TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: **47 CFR FCC Part 27**
47 CFR FCC Part 2

Report No.: RFBBQZ-WTW-P24030292A

FCC ID: PY324100618

Product: Nighthawk 5G Mobile Router

Brand: NETGEAR

Model No.: MR7400

Received Date: 2024/11/8

Test Date: 2024/12/2 ~ 2025/2/12

Issued Date: 2025/5/15

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / Designation Number: 788550 / TW0003 for Test Location(1)
281270 / TW0032 for Test Location(2)

Approved by: Jeremy . Lin , **Date:** **2025/5/15**

Jeremy Lin / Project Engineer

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Prepared by : Pettie Chen / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P24030292A	Original release.	2025/5/15

1 Certificate

Product:	Nighthawk 5G Mobile Router
Brand:	NETGEAR
Test Model:	MR7400
Sample Status:	Engineering sample
Applicant and Manufacturer:	NETGEAR, INC.
Test Date:	2024/12/2 ~ 2025/2/12
Standard:	47 CFR FCC Part 27 47 CFR FCC Part 2
Measurement Procedure:	ANSI/TIA/EIA-603-E 2016 ANSI C63.26-2015 KDB 971168 D01 Power Meas License Digital Systems v03r01 KDB 971168 D02 Misc Rev Approv License Devices v02r02

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

2 Summary of Test Results

Standard / Clause	Test Item	Result	Remark
Part 2.1046 Part 27.50(h) Part 27.1507 Part 27.50(k)	Effective Radiated Power and Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
Part 2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
Part 27.1507(d) Part 27.50(k)(4)	Peak to Average Ratio	Pass	Meet the requirement of limit.
Part 2.1049	Bandwidth	Pass	Meet the requirement of limit.
Part 2.1051 Part 27.53(m) Part 27.1509(a)(c) Part 27.53(n)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
Part 2.1053 Part 27.53(m) Part 27.1509(a)(c) Part 27.53(n)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -11.41 dB at 880.69 MHz
Part 2.1053 Part 27.53(m) Part 27.1509(a)(c) Part 27.53(n)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -19.45 dB at 5145.00, 5160.00 and 5190.00 MHz
Part 2.1055 Part 27.54	Frequency Stability	Pass	Meet the requirement of limit.

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

2.1 Measurement Uncertainty

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

Parameter	Specification	Uncertainty (±)
Effective Radiated Power and Equivalent Isotropically Radiated Power	-	1.371 dB
Peak to Average Ratio	-	0.920 dB
Bandwidth	-	960 Hz
Conducted Spurious Emissions	-	2.12 dB
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	3 dB
	30 MHz ~ 1 GHz	2.93 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 dB
Frequency Stability	-	0.176 ppm

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Nighthawk 5G Mobile Router
Brand	NETGEAR
Test Model	MR7400
Status of EUT	Engineering sample
Power Supply Rating	3.85Vdc from battery 5Vdc or 9Vdc or 12Vdc from adapter

Note:

1. This report is a supplementary report to BV CPS report no.: RFBBQZ-WTW-P24030292-3. The differences compared with the original report are to enable LTE B8, B38, B41, B42 and NR n7, n40, n41 by software. Therefore, all tests for the added band had been an addendum test to this report. Refer to original report for the other test data.
2. EUT Overview

LTE Band 8

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. ERP (W)	Max. ERP (dBm)	Emission Designator
1.4 MHz	898.2 ~ 899.8	QPSK	0.069	18.37	1M09G7D
		16QAM	0.066	18.21	1M09D7W
		64QAM	0.052	17.17	1M09D7W
		256QAM	0.027	14.27	1M09D7W
3 MHz	899	QPSK	0.069	18.40	2M70G7D
		16QAM	0.067	18.28	2M70D7W
		64QAM	0.053	17.26	2M70D7W
		256QAM	0.027	14.36	2M70D7W

LTE Band 38

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)	Emission Designator
5 MHz	2572.5 ~ 2617.5	QPSK	0.417	26.20	4M50G7D
		16QAM	0.324	25.10	4M49D7W
		64QAM	0.254	24.04	4M50D7W
		256QAM	0.134	21.28	4M50D7W
10 MHz	2575 ~ 2615	QPSK	0.436	26.39	8M98G7D
		16QAM	0.336	25.26	8M98D7W
		64QAM	0.263	24.20	8M98D7W
		256QAM	0.138	21.41	9M00D7W
15 MHz	2577.5 ~ 2612.5	QPSK	0.456	26.59	13M5G7D
		16QAM	0.356	25.51	13M5D7W
		64QAM	0.272	24.35	13M5D7W
		256QAM	0.142	21.53	13M5D7W
20 MHz	2580 ~ 2610	QPSK	0.469	26.71	18M0G7D
		16QAM	0.366	25.63	18M0D7W
		64QAM	0.285	24.55	18M0D7W
		256QAM	0.148	21.69	18M0D7W

LTE Band 41

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)	Emission Designator
5 MHz	2498.5 ~ 2687.5	QPSK	0.4	26.02	4M50G7D
		16QAM	0.308	24.88	4M50D7W
		64QAM	0.243	23.86	4M50D7W
		256QAM	0.144	21.57	4M50D7W
10 MHz	2501 ~ 2685	QPSK	0.409	26.12	8M99G7D
		16QAM	0.321	25.06	8M98D7W
		64QAM	0.252	24.02	8M98D7W
		256QAM	0.151	21.79	9M00D7W
15 MHz	2503.5 ~ 2682.5	QPSK	0.432	26.35	13M5G7D
		16QAM	0.333	25.22	13M5D7W
		64QAM	0.267	24.27	13M5D7W
		256QAM	0.156	21.92	13M5D7W
20 MHz	2506 ~ 2680	QPSK	0.445	26.48	18M0G7D
		16QAM	0.344	25.36	18M0D7W
		64QAM	0.274	24.38	18M0D7W
		256QAM	0.162	22.09	18M0D7W

LTE Band 42 (3.45 GHz ~ 3.55 GHz)

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)	Emission Designator
5 MHz	3452.5 ~ 3547.5	QPSK	0.277	24.43	4M49G7D
		16QAM	0.236	23.73	4M49D7W
		64QAM	0.182	22.60	4M50D7W
		256QAM	0.1	20.00	4M50D7W
10 MHz	3455 ~ 3545	QPSK	0.277	24.42	8M99G7D
		16QAM	0.24	23.80	8M98D7W
		64QAM	0.178	22.50	8M97D7W
		256QAM	0.106	20.26	9M00D7W
15 MHz	3457.5 ~ 3542.5	QPSK	0.279	24.45	13M5G7D
		16QAM	0.243	23.85	13M5D7W
		64QAM	0.187	22.72	13M5D7W
		256QAM	0.11	20.42	13M5D7W
20 MHz	3460 ~ 3540	QPSK	0.286	24.56	18M0G7D
		16QAM	0.25	23.98	18M0D7W
		64QAM	0.193	22.86	18M0D7W
		256QAM	0.112	20.49	18M0D7W

3. The EUT uses following accessories.

AC Adapter 1			
Brand	Model	Part Number	Specification
NETGEAR	2AFH0183AA	332-11642-01	AC Input : 100-240Vac, 50/60Hz, 0.5A DC Output : 5.0V, 3.0A, 15.0W 9.0V, 2.0A, 18.0W 12.0V, 1.5A, 18.0W DC Output Cable : N/A Plug : US Manufacturer : CWT
AC Adapter 2			
Brand	Model	Part Number	Specification
NETGEAR	AD2122F20	332-11106-03	AC Input : 100-240V, 50/60Hz, 0.5A DC Output : 5V, 2.0A 9V, 1.8A DC Output Cable : N/A Plug : US Manufacturer : PIE
Battery			
Brand	Model	Part Number	Specification
NETGEAR	W-20b	308-10100-01	Power Rating : 3.85Vdc, 19.96Wh
USB Cable 1			
Brand		Model	Specification
HORTON		D0017100R37HR	Signal Line : 1m
USB Cable 2			
Brand		Model	Specification
LUXSHARE PRECISION INDUSTRY		LZZUC052-CS-H	Signal Line : 1m

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type		Monopole	
LTE Band			
Band	Freq. Range (MHz)	Gain (dBi)	
		Ant. 1	Ant. 2
LTE B2	1850 ~ 1910	3.25	2.99
LTE B4	1710 ~ 1755	2.08	3.09
LTE B5	824 ~ 849	-1.31	-0.58
LTE B7	2500 ~ 2570	3.8	3.18
LTE B8	880 ~ 915	-2.44	-
LTE B12	698 ~ 716	0.47	0.38
LTE B14	788 ~ 798	0.88	0.66
LTE B30	2305 ~ 2315	3.01	2.67
LTE B38	2570 ~ 2620	-	3.18
LTE B40	2305 ~ 2315	3.01	2.67
LTE B40	2350 ~ 2360	3.01	2.88
LTE B41	2496 ~ 2690	-	3.18
LTE B42	3400 ~ 3600	2.31	1.91
LTE B66	1710 ~ 1780	2.19	3.09

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

Antenna Type		External	
External Connector		TS9	
LTE Band			
Band	Freq. Range (MHz)	Gain (dBi)	
		Ant. 1	Ant. 2
LTE B2	1850 ~ 1910	0.67	0.45
LTE B4	1710 ~ 1755	0.67	0.54
LTE B5	824 ~ 849	-1.32	-1.6
LTE B7	2500 ~ 2570	0.39	-0.53
LTE B8	880 ~ 915	-2.45	-2.45
LTE B12	698 ~ 716	-0.83	-1.6
LTE B14	788 ~ 798	-0.83	-1.6
LTE B30	2305 ~ 2315	1.03	1.05
LTE B38	2570 ~ 2620	3.17	3.17
LTE B40	2305 ~ 2315	1.03	1.05
LTE B40	2350 ~ 2360	1.03	1.05
LTE B41	2496 ~ 2690	3.17	3.17
LTE B42	3400 ~ 3600	0.17	1.66
LTE B66	1710 ~ 1780	0.67	0.54

Note:

1. TS9 connector is for the external antennas, while the external antennas are connected, RF outputs are switch from internal 1/2 to the external one.
2. The maximum antenna gain allowed for the external antenna is limited by the internal antenna gain, also illustrated in the user manual.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. For Unwanted Emission (below 1GHz) items: Battery/AC Adapter/USB Cable. Pre-scan these modes and find the worst case as a representative test condition. 2. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition. 3. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP/ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM mode, the other items were performed under QPSK mode only. 4. For peak to average ratio and radiated spurious emissions, choose the maximum EIRP/ERP power and 1RB mode worst case for final test.
Worst Case:	1. AC Adapter 1 + USB Cable 1 2. Z-Axis

Following channel(s) was (were) selected for the final test as listed below:

3.3.1 LTE Band 8

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Effective Radiated Power	21632(898.2 MHz) 21640(899.0 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	21640(899.0 MHz)	3 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Modulation Characteristics	21640(899.0 MHz)	3 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Peak to Average Ratio	21632(898.2 MHz) 21640(899.0 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	21640(899.0 MHz)	3 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Occupied Bandwidth	21632(898.2 MHz) 21640(899.0 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	21640(899.0 MHz)	3 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Emission	21632(898.2 MHz) 21640(899.0 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK	1 RB Full RB
	21640(899.0 MHz)	3 MHz	QPSK	1 RB Full RB
Radiated Spurious Emissions below 1GHz	21640(899.0 MHz)	3 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	21632(898.2 MHz) 21640(899.0 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK	1 RB
	21640(899.0 MHz)	3 MHz	QPSK	1 RB
Frequency Stability	21632(898.2 MHz) 21648(899.8 MHz)	1.4 MHz	QPSK	Full RB
	21640(899.0 MHz)	3 MHz	QPSK	Full RB

3.3.2 LTE Band 38

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	37775(2572.50 MHz) 38000(2595.00 MHz) 38225(2617.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	37800(2575.00 MHz) 38000(2595.00 MHz) 38200(2615.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	37825(2577.50 MHz) 38000(2595.00 MHz) 38175(2612.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	37850(2580.00 MHz) 38000(2595.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Modulation Characteristics	38000(2595.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Peak to Average Ratio	37775(2572.50 MHz) 38000(2595.00 MHz) 38225(2617.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	37800(2575.00 MHz) 38000(2595.00 MHz) 38200(2615.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	37825(2577.50 MHz) 38000(2595.00 MHz) 38175(2612.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	37850(2580.00 MHz) 38000(2595.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Occupied Bandwidth	37775(2572.50 MHz) 38000(2595.00 MHz) 38225(2617.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	37800(2575.00 MHz) 38000(2595.00 MHz) 38200(2615.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	37825(2577.50 MHz) 38000(2595.00 MHz) 38175(2612.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	37850(2580.00 MHz) 38000(2595.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Emission	37775(2572.50 MHz) 38000(2595.00 MHz) 38225(2617.50 MHz)	5 MHz	QPSK	1 RB Full RB
	37800(2575.00 MHz) 38000(2595.00 MHz) 38200(2615.00 MHz)	10 MHz	QPSK	1 RB Full RB
	37825(2577.50 MHz) 38000(2595.00 MHz) 38175(2612.50 MHz)	15 MHz	QPSK	1 RB Full RB
	37850(2580.00 MHz) 38000(2595.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK	1 RB Full RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	38000(2595.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	37775(2572.50 MHz) 38000(2595.00 MHz) 38225(2617.50 MHz)	5 MHz	QPSK	1 RB
	37850(2580.00 MHz) 38000(2595.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK	1 RB
Frequency Stability	37775(2572.50 MHz) 38225(2617.50 MHz)	5 MHz	QPSK	Full RB
	37800(2575.00 MHz) 38200(2615.00 MHz)	10 MHz	QPSK	Full RB
	37825(2577.50 MHz) 38175(2612.50 MHz)	15 MHz	QPSK	Full RB
	37850(2580.00 MHz) 38150(2610.00 MHz)	20 MHz	QPSK	Full RB

3.3.3 LTE Band 41

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	39675(2498.50 MHz) 40620(2593.00 MHz) 41565(2687.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	39700(2501.00 MHz) 40620(2593.00 MHz) 41540(2685.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	39725(2503.50 MHz) 40620(2593.00 MHz) 41515(2682.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	39750(2506.00 MHz) 40620(2593.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Modulation Characteristics	40620(2593.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Peak to Average Ratio	39675(2498.50 MHz) 40620(2593.00 MHz) 41565(2687.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	39700(2501.00 MHz) 40620(2593.00 MHz) 41540(2685.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	39725(2503.50 MHz) 40620(2593.00 MHz) 41515(2682.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	39750(2506.00 MHz) 40620(2593.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Occupied Bandwidth	39675(2498.50 MHz) 40620(2593.00 MHz) 41565(2687.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	39700(2501.00 MHz) 40620(2593.00 MHz) 41540(2685.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	39725(2503.50 MHz) 40620(2593.00 MHz) 41515(2682.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
	39750(2506.00 MHz) 40620(2593.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Emission	39675(2498.50 MHz) 40620(2593.00 MHz) 41565(2687.50 MHz)	5 MHz	QPSK	1 RB Full RB
	39700(2501.00 MHz) 40620(2593.00 MHz) 41540(2685.00 MHz)	10 MHz	QPSK	1 RB Full RB
	39725(2503.50 MHz) 40620(2593.00 MHz) 41515(2682.50 MHz)	15 MHz	QPSK	1 RB Full RB
	39750(2506.00 MHz) 40620(2593.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK	1 RB Full RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	40620(2593.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	39675(2498.50 MHz) 40620(2593.00 MHz) 41565(2687.50 MHz)	5 MHz	QPSK	1 RB
	39750(2506.00 MHz) 40620(2593.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK	1 RB
Frequency Stability	39675(2498.50 MHz) 41565(2687.50 MHz)	5 MHz	QPSK	Full RB
	39700(2501.00 MHz) 41540(2685.00 MHz)	10 MHz	QPSK	Full RB
	39725(2503.50 MHz) 41515(2682.50 MHz)	15 MHz	QPSK	Full RB
	39750(2506.00 MHz) 41490(2680.00 MHz)	20 MHz	QPSK	Full RB

3.3.4 LTE Band 42 (3.45 GHz ~ 3.55 GHz)

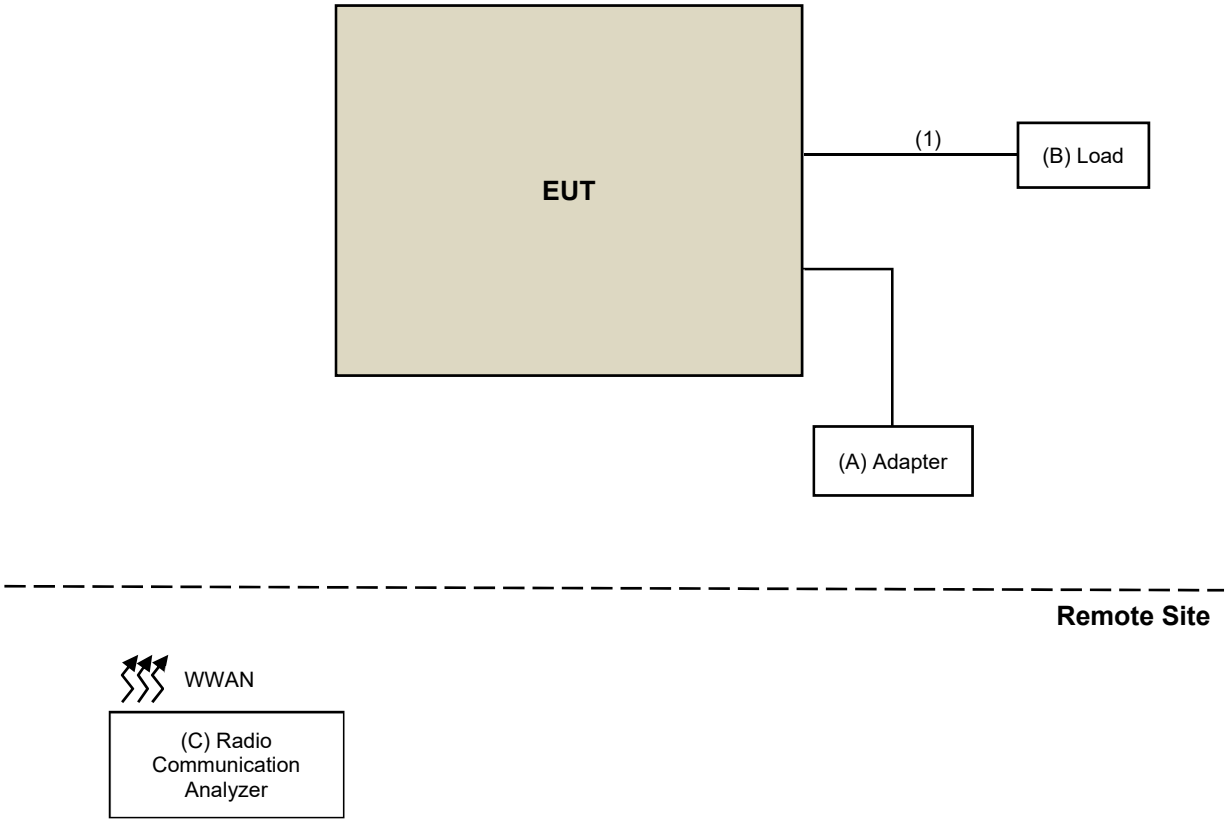
Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	42115(3452.50 MHz) 42590(3500.00 MHz) 43065(3547.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	42140(3455.00 MHz) 42590(3500.00 MHz) 43040(3545.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	42165(3457.50 MHz) 42590(3500.00 MHz) 43015(3542.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	42190(3460.00 MHz) 42590(3500.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Modulation Characteristics	42590(3500.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Peak to Average Ratio	42115(3452.50 MHz) 42590(3500.00 MHz) 43065(3547.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42140(3455.00 MHz) 42590(3500.00 MHz) 43040(3545.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42165(3457.50 MHz) 42590(3500.00 MHz) 43015(3542.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42190(3460.00 MHz) 42590(3500.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Occupied Bandwidth	42115(3452.50 MHz) 42590(3500.00 MHz) 43065(3547.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42140(3455.00 MHz) 42590(3500.00 MHz) 43040(3545.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42165(3457.50 MHz) 42590(3500.00 MHz) 43015(3542.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42190(3460.00 MHz) 42590(3500.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Conducted Emission	42115(3452.50 MHz) 42590(3500.00 MHz) 43065(3547.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42140(3455.00 MHz) 42590(3500.00 MHz) 43040(3545.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42165(3457.50 MHz) 42590(3500.00 MHz) 43015(3542.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
	42190(3460.00 MHz) 42590(3500.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	43065(3547.50 MHz)	5 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	42115(3452.50 MHz) 42590(3500.00 MHz) 43065(3547.50 MHz)	5 MHz	QPSK	1 RB
	42190(3460.00 MHz) 42590(3500.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK	1 RB
Frequency Stability	42115(3452.50 MHz) 43065(3547.50 MHz)	5 MHz	QPSK	Full RB
	42140(3455.00 MHz) 43040(3545.00 MHz)	10 MHz	QPSK	Full RB
	42165(3457.50 MHz) 43015(3542.50 MHz)	15 MHz	QPSK	Full RB
	42190(3460.00 MHz) 42990(3540.00 MHz)	20 MHz	QPSK	Full RB

3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the Radio Communication Analyzer to test the connection when it is powered on.

3.5 Connection Diagram of EUT and Peripheral Devices



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	NETGEAR	2AFH0183AA	N/A	N/A	Supplied by applicant
B	Load	N/A	N/A	N/A	N/A	Provided by Lab
C	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	N/A	Provided by Lab (for RF Setup)

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ45 Cable	1	1.5	No	0	Provided by Lab
2	USB Cable	1	1	Yes	0	Accessory of EUT

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer Keysight	N9030B	MY57140938	2024/3/20	2025/3/19
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2024/3/13	2025/3/12
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/12/3 ~ 2025/2/12

4.2 Modulation Characteristics

Refer to section 4.1 to get the tested date and information of the instruments.

4.3 Peak to Average Ratio

Refer to section 4.1 to get the tested date and information of the instruments.

4.4 Bandwidth

Refer to section 4.1 to get the tested date and information of the instruments.

4.5 Conducted Spurious Emissions

Refer to section 4.1 to get the tested date and information of the instruments.

4.6 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1214	2024/10/15	2025/10/14
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier EMCI	EMC330N	980798	2024/1/15	2025/1/14
	EMC001340	980201	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201248	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-3000	201249	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-9000	201251(with PAD)	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2024/12/2 ~ 2024/12/12

4.7 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna RFSPIN	DRH18-E	210104A18E	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier Agilent	83017A	MY39501357	2024/6/12	2025/6/11
Preamplifier EMCI	EMC184045SE	980788	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2024/1/15	2025/1/14
	EMC101G-KM-KM-3000	201258	2024/1/15	2025/1/14
	EMC101G-KM-KM-5000	201261	2024/1/15	2025/1/14
	EMC104-SM-SM-1000	210103	2024/1/15	2025/1/14
	EMC104-SM-SM-3000	201241	2024/1/15	2025/1/14
	EMC104-SM-SM-9000	201244	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2024/12/4 ~ 2024/12/13

4.8 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
3-channel DC power supply OWON	ODP3033	ODP30332128138	N/A	N/A
Digital Multimeter Fluke	8050A	4660081	2024/6/14	2025/6/13
PXA Signal Analyzer Keysight	N9030B	MY57140938	2024/3/20	2025/3/19
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2024/3/13	2025/3/12
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	MHU-225AU	920842	2024/6/21	2025/6/20

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/2/14

5 Limits of Test Items

5.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

For LTE Band 8:

Portable stations must not exceed 3 watts ERP.

For LTE Band 38, LTE Band 41:

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz):

Mobile devices are limited to 1Watt (30 dBm) EIRP.

5.2 Modulation Characteristics

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

5.3 Peak to Average Ratio

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.

5.4 Bandwidth

According to FCC 47 CFR part 2.1049, the occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated by a given emission.

5.5 Conducted Spurious Emissions

For LTE Band 8:

According to FCC 47 CFR part 27.1509(a), the power of any emission outside a licensee's frequency band of operation shall be attenuated below the transmitter power (P) by at least 43 +10 log (P) dB. The limit of emission is equal to -13 dBm. Compliance with the provisions of paragraphs (a) and (b) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the licensee's band, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

For LTE Band 38, LTE Band 41:

According to FCC 47 CFR part 27.53(m)(4) regulations, any transmit power outside of the channel edge must be attenuated below the transmitting power (P) by a 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. In addition, the attenuation factor shall not be less that 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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

5.6 Radiated Spurious Emissions below 1GHz

For LTE Band 8:

According to FCC 47 CFR part 27.1509(a), the power of any emission outside a licensee's frequency band of operation shall be attenuated below the transmitter power (P) by at least 43 +10 log (P) dB. The limit of emission is equal to -13 dBm.

For LTE Band 38, LTE Band 41:

According to FCC 47 CFR part 27.53(m)(4), on any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to –25 dBm.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

5.7 Radiated Spurious Emissions above 1GHz

For LTE Band 8:

According to FCC 47 CFR part 27.1509(a), the power of any emission outside a licensee's frequency band of operation shall be attenuated below the transmitter power (P) by at least 43 +10 log (P) dB. The limit of emission is equal to -13 dBm.

For LTE Band 38, LTE Band 41:

According to FCC 47 CFR part 27.53(m)(4), on any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to –25 dBm.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

5.8 Frequency Stability

For LTE Band 8, LTE Band 38, LTE Band 41, LTE Band 42 (3.45 GHz ~ 3.55 GHz):

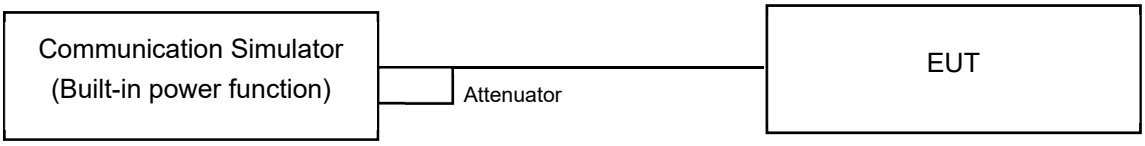
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation (authorized frequency block).

6 Test Arrangements

6.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

6.1.1 Test Setup

Conducted Power Measurement:



6.1.2 Test Procedure

Conducted Power Measurement:

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology. The average (rms) power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

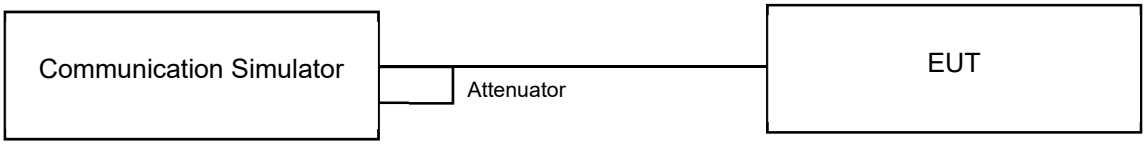
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

6.2 Modulation Characteristics

6.2.1 Test Setup

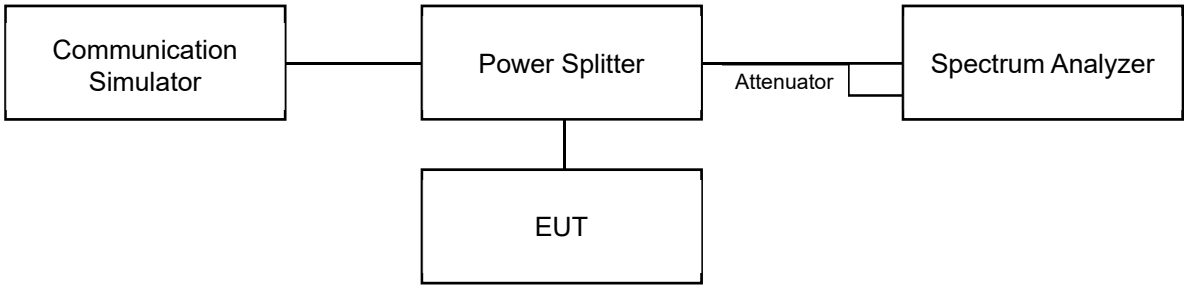


6.2.2 Test Procedure

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

6.3 Peak to Average Ratio

6.3.1 Test Setup

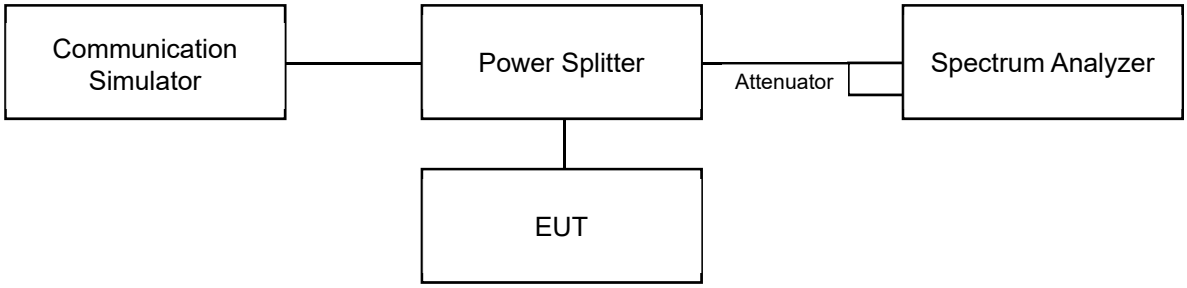


6.3.2 Test Procedure

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

6.4 Bandwidth

6.4.1 Test Setup



6.4.2 Test Procedure

For the 26 dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

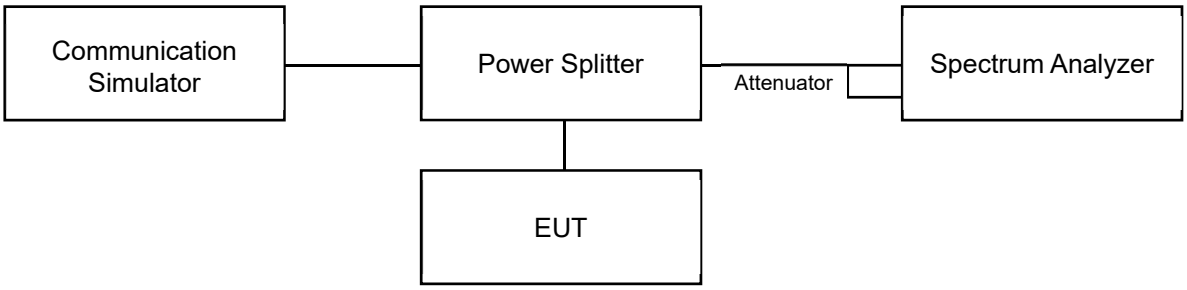
a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f. Determine the following reference values: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
g. Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
h. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
i. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f. Determine the reference value by either of the following:
g. 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
h. 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
i. Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
j. If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).
k. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers. The spectral envelope can cross the "−X dB amplitude" at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the "−X dB amplitude."
l. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.5 Conducted Spurious Emissions

6.5.1 Test Setup



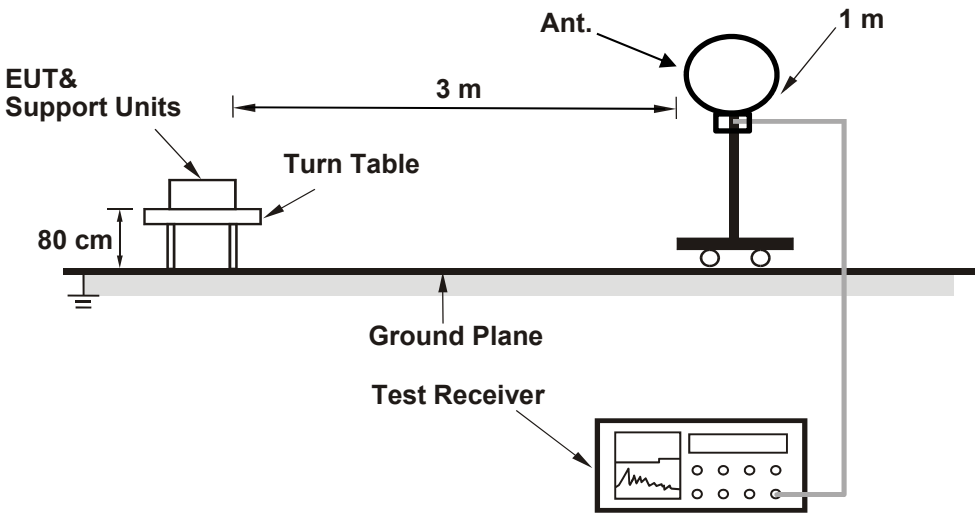
6.5.2 Test Procedure

a. Measurement refer to ANSI C63.26 section 5.7.
b. All measurements were done at 3 channels: low, middle and high operational frequency range.
c. Measuring frequency range is from 9 kHz up to the tenth harmonic of the hightest fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.
d. The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.
e. The fundamental frequency below 1 GHz, the spectrum set RBW ≥ 100 kHz, VBW ≥ 3 x RBW, Detector = Average.
f. Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.
g. For the emissions measurement method, certain channel BW modes demonstrate compliance by integrating with the smaller RBW allowed by the rule.
For example: Where Reference RBW = 1 MHz and a smaller RBW = 100 kHz is used, worst-case integrated BW power = [Max Measured Value (dBm) with RBW = 100 kHz] + 10* log(1000/100). To compensate for this integration before comparison to the value, the adjusted reference level offset was increase by 10 dB accordingly.
h. Record the maximum power value test plot.

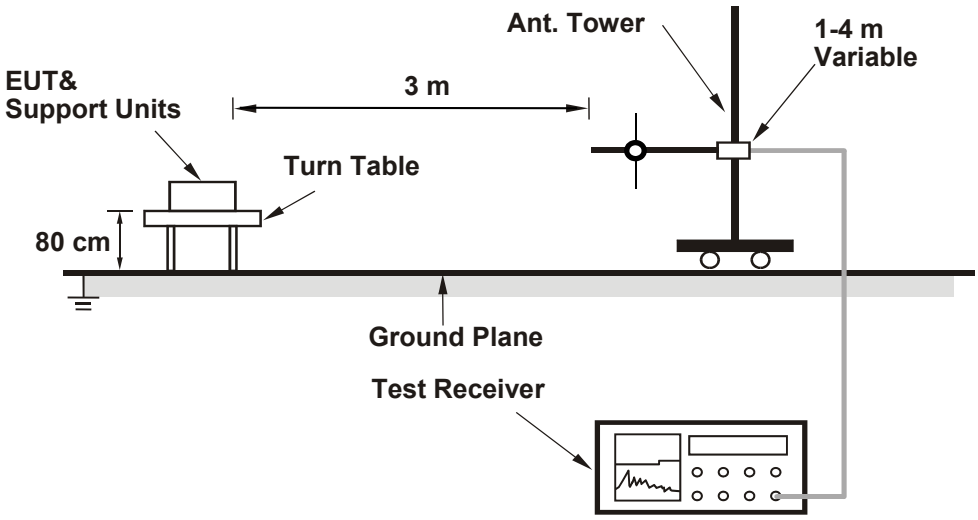
6.6 Radiated Spurious Emissions below 1GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following ANSI C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

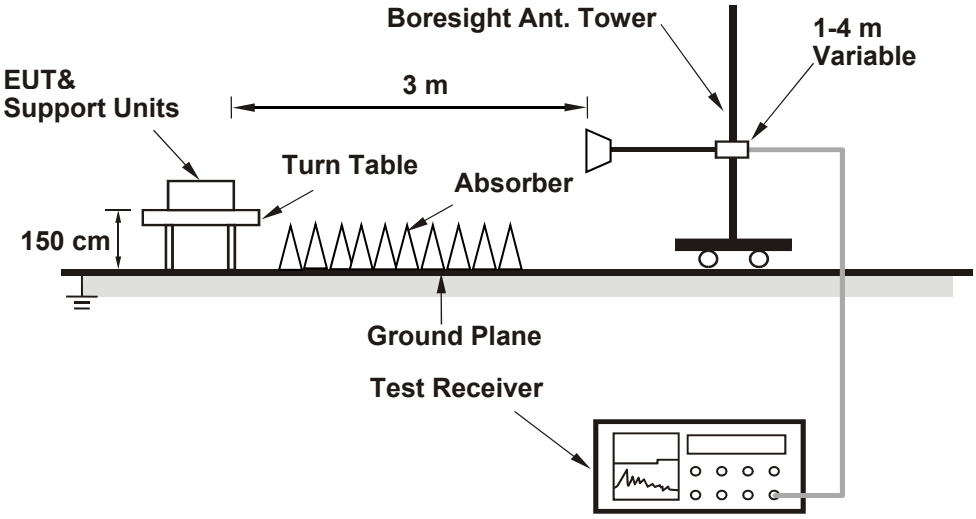
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.
2. The amplitude of spurious emissions in the range 9 kHz to 30 MHz which are attenuated more than 20 dB below the permissible value need not be reported.

6.7 Radiated Spurious Emissions above 1GHz

6.7.1 Test Setup

For radiated emission above 1 GHz



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

6.7.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 1.5 m height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following ANSI C63.26 section 5.5 and 5.2.7

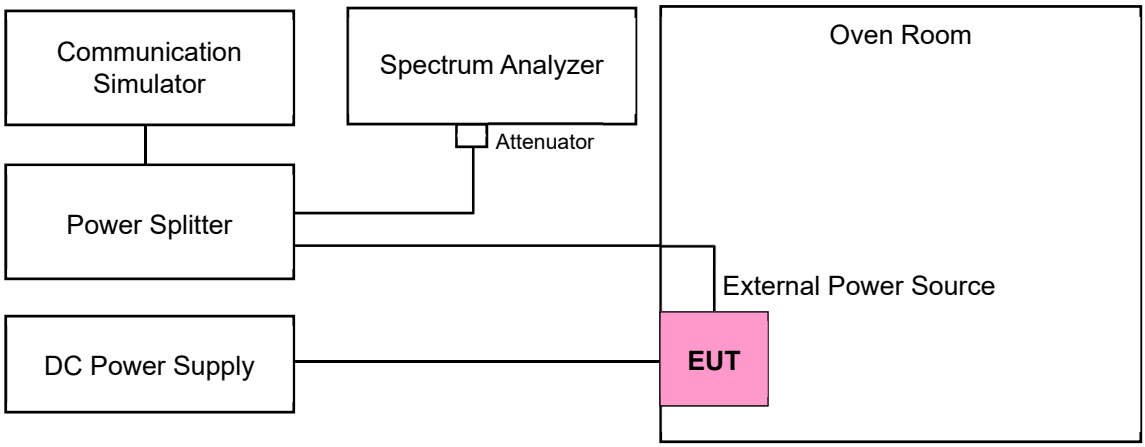
e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

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

6.8 Frequency Stability

6.8.1 Test Setup



6.8.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

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

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

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

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

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Input Power:	3.85 Vdc	Environmental Conditions:	23°C, 67% RH	Tested By:	Noah Chang

7.1.1 LTE Band 8

LTE Band 8, Channel Bandwidth: 1.4 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 21632	CH 21640	CH 21648
			898.2 MHz	899 MHz	899.8 MHz
QPSK	1	0	22.84	22.96	22.9
	1	12	22.74	22.8	22.71
	1	24	22.54	22.59	22.52
	12	0	22.61	22.62	22.53
	12	6	22.47	22.57	22.46
	12	13	22.48	22.56	22.47
	25	0	21.98	21.96	21.95
16QAM	1	0	22.7	22.8	22.72
	1	12	22.65	22.71	22.56
	1	24	22.45	22.53	22.48
	12	0	22.44	22.43	22.49
	12	6	22.27	22.38	22.33
	12	13	22.33	22.47	22.43
	25	0	21.75	21.88	21.75
64QAM	1	0	21.75	21.76	21.7
	1	12	21.55	21.67	21.59
	1	24	21.5	21.57	21.58
	12	0	21.42	21.56	21.56
	12	6	21.36	21.46	21.35
	12	13	21.33	21.38	21.31
	25	0	20.83	20.92	20.83
256QAM	1	0	18.82	18.82	18.85
	1	12	18.55	18.6	18.51
	1	24	18.35	18.44	18.37
	12	0	18.44	18.5	18.5
	12	6	18.41	18.49	18.44
	12	13	18.42	18.46	18.48
	25	0	18.79	18.86	18.78

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
QPSK	21.95	22.96	17.36	18.37	34.77
16QAM	21.75	22.80	17.16	18.21	34.77
64QAM	20.83	21.76	16.24	17.17	34.77
256QAM	18.35	18.86	13.76	14.27	34.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

LTE Band 8, Channel Bandwidth: 3 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)
			CH 21640
			899 MHz
QPSK	1	0	22.99
	1	24	22.86
	1	49	22.67
	25	0	22.66
	25	12	22.65
	25	25	22.63
	50	0	22.05
16QAM	1	0	22.87
	1	24	22.74
	1	49	22.53
	25	0	21.53
	25	12	21.46
	25	25	21.52
	50	0	21.88
64QAM	1	0	21.85
	1	24	21.68
	1	49	21.55
	25	0	20.6
	25	12	20.46
	25	25	20.47
	50	0	20.01
256QAM	1	0	18.81
	1	24	18.66
	1	49	18.47
	25	0	18.55
	25	12	18.54
	25	25	18.51
	50	0	18.95

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
QPSK	22.05	22.99	17.46	18.40	34.77
16QAM	21.46	22.87	16.87	18.28	34.77
64QAM	20.01	21.85	15.42	17.26	34.77
256QAM	18.47	18.95	13.88	14.36	34.77

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.2 LTE Band 38

LTE Band 38, Channel Bandwidth: 5 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 37775	CH 38000	CH 38225
			2572.5 MHz	2595 MHz	2617.5 MHz
QPSK	1	0	22.88	23.02	22.81
	1	12	22.79	22.84	22.81
	1	24	22.57	22.82	22.58
	12	0	21.81	21.99	21.97
	12	6	21.74	21.89	21.87
	12	13	21.75	22	21.77
	25	0	21.92	22.12	21.83
16QAM	1	0	21.68	21.92	21.86
	1	12	21.71	21.74	21.73
	1	24	21.41	21.62	21.55
	12	0	20.87	21.01	20.96
	12	6	20.71	21.12	20.84
	12	13	20.66	20.83	20.94
	25	0	20.65	20.91	20.86
64QAM	1	0	20.76	20.8	20.86
	1	12	20.7	20.73	20.81
	1	24	20.25	20.76	20.45
	12	0	19.92	19.92	19.89
	12	6	19.88	19.83	19.8
	12	13	19.61	19.74	19.73
	25	0	19.62	19.79	19.7
256QAM	1	0	17.77	18.1	17.77
	1	12	17.79	17.75	17.54
	1	24	17.53	17.65	17.65
	12	0	17.58	17.93	17.88
	12	6	17.57	17.84	17.73
	12	13	17.65	17.79	17.79
	25	0	17.93	17.82	17.84

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	21.74	23.02	24.92	26.20	33.01
16QAM	20.65	21.92	23.83	25.10	33.01
64QAM	19.61	20.86	22.79	24.04	33.01
256QAM	17.53	18.10	20.71	21.28	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 38, Channel Bandwidth: 10 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 37800	CH 38000	CH 38200
			2575 MHz	2595 MHz	2615 MHz
QPSK	1	0	23.04	23.21	22.95
	1	24	22.89	23.07	23.05
	1	49	22.69	22.98	22.74
	25	0	21.99	22.09	22.21
	25	12	21.99	22.24	22.11
	25	25	21.96	22.15	21.96
	50	0	22.14	22.3	22.03
16QAM	1	0	21.82	22.08	21.99
	1	24	21.9	21.96	21.98
	1	49	21.54	21.78	21.77
	25	0	20.9	21.24	21.11
	25	12	21.08	21.19	20.99
	25	25	21.06	21.12	21.11
	50	0	20.89	21.05	20.99
64QAM	1	0	20.99	21.02	21
	1	24	20.92	20.97	20.96
	1	49	20.49	20.88	20.69
	25	0	20.06	20.09	20.07
	25	12	20.04	20.06	20.05
	25	25	19.8	19.98	19.93
	50	0	19.87	19.96	19.95
256QAM	1	0	17.97	18.23	17.92
	1	24	17.92	17.97	17.77
	1	49	17.71	17.89	17.84
	25	0	17.71	18.15	18
	25	12	17.71	18.05	17.97
	25	25	17.79	18.02	17.95
	50	0	18.07	17.93	17.99

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	21.96	23.21	25.14	26.39	33.01
16QAM	20.89	22.08	24.07	25.26	33.01
64QAM	19.80	21.02	22.98	24.20	33.01
256QAM	17.71	18.23	20.89	21.41	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 38, Channel Bandwidth: 15 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 37825	CH 38000	CH 38175
			2577.5 MHz	2595 MHz	2612.5 MHz
QPSK	1	0	23.14	23.41	23.18
	1	37	23.06	23.25	23.22
	1	74	22.87	23.1	22.93
	36	0	22.23	22.45	22.36
	36	19	22.24	22.34	22.21
	36	39	22.1	22.32	22.21
	75	0	22.26	22.41	22.26
16QAM	1	0	21.98	22.33	22.2
	1	37	22.1	22.12	22.2
	1	74	21.76	21.98	21.92
	36	0	21.15	21.44	21.27
	36	19	21.29	21.35	21.23
	36	39	21.19	21.3	21.25
	75	0	21.1	21.25	21.21
64QAM	1	0	21.17	21.16	21.16
	1	37	21.04	21.13	21.13
	1	74	20.72	21.03	20.93
	36	0	20.24	20.3	20.27
	36	19	20.21	20.2	20.22
	36	39	20.04	20.21	20.17
	75	0	20.11	20.18	20.16
256QAM	1	0	18.21	18.35	18.12
	1	37	18.16	18.15	17.97
	1	74	17.87	18.02	17.99
	36	0	17.89	18.26	18.18
	36	19	17.87	18.18	18.08
	36	39	17.92	18.17	18.11
	75	0	18.25	18.14	18.21

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	22.10	23.41	25.28	26.59	33.01
16QAM	21.10	22.33	24.28	25.51	33.01
64QAM	20.04	21.17	23.22	24.35	33.01
256QAM	17.87	18.35	21.05	21.53	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 38, Channel Bandwidth: 20 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 37850	CH 38000	CH 38150
			2580 MHz	2595 MHz	2610 MHz
QPSK	1	0	23.31	23.53	23.41
	1	50	23.27	23.44	23.34
	1	99	23.00	23.25	23.08
	50	0	22.40	22.58	22.52
	50	25	22.39	22.56	22.44
	50	50	22.35	22.53	22.42
	100	0	22.40	22.52	22.51
16QAM	1	0	22.22	22.45	22.41
	1	50	22.21	22.36	22.31
	1	99	21.97	22.10	22.08
	50	0	21.37	21.55	21.48
	50	25	21.45	21.49	21.47
	50	50	21.31	21.45	21.43
	100	0	21.31	21.43	21.33
64QAM	1	0	21.29	21.37	21.28
	1	50	21.21	21.32	21.25
	1	99	20.96	21.16	21.14
	50	0	20.38	20.55	20.43
	50	25	20.36	20.45	20.41
	50	50	20.21	20.41	20.36
	100	0	20.31	20.42	20.40
256QAM	1	0	18.35	18.51	18.26
	1	50	18.28	18.29	18.20
	1	99	18.12	18.21	18.14
	50	0	18.11	18.40	18.39
	50	25	18.06	18.34	18.28
	50	50	18.03	18.31	18.21
	100	0	18.38	18.39	18.41

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	22.35	23.53	25.53	26.71	33.01
16QAM	21.31	22.45	24.49	25.63	33.01
64QAM	20.21	21.37	23.39	24.55	33.01
256QAM	18.03	18.51	21.21	21.69	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.3 LTE Band 41

LTE Band 41, Channel Bandwidth: 5 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 39675	CH 40620	CH 41565
			2498.5 MHz	2593 MHz	2687.5 MHz
QPSK	1	0	22.84	22.77	22.73
	1	12	22.69	22.61	22.65
	1	24	22.69	22.71	22.75
	12	0	21.95	21.94	21.95
	12	6	21.84	21.90	21.96
	12	13	22.09	22.10	22.11
	25	0	21.94	21.92	21.98
16QAM	1	0	21.70	21.68	21.60
	1	12	21.59	21.58	21.67
	1	24	21.53	21.65	21.50
	12	0	21.09	21.11	21.02
	12	6	20.88	20.92	20.95
	12	13	20.89	20.93	20.97
	25	0	20.92	20.90	20.83
64QAM	1	0	20.64	20.68	20.64
	1	12	20.65	20.64	20.64
	1	24	20.67	20.58	20.68
	12	0	19.96	19.89	19.90
	12	6	20.02	19.96	19.93
	12	13	20.05	20.00	19.93
	25	0	19.66	19.66	19.76
256QAM	1	0	18.36	18.30	18.39
	1	12	18.21	18.27	18.27
	1	24	18.12	18.21	18.12
	12	0	18.10	18.18	18.20
	12	6	18.14	18.16	18.22
	12	13	17.99	18.03	18.05
	25	0	18.03	18.09	18.03

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	21.84	22.84	25.02	26.02	33.01
16QAM	20.83	21.70	24.01	24.88	33.01
64QAM	19.66	20.68	22.84	23.86	33.01
256QAM	17.99	18.39	21.17	21.57	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 41, Channel Bandwidth: 10 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 39700	CH 40620	CH 41540
			2501 MHz	2593 MHz	2685 MHz
QPSK	1	0	22.93	22.94	22.82
	1	24	22.85	22.84	22.93
	1	49	22.81	22.86	22.77
	25	0	22.12	22.16	22.17
	25	12	22.11	22.09	22.13
	25	25	22.23	22.22	22.21
	50	0	22.13	22.09	22.11
16QAM	1	0	21.79	21.83	21.83
	1	24	21.71	21.78	21.73
	1	49	21.76	21.75	21.88
	25	0	21.20	21.23	21.20
	25	12	21.13	21.07	21.02
	25	25	21.08	21.13	21.04
	50	0	20.94	21.06	21.02
64QAM	1	0	20.77	20.81	20.77
	1	24	20.84	20.79	20.73
	1	49	20.80	20.81	20.77
	25	0	20.09	20.09	20.12
	25	12	20.09	20.16	20.09
	25	25	20.09	20.18	20.14
	50	0	20.04	19.91	20.02
256QAM	1	0	18.61	18.50	18.49
	1	24	18.41	18.40	18.45
	1	49	18.44	18.35	18.40
	25	0	18.36	18.32	18.25
	25	12	18.39	18.37	18.29
	25	25	18.16	18.16	18.10
	50	0	18.26	18.28	18.27

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	22.09	22.94	25.27	26.12	33.01
16QAM	20.94	21.88	24.12	25.06	33.01
64QAM	19.91	20.84	23.09	24.02	33.01
256QAM	18.10	18.61	21.28	21.79	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 41, Channel Bandwidth: 15 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 39725	CH 40620	CH 41515
			2503.5 MHz	2593 MHz	2682.5 MHz
QPSK	1	0	23.12	23.05	23.05
	1	37	23.13	23.09	23.17
	1	74	23.00	23.00	23.06
	36	0	22.39	22.29	22.38
	36	19	22.33	22.34	22.27
	36	39	22.37	22.37	22.34
	75	0	22.30	22.25	22.34
16QAM	1	0	22.04	21.99	22.00
	1	37	21.96	21.91	21.88
	1	74	21.90	22.00	21.94
	36	0	21.22	21.35	21.35
	36	19	21.31	21.26	21.31
	36	39	21.21	21.28	21.28
	75	0	21.20	21.17	21.19
64QAM	1	0	21.09	21.00	20.99
	1	37	20.95	20.95	20.93
	1	74	20.91	20.97	21.00
	36	0	20.28	20.32	20.26
	36	19	20.24	20.32	20.34
	36	39	20.30	20.29	20.25
	75	0	20.16	20.14	20.14
256QAM	1	0	18.72	18.74	18.70
	1	37	18.63	18.59	18.68
	1	74	18.55	18.56	18.52
	36	0	18.49	18.50	18.54
	36	19	18.46	18.53	18.50
	36	39	18.32	18.33	18.34
	75	0	18.37	18.39	18.37

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	22.25	23.17	25.43	26.35	33.01
16QAM	21.17	22.04	24.35	25.22	33.01
64QAM	20.14	21.09	23.32	24.27	33.01
256QAM	18.32	18.74	21.50	21.92	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 41, Channel Bandwidth: 20 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 39750	CH 40620	CH 41490
			2506 MHz	2593 MHz	2680 MHz
QPSK	1	0	23.11	23.30	23.13
	1	50	23.09	23.28	23.09
	1	99	23.06	23.24	23.06
	50	0	22.41	22.53	22.40
	50	25	22.33	22.52	22.38
	50	50	22.31	22.51	22.30
	100	0	22.27	22.47	22.26
16QAM	1	0	21.99	22.18	22.06
	1	50	21.98	22.11	21.92
	1	99	21.87	22.10	21.86
	50	0	21.34	21.47	21.25
	50	25	21.31	21.45	21.25
	50	50	21.20	21.40	21.24
	100	0	21.11	21.36	21.15
64QAM	1	0	21.01	21.20	21.01
	1	50	20.95	21.16	20.91
	1	99	20.94	21.12	20.90
	50	0	20.26	20.51	20.38
	50	25	20.23	20.44	20.24
	50	50	20.21	20.40	20.17
	100	0	20.07	20.31	20.06
256QAM	1	0	18.71	18.91	18.75
	1	50	18.68	18.84	18.73
	1	99	18.62	18.73	18.51
	50	0	18.61	18.71	18.49
	50	25	18.51	18.64	18.49
	50	50	18.45	18.51	18.46
	100	0	18.28	18.62	18.31

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	22.26	23.30	25.44	26.48	33.01
16QAM	21.11	22.18	24.29	25.36	33.01
64QAM	20.06	21.20	23.24	24.38	33.01
256QAM	18.28	18.91	21.46	22.09	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.4 LTE Band 42 (3.45 GHz ~ 3.55 GHz)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 5 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 42115	CH 42590	CH 43065
			3452.5 MHz	3500 MHz	3547.5 MHz
QPSK	1	0	22.12	22.06	21.99
	1	12	22.08	22.07	22.01
	1	24	22.03	22.04	21.99
	12	0	21.15	21.08	21.03
	12	6	21.08	20.97	21.06
	12	13	21.01	20.96	21.00
	25	0	21.06	20.98	20.99
16QAM	1	0	21.42	21.32	21.23
	1	12	21.03	21.02	20.99
	1	24	21.07	21.04	21.11
	12	0	20.42	20.38	20.36
	12	6	20.43	20.34	20.33
	12	13	20.41	20.27	20.22
	25	0	20.31	20.31	20.35
64QAM	1	0	20.23	20.29	20.23
	1	12	20.11	20.14	19.91
	1	24	20.07	20.08	19.95
	12	0	19.41	19.24	19.24
	12	6	19.33	19.30	19.20
	12	13	19.08	19.02	19.02
	25	0	19.15	19.30	19.34
256QAM	1	0	17.69	17.66	17.58
	1	12	17.61	17.64	17.61
	1	24	17.44	17.42	17.48
	12	0	17.20	17.23	17.19
	12	6	17.05	17.13	17.04
	12	13	17.36	17.32	17.27
	25	0	17.22	17.35	17.24

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.96	22.12	23.27	24.43	30.00
16QAM	20.22	21.42	22.53	23.73	30.00
64QAM	19.02	20.29	21.33	22.60	30.00
256QAM	17.04	17.69	19.35	20.00	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 10 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 42140	CH 42590	CH 43040
			3455 MHz	3500 MHz	3545 MHz
QPSK	1	0	22.11	22.09	22.10
	1	24	22.10	22.04	22.03
	1	49	22.03	22.03	22.00
	25	0	21.03	20.97	21.07
	25	12	21.02	20.97	20.95
	25	25	21.01	20.95	20.98
	50	0	21.02	21.06	21.03
16QAM	1	0	21.41	21.31	21.49
	1	24	21.30	21.22	21.16
	1	49	21.31	21.20	21.19
	25	0	20.49	20.48	20.48
	25	12	20.04	20.02	20.07
	25	25	20.01	20.02	20.02
	50	0	20.48	20.38	20.40
64QAM	1	0	20.19	20.18	20.10
	1	24	20.01	19.95	20.12
	1	49	20.01	19.93	19.98
	25	0	19.51	19.60	19.42
	25	12	19.52	19.33	19.40
	25	25	19.15	19.00	19.09
	50	0	19.07	19.01	19.01
256QAM	1	0	17.95	17.91	17.83
	1	24	17.83	17.73	17.80
	1	49	17.60	17.62	17.55
	25	0	17.55	17.41	17.45
	25	12	17.26	17.28	17.29
	25	25	17.07	16.99	17.15
	50	0	17.03	17.30	17.23

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.95	22.11	23.26	24.42	30.00
16QAM	20.01	21.49	22.32	23.80	30.00
64QAM	19.00	20.19	21.31	22.50	30.00
256QAM	16.99	17.95	19.30	20.26	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 15 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 42165	CH 42590	CH 43015
			3457.5 MHz	3500 MHz	3542.5 MHz
QPSK	1	0	22.06	22.12	22.14
	1	37	22.03	22.02	21.99
	1	74	22.02	21.94	22.00
	36	0	21.13	21.09	21.05
	36	19	21.03	20.97	21.09
	36	39	21.01	20.94	21.04
	75	0	21.07	21.00	20.97
16QAM	1	0	21.54	21.47	21.49
	1	37	21.51	21.44	21.40
	1	74	21.44	21.43	21.39
	36	0	20.23	20.23	20.05
	36	19	20.08	19.99	20.05
	36	39	20.72	20.74	20.72
	75	0	20.60	20.61	20.58
64QAM	1	0	20.41	20.31	20.37
	1	37	20.17	20.20	20.27
	1	74	19.91	20.02	20.09
	36	0	19.80	19.64	19.68
	36	19	19.66	19.57	19.49
	36	39	19.33	19.23	19.25
	75	0	19.21	19.27	19.12
256QAM	1	0	18.02	18.11	18.07
	1	37	18.00	17.89	17.89
	1	74	17.82	17.85	17.78
	36	0	17.58	17.60	17.59
	36	19	17.49	17.40	17.33
	36	39	17.20	17.26	17.15
	75	0	17.14	17.07	17.14

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.94	22.14	23.25	24.45	30.00
16QAM	19.99	21.54	22.30	23.85	30.00
64QAM	19.12	20.41	21.43	22.72	30.00
256QAM	17.07	18.11	19.38	20.42	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 20 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 42190	CH 42590	CH 42990
			3460 MHz	3500 MHz	3540 MHz
QPSK	1	0	22.16	22.03	22.25
	1	50	22.03	21.99	22.05
	1	99	22.01	21.96	21.96
	50	0	21.06	21.08	21.14
	50	25	21.03	21.03	21.01
	50	50	21.01	20.93	21.05
	100	0	21.06	20.95	21.00
16QAM	1	0	21.56	21.56	21.67
	1	50	21.51	21.37	21.56
	1	99	21.41	21.33	21.46
	50	0	20.15	19.99	20.28
	50	25	20.06	19.96	20.18
	50	50	20.01	19.95	20.91
	100	0	20.55	20.56	20.80
64QAM	1	0	20.35	20.36	20.55
	1	50	20.25	20.15	20.39
	1	99	20.08	19.98	20.12
	50	0	19.82	19.63	19.90
	50	25	19.63	19.54	19.66
	50	50	19.33	19.34	19.49
	100	0	19.24	19.23	19.41
256QAM	1	0	18.12	17.94	18.18
	1	50	17.98	17.93	18.03
	1	99	17.85	17.82	17.93
	50	0	17.53	17.61	17.78
	50	25	17.38	17.40	17.50
	50	50	17.20	17.22	17.36
	100	0	17.13	17.14	17.22

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.93	22.25	23.24	24.56	30.00
16QAM	19.95	21.67	22.26	23.98	30.00
64QAM	19.23	20.55	21.54	22.86	30.00
256QAM	17.13	18.18	19.44	20.49	30.00

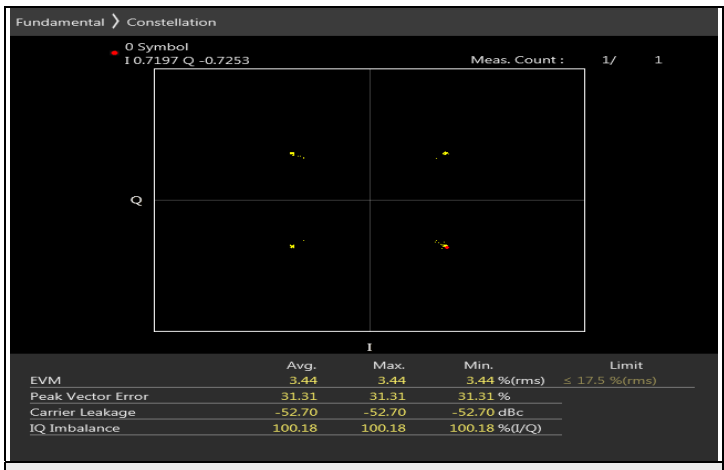
Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.2 Modulation Characteristics

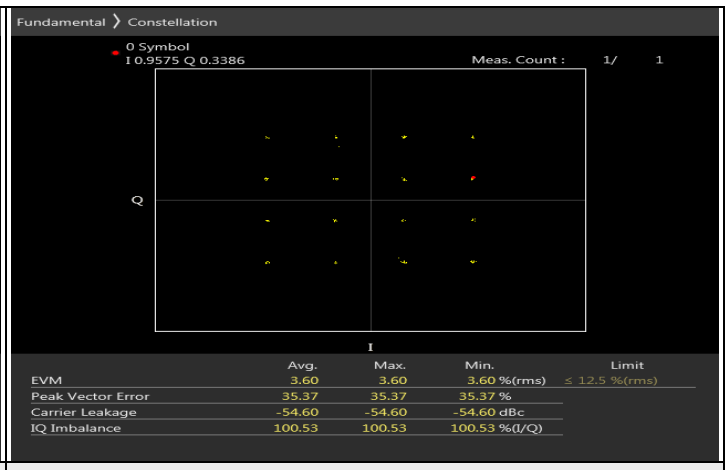
Input Power:	3.85 Vdc	Environmental Conditions:	24°C, 68% RH	Tested By:	Noah Chang

7.2.1 LTE Band 8

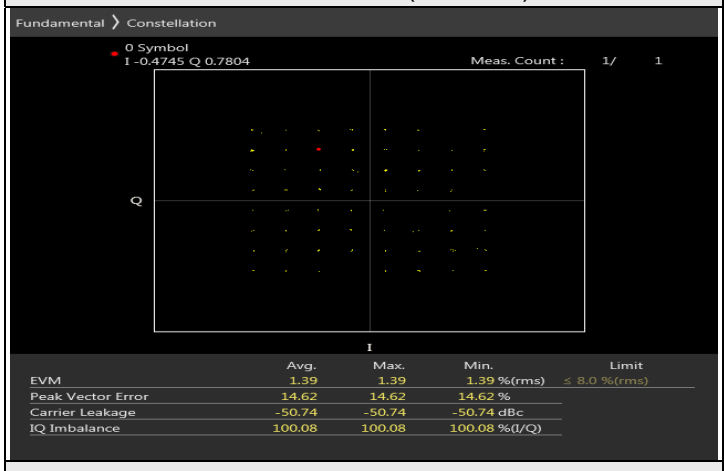
LTE Band 8, Channel Bandwidth: 3 MHz



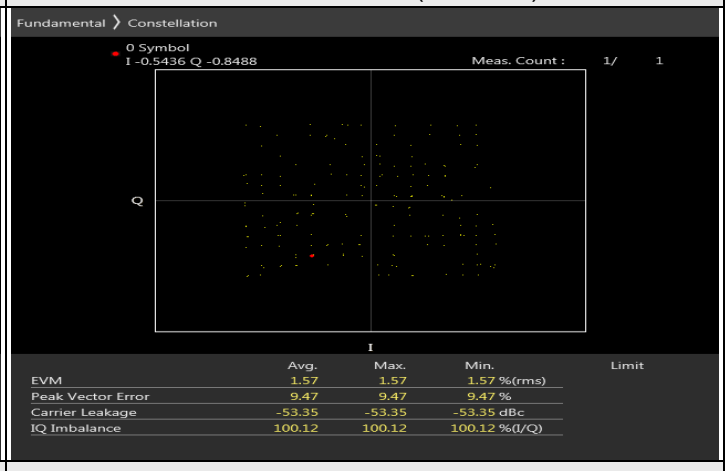
QPSK CH 21640 (899 MHz)



16QAM CH 21640 (899 MHz)



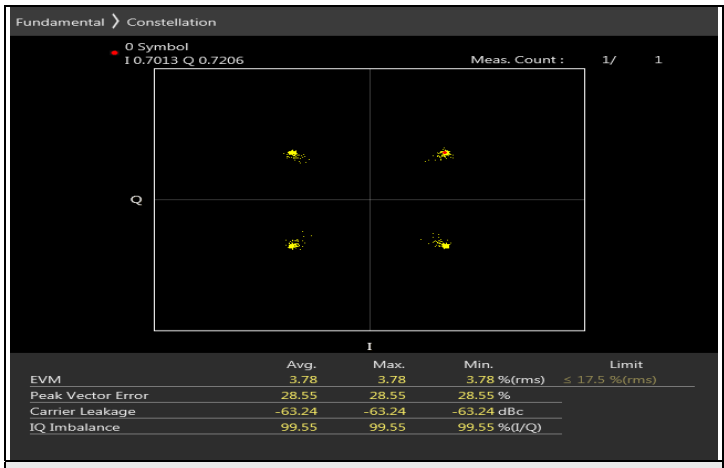
64QAM CH 21640 (899 MHz)



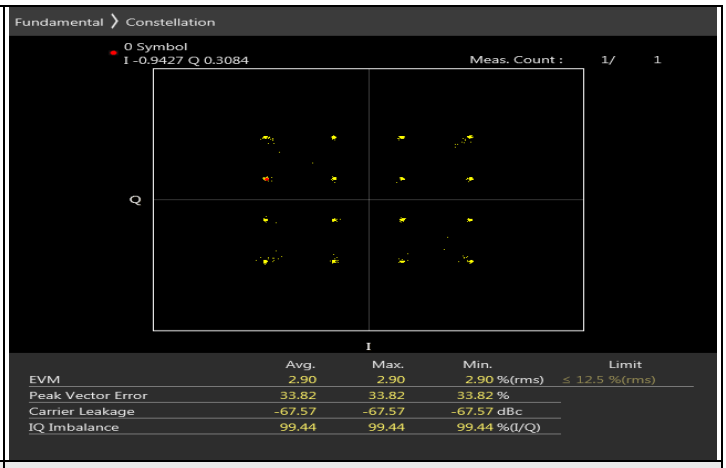
256QAM CH 21640 (899 MHz)

7.2.2 LTE Band 38

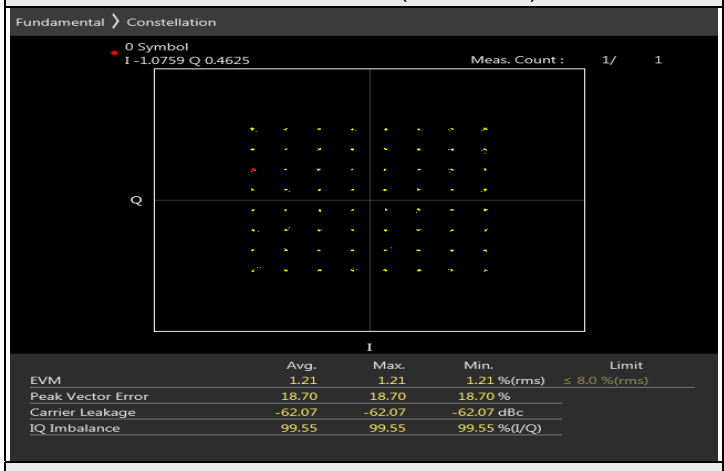
LTE Band 38, Channel Bandwidth: 20 MHz



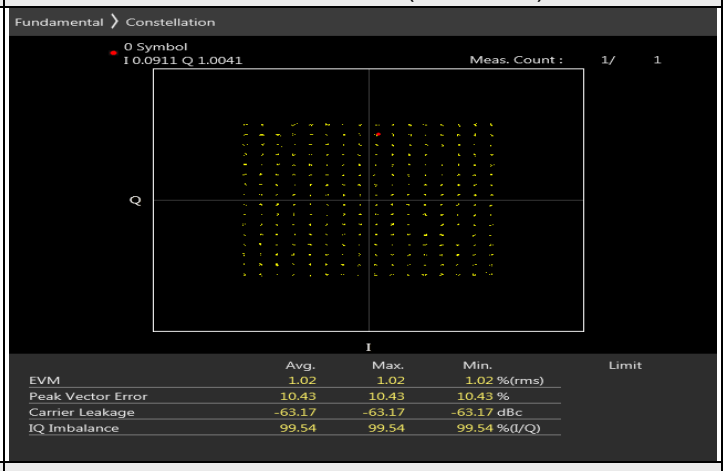
QPSK CH 38000 (2595 MHz)



16QAM CH 38000 (2595 MHz)



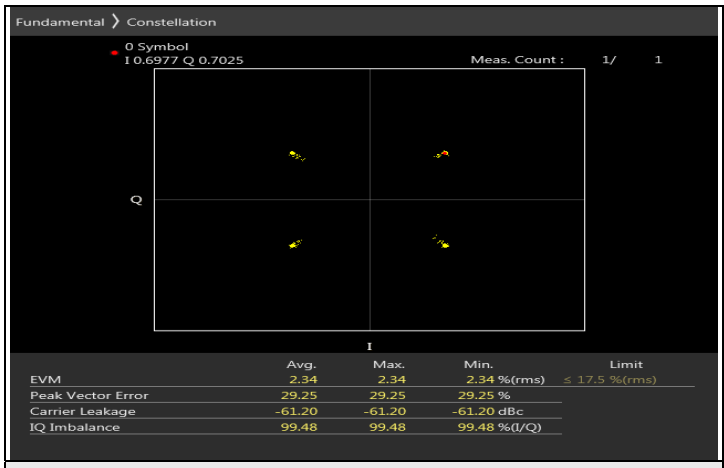
64QAM CH 38000 (2595 MHz)



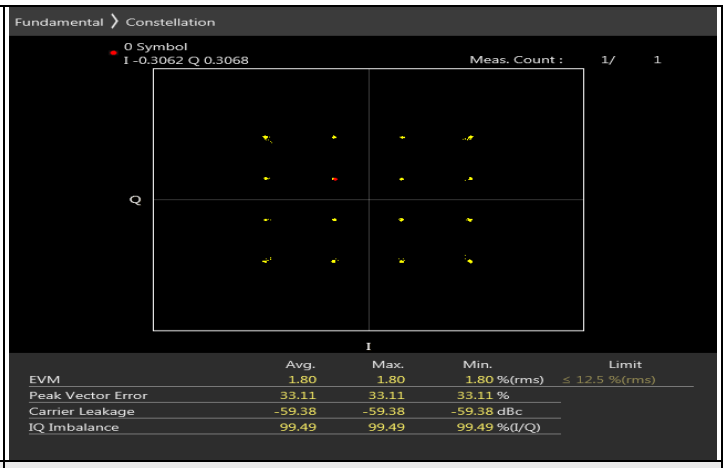
256QAM CH 38000 (2595 MHz)

7.2.3 LTE Band 41

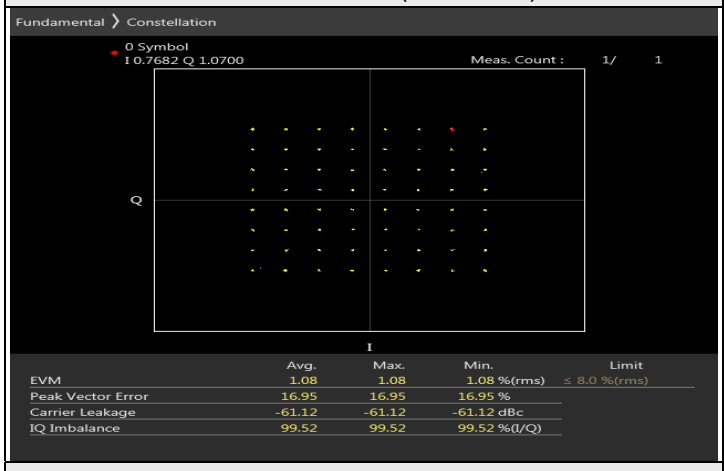
LTE Band 41, Channel Bandwidth: 20 MHz



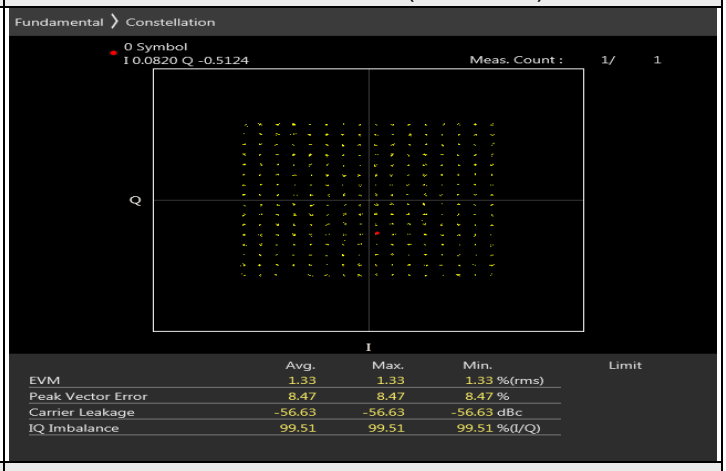
QPSK CH 40620 (2593 MHz)



16QAM CH 40620 (2593 MHz)



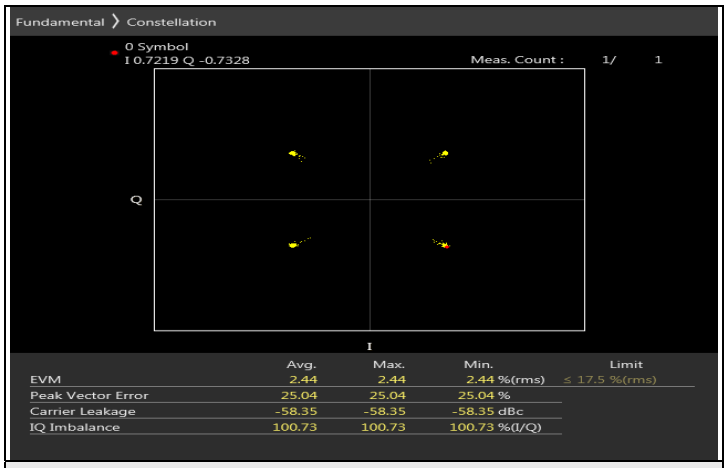
64QAM CH 40620 (2593 MHz)



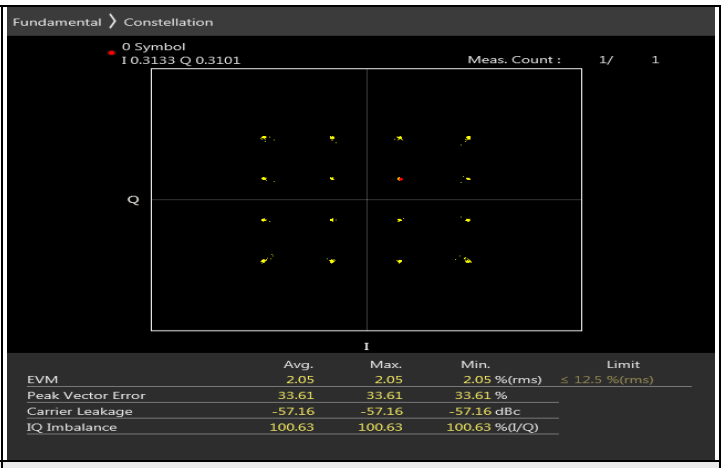
256QAM CH 40620 (2593 MHz)

7.2.4 LTE Band 42 (3.45 GHz ~ 3.55 GHz)

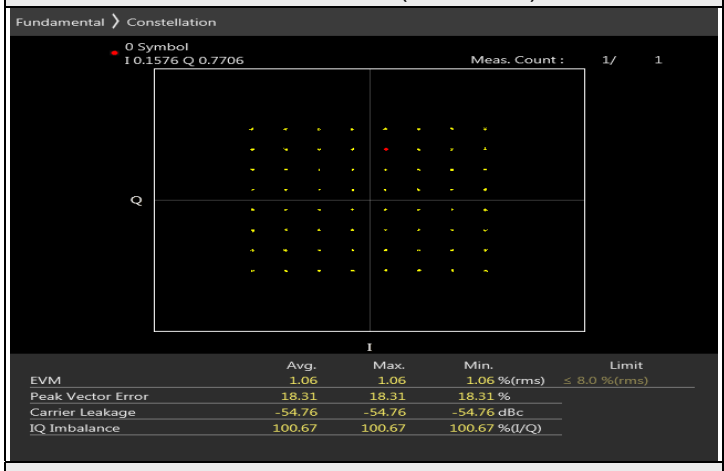
LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 20 MHz



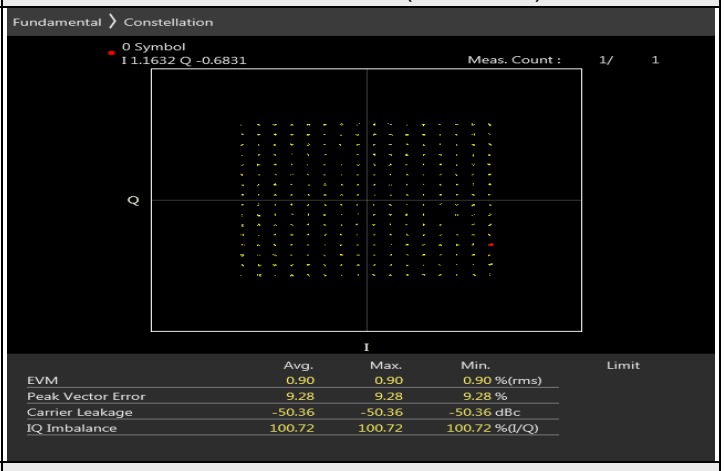
QPSK CH 42590 (3500 MHz)



16QAM CH 42590 (3500 MHz)



64QAM CH 42590 (3500 MHz)



256QAM CH 42590 (3500 MHz)

7.3 Peak to Average Ratio

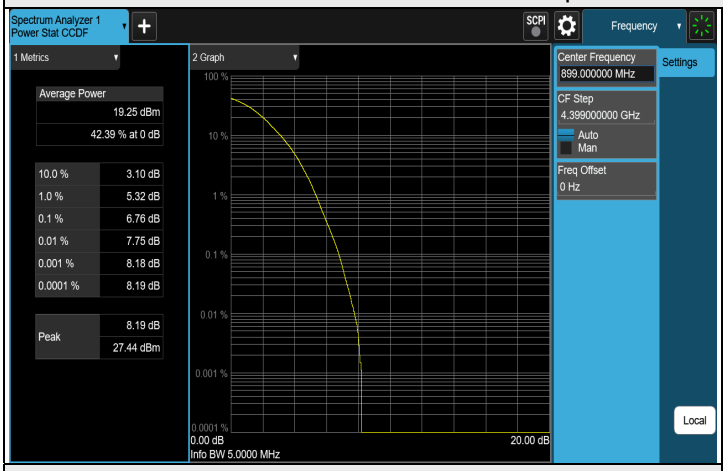
Input Power:	3.85 Vdc	Environmental Conditions:	24°C, 68% RH	Tested By:	Noah Chang

7.3.1 LTE Band 8

LTE Band 8, Channel Bandwidth: 1.4 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	21632	898.2	3.42	13	PASS
QPSK	21640	899	3.62	13	PASS
QPSK	21648	899.8	3.57	13	PASS
16QAM	21632	898.2	4.30	13	PASS
16QAM	21640	899	4.13	13	PASS
16QAM	21648	899.8	4.15	13	PASS
64QAM	21632	898.2	5.26	13	PASS
64QAM	21640	899	5.19	13	PASS
64QAM	21648	899.8	5.23	13	PASS
256QAM	21632	898.2	6.54	13	PASS
256QAM	21640	899	6.76	13	PASS
256QAM	21648	899.8	6.67	13	PASS

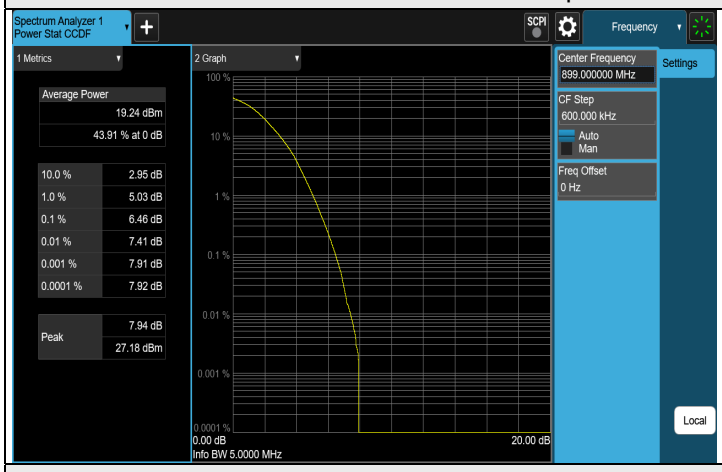
Spectrum Plot of Worst Value



256QAM CH 21640 (899 MHz)

LTE Band 8, Channel Bandwidth: 3 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	21640	899	3.53	13	PASS
16QAM	21640	899	4.29	13	PASS
64QAM	21640	899	5.29	13	PASS
256QAM	21640	899	6.46	13	PASS

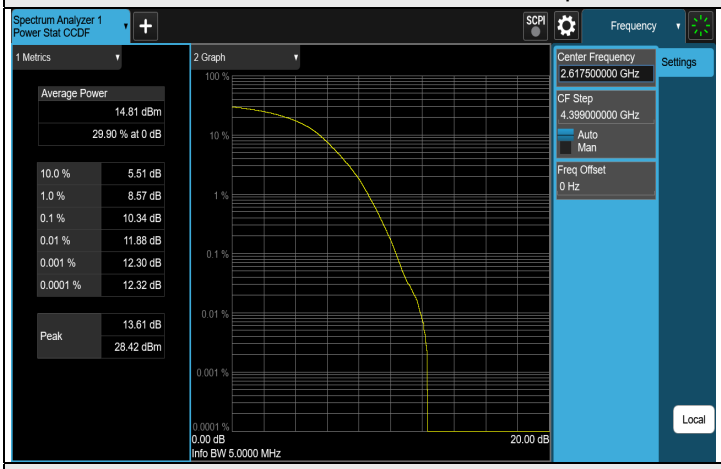
Spectrum Plot of Worst Value	
	
256QAM CH 21640 (899 MHz)	

7.3.2 LTE Band 38

LTE Band 38, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	37775	2572.5	7.54	13	PASS
QPSK	38000	2595	7.61	13	PASS
QPSK	38225	2617.5	7.70	13	PASS
16QAM	37775	2572.5	8.61	13	PASS
16QAM	38000	2595	8.30	13	PASS
16QAM	38225	2617.5	8.44	13	PASS
64QAM	37775	2572.5	8.52	13	PASS
64QAM	38000	2595	8.28	13	PASS
64QAM	38225	2617.5	8.39	13	PASS
256QAM	37775	2572.5	10.11	13	PASS
256QAM	38000	2595	10.26	13	PASS
256QAM	38225	2617.5	10.34	13	PASS

Spectrum Plot of Worst Value

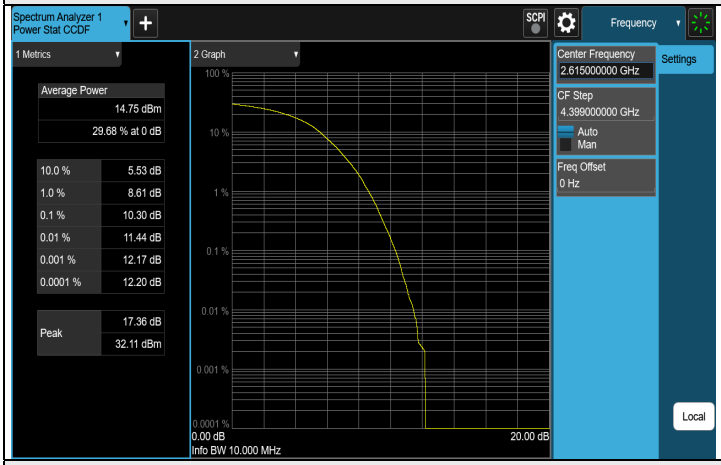


256QAM CH 38225 (2617.5 MHz)

LTE Band 38, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	37800	2575	7.98	13	PASS
QPSK	38000	2595	7.62	13	PASS
QPSK	38200	2615	7.67	13	PASS
16QAM	37800	2575	8.36	13	PASS
16QAM	38000	2595	8.67	13	PASS
16QAM	38200	2615	8.86	13	PASS
64QAM	37800	2575	9.41	13	PASS
64QAM	38000	2595	8.87	13	PASS
64QAM	38200	2615	9.11	13	PASS
256QAM	37800	2575	10.13	13	PASS
256QAM	38000	2595	10.11	13	PASS
256QAM	38200	2615	10.30	13	PASS

Spectrum Plot of Worst Value

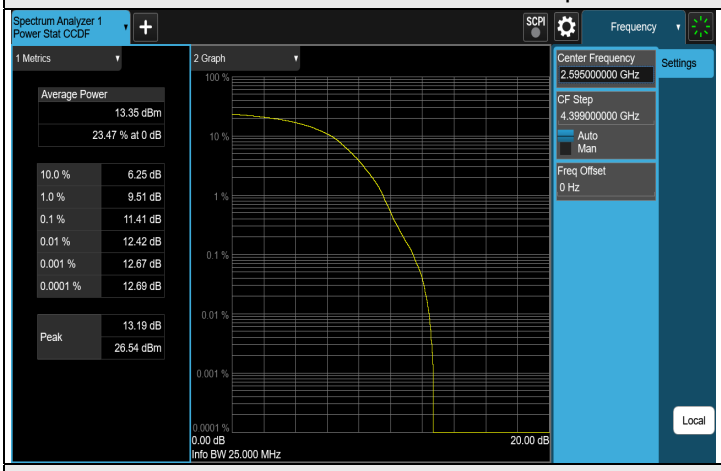


256QAM CH 38200 (2615 MHz)

LTE Band 38, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	37825	2577.5	7.32	13	PASS
QPSK	38000	2595	7.83	13	PASS
QPSK	38175	2612.5	6.92	13	PASS
16QAM	37825	2577.5	8.23	13	PASS
16QAM	38000	2595	8.50	13	PASS
16QAM	38175	2612.5	8.29	13	PASS
64QAM	37825	2577.5	9.51	13	PASS
64QAM	38000	2595	9.06	13	PASS
64QAM	38175	2612.5	8.87	13	PASS
256QAM	37825	2577.5	10.31	13	PASS
256QAM	38000	2595	11.41	13	PASS
256QAM	38175	2612.5	10.35	13	PASS

Spectrum Plot of Worst Value

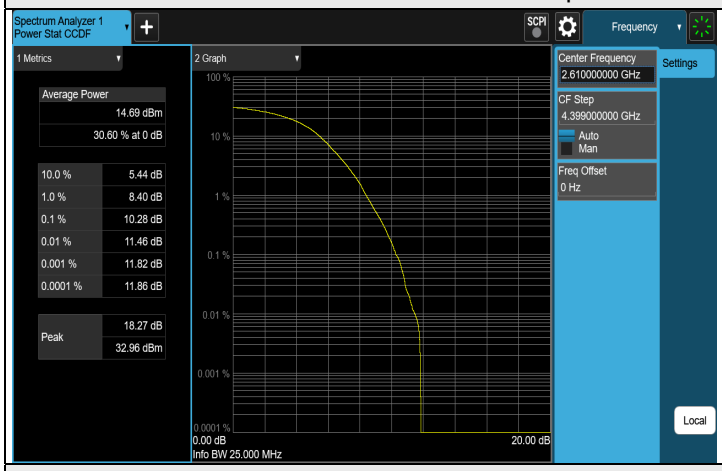


256QAM CH 38000 (2595 MHz)

LTE Band 38, Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	37850	2580	7.37	13	PASS
QPSK	38000	2595	7.27	13	PASS
QPSK	38150	2610	7.23	13	PASS
16QAM	37850	2580	9.41	13	PASS
16QAM	38000	2595	7.54	13	PASS
16QAM	38150	2610	9.04	13	PASS
64QAM	37850	2580	8.52	13	PASS
64QAM	38000	2595	8.43	13	PASS
64QAM	38150	2610	8.09	13	PASS
256QAM	37850	2580	10.09	13	PASS
256QAM	38000	2595	8.88	13	PASS
256QAM	38150	2610	10.28	13	PASS

Spectrum Plot of Worst Value



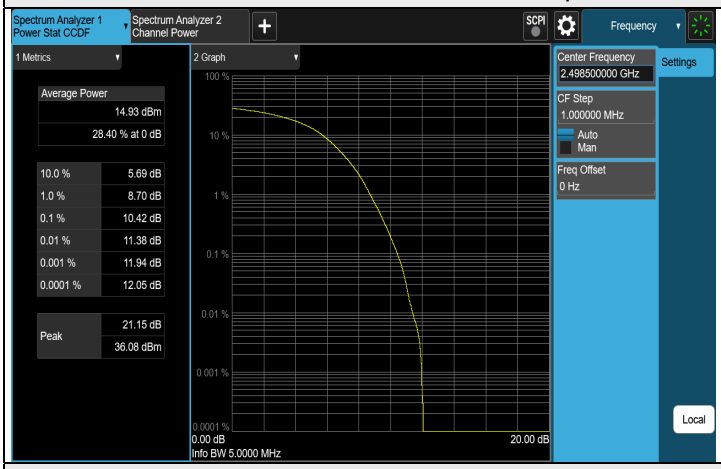
256QAM CH 38150 (2610 MHz)

7.3.3 LTE Band 41

LTE Band 41, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	39675	2498.5	7.24	13	PASS
QPSK	40620	2593	7.85	13	PASS
QPSK	41565	2687.5	7.51	13	PASS
16QAM	39675	2498.5	8.03	13	PASS
16QAM	40620	2593	8.75	13	PASS
16QAM	41565	2687.5	8.13	13	PASS
64QAM	39675	2498.5	7.84	13	PASS
64QAM	40620	2593	8.78	13	PASS
64QAM	41565	2687.5	8.30	13	PASS
256QAM	39675	2498.5	10.42	13	PASS
256QAM	40620	2593	10.32	13	PASS
256QAM	41565	2687.5	9.91	13	PASS

Spectrum Plot of Worst Value

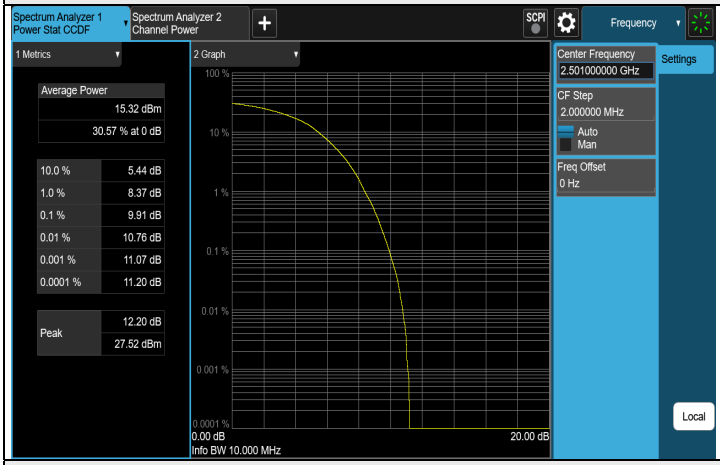


256QAM CH 39675 (2498.5 MHz)

LTE Band 41, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	39700	2501	7.88	13	PASS
QPSK	40620	2593	7.94	13	PASS
QPSK	41540	2685	7.74	13	PASS
16QAM	39700	2501	8.01	13	PASS
16QAM	40620	2593	9.00	13	PASS
16QAM	41540	2685	8.12	13	PASS
64QAM	39700	2501	8.48	13	PASS
64QAM	40620	2593	9.70	13	PASS
64QAM	41540	2685	9.03	13	PASS
256QAM	39700	2501	9.91	13	PASS
256QAM	40620	2593	9.85	13	PASS
256QAM	41540	2685	9.71	13	PASS

Spectrum Plot of Worst Value

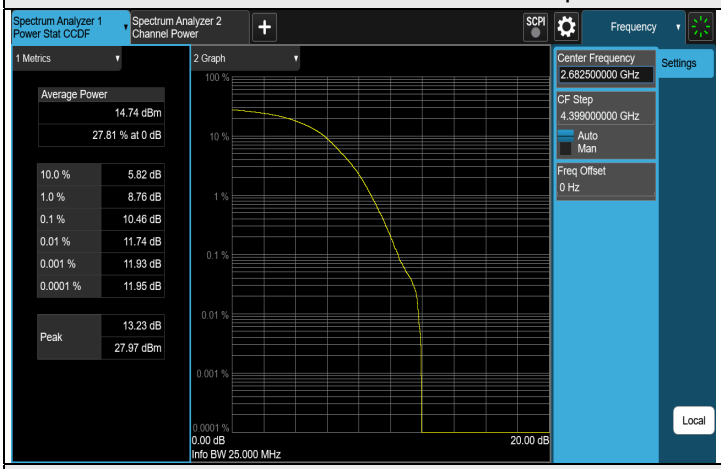


256QAM CH 39700 (2501 MHz)

LTE Band 41, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	39725	2503.5	8.20	13	PASS
QPSK	40620	2593	7.31	13	PASS
QPSK	41515	2682.5	6.15	13	PASS
16QAM	39725	2503.5	7.24	13	PASS
16QAM	40620	2593	8.65	13	PASS
16QAM	41515	2682.5	6.77	13	PASS
64QAM	39725	2503.5	8.41	13	PASS
64QAM	40620	2593	8.82	13	PASS
64QAM	41515	2682.5	8.03	13	PASS
256QAM	39725	2503.5	9.40	13	PASS
256QAM	40620	2593	9.47	13	PASS
256QAM	41515	2682.5	10.46	13	PASS

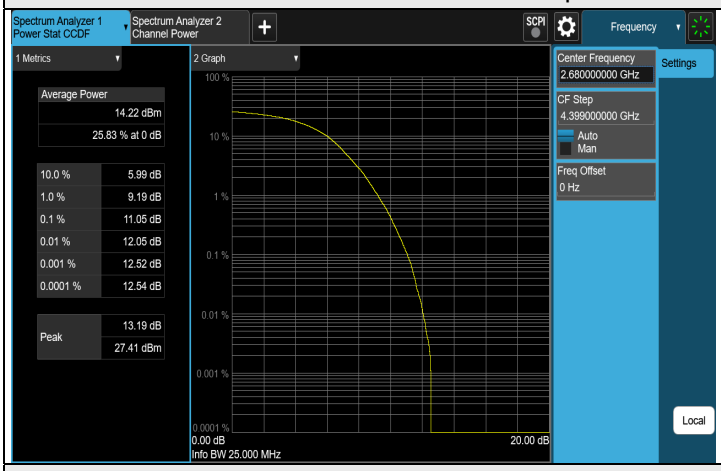
Spectrum Plot of Worst Value



256QAM CH 41515 (2682.5 MHz)

LTE Band 41, Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	39750	2506	8.66	13	PASS
QPSK	40620	2593	7.81	13	PASS
QPSK	41490	2680	7.26	13	PASS
16QAM	39750	2506	6.67	13	PASS
16QAM	40620	2593	8.70	13	PASS
16QAM	41490	2680	7.07	13	PASS
64QAM	39750	2506	9.37	13	PASS
64QAM	40620	2593	9.13	13	PASS
64QAM	41490	2680	8.47	13	PASS
256QAM	39750	2506	10.71	13	PASS
256QAM	40620	2593	10.53	13	PASS
256QAM	41490	2680	11.05	13	PASS

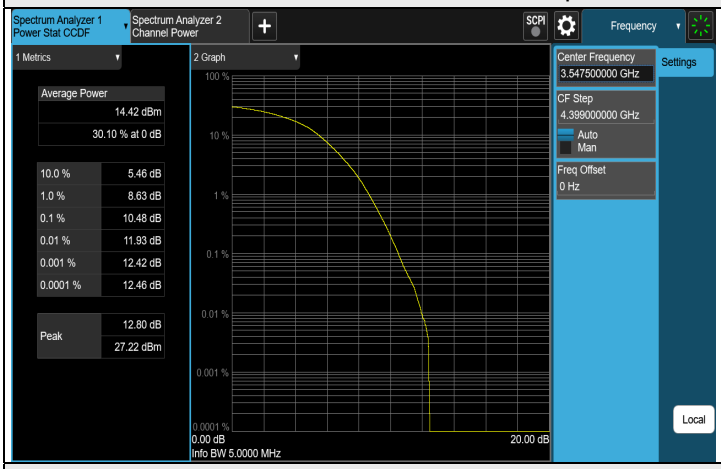
Spectrum Plot of Worst Value	
	
256QAM CH 41490 (2680 MHz)	

7.3.4 LTE Band 42 (3.45 GHz ~ 3.55 GHz)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	42115	3452.5	7.54	13	PASS
QPSK	42590	3500	7.54	13	PASS
QPSK	43065	3547.5	7.61	13	PASS
16QAM	42115	3452.5	8.57	13	PASS
16QAM	42590	3500	8.65	13	PASS
16QAM	43065	3547.5	8.31	13	PASS
64QAM	42115	3452.5	8.49	13	PASS
64QAM	42590	3500	8.44	13	PASS
64QAM	43065	3547.5	8.55	13	PASS
256QAM	42115	3452.5	9.81	13	PASS
256QAM	42590	3500	10.46	13	PASS
256QAM	43065	3547.5	10.48	13	PASS

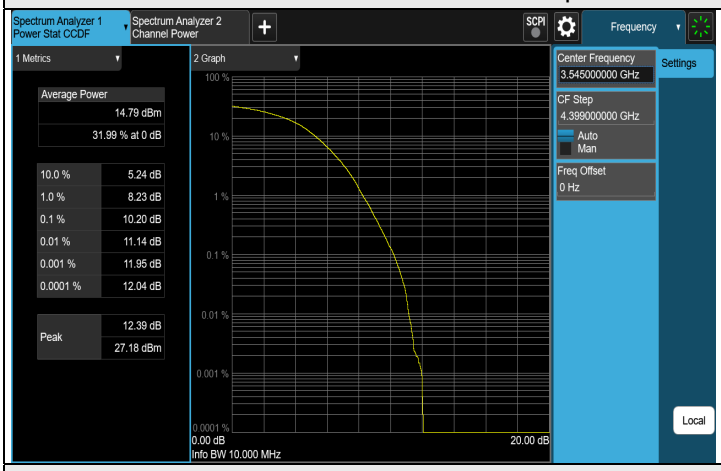
Spectrum Plot of Worst Value



256QAM CH 43065 (3547.5 MHz)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 10 MHz

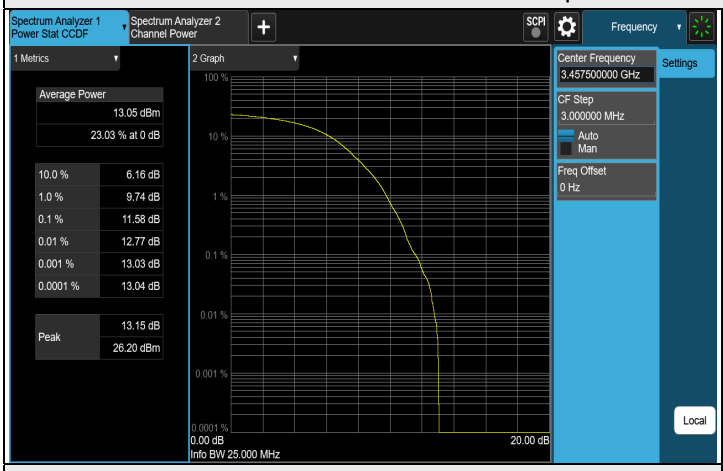
Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	42140	3455	8.42	13	PASS
QPSK	42590	3500	7.49	13	PASS
QPSK	43040	3545	7.65	13	PASS
16QAM	42140	3455	8.59	13	PASS
16QAM	42590	3500	8.46	13	PASS
16QAM	43040	3545	8.21	13	PASS
64QAM	42140	3455	8.40	13	PASS
64QAM	42590	3500	8.16	13	PASS
64QAM	43040	3545	8.42	13	PASS
256QAM	42140	3455	10.02	13	PASS
256QAM	42590	3500	9.96	13	PASS
256QAM	43040	3545	10.20	13	PASS

Spectrum Plot of Worst Value	
	
256QAM CH 43040 (3545 MHz)	

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	42165	3457.5	6.25	13	PASS
QPSK	42590	3500	7.58	13	PASS
QPSK	43015	3542.5	7.70	13	PASS
16QAM	42165	3457.5	8.60	13	PASS
16QAM	42590	3500	7.65	13	PASS
16QAM	43015	3542.5	7.61	13	PASS
64QAM	42165	3457.5	9.18	13	PASS
64QAM	42590	3500	8.86	13	PASS
64QAM	43015	3542.5	7.83	13	PASS
256QAM	42165	3457.5	11.58	13	PASS
256QAM	42590	3500	10.64	13	PASS
256QAM	43015	3542.5	10.48	13	PASS

Spectrum Plot of Worst Value

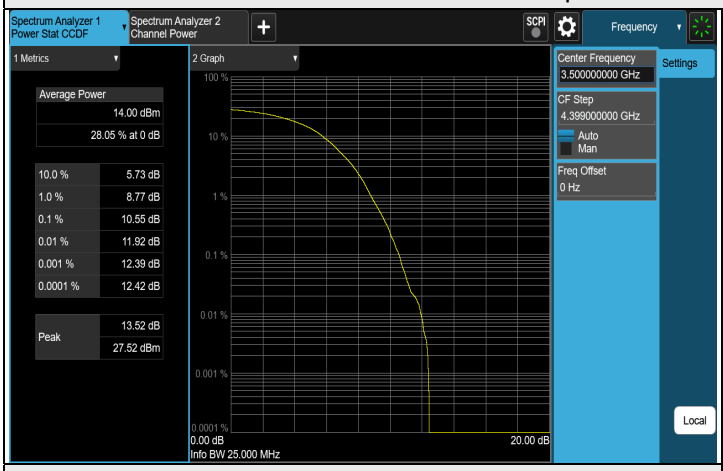


256QAM CH 42165 (3457.5 MHz)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value(dB)	Limit (dB)	Result
QPSK	42190	3460	8.64	13	PASS
QPSK	42590	3500	7.69	13	PASS
QPSK	42990	3540	7.67	13	PASS
16QAM	42190	3460	8.71	13	PASS
16QAM	42590	3500	9.31	13	PASS
16QAM	42990	3540	8.29	13	PASS
64QAM	42190	3460	7.34	13	PASS
64QAM	42590	3500	10.04	13	PASS
64QAM	42990	3540	9.22	13	PASS
256QAM	42190	3460	9.81	13	PASS
256QAM	42590	3500	10.55	13	PASS
256QAM	42990	3540	9.97	13	PASS

Spectrum Plot of Worst Value



256QAM CH 42590 (3500 MHz)

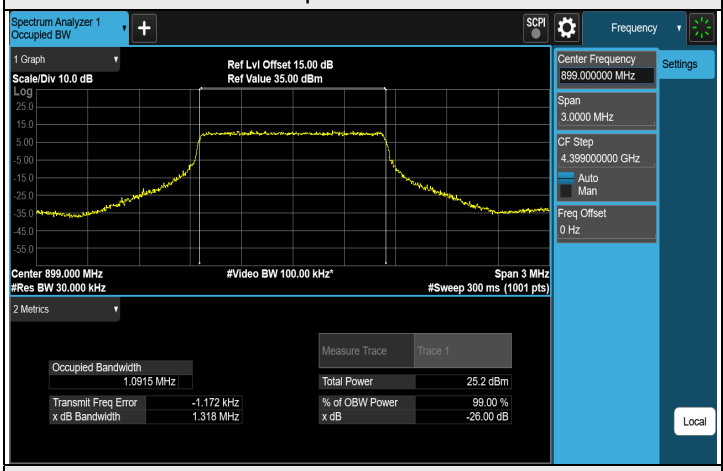
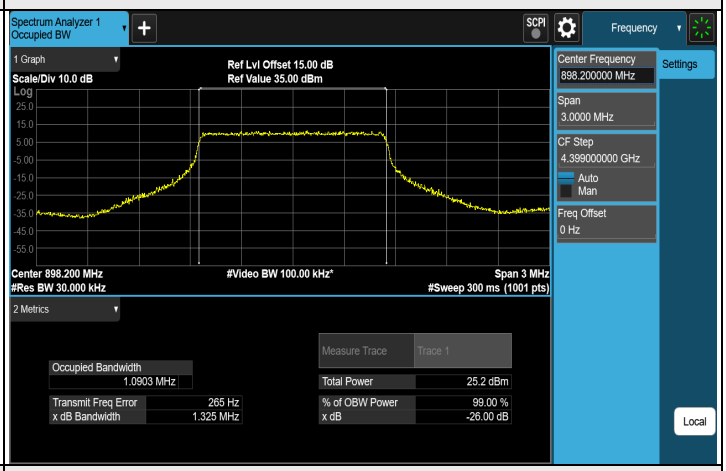
7.4 Bandwidth

Input Power:	3.85 Vdc	Environmental Conditions:	24°C, 68% RH	Tested By:	Noah Chang

7.4.1 LTE Band 8

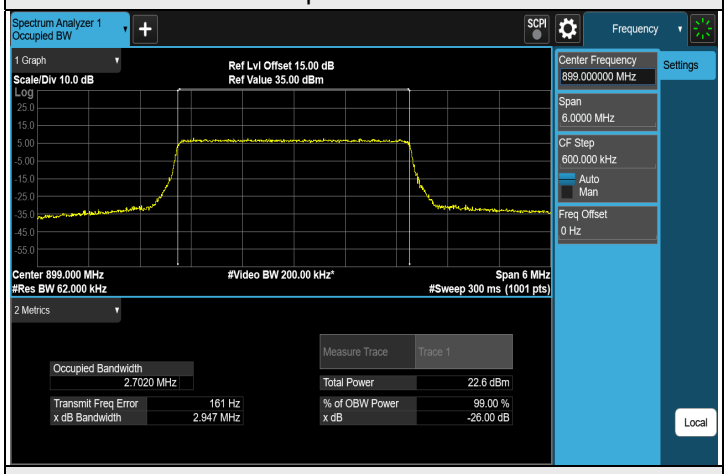
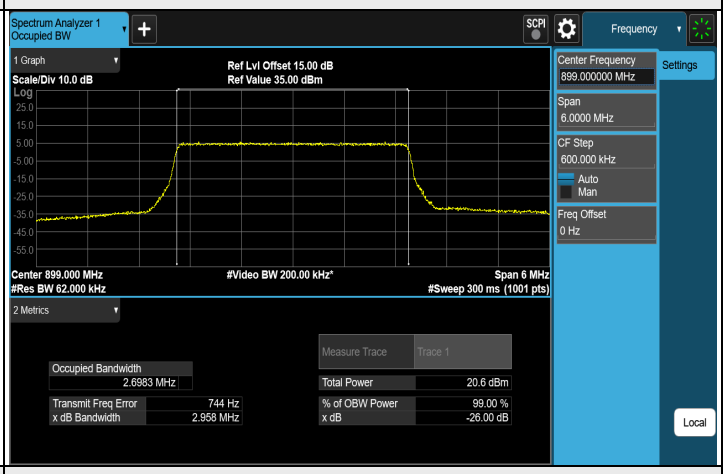
LTE Band 8, Channel Bandwidth: 1.4 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	21632	898.2	1.0888	1.313
QPSK	21640	899	1.0899	1.318
QPSK	21648	899.8	1.0905	1.297
16QAM	21632	898.2	1.0903	1.325
16QAM	21640	899	1.0915	1.318
16QAM	21648	899.8	1.0885	1.298
64QAM	21632	898.2	1.0899	1.302
64QAM	21640	899	1.0901	1.298
64QAM	21648	899.8	1.0902	1.292
256QAM	21632	898.2	1.0901	1.290
256QAM	21640	899	1.0904	1.301
256QAM	21648	899.8	1.0891	1.295

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 21640 (899 MHz)	16QAM CH 21632 (898.2 MHz)

LTE Band 8, Channel Bandwidth: 3 MHz

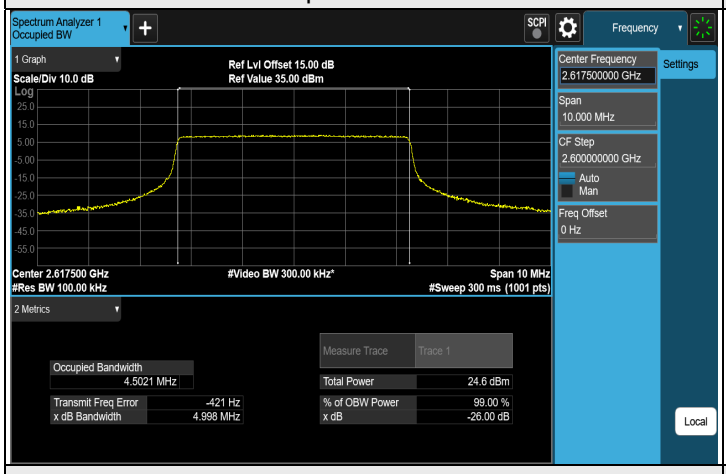
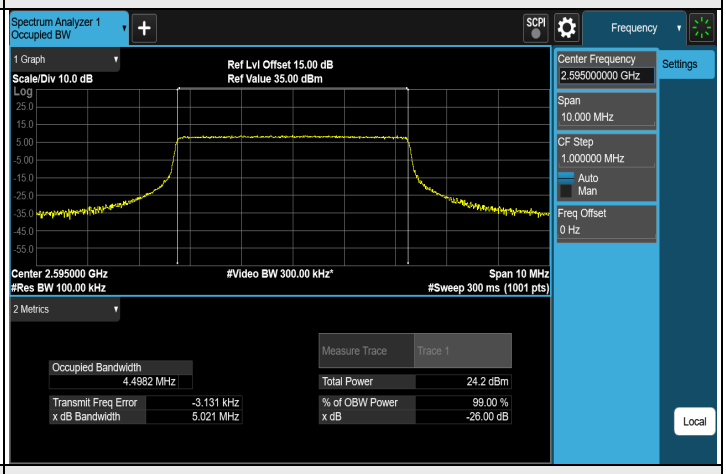
Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	21640	899	2.6990	2.954
16QAM	21640	899	2.7019	2.950
64QAM	21640	899	2.7020	2.947
256QAM	21640	899	2.6983	2.958

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
64QAM CH 21640 (899 MHz)	256QAM CH 21640 (899 MHz)

7.4.2 LTE Band 38

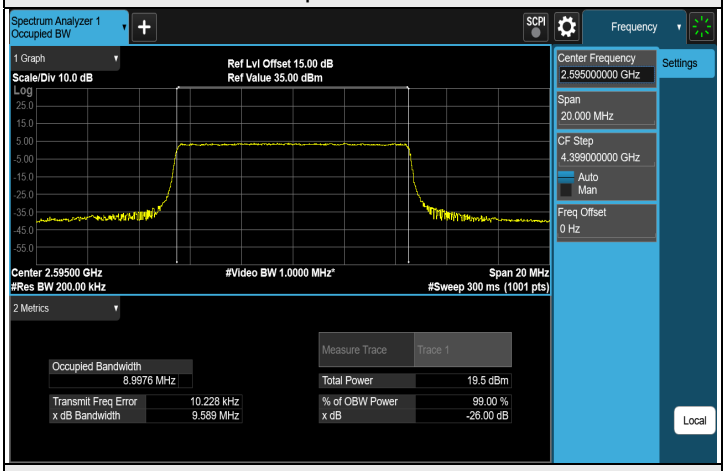
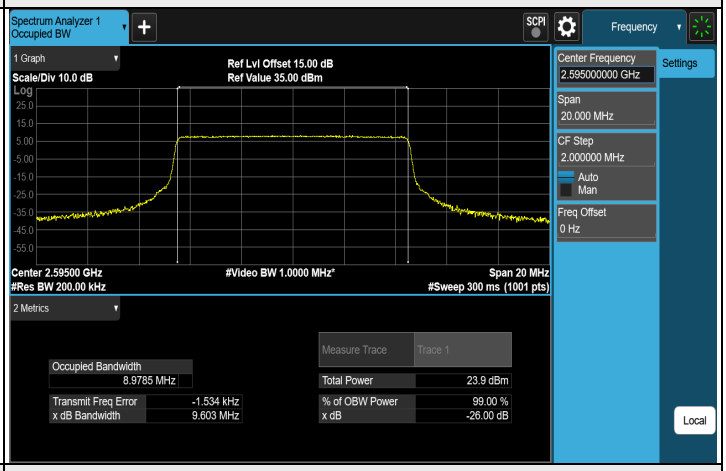
LTE Band 38, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	37775	2572.5	4.4849	4.919
QPSK	38000	2595	4.4982	5.021
QPSK	38225	2617.5	4.5021	4.998
16QAM	37775	2572.5	4.4893	4.883
16QAM	38000	2595	4.4895	4.930
16QAM	38225	2617.5	4.4900	4.883
64QAM	37775	2572.5	4.4916	4.864
64QAM	38000	2595	4.4966	4.964
64QAM	38225	2617.5	4.4934	4.884
256QAM	37775	2572.5	4.4990	4.871
256QAM	38000	2595	4.4921	4.864
256QAM	38225	2617.5	4.4898	4.862

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
QPSK CH 38225 (2617.5 MHz)	QPSK CH 38000 (2595 MHz)

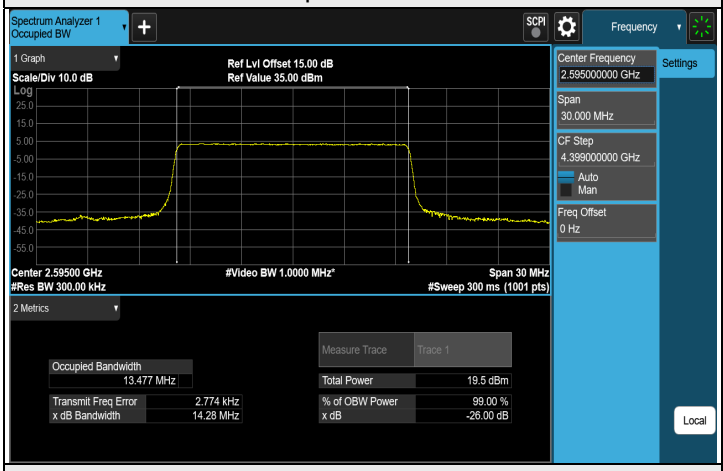
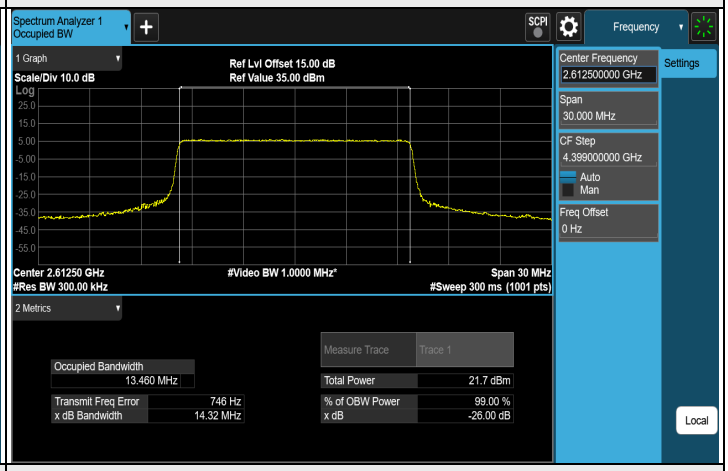
LTE Band 38, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	37800	2575	8.9754	9.601
QPSK	38000	2595	8.9785	9.603
QPSK	38200	2615	8.9708	9.586
16QAM	37800	2575	8.9668	9.551
16QAM	38000	2595	8.9824	9.575
16QAM	38200	2615	8.9690	9.539
64QAM	37800	2575	8.9754	9.555
64QAM	38000	2595	8.9752	9.552
64QAM	38200	2615	8.9674	9.567
256QAM	37800	2575	8.9807	9.561
256QAM	38000	2595	8.9976	9.589
256QAM	38200	2615	8.9969	9.537

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 38000 (2595 MHz)	QPSK CH 38000 (2595 MHz)

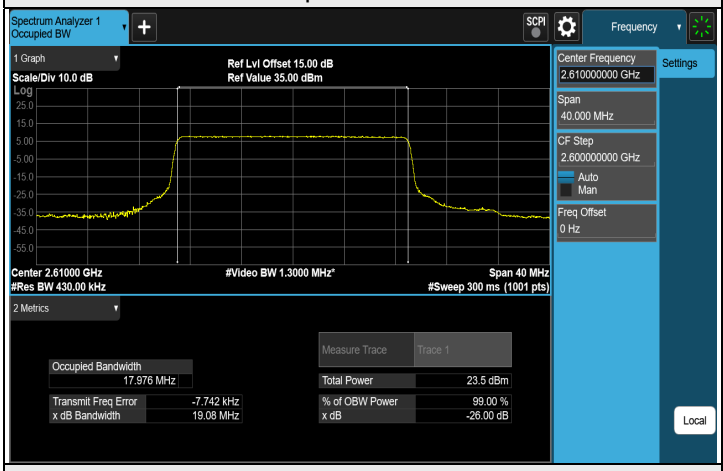
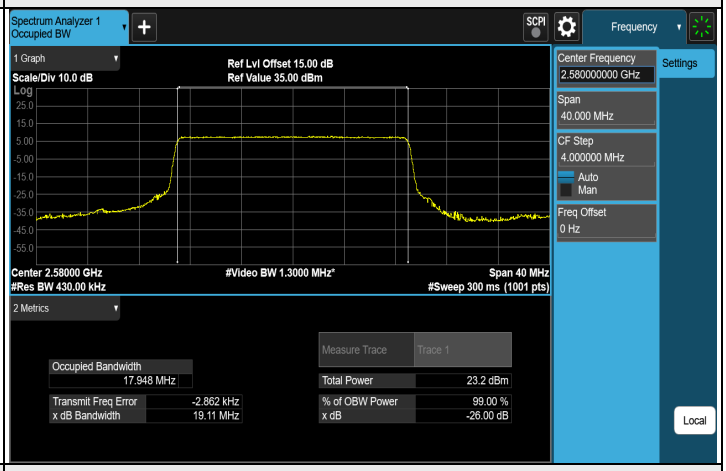
LTE Band 38, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	37825	2577.5	13.4484	14.240
QPSK	38000	2595	13.4590	14.293
QPSK	38175	2612.5	13.4578	14.280
16QAM	37825	2577.5	13.4636	14.302
16QAM	38000	2595	13.4649	14.300
16QAM	38175	2612.5	13.4677	14.294
64QAM	37825	2577.5	13.4550	14.270
64QAM	38000	2595	13.4653	14.284
64QAM	38175	2612.5	13.4597	14.321
256QAM	37825	2577.5	13.4764	14.272
256QAM	38000	2595	13.4770	14.281
256QAM	38175	2612.5	13.4548	14.301

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 38000 (2595 MHz)	64QAM CH 38175 (2612.5 MHz)

LTE Band 38, Channel Bandwidth: 20 MHz

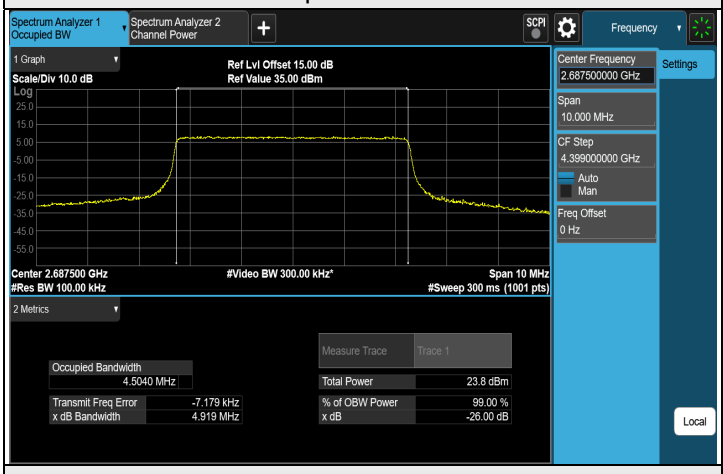
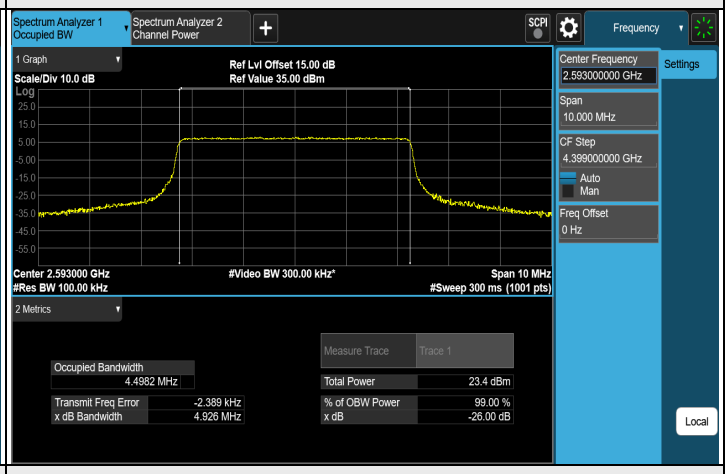
Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	37850	2580	17.9476	19.109
QPSK	38000	2595	17.9512	19.076
QPSK	38150	2610	17.9757	19.079
16QAM	37850	2580	17.9540	19.070
16QAM	38000	2595	17.9535	19.043
16QAM	38150	2610	17.9523	19.065
64QAM	37850	2580	17.9561	19.045
64QAM	38000	2595	17.9615	19.050
64QAM	38150	2610	17.9587	19.069
256QAM	37850	2580	17.9543	19.047
256QAM	38000	2595	17.9516	19.036
256QAM	38150	2610	17.9521	19.039

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
QPSK CH 38150 (2610 MHz)	QPSK CH 37850 (2580 MHz)

7.4.3 LTE Band 41

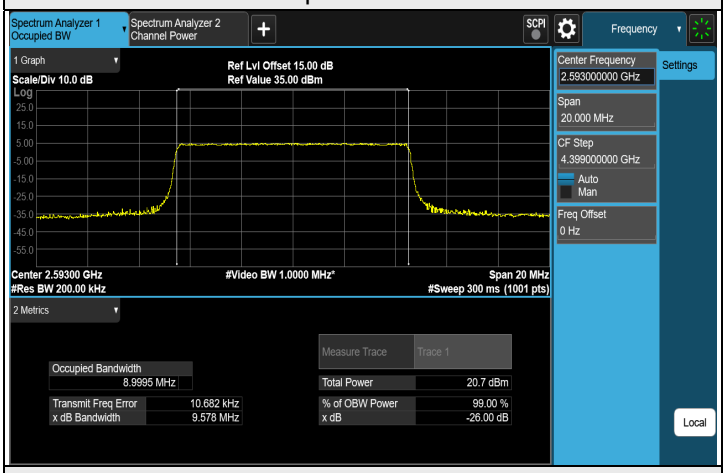
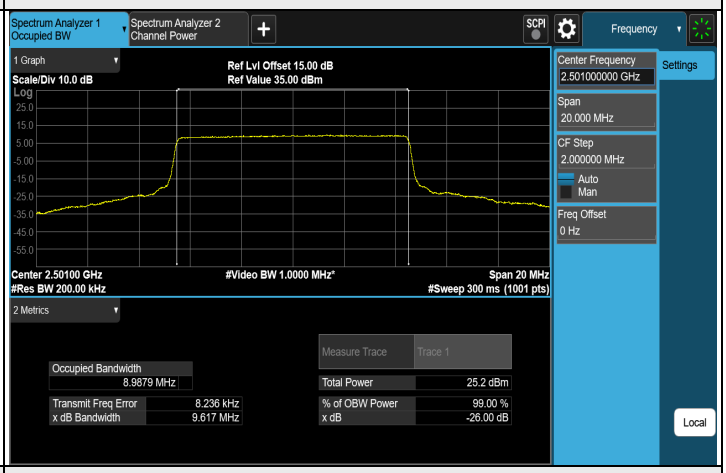
LTE Band 41, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	39675	2498.5	4.4899	4.868
QPSK	40620	2593	4.4944	4.886
QPSK	41565	2687.5	4.4953	4.899
16QAM	39675	2498.5	4.4927	4.876
16QAM	40620	2593	4.4984	4.890
16QAM	41565	2687.5	4.5040	4.919
64QAM	39675	2498.5	4.4946	4.910
64QAM	40620	2593	4.4982	4.926
64QAM	41565	2687.5	4.4974	4.904
256QAM	39675	2498.5	4.4956	4.861
256QAM	40620	2593	4.4941	4.839
256QAM	41565	2687.5	4.4983	4.866

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 41565 (2687.5 MHz)	64QAM CH 40620 (2593 MHz)

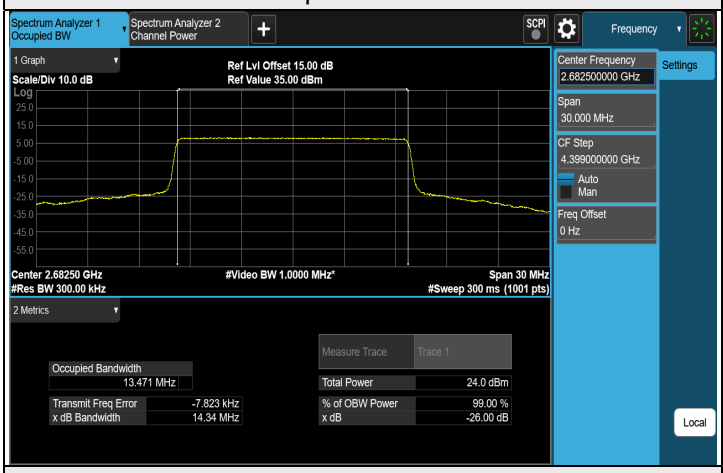
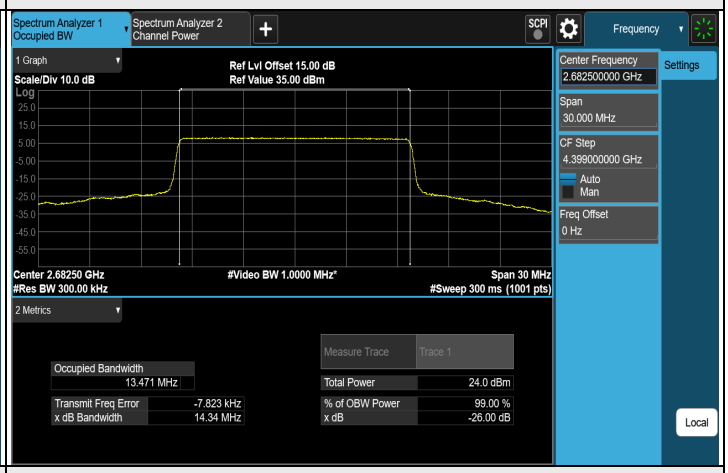
LTE Band 41, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	39700	2501	8.9879	9.617
QPSK	40620	2593	8.9758	9.562
QPSK	41540	2685	8.9788	9.573
16QAM	39700	2501	8.9767	9.564
16QAM	40620	2593	8.9761	9.557
16QAM	41540	2685	8.9721	9.548
64QAM	39700	2501	8.9796	9.555
64QAM	40620	2593	8.9756	9.589
64QAM	41540	2685	8.9718	9.534
256QAM	39700	2501	8.9810	9.555
256QAM	40620	2593	8.9995	9.578
256QAM	41540	2685	8.9802	9.516

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 40620 (2593 MHz)	QPSK CH 39700 (2501 MHz)

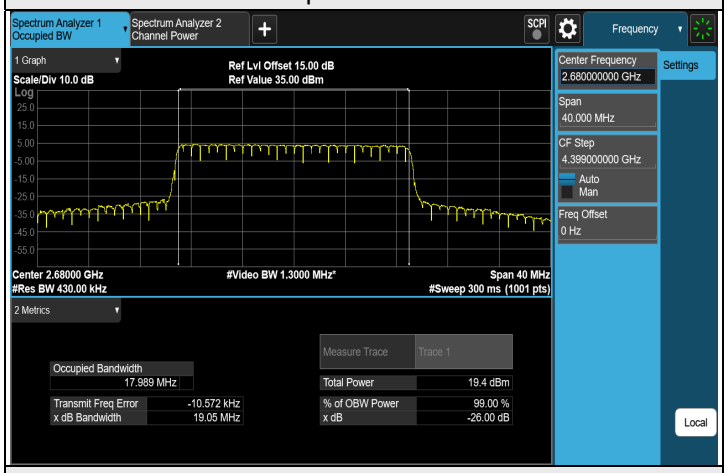
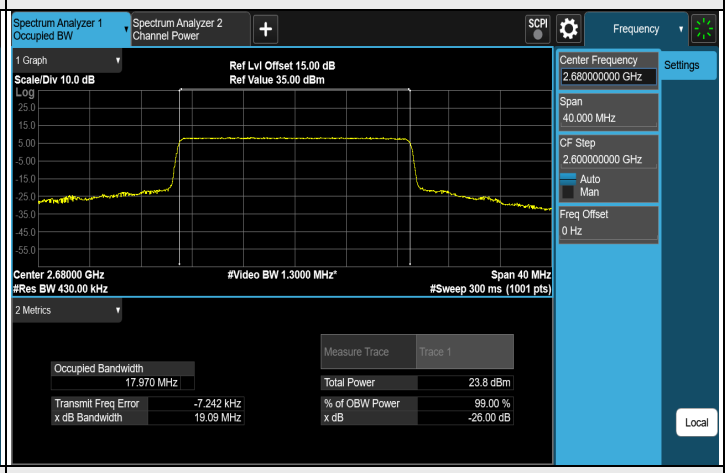
LTE Band 41, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	39725	2503.5	13.4632	14.286
QPSK	40620	2593	13.4663	14.300
QPSK	41515	2682.5	13.4538	14.260
16QAM	39725	2503.5	13.4703	14.265
16QAM	40620	2593	13.4608	14.284
16QAM	41515	2682.5	13.4714	14.339
64QAM	39725	2503.5	13.4638	14.281
64QAM	40620	2593	13.4474	14.265
64QAM	41515	2682.5	13.4706	14.261
256QAM	39725	2503.5	13.4516	14.275
256QAM	40620	2593	13.4578	14.275
256QAM	41515	2682.5	13.4668	14.256

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 41515 (2682.5 MHz)	16QAM CH 41515 (2682.5 MHz)

LTE Band 41, Channel Bandwidth: 20 MHz

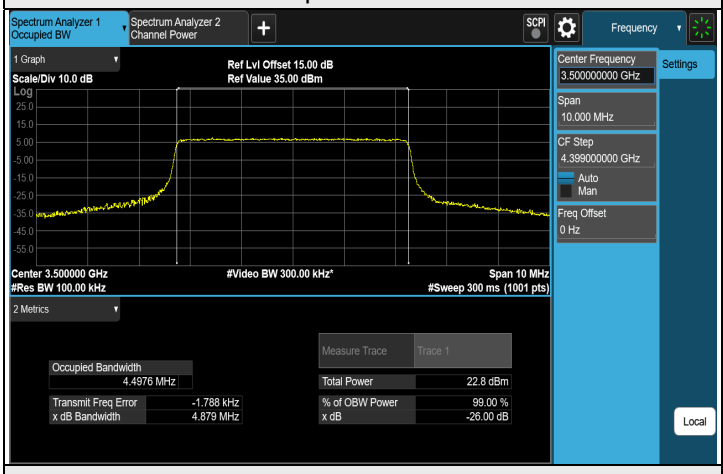
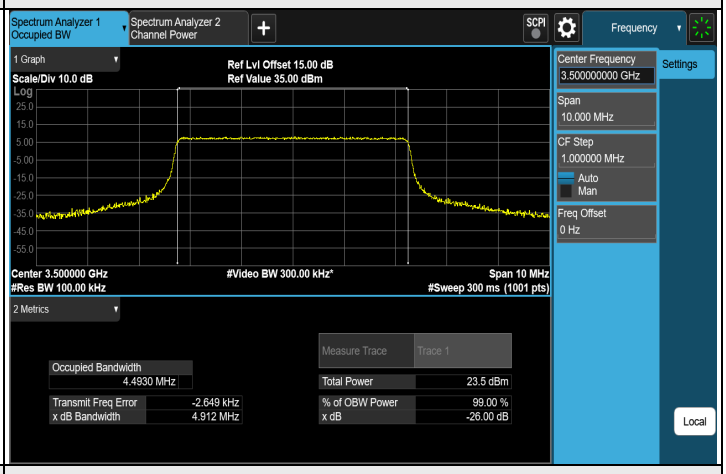
Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	39750	2506	17.9425	19.081
QPSK	40620	2593	17.9582	19.062
QPSK	41490	2680	17.9704	19.088
16QAM	39750	2506	17.9723	19.074
16QAM	40620	2593	17.9690	19.078
16QAM	41490	2680	17.9729	19.086
64QAM	39750	2506	17.9435	19.035
64QAM	40620	2593	17.9567	19.038
64QAM	41490	2680	17.9513	19.059
256QAM	39750	2506	17.9719	19.038
256QAM	40620	2593	17.9512	19.034
256QAM	41490	2680	17.9891	19.053

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 41490 (2680 MHz)	QPSK CH 41490 (2680 MHz)

7.4.4 LTE Band 42 (3.45 GHz ~ 3.55 GHz)

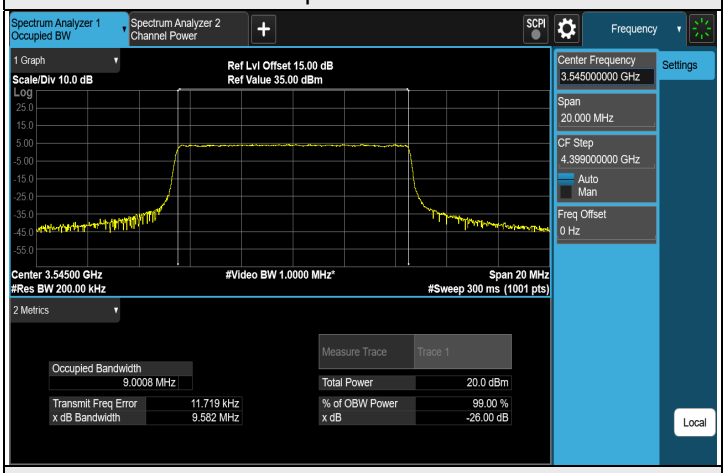
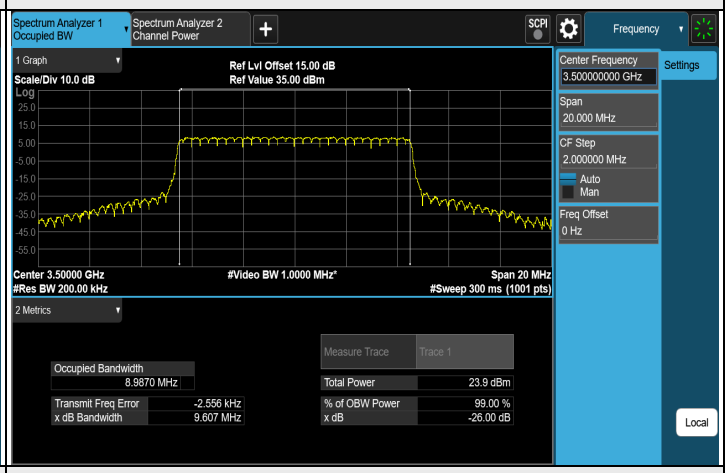
LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	42115	3452.5	4.4864	4.801
QPSK	42590	3500	4.4930	4.912
QPSK	43065	3547.5	4.4925	4.882
16QAM	42115	3452.5	4.4925	4.883
16QAM	42590	3500	4.4903	4.847
16QAM	43065	3547.5	4.4846	4.843
64QAM	42115	3452.5	4.4900	4.862
64QAM	42590	3500	4.4976	4.879
64QAM	43065	3547.5	4.4931	4.880
256QAM	42115	3452.5	4.4958	4.833
256QAM	42590	3500	4.4950	4.910
256QAM	43065	3547.5	4.4930	4.829

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
64QAM CH 42590 (3500 MHz)	QPSK CH 42590 (3500 MHz)

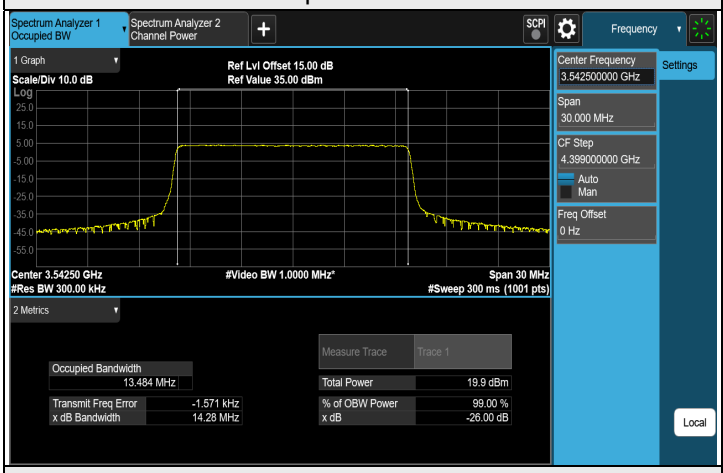
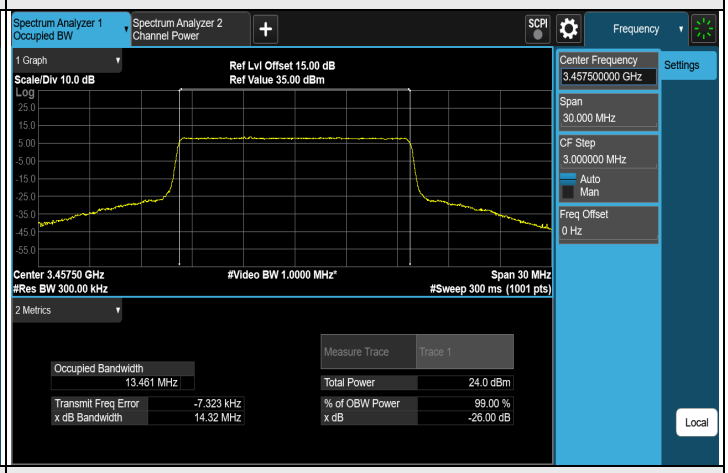
LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	42140	3455	8.9811	9.539
QPSK	42590	3500	8.9870	9.607
QPSK	43040	3545	8.9775	9.573
16QAM	42140	3455	8.9802	9.571
16QAM	42590	3500	8.9702	9.555
16QAM	43040	3545	8.9719	9.567
64QAM	42140	3455	8.9716	9.555
64QAM	42590	3500	8.9709	9.561
64QAM	43040	3545	8.9648	9.540
256QAM	42140	3455	8.9793	9.540
256QAM	42590	3500	8.9878	9.534
256QAM	43040	3545	9.0008	9.582

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 43040 (3545 MHz)	QPSK CH 42590 (3500 MHz)

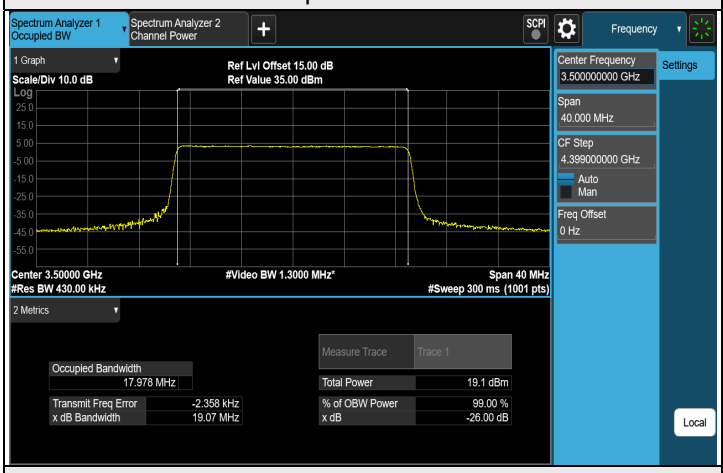
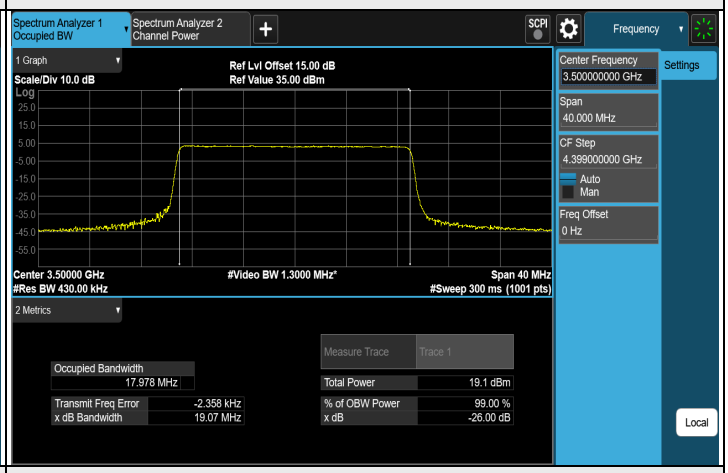
LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	42165	3457.5	13.4606	14.320
QPSK	42590	3500	13.4509	14.289
QPSK	43015	3542.5	13.4622	14.292
16QAM	42165	3457.5	13.4558	14.261
16QAM	42590	3500	13.4621	14.254
16QAM	43015	3542.5	13.4561	14.281
64QAM	42165	3457.5	13.4576	14.265
64QAM	42590	3500	13.4536	14.236
64QAM	43015	3542.5	13.4657	14.261
256QAM	42165	3457.5	13.4605	14.302
256QAM	42590	3500	13.4734	14.255
256QAM	43015	3542.5	13.4837	14.275

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 43015 (3542.5 MHz)	QPSK CH 42165 (3457.5 MHz)

LTE Band 42 (3.45 GHz ~ 3.55 GHz), Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
QPSK	42190	3460	17.9664	19.059
QPSK	42590	3500	17.9600	19.057
QPSK	42990	3540	17.9455	19.014
16QAM	42190	3460	17.9666	19.032
16QAM	42590	3500	17.9587	19.027
16QAM	42990	3540	17.9532	19.069
64QAM	42190	3460	17.9190	19.034
64QAM	42590	3500	17.9504	19.036
64QAM	42990	3540	17.9211	19.050
256QAM	42190	3460	17.9603	19.061
256QAM	42590	3500	17.9777	19.072
256QAM	42990	3540	17.9612	19.061

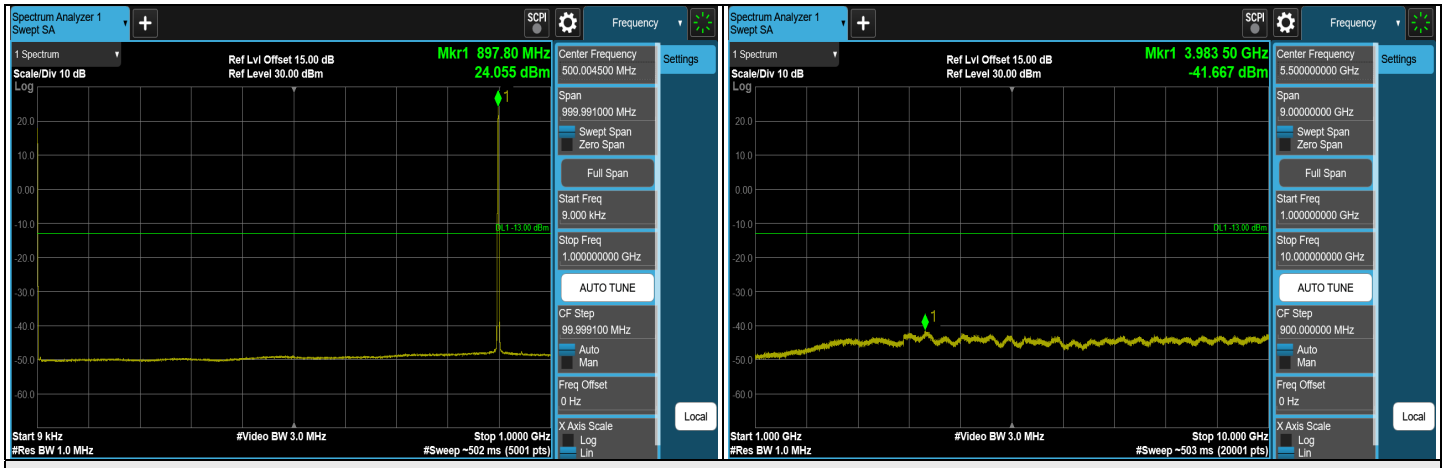
Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 42590 (3500 MHz)	256QAM CH 42590 (3500 MHz)

7.5 Conducted Spurious Emissions

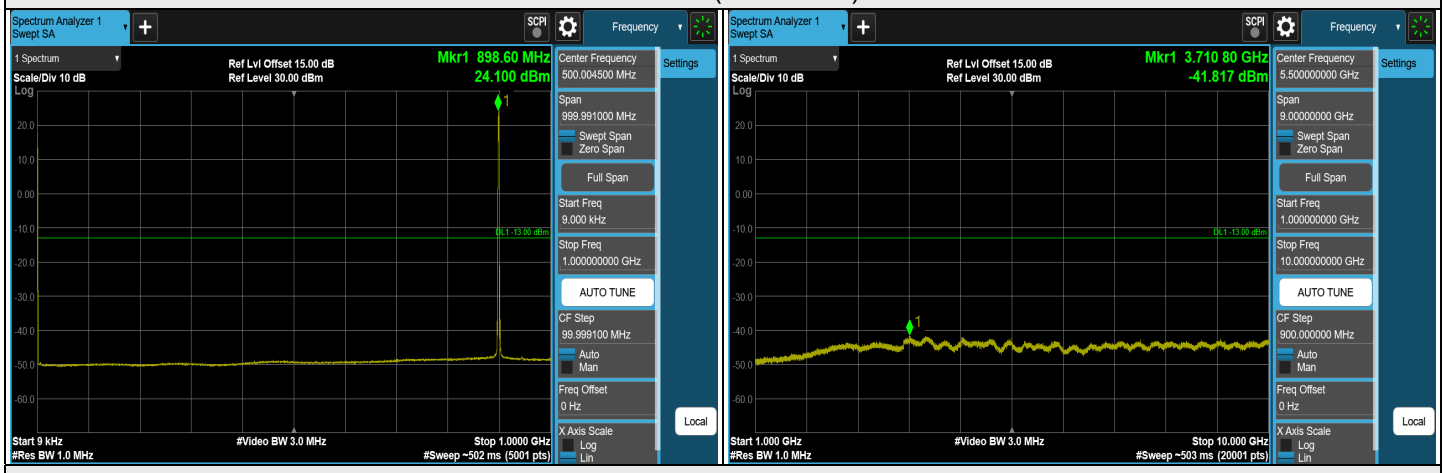
Input Power:	3.85 Vdc	Environmental Conditions:	24°C, 68% RH	Tested By:	Noah Chang

7.5.1 LTE Band 8

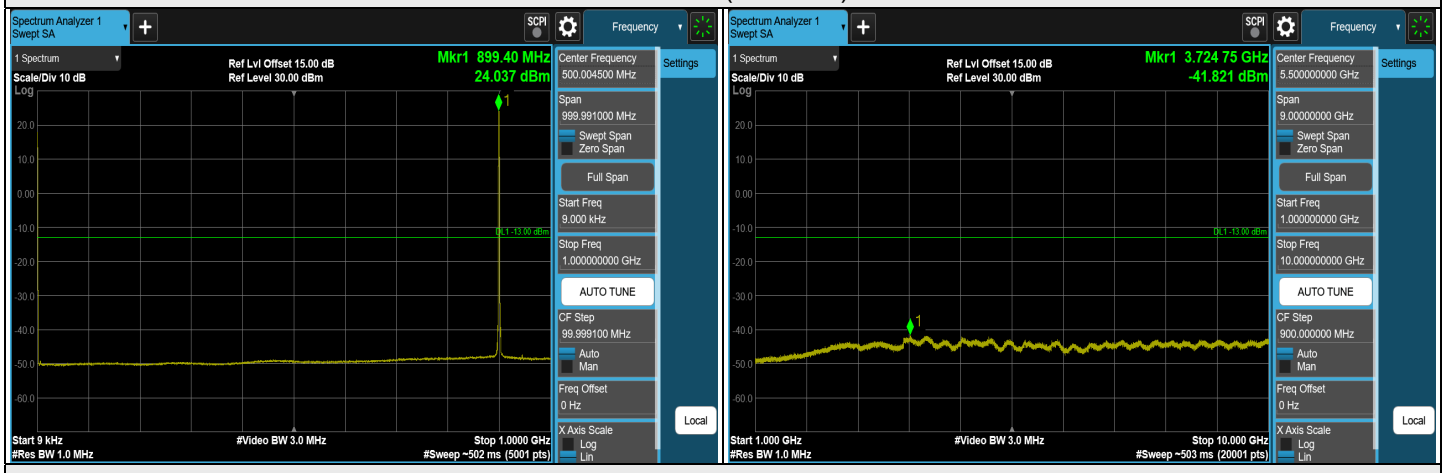
LTE Band 8, Channel Bandwidth: 1.4 MHz



CH 21632 (898.2 MHz)



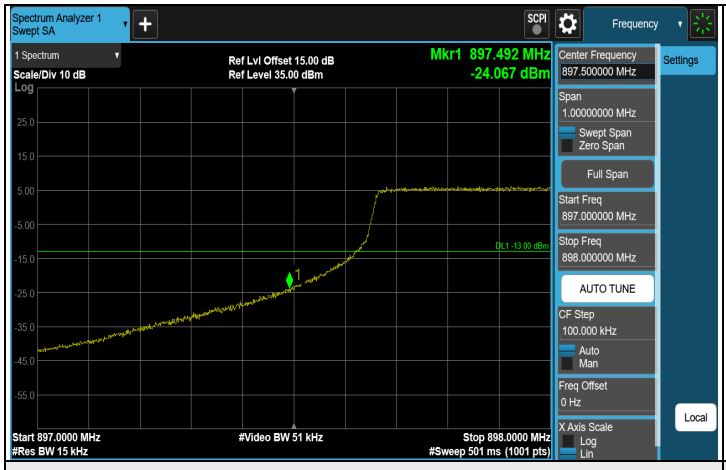
CH 21640 (899 MHz)



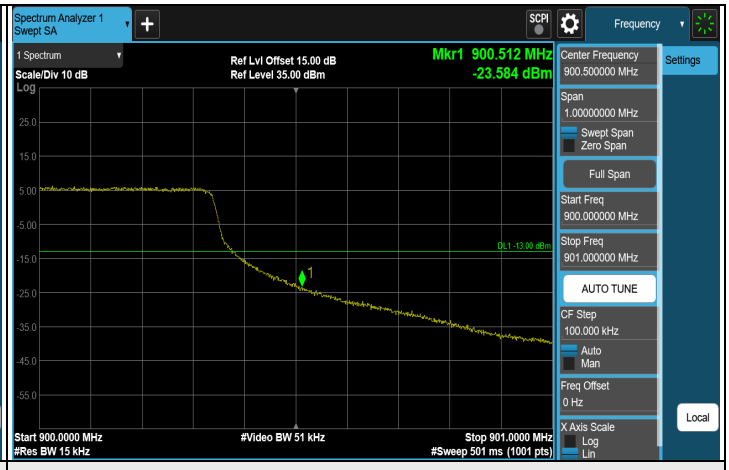
CH 21648 (899.8 MHz)

Note: The signal at 9 kHz is IF signal from spectrum analyzer.

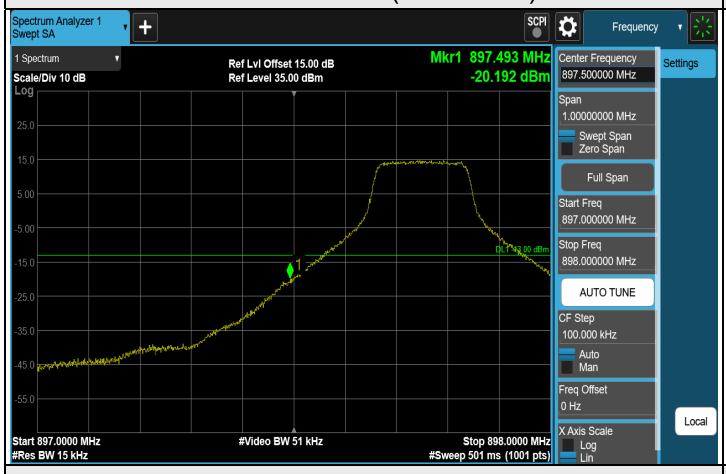
LTE Band 8, Channel Bandwidth: 1.4 MHz



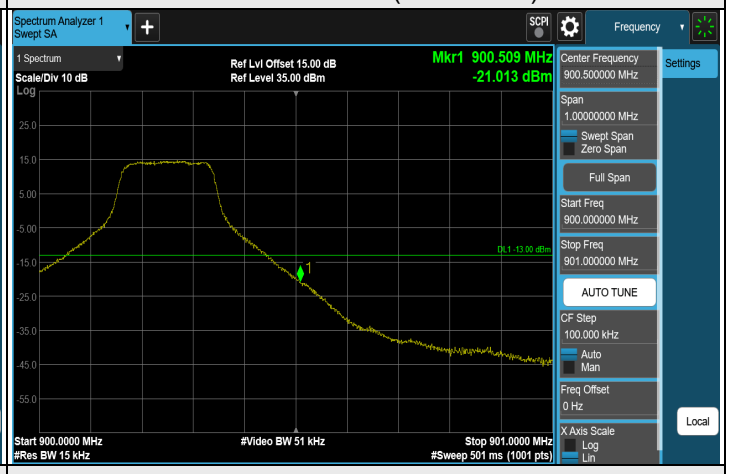
FULL CH 21632 (898.2 MHz)



FULL CH 21648 (899.8 MHz)

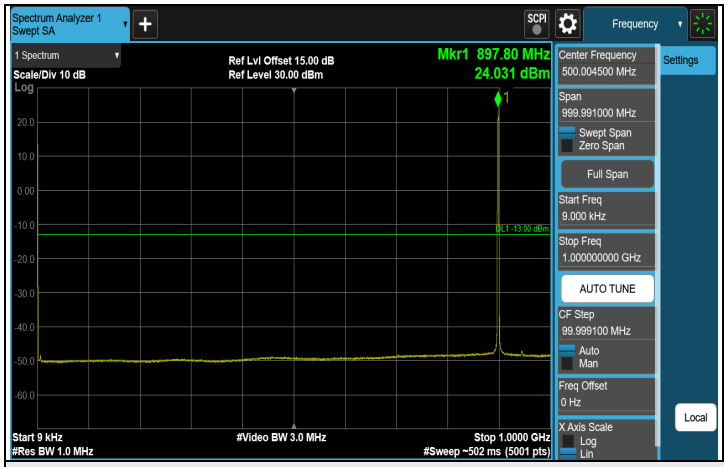


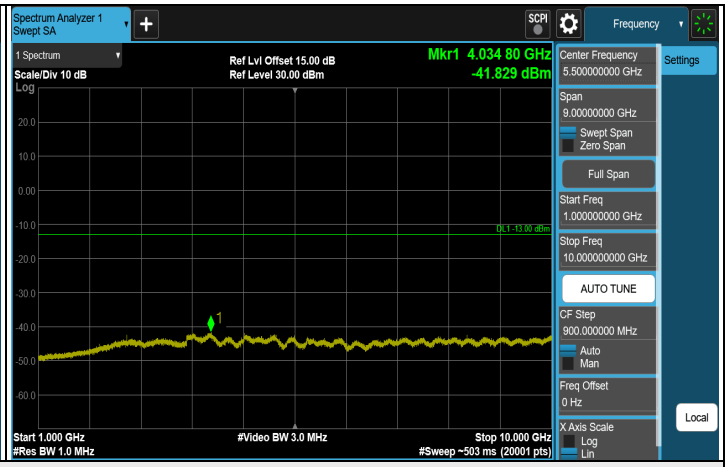
1RB CH 21632 (898.2 MHz)



1RB CH 21648 (899.8 MHz)

LTE Band 8, Channel Bandwidth: 3 MHz



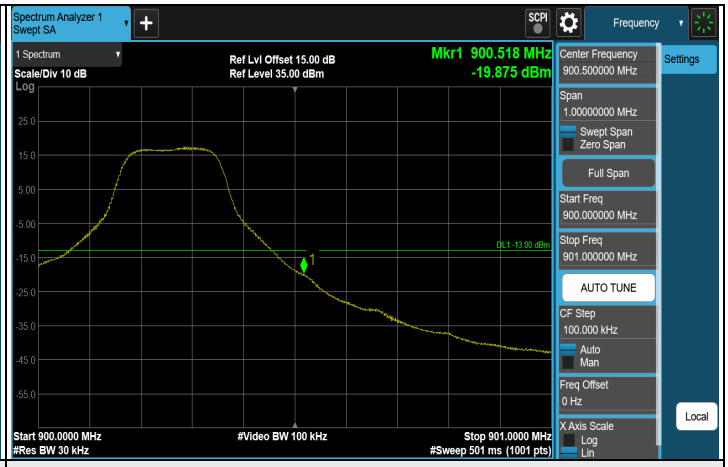


CH 21640 (899 MHz)

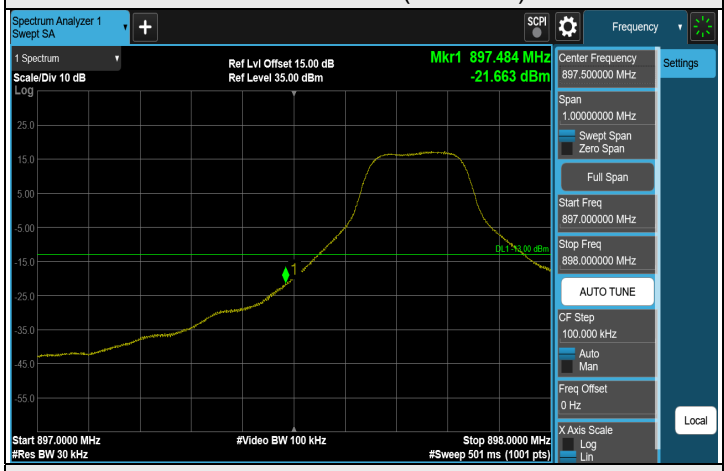
Note: The signal at 9 kHz is IF signal from spectrum analyzer.

LTE Band 8, Channel Bandwidth: 3 MHz

FULL CH 21640 (899 MHz)



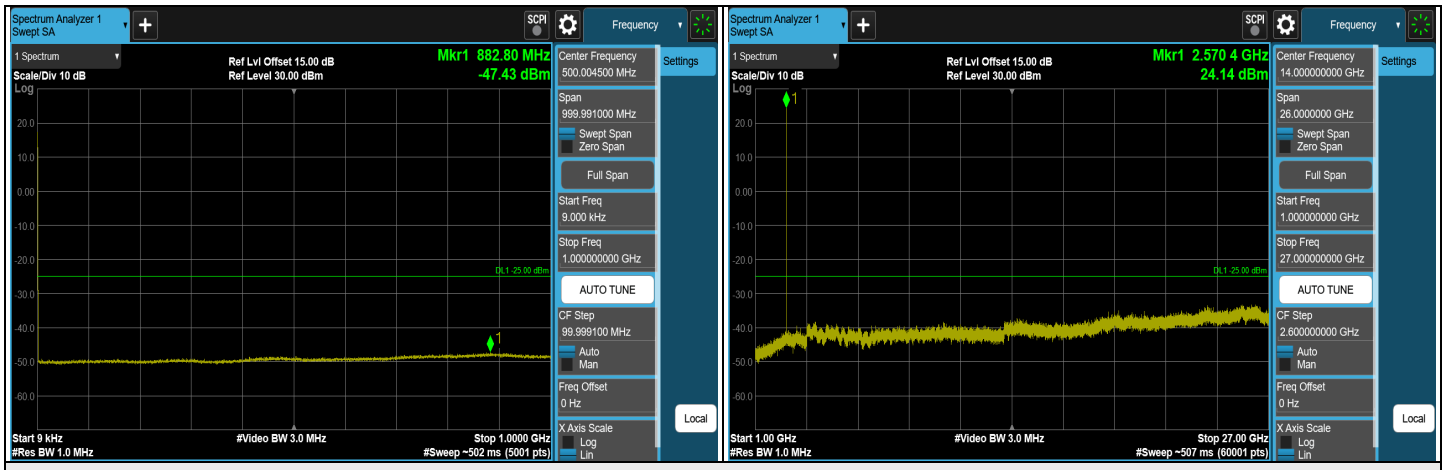
1RB#MAX CH 21640 (899 MHz)



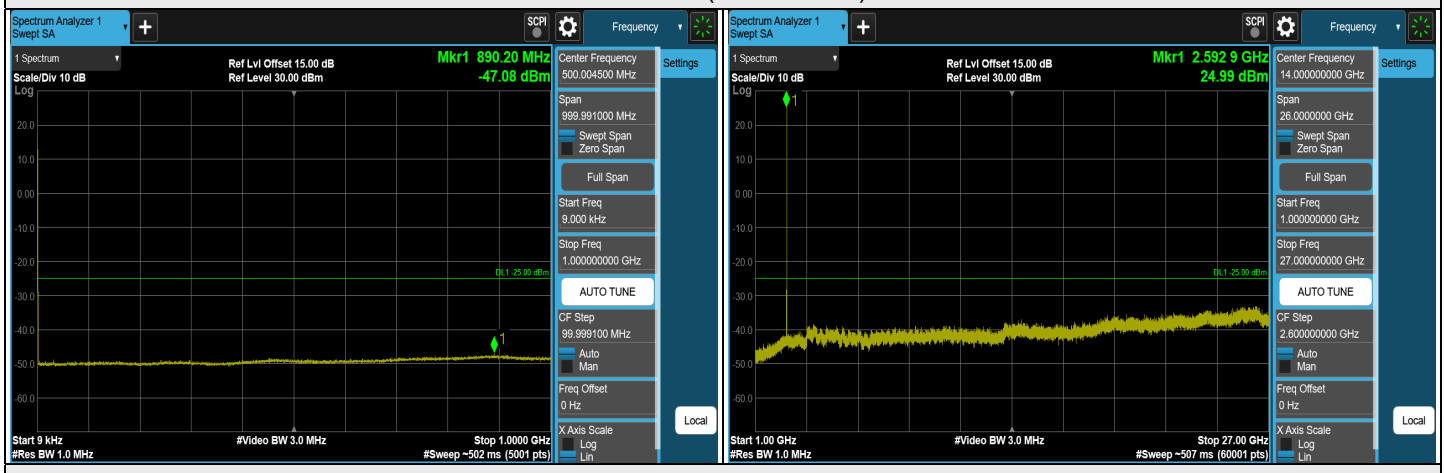
1RB#0 CH 21640 (899 MHz)

7.5.2 LTE Band 38

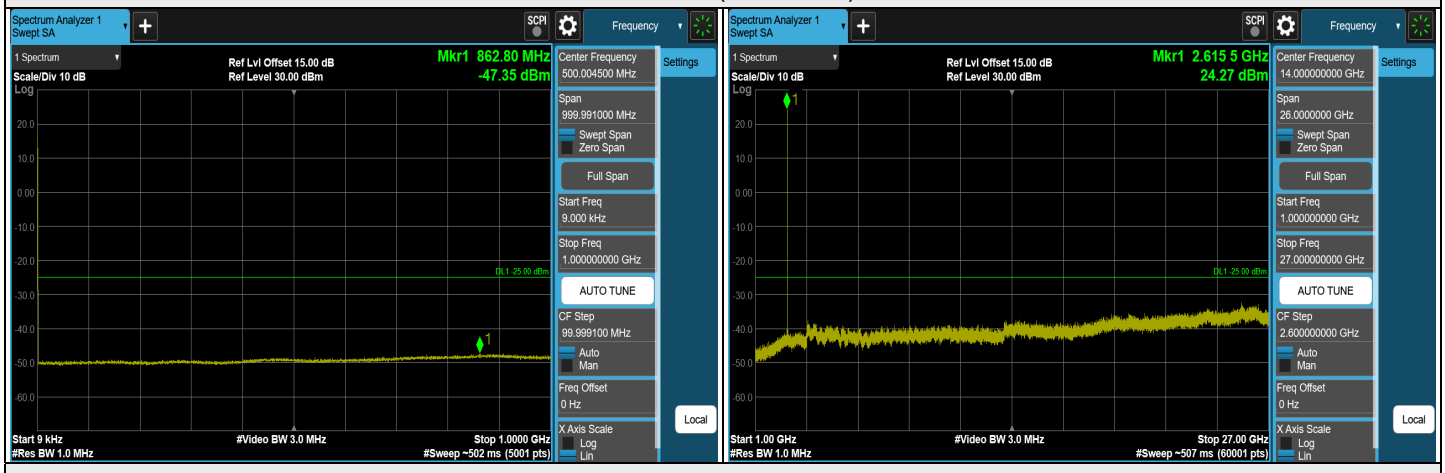
LTE Band 38, Channel Bandwidth: 5 MHz



CH 37775 (2572.5 MHz)



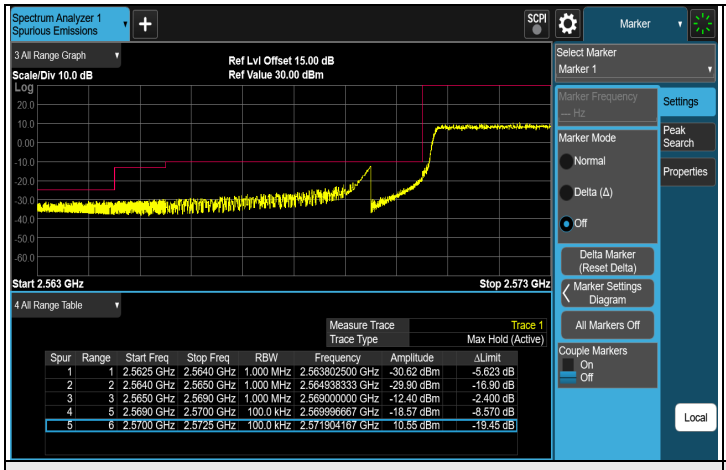
CH 38000 (2595 MHz)



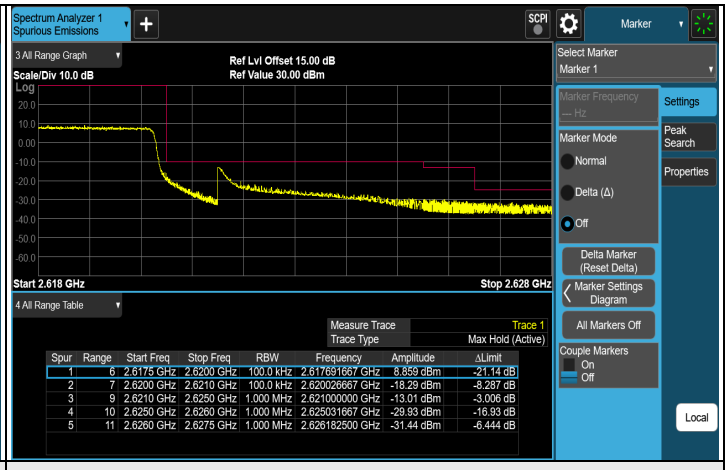
CH 38225 (2617.5 MHz)

Note: The signal at 9 kHz is IF signal from spectrum analyzer.

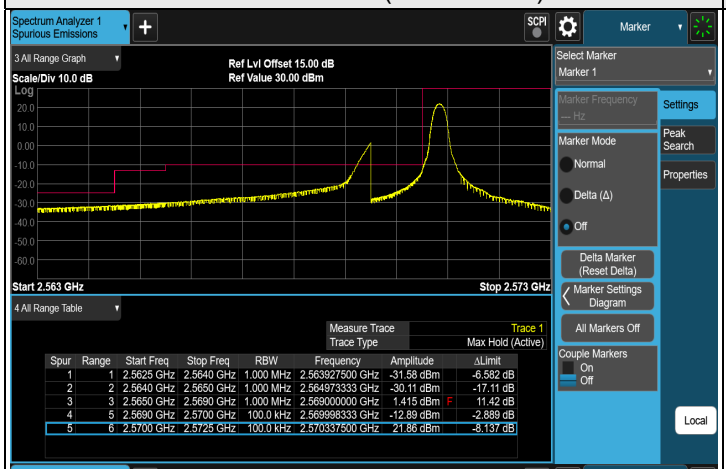
LTE Band 38, Channel Bandwidth: 5 MHz

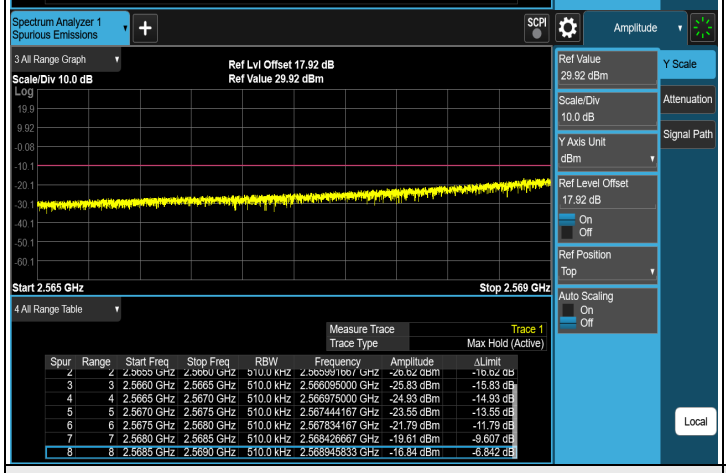


FULL CH 37775 (2572.5 MHz)

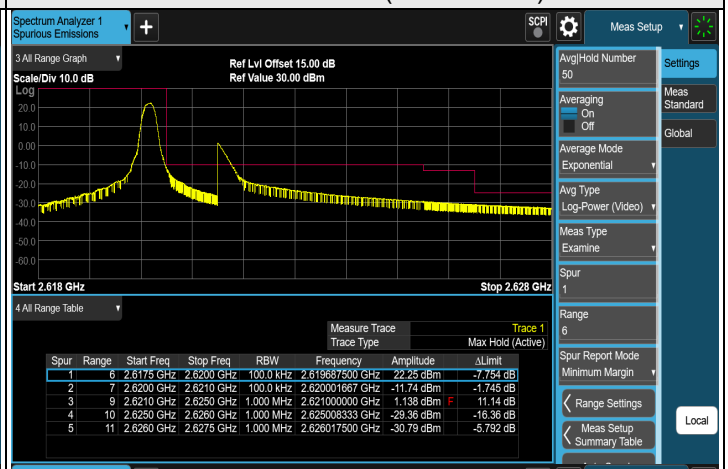


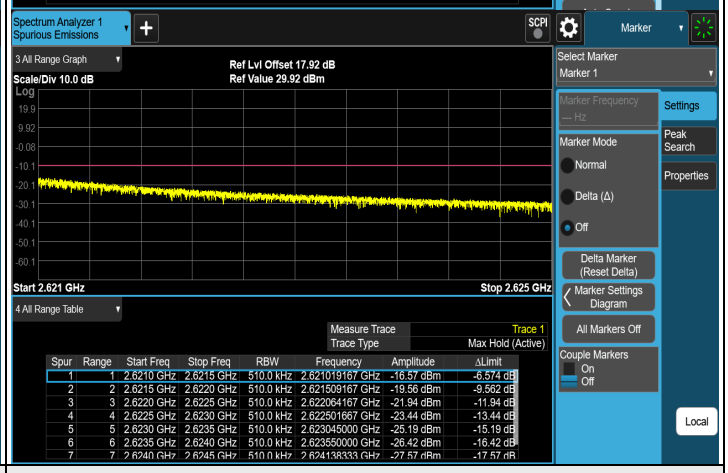
FULL CH 38225 (2617.5 MHz)



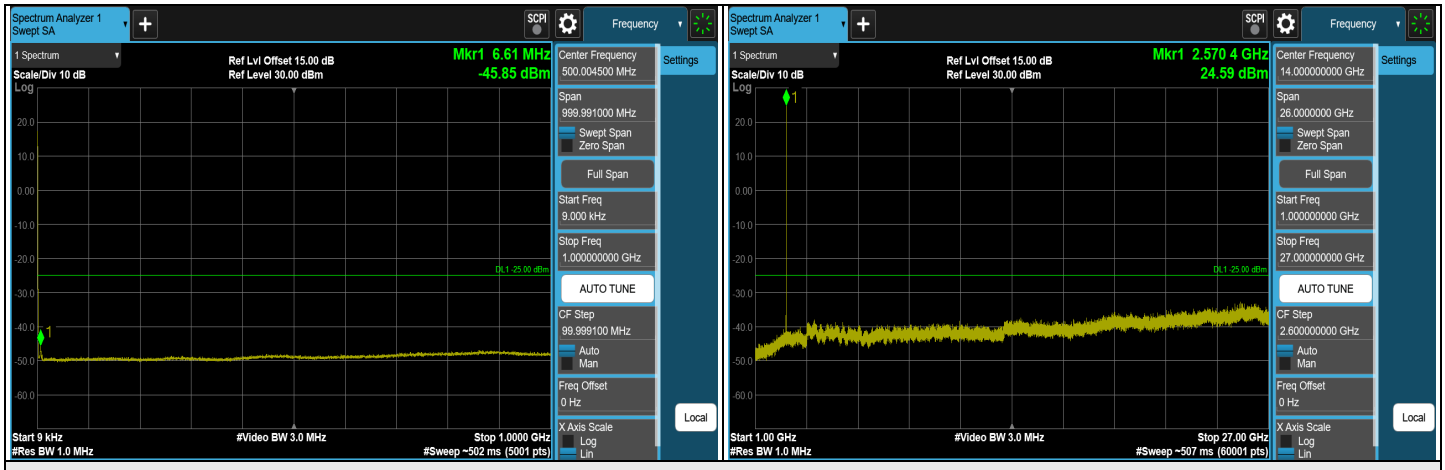


1RB CH 37775 (2572.5 MHz)

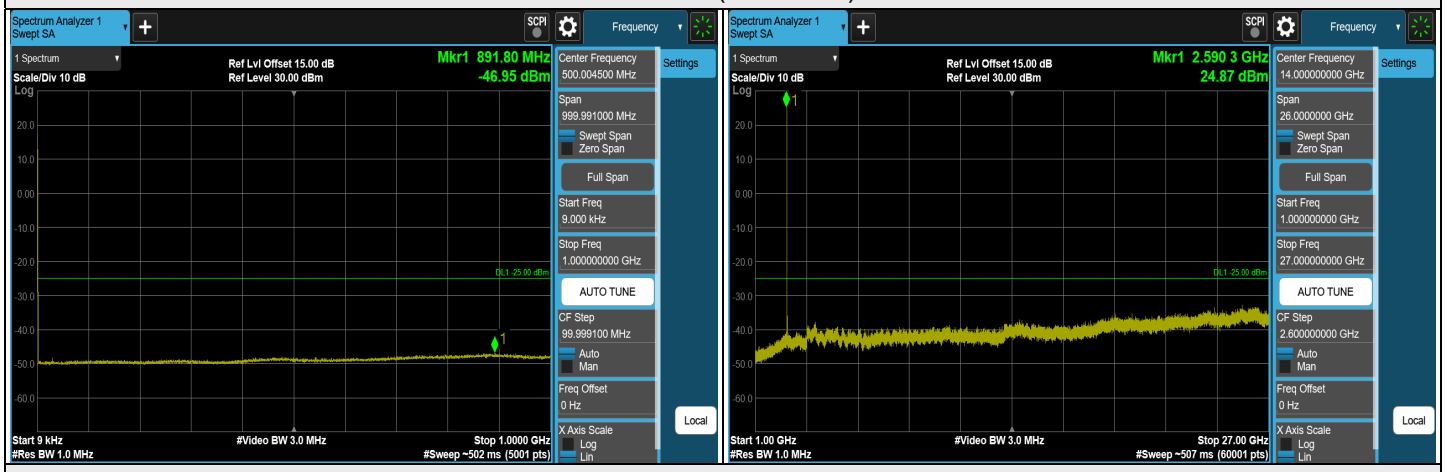




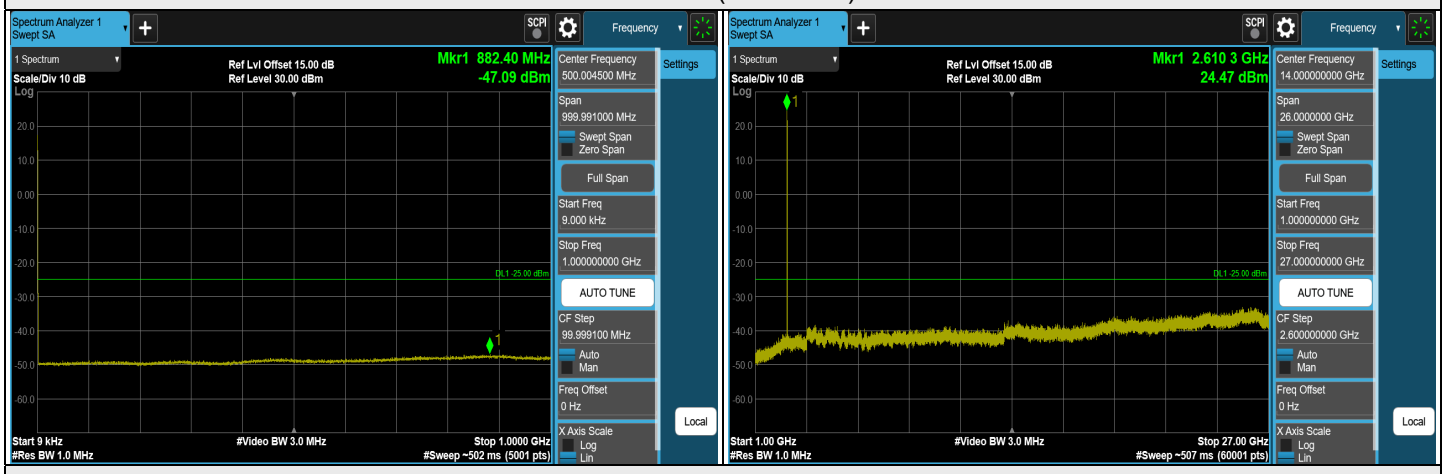
LTE Band 38, Channel Bandwidth: 10 MHz



CH 37800 (2575 MHz)



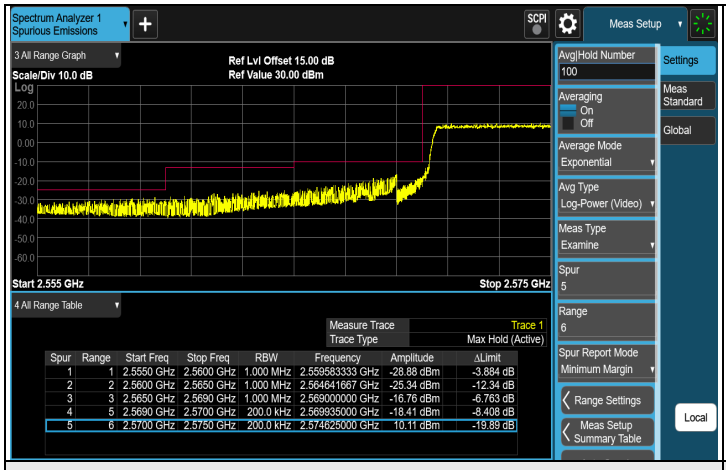
CH 38000 (2595 MHz)



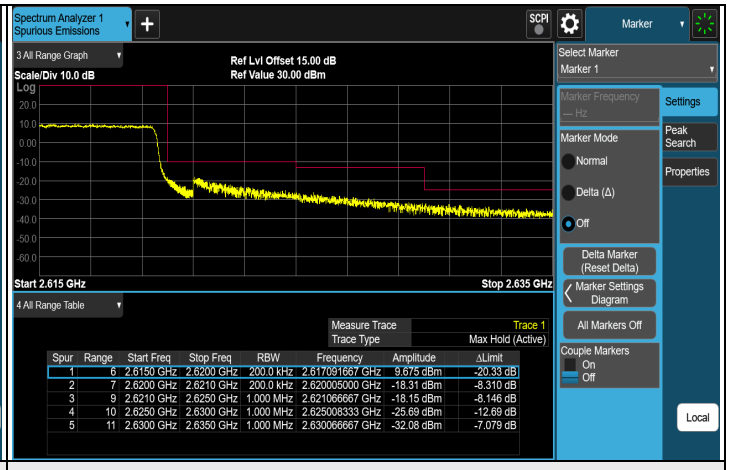
CH 38200 (2615 MHz)

Note: The signal at 9 kHz is IF signal from spectrum analyzer.

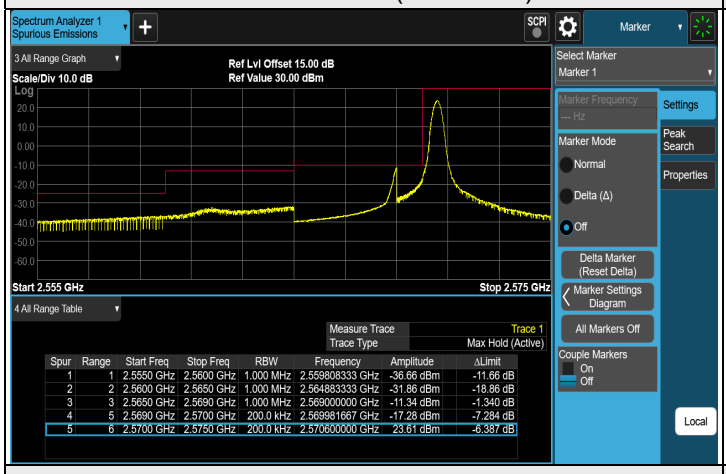
LTE Band 38, Channel Bandwidth: 10 MHz



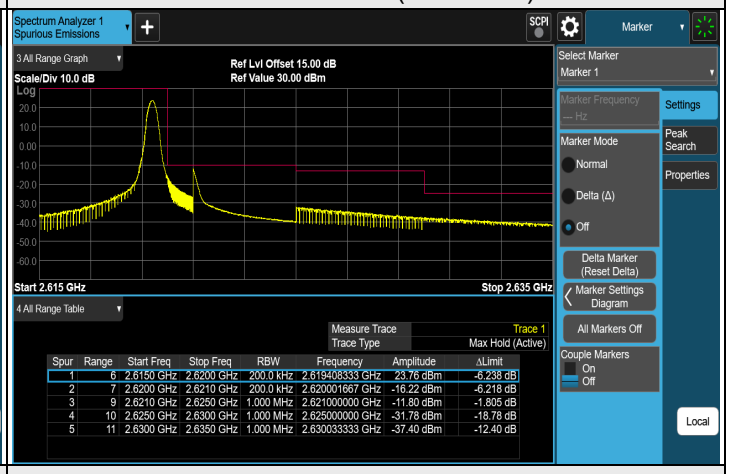
FULL CH 37800 (2575 MHz)



FULL CH 38200 (2615 MHz)



1RB CH 37800 (2575 MHz)



1RB CH 38200 (2615 MHz)