



RF TEST REPORT

Applicant Quectel Wireless Solutions Co., Ltd
FCC ID XMR201909EC21AUX
Product LTE Module
Brand Quectel
Model EC21-AUX, EC21-AUX MINIPCIE
Report No. R2108A0686-R3V1
Issue Date December 8, 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.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	27.50(d)(4) /27.50(h)(2)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	27.53(h) /27.53(m)	PASS
5	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 27.54	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 /27.53(h)/27.53(m)	PASS
8	Radiates Spurious Emission	2.1051 /27.53(h)/27.53(m)	PASS
Date of Testing: (Original) August 19, 2019 ~October 10, 2019 (Variant) September 28, 2021~ December 1, 2021			
Note: PASS: The EUT complies with the essential requirements in the standard.			

EC21-AUX, EC21-AUX MINIPCIE (Report No.: R2108A0686-R3V1) is a variant model of EC21-AUX MINIPCIE (Report No.: R1908A0502-R3). There is only changed the Power Amplifier and Software Version of product.

Tested cases refer to the following table. Please refer to Appendix C for Verify data

Test Case	Original	Variant
RF Power Output and Effective Radiated Power	PASS	Retest(WCDMA Band IV/ LTE Band 4/7)
Occupied Bandwidth	PASS	Verify the worst combination of each frequency band(WCDMA Band IV/ LTE Band 4/7)
Band Edge Compliance	PASS	Verify the worst combination of each frequency band(WCDMA Band IV/ LTE Band 4/7)
Peak-to-Average Power Ratio	PASS	Retest(WCDMA Band IV/ LTE Band 4/7)
Frequency Stability	PASS	Refer to the Original
Spurious Emissions at Antenna Terminals	PASS	Verify the worst combination of each frequency band(WCDMA Band IV/ LTE Band 4/7)
Radiates Spurious Emission	PASS	Retest(WCDMA Band IV/ LTE Band 4/7)

The detailed product change description please refers to the Difference Declaration Letter.



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 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
Post code: 201201
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E-mail: xukai@ta-shanghai.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Quectel Wireless Solutions Co., Ltd
Applicant address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer	Quectel Wireless Solutions Co., Ltd
Manufacturer address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

2.2 General information

EUT Description			
Model	EC21-AUX, EC21-AUX MINIPCIE		
IMEI	868450040001099		
Hardware Version	R2.0		
Software Version	EC21AUXGAR08A03M1G		
Power Supply	External power supply		
Antenna Type	The EUT don't have standard Antenna, The Antenna used for testing in this report is the after-market accessory (Dipole Antenna)		
Antenna Gain	4dBi		
Test Mode(s)	WCDMA Band IV; LTE Band 4/7;		
Test Modulation	(WCDMA) BPSK, QPSK,16QAM; (LTE)QPSK 16QAM;		
HSDPA UE Category	24		
HSUPA UE Category	6		
DC-HSDPA UE Category	24		
HSPA+ UE Category	6		
LTE Category	1		
Maximum E.I.R.P.	WCDMA Band IV:	25.78dBm	
	LTE Band 4:	25.83dBm	
	LTE Band 7:	26.58dBm	
Rated Power Supply Voltage:	3.8V		
Extreme Voltage	Minimum: 3.3V Maximum: 4.3V		
Extreme Temperature	Lowest: -40°C Highest: +85°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
Note: 1. The information of the EUT is declared by the manufacturer.			



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 2 (2018)

FCC CFR47 Part 27C (2018)

ANSI C63.26 (2015)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

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 WCDMA/LTE is set based on the maximum RF Output Power.

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 WCDMA Band IV:

Test items	Modes/Modulation
	WCDMA Band IV
RF power output	RMC HSDPA/HSUPA DC-HSDPA
Effective Isotropic Radiated power	RMC
Occupied Bandwidth	RMC
Band Edge Compliance	RMC
Peak-to-Average Power Ratio	RMC
Frequency Stability	RMC
Spurious Emissions at Antenna Terminals	RMC
Radiates Spurious Emission	RMC



Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Band Edge Compliance	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Frequency Stability	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	O	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	-	O	O	O
Radiates Spurious Emission	LTE 4	O	-	O	-	-	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	-	O	O	O	-	O	-	-	O	O	O
Note	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

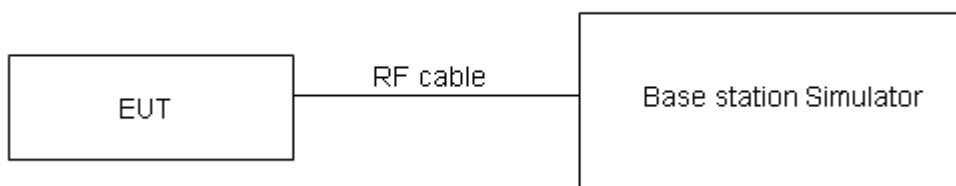
Ambient condition

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

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

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**

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
WCDMA Band IV	1312	HSDPA_Sub0	23.44	30	PASS
WCDMA Band IV	1312	HSDPA_Sub1	22.91	30	PASS
WCDMA Band IV	1312	HSDPA_Sub2	22.91	30	PASS
WCDMA Band IV	1312	HSDPA_Sub3	23.03	30	PASS
WCDMA Band IV	1413	HSDPA_Sub0	23.39	30	PASS
WCDMA Band IV	1413	HSDPA_Sub1	22.85	30	PASS
WCDMA Band IV	1413	HSDPA_Sub2	22.94	30	PASS
WCDMA Band IV	1413	HSDPA_Sub3	22.92	30	PASS
WCDMA Band IV	1513	HSDPA_Sub0	23.32	30	PASS
WCDMA Band IV	1513	HSDPA_Sub1	22.93	30	PASS
WCDMA Band IV	1513	HSDPA_Sub2	22.95	30	PASS
WCDMA Band IV	1513	HSDPA_Sub3	22.71	30	PASS
Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
WCDMA Band IV	1312	HSUPA_Sub1	22.80	33	PASS
WCDMA Band IV	1312	HSUPA_Sub2	21.29	33	PASS
WCDMA Band IV	1312	HSUPA_Sub3	22.49	33	PASS
WCDMA Band IV	1312	HSUPA_Sub4	21.91	30	PASS
WCDMA Band IV	1312	HSUPA_Sub5	23.38	30	PASS
WCDMA Band IV	1413	HSUPA_Sub1	22.90	30	PASS
WCDMA Band IV	1413	HSUPA_Sub2	21.38	30	PASS
WCDMA Band IV	1413	HSUPA_Sub3	22.49	30	PASS
WCDMA Band IV	1413	HSUPA_Sub4	22.01	30	PASS
WCDMA Band IV	1413	HSUPA_Sub5	23.45	30	PASS
WCDMA Band IV	1513	HSUPA_Sub1	23.30	30	PASS
WCDMA Band IV	1513	HSUPA_Sub2	21.40	30	PASS
WCDMA Band IV	1513	HSUPA_Sub3	22.49	30	PASS
WCDMA Band IV	1513	HSUPA_Sub4	22.11	30	PASS
WCDMA Band IV	1513	HSUPA_Sub5	23.65	30	PASS



Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Verdict
LTE Band 4	1.4MHz	QPSK	19957	1RB#0	23.48	PASS
LTE Band 4	1.4MHz	16QAM	19957	1RB#0	22.20	PASS
LTE Band 4	1.4MHz	QPSK	19957	1RB#2	23.50	PASS
LTE Band 4	1.4MHz	16QAM	19957	1RB#2	22.68	PASS
LTE Band 4	1.4MHz	QPSK	19957	1RB#5	23.26	PASS
LTE Band 4	1.4MHz	16QAM	19957	1RB#5	22.46	PASS
LTE Band 4	1.4MHz	QPSK	19957	3RB#0	23.49	PASS
LTE Band 4	1.4MHz	16QAM	19957	3RB#0	22.50	PASS
LTE Band 4	1.4MHz	QPSK	19957	3RB#1	23.57	PASS
LTE Band 4	1.4MHz	16QAM	19957	3RB#1	22.39	PASS
LTE Band 4	1.4MHz	QPSK	19957	3RB#3	23.49	PASS
LTE Band 4	1.4MHz	16QAM	19957	3RB#3	22.49	PASS
LTE Band 4	1.4MHz	QPSK	19957	6RB#0	22.40	PASS
LTE Band 4	1.4MHz	16QAM	19957	6RB#0	21.47	PASS
LTE Band 4	1.4MHz	QPSK	20175	1RB#0	23.61	PASS
LTE Band 4	1.4MHz	16QAM	20175	1RB#0	22.51	PASS
LTE Band 4	1.4MHz	QPSK	20175	1RB#2	23.88	PASS
LTE Band 4	1.4MHz	16QAM	20175	1RB#2	22.71	PASS
LTE Band 4	1.4MHz	QPSK	20175	1RB#5	23.41	PASS
LTE Band 4	1.4MHz	16QAM	20175	1RB#5	22.68	PASS
LTE Band 4	1.4MHz	QPSK	20175	3RB#0	23.63	PASS
LTE Band 4	1.4MHz	16QAM	20175	3RB#0	22.49	PASS
LTE Band 4	1.4MHz	QPSK	20175	3RB#1	23.63	PASS
LTE Band 4	1.4MHz	16QAM	20175	3RB#1	22.58	PASS
LTE Band 4	1.4MHz	QPSK	20175	3RB#3	23.48	PASS
LTE Band 4	1.4MHz	16QAM	20175	3RB#3	22.57	PASS
LTE Band 4	1.4MHz	QPSK	20175	6RB#0	22.56	PASS
LTE Band 4	1.4MHz	16QAM	20175	6RB#0	21.77	PASS
LTE Band 4	1.4MHz	QPSK	20393	1RB#0	23.89	PASS
LTE Band 4	1.4MHz	16QAM	20393	1RB#0	22.98	PASS
LTE Band 4	1.4MHz	QPSK	20393	1RB#2	23.01	PASS
LTE Band 4	1.4MHz	16QAM	20393	1RB#2	23.22	PASS
LTE Band 4	1.4MHz	QPSK	20393	1RB#5	23.87	PASS
LTE Band 4	1.4MHz	16QAM	20393	1RB#5	23.02	PASS
LTE Band 4	1.4MHz	QPSK	20393	3RB#0	23.80	PASS
LTE Band 4	1.4MHz	16QAM	20393	3RB#0	22.33	PASS
LTE Band 4	1.4MHz	QPSK	20393	3RB#1	23.87	PASS
LTE Band 4	1.4MHz	16QAM	20393	3RB#1	22.30	PASS
LTE Band 4	1.4MHz	QPSK	20393	3RB#3	23.90	PASS
LTE Band 4	1.4MHz	16QAM	20393	3RB#3	22.65	PASS



LTE Band 4	1.4MHz	QPSK	20393	6RB#0	22.60	PASS
LTE Band 4	1.4MHz	16QAM	20393	6RB#0	21.88	PASS
LTE Band 4	3MHz	QPSK	19965	1RB#0	23.44	PASS
LTE Band 4	3MHz	16QAM	19965	1RB#0	22.31	PASS
LTE Band 4	3MHz	QPSK	19965	1RB#8	23.12	PASS
LTE Band 4	3MHz	16QAM	19965	1RB#8	22.18	PASS
LTE Band 4	3MHz	QPSK	19965	1RB#14	23.39	PASS
LTE Band 4	3MHz	16QAM	19965	1RB#14	22.22	PASS
LTE Band 4	3MHz	QPSK	19965	8RB#0	22.35	PASS
LTE Band 4	3MHz	16QAM	19965	8RB#0	21.22	PASS
LTE Band 4	3MHz	QPSK	19965	8RB#4	22.34	PASS
LTE Band 4	3MHz	16QAM	19965	8RB#4	21.38	PASS
LTE Band 4	3MHz	QPSK	19965	8RB#7	22.36	PASS
LTE Band 4	3MHz	16QAM	19965	8RB#7	21.45	PASS
LTE Band 4	3MHz	QPSK	19965	15RB#0	22.35	PASS
LTE Band 4	3MHz	16QAM	19965	15RB#0	21.32	PASS
LTE Band 4	3MHz	QPSK	20175	1RB#0	23.49	PASS
LTE Band 4	3MHz	16QAM	20175	1RB#0	22.65	PASS
LTE Band 4	3MHz	QPSK	20175	1RB#8	23.25	PASS
LTE Band 4	3MHz	16QAM	20175	1RB#8	22.54	PASS
LTE Band 4	3MHz	QPSK	20175	1RB#14	23.45	PASS
LTE Band 4	3MHz	16QAM	20175	1RB#14	22.52	PASS
LTE Band 4	3MHz	QPSK	20175	8RB#0	22.63	PASS
LTE Band 4	3MHz	16QAM	20175	8RB#0	21.64	PASS
LTE Band 4	3MHz	QPSK	20175	8RB#4	22.55	PASS
LTE Band 4	3MHz	16QAM	20175	8RB#4	21.74	PASS
LTE Band 4	3MHz	QPSK	20175	8RB#7	22.62	PASS
LTE Band 4	3MHz	16QAM	20175	8RB#7	21.43	PASS
LTE Band 4	3MHz	QPSK	20175	15RB#0	22.57	PASS
LTE Band 4	3MHz	16QAM	20175	15RB#0	21.58	PASS
LTE Band 4	3MHz	QPSK	20385	1RB#0	23.60	PASS
LTE Band 4	3MHz	16QAM	20385	1RB#0	22.41	PASS
LTE Band 4	3MHz	QPSK	20385	1RB#8	23.57	PASS
LTE Band 4	3MHz	16QAM	20385	1RB#8	22.62	PASS
LTE Band 4	3MHz	QPSK	20385	1RB#14	23.84	PASS
LTE Band 4	3MHz	16QAM	20385	1RB#14	22.71	PASS
LTE Band 4	3MHz	QPSK	20385	8RB#0	22.75	PASS
LTE Band 4	3MHz	16QAM	20385	8RB#0	21.58	PASS
LTE Band 4	3MHz	QPSK	20385	8RB#4	22.58	PASS
LTE Band 4	3MHz	16QAM	20385	8RB#4	21.58	PASS
LTE Band 4	3MHz	QPSK	20385	8RB#7	22.66	PASS
LTE Band 4	3MHz	16QAM	20385	8RB#7	21.69	PASS
LTE Band 4	3MHz	QPSK	20385	15RB#0	22.71	PASS



LTE Band 4	3MHz	16QAM	20385	15RB#0	21.51	PASS
LTE Band 4	5MHz	QPSK	19975	1RB#0	23.44	PASS
LTE Band 4	5MHz	16QAM	19975	1RB#0	22.72	PASS
LTE Band 4	5MHz	QPSK	19975	1RB#12	23.39	PASS
LTE Band 4	5MHz	16QAM	19975	1RB#12	22.55	PASS
LTE Band 4	5MHz	QPSK	19975	1RB#24	23.49	PASS
LTE Band 4	5MHz	16QAM	19975	1RB#24	22.32	PASS
LTE Band 4	5MHz	QPSK	19975	12RB#0	22.30	PASS
LTE Band 4	5MHz	16QAM	19975	12RB#0	21.34	PASS
LTE Band 4	5MHz	QPSK	19975	12RB#6	22.30	PASS
LTE Band 4	5MHz	16QAM	19975	12RB#6	21.33	PASS
LTE Band 4	5MHz	QPSK	19975	12RB#13	22.23	PASS
LTE Band 4	5MHz	16QAM	19975	12RB#13	21.61	PASS
LTE Band 4	5MHz	QPSK	19975	25RB#0	22.30	PASS
LTE Band 4	5MHz	16QAM	19975	25RB#0	21.24	PASS
LTE Band 4	5MHz	QPSK	20175	1RB#0	23.74	PASS
LTE Band 4	5MHz	16QAM	20175	1RB#0	22.65	PASS
LTE Band 4	5MHz	QPSK	20175	1RB#12	23.45	PASS
LTE Band 4	5MHz	16QAM	20175	1RB#12	22.47	PASS
LTE Band 4	5MHz	QPSK	20175	1RB#24	23.63	PASS
LTE Band 4	5MHz	16QAM	20175	1RB#24	22.65	PASS
LTE Band 4	5MHz	QPSK	20175	12RB#0	22.53	PASS
LTE Band 4	5MHz	16QAM	20175	12RB#0	21.62	PASS
LTE Band 4	5MHz	QPSK	20175	12RB#6	22.54	PASS
LTE Band 4	5MHz	16QAM	20175	12RB#6	21.71	PASS
LTE Band 4	5MHz	QPSK	20175	12RB#13	22.41	PASS
LTE Band 4	5MHz	16QAM	20175	12RB#13	21.44	PASS
LTE Band 4	5MHz	QPSK	20175	25RB#0	22.69	PASS
LTE Band 4	5MHz	16QAM	20175	25RB#0	21.60	PASS
LTE Band 4	5MHz	QPSK	20375	1RB#0	23.47	PASS
LTE Band 4	5MHz	16QAM	20375	1RB#0	21.93	PASS
LTE Band 4	5MHz	QPSK	20375	1RB#12	23.67	PASS
LTE Band 4	5MHz	16QAM	20375	1RB#12	22.78	PASS
LTE Band 4	5MHz	QPSK	20375	1RB#24	23.93	PASS
LTE Band 4	5MHz	16QAM	20375	1RB#24	22.60	PASS
LTE Band 4	5MHz	QPSK	20375	12RB#0	22.54	PASS
LTE Band 4	5MHz	16QAM	20375	12RB#0	21.55	PASS
LTE Band 4	5MHz	QPSK	20375	12RB#6	22.55	PASS
LTE Band 4	5MHz	16QAM	20375	12RB#6	21.54	PASS
LTE Band 4	5MHz	QPSK	20375	12RB#13	22.65	PASS
LTE Band 4	5MHz	16QAM	20375	12RB#13	21.74	PASS
LTE Band 4	5MHz	QPSK	20375	25RB#0	22.76	PASS
LTE Band 4	5MHz	16QAM	20375	25RB#0	21.87	PASS



LTE Band 4	10MHz	QPSK	20000	1RB#0	23.54	PASS
LTE Band 4	10MHz	16QAM	20000	1RB#0	22.46	PASS
LTE Band 4	10MHz	QPSK	20000	1RB#24	23.61	PASS
LTE Band 4	10MHz	16QAM	20000	1RB#24	22.58	PASS
LTE Band 4	10MHz	QPSK	20000	1RB#49	23.53	PASS
LTE Band 4	10MHz	16QAM	20000	1RB#49	22.26	PASS
LTE Band 4	10MHz	QPSK	20000	25RB#0	22.34	PASS
LTE Band 4	10MHz	16QAM	20000	25RB#0	21.26	PASS
LTE Band 4	10MHz	QPSK	20000	25RB#12	22.45	PASS
LTE Band 4	10MHz	16QAM	20000	25RB#12	21.36	PASS
LTE Band 4	10MHz	QPSK	20000	25RB#25	22.37	PASS
LTE Band 4	10MHz	16QAM	20000	25RB#25	21.30	PASS
LTE Band 4	10MHz	QPSK	20000	50RB#0	22.35	PASS
LTE Band 4	10MHz	16QAM	20000	50RB#0	22.23	PASS
LTE Band 4	10MHz	QPSK	20175	1RB#0	22.46	PASS
LTE Band 4	10MHz	16QAM	20175	1RB#0	22.78	PASS
LTE Band 4	10MHz	QPSK	20175	1RB#24	23.80	PASS
LTE Band 4	10MHz	16QAM	20175	1RB#24	22.36	PASS
LTE Band 4	10MHz	QPSK	20175	1RB#49	23.39	PASS
LTE Band 4	10MHz	16QAM	20175	1RB#49	22.40	PASS
LTE Band 4	10MHz	QPSK	20175	25RB#0	22.55	PASS
LTE Band 4	10MHz	16QAM	20175	25RB#0	21.47	PASS
LTE Band 4	10MHz	QPSK	20175	25RB#12	22.62	PASS
LTE Band 4	10MHz	16QAM	20175	25RB#12	21.63	PASS
LTE Band 4	10MHz	QPSK	20175	25RB#25	22.45	PASS
LTE Band 4	10MHz	16QAM	20175	25RB#25	21.28	PASS
LTE Band 4	10MHz	QPSK	20175	50RB#0	22.51	PASS
LTE Band 4	10MHz	16QAM	20175	50RB#0	22.59	PASS
LTE Band 4	10MHz	QPSK	20350	1RB#0	23.87	PASS
LTE Band 4	10MHz	16QAM	20350	1RB#0	22.56	PASS
LTE Band 4	10MHz	QPSK	20350	1RB#24	23.84	PASS
LTE Band 4	10MHz	16QAM	20350	1RB#24	22.23	PASS
LTE Band 4	10MHz	QPSK	20350	1RB#49	23.55	PASS
LTE Band 4	10MHz	16QAM	20350	1RB#49	22.71	PASS
LTE Band 4	10MHz	QPSK	20350	25RB#0	22.51	PASS
LTE Band 4	10MHz	16QAM	20350	25RB#0	21.59	PASS
LTE Band 4	10MHz	QPSK	20350	25RB#12	22.50	PASS
LTE Band 4	10MHz	16QAM	20350	25RB#12	21.57	PASS
LTE Band 4	10MHz	QPSK	20350	25RB#25	22.69	PASS
LTE Band 4	10MHz	16QAM	20350	25RB#25	21.99	PASS
LTE Band 4	10MHz	QPSK	20350	50RB#0	22.50	PASS
LTE Band 4	10MHz	16QAM	20350	50RB#0	22.52	PASS
LTE Band 4	15MHz	QPSK	20025	1RB#0	23.64	PASS



LTE Band 4	15MHz	16QAM	20025	1RB#0	22.20	PASS
LTE Band 4	15MHz	QPSK	20025	1RB#38	23.48	PASS
LTE Band 4	15MHz	16QAM	20025	1RB#38	22.29	PASS
LTE Band 4	15MHz	QPSK	20025	1RB#74	23.72	PASS
LTE Band 4	15MHz	16QAM	20025	1RB#74	23.13	PASS
LTE Band 4	15MHz	QPSK	20025	38RB#0	23.22	PASS
LTE Band 4	15MHz	16QAM	20025	38RB#0	22.92	PASS
LTE Band 4	15MHz	QPSK	20025	38RB#18	21.71	PASS
LTE Band 4	15MHz	16QAM	20025	38RB#18	22.11	PASS
LTE Band 4	15MHz	QPSK	20025	38RB#37	22.37	PASS
LTE Band 4	15MHz	16QAM	20025	38RB#37	22.27	PASS
LTE Band 4	15MHz	QPSK	20025	75RB#0	22.32	PASS
LTE Band 4	15MHz	16QAM	20025	75RB#0	22.28	PASS
LTE Band 4	15MHz	QPSK	20175	1RB#0	23.44	PASS
LTE Band 4	15MHz	16QAM	20175	1RB#0	22.59	PASS
LTE Band 4	15MHz	QPSK	20175	1RB#38	23.32	PASS
LTE Band 4	15MHz	16QAM	20175	1RB#38	22.42	PASS
LTE Band 4	15MHz	QPSK	20175	1RB#74	23.39	PASS
LTE Band 4	15MHz	16QAM	20175	1RB#74	22.08	PASS
LTE Band 4	15MHz	QPSK	20175	38RB#0	22.29	PASS
LTE Band 4	15MHz	16QAM	20175	38RB#0	22.28	PASS
LTE Band 4	15MHz	QPSK	20175	38RB#18	22.34	PASS
LTE Band 4	15MHz	16QAM	20175	38RB#18	22.34	PASS
LTE Band 4	15MHz	QPSK	20175	38RB#37	22.33	PASS
LTE Band 4	15MHz	16QAM	20175	38RB#37	22.41	PASS
LTE Band 4	15MHz	QPSK	20175	75RB#0	22.55	PASS
LTE Band 4	15MHz	16QAM	20175	75RB#0	22.48	PASS
LTE Band 4	15MHz	QPSK	20325	1RB#0	23.52	PASS
LTE Band 4	15MHz	16QAM	20325	1RB#0	22.26	PASS
LTE Band 4	15MHz	QPSK	20325	1RB#38	23.46	PASS
LTE Band 4	15MHz	16QAM	20325	1RB#38	22.43	PASS
LTE Band 4	15MHz	QPSK	20325	1RB#74	23.45	PASS
LTE Band 4	15MHz	16QAM	20325	1RB#74	22.74	PASS
LTE Band 4	15MHz	QPSK	20325	38RB#0	22.56	PASS
LTE Band 4	15MHz	16QAM	20325	38RB#0	22.56	PASS
LTE Band 4	15MHz	QPSK	20325	38RB#18	22.54	PASS
LTE Band 4	15MHz	16QAM	20325	38RB#18	22.42	PASS
LTE Band 4	15MHz	QPSK	20325	38RB#37	22.09	PASS
LTE Band 4	15MHz	16QAM	20325	38RB#37	22.06	PASS
LTE Band 4	15MHz	QPSK	20325	75RB#0	22.38	PASS
LTE Band 4	15MHz	16QAM	20325	75RB#0	22.36	PASS
LTE Band 4	20MHz	QPSK	20050	1RB#0	23.47	PASS
LTE Band 4	20MHz	16QAM	20050	1RB#0	22.49	PASS



LTE Band 4	20MHz	QPSK	20050	1RB#49	23.76	PASS
LTE Band 4	20MHz	16QAM	20050	1RB#49	22.64	PASS
LTE Band 4	20MHz	QPSK	20050	1RB#99	23.53	PASS
LTE Band 4	20MHz	16QAM	20050	1RB#99	22.82	PASS
LTE Band 4	20MHz	QPSK	20050	50RB#0	22.41	PASS
LTE Band 4	20MHz	16QAM	20050	50RB#0	22.29	PASS
LTE Band 4	20MHz	QPSK	20050	50RB#25	22.26	PASS
LTE Band 4	20MHz	16QAM	20050	50RB#25	22.23	PASS
LTE Band 4	20MHz	QPSK	20050	50RB#50	22.55	PASS
LTE Band 4	20MHz	16QAM	20050	50RB#50	22.41	PASS
LTE Band 4	20MHz	QPSK	20050	100RB#0	22.32	PASS
LTE Band 4	20MHz	16QAM	20050	100RB#0	22.41	PASS
LTE Band 4	20MHz	QPSK	20175	1RB#0	23.84	PASS
LTE Band 4	20MHz	16QAM	20175	1RB#0	22.95	PASS
LTE Band 4	20MHz	QPSK	20175	1RB#49	23.76	PASS
LTE Band 4	20MHz	16QAM	20175	1RB#49	22.93	PASS
LTE Band 4	20MHz	QPSK	20175	1RB#99	23.60	PASS
LTE Band 4	20MHz	16QAM	20175	1RB#99	22.73	PASS
LTE Band 4	20MHz	QPSK	20175	50RB#0	22.59	PASS
LTE Band 4	20MHz	16QAM	20175	50RB#0	22.54	PASS
LTE Band 4	20MHz	QPSK	20175	50RB#25	22.63	PASS
LTE Band 4	20MHz	16QAM	20175	50RB#25	22.55	PASS
LTE Band 4	20MHz	QPSK	20175	50RB#50	22.46	PASS
LTE Band 4	20MHz	16QAM	20175	50RB#50	22.43	PASS
LTE Band 4	20MHz	QPSK	20175	100RB#0	22.31	PASS
LTE Band 4	20MHz	16QAM	20175	100RB#0	22.37	PASS
LTE Band 4	20MHz	QPSK	20300	1RB#0	23.81	PASS
LTE Band 4	20MHz	16QAM	20300	1RB#0	22.95	PASS
LTE Band 4	20MHz	QPSK	20300	1RB#49	23.70	PASS
LTE Band 4	20MHz	16QAM	20300	1RB#49	22.93	PASS
LTE Band 4	20MHz	QPSK	20300	1RB#99	23.48	PASS
LTE Band 4	20MHz	16QAM	20300	1RB#99	23.10	PASS
LTE Band 4	20MHz	QPSK	20300	50RB#0	22.46	PASS
LTE Band 4	20MHz	16QAM	20300	50RB#0	22.41	PASS
LTE Band 4	20MHz	QPSK	20300	50RB#25	22.37	PASS
LTE Band 4	20MHz	16QAM	20300	50RB#25	22.46	PASS
LTE Band 4	20MHz	QPSK	20300	50RB#50	22.46	PASS
LTE Band 4	20MHz	16QAM	20300	50RB#50	22.42	PASS



Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Verdict
LTE Band 7	5MHz	QPSK	20775	1RB#0	23.26	PASS
LTE Band 7	5MHz	16QAM	20775	1RB#0	22.36	PASS
LTE Band 7	5MHz	QPSK	20775	1RB#12	23.22	PASS
LTE Band 7	5MHz	16QAM	20775	1RB#12	22.12	PASS
LTE Band 7	5MHz	QPSK	20775	1RB#24	23.27	PASS
LTE Band 7	5MHz	16QAM	20775	1RB#24	22.31	PASS
LTE Band 7	5MHz	QPSK	20775	12RB#0	22.43	PASS
LTE Band 7	5MHz	16QAM	20775	12RB#0	21.64	PASS
LTE Band 7	5MHz	QPSK	20775	12RB#6	22.49	PASS
LTE Band 7	5MHz	16QAM	20775	12RB#6	21.57	PASS
LTE Band 7	5MHz	QPSK	20775	12RB#13	22.42	PASS
LTE Band 7	5MHz	16QAM	20775	12RB#13	21.53	PASS
LTE Band 7	5MHz	QPSK	20775	25RB#0	22.42	PASS
LTE Band 7	5MHz	16QAM	20775	25RB#0	21.34	PASS
LTE Band 7	5MHz	QPSK	21100	1RB#0	23.34	PASS
LTE Band 7	5MHz	16QAM	21100	1RB#0	22.45	PASS
LTE Band 7	5MHz	QPSK	21100	1RB#12	23.34	PASS
LTE Band 7	5MHz	16QAM	21100	1RB#12	22.38	PASS
LTE Band 7	5MHz	QPSK	21100	1RB#24	23.39	PASS
LTE Band 7	5MHz	16QAM	21100	1RB#24	22.33	PASS
LTE Band 7	5MHz	QPSK	21100	12RB#0	22.33	PASS
LTE Band 7	5MHz	16QAM	21100	12RB#0	21.32	PASS
LTE Band 7	5MHz	QPSK	21100	12RB#6	22.34	PASS
LTE Band 7	5MHz	16QAM	21100	12RB#6	21.41	PASS
LTE Band 7	5MHz	QPSK	21100	12RB#13	22.48	PASS
LTE Band 7	5MHz	16QAM	21100	12RB#13	21.56	PASS
LTE Band 7	5MHz	QPSK	21100	25RB#0	22.38	PASS
LTE Band 7	5MHz	16QAM	21100	25RB#0	21.58	PASS
LTE Band 7	5MHz	QPSK	21425	1RB#0	23.46	PASS
LTE Band 7	5MHz	16QAM	21425	1RB#0	22.19	PASS
LTE Band 7	5MHz	QPSK	21425	1RB#12	23.50	PASS
LTE Band 7	5MHz	16QAM	21425	1RB#12	22.14	PASS
LTE Band 7	5MHz	QPSK	21425	1RB#24	23.42	PASS
LTE Band 7	5MHz	16QAM	21425	1RB#24	22.20	PASS
LTE Band 7	5MHz	QPSK	21425	12RB#0	22.53	PASS
LTE Band 7	5MHz	16QAM	21425	12RB#0	21.25	PASS
LTE Band 7	5MHz	QPSK	21425	12RB#6	22.43	PASS
LTE Band 7	5MHz	16QAM	21425	12RB#6	21.21	PASS
LTE Band 7	5MHz	QPSK	21425	12RB#13	22.30	PASS
LTE Band 7	5MHz	16QAM	21425	12RB#13	21.30	PASS



LTE Band 7	5MHz	QPSK	21425	25RB#0	22.33	PASS
LTE Band 7	5MHz	16QAM	21425	25RB#0	21.46	PASS
LTE Band 7	10MHz	QPSK	20800	1RB#0	23.16	PASS
LTE Band 7	10MHz	16QAM	20800	1RB#0	22.21	PASS
LTE Band 7	10MHz	QPSK	20800	1RB#24	23.26	PASS
LTE Band 7	10MHz	16QAM	20800	1RB#24	22.46	PASS
LTE Band 7	10MHz	QPSK	20800	1RB#49	23.58	PASS
LTE Band 7	10MHz	16QAM	20800	1RB#49	22.20	PASS
LTE Band 7	10MHz	QPSK	20800	25RB#0	22.38	PASS
LTE Band 7	10MHz	16QAM	20800	25RB#0	21.59	PASS
LTE Band 7	10MHz	QPSK	20800	25RB#12	22.41	PASS
LTE Band 7	10MHz	16QAM	20800	25RB#12	21.56	PASS
LTE Band 7	10MHz	QPSK	20800	25RB#25	22.45	PASS
LTE Band 7	10MHz	16QAM	20800	25RB#25	21.63	PASS
LTE Band 7	10MHz	QPSK	20800	50RB#0	22.38	PASS
LTE Band 7	10MHz	16QAM	20800	50RB#0	22.34	PASS
LTE Band 7	10MHz	QPSK	21100	1RB#0	23.24	PASS
LTE Band 7	10MHz	16QAM	21100	1RB#0	22.12	PASS
LTE Band 7	10MHz	QPSK	21100	1RB#24	23.52	PASS
LTE Band 7	10MHz	16QAM	21100	1RB#24	22.45	PASS
LTE Band 7	10MHz	QPSK	21100	1RB#49	23.59	PASS
LTE Band 7	10MHz	16QAM	21100	1RB#49	22.41	PASS
LTE Band 7	10MHz	QPSK	21100	25RB#0	22.42	PASS
LTE Band 7	10MHz	16QAM	21100	25RB#0	21.58	PASS
LTE Band 7	10MHz	QPSK	21100	25RB#12	22.52	PASS
LTE Band 7	10MHz	16QAM	21100	25RB#12	21.56	PASS
LTE Band 7	10MHz	QPSK	21100	25RB#25	22.50	PASS
LTE Band 7	10MHz	16QAM	21100	25RB#25	21.55	PASS
LTE Band 7	10MHz	QPSK	21100	50RB#0	22.32	PASS
LTE Band 7	10MHz	16QAM	21100	50RB#0	22.41	PASS
LTE Band 7	10MHz	QPSK	21400	1RB#0	23.45	PASS
LTE Band 7	10MHz	16QAM	21400	1RB#0	22.50	PASS
LTE Band 7	10MHz	QPSK	21400	1RB#24	23.66	PASS
LTE Band 7	10MHz	16QAM	21400	1RB#24	22.59	PASS
LTE Band 7	10MHz	QPSK	21400	1RB#49	23.46	PASS
LTE Band 7	10MHz	16QAM	21400	1RB#49	22.18	PASS
LTE Band 7	10MHz	QPSK	21400	25RB#0	22.53	PASS
LTE Band 7	10MHz	16QAM	21400	25RB#0	21.57	PASS
LTE Band 7	10MHz	QPSK	21400	25RB#12	22.45	PASS
LTE Band 7	10MHz	16QAM	21400	25RB#12	21.54	PASS
LTE Band 7	10MHz	QPSK	21400	25RB#25	22.40	PASS
LTE Band 7	10MHz	16QAM	21400	25RB#25	21.48	PASS
LTE Band 7	10MHz	QPSK	21400	50RB#0	22.39	PASS



LTE Band 7	10MHz	16QAM	21400	50RB#0	22.39	PASS
LTE Band 7	15MHz	QPSK	20825	1RB#0	23.74	PASS
LTE Band 7	15MHz	16QAM	20825	1RB#0	22.56	PASS
LTE Band 7	15MHz	QPSK	20825	1RB#38	23.29	PASS
LTE Band 7	15MHz	16QAM	20825	1RB#38	22.45	PASS
LTE Band 7	15MHz	QPSK	20825	1RB#74	23.15	PASS
LTE Band 7	15MHz	16QAM	20825	1RB#74	22.43	PASS
LTE Band 7	15MHz	QPSK	20825	38RB#0	22.26	PASS
LTE Band 7	15MHz	16QAM	20825	38RB#0	22.20	PASS
LTE Band 7	15MHz	QPSK	20825	38RB#18	22.29	PASS
LTE Band 7	15MHz	16QAM	20825	38RB#18	22.22	PASS
LTE Band 7	15MHz	QPSK	20825	38RB#37	22.27	PASS
LTE Band 7	15MHz	16QAM	20825	38RB#37	22.19	PASS
LTE Band 7	15MHz	QPSK	20825	75RB#0	22.32	PASS
LTE Band 7	15MHz	16QAM	20825	75RB#0	22.36	PASS
LTE Band 7	15MHz	QPSK	21100	1RB#0	23.40	PASS
LTE Band 7	15MHz	16QAM	21100	1RB#0	22.42	PASS
LTE Band 7	15MHz	QPSK	21100	1RB#38	23.16	PASS
LTE Band 7	15MHz	16QAM	21100	1RB#38	22.24	PASS
LTE Band 7	15MHz	QPSK	21100	1RB#74	23.20	PASS
LTE Band 7	15MHz	16QAM	21100	1RB#74	22.27	PASS
LTE Band 7	15MHz	QPSK	21100	38RB#0	21.80	PASS
LTE Band 7	15MHz	16QAM	21100	38RB#0	21.77	PASS
LTE Band 7	15MHz	QPSK	21100	38RB#18	21.70	PASS
LTE Band 7	15MHz	16QAM	21100	38RB#18	21.66	PASS
LTE Band 7	15MHz	QPSK	21100	38RB#37	21.72	PASS
LTE Band 7	15MHz	16QAM	21100	38RB#37	21.69	PASS
LTE Band 7	15MHz	QPSK	21100	75RB#0	22.32	PASS
LTE Band 7	15MHz	16QAM	21100	75RB#0	22.35	PASS
LTE Band 7	15MHz	QPSK	21375	1RB#0	23.46	PASS
LTE Band 7	15MHz	16QAM	21375	1RB#0	22.33	PASS
LTE Band 7	15MHz	QPSK	21375	1RB#38	23.23	PASS
LTE Band 7	15MHz	16QAM	21375	1RB#38	22.37	PASS
LTE Band 7	15MHz	QPSK	21375	1RB#74	23.21	PASS
LTE Band 7	15MHz	16QAM	21375	1RB#74	22.21	PASS
LTE Band 7	15MHz	QPSK	21375	38RB#0	22.34	PASS
LTE Band 7	15MHz	16QAM	21375	38RB#0	22.28	PASS
LTE Band 7	15MHz	QPSK	21375	38RB#18	21.98	PASS
LTE Band 7	15MHz	16QAM	21375	38RB#18	22.20	PASS
LTE Band 7	15MHz	QPSK	21375	38RB#37	22.37	PASS
LTE Band 7	15MHz	16QAM	21375	38RB#37	22.20	PASS
LTE Band 7	15MHz	QPSK	21375	75RB#0	22.31	PASS
LTE Band 7	15MHz	16QAM	21375	75RB#0	22.27	PASS



LTE Band 7	20MHz	QPSK	20850	1RB#0	23.12	PASS
LTE Band 7	20MHz	16QAM	20850	1RB#0	22.62	PASS
LTE Band 7	20MHz	QPSK	20850	1RB#49	23.60	PASS
LTE Band 7	20MHz	16QAM	20850	1RB#49	22.93	PASS
LTE Band 7	20MHz	QPSK	20850	1RB#99	23.18	PASS
LTE Band 7	20MHz	16QAM	20850	1RB#99	22.48	PASS
LTE Band 7	20MHz	QPSK	20850	50RB#0	22.35	PASS
LTE Band 7	20MHz	16QAM	20850	50RB#0	22.70	PASS
LTE Band 7	20MHz	QPSK	20850	50RB#25	22.67	PASS
LTE Band 7	20MHz	16QAM	20850	50RB#25	22.59	PASS
LTE Band 7	20MHz	QPSK	20850	50RB#50	22.62	PASS
LTE Band 7	20MHz	16QAM	20850	50RB#50	22.35	PASS
LTE Band 7	20MHz	QPSK	20850	100RB#0	22.49	PASS
LTE Band 7	20MHz	16QAM	20850	100RB#0	22.46	PASS
LTE Band 7	20MHz	QPSK	21100	1RB#0	23.27	PASS
LTE Band 7	20MHz	16QAM	21100	1RB#0	22.83	PASS
LTE Band 7	20MHz	QPSK	21100	1RB#49	23.68	PASS
LTE Band 7	20MHz	16QAM	21100	1RB#49	23.02	PASS
LTE Band 7	20MHz	QPSK	21100	1RB#99	23.55	PASS
LTE Band 7	20MHz	16QAM	21100	1RB#99	22.87	PASS
LTE Band 7	20MHz	QPSK	21100	50RB#0	22.33	PASS
LTE Band 7	20MHz	16QAM	21100	50RB#0	22.38	PASS
LTE Band 7	20MHz	QPSK	21100	50RB#25	22.35	PASS
LTE Band 7	20MHz	16QAM	21100	50RB#25	22.35	PASS
LTE Band 7	20MHz	QPSK	21100	50RB#50	22.40	PASS
LTE Band 7	20MHz	16QAM	21100	50RB#50	22.43	PASS
LTE Band 7	20MHz	QPSK	21100	100RB#0	22.42	PASS
LTE Band 7	20MHz	16QAM	21100	100RB#0	22.41	PASS
LTE Band 7	20MHz	QPSK	21350	1RB#0	23.62	PASS
LTE Band 7	20MHz	16QAM	21350	1RB#0	22.91	PASS
LTE Band 7	20MHz	QPSK	21350	1RB#49	23.65	PASS
LTE Band 7	20MHz	16QAM	21350	1RB#49	22.98	PASS
LTE Band 7	20MHz	QPSK	21350	1RB#99	23.45	PASS
LTE Band 7	20MHz	16QAM	21350	1RB#99	22.81	PASS
LTE Band 7	20MHz	QPSK	21350	50RB#0	22.46	PASS
LTE Band 7	20MHz	16QAM	21350	50RB#0	22.35	PASS
LTE Band 7	20MHz	QPSK	21350	50RB#25	22.42	PASS
LTE Band 7	20MHz	16QAM	21350	50RB#25	22.35	PASS
LTE Band 7	20MHz	QPSK	21350	50RB#50	22.33	PASS
LTE Band 7	20MHz	16QAM	21350	50RB#50	22.34	PASS
LTE Band 7	20MHz	QPSK	21350	100RB#0	22.46	PASS
LTE Band 7	20MHz	16QAM	21350	100RB#0	22.38	PASS

5.2 Effective Isotropic Radiated Power

Ambient condition

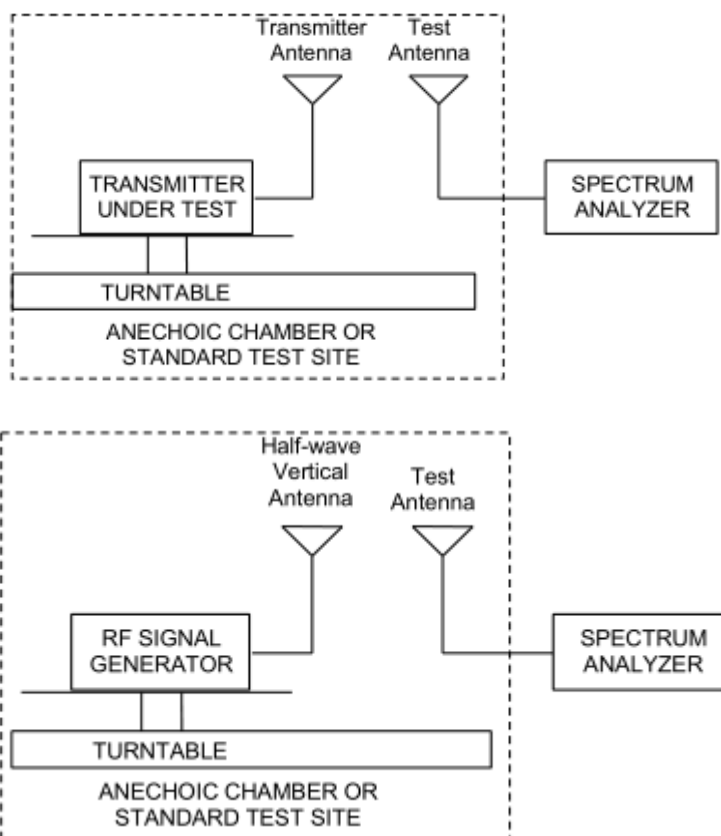
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
 - a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.
 - b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).
 - c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.
 - d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading. $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$
 - e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation: $ERP \text{ (dBm)} = LVL \text{ (dBm)} + LOSS \text{ (dB)}$
 - f) The maximum ERP is the maximum value determined in the preceding step.
 - g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g. transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:
 $EIRP \text{ (dBm)} = \text{Output Power (dBm)} - \text{Losses (dB)} + \text{Antenna Gain (dBi)}$
 where: dBd refers to gain relative to an ideal dipole.
 $EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB.)}$

The RB allocation refers to section 5.1, using the maximum output power configuration.

Test setup



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

**Limits**

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.”

Part 27.50(d)(4)Limit	$\leq 1\text{ W}$ (30 dBm)
Part 27.50(h)(2)	$\leq 2\text{ W}$ (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19\text{ dB}$

**Test Results**

The measurement is performed for both of horizontal and vertical antenna Polarization, and only the data of worst mode is recorded in this report.

Band	Channel	SubTest	EIRP	Limit (dBm)
WCDMA Band IV	1312	-	25.78	30
WCDMA Band IV	1413	-	25.63	30
WCDMA Band IV	1513	-	25.62	30
WCDMA Band IV	1312	HSDPA_Sub0	25.34	30
WCDMA Band IV	1312	HSDPA_Sub1	24.81	30
WCDMA Band IV	1312	HSDPA_Sub2	24.81	30
WCDMA Band IV	1312	HSDPA_Sub3	24.93	30
WCDMA Band IV	1413	HSDPA_Sub0	25.29	30
WCDMA Band IV	1413	HSDPA_Sub1	24.75	30
WCDMA Band IV	1413	HSDPA_Sub2	24.84	30
WCDMA Band IV	1413	HSDPA_Sub3	24.82	30
WCDMA Band IV	1513	HSDPA_Sub0	25.22	30
WCDMA Band IV	1513	HSDPA_Sub1	24.83	30
WCDMA Band IV	1513	HSDPA_Sub2	24.85	30
WCDMA Band IV	1513	HSDPA_Sub3	24.61	30
WCDMA Band IV	1312	HSUPA_Sub1	24.7	30
WCDMA Band IV	1312	HSUPA_Sub2	23.19	30
WCDMA Band IV	1312	HSUPA_Sub3	24.39	30
WCDMA Band IV	1312	HSUPA_Sub4	23.81	30
WCDMA Band IV	1312	HSUPA_Sub5	25.28	30
WCDMA Band IV	1413	HSUPA_Sub1	24.8	30
WCDMA Band IV	1413	HSUPA_Sub2	23.28	30
WCDMA Band IV	1413	HSUPA_Sub3	24.39	30
WCDMA Band IV	1413	HSUPA_Sub4	23.91	30
WCDMA Band IV	1413	HSUPA_Sub5	25.35	30
WCDMA Band IV	1513	HSUPA_Sub1	25.2	30
WCDMA Band IV	1513	HSUPA_Sub2	23.3	30
WCDMA Band IV	1513	HSUPA_Sub3	24.39	30
WCDMA Band IV	1513	HSUPA_Sub4	24.01	30
WCDMA Band IV	1513	HSUPA_Sub5	25.55	30



Band	Bandwidth	Modulation	Channel	RB Configuration	EIRP	Limit (dBm)
LTE Band4	1.4MHz	QPSK	19957	1RB#0	25.38	30
LTE Band4	1.4MHz	16QAM	19957	1RB#0	24.10	30
LTE Band4	1.4MHz	QPSK	19957	1RB#2	25.40	30
LTE Band4	1.4MHz	16QAM	19957	1RB#2	24.58	30
LTE Band4	1.4MHz	QPSK	19957	1RB#5	25.16	30
LTE Band4	1.4MHz	16QAM	19957	1RB#5	24.36	30
LTE Band4	1.4MHz	QPSK	19957	3RB#0	25.39	30
LTE Band4	1.4MHz	16QAM	19957	3RB#0	24.40	30
LTE Band4	1.4MHz	QPSK	19957	3RB#1	25.47	30
LTE Band4	1.4MHz	16QAM	19957	3RB#1	24.29	30
LTE Band4	1.4MHz	QPSK	19957	3RB#3	25.39	30
LTE Band4	1.4MHz	16QAM	19957	3RB#3	24.39	30
LTE Band4	1.4MHz	QPSK	19957	6RB#0	24.30	30
LTE Band4	1.4MHz	16QAM	19957	6RB#0	23.37	30
LTE Band4	1.4MHz	QPSK	20175	1RB#0	25.51	30
LTE Band4	1.4MHz	16QAM	20175	1RB#0	24.41	30
LTE Band4	1.4MHz	QPSK	20175	1RB#2	25.78	30
LTE Band4	1.4MHz	16QAM	20175	1RB#2	24.61	30
LTE Band4	1.4MHz	QPSK	20175	1RB#5	25.31	30
LTE Band4	1.4MHz	16QAM	20175	1RB#5	24.58	30
LTE Band4	1.4MHz	QPSK	20175	3RB#0	25.53	30
LTE Band4	1.4MHz	16QAM	20175	3RB#0	24.39	30
LTE Band4	1.4MHz	QPSK	20175	3RB#1	25.53	30
LTE Band4	1.4MHz	16QAM	20175	3RB#1	24.48	30
LTE Band4	1.4MHz	QPSK	20175	3RB#3	25.38	30
LTE Band4	1.4MHz	16QAM	20175	3RB#3	24.47	30
LTE Band4	1.4MHz	QPSK	20175	6RB#0	24.46	30
LTE Band4	1.4MHz	16QAM	20175	6RB#0	23.67	30
LTE Band4	1.4MHz	QPSK	20393	1RB#0	25.79	30
LTE Band4	1.4MHz	16QAM	20393	1RB#0	24.88	30
LTE Band4	1.4MHz	QPSK	20393	1RB#2	24.91	30
LTE Band4	1.4MHz	16QAM	20393	1RB#2	25.12	30
LTE Band4	1.4MHz	QPSK	20393	1RB#5	25.77	30
LTE Band4	1.4MHz	16QAM	20393	1RB#5	24.92	30
LTE Band4	1.4MHz	QPSK	20393	3RB#0	25.70	30
LTE Band4	1.4MHz	16QAM	20393	3RB#0	24.23	30
LTE Band4	1.4MHz	QPSK	20393	3RB#1	25.77	30
LTE Band4	1.4MHz	16QAM	20393	3RB#1	24.20	30
LTE Band4	1.4MHz	QPSK	20393	3RB#3	25.80	30



LTE Band4	1.4MHz	16QAM	20393	3RB#3	24.55	30
LTE Band4	1.4MHz	QPSK	20393	6RB#0	24.50	30
LTE Band4	1.4MHz	16QAM	20393	6RB#0	23.78	30
LTE Band4	3MHz	QPSK	19965	1RB#0	25.34	30
LTE Band4	3MHz	16QAM	19965	1RB#0	24.21	30
LTE Band4	3MHz	QPSK	19965	1RB#8	25.02	30
LTE Band4	3MHz	16QAM	19965	1RB#8	24.08	30
LTE Band4	3MHz	QPSK	19965	1RB#14	25.29	30
LTE Band4	3MHz	16QAM	19965	1RB#14	24.12	30
LTE Band4	3MHz	QPSK	19965	8RB#0	24.25	30
LTE Band4	3MHz	16QAM	19965	8RB#0	23.12	30
LTE Band4	3MHz	QPSK	19965	8RB#4	24.24	30
LTE Band4	3MHz	16QAM	19965	8RB#4	23.28	30
LTE Band4	3MHz	QPSK	19965	8RB#7	24.26	30
LTE Band4	3MHz	16QAM	19965	8RB#7	23.35	30
LTE Band4	3MHz	QPSK	19965	15RB#0	24.25	30
LTE Band4	3MHz	16QAM	19965	15RB#0	23.22	30
LTE Band4	3MHz	QPSK	20175	1RB#0	25.39	30
LTE Band4	3MHz	16QAM	20175	1RB#0	24.55	30
LTE Band4	3MHz	QPSK	20175	1RB#8	25.15	30
LTE Band4	3MHz	16QAM	20175	1RB#8	24.44	30
LTE Band4	3MHz	QPSK	20175	1RB#14	25.35	30
LTE Band4	3MHz	16QAM	20175	1RB#14	24.42	30
LTE Band4	3MHz	QPSK	20175	8RB#0	24.53	30
LTE Band4	3MHz	16QAM	20175	8RB#0	23.54	30
LTE Band4	3MHz	QPSK	20175	8RB#4	24.45	30
LTE Band4	3MHz	16QAM	20175	8RB#4	23.64	30
LTE Band4	3MHz	QPSK	20175	8RB#7	24.52	30
LTE Band4	3MHz	16QAM	20175	8RB#7	23.33	30
LTE Band4	3MHz	QPSK	20175	15RB#0	24.47	30
LTE Band4	3MHz	16QAM	20175	15RB#0	23.48	30
LTE Band4	3MHz	QPSK	20385	1RB#0	25.50	30
LTE Band4	3MHz	16QAM	20385	1RB#0	24.31	30
LTE Band4	3MHz	QPSK	20385	1RB#8	25.47	30
LTE Band4	3MHz	16QAM	20385	1RB#8	24.52	30
LTE Band4	3MHz	QPSK	20385	1RB#14	25.74	30
LTE Band4	3MHz	16QAM	20385	1RB#14	24.61	30
LTE Band4	3MHz	QPSK	20385	8RB#0	24.65	30
LTE Band4	3MHz	16QAM	20385	8RB#0	23.48	30
LTE Band4	3MHz	QPSK	20385	8RB#4	24.48	30
LTE Band4	3MHz	16QAM	20385	8RB#4	23.48	30
LTE Band4	3MHz	QPSK	20385	8RB#7	24.56	30



LTE Band4	3MHz	16QAM	20385	8RB#7	23.59	30
LTE Band4	3MHz	QPSK	20385	15RB#0	24.61	30
LTE Band4	3MHz	16QAM	20385	15RB#0	23.41	30
LTE Band4	5MHz	QPSK	19975	1RB#0	25.34	30
LTE Band4	5MHz	16QAM	19975	1RB#0	24.62	30
LTE Band4	5MHz	QPSK	19975	1RB#12	25.29	30
LTE Band4	5MHz	16QAM	19975	1RB#12	24.45	30
LTE Band4	5MHz	QPSK	19975	1RB#24	25.39	30
LTE Band4	5MHz	16QAM	19975	1RB#24	24.22	30
LTE Band4	5MHz	QPSK	19975	12RB#0	24.20	30
LTE Band4	5MHz	16QAM	19975	12RB#0	23.24	30
LTE Band4	5MHz	QPSK	19975	12RB#6	24.20	30
LTE Band4	5MHz	16QAM	19975	12RB#6	23.23	30
LTE Band4	5MHz	QPSK	19975	12RB#13	24.13	30
LTE Band4	5MHz	16QAM	19975	12RB#13	23.51	30
LTE Band4	5MHz	QPSK	19975	25RB#0	24.20	30
LTE Band4	5MHz	16QAM	19975	25RB#0	23.14	30
LTE Band4	5MHz	QPSK	20175	1RB#0	25.64	30
LTE Band4	5MHz	16QAM	20175	1RB#0	24.55	30
LTE Band4	5MHz	QPSK	20175	1RB#12	25.35	30
LTE Band4	5MHz	16QAM	20175	1RB#12	24.37	30
LTE Band4	5MHz	QPSK	20175	1RB#24	25.53	30
LTE Band4	5MHz	16QAM	20175	1RB#24	24.55	30
LTE Band4	5MHz	QPSK	20175	12RB#0	24.43	30
LTE Band4	5MHz	16QAM	20175	12RB#0	23.52	30
LTE Band4	5MHz	QPSK	20175	12RB#6	24.44	30
LTE Band4	5MHz	16QAM	20175	12RB#6	23.61	30
LTE Band4	5MHz	QPSK	20175	12RB#13	24.31	30
LTE Band4	5MHz	16QAM	20175	12RB#13	23.34	30
LTE Band4	5MHz	QPSK	20175	25RB#0	24.59	30
LTE Band4	5MHz	16QAM	20175	25RB#0	23.50	30
LTE Band4	5MHz	QPSK	20375	1RB#0	25.37	30
LTE Band4	5MHz	16QAM	20375	1RB#0	23.83	30
LTE Band4	5MHz	QPSK	20375	1RB#12	25.57	30
LTE Band4	5MHz	16QAM	20375	1RB#12	24.68	30
LTE Band4	5MHz	QPSK	20375	1RB#24	25.83	30
LTE Band4	5MHz	16QAM	20375	1RB#24	24.50	30
LTE Band4	5MHz	QPSK	20375	12RB#0	24.44	30
LTE Band4	5MHz	16QAM	20375	12RB#0	23.45	30
LTE Band4	5MHz	QPSK	20375	12RB#6	24.45	30
LTE Band4	5MHz	16QAM	20375	12RB#6	23.44	30
LTE Band4	5MHz	QPSK	20375	12RB#13	24.55	30



LTE Band4	5MHz	16QAM	20375	12RB#13	23.64	30
LTE Band4	5MHz	QPSK	20375	25RB#0	24.66	30
LTE Band4	5MHz	16QAM	20375	25RB#0	23.77	30
LTE Band4	10MHz	QPSK	20000	1RB#0	25.44	30
LTE Band4	10MHz	16QAM	20000	1RB#0	24.36	30
LTE Band4	10MHz	QPSK	20000	1RB#24	25.51	30
LTE Band4	10MHz	16QAM	20000	1RB#24	24.48	30
LTE Band4	10MHz	QPSK	20000	1RB#49	25.43	30
LTE Band4	10MHz	16QAM	20000	1RB#49	24.16	30
LTE Band4	10MHz	QPSK	20000	25RB#0	24.24	30
LTE Band4	10MHz	16QAM	20000	25RB#0	23.16	30
LTE Band4	10MHz	QPSK	20000	25RB#12	24.35	30
LTE Band4	10MHz	16QAM	20000	25RB#12	23.26	30
LTE Band4	10MHz	QPSK	20000	25RB#25	24.27	30
LTE Band4	10MHz	16QAM	20000	25RB#25	23.20	30
LTE Band4	10MHz	QPSK	20000	50RB#0	24.25	30
LTE Band4	10MHz	16QAM	20000	50RB#0	24.13	30
LTE Band4	10MHz	QPSK	20175	1RB#0	24.36	30
LTE Band4	10MHz	16QAM	20175	1RB#0	24.68	30
LTE Band4	10MHz	QPSK	20175	1RB#24	25.70	30
LTE Band4	10MHz	16QAM	20175	1RB#24	24.26	30
LTE Band4	10MHz	QPSK	20175	1RB#49	25.29	30
LTE Band4	10MHz	16QAM	20175	1RB#49	24.30	30
LTE Band4	10MHz	QPSK	20175	25RB#0	24.45	30
LTE Band4	10MHz	16QAM	20175	25RB#0	23.37	30
LTE Band4	10MHz	QPSK	20175	25RB#12	24.52	30
LTE Band4	10MHz	16QAM	20175	25RB#12	23.53	30
LTE Band4	10MHz	QPSK	20175	25RB#25	24.35	30
LTE Band4	10MHz	16QAM	20175	25RB#25	23.18	30
LTE Band4	10MHz	QPSK	20175	50RB#0	24.41	30
LTE Band4	10MHz	16QAM	20175	50RB#0	24.49	30
LTE Band4	10MHz	QPSK	20350	1RB#0	25.77	30
LTE Band4	10MHz	16QAM	20350	1RB#0	24.46	30
LTE Band4	10MHz	QPSK	20350	1RB#24	25.74	30
LTE Band4	10MHz	16QAM	20350	1RB#24	24.13	30
LTE Band4	10MHz	QPSK	20350	1RB#49	25.45	30
LTE Band4	10MHz	16QAM	20350	1RB#49	24.61	30
LTE Band4	10MHz	QPSK	20350	25RB#0	24.41	30
LTE Band4	10MHz	16QAM	20350	25RB#0	23.49	30
LTE Band4	10MHz	QPSK	20350	25RB#12	24.40	30
LTE Band4	10MHz	16QAM	20350	25RB#12	23.47	30
LTE Band4	10MHz	QPSK	20350	25RB#25	24.59	30



LTE Band4	10MHz	16QAM	20350	25RB#25	23.89	30
LTE Band4	10MHz	QPSK	20350	50RB#0	24.40	30
LTE Band4	10MHz	16QAM	20350	50RB#0	24.42	30
LTE Band4	15MHz	QPSK	20025	1RB#0	25.54	30
LTE Band4	15MHz	16QAM	20025	1RB#0	24.10	30
LTE Band4	15MHz	QPSK	20025	1RB#38	25.38	30
LTE Band4	15MHz	16QAM	20025	1RB#38	24.19	30
LTE Band4	15MHz	QPSK	20025	1RB#74	25.62	30
LTE Band4	15MHz	16QAM	20025	1RB#74	25.03	30
LTE Band4	15MHz	QPSK	20025	38RB#0	25.12	30
LTE Band4	15MHz	16QAM	20025	38RB#0	24.82	30
LTE Band4	15MHz	QPSK	20025	38RB#18	23.61	30
LTE Band4	15MHz	16QAM	20025	38RB#18	24.01	30
LTE Band4	15MHz	QPSK	20025	38RB#37	24.27	30
LTE Band4	15MHz	16QAM	20025	38RB#37	24.17	30
LTE Band4	15MHz	QPSK	20025	75RB#0	24.22	30
LTE Band4	15MHz	16QAM	20025	75RB#0	24.18	30
LTE Band4	15MHz	QPSK	20175	1RB#0	25.34	30
LTE Band4	15MHz	16QAM	20175	1RB#0	24.49	30
LTE Band4	15MHz	QPSK	20175	1RB#38	25.22	30
LTE Band4	15MHz	16QAM	20175	1RB#38	24.32	30
LTE Band4	15MHz	QPSK	20175	1RB#74	25.29	30
LTE Band4	15MHz	16QAM	20175	1RB#74	23.98	30
LTE Band4	15MHz	QPSK	20175	38RB#0	24.19	30
LTE Band4	15MHz	16QAM	20175	38RB#0	24.18	30
LTE Band4	15MHz	QPSK	20175	38RB#18	24.24	30
LTE Band4	15MHz	16QAM	20175	38RB#18	24.24	30
LTE Band4	15MHz	QPSK	20175	38RB#37	24.23	30
LTE Band4	15MHz	16QAM	20175	38RB#37	24.31	30
LTE Band4	15MHz	QPSK	20175	75RB#0	24.45	30
LTE Band4	15MHz	16QAM	20175	75RB#0	24.38	30
LTE Band4	15MHz	QPSK	20325	1RB#0	25.42	30
LTE Band4	15MHz	16QAM	20325	1RB#0	24.16	30
LTE Band4	15MHz	QPSK	20325	1RB#38	25.36	30
LTE Band4	15MHz	16QAM	20325	1RB#38	24.33	30
LTE Band4	15MHz	QPSK	20325	1RB#74	25.35	30
LTE Band4	15MHz	16QAM	20325	1RB#74	24.64	30
LTE Band4	15MHz	QPSK	20325	38RB#0	24.46	30
LTE Band4	15MHz	16QAM	20325	38RB#0	24.46	30
LTE Band4	15MHz	QPSK	20325	38RB#18	24.44	30
LTE Band4	15MHz	16QAM	20325	38RB#18	24.32	30
LTE Band4	15MHz	QPSK	20325	38RB#37	23.99	30



LTE Band4	15MHz	16QAM	20325	38RB#37	23.96	30
LTE Band4	15MHz	QPSK	20325	75RB#0	24.28	30
LTE Band4	15MHz	16QAM	20325	75RB#0	24.26	30
LTE Band4	20MHz	QPSK	20050	1RB#0	25.37	30
LTE Band4	20MHz	16QAM	20050	1RB#0	24.39	30
LTE Band4	20MHz	QPSK	20050	1RB#49	25.66	30
LTE Band4	20MHz	16QAM	20050	1RB#49	24.54	30
LTE Band4	20MHz	QPSK	20050	1RB#99	25.43	30
LTE Band4	20MHz	16QAM	20050	1RB#99	24.72	30
LTE Band4	20MHz	QPSK	20050	50RB#0	24.31	30
LTE Band4	20MHz	16QAM	20050	50RB#0	24.19	30
LTE Band4	20MHz	QPSK	20050	50RB#25	24.16	30
LTE Band4	20MHz	16QAM	20050	50RB#25	24.13	30
LTE Band4	20MHz	QPSK	20050	50RB#50	24.45	30
LTE Band4	20MHz	16QAM	20050	50RB#50	24.31	30
LTE Band4	20MHz	QPSK	20050	100RB#0	24.22	30
LTE Band4	20MHz	16QAM	20050	100RB#0	24.31	30
LTE Band4	20MHz	QPSK	20175	1RB#0	25.74	30
LTE Band4	20MHz	16QAM	20175	1RB#0	24.85	30
LTE Band4	20MHz	QPSK	20175	1RB#49	25.66	30
LTE Band4	20MHz	16QAM	20175	1RB#49	24.83	30
LTE Band4	20MHz	QPSK	20175	1RB#99	25.50	30
LTE Band4	20MHz	16QAM	20175	1RB#99	24.63	30
LTE Band4	20MHz	QPSK	20175	50RB#0	24.49	30
LTE Band4	20MHz	16QAM	20175	50RB#0	24.44	30
LTE Band4	20MHz	QPSK	20175	50RB#25	24.53	30
LTE Band4	20MHz	16QAM	20175	50RB#25	24.45	30
LTE Band4	20MHz	QPSK	20175	50RB#50	24.36	30
LTE Band4	20MHz	16QAM	20175	50RB#50	24.33	30
LTE Band4	20MHz	QPSK	20175	100RB#0	24.21	30
LTE Band4	20MHz	16QAM	20175	100RB#0	24.27	30
LTE Band4	20MHz	QPSK	20300	1RB#0	25.71	30
LTE Band4	20MHz	16QAM	20300	1RB#0	24.85	30
LTE Band4	20MHz	QPSK	20300	1RB#49	25.60	30
LTE Band4	20MHz	16QAM	20300	1RB#49	24.83	30
LTE Band4	20MHz	QPSK	20300	1RB#99	25.38	30
LTE Band4	20MHz	16QAM	20300	1RB#99	25.00	30
LTE Band4	20MHz	QPSK	20300	50RB#0	24.36	30
LTE Band4	20MHz	16QAM	20300	50RB#0	24.31	30
LTE Band4	20MHz	QPSK	20300	50RB#25	24.27	30
LTE Band4	20MHz	16QAM	20300	50RB#25	24.36	30
LTE Band4	20MHz	QPSK	20300	50RB#50	24.36	30



LTE Band4	20MHz	16QAM	20300	50RB#50	24.32	30
LTE Band4	20MHz	QPSK	20300	100RB#0	24.28	30
LTE Band4	20MHz	16QAM	20300	100RB#0	24.37	30

Band	Bandwidth	Modulation	Channel	RB Configuration	EIRP	Limit (dBm)
LTE Band 7	5MHz	QPSK	20775	1RB#0	26.26	33
LTE Band 7	5MHz	16QAM	20775	1RB#0	25.36	33
LTE Band 7	5MHz	QPSK	20775	1RB#12	26.22	33
LTE Band 7	5MHz	16QAM	20775	1RB#12	25.12	33
LTE Band 7	5MHz	QPSK	20775	1RB#24	26.27	33
LTE Band 7	5MHz	16QAM	20775	1RB#24	25.31	33
LTE Band 7	5MHz	QPSK	20775	12RB#0	25.43	33
LTE Band 7	5MHz	16QAM	20775	12RB#0	24.64	33
LTE Band 7	5MHz	QPSK	20775	12RB#6	25.49	33
LTE Band 7	5MHz	16QAM	20775	12RB#6	24.57	33
LTE Band 7	5MHz	QPSK	20775	12RB#13	25.42	33
LTE Band 7	5MHz	16QAM	20775	12RB#13	24.53	33
LTE Band 7	5MHz	QPSK	20775	25RB#0	25.42	33
LTE Band 7	5MHz	16QAM	20775	25RB#0	24.34	33
LTE Band 7	5MHz	QPSK	21100	1RB#0	25.78	33
LTE Band 7	5MHz	16QAM	21100	1RB#0	24.89	33
LTE Band 7	5MHz	QPSK	21100	1RB#12	25.78	33
LTE Band 7	5MHz	16QAM	21100	1RB#12	24.82	33
LTE Band 7	5MHz	QPSK	21100	1RB#24	25.83	33
LTE Band 7	5MHz	16QAM	21100	1RB#24	24.77	33
LTE Band 7	5MHz	QPSK	21100	12RB#0	24.77	33
LTE Band 7	5MHz	16QAM	21100	12RB#0	23.76	33
LTE Band 7	5MHz	QPSK	21100	12RB#6	24.78	33
LTE Band 7	5MHz	16QAM	21100	12RB#6	23.85	33
LTE Band 7	5MHz	QPSK	21100	12RB#13	24.92	33
LTE Band 7	5MHz	16QAM	21100	12RB#13	24	33
LTE Band 7	5MHz	QPSK	21100	25RB#0	24.82	33
LTE Band 7	5MHz	16QAM	21100	25RB#0	24.02	33
LTE Band 7	5MHz	QPSK	21425	1RB#0	25.76	33
LTE Band 7	5MHz	16QAM	21425	1RB#0	24.49	33
LTE Band 7	5MHz	QPSK	21425	1RB#12	25.8	33
LTE Band 7	5MHz	16QAM	21425	1RB#12	24.44	33
LTE Band 7	5MHz	QPSK	21425	1RB#24	25.72	33
LTE Band 7	5MHz	16QAM	21425	1RB#24	24.5	33
LTE Band 7	5MHz	QPSK	21425	12RB#0	24.83	33
LTE Band 7	5MHz	16QAM	21425	12RB#0	23.55	33



LTE Band 7	5MHz	QPSK	21425	12RB#6	24.73	33
LTE Band 7	5MHz	16QAM	21425	12RB#6	23.51	33
LTE Band 7	5MHz	QPSK	21425	12RB#13	24.6	33
LTE Band 7	5MHz	16QAM	21425	12RB#13	23.6	33
LTE Band 7	5MHz	QPSK	21425	25RB#0	24.63	33
LTE Band 7	5MHz	16QAM	21425	25RB#0	23.76	33
LTE Band 7	10MHz	QPSK	20800	1RB#0	26.16	33
LTE Band 7	10MHz	16QAM	20800	1RB#0	25.21	33
LTE Band 7	10MHz	QPSK	20800	1RB#24	26.26	33
LTE Band 7	10MHz	16QAM	20800	1RB#24	25.46	33
LTE Band 7	10MHz	QPSK	20800	1RB#49	26.58	33
LTE Band 7	10MHz	16QAM	20800	1RB#49	25.2	33
LTE Band 7	10MHz	QPSK	20800	25RB#0	25.38	33
LTE Band 7	10MHz	16QAM	20800	25RB#0	24.59	33
LTE Band 7	10MHz	QPSK	20800	25RB#12	25.41	33
LTE Band 7	10MHz	16QAM	20800	25RB#12	24.56	33
LTE Band 7	10MHz	QPSK	20800	25RB#25	25.45	33
LTE Band 7	10MHz	16QAM	20800	25RB#25	24.63	33
LTE Band 7	10MHz	QPSK	20800	50RB#0	25.38	33
LTE Band 7	10MHz	16QAM	20800	50RB#0	25.34	33
LTE Band 7	10MHz	QPSK	21100	1RB#0	25.68	33
LTE Band 7	10MHz	16QAM	21100	1RB#0	24.56	33
LTE Band 7	10MHz	QPSK	21100	1RB#24	25.96	33
LTE Band 7	10MHz	16QAM	21100	1RB#24	24.89	33
LTE Band 7	10MHz	QPSK	21100	1RB#49	26.03	33
LTE Band 7	10MHz	16QAM	21100	1RB#49	24.85	33
LTE Band 7	10MHz	QPSK	21100	25RB#0	24.86	33
LTE Band 7	10MHz	16QAM	21100	25RB#0	24.02	33
LTE Band 7	10MHz	QPSK	21100	25RB#12	24.96	33
LTE Band 7	10MHz	16QAM	21100	25RB#12	24	33
LTE Band 7	10MHz	QPSK	21100	25RB#25	24.94	33
LTE Band 7	10MHz	16QAM	21100	25RB#25	23.99	33
LTE Band 7	10MHz	QPSK	21100	50RB#0	24.76	33
LTE Band 7	10MHz	16QAM	21100	50RB#0	24.85	33
LTE Band 7	10MHz	QPSK	21400	1RB#0	25.75	33
LTE Band 7	10MHz	16QAM	21400	1RB#0	24.8	33
LTE Band 7	10MHz	QPSK	21400	1RB#24	25.96	33
LTE Band 7	10MHz	16QAM	21400	1RB#24	24.89	33
LTE Band 7	10MHz	QPSK	21400	1RB#49	25.76	33
LTE Band 7	10MHz	16QAM	21400	1RB#49	24.48	33
LTE Band 7	10MHz	QPSK	21400	25RB#0	24.83	33
LTE Band 7	10MHz	16QAM	21400	25RB#0	23.87	33



LTE Band 7	10MHz	QPSK	21400	25RB#12	24.75	33
LTE Band 7	10MHz	16QAM	21400	25RB#12	23.84	33
LTE Band 7	10MHz	QPSK	21400	25RB#25	24.7	33
LTE Band 7	10MHz	16QAM	21400	25RB#25	23.78	33
LTE Band 7	10MHz	QPSK	21400	50RB#0	24.69	33
LTE Band 7	10MHz	16QAM	21400	50RB#0	24.69	33
LTE Band 7	15MHz	QPSK	20825	1RB#0	26.42	33
LTE Band 7	15MHz	16QAM	20825	1RB#0	25.24	33
LTE Band 7	15MHz	QPSK	20825	1RB#38	25.97	33
LTE Band 7	15MHz	16QAM	20825	1RB#38	25.13	33
LTE Band 7	15MHz	QPSK	20825	1RB#74	25.83	33
LTE Band 7	15MHz	16QAM	20825	1RB#74	25.11	33
LTE Band 7	15MHz	QPSK	20825	38RB#0	24.94	33
LTE Band 7	15MHz	16QAM	20825	38RB#0	24.88	33
LTE Band 7	15MHz	QPSK	20825	38RB#18	24.97	33
LTE Band 7	15MHz	16QAM	20825	38RB#18	24.9	33
LTE Band 7	15MHz	QPSK	20825	38RB#37	24.95	33
LTE Band 7	15MHz	16QAM	20825	38RB#37	24.87	33
LTE Band 7	15MHz	QPSK	20825	75RB#0	25	33
LTE Band 7	15MHz	16QAM	20825	75RB#0	25.04	33
LTE Band 7	15MHz	QPSK	21100	1RB#0	25.84	33
LTE Band 7	15MHz	16QAM	21100	1RB#0	24.86	33
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LTE Band 7	15MHz	16QAM	21100	1RB#74	24.71	33
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LTE Band 7	15MHz	QPSK	21375	1RB#74	25.51	33
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LTE Band 7	15MHz	QPSK	21375	38RB#0	24.64	33
LTE Band 7	15MHz	16QAM	21375	38RB#0	24.58	33



LTE Band 7	15MHz	QPSK	21375	38RB#18	24.28	33
LTE Band 7	15MHz	16QAM	21375	38RB#18	24.5	33
LTE Band 7	15MHz	QPSK	21375	38RB#37	24.67	33
LTE Band 7	15MHz	16QAM	21375	38RB#37	24.5	33
LTE Band 7	15MHz	QPSK	21375	75RB#0	24.61	33
LTE Band 7	15MHz	16QAM	21375	75RB#0	24.57	33
LTE Band 7	20MHz	QPSK	20850	1RB#0	25.8	33
LTE Band 7	20MHz	16QAM	20850	1RB#0	25.3	33
LTE Band 7	20MHz	QPSK	20850	1RB#49	26.28	33
LTE Band 7	20MHz	16QAM	20850	1RB#49	25.61	33
LTE Band 7	20MHz	QPSK	20850	1RB#99	25.86	33
LTE Band 7	20MHz	16QAM	20850	1RB#99	25.16	33
LTE Band 7	20MHz	QPSK	20850	50RB#0	25.03	33
LTE Band 7	20MHz	16QAM	20850	50RB#0	25.38	33
LTE Band 7	20MHz	QPSK	20850	50RB#25	25.35	33
LTE Band 7	20MHz	16QAM	20850	50RB#25	25.27	33
LTE Band 7	20MHz	QPSK	20850	50RB#50	25.3	33
LTE Band 7	20MHz	16QAM	20850	50RB#50	25.03	33
LTE Band 7	20MHz	QPSK	20850	100RB#0	25.17	33
LTE Band 7	20MHz	16QAM	20850	100RB#0	25.14	33
LTE Band 7	20MHz	QPSK	21100	1RB#0	25.71	33
LTE Band 7	20MHz	16QAM	21100	1RB#0	25.27	33
LTE Band 7	20MHz	QPSK	21100	1RB#49	26.12	33
LTE Band 7	20MHz	16QAM	21100	1RB#49	25.46	33
LTE Band 7	20MHz	QPSK	21100	1RB#99	25.99	33
LTE Band 7	20MHz	16QAM	21100	1RB#99	25.31	33
LTE Band 7	20MHz	QPSK	21100	50RB#0	24.77	33
LTE Band 7	20MHz	16QAM	21100	50RB#0	24.82	33
LTE Band 7	20MHz	QPSK	21100	50RB#25	24.79	33
LTE Band 7	20MHz	16QAM	21100	50RB#25	24.79	33
LTE Band 7	20MHz	QPSK	21100	50RB#50	24.84	33
LTE Band 7	20MHz	16QAM	21100	50RB#50	24.87	33
LTE Band 7	20MHz	QPSK	21100	100RB#0	24.86	33
LTE Band 7	20MHz	16QAM	21100	100RB#0	24.85	33
LTE Band 7	20MHz	QPSK	21350	1RB#0	25.92	33
LTE Band 7	20MHz	16QAM	21350	1RB#0	25.21	33
LTE Band 7	20MHz	QPSK	21350	1RB#49	25.95	33
LTE Band 7	20MHz	16QAM	21350	1RB#49	25.28	33
LTE Band 7	20MHz	QPSK	21350	1RB#99	25.75	33
LTE Band 7	20MHz	16QAM	21350	1RB#99	25.11	33
LTE Band 7	20MHz	QPSK	21350	50RB#0	24.76	33
LTE Band 7	20MHz	16QAM	21350	50RB#0	24.65	33



LTE Band 7	20MHz	QPSK	21350	50RB#25	24.72	33
LTE Band 7	20MHz	16QAM	21350	50RB#25	24.65	33
LTE Band 7	20MHz	QPSK	21350	50RB#50	24.63	33
LTE Band 7	20MHz	16QAM	21350	50RB#50	24.64	33
LTE Band 7	20MHz	QPSK	21350	100RB#0	24.76	33
LTE Band 7	20MHz	16QAM	21350	100RB#0	24.68	33

5.3 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 100 kHz, VBW is set to 300 kHz for WCDMA Band IV.

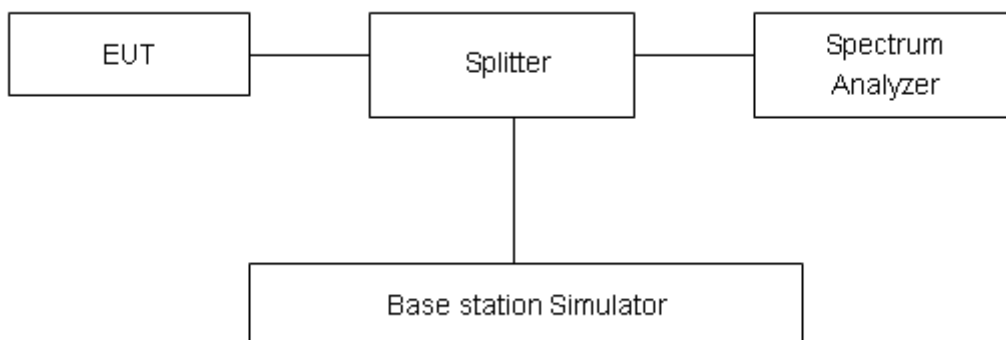
RBW is set to 51 kHz, VBW is set to 51 kHz for LTE Band 4 (1.4MHz/3MHz).

RBW is set to 51 kHz, VBW is set to 51 kHz for LTE Band 4/7 (5MHz/10MHz).

RBW is set to 51 kHz, VBW is set to 51KHz for LTE Band 4/7 (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

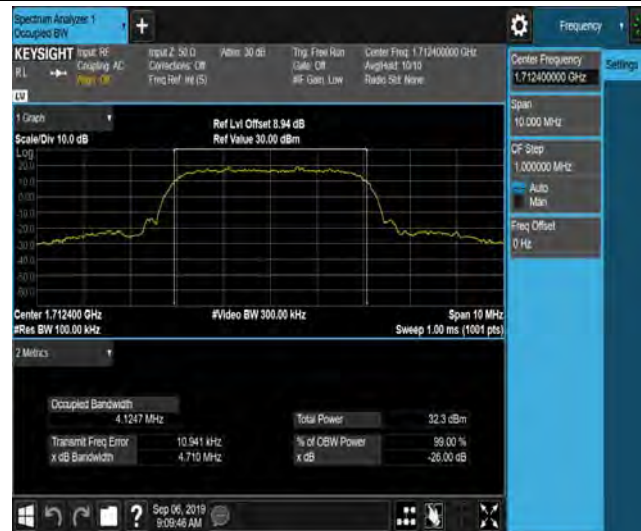
Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band IV	1312	4124.7	4710	---	PASS
Band IV	1413	4139.3	4712	---	PASS
Band IV	1513	4137.8	4703	---	PASS

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
LTE Band 4	1.4MHz	QPSK	19957	6RB#0	1.1121	1.274	PASS
LTE Band 4	1.4MHz	16QAM	19957	6RB#0	1.1101	1.299	PASS
LTE Band 4	1.4MHz	QPSK	20175	6RB#0	1.1077	1.283	PASS
LTE Band 4	1.4MHz	16QAM	20175	6RB#0	1.1097	1.283	PASS
LTE Band 4	1.4MHz	QPSK	20393	6RB#0	1.1069	1.289	PASS
LTE Band 4	1.4MHz	16QAM	20393	6RB#0	1.1107	1.290	PASS
LTE Band 4	3MHz	QPSK	19965	15RB#0	2.6871	2.912	PASS
LTE Band 4	3MHz	16QAM	19965	15RB#0	2.6952	2.947	PASS
LTE Band 4	3MHz	QPSK	20175	15RB#0	2.6995	2.921	PASS
LTE Band 4	3MHz	16QAM	20175	15RB#0	2.6919	2.941	PASS
LTE Band 4	3MHz	QPSK	20385	15RB#0	2.7014	2.925	PASS
LTE Band 4	3MHz	16QAM	20385	15RB#0	2.6958	2.928	PASS
LTE Band 4	5MHz	QPSK	19975	25RB#0	4.4780	4.859	PASS
LTE Band 4	5MHz	16QAM	19975	25RB#0	4.4744	4.829	PASS
LTE Band 4	5MHz	QPSK	20175	25RB#0	4.4709	4.834	PASS
LTE Band 4	5MHz	16QAM	20175	25RB#0	4.4776	4.859	PASS
LTE Band 4	5MHz	QPSK	20375	25RB#0	4.4771	4.805	PASS
LTE Band 4	5MHz	16QAM	20375	25RB#0	4.4769	4.837	PASS
LTE Band 4	10MHz	QPSK	20000	50RB#0	8.9109	9.343	PASS
LTE Band 4	10MHz	16QAM	20000	50RB#0	8.9104	9.349	PASS
LTE Band 4	10MHz	QPSK	20175	50RB#0	8.9079	9.348	PASS
LTE Band 4	10MHz	16QAM	20175	50RB#0	8.9002	9.305	PASS
LTE Band 4	10MHz	QPSK	20350	50RB#0	8.9060	9.380	PASS
LTE Band 4	10MHz	16QAM	20350	50RB#0	8.9036	9.348	PASS
LTE Band 4	15MHz	QPSK	20025	75RB#0	13.365	13.94	PASS
LTE Band 4	15MHz	16QAM	20025	75RB#0	13.361	13.90	PASS
LTE Band 4	15MHz	QPSK	20175	75RB#0	13.358	13.87	PASS
LTE Band 4	15MHz	16QAM	20175	75RB#0	13.351	13.85	PASS
LTE Band 4	15MHz	QPSK	20325	75RB#0	13.351	13.89	PASS
LTE Band 4	15MHz	16QAM	20325	75RB#0	13.339	13.83	PASS
LTE Band 4	20MHz	QPSK	20050	100RB#0	17.808	18.38	PASS
LTE Band 4	20MHz	16QAM	20050	100RB#0	17.815	18.31	PASS
LTE Band 4	20MHz	QPSK	20175	100RB#0	17.829	18.41	PASS

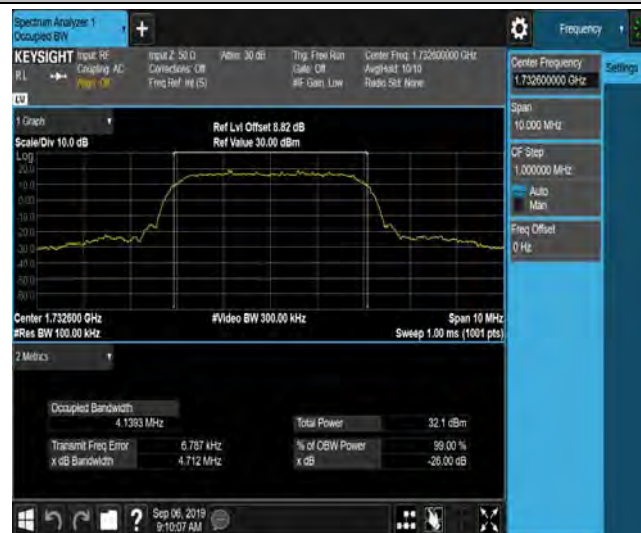


LTE Band 4	20MHz	16QAM	20175	100RB#0	17.809	18.41	PASS
LTE Band 4	20MHz	QPSK	20300	100RB#0	17.776	18.42	PASS
LTE Band 4	20MHz	16QAM	20300	100RB#0	17.775	18.39	PASS

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
LTE Band 7	5MHz	QPSK	20775	25RB#0	4.4703	4.831	PASS
LTE Band 7	5MHz	16QAM	20775	25RB#0	4.4749	4.855	PASS
LTE Band 7	5MHz	QPSK	21100	25RB#0	4.4757	4.806	PASS
LTE Band 7	5MHz	16QAM	21100	25RB#0	4.4800	4.825	PASS
LTE Band 7	5MHz	QPSK	21425	25RB#0	4.4730	4.846	PASS
LTE Band 7	5MHz	16QAM	21425	25RB#0	4.4749	4.798	PASS
LTE Band 7	10MHz	QPSK	20800	50RB#0	8.9132	9.328	PASS
LTE Band 7	10MHz	16QAM	20800	50RB#0	8.9168	9.348	PASS
LTE Band 7	10MHz	QPSK	21100	50RB#0	8.9102	9.314	PASS
LTE Band 7	10MHz	16QAM	21100	50RB#0	8.9010	9.346	PASS
LTE Band 7	10MHz	QPSK	21400	50RB#0	8.9016	9.334	PASS
LTE Band 7	10MHz	16QAM	21400	50RB#0	8.9052	9.366	PASS
LTE Band 7	15MHz	QPSK	20825	75RB#0	13.338	13.90	PASS
LTE Band 7	15MHz	16QAM	20825	75RB#0	13.355	13.97	PASS
LTE Band 7	15MHz	QPSK	21100	75RB#0	13.367	13.87	PASS
LTE Band 7	15MHz	16QAM	21100	75RB#0	13.336	13.95	PASS
LTE Band 7	15MHz	QPSK	21375	75RB#0	13.353	13.84	PASS
LTE Band 7	15MHz	16QAM	21375	75RB#0	13.362	13.87	PASS
LTE Band 7	20MHz	QPSK	20850	100RB#0	17.799	18.36	PASS
LTE Band 7	20MHz	16QAM	20850	100RB#0	17.793	18.34	PASS
LTE Band 7	20MHz	QPSK	21100	100RB#0	17.786	18.35	PASS
LTE Band 7	20MHz	16QAM	21100	100RB#0	17.785	18.39	PASS
LTE Band 7	20MHz	QPSK	21350	100RB#0	17.765	18.38	PASS
LTE Band 7	20MHz	16QAM	21350	100RB#0	17.766	18.39	PASS



WCDMA Band IV_1312

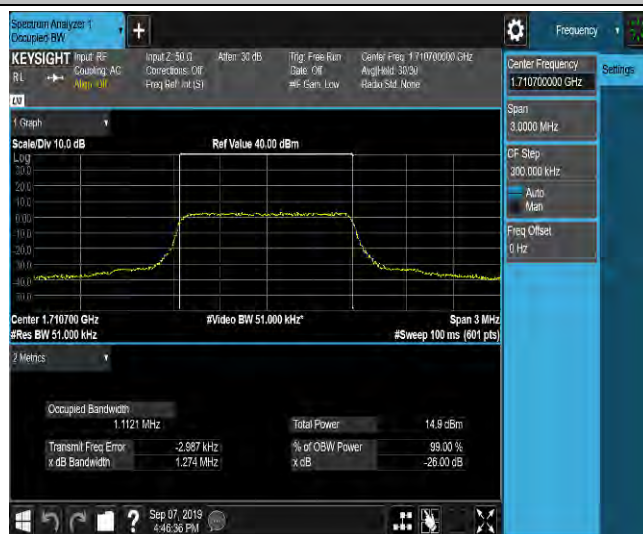


WCDMA Band IV_1413

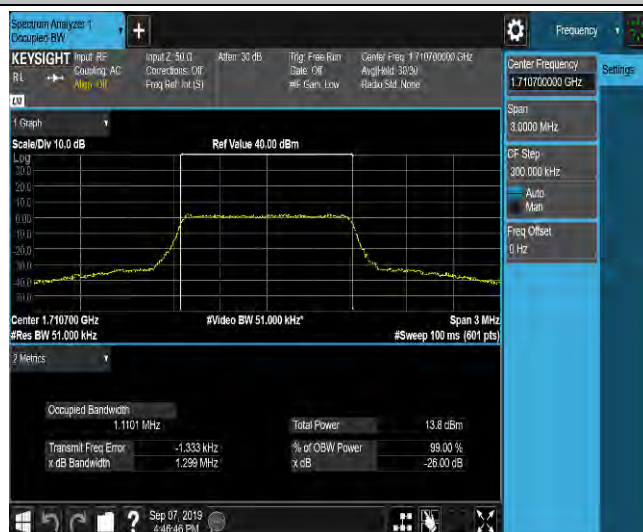


WCDMA Band IV_1513

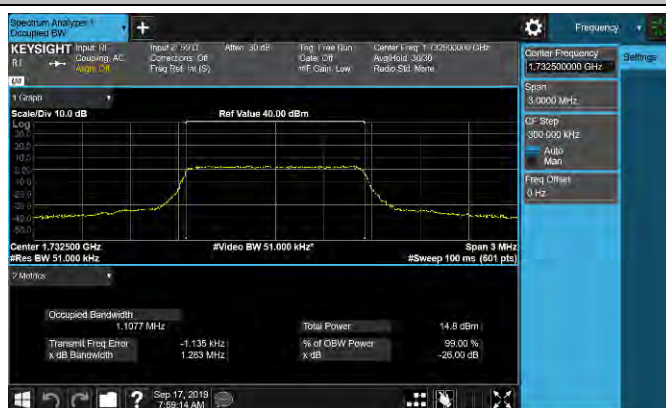
LTE Band 4_1.4MHz_QPSK_19957_6RB#0_1.1121_1.274_PASS



LTE Band 4_1.4MHz_16QAM_19957_6RB#0_1.1101_1.299_PASS



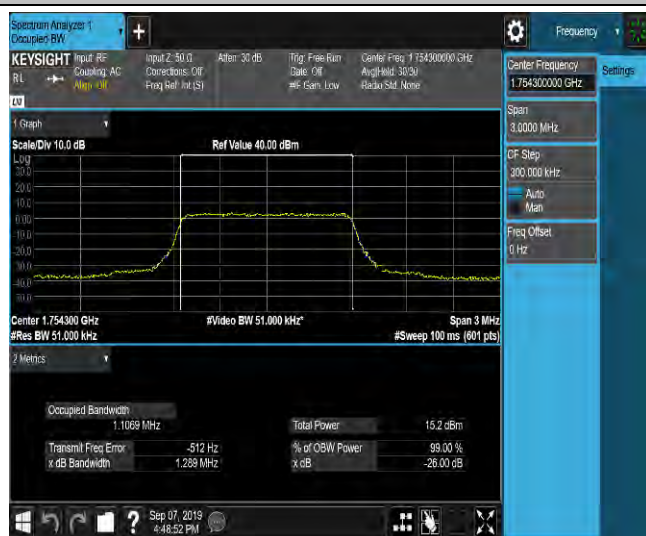
LTE Band 4_1.4MHz_QPSK_20175_6RB#0_1.1077_1.283_PASS



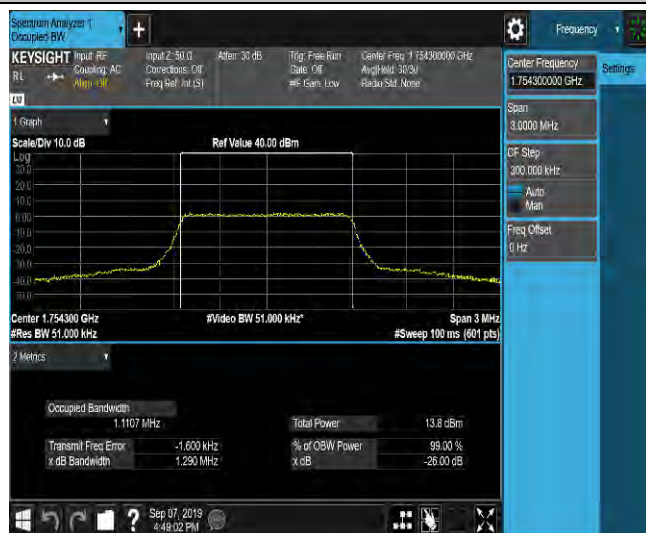
LTE Band 4_1.4MHz_16QAM_20175_6RB#0_1.1097_1.283_PASS



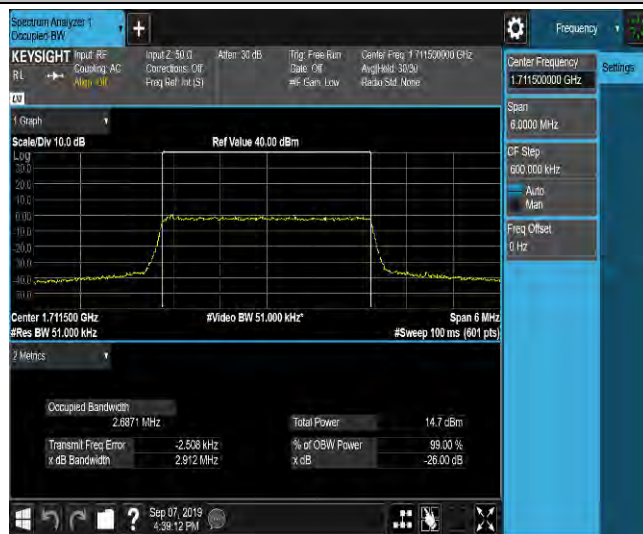
LTE Band 4_1.4MHz_QPSK_20393_6RB#0_1.1069_1.289_PASS



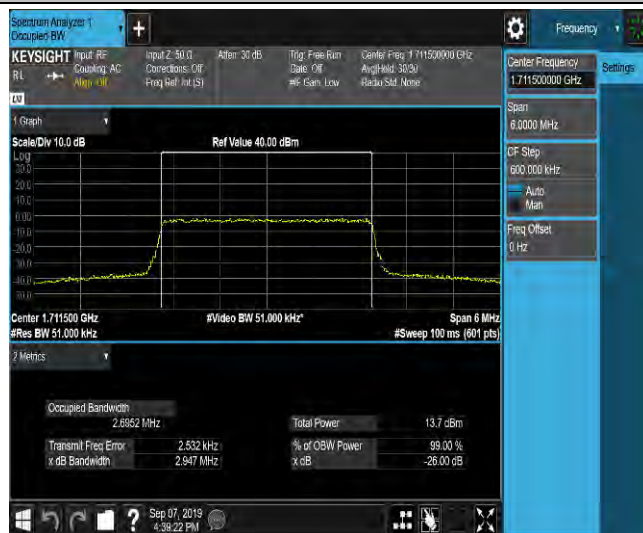
LTE Band 4_1.4MHz_16QAM_20393_6RB#0_1.1107_1.290_PASS



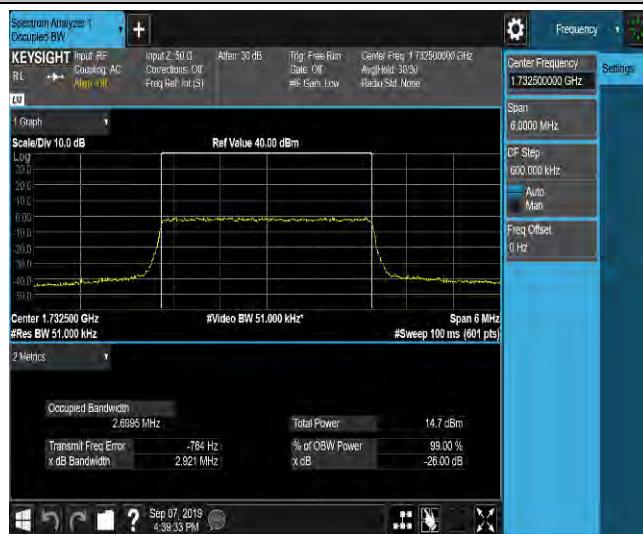
LTE Band 4_3MHz_QPSK_19965_15RB#0_2.6871_2.912_PASS



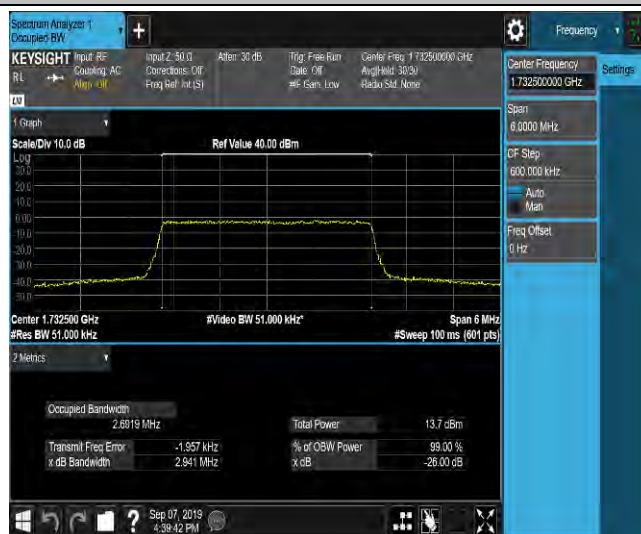
LTE Band 4_3MHz_16QAM_19965_15RB#0_2.6952_2.947_PASS



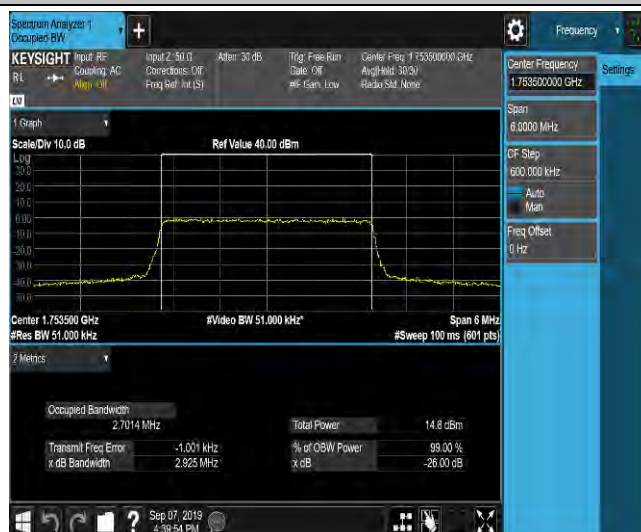
LTE Band 4_3MHz_QPSK_20175_15RB#0_2.6995_2.921_PASS



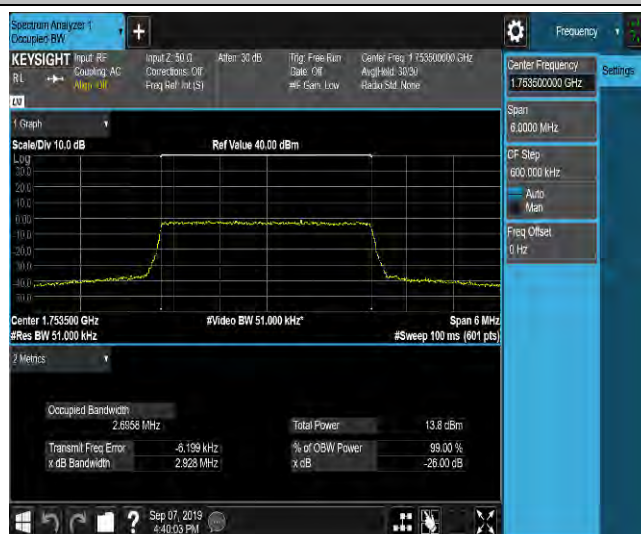
LTE Band 4_3MHz_16QAM_20175_15RB#0_2.6919_2.941_PASS



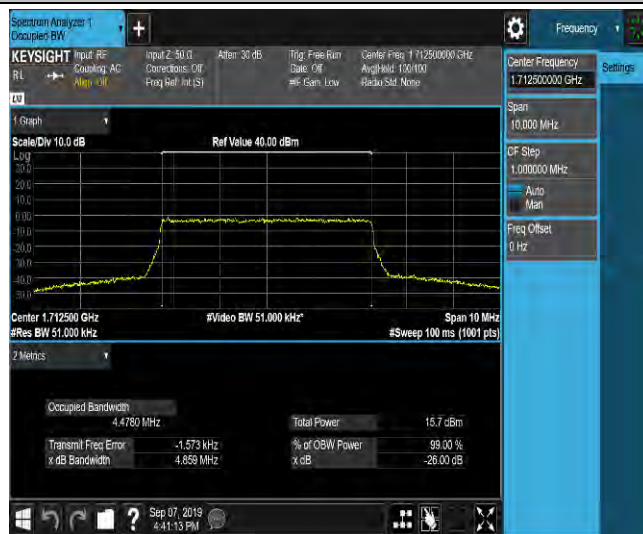
LTE Band 4_3MHz_QPSK_20385_15RB#0_2.7014_2.925_PASS



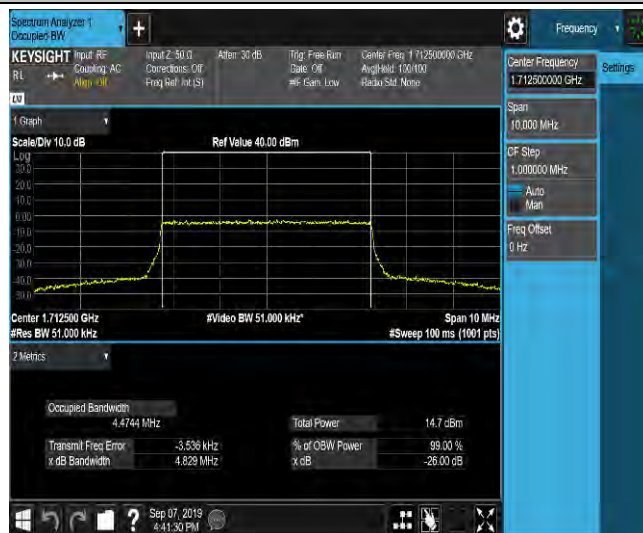
LTE Band 4_3MHz_16QAM_20385_15RB#0_2.6958_2.928_PASS



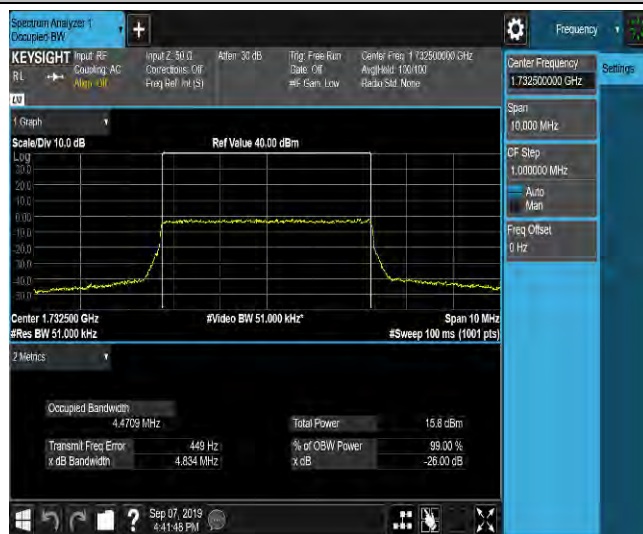
LTE Band 4_5MHz_QPSK_19975_25RB#0_4.4780_4.859_PASS



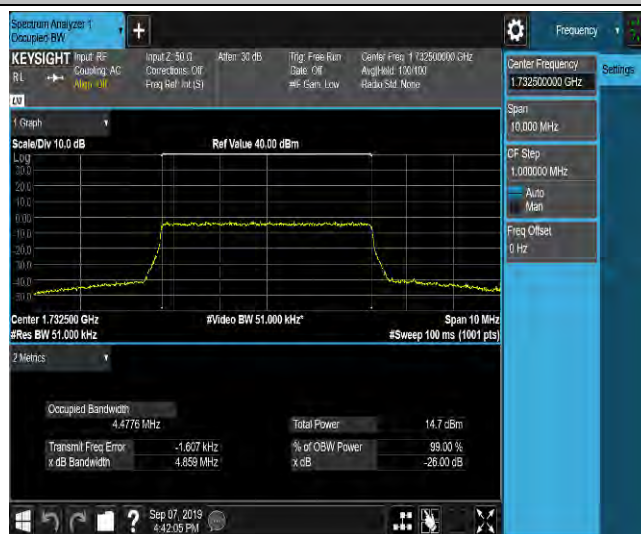
LTE Band 4_5MHz_16QAM_19975_25RB#0_4.4744_4.829_PASS



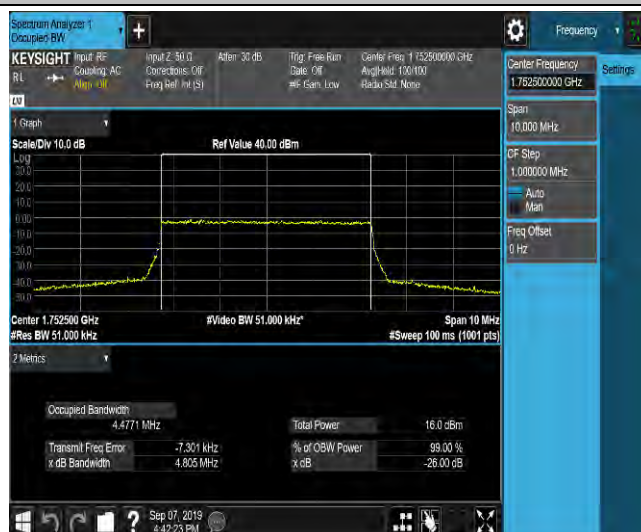
LTE Band 4_5MHz_QPSK_20175_25RB#0_4.4709_4.834_PASS



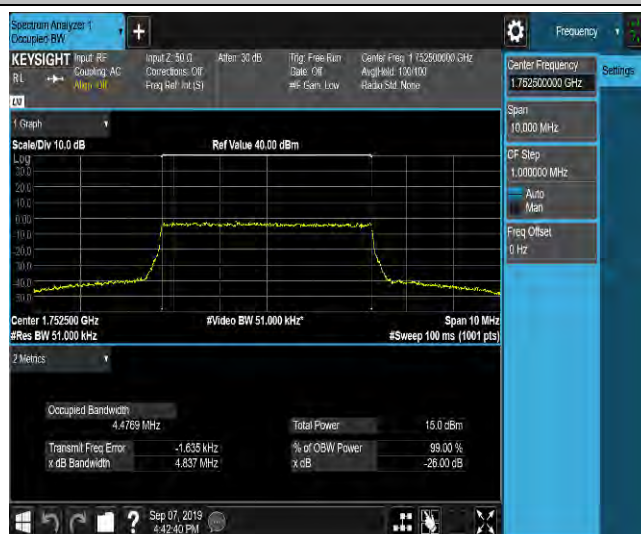
LTE Band 4_5MHz_16QAM_20175_25RB#0_4.4776_4.859_PASS



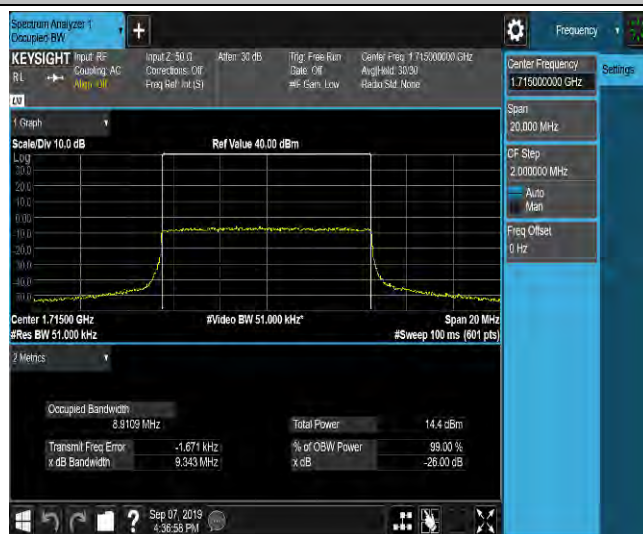
LTE Band 4_5MHz_QPSK_20375_25RB#0_4.4771_4.805_PASS



LTE Band 4_5MHz_16QAM_20375_25RB#0_4.4769_4.837_PASS



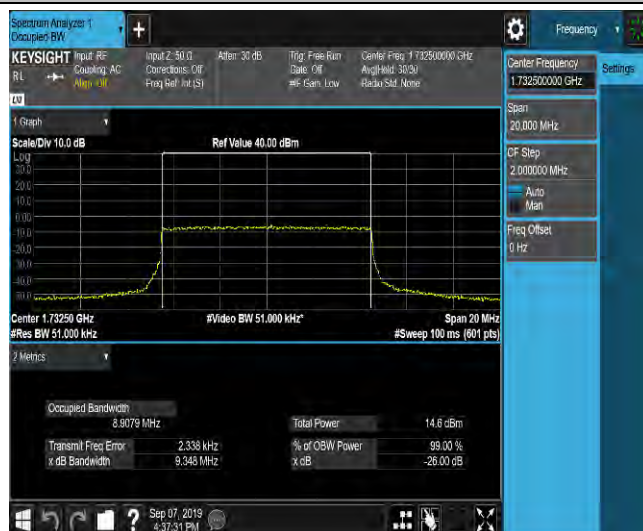
LTE Band 4_10MHz_QPSK_20000_50RB#0_8.9109_9.343_PASS



LTE Band 4_10MHz_16QAM_20000_50RB#0_8.9104_9.349_PASS



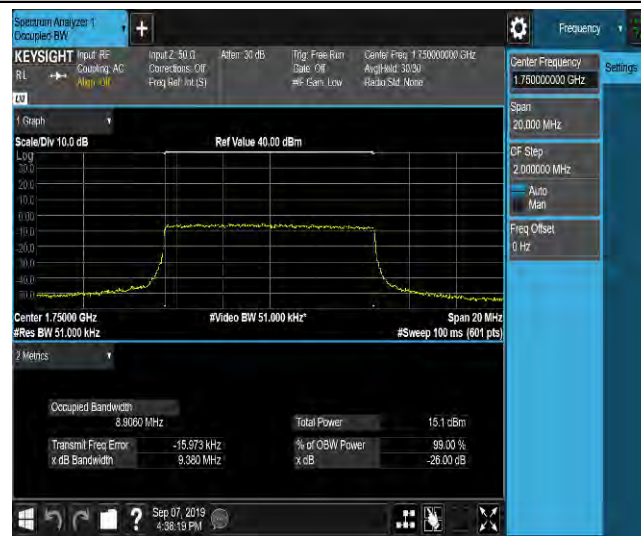
LTE Band 4_10MHz_QPSK_20175_50RB#0_8.9079_9.348_PASS



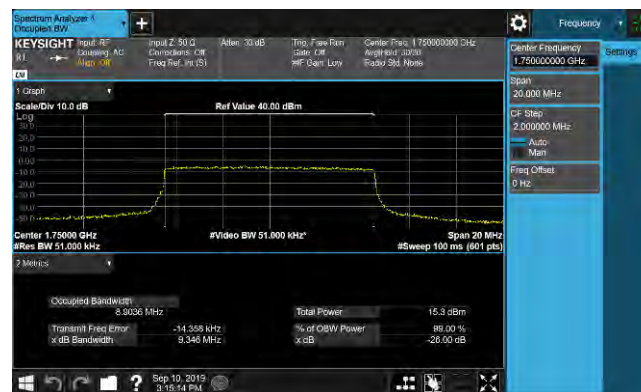
LTE Band 4_10MHz_16QAM_20175_50RB#0_8.9002_9.305_PASS



LTE Band 4_10MHz_QPSK_20350_50RB#0_8.9060_9.380_PASS



LTE Band 4_10MHz_16QAM_20350_50RB#0_8.9036_9.346_PASS



LTE Band 4_15MHz_QPSK_20025_75RB#0_13.365_13.94_PASS



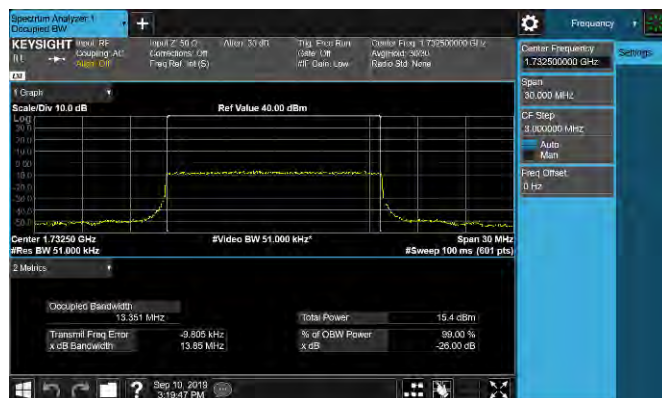
LTE Band 4_15MHz_16QAM_20025_75RB#0_13.361_13.90_PASS



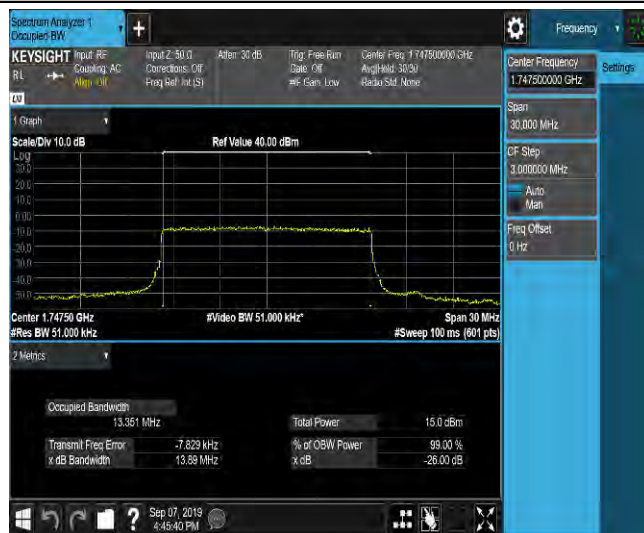
LTE Band 4_15MHz_QPSK_20175_75RB#0_13.358_13.87_PASS



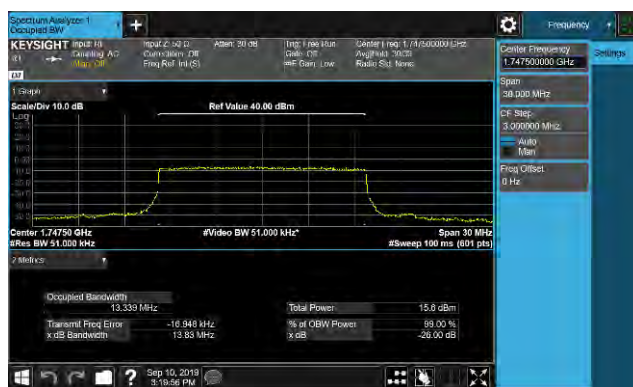
LTE Band 4_15MHz_16QAM_20175_75RB#0_13.351_13.85_PASS



LTE Band 4_15MHz_QPSK_20325_75RB#0_13.351_13.89_PASS



LTE Band 4_15MHz_16QAM_20325_75RB#0_13.339_13.83_PASS



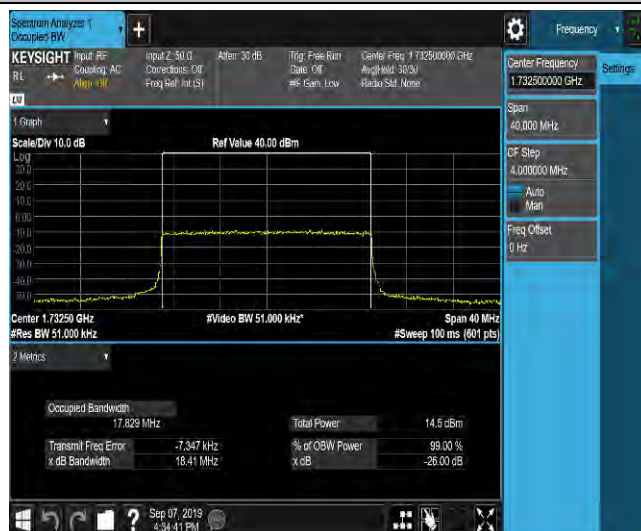
LTE Band 4_20MHz_QPSK_20050_100RB#0_17.808_18.38_PASS



LTE Band 4_20MHz_16QAM_20050_100RB#0_17.815_18.31_PASS



LTE Band 4_20MHz_QPSK_20175_100RB#0_17.829_18.41_PASS



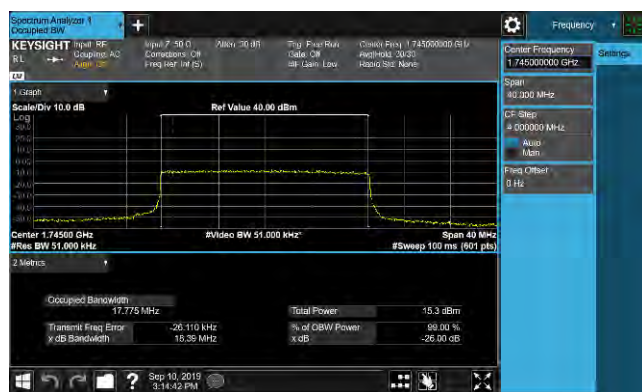
LTE Band 4_20MHz_16QAM_20175_100RB#0_17.809_18.41_PASS



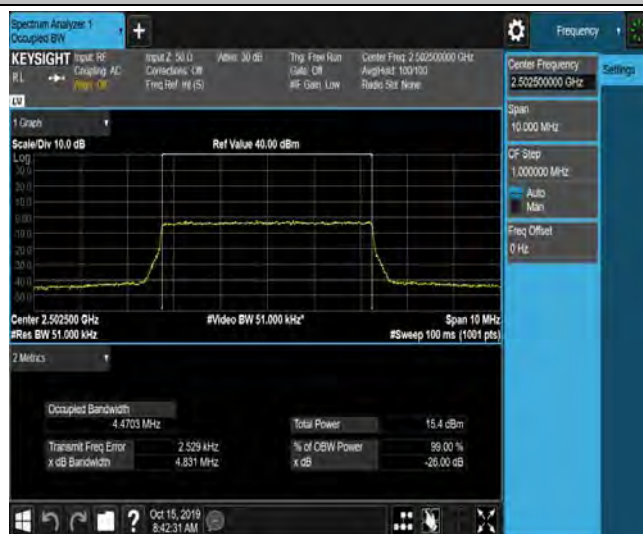
LTE Band 4_20MHz_QPSK_20300_100RB#0_17.776_18.42_PASS



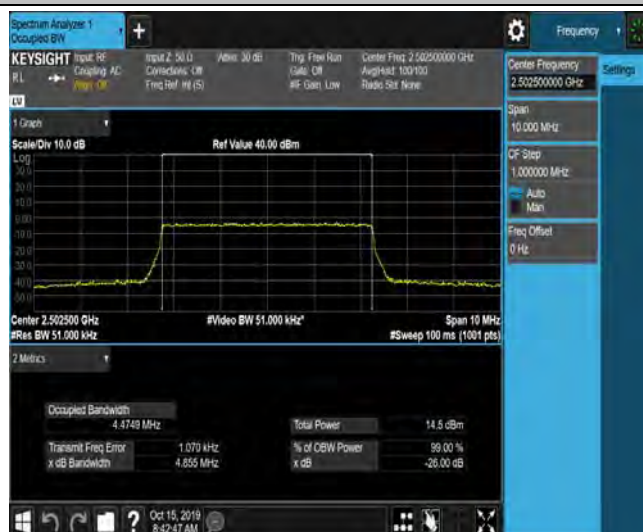
LTE Band 4_20MHz_16QAM_20300_100RB#0_17.775_18.39_PASS



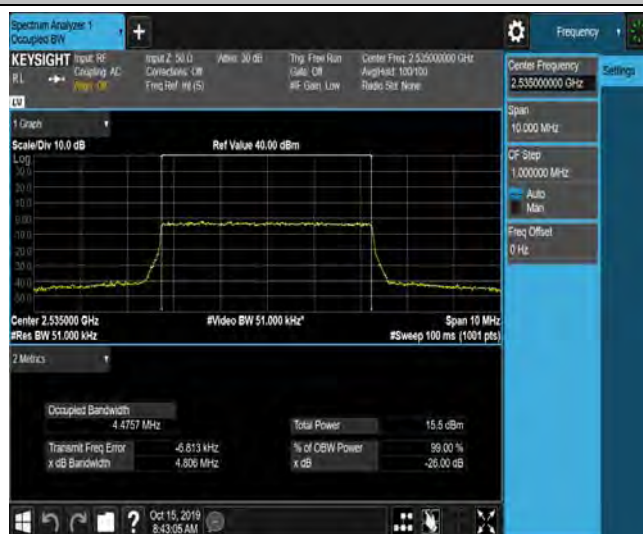
LTE Band 7_5MHz_QPSK_20775_25RB#0_4.4703_4.831_PASS



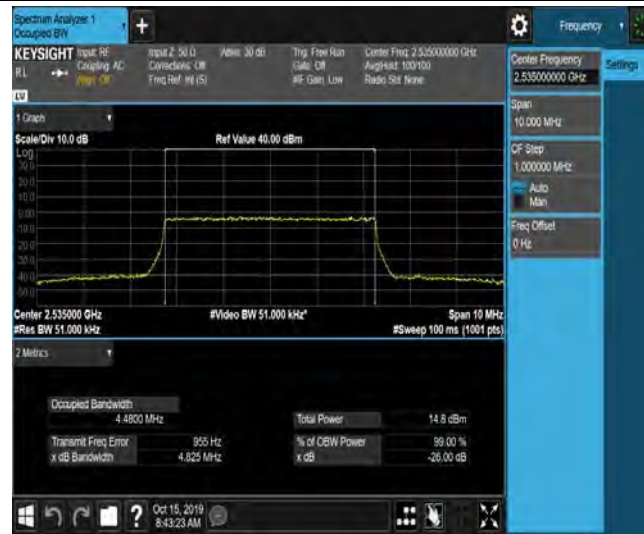
LTE Band 7_5MHz_16QAM_20775_25RB#0_4.4749_4.855_PASS



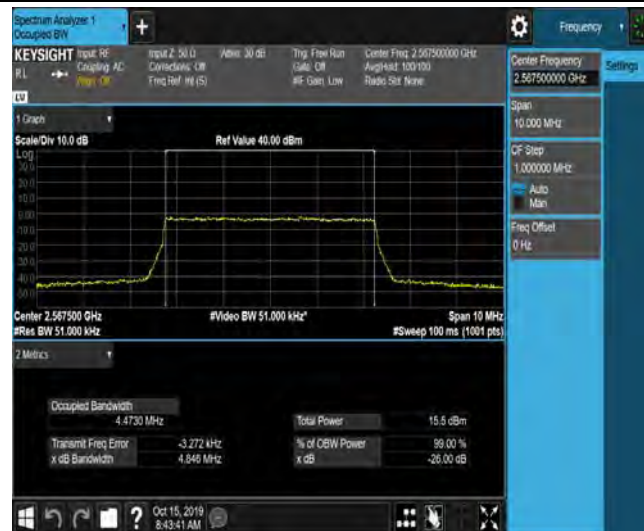
LTE Band 7_5MHz_QPSK_21100_25RB#0_4.4757_4.806_PASS



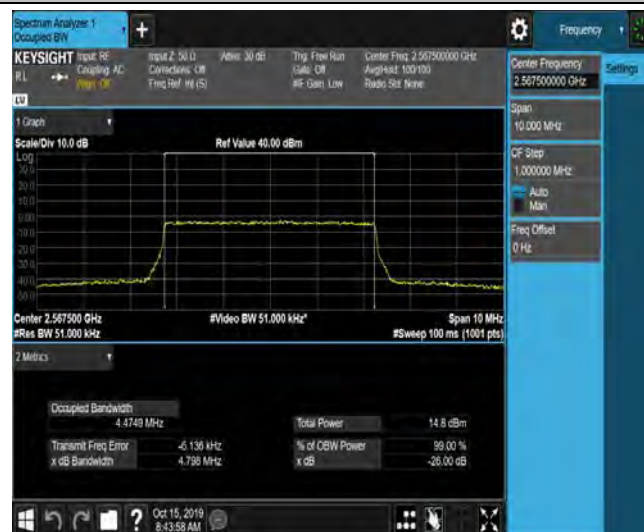
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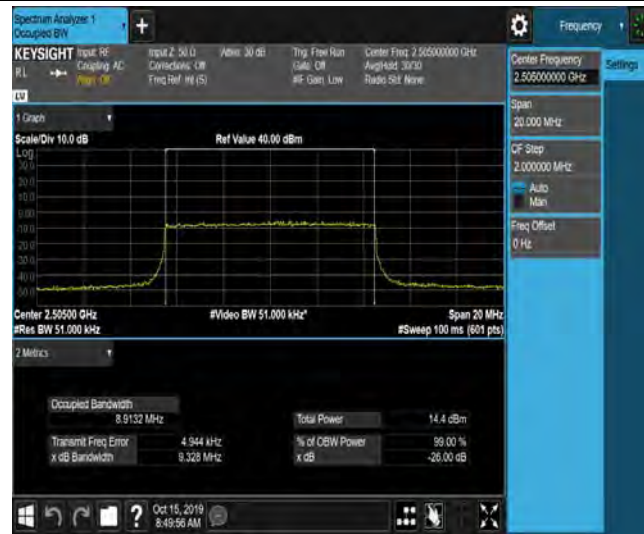
LTE Band 7_5MHz_QPSK_21425_25RB#0_4.4730_4.846_PASS



LTE Band 7_5MHz_16QAM_21425_25RB#0_4.4749_4.798_PASS



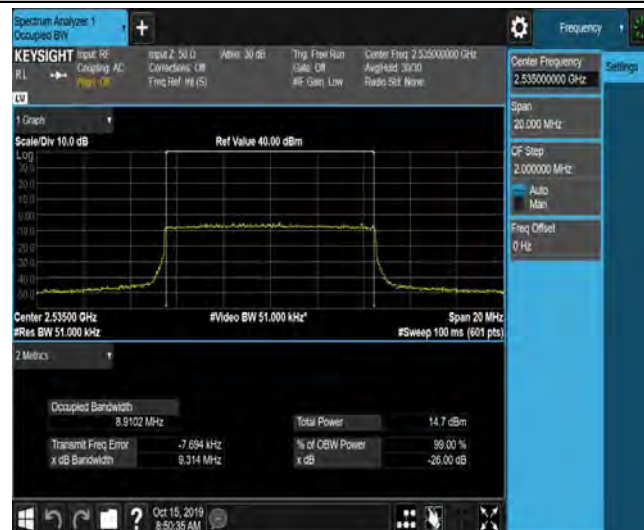
LTE Band 7_10MHz_QPSK_20800_50RB#0_8.9132_9.328_PASS



LTE Band 7-10MHz_16QAM_20800_50RB#0_8.9168_9.348_PASS



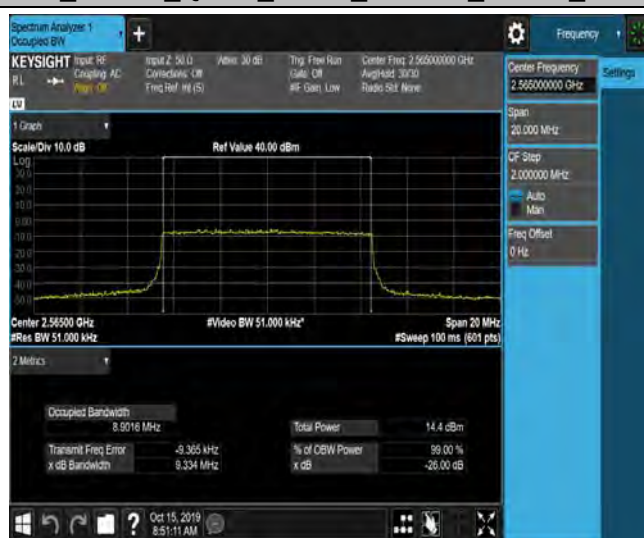
LTE Band 7_10MHz_QPSK_21100_50RB#0_8.9102_9.314_PASS



LTE Band 7_10MHz_16QAM_21100_50RB#0_8.9010_9.346_PASS



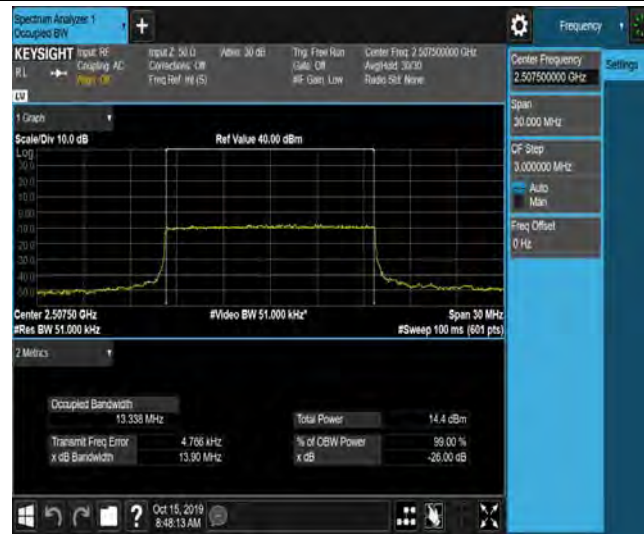
LTE Band 7_10MHz_QPSK_21400_50RB#0_8.9016_9.334_PASS



LTE Band 7_10MHz_16QAM_21400_50RB#0_8.9052_9.366_PASS



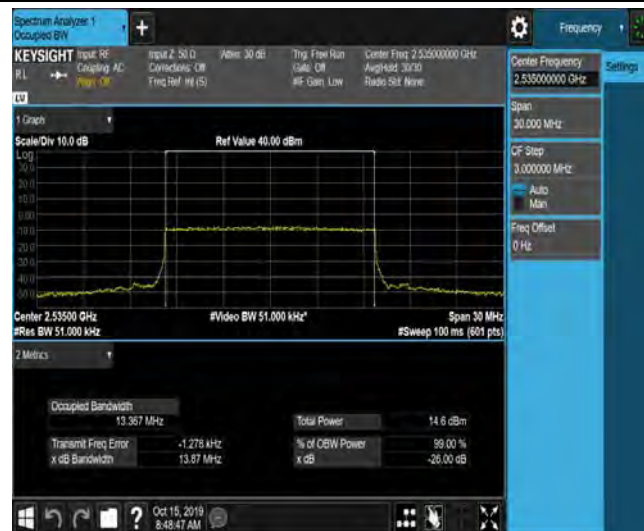
LTE Band 7_15MHz_QPSK_20825_75RB#0_13.338_13.90_PASS



LTE Band 7_15MHz_16QAM_20825_75RB#0_13.355_13.97_PASS



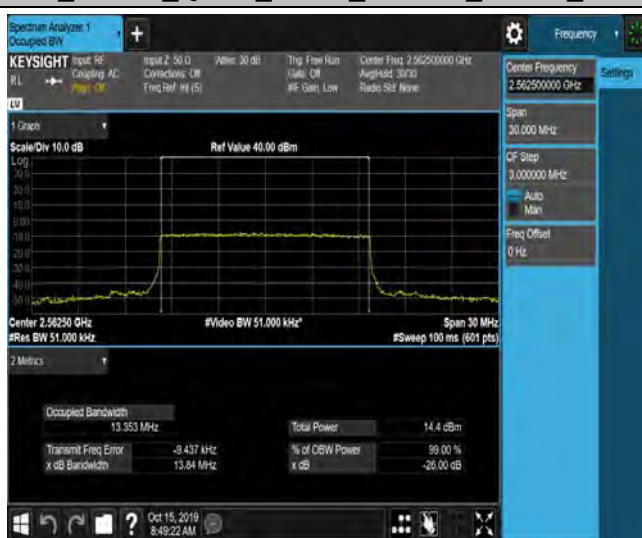
LTE Band 7_15MHz_QPSK_21100_75RB#0_13.367_13.87_PASS



LTE Band 7_15MHz_16QAM_21100_75RB#0_13.336_13.95_PASS



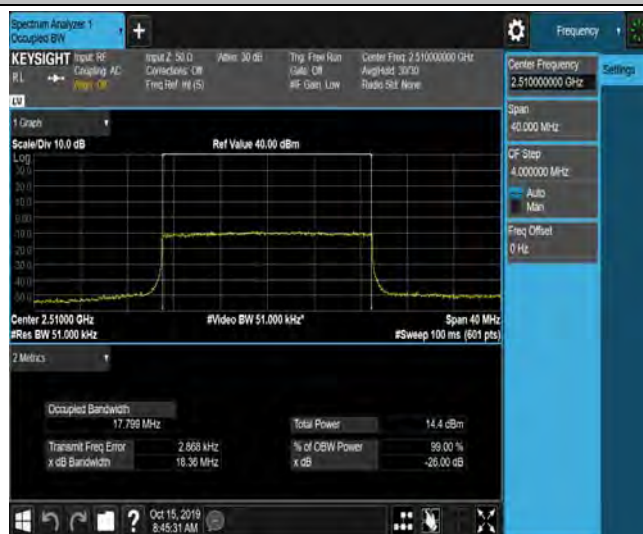
LTE Band 7_15MHz_QPSK_21375_75RB#0_13.353_13.84_PASS



LTE Band 7_15MHz_16QAM_21375_75RB#0_13.362_13.87_PASS



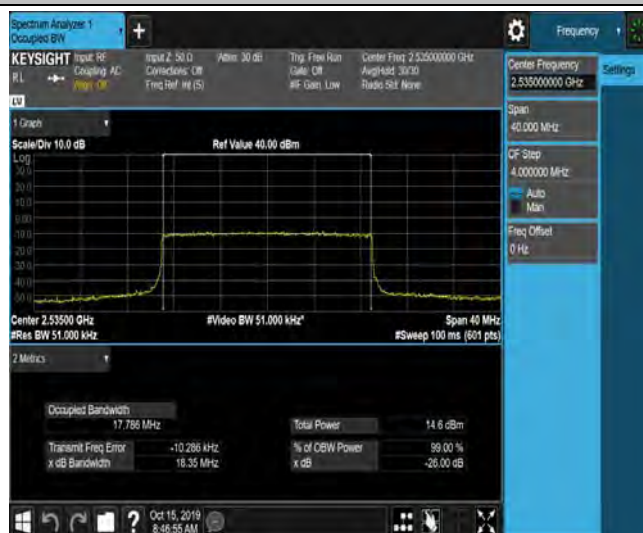
LTE Band 7_20MHz_QPSK_20850_100RB#0_17.799_18.36_PASS



LTE Band 7_20MHz_16QAM_20850_100RB#0_17.793_18.34_PASS



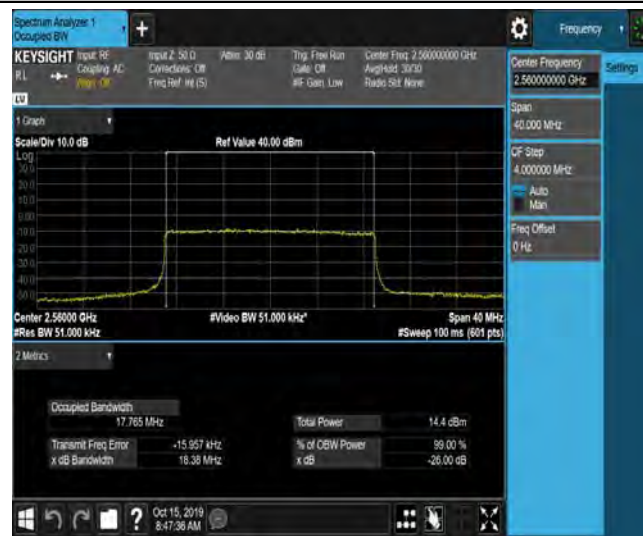
LTE Band 7_20MHz_QPSK_21100_100RB#0_17.786_18.35_PASS



LTE Band 7_20MHz_16QAM_21100_100RB#0_17.785_18.39_PASS



LTE Band 7_20MHz_QPSK_21350_100RB#0_17.765_18.38_PASS



LTE Band 7_20MHz_16QAM_21350_100RB#0_17.766_18.39_PASS



5.4 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 51 kHz, VBW is set to 160 kHz for WCDMA Band IV.

RBW is set to 51 kHz, VBW is set to 150kHz for LTE Band 4 (1.4MHz/3MHz/5MHz).

RBW is set to 51 kHz, VBW is set to 150kHz for LTE Band 7 (5MHz).

RBW is set to 51 kHz, VBW is set to 150kHz for LTE Band 4/7(10MHz/15MHz/20MHz).

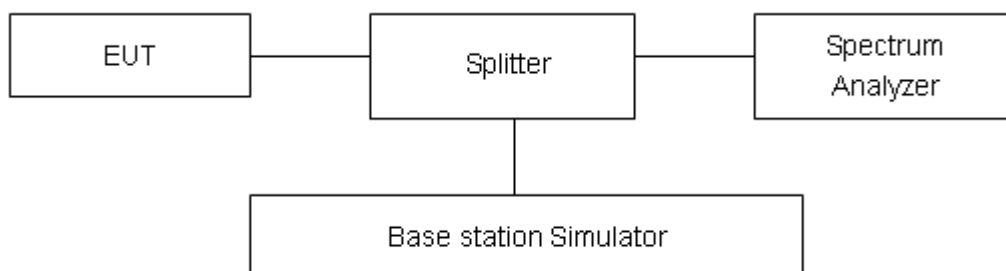
on spectrum analyzer.

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(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(m) (4)/ specifies that “for BRS and EBS stations. For mobile digital stations, the



attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Example:

The limit line is derived from $43 + 10 \log (P)$ dB below the transmitter power P(Watts)

$$= P(W) - [43 + 10 \log (P)] \text{ (dB)}$$

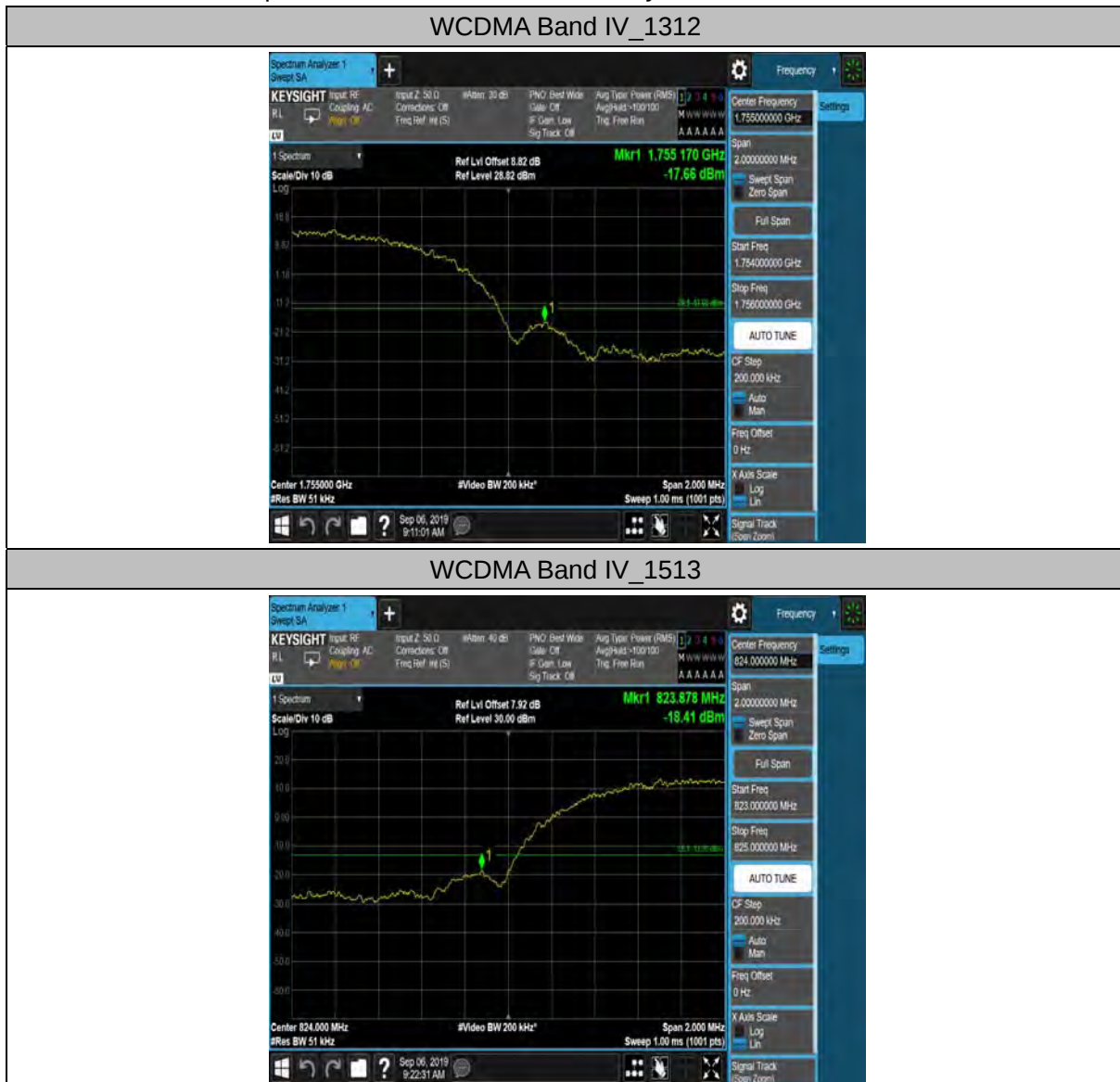
$$= [30 + 10 \log (P)] \text{ (dBm)} - [43 + 10 \log (P)] \text{ (dB)} = -13 \text{ dBm}.$$

Measurement Uncertainty

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

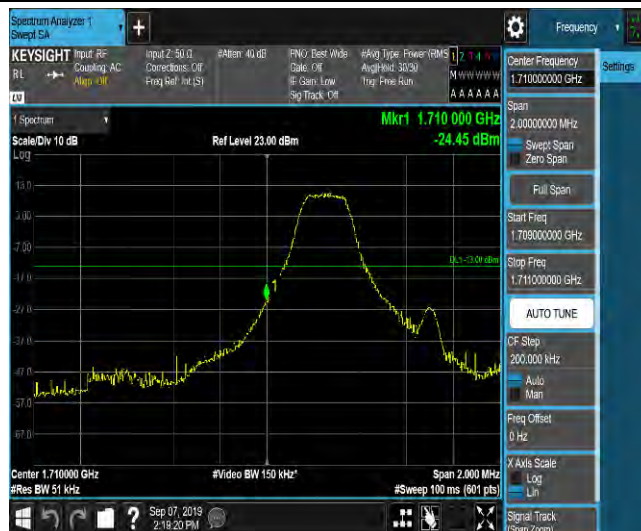
Test Result

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





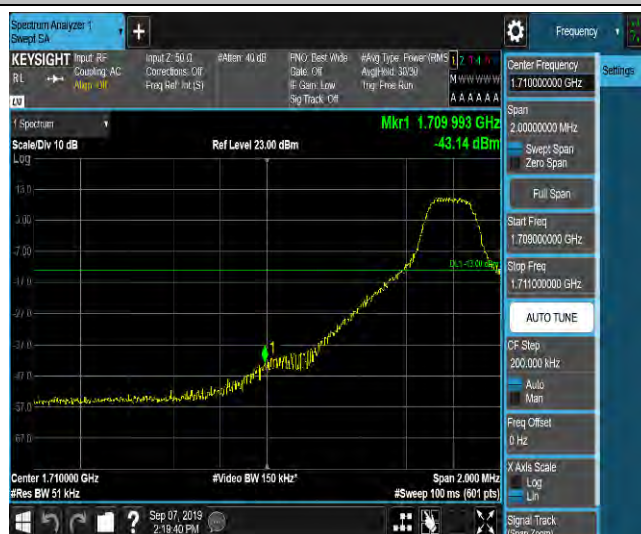
LTE Band 4_1.4MHz_QPSK_19957_1RB#0_-24.45_PASS



LTE Band 4_1.4MHz_16QAM_19957_1RB#0_-26.00_PASS



LTE Band 4_1.4MHz_QPSK_19957_1RB#2_-43.14_PASS



LTE Band 4_1.4MHz_16QAM_19957_1RB#2_-45.21_PASS



LTE Band 4_1.4MHz_QPSK_19957_1RB#5_-40.79_PASS



LTE Band 4_1.4MHz_16QAM_19957_1RB#5_-39.76_PASS



LTE Band 4_1.4MHz_QPSK_19957_3RB#0_-26.88_PASS



LTE Band 4_1.4MHz_16QAM_19957_3RB#0_-26.30_PASS



LTE Band 4_1.4MHz_QPSK_19957_3RB#1_-26.01_PASS



LTE Band 4_1.4MHz_16QAM_19957_3RB#1_-27.02_PASS



LTE Band 4_1.4MHz_QPSK_19957_3RB#3_-37.29_PASS



LTE Band 4_1.4MHz_16QAM_19957_3RB#3_-38.93_PASS



LTE Band 4_1.4MHz_QPSK_19957_6RB#0_-29.16_PASS



LTE Band 4_1.4MHz_16QAM_19957_6RB#0_-29.87_PASS



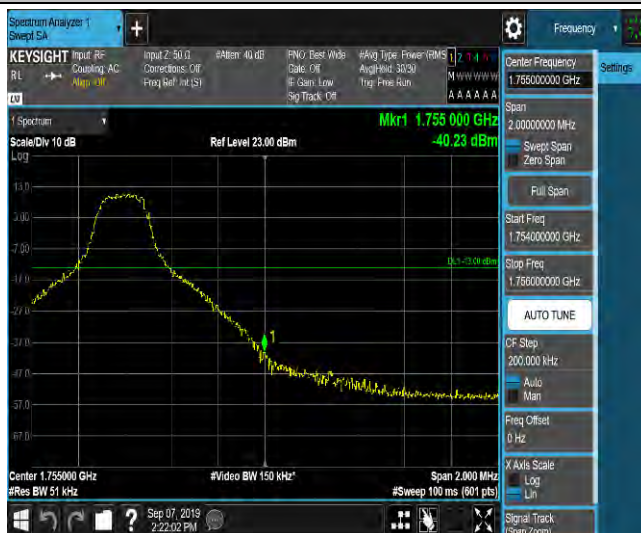
LTE Band 4_1.4MHz_QPSK_20393_1RB#0_-42.39_PASS



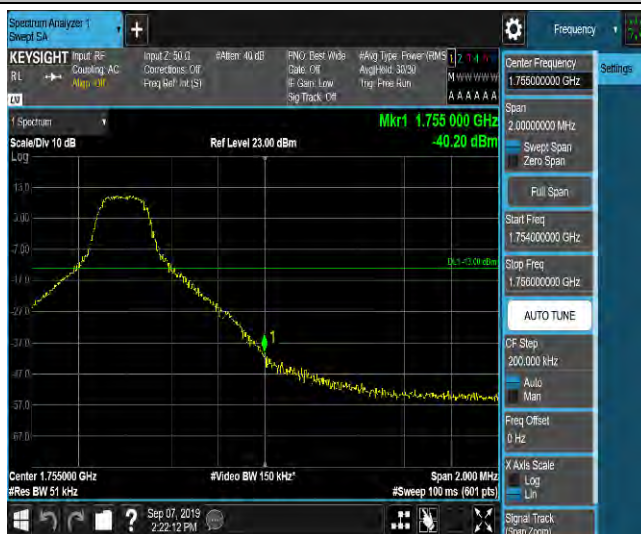
LTE Band 4_1.4MHz_16QAM_20393_1RB#0_-42.03_PASS



LTE Band 4_1.4MHz_QPSK_20393_1RB#2_-40.23_PASS



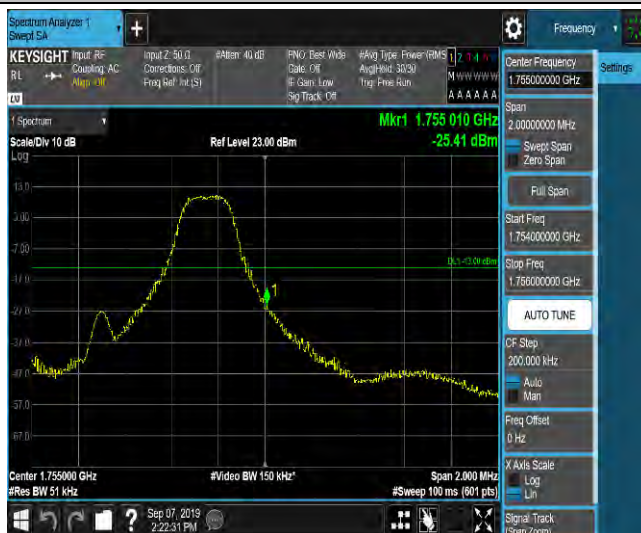
LTE Band 4_1.4MHz_16QAM_20393_1RB#2_-40.20_PASS



LTE Band 4_1.4MHz_QPSK_20393_1RB#5_-22.84_PASS



LTE Band 4_1.4MHz_16QAM_20393_1RB#5_-25.41_PASS



LTE Band 4_1.4MHz_QPSK_20393_3RB#0_-36.06_PASS



LTE Band 4	1.4MHz	16QAM	20393	3RB#0	-36.86	PASS
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LTE Band 4	1.4MHz	QPSK	20393	3RB#1	-36.26	PASS
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LTE Band 4	1.4MHz	16QAM	20393	3RB#1	-36.78	PASS
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LTE Band 4_1.4MHz_QPSK_20393_3RB#3_-25.02_PASS



LTE Band 4_1.4MHz_16QAM_20393_3RB#3_-25.01_PASS



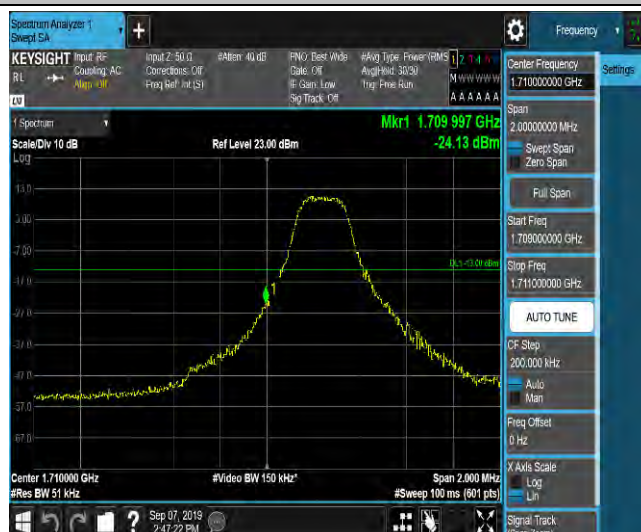
LTE Band 4_1.4MHz_QPSK_20393_6RB#0_-30.15_PASS



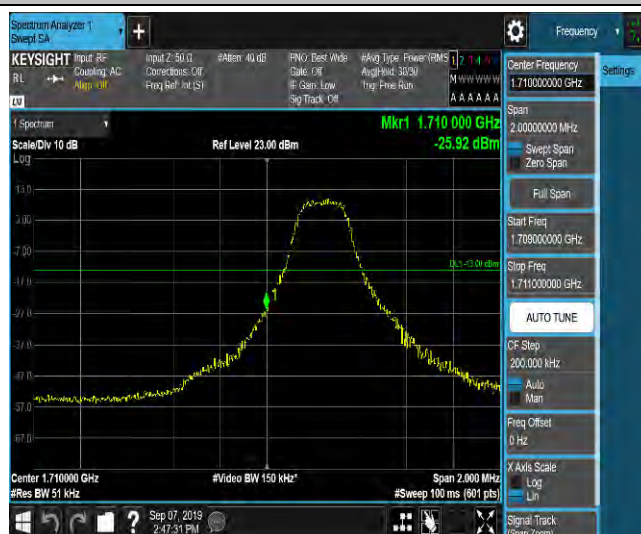
LTE Band 4_1.4MHz_16QAM_20393_6RB#0_-31.22_PASS



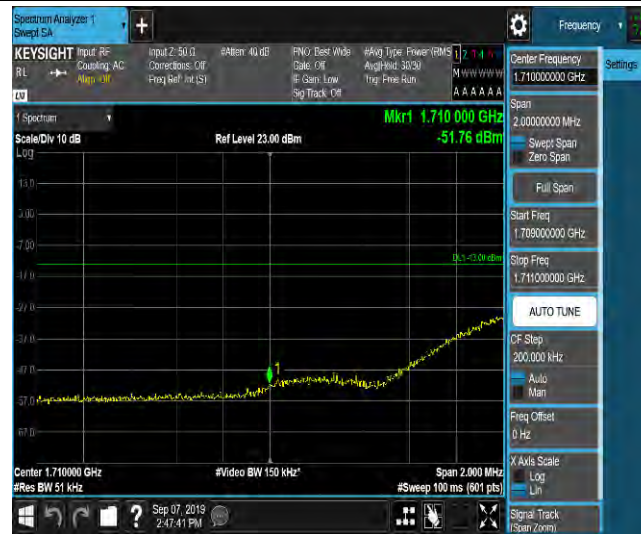
LTE Band 4_3MHz_QPSK_19965_1RB#0_-24.13_PASS



LTE Band 4_3MHz_16QAM_19965_1RB#0_-25.92_PASS



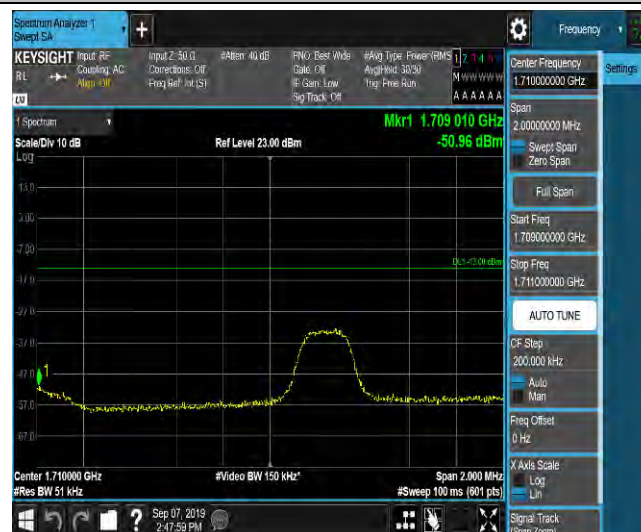
LTE Band 4_3MHz_QPSK_19965_1RB#8_-51.76_PASS



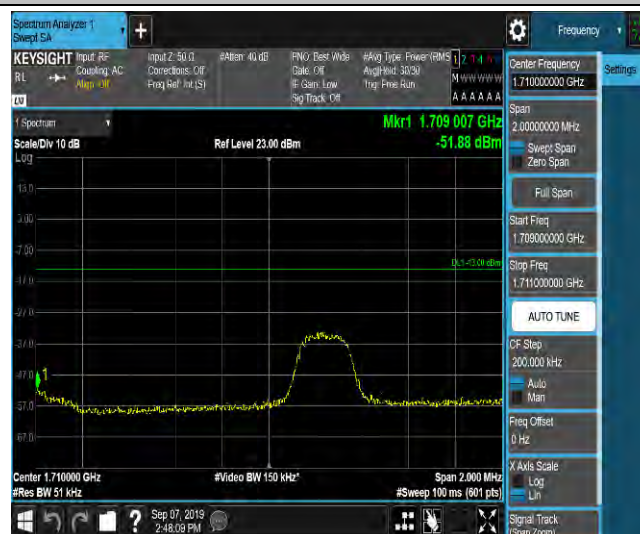
LTE Band 4_3MHz_16QAM_19965_1RB#8_-52.70_PASS



LTE Band 4_3MHz_QPSK_19965_1RB#14_-50.96_PASS



LTE Band 4	3MHz	16QAM	19965	1RB#14	-51.88	PASS
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LTE Band 4 3MHz QPSK 19965 8RB#0 -28.25 PASS



LTE Band 4	3MHz	16QAM	19965	8RB#0	-30.24	PASS
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LTE Band 4_3MHz_QPSK_19965_8RB#4_-27.66_PASS



LTE Band 4_3MHz_16QAM_19965_8RB#4_-28.91_PASS



LTE Band 4_3MHz_QPSK_19965_8RB#7_-38.16_PASS



LTE Band 4_3MHz_16QAM_19965_8RB#7_-41.16_PASS



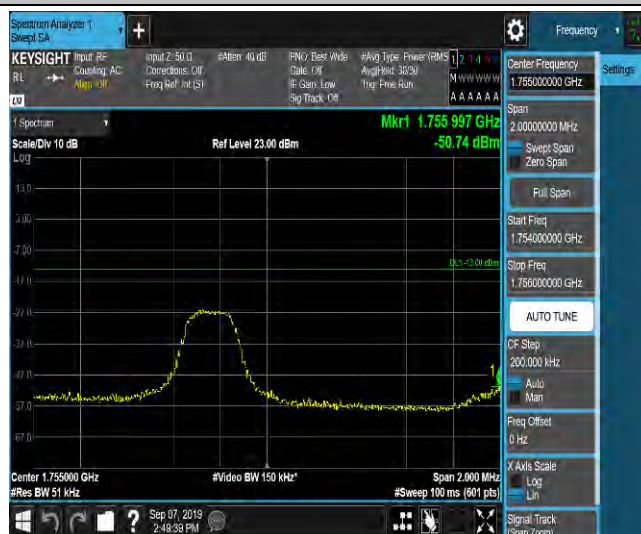
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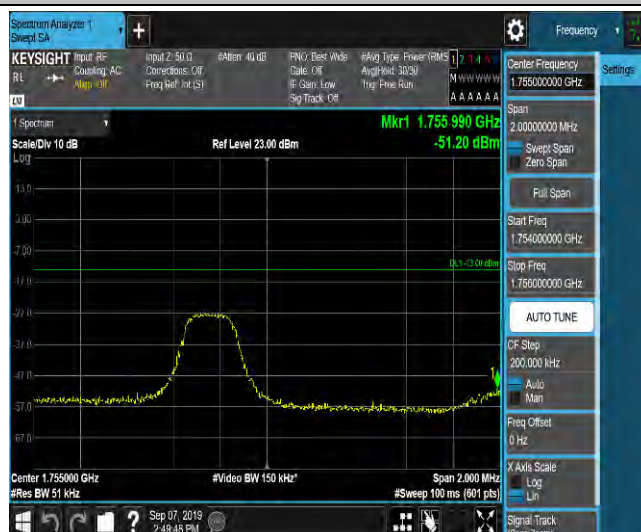
LTE Band 4_3MHz_16QAM_19965_15RB#0_-31.59_PASS



LTE Band 4_3MHz_QPSK_20385_1RB#0_-50.74_PASS



LTE Band 4_3MHz_16QAM_20385_1RB#0_-51.20_PASS



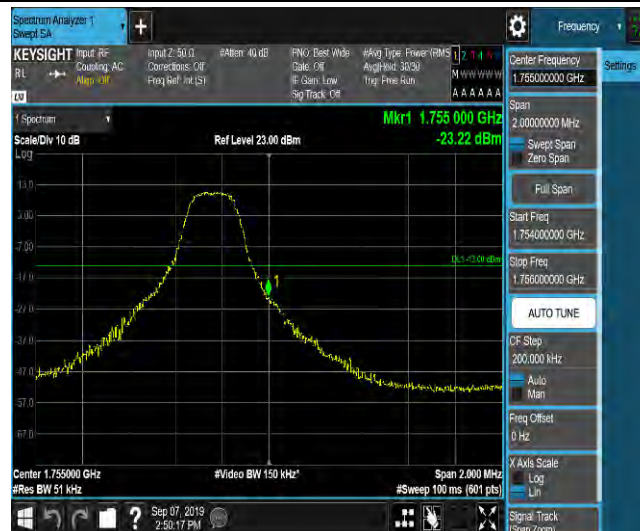
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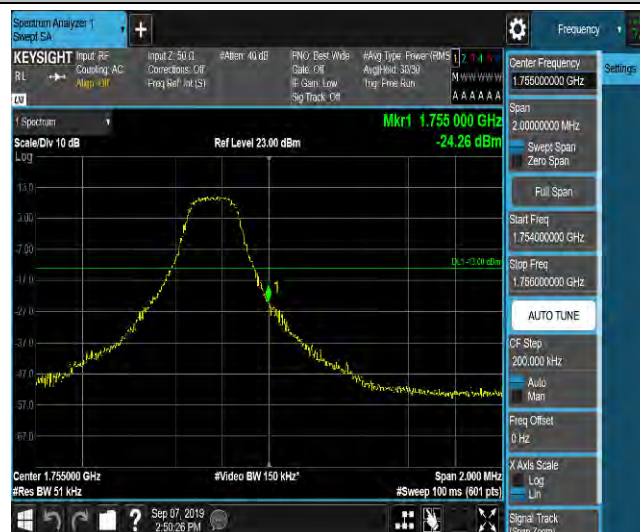
LTE Band 4_3MHz_16QAM_20385_1RB#8_-50.30_PASS



LTE Band 4_3MHz_QPSK_20385_1RB#14_-23.22_PASS



LTE Band 4_3MHz_16QAM_20385_1RB#14_-24.26_PASS





LTE Band 4_3MHz_QPSK_20385_8RB#0_-37.01_PASS



LTE Band 4_3MHz_16QAM_20385_8RB#0_-39.03_PASS



LTE Band 4_3MHz_QPSK_20385_8RB#4_-37.54_PASS



LTE Band 4_3MHz_16QAM_20385_8RB#4_-39.22_PASS



LTE Band 4_3MHz_QPSK_20385_8RB#7_-28.10_PASS



LTE Band 4_3MHz_16QAM_20385_8RB#7_-28.00_PASS



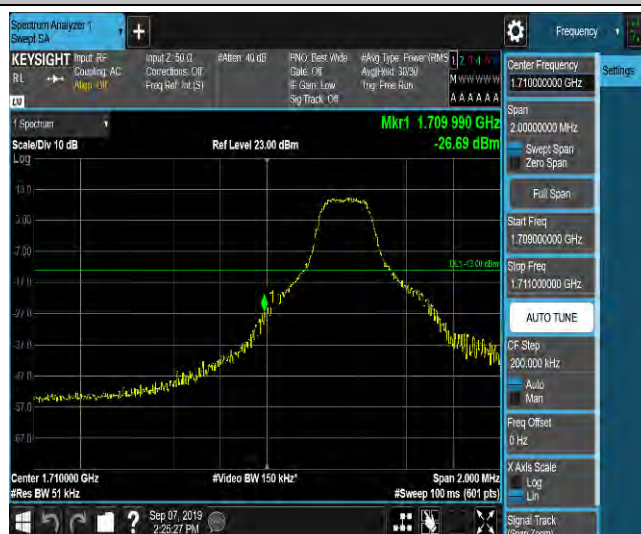
LTE Band 4_3MHz_QPSK_20385_15RB#0_-32.63_PASS



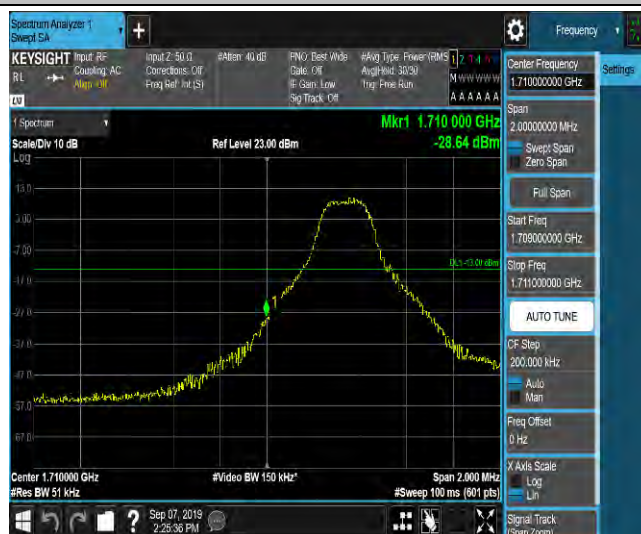
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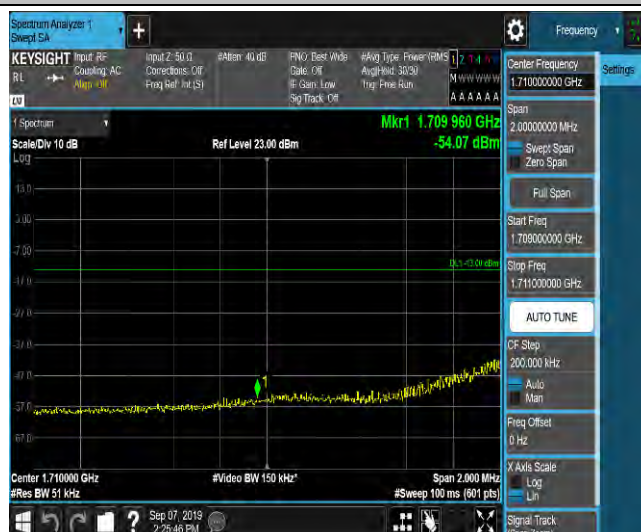
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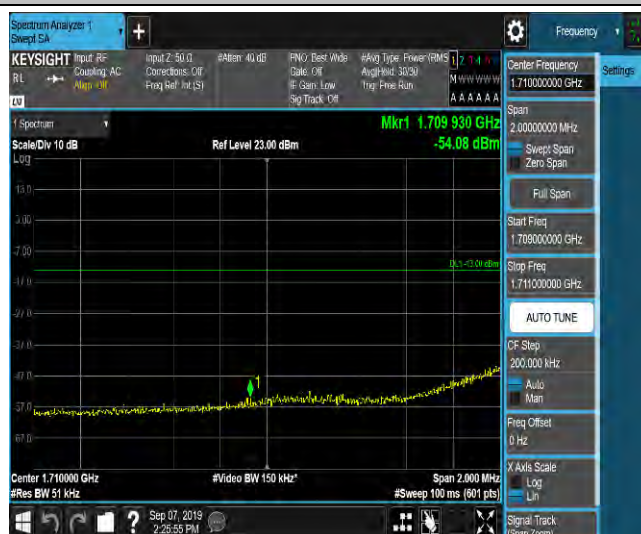
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LTE Band 4_5MHz_QPSK_19975_1RB#12_-54.07_PASS



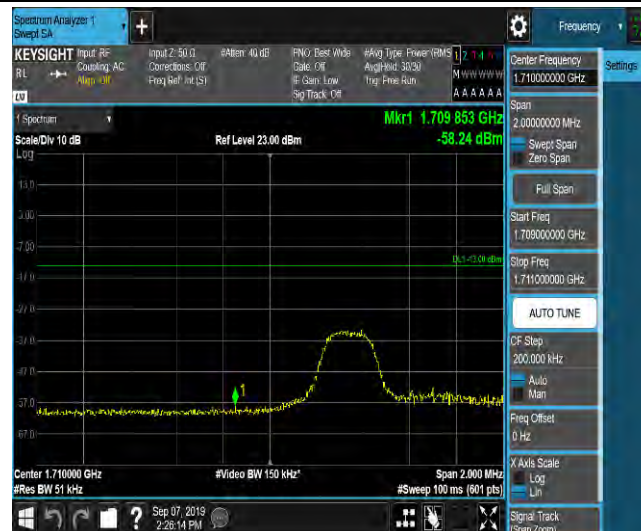
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LTE Band 4_5MHz_QPSK_19975_1RB#24_-58.18_PASS



LTE Band 4_5MHz_16QAM_19975_1RB#24_-58.24_PASS



LTE Band 4_5MHz_QPSK_19975_12RB#0_-30.42_PASS



LTE Band 4_5MHz_16QAM_19975_12RB#0_-31.14_PASS



LTE Band 4_5MHz_QPSK_19975_12RB#6_-30.03_PASS



LTE Band 4_5MHz_16QAM_19975_12RB#6_-31.68_PASS



LTE Band 4_5MHz_QPSK_19975_12RB#13_-44.74_PASS



LTE Band 4_5MHz_16QAM_19975_12RB#13_-48.67_PASS



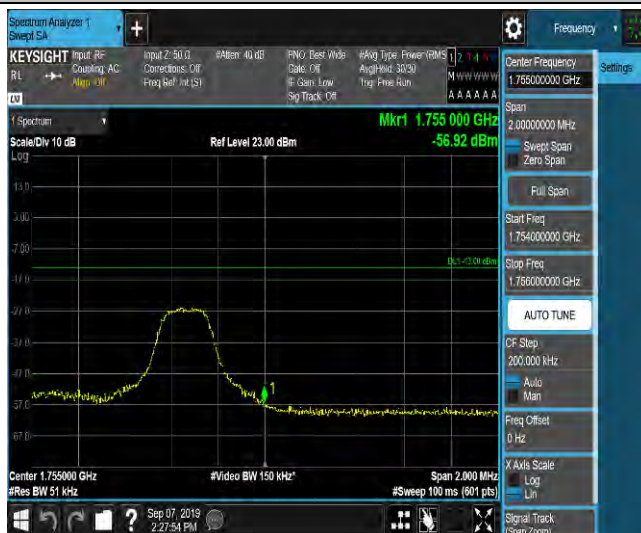
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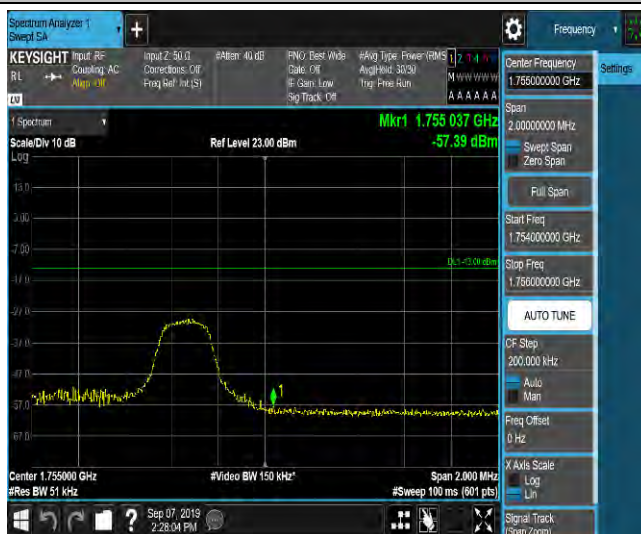
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LTE Band 4_5MHz_QPSK_20375_1RB#0_-56.92_PASS



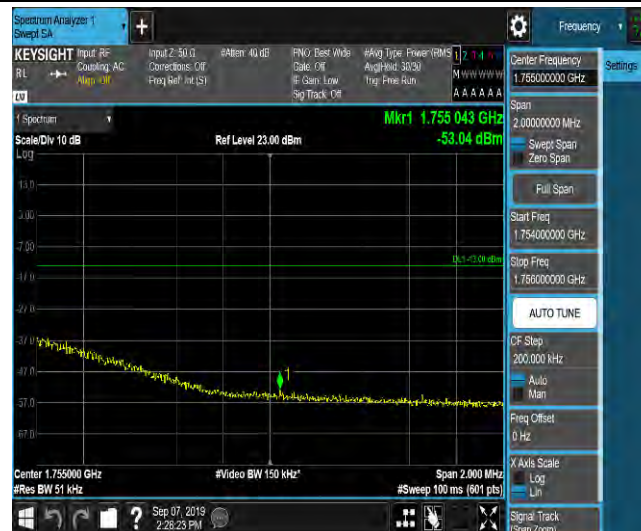
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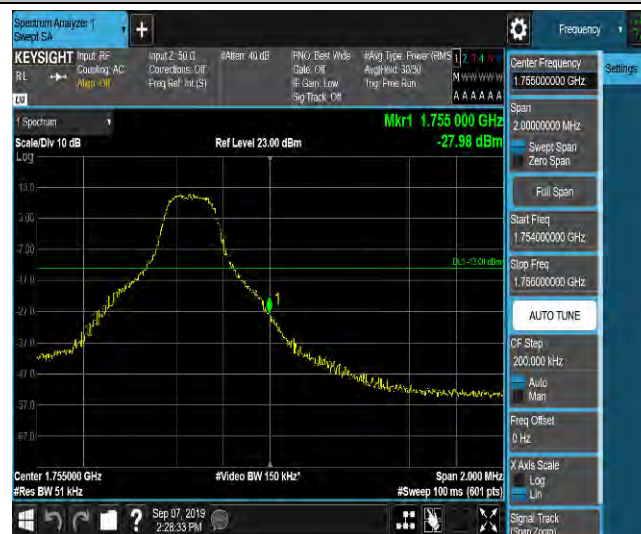
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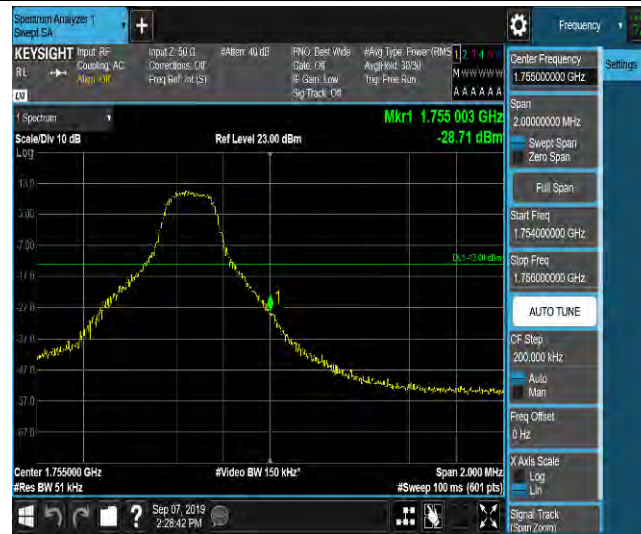
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LTE Band 4_5MHz_QPSK_20375_1RB#24_-27.98_PASS



LTE Band 4_5MHz_16QAM_20375_1RB#24_-28.71_PASS



LTE Band 4_5MHz_QPSK_20375_12RB#0_-44.58_PASS



LTE Band 4_5MHz_16QAM_20375_12RB#0_-46.52_PASS



LTE Band 4_5MHz_QPSK_20375_12RB#6_-45.10_PASS



LTE Band 4_5MHz_16QAM_20375_12RB#6_-47.21_PASS



LTE Band 4_5MHz_QPSK_20375_12RB#13_-31.57_PASS



LTE Band 4_5MHz_16QAM_20375_12RB#13_-33.28_PASS



LTE Band 4_5MHz_QPSK_20375_25RB#0_-34.93_PASS



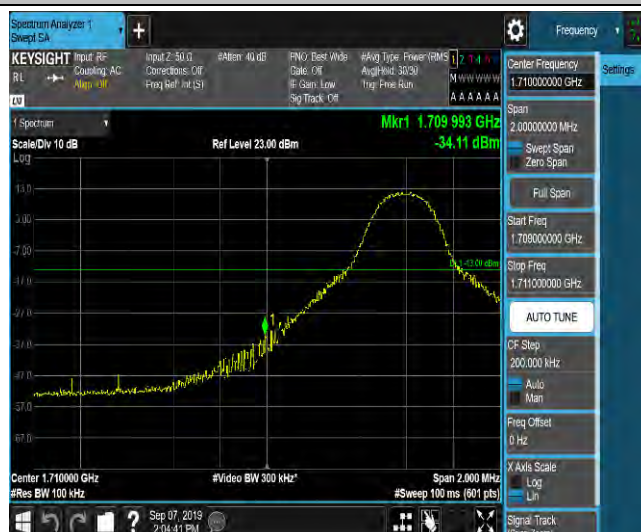
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LTE Band 4_10MHz_16QAM_20000_1RB#0_-34.11_PASS



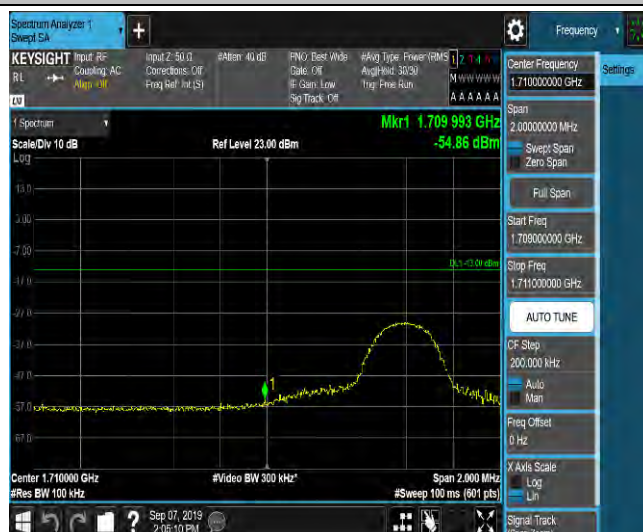
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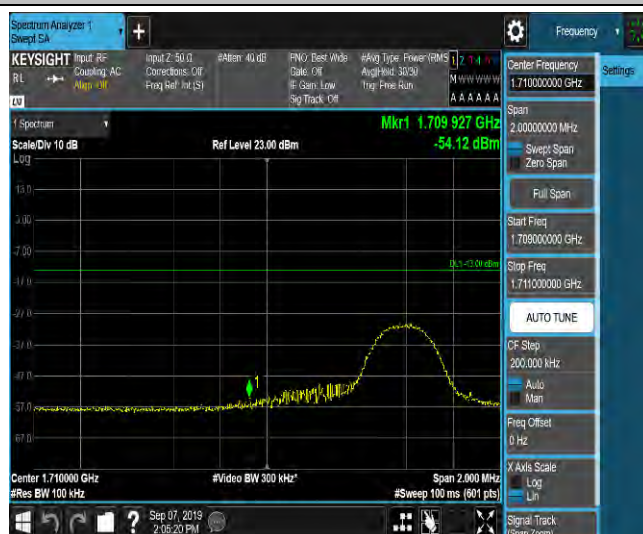
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LTE Band 4_10MHz_QPSK_20000_1RB#49_-54.86_PASS



LTE Band 4_10MHz_16QAM_20000_1RB#49_-54.12_PASS



LTE Band 4_10MHz_QPSK_20000_25RB#0_-36.26_PASS



LTE Band 4_10MHz_16QAM_20000_25RB#0_-37.13_PASS



LTE Band 4_10MHz_QPSK_20000_25RB#12_-35.42_PASS



LTE Band 4_10MHz_16QAM_20000_25RB#12_-37.32_PASS



LTE Band 4_10MHz_QPSK_20000_25RB#25_-44.66_PASS



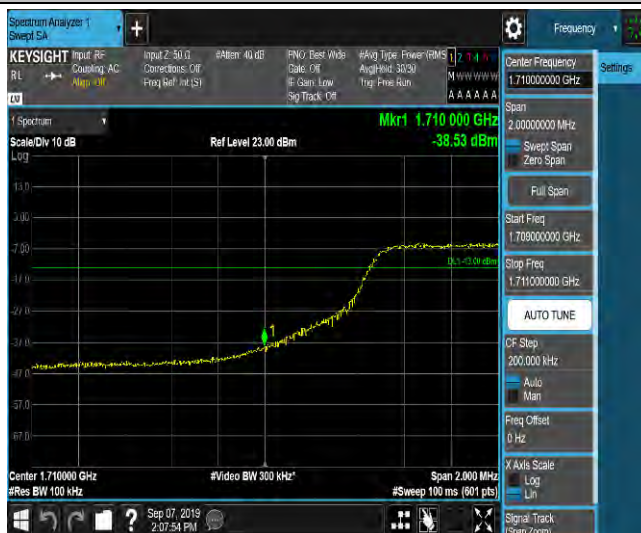
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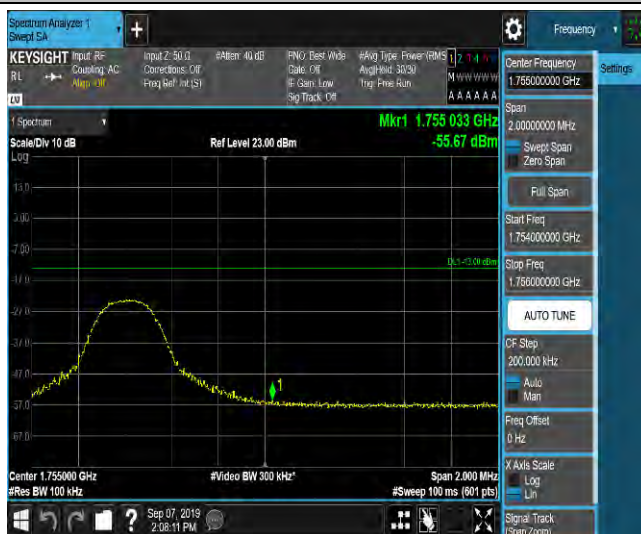
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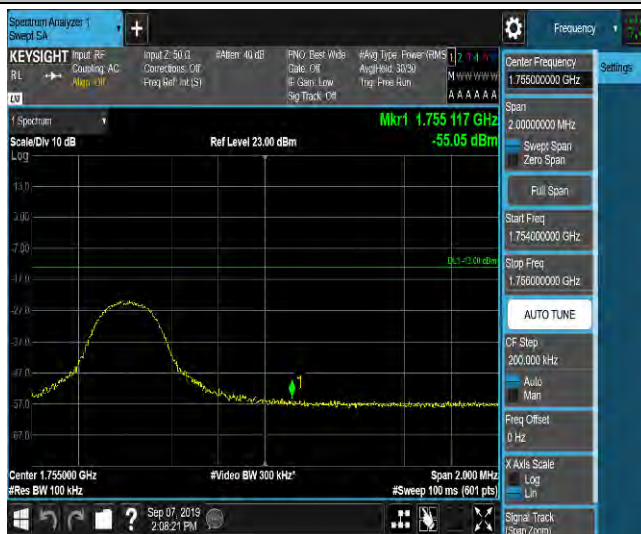
LTE Band 4_10MHz_16QAM_20000_50RB#0_-38.53_PASS



LTE Band 4_10MHz_QPSK_20350_1RB#0_-55.67_PASS



LTE Band 4_10MHz_16QAM_20350_1RB#0_-55.05_PASS



LTE Band 4_10MHz_QPSK_20350_1RB#24_-55.29_PASS



LTE Band 4_10MHz_16QAM_20350_1RB#24_-56.06_PASS





LTE Band 4_10MHz_QPSK_20350_1RB#49_-35.69_PASS



LTE Band 4_10MHz_16QAM_20350_1RB#49_-35.79_PASS



LTE Band 4_10MHz_QPSK_20350_25RB#0_-45.57_PASS





LTE Band 4_10MHz_16QAM_20350_25RB#0_-46.78_PASS



LTE Band 4_10MHz_QPSK_20350_25RB#12_-45.39_PASS



LTE Band 4_10MHz_16QAM_20350_25RB#12_-47.00_PASS



LTE Band 4_10MHz_QPSK_20350_25RB#25_-37.30_PASS



LTE Band 4_10MHz_16QAM_20350_25RB#25_-37.16_PASS



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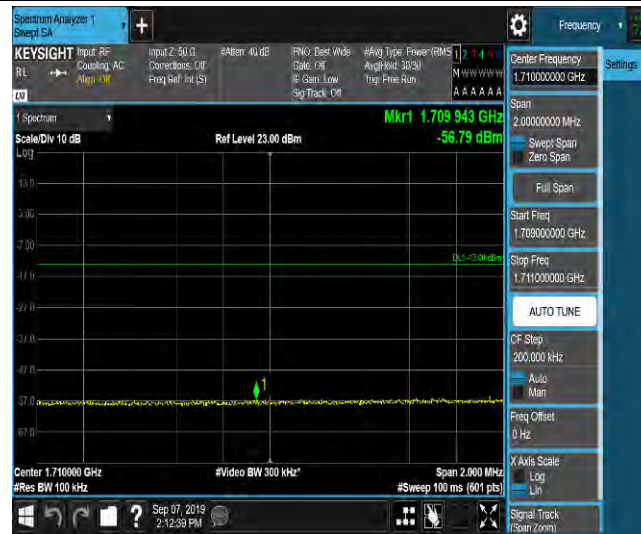
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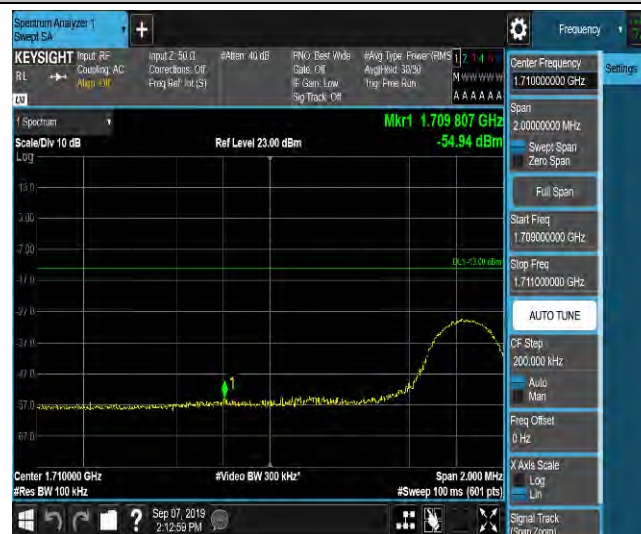
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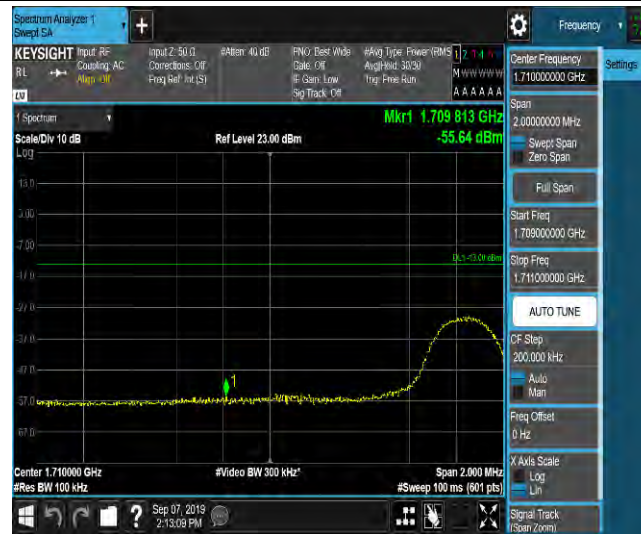
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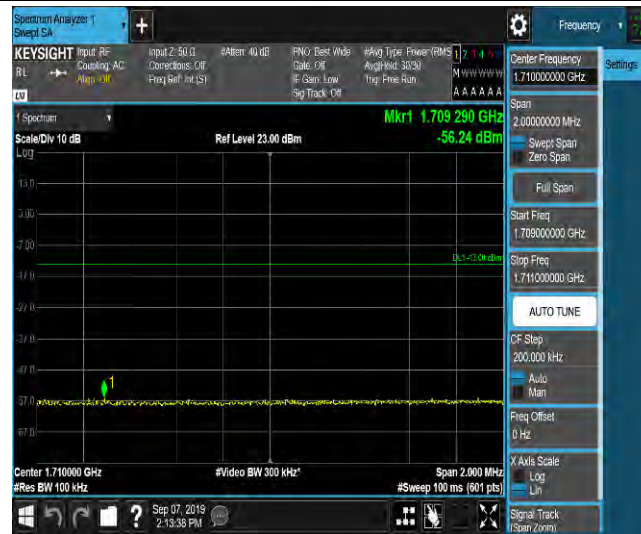
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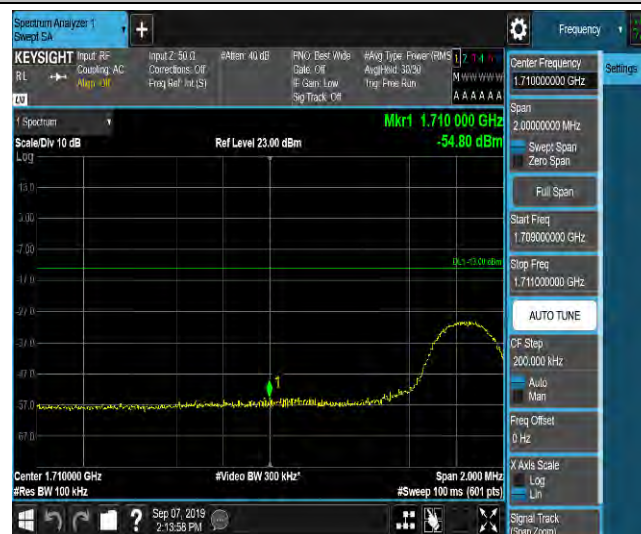
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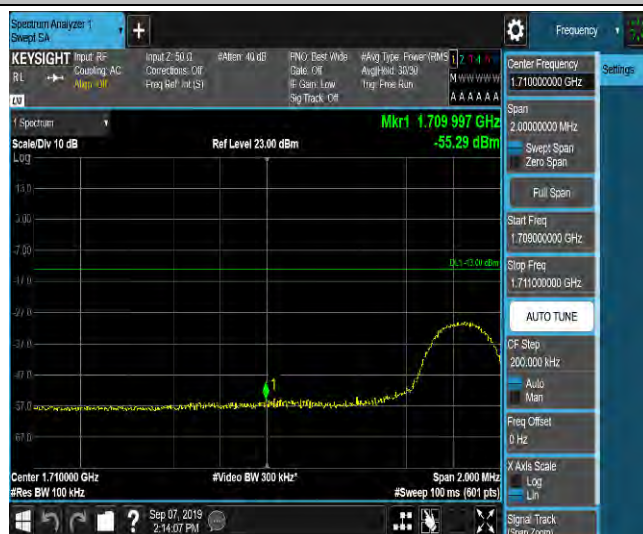
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LTE Band 4_15MHz_16QAM_20025_38RB#37_-55.29_PASS



LTE Band 4_15MHz_QPSK_20025_75RB#0_-43.01_PASS



LTE Band 4_15MHz_16QAM_20025_75RB#0_-43.03_PASS





LTE Band 4_15MHz_QPSK_20325_1RB#0_-53.92_PASS



LTE Band 4_15MHz_16QAM_20325_1RB#0_-53.86_PASS



LTE Band 4_15MHz_QPSK_20325_1RB#38_-55.98_PASS



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LTE Band 4_15MHz_QPSK_20325_1RB#74_-37.59_PASS



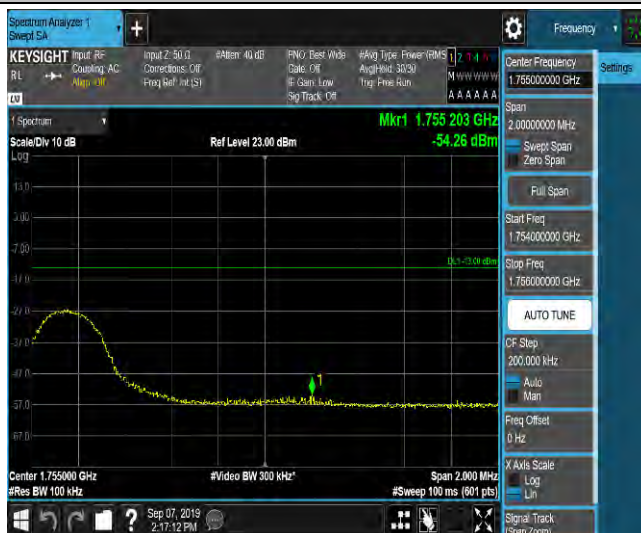
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LTE Band 4_15MHz_QPSK_20325_38RB#18_-56.09_PASS



LTE Band 4_15MHz_16QAM_20325_38RB#18_-56.13_PASS



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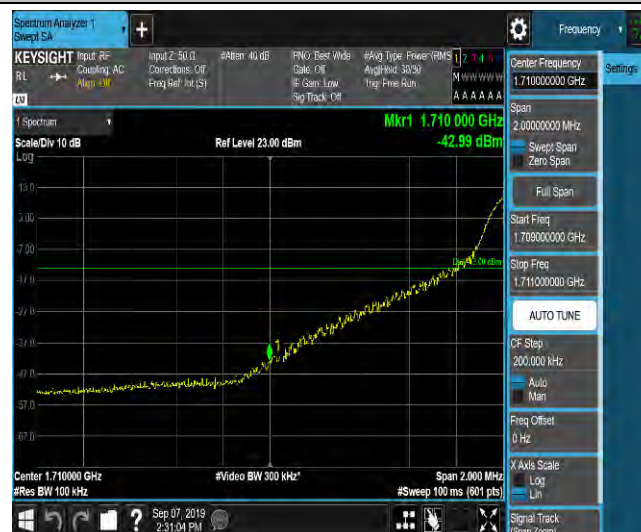
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LTE Band 4_20MHz_QPSK_20050_1RB#0_-42.99_PASS





LTE Band 4_20MHz_16QAM_20050_1RB#0_-43.09_PASS



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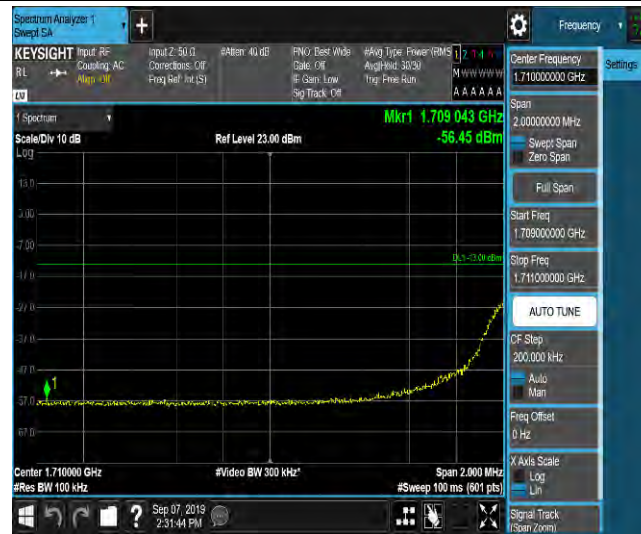


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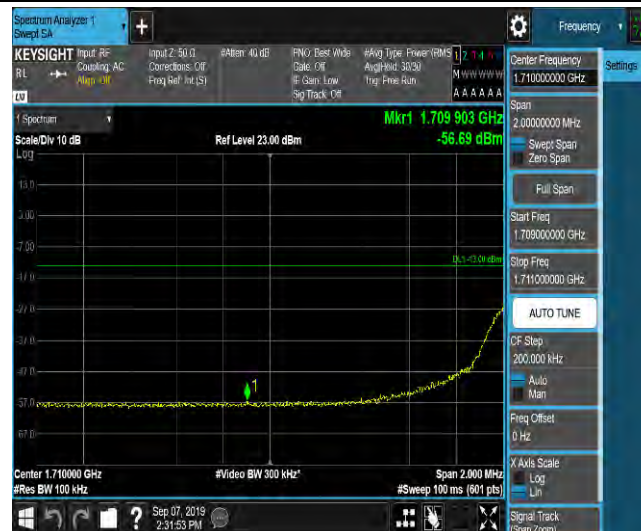




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LTE Band 4_20MHz_16QAM_20050_1RB#99_-56.69_PASS



LTE Band 4_20MHz_QPSK_20050_50RB#0_-43.64_PASS





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LTE Band 4_20MHz_QPSK_20050_50RB#25_-43.25_PASS



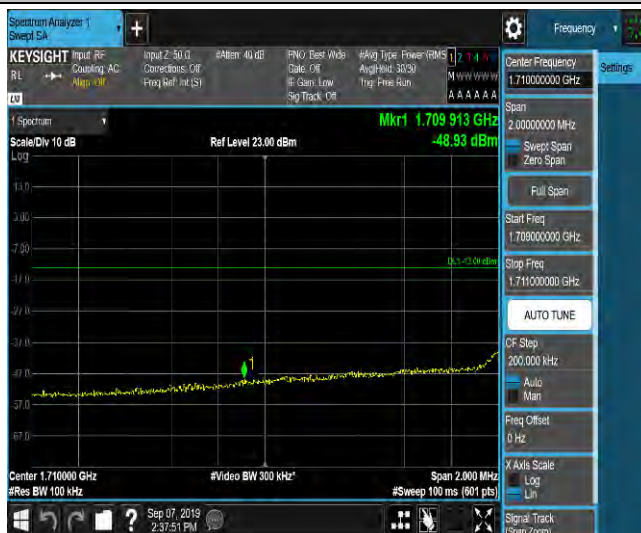
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LTE Band 4_20MHz_16QAM_20050_50RB#50_-48.93_PASS



LTE Band 4_20MHz_QPSK_20050_100RB#0_-42.88_PASS



LTE Band 4_20MHz_16QAM_20050_100RB#0_-42.81_PASS



LTE Band 4_20MHz_QPSK_20300_1RB#0_-45.95_PASS



LTE Band 4_20MHz_16QAM_20300_1RB#0_-55.32_PASS



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LTE Band 4_20MHz_16QAM_20300_1RB#49_-56.22_PASS



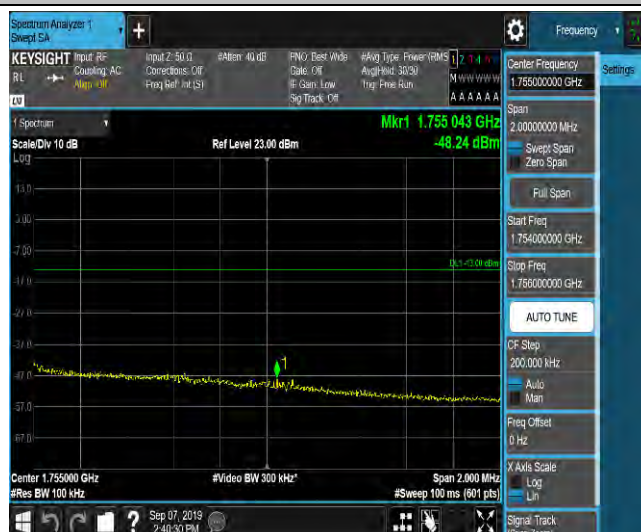
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LTE Band 4_20MHz_16QAM_20300_50RB#0_-49.08_PASS



LTE Band 4_20MHz_QPSK_20300_50RB#25_-48.47_PASS



LTE Band 4_20MHz_16QAM_20300_50RB#25_-49.10_PASS



LTE Band 4_20MHz_QPSK_20300_50RB#50_-43.75_PASS



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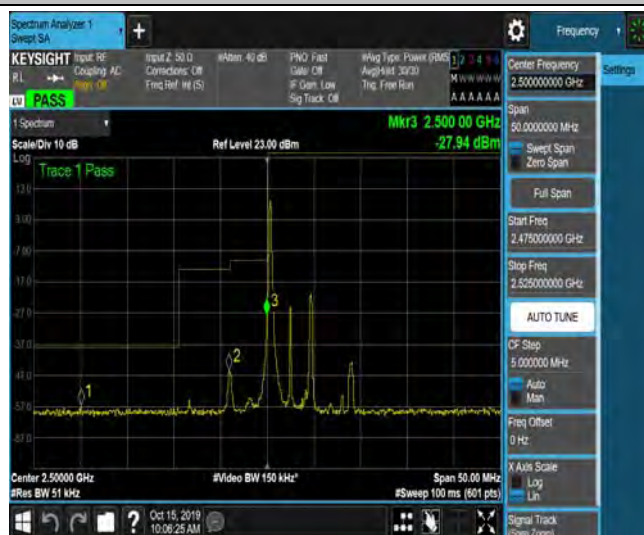
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LTE Band 7_5MHz_16QAM_20775_1RB#0_-56.96,-45.68,-27.94_PASS



LTE Band 7_5MHz_QPSK_20775_1RB#12_-57.01,-57.91,-55.78_PASS



LTE Band 7_5MHz_16QAM_20775_1RB#12_-57.31,-57.75,-55.08_PASS



LTE Band 7_5MHz_QPSK_20775_1RB#24_-57.40,-51.71,-51.33_PASS



7_5MHz_16QAM_20775_1RB#24_-57.53,-52.53,-52.75_PASS

