FCC Test Report

(Part 27: LTE Band 4, 13, 66)

Report No.:	RF200504D06
FCC ID:	P27SCE4103CBV
Test Model:	SCE4103C-BV
Series Model:	SCE4103C-BVxxxxxx (the 2nd x should be "blank" or "-", or A to Z; the first and the rest x could be 0 to 9, A to Z, "blank", or "-" or "/", for marketing purpose)
Received Date:	May 4, 2020
Test Date:	Jun. 2 to Jul. 20, 2020
Issued Date:	Jul. 21, 2020
Applicant:	Sercomm Corp.
Address:	8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C. (NanKang Software Park)
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	198487 / TW2021

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF200504D06	Original release.	Jul. 21, 2020

1 Certificate of Conformity

Product:	Bridgewood 4G Femto cell
Brand:	Verizon, Sercomm
Test Model:	SCE4103C-BV
Series Model:	SCE4103C-BVxxxxxx (the 2nd x should be "blank" or "-", or A to Z; the first and the rest x could be 0 to 9, A to Z, "blank", or "-" or "/", for marketing purpose)
Sample Status:	Engineering sample
Applicant:	Sercomm Corp.
Test Date:	Jun. 2 to Jul. 20, 2020
Standards:	FCC Part 27, Subpart C, F, L FCC Part 2, Subpart J

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 : Celia Chen , **Date:** Jul. 21, 2020

Celia Chen / Supervisor

Approved by : Rex. Lai , **Date:** Jul. 21, 2020

Rex Lai / Associate Technical Manager

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2					
FCC Clause			Test Item	Result	Remarks
LTE Band 4	LTE Band 13	LTE Band 66			
2.1046 27.50(d)(3)	2.1046 27.50(b)(9)	2.1046 27.50 (d)(2)	Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
2.1047	2.1047	2.1047	Modulation characteristics	Pass	Meet the requirement
27.50(d)(5)	----	27.50(d)(5)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 27.54	2.1055 27.54	2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Meet the requirement of limit.
2.1049 27.53(h)	2.1049 27.53(c)	2.1049 27.53(h)(3)	Emission Bandwidth	Pass	Meet the requirement of limit.
2.1051 27.53(h)	2.1051 27.53(c)	2.1051 27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	2.1051 27.53(c)	2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1051 27.53(h)	2.1051 27.53(c)	2.1051 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -49.38dB at 4446.53MHz.

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	30MHz ~ 1000MHz	5.43 dB
Radiated Emissions above 1 GHz	1GHz ~ 40GHz	5.42 dB

2.2 Test Site and Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 19, 2020	Feb. 18, 2021
HP Preamplifier	8449B	3008A01201	Feb. 20, 2020	Feb. 19, 2021
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 19, 2020	Feb. 18, 2021
Agilent TEST RECEIVER	N9038A	MY51210129	Mar. 18, 2020	Mar. 17, 2021
Schwarzbeck Antenna	VULB 9168	139	Nov. 7, 2019	Nov. 6, 2020
Schwarzbeck Antenna	VHBA 9123	480	Jun. 3, 2019	Jun. 2, 2021
Schwarzbeck Horn Antenna	BBHA-9170	212	Nov. 24, 2019	Nov. 23, 2020
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Nov. 24, 2019	Nov. 23, 2020
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF102	Cable-CH6-01	Jul. 10, 2019	Jul. 9, 2020
			Jul. 10, 2020	Jul. 9, 2021
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Jul. 10, 2019	Jul. 9, 2020
			Jul. 10, 2020	Jul. 9, 2021
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 16, 2019	Jun. 15, 2020
			Jun. 16, 2020	Jun. 15, 2021
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 30, 2019	Jul. 29, 2020
Loop Antenna EMCI	LPA600	270	Aug. 23, 2019	Aug. 22, 2021
EMCO Horn Antenna	3115	00028257	Nov. 24, 2019	Nov. 23, 2020
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 23, 2019	Sep. 22, 2020
Anritsu Power Sensor	MA2411B	0738404	Apr. 13, 2020	Apr. 12, 2021
Anritsu Power Meter	ML2495A	0842014	Apr. 13, 2020	Apr. 12, 2021
Temperature & Humidity Chamber	MHU-225AU	920409	May 22, 2020	May 21, 2021
DIGITAL POWER METER IDRC	CP-240	240515	Sep. 11, 2019	Sep. 10, 2020
AC Power Source ExTech	CFW-105	E000603	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.

3 General Information

3.1 General Description of EUT

Product	Bridgewood 4G Femto cell		
Brand	Verizon, Sercomm		
Test Model	SCE4103C-BV		
Series Model	SCE4103C-BVxxxxxx (the 2nd x should be "blank" or "-", or A to Z; the first and the rest x could be 0 to 9, A to Z, "blank", or "-" or "/", for marketing purpose)		
Model Difference	For marketing purpose		
Status of EUT	Engineering sample		
Power Supply Rating	12Vdc (adapter)		
Modulation Type	QPSK, 16QAM, 64QAM		
Operating Frequency	LTE Band 4	Channel Bandwidth 5MHz	2112.5MHz ~ 2152.5MHz
		Channel Bandwidth 10MHz	2115.0MHz ~ 2150.0MHz
		Channel Bandwidth 15MHz	2117.5MHz ~ 2147.5MHz
		Channel Bandwidth 20MHz	2120.0MHz ~ 2145.0MHz
	LTE Band 66	Channel Bandwidth 5MHz	2112.5MHz ~ 2177.5MHz
		Channel Bandwidth 10MHz	2115.0MHz ~ 2175.0MHz
		Channel Bandwidth 15MHz	2117.5MHz ~ 2172.5MHz
		Channel Bandwidth 20MHz	2120.0MHz ~ 2170.0MHz
	LTE Band 13	Channel Bandwidth 10MHz	751.0MHz
Max. EIRP Power	LTE Band 4	Channel Bandwidth 5MHz	27.22dBm
		Channel Bandwidth 10MHz	27.22dBm
		Channel Bandwidth 15MHz	27.10dBm
		Channel Bandwidth 20MHz	27.15dBm
	LTE Band 66	Channel Bandwidth 5MHz	27.22dBm
		Channel Bandwidth 10MHz	27.21dBm
		Channel Bandwidth 15MHz	27.06dBm
		Channel Bandwidth 20MHz	27.20dBm
Max. ERP Power	LTE Band 13	Channel Bandwidth 10MHz	24.14dBm
Emission Designator	LTE Band 4	Channel Bandwidth 5MHz	4M49G7D
		Channel Bandwidth 10MHz	8M96G7D
		Channel Bandwidth 15MHz	13M5G7D
		Channel Bandwidth 20MHz	17M9G7D
	LTE Band 66	Channel Bandwidth 5MHz	4M49G7D
		Channel Bandwidth 10MHz	8M94G7D
		Channel Bandwidth 15MHz	13M4G7D
		Channel Bandwidth 20MHz	17M9G7D
	LTE Band 13	Channel Bandwidth 10MHz	8M94G7D
Antenna Type	LTE Band 4	PIFA antenna with 4.2dBi gain	
	LTE Band 66		
	LTE Band 13	PIFA antenna with 1.2dBi gain	
Antenna Connector	IPEX		
Accessory Device	Adapter		
Data Cable Supplied	Non-shielded LAN cable (1.5m) Non-shielded LAN cable (0.5m) Non-shielded 1PPS cable (0.5m)		

Note:

1. The EUT provides 2 completed transmitters and 3 receivers.

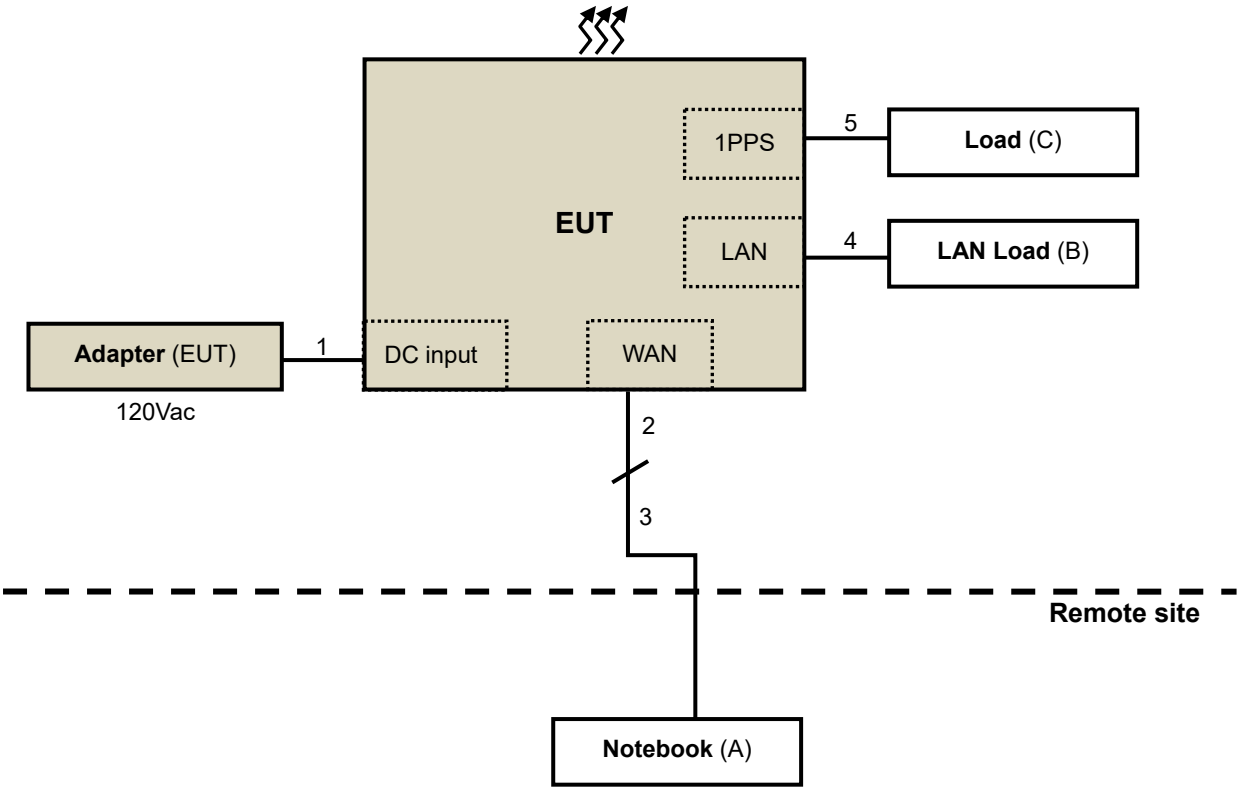
Modulation Mode	TX Function
LTE	2TX

2. The EUT uses following adapter.

Brand	LEI
Model	MU24B1120200-A1
Input Power	100-240Vac, 50/60Hz, 0.7A
Output Power	12Vdc, 2A
Power Line	AC 2 Pin, Non-shielded DC cable (1.5m)

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
4. 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.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	BW33YM1	N/A	Provided by Lab
B.	LAN Load	N/A	N/A	N/A	N/A	Provided by Lab
C.	Load	N/A	N/A	N/A	N/A	Provided by Lab

Note:

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

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.5	N	0	Supplied by client
2.	LAN cable	1	1.5	N	0	Supplied by client
3.	LAN cable	1	10.0	N	0	Provided by Lab
4.	LAN cable	1	0.5	N	0	Supplied by client
5.	1PPS cable	1	0.5	N	0	Supplied by client

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

3.3 Test Mode Applicability and Tested Channel Detail

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

The EUT was tested under following modes:
LTE Band 4

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
EIRP	1975 to 2375	1975, 2175, 2375	5MHz	QPSK / 16QAM / 64QAM
	2000 to 2350	2000, 2175, 2350	10MHz	QPSK / 16QAM / 64QAM
	2025 to 2325	2025, 2175, 2325	15MHz	QPSK / 16QAM / 64QAM
	2050 to 2300	2050, 2175, 2300	20MHz	QPSK / 16QAM / 64QAM
Modulation characteristics	2000 to 2350	2175	10MHz	QPSK, 16QAM, 64QAM
Frequency Stability	2000 to 2350	2175	10MHz	QPSK
Emission Bandwidth	1975 to 2375	1975, 2175, 2375	5MHz	QPSK / 16QAM / 64QAM
	2000 to 2350	2000, 2175, 2350	10MHz	QPSK / 16QAM / 64QAM
	2025 to 2325	2025, 2175, 2325	15MHz	QPSK / 16QAM / 64QAM
	2050 to 2300	2050, 2175, 2300	20MHz	QPSK / 16QAM / 64QAM
Band Edge	1975 to 2375	1975, 2375	5MHz	QPSK
	2000 to 2350	2000, 2350	10MHz	QPSK
	2025 to 2325	2025, 2325	15MHz	QPSK
	2050 to 2300	2050, 2300	20MHz	QPSK
Peak to Average Ratio	1975 to 2375	1975, 2175, 2375	5MHz	QPSK
	2000 to 2350	2000, 2175, 2350	10MHz	QPSK
	2025 to 2325	2025, 2175, 2325	15MHz	QPSK
	2050 to 2300	2050, 2175, 2300	20MHz	QPSK
Conducted Emission	1975 to 2375	1975, 2175, 2375	5MHz	QPSK
	2000 to 2350	2000, 2175, 2350	10MHz	QPSK
	2025 to 2325	2025, 2175, 2325	15MHz	QPSK
	2050 to 2300	2050, 2175, 2300	20MHz	QPSK
Radiated Emission Below 1GHz	1975 to 2375	1975	5MHz	QPSK
	2000 to 2350	2000	10MHz	QPSK
	2025 to 2325	2025	15MHz	QPSK
	2050 to 2300	2050	20MHz	QPSK
Radiated Emission Above 1GHz	1975 to 2375	1975, 2175, 2375	5MHz	QPSK
	2000 to 2350	2000, 2175, 2350	10MHz	QPSK
	2025 to 2325	2025, 2175, 2325	15MHz	QPSK
	2050 to 2300	2050, 2175, 2300	20MHz	QPSK

LTE Band 66

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
EIRP	66461 to 67111	66461, 66786, 67111	5MHz	QPSK / 16QAM / 64QAM
	66486 to 67086	66486, 66786, 67086	10MHz	QPSK / 16QAM / 64QAM
	66511 to 67061	66511, 66786, 67061	15MHz	QPSK / 16QAM / 64QAM
	66536 to 67036	66536, 66786, 67036	20MHz	QPSK / 16QAM / 64QAM
Modulation characteristics	66486 to 67086	66786	10MHz	QPSK, 16QAM, 64QAM
Frequency Stability	66486 to 67086	66786	10MHz	QPSK
Emission Bandwidth	66461 to 67111	66461, 66786, 67111	5MHz	QPSK / 16QAM / 64QAM
	66486 to 67086	66486, 66786, 67086	10MHz	QPSK / 16QAM / 64QAM
	66511 to 67061	66511, 66786, 67061	15MHz	QPSK / 16QAM / 64QAM
	66536 to 67036	66536, 66786, 67036	20MHz	QPSK / 16QAM / 64QAM
Band Edge	66461 to 67111	66461, 67111	5MHz	QPSK
	66486 to 67086	66486, 67086	10MHz	QPSK
	66511 to 67061	66511, 67061	15MHz	QPSK
	66536 to 67036	66536, 67036	20MHz	QPSK
Peak to Average Ratio	66461 to 67111	66461, 66786, 67111	5MHz	QPSK
	66486 to 67086	66486, 66786, 67086	10MHz	QPSK
	66511 to 67061	66511, 66786, 67061	15MHz	QPSK
	66536 to 67036	66536, 66786, 67036	20MHz	QPSK
Conducted Emission	66461 to 67111	66461, 66786, 67111	5MHz	QPSK
	66486 to 67086	66486, 66786, 67086	10MHz	QPSK
	66511 to 67061	66511, 66786, 67061	15MHz	QPSK
	66536 to 67036	66536, 66786, 67036	20MHz	QPSK
Radiated Emission Below 1GHz	66461 to 67111	66461	5MHz	QPSK
	66486 to 67086	66486	10MHz	QPSK
	66511 to 67061	66511	15MHz	QPSK
	66536 to 67036	66536	20MHz	QPSK
Radiated Emission Above 1GHz	66461 to 67111	66461, 66786, 67111	5MHz	QPSK
	66486 to 67086	66486, 66786, 67086	10MHz	QPSK
	66511 to 67061	66511, 66786, 67061	15MHz	QPSK
	66536 to 67036	66536, 66786, 67036	20MHz	QPSK

LTE Band 13

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
ERP	5230	5230	10MHz	QPSK, 16QAM, 64QAM
Modulation characteristics	5230	5230	10MHz	QPSK, 16QAM, 64QAM
Frequency Stability	5230	5230	10MHz	QPSK
Emission Bandwidth	5230	5230	10MHz	QPSK, 16QAM, 64QAM
Band Edge	5230	5230	10MHz	QPSK
Peak to Average Ratio	5230	5230	10MHz	QPSK
Conducted Emission	5230	5230	10MHz	QPSK
Radiated Emission Below 1GHz	5230	5230	10MHz	QPSK
Radiated Emission Above 1GHz	5230	5230	10MHz	QPSK

Note:

1. For radiated emission below 1 GHz, the low, mid and high channels were pre-tested in chamber. The low channel was the worst case and chosen for final test.
2. The conducted output power for QPSK /16QAM / 64QAM, measured value of QPSK is higher than 16QAM / 64QAM mode. Therefore, the Frequency Stability, Band Edge, Condcudeted Emission and Radiated Emission were performed under QPSK mode only.
3. This device was tested under all RB configs/offsets. The worst case was found in full RB config/offset for all final tests.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Modulation characteristics	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Frequency Stability	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Emission Bandwidth	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Band Edge	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Peak To Average Ratio	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Conducted Emission	20deg. C, 76%RH	120Vac, 60Hz	Saxon Lee
Radiated Emission	21deg. C, 77%RH	120Vac, 60Hz	StarItaly Wu

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards 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:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For Band 4: The radiated peak output power shall be according to the specific rule Part 27.50(d)(2).

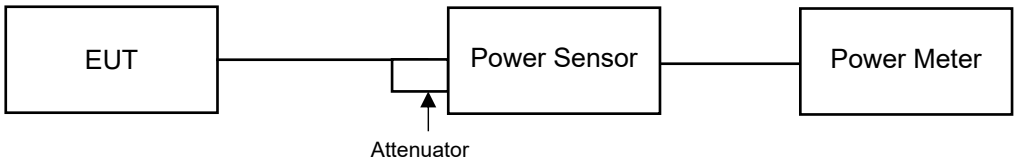
For Band 66: The radiated peak output power shall be according to the specific rule Part 27.50(d)(2).

For Band 13: The radiated peak output power shall be according to the specific rule Part 27.50(b)(9).

4.1.2 Test Procedures

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

4.1.3 Test Setup



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

4.1.4 Test Results

Conducted Output Power (dBm)

LTE Band 4 (Channel Bandwidth 5MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
1975	2112.5	17.06	16.93	20.01	16.91	16.80	19.87	16.82	16.69	19.77
2175	2132.5	16.85	16.96	19.92	16.73	16.84	19.80	16.63	16.72	19.69
2375	2152.5	16.58	16.57	19.59	16.46	16.43	19.46	16.34	16.34	19.35

LTE Band 4 (Channel Bandwidth 10MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
2000	2115	17.02	16.97	20.01	16.98	16.85	19.93	16.87	16.73	19.81
2175	2132.5	16.99	16.94	19.98	16.90	16.80	19.86	16.79	16.69	19.75
2350	2150	16.52	16.46	19.50	16.41	16.31	19.37	16.30	16.23	19.28

LTE Band 4 (Channel Bandwidth 15MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
2025	2117.5	16.73	17.02	19.89	16.59	16.90	19.76	16.50	16.78	19.65
2175	2132.5	16.61	16.72	19.68	16.46	16.61	19.55	16.36	16.50	19.44
2325	2147.5	16.68	16.67	19.69	16.56	16.56	19.57	16.46	16.42	19.45

LTE Band 4 (Channel Bandwidth 20MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
2050	2120	16.77	17.08	19.94	16.66	16.93	19.81	16.53	16.87	19.71
2175	2132.5	16.72	16.89	19.82	16.60	16.79	19.71	16.51	16.69	19.61
2300	2145	16.95	17.08	19.63	16.80	16.97	19.52	16.71	16.87	19.44

LTE Band 66 (Channel Bandwidth 5MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
66461	2112.5	17.02	16.98	20.01	16.91	16.96	19.95	16.79	16.86	19.84
66786	2145	16.96	16.75	19.87	16.84	16.61	19.74	16.74	16.54	19.65
67111	2177.5	17.04	16.55	19.81	16.82	16.41	19.63	16.78	16.39	19.60

LTE Band 66 (Channel Bandwidth 10MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
66486	2115	16.94	17.03	20.00	16.80	16.92	19.87	16.72	16.81	19.78
66786	2145	16.91	16.62	19.78	16.80	16.47	19.65	16.68	16.41	19.56
67086	2175	16.92	16.91	19.93	16.88	16.73	19.82	16.79	16.68	19.75

LTE Band 66 (Channel Bandwidth 15MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
66511	2117.5	16.66	17.01	19.85	16.55	16.90	19.74	16.44	16.79	19.63
66786	2145	16.57	16.63	19.61	16.46	16.54	19.51	16.36	16.64	19.51
67061	2172.5	16.48	16.62	19.56	16.35	16.72	19.55	16.24	16.58	19.42

LTE Band 66 (Channel Bandwidth 20MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
66536	2120	16.98	16.98	19.99	16.40	16.86	19.65	16.31	16.75	19.55
66786	2145	16.73	16.73	19.74	16.57	16.61	19.60	16.48	16.49	19.50
67036	2170	16.56	16.54	19.56	16.62	16.38	19.51	16.51	16.29	19.41

LTE Band 13 (Channel Bandwidth 10MHz):

CH	Frequency (MHz)	Conducted Output Power (dBm)								
		QPSK			16QAM			64QAM		
		Chain 0	Chain 1	Total	Chain 0	Chain 1	Total	Chain 0	Chain 1	Total
5230	751	17.02	16.81	19.93	16.88	16.66	19.78	16.81	16.60	19.72

EIRP Power (dBm)

LTE Band 4

Channel Bandwidth: 5MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
1975	2112.5	**27.22**	0.53	27.08	0.51	26.98	0.50
2175	2132.5	27.13	0.52	27.01	0.50	26.90	0.49
2375	2152.5	26.80	0.48	26.67	0.46	26.56	0.45

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 10MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
2000	2115	**27.22**	0.53	27.14	0.52	27.02	0.50
2175	2132.5	27.19	0.52	27.07	0.51	26.96	0.50
2350	2150	26.71	0.47	26.58	0.46	26.49	0.45

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 15MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
2025	2117.5	**27.10**	0.51	26.97	0.50	26.86	0.49
2175	2132.5	26.89	0.49	26.76	0.47	26.65	0.46
2325	2147.5	26.90	0.49	26.78	0.48	26.66	0.46

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 20MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
2050	2120	**27.15**	0.52	27.02	0.50	26.92	0.49
2175	2132.5	27.03	0.50	26.92	0.49	26.82	0.48
2300	2145	26.84	0.48	26.73	0.47	26.65	0.46

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

LTE Band 66

Channel Bandwidth: 5MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
66461	2112.5	**27.22**	0.53	27.16	0.52	27.05	0.51
66786	2145	27.08	0.51	26.95	0.50	26.86	0.49
67111	2177.5	27.02	0.50	26.84	0.48	26.81	0.48

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 10MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
66486	2115	**27.21**	0.53	27.08	0.51	26.99	0.50
66786	2145	26.99	0.50	26.86	0.49	26.77	0.48
67086	2175	27.14	0.52	27.03	0.50	26.96	0.50

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 15MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
66511	2117.5	**27.06**	0.51	26.95	0.50	26.84	0.48
66786	2145	26.82	0.48	26.72	0.47	26.72	0.47
67061	2172.5	26.77	0.48	26.76	0.47	26.63	0.46

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

Channel Bandwidth: 20MHz

CH	Frequency (MHz)	EIRP Power					
		QPSK		16QAM		64QAM	
		Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)	Total EIRP (dBm)	Total EIRP (W)
66536	2120	**27.20**	0.52	26.86	0.48	26.76	0.47
66786	2145	26.95	0.50	26.81	0.48	26.71	0.47
67036	2170	26.77	0.48	26.72	0.47	26.62	0.46

Note: EIRP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi)

LTE Band 13

Channel Bandwidth: 10MHz

CH	Frequency (MHz)	ERP Power					
		QPSK		16QAM		64QAM	
		Total ERP (dBm)	Total ERP (W)	Total ERP (dBm)	Total ERP (W)	Total ERP (dBm)	Total ERP (W)
5230	751	**24.14**	0.26	23.99	0.25	23.93	0.25

Note: ERP (dBm) = Total Conducted Output Power (dBm) + Directional Gain (dBi) – 2.15.

4.2 Modulation characteristics Measurement

4.2.1 Limits of Modulation characteristics

N/A

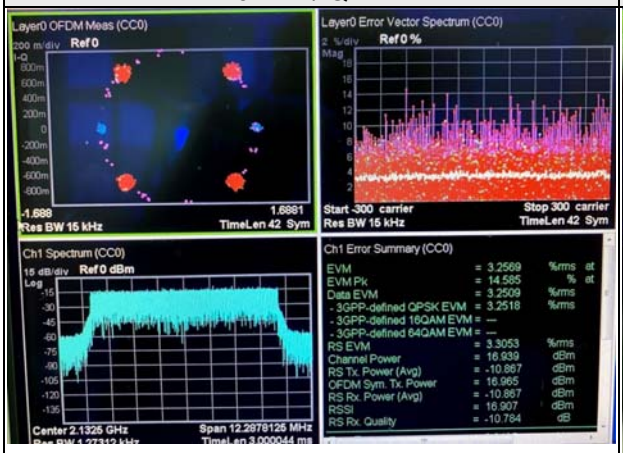
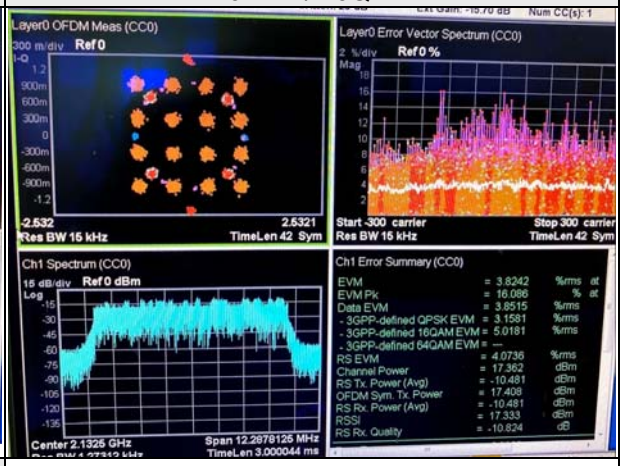
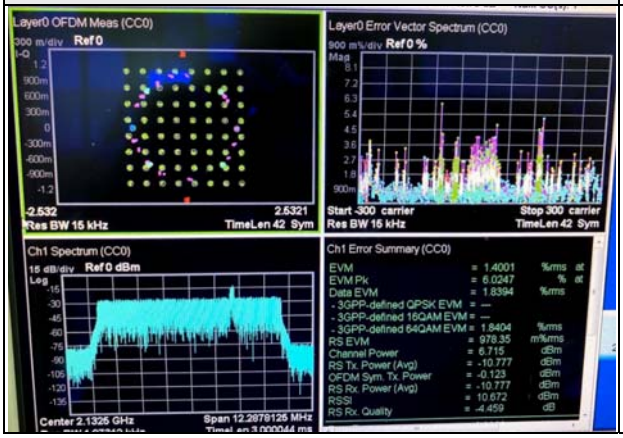
4.2.2 Test Procedure

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

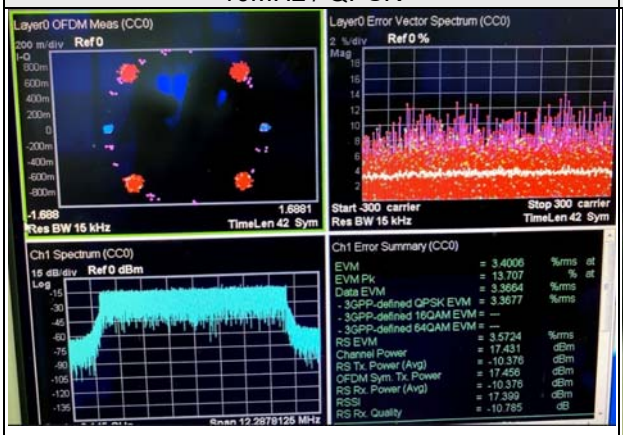
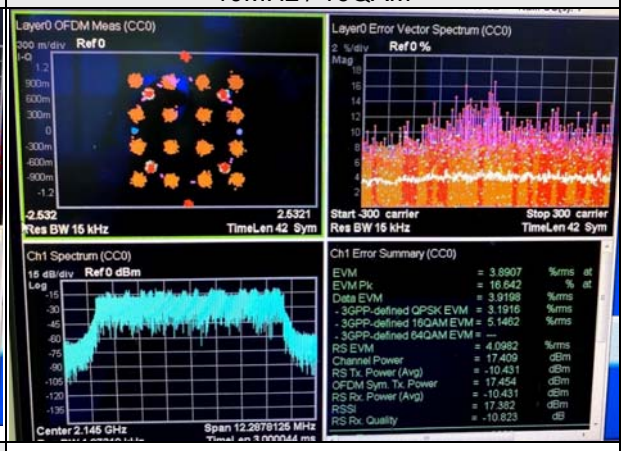
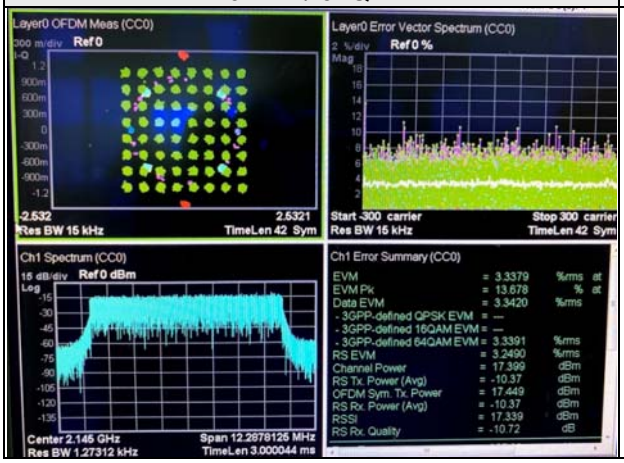
4.2.3 Test Setup

4.2.4 Test Results

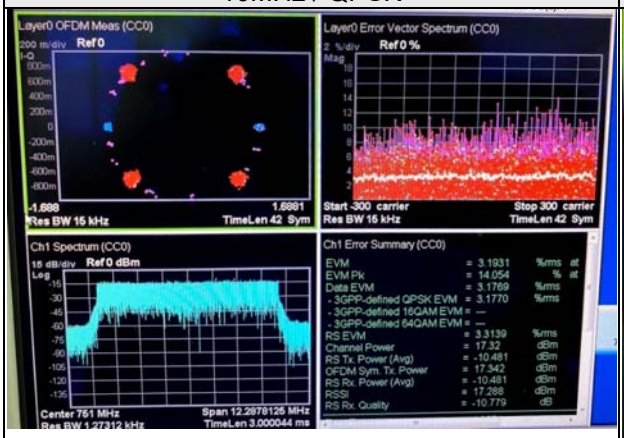
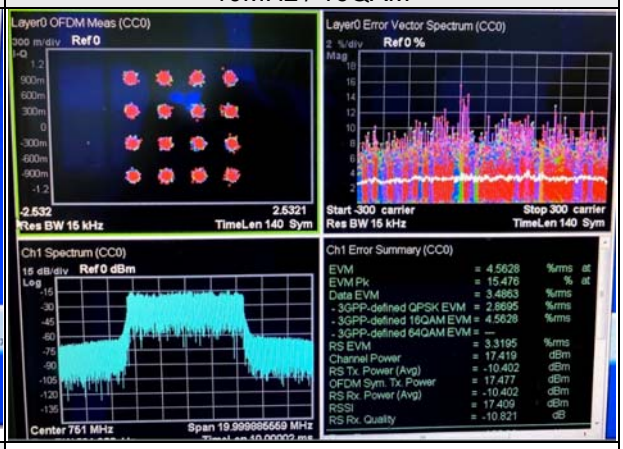
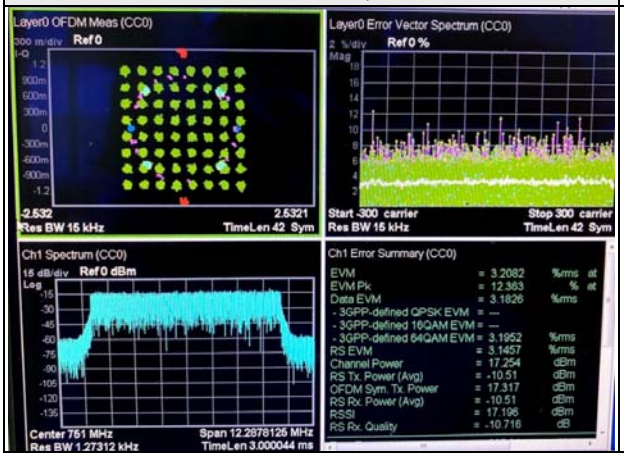
LTE Band 4

Spectrum Plot of Measurement Value	
Channel: 2175 Frequency (MHz): 2132.5	
10MHz / QPSK	10MHz / 16QAM
	
10MHz / 64QAM	
	

LTE Band 66

Spectrum Plot of Measurement Value	
Channel: 66786 Frequency (MHz): 2145	
10MHz / QPSK	10MHz / 16QAM
	
10MHz / 64QAM	
	

LTE Band 13

Spectrum Plot of Measurement Value	
Channel: 5230 Frequency (MHz): 751	
10MHz / QPSK	10MHz / 16QAM
	
10MHz / 64QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT -30℃ ~ 75℃.

4.3.2 Test Procedure

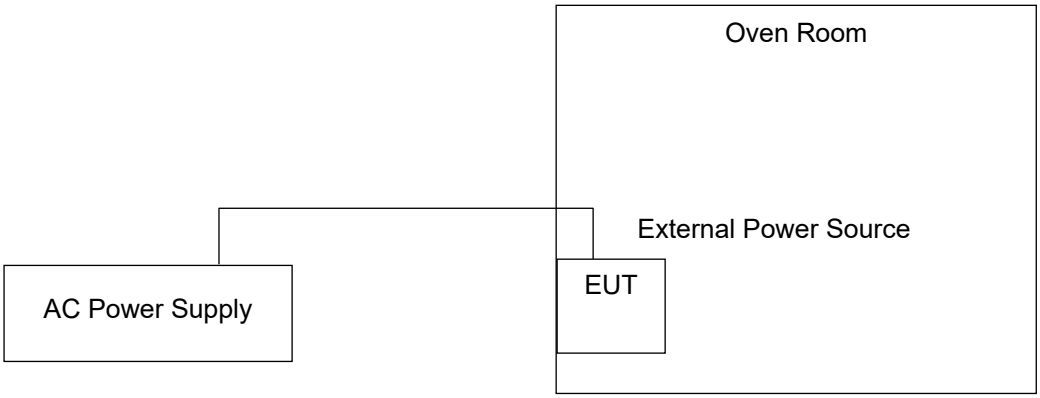
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4		LTE Band 66		LTE Band 13	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	2132.50000087	0.0004079719	2145.00000091	0.0004242424	751.00000092	0.0012250333
120	2132.50000102	0.0004783118	2145.00000102	0.0004755245	751.00000101	0.0013448735
138	2132.50000127	0.0005955451	2145.00000123	0.0005734266	751.00000126	0.0016777630

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

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 4		LTE Band 66		LTE Band 13	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2132.50000249	0.0011676436	2145.00000248	0.0011561772	751.00000250	0.0033288948
-20	2132.50000237	0.0011113716	2145.00000234	0.0010909091	751.00000232	0.0030892144
-10	2132.50000195	0.0009144197	2145.00000197	0.0009184149	751.00000197	0.0026231691
0	2132.50000177	0.0008300117	2145.00000175	0.0008158508	751.00000175	0.0023302264
10	2132.50000133	0.0006236811	2145.00000134	0.0006247086	751.00000134	0.0017842876
20	2132.50000121	0.0005674091	2145.00000126	0.0005874126	751.00000126	0.0016777630
30	2132.50000063	0.0002954279	2145.00000069	0.0003216783	751.00000068	0.0009054594
40	2132.49999860	-0.0006565064	2144.99999860	-0.0006526807	750.99999863	-0.0018242344
50	2132.49999825	-0.0008206331	2144.99999823	-0.0008251748	750.99999823	-0.0023568575
60	2132.49999799	-0.0009425557	2144.99999796	-0.0009510490	750.99999801	-0.0026498003
70	2132.49999751	-0.0011676436	2144.99999748	-0.0011748252	750.99999752	-0.0033022636
75	2132.49999727	-0.0012801876	2144.99999727	-0.0012727273	750.99999726	-0.0036484687

4.4 Emission Bandwidth Measurement

4.4.1 Limits of Emission Bandwidth Measurement

-26dBc Bandwidth
For LTE Band 4 & LTE Band 66:
According to FCC 27.53(m)(6) specified that emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.
For LTE Band 13:
According to FCC 27.53(g)(1) specified that emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

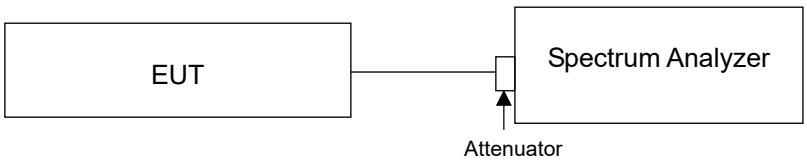
Occupied Bandwidth
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use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

4.4.2 Test Procedure

-26dBc Bandwidth
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz and VBW = 150kHz (Channel Bandwidth: 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 150kHz and VBW = 470kHz (Channel Bandwidth: 15MHz) and RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 20MHz). The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

Occupied Channel Bandwidth
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz and VBW = 150kHz (Channel Bandwidth: 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 150kHz and VBW = 470kHz (Channel Bandwidth: 15MHz) and RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 20MHz).

4.4.3 Test Setup

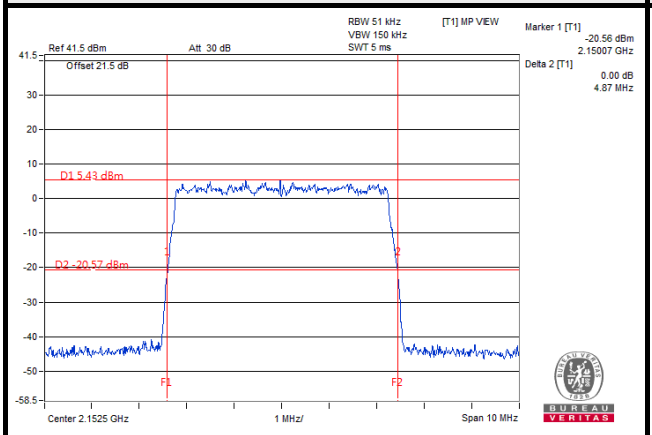


4.4.4 Test Result

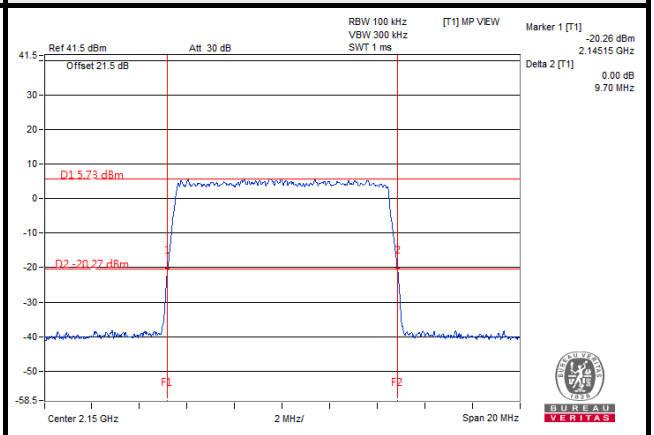
LTE Band 4							
Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1975	2112.5	4.86	4.77	4.85	4.85	4.79	4.84
2175	2132.5	4.86	4.78	4.86	4.85	4.79	4.85
2375	2152.5	4.87	4.76	4.85	4.86	4.77	4.86
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
2000	2115	9.67	9.56	9.65	9.69	9.59	9.66
2175	2132.5	9.67	9.60	9.68	9.68	9.56	9.66
2350	2150	9.70	9.58	9.64	9.69	9.59	9.65
Channel Bandwidth 15MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
2025	2117.5	14.45	14.34	14.44	14.40	14.37	14.38
2175	2132.5	14.42	14.37	14.52	14.42	14.36	14.47
2325	2147.5	14.38	14.42	14.44	14.40	14.37	14.44
Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
2050	2120	19.09	19.03	19.12	19.10	19.03	19.13
2175	2132.5	19.15	19.01	19.15	19.16	19.02	19.15
2300	2145	19.17	18.99	19.09	19.18	19.03	19.13

Spectrum Plot Of Worst Value

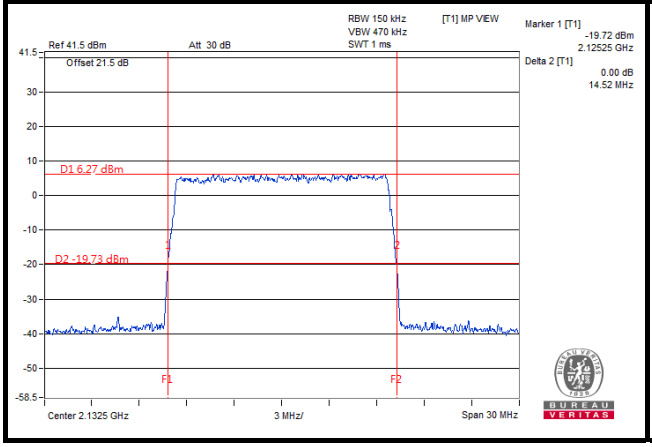
5MHz / QPSK



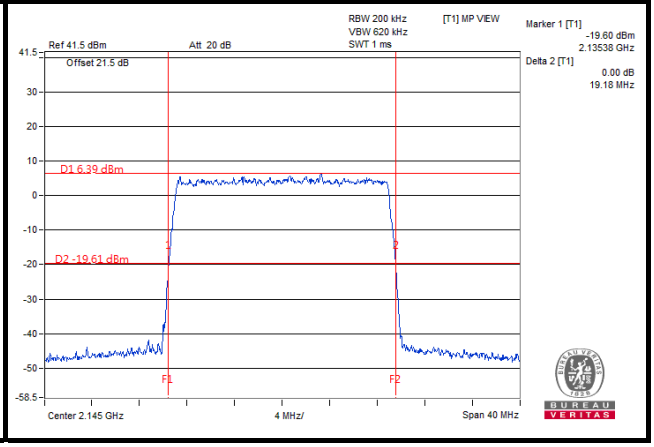
10MHz / QPSK



15MHz / 64QAM



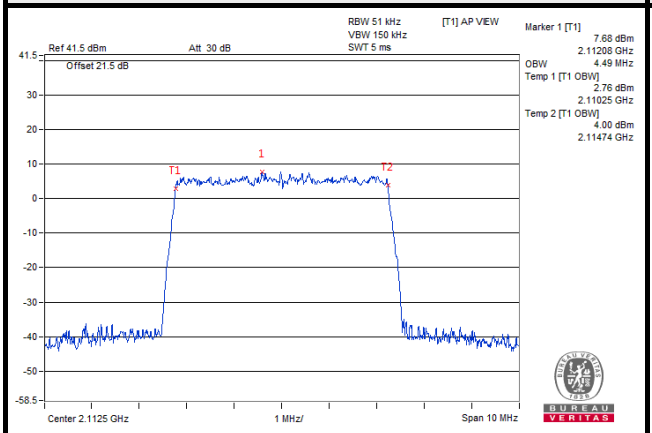
20MHz / QPSK



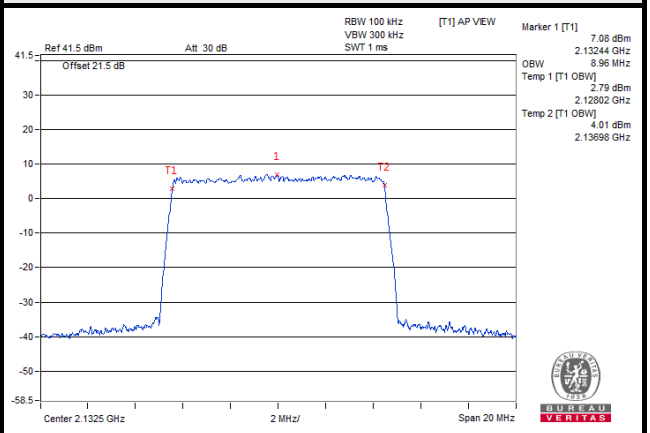
LTE Band 4							
Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1975	2112.5	4.49	4.47	4.48	4.48	4.47	4.48
2175	2132.5	4.48	4.45	4.48	4.49	4.46	4.48
2375	2152.5	4.49	4.46	4.49	4.48	4.48	4.48
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
2000	2115	8.94	8.92	8.92	8.92	8.92	8.92
2175	2132.5	8.96	8.92	8.92	8.96	8.94	8.92
2350	2150	8.94	8.92	8.94	8.96	8.92	8.94
Channel Bandwidth 15MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
2025	2117.5	13.38	13.41	13.41	13.41	13.44	13.44
2175	2132.5	13.41	13.41	13.47	13.44	13.41	13.41
2325	2147.5	13.41	13.44	13.41	13.41	13.38	13.44
Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
2050	2120	17.88	17.92	17.88	17.92	17.92	17.88
2175	2132.5	17.88	17.88	17.84	17.92	17.88	17.88
2300	2145	17.88	17.84	17.88	17.88	17.88	17.84

Spectrum Plot Of Worst Value

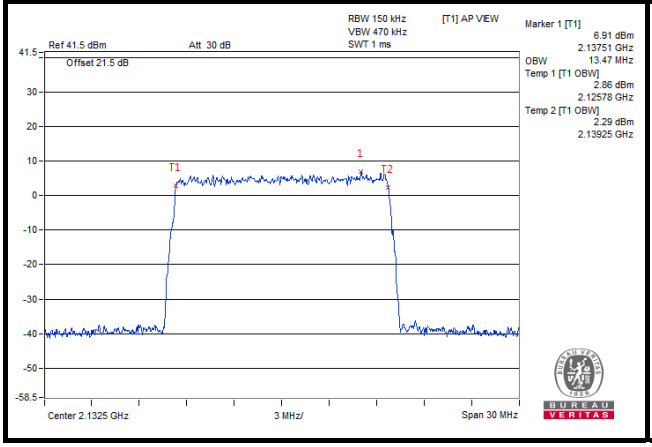
5MHz / QPSK



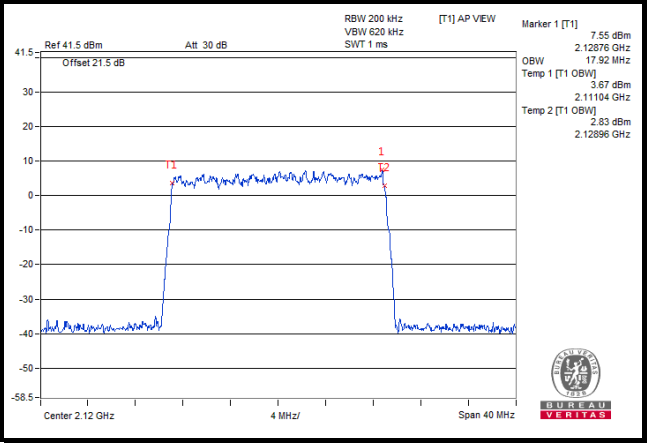
10MHz / QPSK



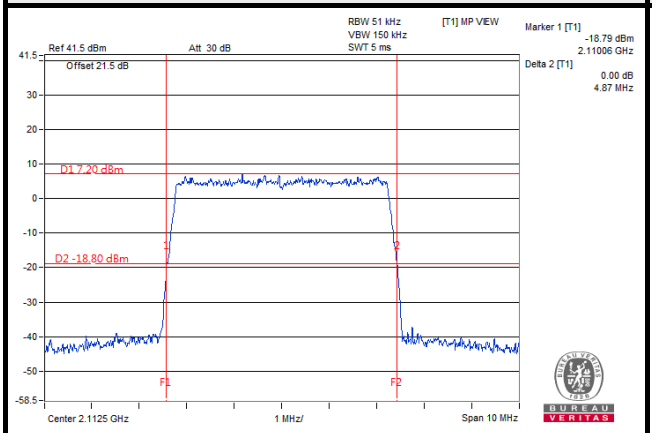
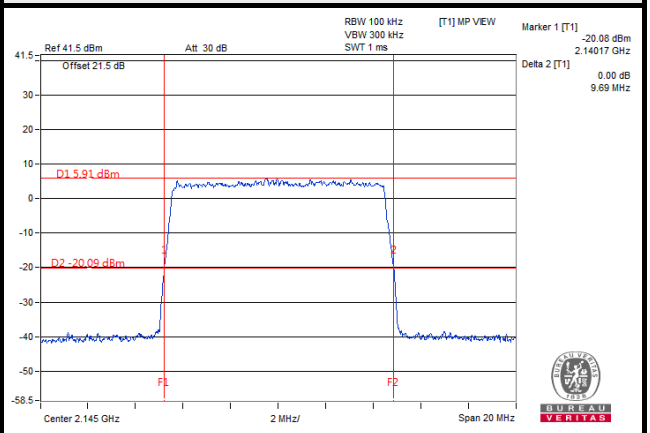
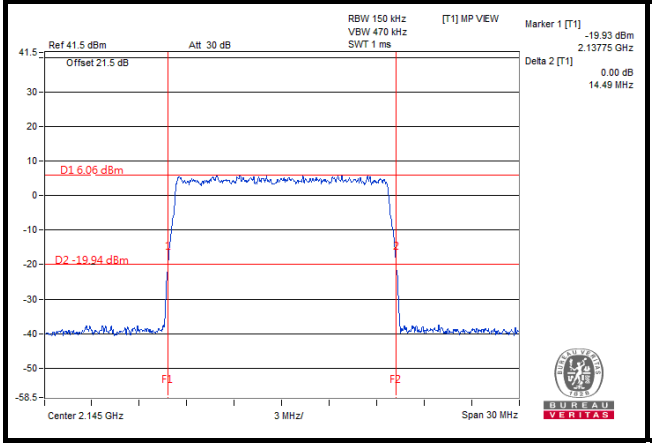
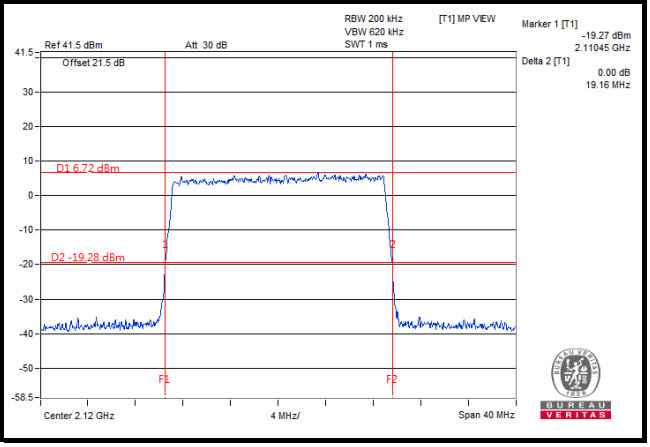
15MHz / 64QAM



20MHz / 16QAM



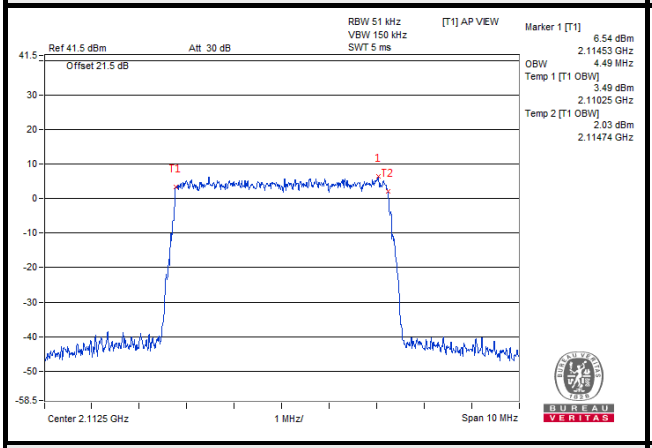
LTE Band 66							
Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66461	2112.5	4.82	4.78	4.84	4.86	4.75	4.87
66786	2145	4.86	4.76	4.86	4.85	4.78	4.83
67111	2177.5	4.86	4.82	4.87	4.84	4.82	4.82
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66486	2115	9.67	9.55	9.63	9.66	9.58	9.65
66786	2145	9.69	9.56	9.67	9.62	9.57	9.67
67086	2175	9.60	9.60	9.65	9.67	9.61	9.66
Channel Bandwidth 15MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66511	2117.5	14.45	14.42	14.43	14.43	14.39	14.44
66786	2145	14.44	14.36	14.49	14.40	14.36	14.47
67061	2172.5	14.43	14.35	14.47	14.43	14.33	14.47
Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66536	2120	19.08	19.05	19.10	19.12	18.98	19.16
66786	2145	19.08	19.04	19.08	19.13	19.06	19.12
67036	2170	19.12	19.09	19.10	19.08	19.00	19.08

Spectrum Plot Of Worst Value	
5MHz / 64QAM	10MHz / QPSK
	
15MHz / 64QAM	20MHz / 64QAM
	

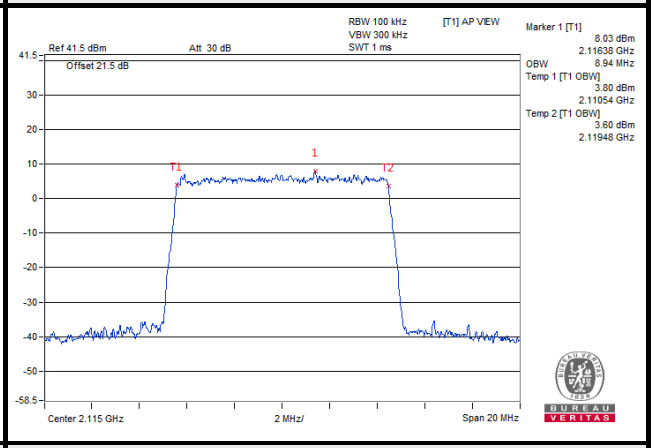
LTE Band 66							
Channel Bandwidth 5MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66461	2112.5	4.48	4.48	4.49	4.47	4.47	4.49
66786	2145	4.47	4.47	4.48	4.47	4.46	4.49
67111	2177.5	4.47	4.48	4.47	4.49	4.47	4.49
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66486	2115	8.94	8.92	8.92	8.94	8.92	8.92
66786	2145	8.92	8.94	8.94	8.92	8.94	8.92
67086	2175	8.94	8.92	8.92	8.94	8.92	8.94
Channel Bandwidth 15MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66511	2117.5	13.41	13.41	13.44	13.44	13.41	13.44
66786	2145	13.41	13.44	13.44	13.38	13.41	13.38
67061	2172.5	13.44	13.41	13.44	13.41	13.41	13.41
Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
66536	2120	17.92	17.92	17.88	17.84	17.88	17.92
66786	2145	17.88	17.92	17.88	17.84	17.88	17.84
67036	2170	17.88	17.88	17.88	17.88	17.88	17.84

Spectrum Plot Of Worst Value

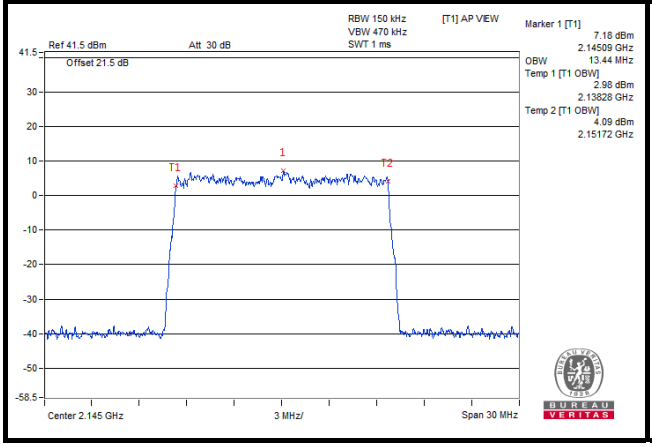
5MHz / 64QAM



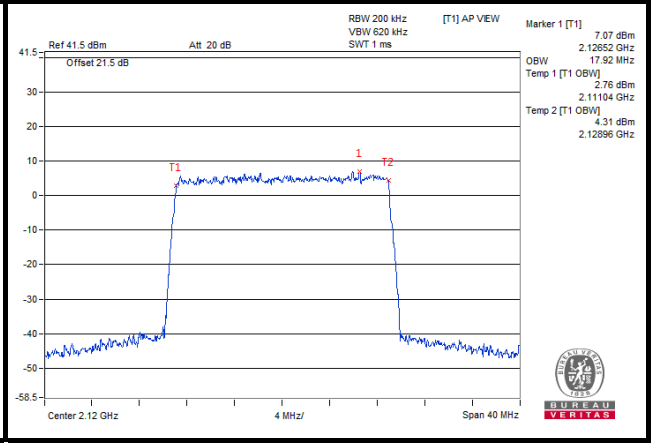
10MHz / QPSK



15MHz / 16QAM

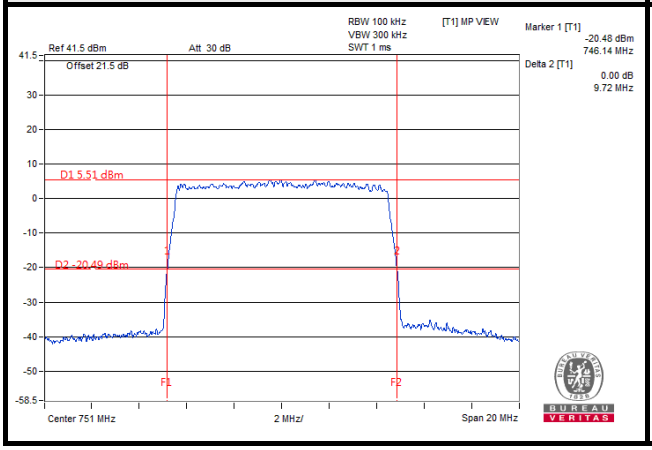
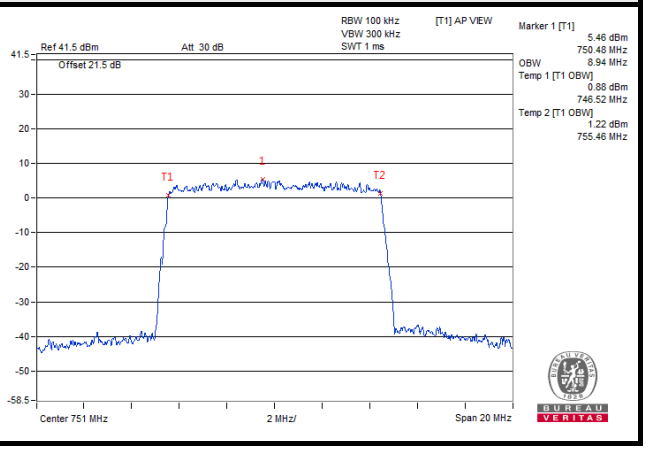


20MHz / QPSK



LTE Band 13							
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5230	751	9.71	9.56	9.66	9.72	9.58	9.67

LTE Band 13							
Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5230	751	8.94	8.92	8.90	8.92	8.92	8.92

Spectrum Plot Of Worst Value	
26dBc Bandwidth	99% Occupied Bandwidth
	

4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

For LTE Band 4 & LTE Band 66
According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

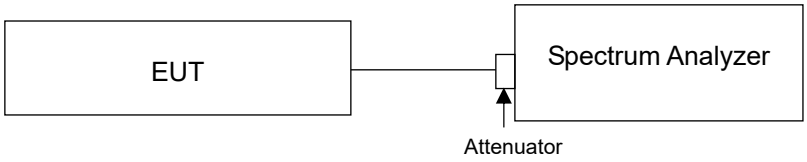
For LTE Band 13
According to FCC 27.53(c), for operations in the 747 to 762 MHz band and the 777 to 792 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured watts, in accordance with the following:
(1) On any frequency outside the 747 to 762 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

Note: The Device has 2x2 MIMO function, so the limit of spurious emissions needs to be reduced by $10\log(Numbers_{Ant})$ according to FCC KDB 662911 D01 guidance.

{The limits is adjusted to -13dBm – 10*log(2) = -16.01dBm}

Note: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains).

4.5.2 Test Setup



4.5.3 Test Procedures

a. The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. All measurements were done at 2 channels: low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 50kHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 5MHz).

c. The center frequency of spectrum is the band edge frequency and span is 100kHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Channel Bandwidth 10MHz).

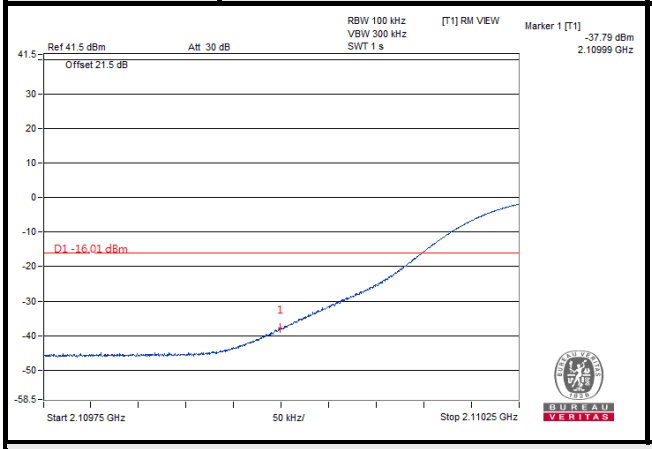
d. The center frequency of spectrum is the band edge frequency and span is 150kHz. RB of the spectrum is 300kHz and VB of the spectrum is 910kHz (LTE Channel Bandwidth 15MHz).

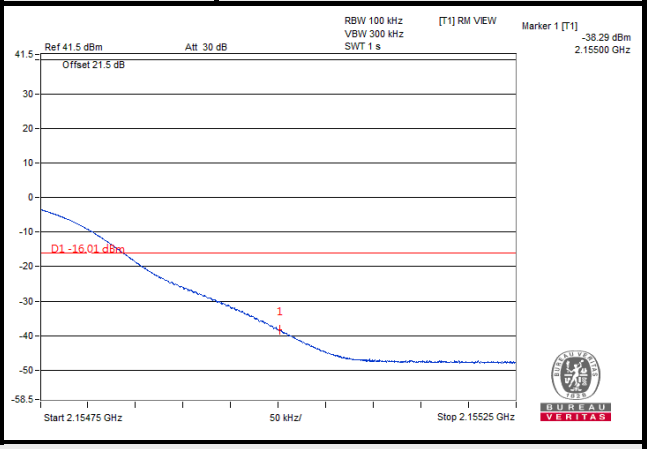
e. The center frequency of spectrum is the band edge frequency and span is 200kHz. RB of the spectrum is 430kHz and VB of the spectrum is 1300kHz (LTE Channel Bandwidth 20MHz).

f. Record the max trace plot into the test report.

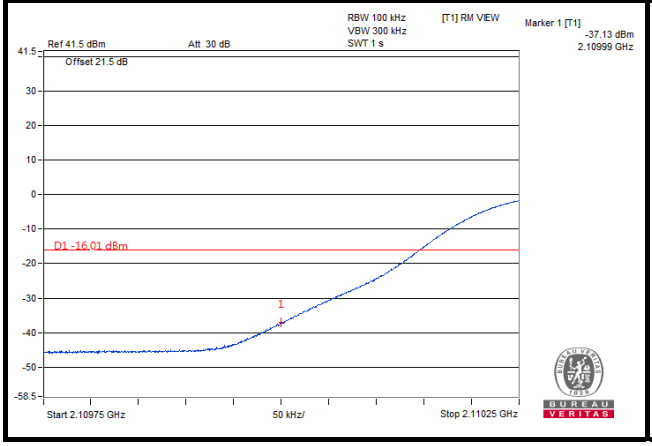
4.5.4 Test Results

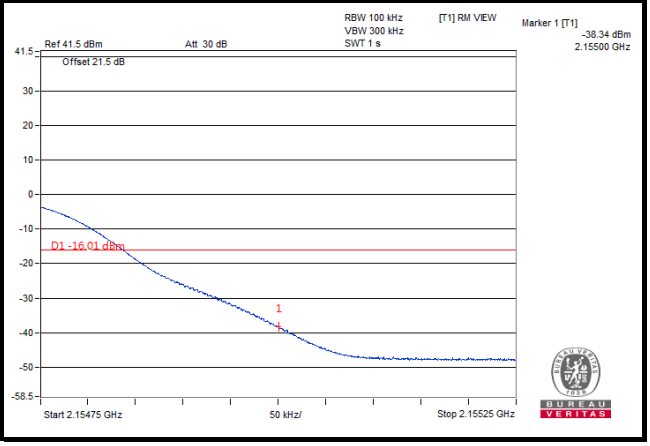
LTE Band 4			
Channel Bandwidth 5MHz			
Chain 0			
Channel	1975	Channel	2375





Chain 1			
Channel	1975	Channel	2375



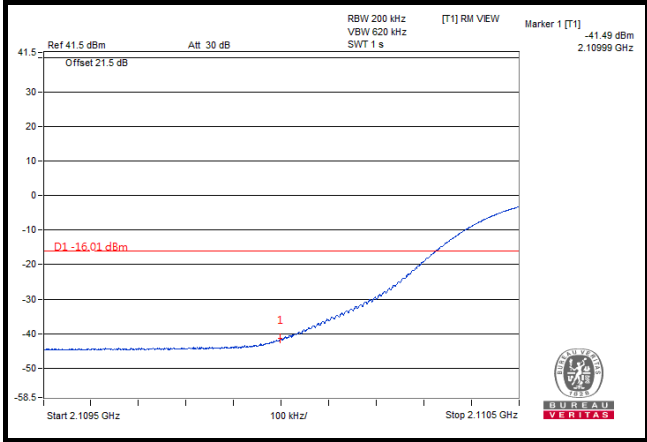


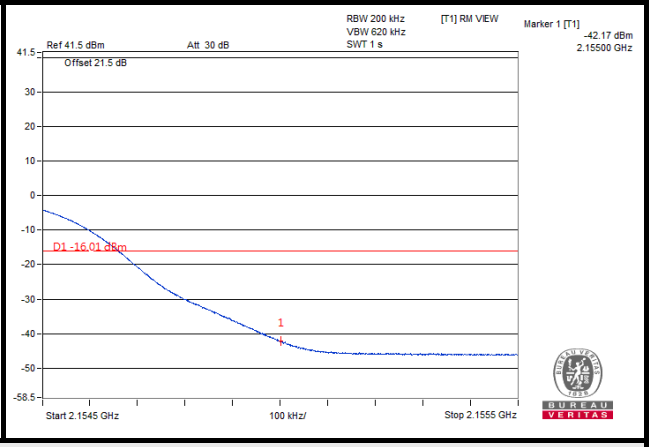
LTE Band 4

Channel Bandwidth 10MHz

Chain 0

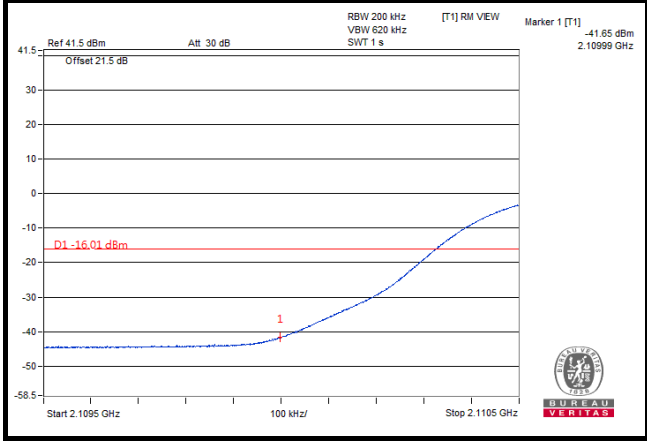
Channel	2000	Channel	2350

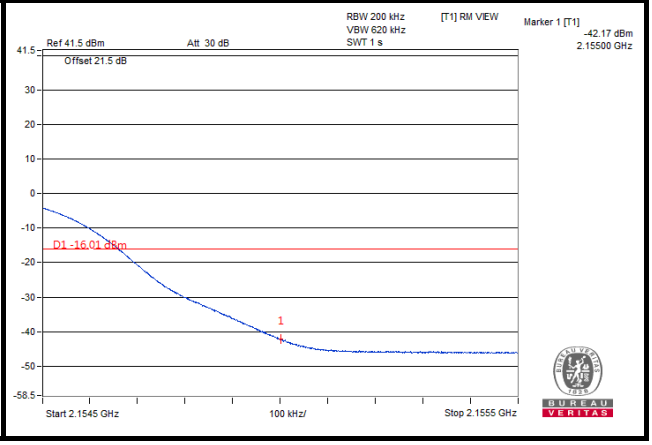




Chain 1

Channel	2000	Channel	2350



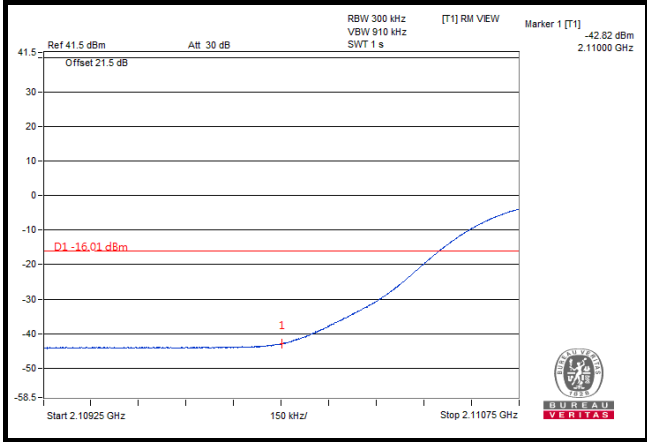


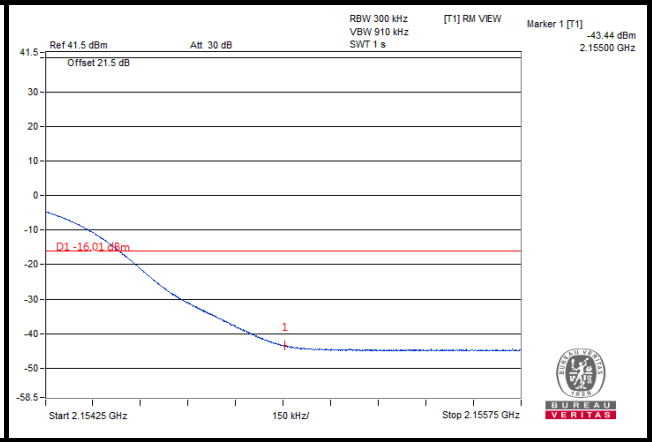
LTE Band 4

Channel Bandwidth 15MHz

Chain 0

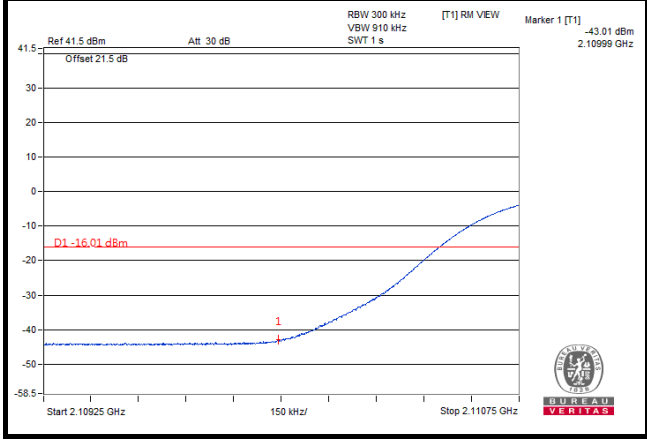
Channel	2025	Channel	2325

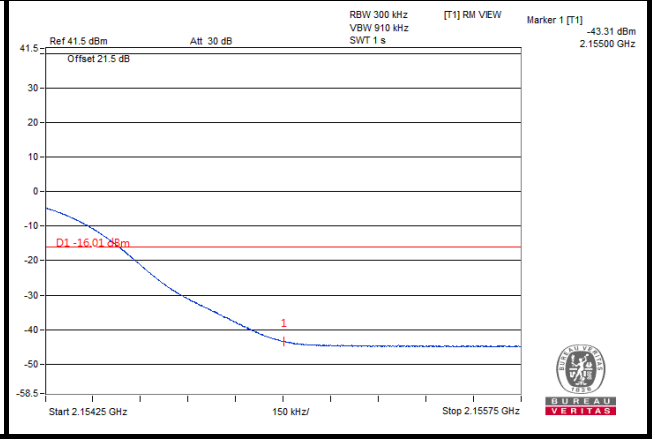




Chain 1

Channel	2025	Channel	2325



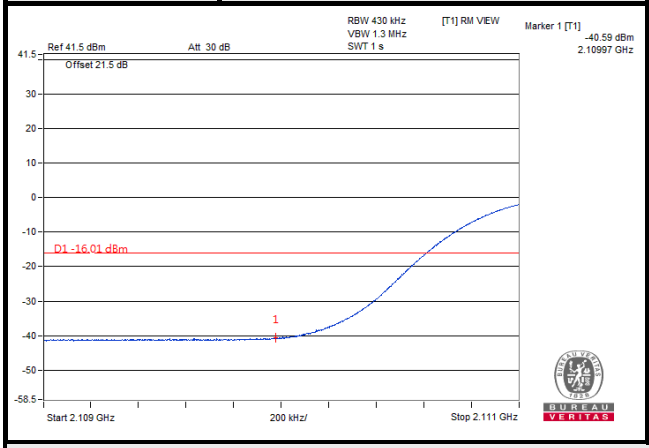


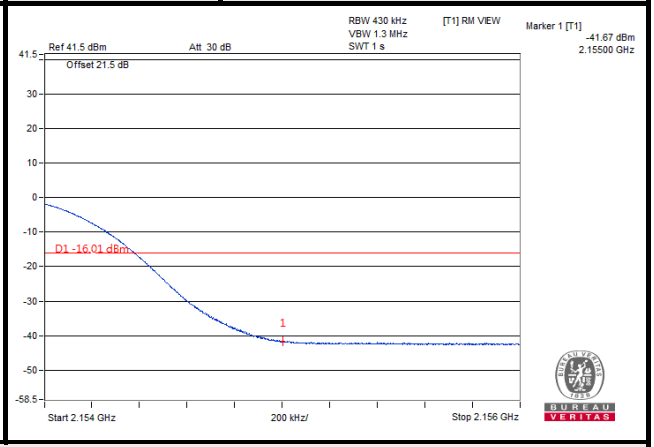
LTE Band 4

Channel Bandwidth 20MHz

Chain 0

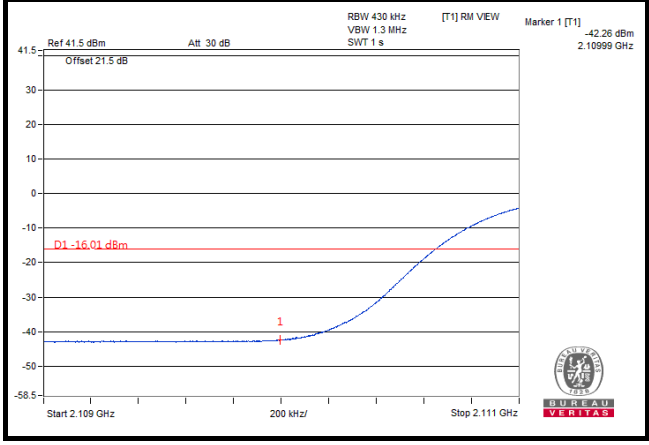
Channel	2050	Channel	2300

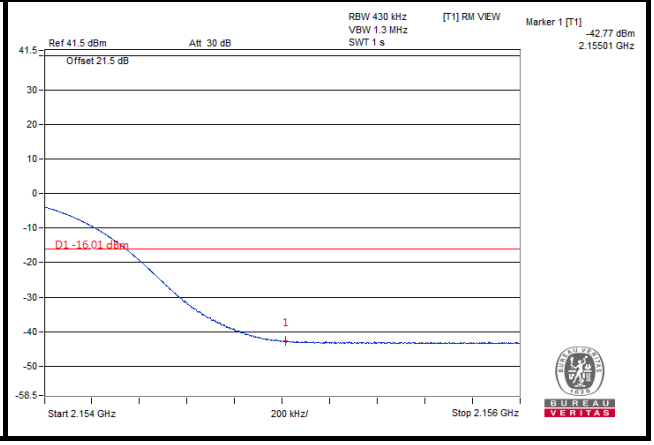




Chain 1

Channel	2050	Channel	2300



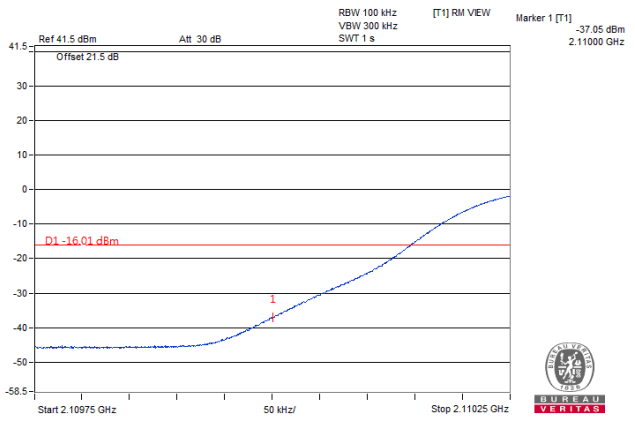


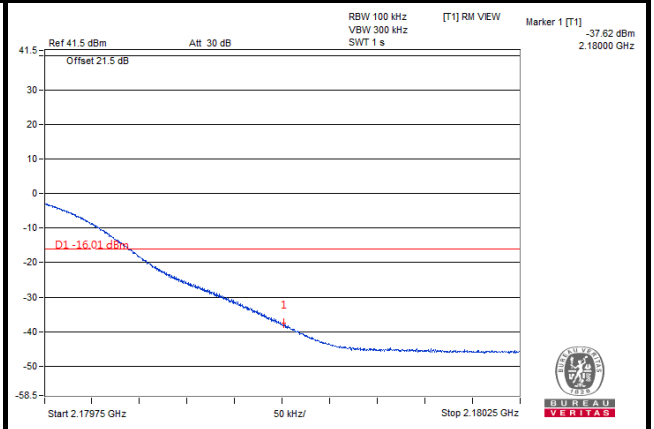
LTE Band 66

Channel Bandwidth 5MHz

Chain 0

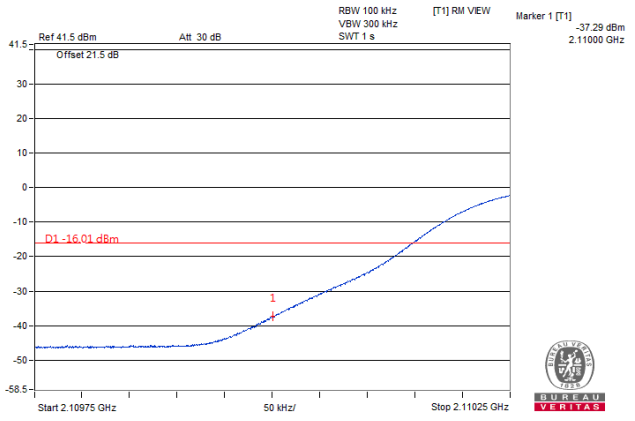
Channel	66461	Channel	67111

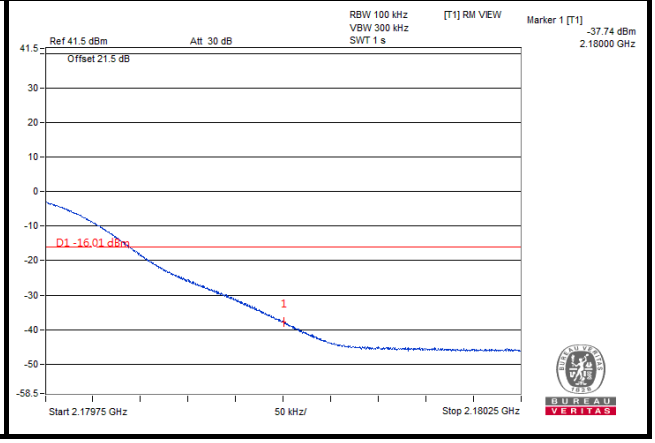




Chain 1

Channel	66461	Channel	67111



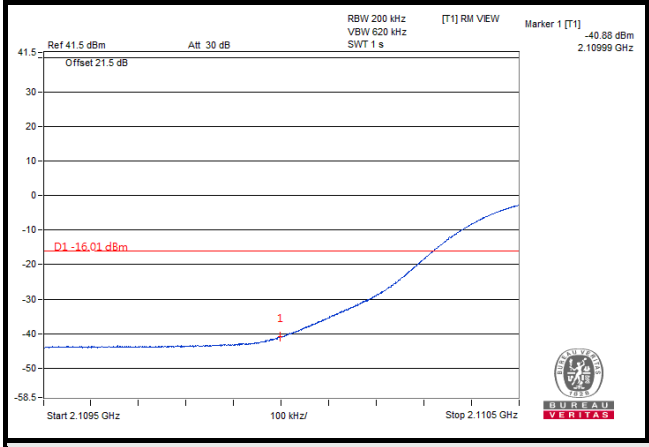


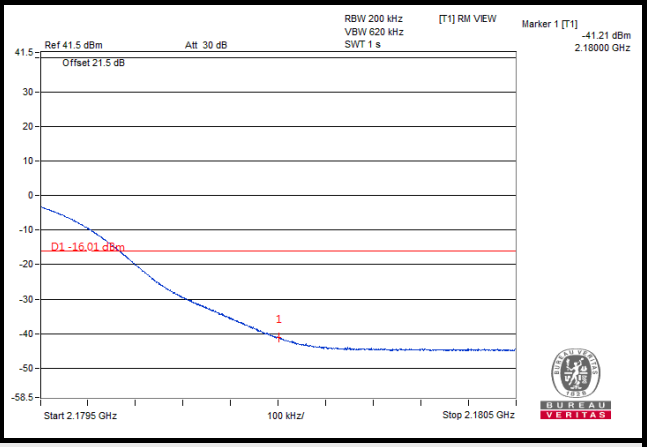
LTE Band 66

Channel Bandwidth 10MHz

Chain 0

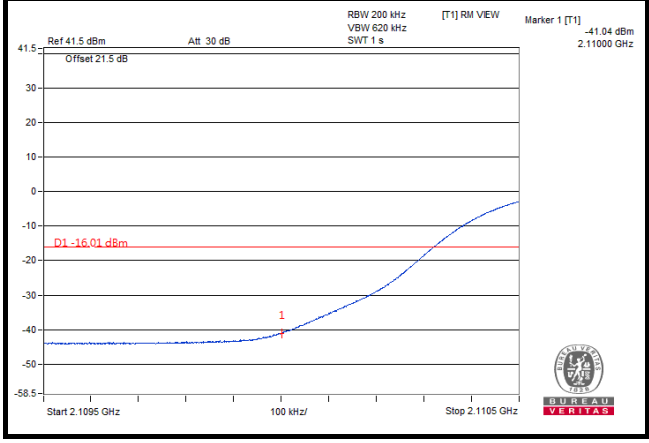
Channel	66486	Channel	67086

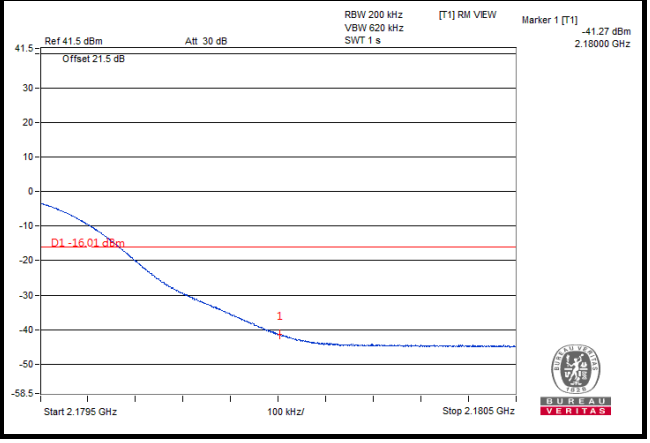




Chain 1

Channel	66486	Channel	67086



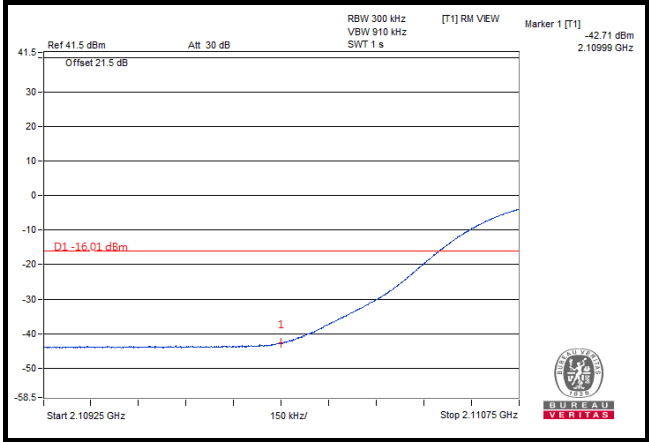


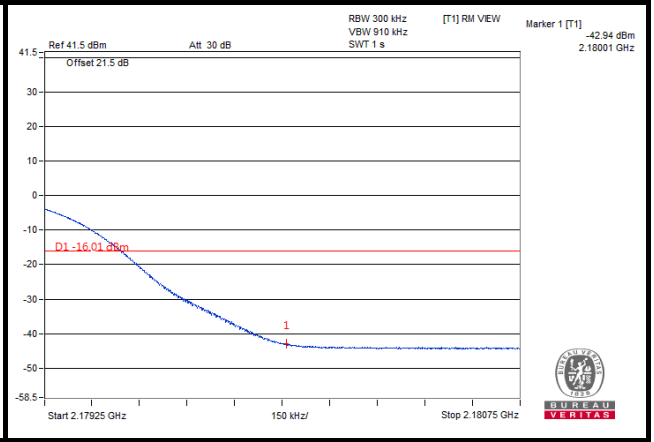
LTE Band 66

Channel Bandwidth 15MHz

Chain 0

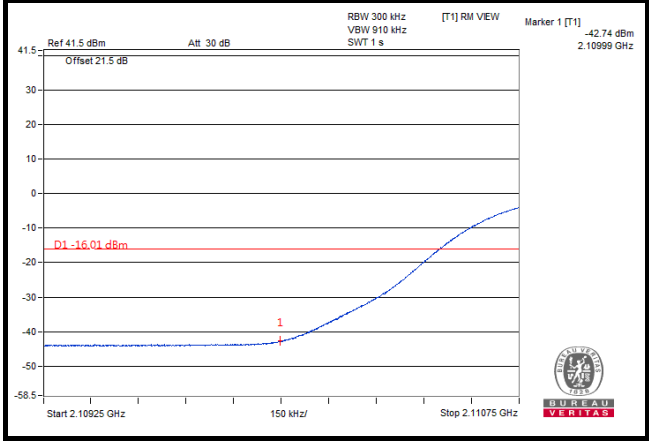
Channel	66511	Channel	67061

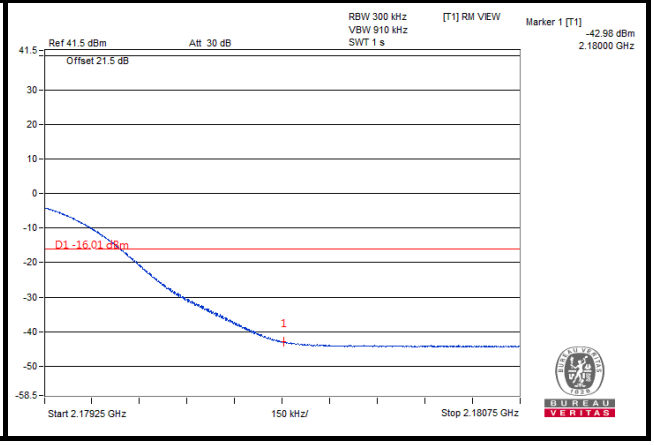




Chain 1

Channel	66511	Channel	67061



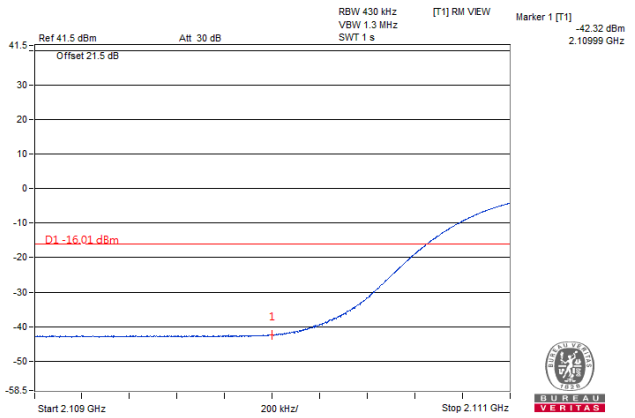


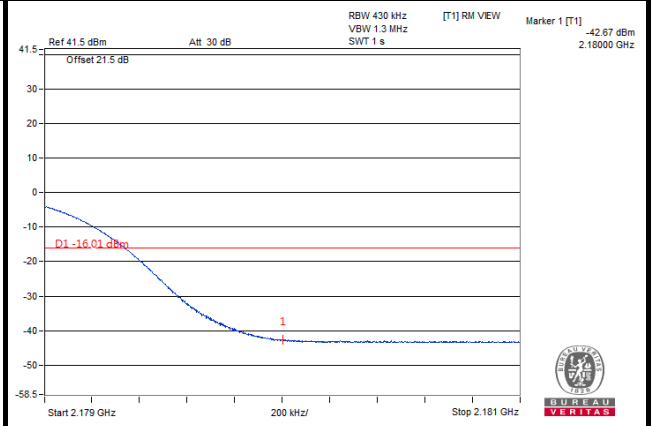
LTE Band 66

Channel Bandwidth 20MHz

Chain 0

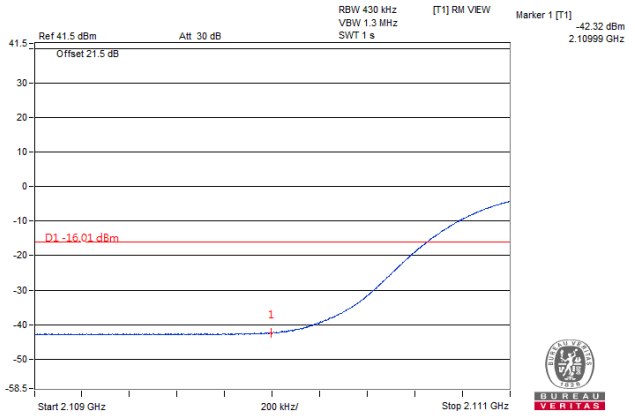
Channel	66536	Channel	67036

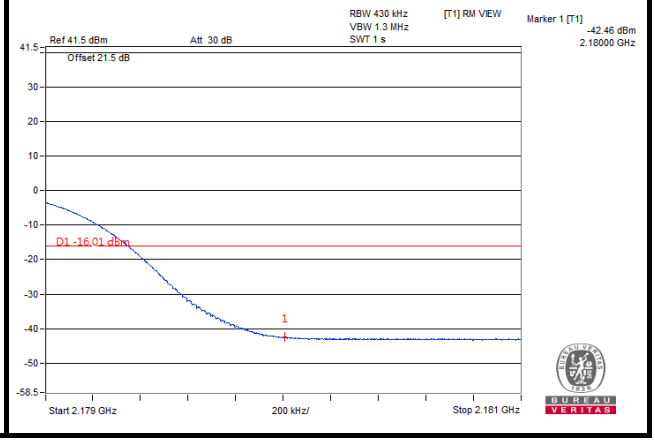




Chain 1

Channel	66536	Channel	67036



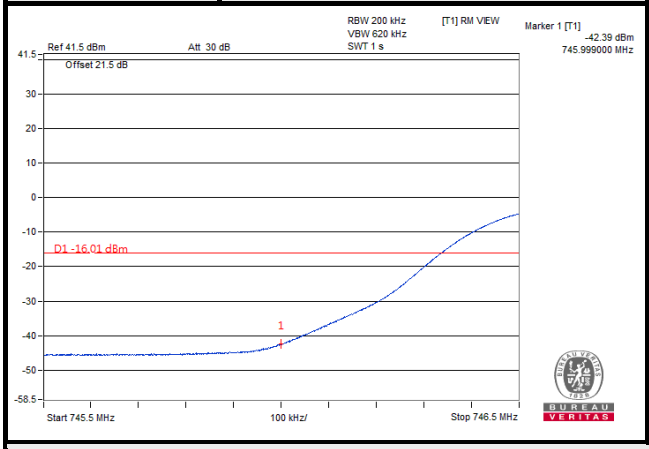


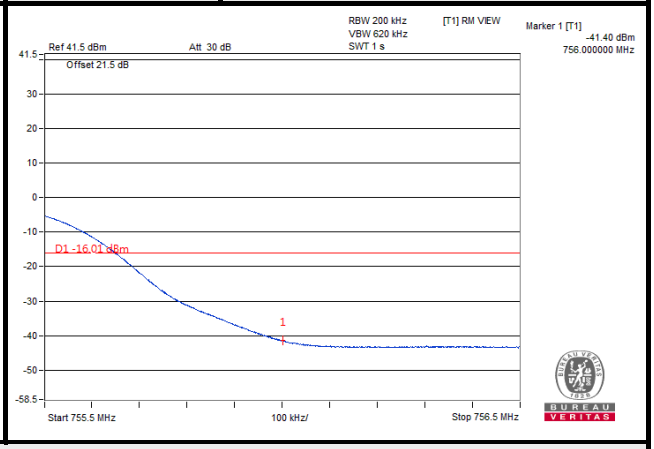
LTE Band 13

Channel Bandwidth 10MHz

Chain 0

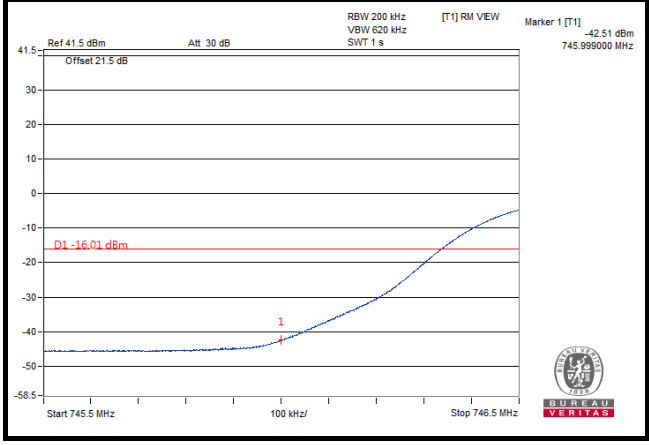
Channel	5230	Channel	5230

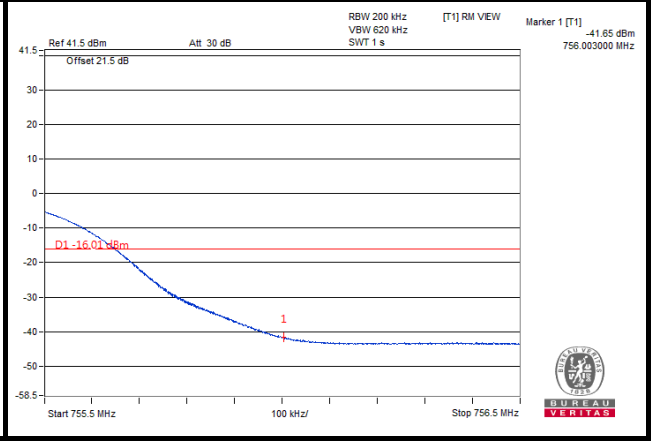




Chain 1

Channel	5230	Channel	5230



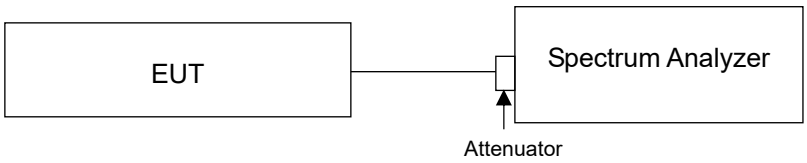


4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

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

4.6.2 Test Setup



4.6.3 Test Procedures

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

b. Set the number of counts to a value that stabilizes the measured CCDF curve;

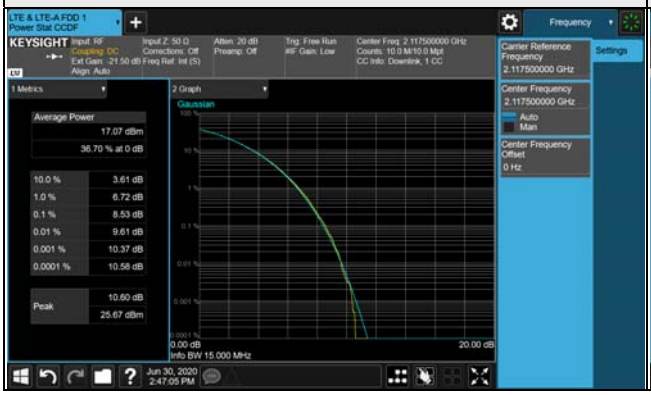
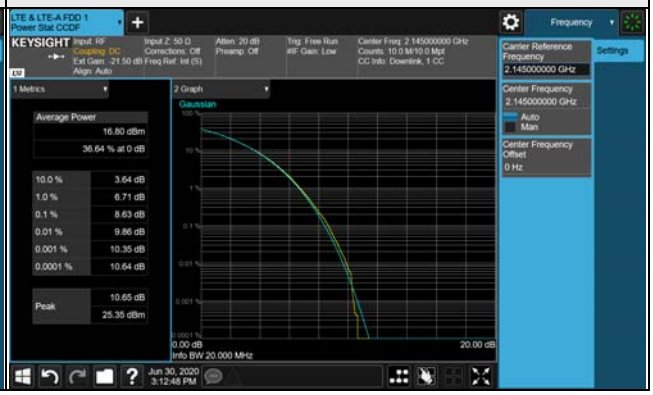
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

LTE Band 4							
Peak To Average Ratio (dB)							
Channel	Frequency (MHz)	Channel Bandwidth 5MHz		Channel	Frequency (MHz)	Channel Bandwidth 10MHz	
		QPSK				QPSK	
		Chain 0	Chain 1			Chain 0	Chain 1
1975	2112.5	8.50	8.49	2000	2115.0	8.51	8.51
2175	2132.5	8.52	8.52	2175	2132.5	8.69	8.70
2375	2152.5	8.73	8.75	2350	2150.0	8.71	8.71
Channel	Frequency (MHz)	Channel Bandwidth 15MHz		Channel	Frequency (MHz)	Channel Bandwidth 20MHz	
		QPSK				QPSK	
		Chain 0	Chain 1			Chain 0	Chain 1
2025	2117.5	8.52	8.52	2050	2120.0	8.53	8.53
2175	2132.5	8.59	8.60	2175	2132.5	8.54	8.54
2325	2147.5	8.52	8.51	2300	2145.0	8.58	8.54

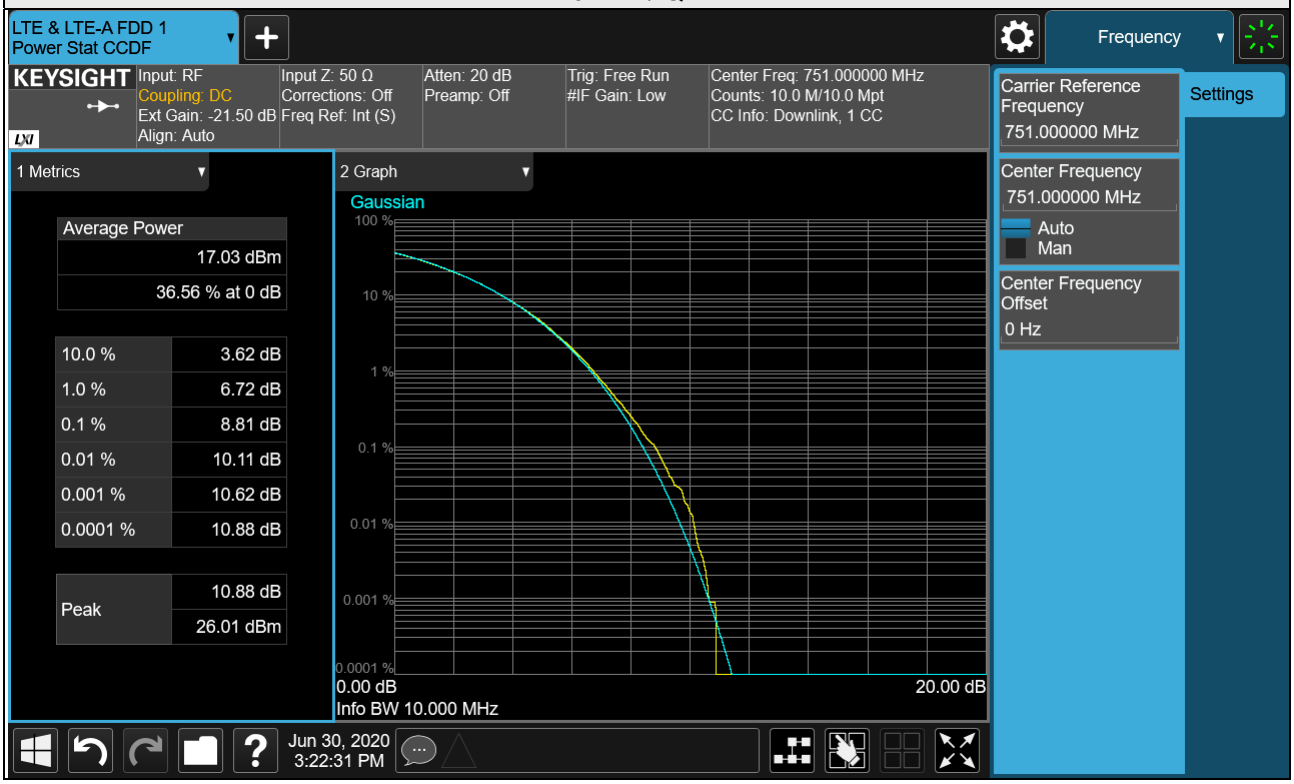
Spectrum Plot Of Worst Value	
5MHz / QPSK	10MHz / QPSK
	
15MHz / QPSK	20MHz / QPSK
	

LTE Band 66							
Peak To Average Ratio (dB)							
Channel	Frequency (MHz)	Channel Bandwidth 5MHz		Channel	Frequency (MHz)	Channel Bandwidth 10MHz	
		QPSK				QPSK	
		Chain 0	Chain 1			Chain 0	Chain 1
66461	2112.5	8.42	8.41	66486	2115	8.55	8.58
66786	2145	8.60	8.59	66786	2145	8.61	8.61
67111	2177.5	8.57	8.54	67086	2175	8.68	8.68
Channel	Frequency (MHz)	Channel Bandwidth 15MHz		Channel	Frequency (MHz)	Channel Bandwidth 20MHz	
		QPSK				QPSK	
		Chain 0	Chain 1			Chain 0	Chain 1
66511	2117.5	8.52	8.53	66536	2120	8.57	8.58
66786	2145	8.48	8.51	66786	2145	8.63	8.62
67061	2172.5	8.51	8.53	67036	2170	8.53	8.54

Spectrum Plot Of Worst Value	
5MHz / QPSK	10MHz / QPSK
	
15MHz / QPSK	20MHz / QPSK
	

LTE Band 13			
Peak To Average Ratio (dB)			
Channel	Frequency (MHz)	Channel Bandwidth 10MHz	
		QPSK	
		Chain 0	Chain 1
5230	751.0	8.80	8.81

Spectrum Plot Of Worst Value
10MHz / QPSK



4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

For LTE Band 4 & LTE Band 66
According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

Note: The Device has 2x2 MIMO function, so the limit of spurious emissions needs to be reduced by $10\log(Numbers_{Ant})$ according to FCC KDB 662911 D01 guidance.

{The limits is adjusted to -13dBm – 10*log(2) = -16.01dBm}

For LTE Band 13
According to FCC 27.53(c) for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured watts, in accordance with the following:
(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

Note: The Device has 2x2 MIMO function, so the limit of spurious emissions needs to be reduced by $10\log(Numbers_{Ant})$ according to FCC KDB 662911 D01 quidance.

{The limits is adjusted to -13dBm – 10*log(2) = -16.01dBm}

(2) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

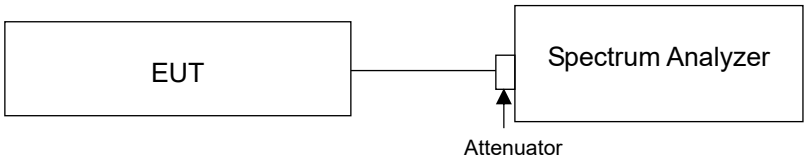
Note: The Device has 2x2 MIMO function, so the limit of spurious emissions needs to be reduced by $10\log(Numbers_{Ant})$ according to FCC KDB 662911 D01 quidance.

{10log(10kHz/6.25kHz) = 2.04dB,
The limits is adjusted to -46dBm + 2.04dB – 10*log(2) = -46.97dBm}

Emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80dBW EIRP for discrete emission of less than 700Hz bandwidth.
{The limits is adjusted to -40dBm (-70dBW) – 10*log(2) = -43.01dBm}

Note:
1. The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains).
2. The other emission levels were very low against the limit in the band 1559-1610 MHz.

4.7.2 Test Setup



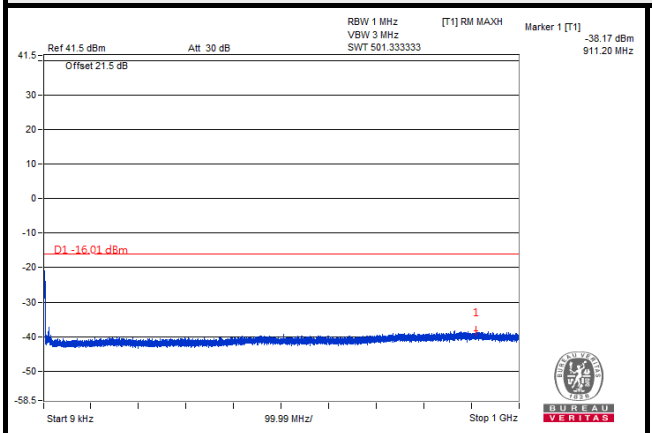
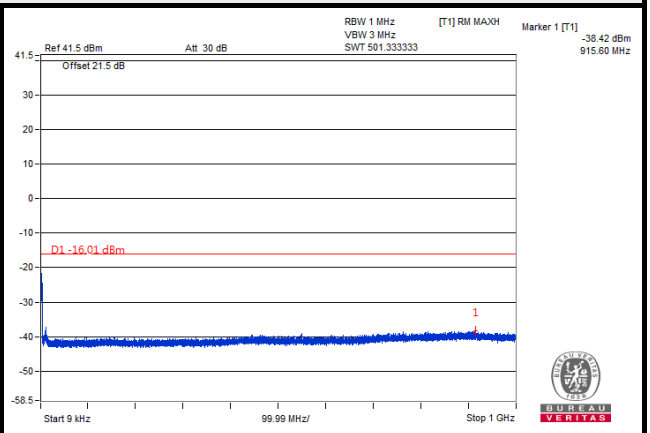
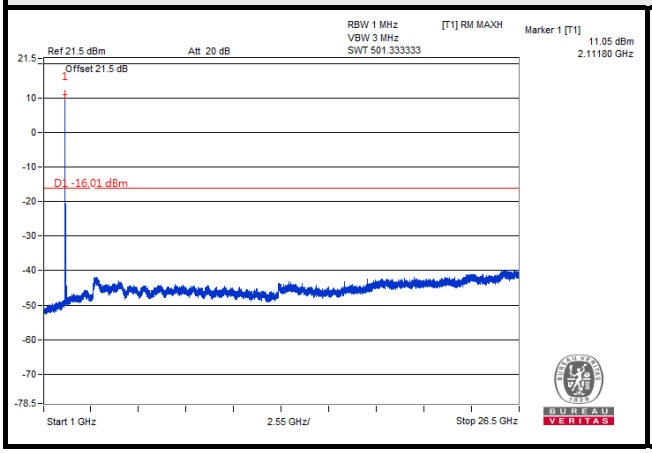
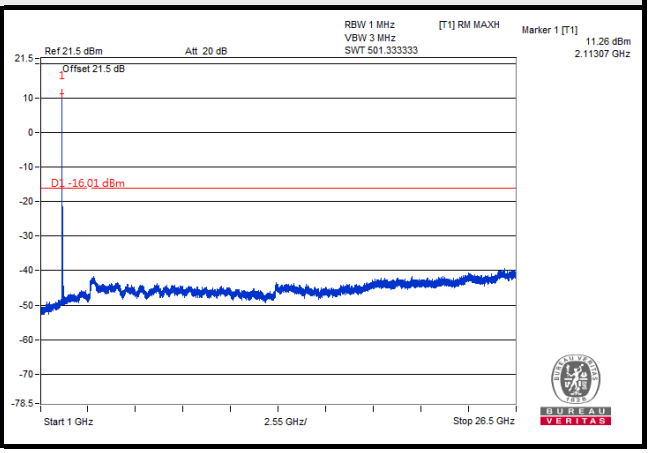
4.7.3 Test Procedure

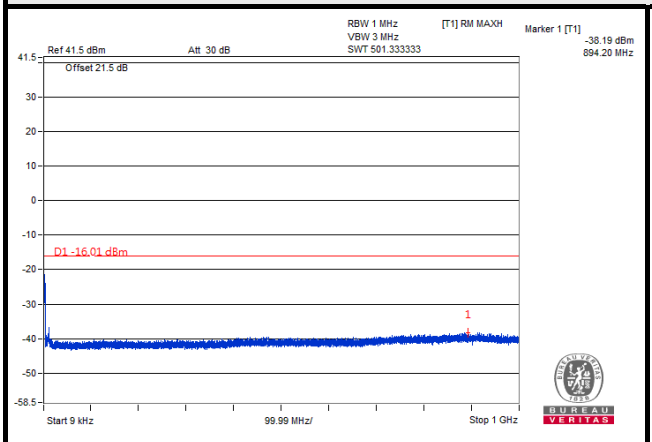
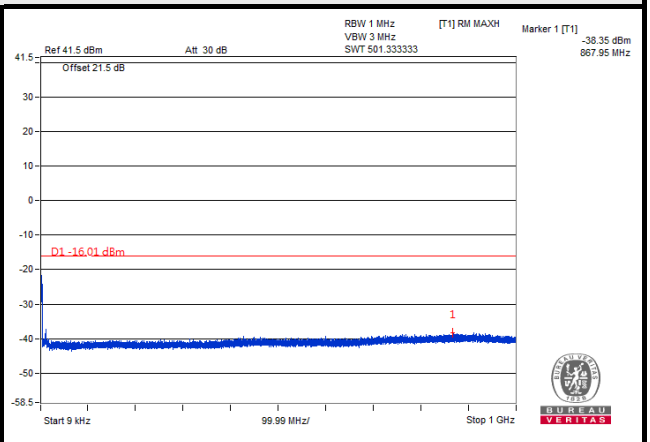
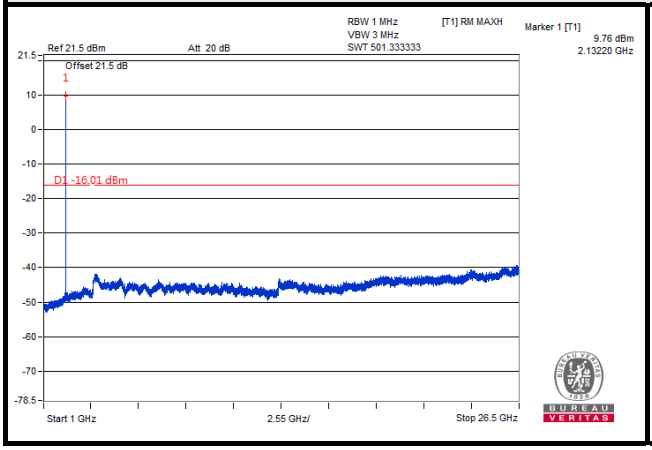
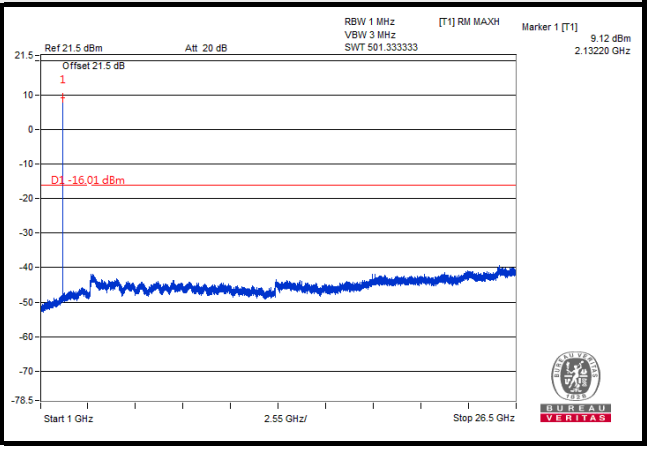
a. All measurements were done at 3 channels: low, middle and high operational frequency range.

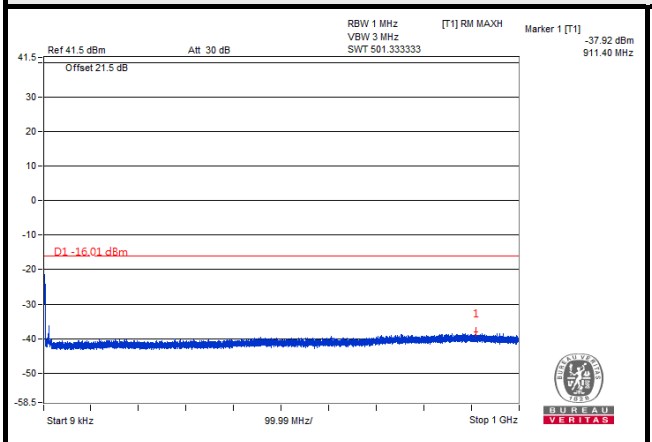
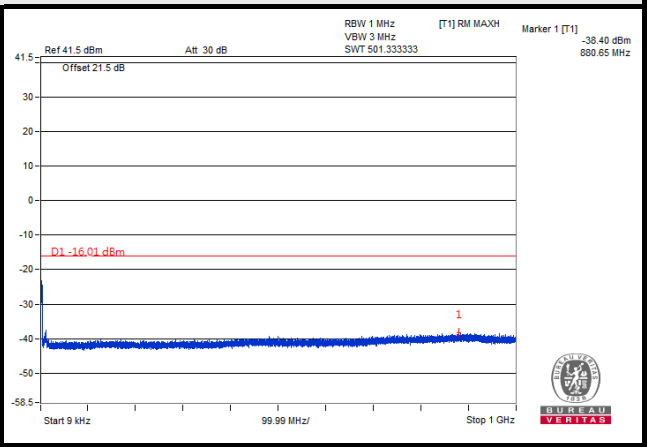
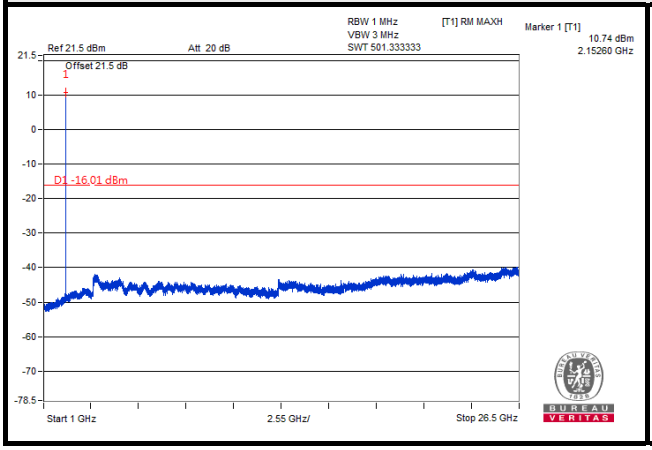
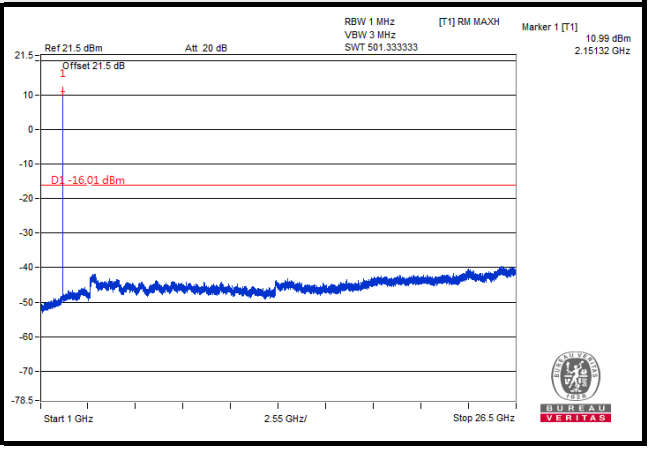
b. When the spectrum scanned from 9kHz to 26.5GHz, it shall be connected to the 20dB pad attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz. (For LTE Band 4 & LTE Band 66)

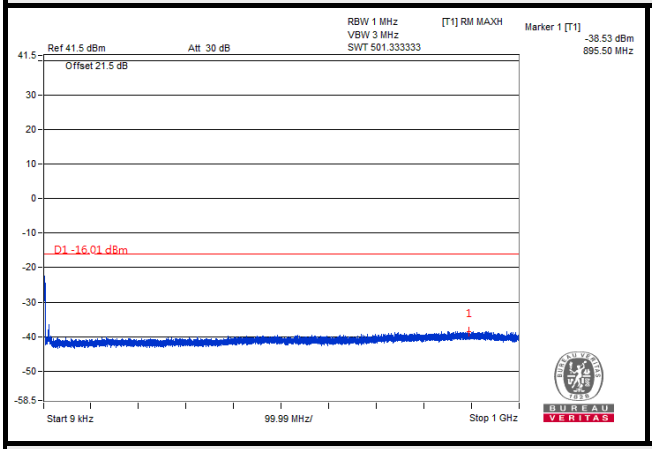
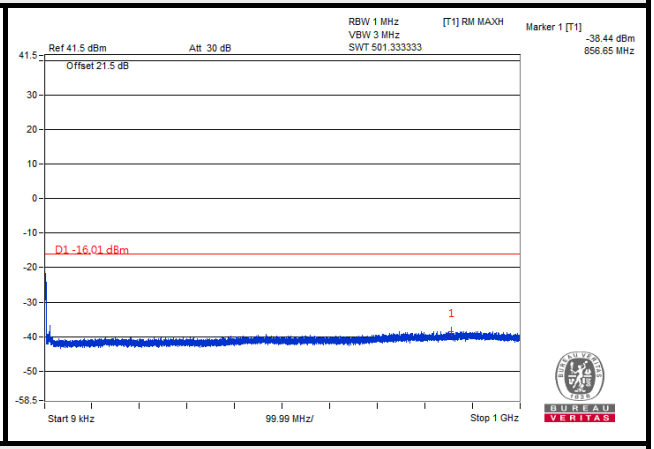
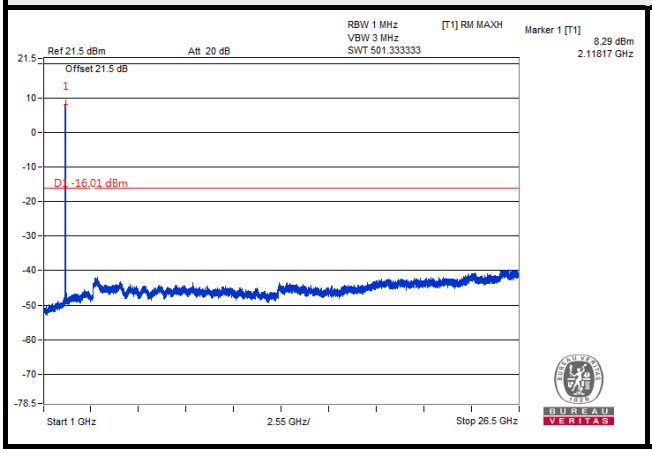
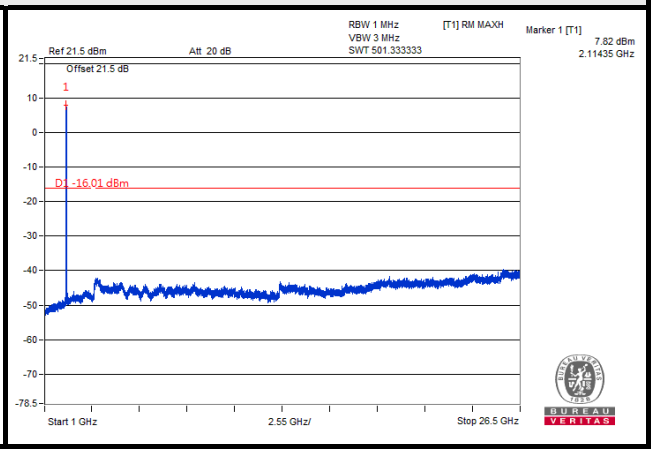
c. When the spectrum scanned from 9kHz to 9GHz, it shall be connected to the 20dB pad attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz for frequency range: 9kHz~763MHz, 775MHz~793MHz and 805MHz~9GHz, RB = 10kHz, VB = 30kHz for frequency range: 763MHz~775MHz and 793MHz~805MHz. (For LTE Band 13)

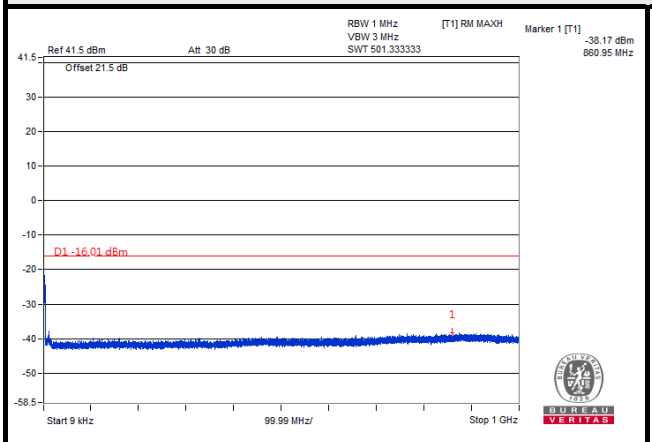
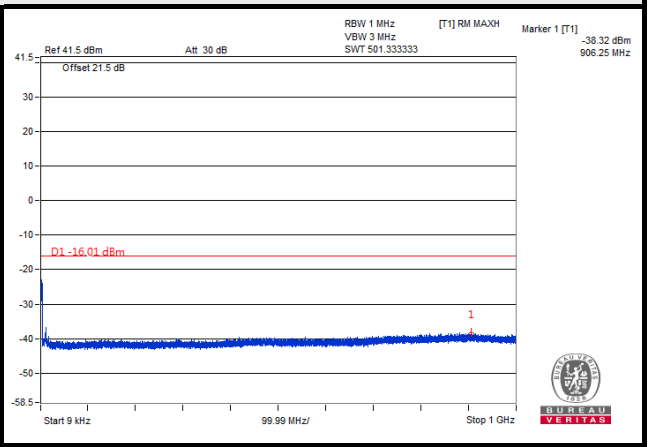
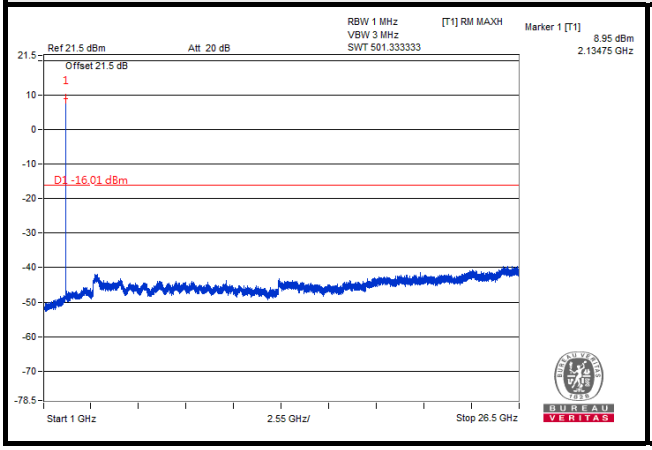
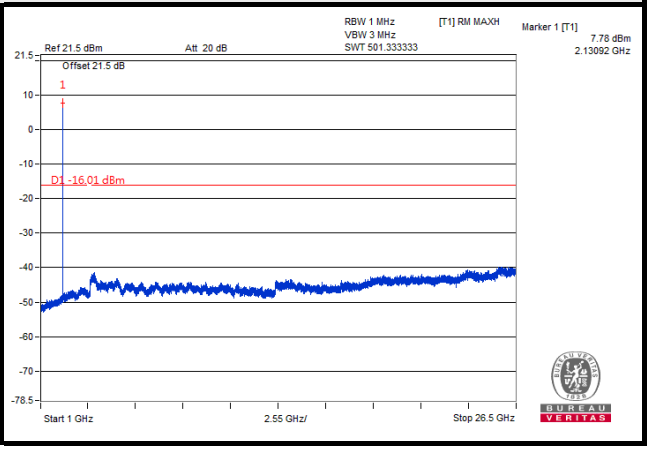
4.7.4 Test Results

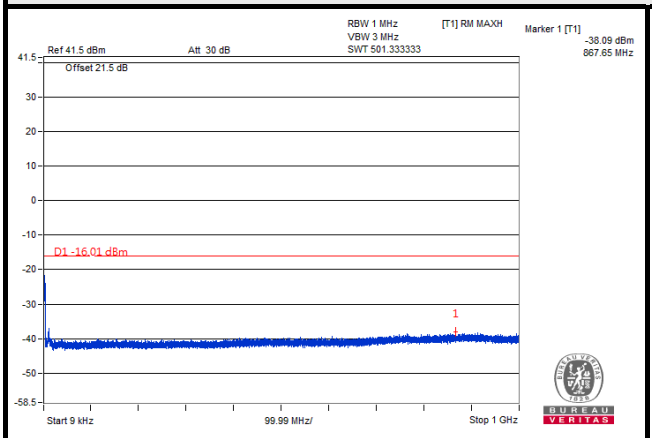
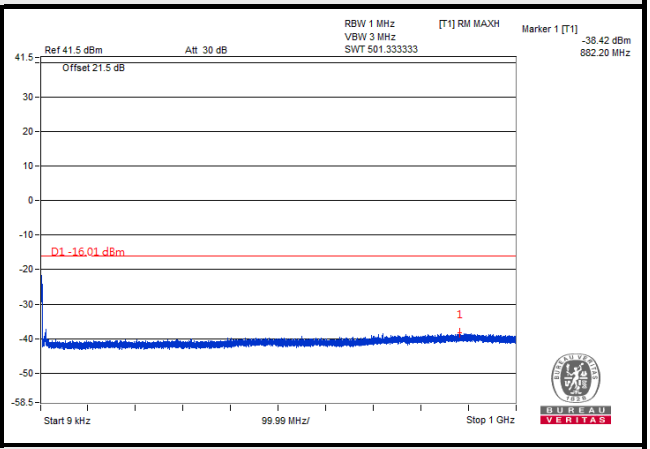
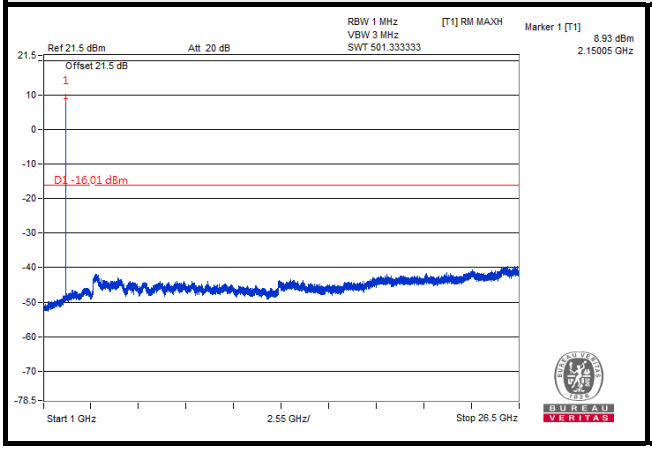
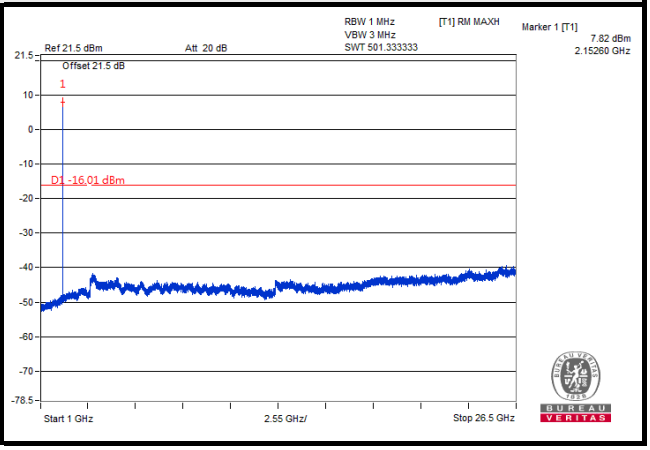
LTE Band 4	
Channel Band width: 5MHz	
Channel 1975	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

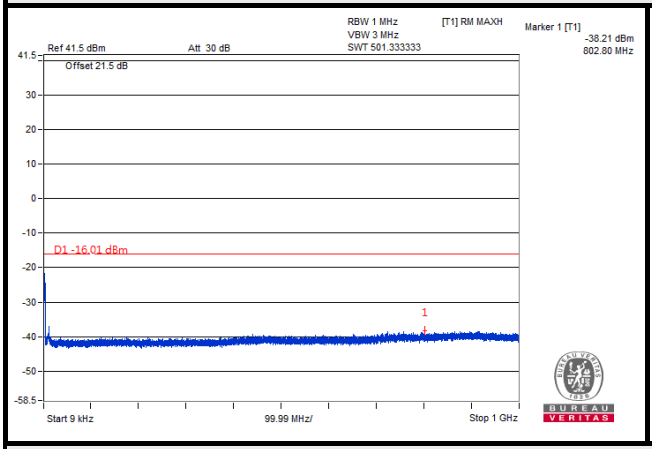
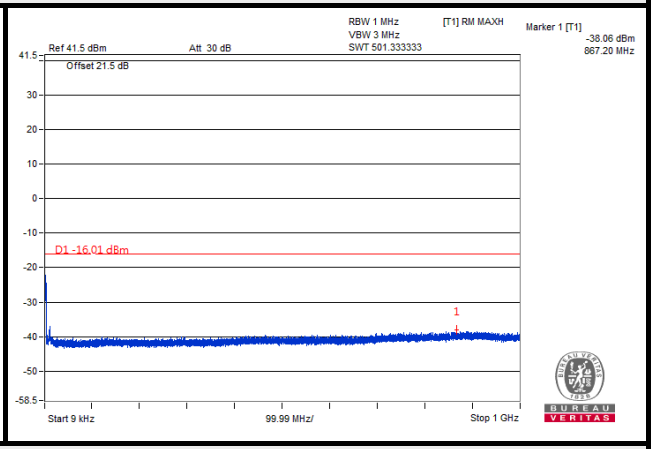
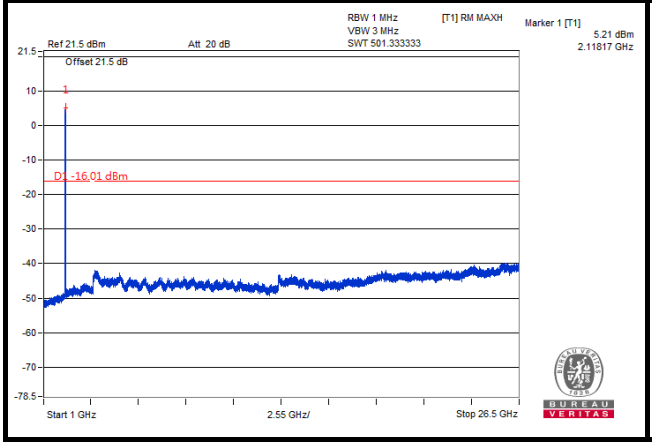
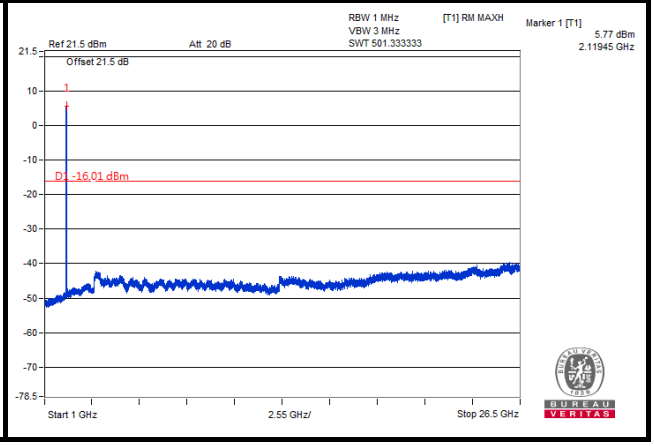
LTE Band 4	
Channel Band width: 5MHz	
Channel 2175	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

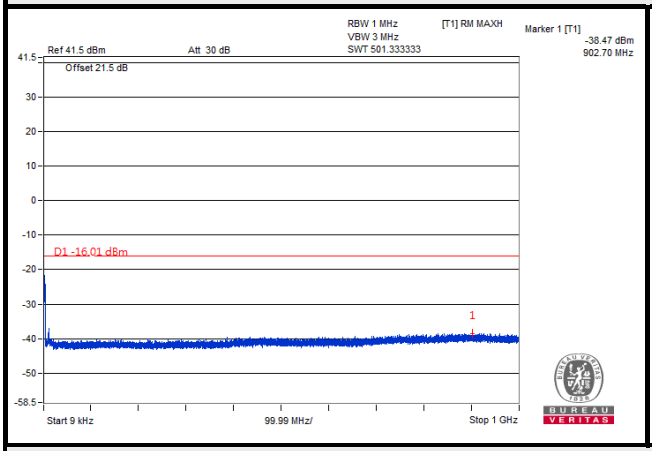
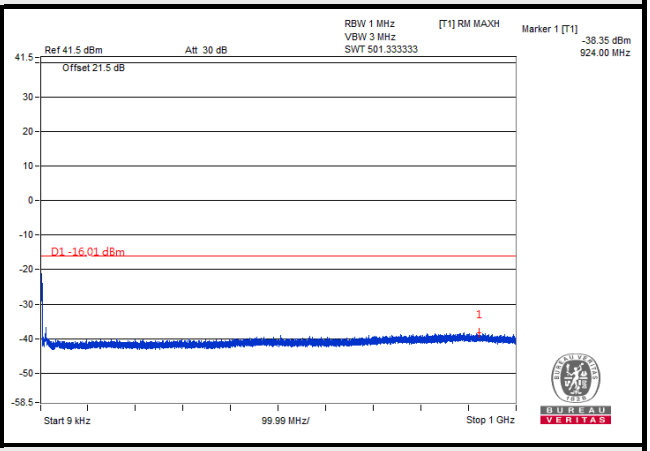
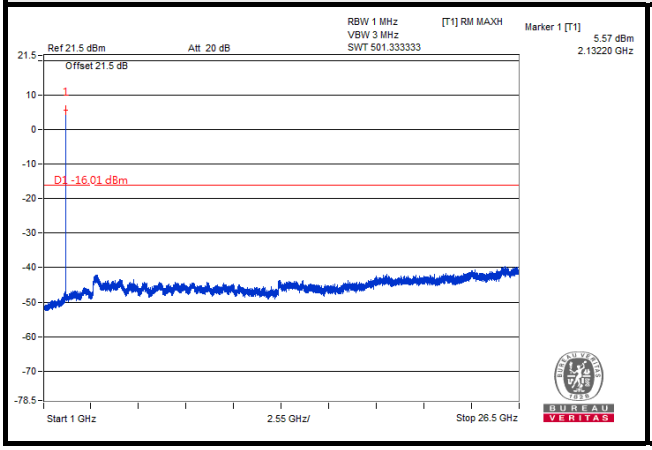
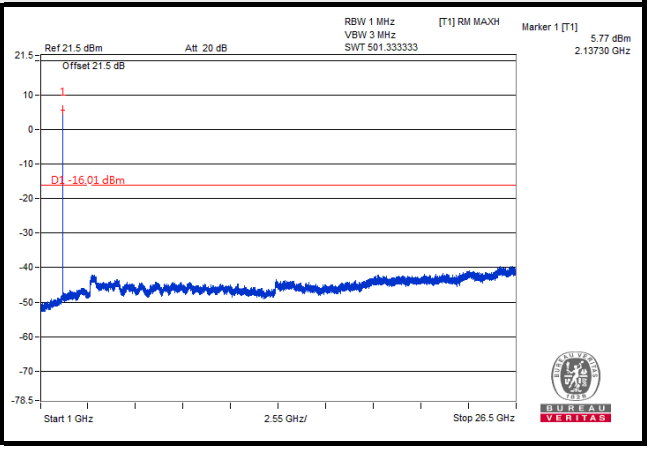
LTE Band 4	
Channel Band width: 5MHz	
Channel 2375	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

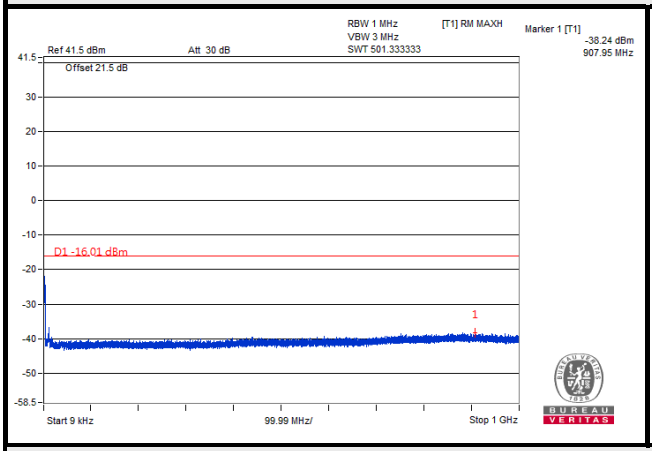
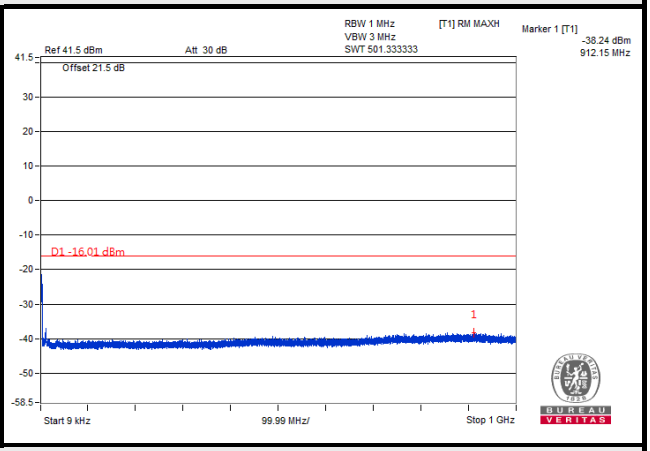
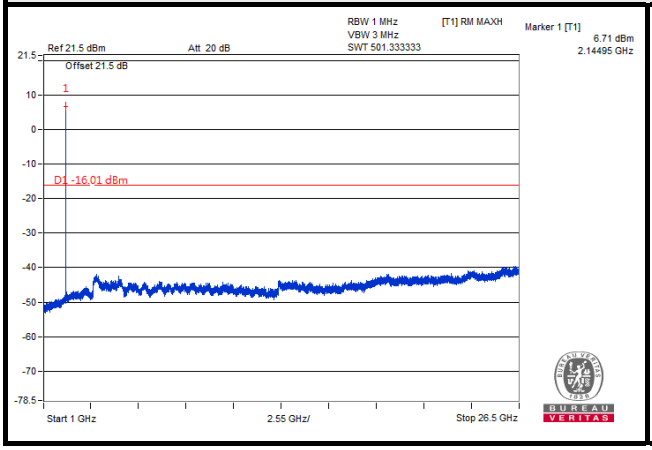
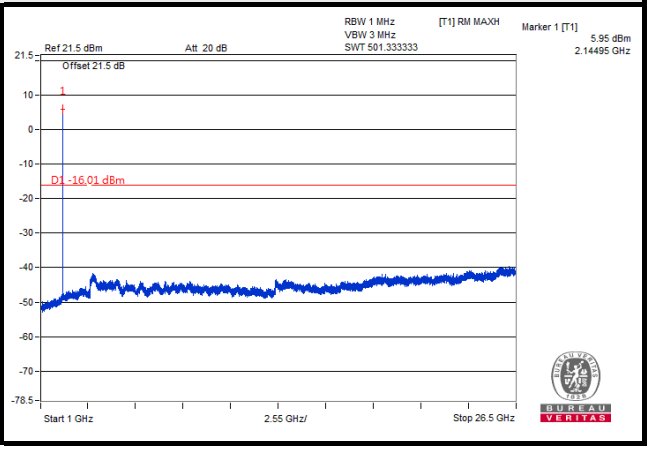
LTE Band 4	
Channel Band width: 10MHz	
Channel 2000	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

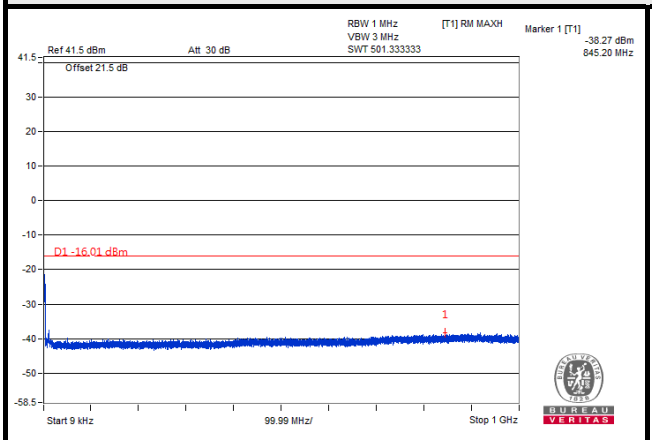
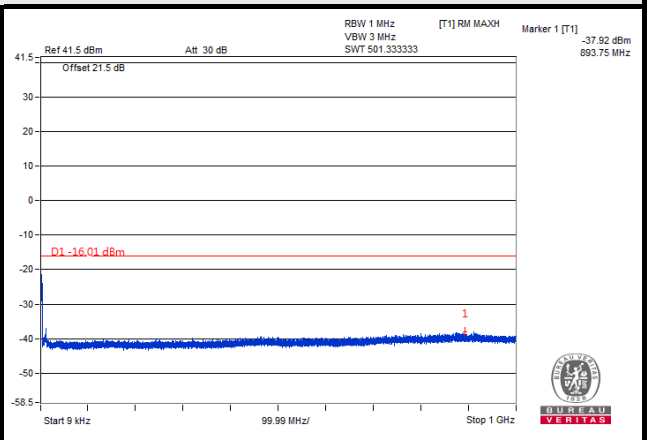
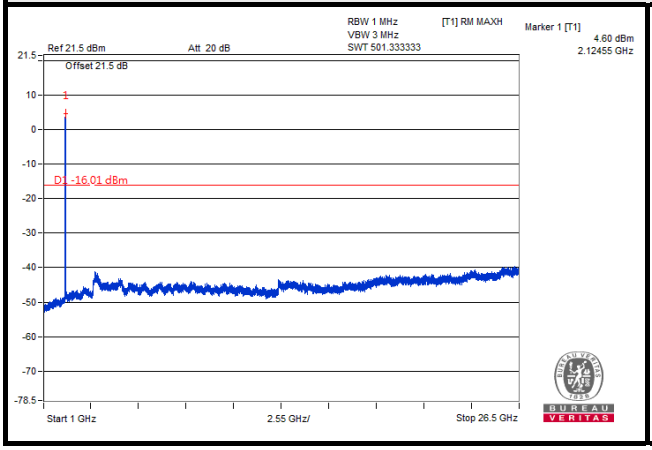
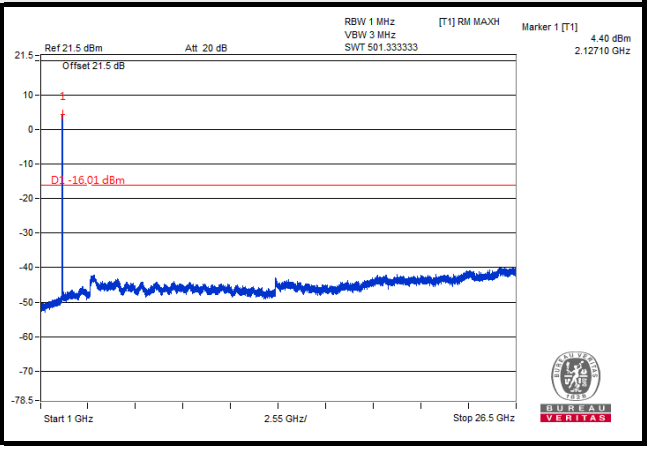
LTE Band 4	
Channel Band width: 10MHz	
Channel 2175	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

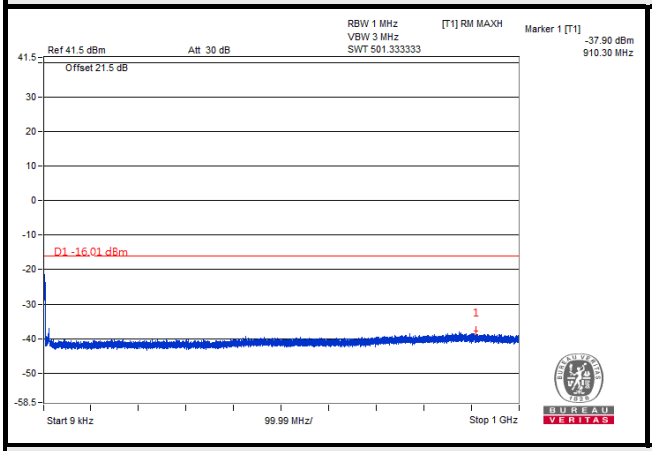
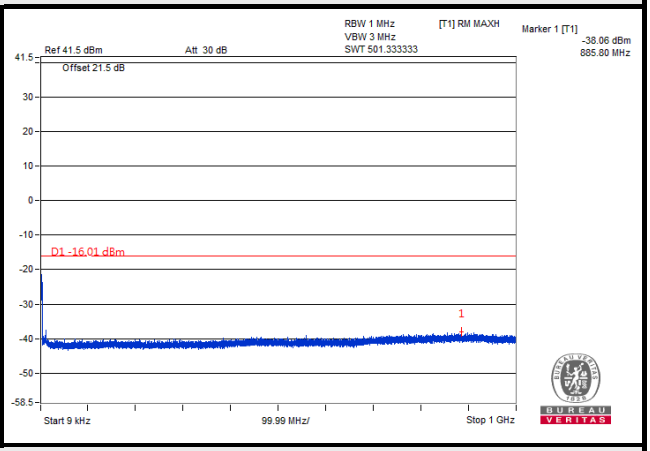
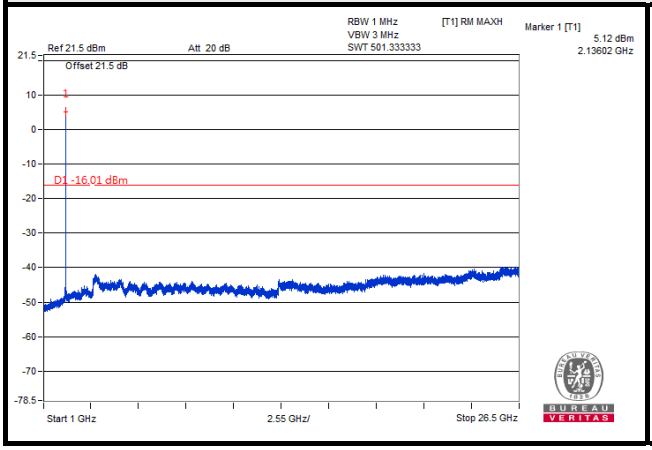
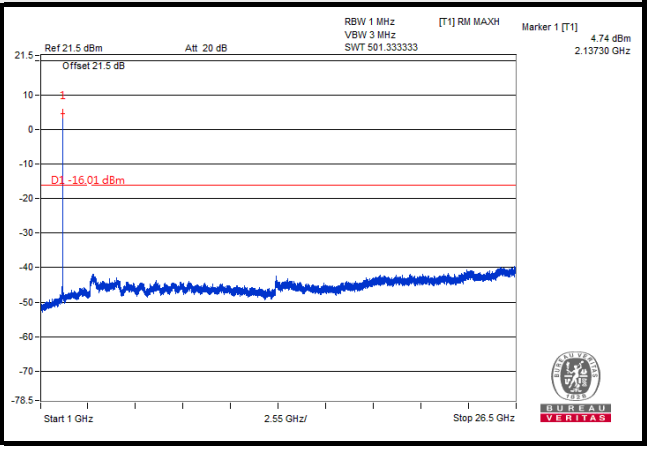
LTE Band 4	
Channel Band width: 10MHz	
Channel 2350	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

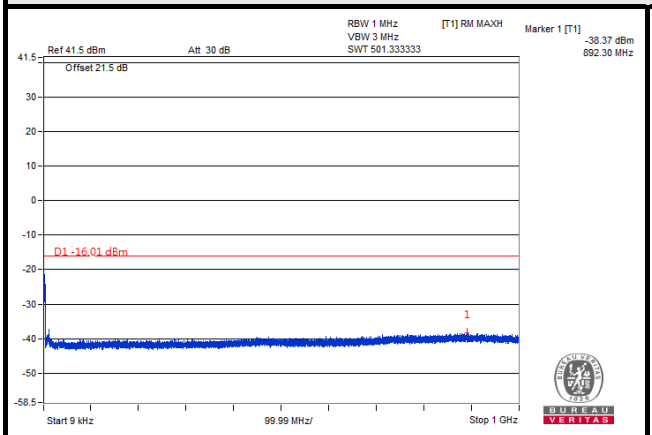
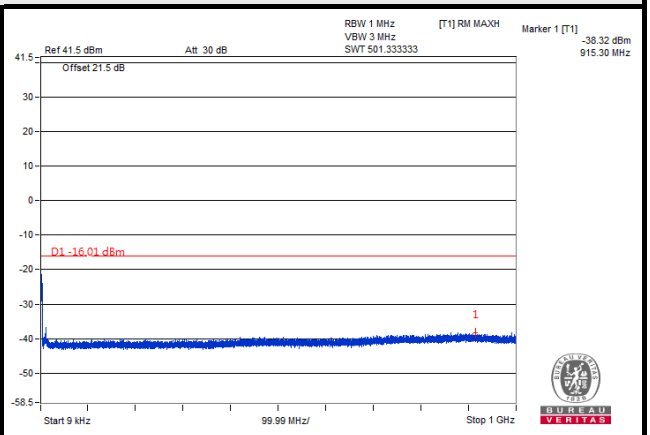
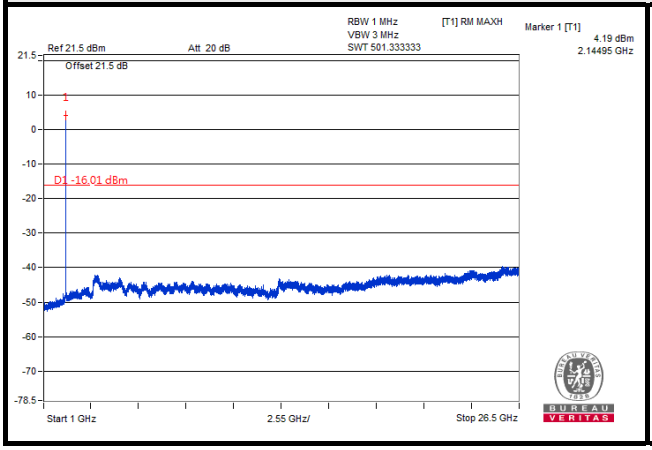
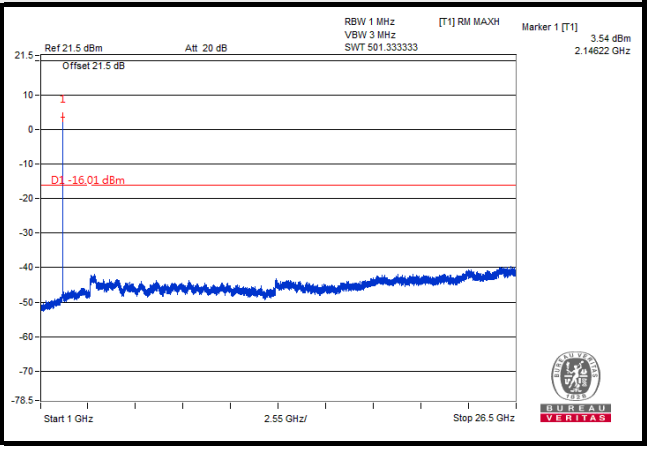
LTE Band 4	
Channel Band width: 15MHz	
Channel 2025	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

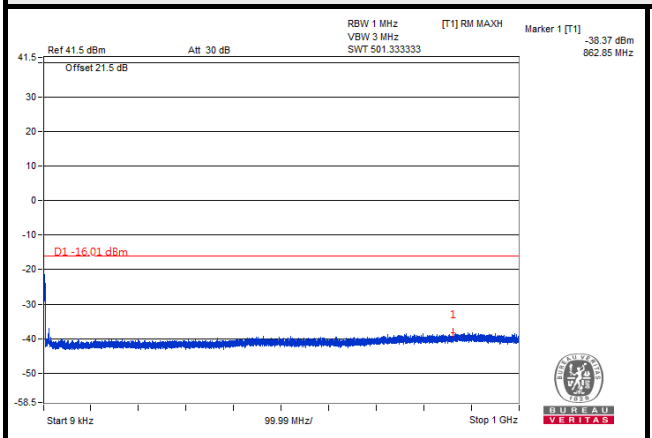
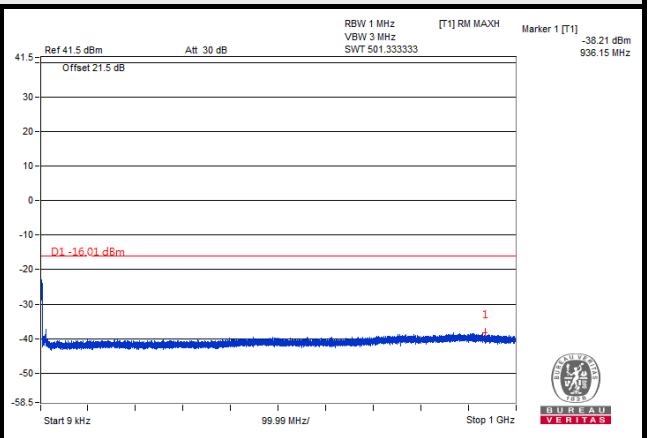
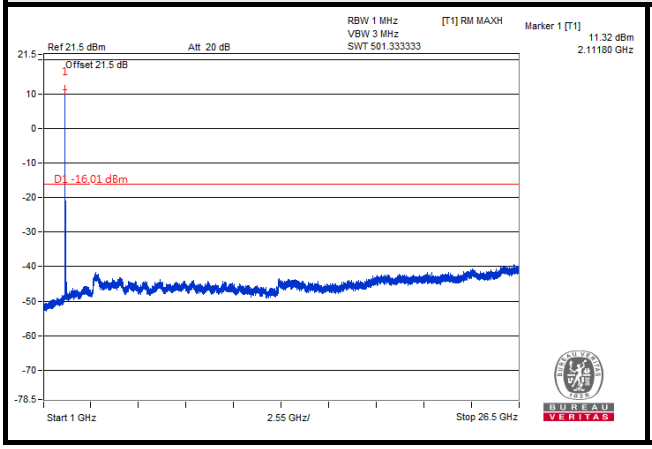
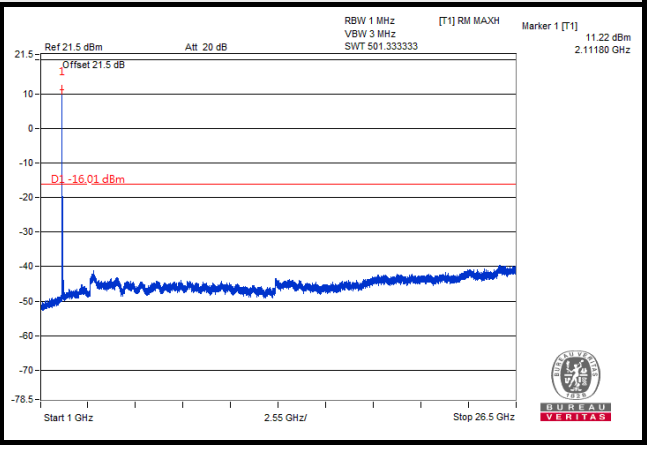
LTE Band 4	
Channel Band width: 15MHz	
Channel 2175	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

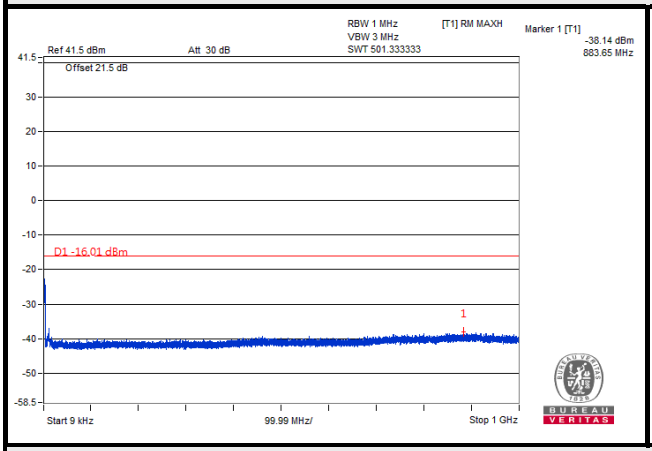
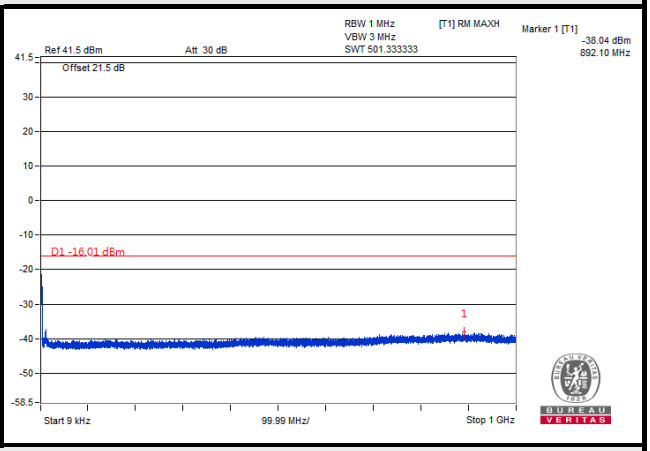
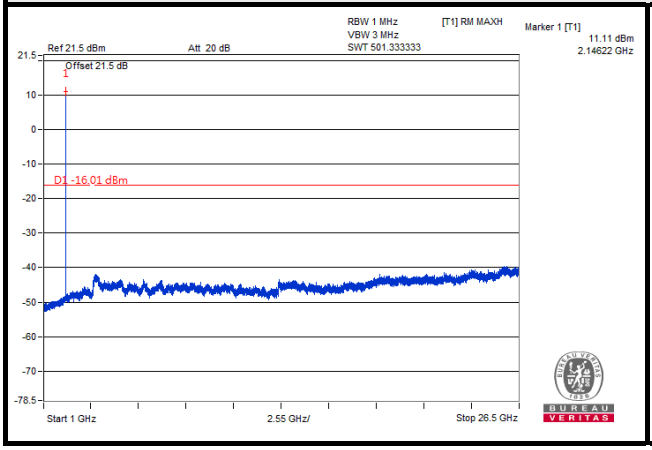
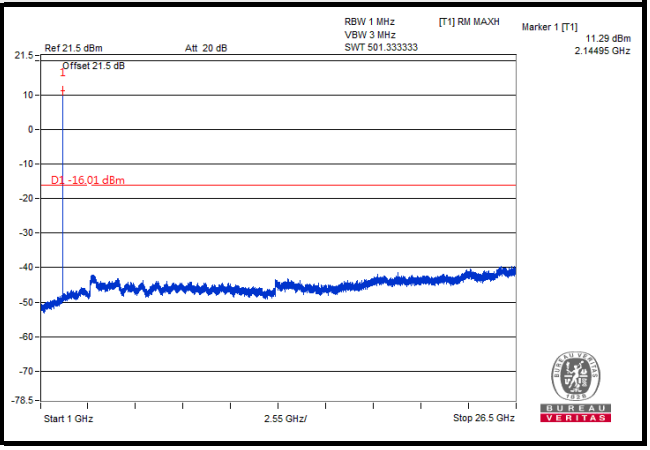
LTE Band 4	
Channel Band width: 15MHz	
Channel 2325	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

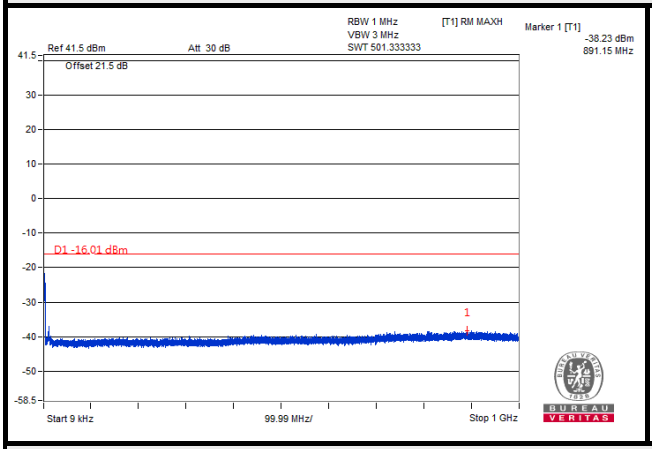
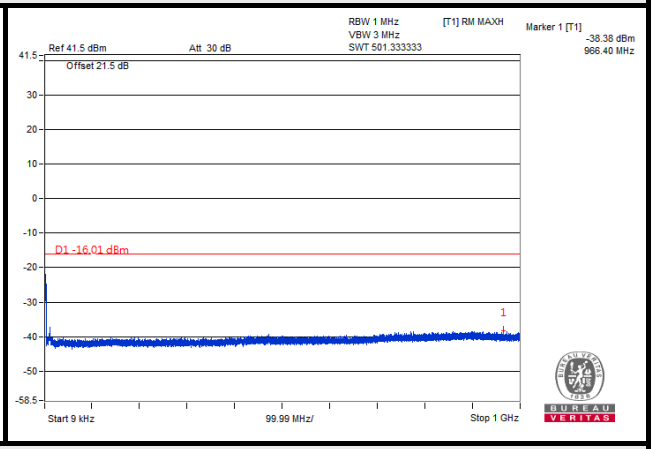
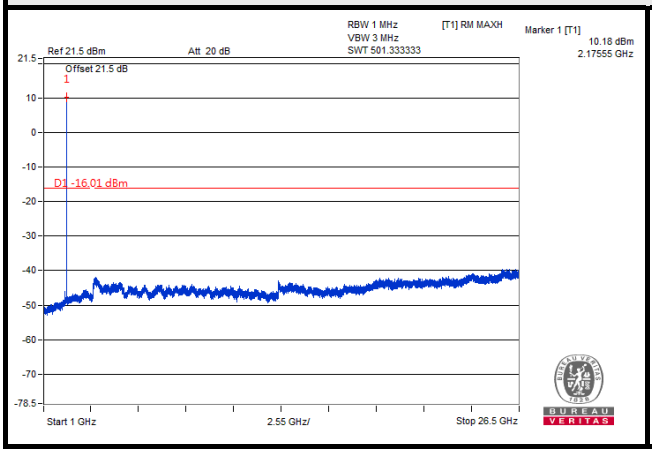
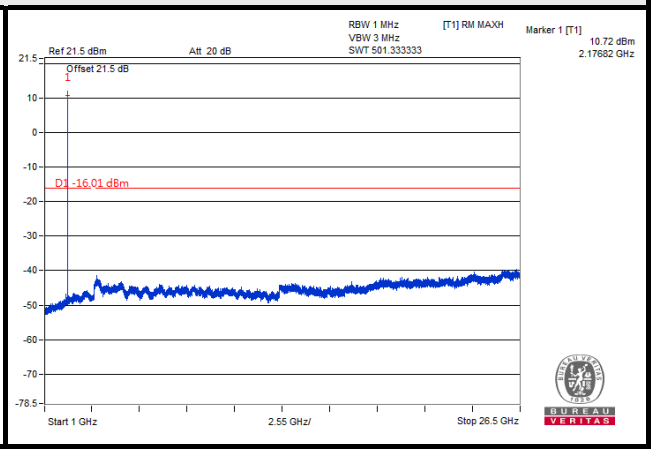
LTE Band 4	
Channel Band width: 20MHz	
Channel 2050	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

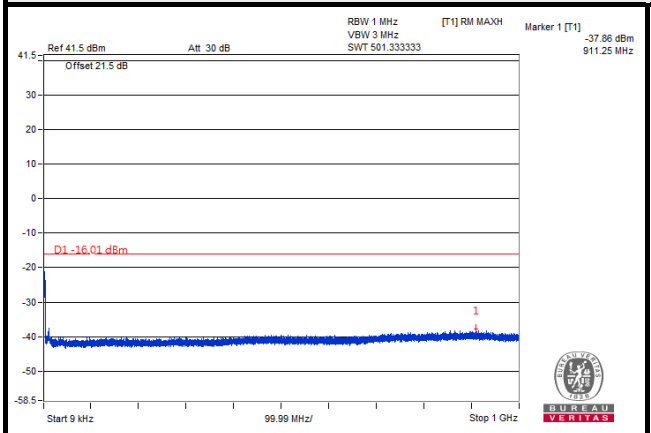
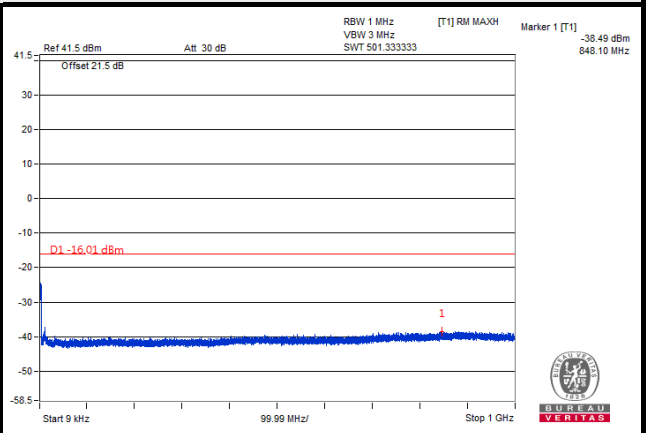
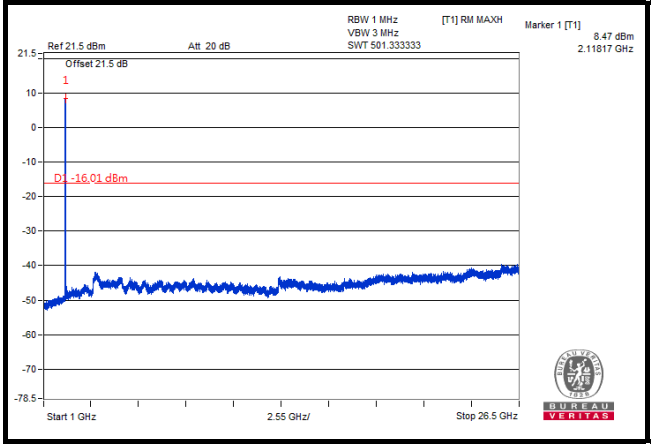
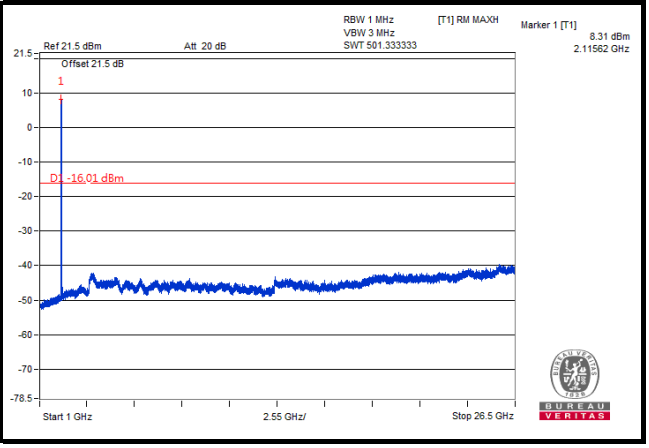
LTE Band 4	
Channel Band width: 20MHz	
Channel 2175	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

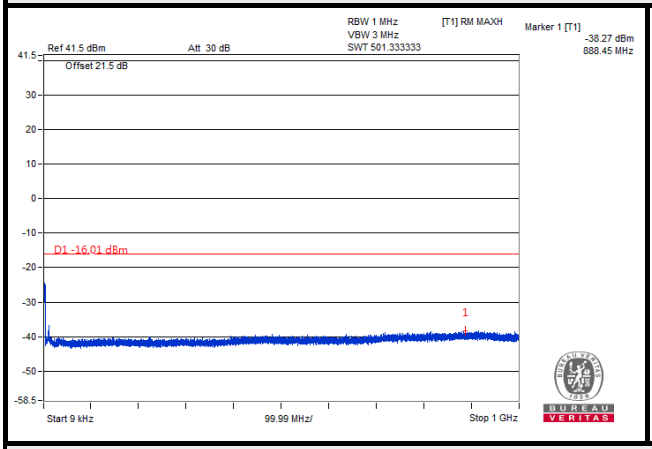
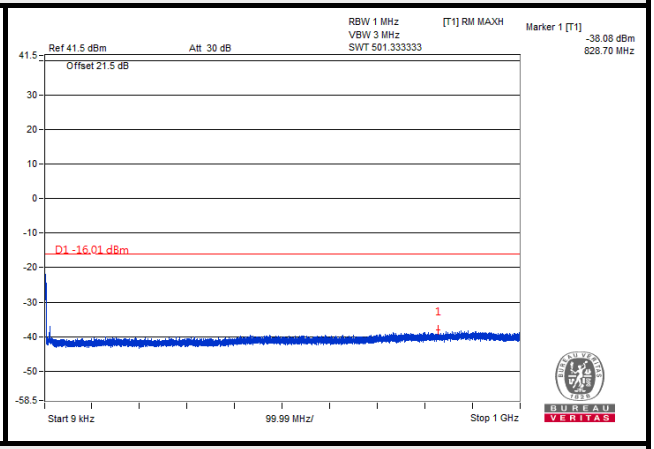
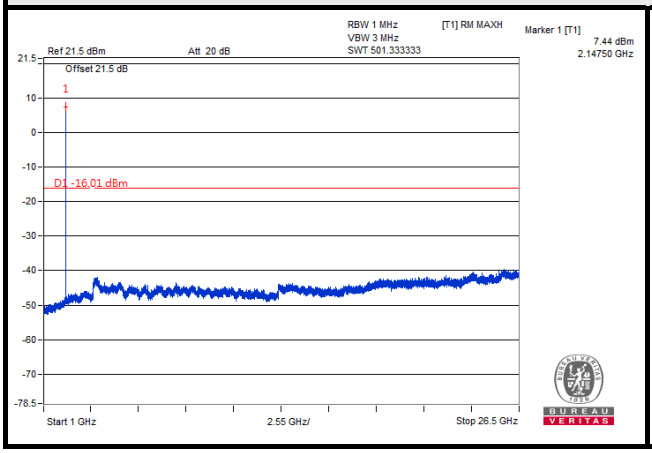
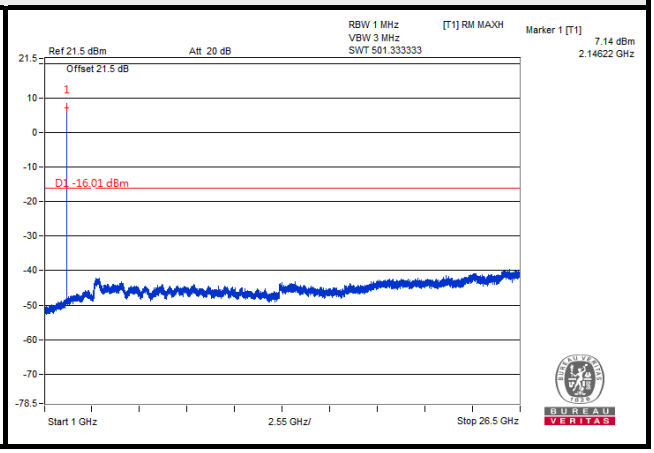
LTE Band 4	
Channel Band width: 20MHz	
Channel 2300	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

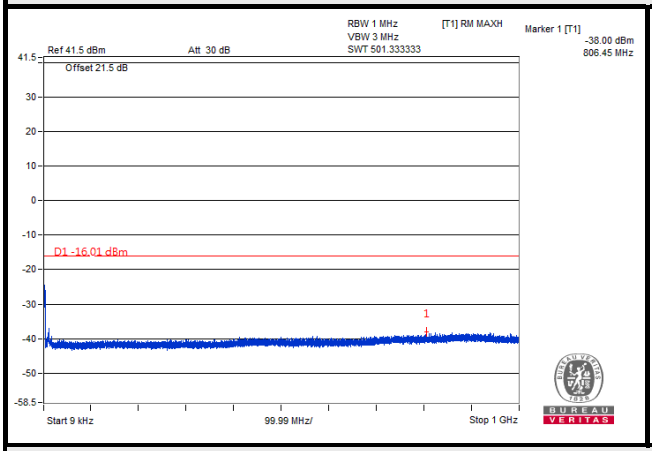
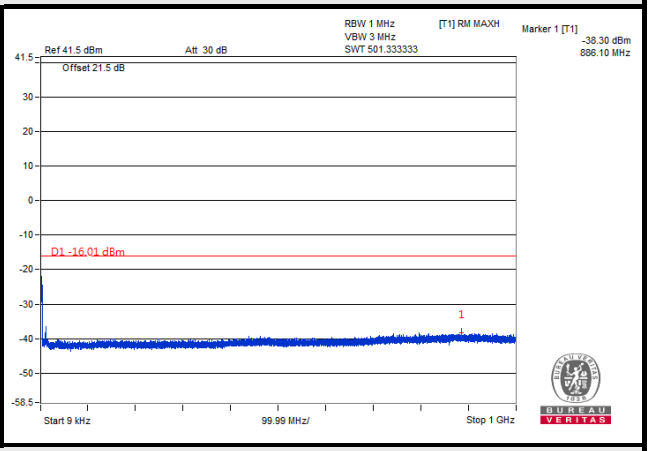
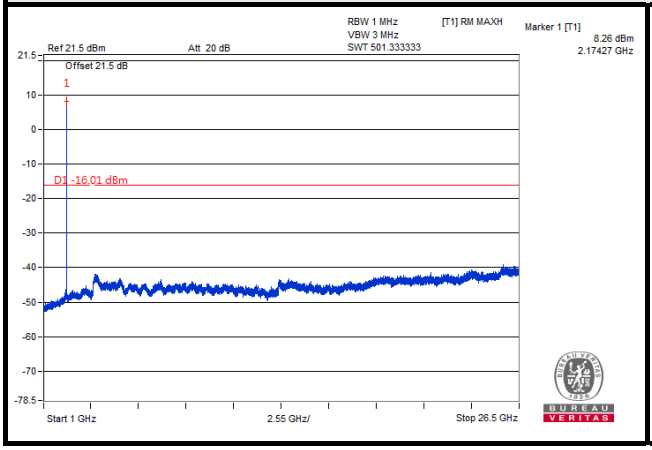
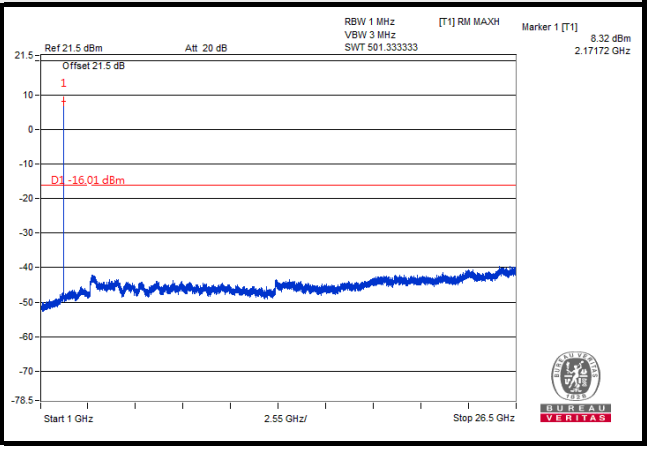
LTE Band 66	
Channel Band width: 5MHz	
Channel 66461	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

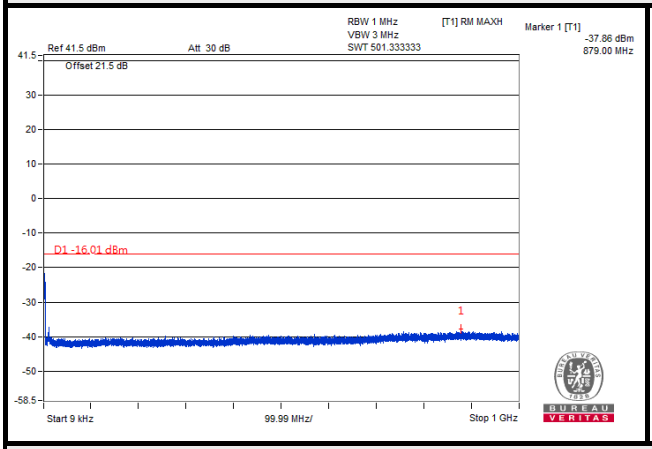
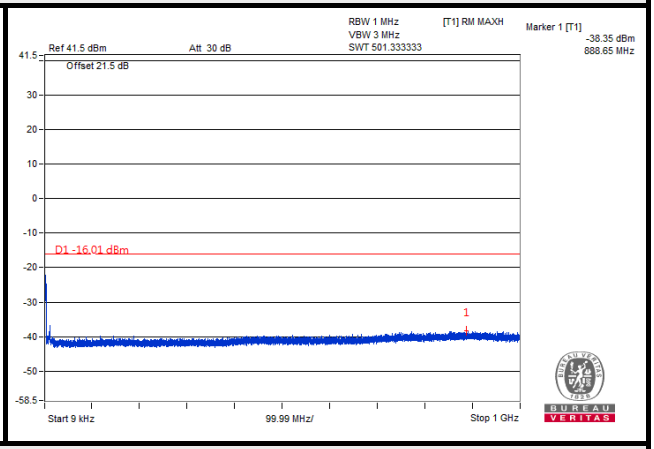
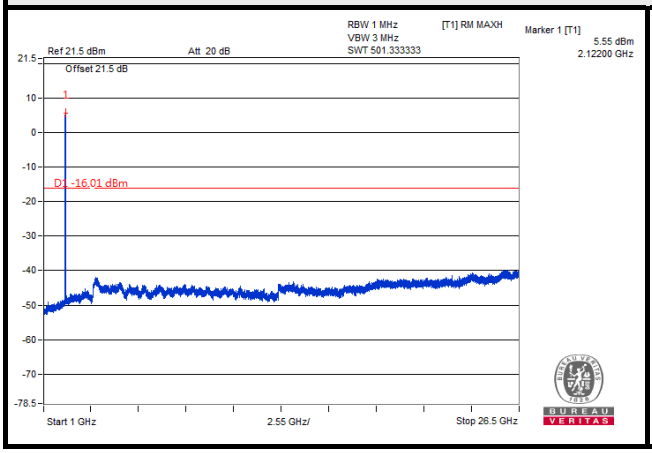
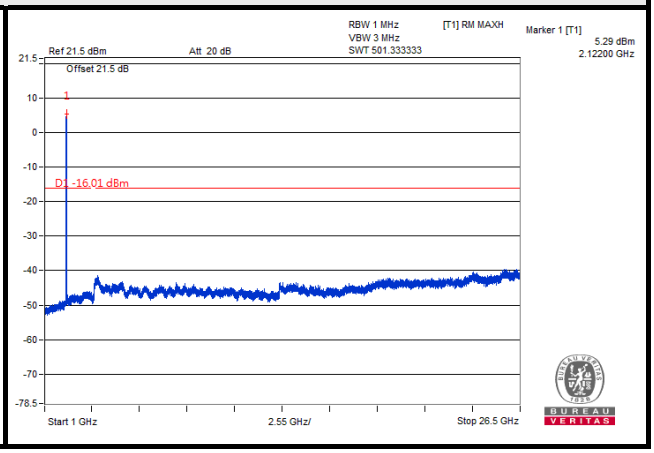
LTE Band 66	
Channel Band width: 5MHz	
Channel 66786	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

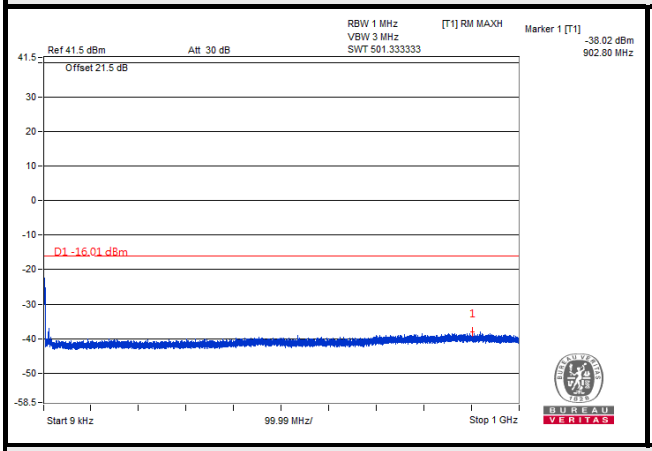
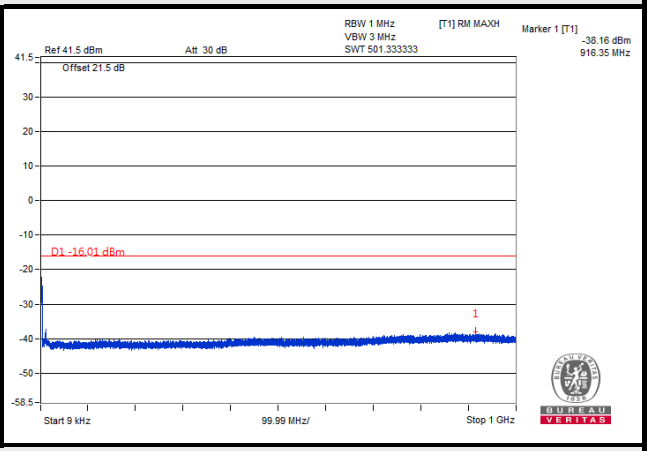
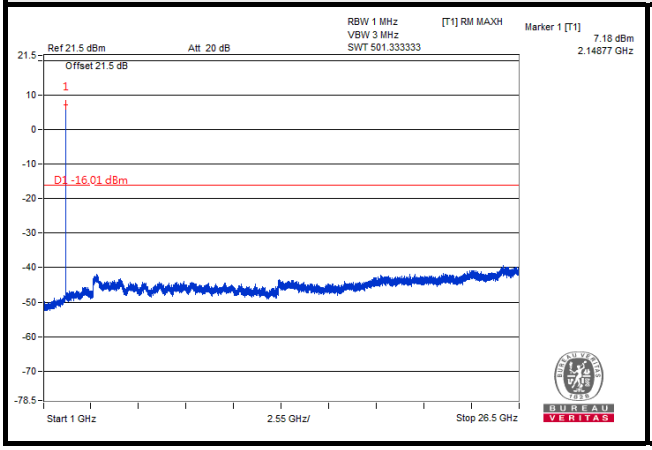
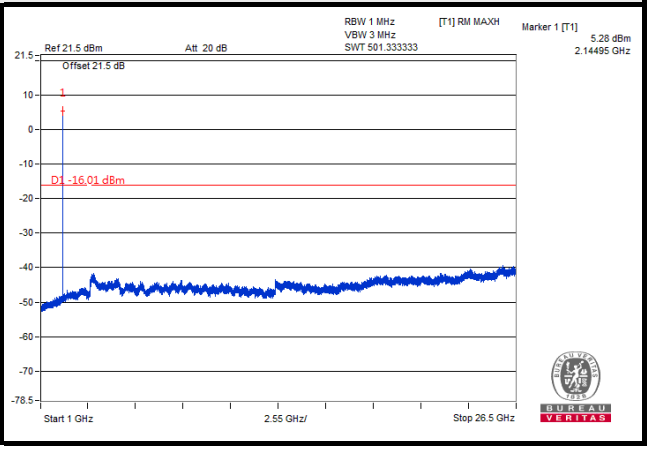
LTE Band 66	
Channel Band width: 5MHz	
Channel 67111	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

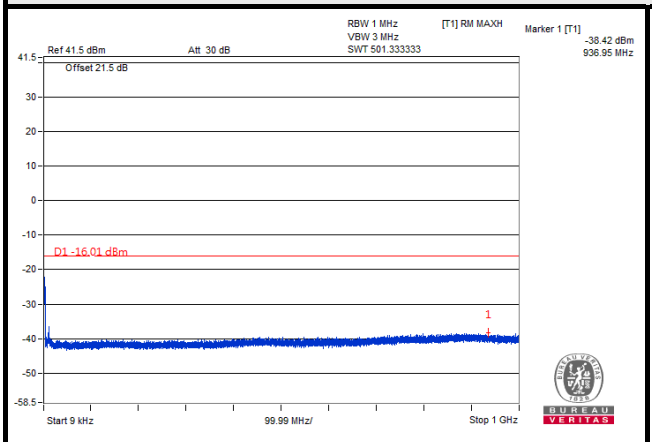
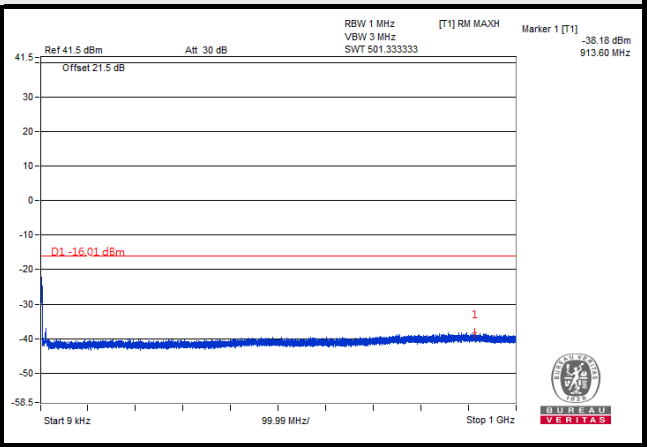
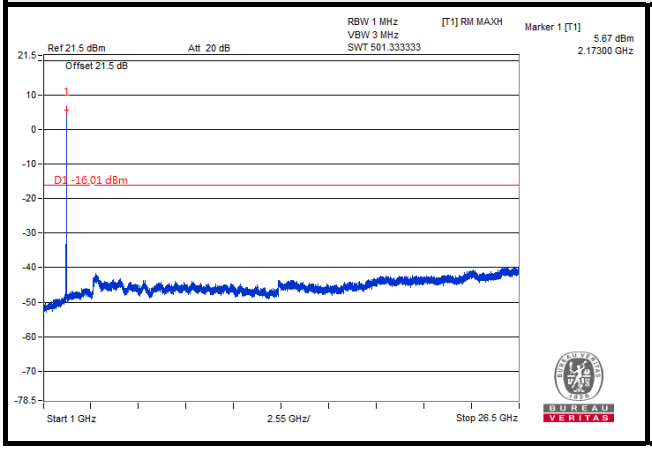
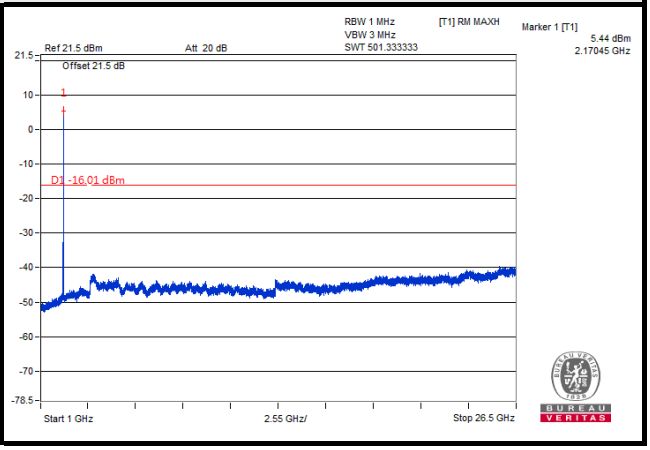
LTE Band 66	
Channel Band width: 10MHz	
Channel 66486	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

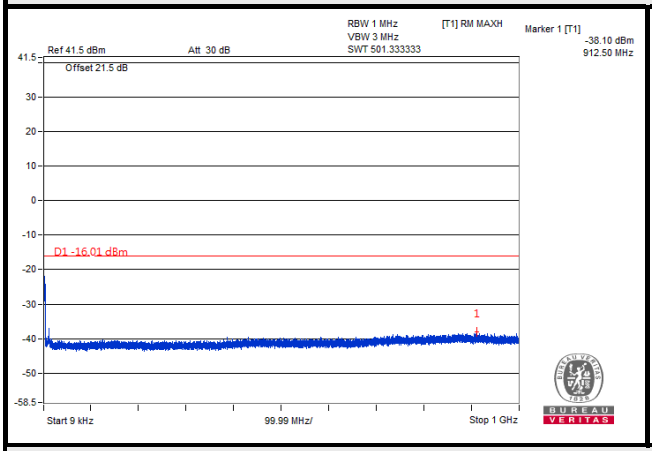
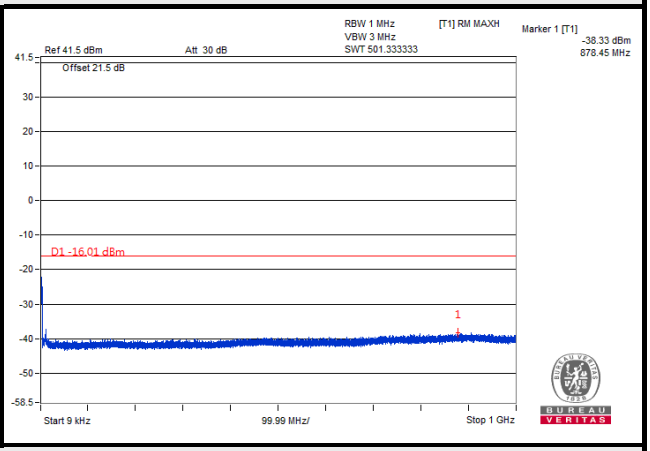
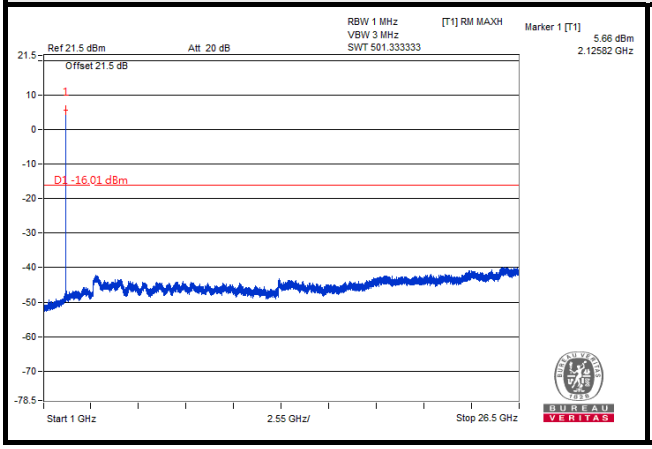
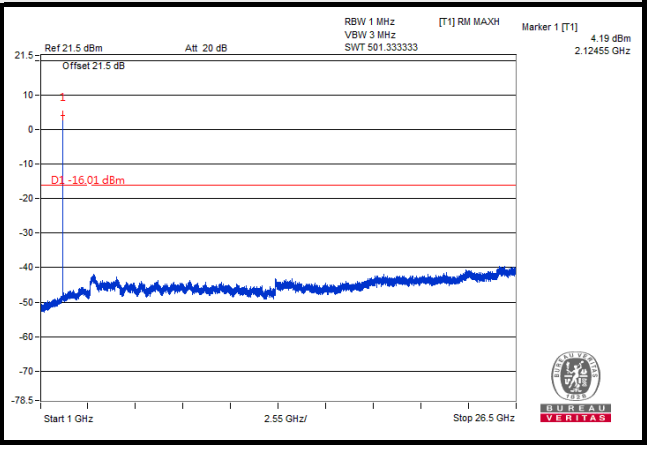
LTE Band 66	
Channel Band width: 10MHz	
Channel 66786	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

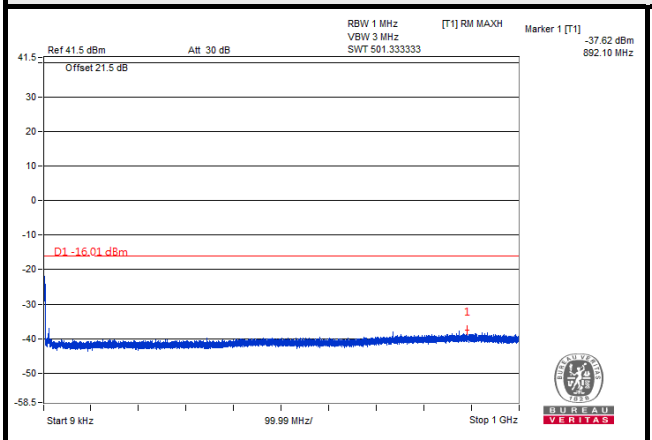
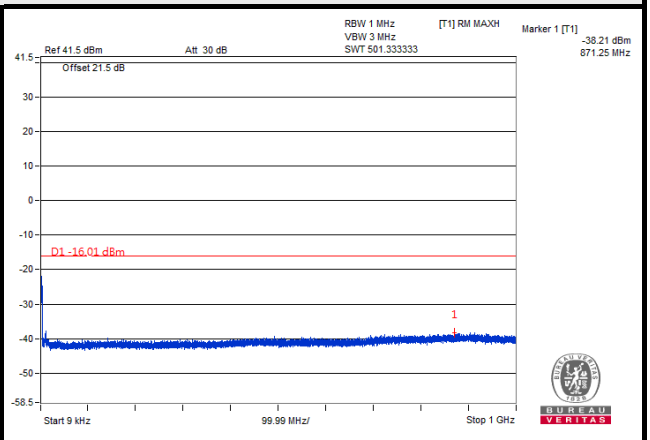
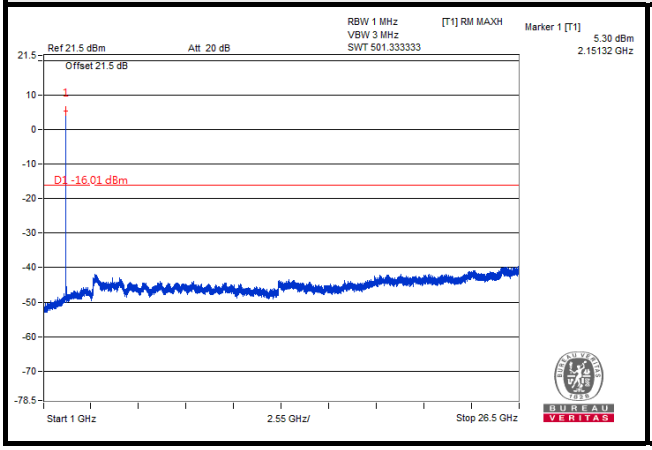
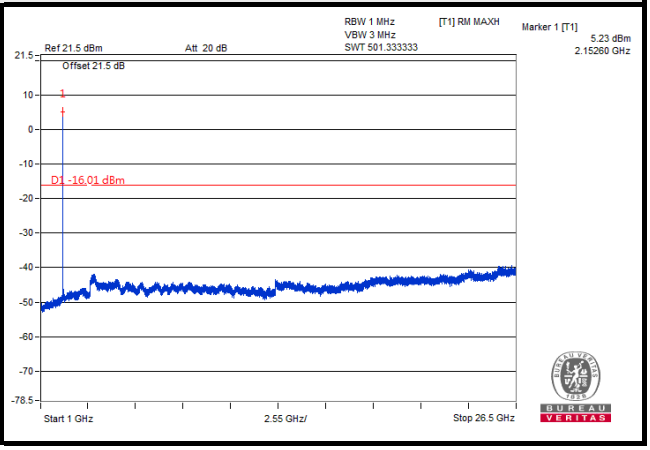
LTE Band 66	
Channel Band width: 10MHz	
Channel 67086	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

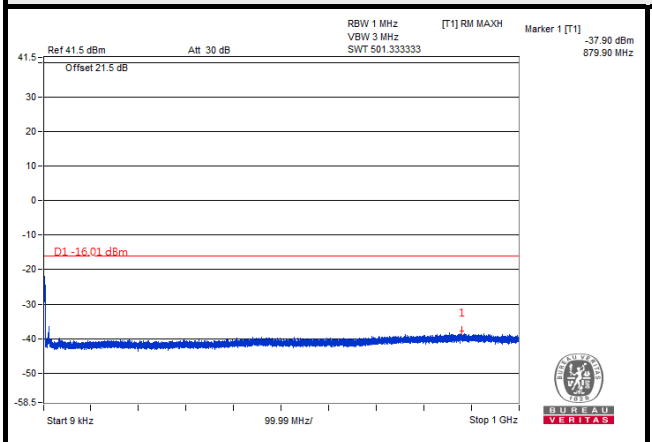
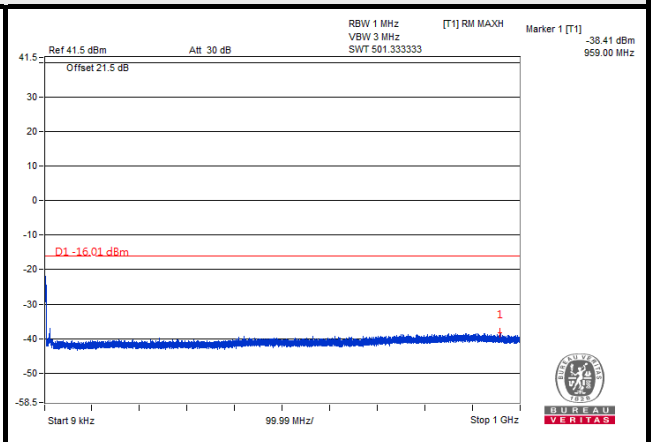
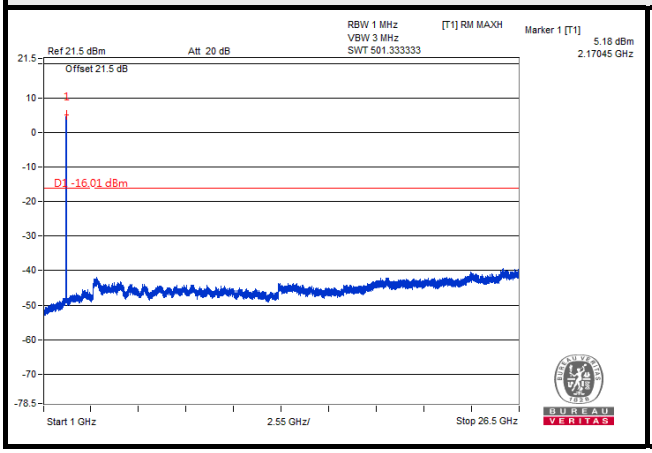
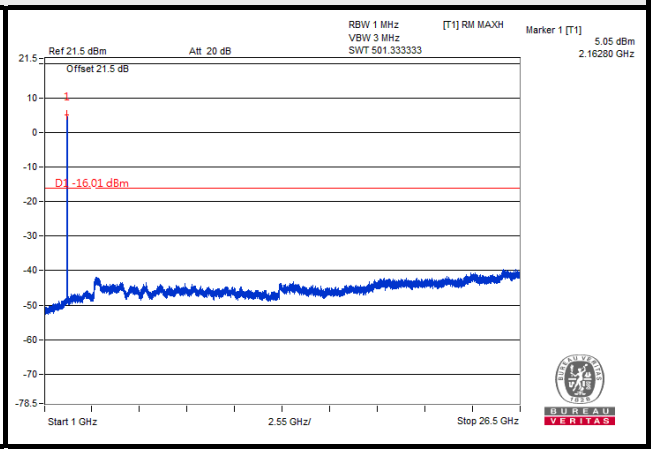
LTE Band 66	
Channel Band width: 15MHz	
Channel 66511	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

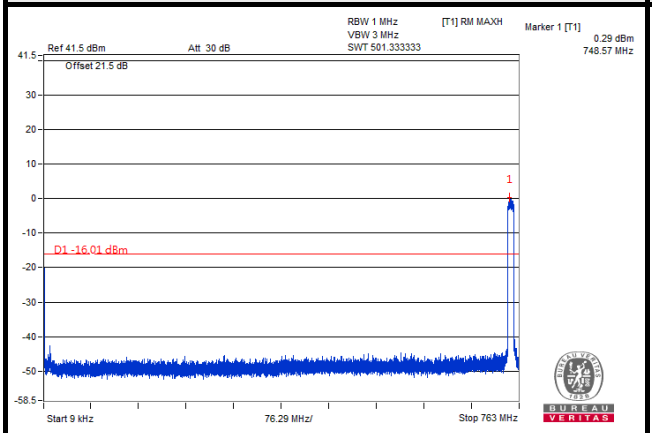
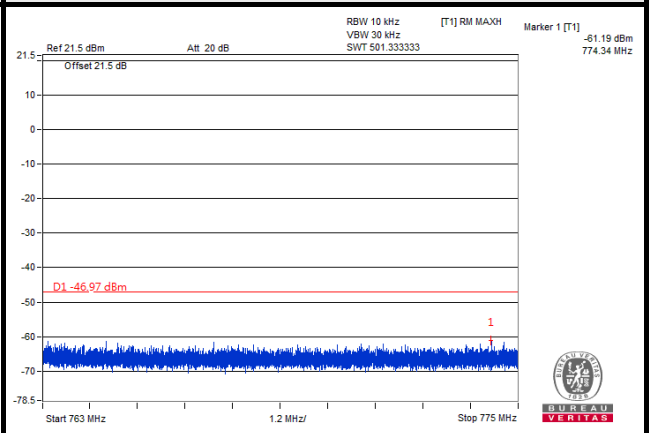
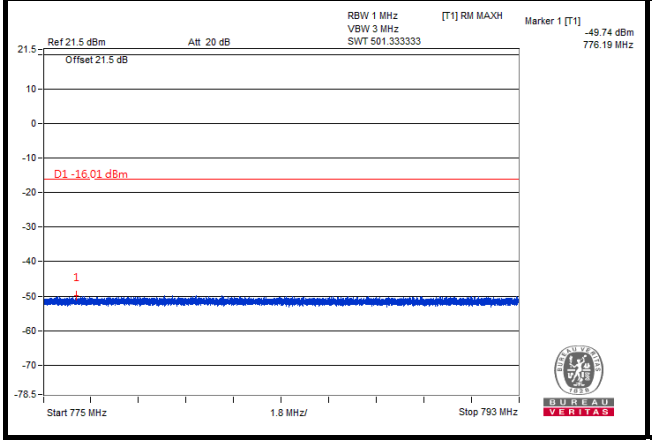
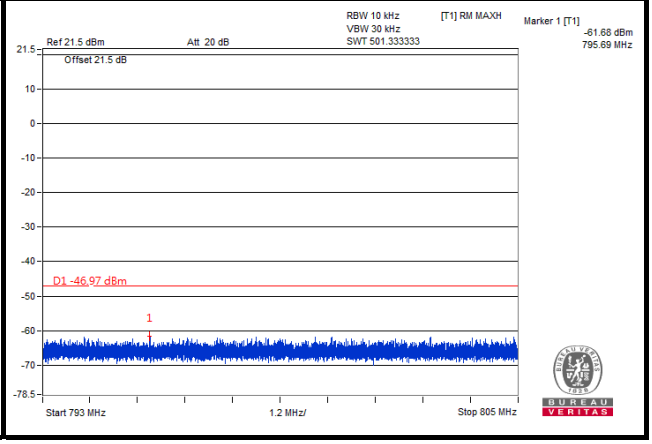
LTE Band 66	
Channel Band width: 15MHz	
Channel 66786	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

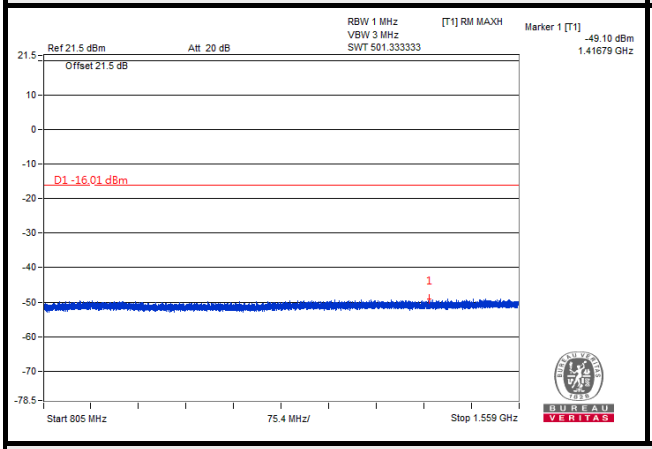
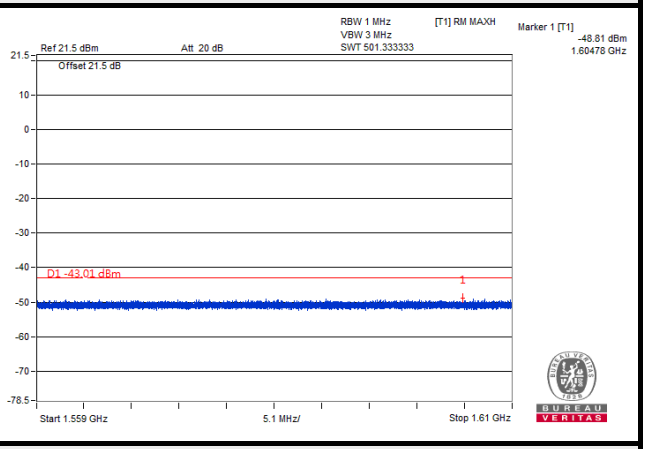
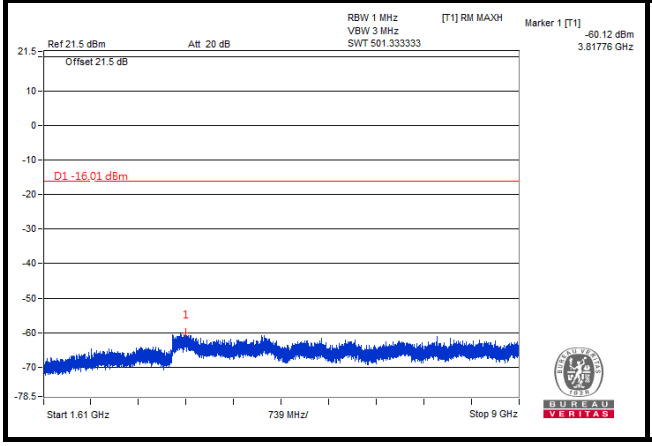
LTE Band 66	
Channel Band width: 15MHz	
Channel 67061	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

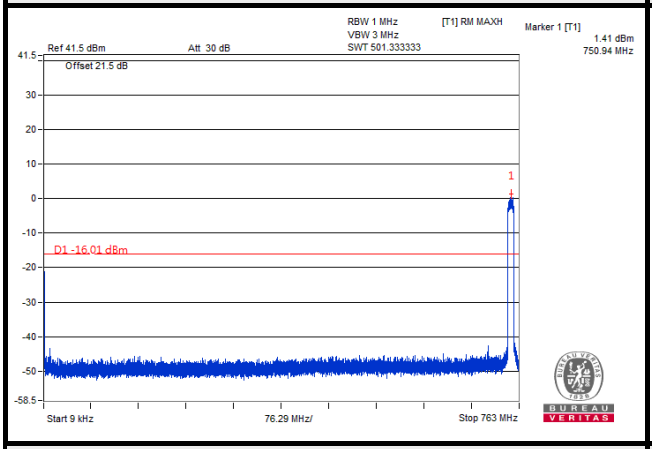
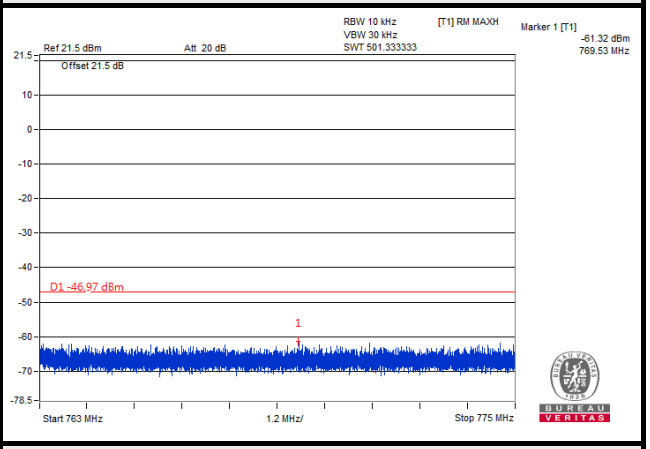
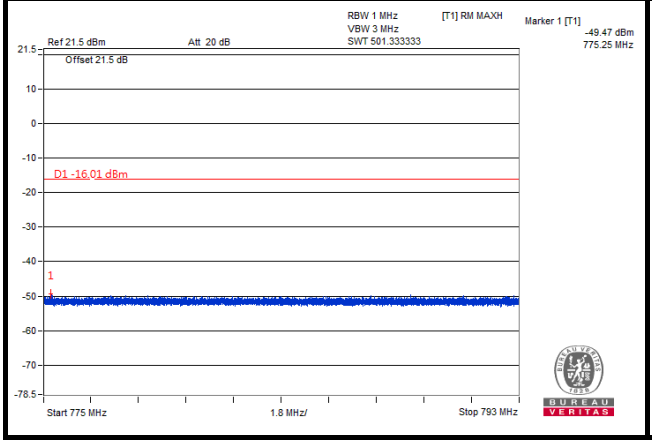
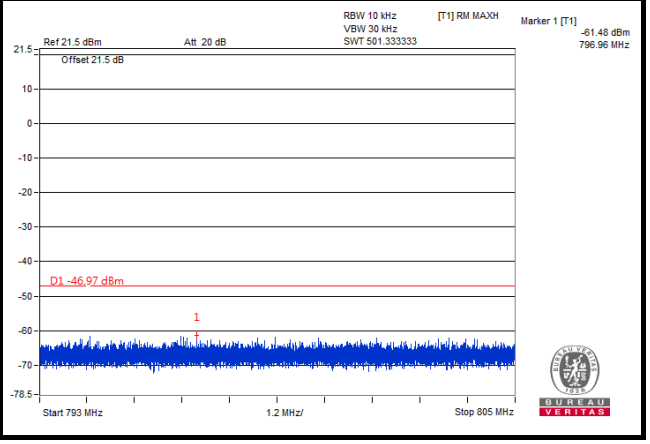
LTE Band 66	
Channel Band width: 20MHz	
Channel 66536	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

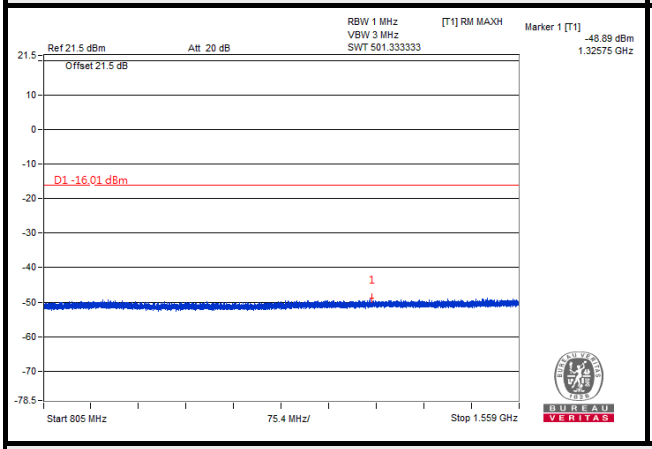
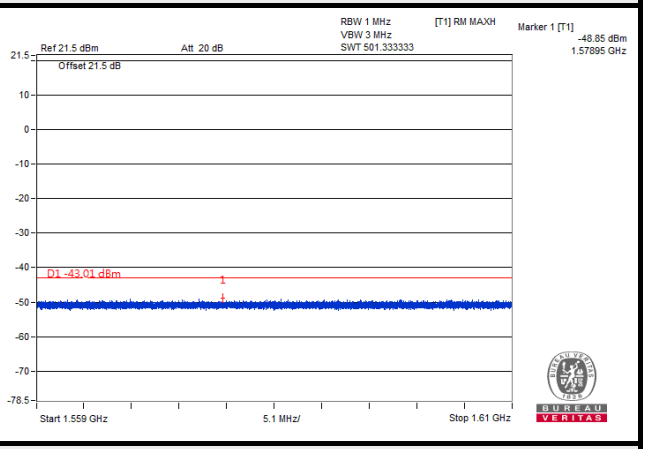
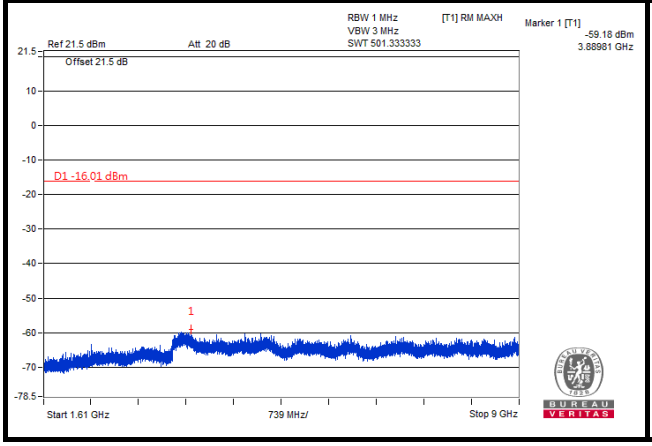
LTE Band 66	
Channel Band width: 20MHz	
Channel 66786	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

LTE Band 66	
Channel Band width: 20MHz	
Channel 67036	
Chain 0	Chain 1
Frequency Range : 9kHz~1GHz	
	
Frequency Range : 1GHz~26.5GHz	
	

LTE Band 13	
Channel Band width: 10MHz	
Channel 5230	
Chain 0	
Frequency Range : 9kHz~763MHz	Frequency Range : 763MHz~775MHz
	
Frequency Range : 775MHz~793MHz	Frequency Range : 793MHz~805MHz
	

LTE Band 13	
Channel Band width: 10MHz	
Channel 5230	
Chain 0	
Frequency Range : 805MHz~1.559GHz	Frequency Range : 1.559GHz~1.61GHz
	
Frequency Range : 1.61GHz~9GHz	
	

LTE Band 13	
Channel Band width: 10MHz	
Channel 5230	
Chain 1	
Frequency Range : 9kHz~763MHz	Frequency Range : 763MHz~775MHz
	
Frequency Range : 775MHz~793MHz	Frequency Range : 793MHz~805MHz
	

LTE Band 13	
Channel Band width: 10MHz	
Channel 5230	
Chain 1	
Frequency Range : 805MHz~1.559GHz	Frequency Range : 1.559GHz~1.61GHz
	
Frequency Range : 1.61GHz~9GHz	
	

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

For LTE Band 4 & LTE Band 66
According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

For LTE Band 13
According to FCC 27.53(c) for on any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

4.8.2 Test Procedure

a. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high channel of operational frequency range.)

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

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

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution antenna.

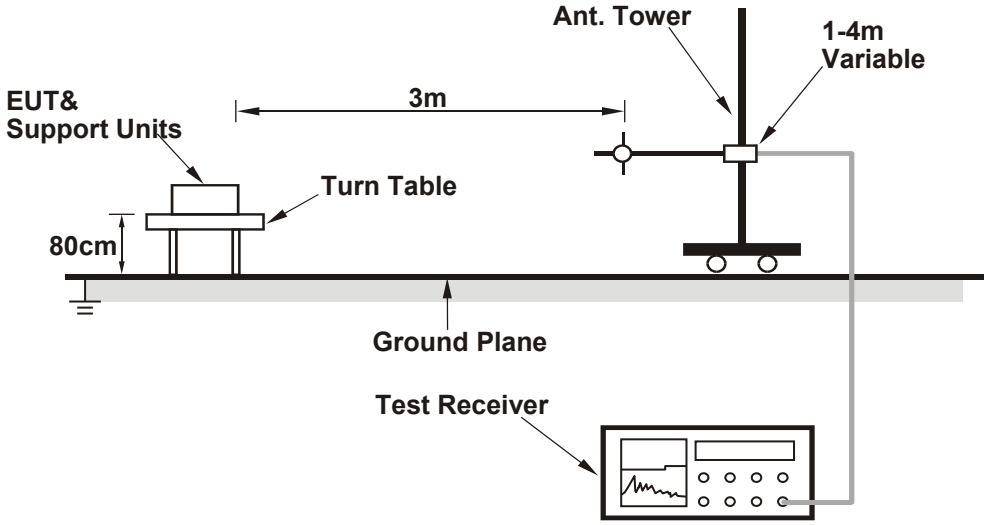
Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.8.3 Deviation from Test Standard

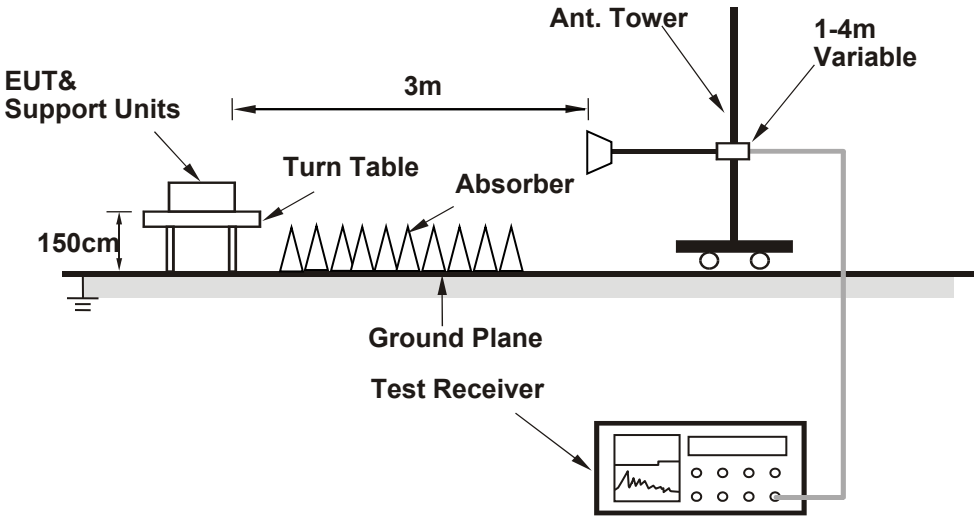
No deviation.

4.8.4 Test Setup

For Radiated Emission below or equal 1GHz



For Radiated Emission above 1GHz



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

4.8.5 Test Results

Below 1GHz

LTE Band 4

Channel Bandwidth: 5MHz

Mode	TX channel 1975	Frequency Range	Below 1000 MHz

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	71.59	-72.61	-92.13	12.22	-79.91	-13.00	-66.91
2	130.03	-70.56	-90.29	13.52	-76.77	-13.00	-63.77
3	179.99	-71.82	-94.31	13.36	-80.95	-13.00	-67.95
4	240.00	-73.43	-95.20	13.68	-81.52	-13.00	-68.52
5	486.51	-80.66	-101.10	20.93	-80.17	-13.00	-67.17
6	630.79	-80.98	-100.62	24.30	-76.32	-13.00	-63.32
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	62.74	-72.44	-89.09	13.62	-75.47	-13.00	-62.47
2	150.04	-78.09	-95.68	15.04	-80.64	-13.00	-67.64
3	199.99	-71.17	-93.08	12.15	-80.93	-13.00	-67.93
4	260.01	-76.49	-95.01	14.60	-80.41	-13.00	-67.41
5	481.78	-76.52	-95.66	20.85	-74.81	-13.00	-61.81
6	631.40	-82.46	-100.98	24.30	-76.68	-13.00	-63.68

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

Channel Bandwidth: 10MHz

Mode	TX channel 2000	Frequency Range	Below 1000 MHz

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	83.23	-70.79	-86.24	9.50	-76.74	-13.00	-63.74
2	130.03	-71.92	-89.50	13.52	-75.98	-13.00	-62.98
3	170.04	-72.10	-92.51	14.26	-78.25	-13.00	-65.25
4	240.00	-76.64	-96.26	13.68	-82.58	-13.00	-69.58
5	481.17	-79.34	-98.01	20.85	-77.16	-13.00	-64.16
6	627.28	-84.15	-101.49	24.26	-77.23	-13.00	-64.23
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	78.98	-66.90	-82.39	10.34	-72.05	-13.00	-59.05
2	148.82	-76.80	-94.09	14.97	-79.12	-13.00	-66.12
3	220.00	-72.28	-92.59	12.12	-80.47	-13.00	-67.47
4	280.02	-78.37	-97.52	15.51	-82.01	-13.00	-69.01
5	449.89	-77.63	-95.56	20.32	-75.24	-13.00	-62.24
6	482.50	-74.31	-93.42	20.86	-72.56	-13.00	-59.56

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

Channel Bandwidth: 15MHz

Mode	TX channel 2025	Frequency Range	Below 1000 MHz

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	82.14	-73.62	-89.22	9.65	-79.57	-13.00	-66.57
2	130.03	-72.21	-89.79	13.52	-76.27	-13.00	-63.27
3	170.04	-72.59	-93.00	14.26	-78.74	-13.00	-65.74
4	249.95	-76.03	-96.66	14.18	-82.48	-13.00	-69.48
5	485.66	-80.87	-99.23	20.91	-78.32	-13.00	-65.32
6	632.61	-83.92	-101.31	24.31	-77.00	-13.00	-64.00
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	61.04	-74.83	-92.03	13.83	-78.20	-13.00	-65.20
2	150.04	-78.58	-96.17	15.04	-81.13	-13.00	-68.13
3	170.04	-72.62	-92.92	14.26	-78.66	-13.00	-65.66
4	249.95	-77.76	-96.24	14.18	-82.06	-13.00	-69.06
5	481.78	-76.13	-95.27	20.85	-74.42	-13.00	-61.42
6	588.96	-82.65	-100.47	23.40	-77.07	-13.00	-64.07

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

Channel Bandwidth: 20MHz

Mode	TX channel 2050	Frequency Range	Below 1000 MHz

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	76.32	-70.55	-88.07	10.98	-77.09	-13.00	-64.09
2	130.03	-72.05	-89.63	13.52	-76.11	-13.00	-63.11
3	170.04	-72.07	-92.48	14.26	-78.22	-13.00	-65.22
4	240.00	-75.08	-94.70	13.68	-81.02	-13.00	-68.02
5	481.78	-81.82	-100.44	20.85	-79.59	-13.00	-66.59
6	635.16	-84.25	-101.50	24.33	-77.17	-13.00	-64.17
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	61.28	-74.44	-91.56	13.80	-77.76	-13.00	-64.76
2	151.74	-78.04	-95.80	15.01	-80.79	-13.00	-67.79
3	199.99	-70.81	-92.72	12.15	-80.57	-13.00	-67.57
4	260.01	-76.82	-95.34	14.60	-80.74	-13.00	-67.74
5	482.26	-76.60	-95.72	20.86	-74.86	-13.00	-61.86
6	624.12	-83.00	-101.04	24.22	-76.82	-13.00	-63.82

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

LTE Band 66

Channel Bandwidth: 5MHz

Mode	TX channel 66461	Frequency Range	Below 1000 MHz

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	69.89	-74.92	-91.93	12.65	-79.28	-13.00	-66.28
2	130.03	-71.66	-89.24	13.52	-75.72	-13.00	-62.72
3	249.95	-74.08	-94.71	14.18	-80.53	-13.00	-67.53
4	422.24	-78.51	-96.78	19.38	-77.40	-13.00	-64.40
5	479.96	-79.32	-98.06	20.83	-77.23	-13.00	-64.23
6	499.96	-77.10	-94.33	21.21	-73.12	-13.00	-60.12
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	60.07	-74.40	-91.75	13.79	-77.96	-13.00	-64.96
2	150.04	-77.70	-95.29	15.04	-80.25	-13.00	-67.25
3	260.01	-77.07	-95.59	14.60	-80.99	-13.00	-67.99
4	459.95	-76.87	-95.25	20.54	-74.71	-13.00	-61.71
5	499.96	-76.62	-94.97	21.21	-73.76	-13.00	-60.76
6	632.37	-83.76	-102.26	24.31	-77.95	-13.00	-64.95

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

Channel Bandwidth: 10MHz

Mode	TX channel 66486	Frequency Range	Below 1000 MHz

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	95.96	-73.50	-89.27	9.77	-79.50	-13.00	-66.50
2	130.03	-71.35	-88.93	13.52	-75.41	-13.00	-62.41
3	240.00	-75.63	-95.25	13.68	-81.57	-13.00	-68.57
4	372.05	-81.95	-99.95	18.16	-81.79	-13.00	-68.79
5	499.96	-79.83	-97.06	21.21	-75.85	-13.00	-62.85
6	640.62	-82.52	-99.78	24.38	-75.40	-13.00	-62.40
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	62.01	-72.71	-89.61	13.73	-75.88	-13.00	-62.88
2	170.04	-72.86	-93.16	14.26	-78.90	-13.00	-65.90
3	220.00	-72.98	-93.29	12.12	-81.17	-13.00	-68.17
4	260.01	-76.71	-95.23	14.60	-80.63	-13.00	-67.63
5	481.90	-77.75	-96.89	20.86	-76.03	-13.00	-63.03
6	614.42	-83.28	-101.63	24.07	-77.56	-13.00	-64.56

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

Channel Bandwidth: 15MHz

Mode	TX channel 66511	Frequency Range	Below 1000 MHz

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	75.35	-70.74	-88.75	11.31	-77.44	-13.00	-64.44
2	130.03	-72.38	-89.96	13.52	-76.44	-13.00	-63.44
3	170.04	-72.71	-93.12	14.26	-78.86	-13.00	-65.86
4	240.00	-75.26	-94.88	13.68	-81.20	-13.00	-68.20
5	447.58	-78.75	-96.87	20.26	-76.61	-13.00	-63.61
6	499.96	-78.61	-95.84	21.21	-74.63	-13.00	-61.63
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	69.16	-70.50	-86.69	12.72	-73.97	-13.00	-60.97
2	150.04	-77.92	-95.51	15.04	-80.47	-13.00	-67.47
3	220.00	-72.95	-93.26	12.12	-81.14	-13.00	-68.14
4	280.02	-77.75	-96.90	15.51	-81.39	-13.00	-68.39
5	482.26	-76.78	-95.90	20.86	-75.04	-13.00	-62.04
6	598.54	-84.00	-102.18	23.63	-78.55	-13.00	-65.55

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

Channel Bandwidth: 20MHz

Mode	TX channel 66536	Frequency Range	Below 1000 MHz

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	85.90	-70.84	-86.13	9.10	-77.03	-13.00	-64.03
2	130.03	-72.94	-90.52	13.52	-77.00	-13.00	-64.00
3	240.00	-74.88	-94.50	13.68	-80.82	-13.00	-67.82
4	486.26	-80.79	-99.10	20.92	-78.18	-13.00	-65.18
5	636.86	-83.03	-100.26	24.35	-75.91	-13.00	-62.91
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	68.44	-71.77	-87.91	12.83	-75.08	-13.00	-62.08
2	150.04	-78.07	-95.66	15.04	-80.62	-13.00	-67.62
3	280.02	-76.85	-96.00	15.51	-80.49	-13.00	-67.49
4	447.46	-78.58	-96.32	20.26	-76.06	-13.00	-63.06
5	482.87	-76.15	-95.24	20.86	-74.38	-13.00	-61.38
6	630.07	-83.57	-102.10	24.28	-77.82	-13.00	-64.82

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

LTE Band 13

Channel Bandwidth: 10MHz

Mode	TX channel 5230	Frequency Range	Below 1000 MHz

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	54.25	-82.46	-100.75	14.22	-86.53	-13.00	-73.53
2	149.07	-83.08	-104.05	14.99	-89.06	-13.00	-76.06
3	305.12	-84.64	-103.48	16.32	-87.16	-13.00	-74.16
4	511.48	-82.89	-102.47	21.54	-80.93	-13.00	-67.93
5	629.34	-83.29	-102.92	24.27	-78.65	-13.00	-65.65
6	841.28	-83.44	-103.88	27.50	-76.38	-13.00	-63.38
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	47.82	-82.71	-98.61	14.28	-84.33	-13.00	-71.33
2	147.37	-83.55	-102.69	14.95	-87.74	-13.00	-74.74
3	330.58	-83.57	-102.38	16.97	-85.41	-13.00	-72.41
4	520.46	-83.03	-102.49	21.69	-80.80	-13.00	-67.80
5	607.76	-82.71	-102.98	23.81	-79.17	-13.00	-66.17
6	891.97	-83.61	-102.71	28.07	-74.64	-13.00	-61.64

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

Above 1GHz

LTE Band 4

Channel Bandwidth: 5MHz

Mode	TX channel 1975	Frequency Range	Above 1000MHz

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	4228.77	-70.44	-108.89	44.65	-64.24	-13.00	-51.24
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	4229.26	-70.40	-108.81	44.65	-64.16	-13.00	-51.16

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

Mode	TX channel 2175	Frequency Range	Above 1000MHz

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	**4446.53**	**-69.13**	**-108.04**	**45.66**	**-62.38**	**-13.00**	**-49.38**
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	4444.08	-69.51	-108.50	45.65	-62.85	-13.00	-49.85

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

Mode	TX channel 2375	Frequency Range	Above 1000MHz

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	4306.62	-69.25	-108.45	45.36	-63.09	-13.00	-50.09
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	4306.68	-69.56	-108.97	45.36	-63.61	-13.00	-50.61

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

Channel Bandwidth: 10MHz

Mode	TX channel 2000	Frequency Range	Above 1000MHz

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	4230.29	-70.30	-108.76	44.66	-64.10	-13.00	-51.10
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	4231.37	-70.48	-108.93	44.68	-64.25	-13.00	-51.25

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

Mode	TX channel 2175	Frequency Range	Above 1000MHz

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	4263.94	-70.08	-108.89	44.98	-63.91	-13.00	-50.91
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	4266.74	-70.12	-109.07	45.01	-64.06	-13.00	-51.06

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

Mode	TX channel 2350	Frequency Range	Above 1000MHz

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	4301.10	-70.02	-109.24	45.35	-63.89	-13.00	-50.89
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	4302.42	-69.89	-109.32	45.35	-63.97	-13.00	-50.97

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

Channel Bandwidth: 15MHz

Mode	TX channel 2025	Frequency Range	Above 1000MHz

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	4234.48	-70.11	-108.61	44.70	-63.91	-13.00	-50.91
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	4236.51	-69.67	-108.18	44.72	-63.46	-13.00	-50.46

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

Mode	TX channel 2175	Frequency Range	Above 1000MHz

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	4266.30	-70.02	-108.87	45.01	-63.86	-13.00	-50.86
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	4266.37	-69.95	-108.90	45.01	-63.89	-13.00	-50.89

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

Mode	TX channel 2325	Frequency Range	Above 1000MHz

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	4295.13	-69.89	-109.06	45.30	-63.76	-13.00	-50.76
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	4297.12	-70.15	-109.56	45.32	-64.24	-13.00	-51.24

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

Channel Bandwidth: 20MHz

Mode	TX channel 2050	Frequency Range	Above 1000MHz

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	4239.80	-70.04	-108.60	44.75	-63.85	-13.00	-50.85
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	4241.19	-70.37	-108.95	44.76	-64.19	-13.00	-51.19

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

Mode	TX channel 2175	Frequency Range	Above 1000MHz

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	4267.30	-69.89	-108.75	45.02	-63.73	-13.00	-50.73
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	4266.67	-69.94	-108.89	45.01	-63.88	-13.00	-50.88

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

Mode	TX channel 2300	Frequency Range	Above 1000MHz

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	4289.38	-69.85	-108.95	45.24	-63.71	-13.00	-50.71
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	4292.19	-69.98	-109.31	45.27	-64.04	-13.00	-51.04

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

LTE Band 66

Channel Bandwidth: 5MHz

Mode	TX channel 66461	Frequency Range	Above 1000MHz

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	4226.20	-70.23	-108.65	44.63	-64.02	-13.00	-51.02
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	4226.40	-70.29	-108.66	44.63	-64.03	-13.00	-51.03

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

Mode	TX channel 66786	Frequency Range	Above 1000MHz

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	4288.85	-70.28	-109.37	45.23	-64.14	-13.00	-51.14
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	4290.52	-69.70	-109.00	45.25	-63.75	-13.00	-50.75

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

Mode	TX channel 67111	Frequency Range	Above 1000MHz

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	4356.74	-69.62	-108.63	45.45	-63.18	-13.00	-50.18
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	4353.92	-69.89	-109.05	45.46	-63.59	-13.00	-50.59

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

Channel Bandwidth: 10MHz

Mode	TX channel 66486	Frequency Range	Above 1000MHz

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	4230.80	-70.35	-108.82	44.67	-64.15	-13.00	-51.15
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	4232.08	-70.21	-108.66	44.68	-63.98	-13.00	-50.98

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

Mode	TX channel 66786	Frequency Range	Above 1000MHz

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	4289.37	-70.03	-109.13	45.24	-63.89	-13.00	-50.89
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	4288.38	-70.23	-109.50	45.23	-64.27	-13.00	-51.27

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

Mode	TX channel 67086	Frequency Range	Above 1000MHz

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	4348.31	-69.52	-108.58	45.45	-63.13	-13.00	-50.13
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	4350.14	-69.57	-108.75	45.45	-63.30	-13.00	-50.30

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

Channel Bandwidth: 15MHz

Mode	TX channel 66511	Frequency Range	Above 1000MHz

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	4237.44	-70.25	-108.78	44.73	-64.05	-13.00	-51.05
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	4235.87	-69.88	-108.38	44.71	-63.67	-13.00	-50.67

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

Mode	TX channel 66786	Frequency Range	Above 1000MHz

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	4288.48	-70.23	-109.32	45.23	-64.09	-13.00	-51.09
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	4288.06	-70.35	-109.62	45.23	-64.39	-13.00	-51.39

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

Mode	TX channel 67061	Frequency Range	Above 1000MHz

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	4347.15	-69.54	-108.60	45.44	-63.16	-13.00	-50.16
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	4345.35	-69.69	-108.90	45.44	-63.46	-13.00	-50.46

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

Channel Bandwidth: 20MHz

Mode	TX channel 66536	Frequency Range	Above 1000MHz

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	4239.32	-69.90	-108.46	44.75	-63.71	-13.00	-50.71
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	4242.31	-70.09	-108.68	44.77	-63.91	-13.00	-50.91

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

Mode	TX channel 66786	Frequency Range	Above 1000MHz

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	4289.63	-70.18	-109.28	45.24	-64.04	-13.00	-51.04
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	4287.84	-70.17	-109.43	45.22	-64.21	-13.00	-51.21

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

Mode	TX channel 67036	Frequency Range	Above 1000MHz

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	4340.00	-69.93	-109.02	45.43	-63.59	-13.00	-50.59
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	4340.00	-69.31	-108.55	45.43	-63.12	-13.00	-50.12

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

LTE Band 13

Channel Bandwidth: 10MHz

Mode	TX channel 5230	Frequency Range	Above 1000MHz

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	1501.47	-78.23	-114.03	34.32	-79.71	-13.00	-66.71
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	1501.39	-78.82	-114.68	34.33	-80.35	-13.00	-67.35

NOTE: Power Value(dBm) = S.G Power Value(dBm) + Correction Factor(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 accredited and approved according to ISO/IEC 17025.

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

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

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