6 Peak to Average Ratio 103
4.6.1 Limits of Peak to Average Ratio Measurement 103
4.6.2 Test Setup 103
4.6.3 Test Procedures 103
4.6.4 Test Results 104
4.7 Conducted Spurious Emissions 113
4.7.1 Limits of Conducted Spurious Emissions Measurement 113
4.7.2 Test Setup 113
4.7.3 Test Procedure 113
4.7.4 Test Results 114
4.8 Radiated Emission Measurement 135
4.8.1 Limits of Radiated Emission Measurement 135
4.8.2 Test Procedure 135
4.8.3 Deviation from Test Standard 135
4.8.4 Test Setup 136

4.8.5 Test Results 137
5 Pictures of Test Arrangements 169
Appendix – Information of the Testing Laboratories 170

Release Control Record

Issue No.	Description	Date Issued
RF200518C05-7	Original Release	Oct. 08, 2020

1 Certificate of Conformity

Product: HP tablet

Brand: HP

Test Model: TPC-F135P

Marketing Name: HP Bridge

Sample Status: Engineering Sample

Applicant: HP Inc.

Test Date: Jun. 16 ~ Sep. 12, 2020

Standards: FCC Part 27, Subpart C, H, F, L

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Oct. 08, 2020

Gina Liu / Specialist

Approved by : _____ , **Date:** Oct. 08, 2020

Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (WCDMA)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(d)(4)	Equivalent Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -30.10 dB at 895.24 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 4)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -30.60 dB at 893.30 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 12)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -27.30 dB at 47.46 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 13)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(b)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(c)(2)(4)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(c)(2)&(f)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(c)(2)&(f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -12.60 dB at 1559.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 66)			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -29.40 dB at 658.56 MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	3.86 dB
	200 MHz ~ 1000 MHz	3.87 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jun. 27, 2019	Jun. 26, 2020
			Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101582	Mar. 31, 2020	Mar. 30, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
			Jul. 06, 2020	Jul. 05, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 11, 2019	Nov. 10, 2020
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
BILOG Antenna SCHWARZBECK	VULB9168	9168-161	Nov. 08, 2019	Nov. 07, 2020
HORN Antenna ETS	3117	00034130	Nov. 24, 2019	Nov. 23, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM-SM- 8000	Cable-CH3-03 (309224+170907)	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2019	Sep. 09, 2020
			Sep. 09, 2020	Sep. 08, 2021
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun 06, 2020	Jun 05, 2021
DC power supply Keysight	U8002A	MY56330015	NA	NA
Radio Communication Analyzer Anritsu	MT8820C	6201010284	Dec. 25, 2019	Dec. 24, 2020
Radio Communication Analyzer Anritsu	MT8821C	6261806803	Jan. 18, 2020	Jan. 17, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2019	Nov. 24, 2020

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 3.

3 General Information

3.1 General Description of EUT

Product	HP tablet	
Brand	HP	
Test Model	TPC-F135P	
Marketing Name	HP Bridge	
Status of EUT	Engineering Sample	
Power Supply Rating	3.8 Vdc (Li-ion battery) 5.0 / 9.0 / 12.0 Vdc (adapter)	
Modulation Type	WCDMA	QPSK
	LTE	QPSK, 16QAM, 64QAM
Frequency Range	WCDMA	1712.4 ~ 1752.6 MHz
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
	LTE Band 13 (Channel Bandwidth: 5 MHz)	779.5 ~ 784.5 MHz
	LTE Band 13 (Channel Bandwidth: 10 MHz)	782.0 MHz
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1779.3 MHz
	LTE Band 66 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1778.5 MHz
	LTE Band 66 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1777.5 MHz
	LTE Band 66 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1775.0 MHz
	LTE Band 66 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1772.5 MHz
	LTE Band 66 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1770.0 MHz
Emission Designator	WCDMA	4M15F9W
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 4 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 4 (Channel Bandwidth: 5 MHz)	4M51D7W
	LTE Band 4 (Channel Bandwidth: 10 MHz)	8M98D7W
	LTE Band 4 (Channel Bandwidth: 15 MHz)	13M5G7D
	LTE Band 4 (Channel Bandwidth: 20 MHz)	17M9D7W
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 12 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 12 (Channel Bandwidth: 5 MHz)	4M50D7W
	LTE Band 12 (Channel Bandwidth: 10 MHz)	8M99D7W
	LTE Band 13 (Channel Bandwidth: 5 MHz)	4M51D7W
	LTE Band 13 (Channel Bandwidth: 10 MHz)	8M98G7D
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 66 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 66 (Channel Bandwidth: 5 MHz)	4M50D7W

	LTE Band 66 (Channel Bandwidth: 10 MHz)	8M98D7W
	LTE Band 66 (Channel Bandwidth: 15 MHz)	13M5G7D
	LTE Band 66 (Channel Bandwidth: 20 MHz)	18M0D7W
Max. ERP Power	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	45.709 mW (16.60 dBm)
	LTE Band 12 (Channel Bandwidth: 3 MHz)	45.709 mW (16.60 dBm)
	LTE Band 12 (Channel Bandwidth: 5 MHz)	47.863 mW (16.80 dBm)
	LTE Band 12 (Channel Bandwidth: 10 MHz)	44.668 mW (16.50 dBm)
	LTE Band 13 (Channel Bandwidth: 5 MHz)	54.954 mW (17.40 dBm)
	LTE Band 13 (Channel Bandwidth: 10 MHz)	56.234 mW (17.50 dBm)
Max. EIRP Power	WCDMA	281.838 mW (24.50 dBm)
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	263.027 mW (24.20 dBm)
	LTE Band 4 (Channel Bandwidth: 3 MHz)	251.189 mW (24.00 dBm)
	LTE Band 4 (Channel Bandwidth: 5 MHz)	269.153 mW (24.30 dBm)
	LTE Band 4 (Channel Bandwidth: 10 MHz)	257.040 mW (24.10 dBm)
	LTE Band 4 (Channel Bandwidth: 15 MHz)	263.027 mW (24.20 dBm)
	LTE Band 4 (Channel Bandwidth: 20 MHz)	257.040 mW (24.10 dBm)
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	263.027 mW (24.20 dBm)
	LTE Band 66 (Channel Bandwidth: 3 MHz)	288.403 mW (24.60 dBm)
	LTE Band 66 (Channel Bandwidth: 5 MHz)	281.838 mW (24.50 dBm)
	LTE Band 66 (Channel Bandwidth: 10 MHz)	263.027 mW (24.20 dBm)
	LTE Band 66 (Channel Bandwidth: 15 MHz)	263.027 mW (24.20 dBm)
	LTE Band 66 (Channel Bandwidth: 20 MHz)	281.838 mW (24.50 dBm)
Antenna Type	PIFA Antenna	
Antenna Gain	WCDMA	-0.04 dBi
	LTE Band 4	-0.04 dBi
	LTE Band 12	-5.12 dBi
	LTE Band 13	-5.39 dBi
	LTE Band 66	-0.04 dBi
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

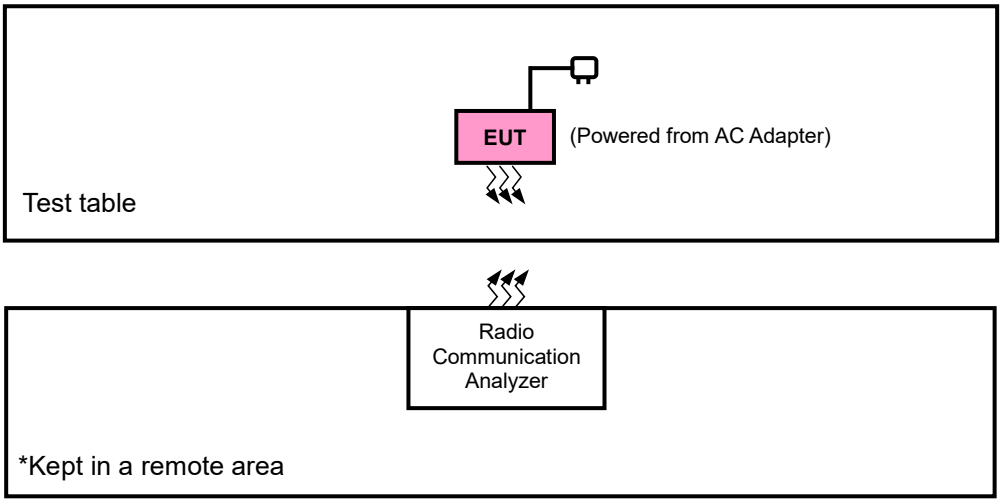
Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	HP	DSA-18QFE FUS A	I/P: 100-240 Vac, 50/60 Hz, 0.5 A O/P: 5.0 Vdc, 3 A, 15.0 W; +9.0 Vdc, 2.0 A ,18.0 W; 12.0 Vdc, 1.5A, 18 W
Battery	HP	HSP 1CP5/34/77	3.8 Vdc, 1500 mAh, 5.7 Wh
BT/WLAN Module	Qualcomm	SDM660-3	--
USB Cable	HP	WU-0093-00	1.47 m shielded cable w/o core
Holster	HP	HP Bridge Holster	HP holster Marketing Name: HP Bridge Holster

2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
3. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports
The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP / EIRP	Radiated Emission
WCDMA	X-plane	X-plane
LTE Band 4	X-plane	X-plane
LTE Band 12	X-plane	X-plane
LTE Band 13	X-plane	X-plane
LTE Band 66	X-plane	X-plane

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
-	Modulation Characteristics	1312 to 1513	1413	WCDMA
-	Frequency Stability	1312 to 1513	1312, 1513	WCDMA
-	Occupied Bandwidth	1312 to 1513	1312, 1413, 1513	WCDMA
-	Band Edge	1312 to 1513	1312, 1513	WCDMA
-	Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA
-	Conducted Emission	1312 to 1513	1312, 1413, 1513	WCDMA
-	Radiated Emission	1312 to 1513	1312, 1413, 1513	WCDMA

Note: For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM, 64QAM	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	20050 to 20300	20175	20 MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
-	Frequency Stability	19957 to 20393	19957, 20393	1.4 MHz	QPSK	6 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3 MHz	QPSK	15 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5 MHz	QPSK	25 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10 MHz	QPSK	50 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15 MHz	QPSK	75 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20 MHz	QPSK	100 RB / 0 RB Offset
-	Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM, 64QAM	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	19957 to 20393	19957	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20393	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	19965	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20385	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19975 to 20375	19975	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20375	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20000	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20350	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20025 to 20325	20025	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			20325	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20050 to 20300	20050	20 MHz	QPSK	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			20300	20 MHz	QPSK	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
-	Conducted Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	3 RB / 1 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	3 RB / 1 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM, 64QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM, 64QAM	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	23060 to 23130	23095	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
-	Frequency Stability	23017 to 23173	23017, 23173	1.4 MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3 MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5 MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10 MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM, 64QAM	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Band Edge	23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			23173	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			23165	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		23035 to 23155	23035	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23155	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			23130	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	3 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	3 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM, 64QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 13

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	23230	23230	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
-	Frequency Stability	23205 to 23255	23205, 23255	5 MHz	QPSK	25 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Band Edge	23205 to 23255	23205	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23255	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			23230	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM, 64QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM, 64QAM	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 12 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM, 64QAM	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	132072 to 132572	132322	20 MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
-	Frequency Stability	131979 to 132665	131979, 132665	1.4 MHz	QPSK	6 RB / 0 RB Offset
		131987 to 132657	131987, 132657	3 MHz	QPSK	15 RB / 0 RB Offset
		131997 to 132647	131997, 132647	5 MHz	QPSK	25 RB / 0 RB Offset
		132022 to 132622	132022, 132622	10 MHz	QPSK	50 RB / 0 RB Offset
		132047 to 132597	132047, 132597	15 MHz	QPSK	75 RB / 0 RB Offset
		132072 to 132572	132072, 132572	20 MHz	QPSK	100 RB / 0 RB Offset
-	Occupied Bandwidth	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM, 64QAM	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM, 64QAM	1 RB / 12 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM, 64QAM	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	131979 to 132665	131979	1.4 MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			132665	1.4 MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3 MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			132657	3 MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131997 to 132647	131997	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132647	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132022	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132622	10 MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15 MHz	QPSK	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15 MHz	QPSK	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		132072 to 132572	132072	20 MHz	QPSK	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			132572	20 MHz	QPSK	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
-	Conducted Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	1 RB / 12 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK	1 RB / 37 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 2 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	1 RB / 12 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM, 64QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel for final testing.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 65 % RH	120 Vac, 60 Hz	Adair Peng, Luis Lee, Noah Chang
Modulation Characteristics	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu, Getaz Yang
Frequency Stability	25 deg. C, 65 % RH	3.8Vdc	Gavin Wu, Getaz Yang
Occupied Bandwidth	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu, Getaz Yang
Band Edge	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu, Getaz Yang
Peak to Average Ratio	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu, Getaz Yang
Conducted Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu, Getaz Yang
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Luis Lee, Noah Chang, Titan Hsu

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards and references

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

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

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

References Test Guidance:
KDB 971168 D01 Power Meas License Digital Systems v03r01
ANSI/TIA/EIA-603-E 2016
3GPP TS 36.521-1 V16.3.0 (2019-12)

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

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

Portable stations (hand-held devices) operating in the 746-757 MHz, 776-788 MHz and 805-806 MHz band are limited to 3 watts ERP

Portable stations (hand-held device) operating in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

4.1.2 Test Procedures

EIRP / ERP Measurement:

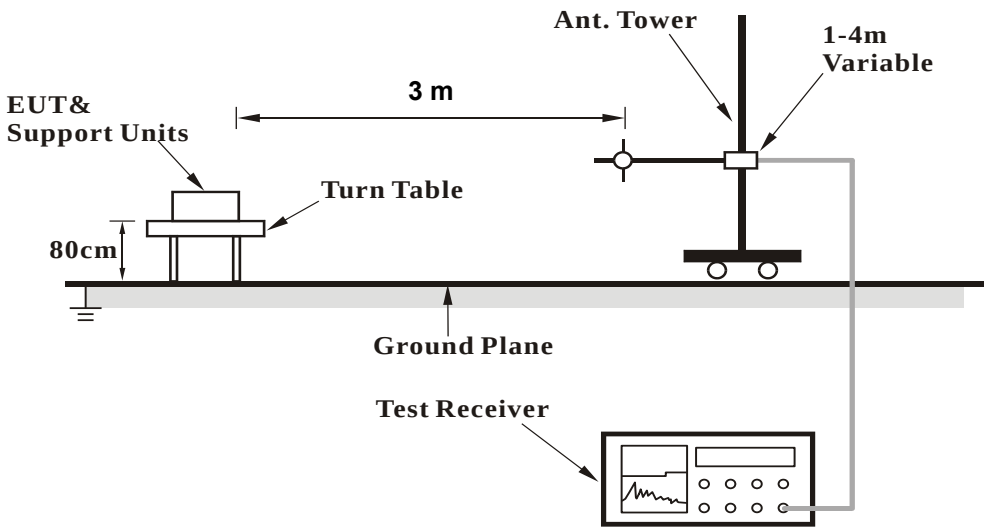
a. All measurements were done at low, middle and high operational frequency range. RBW is 5 MHz for WCDMA and 5 MHz、10 MHz、15 MHz、20 MHz for LTE mode, VBW ≥ 3 x RBW.
b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
c. 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 - 2.15 dB.

Conducted Power Measurement:

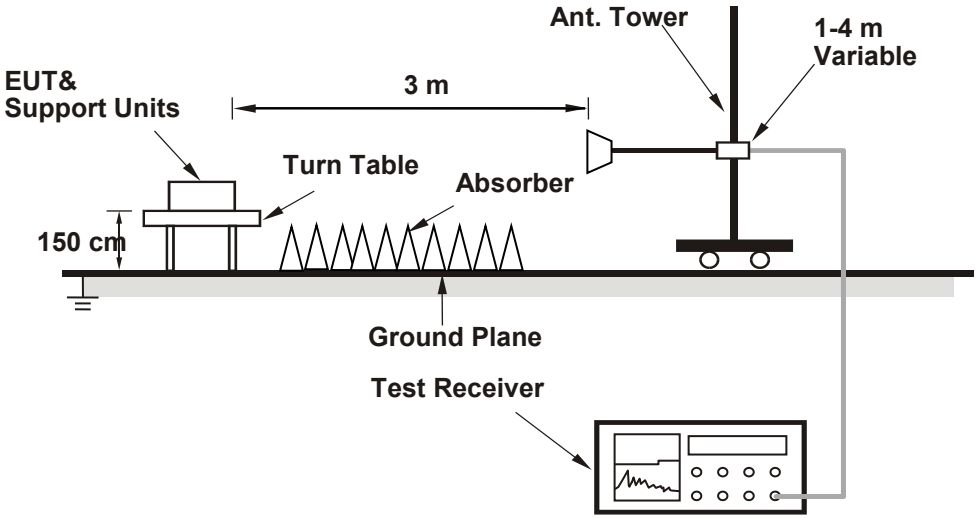
a. The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator.
b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 Test Setup

EIRP / ERP Measurement:
<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

Conducted Power Measurement:

4.1.4 Test Results

Conducted Output Power (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.97	24.99	24.85
HSDPA Subtest-1	23.74	23.68	23.59
HSDPA Subtest-2	23.71	23.80	23.63
HSDPA Subtest-3	23.22	23.35	23.13
HSDPA Subtest-4	23.25	23.30	23.08
DC-HSDPA Subtest-1	23.57	23.56	23.49
DC-HSDPA Subtest-2	23.62	23.70	23.58
DC-HSDPA Subtest-3	23.10	23.18	23.01
DC-HSDPA Subtest-4	23.04	23.12	22.96
HSUPA Subtest-1	23.63	23.69	23.62
HSUPA Subtest-2	21.70	21.75	21.58
HSUPA Subtest-3	22.66	22.71	22.60
HSUPA Subtest-4	21.59	21.64	21.57
HSUPA Subtest-5	23.76	23.83	23.65

LTE Band 4

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300	
		Frequency (MHz)		1720.0	1732.5	1745.0	
20M	QPSK	1	0	23.83	23.94	23.86	0
		1	50	23.80	23.91	23.82	0
		1	99	23.68	23.79	23.70	0
		50	0	22.92	23.03	22.94	1
		50	25	22.91	23.02	22.93	1
		50	50	22.83	22.94	22.85	1
		100	0	22.86	22.97	22.88	1
	16QAM	1	0	23.01	23.12	23.03	1
		1	50	23.12	23.23	23.14	1
		1	99	22.97	23.08	22.99	1
		50	0	21.98	22.09	22.00	2
		50	25	22.03	22.14	22.05	2
		50	50	21.99	22.10	22.01	2
		100	0	21.98	22.09	22.00	2
	64QAM	1	0	21.95	22.11	21.95	2
		1	50	22.05	22.21	22.07	2
		1	99	21.94	22.00	21.90	2
		50	0	20.98	21.06	20.96	3
		50	25	21.01	21.09	20.97	3
		50	50	20.94	21.02	20.92	3
		100	0	20.95	21.09	21.00	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20025	20175	20325	
		Frequency (MHz)		1717.5	1732.5	1747.5	
15M	QPSK	1	0	23.77	23.92	23.80	0
		1	37	23.74	23.85	23.73	0
		1	74	23.62	23.77	23.69	0
		36	0	22.89	22.99	22.84	1
		36	19	22.83	23.00	22.88	1
		36	39	22.75	22.92	22.82	1
		75	0	22.81	22.88	22.81	1
	16QAM	1	0	23.00	23.08	23.02	1
		1	37	23.06	23.16	23.12	1
		1	74	22.92	22.98	22.91	1
		36	0	21.91	22.00	21.96	2
		36	19	21.95	22.09	22.05	2
		36	39	21.97	22.06	21.95	2
		75	0	21.90	22.06	21.98	2
	64QAM	1	0	22.00	22.05	21.95	2
		1	37	22.09	22.16	22.13	2
		1	74	21.96	22.04	21.96	2
		36	0	20.95	20.99	20.97	3
		36	19	20.99	21.08	21.00	3
		36	39	20.99	21.00	20.98	3
		75	0	20.97	21.02	20.98	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20000	20175	20350	
		Frequency (MHz)		1715.0	1732.5	1750.0	
10M	QPSK	1	0	23.72	23.86	23.77	0
		1	24	23.75	23.75	23.71	0
		1	49	23.48	23.70	23.54	0
		25	0	22.88	22.85	22.83	1
		25	12	22.77	22.90	22.83	1
		25	25	22.70	22.82	22.70	1
		50	0	22.69	22.75	22.78	1
	16QAM	1	0	22.91	22.95	23.00	1
		1	24	23.03	23.16	23.01	1
		1	49	22.94	23.00	22.82	1
		25	0	21.93	21.99	21.86	2
		25	12	21.92	22.02	22.01	2
		25	25	21.89	21.97	21.94	2
		50	0	21.85	22.03	21.87	2
	64QAM	1	0	21.85	22.03	21.91	2
		1	24	22.00	22.12	21.93	2
		1	49	21.90	22.04	21.91	2
		25	0	20.79	20.97	20.81	3
		25	12	20.86	21.00	20.90	3
		25	25	20.90	20.89	20.82	3
		50	0	20.88	21.03	20.87	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		19975	20175	20375	
		Frequency (MHz)		1712.5	1732.5	1752.5	
5M	QPSK	1	0	23.81	23.77	23.78	0
		1	12	23.58	23.79	23.54	0
		1	24	23.60	23.70	23.56	0
		12	0	22.82	22.87	22.76	1
		12	6	22.86	22.87	22.74	1
		12	13	22.74	22.79	22.74	1
		25	0	22.79	22.84	22.80	1
	16QAM	1	0	22.93	22.98	22.89	1
		1	12	23.06	23.06	23.02	1
		1	24	22.93	22.95	22.82	1
		12	0	21.76	21.95	21.86	2
		12	6	21.89	22.00	21.92	2
		12	13	21.93	22.00	21.96	2
		25	0	21.76	21.97	21.84	2
	64QAM	1	0	21.82	22.05	21.86	2
		1	12	21.92	22.15	22.03	2
		1	24	21.79	21.93	21.87	2
		12	0	20.80	20.88	20.81	3
		12	6	20.86	20.96	20.84	3
		12	13	20.89	20.85	20.80	3
		25	0	20.79	20.95	20.99	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		19965	20175	20385	
		Frequency (MHz)		1711.5	1732.5	1753.5	
3M	QPSK	1	0	23.78	23.90	23.71	0
		1	7	23.66	23.68	23.68	0
		1	14	23.62	23.62	23.57	0
		8	0	22.75	22.85	22.92	1
		8	3	22.78	22.95	22.86	1
		8	7	22.67	22.78	22.72	1
		15	0	22.75	22.88	22.65	1
	16QAM	1	0	22.76	22.99	22.91	1
		1	7	23.03	23.06	23.07	1
		1	14	22.89	22.94	22.96	1
		8	0	21.87	21.97	21.83	2
		8	3	21.84	22.06	21.83	2
		8	7	21.92	22.05	21.83	2
		15	0	21.93	21.96	21.91	2
	64QAM	1	0	21.88	21.96	21.81	2
		1	7	21.95	22.03	22.00	2
		1	14	21.94	21.92	21.82	2
		8	0	20.86	21.00	20.89	3
		8	3	20.92	20.90	20.89	3
		8	7	20.84	21.04	20.86	3
		15	0	20.89	21.04	20.93	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		19957	20175	20393	
		Frequency (MHz)		1710.7	1732.5	1754.3	
1.4M	QPSK	1	0	23.66	23.71	23.74	0
		1	2	23.62	23.77	23.73	0
		1	5	23.59	23.78	23.65	0
		3	0	23.82	23.85	23.76	0
		3	1	23.77	23.90	23.79	0
		3	3	23.75	23.81	23.66	0
		6	0	22.67	22.84	22.76	1
	16QAM	1	0	22.85	23.03	22.84	1
		1	2	22.93	23.13	23.06	1
		1	5	22.86	22.91	22.87	1
		3	0	22.80	22.99	22.95	1
		3	1	22.85	23.03	22.97	1
		3	3	22.81	22.92	22.86	1
		6	0	21.83	22.03	21.85	2
	64QAM	1	0	21.87	22.00	21.85	2
		1	2	22.01	22.14	21.95	2
		1	5	21.90	22.03	21.85	2
		3	0	21.86	21.87	21.77	2
		3	1	21.90	22.05	21.89	2
		3	3	21.78	21.98	21.81	2
		6	0	20.74	21.02	20.76	3

LTE Band 12

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	24.33	24.21	24.27	0	5M	QPSK	1	0	24.16	24.21	24.26	0
		1	24	24.24	24.19	24.25	0			1	12	24.22	24.19	24.21	0
		1	49	24.17	24.13	24.19	0			1	24	24.10	24.06	24.15	0
		25	0	23.32	23.27	23.33	1			12	0	23.26	23.24	23.29	1
		25	12	23.21	23.24	23.29	1			12	6	23.96	23.16	23.24	1
		25	25	23.24	23.19	23.25	1			12	13	23.20	23.11	23.19	1
		50	0	23.32	23.26	23.28	1			25	0	23.31	23.18	23.28	1
	16QAM	1	0	23.64	23.59	23.63	1		16QAM	1	0	23.60	23.57	23.53	1
		1	24	23.63	23.58	23.64	1			1	12	23.59	23.48	23.60	1
		1	49	23.49	23.47	23.53	1			1	24	23.39	23.45	23.53	1
		25	0	22.43	22.38	22.41	2			12	0	22.42	22.37	22.34	2
		25	12	22.41	22.38	22.44	2			12	6	22.37	22.33	22.39	2
		25	25	22.36	22.31	22.37	2			12	13	22.27	22.27	22.29	2
		50	0	22.42	22.37	22.43	2			25	0	22.36	22.32	22.36	2
	64QAM	1	0	22.62	22.54	22.60	2		64QAM	1	0	22.55	22.56	22.55	2
		1	24	22.60	22.58	22.59	2			1	12	22.53	22.53	22.61	2
		1	49	22.43	22.47	22.52	2			1	24	22.43	22.44	22.52	2
		25	0	21.35	21.28	21.32	3			12	0	21.40	21.36	21.35	3
		25	12	21.33	21.32	21.34	3			12	6	21.32	21.29	21.34	3
		25	25	21.33	21.26	21.37	3			12	13	21.35	21.24	21.33	3
		50	0	21.34	21.34	21.33	3			25	0	21.39	21.36	21.36	3
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23025	23095	23165				Channel		23017	23095	23173	
		Frequency (MHz)		700.5	707.5	714.5				Frequency (MHz)		699.7	707.5	715.3	
3M	QPSK	1	0	24.21	24.11	24.11	0	1.4M	QPSK	1	0	24.15	24.08	24.16	0
		1	7	24.11	24.01	24.13	0			1	2	24.16	24.04	24.12	0
		1	14	24.01	24.06	23.95	0			1	5	24.00	24.06	24.04	0
		8	0	23.19	23.22	23.33	1			3	0	24.32	24.15	24.25	0
		8	3	23.88	23.10	23.22	1			3	1	24.25	24.11	24.21	0
		8	7	23.17	23.00	23.21	1			3	3	24.07	24.11	24.07	0
		15	0	23.13	23.08	23.12	1			6	0	23.13	23.03	23.25	1
	16QAM	1	0	23.47	23.45	23.49	1		16QAM	1	0	23.45	23.44	23.58	1
		1	7	23.49	23.37	23.53	1			1	2	23.45	23.49	23.51	1
		1	14	23.41	23.29	23.46	1			1	5	23.32	23.36	23.35	1
		8	0	22.26	22.24	22.28	2			3	0	23.39	23.22	23.31	1
		8	3	22.22	22.23	22.31	2			3	1	23.31	23.21	23.30	1
		8	7	22.25	22.17	22.17	2			3	3	23.21	23.15	23.21	1
		15	0	22.29	22.19	22.30	2			6	0	22.21	22.20	22.23	2
	64QAM	1	0	22.54	22.45	22.43	2		64QAM	1	0	22.54	22.53	22.54	2
		1	7	22.45	22.54	22.39	2			1	2	22.50	22.44	22.42	2
		1	14	22.42	22.25	22.40	2			1	5	22.47	22.34	22.43	2
		8	0	21.20	21.31	21.40	3			3	0	22.36	22.20	22.35	2
		8	3	21.22	21.28	21.37	3			3	1	22.28	22.24	22.34	2
		8	7	21.28	21.21	21.29	3			3	3	22.20	22.12	22.27	2
		15	0	21.23	21.21	21.20	3			6	0	21.27	21.29	21.36	3

LTE Band 13

BW	MCS Index	RB Size	RB Offset		Mid		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		22.55		0	5M	QPSK	1	0	22.48	22.53	22.36	0
		1	24		22.46		0			1	12	22.42	22.47	22.30	0
		1	49		22.36		0			1	24	22.34	22.39	22.22	0
		25	0		21.63		1			12	0	21.53	21.58	21.41	1
		25	12		21.61		1			12	6	21.51	21.56	21.39	1
		25	25		21.53		1			12	13	21.45	21.50	21.33	1
		50	0		21.57		1			25	0	21.49	21.54	21.37	1
	16QAM	1	0		21.84		1		16QAM	1	0	21.55	21.60	21.43	1
		1	24		21.57		1			1	12	21.52	21.57	21.40	1
		1	49		21.80		1			1	24	21.57	21.62	21.45	1
		25	0		20.65		2			12	0	20.48	20.53	20.36	2
		25	12		20.61		2			12	6	20.46	20.51	20.34	2
		25	25		20.60		2			12	13	20.51	20.56	20.39	2
		50	0		20.62		2			25	0	20.52	20.57	20.40	2
	64QAM	1	0		20.80		2		64QAM	1	0	20.50	20.59	20.39	2
		1	24		20.53		2			1	12	20.52	20.52	20.32	2
		1	49		20.76		2			1	24	20.49	20.61	20.43	2
		25	0		19.55		3			12	0	19.39	19.44	19.35	3
		25	12		19.55		3			12	6	19.41	19.47	19.32	3
		25	25		19.57		3			12	13	19.51	19.54	19.31	3
		50	0		19.60		3			25	0	19.50	19.50	19.38	3

LTE Band 66

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572	
		Frequency (MHz)		1720.0	1745.0	1770.0	
20M	QPSK	1	0	24.03	23.99	23.71	0
		1	50	24.00	23.93	23.71	0
		1	99	23.80	23.73	23.53	0
		50	0	22.93	22.86	22.66	1
		50	25	22.91	22.83	22.65	1
		50	50	22.93	22.80	22.66	1
		100	0	22.93	22.86	22.66	1
	16QAM	1	0	23.24	23.17	22.97	1
		1	50	23.16	23.09	22.91	1
		1	99	23.01	22.91	22.71	1
		50	0	22.11	22.04	21.88	2
		50	25	22.03	21.98	21.78	2
		50	50	22.00	21.93	21.73	2
		100	0	22.02	21.95	21.75	2
	64QAM	1	0	22.14	22.10	21.88	2
		1	50	22.13	22.01	21.90	2
		1	99	21.92	21.89	21.65	2
		50	0	21.08	20.94	20.86	3
		50	25	20.97	20.92	20.75	3
		50	50	20.95	20.92	20.71	3
		100	0	21.02	20.90	20.72	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132047	132322	132597	
		Frequency (MHz)		1717.5	1745.0	1772.5	
15M	QPSK	1	0	23.88	23.85	23.61	0
		1	37	24.00	23.88	23.70	0
		1	74	23.75	23.65	23.53	0
		36	0	22.85	22.78	22.62	1
		36	19	22.91	22.77	22.57	1
		36	39	22.83	22.79	22.58	1
		75	0	22.90	22.82	22.57	1
	16QAM	1	0	23.18	23.11	22.90	1
		1	37	23.16	23.05	22.87	1
		1	74	22.99	22.91	22.69	1
		36	0	22.10	21.98	21.81	2
		36	19	22.01	21.91	21.71	2
		36	39	21.94	21.86	21.67	2
		75	0	21.96	21.92	21.69	2
	64QAM	1	0	22.02	22.12	21.84	2
		1	37	22.04	21.92	21.76	2
		1	74	21.91	21.87	21.53	2
		36	0	21.06	20.83	20.71	3
		36	19	20.91	20.85	20.67	3
		36	39	20.87	20.82	20.58	3
		75	0	20.84	20.85	20.59	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132022	132322	132622	
		Frequency (MHz)		1715.0	1745.0	1775.0	
10M	QPSK	1	0	23.86	23.69	23.63	0
		1	24	23.91	23.78	23.59	0
		1	49	23.70	23.64	23.49	0
		25	0	22.86	22.73	22.56	1
		25	12	22.72	22.64	22.44	1
		25	25	22.81	22.79	22.57	1
		50	0	22.81	22.76	22.45	1
	16QAM	1	0	23.18	23.02	22.88	1
		1	24	23.05	22.99	22.75	1
		1	49	22.98	22.78	22.64	1
		25	0	22.04	21.88	21.80	2
		25	12	21.98	21.88	21.60	2
		25	25	21.88	21.78	21.63	2
		50	0	21.87	21.78	21.68	2
	64QAM	1	0	22.13	22.05	21.83	2
		1	24	21.97	22.01	21.79	2
		1	49	21.91	21.78	21.47	2
		25	0	21.02	21.02	20.81	3
		25	12	20.90	20.84	20.59	3
		25	25	20.86	20.89	20.69	3
		50	0	20.90	20.92	20.66	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131997	132322	132647	
		Frequency (MHz)		1712.5	1745.0	1777.5	
5M	QPSK	1	0	23.88	23.77	23.42	0
		1	12	23.88	23.78	23.60	0
		1	24	23.69	23.54	23.31	0
		12	0	22.71	22.71	22.40	1
		12	6	22.88	22.78	22.52	1
		12	13	22.79	22.74	22.41	1
		25	0	22.71	22.81	22.51	1
	16QAM	1	0	23.23	23.03	22.94	1
		1	12	23.05	23.04	22.84	1
		1	24	22.94	22.88	22.59	1
		12	0	22.09	21.92	21.74	2
		12	6	21.91	21.77	21.63	2
		12	13	21.91	21.77	21.60	2
		25	0	22.01	21.84	21.62	2
	64QAM	1	0	22.15	21.97	21.86	2
		1	12	22.08	21.90	21.71	2
		1	24	21.91	21.82	21.58	2
		12	0	21.03	20.82	20.83	3
		12	6	20.95	20.97	20.74	3
		12	13	20.86	20.77	20.66	3
		25	0	20.92	20.84	20.73	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131987	132322	132657	
		Frequency (MHz)		1711.5	1745.5	1778.5	
3M	QPSK	1	0	23.90	23.73	23.59	0
		1	7	23.99	23.78	23.64	0
		1	14	23.59	23.58	23.47	0
		8	0	22.81	22.69	22.57	1
		8	3	22.80	22.66	22.49	1
		8	7	22.78	22.66	22.51	1
		15	0	22.85	22.71	22.50	1
	16QAM	1	0	23.06	23.06	22.83	1
		1	7	23.05	22.96	22.72	1
		1	14	22.90	22.80	22.64	1
		8	0	21.90	21.98	21.79	2
		8	3	21.85	21.88	21.62	2
		8	7	21.84	21.86	21.67	2
		15	0	21.83	21.84	21.69	2
	64QAM	1	0	22.09	22.02	21.86	2
		1	7	22.10	21.91	21.83	2
		1	14	21.85	21.71	21.60	2
		8	0	21.02	21.01	20.77	3
		8	3	20.91	20.82	20.65	3
		8	7	20.92	20.86	20.50	3
		15	0	20.90	20.80	20.64	3

BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		131979	132322	132665	
		Frequency (MHz)		1710.7	1745.0	1779.3	
1.4M	QPSK	1	0	23.89	23.69	23.47	0
		1	2	23.94	23.81	23.61	0
		1	5	23.75	23.56	23.46	0
		3	0	23.70	23.61	23.48	0
		3	1	23.88	23.66	23.49	0
		3	3	23.78	23.66	23.57	0
		6	0	22.69	22.72	22.59	1
	16QAM	1	0	23.22	23.03	22.91	1
		1	2	22.92	22.93	22.88	1
		1	5	22.87	22.81	22.51	1
		3	0	22.91	22.93	22.74	1
		3	1	22.91	22.90	22.58	1
		3	3	22.95	22.75	22.71	1
		6	0	21.96	21.79	21.63	2
	64QAM	1	0	22.19	22.09	21.83	2
		1	2	22.08	21.88	21.73	2
		1	5	21.94	21.72	21.63	2
		3	0	21.88	21.89	21.74	2
		3	1	21.93	21.86	21.69	2
		3	3	21.90	21.92	21.56	2
		6	0	20.95	20.85	20.74	3

EIRP / ERP Power

WCDMA Band 4

Mode	TX channel 1312, 1413, 1513						
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	1712.4	-15.00	23.50	1.00	24.50	30.00	-5.50
2	1732.6	-15.30	23.40	1.00	24.40	30.00	-5.60
3	1752.6	-15.80	23.00	1.10	24.10	30.00	-5.90
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	1712.4	-20.20	19.00	1.00	20.00	30.00	-10.00
2	1732.6	-20.50	18.70	1.00	19.70	30.00	-10.30
3	1752.6	-20.80	18.30	1.10	19.40	30.00	-10.60

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

Modulation Type: QPSK

LTE Band 4, Channel Bandwidth: 1.4MHz

Mode	TX channel 19957, 20175, 20393						
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	1710.7	-14.40	23.10	1.00	24.10	30.00	-5.90
2	1732.5	-14.60	23.10	1.00	24.10	30.00	-5.90
3	1754.3	-14.60	23.10	1.10	24.20	30.00	-5.80
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	1710.7	-19.90	18.70	1.00	19.70	30.00	-10.30
2	1732.5	-19.30	19.20	1.00	20.20	30.00	-9.80
3	1754.3	-19.40	18.90	1.10	20.00	30.00	-10.00

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

LTE Band 4, Channel Bandwidth: 3MHz

Mode	TX channel 19965, 20175, 20385						
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	1711.5	-15.10	22.50	1.00	23.50	30.00	-6.50
2	1732.5	-15.00	22.70	1.00	23.70	30.00	-6.30
3	1753.5	-14.80	22.90	1.10	24.00	30.00	-6.00
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	1711.5	-19.80	18.80	1.00	19.80	30.00	-10.20
2	1732.5	-19.60	18.90	1.10	19.90	30.00	-10.10
3	1753.5	-19.60	18.70	1.10	19.80	30.00	-10.20

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

LTE Band 4, Channel Bandwidth: 5MHz

Mode	TX channel 19975, 20175, 20375						
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	1712.5	-14.50	23.10	1.00	24.10	30.00	-5.90
2	1732.5	-14.40	23.30	1.00	24.30	30.00	-5.70
3	1752.5	-14.70	23.00	1.10	24.10	30.00	-5.90
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	1712.5	-19.30	19.30	1.00	20.30	30.00	-9.70
2	1732.5	-19.10	19.40	1.00	20.40	30.00	-9.60
3	1752.5	-19.20	19.10	1.10	20.20	30.00	-9.80

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

LTE Band 4, Channel Bandwidth: 10MHz

Mode	TX channel 20000, 20175, 20350						
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	1715.0	-14.50	23.10	1.00	24.10	30.00	-5.90
2	1732.5	-14.60	23.10	1.00	24.10	30.00	-5.90
3	1750.0	-14.80	22.80	1.10	23.90	30.00	-6.10
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	1715.0	-19.70	18.80	1.00	19.80	30.00	-10.20
2	1732.5	-19.40	19.10	1.00	20.10	30.00	-9.90
3	1750.0	-19.40	18.90	1.10	20.00	30.00	-10.00

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

LTE Band 4, Channel Bandwidth: 15MHz

Mode	TX channel 20025, 20175, 20325						
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	1717.5	-15.10	22.50	1.00	23.50	30.00	-6.50
2	1732.5	-14.50	23.20	1.00	24.20	30.00	-5.80
3	1747.5	-15.00	22.60	1.10	23.70	30.00	-6.30
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	1717.5	-19.40	19.10	1.00	20.10	30.00	-9.90
2	1732.5	-19.30	19.20	1.00	20.20	30.00	-9.80
3	1747.5	-19.20	19.10	1.10	20.20	30.00	-9.80

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

LTE Band 4, Channel Bandwidth: 20MHz

Mode	TX channel 20050, 20175, 20300						
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	1720.0	-14.60	23.00	1.00	24.00	30.00	-6.00
2	1732.5	-14.60	23.10	1.00	24.10	30.00	-5.90
3	1745.0	-14.90	22.80	1.00	23.80	30.00	-6.20
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	1720.0	-19.80	18.70	1.00	19.70	30.00	-10.30
2	1732.5	-19.70	18.80	1.00	19.80	30.00	-10.20
3	1745.0	-19.30	19.10	1.00	20.10	30.00	-9.90

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

LTE Band 12, Channel Bandwidth: 1.4MHz

MODE		TX channel 23017, 23095, 23173					
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	699.7	-11.20	17.00	-0.50	16.50	34.80	-18.30
2	707.5	-11.40	17.10	-0.50	16.60	34.80	-18.20
3	715.3	-11.70	16.80	-0.50	16.30	34.80	-18.50
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	699.7	-19.20	12.00	-0.50	11.50	34.80	-23.30
2	707.5	-20.00	11.60	-0.50	11.10	34.80	-23.70
3	715.3	-19.90	12.00	-0.50	11.50	34.80	-23.30

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

LTE Band 12, Channel Bandwidth: 3MHz

MODE		TX channel 23025, 23095, 23165					
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	700.5	-11.40	16.80	-0.50	16.30	34.80	-18.50
2	707.5	-11.90	16.60	-0.50	16.10	34.80	-18.70
3	714.5	-11.20	17.10	-0.50	16.60	34.80	-18.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.5	-19.40	11.90	-0.50	11.40	34.80	-23.40
2	707.5	-19.80	11.80	-0.50	11.30	34.80	-23.50
3	714.5	-19.60	12.20	-0.50	11.70	34.80	-23.10

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

LTE Band 12, Channel Bandwidth: 5MHz

MODE		TX channel 23035, 23095, 23155					
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	701.5	-11.10	17.10	-0.50	16.60	34.80	-18.20
2	707.5	-11.60	16.90	-0.50	16.40	34.80	-18.40
3	713.5	-11.10	17.30	-0.50	16.80	34.80	-18.00
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	701.5	-19.10	12.10	-0.50	11.60	34.80	-23.20
2	707.5	-20.10	11.50	-0.50	11.00	34.80	-23.80
3	713.5	-19.80	11.80	-0.50	11.30	34.80	-23.50

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

LTE Band 12, Channel Bandwidth: 10MHz

MODE		TX channel 23060, 23095, 23130					
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	704.0	-12.10	16.50	-0.50	16.00	34.80	-18.80
2	707.5	-11.60	16.90	-0.50	16.40	34.80	-18.40
3	711.0	-11.20	17.00	-0.50	16.50	34.80	-18.30
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	704.0	-20.10	11.50	-0.50	11.00	34.80	-23.80
2	707.5	-19.60	12.00	-0.50	11.50	34.80	-23.30
3	711.0	-19.70	11.90	-0.50	11.40	34.80	-23.40

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

LTE Band 13, Channel Bandwidth: 5MHz

MODE		TX channel 23205, 23230, 23255					
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	779.5	-13.40	17.60	-0.50	17.10	34.80	-17.70
2	782.0	-13.20	17.80	-0.50	17.30	34.80	-17.50
3	784.5	-13.20	17.80	-0.40	17.40	34.80	-17.40
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	779.5	-24.20	8.30	-0.50	7.80	34.80	-27.00
2	782.0	-24.60	7.70	-0.50	7.20	34.80	-27.60
3	784.5	-24.20	7.90	-0.40	7.50	34.80	-27.30

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

LTE Band 13, Channel Bandwidth: 10MHz

MODE		TX channel 23230					
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	782.0	-13.00	18.00	-0.50	17.50	34.80	-17.30
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	782.0	-24.10	8.20	-0.50	7.70	34.80	-27.10

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

LTE Band 66, Channel Bandwidth: 1.4MHz

MODE	TX channel 131979, 132322, 132665						
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	1710.7	-14.30	23.20	1.00	24.20	30.00	-5.80
2	1745.0	-14.50	23.20	1.00	24.20	30.00	-5.80
3	1779.3	-14.80	23.00	1.10	24.10	30.00	-5.90
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	1710.7	-21.20	17.40	1.00	18.40	30.00	-11.60
2	1745.0	-21.30	17.10	1.00	18.10	30.00	-11.90
3	1779.3	-21.00	17.20	1.10	18.30	30.00	-11.70

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

LTE Band 66, Channel Bandwidth: 3MHz

MODE	TX channel 131987, 132322, 132657						
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	1711.5	-14.40	23.20	1.00	24.20	30.00	-5.80
2	1745.0	-14.70	23.00	1.00	24.00	30.00	-6.00
3	1778.5	-14.30	23.50	1.10	24.60	30.00	-5.40
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	1711.5	-21.10	17.50	1.00	18.50	30.00	-11.50
2	1745.0	-21.30	17.10	1.00	18.10	30.00	-11.90
3	1778.5	-20.80	17.40	1.10	18.50	30.00	-11.50

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

LTE Band 66, Channel Bandwidth: 5MHz

MODE	TX channel 131997, 132322, 132647						
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	1712.5	-14.80	22.80	1.00	23.80	30.00	-6.20
2	1745.0	-14.80	22.90	1.00	23.90	30.00	-6.10
3	1777.5	-14.40	23.40	1.10	24.50	30.00	-5.50
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	1712.5	-21.20	17.40	1.00	18.40	30.00	-11.60
2	1745.0	-21.20	17.20	1.00	18.20	30.00	-11.80
3	1777.5	-21.20	17.00	1.10	18.10	30.00	-11.90

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

LTE Band 66, Channel Bandwidth: 10MHz

MODE		TX channel 132022, 132322, 132622					
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	1715.0	-14.40	23.20	1.00	24.20	30.00	-5.80
2	1745.0	-14.70	23.00	1.00	24.00	30.00	-6.00
3	1775.0	-15.00	22.80	1.10	23.90	30.00	-6.10
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	1715.0	-20.90	17.60	1.00	18.60	30.00	-11.40
2	1745.0	-21.20	17.20	1.00	18.20	30.00	-11.80
3	1775.0	-21.20	17.00	1.10	18.10	30.00	-11.90

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

LTE Band 66, Channel Bandwidth: 15MHz

MODE		TX channel 132047, 132322, 132597					
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	1717.5	-14.50	23.10	1.00	24.10	30.00	-5.90
2	1745.0	-14.70	23.00	1.00	24.00	30.00	-6.00
3	1772.5	-14.70	23.10	1.10	24.20	30.00	-5.80
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	1717.5	-21.30	17.20	1.00	18.20	30.00	-11.80
2	1745.0	-21.00	17.40	1.00	18.40	30.00	-11.60
3	1772.5	-21.30	16.90	1.10	18.00	30.00	-12.00

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

LTE Band 66, Channel Bandwidth: 20MHz

MODE		TX channel 132072, 132322, 132572					
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	1720.0	-14.30	23.30	1.00	24.30	30.00	-5.70
2	1745.0	-14.70	23.00	1.00	24.00	30.00	-6.00
3	1770.0	-14.30	23.40	1.10	24.50	30.00	-5.50
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	1720.0	-21.00	17.50	1.00	18.50	30.00	-11.50
2	1745.0	-20.90	17.50	1.00	18.50	30.00	-11.50
3	1770.0	-20.90	17.30	1.10	18.40	30.00	-11.60

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

Modulation Type: 16QAM

LTE Band 4, Channel Bandwidth: 1.4MHz

Mode		TX channel 19957, 20175, 20393					
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	1710.7	-15.20	22.30	1.00	23.30	30.00	-6.70
2	1732.5	-15.70	22.00	1.00	23.00	30.00	-7.00
3	1754.3	-15.60	22.10	1.10	23.20	30.00	-6.80
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	1710.7	-21.00	17.60	1.00	18.60	30.00	-11.40
2	1732.5	-20.30	18.20	1.00	19.20	30.00	-10.80
3	1754.3	-20.20	18.10	1.10	19.20	30.00	-10.80

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

LTE Band 4, Channel Bandwidth: 3MHz

Mode		TX channel 19965, 20175, 20385					
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	1711.5	-16.00	21.60	1.00	22.60	30.00	-7.40
2	1732.5	-15.90	21.80	1.00	22.80	30.00	-7.20
3	1753.5	-15.70	22.00	1.10	23.10	30.00	-6.90
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	1711.5	-20.80	17.80	1.00	18.80	30.00	-11.20
2	1732.5	-20.20	18.30	1.00	19.30	30.00	-10.70
3	1753.5	-20.60	17.70	1.10	18.80	30.00	-11.20

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

LTE Band 4, Channel Bandwidth: 5MHz

Mode		TX channel 19975, 20175, 20375					
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	1712.5	-15.60	22.00	1.00	23.00	30.00	-7.00
2	1732.5	-15.20	22.50	1.00	23.50	30.00	-6.50
3	1752.5	-15.80	21.90	1.10	23.00	30.00	-7.00
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	1712.5	-20.40	18.20	1.00	19.20	30.00	-10.80
2	1732.5	-19.90	18.60	1.00	19.60	30.00	-10.40
3	1752.5	-20.00	18.30	1.10	19.40	30.00	-10.60

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

LTE Band 4, Channel Bandwidth: 10MHz

Mode		TX channel 20000, 20175, 20350					
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	1715.0	-15.50	22.10	1.00	23.10	30.00	-6.90
2	1732.5	-15.60	22.10	1.00	23.10	30.00	-6.90
3	1750.0	-15.70	21.90	1.10	23.00	30.00	-7.00
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	1715.0	-20.50	18.00	1.00	19.00	30.00	-11.00
2	1732.5	-20.30	18.20	1.00	19.20	30.00	-10.80
3	1750.0	-20.50	17.80	1.10	18.90	30.00	-11.10

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

LTE Band 4, Channel Bandwidth: 15MHz

Mode		TX channel 20025, 20175, 20325					
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	1717.5	-15.90	21.70	1.00	22.70	30.00	-7.30
2	1732.5	-15.40	22.30	1.00	23.30	30.00	-6.70
3	1747.5	-15.80	21.90	1.00	22.90	30.00	-7.10
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	1717.5	-20.50	18.00	1.00	19.00	30.00	-11.00
2	1732.5	-20.40	18.10	1.00	19.10	30.00	-10.90
3	1747.5	-20.40	17.90	1.10	19.00	30.00	-11.00

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

LTE Band 4, Channel Bandwidth: 20MHz

Mode		TX channel 20050, 20175, 20300					
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	1720.0	-15.70	21.90	1.00	22.90	30.00	-7.10
2	1732.5	-15.30	22.40	1.00	23.40	30.00	-6.60
3	1745.0	-15.70	22.00	1.00	23.00	30.00	-7.00
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	1720.0	-20.90	17.60	1.00	18.60	30.00	-11.40
2	1732.5	-20.70	17.80	1.00	18.80	30.00	-11.20
3	1745.0	-20.10	18.30	1.00	19.30	30.00	-10.70

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

LTE Band 12, Channel Bandwidth: 1.4MHz

MODE		TX channel 23017, 23095, 23173					
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	699.7	-12.00	16.20	-0.50	15.70	34.80	-19.10
2	707.5	-12.40	16.10	-0.50	15.60	34.80	-19.20
3	715.3	-12.60	15.90	-0.50	15.40	34.80	-19.40
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	699.7	-20.10	11.20	-0.50	10.70	34.80	-24.10
2	707.5	-20.90	10.70	-0.50	10.20	34.80	-24.60
3	715.3	-20.90	11.00	-0.50	10.50	34.80	-24.30

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

LTE Band 12, Channel Bandwidth: 3MHz

MODE		TX channel 23025, 23095, 23165					
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	700.5	-12.40	15.80	-0.50	15.30	34.80	-19.50
2	707.5	-12.80	15.70	-0.50	15.20	34.80	-19.60
3	714.5	-12.20	16.20	-0.50	15.70	34.80	-19.10
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	700.5	-20.40	10.90	-0.50	10.40	34.80	-24.40
2	707.5	-20.60	11.00	-0.50	10.50	34.80	-24.30
3	714.5	-20.60	11.20	-0.50	10.70	34.80	-24.10

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

LTE Band 12, Channel Bandwidth: 5MHz

MODE		TX channel 23035, 23095, 23155					
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	701.5	-12.20	16.10	-0.50	15.60	34.80	-19.20
2	707.5	-12.70	15.80	-0.50	15.30	34.80	-19.50
3	713.5	-12.00	16.40	-0.50	15.90	34.80	-18.90
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	701.5	-20.10	11.10	-0.50	10.60	34.80	-24.20
2	707.5	-21.00	10.60	-0.50	10.10	34.80	-24.70
3	713.5	-20.80	10.80	-0.50	10.30	34.80	-24.50

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

LTE Band 12, Channel Bandwidth: 10MHz

MODE		TX channel 23060, 23095, 23130					
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	704.0	-13.10	15.50	-0.50	15.00	34.80	-19.80
2	707.5	-12.50	16.00	-0.50	15.50	34.80	-19.30
3	711.0	-12.20	16.10	-0.50	15.60	34.80	-19.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	704.0	-21.10	10.50	-0.50	10.00	34.80	-24.80
2	707.5	-20.70	10.90	-0.50	10.40	34.80	-24.40
3	711.0	-20.70	10.90	-0.50	10.40	34.80	-24.40

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

LTE Band 13, Channel Bandwidth: 5MHz

MODE		TX channel 23205, 23230, 23255					
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	779.5	-14.50	16.50	-0.50	16.00	34.80	-18.80
2	782.0	-14.30	16.70	-0.50	16.20	34.80	-18.60
3	784.5	-14.30	16.70	-0.40	16.30	34.80	-18.50
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	779.5	-25.10	7.40	-0.50	6.90	34.80	-27.90
2	782.0	-25.40	6.80	-0.50	6.30	34.80	-28.50
3	784.5	-25.10	7.10	-0.40	6.70	34.80	-28.10

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

LTE Band 13, Channel Bandwidth: 10MHz

MODE		TX channel 23230					
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	782.0	-14.30	16.70	-0.50	16.20	34.80	-18.60
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	782.0	-24.90	7.30	-0.50	6.80	34.80	-28.00

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

LTE Band 66, Channel Bandwidth: 1.4MHz

MODE	TX channel 131979, 132322, 132665						
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	1710.7	-15.00	22.50	1.00	23.50	30.00	-6.50
2	1745.0	-15.30	22.40	1.00	23.40	30.00	-6.60
3	1779.3	-15.70	22.10	1.10	23.20	30.00	-6.80
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	1710.7	-22.20	16.40	1.00	17.40	30.00	-12.60
2	1745.0	-22.40	16.00	1.00	17.00	30.00	-13.00
3	1779.3	-22.20	16.00	1.10	17.10	30.00	-12.90

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

LTE Band 66, Channel Bandwidth: 3MHz

MODE	TX channel 131987, 132322, 132657						
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	1711.5	-15.20	22.40	1.00	23.40	30.00	-6.60
2	1745.0	-15.40	22.30	1.00	23.30	30.00	-6.70
3	1778.5	-15.20	22.60	1.10	23.70	30.00	-6.30
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	1711.5	-22.00	16.60	1.00	17.60	30.00	-12.40
2	1745.0	-22.20	16.20	1.00	17.20	30.00	-12.80
3	1778.5	-21.90	16.30	1.10	17.40	30.00	-12.60

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

LTE Band 66, Channel Bandwidth: 5MHz

MODE	TX channel 131997, 132322, 132647						
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	1712.5	-15.80	21.80	1.00	22.80	30.00	-7.20
2	1745.0	-15.80	21.90	1.00	22.90	30.00	-7.10
3	1777.5	-15.50	22.30	1.10	23.40	30.00	-6.60
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	1712.5	-22.30	16.30	1.00	17.30	30.00	-12.70
2	1745.0	-22.40	16.00	1.00	17.00	30.00	-13.00
3	1777.5	-22.10	16.10	1.10	17.20	30.00	-12.80

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

LTE Band 66, Channel Bandwidth: 10MHz

MODE		TX channel 132022, 132322, 132622					
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	1715.0	-15.40	22.20	1.00	23.20	30.00	-6.80
2	1745.0	-15.80	21.90	1.00	22.90	30.00	-7.10
3	1775.0	-15.90	21.90	1.10	23.00	30.00	-7.00
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	1715.0	-21.90	16.60	1.00	17.60	30.00	-12.40
2	1745.0	-22.20	16.20	1.00	17.20	30.00	-12.80
3	1775.0	-22.10	16.10	1.10	17.20	30.00	-12.80

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

LTE Band 66, Channel Bandwidth: 15MHz

MODE		TX channel 132047, 132322, 132597					
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	1717.5	-15.70	21.90	1.00	22.90	30.00	-7.10
2	1745.0	-15.70	22.00	1.00	23.00	30.00	-7.00
3	1772.5	-15.50	22.30	1.10	23.40	30.00	-6.60
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	1717.5	-22.20	16.30	1.00	17.30	30.00	-12.70
2	1745.0	-21.80	16.60	1.00	17.60	30.00	-12.40
3	1772.5	-22.40	15.80	1.10	16.90	30.00	-13.10

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

LTE Band 66, Channel Bandwidth: 20MHz

MODE		TX channel 132072, 132322, 132572					
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	1720.0	-15.40	22.20	1.00	23.20	30.00	-6.80
2	1745.0	-15.60	22.10	1.00	23.10	30.00	-6.90
3	1770.0	-15.20	22.50	1.10	23.60	30.00	-6.40
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	1720.0	-22.20	16.30	1.00	17.30	30.00	-12.70
2	1745.0	-21.80	16.60	1.00	17.60	30.00	-12.40
3	1770.0	-22.00	16.20	1.10	17.30	30.00	-12.70

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

Modulation Type: 64QAM

LTE Band 4, Channel Bandwidth: 1.4MHz

Mode	TX channel 19957, 20175, 20393						
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	1710.7	-15.80	21.70	1.00	22.70	30.00	-7.30
2	1732.5	-16.20	21.50	1.00	22.50	30.00	-7.50
3	1754.3	-16.20	21.50	1.10	22.60	30.00	-7.40
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	1710.7	-21.40	17.20	1.00	18.20	30.00	-11.80
2	1732.5	-20.80	17.70	1.00	18.70	30.00	-11.30
3	1754.3	-20.90	17.40	1.10	18.50	30.00	-11.50

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

LTE Band 4, Channel Bandwidth: 3MHz

Mode	TX channel 19965, 20175, 20385						
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	1711.5	-16.40	21.20	1.00	22.20	30.00	-7.80
2	1732.5	-16.40	21.30	1.00	22.30	30.00	-7.70
3	1753.5	-16.30	21.40	1.10	22.50	30.00	-7.50
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	1711.5	-21.60	17.00	1.00	18.00	30.00	-12.00
2	1732.5	-21.00	17.50	1.00	18.50	30.00	-11.50
3	1753.5	-21.30	17.00	1.10	18.10	30.00	-11.90

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

LTE Band 4, Channel Bandwidth: 5MHz

Mode	TX channel 19975, 20175, 20375						
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	1712.5	-16.10	21.50	1.00	22.50	30.00	-7.50
2	1732.5	-15.70	22.00	1.00	23.00	30.00	-7.00
3	1752.5	-16.20	21.50	1.10	22.60	30.00	-7.40
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	1712.5	-21.00	17.60	1.00	18.60	30.00	-11.40
2	1732.5	-20.40	18.10	1.00	19.10	30.00	-10.90
3	1752.5	-20.60	17.70	1.10	18.80	30.00	-11.20

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

LTE Band 4, Channel Bandwidth: 10MHz

Mode		TX channel 20000, 20175, 20350					
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	1715.0	-16.20	21.40	1.00	22.40	30.00	-7.60
2	1732.5	-16.00	21.70	1.00	22.70	30.00	-7.30
3	1750.0	-16.20	21.40	1.10	22.50	30.00	-7.50
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	1715.0	-21.10	17.40	1.00	18.40	30.00	-11.60
2	1732.5	-21.20	17.30	1.00	18.30	30.00	-11.70
3	1750.0	-21.10	17.20	1.10	18.30	30.00	-11.70

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

LTE Band 4, Channel Bandwidth: 15MHz

Mode		TX channel 20025, 20175, 20325					
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	1717.5	-16.50	21.10	1.00	22.10	30.00	-7.90
2	1732.5	-15.90	21.80	1.00	22.80	30.00	-7.20
3	1747.5	-16.40	21.20	1.10	22.30	30.00	-7.70
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	1717.5	-21.10	17.40	1.00	18.40	30.00	-11.60
2	1732.5	-21.10	17.40	1.00	18.40	30.00	-11.60
3	1747.5	-21.00	17.30	1.10	18.40	30.00	-11.60

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

LTE Band 4, Channel Bandwidth: 20MHz

Mode		TX channel 20050, 20175, 20300					
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	1720.0	-16.10	21.50	1.00	22.50	30.00	-7.50
2	1732.5	-15.70	22.00	1.00	23.00	30.00	-7.00
3	1745.0	-16.40	21.30	1.00	22.30	30.00	-7.70
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	1720.0	-21.30	17.20	1.00	18.20	30.00	-11.80
2	1732.5	-21.00	17.50	1.00	18.50	30.00	-11.50
3	1745.0	-20.50	17.90	1.00	18.90	30.00	-11.10

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

LTE Band 12, Channel Bandwidth: 1.4MHz

MODE		TX channel 23017, 23095, 23173					
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	699.7	-12.90	15.30	-0.50	14.80	34.80	-20.00
2	707.5	-13.10	15.40	-0.50	14.90	34.80	-19.90
3	715.3	-13.60	14.90	-0.50	14.40	34.80	-20.40
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	699.7	-20.90	10.30	-0.50	9.80	34.80	-25.00
2	707.5	-22.00	9.60	-0.50	9.10	34.80	-25.70
3	715.3	-21.80	10.10	-0.50	9.60	34.80	-25.20

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

LTE Band 12, Channel Bandwidth: 3MHz

MODE		TX channel 23025, 23095, 23165					
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	700.5	-13.30	14.90	-0.50	14.40	34.80	-20.40
2	707.5	-13.80	14.70	-0.50	14.20	34.80	-20.60
3	714.5	-13.30	15.10	-0.50	14.60	34.80	-20.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.5	-21.20	10.00	-0.50	9.50	34.80	-25.30
2	707.5	-21.40	10.20	-0.50	9.70	34.80	-25.10
3	714.5	-21.40	10.30	-0.50	9.80	34.80	-25.00

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

LTE Band 12, Channel Bandwidth: 5MHz

MODE		TX channel 23035, 23095, 23155					
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	701.5	-12.90	15.30	-0.50	14.80	34.80	-20.00
2	707.5	-13.60	14.90	-0.50	14.40	34.80	-20.40
3	713.5	-13.00	15.40	-0.50	14.90	34.80	-19.90
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	701.5	-21.10	10.20	-0.50	9.70	34.80	-25.10
2	707.5	-21.90	9.70	-0.50	9.20	34.80	-25.60
3	713.5	-21.60	10.00	-0.50	9.50	34.80	-25.30

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

LTE Band 12, Channel Bandwidth: 10MHz

MODE		TX channel 23060, 23095, 23130					
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	704.0	-14.10	14.50	-0.50	14.00	34.80	-20.80
2	707.5	-13.60	14.90	-0.50	14.40	34.80	-20.40
3	711.0	-13.40	14.80	-0.50	14.30	34.80	-20.50
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	704.0	-22.10	9.50	-0.50	9.00	34.80	-25.80
2	707.5	-21.60	10.00	-0.50	9.50	34.80	-25.30
3	711.0	-21.70	9.90	-0.50	9.40	34.80	-25.40

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

LTE Band 13, Channel Bandwidth: 5MHz

MODE		TX channel 23205, 23230, 23255					
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	779.5	-15.50	15.50	-0.50	15.00	34.80	-19.80
2	782.0	-15.20	15.80	-0.50	15.30	34.80	-19.50
3	784.5	-15.40	15.60	-0.40	15.20	34.80	-19.60
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	779.5	-26.50	6.00	-0.50	5.50	34.80	-29.30
2	782.0	-26.40	5.90	-0.50	5.40	34.80	-29.40
3	784.5	-25.90	6.20	-0.40	5.80	34.80	-29.00

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

LTE Band 13, Channel Bandwidth: 10MHz

MODE		TX channel 23230					
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	782.0	-15.20	15.80	-0.50	15.30	34.80	-19.50
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	782.0	-25.90	6.40	-0.50	5.90	34.80	-28.90

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

LTE Band 66, Channel Bandwidth: 1.4MHz

MODE		TX channel 131979, 132322, 132665					
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	1710.7	-16.30	21.20	1.00	22.20	30.00	-7.80
2	1745.0	-15.70	22.00	1.00	23.00	30.00	-7.00
3	1779.3	-16.20	21.60	1.10	22.70	30.00	-7.30
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	1710.7	-23.00	15.60	1.00	16.60	30.00	-13.40
2	1745.0	-22.90	15.50	1.00	16.50	30.00	-13.50
3	1779.3	-22.70	15.50	1.10	16.60	30.00	-13.40

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

LTE Band 66, Channel Bandwidth: 3MHz

MODE		TX channel 131987, 132322, 132657					
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	1711.5	-15.90	21.70	1.00	22.70	30.00	-7.30
2	1745.0	-15.60	22.10	1.00	23.10	30.00	-6.90
3	1778.5	-16.50	21.30	1.10	22.40	30.00	-7.60
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	1711.5	-22.80	15.80	1.00	16.80	30.00	-13.20
2	1745.0	-23.10	15.30	1.00	16.30	30.00	-13.70
3	1778.5	-22.90	15.30	1.10	16.40	30.00	-13.60

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

LTE Band 66, Channel Bandwidth: 5MHz

MODE		TX channel 131997, 132322, 132647					
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	1712.5	-15.60	22.00	1.00	23.00	30.00	-7.00
2	1745.0	-15.80	21.90	1.00	22.90	30.00	-7.10
3	1777.5	-16.40	21.40	1.10	22.50	30.00	-7.50
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	1712.5	-22.60	16.00	1.00	17.00	30.00	-13.00
2	1745.0	-22.40	16.00	1.00	17.00	30.00	-13.00
3	1777.5	-23.10	15.10	1.10	16.20	30.00	-13.80

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

LTE Band 66, Channel Bandwidth: 10MHz

MODE		TX channel 132022, 132322, 132622					
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	1715.0	-15.50	22.10	1.00	23.10	30.00	-6.90
2	1745.0	-16.20	21.50	1.00	22.50	30.00	-7.50
3	1775.0	-15.90	21.90	1.10	23.00	30.00	-7.00
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	1715.0	-23.00	15.50	1.00	16.50	30.00	-13.50
2	1745.0	-22.50	15.90	1.00	16.90	30.00	-13.10
3	1775.0	-22.50	15.70	1.10	16.80	30.00	-13.20

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

LTE Band 66, Channel Bandwidth: 15MHz

MODE		TX channel 132047, 132322, 132597					
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	1717.5	-16.60	21.00	1.00	22.00	30.00	-8.00
2	1745.0	-16.40	21.30	1.00	22.30	30.00	-7.70
3	1772.5	-15.90	21.90	1.10	23.00	30.00	-7.00
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	1717.5	-22.30	16.20	1.00	17.20	30.00	-12.80
2	1745.0	-22.80	15.60	1.00	16.60	30.00	-13.40
3	1772.5	-22.20	16.00	1.10	17.10	30.00	-12.90

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

LTE Band 66, Channel Bandwidth: 20MHz

MODE		TX channel 132072, 132322, 132572					
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	1720.0	-16.00	21.60	1.00	22.60	30.00	-7.40
2	1745.0	-15.80	21.90	1.00	22.90	30.00	-7.10
3	1770.0	-16.10	21.60	1.10	22.70	30.00	-7.30
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	1720.0	-23.30	15.20	1.00	16.20	30.00	-13.80
2	1745.0	-23.10	15.30	1.00	16.30	30.00	-13.70
3	1770.0	-22.50	15.70	1.10	16.80	30.00	-13.20

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

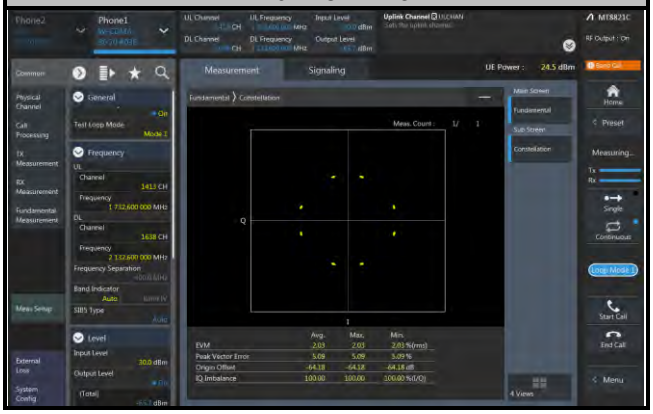
4.2.2 Test Setup

4.2.3 Test Procedure

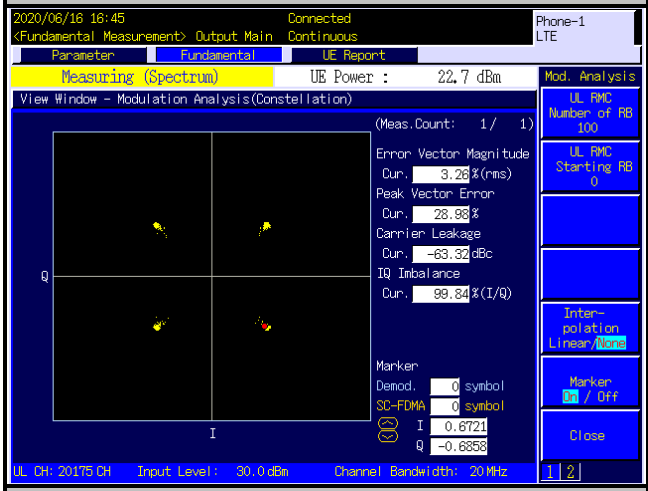
Connect the EUT to Communication Simulator via the antenna connector. The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

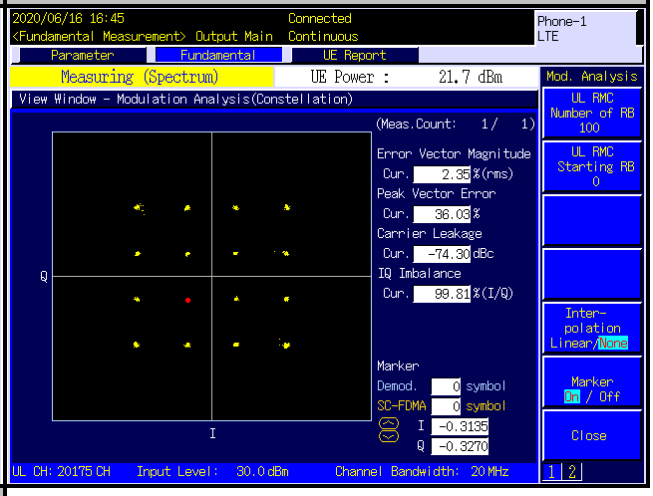
4.2.4 Test Results

Spectrum Plot of Measurement
WCDMA
Channel 1413

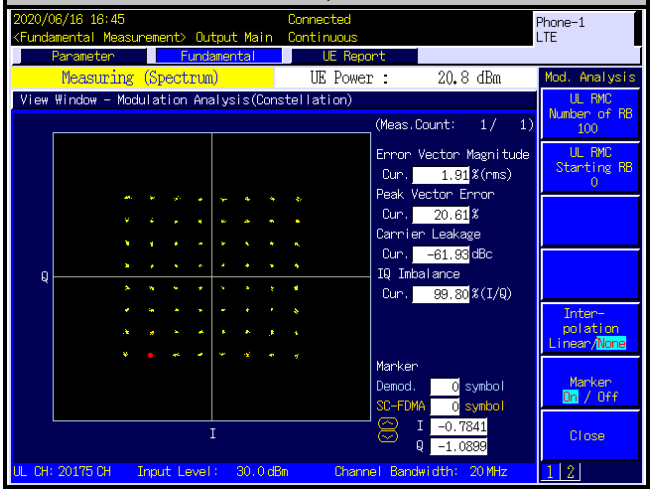


Spectrum Plot of Measurement	
LTE Band 4	
Channel 20175	
QPSK	16QAM





64QAM

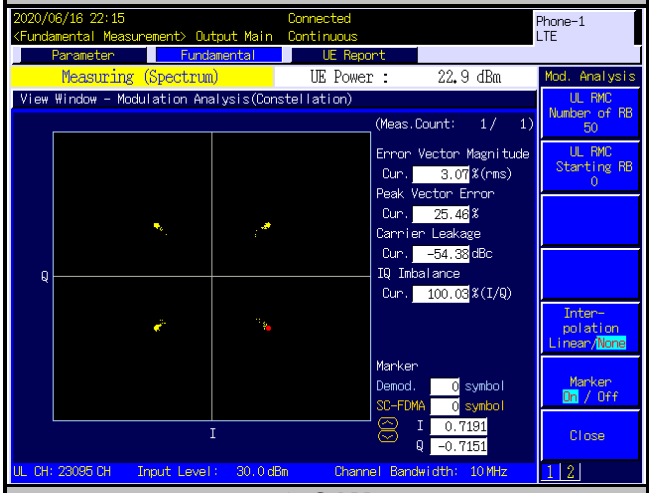


Spectrum Plot of Measurement

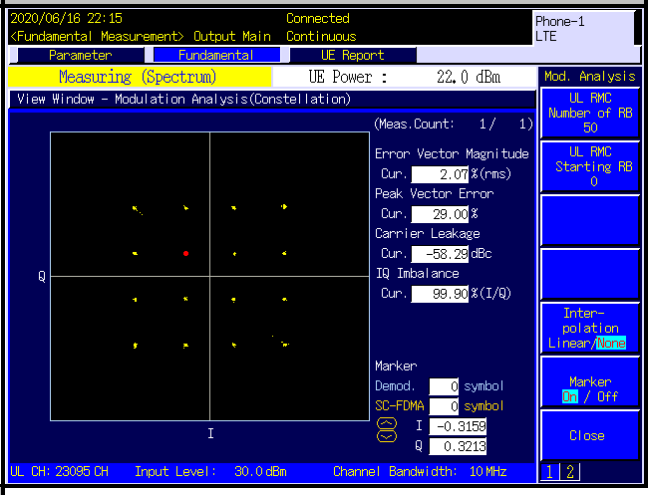
LTE Band 12

Channel 23095

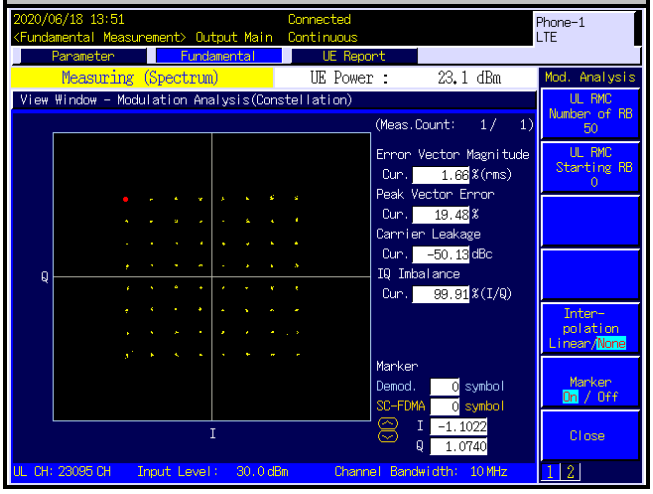
QPSK



16QAM



64QAM

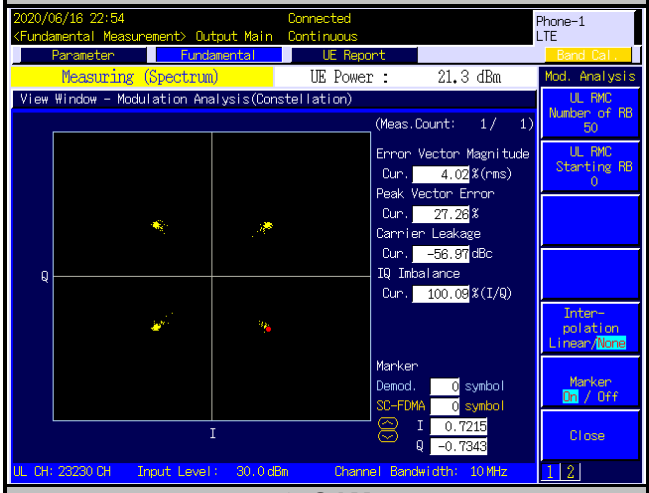


Spectrum Plot of Measurement

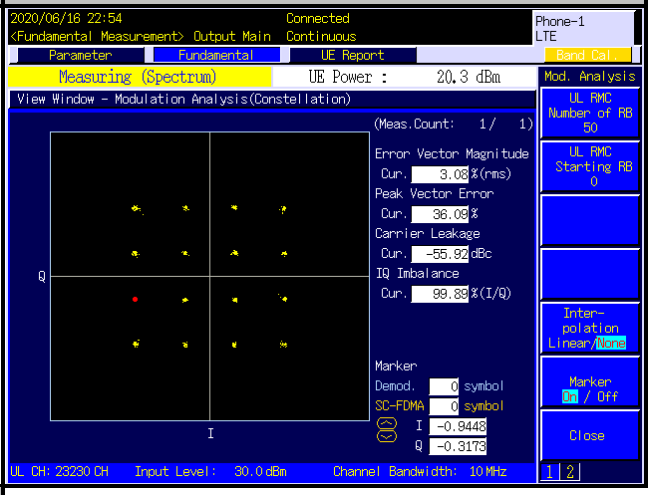
LTE Band 13

Channel 23230

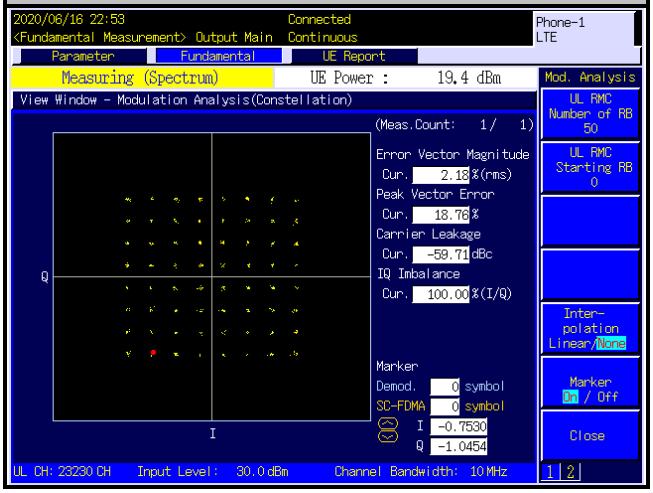
QPSK



16QAM



64QAM

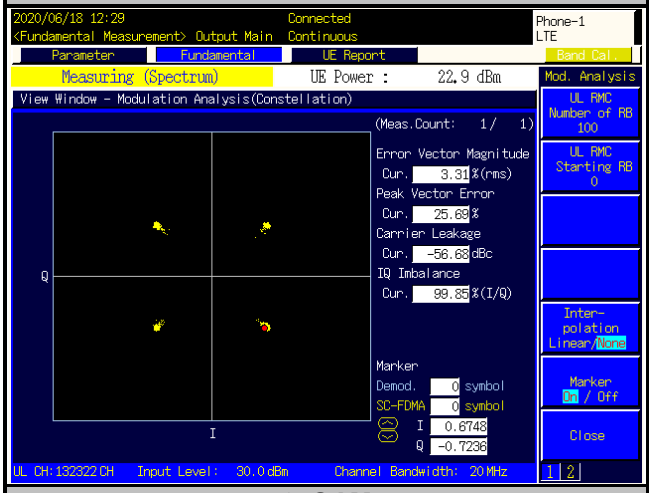


Spectrum Plot of Measurement

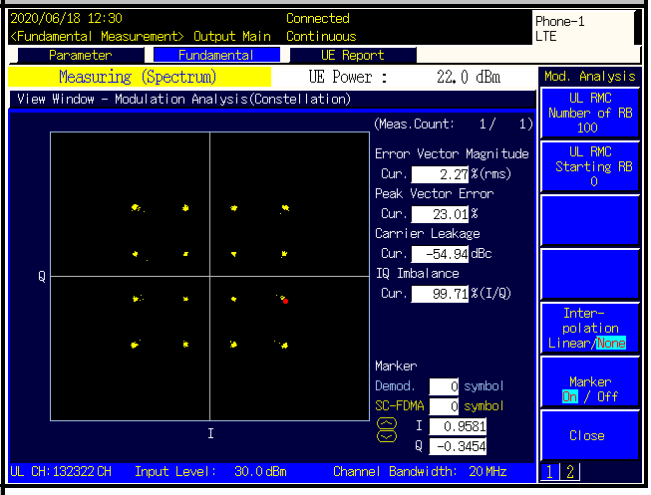
LTE Band 66

Channel 132322

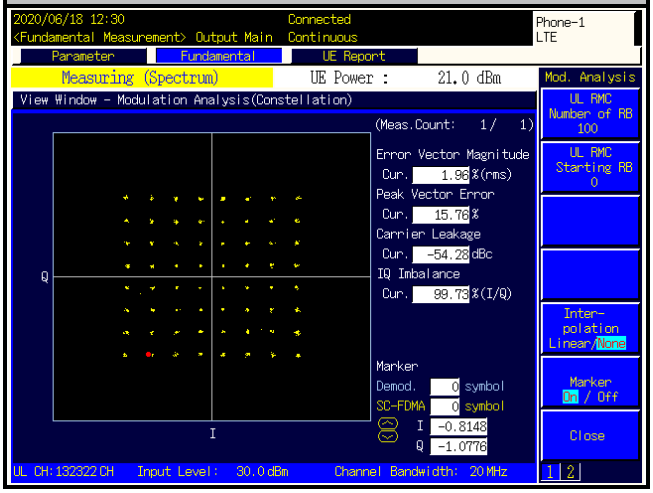
QPSK



16QAM



64QAM



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

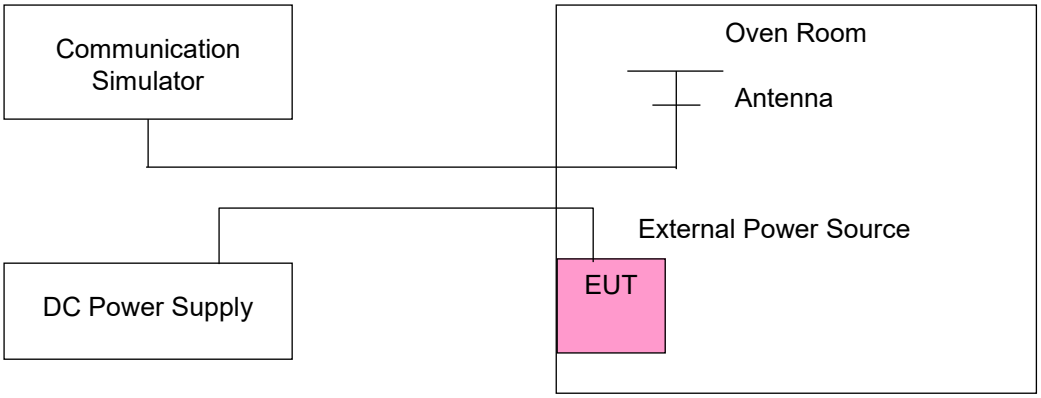
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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)	WCDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.400003	0.002	1752.600002	0.001
3.23	1712.400001	0.001	1752.600003	0.002
4.37	1712.400001	0.001	1752.600003	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.400004	0.002	1752.600001	0.001
-20	1712.400002	0.001	1752.600003	0.002
-10	1712.400003	0.002	1752.600003	0.002
0	1712.399998	-0.001	1752.599997	-0.002
10	1712.399997	-0.002	1752.599999	-0.001
20	1712.399998	-0.001	1752.599998	-0.001
30	1712.399997	-0.002	1752.599997	-0.002
40	1712.399999	-0.001	1752.599997	-0.002
50	1712.399997	-0.002	1752.599997	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1710.700002	0.001	1754.300003	0.002
3.23	1710.700002	0.001	1754.300001	0.001
4.37	1710.700004	0.002	1754.300001	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700004	0.002	1754.300002	0.001
-20	1710.700003	0.002	1754.300004	0.002
-10	1710.700004	0.002	1754.300002	0.001
0	1710.699996	-0.002	1754.299998	-0.001
10	1710.699999	-0.001	1754.299999	-0.001
20	1710.699996	-0.002	1754.299998	-0.001
30	1710.699997	-0.002	1754.299998	-0.001
40	1710.699998	-0.001	1754.299999	-0.001
50	1710.699997	-0.002	1754.299998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1711.500003	0.002	1753.500002	0.001
3.23	1711.500002	0.001	1753.500004	0.002
4.37	1711.500003	0.002	1753.500003	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500002	0.001	1753.500002	0.001
-20	1711.500003	0.002	1753.500002	0.001
-10	1711.500001	0.001	1753.500002	0.001
0	1711.499997	-0.002	1753.499997	-0.002
10	1711.499999	-0.001	1753.499997	-0.002
20	1711.499998	-0.001	1753.499997	-0.002
30	1711.499999	-0.001	1753.499997	-0.002
40	1711.499998	-0.001	1753.499996	-0.002
50	1711.499998	-0.001	1753.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.500001	0.001	1752.500003	0.002
3.23	1712.500001	0.001	1752.500003	0.002
4.37	1712.500001	0.001	1752.500004	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500002	0.001	1752.500003	0.002
-20	1712.500001	0.001	1752.500004	0.002
-10	1712.500002	0.001	1752.500002	0.001
0	1712.499997	-0.002	1752.499998	-0.001
10	1712.499997	-0.002	1752.499997	-0.002
20	1712.499997	-0.002	1752.499999	-0.001
30	1712.499996	-0.002	1752.499999	-0.001
40	1712.499997	-0.002	1752.499998	-0.001
50	1712.499998	-0.001	1752.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1715.000004	0.002	1750.000003	0.002
3.23	1715.000003	0.002	1750.000002	0.001
4.37	1715.000004	0.002	1750.000002	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1715.000003	0.001	1750.000004	0.002
-20	1715.000004	0.002	1750.000002	0.001
-10	1715.000003	0.002	1750.000001	0.001
0	1714.999997	-0.002	1749.999998	-0.001
10	1714.999999	-0.001	1749.999997	-0.002
20	1714.999996	-0.002	1749.999996	-0.002
30	1714.999997	-0.002	1749.999996	-0.002
40	1714.999997	-0.002	1749.999999	-0.001
50	1714.999997	-0.002	1749.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1717.500002	0.001	1747.500002	0.001
3.23	1717.500001	0.001	1747.500003	0.002
4.37	1717.500004	0.002	1747.500002	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500003	0.002	1747.500003	0.002
-20	1717.500003	0.002	1747.500002	0.001
-10	1717.500001	0.001	1747.500001	0.001
0	1717.499999	-0.001	1747.499997	-0.002
10	1717.499998	-0.001	1747.499998	-0.001
20	1717.499998	-0.001	1747.499999	-0.001
30	1717.499996	-0.002	1747.499996	-0.002
40	1717.499999	-0.001	1747.499997	-0.002
50	1717.499996	-0.002	1747.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1720.000002	0.001	1745.000002	0.001
3.23	1720.000002	0.001	1745.000002	0.001
4.37	1720.000003	0.002	1745.000004	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000002	0.001	1745.000002	0.001
-20	1720.000004	0.002	1745.000002	0.001
-10	1720.000002	0.001	1745.000001	0.001
0	1719.999997	-0.002	1744.999999	-0.001
10	1719.999999	-0.001	1744.999996	-0.002
20	1719.999999	-0.001	1744.999996	-0.002
30	1719.999996	-0.002	1744.999997	-0.002
40	1719.999996	-0.002	1744.999996	-0.002
50	1719.999998	-0.001	1744.999997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	699.700002	0.003	715.300004	0.005
3.23	699.700002	0.003	715.300002	0.003
4.37	699.700003	0.004	715.300002	0.003

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	699.700001	0.002	715.300001	0.001
-20	699.700002	0.003	715.300002	0.002
-10	699.700002	0.003	715.300001	0.002
0	699.699997	-0.004	715.299996	-0.005
10	699.699999	-0.002	715.299997	-0.005
20	699.699998	-0.003	715.299998	-0.003
30	699.699996	-0.005	715.299999	-0.002
40	699.699998	-0.003	715.299997	-0.005
50	699.699996	-0.005	715.299997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	700.500002	0.003	714.500003	0.004
3.23	700.500003	0.004	714.500001	0.001
4.37	700.500002	0.003	714.500003	0.004

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	700.500003	0.004	714.500003	0.004
-20	700.500002	0.003	714.500001	0.001
-10	700.500003	0.004	714.500003	0.004
0	700.499997	-0.005	714.499997	-0.004
10	700.499999	-0.002	714.499997	-0.005
20	700.499997	-0.004	714.499997	-0.004
30	700.499998	-0.002	714.499996	-0.005
40	700.499998	-0.003	714.499998	-0.002
50	700.499996	-0.006	714.499998	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	701.500003	0.004	713.500004	0.005
3.23	701.500001	0.001	713.500003	0.004
4.37	701.500002	0.002	713.500003	0.005

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	701.500003	0.004	713.500001	0.001
-20	701.500002	0.002	713.500003	0.004
-10	701.500002	0.002	713.500004	0.006
0	701.499999	-0.002	713.499996	-0.005
10	701.499997	-0.004	713.499996	-0.006
20	701.499997	-0.005	713.499996	-0.005
30	701.499997	-0.005	713.499999	-0.001
40	701.499998	-0.003	713.499998	-0.004
50	701.499998	-0.003	713.499997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	704.000001	0.001	711.000001	0.002
3.23	704.000002	0.003	711.000002	0.003
4.37	704.000003	0.004	711.000002	0.003

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	704.000004	0.006	711.000003	0.004
-20	704.000003	0.004	711.000003	0.005
-10	704.000002	0.003	711.000001	0.002
0	703.999997	-0.004	710.999999	-0.002
10	703.999999	-0.002	710.999998	-0.003
20	703.999997	-0.005	710.999997	-0.005
30	703.999998	-0.004	710.999996	-0.006
40	703.999997	-0.005	710.999998	-0.003
50	703.999996	-0.005	710.999998	-0.003

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 13			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	779.500003	0.004	784.500003	0.004
3.23	779.500003	0.003	784.500004	0.005
4.37	779.500003	0.004	784.500002	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 13			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	779.500004	0.005	784.500003	0.004
-20	779.500001	0.002	784.500002	0.003
-10	779.500002	0.003	784.500001	0.001
0	779.499999	-0.001	784.499998	-0.002
10	779.499997	-0.004	784.499999	-0.002
20	779.499997	-0.004	784.499999	-0.002
30	779.499997	-0.004	784.499997	-0.003
40	779.499997	-0.004	784.499999	-0.002
50	779.499997	-0.004	784.499997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 13	
	Channel Bandwidth: 10 MHz	
	Frequency (MHz)	Frequency Error (ppm)
3.8	782.000004	0.005
3.23	782.000004	0.005
4.37	782.000003	0.004

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 13	
	Channel Bandwidth: 10 MHz	
	Frequency (MHz)	Frequency Error (ppm)
-30	782.000003	0.004
-20	782.000001	0.002
-10	782.000003	0.004
0	781.999997	-0.004
10	781.999996	-0.005
20	781.999999	-0.002
30	781.999998	-0.002
40	781.999999	-0.002
50	781.999996	-0.005

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1710.700004	0.002	1779.300002	0.001
3.23	1710.700002	0.001	1779.300003	0.002
4.37	1710.700003	0.002	1779.300004	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700003	0.002	1779.300003	0.002
-20	1710.700003	0.002	1779.300002	0.001
-10	1710.700003	0.001	1779.300003	0.002
0	1710.699997	-0.002	1779.299996	-0.002
10	1710.699999	-0.001	1779.299997	-0.002
20	1710.699997	-0.002	1779.299998	-0.001
30	1710.699997	-0.002	1779.299997	-0.001
40	1710.699997	-0.002	1779.299997	-0.002
50	1710.699997	-0.002	1779.299997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1711.500001	0.001	1778.500002	0.001
3.23	1711.500002	0.001	1778.500003	0.002
4.37	1711.500001	0.001	1778.500001	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500002	0.001	1778.500003	0.001
-20	1711.500002	0.001	1778.500004	0.002
-10	1711.500001	0.001	1778.500004	0.002
0	1711.499997	-0.002	1778.499999	-0.001
10	1711.499997	-0.002	1778.499996	-0.002
20	1711.499997	-0.002	1778.499997	-0.002
30	1711.499997	-0.002	1778.499998	-0.001
40	1711.499999	-0.001	1778.499997	-0.001
50	1711.499999	-0.001	1778.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1712.500002	0.001	1777.500004	0.002
3.23	1712.500002	0.001	1777.500002	0.001
4.37	1712.500002	0.001	1777.500002	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500003	0.002	1777.500003	0.002
-20	1712.500001	0.001	1777.500003	0.001
-10	1712.500001	0.001	1777.500001	0.001
0	1712.499998	-0.001	1777.499998	-0.001
10	1712.499997	-0.002	1777.499997	-0.002
20	1712.499999	-0.001	1777.499998	-0.001
30	1712.499999	-0.001	1777.499997	-0.002
40	1712.499996	-0.002	1777.499997	-0.002
50	1712.499997	-0.002	1777.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1715.000003	0.002	1775.000002	0.001
3.23	1715.000002	0.001	1775.000004	0.002
4.37	1715.000003	0.002	1775.000003	0.001

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1715.000003	0.002	1775.000003	0.001
-20	1715.000002	0.001	1775.000002	0.001
-10	1715.000003	0.002	1775.000004	0.002
0	1714.999998	-0.001	1774.999998	-0.001
10	1714.999999	-0.001	1774.999997	-0.002
20	1714.999999	-0.001	1774.999999	-0.001
30	1714.999998	-0.001	1774.999999	-0.001
40	1714.999997	-0.002	1774.999997	-0.002
50	1714.999998	-0.001	1774.999997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1717.500003	0.002	1772.500003	0.001
3.23	1717.500001	0.001	1772.500003	0.002
4.37	1717.500004	0.002	1772.500004	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500002	0.001	1772.500003	0.002
-20	1717.500003	0.002	1772.500003	0.001
-10	1717.500002	0.001	1772.500004	0.002
0	1717.499999	-0.001	1772.499996	-0.002
10	1717.499997	-0.002	1772.499998	-0.001
20	1717.499997	-0.002	1772.499997	-0.002
30	1717.499996	-0.002	1772.499999	-0.001
40	1717.499996	-0.002	1772.499999	-0.001
50	1717.499997	-0.002	1772.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.8	1720.000003	0.002	1770.000003	0.001
3.23	1720.000003	0.001	1770.000003	0.002
4.37	1720.000004	0.002	1770.000003	0.002

Note: The applicant defined the normal working voltage is from 3.23 Vdc to 4.37 Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000004	0.002	1770.000001	0.001
-20	1720.000004	0.002	1770.000004	0.002
-10	1720.000003	0.002	1770.000002	0.001
0	1719.999997	-0.002	1769.999996	-0.002
10	1719.999998	-0.001	1769.999998	-0.001
20	1719.999999	-0.001	1769.999999	-0.001
30	1719.999996	-0.002	1769.999998	-0.001
40	1719.999998	-0.001	1769.999997	-0.002
50	1719.999999	-0.001	1769.999998	-0.001

4.4 Occupied Bandwidth Measurement

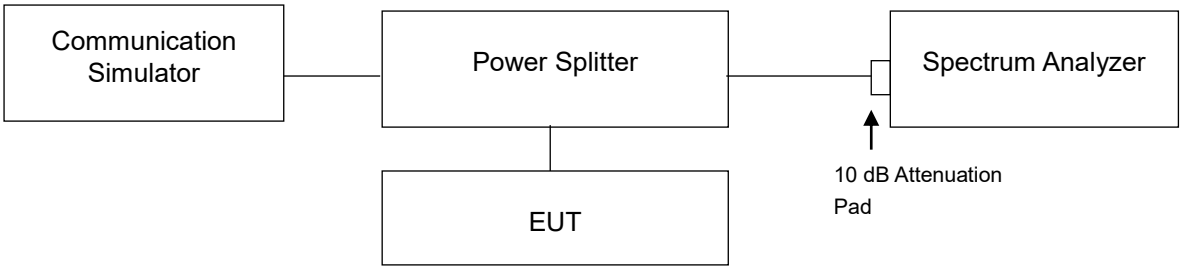
4.4.1 Limits of Occupied Bandwidth Measurement

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.2 Test Procedure

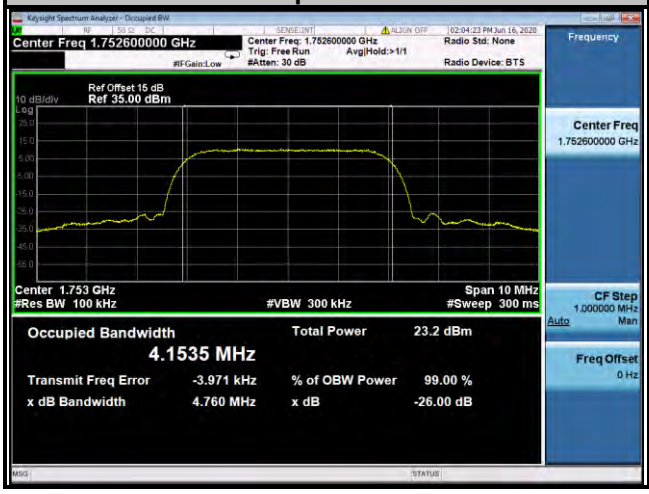
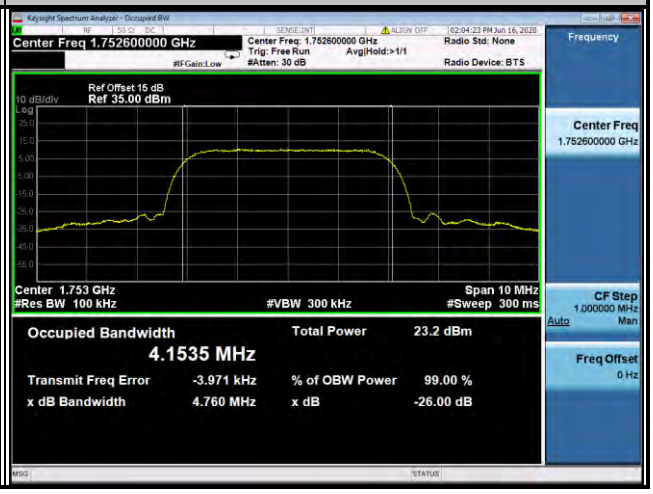
a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.3 Test Setup



4.4.4 Test Result

WCDMA			
Channel	**Frequency (MHz)**	**99 % Occupied Bandwidth (MHz)**	**26 dB Bandwidth (MHz)**
1312	1712.4	4.1407	4.725
1413	1732.6	4.1449	4.732
1513	1752.6	4.1535	4.760

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	**26 dB Bandwidth**
	

LTE Band 4							
Channel Bandwidth: 1.4 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
19957	1710.7	1.0864	1.0875	1.0888	1.216	1.215	1.217
20175	1732.5	1.0851	1.0868	1.0874	1.226	1.216	1.217
20393	1754.3	1.0874	1.0878	1.0886	1.235	1.220	1.213
Channel Bandwidth: 3 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
19965	1711.5	2.7014	2.6975	2.6984	2.927	2.930	2.912
20175	1732.5	2.7018	2.6987	2.6981	2.929	2.929	2.913
20385	1753.5	2.7038	2.6990	2.6972	2.942	2.930	2.900

Spectrum Plot of Worst Value

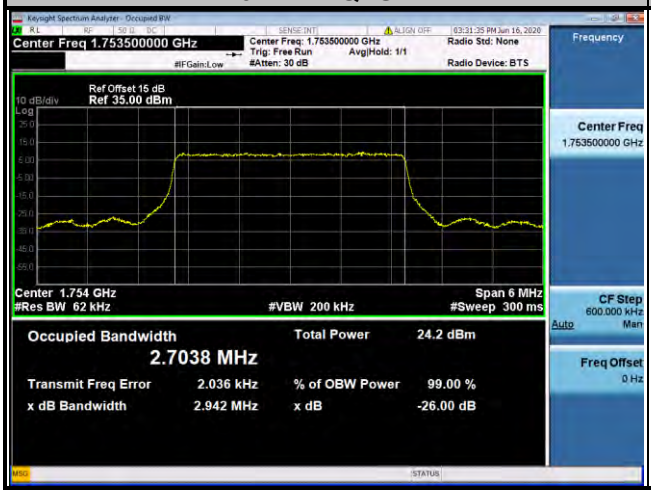
99 % Occupied Bandwidth

1.4 MHz / 64QAM

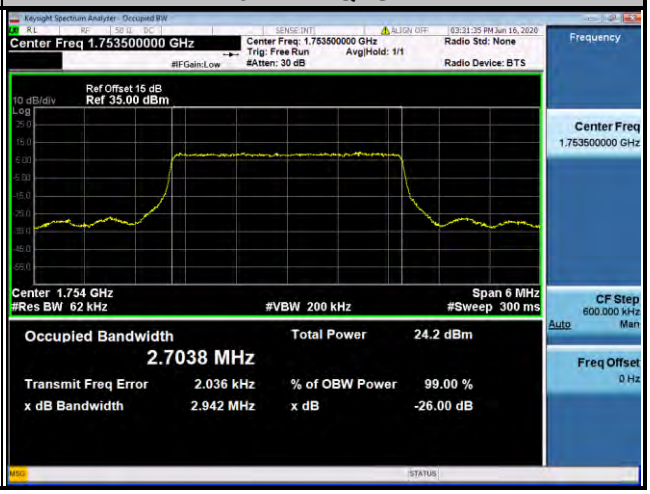
26 dB Bandwidth

1.4 MHz / QPSK

3 MHz / QPSK

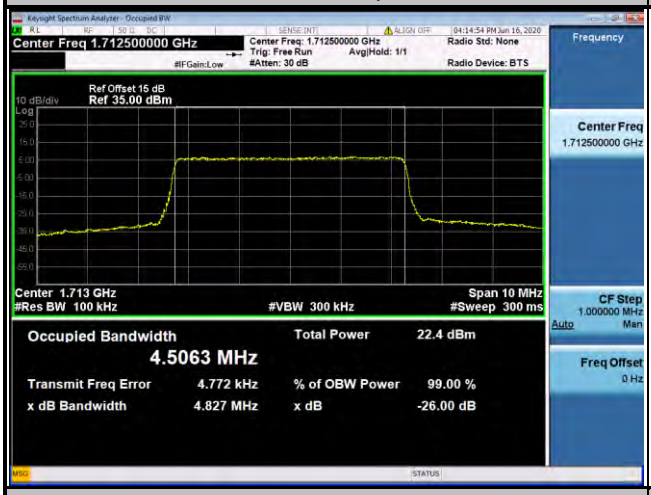
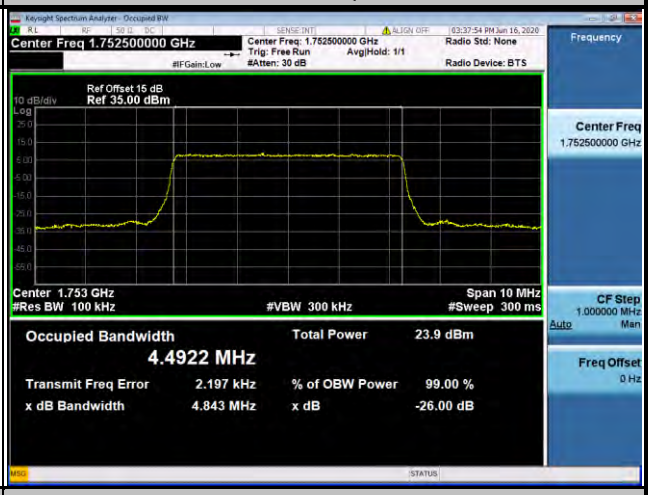


3 MHz / QPSK



LTE Band 4							
Channel Bandwidth: 5 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
19975	1712.5	4.4928	4.4962	4.5063	4.828	4.805	4.827
20175	1732.5	4.4917	4.4965	4.5027	4.821	4.813	4.829
20375	1752.5	4.4922	4.4940	4.5027	4.843	4.809	4.828
Channel Bandwidth: 10 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20000	1715.0	8.9657	8.9700	8.9719	9.537	9.518	9.512
20175	1732.5	8.9730	8.9764	8.9801	9.528	9.530	9.509
20350	1750.0	8.9659	8.9677	8.9755	9.535	9.517	9.530

Spectrum Plot of Worst Value

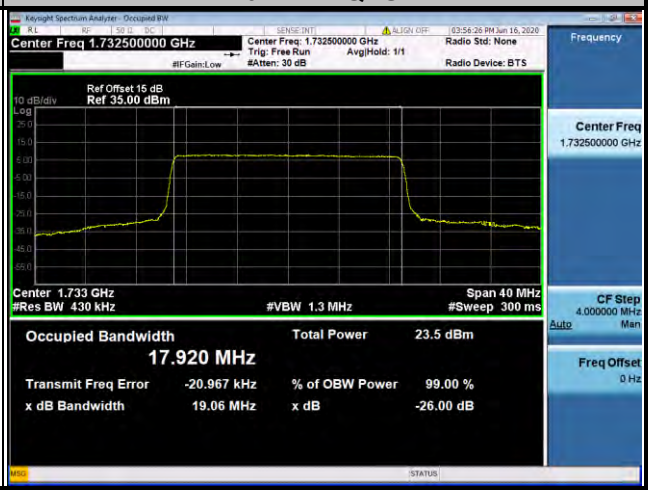
99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / 64QAM	**5 MHz / QPSK**
	
10 MHz / 64QAM	**10 MHz / QPSK**

LTE Band 4							
Channel Bandwidth: 15 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20025	1717.5	13.435	13.429	13.422	14.27	14.24	14.23
20175	1732.5	13.458	13.447	13.440	14.28	14.25	14.24
20325	1747.5	13.452	13.442	13.436	14.30	14.25	14.24
Channel Bandwidth: 20 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
20050	1720.0	17.889	17.908	17.905	19.03	19.01	19.01
20175	1732.5	17.920	17.947	17.942	19.06	19.04	19.04
20300	1745.0	17.922	17.945	17.938	19.04	19.03	19.04

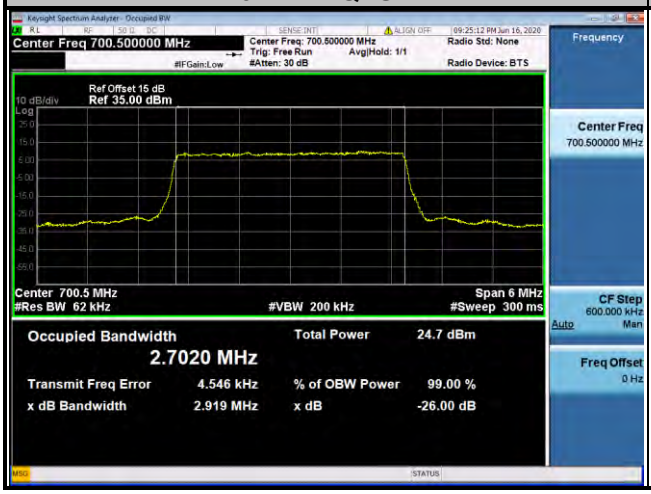
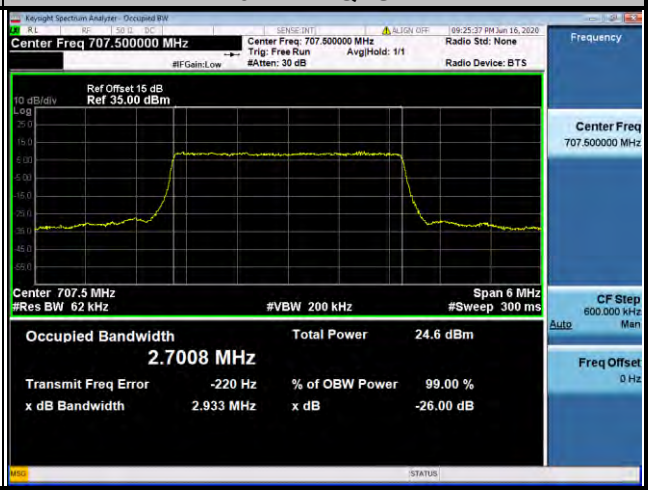
Spectrum Plot of Worst Value

99 % Occupied Bandwidth	26 dB Bandwidth
15 MHz / QPSK	15 MHz / QPSK

20 MHz / 16QAM	20 MHz / QPSK



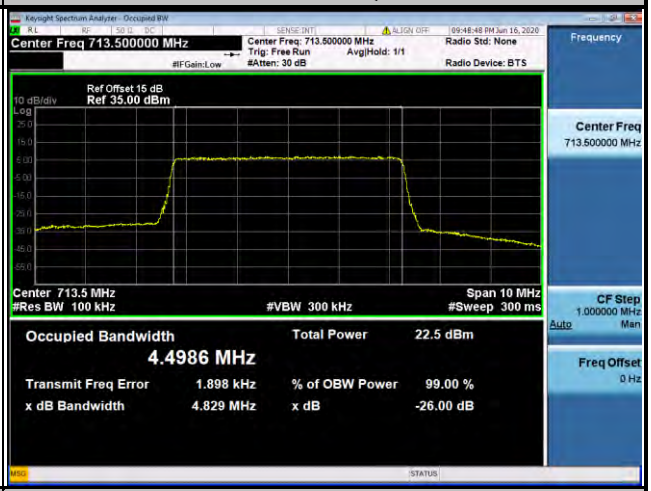
LTE Band 12							
Channel Bandwidth: 1.4 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23017	699.7	1.0888	1.0899	1.0883	1.215	1.218	1.217
23095	707.5	1.0860	1.0901	1.0893	1.215	1.215	1.213
23173	715.3	1.0870	1.0886	1.0870	1.213	1.213	1.217
Channel Bandwidth: 3 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23025	700.5	2.7020	2.6988	2.6982	2.919	2.932	2.904
23095	707.5	2.7008	2.6997	2.6977	2.933	2.921	2.905
23165	714.5	2.6979	2.6954	2.6951	2.923	2.925	2.906

Spectrum Plot of Worst Value	
99 % Occupied Bandwidth	26 dB Bandwidth
1.4 MHz / 16QAM	1.4 MHz / 16QAM
3 MHz / QPSK	3 MHz / QPSK
	

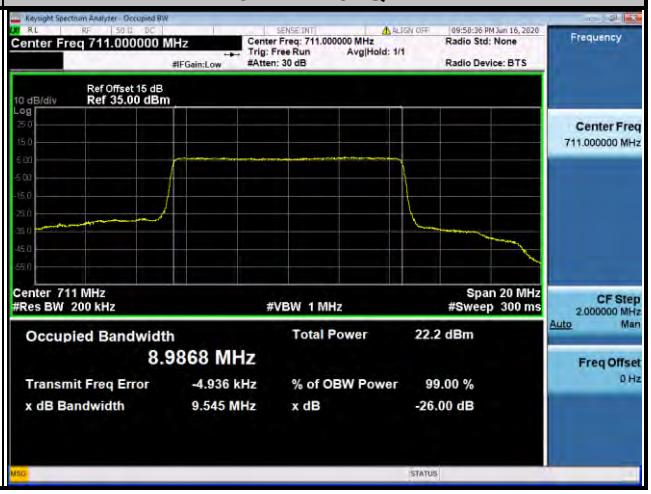
LTE Band 12							
Channel Bandwidth: 5 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23035	701.5	4.4898	4.4935	4.4999	4.811	4.794	4.827
23095	707.5	4.4946	4.4946	4.5034	4.814	4.804	4.814
23155	713.5	4.4896	4.4886	4.4986	4.808	4.790	4.829
Channel Bandwidth: 10 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23060	704.0	8.9389	8.9441	8.9480	9.492	9.499	9.500
23095	707.5	8.9693	8.9706	8.9780	9.519	9.520	9.526
23130	711.0	8.9745	8.9788	8.9868	9.543	9.527	9.545

Spectrum Plot of Worst Value

99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / 64QAM	5 MHz / 64QAM



10 MHz / 64QAM	10 MHz / 64QAM

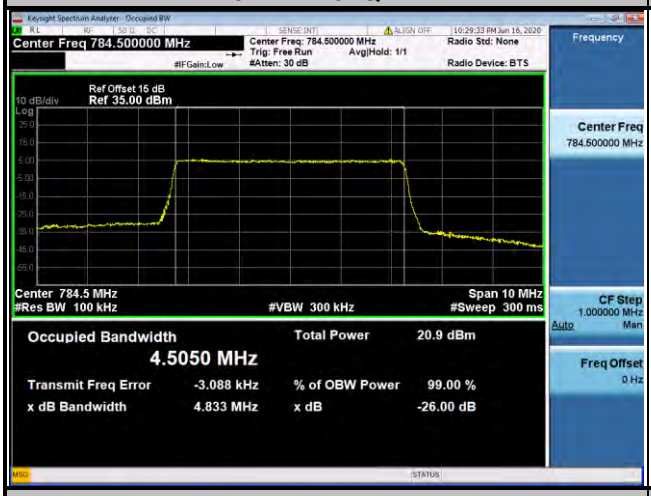


LTE Band 13							
Channel Bandwidth: 5 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23205	779.5	4.4872	4.4872	4.4933	4.844	4.813	4.840
23230	782.0	4.5000	4.4990	4.5049	4.888	4.852	4.846
23255	784.5	4.5005	4.4979	4.5050	4.858	4.832	4.833
Channel Bandwidth: 10 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
23230	782.0	8.9827	8.9806	8.9780	9.553	9.534	9.533

Spectrum Plot of Worst Value

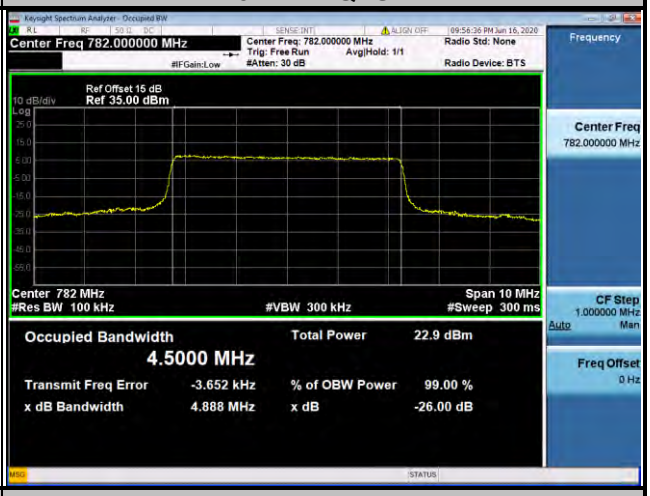
99 % Occupied Bandwidth

5 MHz / 64QAM



26 dB Bandwidth

5 MHz / QPSK



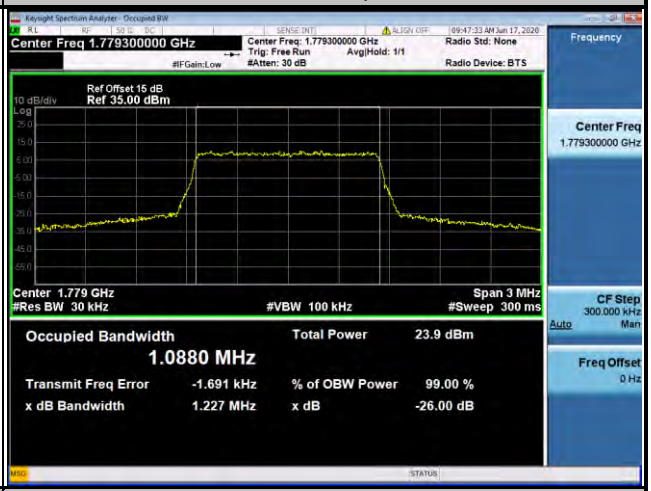
10 MHz / QPSK

10 MHz / QPSK

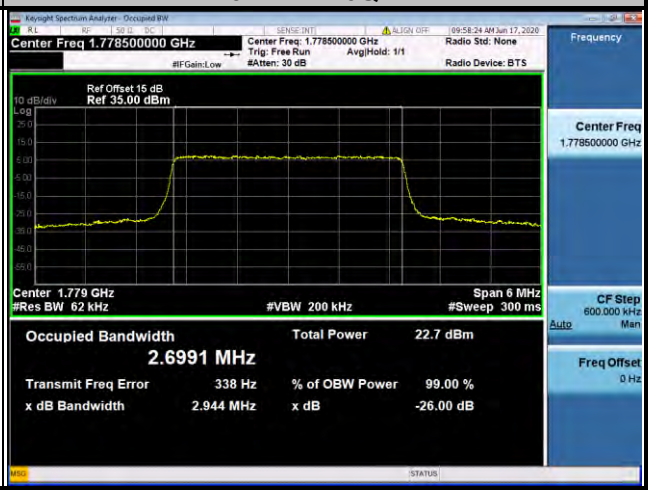
LTE Band 66							
Channel Bandwidth: 1.4 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
131979	1710.7	1.0878	1.0877	1.0882	1.225	1.218	1.219
132322	1745.0	1.0882	1.0867	1.0888	1.220	1.217	1.222
132665	1779.3	1.0880	1.0880	1.0887	1.227	1.219	1.214
Channel Bandwidth: 3 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
131987	1711.5	2.7004	2.6969	2.6984	2.932	2.931	2.909
132322	1745.0	2.7007	2.6989	2.6991	2.929	2.927	2.911
132657	1778.5	2.7009	2.6991	2.7001	2.937	2.944	2.908

Spectrum Plot of Worst Value

99 % Occupied Bandwidth	26 dB Bandwidth
1.4 MHz / 64QAM	1.4 MHz / QPSK



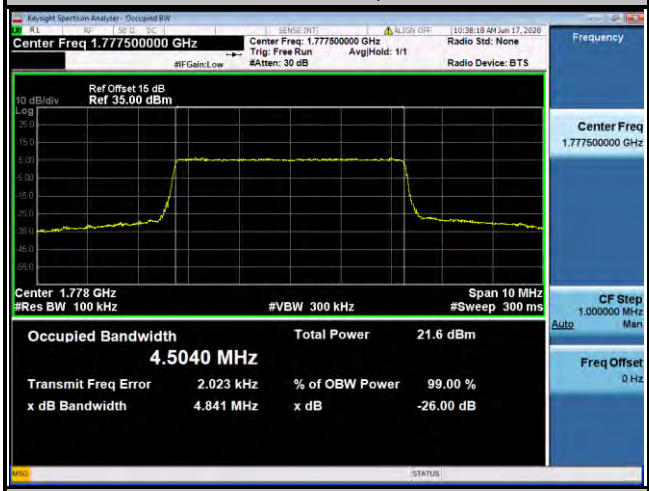
3 MHz / QPSK	3 MHz / 16QAM



LTE Band 66							
Channel Bandwidth: 5 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
131997	1712.5	4.4946	4.4920	4.5006	4.820	4.822	4.853
132322	1745.0	4.4946	4.4959	4.5023	4.829	4.823	4.843
132647	1777.5	4.4914	4.4974	4.5040	4.850	4.825	4.841
Channel Bandwidth: 10 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
132022	1715.0	8.9656	8.9701	8.9715	9.536	9.503	9.526
132322	1745.0	8.9727	8.9764	8.9782	9.531	9.523	9.546
132622	1775.0	8.9759	8.9790	8.9824	9.542	9.529	9.555

Spectrum Plot of Worst Value

99 % Occupied Bandwidth	26 dB Bandwidth
5 MHz / 64QAM	5 MHz / 64QAM



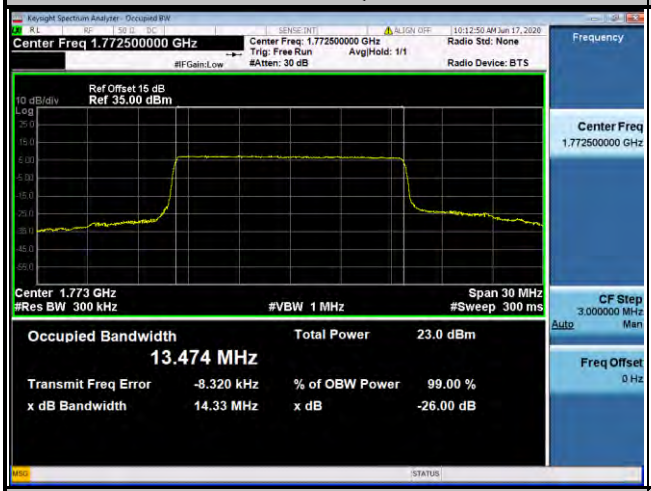
10 MHz / 64QAM	10 MHz / 64QAM

LTE Band 66							
Channel Bandwidth: 15 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
132047	1717.5	13.439	13.432	13.422	14.26	14.25	14.23
132322	1745.0	13.455	13.447	13.442	14.26	14.25	14.26
132597	1772.5	13.474	13.461	13.455	14.33	14.29	14.25
Channel Bandwidth: 20 MHz							
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)			26 dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
132072	1720.0	17.884	17.908	17.905	19.03	19.01	19.01
132322	1745.0	17.920	17.947	17.945	19.05	19.04	19.04
132572	1770.0	17.950	17.972	17.962	19.15	19.06	19.05

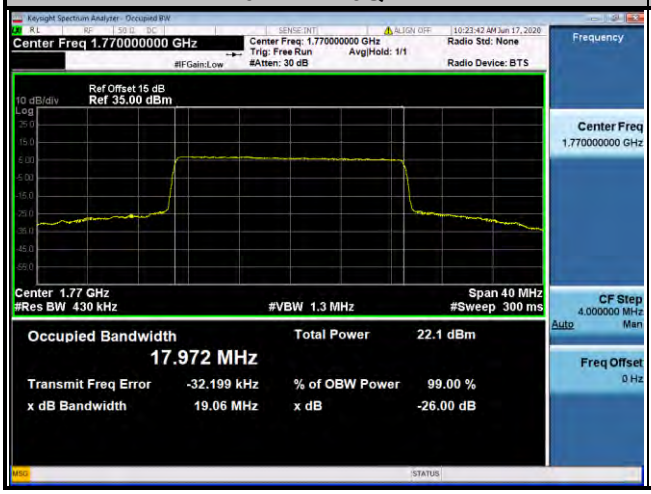
Spectrum Plot of Worst Value

99 % Occupied Bandwidth

15 MHz / QPSK

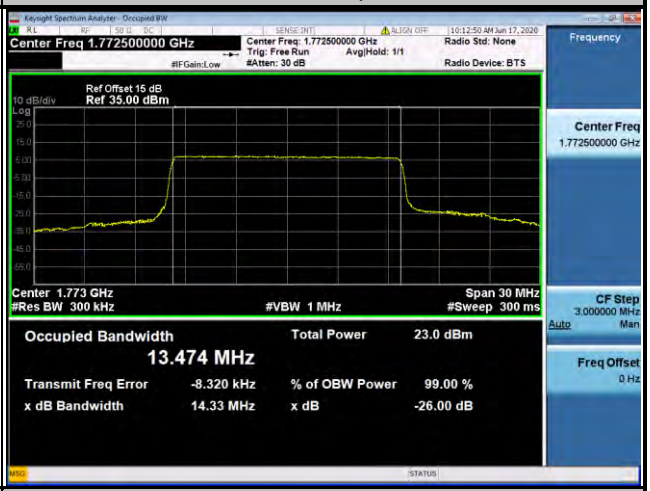


20 MHz /16QAM

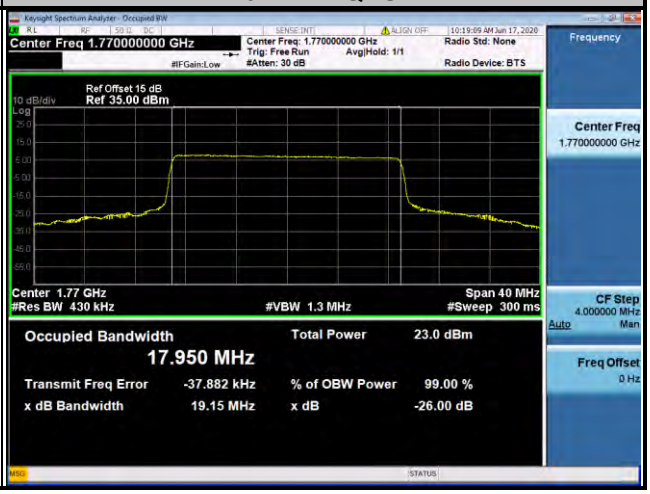


26 dB Bandwidth

15 MHz / QPSK



20 MHz / QPSK



4.5 Band Edge Measurement

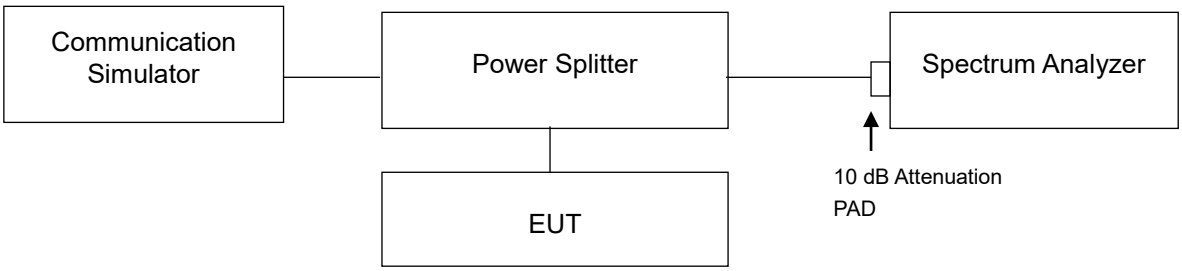
4.5.1 Limits of Band Edge Measurement

For operations in the 600 MHz and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.
On all frequencies between 763-775 MHz and 793-805 MHz, by a factor no less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB.

4.5.2 Test Setup

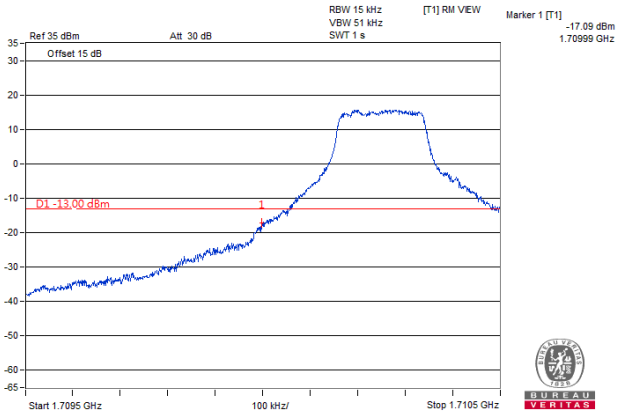
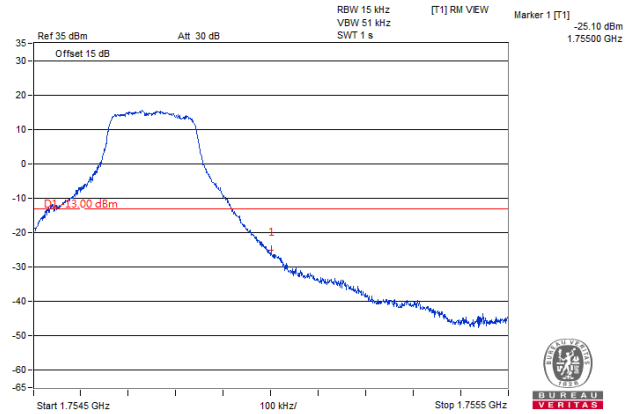
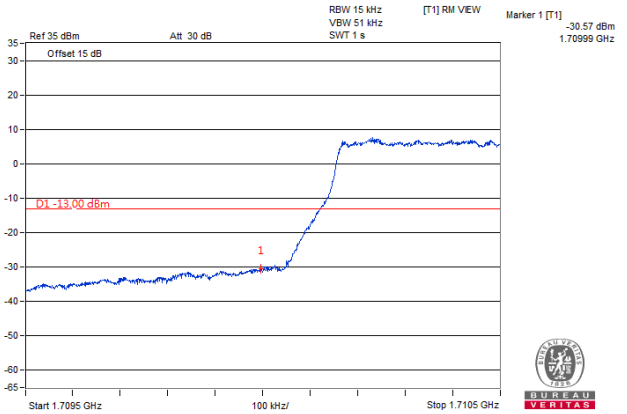
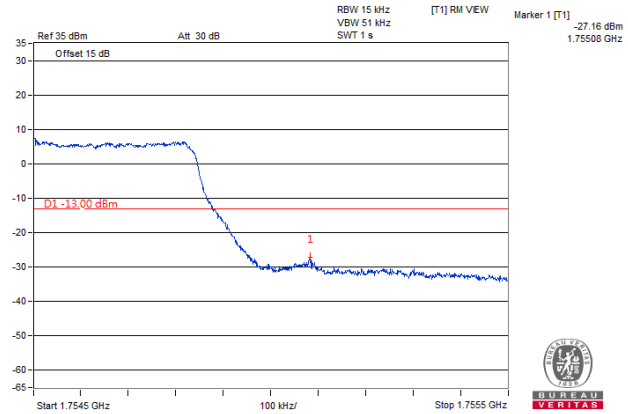


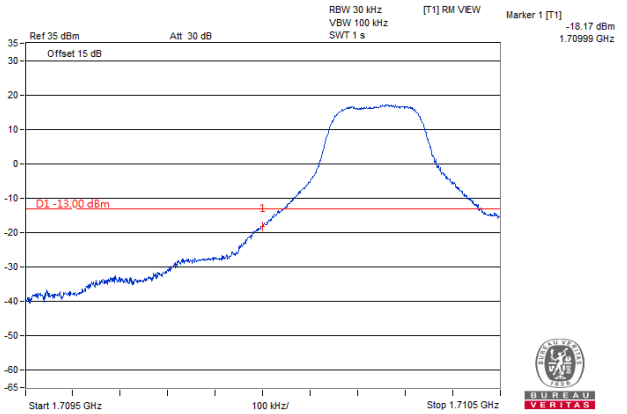
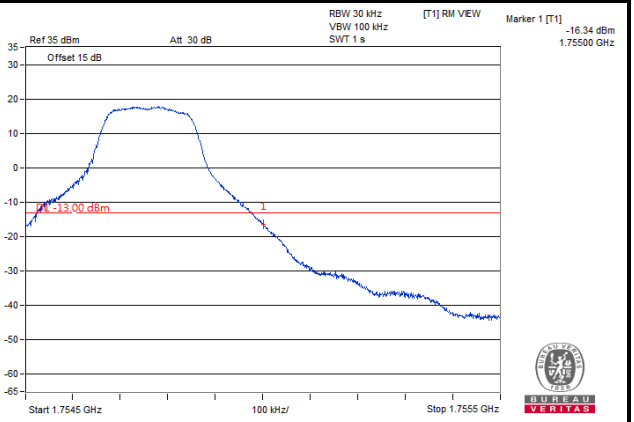
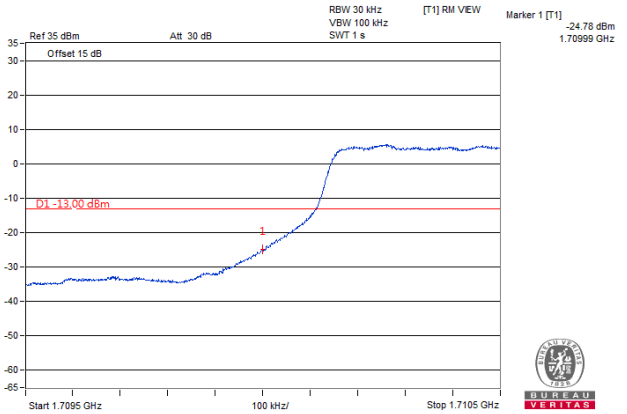
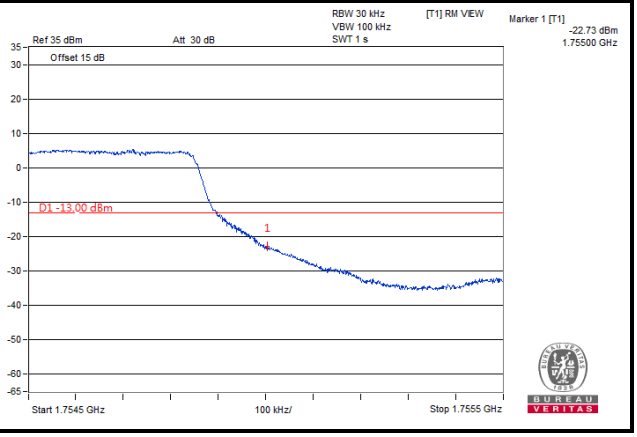
4.5.3 Test Procedures

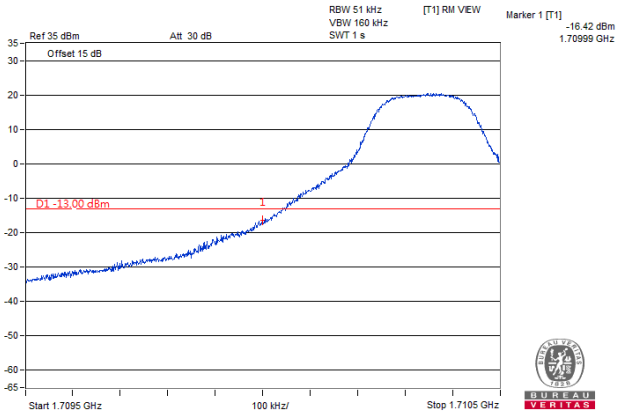
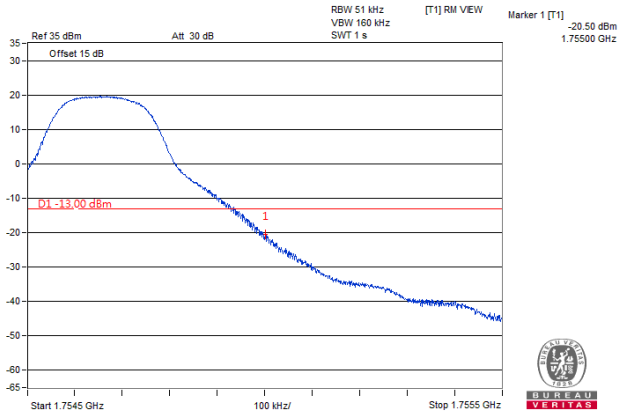
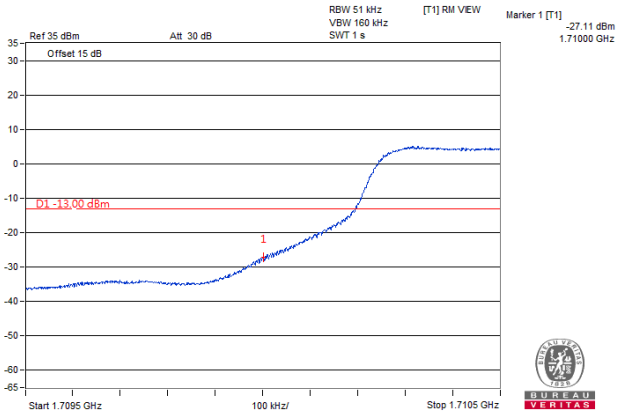
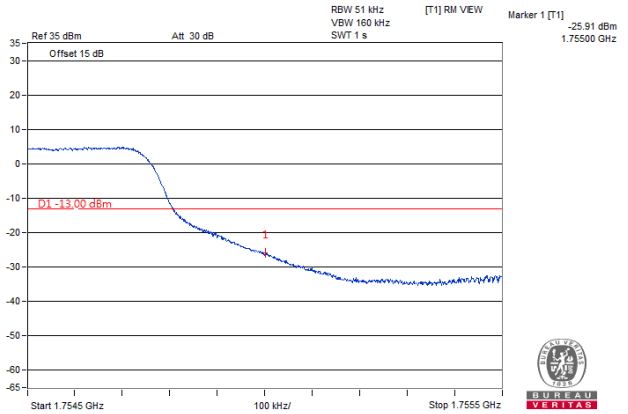
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (WCDMA).
c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 15 kHz or 30 kHz and VB of the spectrum is 51 kHz or 100 kHz (LTE Bandwidth 1.4 MHz).
d. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
e. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (LTE Bandwidth 5 MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 10 MHz).
g. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150 kHz and VB of the spectrum is 470 kHz (LTE Bandwidth 15 MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz).
i. Record the max. trace plot into the test report.

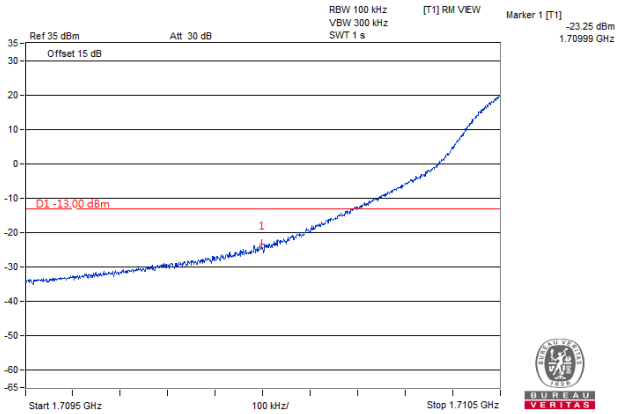
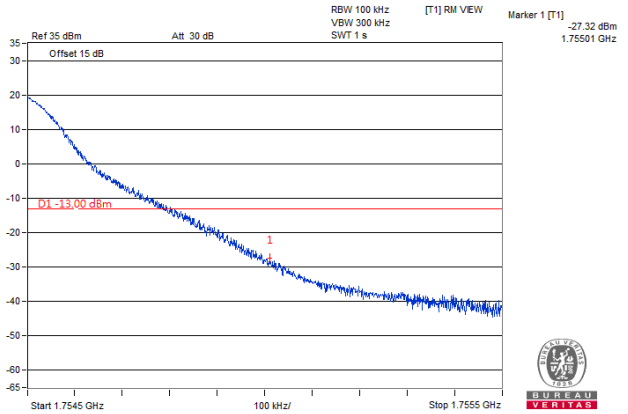
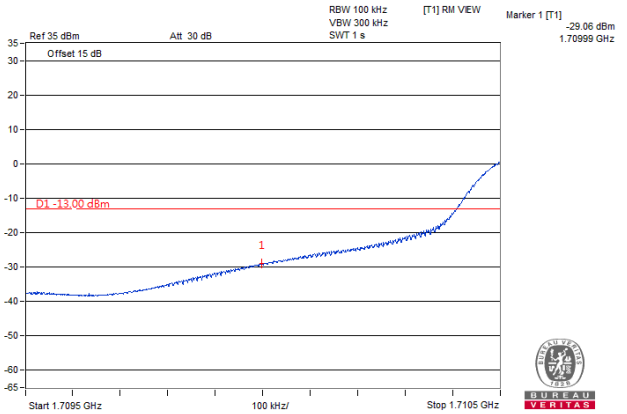
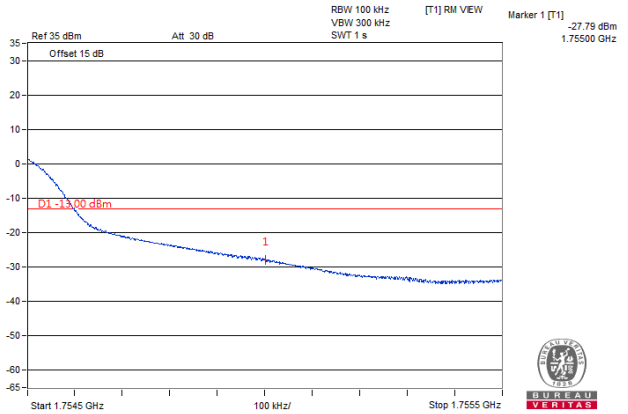
4.5.4 Test Results

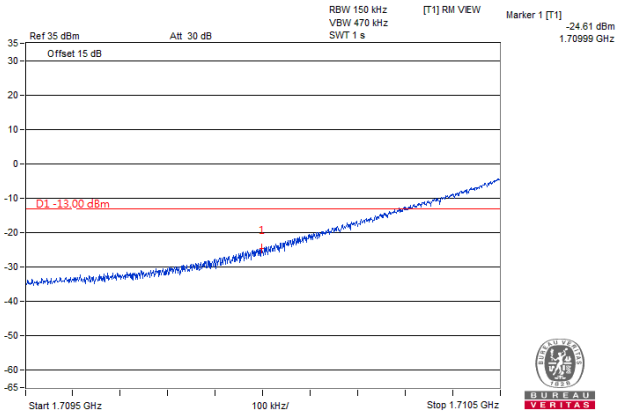
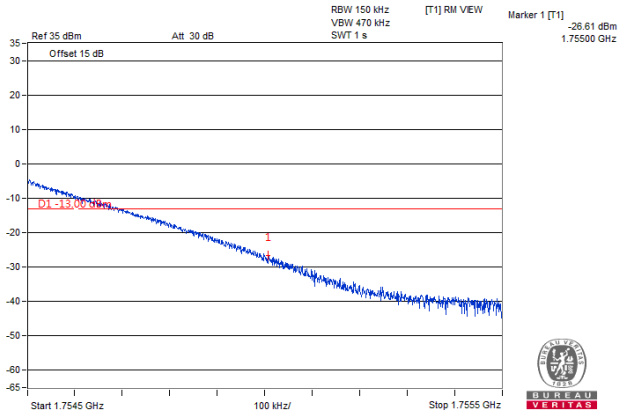
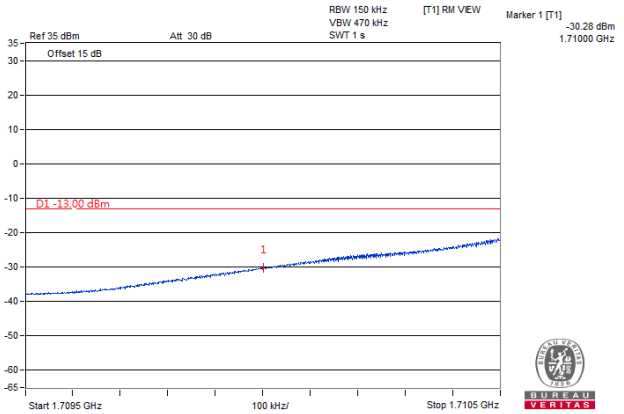
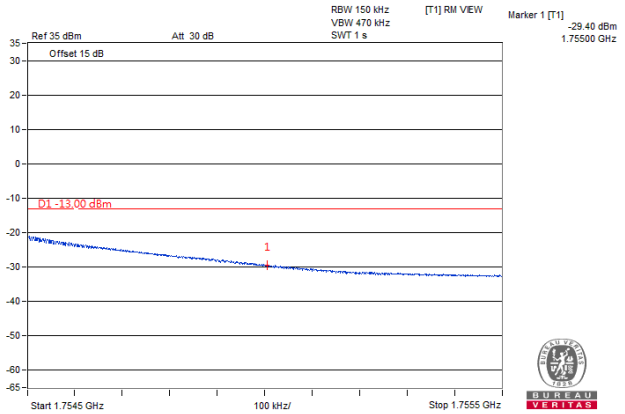
WCDMA			
Channel	1312	Channel	1513

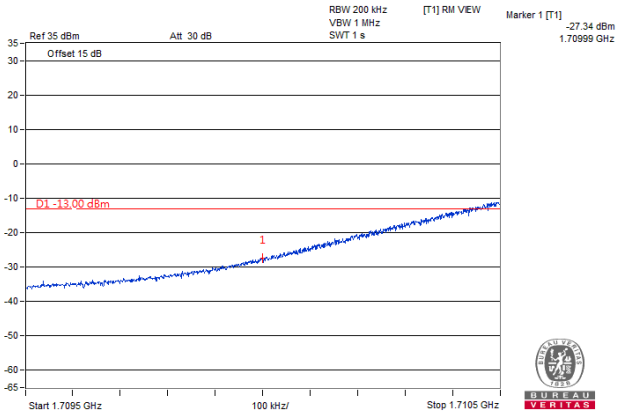
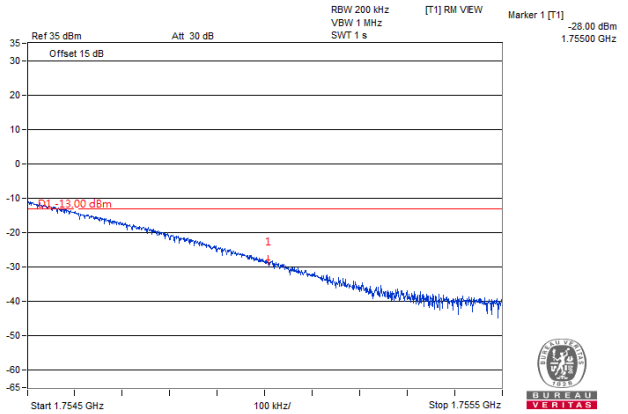
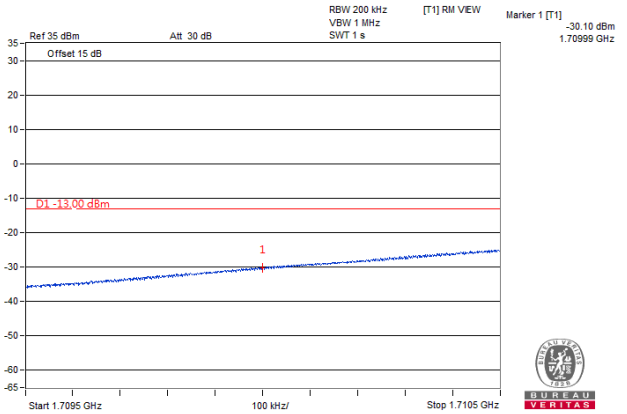
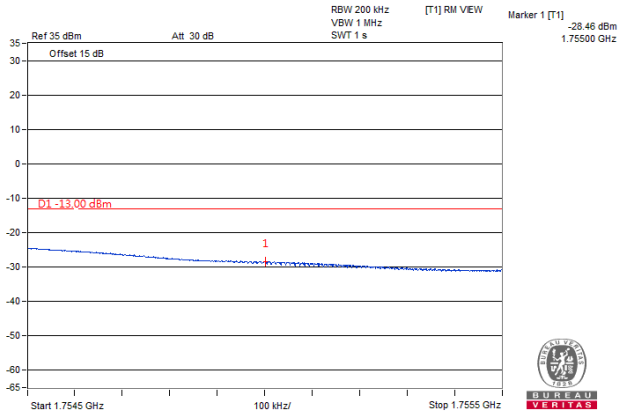
LTE Band 4					
Channel Bandwidth: 1.4 MHz					
Channel	19957	1 RB	Channel	20393	1 RB
				
Channel	19957	6 RB	Channel	20393	6 RB
				

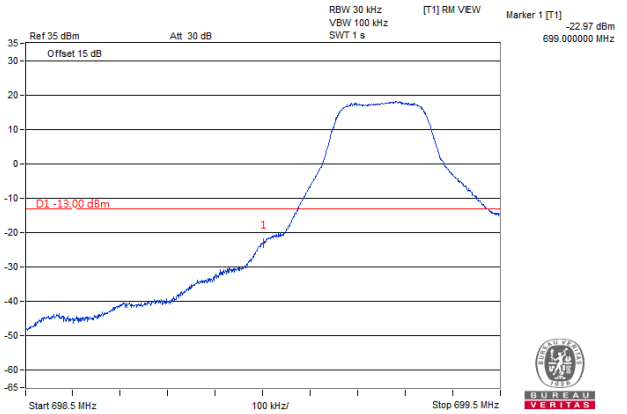
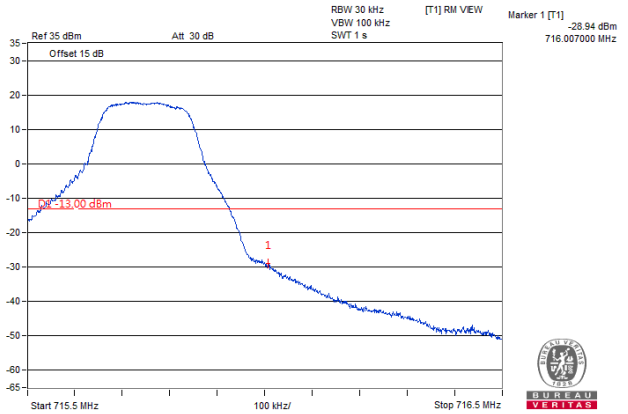
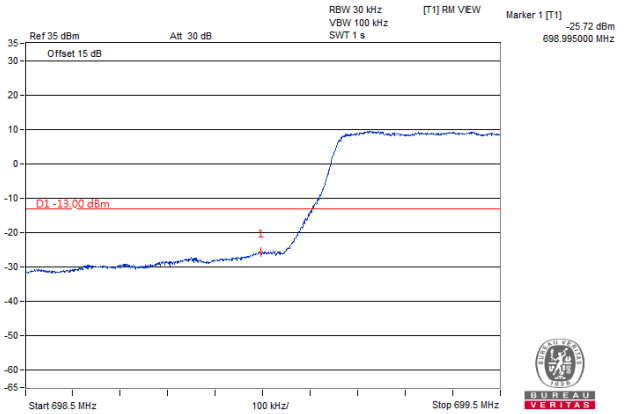
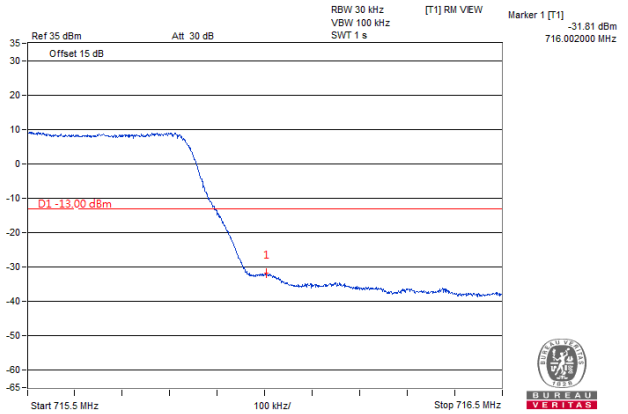
LTE Band 4					
Channel Bandwidth: 3 MHz					
Channel	19965	1 RB	Channel	20385	1 RB
					
Channel	19965	15 RB	Channel	20385	15 RB
					

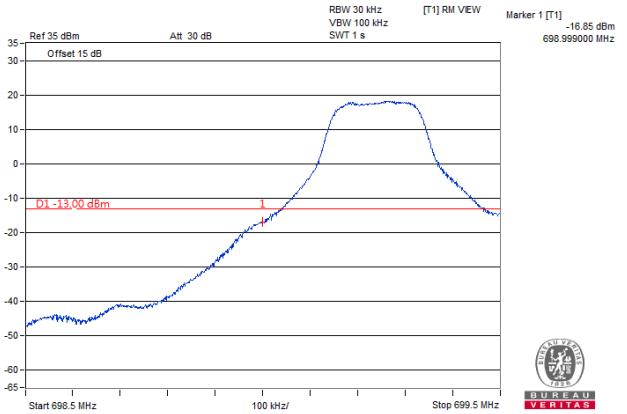
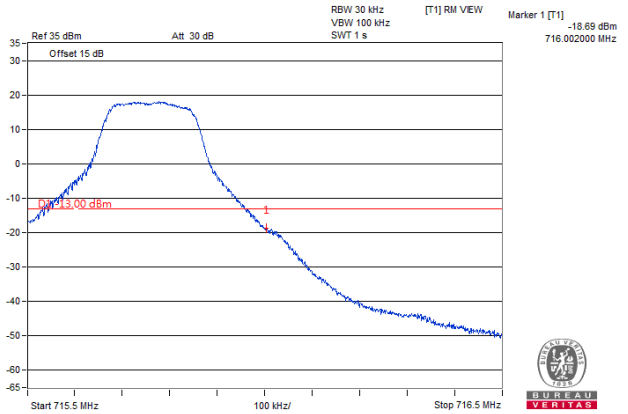
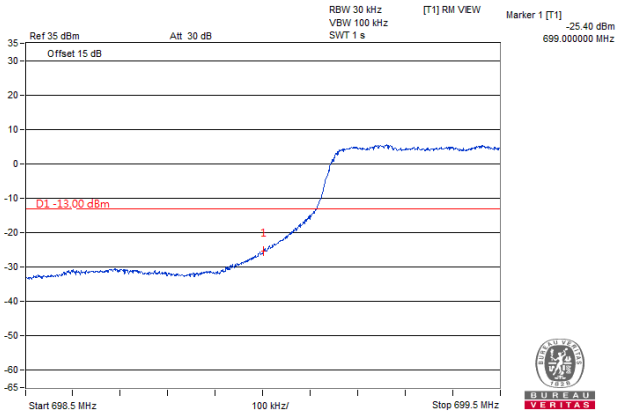
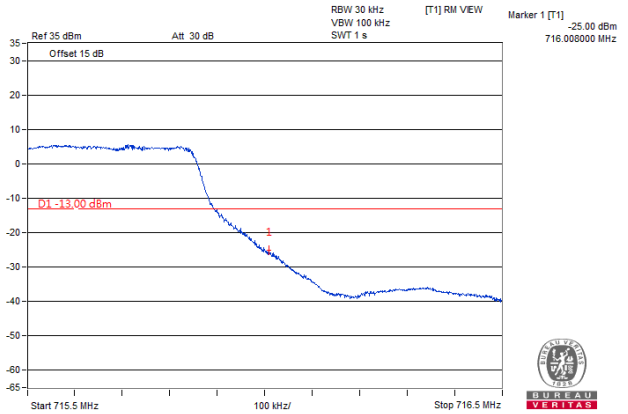
LTE Band 4					
Channel Bandwidth: 5 MHz					
Channel	19975	1 RB	Channel	20375	1 RB
					
Channel	19975	25 RB	Channel	20375	25 RB
					

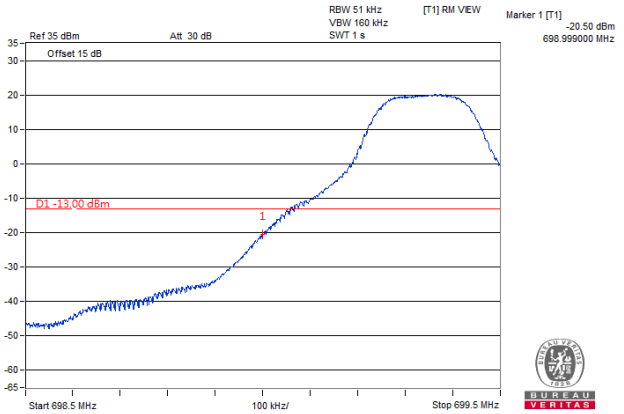
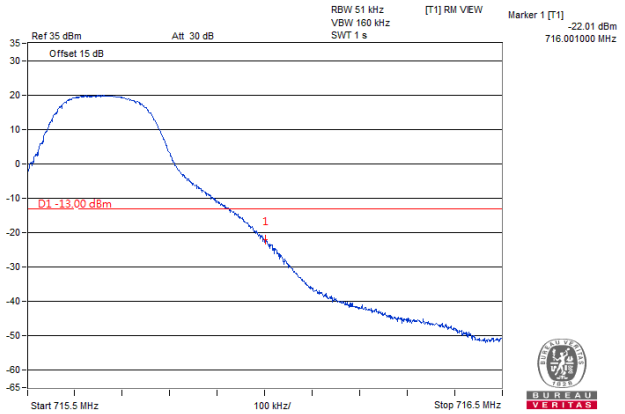
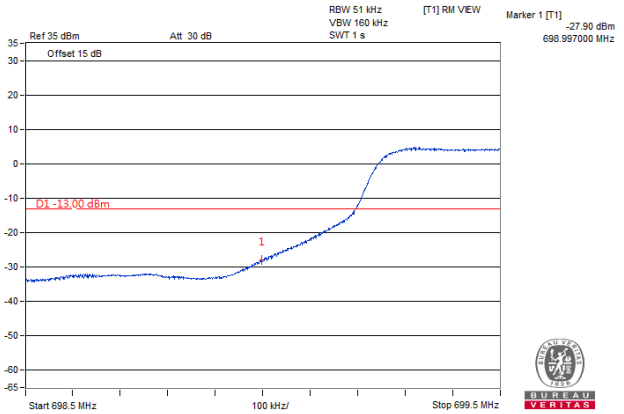
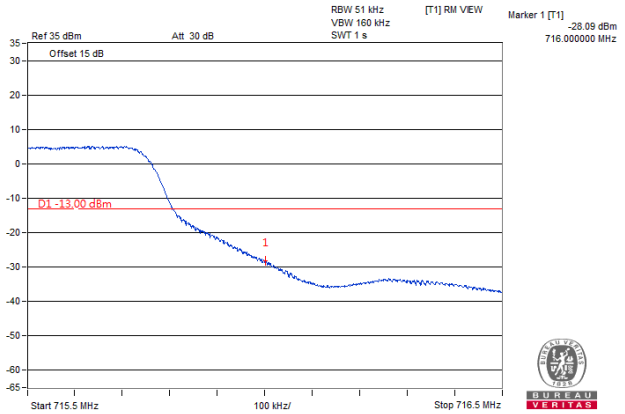
LTE Band 4					
Channel Bandwidth: 10 MHz					
Channel	20000	1 RB	Channel	20350	1 RB
					
Channel	20000	50 RB	Channel	20350	50 RB
					

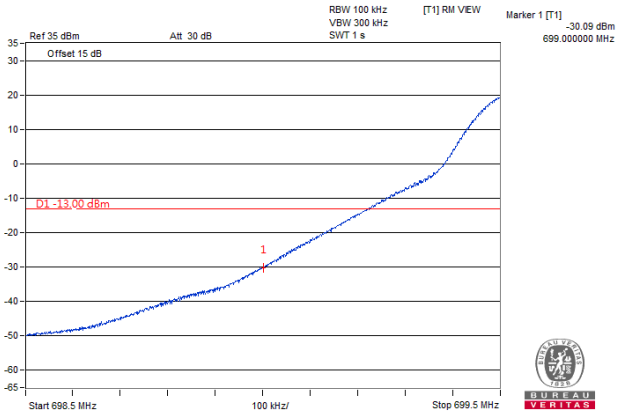
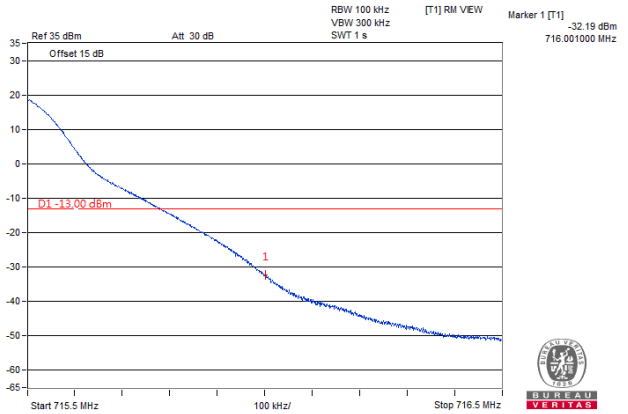
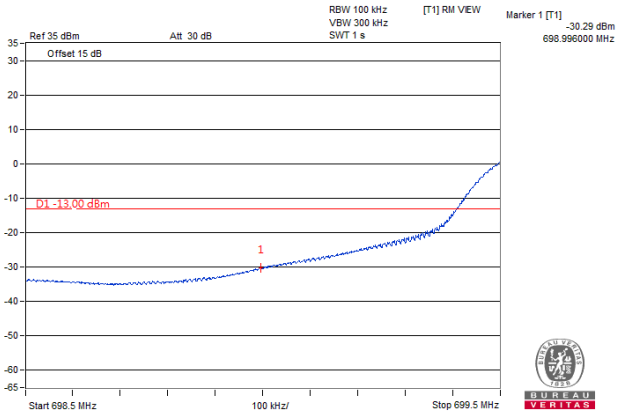
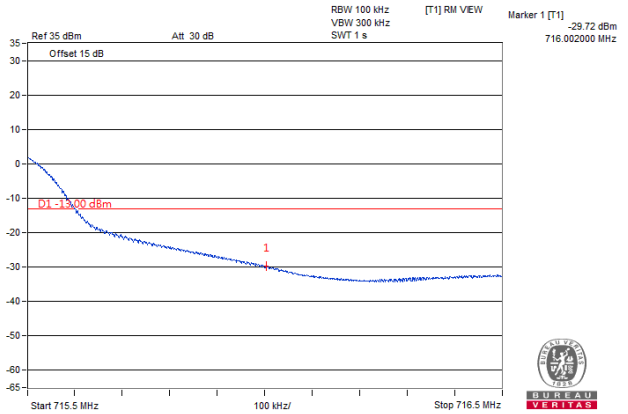
LTE Band 4					
Channel Bandwidth: 15 MHz					
Channel	20025	1 RB	Channel	20325	1 RB
					
Channel	20025	75 RB	Channel	20325	75 RB
					

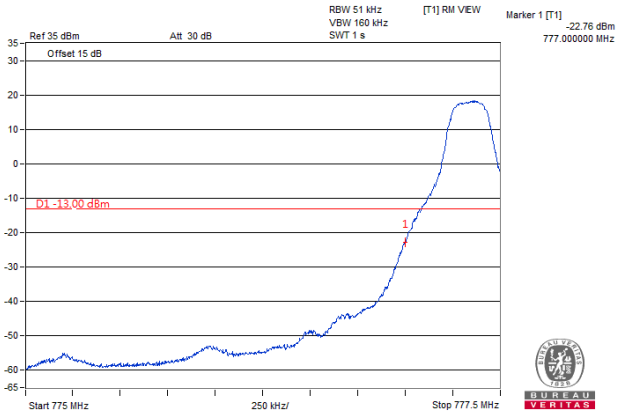
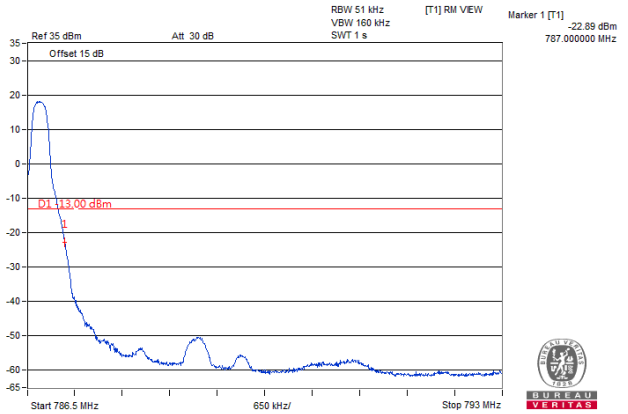
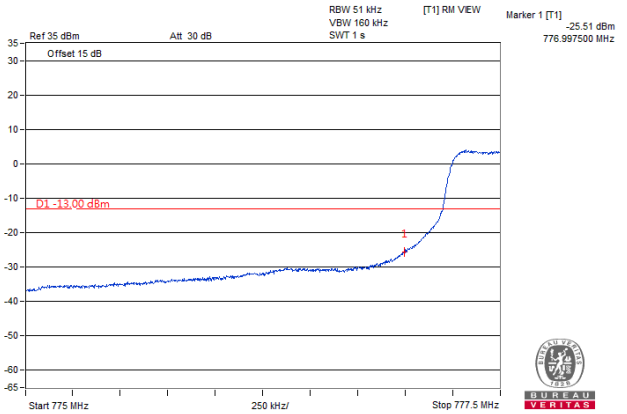
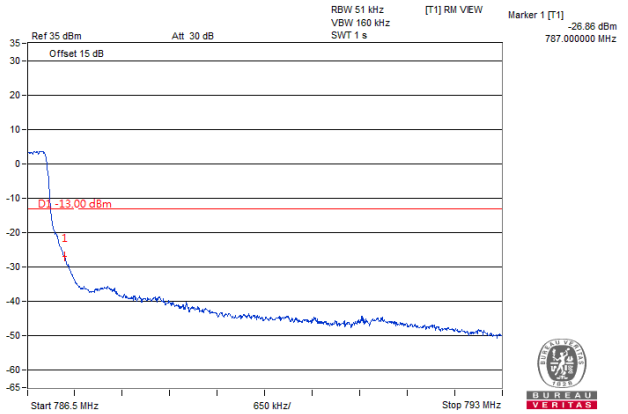
LTE Band 4					
Channel Bandwidth: 20 MHz					
Channel	20050	1 RB	Channel	20300	1 RB
					
Channel	20050	100 RB	Channel	20300	100 RB
					

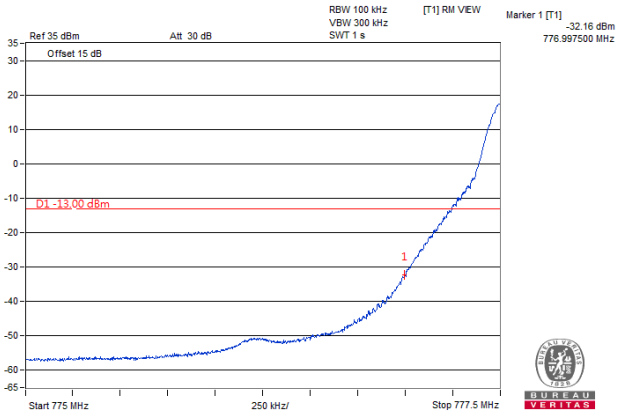
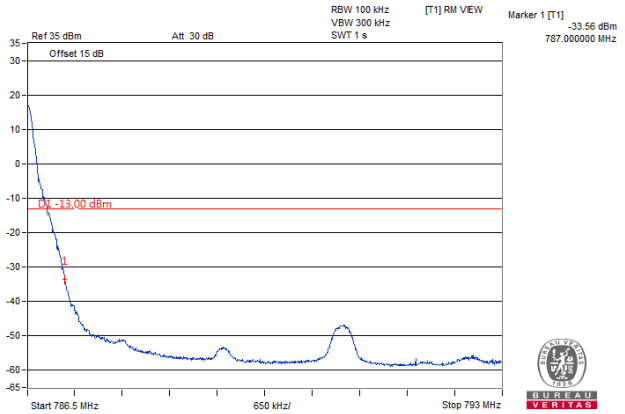
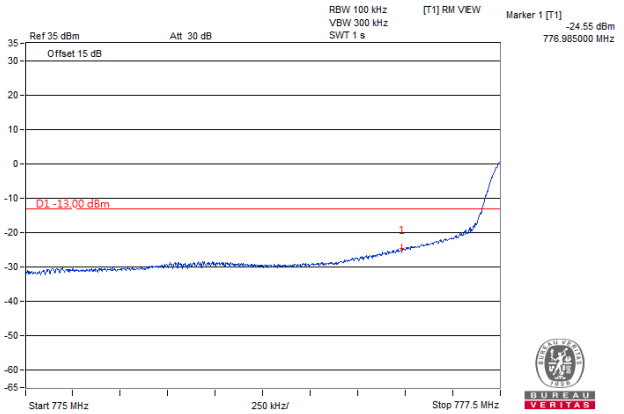
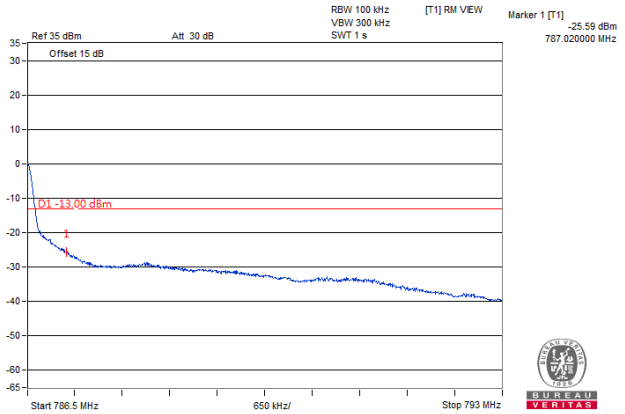
LTE Band 12					
Channel Bandwidth: 1.4 MHz					
Channel	23017	1 RB	Channel	23173	1 RB
					
Channel	23017	6 RB	Channel	23173	6 RB
					

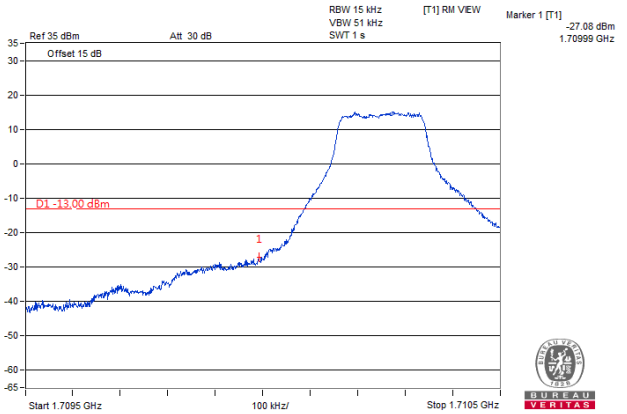
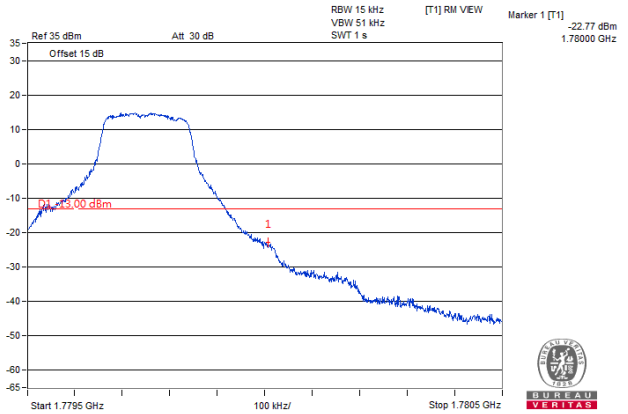
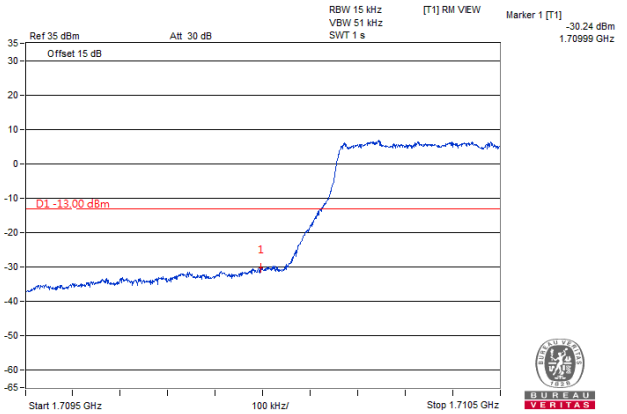
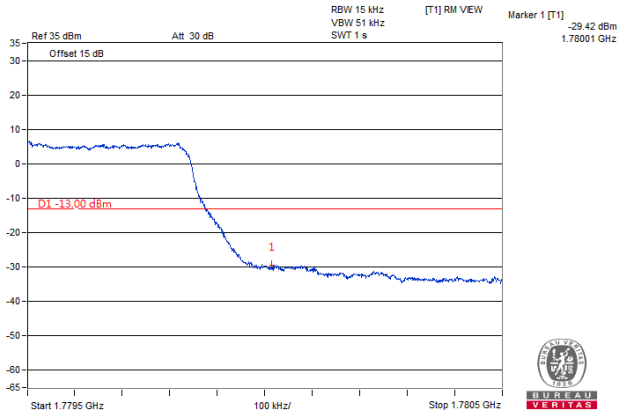
LTE Band 12					
Channel Bandwidth: 3 MHz					
Channel	23025	1 RB	Channel	23165	1 RB
					
Channel	23025	15 RB	Channel	23165	15 RB
					

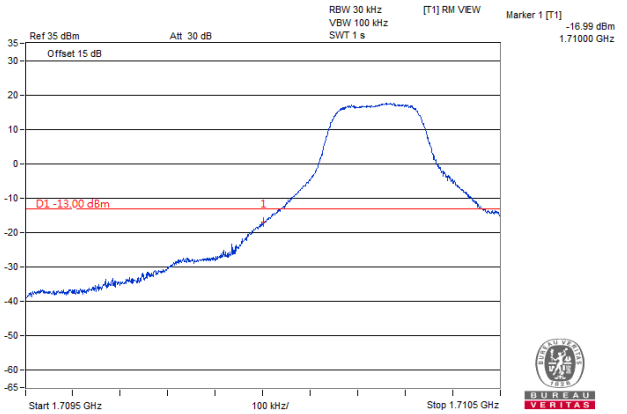
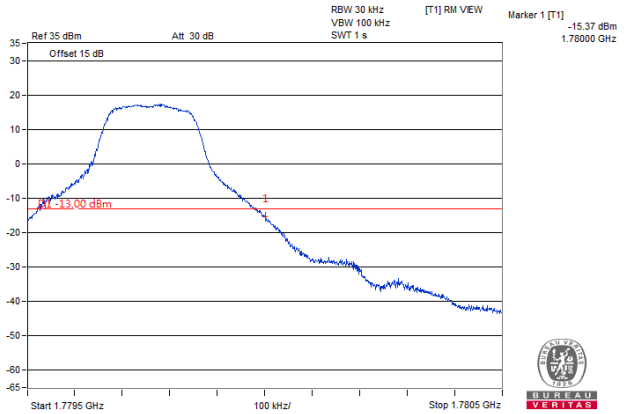
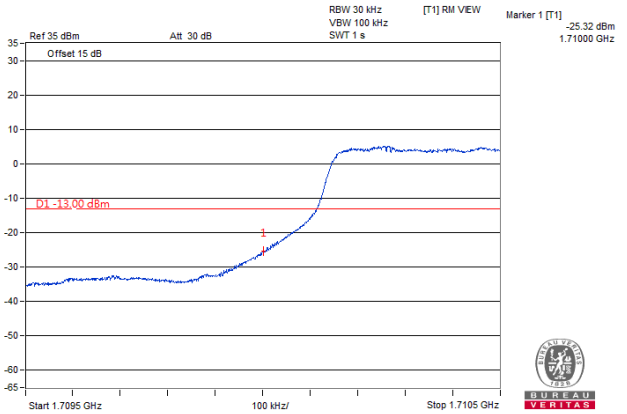
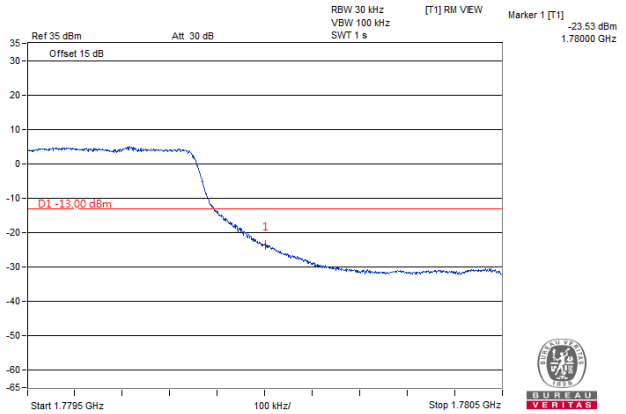
LTE Band 12					
Channel Bandwidth: 5 MHz					
Channel	23035	1 RB	Channel	23155	1 RB
					
Channel	23035	25 RB	Channel	23155	25 RB
					

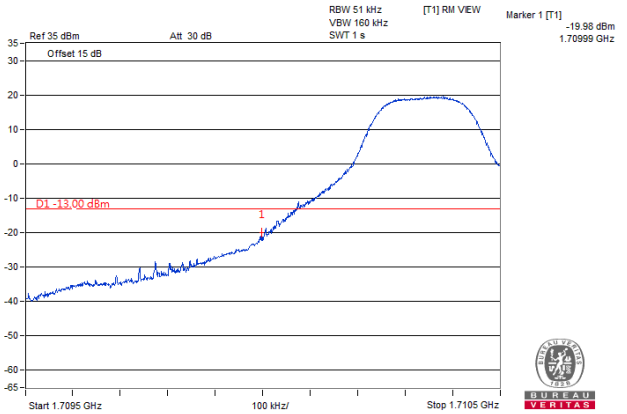
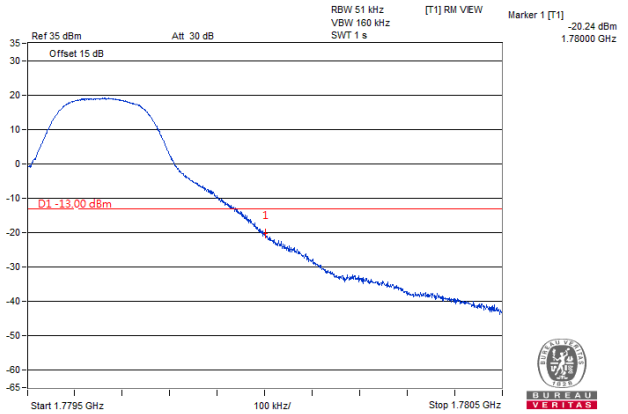
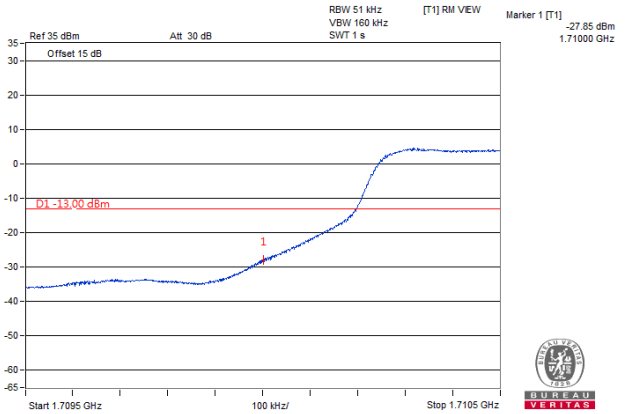
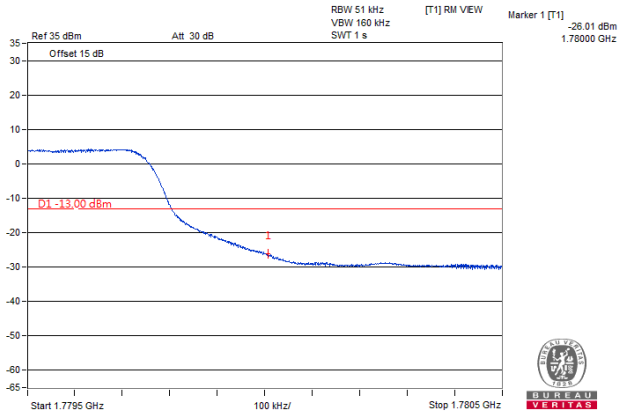
LTE Band 12					
Channel Bandwidth: 10 MHz					
Channel	23060	1 RB	Channel	23130	1 RB
					
Channel	23060	50 RB	Channel	23130	50 RB
					

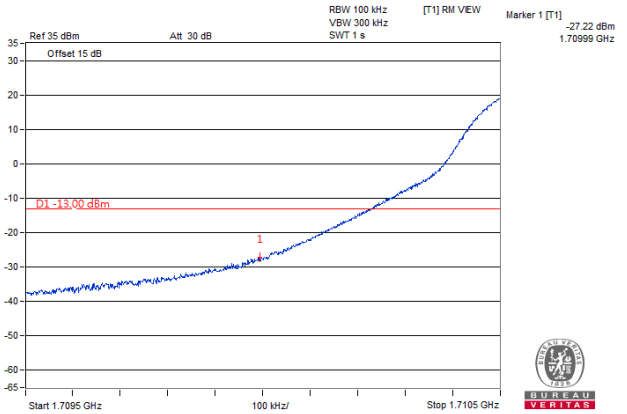
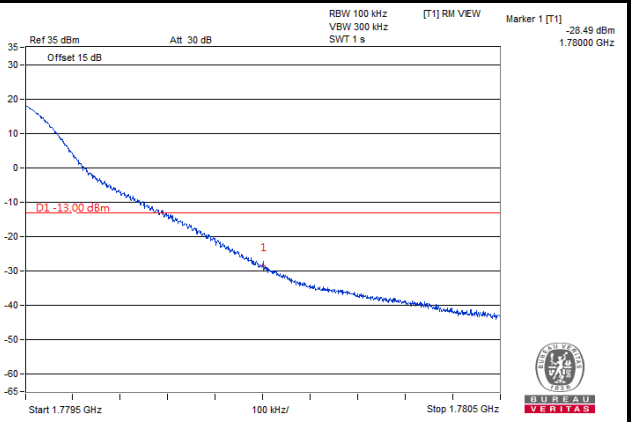
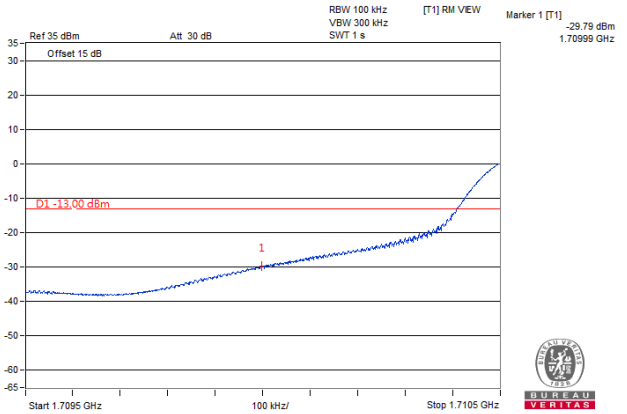
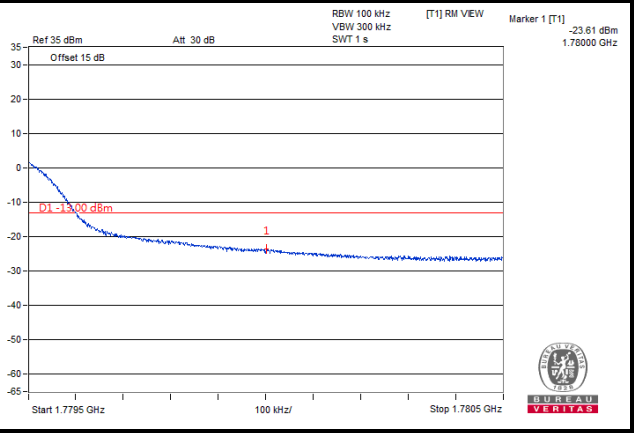
LTE Band 13					
Channel Bandwidth: 5 MHz					
Channel	23205	1 RB	Channel	23255	1 RB
					
Channel	23205	25 RB	Channel	23255	25 RB
					

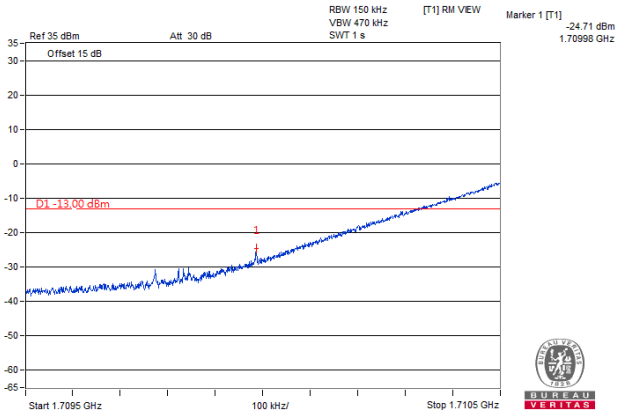
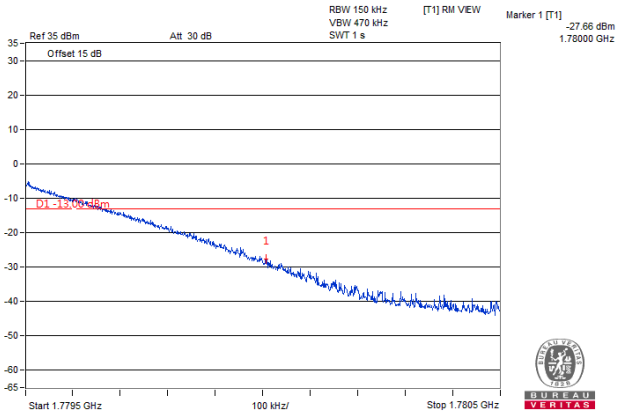
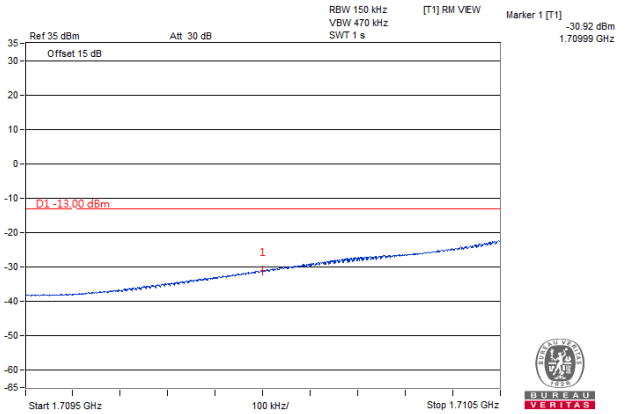
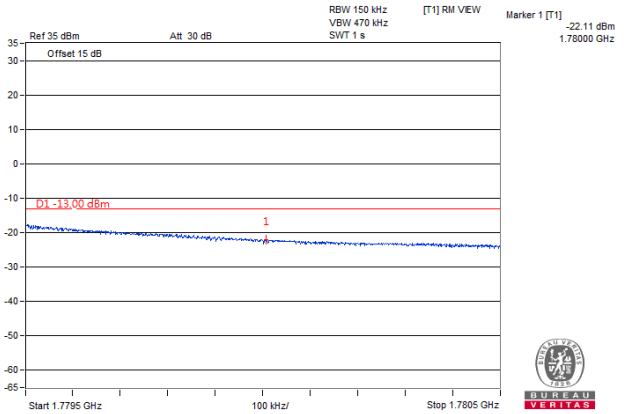
LTE Band 13					
Channel Bandwidth: 10 MHz					
Channel	23230	1 RB	Channel	23230	1 RB
					
Channel	23230	50 RB	Channel	23230	50 RB
					

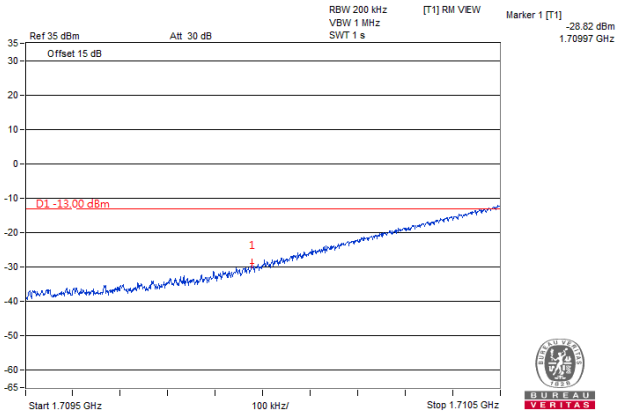
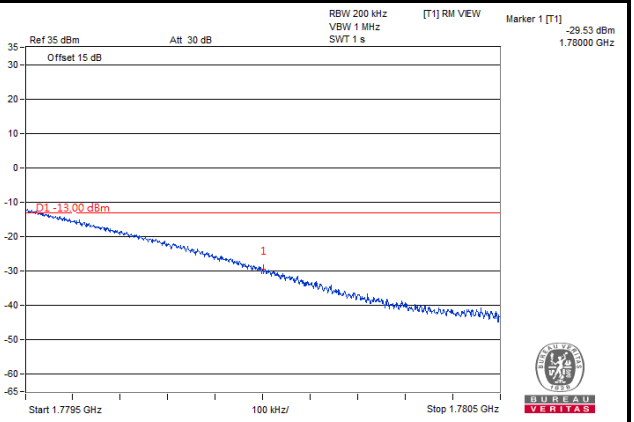
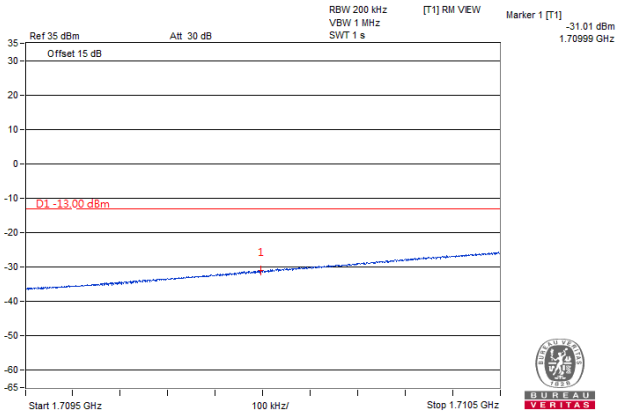
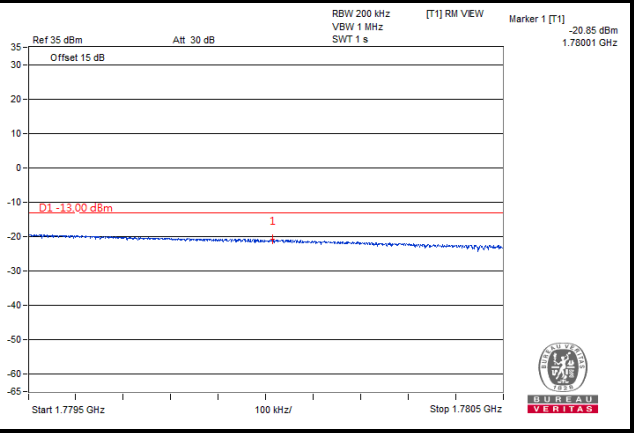
LTE Band 66					
Channel Bandwidth: 1.4 MHz					
Channel	131979	6 RB	Channel	132665	6 RB
					
Channel	131979	25 RB	Channel	132665	25 RB
					

LTE Band 66					
Channel Bandwidth: 3 MHz					
Channel	131987	1 RB	Channel	132657	1 RB
					
Channel	131987	15 RB	Channel	132657	15 RB
					

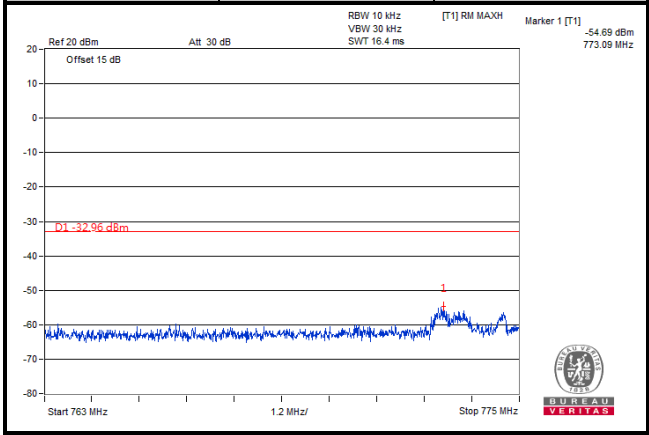
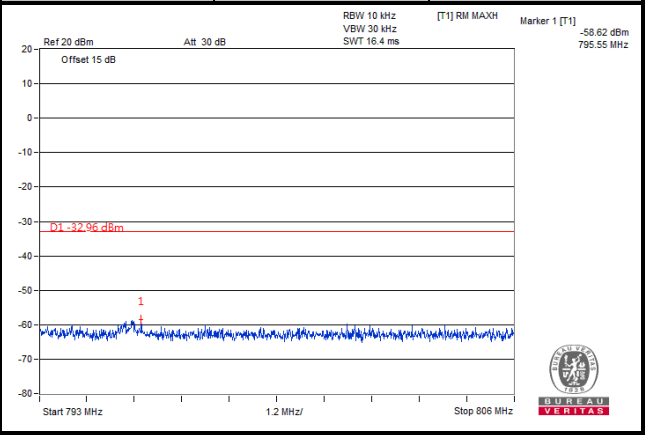
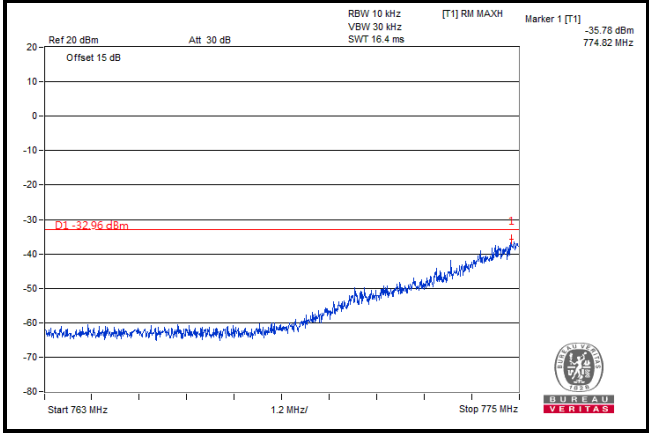
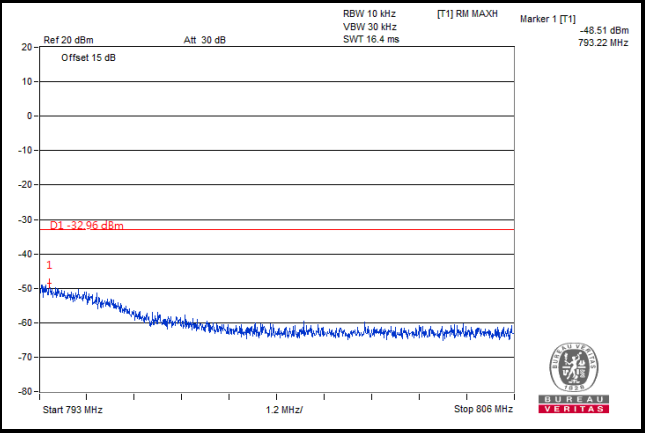
LTE Band 66					
Channel Bandwidth: 5 MHz					
Channel	131997	1 RB	Channel	132647	1 RB
					
Channel	131997	25 RB	Channel	132647	25 RB
					

LTE Band 66					
Channel Bandwidth: 10 MHz					
Channel	132022	1 RB	Channel	132622	1 RB
					
Channel	132022	50 RB	Channel	132622	50 RB
					

LTE Band 66					
Channel Bandwidth: 15 MHz					
Channel	132047	1 RB	Channel	132597	1 RB
					
Channel	132047	75 RB	Channel	132597	75 RB
					

LTE Band 66					
Channel Bandwidth: 20 MHz					
Channel	132072	1 RB	Channel	132572	1 RB
					
Channel	132072	100 RB	Channel	132572	100 RB
					

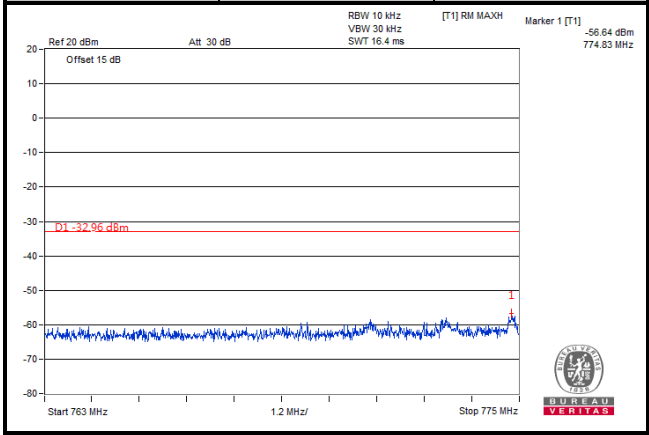
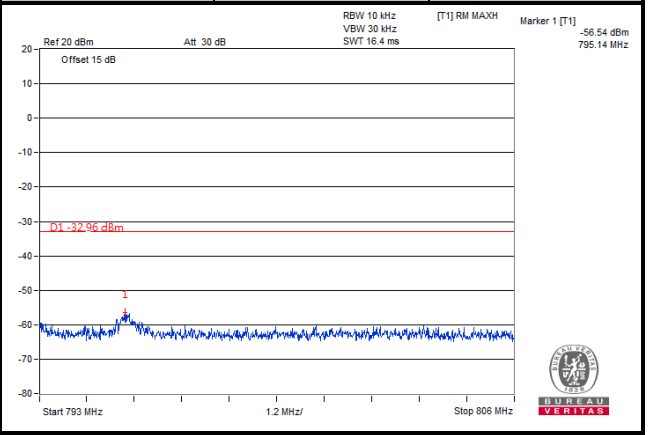
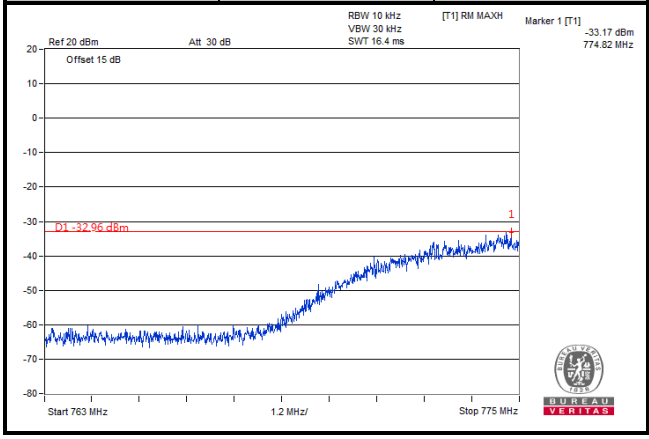
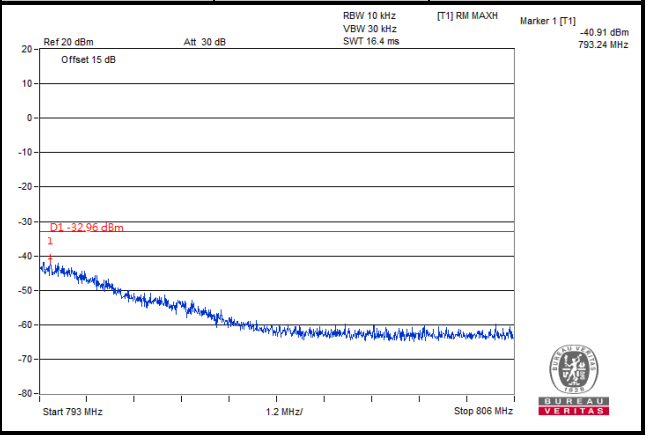
Emission Mask

LTE Band 13					
Channel Bandwidth: 5 MHz					
Channel	23205	1 RB	Channel	23255	1 RB
					
Channel	23205	25 RB	Channel	23255	25 RB
					

For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is 65+10log(P[watt]) in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

10log(10kHz/6.25kHz) = 2.04 dB

Limit line = -35 dBm + 2.04 dB = -32.96 dBm

LTE Band 13					
Channel Bandwidth: 10 MHz					
Channel	23230	1 RB	Channel	23230	1 RB
					
Channel	23230	50 RB	Channel	23230	50 RB
					

For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is 65+10log(P[watt]) in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

10log(10kHz/6.25kHz) = 2.04 dB

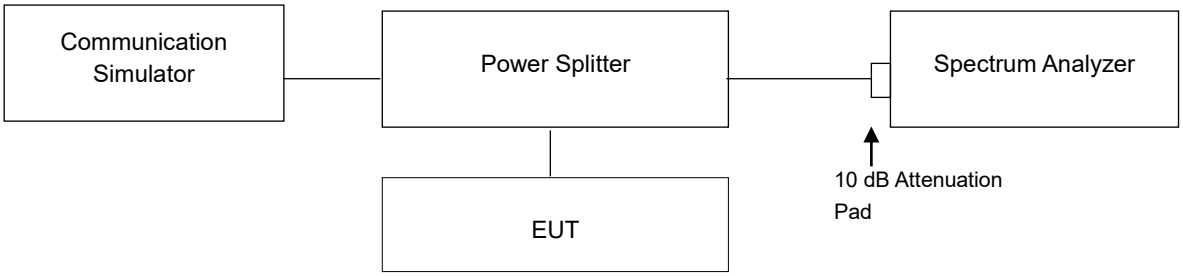
Limit line = -35 dBm + 2.04 dB =-32.96 dBm

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



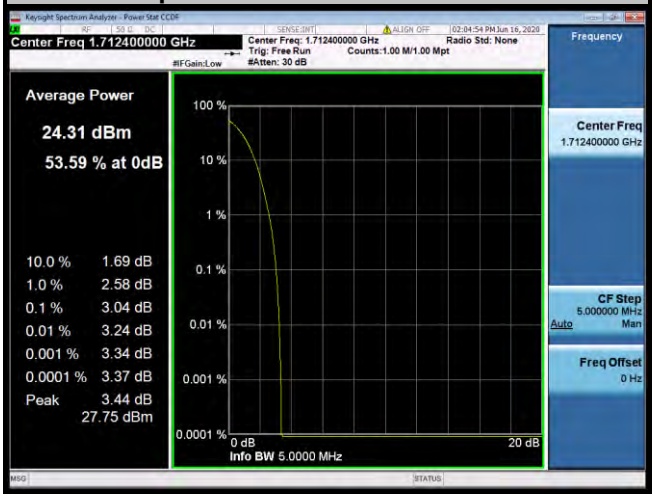
4.6.3 Test Procedures

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

4.6.4 Test Results

WCDMA		
Channel	**Frequency (MHz)**	**Peak to Average Ratio (dB)**
1312	1712.4	3.04
1413	1732.6	2.96
1513	1752.6	2.71

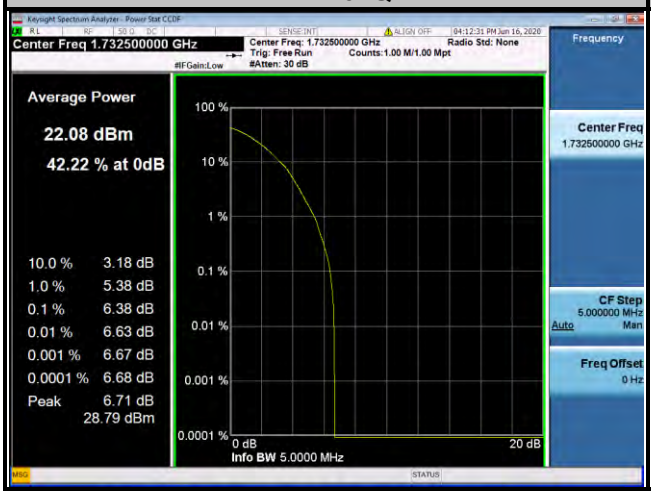
Spectrum Plot of Worst Value



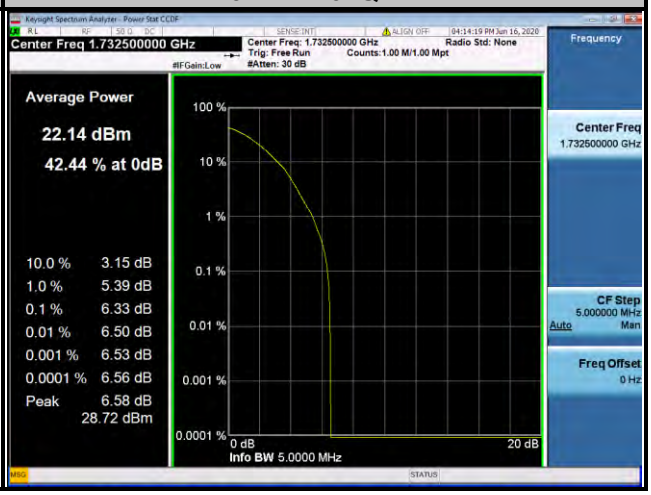
LTE Band 4									
Channel Bandwidth: 1.4 MHz					**Channel Bandwidth: 3 MHz**				
Channel	**Frequency (MHz)**	**Peak to Average Ratio (dB)**			**Channel**	**Frequency (MHz)**	**Peak to Average Ratio (dB)**		
		QPSK	**16QAM**	**64QAM**			**QPSK**	**16QAM**	**64QAM**
19957	1710.7	3.67	4.65	5.82	19965	1711.5	3.56	4.62	5.72
20175	1732.5	3.75	5.19	6.38	20175	1732.5	3.51	5.06	6.33
20393	1754.3	3.04	4.20	5.31	20385	1753.5	3.05	4.25	5.48

Spectrum Plot of Worst Value

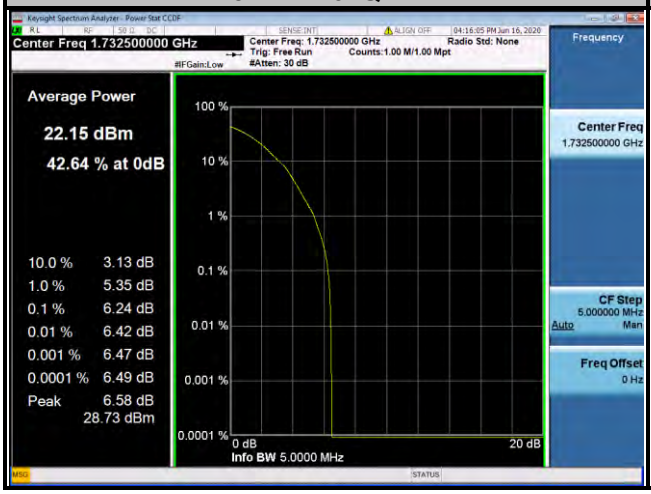
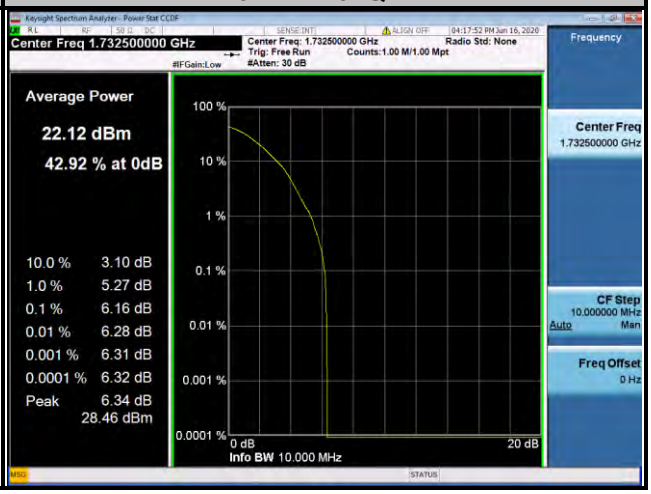
1.4 MHz / 64QAM



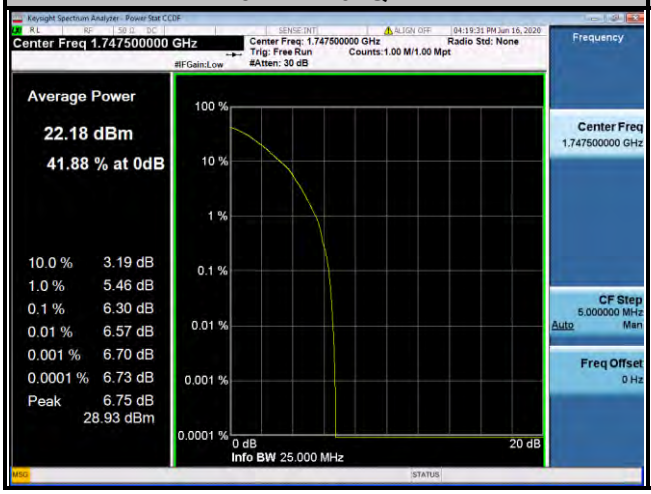
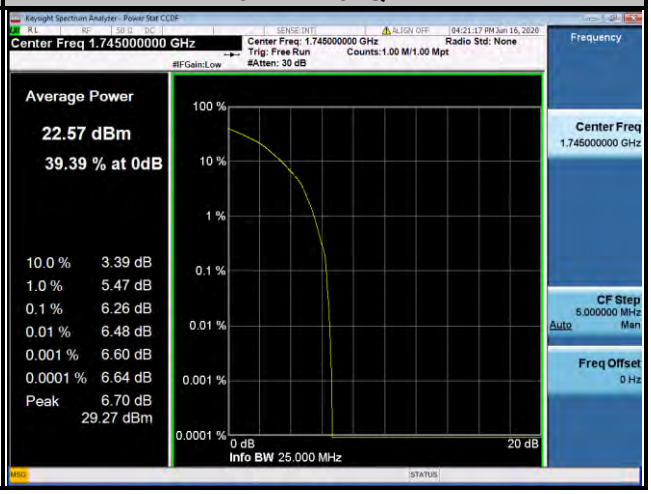
3 MHz / 64QAM



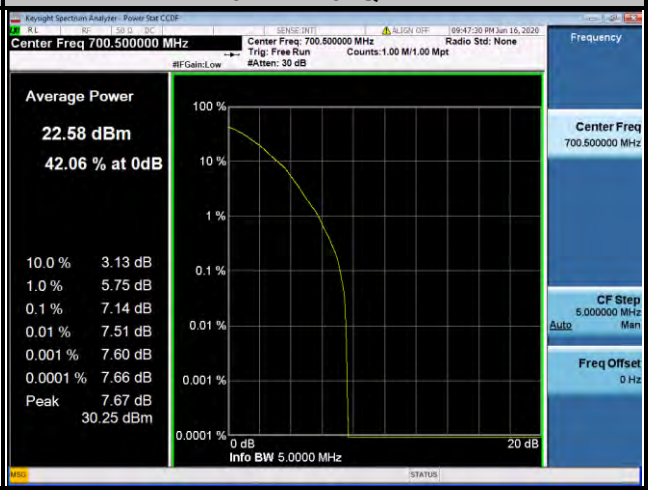
LTE Band 4									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
19975	1712.5	3.43	4.61	5.85	20000	1715.0	3.32	4.61	5.62
20175	1732.5	3.52	4.96	6.24	20175	1732.5	3.39	4.78	6.16
20375	1752.5	3.22	4.44	5.68	20350	1750.0	3.52	4.87	6.04

Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM
	

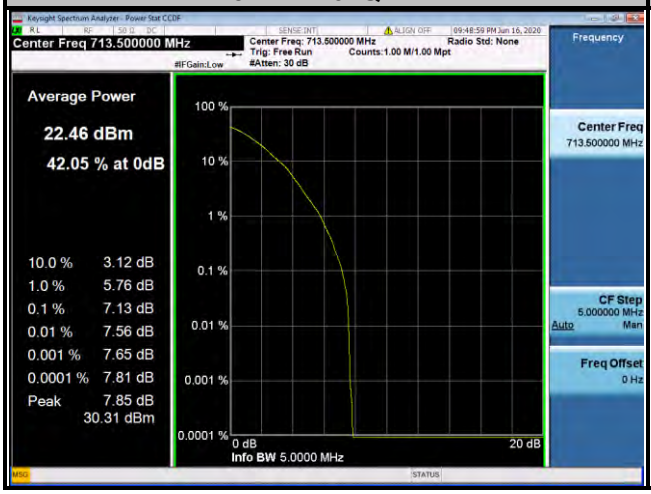
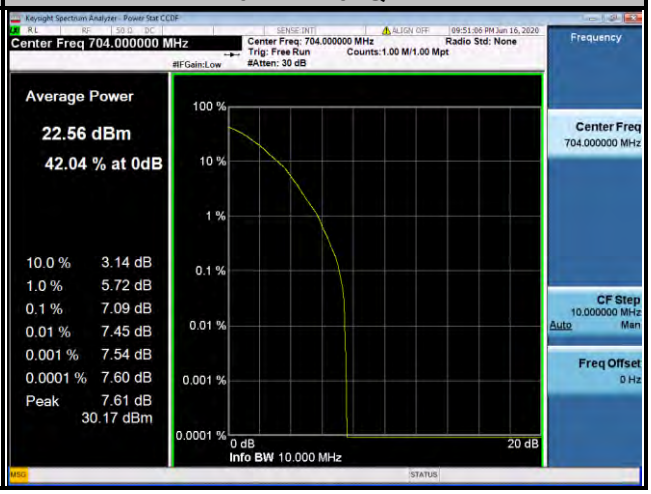
LTE Band 4									
Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
20025	1717.5	3.76	4.61	5.97	20050	1720.0	3.76	4.80	5.85
20175	1732.5	3.28	4.67	5.99	20175	1732.5	3.80	4.58	5.82
20325	1747.5	3.65	5.13	6.30	20300	1745.0	4.37	5.36	6.26

Spectrum Plot of Worst Value	
15 MHz / 64QAM	20 MHz / 64QAM
	

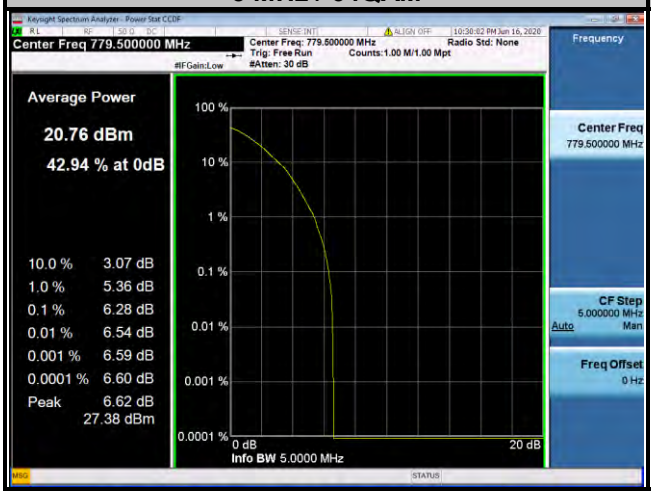
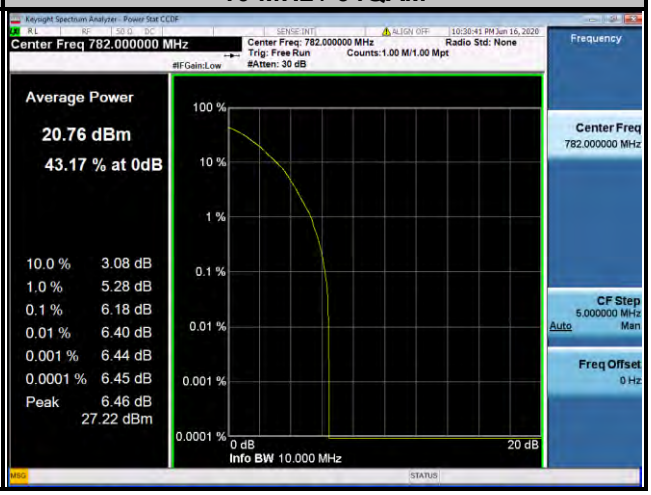
LTE Band 12									
Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23017	699.7	4.05	5.72	7.11	23025	700.5	3.85	5.58	7.14
23095	707.5	3.90	5.44	6.66	23095	707.5	3.64	5.19	6.55
23173	715.3	3.89	5.33	6.64	23165	714.5	3.79	5.37	6.98

Spectrum Plot of Worst Value	
1.4 MHz / 64QAM	3 MHz / 64QAM
	

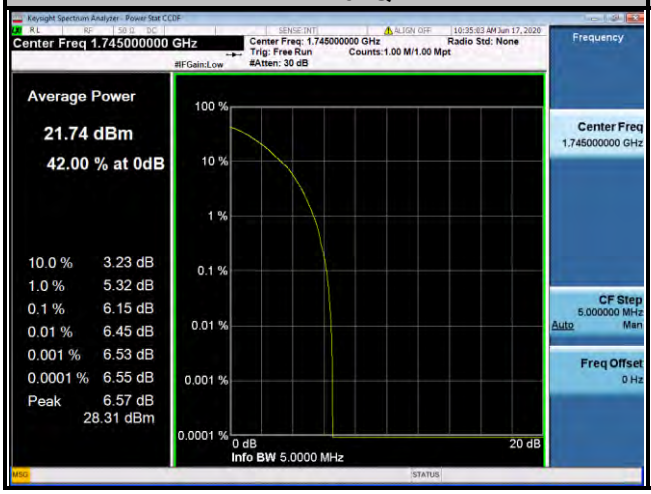
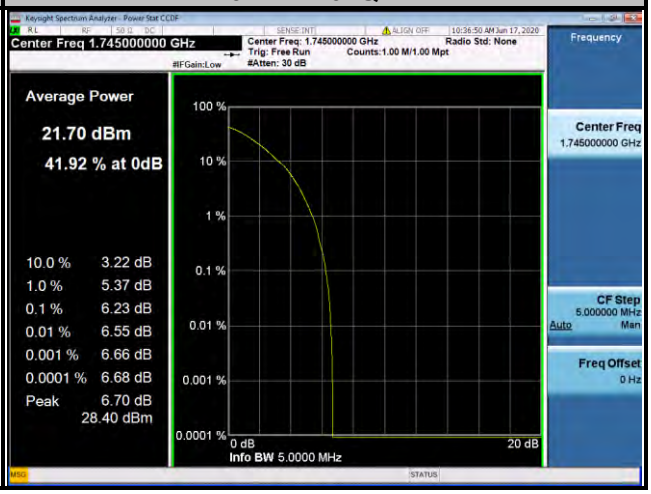
LTE Band 12									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23035	701.5	3.85	5.56	7.11	23060	704.0	3.78	5.46	7.09
23095	707.5	3.59	5.09	6.52	23095	707.5	3.63	5.18	6.65
23155	713.5	3.86	5.57	7.13	23130	711.0	3.61	5.10	6.56

Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM
	

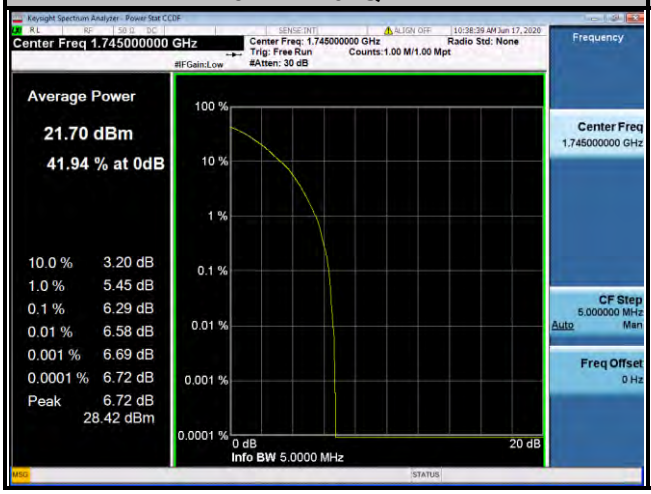
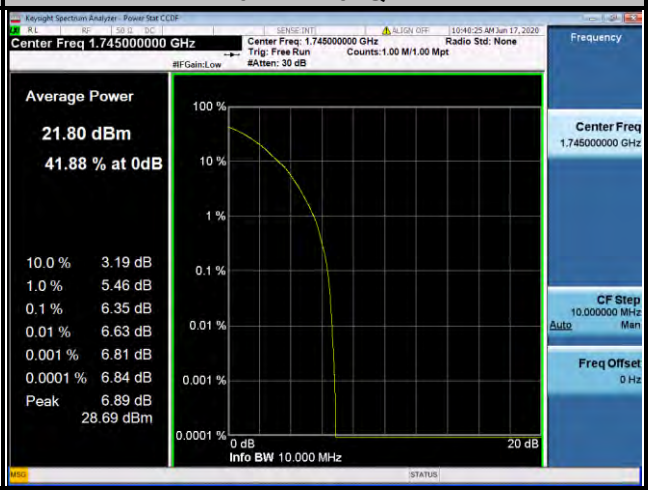
LTE Band 13									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
23205	779.5	3.49	4.93	6.28	23230	782.0	3.41	4.74	6.18
23230	782.0	2.71	3.93	5.06					
23255	784.5	2.68	3.82	4.90					

Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM
	

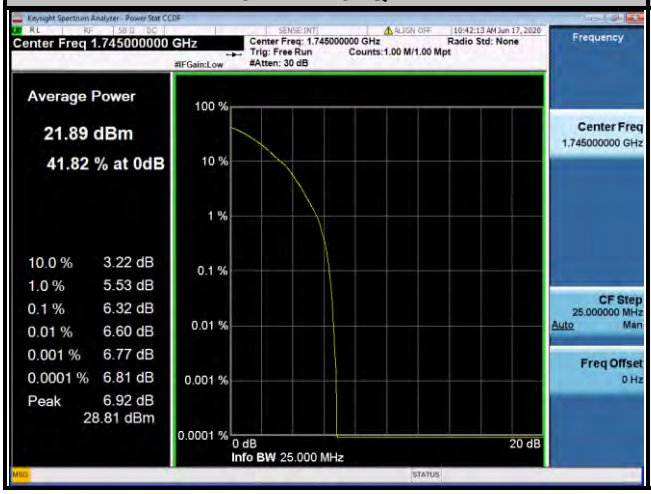
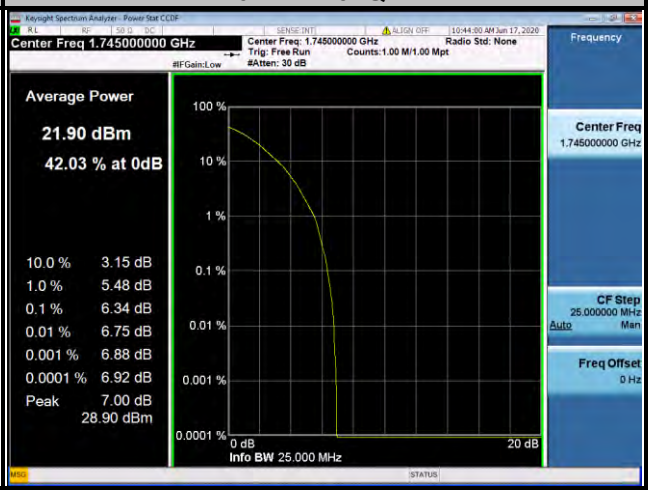
LTE Band 66									
Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131979	1710.7	3.79	4.94	5.72	131987	1711.5	3.70	4.88	5.81
132322	1745.0	3.92	5.27	6.15	132322	1745.0	3.75	5.19	6.23
132665	1779.3	3.42	4.49	5.27	132657	1778.5	3.51	4.75	5.69

Spectrum Plot of Worst Value	
1.4 MHz / 64QAM	3 MHz / 64QAM
	

LTE Band 66									
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
131997	1712.5	3.64	4.83	5.77	132022	1715.0	3.56	4.76	5.72
132322	1745.0	3.77	5.22	6.29	132322	1745.0	3.71	5.21	6.35
132647	1777.5	3.58	4.83	5.84	132622	1775.0	3.24	4.44	5.53

Spectrum Plot of Worst Value	
5 MHz / 64QAM	10 MHz / 64QAM
	

LTE Band 66									
Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
Channel	Frequency (MHz)	Peak to Average Ratio (dB)			Channel	Frequency (MHz)	Peak to Average Ratio (dB)		
		QPSK	16QAM	64QAM			QPSK	16QAM	64QAM
132047	1717.5	3.53	4.74	5.74	132072	1720.0	3.52	4.77	5.78
132322	1745.0	3.68	5.16	6.32	132322	1745.0	4.02	5.17	6.34
132597	1772.5	2.89	3.94	5.06	132572	1770.0	2.73	3.75	4.86

Spectrum Plot of Worst Value	
15 MHz / 64QAM	20 MHz / 64QAM
	

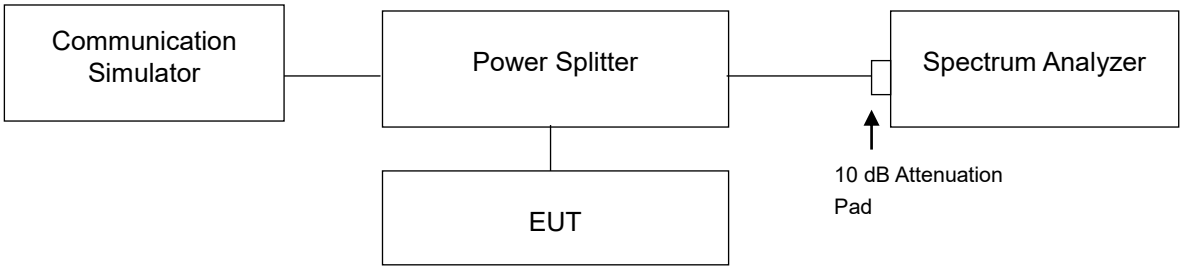
4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log (P) dB. The limit of emission is equal to -13 dBm.

For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz. The limit of emissions is equal to -40 dBm.

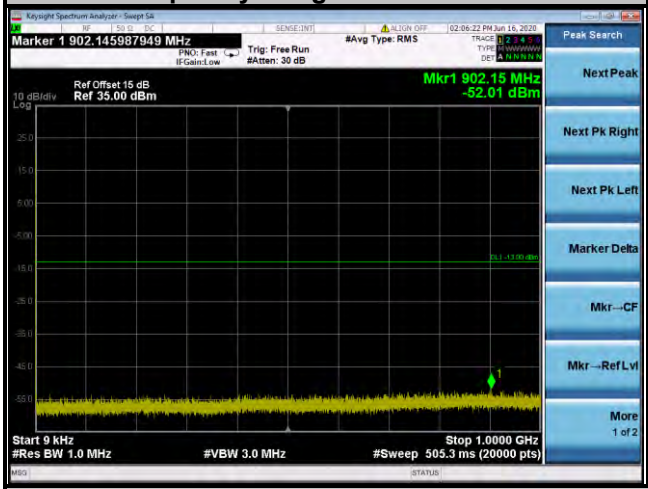
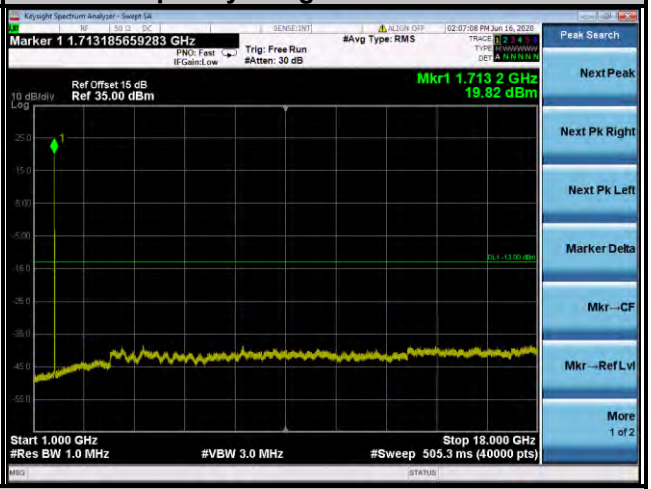
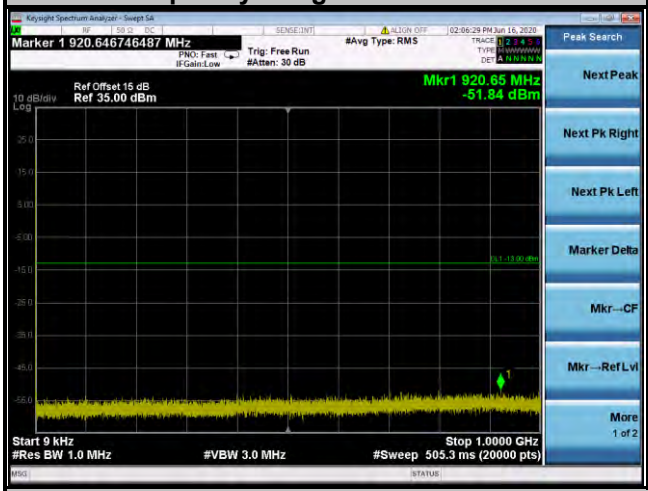
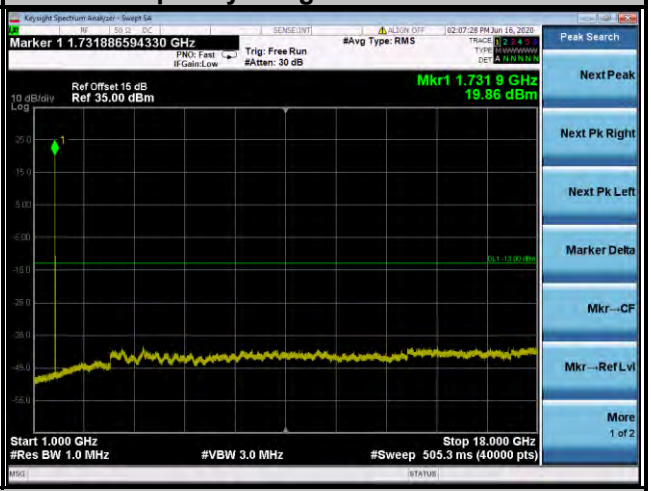
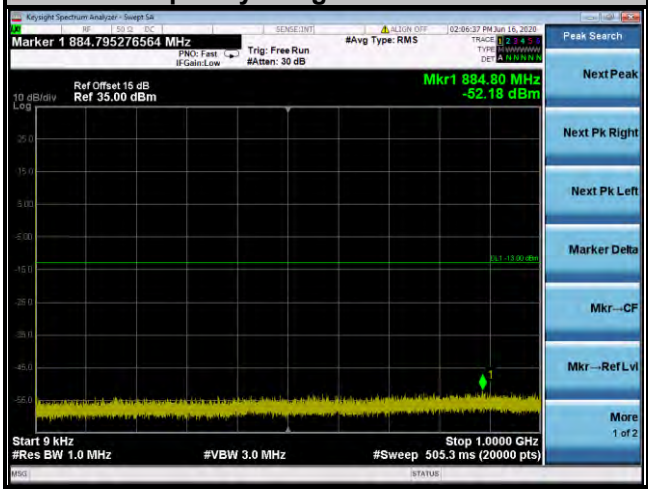
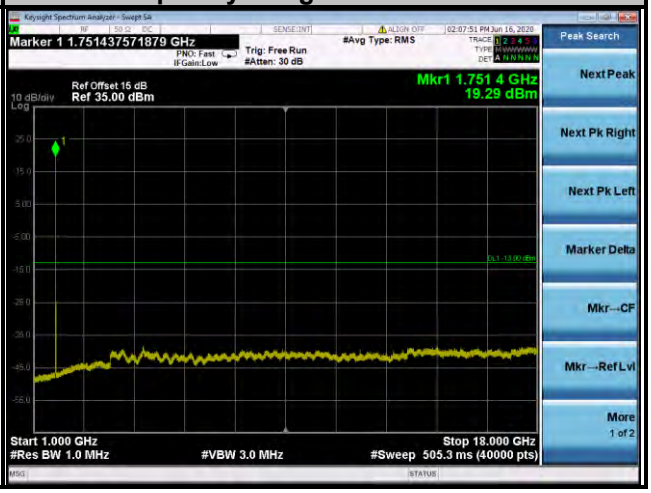
4.7.2 Test Setup



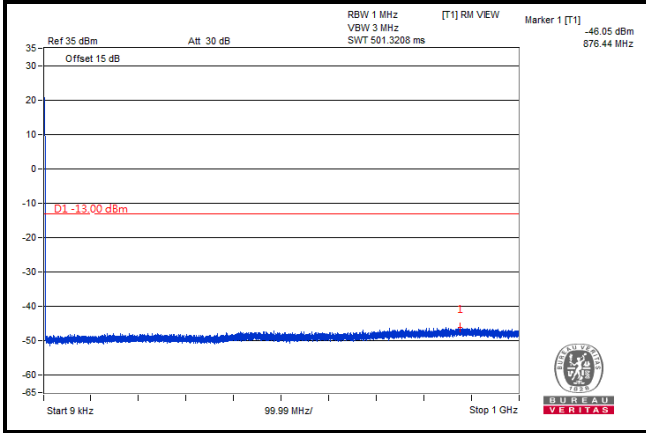
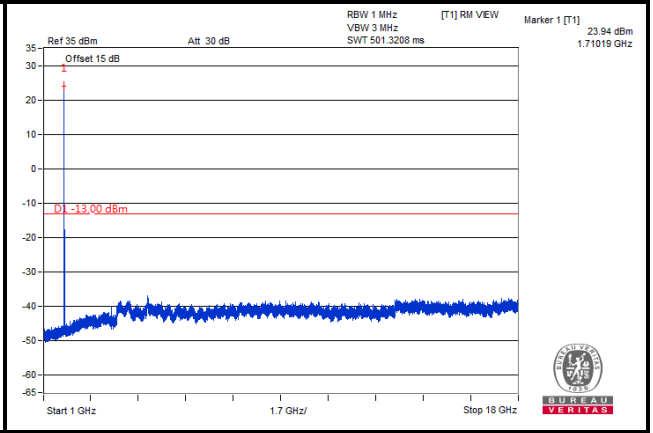
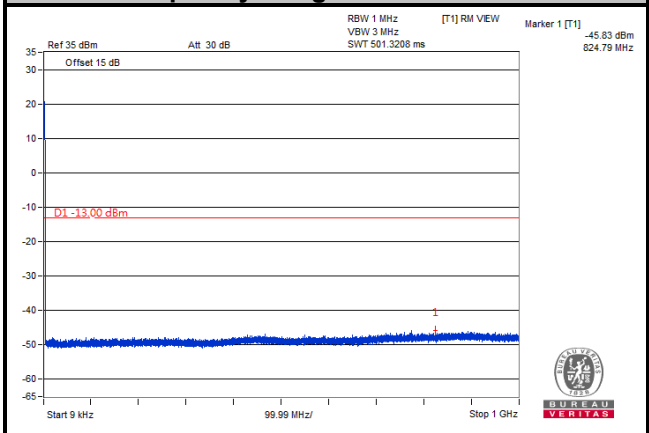
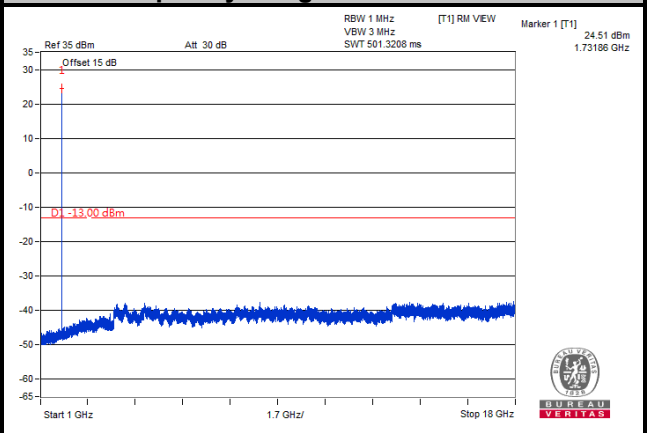
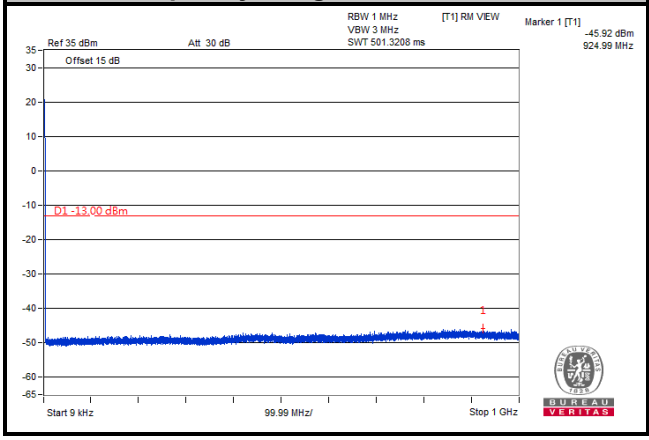
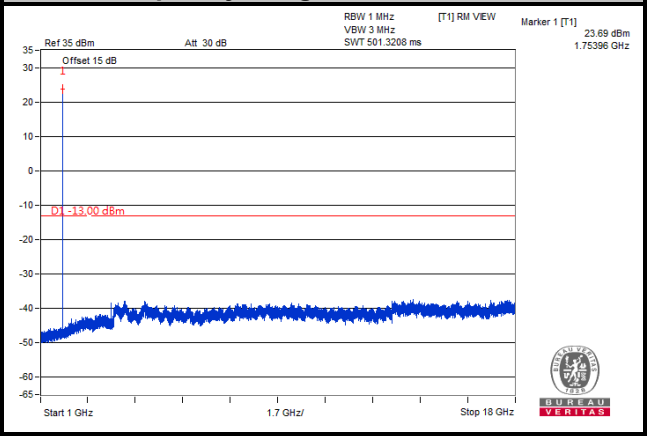
4.7.3 Test Procedure

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 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.
c. Measuring frequency range is from 1 GHz to 8 GHz / 18 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

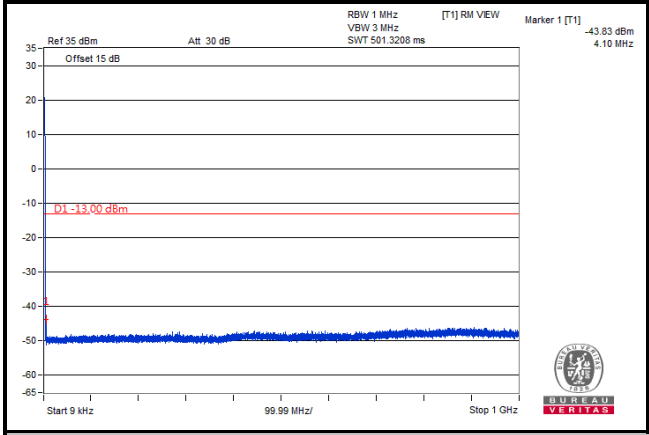
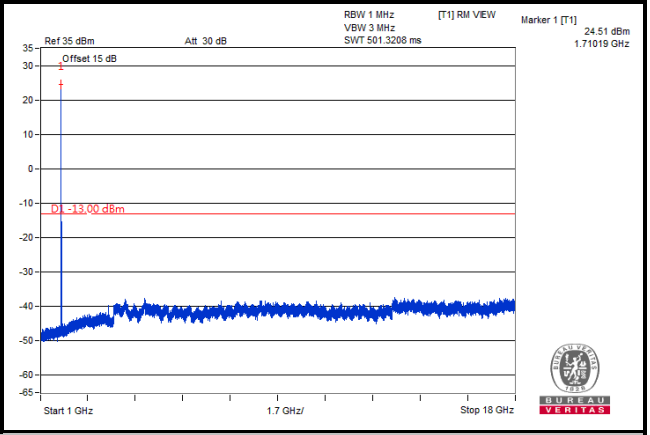
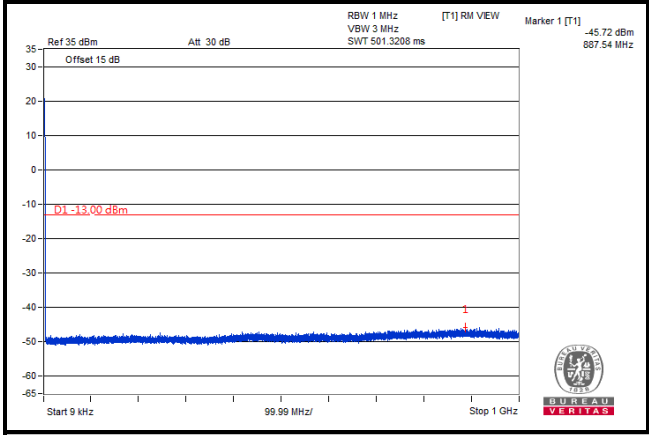
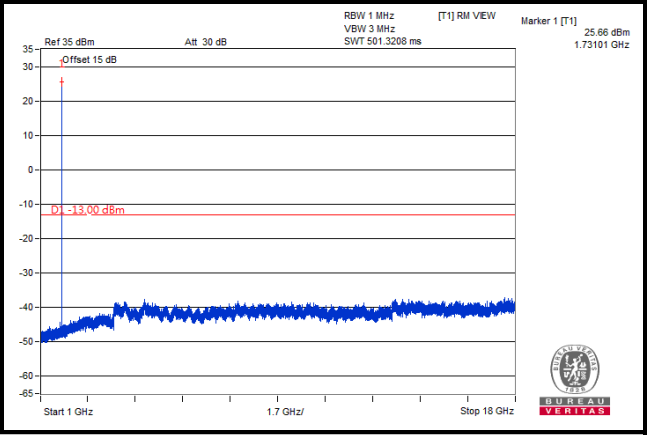
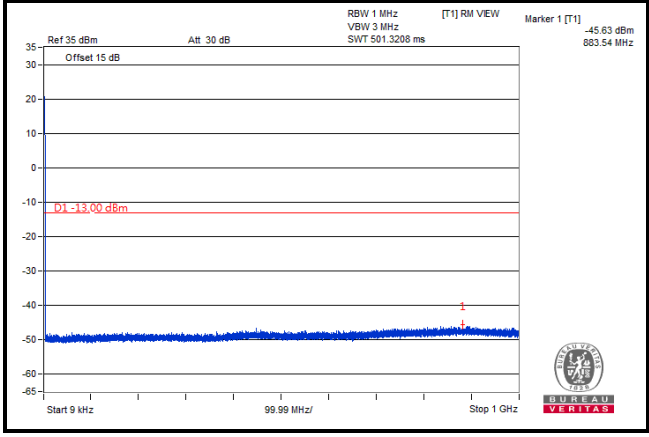
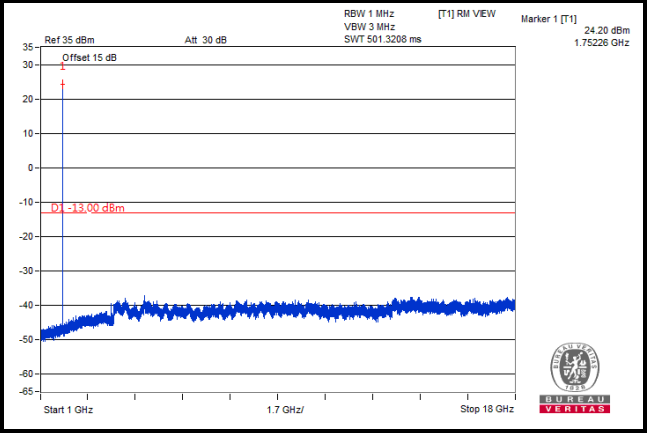
4.7.4 Test Results

WCDMA	
Channel 1312	
Frequency Range: 9 kHz ~ 1 GHz	**Frequency Range: 1 GHz ~ 18 GHz**
	
Channel 1413	
Frequency Range: 9 kHz ~ 1 GHz	**Frequency Range: 1 GHz ~ 18 GHz**
	
Channel 1513	
Frequency Range: 9 kHz ~ 1 GHz	**Frequency Range: 1 GHz ~ 18 GHz**
	

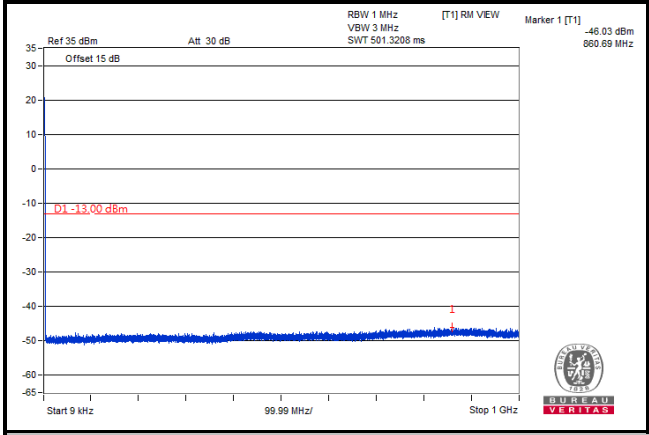
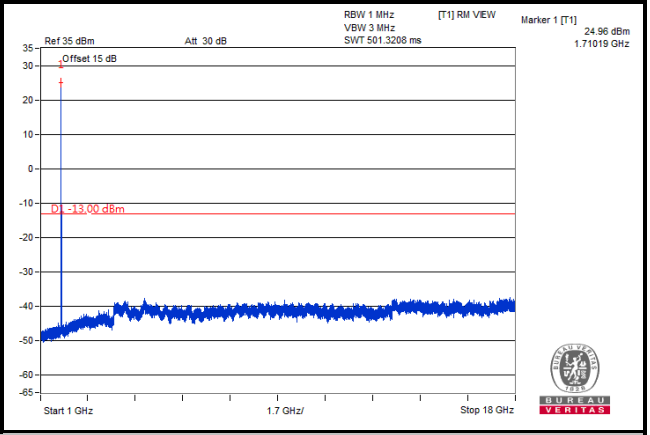
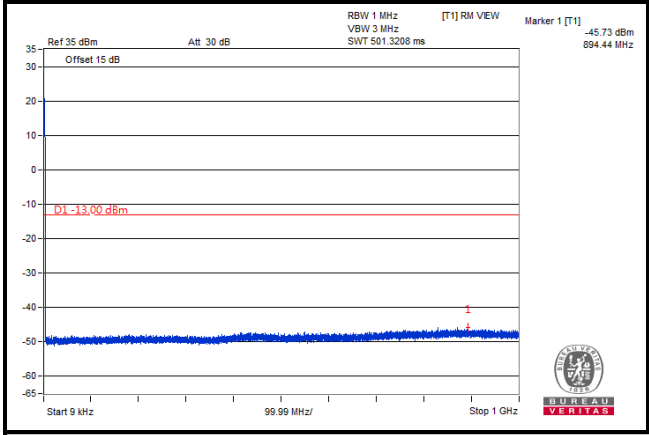
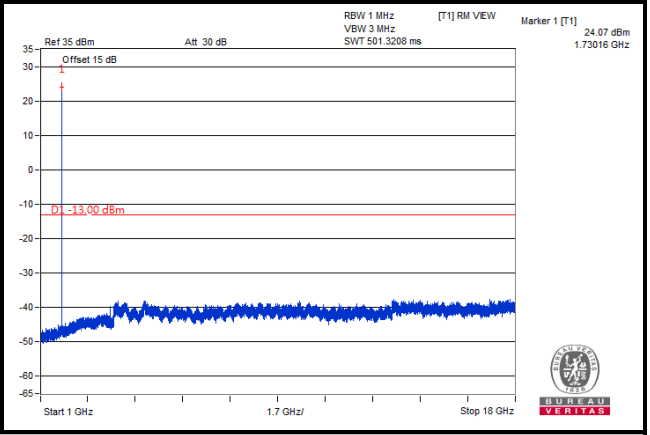
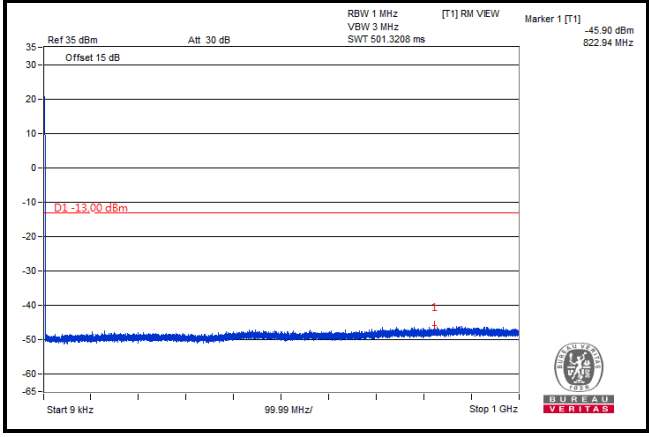
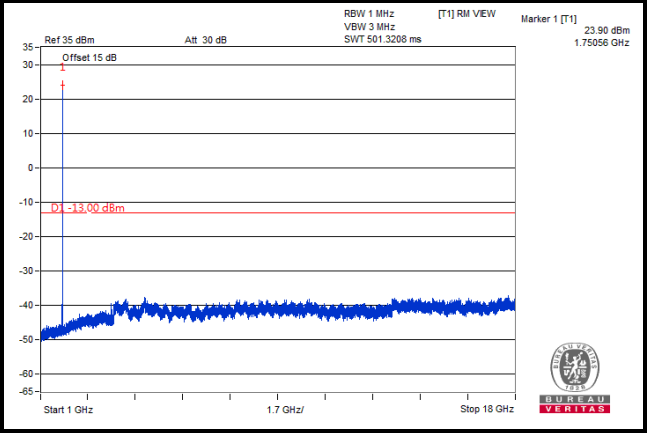
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 1.4 MHz	
Channel 19957	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20393	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

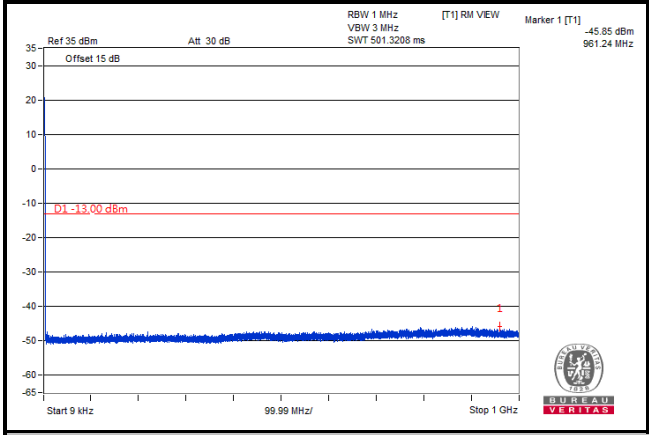
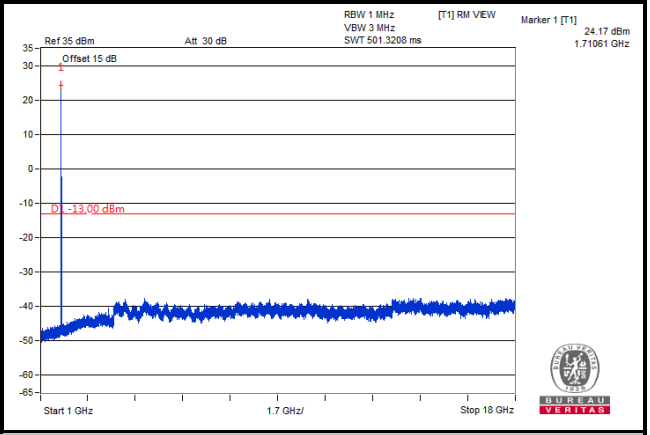
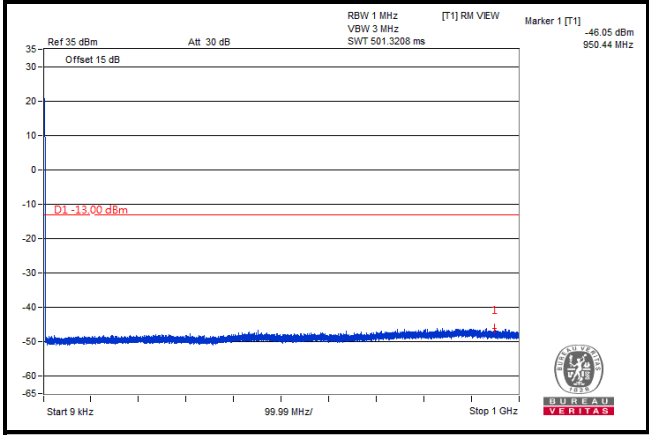
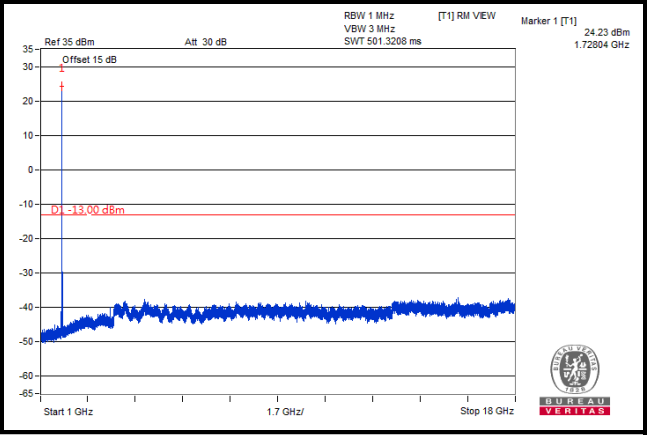
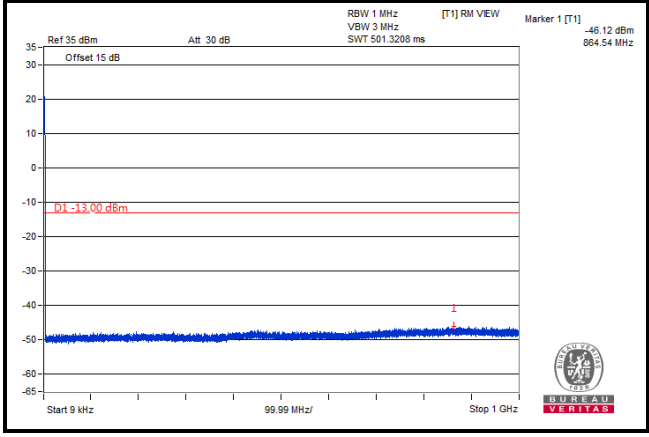
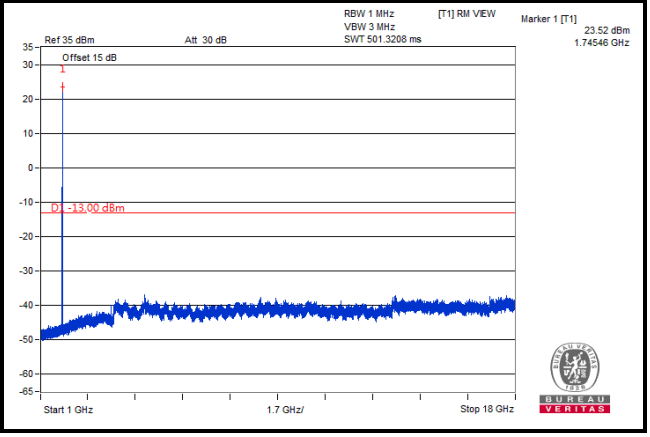
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 3 MHz	
Channel 19965	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20385	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

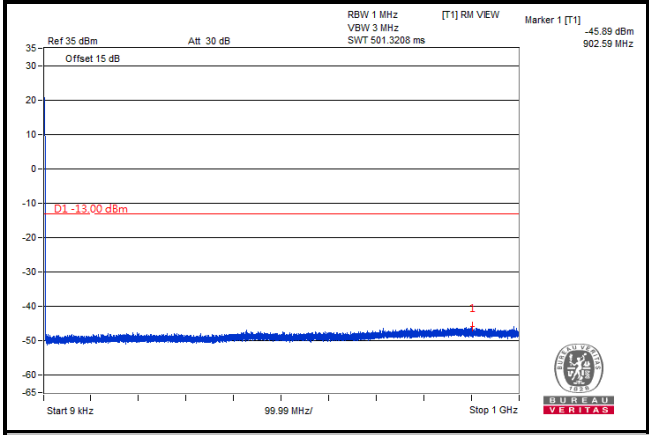
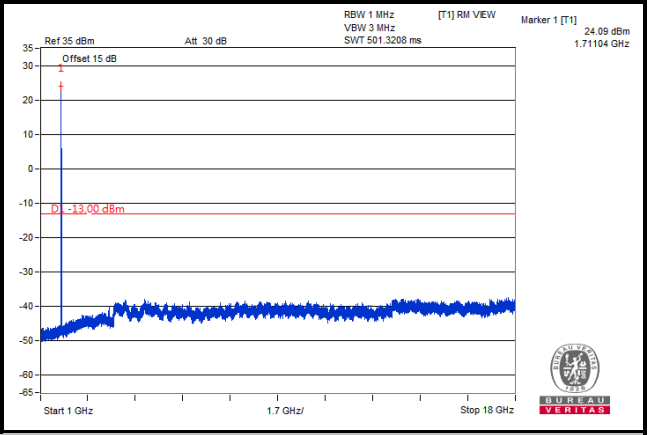
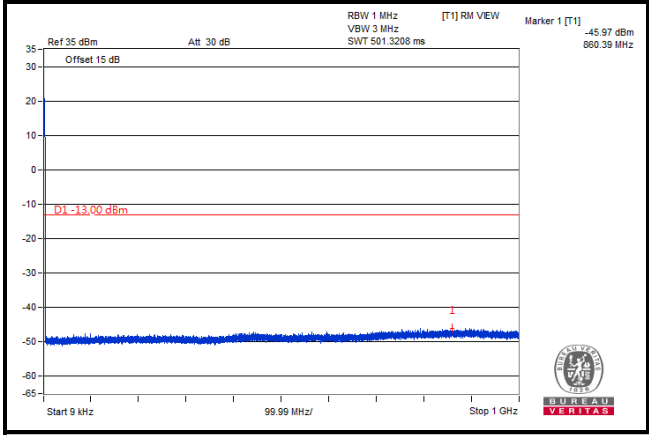
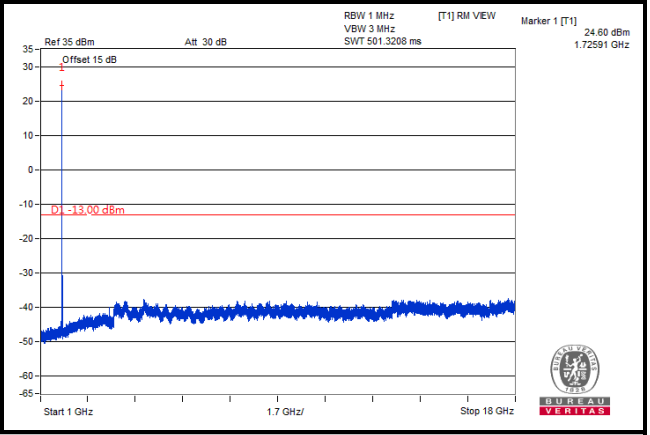
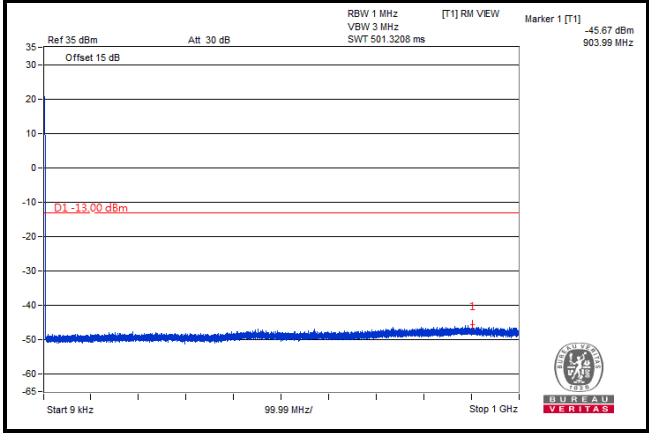
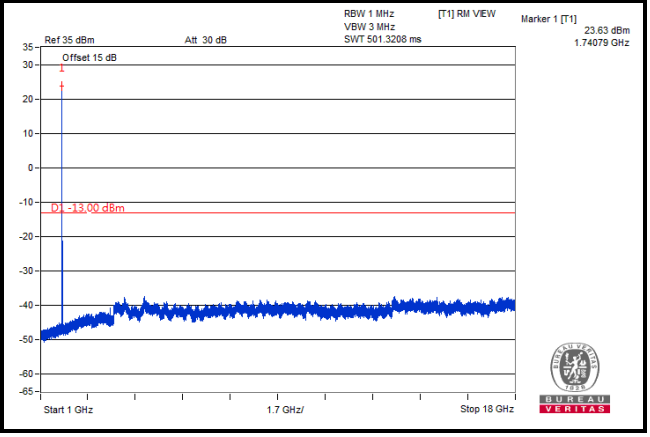
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 5 MHz	
Channel 19975	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20375	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

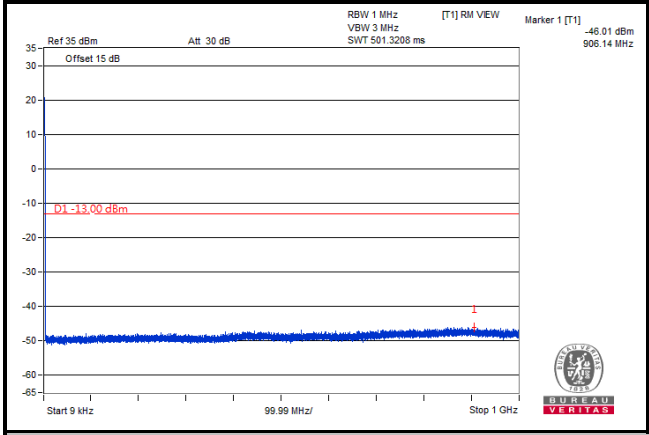
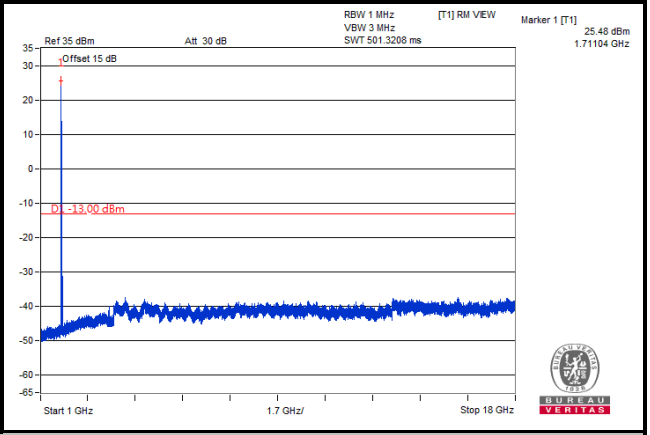
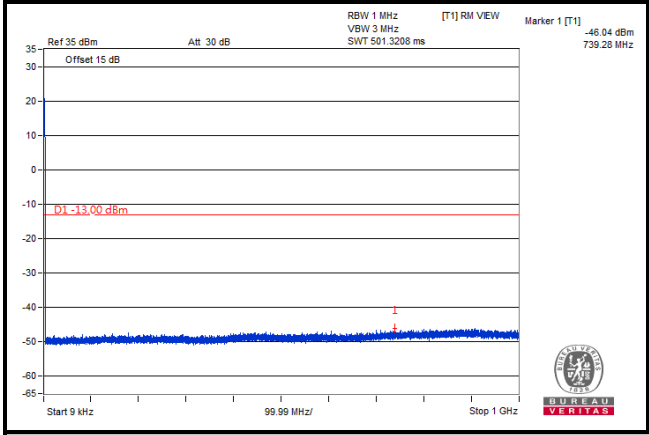
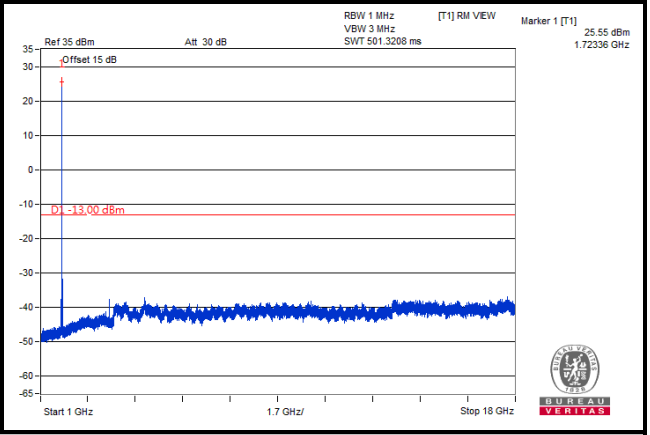
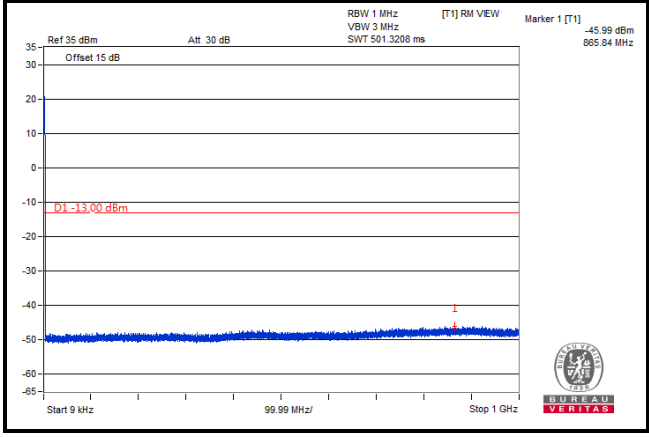
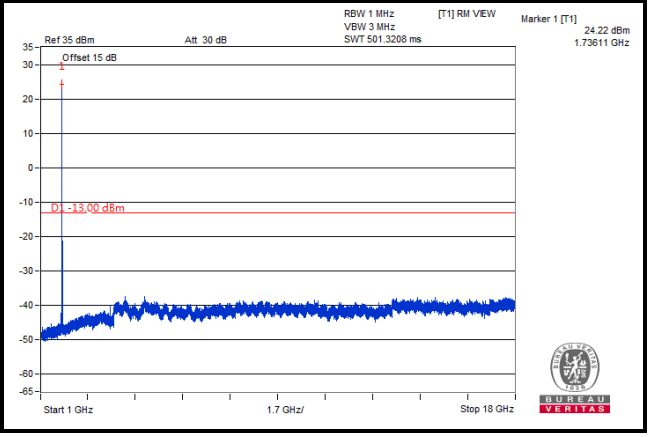
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 10 MHz	
Channel 20000	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20350	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

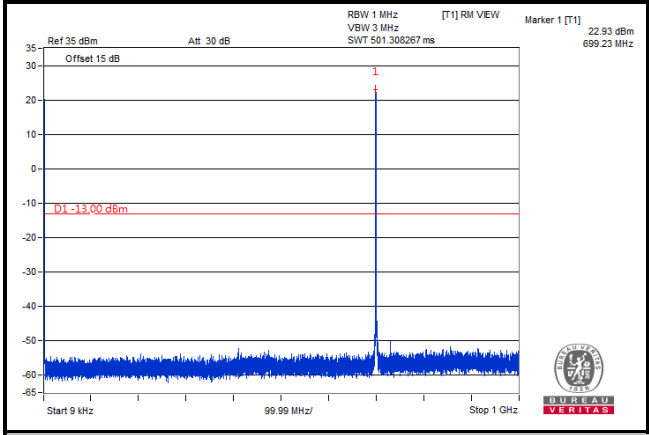
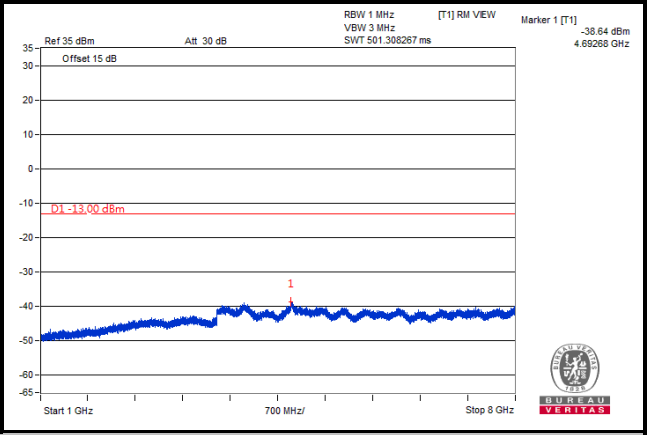
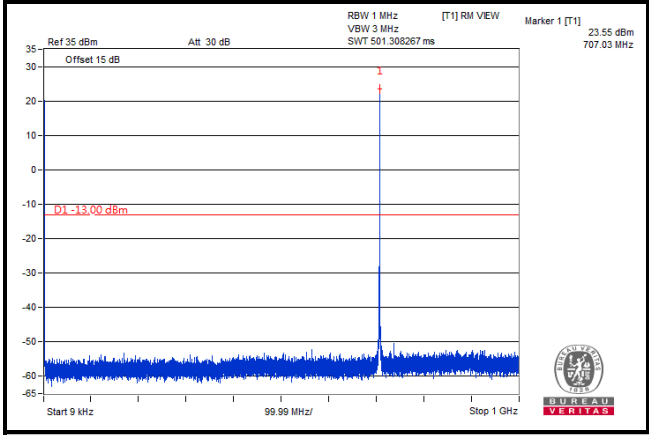
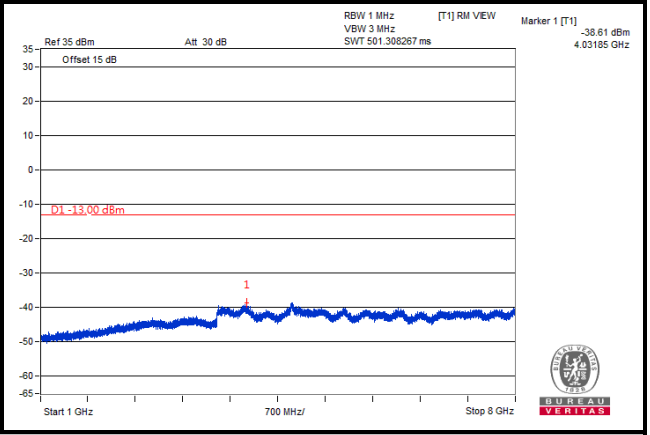
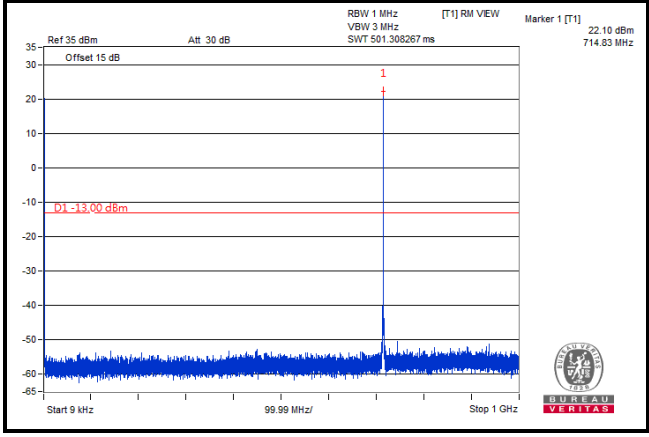
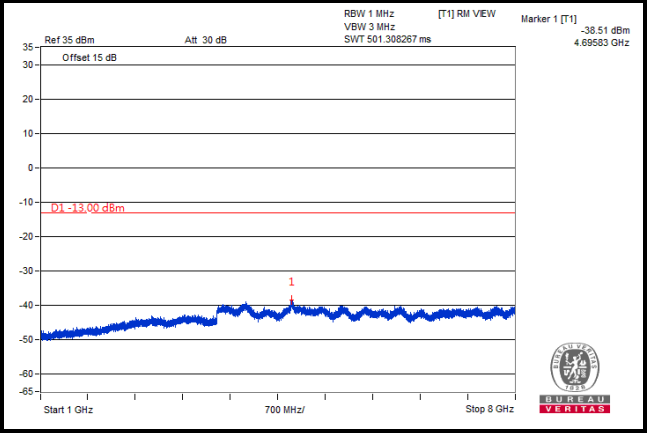
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 15 MHz	
Channel 20025	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20325	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

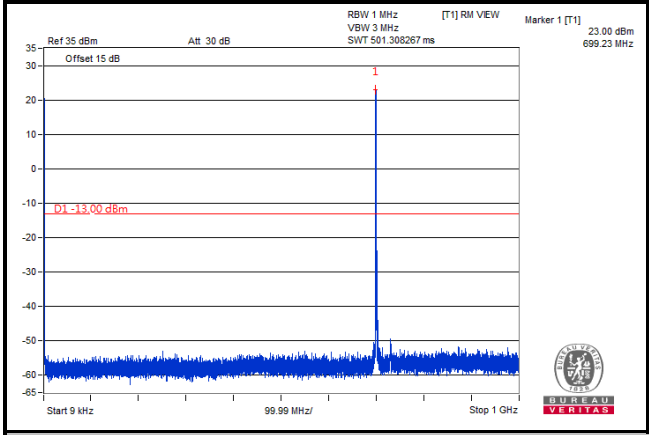
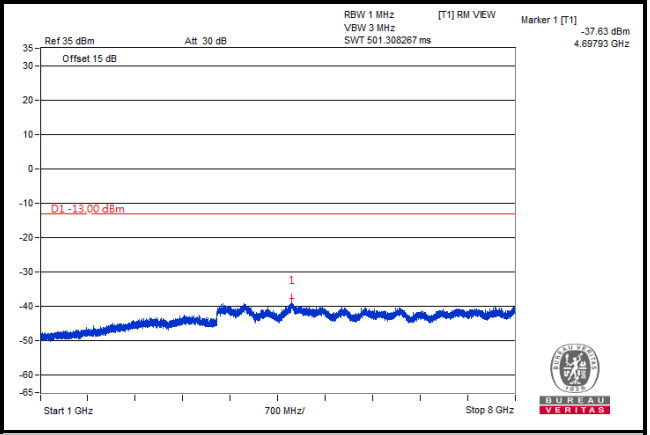
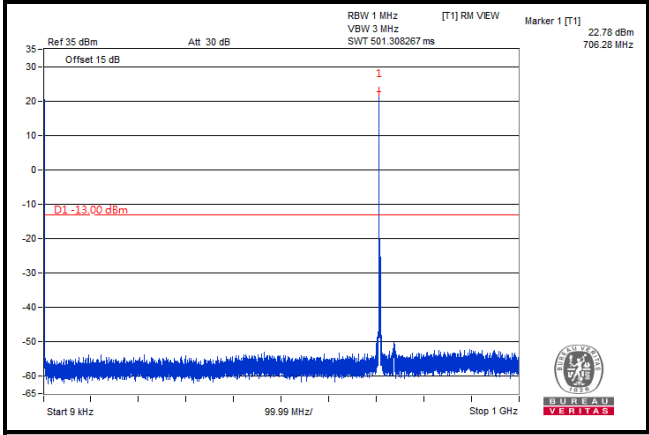
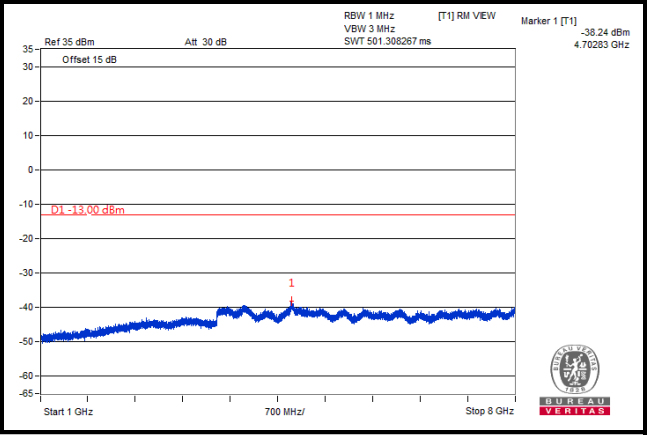
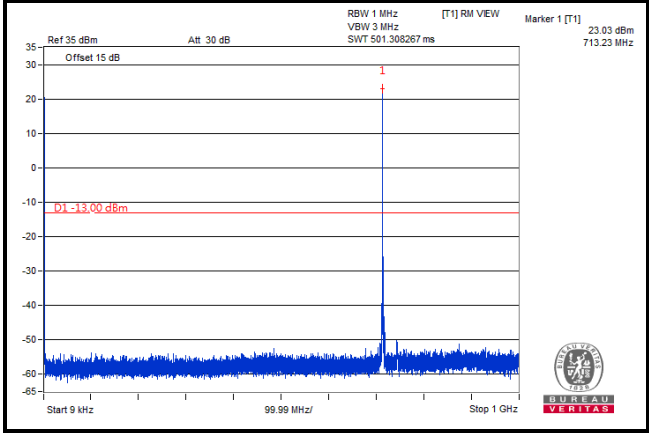
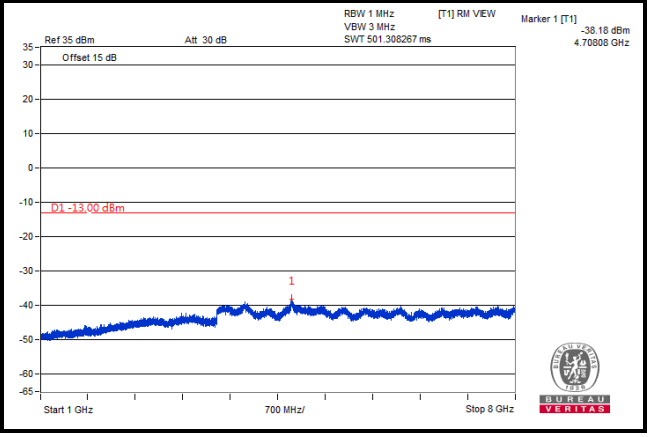
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 4	
Channel Bandwidth: 20 MHz	
Channel 20050	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20175	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 20300	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

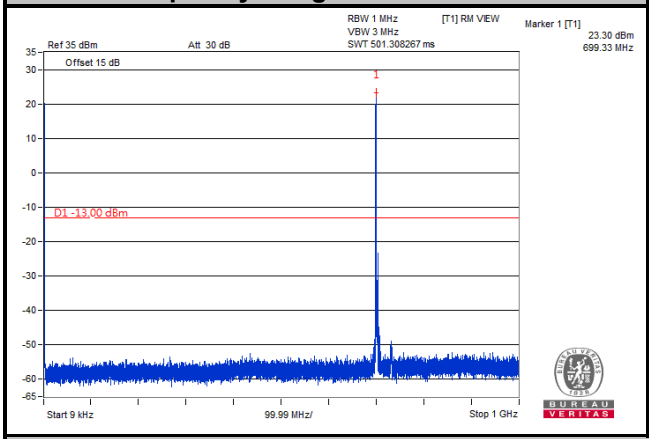
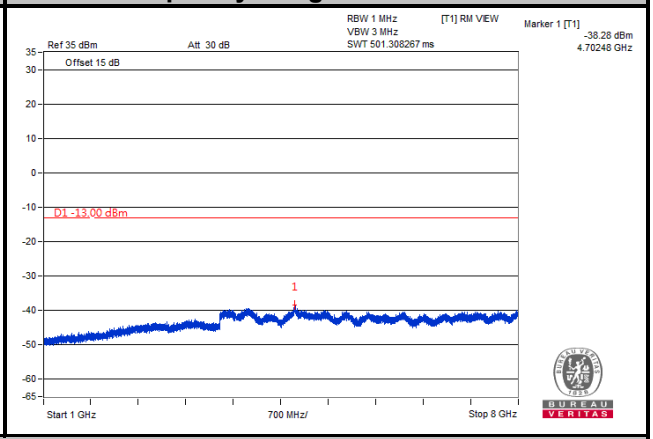
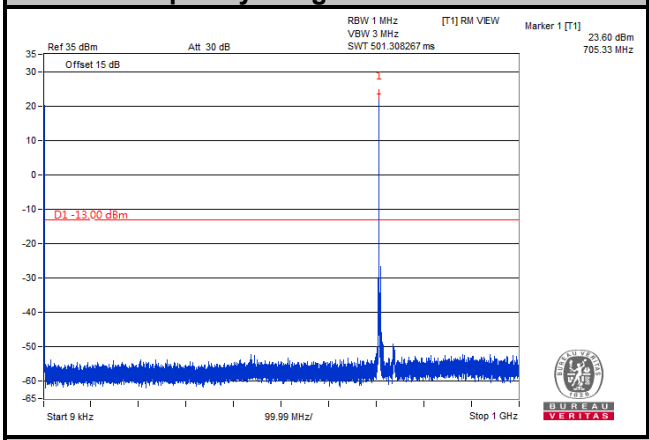
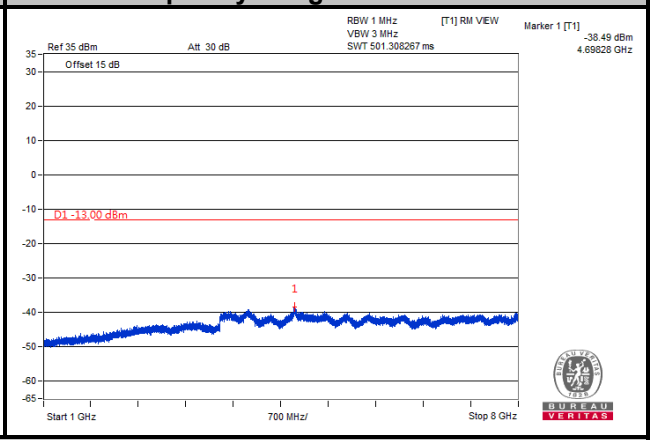
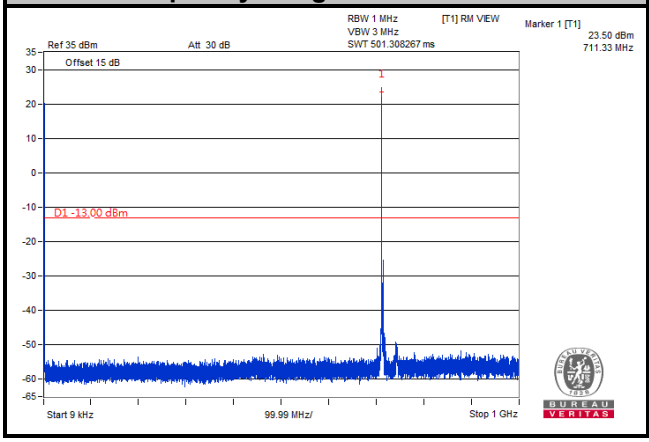
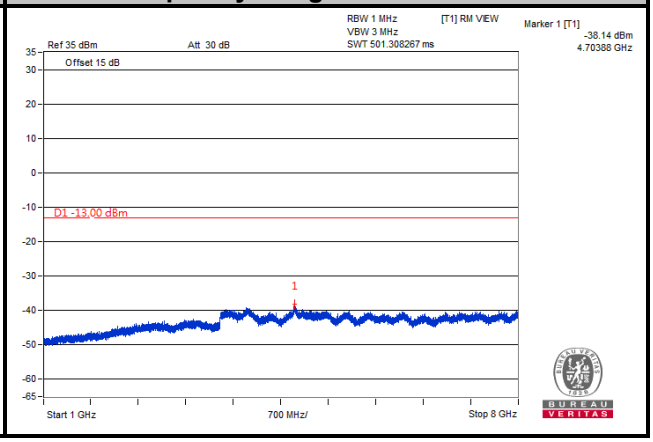
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 12	
Channel Bandwidth: 1.4 MHz	
Channel 23017	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23095	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23173	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	

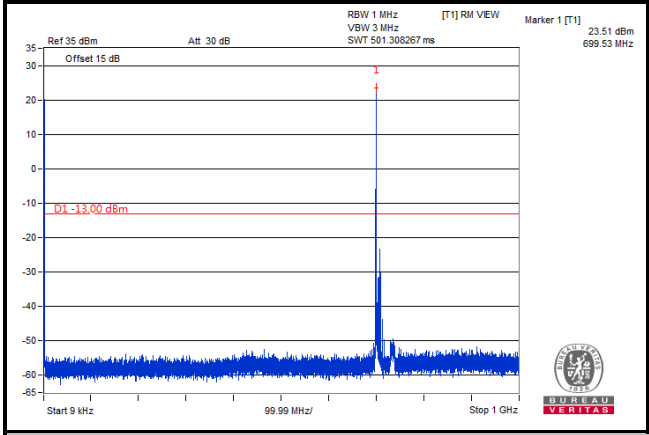
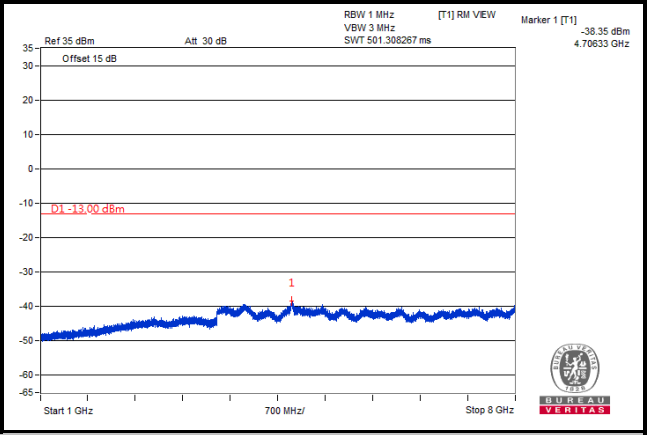
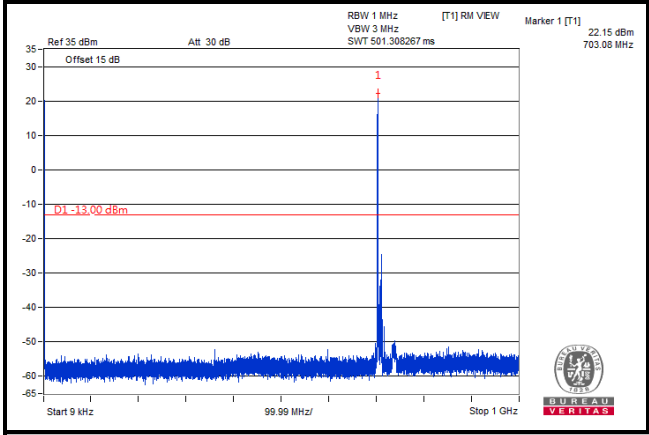
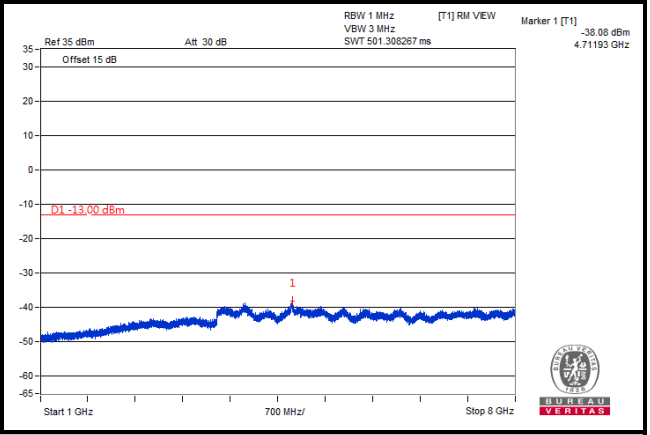
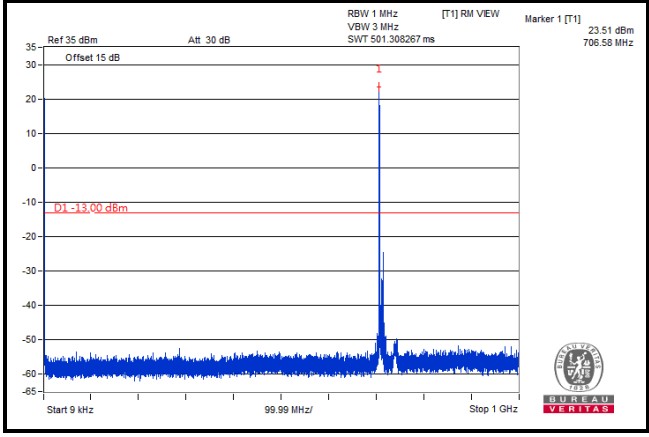
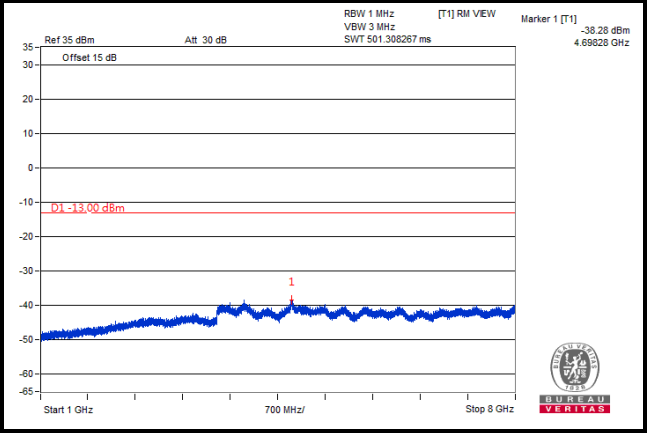
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 12	
Channel Bandwidth: 3 MHz	
Channel 23025	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23095	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23165	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	

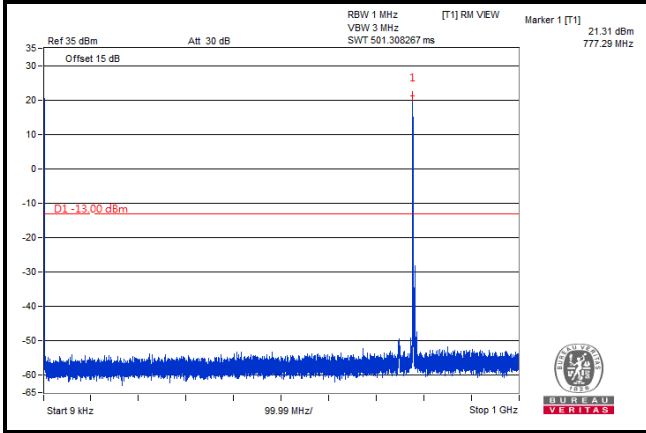
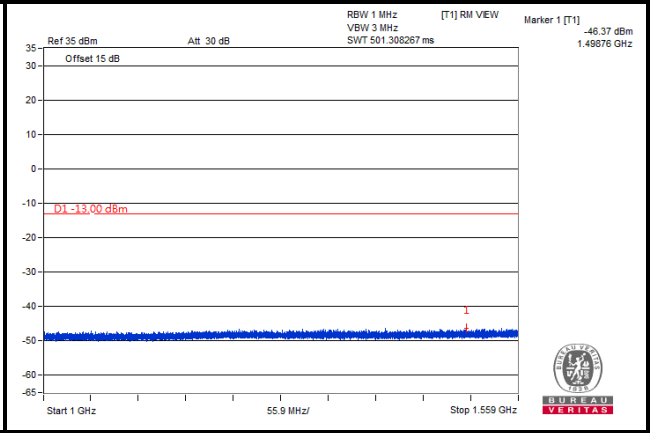
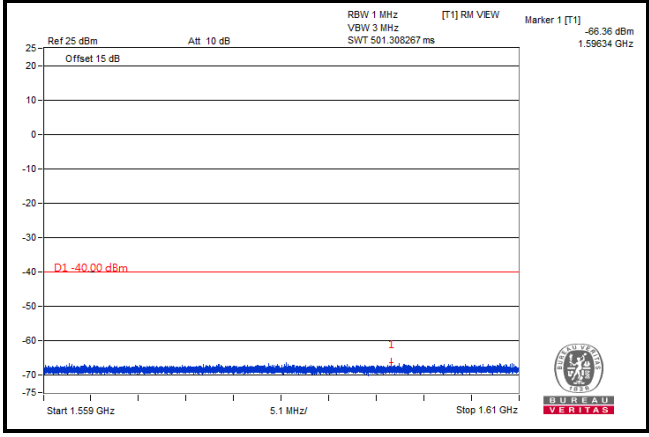
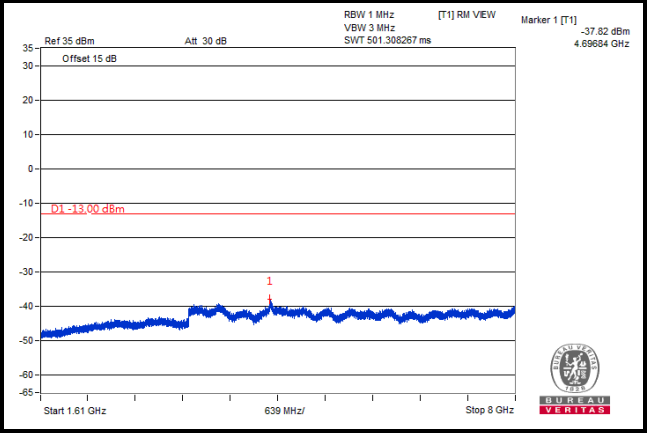
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 12	
Channel Bandwidth: 5 MHz	
Channel 23035	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23095	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23155	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	

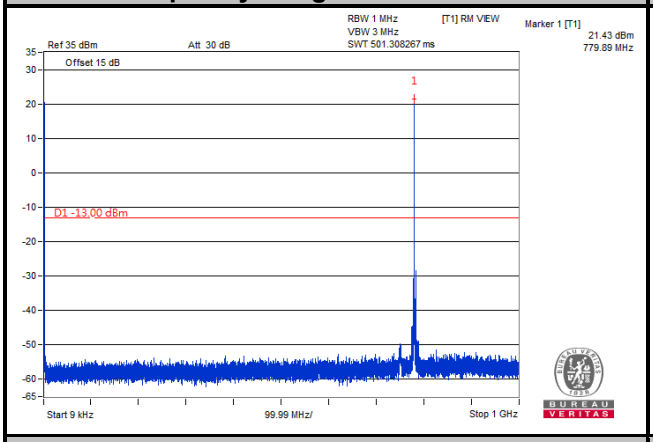
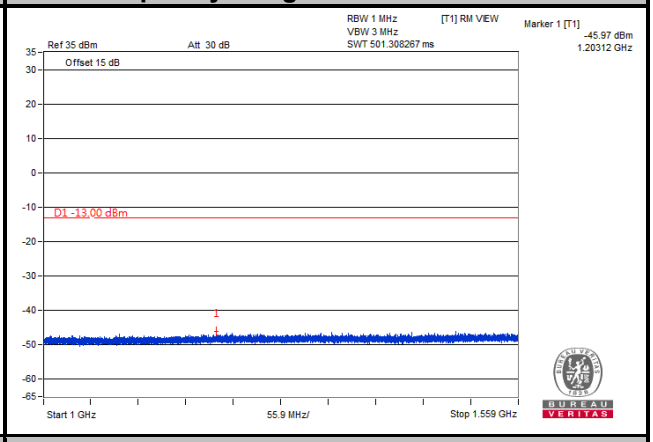
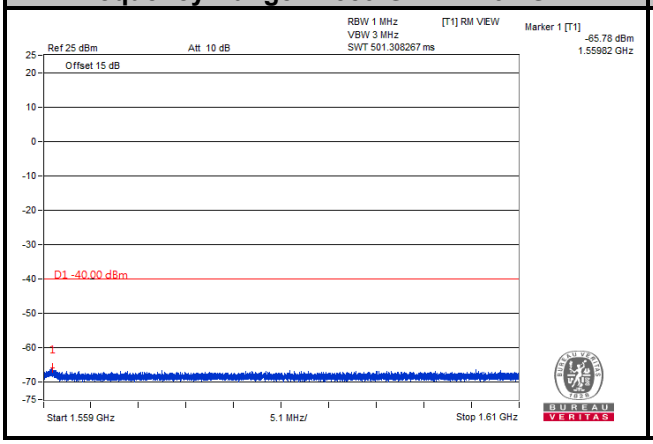
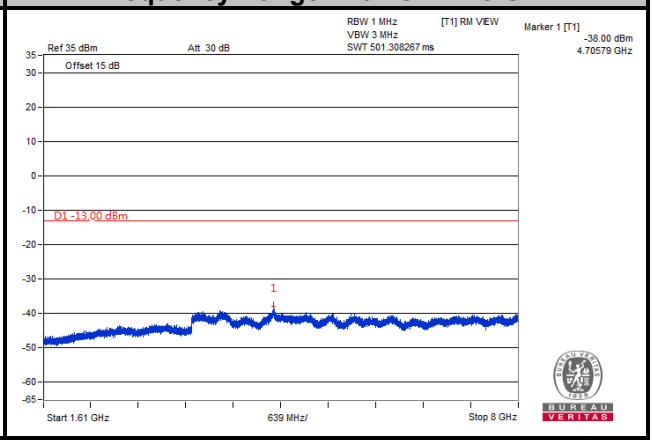
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 12	
Channel Bandwidth: 10 MHz	
Channel 23060	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23095	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	
Channel 23130	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 8 GHz
	

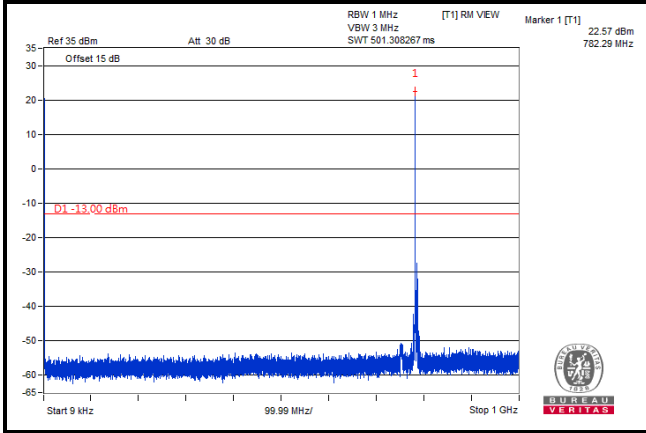
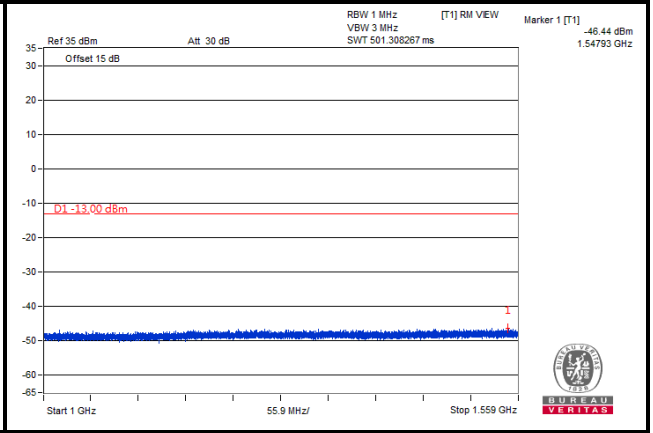
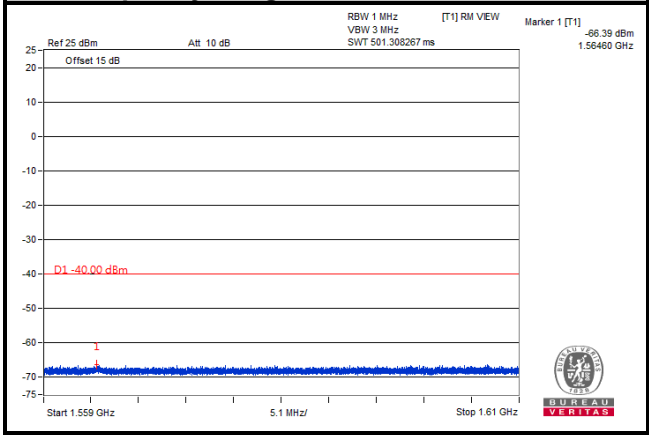
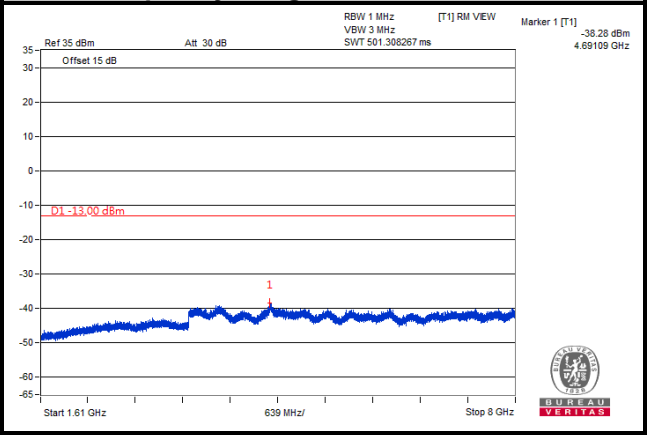
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 13	
Channel Bandwidth: 5 MHz	
Channel 23205	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 1.559 GHz
	
Frequency Range: 1.559 GHz ~ 1.61 GHz	Frequency Range: 1.61 GHz ~ 8 GHz
	

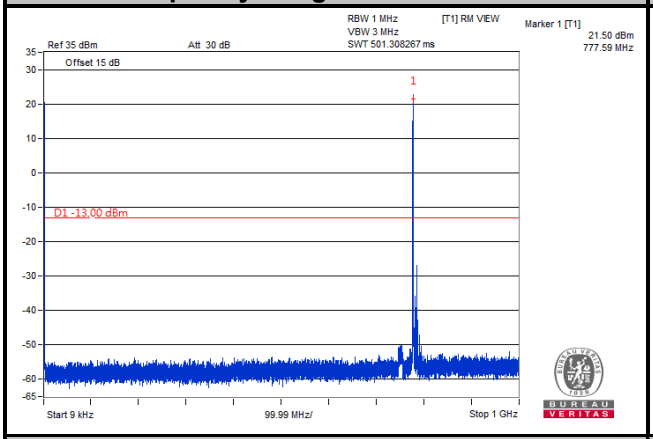
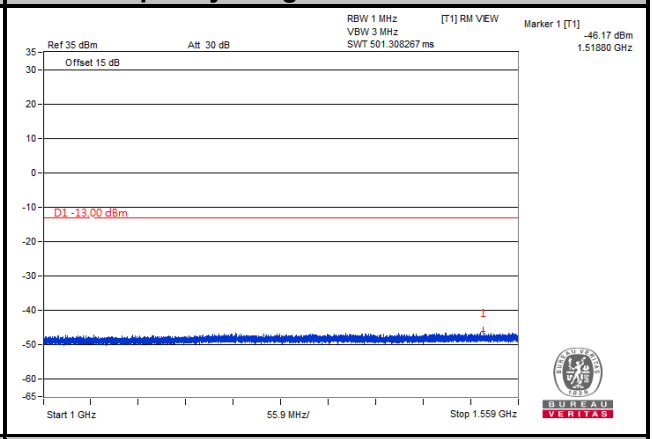
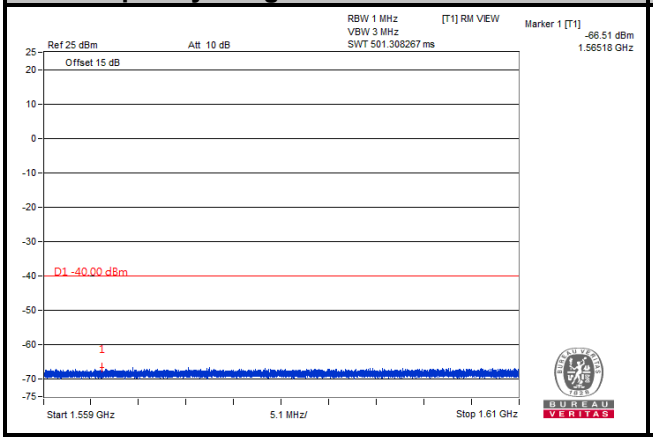
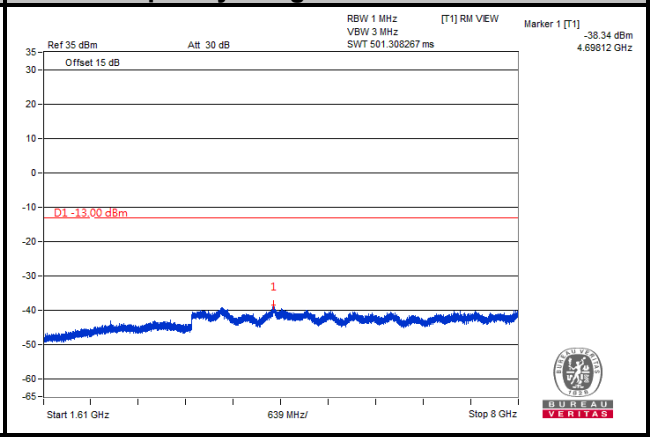
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 13	
Channel Bandwidth: 5 MHz	
Channel 23230	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 1.559 GHz
	
Frequency Range: 1.559 GHz ~ 1.61 GHz	Frequency Range: 1.61 GHz ~ 8 GHz
	

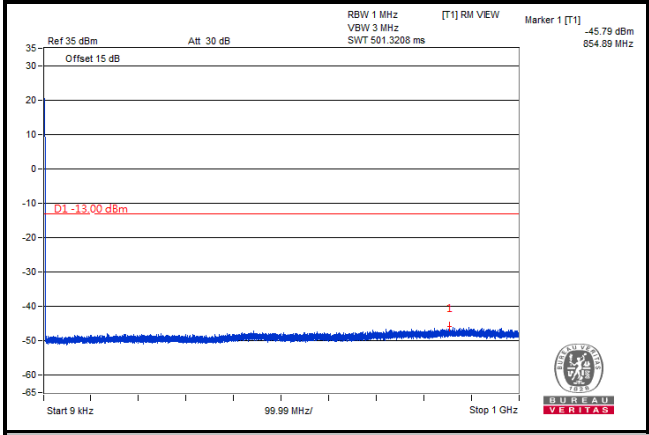
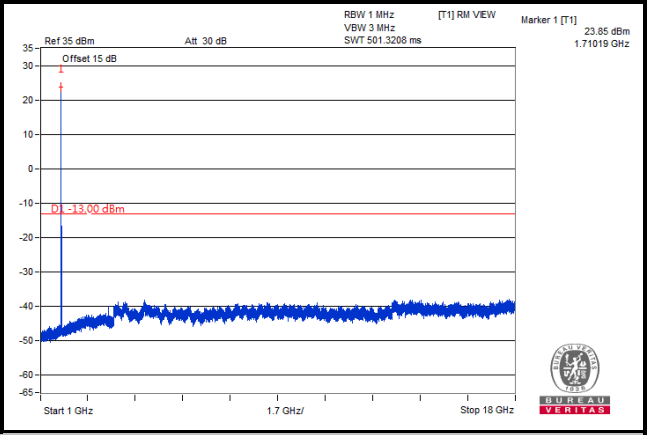
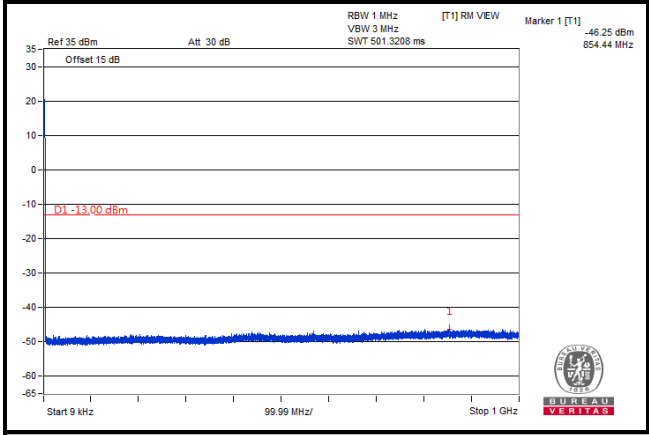
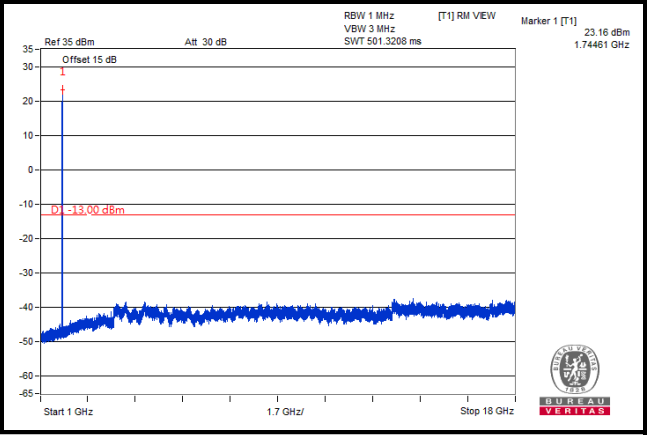
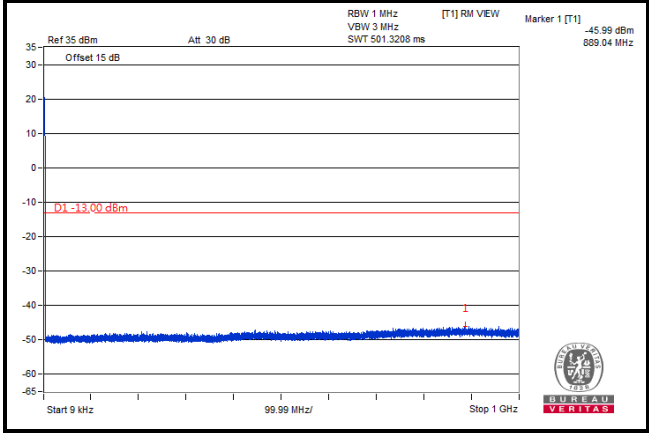
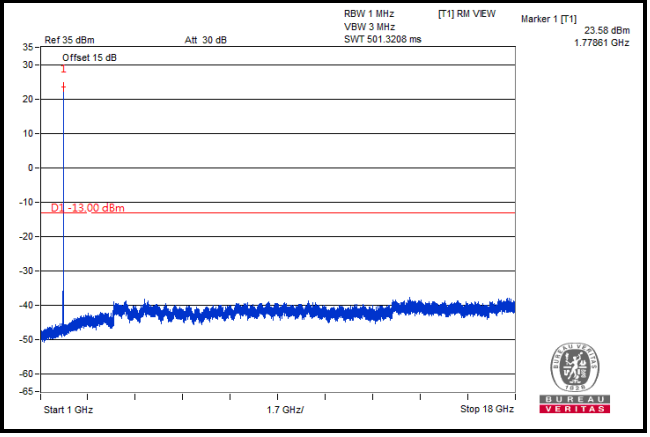
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 13	
Channel Bandwidth: 5 MHz	
Channel 23255	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 1.559 GHz
	
Frequency Range: 1.559 GHz ~ 1.61 GHz	Frequency Range: 1.61 GHz ~ 8 GHz
	

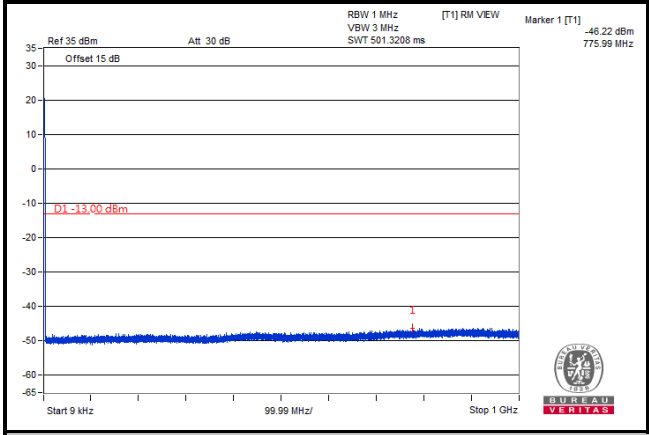
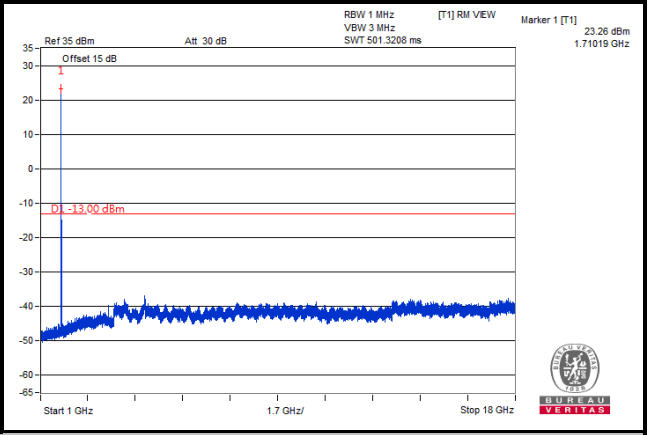
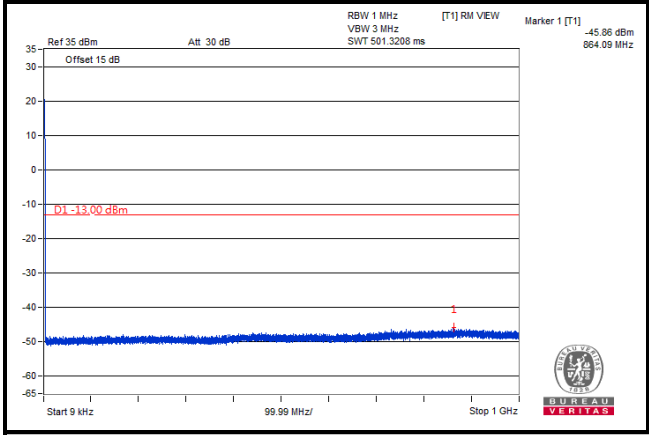
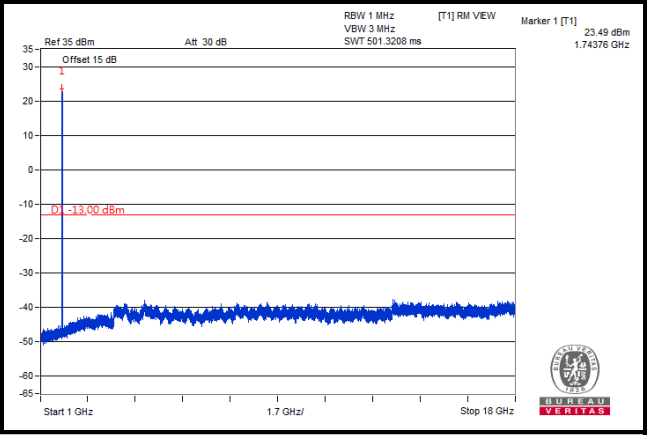
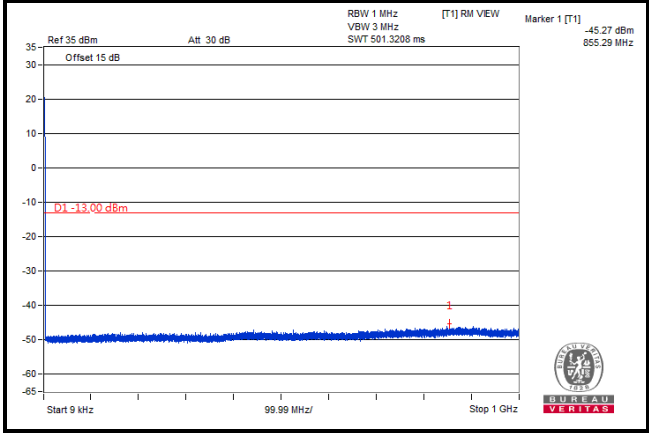
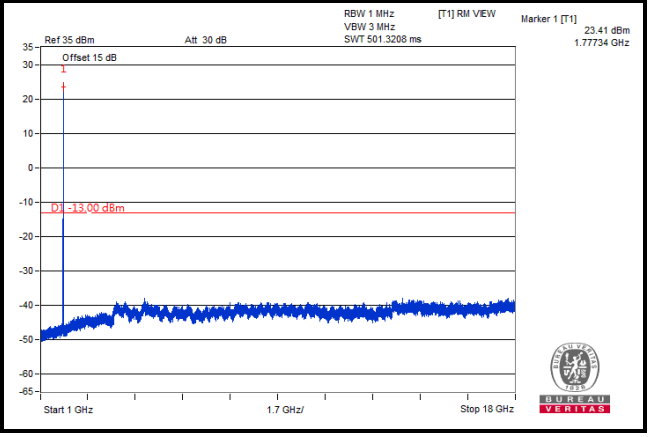
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 13	
Channel Bandwidth: 10 MHz	
Channel 23230	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 1.559 GHz
	
Frequency Range: 1.559 GHz ~ 1.61 GHz	Frequency Range: 1.61 GHz ~ 8 GHz
	

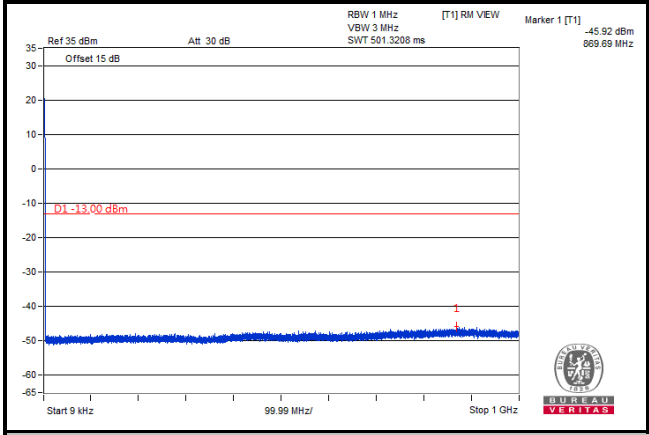
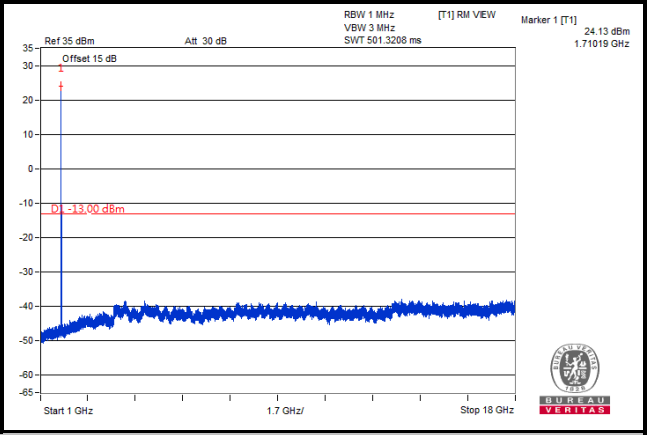
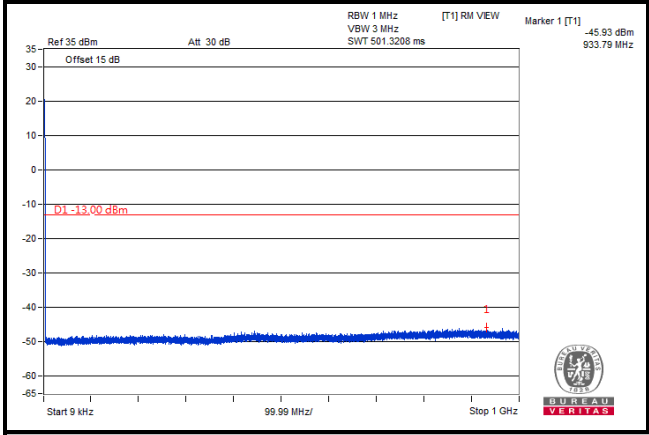
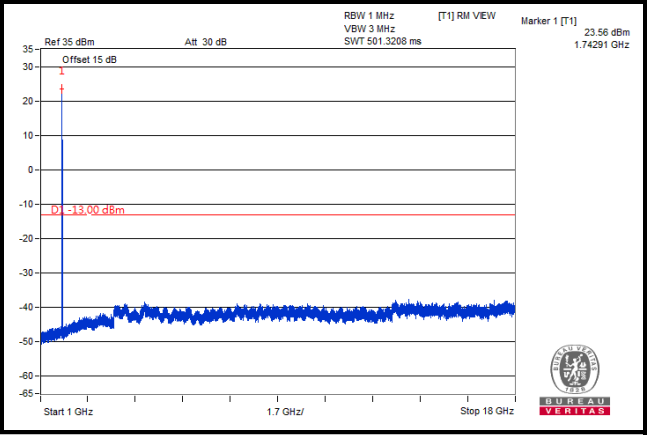
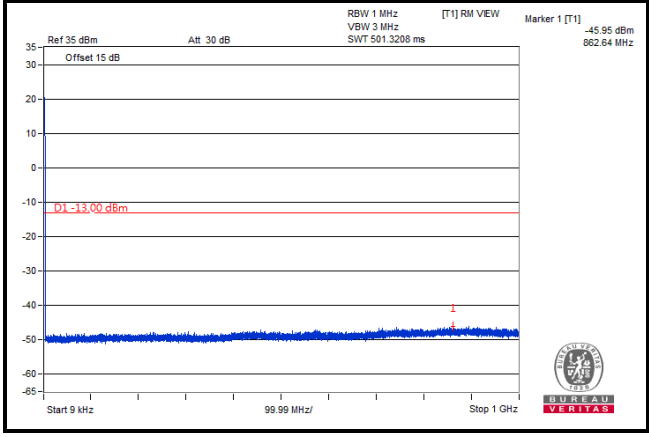
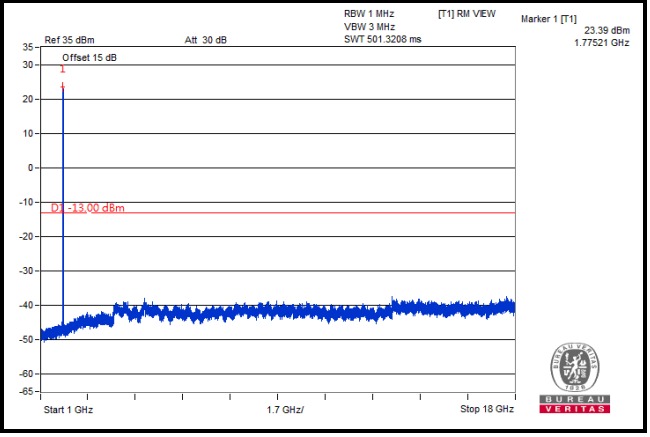
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 1.4 MHz	
Channel 131979	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132665	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

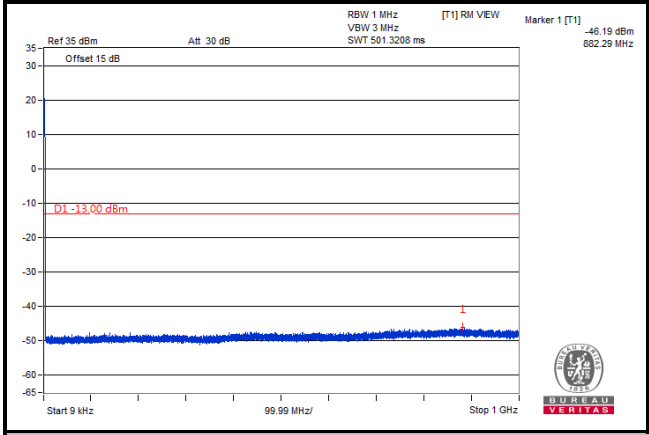
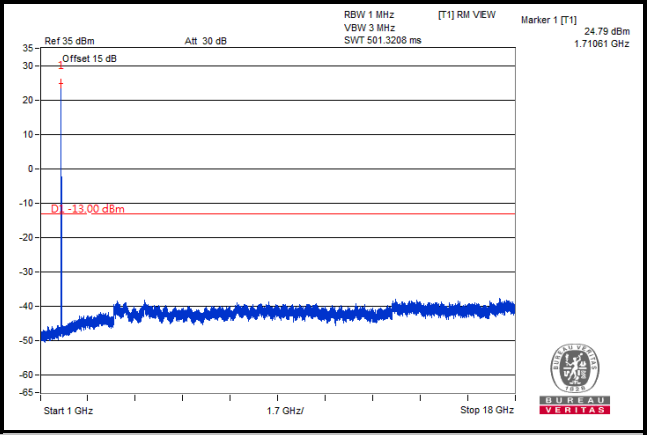
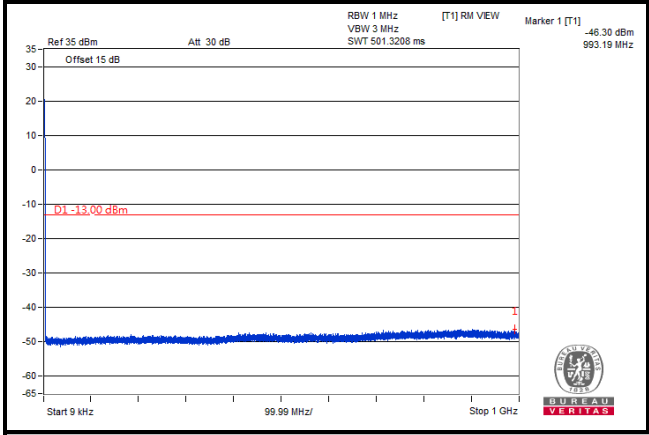
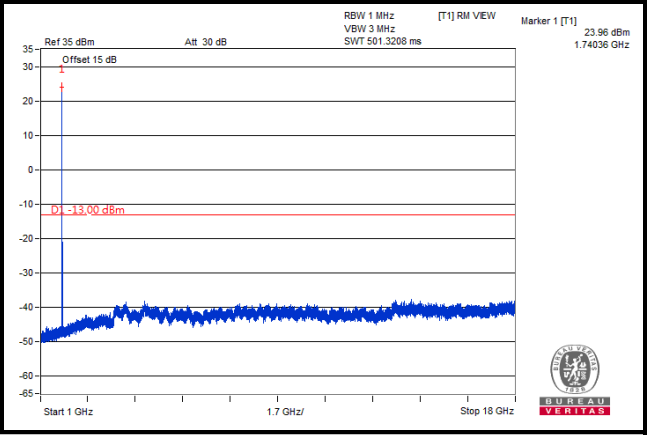
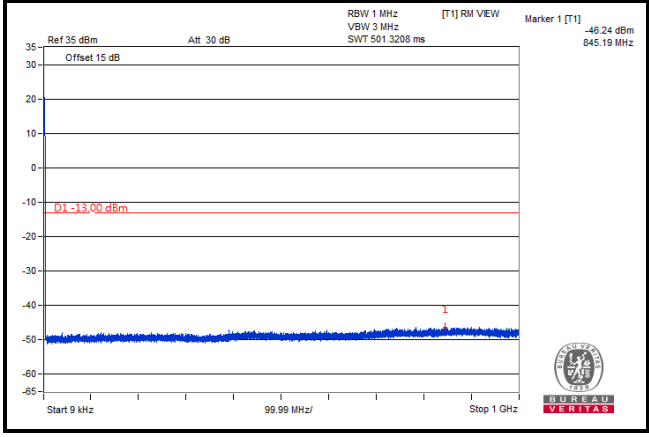
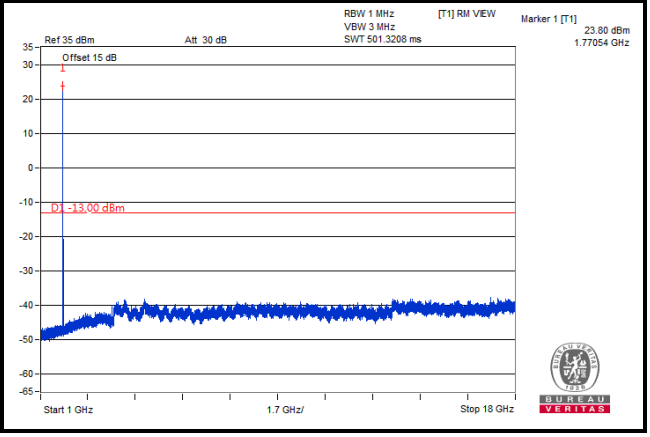
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 3 MHz	
Channel 131987	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132657	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

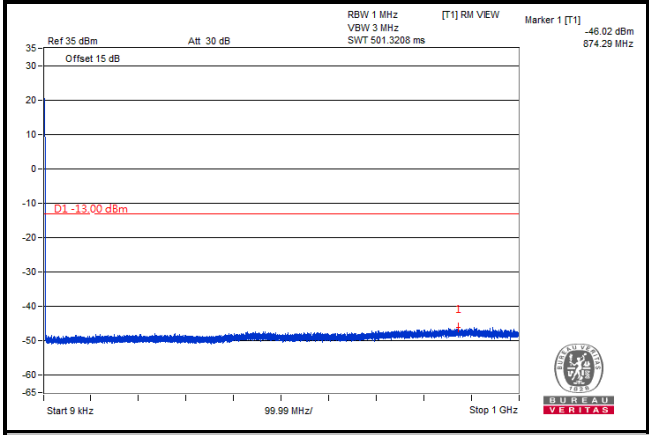
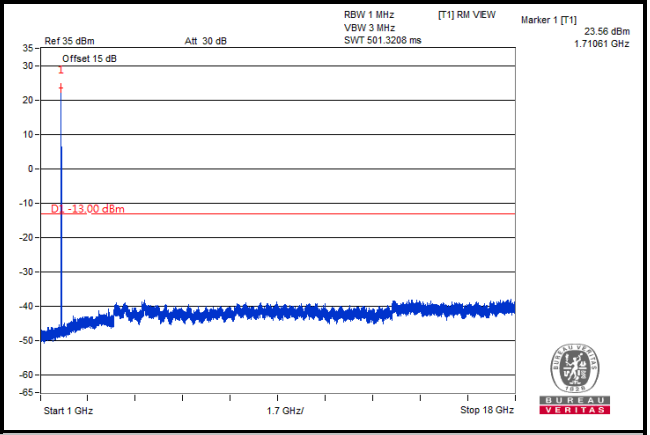
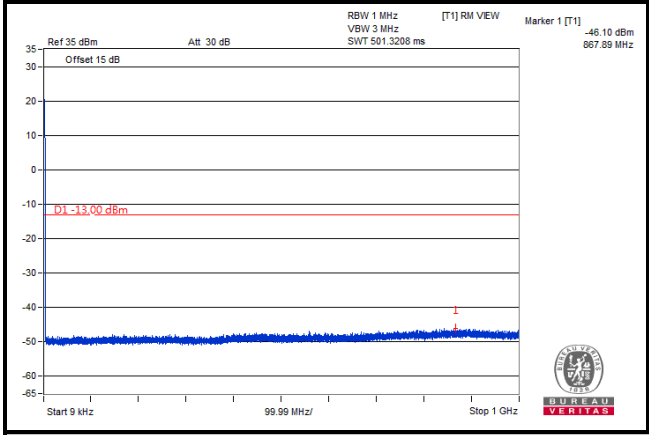
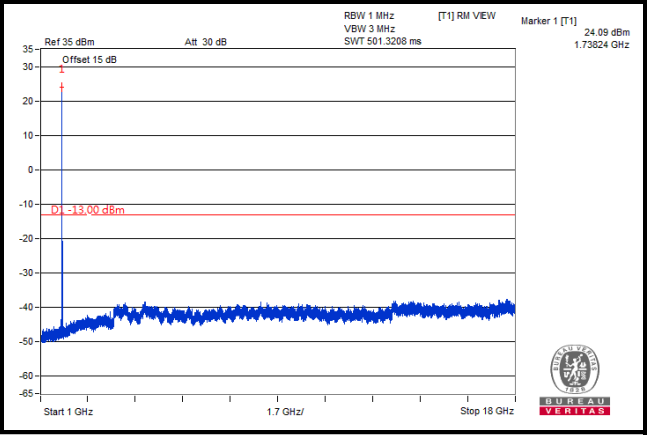
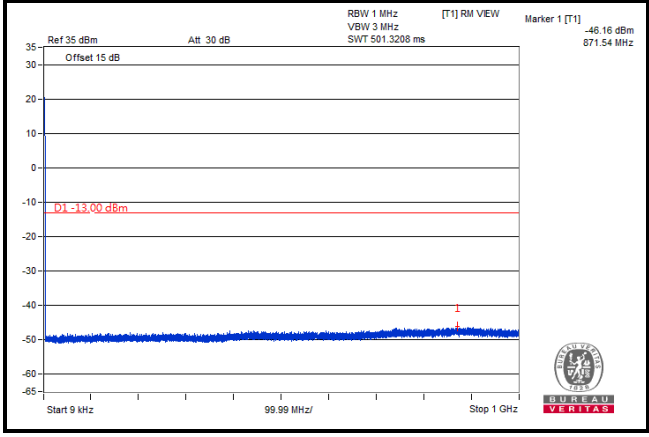
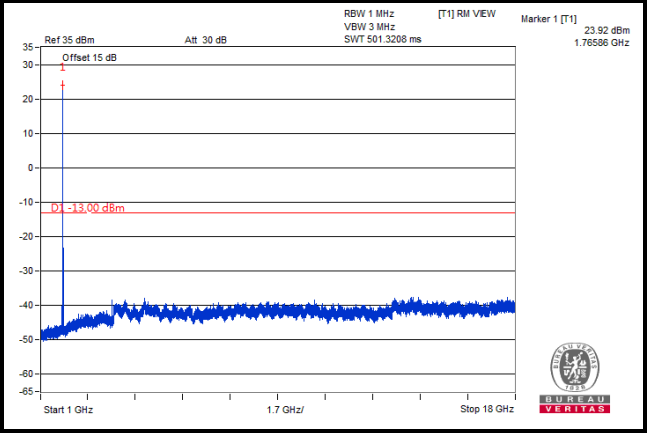
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 5 MHz	
Channel 131997	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132647	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

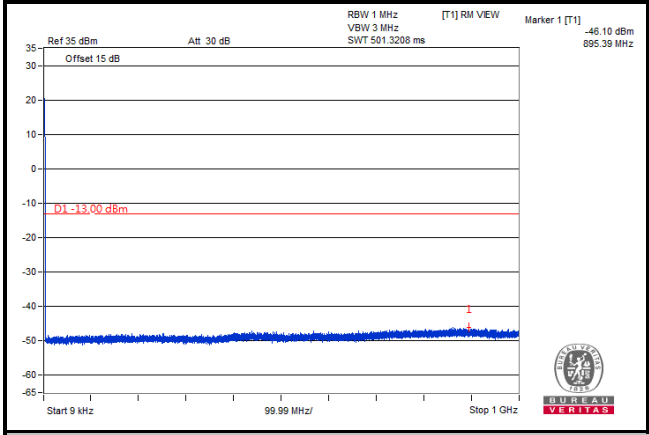
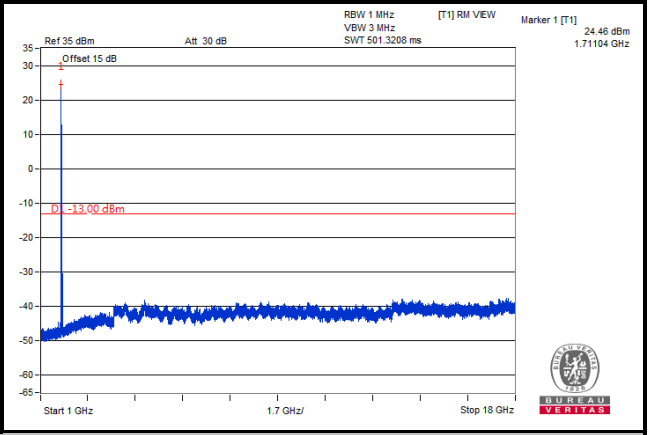
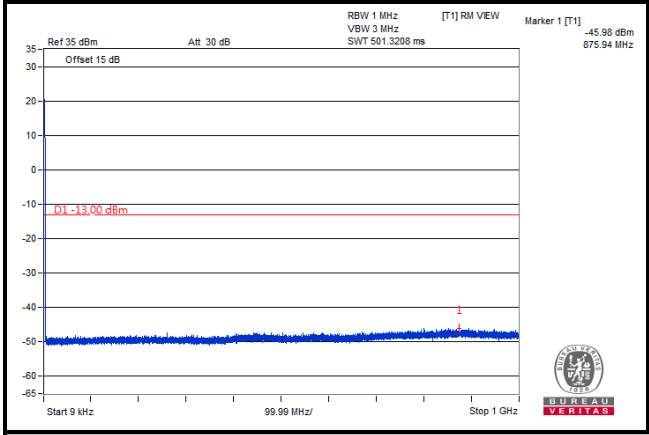
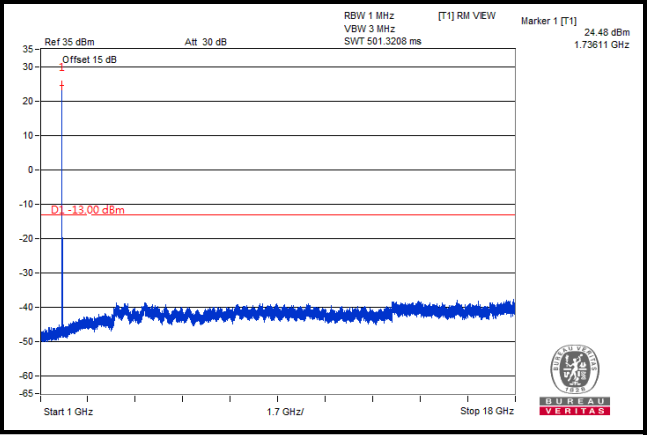
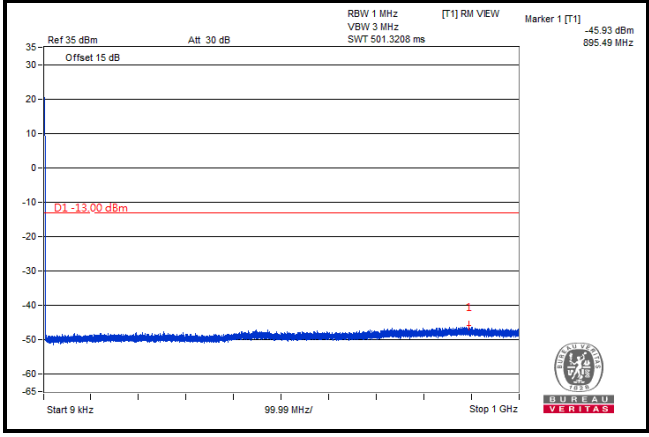
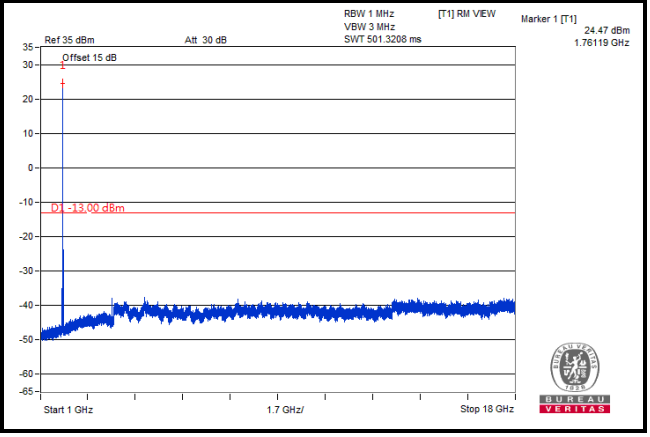
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 10 MHz	
Channel 132022	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132622	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 15 MHz	
Channel 132047	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132597	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

LTE Band 66	
Channel Bandwidth: 20 MHz	
Channel 132072	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132322	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	
Channel 132572	
Frequency Range: 9 kHz ~ 1 GHz	Frequency Range: 1 GHz ~ 18 GHz
	

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log (P) dB. The limit of emission is equal to -13 dBm.
b. For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz. The limit of emissions is equal to -40 dBm.

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 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
b. ion horn.
c. 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 - 2.15 dB.

Note:

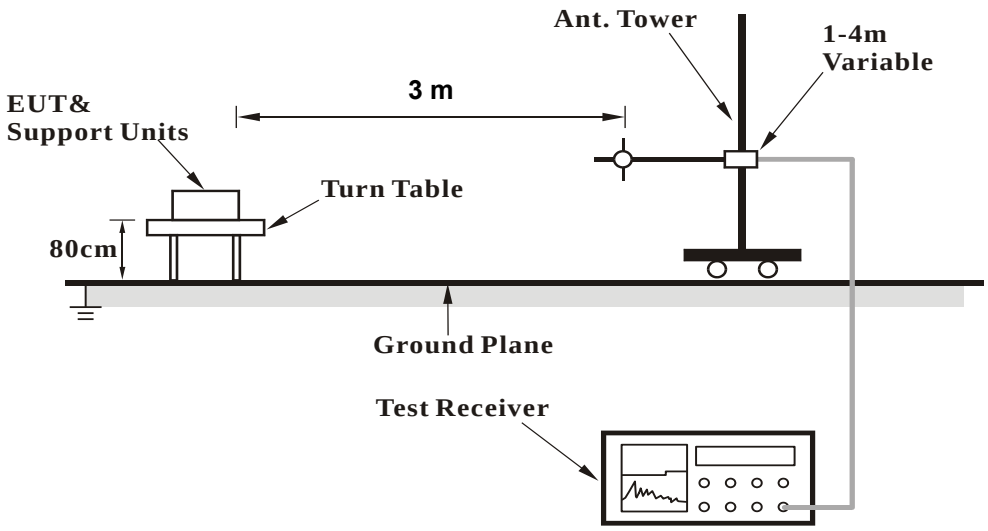
1. The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

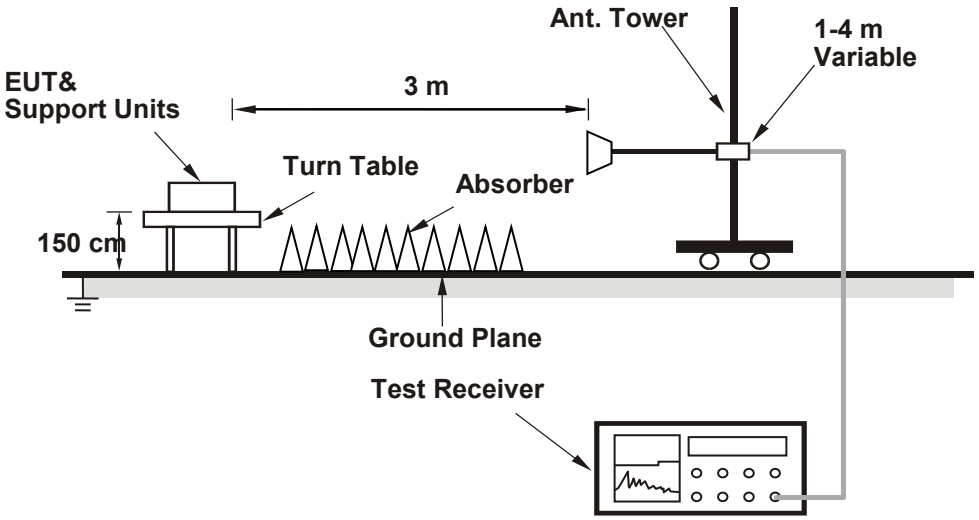
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

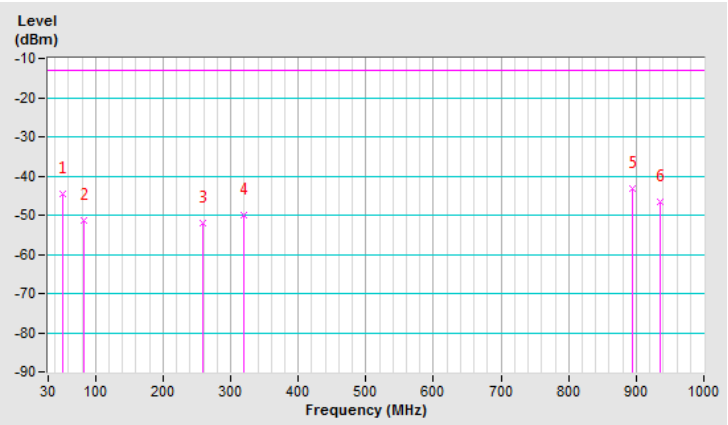
4.8.5 Test Results

Below 1GHz
WCDMA Band 4

Mode	TX channel 1513 (1752.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	51.34	-43.40	-35.70	-8.90	-44.60	-13.00	-31.60
2	82.38	-44.80	-50.30	-1.00	-51.30	-13.00	-38.30
3	258.92	-46.50	-57.30	5.30	-52.00	-13.00	-39.00
4	319.06	-45.70	-55.20	5.20	-50.00	-13.00	-37.00
5	**895.24**	**-49.70**	**-47.00**	**3.90**	**-43.10**	**-13.00**	**-30.10**
6	935.98	-53.60	-50.50	3.90	-46.60	-13.00	-33.60

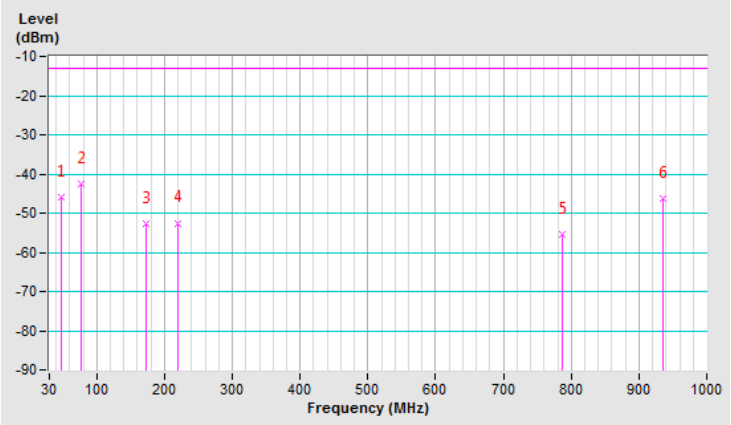
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



Mode	TX channel 1513 (1752.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	47.46	-40.00	-36.30	-9.70	-46.00	-13.00	-33.00
2	76.56	-38.00	-39.60	-2.80	-42.40	-13.00	-29.40
3	173.56	-52.50	-54.70	2.10	-52.60	-13.00	-39.60
4	220.12	-52.10	-57.90	5.40	-52.50	-13.00	-39.50
5	786.60	-61.60	-59.60	4.20	-55.40	-13.00	-42.40
6	935.98	-55.00	-50.20	3.90	-46.30	-13.00	-33.30

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

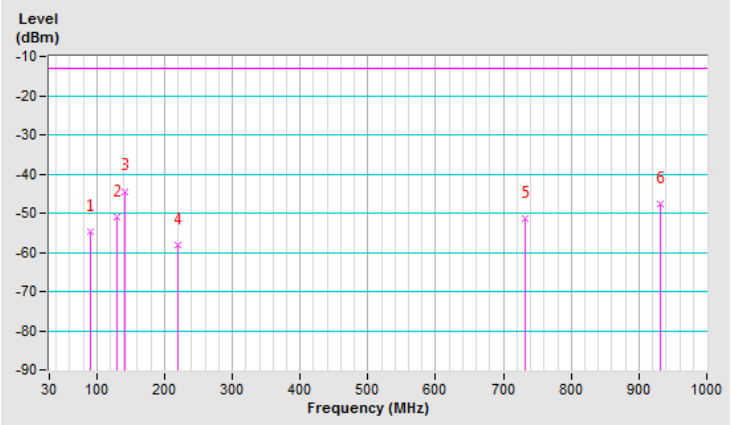


LTE Band 4, Channel Bandwidth: 1.4MHz

Mode	TX channel 20393 (1754.3MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	90.14	-47.10	-55.70	1.10	-54.60	-13.00	-41.60
2	128.94	-44.00	-51.00	-0.10	-51.10	-13.00	-38.10
3	140.58	-38.80	-44.10	-0.30	-44.40	-13.00	-31.40
4	220.12	-50.50	-63.70	5.40	-58.30	-13.00	-45.30
5	732.28	-54.80	-56.30	4.90	-51.40	-13.00	-38.40
6	932.10	-54.70	-51.50	3.90	-47.60	-13.00	-34.60

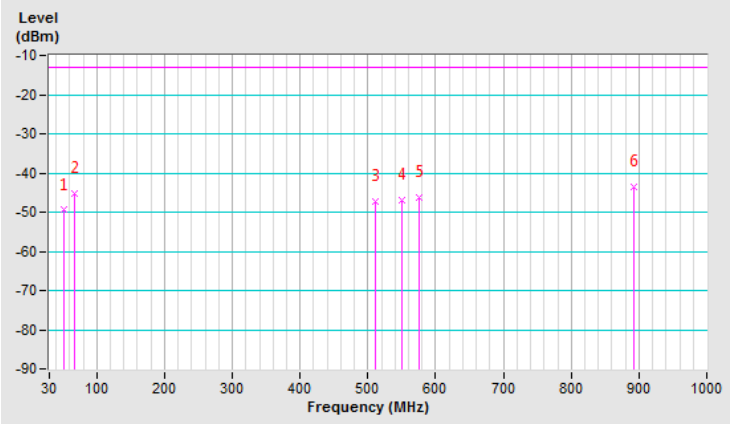
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



Mode	TX channel 20393 (1754.3MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	51.34	-42.80	-40.60	-8.90	-49.50	-13.00	-36.50
2	66.86	-38.90	-39.60	-5.80	-45.40	-13.00	-32.40
3	511.12	-46.70	-52.00	4.80	-47.20	-13.00	-34.20
4	549.92	-48.10	-51.50	4.70	-46.80	-13.00	-33.80
5	575.14	-48.70	-50.90	4.50	-46.40	-13.00	-33.40
6	**893.30**	**-50.50**	**-47.50**	**3.90**	**-43.60**	**-13.00**	**-30.60**

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

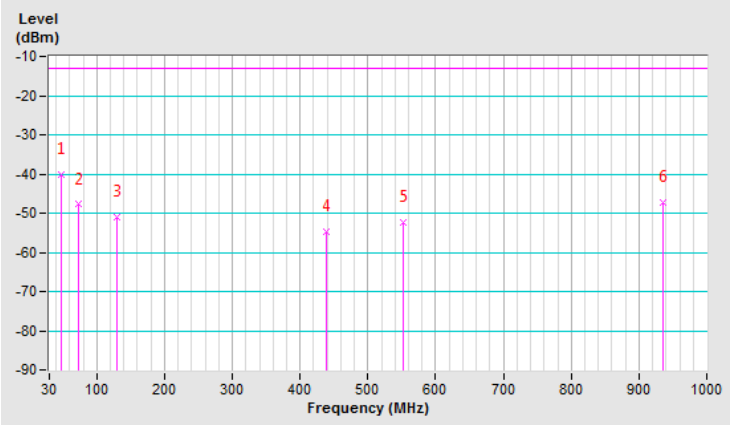


LTE Band 12, Channel Bandwidth: 5MHz

Mode	TX channel 23155 (713.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	**47.46**	**-39.20**	**-30.60**	**-9.70**	**-40.30**	**-13.00**	**-27.30**
2	72.68	-39.80	-43.70	-4.10	-47.80	-13.00	-34.80
3	128.94	-41.90	-51.00	-0.10	-51.10	-13.00	-38.10
4	439.34	-51.60	-60.00	5.20	-54.80	-13.00	-41.80
5	551.86	-49.60	-57.00	4.70	-52.30	-13.00	-39.30
6	935.98	-52.10	-51.20	3.90	-47.30	-13.00	-34.30

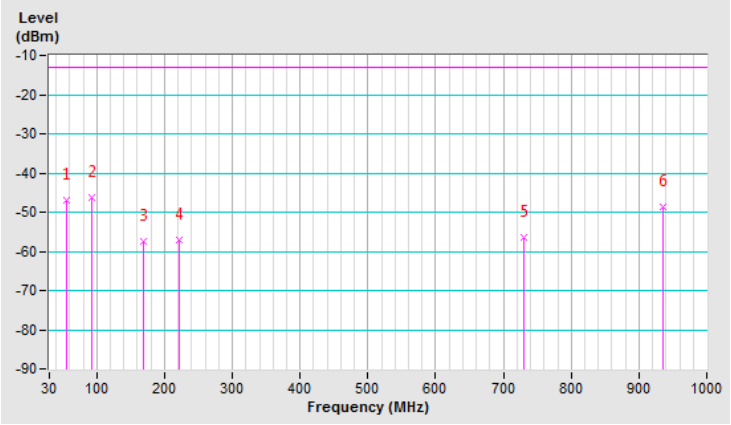
Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



Mode	TX channel 23155 (713.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	55.22	-38.20	-38.30	-8.70	-47.00	-13.00	-34.00
2	92.08	-38.80	-47.30	1.10	-46.20	-13.00	-33.20
3	169.68	-55.80	-59.20	1.60	-57.60	-13.00	-44.60
4	222.06	-54.20	-62.60	5.40	-57.20	-13.00	-44.20
5	730.34	-59.90	-61.30	4.90	-56.40	-13.00	-43.40
6	935.98	-55.00	-52.40	3.90	-48.50	-13.00	-35.50

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

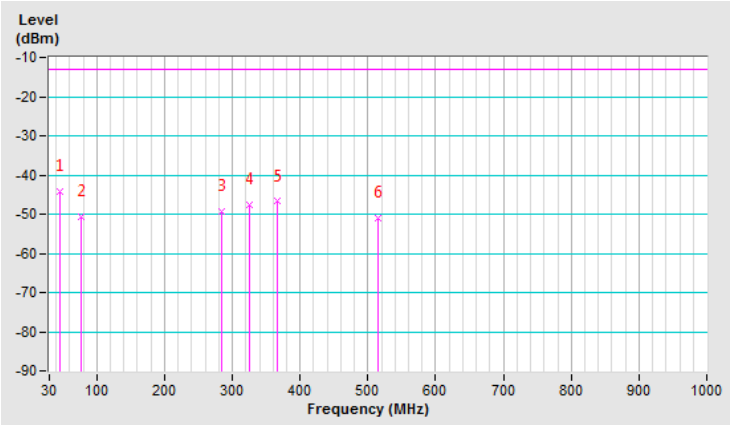


LTE Band 13, Channel Bandwidth: 5MHz

Mode	TX channel 23205 (779.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	45.52	-43.40	-34.10	-10.00	-44.10	-13.00	-31.10
2	76.56	-42.50	-47.90	-2.80	-50.70	-13.00	-37.70
3	284.14	-43.90	-54.60	5.20	-49.40	-13.00	-36.40
4	324.88	-41.80	-52.90	5.20	-47.70	-13.00	-34.70
5	365.62	-42.00	-52.00	5.20	-46.80	-13.00	-33.80
6	515.00	-48.00	-55.90	4.80	-51.10	-13.00	-38.10

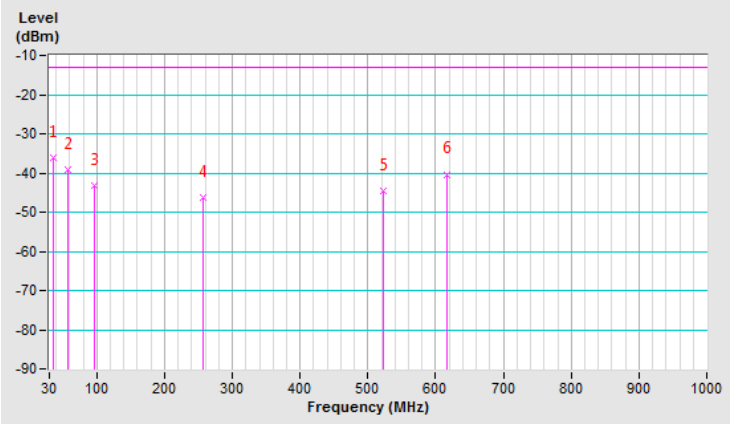
Remarks:
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



Mode	TX channel 23205 (779.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	35.82	-25.40	-24.60	-11.40	-36.00	-13.00	-23.00
2	57.16	-29.80	-30.90	-8.20	-39.10	-13.00	-26.10
3	95.96	-35.20	-44.10	1.00	-43.10	-13.00	-30.10
4	256.98	-44.80	-51.60	5.30	-46.30	-13.00	-33.30
5	522.76	-42.50	-49.40	4.80	-44.60	-13.00	-31.60
6	615.88	-43.10	-44.90	4.60	-40.30	-13.00	-27.30

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

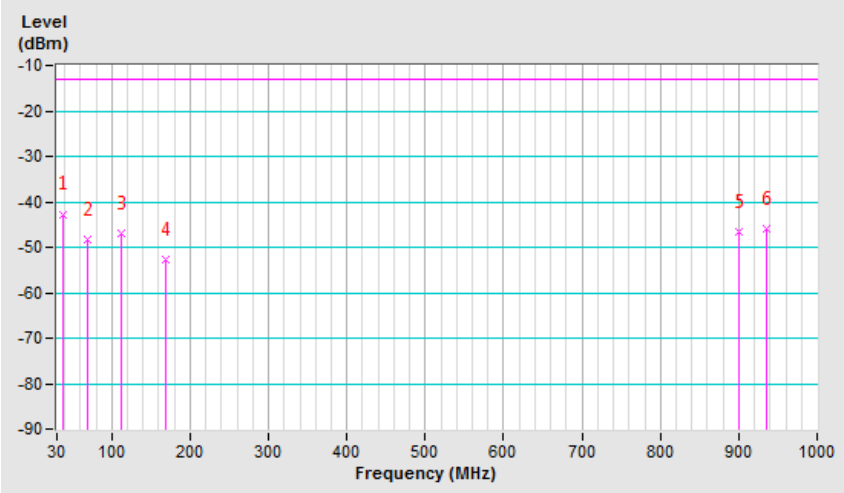


LTE Band 66, Channel Bandwidth: 1.4MHz

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	37.76	-45.80	-31.50	-11.20	-42.70	-13.00	-29.70
2	68.80	-42.20	-43.00	-5.30	-48.30	-13.00	-35.30
3	111.48	-39.40	-47.20	0.40	-46.80	-13.00	-33.80
4	169.68	-46.20	-54.40	1.60	-52.80	-13.00	-39.80
5	901.06	-53.30	-50.50	3.90	-46.60	-13.00	-33.60
6	935.98	-52.80	-49.70	3.90	-45.80	-13.00	-32.80

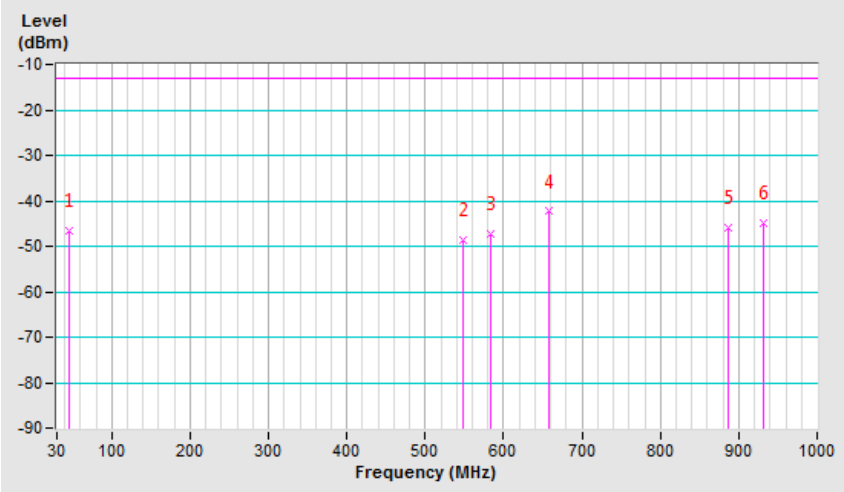
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

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	45.52	-40.20	-36.60	-10.00	-46.60	-13.00	-33.60
2	547.98	-49.90	-53.40	4.70	-48.70	-13.00	-35.70
3	582.90	-50.00	-51.90	4.50	-47.40	-13.00	-34.40
4	658.56	-47.20	-47.30	4.90	-42.40	-13.00	-29.40
5	887.48	-52.60	-49.70	3.90	-45.80	-13.00	-32.80
6	932.10	-53.40	-48.80	3.90	-44.90	-13.00	-31.90

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



Above 1GHz
WCDMA Band 4

Mode	TX channel 1312 (1712.4MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3424.80	-63.10	-58.90	7.10	-51.80	-13.00	-38.80
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	3424.80	-64.50	-60.50	7.10	-53.40	-13.00	-40.40

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

Mode	TX channel 1413 (1732.6MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3465.20	-63.40	-58.90	7.10	-51.80	-13.00	-38.80
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	3465.20	-64.70	-60.20	7.10	-53.10	-13.00	-40.10

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

Mode	TX channel 1513 (1752.6MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3505.20	-63.40	-58.70	7.20	-51.50	-13.00	-38.50
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	3505.20	-64.60	-59.80	7.20	-52.60	-13.00	-39.60

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

LTE Band 4, Channel Bandwidth: 1.4MHz

Mode	TX channel 19957 (1710.7MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3421.40	-62.60	-58.40	7.10	-51.30	-13.00	-38.30
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	3421.40	-65.30	-58.80	7.10	-51.70	-13.00	-38.70

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3465.00	-62.20	-57.30	7.10	-50.20	-13.00	-37.20
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	3465.00	-65.80	-59.00	7.10	-51.90	-13.00	-38.90

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

Mode	TX channel 20393 (1754.3MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3508.60	-62.00	-56.50	7.20	-49.30	-13.00	-36.30
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	3508.60	-65.50	-58.60	7.20	-51.40	-13.00	-38.40

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

LTE Band 4, Channel Bandwidth: 5MHz

Mode	TX channel 19975 (1712.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3425.00	-62.00	-57.80	7.10	-50.70	-13.00	-37.70
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	3425.00	-65.40	-58.90	7.10	-51.80	-13.00	-38.80

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3465.00	-62.60	-57.70	7.10	-50.60	-13.00	-37.60
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	3465.00	-65.00	-58.20	7.10	-51.10	-13.00	-38.10

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

Mode	TX channel 20375 (1752.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3505.00	-62.10	-56.60	7.20	-49.40	-13.00	-36.40
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	3505.00	-65.20	-58.20	7.20	-51.00	-13.00	-38.00

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

LTE Band 4, Channel Bandwidth: 20MHz

Mode	TX channel 20050 (1720.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3440.00	-62.40	-57.90	7.10	-50.80	-13.00	-37.80
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	3440.00	-64.90	-58.30	7.10	-51.20	-13.00	-38.20

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3465.00	-62.20	-57.30	7.10	-50.20	-13.00	-37.20
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	3465.00	-65.70	-58.90	7.10	-51.80	-13.00	-38.80

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

Mode	TX channel 20300 (1745.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	3490.00	-62.00	-56.70	7.20	-49.50	-13.00	-36.50
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	3490.00	-65.70	-58.80	7.20	-51.60	-13.00	-38.60

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

LTE Band 12, Channel Bandwidth: 1.4MHz

Mode	TX channel 23017 (699.7MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1399.40	-57.60	-59.50	4.70	-54.80	-13.00	-41.80
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	1399.40	-61.60	-63.30	4.70	-58.60	-13.00	-45.60

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1415.00	-58.00	-59.80	4.70	-55.10	-13.00	-42.10
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	1415.00	-61.20	-62.90	4.70	-58.20	-13.00	-45.20

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

Mode	TX channel 23173 (715.3MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1430.60	-57.80	-59.70	4.80	-54.90	-13.00	-41.90
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	1430.60	-60.80	-62.60	4.80	-57.80	-13.00	-44.80

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

LTE Band 12, Channel Bandwidth: 5MHz

Mode	TX channel 23035 (701.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1403.00	-57.10	-58.90	4.70	-54.20	-13.00	-41.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1403.00	-62.00	-63.70	4.70	-59.00	-13.00	-46.00

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1415.00	-57.40	-59.20	4.70	-54.50	-13.00	-41.50
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	1415.00	-61.10	-62.80	4.70	-58.10	-13.00	-45.10

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

Mode	TX channel 23155 (713.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1427.00	-57.00	-58.90	4.80	-54.10	-13.00	-41.10
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	1427.00	-61.20	-63.00	4.80	-58.20	-13.00	-45.20

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

LTE Band 12, Channel Bandwidth: 10MHz

Mode	TX channel 23060 (704MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1408.00	-58.00	-59.80	4.70	-55.10	-13.00	-42.10
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	1408.00	-61.00	-62.70	4.70	-58.00	-13.00	-45.00

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1415.00	-57.50	-59.30	4.70	-54.60	-13.00	-41.60
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	1415.00	-61.40	-63.10	4.70	-58.40	-13.00	-45.40

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

Mode	TX channel 23130 (711MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

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	1422.00	-57.50	-59.40	4.80	-54.60	-13.00	-41.60
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	1422.00	-61.80	-63.60	4.80	-58.80	-13.00	-45.80

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

LTE Band 13, Channel Bandwidth: 5MHz

Mode	TX channel 23205 (779.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	1559.00	-59.10	-60.20	5.30	-54.90	-40.00	-14.90
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	**1559.00**	**-57.20**	**-57.90**	**5.30**	**-52.60**	**-40.00**	**-12.60**

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

Mode	TX channel 23230 (782.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	1564.00	-60.00	-61.20	5.30	-55.90	-40.00	-15.90
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	1564.00	-58.40	-59.10	5.30	-53.80	-40.00	-13.80

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

Mode	TX channel 23255 (784.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	1569.00	-58.90	-60.20	5.30	-54.90	-40.00	-14.90
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	1569.00	-58.40	-59.00	5.30	-53.70	-40.00	-13.70

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

LTE Band 13, Channel Bandwidth: 10MHz

Mode	TX channel 23230 (782.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	1564.00	-57.50	-58.70	5.30	-53.40	-40.00	-13.40
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	1564.00	-58.40	-59.10	5.30	-53.80	-40.00	-13.80

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

LTE Band 66, Channel Bandwidth: 1.4MHz

Mode	TX channel 131979 (1710.7MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3421.40	-72.90	-68.80	7.10	-61.70	-13.00	-48.70
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	3421.40	-69.70	-65.70	7.10	-58.60	-13.00	-45.60

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

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3490.00	-72.60	-68.00	7.20	-60.80	-13.00	-47.80
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	3490.00	-69.80	-65.10	7.20	-57.90	-13.00	-44.90

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

Mode	TX channel 132665 (1779.3MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3558.60	-72.80	-67.80	7.20	-60.60	-13.00	-47.60
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	3558.60	-73.60	-68.60	7.20	-61.40	-13.00	-48.40

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

LTE Band 66, Channel Bandwidth: 5MHz

Mode	TX channel 131997 (1712.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3425.00	-73.80	-69.60	7.10	-62.50	-13.00	-49.50
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	3425.00	-69.00	-65.00	7.10	-57.90	-13.00	-44.90

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

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3490.00	-70.90	-66.30	7.20	-59.10	-13.00	-46.10
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	3490.00	-71.20	-66.50	7.20	-59.30	-13.00	-46.30

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

Mode	TX channel 132647 (1777.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3555.00	-71.00	-66.10	7.20	-58.90	-13.00	-45.90
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	3555.00	-72.50	-67.60	7.20	-60.40	-13.00	-47.40

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

LTE Band 66, Channel Bandwidth: 20MHz

Mode	TX channel 132072 (1720.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3440.00	-73.00	-68.70	7.10	-61.60	-13.00	-48.60
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	3440.00	-70.50	-66.30	7.10	-59.20	-13.00	-46.20

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

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3490.00	-72.10	-67.50	7.20	-60.30	-13.00	-47.30
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	3490.00	-71.00	-66.30	7.20	-59.10	-13.00	-46.10

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

Mode	TX channel 132572 (1770.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	23deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Titan Hsu		

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	3540.00	-71.50	-66.60	7.20	-59.40	-13.00	-46.40
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	3540.00	-72.40	-67.50	7.20	-60.30	-13.00	-47.30

Remarks:
1. EIRP (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 of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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

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

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

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

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

--- END ---