



RF TEST REPORT

Applicant Xiaomi Communications Co., Ltd.
FCC ID 2AFZZ1119AL
Product Mobile Phone
Model 21061119AL
Report No. R2105A0397-R3V2
Issue Date July 9 ,2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2020)/ FCC CFR47 Part 27C (2020)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Peng Tao

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000



TABLE OF CONTENT

1	Test Laboratory	5
1.1	Notes of the Test Report	5
1.2.	Test facility	5
1.3	Testing Location	5
2	General Description of Equipment under Test	6
2.1	Applicant and Manufacturer Information	6
2.2	General information	6
3	Applied Standards	8
4	Test Configuration	9
5	Test Case Results	11
5.1	RF Power Output and Effective Isotropic Radiated Power	11
5.2	Occupied Bandwidth	22
5.3	Band Edge Compliance	45
5.4	Peak-to-Average Power Ratio (PAPR)	73
5.5	Frequency Stability	78
5.6	Spurious Emissions at Antenna Terminals	85
5.7	Radiates Spurious Emission	93
6	Main Test Instruments	100
ANNEX A: The EUT Appearance		101
ANNEX B: Test Setup Photos		102



Version	Revision description	Issue Date
Rev.0	Initial issue of report.	July 1, 2021
Rev.1	Update information in Page1	July 5, 2021
Rev.2	Update information in Page 7 Update Frequency Stability in Page79 to Page 84	July 9, 2021
Note: This revised report (Report No. R2105A0397-R3V2) supersedes and replaces the previously issued report (Report No. R2105A0397- R3V1). Please discard or destroy the previously issued report and dispose of it accordingly.		



Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Isotropic Radiated Power	2.1046 /27.50(d)(4) /27.50(c)(10)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	27.53(h) /27.53(g)	PASS
4	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 / 27.54	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 /27.53(h) /27.53(g) /27.53(f) /27.53(c)	PASS
7	Radiates Spurious Emission	2.1053 /27.53(h) /27.53(g)	PASS
Date of Testing: June 8, 2021 ~ June 16, 2021 and July 9, 2021			
Date of Sample Received: May 27, 2021			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			



1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Xiaomi Communications Co., Ltd.
Applicant address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer	Xiaomi Communications Co., Ltd.
Manufacturer address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.2 General information

EUT Description			
Model	21061119AL		
IMEI	IMEI 1:865877050240527 IMEI 2:865877050249460		
Hardware Version	P1.1		
Software Version	MIUI12.5		
Power Supply	Battery / AC adapter		
Antenna Type	PIFA Antenna		
Antenna Gain		Main(dBi)	Second(dBi)
	LTE Band 12	-3.7	-4.8
	LTE Band 17	-3.7	-4.8
	LTE Band 66	-0.8	-1.4
Test Mode(s)	LTE Band 12/17/66;		
Test Modulation	(LTE)QPSK 16QAM,64QAM;		
LTE Category	7		
Maximum E.I.R.P./ E.R.P.	LTE Band 12:	18.78dBm	
	LTE Band 17:	18.63dBm	
	LTE Band 66:	23.42dBm	
Rated Power Supply Voltage	3.8V		
Operating Voltage	Minimum: 3.6V Maximum: 4.45V		
Operating Temperature	Lowest: -10°C Highest: +60°C		
Extreme Temperature	Lowest: -30°C Highest: +60°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 17	704 ~ 716	734 ~ 746
	LTE Band 66	1710 ~ 1780	2110 ~ 2200
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by			



the applicant.



3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 27C (2020)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2020)

KDB 971168 D01 Power Meas License Digital Systems v03r01



4 Test Configuration

There is more than one SIM card slot, each one should be applied throughout the compliance test respectively, and however, only the worst case (SIM 1) will be recorded in this report

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in different Bandwidth is set to detail in the following table:

Test modes are chosen to be reported as the worst case configuration below for LTE Band 12/17/66:

Test items	Modes	Bandwidth (MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	LTE 12	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0
	LTE 17	-	-	0	0	-	-	0	0	0	0	0	0	0	0	0
	LTE 66	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0
Occupied Bandwidth	LTE 12	0	0	0	0	-	-	0	0	0	-	-	0	0	0	0
	LTE 17	-	-	0	0	-	-	0	0	0	-	-	0	0	0	0
	LTE 66	-	-	0	0	0	0	0	0	0	-	-	0	0	0	0
Band Edge Compliance	LTE 12	0	0	0	0	-	-	0	0	0	0	-	0	0	-	0
	LTE 17	-	-	0	0	-	-	0	0	0	0	-	0	0	-	0
	LTE 66	-	-	0	0	0	0	0	0	0	0	-	0	0	-	0
Peak-to-Average Power Ratio	LTE 12	0	0	0	0	-	-	0	0	0	-	-	0	0	0	0
	LTE 17	-	-	0	0	-	-	0	0	0	-	-	0	0	0	0
	LTE 66	-	-	0	0	0	0	0	0	0	-	-	0	0	0	0
Frequency Stability	LTE 12	0	0	0	0	-	-	0	0	0	0	-	-	-	0	-
	LTE 17	-	-	0	0	-	-	0	0	0	0	-	-	-	0	-
	LTE 66	-	-	0	0	0	0	0	0	0	0	-	-	-	0	-
Spurious Emissions at Antenna Terminals	LTE 12	0	0	0	0	-	-	0	-	-	0	-	-	0	0	0
	LTE 17	-	-	0	0	-	-	0	-	-	0	-	-	0	0	0
	LTE 66	-	-	0	0	0	0	0	-	-	0	-	-	0	0	0
Radiates Spurious Emission	LTE 12	0	-	0	0	-	-	0	-	-	0	-	-	-	0	-
	LTE 17	-	-	0	0	-	-	0	-	-	0	-	-	-	0	-
	LTE 66	-	-	0	-	-	0	0	-	-	0	-	-	-	0	-



Note	<ol style="list-style-type: none">1. The mark "O" means that this configuration is chosen for testing.2. The mark "-" means that this configuration is not testing.
------	--

5 Test Case Results

5.1 RF Power Output and Effective Isotropic Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

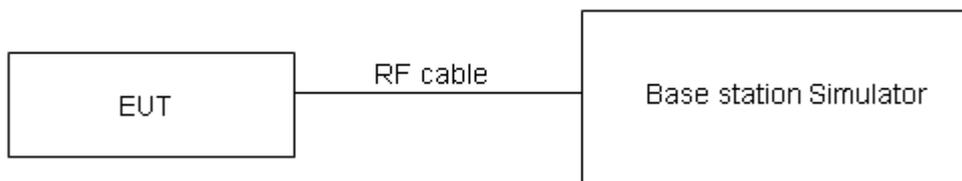
ERP can then be calculated as follows:

$$\text{EIRP (dBm)} = \text{Output Power (dBm)} - \text{Losses (dB)} + \text{Antenna Gain (dBi)}$$

where:dBd refers to gain relative to an ideal dipole.

$$\text{EIRP (dBm)} = \text{ERP (dBm)} + 2.15 \text{ (dB.)}$$

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 27.50(b) (10) specifies that “Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP”

Rule Part 27.50(c) (10) specifies that “Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP”

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”

Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Rule Part 27.50(a) (3) specifies that “(i) For mobile and portable stations transmitting in the



2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. ”

Part 27.50(c)(10)Limit	$\leq 3 \text{ W}$ (34.77 dBm)
Part 27.50(d)(4)Limit	$\leq 1 \text{ W}$ (30 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=0.4$ dB for RF power output, $k = 2$, $U= 1.19$ dB for ERP/EIRP.



Test Results

LTE Band 12				Maximum Output Power(dBm)			ERP (dBm) (Main antenna)			ERP (dBm) (Second antenna)		
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				23017/ 699.7	23095/ 707.5	23173/ 715.3	23017/ 699.7	23095/ 707.5	23173/ 715.3	23017/ 699.7	23095/ 707.5	23173/ 715.3
1.4MHz	QPSK	1	0	24.36	24.46	24.45	18.51	18.61	18.60	17.41	17.51	17.50
		1	2	24.66	24.54	24.53	18.81	18.69	18.68	17.71	17.59	17.58
		1	5	24.47	24.51	24.48	18.62	18.66	18.63	17.52	17.56	17.53
		3	0	24.56	24.55	24.47	18.71	18.7	18.62	17.61	17.60	17.52
		3	2	24.59	24.61	24.54	18.74	18.76	18.69	17.64	17.66	17.59
		3	3	24.60	24.54	24.43	18.75	18.69	18.58	17.65	17.59	17.48
		6	0	23.61	23.59	23.54	17.76	17.74	17.69	16.66	16.64	16.59
	16QAM	1	0	23.59	23.60	23.62	17.74	17.75	17.77	16.64	16.65	16.67
		1	2	23.57	23.54	23.56	17.72	17.69	17.71	16.62	16.59	16.61
		1	5	23.51	23.50	23.44	17.66	17.65	17.59	16.56	16.55	16.49
		3	0	23.34	23.38	23.34	17.49	17.53	17.49	16.39	16.43	16.39
		3	2	23.42	23.39	23.29	17.57	17.54	17.44	16.47	16.44	16.34
		3	3	23.38	23.39	23.32	17.53	17.54	17.47	16.43	16.44	16.37
		6	0	22.46	22.44	22.44	16.61	16.59	16.59	15.51	15.49	15.49
	64QAM	1	0	22.51	22.48	22.49	16.66	16.63	16.64	15.56	15.53	15.54
		1	2	22.47	22.44	22.42	16.62	16.59	16.57	15.52	15.49	15.47
		1	5	22.50	22.53	22.49	16.65	16.68	16.64	15.55	15.58	15.54
		3	0	22.31	22.28	22.31	16.46	16.43	16.46	15.36	15.33	15.36
		3	2	22.32	22.32	22.39	16.47	16.47	16.54	15.37	15.37	15.44
		3	3	22.45	22.38	22.40	16.6	16.53	16.55	15.50	15.43	15.45
		6	0	21.47	21.51	21.53	15.62	15.66	15.68	14.52	14.56	14.58
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				23025/ 700.5	23095/ 707.5	23165/ 714.5	23025/ 700.5	23095/ 707.5	23165/ 714.5	23025/ 700.5	23095/ 707.5	23165/ 714.5
3MHz	QPSK	1	0	24.37	24.49	24.47	18.52	18.64	18.62	17.42	17.54	17.52
		1	7	24.65	24.58	24.58	18.80	18.73	18.73	17.70	17.63	17.63
		1	14	24.49	24.55	24.51	18.64	18.70	18.66	17.54	17.60	17.56
		8	0	23.66	23.67	23.60	17.81	17.82	17.75	16.71	16.72	16.65
		8	4	23.72	23.72	23.65	17.87	17.87	17.80	16.77	16.77	16.70
		8	7	23.70	23.67	23.54	17.85	17.82	17.69	16.75	16.72	16.59
		15	0	23.65	23.64	23.59	17.80	17.79	17.74	16.70	16.69	16.64



	16QAM	1	0	23.61	23.61	23.64	17.76	17.76	17.79	16.66	16.66	16.69
		1	7	23.60	23.56	23.60	17.75	17.71	17.75	16.65	16.61	16.65
		1	14	23.53	23.54	23.46	17.68	17.69	17.61	16.58	16.59	16.51
		8	0	22.46	22.52	22.47	16.61	16.67	16.62	15.51	15.57	15.52
		8	4	22.52	22.51	22.40	16.67	16.66	16.55	15.57	15.56	15.45
		8	7	22.48	22.51	22.45	16.63	16.66	16.60	15.53	15.56	15.50
		15	0	22.50	22.49	22.46	16.65	16.64	16.61	15.55	15.54	15.51
	64QAM	1	0	22.53	22.49	22.51	16.68	16.64	16.66	15.58	15.54	15.56
		1	7	22.50	22.46	22.44	16.65	16.61	16.59	15.55	15.51	15.49
		1	14	22.52	22.52	22.51	16.67	16.67	16.66	15.57	15.57	15.56
		8	0	21.43	21.42	21.44	15.58	15.57	15.59	14.48	14.47	14.49
		8	4	21.42	21.44	21.50	15.57	15.59	15.65	14.47	14.49	14.55
		8	7	21.55	21.50	21.53	15.70	15.65	15.68	14.60	14.55	14.58
		15	0	21.51	21.56	21.55	15.66	15.71	15.70	14.56	14.61	14.60
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				23035/701.5	23095/707.5	23155/713.5	23035/701.5	23095/707.5	23155/713.5	23035/701.5	23095/707.5	23155/713.5
5MHz	QPSK	1	0	24.36	24.45	24.45	18.51	18.60	18.60	17.41	17.50	17.50
		1	13	24.63	24.57	24.55	18.78	18.72	18.70	17.68	17.62	17.60
		1	24	24.46	24.50	24.47	18.61	18.65	18.62	17.51	17.55	17.52
		12	0	23.64	23.63	23.57	17.79	17.78	17.72	16.69	16.68	16.62
		12	6	23.69	23.67	23.61	17.84	17.82	17.76	16.74	16.72	16.66
		12	13	23.67	23.64	23.50	17.82	17.79	17.65	16.72	16.69	16.55
		25	0	23.63	23.60	23.54	17.78	17.75	17.69	16.68	16.65	16.59
	16QAM	1	0	23.56	23.59	23.62	17.71	17.74	17.77	16.61	16.64	16.67
		1	13	23.58	23.53	23.58	17.73	17.68	17.73	16.63	16.58	16.63
		1	24	23.50	23.50	23.43	17.65	17.65	17.58	16.55	16.55	16.48
		12	0	22.43	22.50	22.44	16.58	16.65	16.59	15.48	15.55	15.49
		12	6	22.49	22.46	22.36	16.64	16.61	16.51	15.54	15.51	15.41
		12	13	22.46	22.47	22.42	16.61	16.62	16.57	15.51	15.52	15.47
		25	0	22.47	22.44	22.42	16.62	16.59	16.57	15.52	15.49	15.47
	64QAM	1	0	22.48	22.47	22.49	16.63	16.62	16.64	15.53	15.52	15.54
		1	13	22.48	22.43	22.42	16.63	16.58	16.57	15.53	15.48	15.47
		1	24	22.53	22.51	22.52	16.68	16.66	16.67	15.58	15.56	15.57
		12	0	21.42	21.44	21.45	15.57	15.59	15.60	14.47	14.49	14.50
		12	6	21.40	21.41	21.49	15.55	15.56	15.64	14.45	14.46	14.54
		12	13	21.53	21.46	21.50	15.68	15.61	15.65	14.58	14.51	14.55



BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				23060/704	23095/707.5	23130/711	23060/704	23095/707.5	23130/711	23060/704	23095/707.5	23130/711
				25	0	21.48	21.51	21.51	15.63	15.66	15.66	14.53
10MHz	QPSK	1	0	24.33	24.41	24.42	18.48	18.56	18.57	17.38	17.46	17.47
		1	25	24.52	24.53	24.63	18.67	18.68	18.78	17.57	17.58	17.68
		1	49	24.44	24.49	24.44	18.59	18.64	18.59	17.49	17.54	17.49
		25	0	23.61	23.58	23.53	17.76	17.73	17.68	16.66	16.63	16.58
		25	13	23.67	23.63	23.58	17.82	17.78	17.73	16.72	16.68	16.63
		25	25	23.64	23.59	23.46	17.79	17.74	17.61	16.69	16.64	16.51
		50	0	23.60	23.55	23.50	17.75	17.70	17.65	16.65	16.60	16.55
	16QAM	1	0	23.61	23.55	23.57	17.76	17.70	17.72	16.66	16.60	16.62
		1	25	23.54	23.51	23.54	17.69	17.66	17.69	16.59	16.56	16.59
		1	49	23.48	23.47	23.41	17.63	17.62	17.56	16.53	16.52	16.46
		25	0	22.40	22.46	22.41	16.55	16.61	16.56	15.45	15.51	15.46
		25	13	22.46	22.44	22.33	16.61	16.59	16.48	15.51	15.49	15.38
		25	25	22.43	22.42	22.38	16.58	16.57	16.53	15.48	15.47	15.43
		50	0	22.45	22.40	22.39	16.60	16.55	16.54	15.50	15.45	15.44
	64QAM	1	0	22.46	22.43	22.44	16.61	16.58	16.59	15.51	15.48	15.49
		1	25	22.44	22.41	22.38	16.59	16.56	16.53	15.49	15.46	15.43
		1	49	22.47	22.45	22.46	16.62	16.60	16.61	15.52	15.50	15.51
		25	0	21.37	21.36	21.38	15.52	15.51	15.53	14.42	14.41	14.43
		25	13	21.36	21.37	21.43	15.51	15.52	15.58	14.41	14.42	14.48
		25	25	21.50	21.41	21.46	15.65	15.56	15.61	14.55	14.46	14.51
		50	0	21.46	21.47	21.48	15.61	15.62	15.63	14.51	14.52	14.53



LTE Band 17				Maximum Output Power(dBm)			ERP (dBm) (Main antenna)			ERP (dBm) (Second antenna)		
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				23755/ 706.5	23790/ 710	23825/ 713.5	23755/ 706.5	23790/ 710	23825/ 713.5	23755/ 706.5	23790/ 710	23825/ 713.5
5MHz	QPSK	1	0	24.39	24.36	24.28	18.54	18.51	18.43	17.44	17.41	17.33
		1	13	24.44	24.42	24.48	18.59	18.57	18.63	17.49	17.47	17.53
		1	24	24.31	24.35	24.32	18.46	18.50	18.47	17.36	17.40	17.37
		12	0	23.40	23.36	23.40	17.55	17.51	17.55	16.45	16.41	16.45
		12	6	23.44	23.44	23.45	17.59	17.59	17.60	16.49	16.49	16.50
		12	13	23.48	23.42	23.41	17.63	17.57	17.56	16.53	16.47	16.46
		25	0	23.40	23.46	23.45	17.55	17.61	17.60	16.45	16.51	16.50
	16QAM	1	0	23.73	23.44	23.42	17.88	17.59	17.57	16.78	16.49	16.47
		1	13	23.71	23.61	23.64	17.86	17.76	17.79	16.76	16.66	16.69
		1	24	23.64	23.60	23.54	17.79	17.75	17.69	16.69	16.65	16.59
		12	0	22.44	22.45	22.39	16.59	16.60	16.54	15.49	15.50	15.44
		12	6	22.51	22.42	22.46	16.66	16.57	16.61	15.56	15.47	15.51
		12	13	22.47	22.49	22.37	16.62	16.64	16.52	15.52	15.54	15.42
		25	0	22.55	22.56	22.50	16.70	16.71	16.65	15.60	15.61	15.55
	64QAM	1	0	22.41	22.46	22.39	16.56	16.61	16.54	15.46	15.51	15.44
		1	13	22.38	22.41	22.32	16.53	16.56	16.47	15.43	15.46	15.37
		1	24	22.47	22.39	22.35	16.62	16.54	16.5	15.52	15.44	15.40
		12	0	21.65	21.57	21.58	15.80	15.72	15.73	14.70	14.62	14.63
		12	6	21.62	21.56	21.52	15.77	15.71	15.67	14.67	14.61	14.57
		12	13	21.56	21.54	21.62	15.71	15.69	15.77	14.61	14.59	14.67
		25	0	21.49	21.50	21.46	15.64	15.65	15.61	14.54	14.55	14.51
10MHz	QPSK	1	0	24.37	24.29	24.26	18.52	18.44	18.41	17.42	17.34	17.31
		1	25	24.44	24.42	24.47	18.59	18.57	18.62	17.49	17.47	17.52
1		49	24.28	24.33	24.28	18.43	18.48	18.43	17.33	17.38	17.33	
25		0	23.38	23.32	23.37	17.53	17.47	17.52	16.43	16.37	16.42	
25		13	23.42	23.40	23.42	17.57	17.55	17.57	16.47	16.45	16.47	
25		25	23.44	23.38	23.38	17.59	17.53	17.53	16.49	16.43	16.43	
50		0	23.39	23.39	23.40	17.54	17.54	17.55	16.44	16.44	16.45	
16QAM	1	0	23.61	23.41	23.37	17.76	17.56	17.52	16.66	16.46	16.42	
	1	25	23.68	23.60	23.61	17.83	17.75	17.76	16.73	16.65	16.66	



		1	49	23.62	23.55	23.52	17.77	17.70	17.67	16.67	16.60	16.57
		25	0	22.41	22.44	22.37	16.56	16.59	16.52	15.46	15.49	15.42
		25	13	22.47	22.39	22.42	16.62	16.54	16.57	15.52	15.44	15.47
		25	25	22.45	22.45	22.34	16.60	16.60	16.49	15.50	15.50	15.39
		50	0	22.53	22.52	22.47	16.68	16.67	16.62	15.58	15.57	15.52
	64QAM	1	0	22.36	22.39	22.34	16.51	16.54	16.49	15.41	15.44	15.39
		1	25	22.35	22.36	22.29	16.50	16.51	16.44	15.40	15.41	15.34
		1	49	22.41	22.34	22.33	16.56	16.49	16.48	15.46	15.39	15.38
		25	0	21.62	21.56	21.52	15.77	15.71	15.67	14.67	14.61	14.57
		25	13	21.58	21.53	21.48	15.73	15.68	15.63	14.63	14.58	14.53
		25	25	21.54	21.50	21.59	15.69	15.65	15.74	14.59	14.55	14.64
		50	0	21.47	21.46	21.43	15.62	15.61	15.58	14.52	14.51	14.48

LTE Band 66				Maximum Output Power(dBm)			EIRP (dBm) (Main antenna)			EIRP (dBm) (Second antenna)		
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				131979/1710.7	132322/1745	132665/1779.3	131979/1710.7	132322/1745	132665/1779.3	131979/1710.7	132322/1745	132665/1779.3
1.4MHz	QPSK	1	0	23.94	23.83	23.76	23.14	23.03	22.96	22.54	22.43	22.36
		1	2	24.22	24.13	24.09	23.42	23.33	23.29	22.82	22.73	22.69
		1	5	23.95	23.89	23.96	23.15	23.09	23.16	22.55	22.49	22.56
		3	0	24.01	23.92	24.01	23.21	23.12	23.21	22.61	22.52	22.61
		3	2	23.87	23.89	23.91	23.07	23.09	23.11	22.47	22.49	22.51
		3	3	23.97	23.76	23.88	23.17	22.96	23.08	22.57	22.36	22.48
		6	0	23.05	22.92	23.01	22.25	22.12	22.21	21.65	21.52	21.61
	16QAM	1	0	23.46	23.13	23.08	22.66	22.33	22.28	22.06	21.73	21.68
		1	2	23.44	23.42	23.37	22.64	22.62	22.57	22.04	22.02	21.97
		1	5	23.23	23.20	23.18	22.43	22.40	22.38	21.83	21.80	21.78
		3	0	23.17	23.12	23.10	22.37	22.32	22.30	21.77	21.72	21.70
		3	2	23.01	22.96	22.94	22.21	22.16	22.14	21.61	21.56	21.54
		3	3	22.92	22.91	22.84	22.12	22.11	22.04	21.52	21.51	21.44
		6	0	22.07	22.06	22.04	21.27	21.26	21.24	20.67	20.66	20.64
	64QAM	1	0	23.24	23.22	23.17	22.44	22.42	22.37	21.84	21.82	21.77
		1	2	23.33	23.31	23.28	22.53	22.51	22.48	21.93	21.91	21.88
		1	5	23.21	23.27	23.16	22.41	22.47	22.36	21.81	21.87	21.76
		3	0	23.11	23.10	23.04	22.31	22.30	22.24	21.71	21.70	21.64
		3	2	23.18	23.16	23.11	22.38	22.36	22.31	21.78	21.76	21.71



BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)									
				131987/ 1711.5	132322/ 1745	132657/ 1778.5	131987/ 1711.5	132322/ 1745	132657/ 1778.5	131987/ 1711.5	132322/ 1745	132657/ 1778.5	
				3	3	23.04	23.03	22.96	22.24	22.23	22.16	21.64	21.63
		6	0	21.09	21.08	21.06	20.29	20.28	20.26	19.69	19.68	19.66	
3MHz	QPSK	1	0	23.96	23.87	23.79	23.16	23.07	22.99	22.56	22.47	22.39	
		1	7	24.20	24.16	24.13	23.40	23.36	23.33	22.80	22.76	22.73	
		1	14	23.98	23.94	24.00	23.18	23.14	23.20	22.58	22.54	22.60	
		8	0	23.11	23.04	23.14	22.31	22.24	22.34	21.71	21.64	21.74	
		8	4	22.99	22.99	23.03	22.19	22.19	22.23	21.59	21.59	21.63	
		8	7	23.07	22.87	22.98	22.27	22.07	22.18	21.67	21.47	21.58	
		15	0	23.05	22.96	23.04	22.25	22.16	22.24	21.65	21.56	21.64	
	16QAM	1	0	23.49	23.15	23.11	22.69	22.35	22.31	22.09	21.75	21.71	
		1	7	23.47	23.42	23.41	22.67	22.62	22.61	22.07	22.02	22.01	
		1	14	23.25	23.24	23.21	22.45	22.44	22.41	21.85	21.84	21.81	
		8	0	22.28	22.25	22.22	21.48	21.45	21.42	20.88	20.85	20.82	
		8	4	22.12	22.09	22.06	21.32	21.29	21.26	20.72	20.69	20.66	
		8	7	22.02	22.03	21.97	21.22	21.23	21.17	20.62	20.63	20.57	
		15	0	22.10	22.10	22.07	21.30	21.30	21.27	20.70	20.70	20.67	
	64QAM	1	0	22.27	22.24	22.20	21.47	21.44	21.40	20.87	20.84	20.80	
		1	7	22.36	22.31	22.30	21.56	21.51	21.50	20.96	20.91	20.90	
		1	14	22.23	22.26	22.19	21.43	21.46	21.39	20.83	20.86	20.79	
		8	0	21.22	21.23	21.16	20.42	20.43	20.36	19.82	19.83	19.76	
		8	4	21.29	21.29	21.23	20.49	20.49	20.43	19.89	19.89	19.83	
		8	7	21.14	21.15	21.09	20.34	20.35	20.29	19.74	19.75	19.69	
		15	0	21.12	21.12	21.09	20.32	20.32	20.29	19.72	19.72	19.69	
	BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
					131997/ 1712.5	132322/ 1745	132647/ 1777.5	131997/ 1712.5	132322/ 1745	132647/ 1777.5	131997/ 1712.5	132322/ 1745	132647/ 1777.5
					23.93	23.85	23.75	23.13	23.05	22.95	22.53	22.45	22.35
5MHz	QPSK	1	13	24.18	24.12	24.10	23.38	23.32	23.30	22.78	22.72	22.70	
		1	24	23.95	23.89	23.96	23.15	23.09	23.16	22.55	22.49	22.56	
		12	0	23.08	22.99	23.10	22.28	22.19	22.30	21.68	21.59	21.70	
		12	6	22.97	22.95	22.98	22.17	22.15	22.18	21.57	21.55	21.58	
		12	13	23.05	22.85	22.94	22.25	22.05	22.14	21.65	21.45	21.54	
		25	0	23.05	22.95	23.02	22.25	22.15	22.22	21.65	21.55	21.62	
		16QAM	1	0	23.46	23.11	23.08	22.66	22.31	22.28	22.06	21.71	21.68



		1	13	23.44	23.40	23.38	22.64	22.60	22.58	22.04	22.00	21.98
		1	24	23.22	23.22	23.17	22.42	22.42	22.37	21.82	21.82	21.77
		12	0	22.26	22.21	22.19	21.46	21.41	21.39	20.86	20.81	20.79
		12	6	22.09	22.04	22.02	21.29	21.24	21.22	20.69	20.64	20.62
		12	13	21.99	21.98	21.93	21.19	21.18	21.13	20.59	20.58	20.53
		25	0	22.08	22.06	22.02	21.28	21.26	21.22	20.68	20.66	20.62
		25	25	22.08	22.06	22.02	21.28	21.26	21.22	20.68	20.66	20.62
	64QAM	1	0	22.24	22.24	22.17	21.44	21.44	21.37	20.84	20.84	20.77
		1	13	22.33	22.33	22.27	21.53	21.53	21.47	20.93	20.93	20.87
		1	24	22.24	22.24	22.15	21.44	21.44	21.35	20.84	20.84	20.75
		12	0	21.20	21.19	21.17	20.40	20.39	20.37	19.80	19.79	19.77
		12	6	21.26	21.24	21.19	20.46	20.44	20.39	19.86	19.84	19.79
		12	13	21.11	21.10	21.05	20.31	20.30	20.25	19.71	19.70	19.65
		25	0	21.10	21.08	21.04	20.30	20.28	20.24	19.70	19.68	19.64
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				132022/ 1715	132322/ 1745	132622/ 1775	132022/ 1715	132322/ 1745	132622/ 1775	132022/ 1715	132322/ 1745	132622/ 1775
10MHz	QPSK	1	0	23.95	23.86	23.78	23.15	23.06	22.98	22.55	22.46	22.38
		1	25	24.21	24.17	24.14	23.41	23.37	23.34	22.81	22.77	22.74
		1	49	23.97	23.93	23.99	23.17	23.13	23.19	22.57	22.53	22.59
		25	0	23.11	23.04	23.14	22.31	22.24	22.34	21.71	21.64	21.74
		25	13	23.00	23.00	23.02	22.20	22.20	22.22	21.60	21.60	21.62
		25	25	23.07	22.89	22.99	22.27	22.09	22.19	21.67	21.49	21.59
		50	0	23.09	22.97	23.06	22.29	22.17	22.26	21.69	21.57	21.66
	16QAM	1	0	23.48	23.14	23.10	22.68	22.34	22.30	22.08	21.74	21.70
		1	25	23.47	23.44	23.41	22.67	22.64	22.61	22.07	22.04	22.01
		1	49	23.25	23.24	23.20	22.45	22.44	22.40	21.85	21.84	21.80
		25	0	22.29	22.26	22.23	21.49	21.46	21.43	20.89	20.86	20.83
		25	13	22.11	22.08	22.05	21.31	21.28	21.25	20.71	20.68	20.65
		25	25	22.02	22.03	21.97	21.22	21.23	21.17	20.62	20.63	20.57
		50	0	22.11	22.11	22.06	21.31	21.31	21.26	20.71	20.71	20.66
	64QAM	1	0	22.26	22.23	22.19	21.46	21.43	21.39	20.86	20.83	20.79
		1	25	22.36	22.33	22.30	21.56	21.53	21.50	20.96	20.93	20.90
		1	49	22.23	22.26	22.18	21.43	21.46	21.38	20.83	20.86	20.78
		25	0	21.23	21.24	21.17	20.43	20.44	20.37	19.83	19.84	19.77
		25	13	21.28	21.28	21.22	20.48	20.48	20.42	19.88	19.88	19.82
		25	25	21.14	21.15	21.09	20.34	20.35	20.29	19.74	19.75	19.69
		50	0	21.13	21.13	21.08	20.33	20.33	20.28	19.73	19.73	19.68



BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				132047/1717.5	132322/1745	132597/1772.5	132047/1717.5	132322/1745	132597/1772.5	132047/1717.5	132322/1745	132597/1772.5
15MHz	QPSK	1	0	23.94	23.82	23.76	23.14	23.02	22.96	22.54	22.42	22.36
		1	38	24.19	24.16	24.11	23.39	23.36	23.31	22.79	22.76	22.71
		1	74	23.94	23.88	23.95	23.14	23.08	23.15	22.54	22.48	22.55
		36	0	23.09	23.00	23.11	22.29	22.20	22.31	21.69	21.60	21.71
		36	18	22.97	22.95	22.98	22.17	22.15	22.18	21.57	21.55	21.58
		36	39	23.04	22.86	22.95	22.24	22.06	22.15	21.64	21.46	21.55
		75	0	23.07	22.93	23.01	22.27	22.13	22.21	21.67	21.53	21.61
	16QAM	1	0	23.43	23.12	23.08	22.63	22.32	22.28	22.03	21.72	21.68
		1	38	23.45	23.41	23.39	22.65	22.61	22.59	22.05	22.01	21.99
		1	74	23.22	23.20	23.17	22.42	22.40	22.37	21.82	21.80	21.77
		36	0	22.26	22.24	22.20	21.46	21.44	21.40	20.86	20.84	20.80
		36	18	22.08	22.03	22.01	21.28	21.23	21.21	20.68	20.63	20.61
		36	39	22.00	21.99	21.94	21.20	21.19	21.14	20.60	20.59	20.54
		75	0	22.08	22.06	22.02	21.28	21.26	21.22	20.68	20.66	20.62
	64QAM	1	0	22.21	22.21	22.17	21.41	21.41	21.37	20.81	20.81	20.77
		1	38	22.34	22.30	22.28	21.54	21.50	21.48	20.94	20.90	20.88
		1	74	22.24	22.25	22.19	21.44	21.45	21.39	20.84	20.85	20.79
		36	0	21.22	21.26	21.18	20.42	20.46	20.38	19.82	19.86	19.78
		36	18	21.26	21.25	21.21	20.46	20.45	20.41	19.86	19.85	19.81
		36	39	21.12	21.11	21.06	20.32	20.31	20.26	19.72	19.71	19.66
		75	0	21.10	21.08	21.04	20.30	20.28	20.24	19.70	19.68	19.64
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)								
				132072/1720	132322/1745	132572/1770	132072/1720	132322/1745	132572/1770	132072/1720	132322/1745	132572/1770
20MHz	QPSK	1	0	23.91	23.78	23.73	23.11	22.98	22.93	22.51	22.38	22.33
		1	50	24.18	24.12	24.09	23.38	23.32	23.29	22.78	22.72	22.69
		1	99	23.92	23.87	23.92	23.12	23.07	23.12	22.52	22.47	22.52
		50	0	23.06	22.95	23.07	22.26	22.15	22.27	21.66	21.55	21.67
		50	25	22.95	22.91	22.95	22.15	22.11	22.15	21.55	21.51	21.55
		50	50	23.01	22.81	22.91	22.21	22.01	22.11	21.61	21.41	21.51
		100	0	23.04	22.88	22.97	22.24	22.08	22.17	21.64	21.48	21.57
	16QAM	1	0	23.10	23.08	23.03	22.30	22.28	22.23	21.70	21.68	21.63
		1	50	23.41	23.39	23.35	22.61	22.59	22.55	22.01	21.99	21.95
		1	99	23.20	23.17	23.15	22.40	22.37	22.35	21.80	21.77	21.75



		50	0	22.23	22.20	22.17	21.43	21.40	21.37	20.83	20.80	20.77
		50	25	22.05	22.01	21.98	21.25	21.21	21.18	20.65	20.61	20.58
		50	50	21.97	21.94	21.90	21.17	21.14	21.10	20.57	20.54	20.50
		100	0	22.06	22.02	21.99	21.26	21.22	21.19	20.66	20.62	20.59
	64QAM	1	0	22.19	22.17	22.12	21.39	21.37	21.32	20.79	20.77	20.72
		1	50	22.30	22.28	22.24	21.50	21.48	21.44	20.90	20.88	20.84
		1	99	22.18	22.19	22.13	21.38	21.39	21.33	20.78	20.79	20.73
		50	0	21.17	21.18	21.11	20.37	20.38	20.31	19.77	19.78	19.71
		50	25	21.22	21.21	21.15	20.42	20.41	20.35	19.82	19.81	19.75
		50	50	21.09	21.06	21.02	20.29	20.26	20.22	19.69	19.66	19.62
		100	0	21.08	21.04	21.01	20.28	20.24	20.21	19.68	19.64	19.61

5.2 Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 30 kHz, VBW is set to 91kHz for LTE Band 12 (1.4MHz).

RBW is set to 62 kHz, VBW is set to 180 kHz for LTE Band 12 (3MHz).

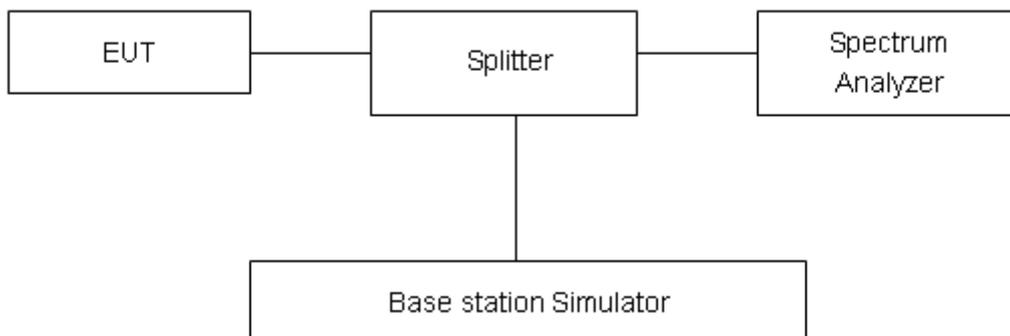
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 12/17/66 (5MHz).

RBW is set to 200 kHz, VBW is set to 600 kHz for LTE Band 12/17/66 (10MHz).

RBW is set to 300 kHz, VBW is set to 910kHz for LTE Band 66 (15MHz/20MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=624\text{Hz}$.



Test Result

LTE Band 12						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	23017	699.7	1.0988	1.291
			23095	707.5	1.0949	1.274
			23173	715.3	1.0937	1.283
		3	23025	700.5	2.7005	3.016
			23095	707.5	2.6953	2.921
			23165	714.5	2.6913	2.904
		5	23035	701.5	4.5215	5.125
			23095	707.5	4.5285	5.093
			23155	713.5	4.5143	5.086
		10	23060	704.0	9.0089	9.911
			23095	707.5	8.9672	9.956
			23130	711.0	8.9811	9.895
	16QAM	1.4	23017	699.7	1.0939	1.266
			23095	707.5	1.0922	1.283
			23173	715.3	1.0906	1.281
		3	23025	700.5	2.6861	2.939
			23095	707.5	2.6867	2.932
			23165	714.5	2.6842	2.931
		5	23035	701.5	4.5256	5.143
			23095	707.5	4.5106	5.118
			23155	713.5	4.5217	5.173
		10	23060	704.0	8.9964	9.947
			23095	707.5	9.0248	9.826
			23130	711.0	9.0034	9.920
	64QAM	1.4	23017	699.7	1.0965	1.287
			23095	707.5	1.1030	1.308
			23173	715.3	1.0902	1.260
		3	23025	700.5	2.6892	2.906
			23095	707.5	2.6823	2.922
			23165	714.5	2.6902	2.898
5		23035	701.5	4.5161	5.014	
		23095	707.5	4.5278	5.103	
		23155	713.5	4.5183	5.201	
10		23060	704.0	9.0084	10.020	
		23095	707.5	8.9849	9.728	
		23130	711.0	8.9877	9.934	



LTE Band 17						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	23755	706.5	4.5286	5.065
			23790	710.0	4.5135	5.163
			23825	713.5	4.5308	5.068
		10	23780	709.0	9.0081	9.993
			23790	710.0	8.9895	9.779
			23800	711.0	8.9896	9.998
	16QAM	5	23755	706.5	4.5370	5.104
			23790	710.0	4.5272	5.141
			23825	713.5	4.5166	5.217
		10	23780	709.0	9.0058	9.966
			23790	710.0	8.9903	9.958
			23800	711.0	8.9929	9.947
	64QAM	5	23755	706.5	4.5163	5.134
			23790	710.0	4.5289	5.234
			23825	713.5	4.5177	5.112
10		23780	709.0	8.9785	9.923	
		23790	710.0	8.9789	9.965	
		23800	711.0	8.9933	9.913	



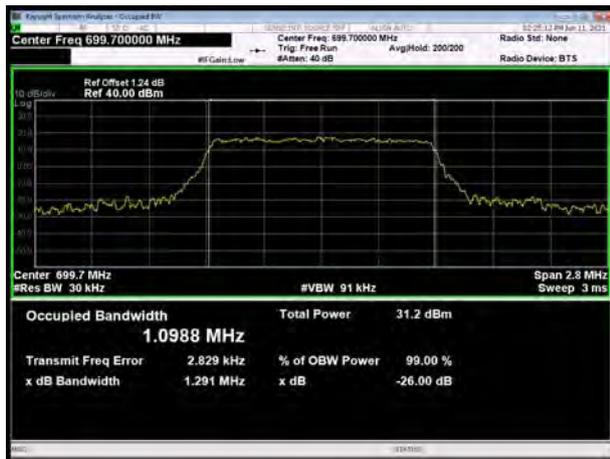
LTE Band 66						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	131979	1710.7	1.0934	1.301
			132322	1745	1.0939	1.271
			132665	1779.3	1.0905	1.273
		3	131987	1711.5	2.69	2.894
			132322	1745	2.698	2.943
			132657	1778.5	2.6885	2.940
		5	131997	1712.5	4.5251	5.067
			132322	1745	4.5178	5.126
			132647	1777.5	4.5264	5.072
		10	132022	1715	8.9786	10.15
			132322	1745	9.0213	10.14
			132622	1775	9.0075	10.03
		15	132047	1717.5	13.534	14.91
			132322	1745	13.436	15.08
			132597	1772.5	13.481	14.86
		20	132072	1720	18.001	19.46
			132322	1745	17.982	19.41
			132572	1770	17.988	19.86
	16QAM	1.4	131979	1710.7	1.0955	1.278
			132322	1745	1.094	1.268
			132665	1779.3	1.0949	1.29
		3	131987	1711.5	2.6834	2.901
			132322	1745	2.6976	2.925
			132657	1778.5	2.6835	2.921
		5	131997	1712.5	4.5120	5.068
			132322	1745	4.5112	5.103
			132647	1777.5	4.5193	5.271
		10	132022	1715	9.0214	9.786
			132322	1745	9.0100	10.01
			132622	1775	8.9987	10.04
15		132047	1717.5	13.476	14.82	
		132322	1745	13.465	14.96	
		132597	1772.5	13.487	15.06	
20		132072	1720	17.983	19.56	
		132322	1745	17.963	21.08	
		132572	1770	17.987	19.37	
	64QAM	1.4	131979	1710.7	1.0916	1.272



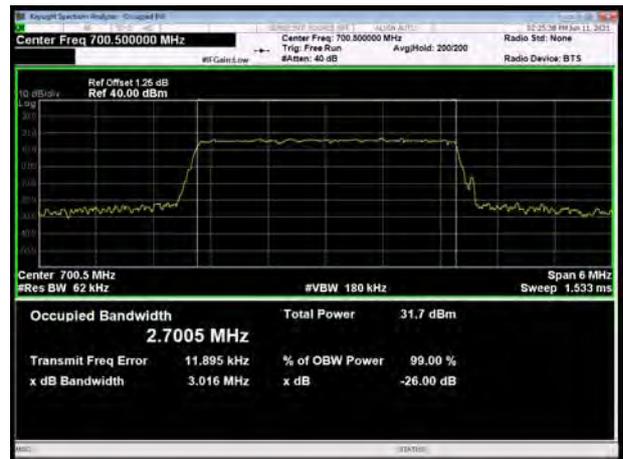
			132322	1745.0	1.0954	1.282
			132665	1779.3	1.0946	1.310
		3	131987	1711.5	2.6882	2.912
			132322	1745.0	2.6835	2.922
			132657	1778.5	2.6851	2.900
		5	131997	1712.5	4.5180	5.142
			132322	1745.0	4.5325	5.123
			132647	1777.5	4.5332	5.202
		10	132022	1715.0	8.9964	10.050
			132322	1745.0	9.0053	9.990
			132622	1775.0	8.9903	9.898
		15	132047	1717.5	13.4920	14.920
			132322	1745.0	13.4960	14.720
			132597	1772.5	13.4490	14.790
		20	132072	1720.0	17.9640	19.550
			132322	1745.0	17.9730	19.480
			132572	1770.0	17.9640	19.510



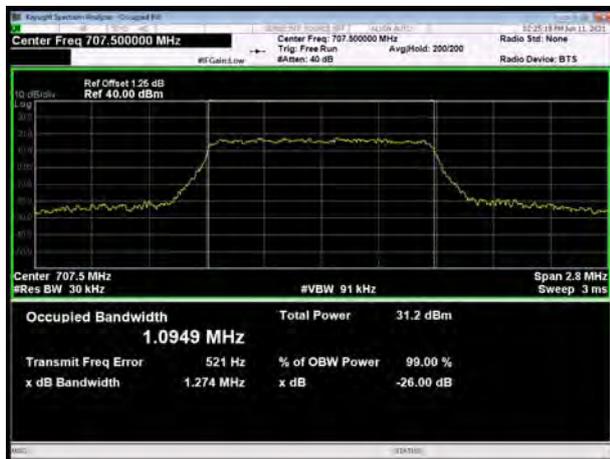
LTE Band 12 QPSK 1.4MHz CH-Low



LTE Band 12 QPSK 3MHz CH-Low



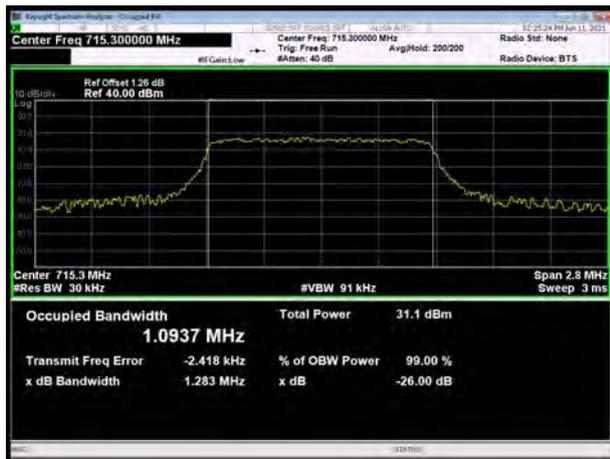
LTE Band 12 QPSK 1.4MHz CH-Middle



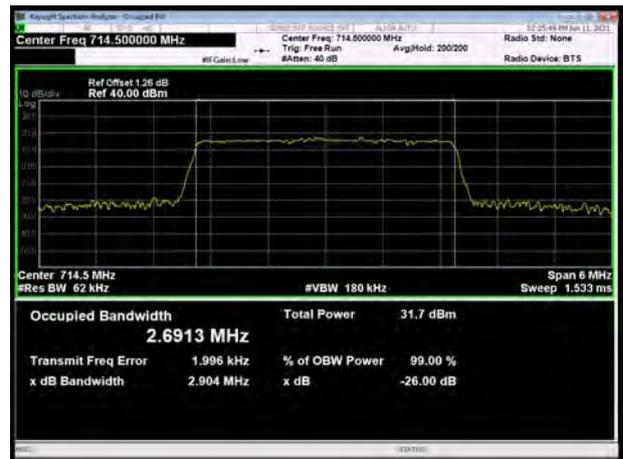
LTE Band 12 QPSK 3MHz CH-Middle



LTE Band 12 QPSK 1.4MHz CH-High



LTE Band 12 QPSK 3MHz CH-High

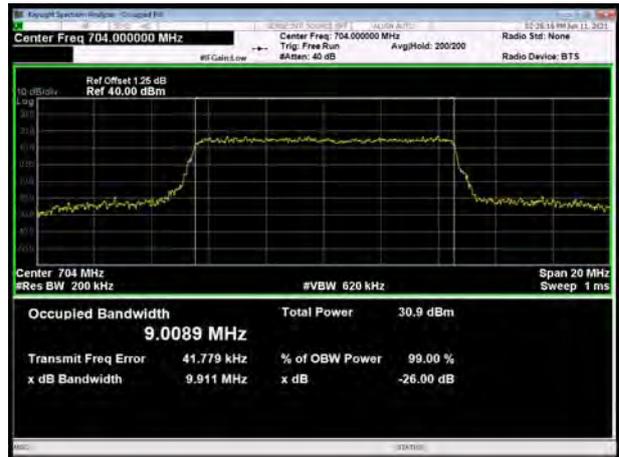




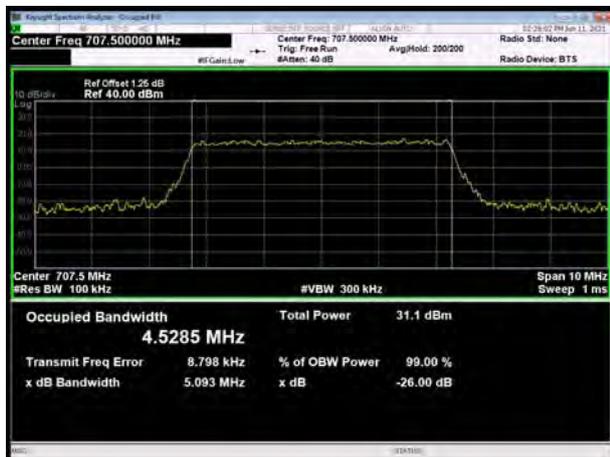
LTE Band 12 QPSK 5MHz CH-Low



LTE Band 12 QPSK 10MHz CH-Low



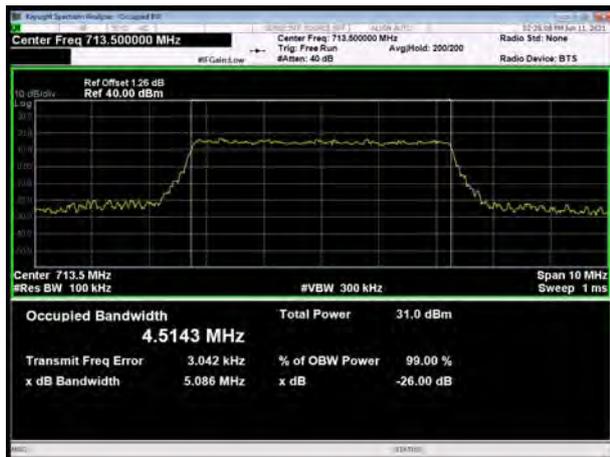
LTE Band 12 QPSK 5MHz CH-Middle



LTE Band 12 QPSK 10MHz CH-Middle



LTE Band 12 QPSK 5MHz CH-High



LTE Band 12 QPSK 10MHz CH-High

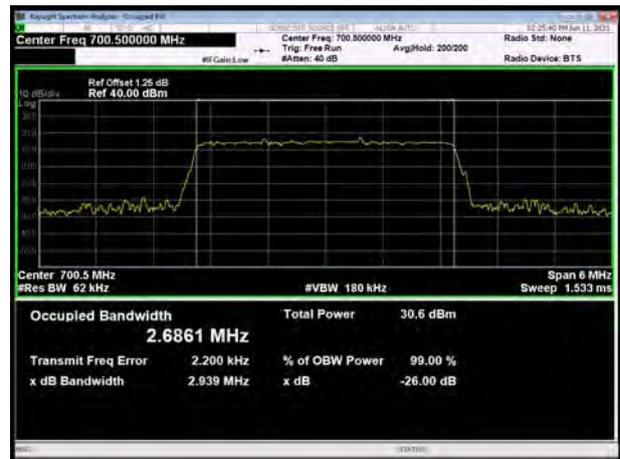




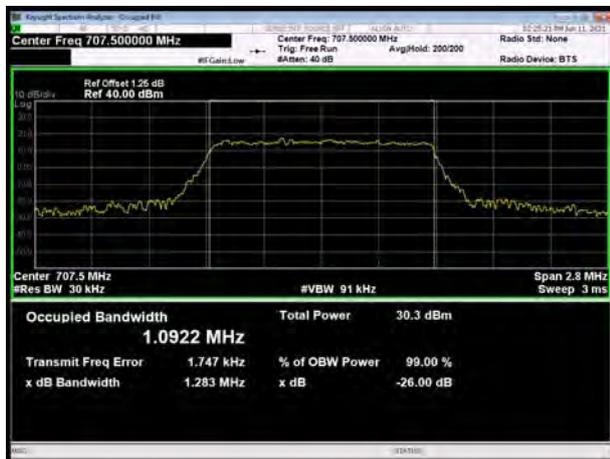
LTE Band 12 16QAM 1.4MHz CH-Low



LTE Band 12 16QAM 3MHz CH-Low



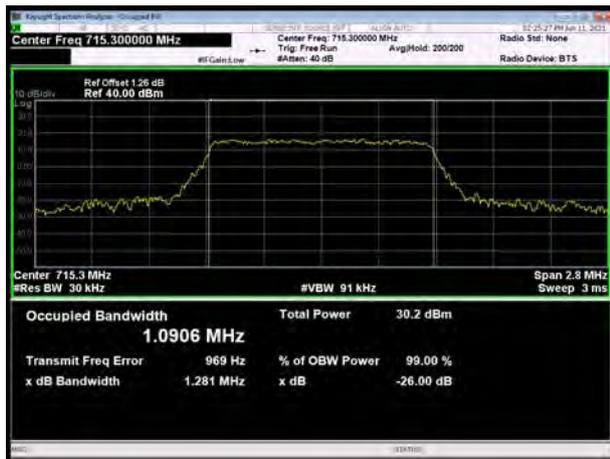
LTE Band 12 16QAM 1.4MHz CH-Middle



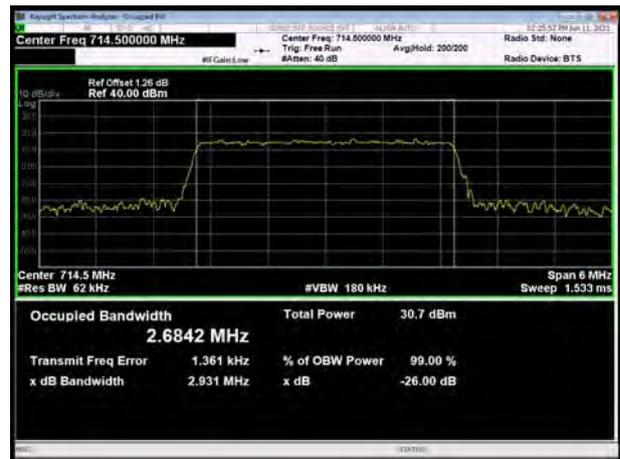
LTE Band 12 16QAM 3MHz CH-Middle



LTE Band 12 16QAM 1.4MHz CH-High



LTE Band 12 16QAM 3MHz CH-High





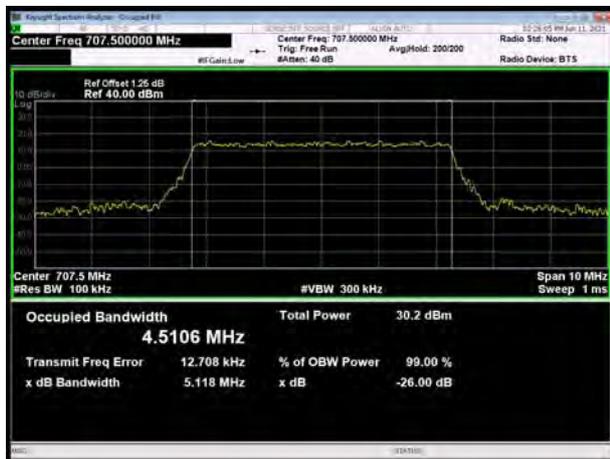
LTE Band 12 16QAM 5MHz CH-Low



LTE Band 12 16QAM 10MHz CH-Low



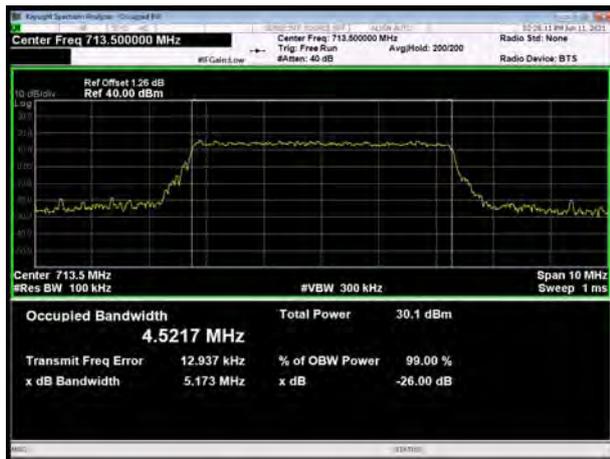
LTE Band 12 16QAM 5MHz CH-Middle



LTE Band 12 16QAM 10MHz CH-Middle



LTE Band 12 16QAM 5MHz CH-High



LTE Band 12 16QAM 10MHz CH-High





LTE Band 12 64QAM 1.4MHz CH-Low



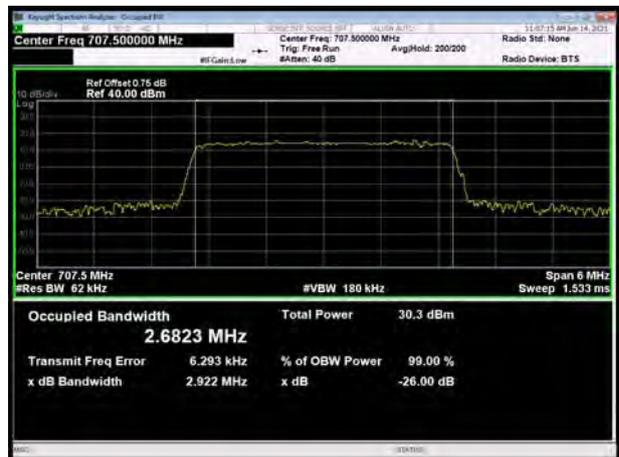
LTE Band 12 64QAM 3MHz CH-Low



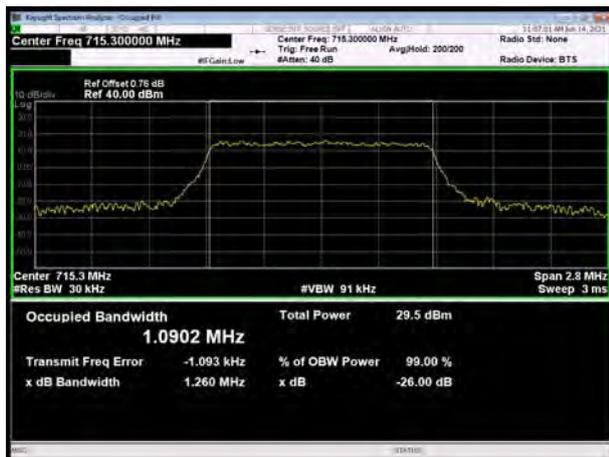
LTE Band 12 64QAM 1.4MHz CH-Middle



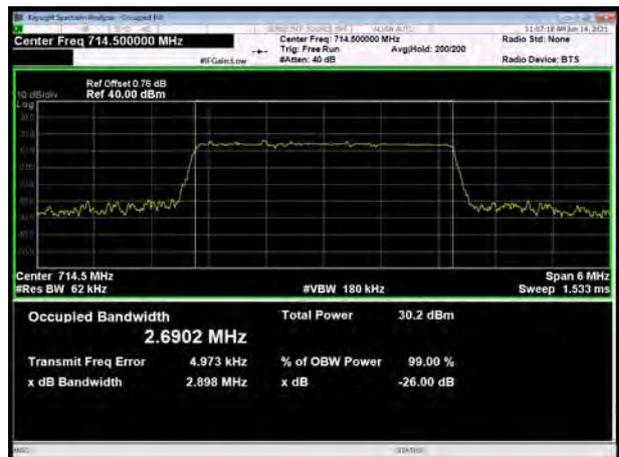
LTE Band 12 64QAM 3MHz CH-Middle



LTE Band 12 64QAM 1.4MHz CH-High

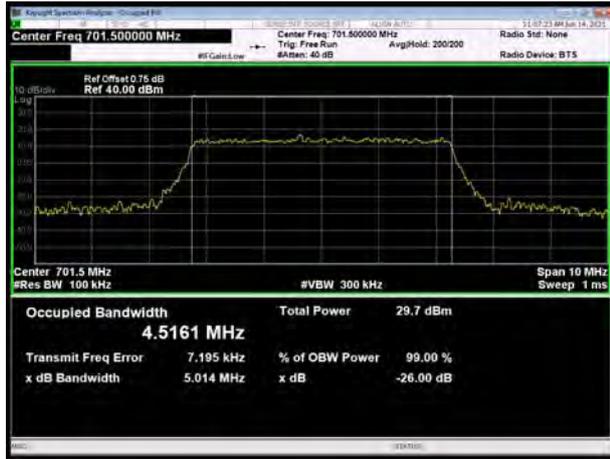


LTE Band 12 64QAM 3MHz CH-High





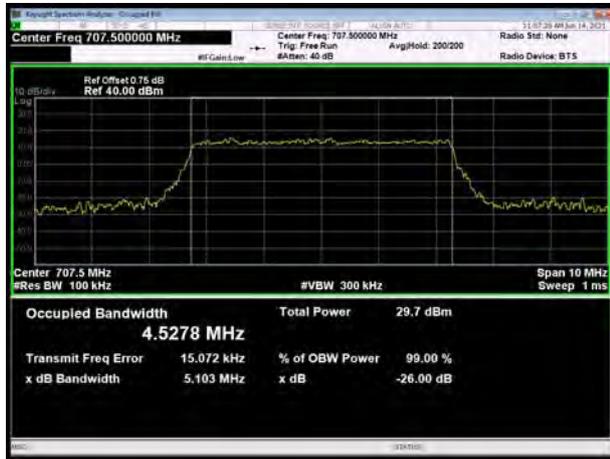
LTE Band 12 64QAM 5MHz CH-Low



LTE Band 12 64QAM 10MHz CH-Low



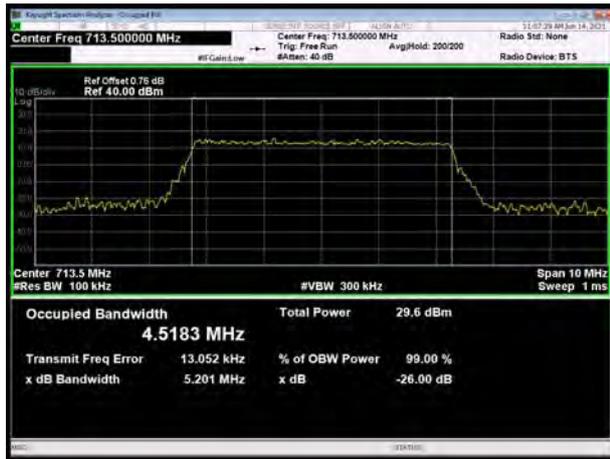
LTE Band 12 64QAM 5MHz CH-Middle



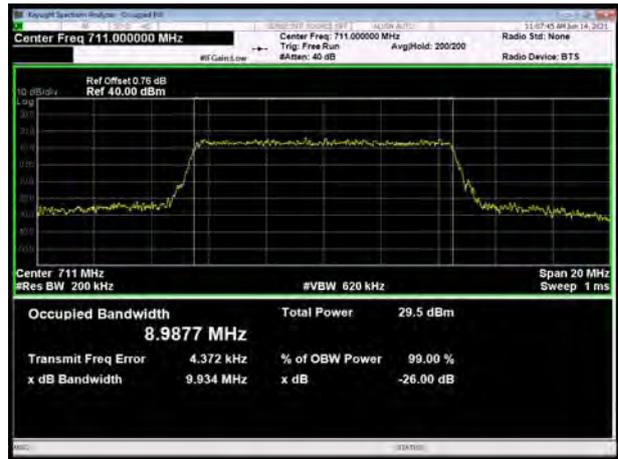
LTE Band 12 64QAM 10MHz CH-Middle



LTE Band 12 64QAM 5MHz CH-High

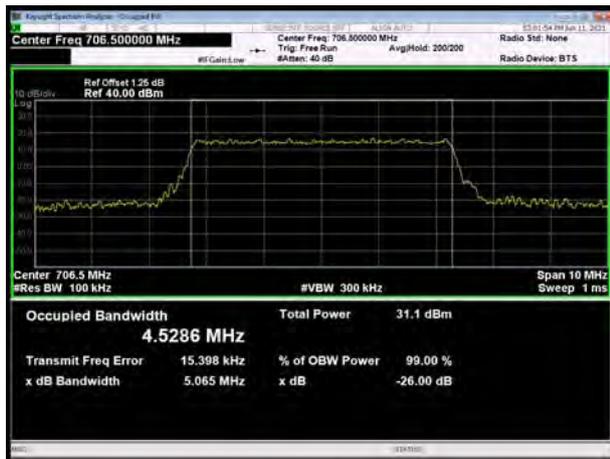


LTE Band 12 64QAM 10MHz CH-High





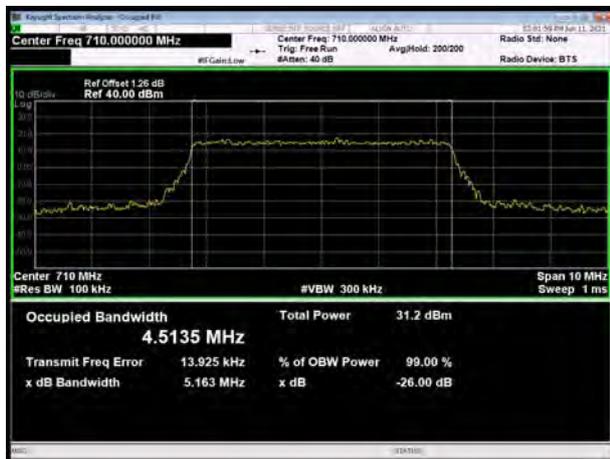
LTE Band 17 QPSK 5MHz CH-Low



LTE Band 17 QPSK 10MHz CH-Low



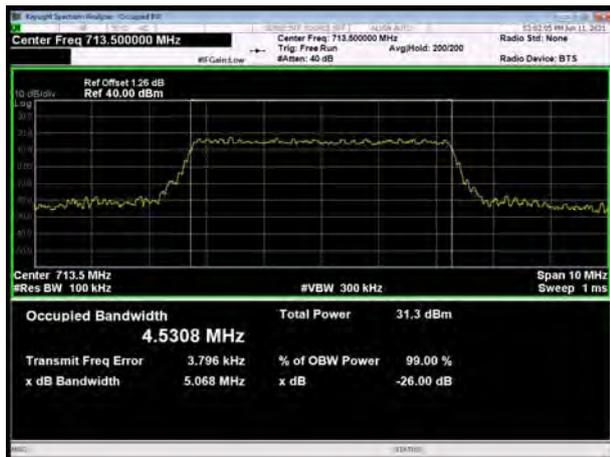
LTE Band 17 QPSK 5MHz CH-Middle



LTE Band 17 QPSK 10MHz CH-Middle



LTE Band 17 QPSK 5MHz CH-High

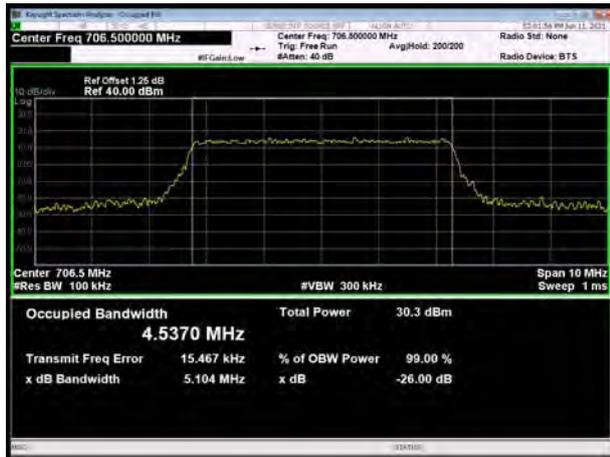


LTE Band 17 QPSK 10MHz CH-High

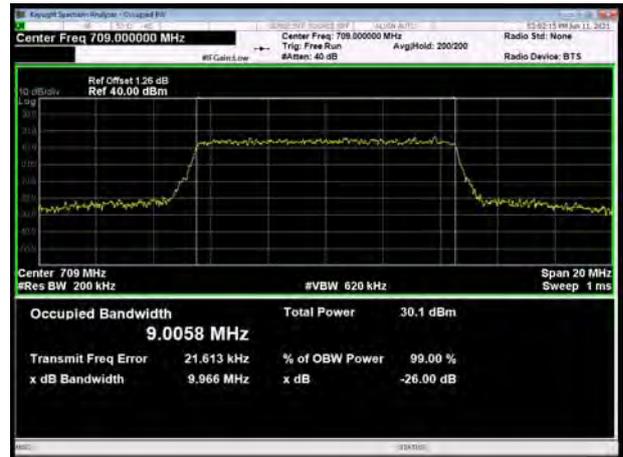




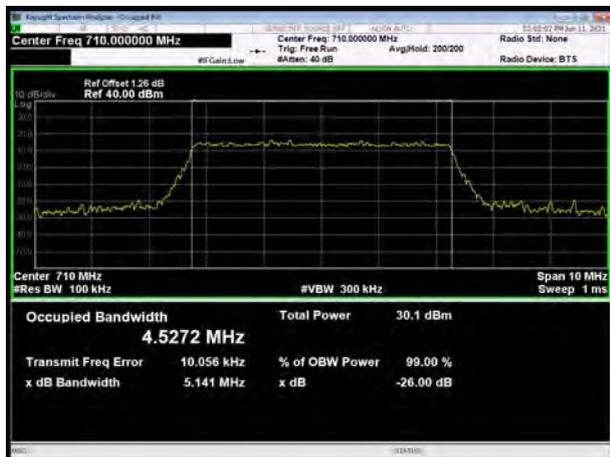
LTE Band 17 16QAM 5MHz CH-Low



LTE Band 17 16QAM 10MHz CH-Low



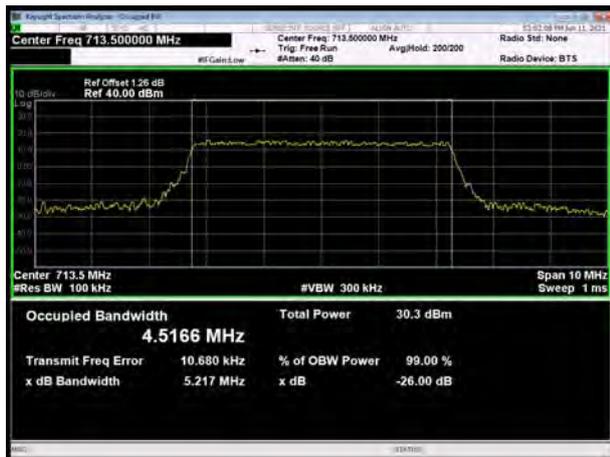
LTE Band 17 16QAM 5MHz CH-Middle



LTE Band 17 16QAM 10MHz CH-Middle



LTE Band 17 16QAM 5MHz CH-High



LTE Band 17 16QAM 10MHz CH-High





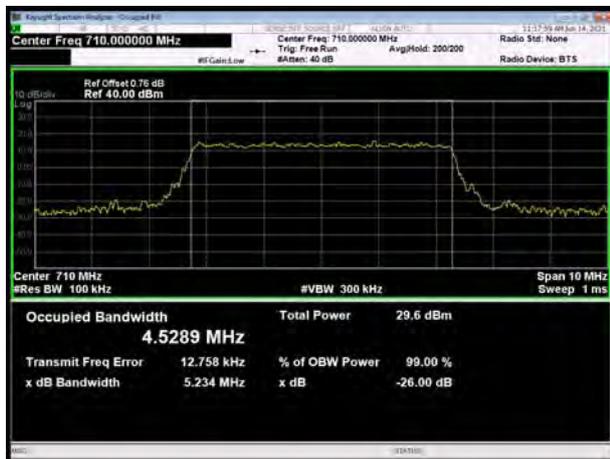
LTE Band 17 64QAM 5MHz CH-Low



LTE Band 17 64QAM 10MHz CH-Low



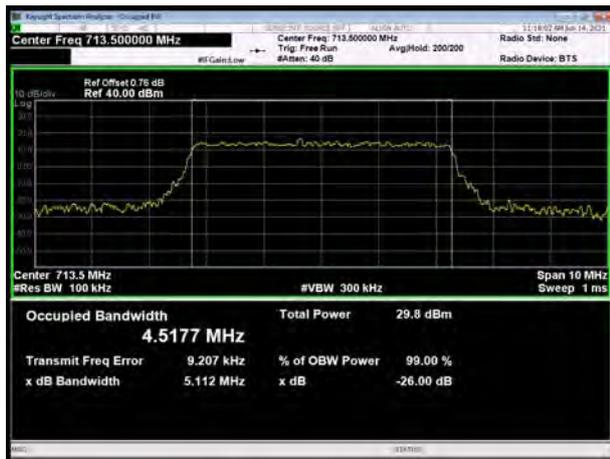
LTE Band 17 64QAM 5MHz CH-Middle



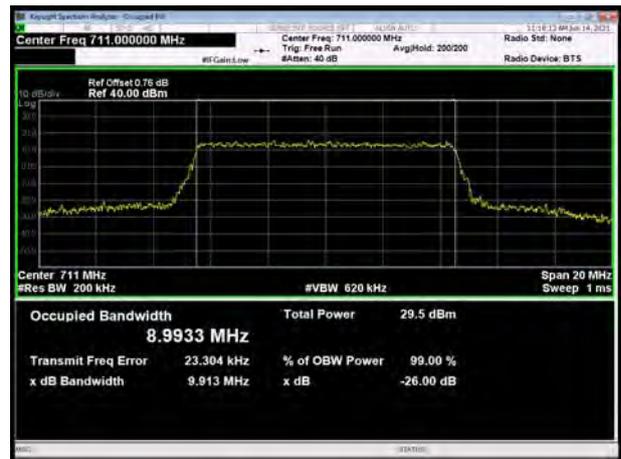
LTE Band 17 64QAM 10MHz CH-Middle



LTE Band 17 64QAM 5MHz CH-High

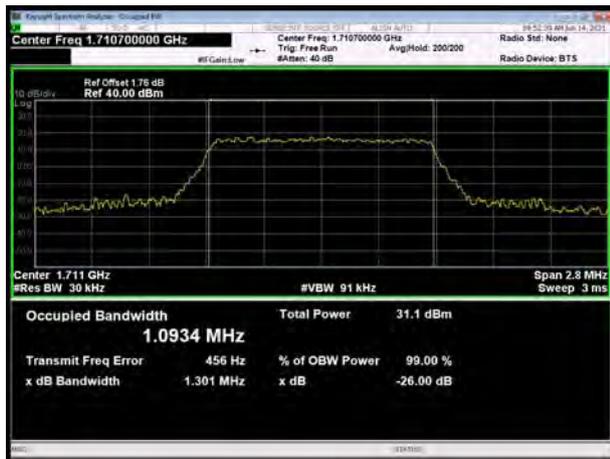


LTE Band 17 64QAM 10MHz CH-High

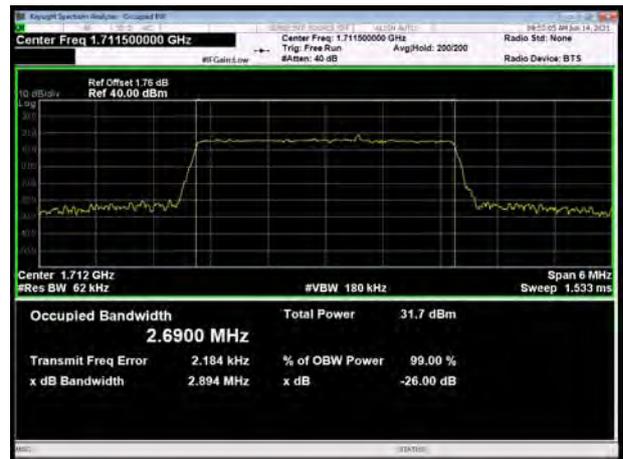




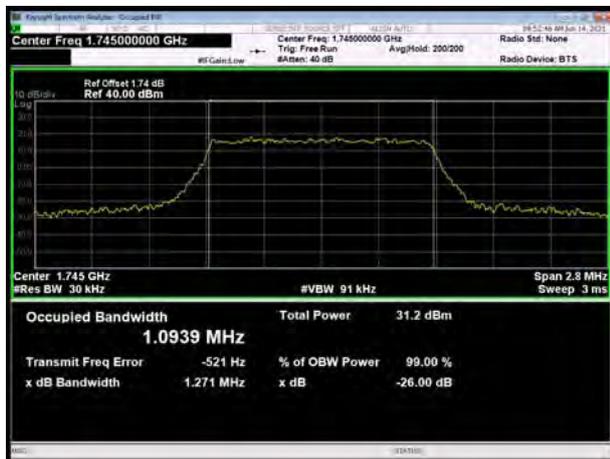
LTE Band 66 QPSK 1.4MHz CH-Low



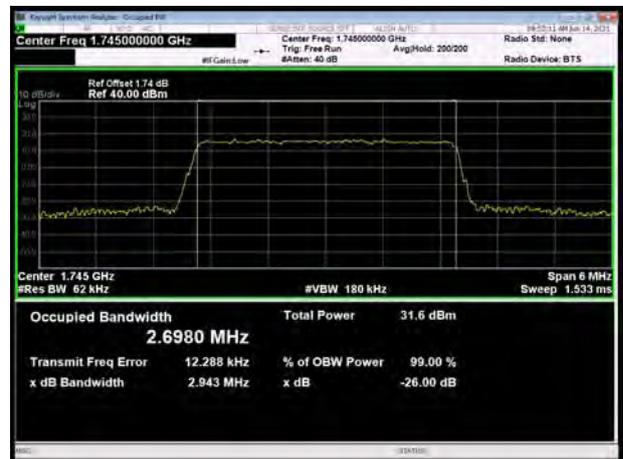
LTE Band 66 QPSK 3MHz CH-Low



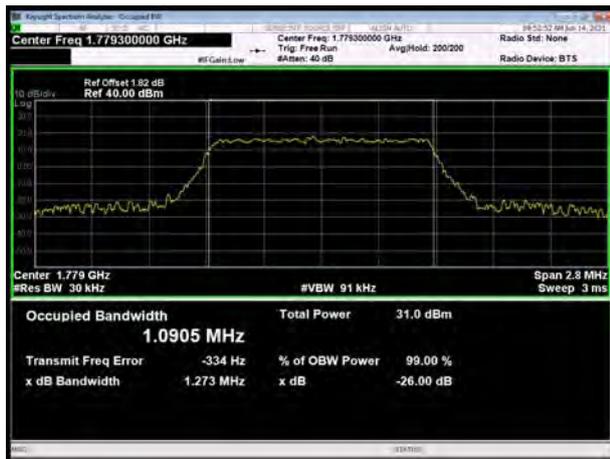
LTE Band 66 QPSK 1.4MHz CH-Middle



LTE Band 66 QPSK 3MHz CH-Middle



LTE Band 66 QPSK 1.4MHz CH-High

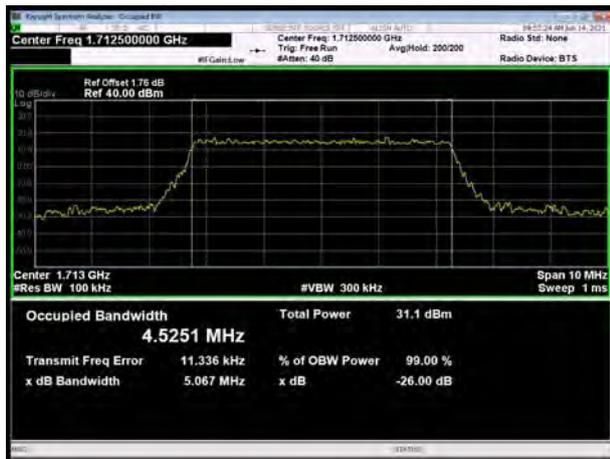


LTE Band 66 QPSK 3MHz CH-High





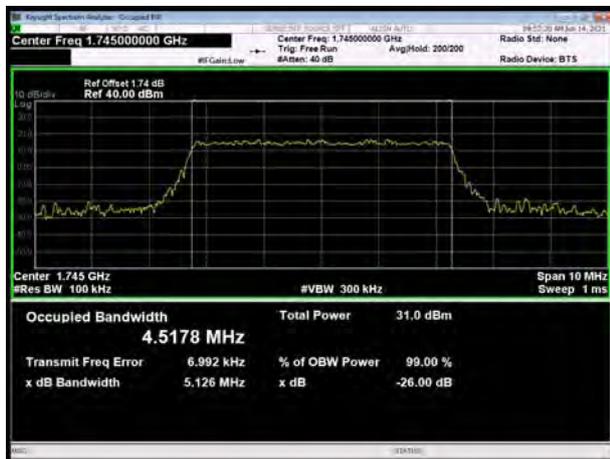
LTE Band 66 QPSK 5MHz CH-Low



LTE Band 66 QPSK 10MHz CH-Low



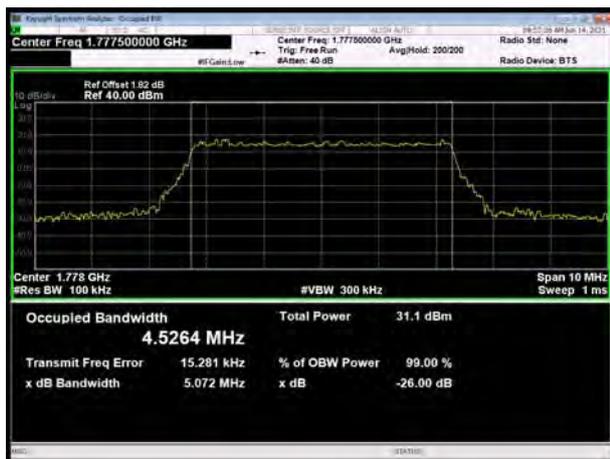
LTE Band 66 QPSK 5MHz CH-Middle



LTE Band 66 QPSK 10MHz CH-Middle



LTE Band 66 QPSK 5MHz CH-High

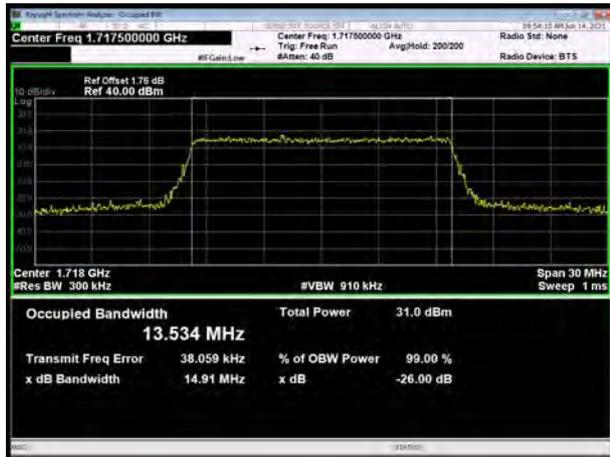


LTE Band 66 QPSK 10MHz CH-High

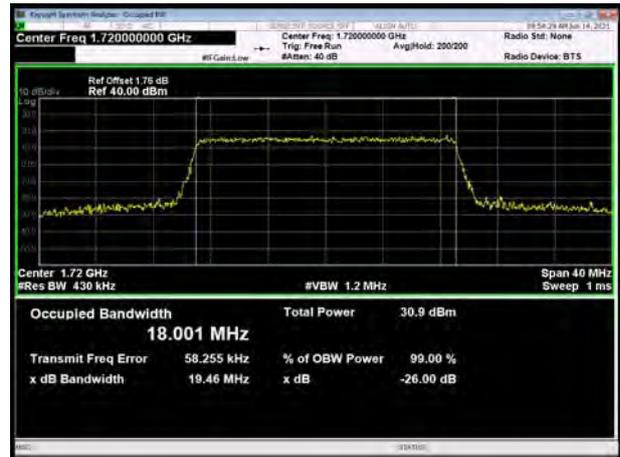




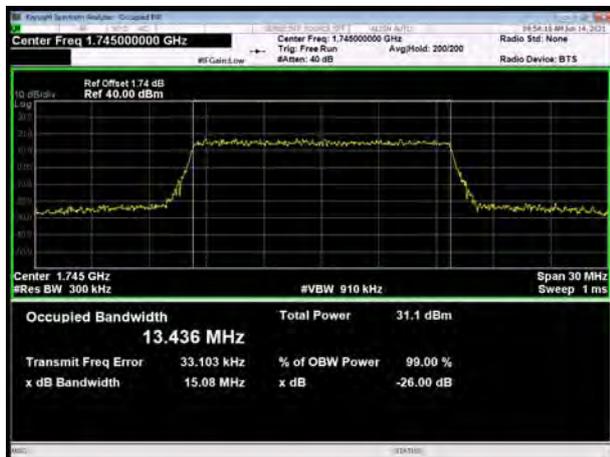
LTE Band 66 QPSK 15MHz CH-Low



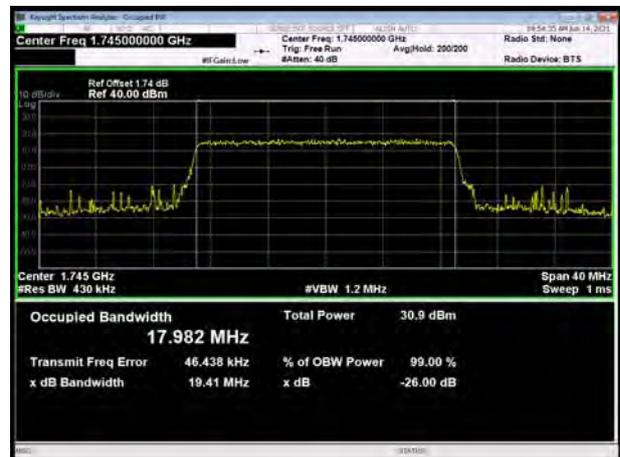
LTE Band 66 QPSK 20MHz CH-Low



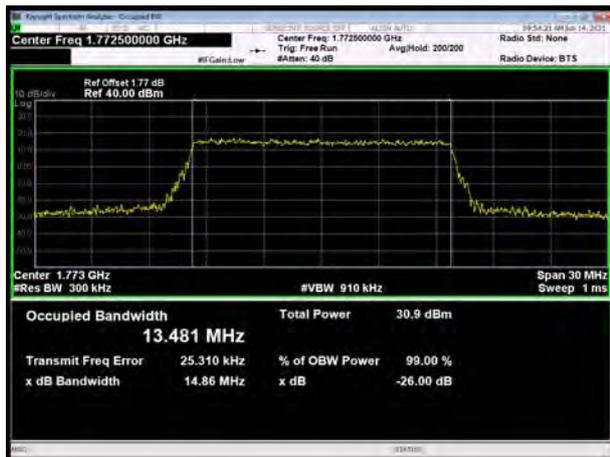
LTE Band 66 QPSK 15MHz CH-Middle



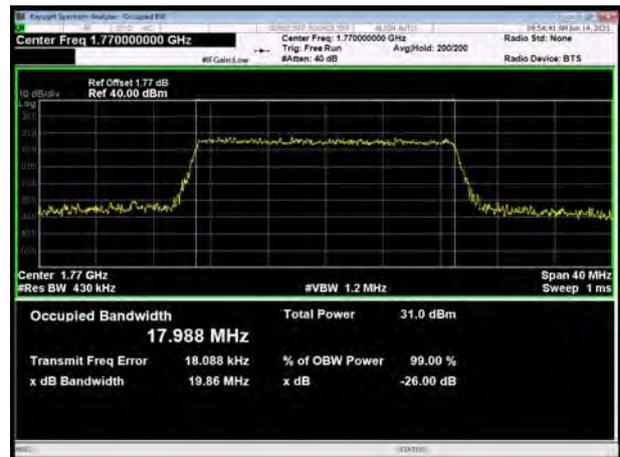
LTE Band 66 QPSK 20MHz CH-Middle



LTE Band 66 QPSK 15MHz CH-High

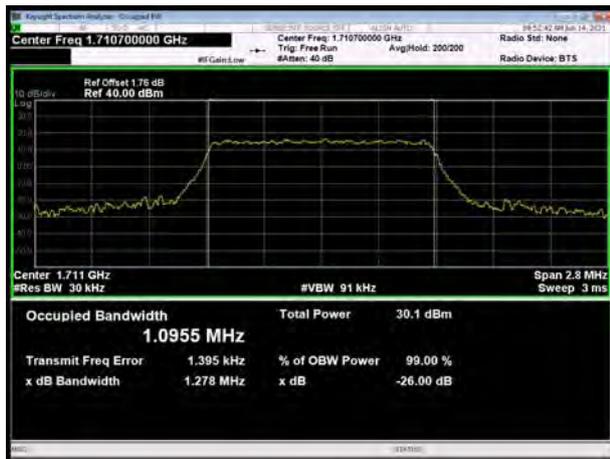


LTE Band 66 QPSK 20MHz CH-High

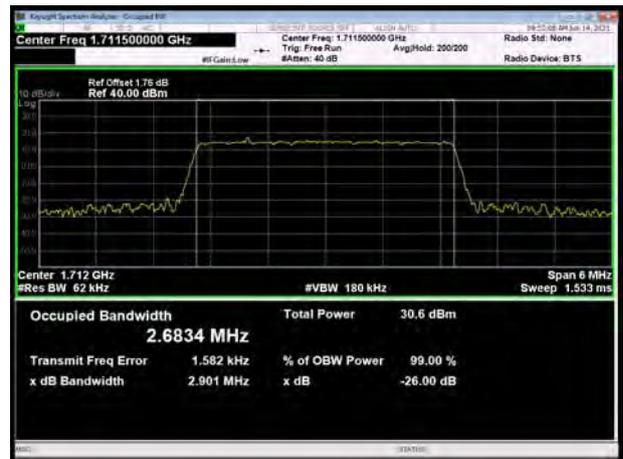




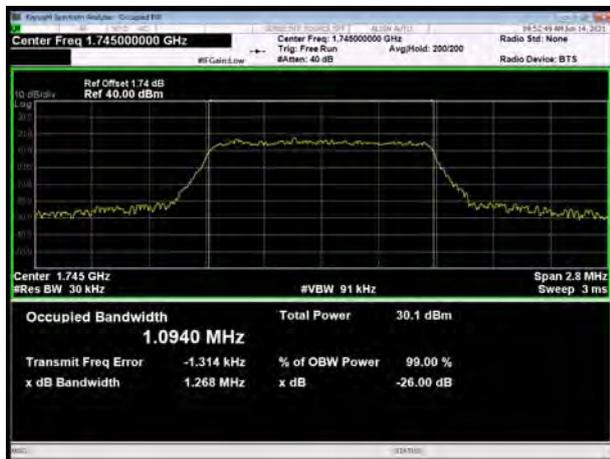
LTE Band 66 16QAM 1.4MHz CH-Low



LTE Band 66 16QAM 3MHz CH-Low



LTE Band 66 16QAM 1.4MHz CH-Middle



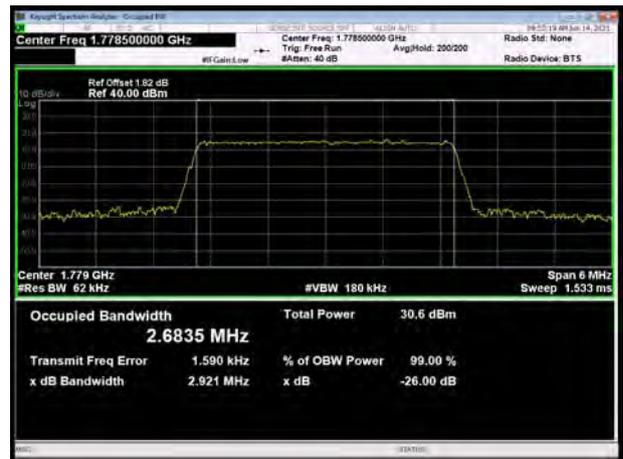
LTE Band 66 16QAM 3MHz CH-Middle



LTE Band 66 16QAM 1.4MHz CH-High

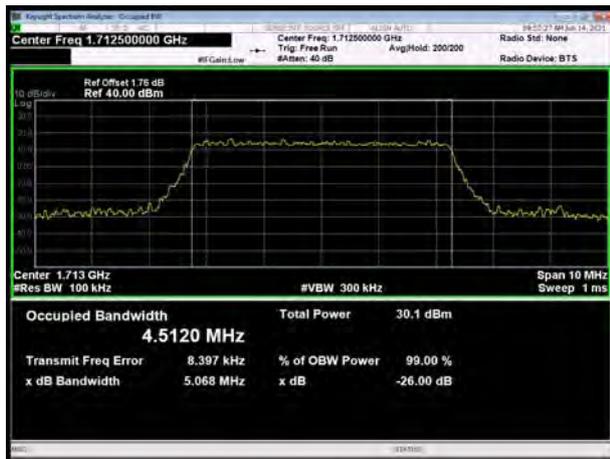


LTE Band 66 16QAM 3MHz CH-High





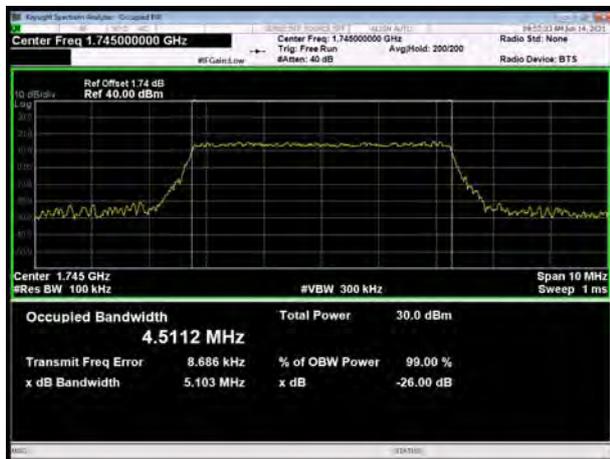
LTE Band 66 16QAM 5MHz CH-Low



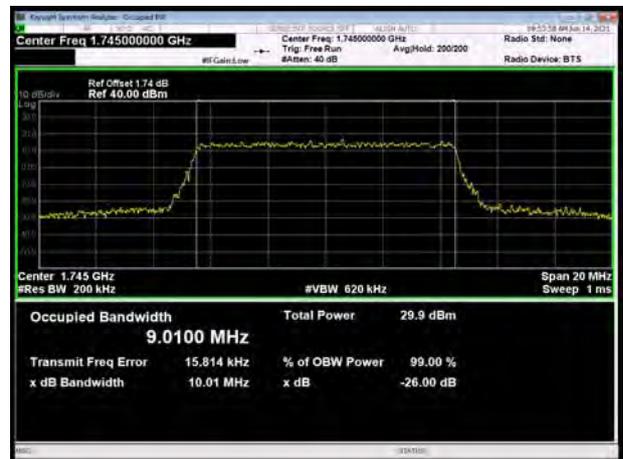
LTE Band 66 16QAM 10MHz CH-Low



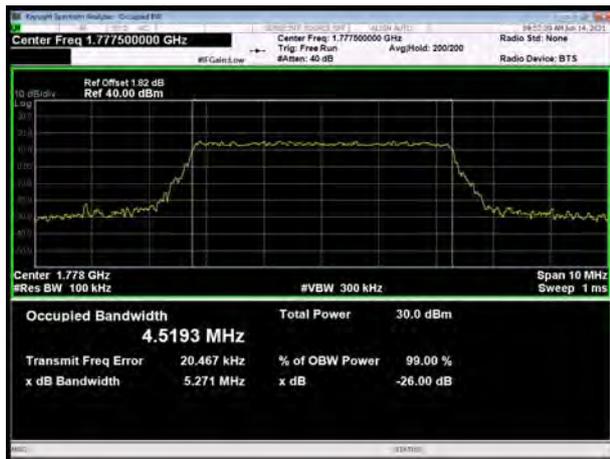
LTE Band 66 16QAM 5MHz CH-Middle



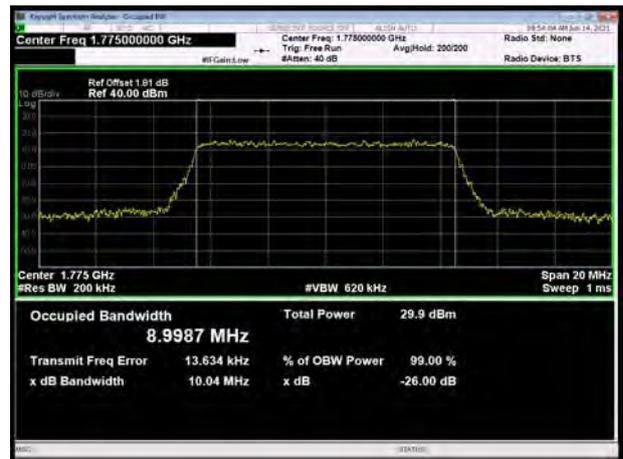
LTE Band 66 16QAM 10MHz CH-Middle



LTE Band 66 16QAM 5MHz CH-High

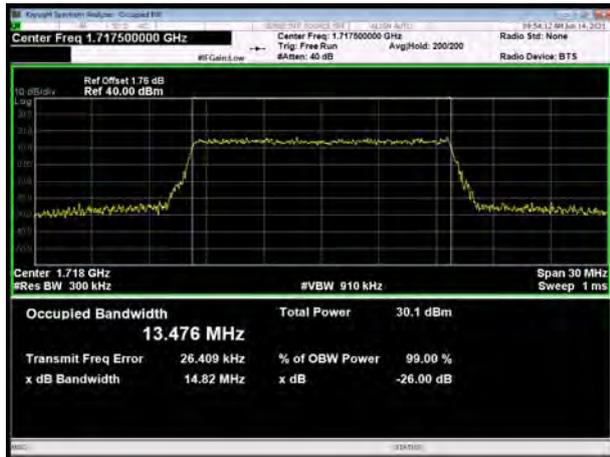


LTE Band 66 16QAM 10MHz CH-High

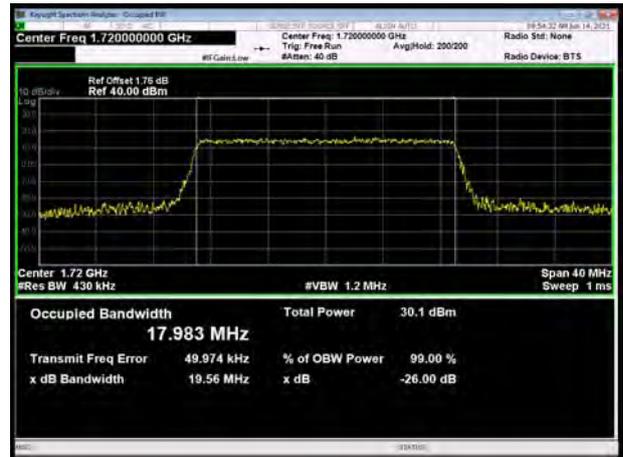




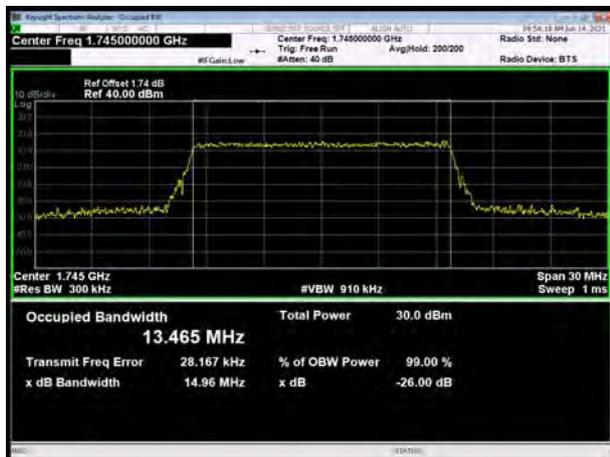
LTE Band 66 16QAM 15MHz CH-Low



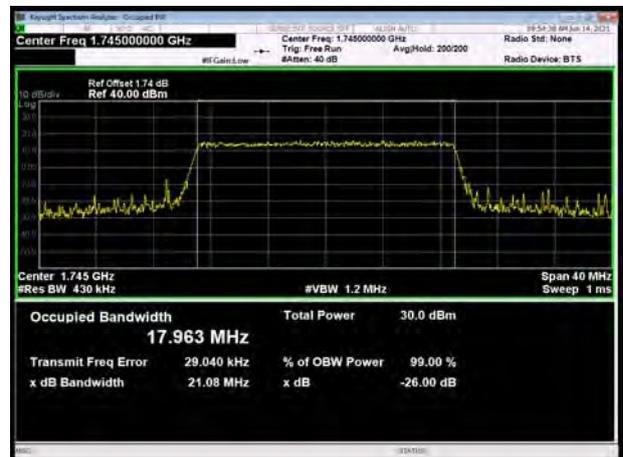
LTE Band 66 16QAM 20MHz CH-Low



LTE Band 66 16QAM 15MHz CH-Middle



LTE Band 66 16QAM 20MHz CH-Middle



LTE Band 66 16QAM 15MHz CH-High

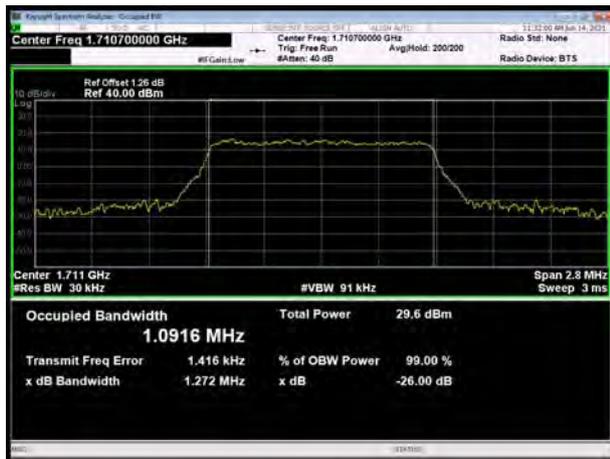


LTE Band 66 16QAM 20MHz CH-High

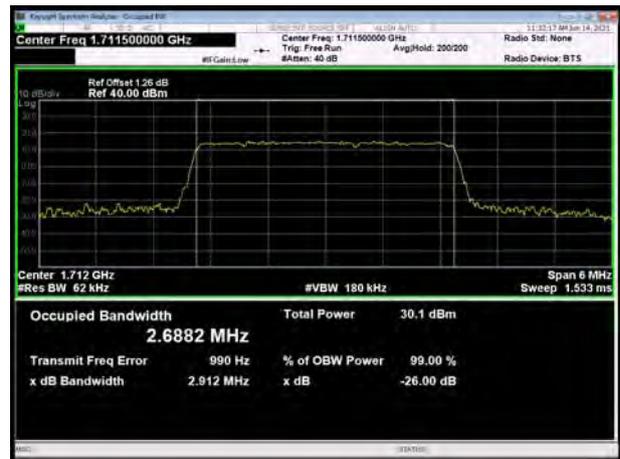




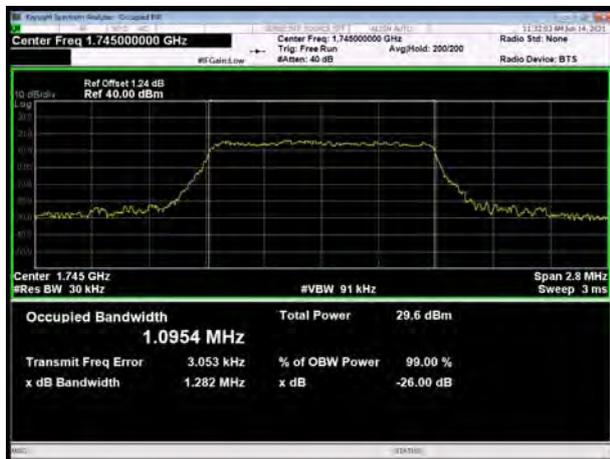
LTE Band 66 64QAM 1.4MHz CH-Low



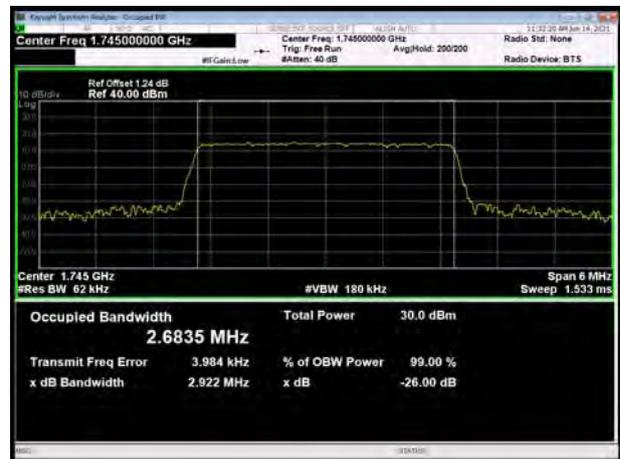
LTE Band 66 64QAM 3MHz CH-Low



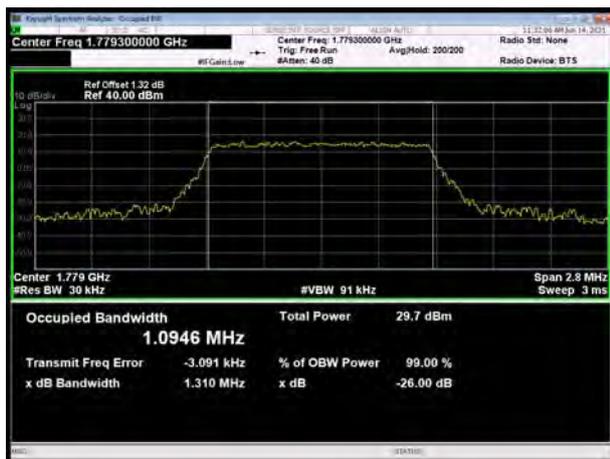
LTE Band 66 64QAM 1.4MHz CH-Middle



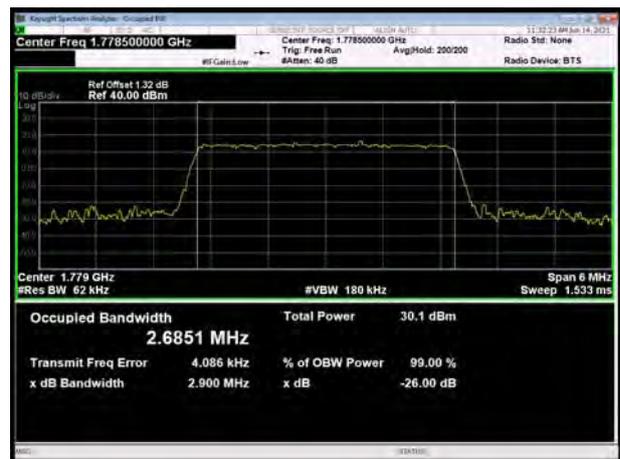
LTE Band 66 64QAM 3MHz CH-Middle



LTE Band 66 64QAM 1.4MHz CH-High

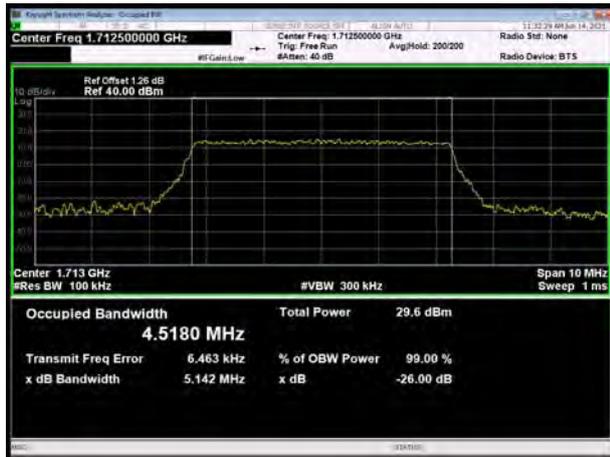


LTE Band 66 64QAM 3MHz CH-High





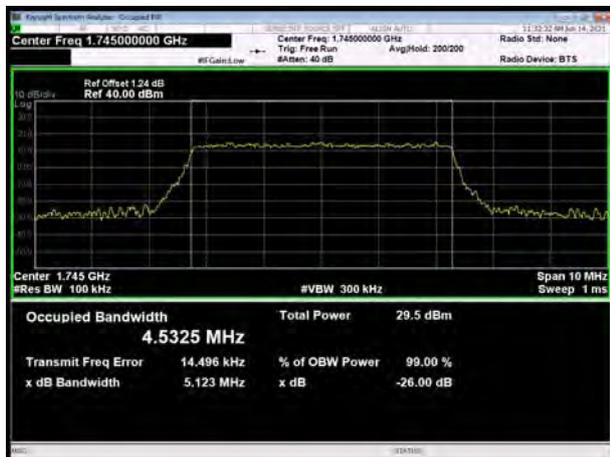
LTE Band 66 64QAM 5MHz CH-Low



LTE Band 66 64QAM 10MHz CH-Low



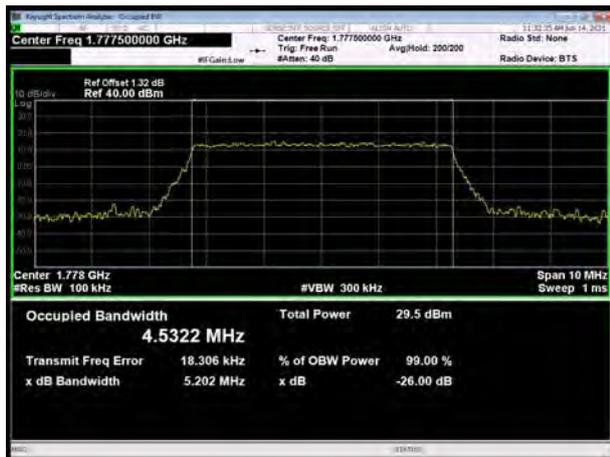
LTE Band 66 64QAM 5MHz CH-Middle



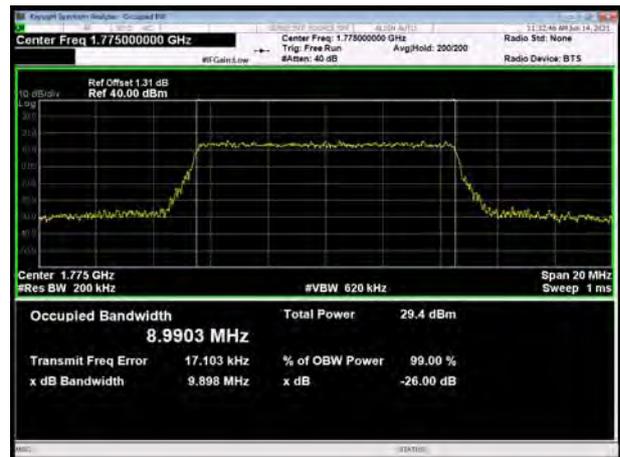
LTE Band 66 64QAM 10MHz CH-Middle



LTE Band 66 64QAM 5MHz CH-High

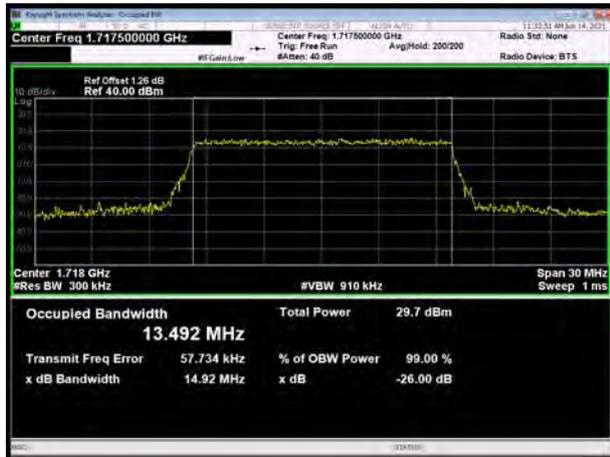


LTE Band 66 64QAM 10MHz CH-High

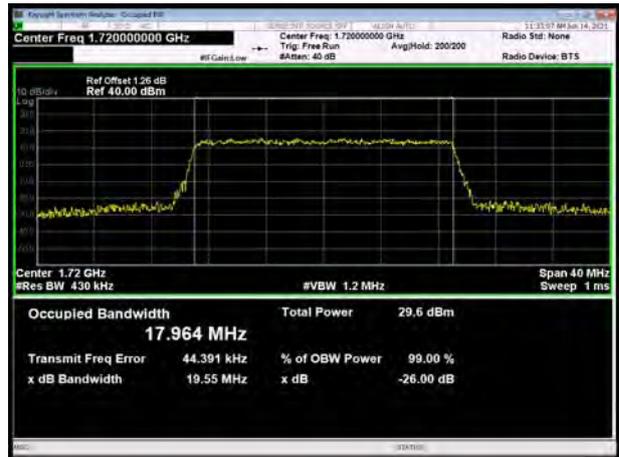




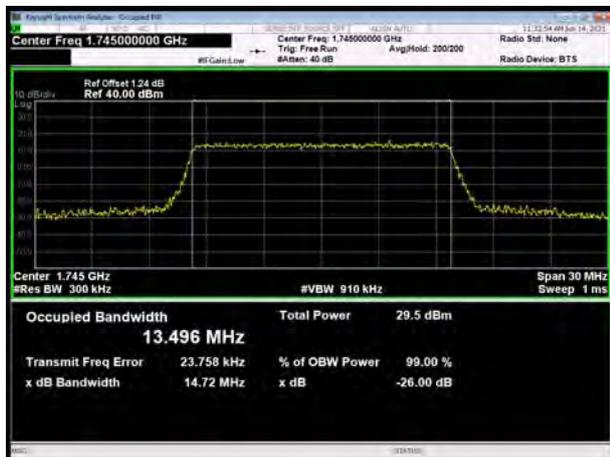
LTE Band 66 64QAM 15MHz CH-Low



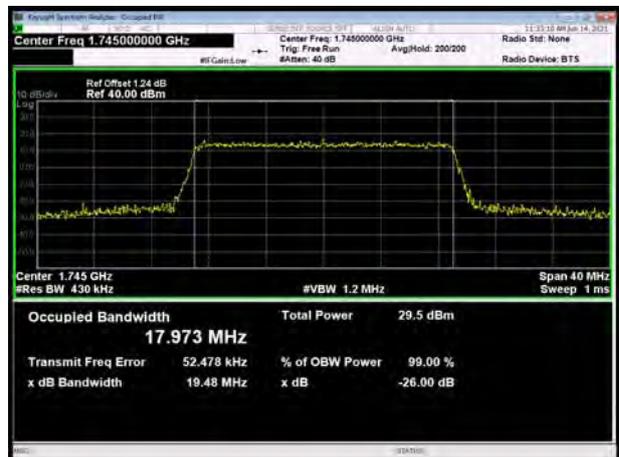
LTE Band 66 64QAM 20MHz CH-Low



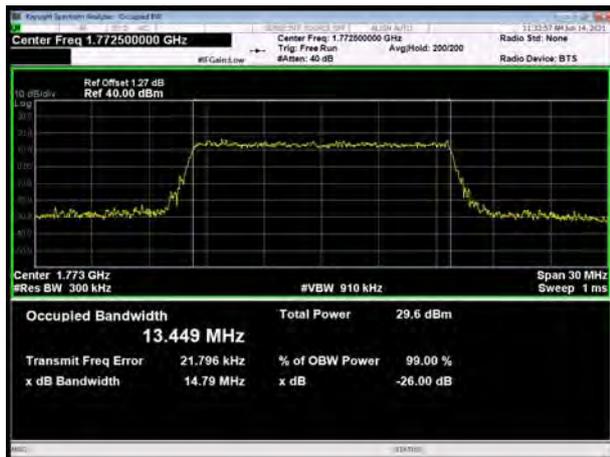
LTE Band 66 64QAM 15MHz CH-Middle



LTE Band 66 64QAM 20MHz CH-Middle



LTE Band 66 64QAM 15MHz CH-High



LTE Band 66 64QAM 20MHz CH-High



5.3 Band Edge Compliance

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 D01 v03r01 Section 6.0

The EUT was connected to spectrum analyzer and system simulator via a power divider.

The band edges of low and high channels for the highest RF powers were measured.

RBW is set to 15 kHz, VBW is set to 43 kHz for LTE Band 66 (1.4MHz).

RBW is set to 33 kHz, VBW is set to 100 kHz for LTE Band 66 (3MHz).

RBW is set to 51 kHz, VBW is set to 150 kHz for LTE Band 66/ (5MHz).

RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 66 (10MHz).

RBW is set to 150 kHz, VBW is set to 470 kHz for LTE Band 66 (15MHz).

RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 66 (20MHz)

RBW is set to 30 kHz, VBW is set to 100kHz for LTE Band 12(1.4MHz/3MHz/5MHz/10MHz).

RBW is set to 30 kHz, VBW is set to 100kHz for LTE Band 17(5MHz/10MHz)

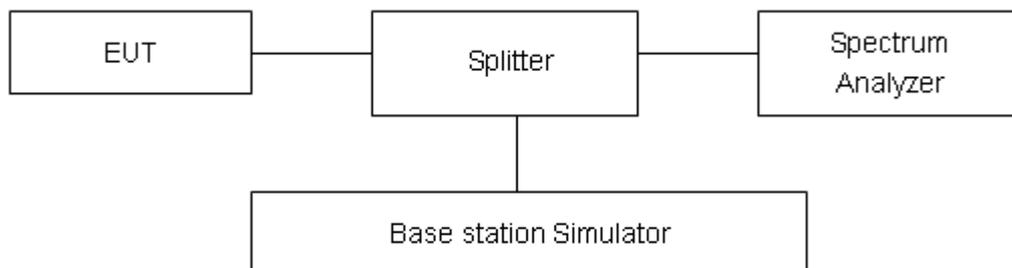
on spectrum analyzer.

Set spectrum analyzer with RMS detector.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(i) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz.

Rule Part 27.53(h) specifies that “ 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 $43 + 10 \log_{10} (P)$ dB”

Rule Part 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Measurement Uncertainty

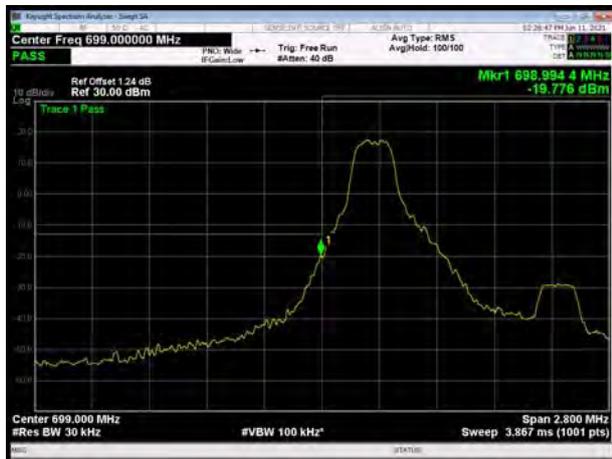
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.



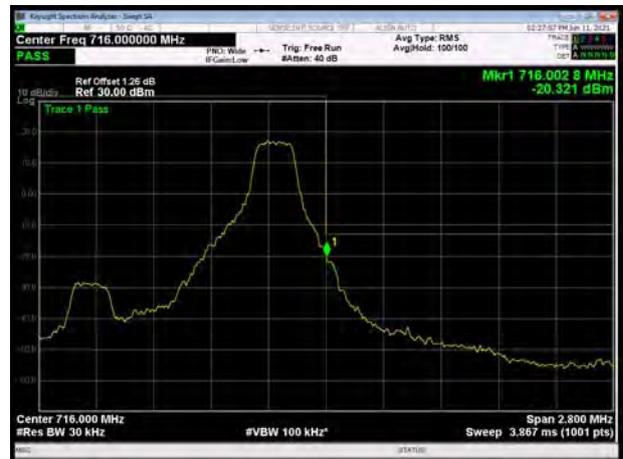
Test Result

All the test traces in the plots shows the test results clearly.

LTE Band 12 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 12 QPSK 1.4MHz CH-High, 1 RB



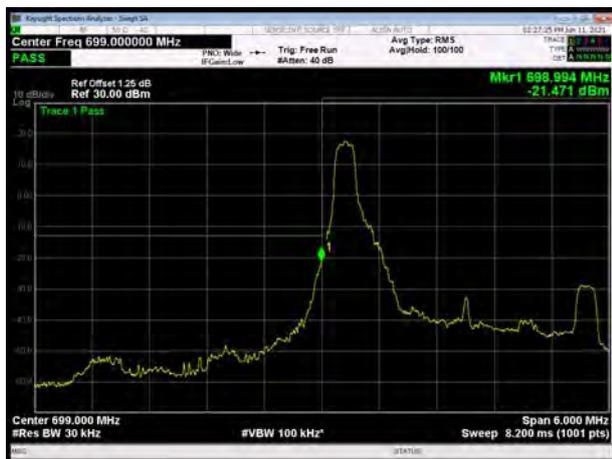
LTE Band 12 QPSK 1.4MHz CH-Low, 100%RB



LTE Band 12 QPSK 1.4MHz CH-High, 100%RB



LTE Band 12 QPSK 3MHz CH-Low, 1 RB



LTE Band 12 QPSK 3MHz CH-High, 1 RB





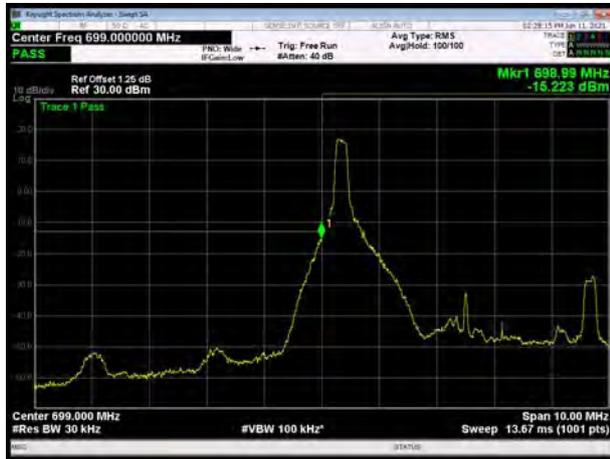
LTE Band 12 QPSK 3MHz CH-Low, 100%RB



LTE Band 12 QPSK 3MHz CH-High, 100%RB



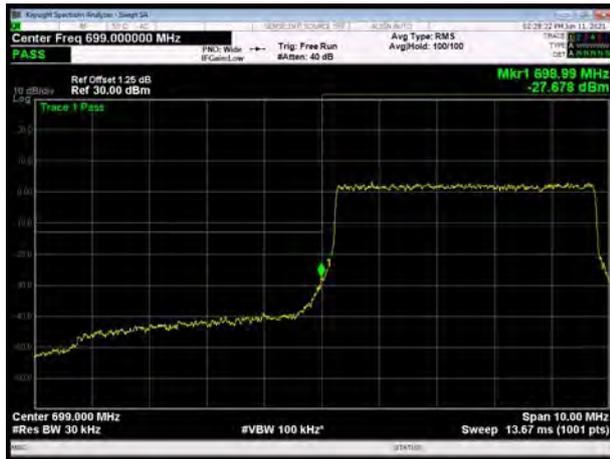
LTE Band 12 QPSK 5MHz CH-Low, 1 RB



LTE Band 12 QPSK 5MHz CH-High, 1 RB



LTE Band 12 QPSK 5MHz CH-Low, 100%RB



LTE Band 12 QPSK 5MHz CH-High, 100%RB





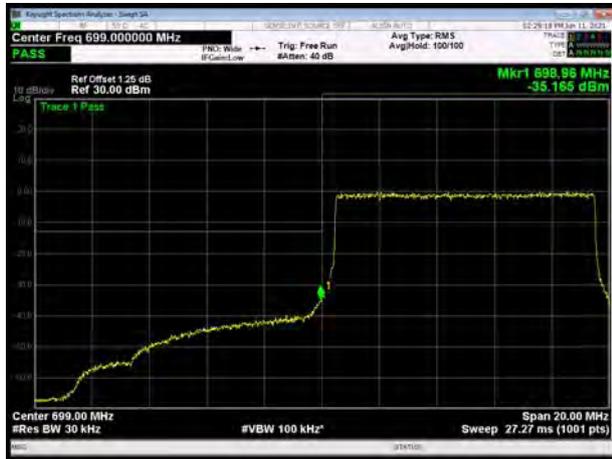
LTE Band 12 QPSK 10MHz CH-Low, 1 RB



LTE Band 12 QPSK 10MHz CH-High, 1 RB



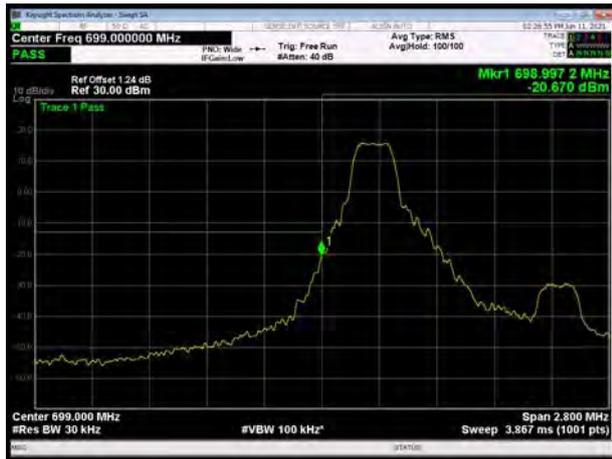
LTE Band 12 QPSK 10MHz CH-Low, 100%RB



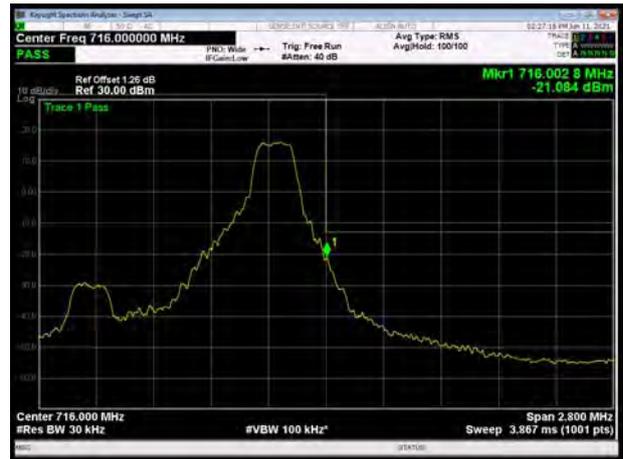
LTE Band 12 QPSK 10MHz CH-High, 100%RB



LTE Band 12 16QAM 1.4MHz CH-Low, 1 RB

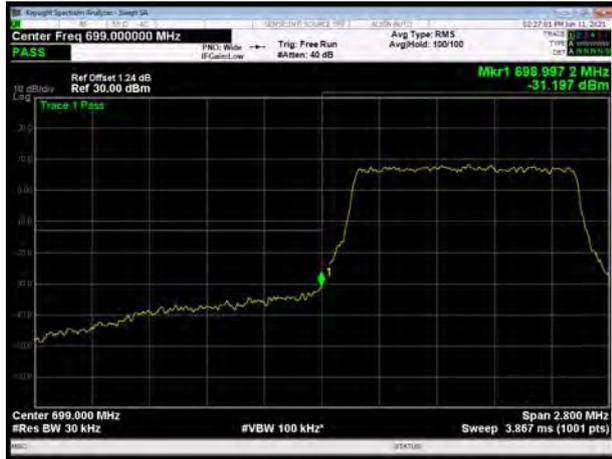


LTE Band 12 16QAM 1.4MHz CH-High, 1 RB

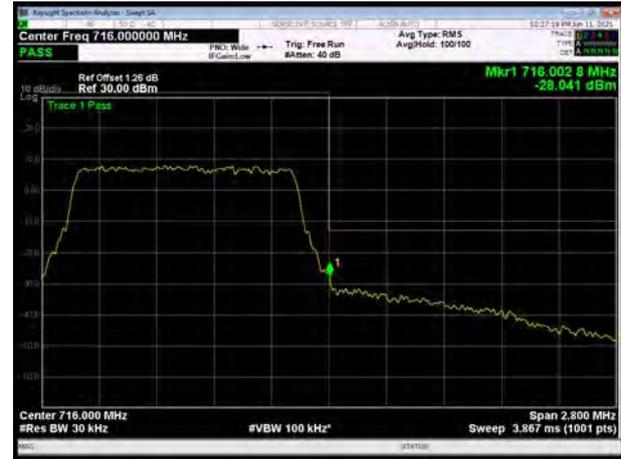




LTE Band 12 16QAM 1.4MHz CH-Low, 100%RB



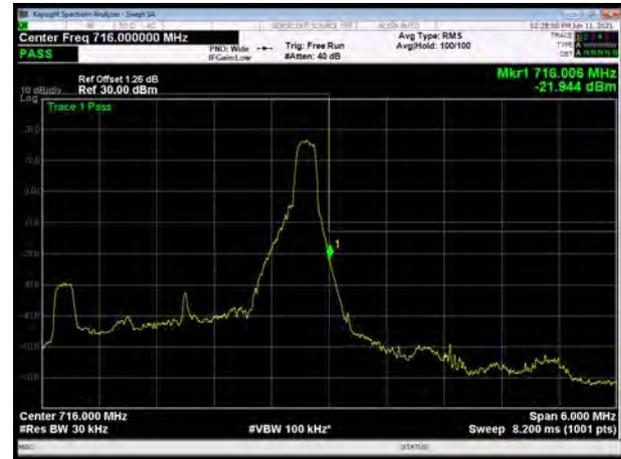
LTE Band 12 16QAM 1.4MHz CH-High, 100%RB



LTE Band 12 16QAM 3MHz CH-Low, 1 RB



LTE Band 12 16QAM 3MHz CH-High, 1 RB



LTE Band 12 16QAM 3MHz CH-Low, 100%RB

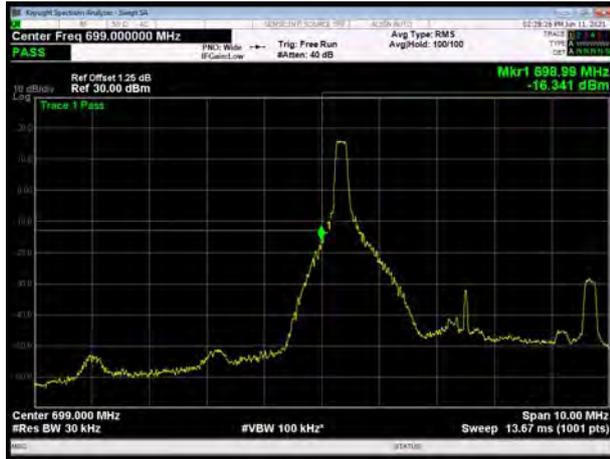


LTE Band 12 16QAM 3MHz CH-High, 100%RB

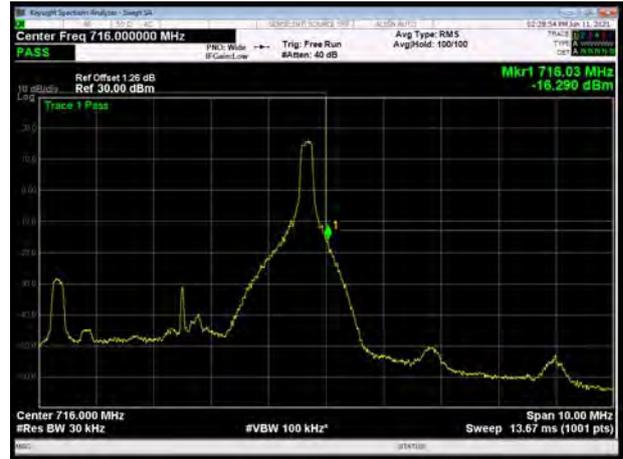




LTE Band 12 16QAM 5MHz CH-Low, 1 RB



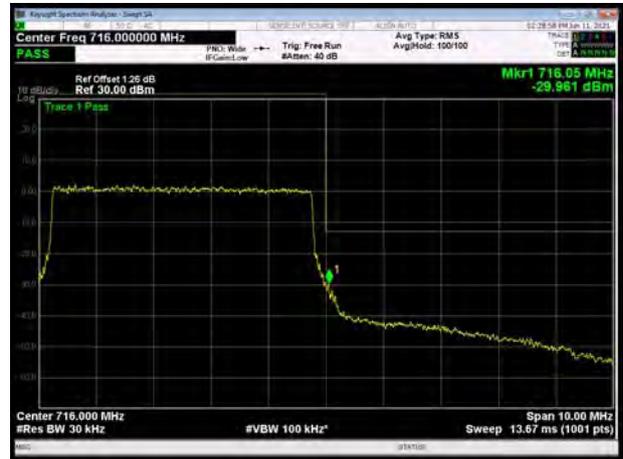
LTE Band 12 16QAM 5MHz CH-High, 1 RB



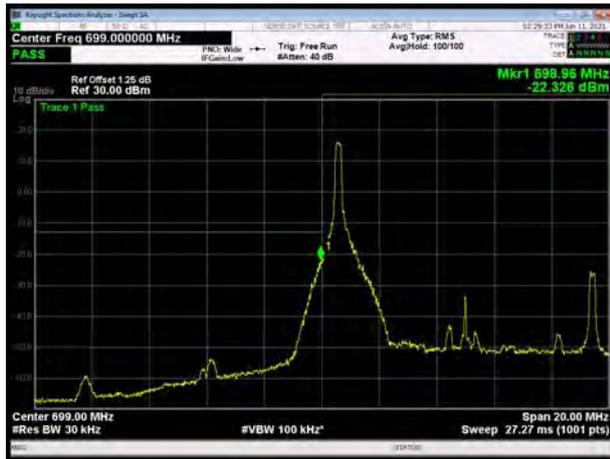
LTE Band 12 16QAM 5MHz CH-Low, 100%RB



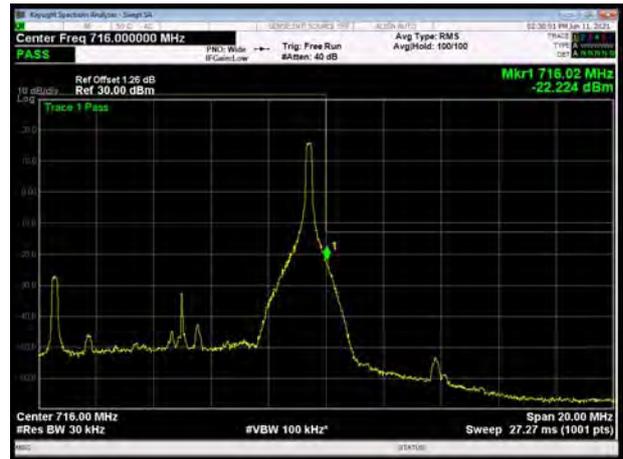
LTE Band 12 16QAM 5MHz CH-High, 100%RB



LTE Band 12 16QAM 10MHz CH-Low, 1 RB



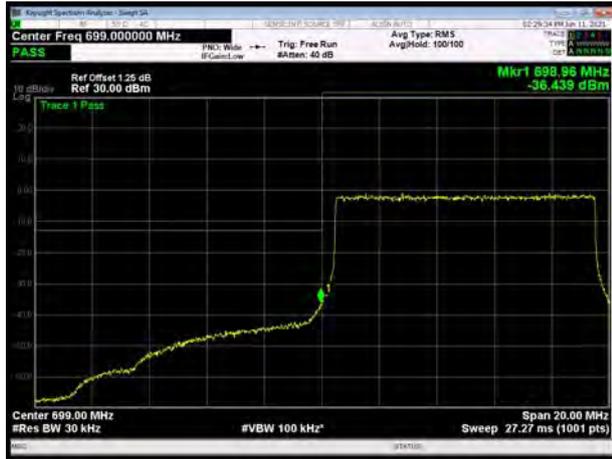
LTE Band 12 16QAM 10MHz CH-High, 1 RB





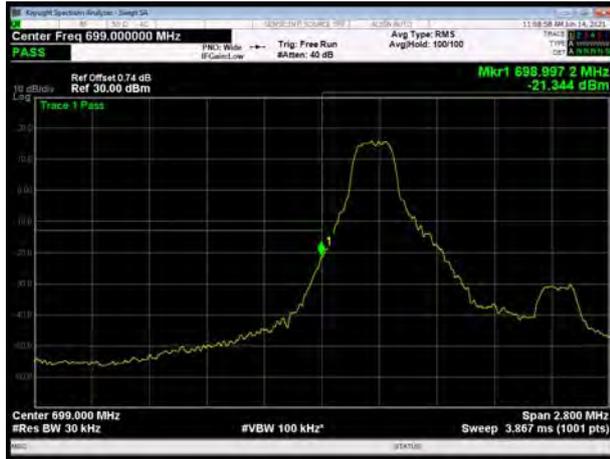
LTE Band 12 16QAM 10MHz CH-Low, 100%RB

LTE Band 12 16QAM 10MHz CH-High, 100%RB

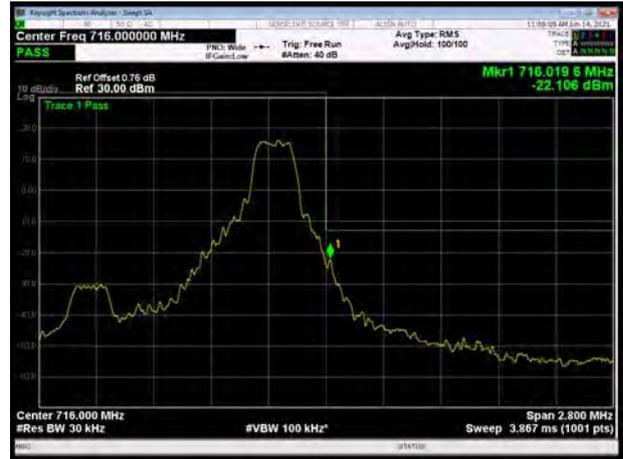




LTE Band 12 64QAM 1.4MHz CH-Low, 1 RB



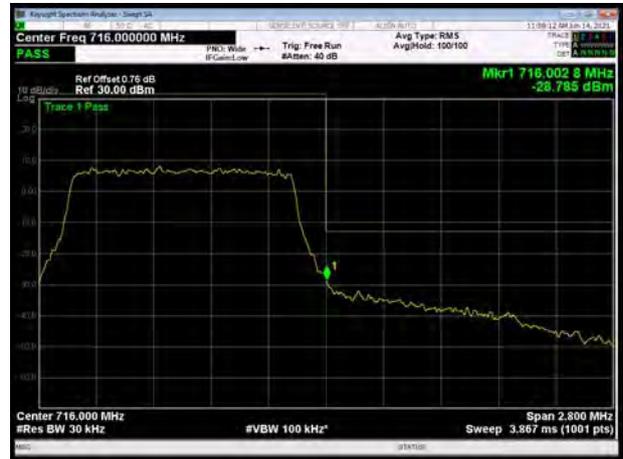
LTE Band 12 64QAM 1.4MHz CH-High, 1 RB



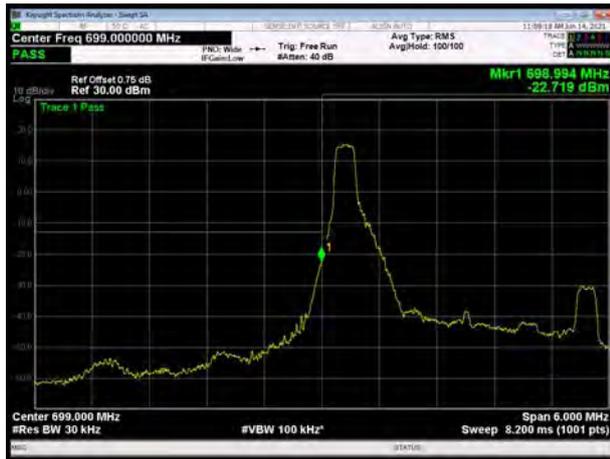
LTE Band 12 64QAM 1.4MHz CH-Low, 100%RB



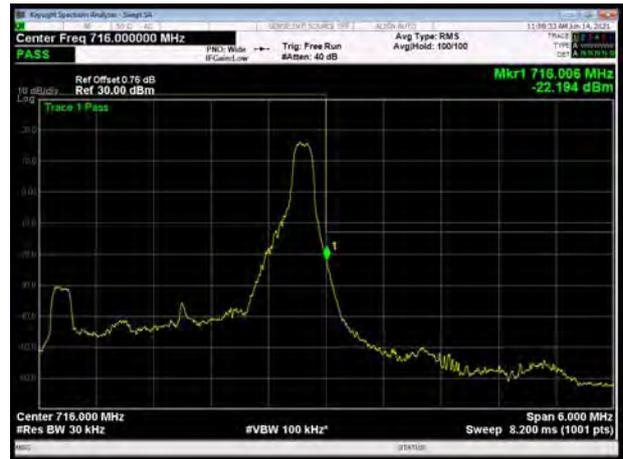
LTE Band 12 64QAM 1.4MHz CH-High, 100%RB



LTE Band 12 64QAM 3MHz CH-Low, 1 RB

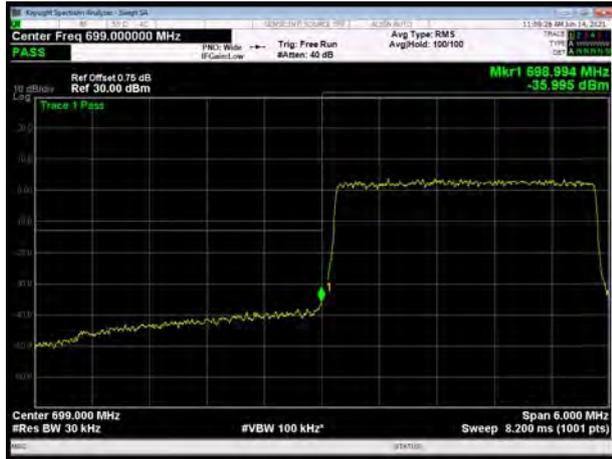


LTE Band 12 64QAM 3MHz CH-High, 1 RB

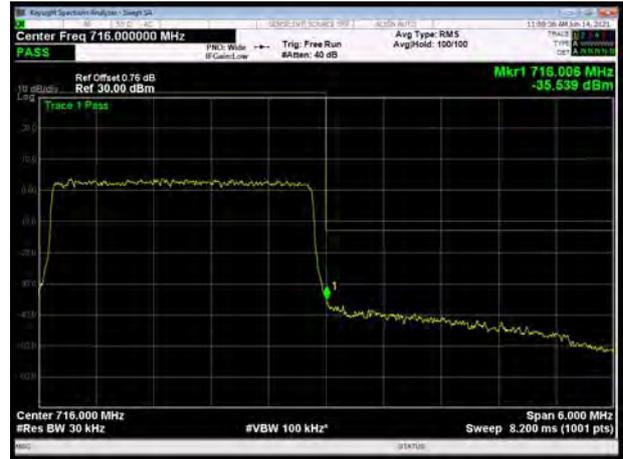




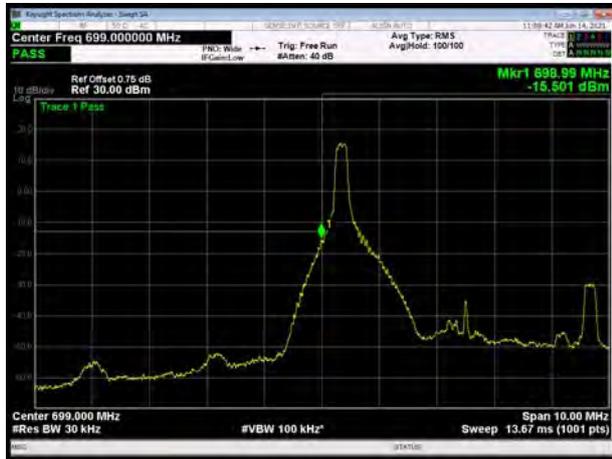
LTE Band 12 64QAM 3MHz CH-Low, 100%RB



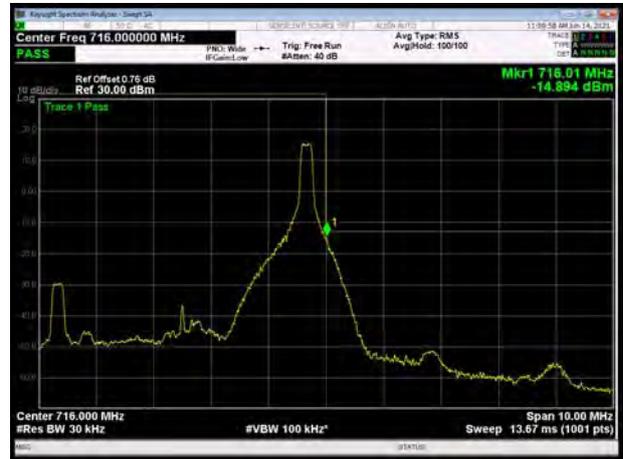
LTE Band 12 64QAM 3MHz CH-High, 100%RB



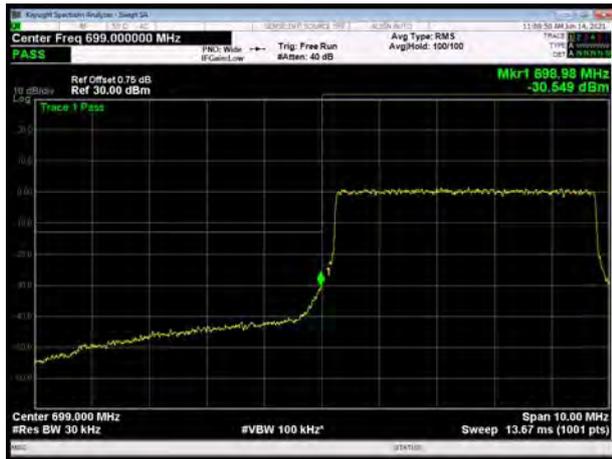
LTE Band 12 64QAM 5MHz CH-Low, 1 RB



LTE Band 12 64QAM 5MHz CH-High, 1 RB



LTE Band 12 64QAM 5MHz CH-Low, 100%RB



LTE Band 12 64QAM 5MHz CH-High, 100%RB

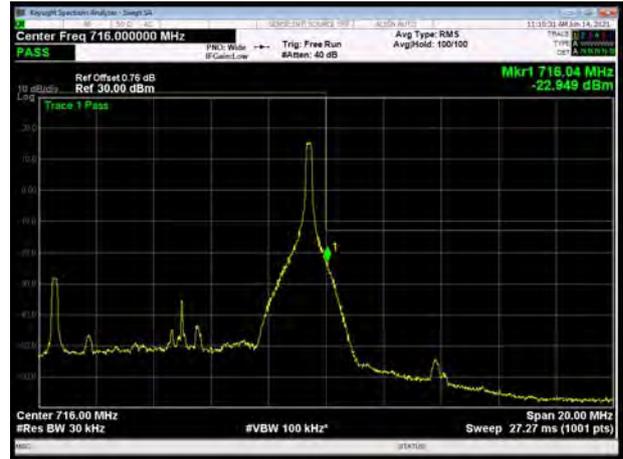




LTE Band 12 64QAM 10MHz CH-Low, 1 RB



LTE Band 12 64QAM 10MHz CH-High, 1 RB



LTE Band 12 64QAM 10MHz CH-Low, 100%RB



LTE Band 12 64QAM 10MHz CH-High, 100%RB

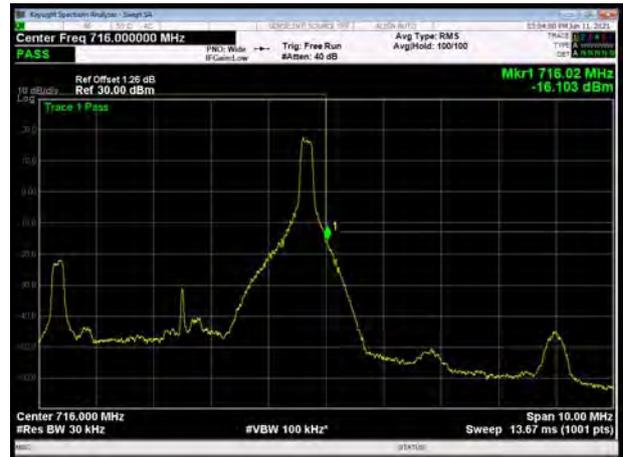




LTE Band 17 QPSK 5MHz CH-Low, 1 RB



LTE Band 17 QPSK 5MHz CH-High, 1 RB



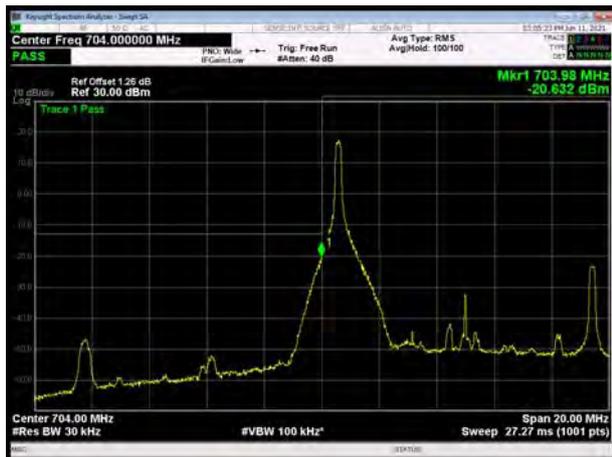
LTE Band 17 QPSK 5MHz CH-Low, 100%RB



LTE Band 17 QPSK 5MHz CH-High, 100%RB



LTE Band 17 QPSK 10MHz CH-Low, 1 RB



LTE Band 17 QPSK 10MHz CH-High, 1 RB





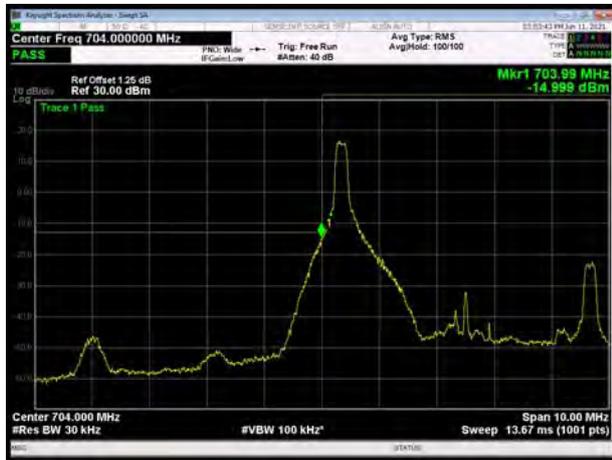
LTE Band 17 QPSK 10MHz CH-Low, 100%RB



LTE Band 17 QPSK 10MHz CH-High, 100%RB



LTE Band 17 16QAM 5MHz CH-Low, 1 RB



LTE Band 17 16QAM 5MHz CH-High, 1 RB



LTE Band 17 16QAM 5MHz CH-Low, 100%RB

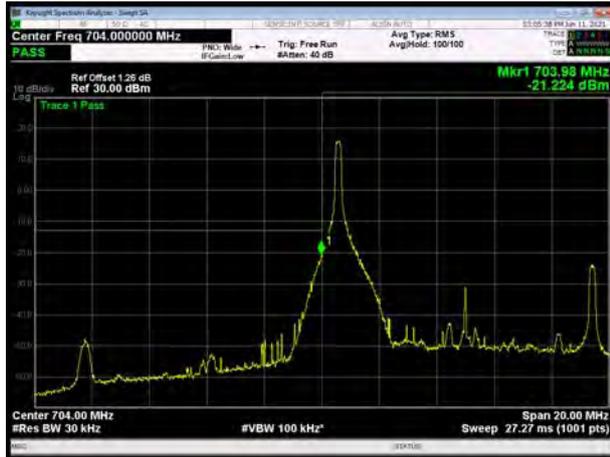


LTE Band 17 16QAM 5MHz CH-High, 100%RB

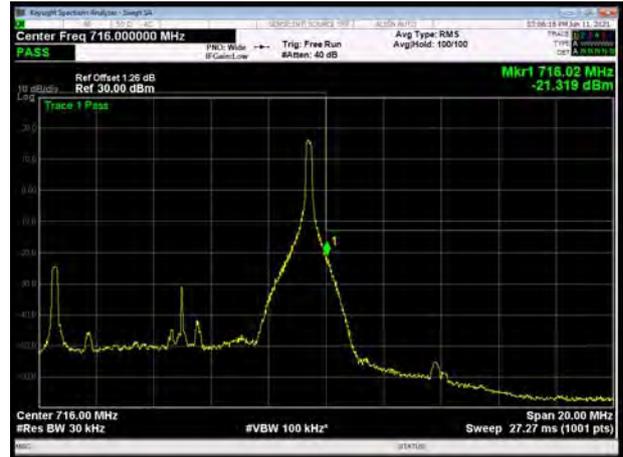




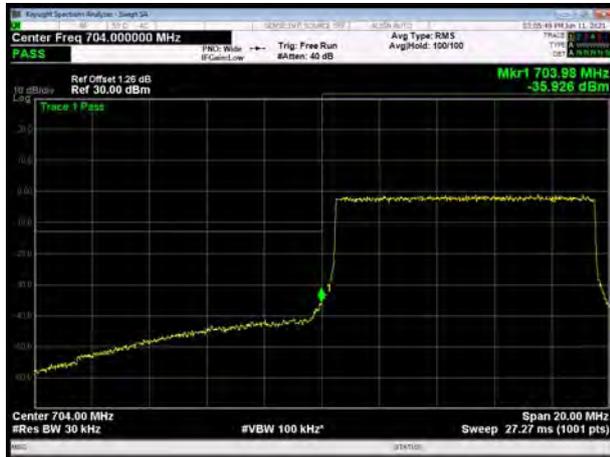
LTE Band 17 16QAM 10MHz CH-Low, 1 RB



LTE Band 17 16QAM 10MHz CH-High, 1 RB



LTE Band 17 16QAM 10MHz CH-Low, 100%RB



LTE Band 17 16QAM 10MHz CH-High, 100%RB

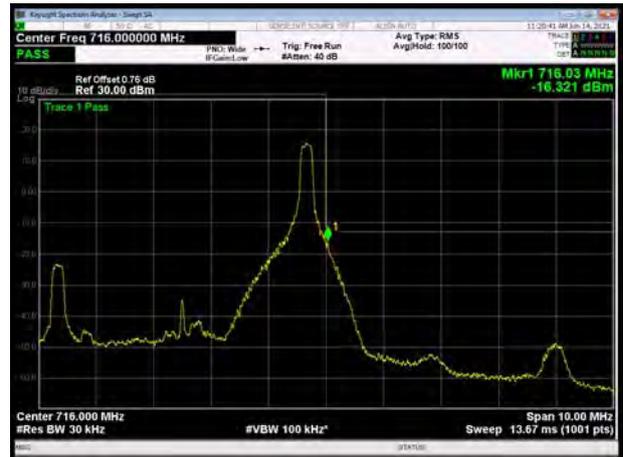




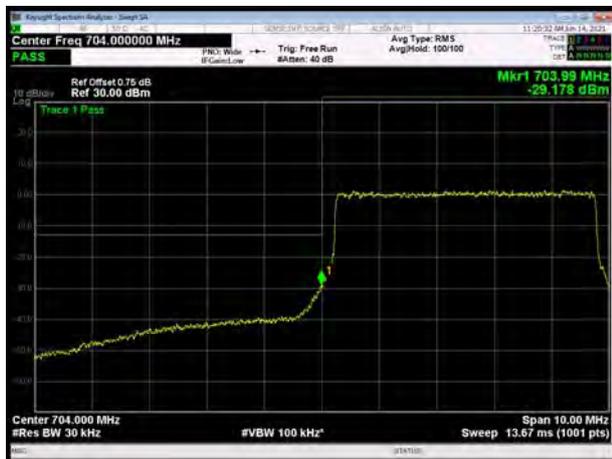
LTE Band 17 64QAM 5MHz CH-Low, 1 RB



LTE Band 17 64QAM 5MHz CH-High, 1 RB



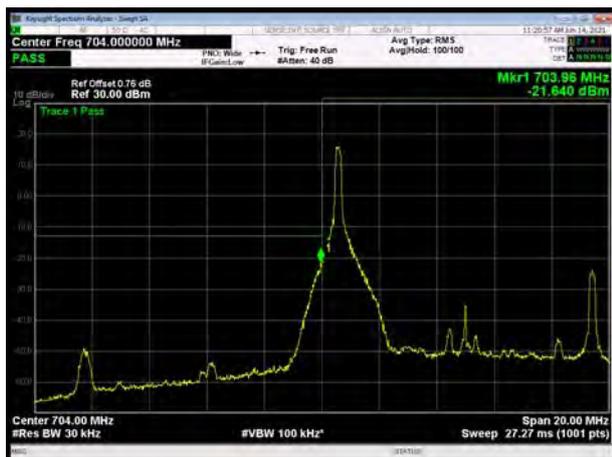
LTE Band 17 64QAM 5MHz CH-Low, 100%RB



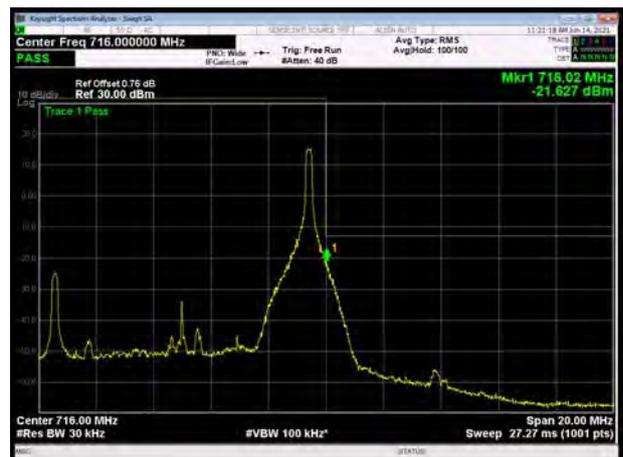
LTE Band 17 64QAM 5MHz CH-High, 100%RB



LTE Band 17 64QAM 10MHz CH-Low, 1 RB

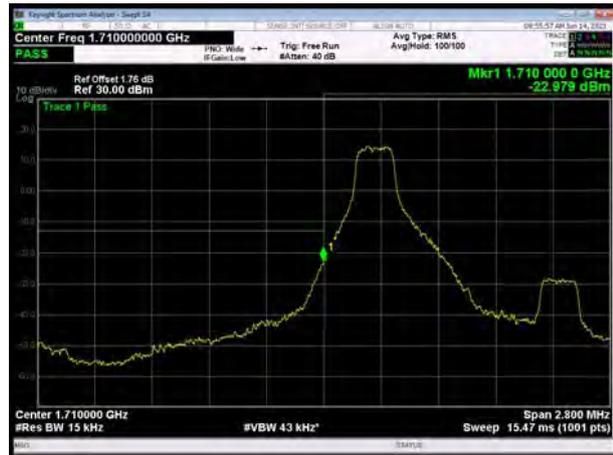


LTE Band 17 64QAM 10MHz CH-High, 1 RB

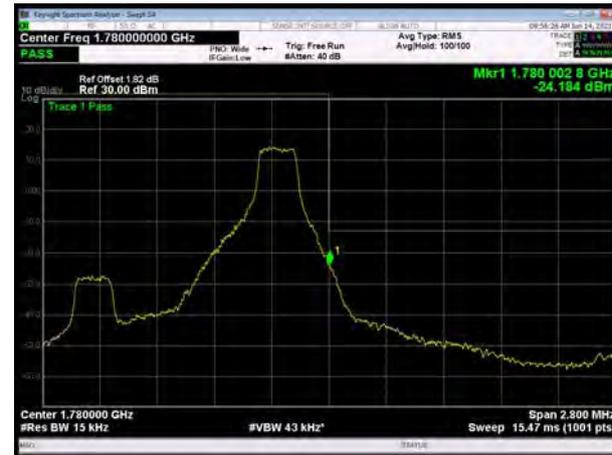




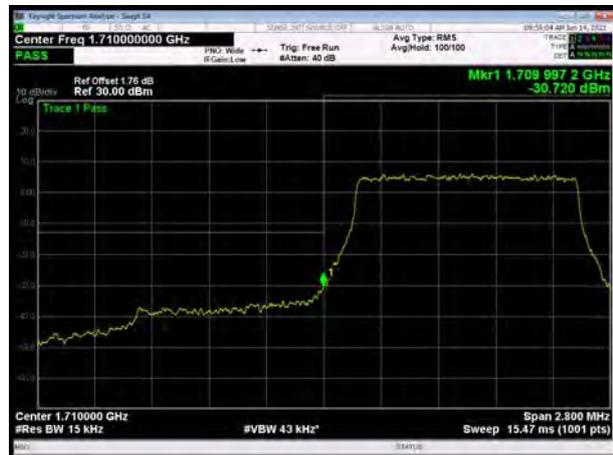
LTE Band 66 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 66 QPSK 1.4MHz CH-High, 1 RB



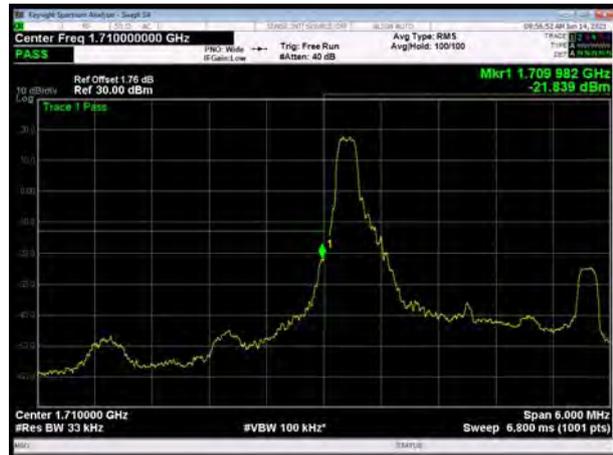
LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB



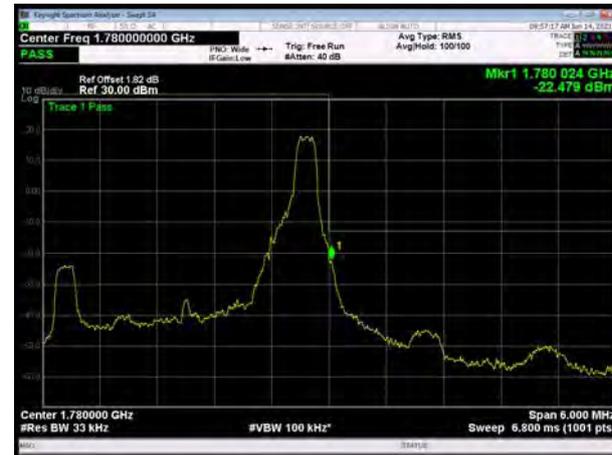
LTE Band 66 QPSK 1.4MHz CH-High, 100%RB



LTE Band 66 QPSK 3MHz CH-Low, 1 RB



LTE Band 66 QPSK 3MHz CH-High, 1 RB



LTE Band 66 QPSK 3MHz CH-Low, 100%RB

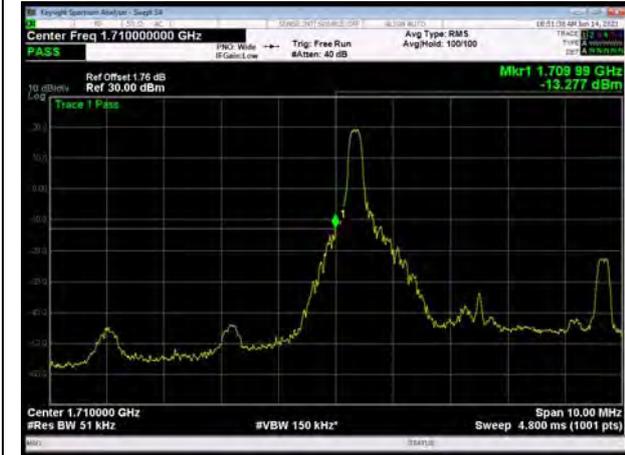
LTE Band 66 QPSK 3MHz CH-High, 100%RB



LTE Band 66 QPSK 5MHz CH-Low, 1 RB



LTE Band 66 QPSK 5MHz CH-High, 1 RB



LTE Band 66 QPSK 5MHz CH-Low, 100%RB



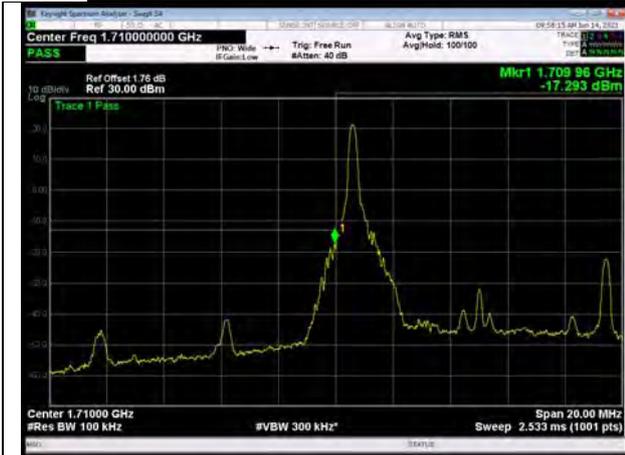
LTE Band 66 QPSK 5MHz CH-High, 100%RB



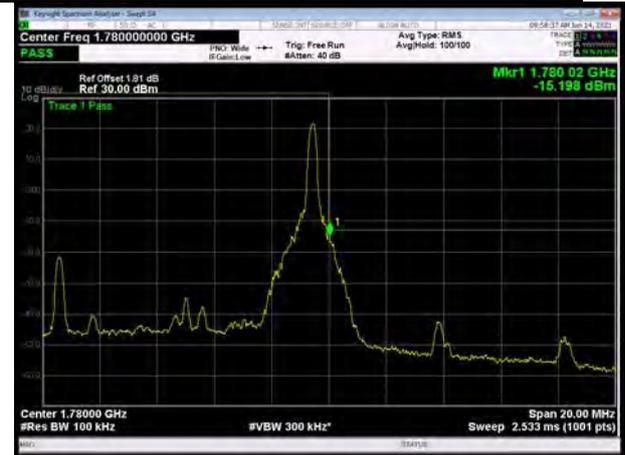
LTE Band 66 QPSK 10MHz CH-Low, 1 RB



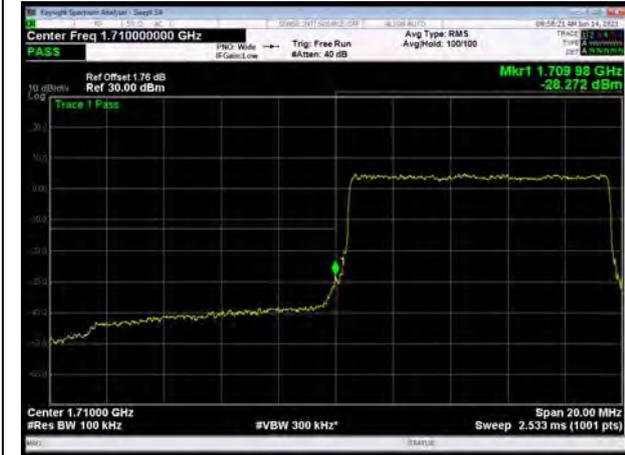
LTE Band 66 QPSK 10MHz CH-High, 1 RB



LTE Band 66 QPSK 10MHz CH-Low, 100%RB



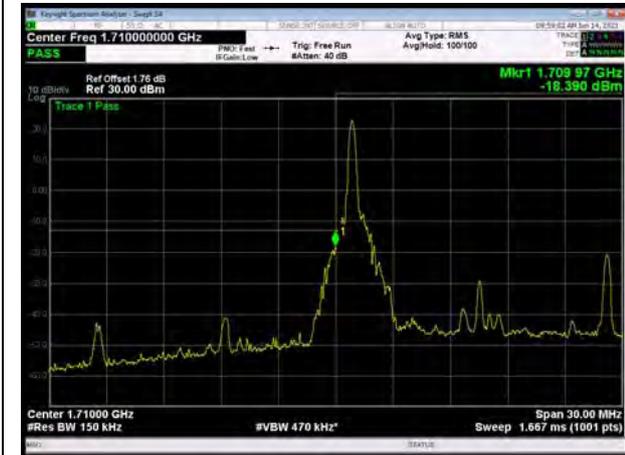
LTE Band 66 QPSK 10MHz CH-High, 100%RB



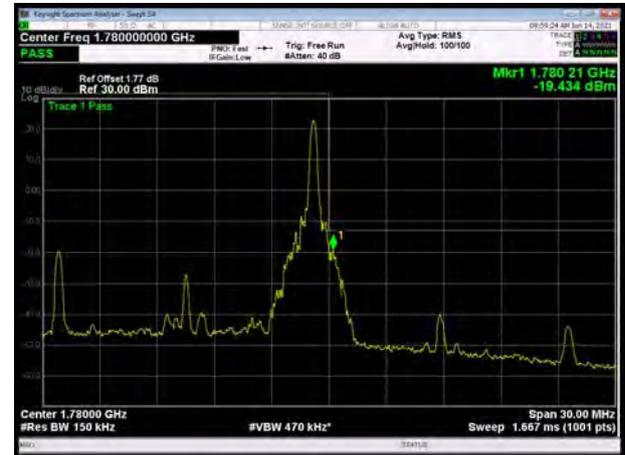
LTE Band 66 QPSK 15MHz CH-Low, 1 RB



LTE Band 66 QPSK 15MHz CH-High, 1 RB



LTE Band 66 QPSK 15MHz CH-Low, 100%RB



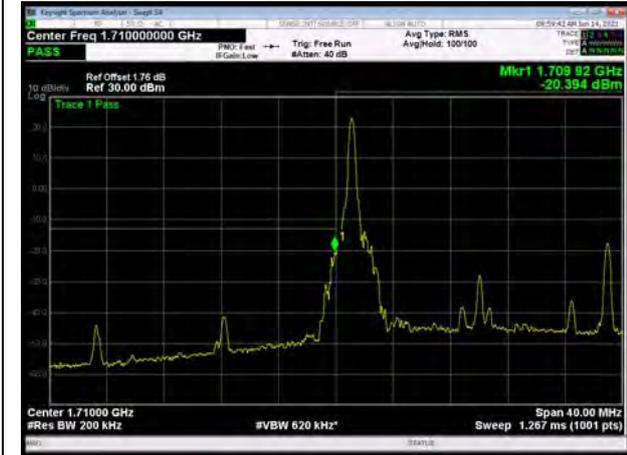
LTE Band 66 QPSK 15MHz CH-High, 100%RB



LTE Band 66 QPSK 20MHz CH-Low, 1 RB



LTE Band 66 QPSK 20MHz CH-High, 1 RB



LTE Band 66 QPSK 20MHz CH-Low, 100%RB



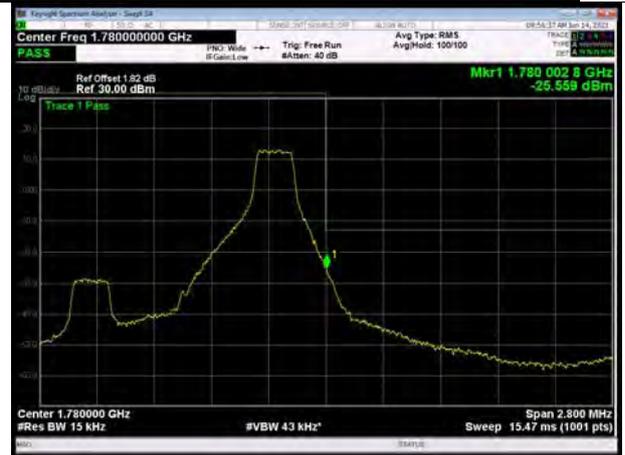
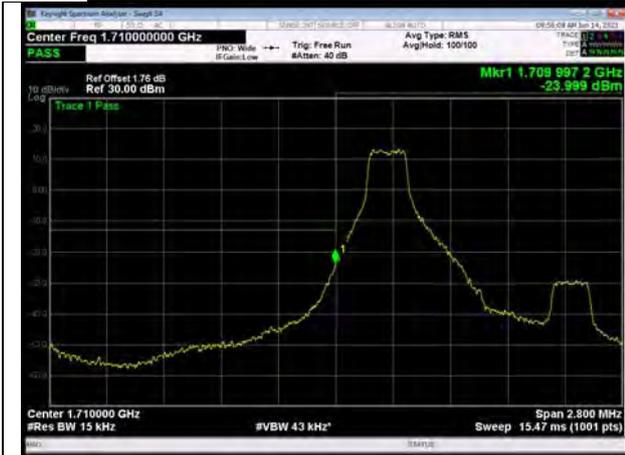
LTE Band 66 QPSK 20MHz CH-High, 100%RB



LTE Band 66 16QAM 1.4MHz CH-Low, 1 RB

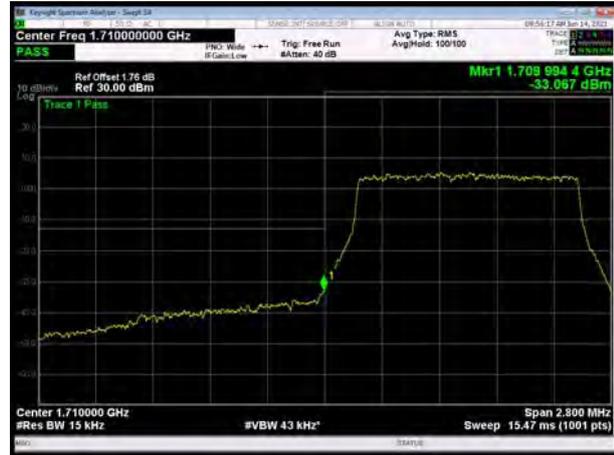


LTE Band 66 16QAM 1.4MHz CH-High, 1 RB



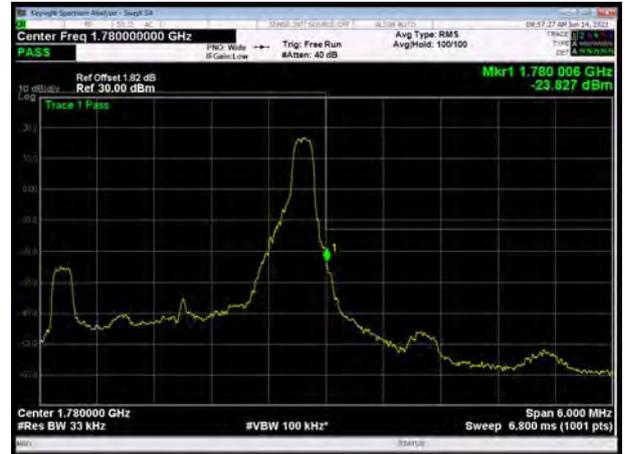
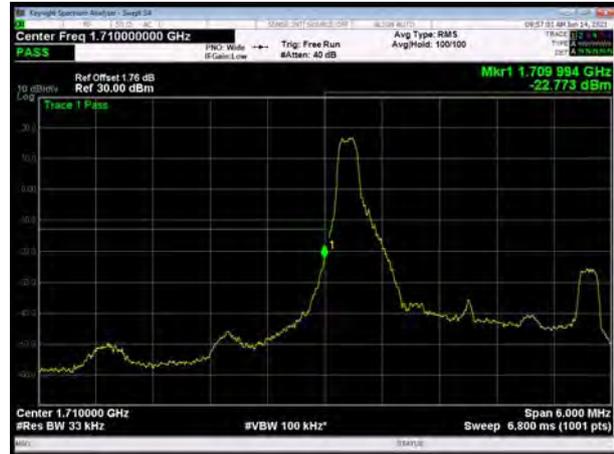
LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB

LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



LTE Band 66 16QAM 3MHz CH-Low, 1 RB

LTE Band 66 16QAM 3MHz CH-High, 1 RB



LTE Band 66 16QAM 3MHz CH-Low, 100%RB

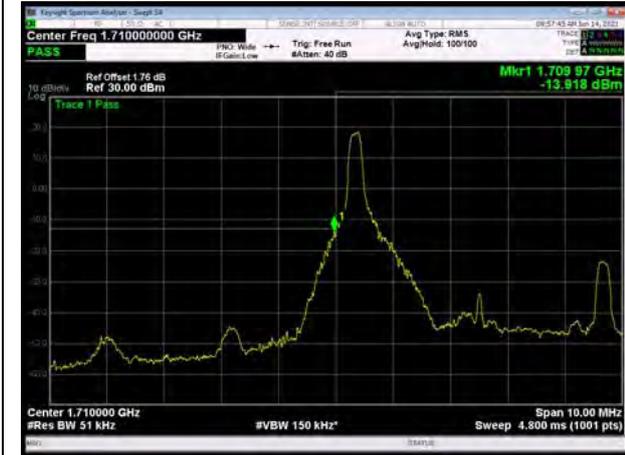
LTE Band 66 16QAM 3MHz CH-High, 100%RB



LTE Band 66 16QAM 5MHz CH-Low, 1 RB



LTE Band 66 16QAM 5MHz CH-High, 1 RB



LTE Band 66 16QAM 5MHz CH-Low, 100%RB



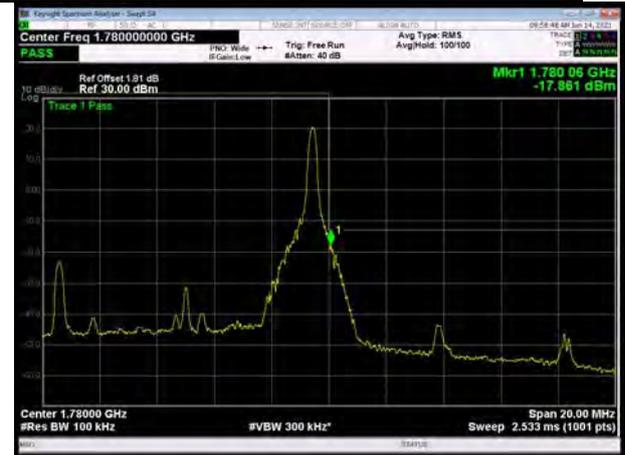
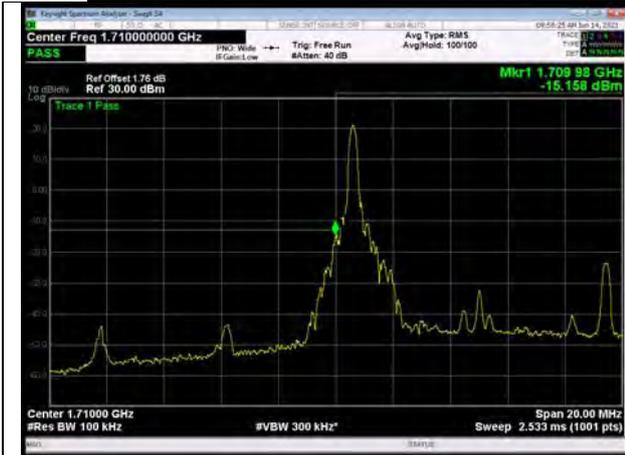
LTE Band 66 16QAM 5MHz CH-High, 100%RB



LTE Band 66 16QAM 10MHz CH-Low, 1 RB



LTE Band 66 16QAM 10MHz CH-High, 1 RB



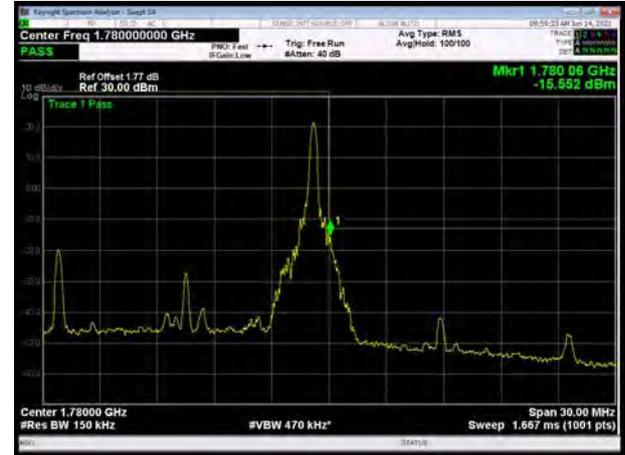
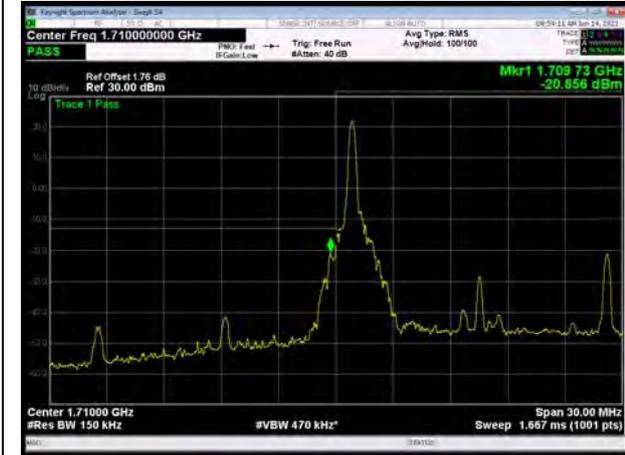
LTE Band 66 16QAM 10MHz CH-Low, 100%RB

LTE Band 66 16QAM 10MHz CH-High, 100%RB



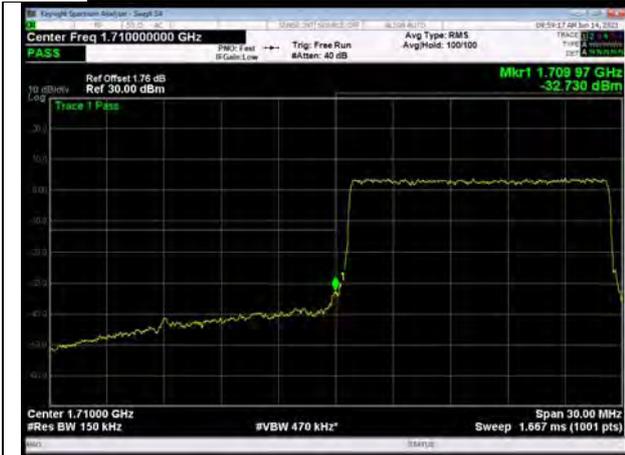
LTE Band 66 16QAM 15MHz CH-Low, 1 RB

LTE Band 66 16QAM 15MHz CH-High, 1 RB



LTE Band 66 16QAM 15MHz CH-Low, 100%RB

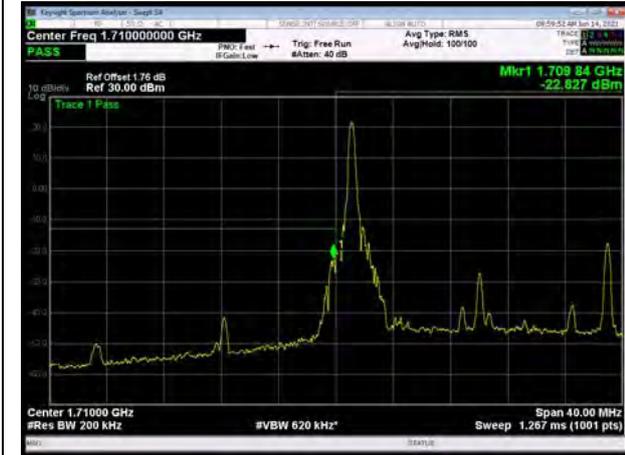
LTE Band 66 16QAM 15MHz CH-High, 100%RB



LTE Band 66 16QAM 20MHz CH-Low, 1 RB



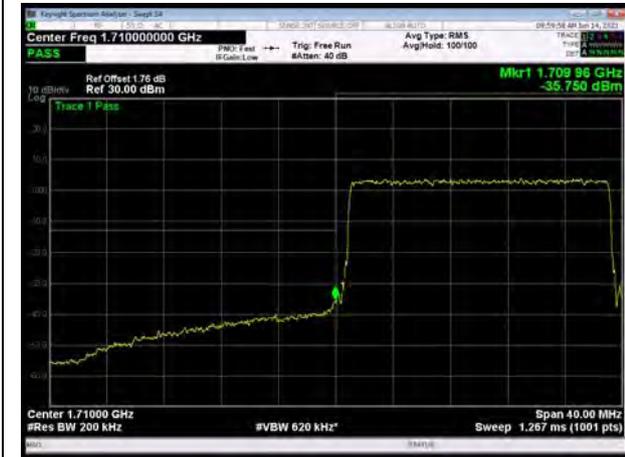
LTE Band 66 16QAM 20MHz CH-High, 1 RB



LTE Band 66 16QAM 20MHz CH-Low, 100%RB

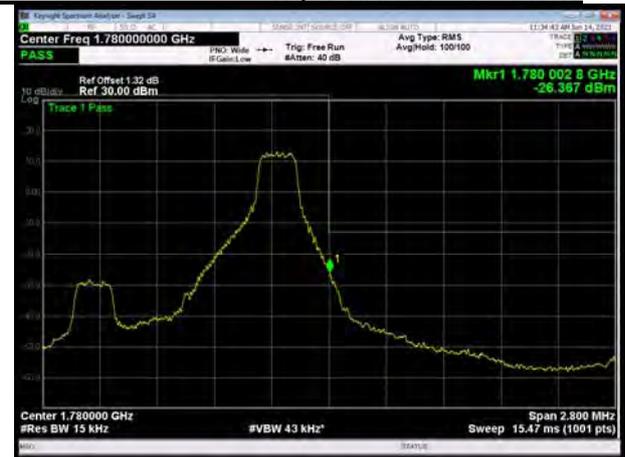
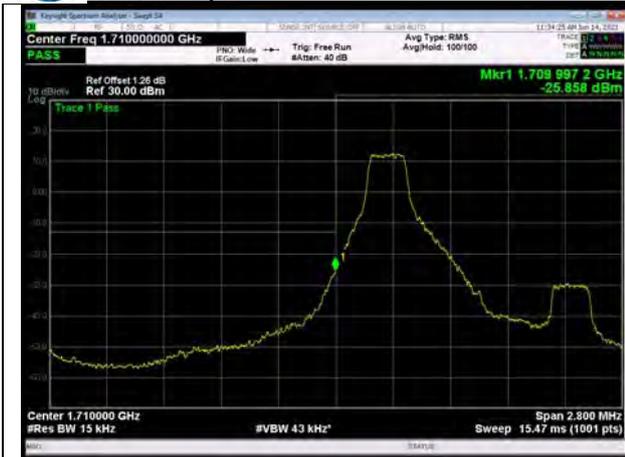


LTE Band 66 16QAM 20MHz CH-High, 100%RB



LTE Band 66 64QAM 1.4MHz CH-Low, 1 RB

LTE Band 66 64QAM 1.4MHz CH-High, 1 RB



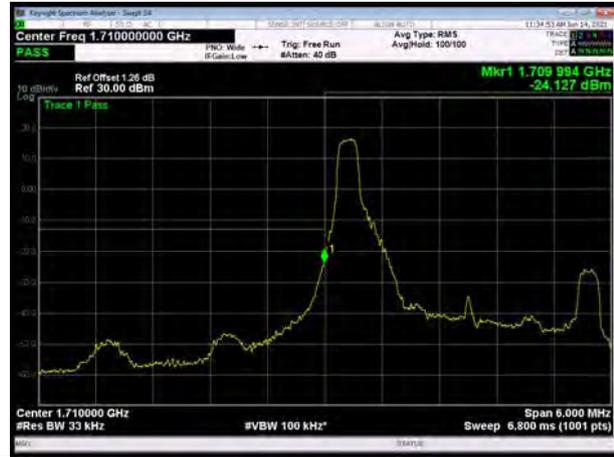
LTE Band 66 64QAM 1.4MHz CH-Low, 100%RB

LTE Band 66 64QAM 1.4MHz CH-High, 100%RB



LTE Band 66 64QAM 3MHz CH-Low, 1 RB

LTE Band 66 64QAM 3MHz CH-High, 1 RB



LTE Band 66 64QAM 3MHz CH-Low, 100%RB

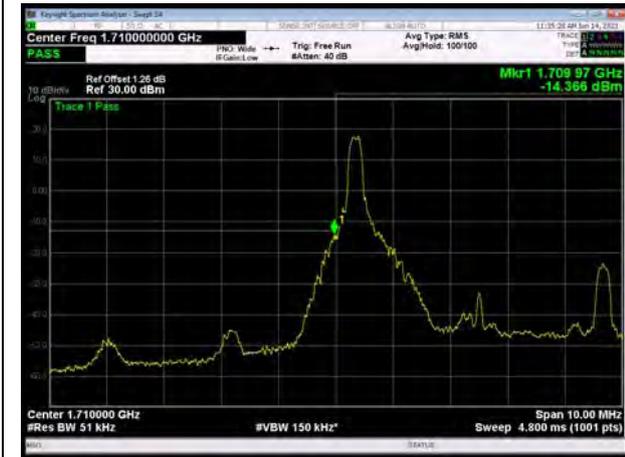
LTE Band 66 64QAM 3MHz CH-High, 100%RB



LTE Band 66 64QAM 5MHz CH-Low, 1 RB



LTE Band 66 64QAM 5MHz CH-High, 1 RB



LTE Band 66 64QAM 5MHz CH-Low, 100%RB



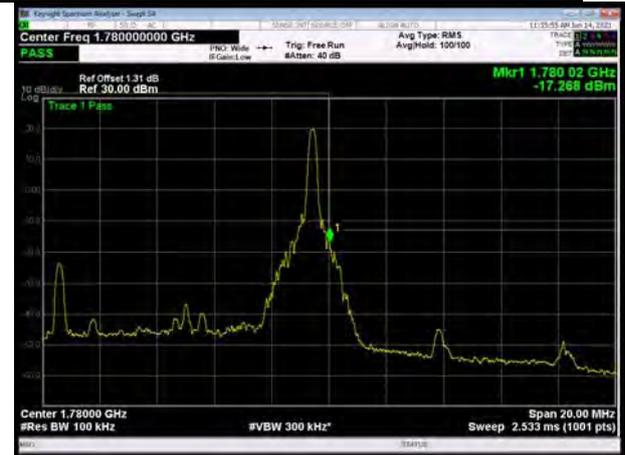
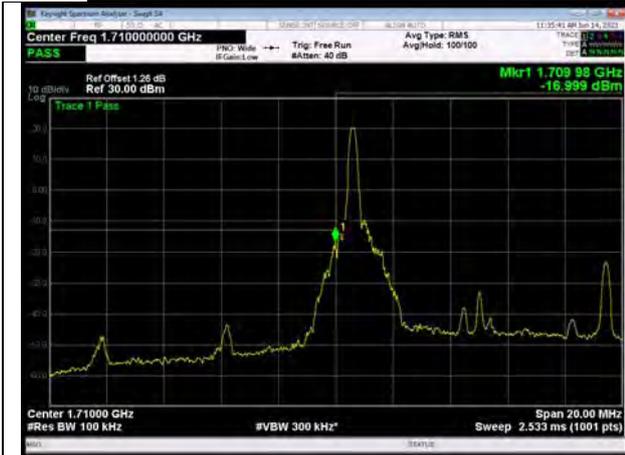
LTE Band 66 64QAM 5MHz CH-High, 100%RB



LTE Band 66 64QAM 10MHz CH-Low, 1 RB

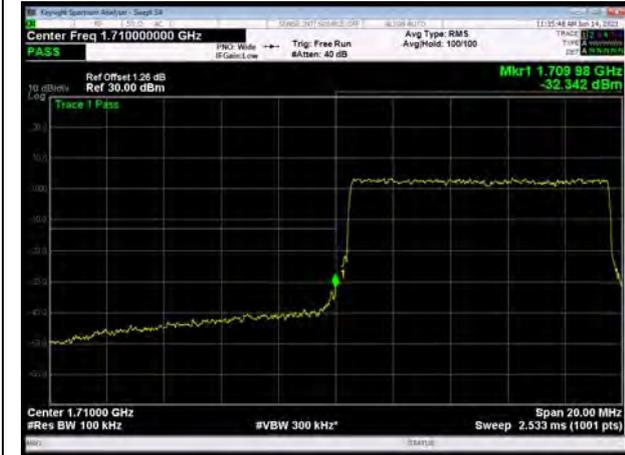


LTE Band 66 64QAM 10MHz CH-High, 1 RB



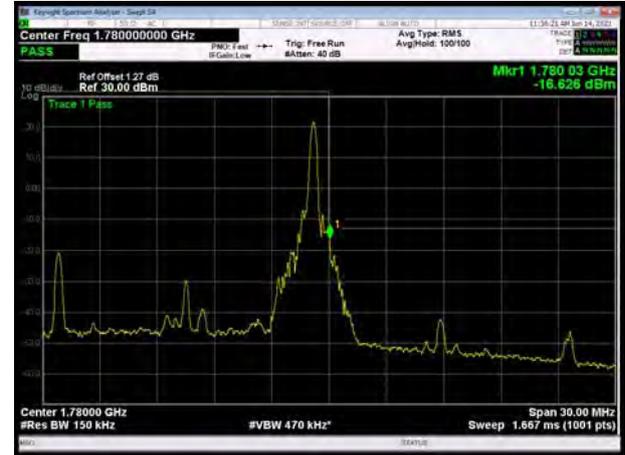
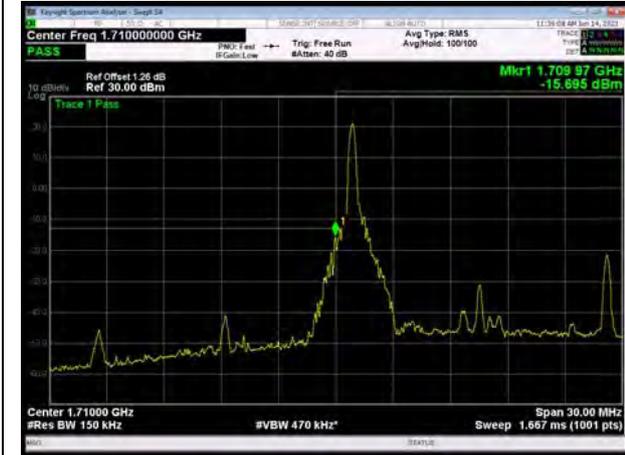
LTE Band 66 64QAM 10MHz CH-Low, 100%RB

LTE Band 66 64QAM 10MHz CH-High, 100%RB



LTE Band 66 64QAM 15MHz CH-Low, 1 RB

LTE Band 66 64QAM 15MHz CH-High, 1 RB



LTE Band 66 64QAM 15MHz CH-Low, 100%RB

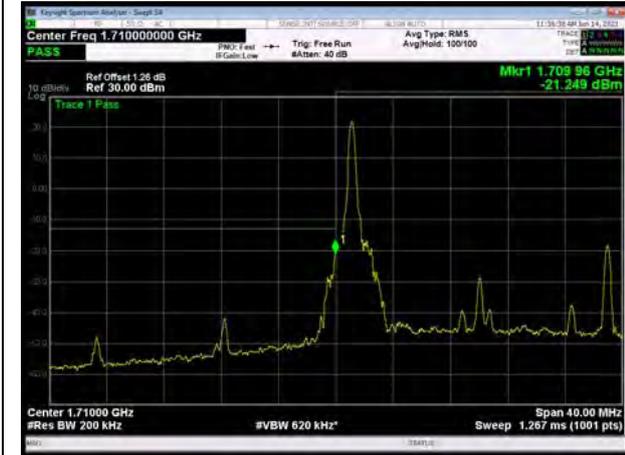
LTE Band 66 64QAM 15MHz CH-High, 100%RB



LTE Band 66 64QAM 20MHz CH-Low, 1 RB



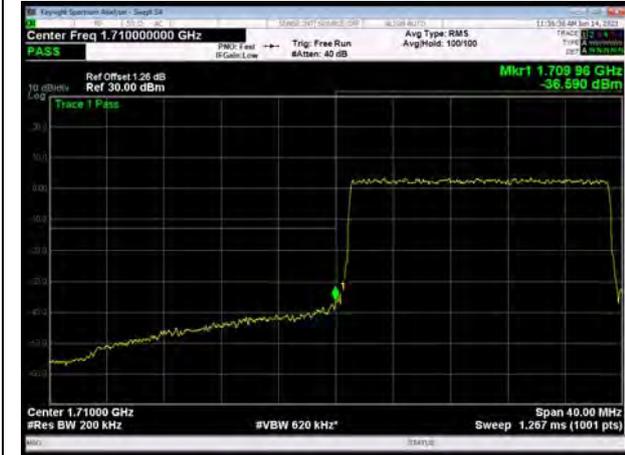
LTE Band 66 64QAM 20MHz CH-High, 1 RB



LTE Band 66 64QAM 20MHz CH-Low, 100%RB



LTE Band 66 64QAM 20MHz CH-High, 100%RB



5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

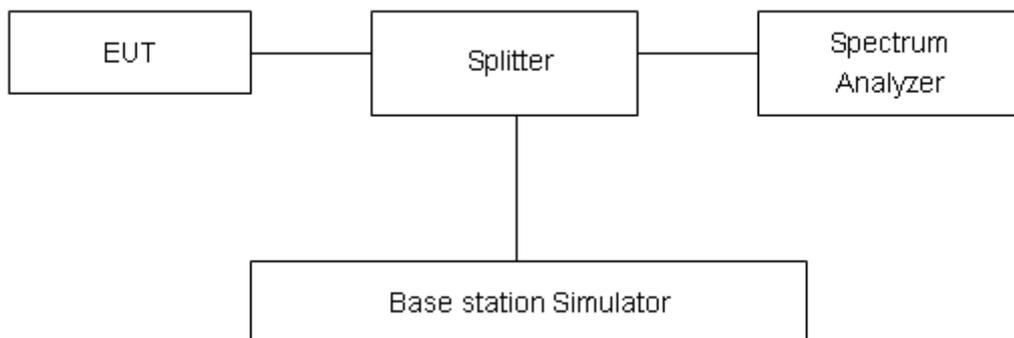
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = PPk (dBm) - PAvg (dBm).$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. 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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.4 dB.



Test Results

LTE Band 12								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	23017	699.7	28.00	23.12	4.88	≤13	PASS
		23095	707.5	27.88	23.14	4.74	≤13	PASS
		23173	715.3	27.81	23.15	4.66	≤13	PASS
	3	23025	700.5	28.03	23.05	4.98	≤13	PASS
		23095	707.5	27.87	23.09	4.78	≤13	PASS
		23165	714.5	27.90	23.04	4.86	≤13	PASS
	5	23035	701.5	28.13	23.09	5.04	≤13	PASS
		23095	707.5	28.03	23.10	4.93	≤13	PASS
		23155	713.5	28.10	23.09	5.01	≤13	PASS
	10	23060	704	28.19	23.17	5.02	≤13	PASS
		23095	707.5	28.14	23.11	5.03	≤13	PASS
		23130	711	28.10	23.07	5.03	≤13	PASS
16QAM	1.4	23017	699.7	27.76	22.08	5.68	≤13	PASS
		23095	707.5	27.68	22.14	5.54	≤13	PASS
		23173	715.3	27.70	22.15	5.55	≤13	PASS
	3	23025	700.5	27.95	22.07	5.88	≤13	PASS
		23095	707.5	27.78	22.08	5.70	≤13	PASS
		23165	714.5	27.79	22.06	5.73	≤13	PASS
	5	23035	701.5	27.97	22.09	5.88	≤13	PASS
		23095	707.5	27.79	22.10	5.69	≤13	PASS
		23155	713.5	27.88	22.11	5.77	≤13	PASS
	10	23060	704	27.97	22.13	5.84	≤13	PASS
		23095	707.5	27.94	22.11	5.83	≤13	PASS
		23130	711	27.96	22.07	5.89	≤13	PASS
64QAM	1.4	23017	699.7	27.34	21.63	5.71	≤13	PASS
		23095	707.5	27.26	21.66	5.60	≤13	PASS
		23173	715.3	27.21	21.67	5.54	≤13	PASS
	3	23025	700.5	27.44	21.60	5.84	≤13	PASS
		23095	707.5	27.28	21.58	5.70	≤13	PASS
		23165	714.5	27.37	21.59	5.78	≤13	PASS
	5	23035	701.5	27.47	21.62	5.85	≤13	PASS
		23095	707.5	27.38	21.63	5.75	≤13	PASS
		23155	713.5	27.52	21.65	5.87	≤13	PASS
	10	23060	704	27.56	21.69	5.87	≤13	PASS
		23095	707.5	27.51	21.69	5.82	≤13	PASS
		23130	711	27.50	21.60	5.90	≤13	PASS



LTE Band 17								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	37775	2572.5	28.07	23.22	4.85	≤13	PASS
		38000	2595	28.04	23.19	4.85	≤13	PASS
		38225	2617.5	28.08	23.18	4.90	≤13	PASS
	10	37800	2575	28.14	23.22	4.92	≤13	PASS
		38000	2595	28.13	23.18	4.95	≤13	PASS
		38200	2615	28.14	23.21	4.93	≤13	PASS
16QAM	5	37775	2572.5	27.80	22.24	5.56	≤13	PASS
		38000	2595	27.90	22.20	5.70	≤13	PASS
		38225	2617.5	27.81	22.16	5.65	≤13	PASS
	10	37800	2575	27.92	22.22	5.70	≤13	PASS
		38000	2595	27.90	22.16	5.74	≤13	PASS
		38200	2615	27.97	22.19	5.78	≤13	PASS
64QAM	5	37775	2572.5	27.39	21.72	5.67	≤13	PASS
		38000	2595	27.37	21.69	5.68	≤13	PASS
		38225	2617.5	27.44	21.72	5.72	≤13	PASS
	10	37800	2575	27.44	21.70	5.74	≤13	PASS
		38000	2595	27.45	21.70	5.75	≤13	PASS
		38200	2615	27.49	21.72	5.77	≤13	PASS



LTE Band 66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	131979	1710.7	28.10	23.11	4.99	≤13	PASS
		132322	1745	28.00	23.05	4.95	≤13	PASS
		132665	1779.3	28.21	23.12	5.09	≤13	PASS
	3	131987	1711.5	28.05	23.06	4.99	≤13	PASS
		132322	1745	28.09	22.99	5.10	≤13	PASS
		132657	1778.5	28.15	23.06	5.09	≤13	PASS
	5	131997	1712.5	28.28	23.09	5.19	≤13	PASS
		132322	1745	28.13	23.00	5.13	≤13	PASS
		132647	1777.5	28.33	23.10	5.23	≤13	PASS
	10	132022	1715	28.35	23.13	5.22	≤13	PASS
		132322	1745	28.15	23.04	5.11	≤13	PASS
		132622	1775	28.44	23.15	5.29	≤13	PASS
	15	132047	1717.5	28.77	23.14	5.63	≤13	PASS
		132322	1745	28.55	23.09	5.46	≤13	PASS
		132597	1772.5	28.71	23.07	5.64	≤13	PASS
	20	132072	1720	28.48	23.06	5.42	≤13	PASS
		132322	1745	28.34	22.97	5.37	≤13	PASS
		132572	1770	28.43	23.01	5.42	≤13	PASS
16QAM	1.4	131979	1710.7	27.87	22.17	5.70	≤13	PASS
		132322	1745	27.84	22.06	5.78	≤13	PASS
		132665	1779.3	27.92	22.05	5.87	≤13	PASS
	3	131987	1711.5	27.92	22.08	5.84	≤13	PASS
		132322	1745	27.98	21.99	5.99	≤13	PASS
		132657	1778.5	28.03	22.07	5.96	≤13	PASS
	5	131997	1712.5	27.97	22.08	5.89	≤13	PASS
		132322	1745	27.88	22.02	5.86	≤13	PASS
		132647	1777.5	28.11	22.10	6.01	≤13	PASS
	10	132022	1715	28.10	22.11	5.99	≤13	PASS
		132322	1745	27.96	22.04	5.92	≤13	PASS
		132622	1775	28.17	22.12	6.05	≤13	PASS
	15	132047	1717.5	28.29	22.15	6.14	≤13	PASS
		132322	1745	28.09	22.04	6.05	≤13	PASS
		132597	1772.5	28.23	22.06	6.17	≤13	PASS
	20	132072	1720	28.22	22.06	6.16	≤13	PASS
		132322	1745	28.02	21.96	6.06	≤13	PASS
		132572	1770	28.17	22.00	6.17	≤13	PASS



	1.4	131979	1710.7	27.36	21.66	5.70	≤13	PASS
		132322	1745	27.42	21.55	5.87	≤13	PASS
		132665	1779.3	27.42	21.61	5.81	≤13	PASS
	3	131987	1711.5	27.46	21.60	5.86	≤13	PASS
		132322	1745	27.40	21.54	5.86	≤13	PASS
		132657	1778.5	27.57	21.62	5.95	≤13	PASS
	5	131997	1712.5	27.50	21.61	5.89	≤13	PASS
		132322	1745	27.44	21.55	5.89	≤13	PASS
		132647	1777.5	27.65	21.63	6.02	≤13	PASS
	10	132022	1715	27.62	21.66	5.96	≤13	PASS
		132322	1745	27.51	21.58	5.93	≤13	PASS
		132622	1775	27.72	21.66	6.06	≤13	PASS
	15	132047	1717.5	27.83	21.69	6.14	≤13	PASS
		132322	1745	27.65	21.60	6.05	≤13	PASS
		132597	1772.5	27.80	21.62	6.18	≤13	PASS
	20	132072	1720	27.77	21.62	6.15	≤13	PASS
		132322	1745	27.62	21.51	6.11	≤13	PASS
		132572	1770	27.71	21.54	6.17	≤13	PASS

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +60°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +60°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

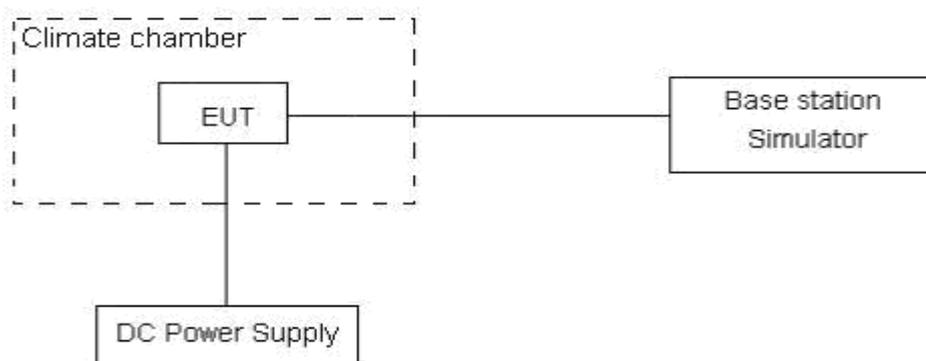
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.45 V, with a nominal voltage of 3.8V.

Test setup



Limits

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

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3, U=0.01\text{ppm}$.



Test Result

LTE Band 12								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	14.64	5.72	8.95	0.00779	0.00304	0.00476	PASS
Extreme (60°C)		17.06	14.56	13.72	0.00907	0.00774	0.00730	PASS
Extreme (50°C)		10.12	8.31	16.05	0.00538	0.00442	0.00854	PASS
Extreme (40°C)		16.85	17.04	8.64	0.00896	0.00907	0.00460	PASS
Extreme (30°C)		13.33	1.47	1.46	0.00709	0.00078	0.00078	PASS
Extreme (20°C)		11.41	3.16	10.10	0.00607	0.00168	0.00537	PASS
Extreme (10°C)		7.40	9.39	10.41	0.00394	0.00499	0.00554	PASS
Extreme (0°C)		9.03	10.05	8.48	0.00481	0.00535	0.00451	PASS
Extreme (-10°C)		4.97	4.84	13.81	0.00264	0.00257	0.00735	PASS
Extreme (-20°C)		5.86	12.16	11.72	0.00312	0.00647	0.00624	PASS
Extreme (-30°C)		12.13	8.62	10.02	0.00645	0.00458	0.00533	PASS
25°C		LV	5.27	4.42	9.09	0.00280	0.00235	0.00484
	HV	3.27	3.63	3.78	0.00174	0.00193	0.00201	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	12.91	14.54	1.03	0.00687	0.00774	0.00055	PASS
Extreme (60°C)		7.19	1.96	3.10	0.00383	0.00104	0.00165	PASS
Extreme (50°C)		17.94	12.48	7.45	0.00954	0.00664	0.00396	PASS
Extreme (40°C)		3.22	6.13	1.93	0.00171	0.00326	0.00103	PASS
Extreme (30°C)		11.50	10.81	17.27	0.00611	0.00575	0.00919	PASS
Extreme (20°C)		2.86	12.68	14.92	0.00152	0.00674	0.00793	PASS
Extreme (10°C)		11.35	4.70	16.15	0.00604	0.00250	0.00859	PASS
Extreme (0°C)		8.29	10.33	16.08	0.00441	0.00549	0.00855	PASS
Extreme (-10°C)		8.48	8.57	10.49	0.00451	0.00456	0.00558	PASS
Extreme (-20°C)		14.61	14.54	5.15	0.00777	0.00774	0.00274	PASS
Extreme (-30°C)		2.86	15.75	17.91	0.00152	0.00838	0.00953	PASS
25°C		LV	8.46	1.66	4.33	0.00450	0.00088	0.00230
	HV	5.27	2.51	8.04	0.00280	0.00133	0.00428	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							



Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	12.94	7.30	13.55	0.00688	0.00388	0.00721	PASS
Extreme (60°C)		13.01	5.86	1.41	0.00692	0.00312	0.00075	PASS
Extreme (50°C)		3.24	15.73	2.35	0.00172	0.00837	0.00125	PASS
Extreme (40°C)		1.71	10.55	6.34	0.00091	0.00561	0.00337	PASS
Extreme (30°C)		8.25	1.01	17.66	0.00439	0.00054	0.00939	PASS
Extreme (20°C)		1.72	16.14	10.38	0.00092	0.00859	0.00552	PASS
Extreme (10°C)		7.29	8.25	10.30	0.00388	0.00439	0.00548	PASS
Extreme (0°C)		8.16	2.07	17.51	0.00434	0.00110	0.00931	PASS
Extreme (-10°C)		5.64	3.21	9.69	0.00300	0.00170	0.00515	PASS
Extreme (-20°C)		16.33	6.89	3.57	0.00868	0.00367	0.00190	PASS
Extreme (-30°C)		14.10	1.13	12.20	0.00750	0.00060	0.00649	PASS
25°C	LV	12.67	8.88	4.32	0.00674	0.00472	0.00230	PASS
	HV	5.37	12.88	8.83	0.00286	0.00685	0.00470	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	15.38	5.20	6.68	0.00818	0.00277	0.00355	PASS
Extreme (60°C)		10.64	7.30	4.16	0.00566	0.00389	0.00221	PASS
Extreme (50°C)		15.28	13.74	12.21	0.00813	0.00731	0.00649	PASS
Extreme (40°C)		17.76	6.57	13.53	0.00944	0.00349	0.00720	PASS
Extreme (30°C)		11.07	3.80	2.39	0.00589	0.00202	0.00127	PASS
Extreme (20°C)		7.74	9.49	10.21	0.00412	0.00505	0.00543	PASS
Extreme (10°C)		2.15	13.39	10.88	0.00114	0.00712	0.00579	PASS
Extreme (0°C)		15.86	9.50	2.98	0.00843	0.00505	0.00158	PASS
Extreme (-10°C)		5.86	15.34	14.86	0.00312	0.00816	0.00790	PASS
Extreme (-20°C)		16.56	12.16	1.09	0.00881	0.00647	0.00058	PASS
Extreme (-30°C)		6.24	9.50	5.90	0.00332	0.00505	0.00314	PASS
25°C	LV	6.61	4.51	13.56	0.00352	0.00240	0.00721	PASS
	HV	13.36	16.43	11.80	0.00711	0.00874	0.00628	PASS



LTE Band 17								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	12.35	9.33	2.19	0.00657	0.00496	0.00116	PASS
Extreme (60°C)		17.85	16.95	3.37	0.00950	0.00901	0.00179	PASS
Extreme (50°C)		13.19	6.09	2.66	0.00702	0.00324	0.00141	PASS
Extreme (40°C)		8.08	16.29	3.96	0.00430	0.00867	0.00211	PASS
Extreme (30°C)		11.17	10.70	2.76	0.00594	0.00569	0.00147	PASS
Extreme (20°C)		10.77	5.61	15.40	0.00573	0.00299	0.00819	PASS
Extreme (10°C)		2.67	8.90	10.76	0.00142	0.00473	0.00572	PASS
Extreme (0°C)		7.26	4.33	11.92	0.00386	0.00230	0.00634	PASS
Extreme (-10°C)		11.71	12.04	6.65	0.00623	0.00640	0.00354	PASS
Extreme (-20°C)		15.53	5.42	17.79	0.00826	0.00288	0.00946	PASS
Extreme (-30°C)		16.47	2.16	5.88	0.00876	0.00115	0.00313	PASS
25°C		LV	14.13	1.72	10.29	0.00752	0.00091	0.00548
	HV	3.73	16.02	8.92	0.00199	0.00852	0.00474	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	14.92	5.30	4.53	0.00793	0.00282	0.00241	PASS
Extreme (60°C)		17.13	12.33	8.53	0.00911	0.00656	0.00454	PASS
Extreme (50°C)		11.37	1.71	7.78	0.00605	0.00091	0.00414	PASS
Extreme (40°C)		8.15	10.39	9.66	0.00434	0.00553	0.00514	PASS
Extreme (30°C)		12.60	11.78	6.21	0.00670	0.00626	0.00330	PASS
Extreme (20°C)		11.87	17.86	14.07	0.00632	0.00950	0.00748	PASS
Extreme (10°C)		4.86	2.18	8.37	0.00259	0.00116	0.00445	PASS
Extreme (0°C)		17.01	6.85	14.77	0.00905	0.00364	0.00786	PASS
Extreme (-10°C)		8.47	7.49	16.59	0.00451	0.00398	0.00883	PASS
Extreme (-20°C)		7.24	1.14	7.37	0.00385	0.00061	0.00392	PASS
Extreme (-30°C)		3.29	4.33	13.88	0.00175	0.00230	0.00738	PASS
25°C		LV	11.22	3.93	10.19	0.00597	0.00209	0.00542
	HV	9.27	3.41	3.74	0.00493	0.00182	0.00199	PASS



LTE Band 66								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	10.42	11.23	12.01	0.00554	0.00598	0.00639	PASS
Extreme (60°C)		9.02	9.99	1.77	0.00480	0.00531	0.00094	PASS
Extreme (50°C)		3.96	1.96	1.92	0.00211	0.00104	0.00102	PASS
Extreme (40°C)		10.81	17.46	12.86	0.00575	0.00929	0.00684	PASS
Extreme (30°C)		8.44	6.05	1.98	0.00449	0.00322	0.00105	PASS
Extreme (20°C)		16.41	12.74	6.05	0.00873	0.00678	0.00322	PASS
Extreme (10°C)		7.90	10.29	15.36	0.00420	0.00547	0.00817	PASS
Extreme (0°C)		11.34	12.51	7.40	0.00603	0.00665	0.00394	PASS
Extreme (-10°C)		13.43	16.24	12.01	0.00714	0.00864	0.00639	PASS
Extreme (-20°C)		12.99	13.51	9.04	0.00691	0.00719	0.00481	PASS
Extreme (-30°C)		15.12	2.59	7.11	0.00804	0.00138	0.00378	PASS
25°C		LV	9.67	14.94	12.30	0.00515	0.00795	0.00654
	HV	5.06	1.24	9.32	0.00269	0.00066	0.00496	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	5.03	8.28	2.76	0.00267	0.00440	0.00147	PASS
Extreme (60°C)		15.55	11.33	4.05	0.00827	0.00603	0.00215	PASS
Extreme (50°C)		9.40	7.15	6.08	0.00500	0.00381	0.00323	PASS
Extreme (40°C)		6.76	15.22	2.87	0.00360	0.00809	0.00153	PASS
Extreme (30°C)		4.60	16.90	11.13	0.00245	0.00899	0.00592	PASS
Extreme (20°C)		3.46	4.91	17.35	0.00184	0.00261	0.00923	PASS
Extreme (10°C)		12.41	17.37	11.48	0.00660	0.00924	0.00610	PASS
Extreme (0°C)		13.03	9.35	17.22	0.00693	0.00497	0.00916	PASS
Extreme (-10°C)		14.24	4.30	5.47	0.00757	0.00229	0.00291	PASS
Extreme (-20°C)		14.61	10.39	10.09	0.00777	0.00553	0.00537	PASS
Extreme (-30°C)		7.44	16.06	12.48	0.00395	0.00854	0.00664	PASS
25°C		LV	15.20	9.18	7.96	0.00809	0.00488	0.00423
	HV	8.34	15.77	12.44	0.00444	0.00839	0.00662	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							



Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	16.91	12.90	14.54	0.00900	0.00686	0.00773	PASS
Extreme (60°C)		9.49	15.25	5.66	0.00505	0.00811	0.00301	PASS
Extreme (50°C)		13.12	13.76	9.80	0.00698	0.00732	0.00521	PASS
Extreme (40°C)		8.85	17.37	4.72	0.00471	0.00924	0.00251	PASS
Extreme (30°C)		16.66	12.50	4.04	0.00886	0.00665	0.00215	PASS
Extreme (20°C)		16.11	10.99	7.07	0.00857	0.00584	0.00376	PASS
Extreme (10°C)		1.94	15.57	4.92	0.00103	0.00828	0.00262	PASS
Extreme (0°C)		9.89	13.13	1.10	0.00526	0.00698	0.00059	PASS
Extreme (-10°C)		14.34	8.90	15.97	0.00763	0.00474	0.00850	PASS
Extreme (-20°C)		12.31	16.25	7.73	0.00655	0.00864	0.00411	PASS
Extreme (-30°C)		6.68	11.13	3.66	0.00356	0.00592	0.00194	PASS
25°C	LV	17.73	10.06	4.77	0.00943	0.00535	0.00254	PASS
	HV	16.29	9.32	14.41	0.00867	0.00496	0.00766	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	3.55	3.42	16.31	0.00189	0.00182	0.00867	PASS
Extreme (60°C)		3.89	2.18	4.11	0.00207	0.00116	0.00218	PASS
Extreme (50°C)		9.22	9.95	15.30	0.00490	0.00529	0.00814	PASS
Extreme (40°C)		8.04	8.19	16.31	0.00428	0.00436	0.00867	PASS
Extreme (30°C)		12.89	4.36	10.70	0.00686	0.00232	0.00569	PASS
Extreme (20°C)		5.33	15.88	14.67	0.00284	0.00845	0.00780	PASS
Extreme (10°C)		14.68	7.77	16.22	0.00781	0.00413	0.00863	PASS
Extreme (0°C)		2.04	7.04	1.68	0.00109	0.00374	0.00089	PASS
Extreme (-10°C)		5.04	6.38	6.12	0.00268	0.00339	0.00325	PASS
Extreme (-20°C)		14.15	1.69	12.63	0.00753	0.00090	0.00672	PASS
Extreme (-30°C)		7.74	15.59	16.89	0.00412	0.00829	0.00899	PASS
25°C	LV	6.73	15.34	13.68	0.00358	0.00816	0.00727	PASS
	HV	2.12	11.73	11.10	0.00113	0.00624	0.00590	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	2.17	13.49	3.03	0.00116	0.00718	0.00161	PASS
Extreme (60°C)		11.45	2.32	4.43	0.00609	0.00124	0.00236	PASS
Extreme (50°C)		13.28	15.71	1.60	0.00707	0.00836	0.00085	PASS
Extreme (40°C)		6.60	12.13	6.07	0.00351	0.00645	0.00323	PASS
Extreme (30°C)		3.44	9.24	2.47	0.00183	0.00491	0.00131	PASS



Extreme (20°C)		3.82	16.28	7.86	0.00203	0.00866	0.00418	PASS
Extreme (10°C)		1.73	13.76	10.99	0.00092	0.00732	0.00585	PASS
Extreme (0°C)		17.30	9.23	13.11	0.00920	0.00491	0.00697	PASS
Extreme (-10°C)		8.41	2.25	15.72	0.00447	0.00119	0.00836	PASS
Extreme (-20°C)		7.20	5.73	3.34	0.00383	0.00305	0.00178	PASS
Extreme (-30°C)		13.87	10.36	2.82	0.00738	0.00551	0.00150	PASS
25°C	LV	2.52	5.62	13.11	0.00134	0.00299	0.00697	PASS
	HV	2.56	6.22	16.09	0.00136	0.00331	0.00856	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25°C)	Normal	9.81	3.75	4.57	0.00522	0.00200	0.00243	PASS
Extreme (60°C)		3.42	2.74	10.64	0.00182	0.00146	0.00566	PASS
Extreme (50°C)		8.23	15.67	8.77	0.00438	0.00834	0.00467	PASS
Extreme (40°C)		4.30	3.77	10.93	0.00229	0.00201	0.00581	PASS
Extreme (30°C)		15.56	11.92	16.74	0.00828	0.00634	0.00890	PASS
Extreme (20°C)		12.76	5.75	16.36	0.00679	0.00306	0.00870	PASS
Extreme (10°C)		9.47	13.82	17.96	0.00504	0.00735	0.00955	PASS
Extreme (0°C)		5.11	1.79	1.52	0.00272	0.00095	0.00081	PASS
Extreme (-10°C)		14.48	7.64	1.98	0.00770	0.00406	0.00105	PASS
Extreme (-20°C)		11.59	7.59	7.56	0.00617	0.00404	0.00402	PASS
Extreme (-30°C)		6.13	13.14	11.64	0.00326	0.00699	0.00619	PASS
25°C		LV	4.79	15.79	15.15	0.00255	0.00840	0.00806
	HV	6.78	14.93	9.54	0.00361	0.00794	0.00508	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

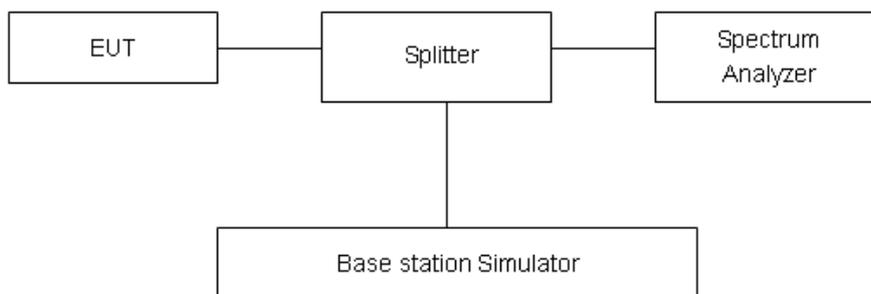
RBW is set to 100 kHz (30MHz~1000 MHz)

RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “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..”

Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least



30 kHz may be employed.

Part 27.53(a)/(h)/(g) Limit	-13 dBm
-----------------------------	---------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

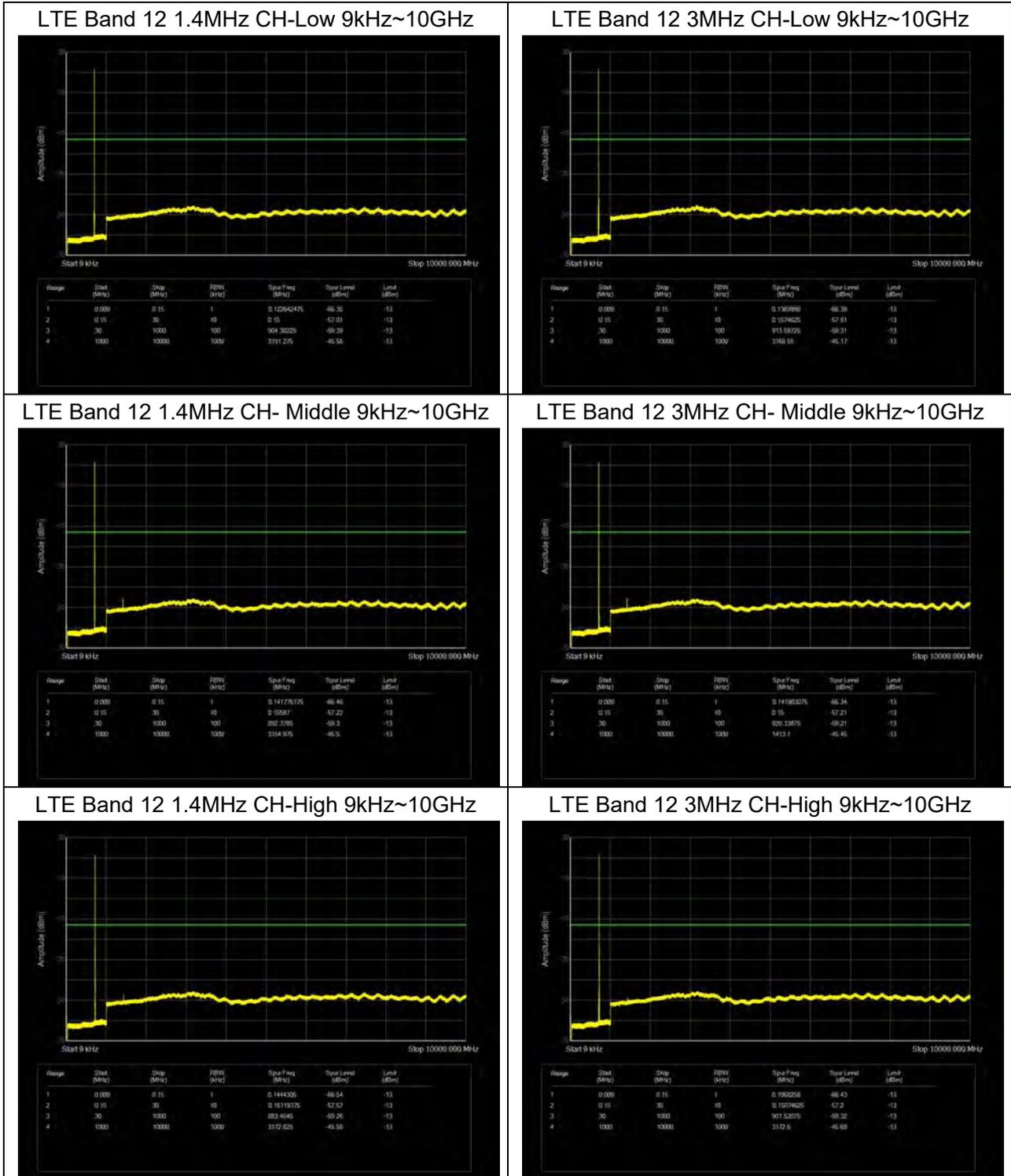
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB



Test Result

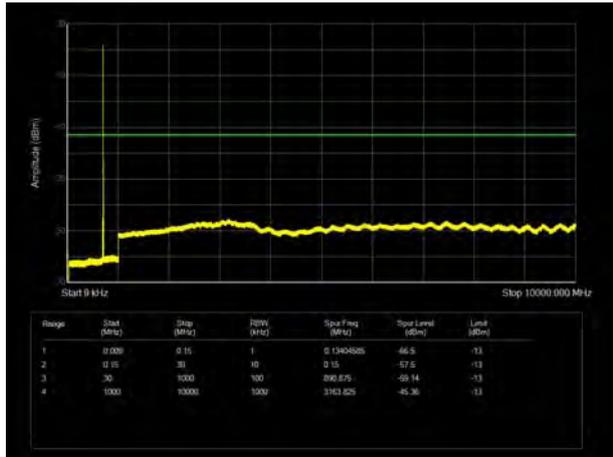
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

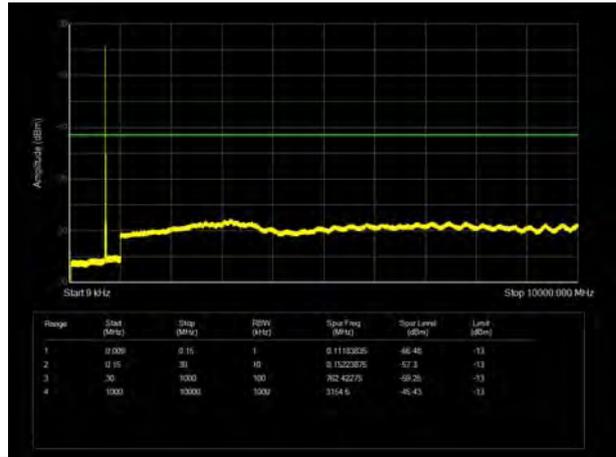




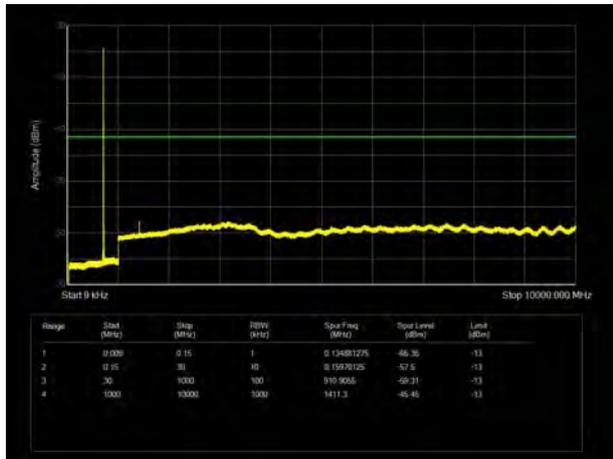
LTE Band 12 5MHz CH-Low 9kHz~10GHz



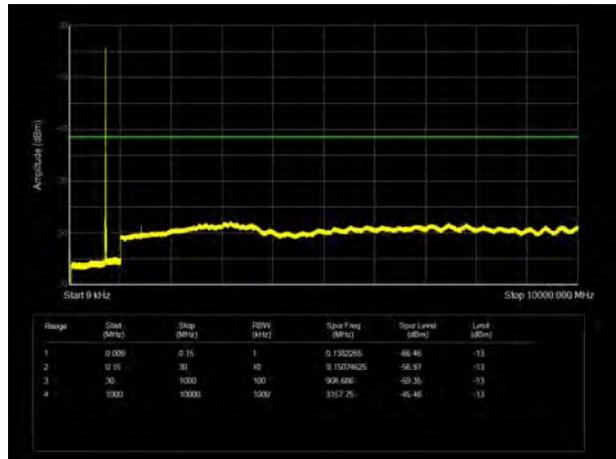
LTE Band 12 10MHz CH-Low 9kHz~10GHz



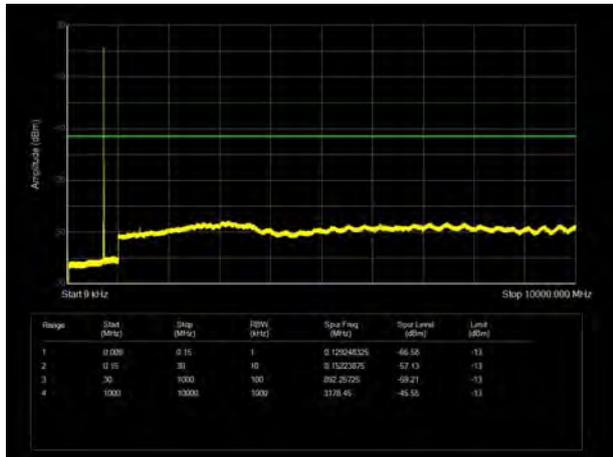
LTE Band 12 5MHz CH- Middle 9kHz~10GHz



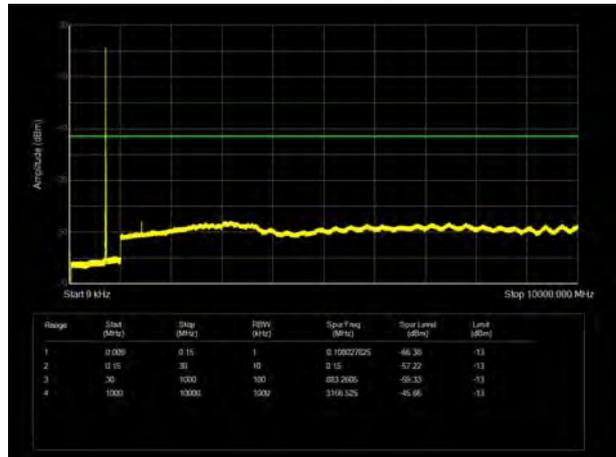
LTE Band 12 10MHz CH- Middle 9kHz~10GHz



LTE Band 12 5MHz CH-High 9kHz~10GHz

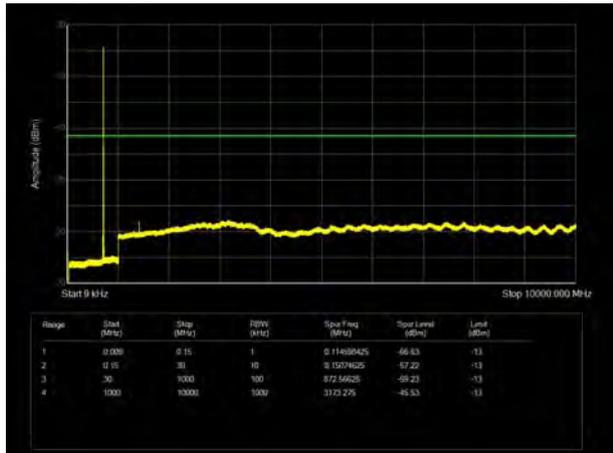


LTE Band 12 10MHz CH-High 9kHz~10GHz

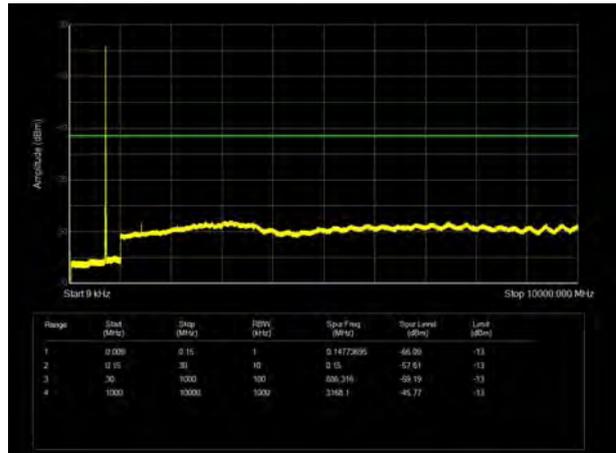




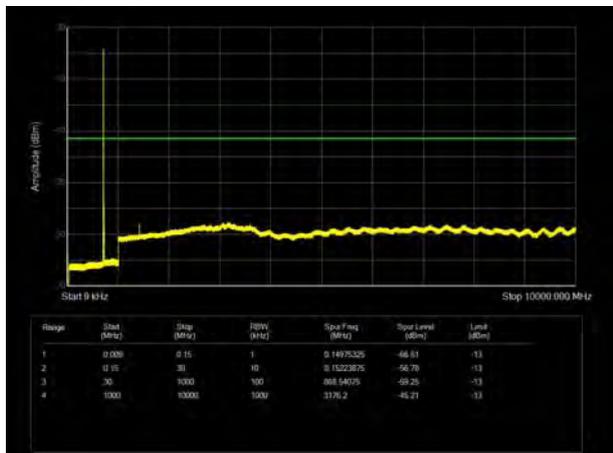
LTE Band 17 5MHz CH-Low 9kHz~10GHz



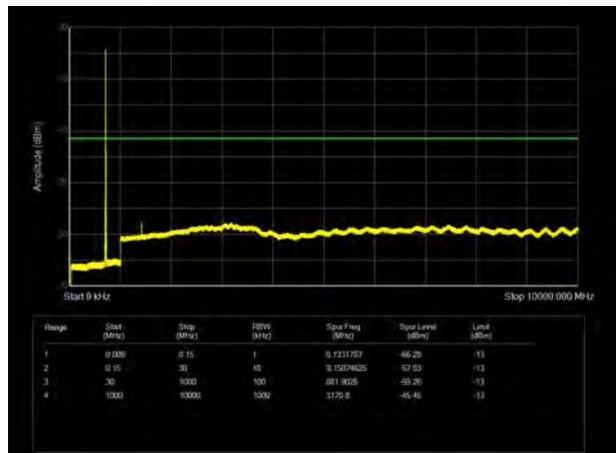
LTE Band 17 10MHz CH-Low 9kHz~10GHz



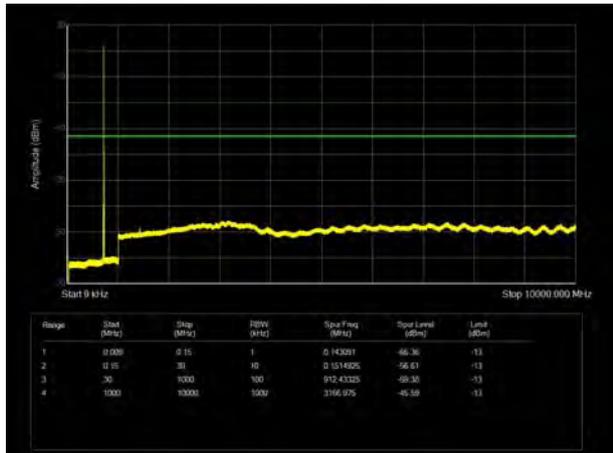
LTE Band 17 5MHz CH-Middle 9kHz~10GHz



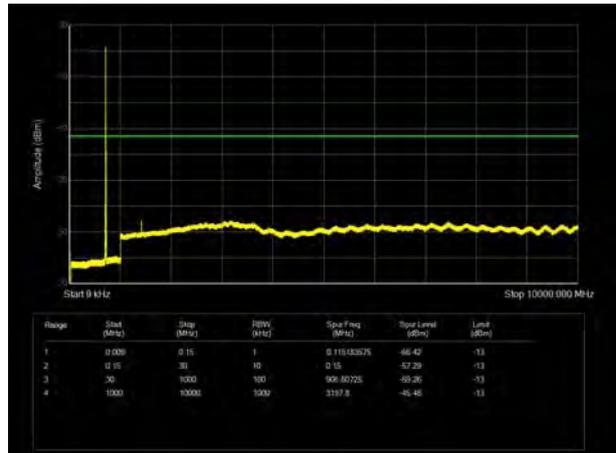
LTE Band 17 10MHz CH-Middle 9kHz~10GHz



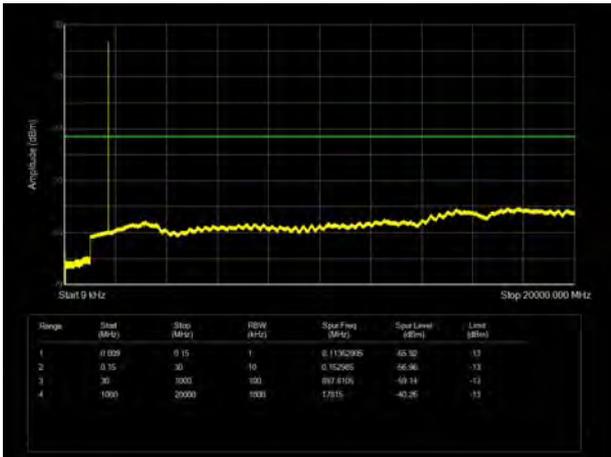
LTE Band 17 5MHz CH-High 9kHz~10GHz



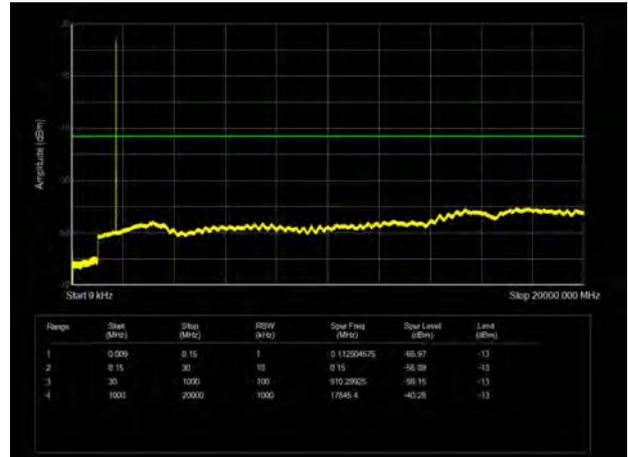
LTE Band 17 10MHz CH-High 9kHz~10GHz



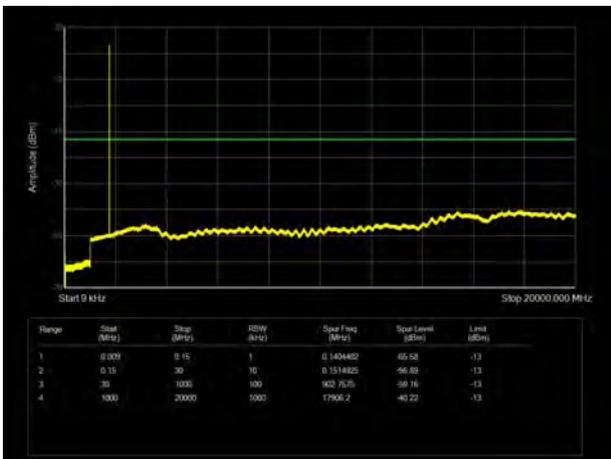
LTE Band 66 1.4MHz CH-Low 9kHz~20GHz



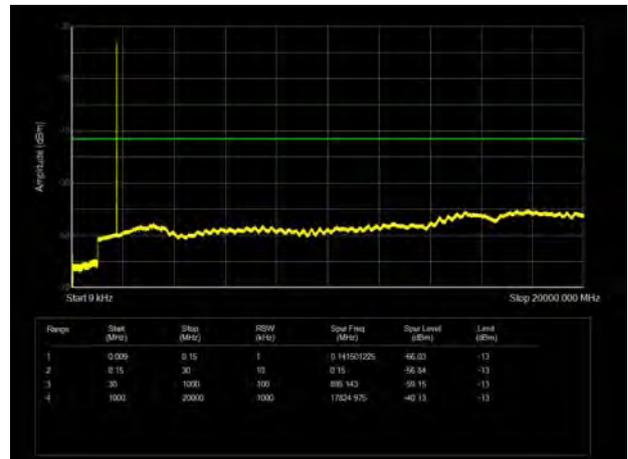
LTE Band 66 3MHz CH-Low 9kHz~20GHz



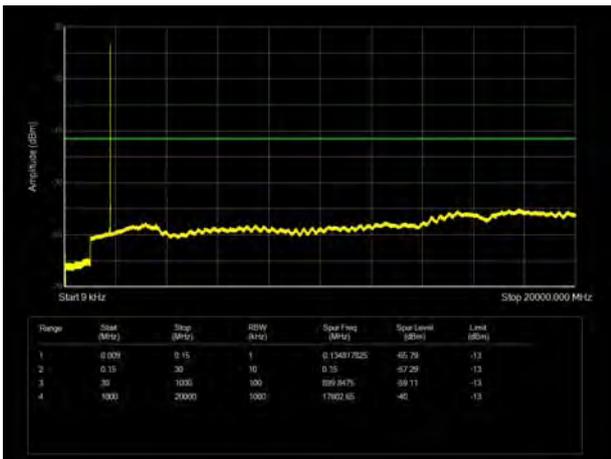
LTE Band 66 1.4MHz CH-Middle 9kHz~20GHz



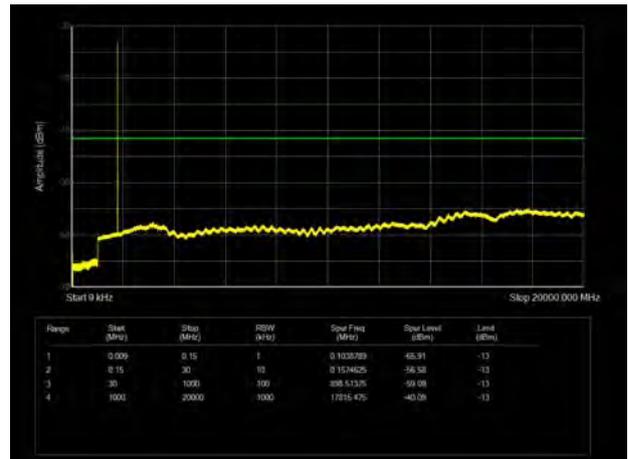
LTE Band 66 3MHz CH-Middle 9kHz~20GHz



LTE Band 66 1.4MHz CH-High 9kHz~20GHz

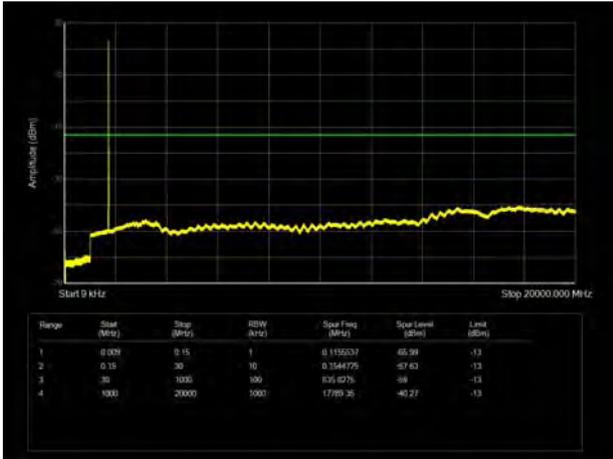


LTE Band 66 3MHz CH-High 9kHz~20GHz

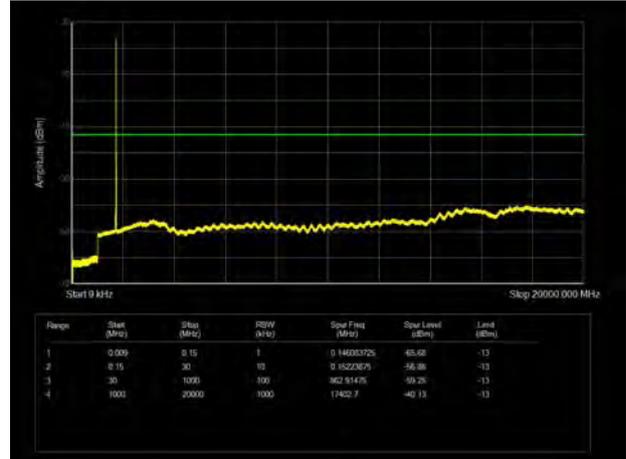




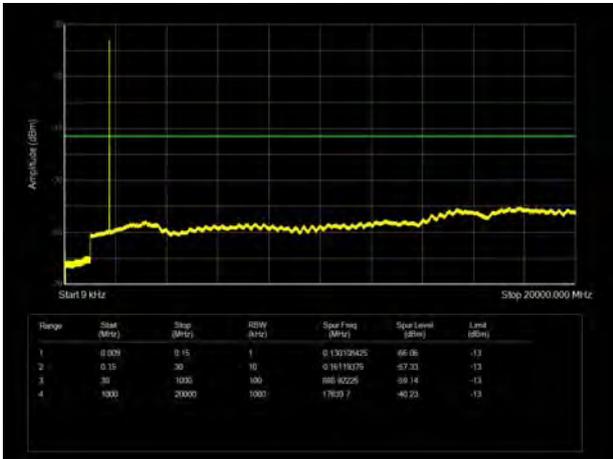
LTE Band 66 5MHz CH-Low 9kHz~20GHz



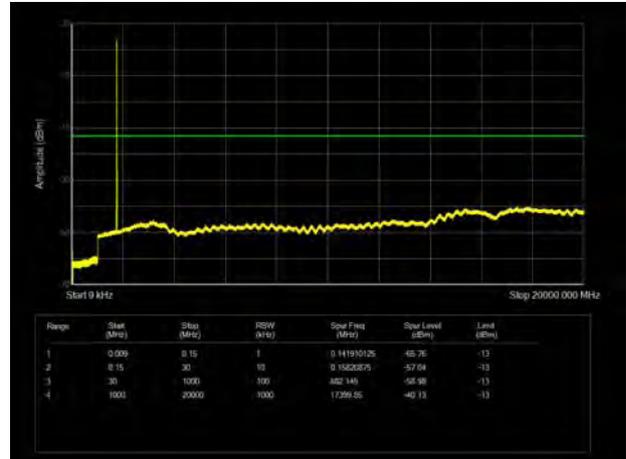
LTE Band 66 10MHz CH-Low 9kHz~20GHz



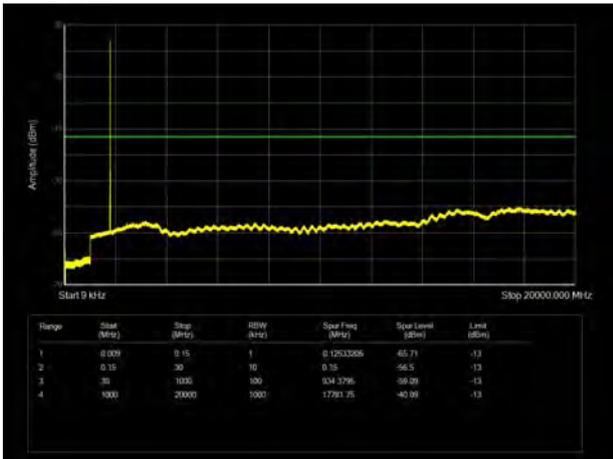
LTE Band 66 5MHz CH-Middle 9kHz~20GHz



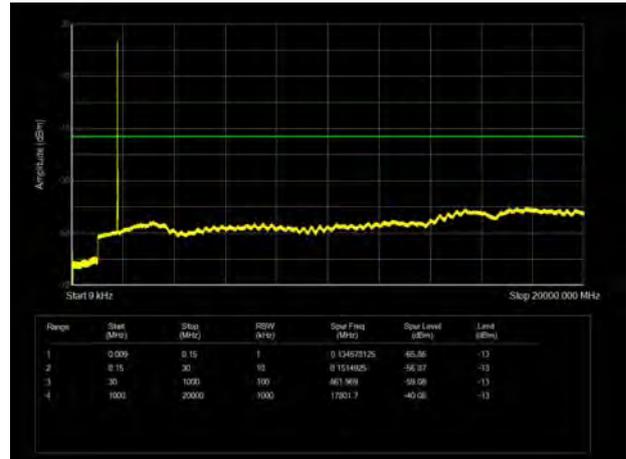
LTE Band 66 10MHz CH-Middle 9kHz~20GHz



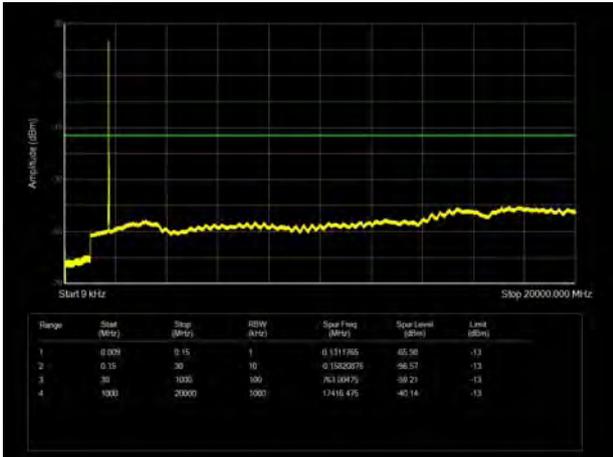
LTE Band 66 5MHz CH-High 9kHz~20GHz



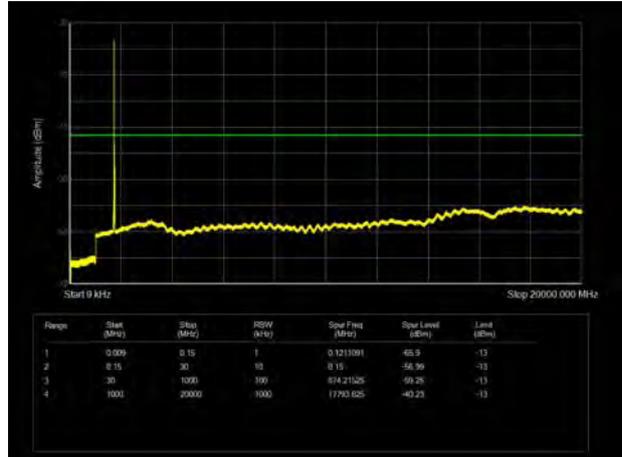
LTE Band 66 10MHz CH-High 9kHz~20GHz



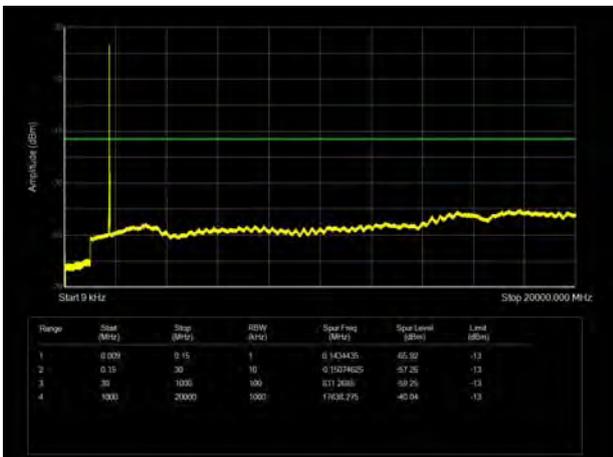
LTE Band 66 15MHz CH-Low 9kHz~20GHz



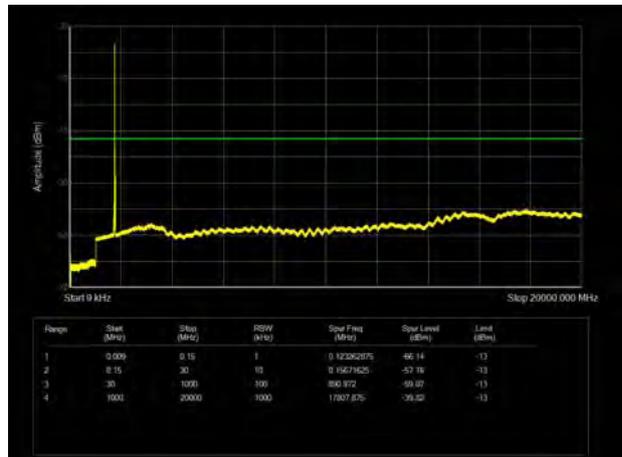
LTE Band 66 20MHz CH-Low 9kHz~20GHz



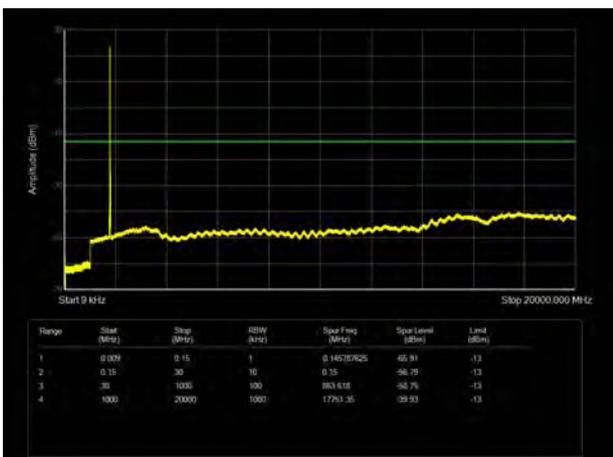
LTE Band 66 15MHz CH-Middle 9kHz~20GHz



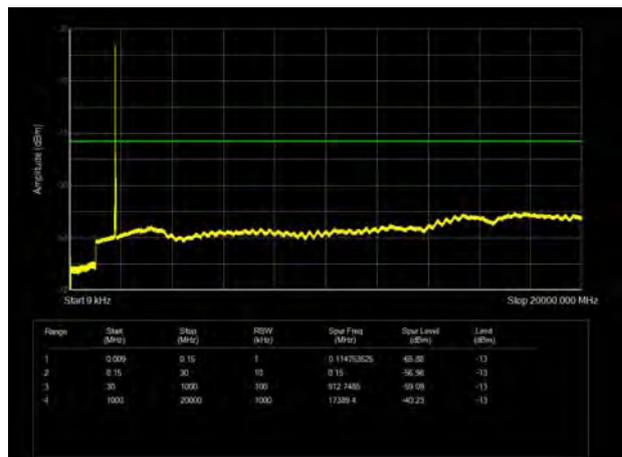
LTE Band 66 20MHz CH-Middle 9kHz~20GHz



LTE Band 66 15MHz CH-High 9kHz~20GHz



LTE Band 66 20MHz CH-High 9kHz~20GHz



5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

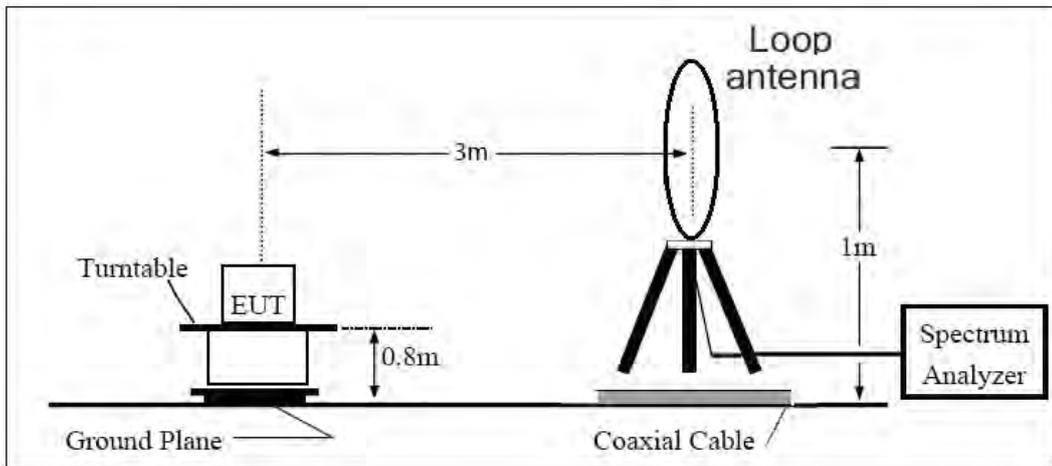
Method of Measurement

- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
- Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
- A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
- The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
- The measurement results are obtained as described below:
 $Power(EIRP)=PMea- PAg - Pcl + Ga$
 The measurement results are amend as described below:
 $Power(EIRP)=PMea- Pcl + Ga$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP-2.15dBi$.

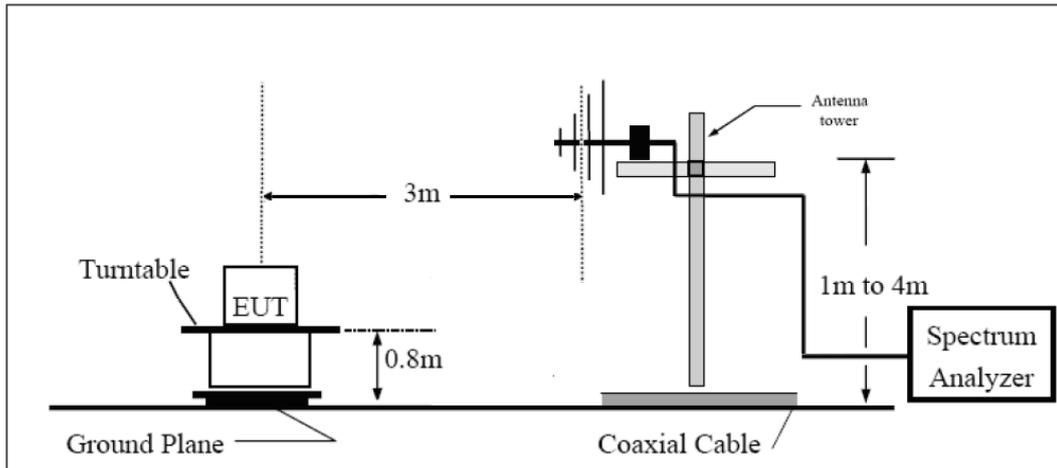
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

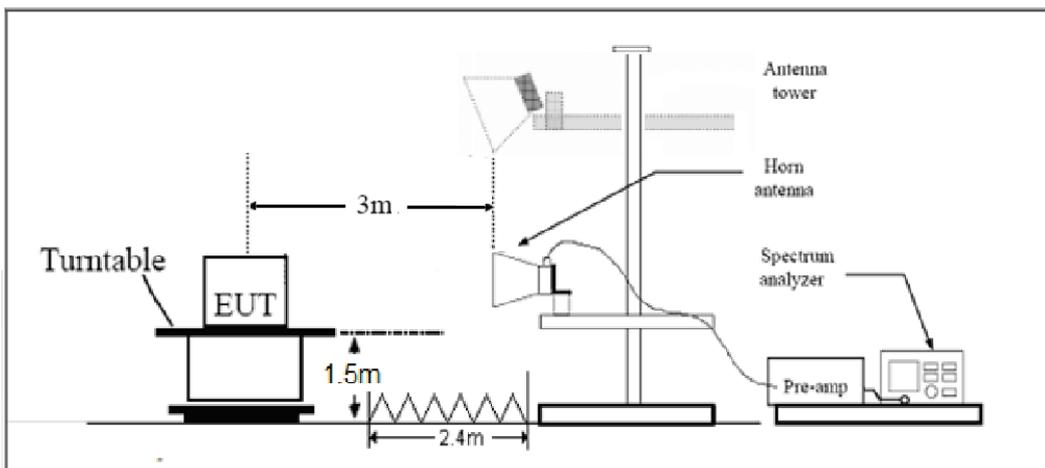
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits



Rule Part 27.53(h) specifies that “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 $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Part 27.53(a)/(h)/(g) Limit	-13 dBm
-----------------------------	---------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

LTE Band 12 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	2121.3	-56.78	1.70	8.70	Horizontal	-48.93	-13.00	35.93	135
3	2830.6	-64.02	2.10	11.10	Horizontal	-56.87	-13.00	43.87	0
4	1415.0	-64.40	2.30	13.10	Horizontal	-58.95	-13.00	45.95	180
5	3537.5	-61.00	2.60	12.70	Horizontal	-55.05	-13.00	42.05	270
6	4245.0	-60.41	3.30	12.50	Horizontal	-55.96	-13.00	42.96	0
7	4952.5	-60.07	3.40	12.50	Horizontal	-53.62	-13.00	40.62	0
8	5660.0	-55.48	3.30	12.50	Horizontal	-52.03	-13.00	39.03	90
9	6367.5	-62.81	3.80	11.50	Horizontal	-54.26	-13.00	41.26	45
10	7075.0	-57.68	4.20	11.80	Horizontal	-51.73	-13.00	38.73	270

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 12 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1410.6	-65.77	1.70	8.70	Horizontal	-57.92	-13.00	44.92	45
3	2115.9	-64.98	2.10	11.10	Horizontal	-57.83	-13.00	44.83	315
4	2821.2	-60.61	2.30	13.10	Horizontal	-55.16	-13.00	42.16	90
5	3537.5	-62.42	2.60	12.70	Horizontal	-56.47	-13.00	43.47	90
6	4245.0	-60.50	3.30	12.50	Horizontal	-56.05	-13.00	43.05	45
7	4952.5	-59.92	3.40	12.50	Horizontal	-53.47	-13.00	40.47	270
8	5660.0	-56.87	3.30	12.50	Horizontal	-53.42	-13.00	40.42	90
9	6367.5	-61.60	3.80	11.50	Horizontal	-53.05	-13.00	40.05	45
10	7075.0	-56.74	4.20	11.80	Horizontal	-50.79	-13.00	37.79	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 12 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1406.4	-63.68	1.70	8.70	Horizontal	-55.83	-13.00	42.83	315
3	2109.6	-65.70	2.10	11.10	Horizontal	-58.55	-13.00	45.55	270
4	2812.8	-61.01	2.30	13.10	Horizontal	-55.56	-13.00	42.56	45
5	3537.5	-62.18	2.60	12.70	Horizontal	-56.23	-13.00	43.23	45
6	4245.0	-59.96	3.30	12.50	Horizontal	-55.51	-13.00	42.51	315
7	4952.5	-60.49	3.40	12.50	Horizontal	-54.04	-13.00	41.04	90
8	5660.0	-56.11	3.30	12.50	Horizontal	-52.66	-13.00	39.66	45
9	6367.5	-61.94	3.80	11.50	Horizontal	-53.39	-13.00	40.39	180
10	7075.0	-56.71	4.20	11.80	Horizontal	-50.76	-13.00	37.76	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 17 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1420.0	-67.18	1.70	8.70	Horizontal	-62.33	-13.00	49.33	0
3	2130.0	-53.88	2.10	11.10	Horizontal	-47.03	-13.00	34.03	45
4	2840.0	-63.78	2.50	13.10	Horizontal	-55.33	-13.00	42.33	315
5	3550.0	-64.58	2.60	12.70	Horizontal	-56.63	-13.00	43.63	45
6	4260.0	-62.74	3.30	12.50	Horizontal	-55.69	-13.00	42.69	135
7	4970.0	-60.60	3.40	12.50	Horizontal	-53.65	-13.00	40.65	180
8	5680.0	-58.97	3.40	12.80	Horizontal	-51.72	-13.00	38.72	315
9	6390.0	-59.48	4.10	11.50	Horizontal	-54.23	-13.00	41.23	45
10	7100.0	-57.20	4.20	12.20	Horizontal	-51.35	-13.00	38.35	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 17 QPSK 10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1420.0	-64.16	1.70	8.70	Horizontal	-59.31	-13.00	46.31	90
3	2130.0	-64.54	2.10	11.10	Horizontal	-57.69	-13.00	44.69	45
4	2840.0	-62.39	2.50	13.10	Horizontal	-53.94	-13.00	40.94	225
5	3550.0	-64.73	2.60	12.70	Horizontal	-56.78	-13.00	43.78	225
6	4260.0	-63.17	3.30	12.50	Horizontal	-56.12	-13.00	43.12	90
7	4970.0	-60.09	3.40	12.50	Horizontal	-53.14	-13.00	40.14	45
8	5680.0	-59.54	3.40	12.80	Horizontal	-52.29	-13.00	39.29	135
9	6390.0	-59.40	4.10	11.50	Horizontal	-54.15	-13.00	41.15	270
10	7100.0	-56.89	4.20	12.20	Horizontal	-51.04	-13.00	38.04	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.3	-65.68	2.70	12.70	Horizontal	-55.68	-13.00	42.68	180
3	5233.5	-61.35	3.20	12.50	Horizontal	-52.05	-13.00	39.05	90
4	6930.0	-62.47	4.20	11.80	Horizontal	-54.87	-13.00	41.87	45
5	8722.5	-54.28	4.40	12.50	Horizontal	-46.18	-13.00	33.18	225
6	10395.0	-49.88	4.70	11.80	Horizontal	-42.78	-13.00	29.78	45
7	12211.5	-50.63	5.20	13.80	Horizontal	-42.03	-13.00	29.03	90
8	13860.0	-50.53	5.70	13.20	Horizontal	-43.03	-13.00	30.03	45
9	15701.3	-49.74	6.10	16.80	Horizontal	-39.04	-13.00	26.04	315
10	17325.0	-47.39	6.10	14.20	Horizontal	-39.29	-13.00	26.29	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.5	-56.56	2.70	12.70	Horizontal	-46.56	-13.00	33.56	225
3	5228.6	-54.20	3.20	12.50	Horizontal	-44.90	-13.00	31.90	45
4	6930.0	-61.75	4.20	11.80	Horizontal	-54.15	-13.00	41.15	90
5	8714.3	-55.65	4.40	12.50	Horizontal	-47.55	-13.00	34.55	315
6	10395.0	-49.29	4.70	11.80	Horizontal	-42.19	-13.00	29.19	45
7	12199.5	-50.61	5.20	13.80	Horizontal	-42.01	-13.00	29.01	225
8	13860.0	-50.76	5.70	13.20	Horizontal	-43.26	-13.00	30.26	90
9	15685.5	-53.68	6.10	16.80	Horizontal	-42.98	-13.00	29.98	315
10	17325.0	-49.23	6.10	14.20	Horizontal	-41.13	-13.00	28.13	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.0	-61.52	2.70	12.70	Horizontal	-51.52	-13.00	38.52	90
3	5208.0	-59.08	3.20	12.50	Horizontal	-49.78	-13.00	36.78	45
4	6930.0	-61.68	4.20	11.80	Horizontal	-54.08	-13.00	41.08	225
5	8680.5	-55.59	4.40	12.50	Horizontal	-47.49	-13.00	34.49	270
6	10395.0	-50.01	4.70	11.80	Horizontal	-42.91	-13.00	29.91	90
7	12151.5	-51.34	5.20	13.80	Horizontal	-42.74	-13.00	29.74	45
8	13860.0	-51.09	5.70	13.20	Horizontal	-43.59	-13.00	30.59	135
9	15592.5	-52.62	6.10	16.80	Horizontal	-41.92	-13.00	28.92	180
10	17325.0	-49.63	6.10	14.20	Horizontal	-41.53	-13.00	28.53	270

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2022-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Signal generator	R&S	SMB 100A	102594	2021-05-15	2022-05-14
Climatic Chamber	ESPEC	SU-242	93000506	2020-12-13	2021-12-12
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2021-06-09	2021-12-08
RF Cable	Agilent	SMA 15cm	0001	2021-06-09	2021-12-08
Software	R&S	EMC32	9.26.0	/	/

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.