



# TEST REPORT

**APPLICANT** : LG Electronics USA, Inc.  
**PRODUCT NAME** : Smartphone  
**MODEL NAME** : LM-X440IM  
**BRAND NAME** : LG  
**FCC ID** : ZNFX440IM  
**STANDARD(S)** : 47 CFR Part 22, Subpart H  
: 47 CFR Part 27, Subpart D&M  
**RECEIPT DATE** : 2019-06-06  
**TEST DATE** : 2019-06-17 to 2019-08-07  
**ISSUE DATE** : 2019-08-13

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Peng Huarui ( Supervisor )

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<b>Change History</b>		
<b>Version</b>	<b>Date</b>	<b>Reason for change</b>
1.0	2019-08-13	First edition



# 1. Technical Information

**Note:** Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	LG Electronics USA, Inc.
<b>Applicant Address:</b>	1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
<b>Manufacturer:</b>	OPTIEMUS ELECTRONICS LIMITED .
<b>Manufacturer Address:</b>	D-348, Sector 63, Gautam Budh Nagar, Noida, Uttar Pradesh 201307 India

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Smartphone	
<b>Serial No:</b>	(N/A, marked #1 by test site)	
<b>Hardware Version:</b>	V0.10	
<b>Software Version:</b>	LG_IM-X440IM_Software	
<b>Modulation Type:</b>	QPSK, 16QAM, 64QAM	
<b>Operation Band:</b>	Band 5 / 40 / 41	
<b>Frequency Range:</b>	LTE Band 5	Tx: 824.7MHz -848.3MHz
		Rx: 869.7MHz – 893.3MHz
	LTE Band 40	Tx: 2307.5MHz – 2312.5MHz
		Rx: 2307.5MHz – 2312.5MHz
		Tx: 2352.5MHz – 2357.5MHz
		Rx: 2352.5MHz – 2357.5MHz
LTE Band 41	Tx:2555MHz-2655MHz	
	Rx:2555MHz-2655MHz	
<b>Channel Bandwidth</b>	LTE Band 5	1.4MHz, 3 MHz, 5 MHz, 10MHz
	LTE Band 40	5 MHz, 10MHz
	LTE Band 41	5 MHz, 10MHz, 15 MHz, 20MHz
<b>Emission Designator:</b>	1M10G7D (LTE Band 5, QPSK, BW 1.4MHz) 1M10W7D (LTE Band 5, 16QAM, BW 1.4MHz) 1M10D7W (LTE Band 5, 64QAM, BW 1.4MHz) 2M69G7D (LTE Band 5, QPSK, BW 3MHz) 2M69W7D (LTE Band 5, 16QAM, BW 3MHz)	



	2M69D7W (LTE Band 5, 64QAM, BW 3MHz) 4M50G7D (LTE Band 5, QPSK, BW 5MHz) 4M50W7D (LTE Band 5, 16QAM, BW 5MHz) 4M51D7W (LTE Band 5, 64QAM, BW 5MHz) 9M01G7D (LTE Band 5, QPSK, BW 10MHz) 8M98W7D (LTE Band 5, 16QAM, BW 10MHz) 8M97D7W (LTE Band 5, 64QAM, BW 10MHz) 4M51G7D (LTE Band 40, QPSK, BW 5MHz) 4M52W7D (LTE Band 40, 16QAM, BW 5MHz) 4M50D7W (LTE Band 40, 64QAM, BW 5MHz) 8M97G7D (LTE Band 40, QPSK, BW 10MHz) 8M99W7D (LTE Band 40, 16QAM, BW 10MHz) 8M98D7W (LTE Band 40, 64QAM, BW 10MHz) 4M49G7D (LTE Band 41, QPSK, BW 5MHz) 4M49W7D (LTE Band 41, 16QAM, BW 5MHz) 4M49D7W (LTE Band 41, 64QAM, BW 5MHz) 8M93G7D (LTE Band 41, QPSK, BW 10MHz) 8M93W7D (LTE Band 41, 16QAM, BW 10MHz) 8M92D7W (LTE Band 41, 64QAM, BW 10MHz) 13M47G7D (LTE Band 41, QPSK, BW 15MHz) 13M47W7D (LTE Band 41, 16QAM, BW 15MHz) 13M47D7W (LTE Band 41, 64QAM, BW 15MHz) 17M91G7D (LTE Band 41, QPSK, BW 20MHz) 17M91W7D (LTE Band 41, 16QAM, BW 20MHz) 17M90D7W (LTE Band 41, 64QAM, BW 20MHz)	
<b>Antenna Type:</b>	Fixed Internal	
<b>Antenna Gain:</b>	LTE Band 5	-1.50 dBi
	LTE Band 40	-1.00 dBi
	LTE Band 41	-0.50 dBi
<b>Accessory Information:</b>	Battery	
	Brand Name:	LG
	Model No.:	LG4000STCL02
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	3900mAh
	Rated Voltage:	3.85
	Charge Limit:	4.4V
	AC Adapter Type1	
	Brand Name:	N/A



	Model No.:	TN-050200U4
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	100-240V~50/60Hz 0.35A
	Rated Output:	5V= 2A
	AC Adapter Type2	
	Brand Name:	N/A
	Model No.:	LG2AUKPA-1
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	100-240V~50/60Hz 0.35A
	Rated Output:	5V= 2A

**Note 1:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



### 1.3. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24 and Part 27 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 27	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result
2.1046, 22.913(a)(2), 27.50(c)(10) 27.50(d)(4), 27.50(h)(2)	Transmitter Conducted Output Power and ERP/EIRP	July16, 2019 July16, 2019	Gao Mingzhou Peng Xuwei	PASS
2.1049	Occupied Bandwidth	Jun17, 2019 Jun24, 2019 Aug7,2019	Gao Mingzhou	PASS
2.1055, 22.355, 27.54	Frequency Stability	May05, 2019	Gao Mingzhou	PASS
27.50(d)(5)	Peak to Average Ratio	Jun17, 2019 Jun21, 2019 Jun24, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 27.53(g)(h)(m)(4)	Conducted Spurious Emissions	Jun17, 2019 Jun21, 2019 Aug07, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 27.53(g)(h)(m)(4)	Band Edge	Jun17, 2019 Jun21, 2019 Aug07, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 27.53(g)(h)(m)(4)	Radiated Spurious Emissions	May05, 2019	Peng Xuwei	PASS

**Note 1:** The tests were performed according to the method of measurements prescribed in KDB 971168 D01 V03R01 (Oct 27, 2017) and ANSI/TIA-603-E-2016.

**Note 2:** The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 26.5dB contains two parts that cable loss 16.5dB and Attenuator 10dB.



## 1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

## 2.47 CFR Part 2, Part 22H and 27H&L&M Requirements

### 2.1. Transmitter Conducted Output Power And ERP/EIPR

#### 2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 24.232 (c) for LTE Band 2/25, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

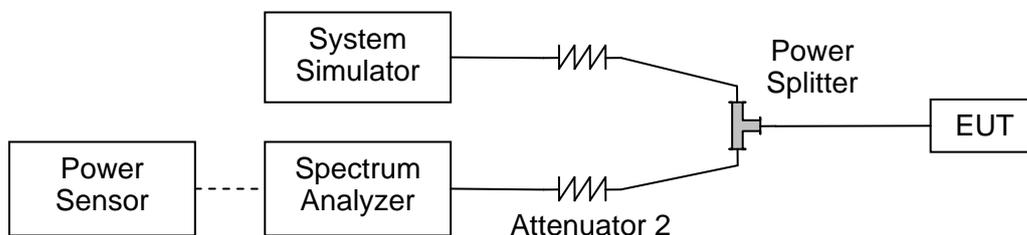
According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

According to FCC section 22.913 (a.2) for LTE Band 5/26, the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (h) for LTE Band 7/41, Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to FCC section 27.50 (c) for LTE Band 12/17, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

#### 2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path



loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

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

$ERP \text{ (dBm)} = EIRP \text{ (dBm)} - 2.15$

### 2.1.4. Result



**Transmitter Conducted Output Power**

<b>LTE Band5</b>						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	23.65	23.78	23.55
10	QPSK	1	25	24.07	23.89	23.70
10	QPSK	1	49	23.65	23.57	23.56
10	QPSK	25	0	22.69	22.77	22.79
10	QPSK	25	12	22.74	22.79	22.75
10	QPSK	25	25	22.86	22.82	22.76
10	QPSK	50	0	22.83	22.64	22.76
10	16QAM	1	0	22.86	22.96	23.09
10	16QAM	1	25	22.75	23.11	23.28
10	16QAM	1	49	22.86	23.15	22.86
10	16QAM	25	0	21.68	21.67	21.73
10	16QAM	25	12	21.68	21.87	21.78
10	16QAM	25	25	21.88	21.82	21.62
10	16QAM	50	0	21.86	21.68	21.78
10	64QAM	1	0	21.73	21.64	21.76
10	64QAM	1	25	21.77	21.64	21.74
10	64QAM	1	49	21.65	21.77	21.62
10	64QAM	25	0	21.12	21.16	21.17
10	64QAM	25	12	21.15	21.14	21.11
10	64QAM	25	25	21.12	21.18	21.15
10	64QAM	50	0	21.19	21.16	21.13
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.56	23.57	23.59
5	QPSK	1	12	24.05	23.93	23.83
5	QPSK	1	24	23.69	23.59	23.65
5	QPSK	12	0	22.82	22.68	22.75
5	QPSK	12	7	22.81	22.75	22.82
5	QPSK	12	13	22.87	22.76	22.76



5	QPSK	25	0	22.81	22.79	22.77
5	16QAM	1	0	22.82	23.03	22.67
5	16QAM	1	12	23.22	23.15	22.84
5	16QAM	1	24	22.86	22.90	22.64
5	16QAM	12	0	21.69	21.69	21.66
5	16QAM	12	7	21.87	21.74	21.85
5	16QAM	12	13	21.89	21.63	21.76
5	16QAM	25	0	21.71	21.71	21.78
5	64QAM	1	0	21.71	21.77	21.77
5	64QAM	1	12	21.75	21.75	21.64
5	64QAM	1	24	21.60	21.62	21.78
5	64QAM	12	0	21.14	21.15	21.11
5	64QAM	12	7	21.19	21.15	21.15
5	64QAM	12	13	21.13	21.12	21.10
5	64QAM	25	0	21.18	21.14	21.17

LTE Band5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	23.61	23.73	23.75
3	QPSK	1	8	23.62	23.65	23.66
3	QPSK	1	14	23.70	23.73	23.67
3	QPSK	8	0	22.71	22.66	22.77
3	QPSK	8	4	22.86	22.73	22.77
3	QPSK	8	7	22.68	22.63	22.69
3	QPSK	15	0	22.69	22.66	22.77
3	16QAM	1	0	22.75	22.71	22.84
3	16QAM	1	8	22.63	23.03	22.60
3	16QAM	1	14	22.60	22.68	22.81
3	16QAM	8	0	21.81	21.86	21.78
3	16QAM	8	4	21.79	21.77	21.87
3	16QAM	8	7	21.75	21.83	21.92
3	16QAM	15	0	21.86	21.75	21.81



3	64QAM	1	0	21.68	21.64	21.65
3	64QAM	1	8	21.69	21.65	21.69
3	64QAM	1	14	21.78	21.79	21.68
3	64QAM	8	0	21.17	21.15	21.13
3	64QAM	8	4	21.15	21.16	21.16
3	64QAM	8	7	21.18	21.12	21.17
3	64QAM	15	0	21.11	21.12	21.15
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	23.74	23.63	23.69
1.4	QPSK	1	3	23.74	23.96	23.81
1.4	QPSK	1	5	23.78	23.75	23.69
1.4	QPSK	3	0	23.78	23.86	23.79
1.4	QPSK	3	1	23.86	23.82	23.69
1.4	QPSK	3	3	23.76	23.71	23.82
1.4	QPSK	6	0	22.75	22.81	22.73
1.4	16QAM	1	0	23.11	22.52	22.79
1.4	16QAM	1	3	23.17	22.98	23.13
1.4	16QAM	1	5	22.94	23.09	22.85
1.4	16QAM	3	0	22.88	22.70	22.76
1.4	16QAM	3	1	22.93	22.88	22.65
1.4	16QAM	3	3	22.84	22.58	22.69
1.4	16QAM	6	0	21.88	21.91	21.92
1.4	64QAM	1	0	21.77	21.72	21.69
1.4	64QAM	1	3	21.74	21.61	21.73
1.4	64QAM	1	5	21.77	21.66	21.77
1.4	64QAM	3	0	21.19	21.19	21.12
1.4	64QAM	3	1	21.20	21.19	21.19
1.4	64QAM	3	3	21.11	21.11	21.19
1.4	64QAM	6	0	21.19	21.16	21.17

LTE Band 40 (2305MHz ~ 2315MHz)						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	38750	/
Frequency (MHz)				/	2310	/
10	QPSK	1	0	/	23.12	/



10	QPSK	1	25	/	23.01	/
10	QPSK	1	49	/	22.99	/
10	QPSK	25	0	/	22.07	/
10	QPSK	25	12	/	22.17	/
10	QPSK	25	25	/	22.02	/
10	QPSK	50	0	/	22.09	/
10	16QAM	1	0	/	22.44	/
10	16QAM	1	25	/	22.42	/
10	16QAM	1	49	/	22.19	/
10	16QAM	25	0	/	21.27	/
10	16QAM	25	12	/	21.22	/
10	16QAM	25	25	/	21.26	/
10	16QAM	50	0	/	21.15	/
10	64QAM	1	0	/	21.18	/
10	64QAM	1	25	/	21.21	/
10	64QAM	1	49	/	21.16	/
10	64QAM	25	0	/	20.13	/
10	64QAM	25	12	/	20.20	/
10	64QAM	25	25	/	20.19	/
10	64QAM	50	0	/	20.20	/

LTE Band 40 (2305MHz ~ 2315MHz)						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				38725	38750	38775
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	22.96	22.83	22.96
5	QPSK	1	12	23.03	23.04	23.03
5	QPSK	1	24	22.85	22.83	22.87
5	QPSK	12	0	22.07	22.09	22.06
5	QPSK	12	7	22.09	22.15	22.08
5	QPSK	12	13	22.05	22.03	22.06
5	QPSK	25	0	22.08	22.04	22.12
5	16QAM	1	0	22.31	22.27	22.28
5	16QAM	1	12	22.38	22.37	22.33
5	16QAM	1	24	22.23	22.16	22.22



5	16QAM	12	0	21.12	21.10	21.17
5	16QAM	12	7	21.24	21.21	21.17
5	16QAM	12	13	21.23	21.17	21.20
5	16QAM	25	0	21.21	21.17	21.22
5	64QAM	1	0	21.15	21.18	21.12
5	64QAM	1	12	21.19	21.14	21.14
5	64QAM	1	24	21.17	21.12	21.18
5	64QAM	12	0	20.19	20.15	20.12
5	64QAM	12	7	20.12	20.15	20.10
5	64QAM	12	13	20.15	20.18	20.14
5	64QAM	25	0	20.11	20.15	20.18

LTE Band 40 (2350MHz ~ 2360MHz)						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	39200	/
Frequency (MHz)				/	2355	/
10	QPSK	1	0	/	23.25	/
10	QPSK	1	25	/	23.21	/
10	QPSK	1	49	/	23.32	/
10	QPSK	25	0	/	22.14	/
10	QPSK	25	12	/	22.11	/
10	QPSK	25	25	/	22.11	/
10	QPSK	50	0	/	22.12	/
10	16QAM	1	0	/	22.51	/
10	16QAM	1	25	/	22.49	/
10	16QAM	1	49	/	22.47	/
10	16QAM	25	0	/	21.34	/
10	16QAM	25	12	/	21.30	/
10	16QAM	25	25	/	21.22	/
10	16QAM	50	0	/	21.26	/
10	64QAM	1	0	/	21.17	/
10	64QAM	1	25	/	21.21	/
10	64QAM	1	49	/	21.13	/
10	64QAM	25	0	/	20.26	/
10	64QAM	25	12	/	20.30	/



10	64QAM	25	25	/	20.20	/
10	64QAM	50	0	/	20.39	/

LTE Band 40 (2350MHz ~ 2360MHz)						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				39175	39200	39225
Frequency (MHz)				2352.5	2355	2357.5
5	QPSK	1	0	23.12	23.04	23.01
5	QPSK	1	12	23.10	23.05	23.03
5	QPSK	1	24	23.00	22.92	22.97
5	QPSK	12	0	22.17	22.16	22.13
5	QPSK	12	7	22.18	22.16	22.18
5	QPSK	12	13	22.12	22.11	22.11
5	QPSK	25	0	22.18	22.19	22.16
5	16QAM	1	0	22.35	22.39	22.24
5	16QAM	1	12	22.40	22.43	22.74
5	16QAM	1	24	22.40	22.22	22.19
5	16QAM	12	0	21.25	21.25	21.24
5	16QAM	12	7	21.24	21.22	21.27
5	16QAM	12	13	21.21	21.15	21.22
5	16QAM	25	0	21.31	21.32	21.26
5	64QAM	1	0	21.16	21.18	21.20
5	64QAM	1	12	21.10	21.10	21.13
5	64QAM	1	24	21.14	21.12	21.15
5	64QAM	12	0	20.35	20.33	20.34
5	64QAM	12	7	20.11	20.13	20.13
5	64QAM	12	13	20.20	20.19	20.12
5	64QAM	25	0	20.13	20.15	20.10

LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.



Channel				40340	40740	41140
Frequency (MHz)				2565	2605	2645
20	QPSK	1	0	21.76	21.76	21.66
20	QPSK	1	49	22.09	22.10	22.03
20	QPSK	1	99	21.61	21.58	21.54
20	QPSK	50	0	21.18	21.15	21.17
20	QPSK	50	24	21.11	21.19	21.04
20	QPSK	50	50	21.16	21.09	20.96
20	QPSK	100	0	21.15	21.15	21.07
20	16QAM	1	0	21.14	21.16	21.13
20	16QAM	1	49	21.40	21.40	21.30
20	16QAM	1	99	21.06	20.95	20.88
20	16QAM	50	0	20.27	20.18	20.26
20	16QAM	50	24	20.23	20.17	20.15
20	16QAM	50	50	20.23	20.12	19.91
20	16QAM	100	0	20.13	20.19	20.10
20	64QAM	1	0	20.15	20.10	20.11
20	64QAM	1	49	20.20	20.15	20.13
20	64QAM	1	99	20.19	20.19	20.19
20	64QAM	50	0	19.14	19.20	19.46
20	64QAM	50	24	19.18	19.15	19.18
20	64QAM	50	50	19.15	19.19	19.20
20	64QAM	100	0	19.19	19.20	19.15

LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40315	40740	41165
Frequency (MHz)				2562.5	2605	2647.5
15	QPSK	1	0	21.74	21.94	21.91
15	QPSK	1	37	22.03	22.02	21.99
15	QPSK	1	74	21.94	21.93	21.79
15	QPSK	36	0	21.17	21.13	21.15
15	QPSK	36	20	21.02	21.15	21.12
15	QPSK	36	39	21.09	21.18	21.00
15	QPSK	75	0	21.07	21.13	21.00



15	16QAM	1	0	21.26	21.35	21.12
15	16QAM	1	37	21.36	21.40	21.30
15	16QAM	1	74	21.20	21.23	21.04
15	16QAM	36	0	20.06	20.10	20.16
15	16QAM	36	20	20.14	20.04	19.96
15	16QAM	36	39	20.08	20.06	20.00
15	16QAM	75	0	20.11	20.11	20.03
15	64QAM	1	0	20.11	20.15	20.17
15	64QAM	1	37	20.16	20.15	20.13
15	64QAM	1	74	20.14	20.12	20.12
15	64QAM	36	0	19.61	19.59	19.63
15	64QAM	36	20	19.65	19.67	19.64
15	64QAM	36	39	19.58	19.61	19.60
15	64QAM	75	0	19.57	19.69	19.62

LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40290	40740	41190
Frequency (MHz)				2550	2605	2650
10	QPSK	1	0	22.02	21.98	21.88
10	QPSK	1	25	22.03	22.05	22.03
10	QPSK	1	49	21.88	21.93	21.85
10	QPSK	25	0	21.17	21.16	21.11
10	QPSK	25	12	21.17	21.14	21.09
10	QPSK	25	25	21.03	21.14	21.07
10	QPSK	50	0	21.07	21.13	21.09
10	16QAM	1	0	21.37	21.46	21.33
10	16QAM	1	25	21.39	21.45	21.27
10	16QAM	1	49	21.38	21.39	21.22
10	16QAM	25	0	20.18	20.24	20.27
10	16QAM	25	12	20.16	20.17	20.14
10	16QAM	25	25	20.11	20.16	20.14
10	16QAM	50	0	20.14	20.20	20.13
10	64QAM	1	0	20.19	20.10	20.16
10	64QAM	1	25	20.11	20.19	20.12



10	64QAM	1	49	20.15	20.17	20.16
10	64QAM	25	0	19.59	19.56	19.60
10	64QAM	25	12	19.57	19.55	19.61
10	64QAM	25	25	19.50	19.58	19.65
10	64QAM	50	0	19.65	19.64	19.69

LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				40265	40740	41215
Frequency (MHz)				2557.5	2605	2652.5
5	QPSK	1	0	21.52	21.80	21.84
5	QPSK	1	12	21.89	22.01	21.94
5	QPSK	1	24	21.97	21.86	21.81
5	QPSK	12	0	21.05	21.09	21.05
5	QPSK	12	7	21.16	21.12	21.13
5	QPSK	12	13	21.10	21.12	21.05
5	QPSK	25	0	21.05	21.09	21.04
5	16QAM	1	0	21.19	21.24	21.12
5	16QAM	1	12	21.25	21.35	21.22
5	16QAM	1	24	21.31	21.23	21.07
5	16QAM	12	0	20.09	20.08	20.11
5	16QAM	12	7	20.15	20.20	20.13
5	16QAM	12	13	20.06	20.10	20.04
5	16QAM	25	0	20.13	20.10	20.15
5	64QAM	1	0	20.15	20.10	20.15
5	64QAM	1	12	20.10	20.20	20.18
5	64QAM	1	24	20.14	20.12	20.15
5	64QAM	12	0	19.60	19.60	19.60
5	64QAM	12	7	19.54	19.59	19.61
5	64QAM	12	13	19.57	19.65	19.60
5	64QAM	25	0	19.67	19.56	19.57



**Effective Radiated Power and Effective Isotropic Radiated Power**

LTE Band5				Measured ERP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	19.10	19.23	19.00
10	QPSK	1	25	19.52	19.34	19.15
10	QPSK	1	49	19.10	19.02	19.01
10	QPSK	25	0	18.14	18.22	18.24
10	QPSK	25	12	18.19	18.24	18.20
10	QPSK	25	25	18.31	18.27	18.21
10	QPSK	50	0	18.28	18.09	18.21
10	16QAM	1	0	18.31	18.41	18.54
10	16QAM	1	25	18.20	18.56	18.73
10	16QAM	1	49	18.31	18.60	18.31
10	16QAM	25	0	17.13	17.12	17.18
10	16QAM	25	12	17.13	17.32	17.23
10	16QAM	25	25	17.33	17.27	17.07
10	16QAM	50	0	17.31	17.13	17.23
10	64QAM	1	0	17.18	17.09	17.21
10	64QAM	1	25	17.22	17.09	17.19
10	64QAM	1	49	17.10	17.22	17.07
10	64QAM	25	0	16.57	16.61	16.62
10	64QAM	25	12	16.60	16.59	16.56
10	64QAM	25	25	16.57	16.63	16.60
10	64QAM	50	0	16.64	16.61	16.58
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	23.56	23.57	23.59
5	QPSK	1	12	24.05	23.93	23.83
5	QPSK	1	24	23.69	23.59	23.65
5	QPSK	12	0	22.82	22.68	22.75
5	QPSK	12	7	22.81	22.75	22.82
5	QPSK	12	13	22.87	22.76	22.76



5	QPSK	25	0	22.81	22.79	22.77
5	16QAM	1	0	22.82	23.03	22.67
5	16QAM	1	12	23.22	23.15	22.84
5	16QAM	1	24	22.86	22.90	22.64
5	16QAM	12	0	21.69	21.69	21.66
5	16QAM	12	7	21.87	21.74	21.85
5	16QAM	12	13	21.89	21.63	21.76
5	16QAM	25	0	21.71	21.71	21.78
5	64QAM	1	0	21.71	21.77	21.77
5	64QAM	1	12	21.75	21.75	21.64
5	64QAM	1	24	21.60	21.62	21.78
5	64QAM	12	0	21.14	21.15	21.11
5	64QAM	12	7	21.19	21.15	21.15
5	64QAM	12	13	21.13	21.12	21.10
5	64QAM	25	0	21.18	21.14	21.17

LTE Band5				Measured ERP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	19.06	19.18	19.20
3	QPSK	1	8	19.07	19.10	19.11
3	QPSK	1	14	19.15	19.18	19.12
3	QPSK	8	0	18.16	18.11	18.22
3	QPSK	8	4	18.31	18.18	18.22
3	QPSK	8	7	18.13	18.08	18.14
3	QPSK	15	0	18.14	18.11	18.22
3	16QAM	1	0	18.20	18.16	18.29
3	16QAM	1	8	18.08	18.48	18.05
3	16QAM	1	14	18.05	18.13	18.26
3	16QAM	8	0	17.26	17.31	17.23
3	16QAM	8	4	17.24	17.22	17.32
3	16QAM	8	7	17.20	17.28	17.37
3	16QAM	15	0	17.31	17.20	17.26
3	64QAM	1	0	17.13	17.09	17.10
3	64QAM	1	8	17.14	17.10	17.14
3	64QAM	1	14	17.23	17.24	17.13



3	64QAM	8	0	16.62	16.60	16.58
3	64QAM	8	4	16.60	16.61	16.61
3	64QAM	8	7	16.63	16.57	16.62
3	64QAM	15	0	16.56	16.57	16.60
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	19.19	19.08	19.14
1.4	QPSK	1	3	19.19	19.41	19.26
1.4	QPSK	1	5	19.23	19.20	19.14
1.4	QPSK	3	0	19.23	19.31	19.24
1.4	QPSK	3	1	19.31	19.27	19.14
1.4	QPSK	3	3	19.21	19.16	19.27
1.4	QPSK	6	0	18.20	18.26	18.18
1.4	16QAM	1	0	18.56	17.97	18.24
1.4	16QAM	1	3	18.62	18.43	18.58
1.4	16QAM	1	5	18.39	18.54	18.30
1.4	16QAM	3	0	18.33	18.15	18.21
1.4	16QAM	3	1	18.38	18.33	18.10
1.4	16QAM	3	3	18.29	18.03	18.14
1.4	16QAM	6	0	17.33	17.36	17.37
1.4	64QAM	1	0	17.22	17.17	17.14
1.4	64QAM	1	3	17.19	17.06	17.18
1.4	64QAM	1	5	17.22	17.11	17.22
1.4	64QAM	3	0	16.64	16.64	16.57
1.4	64QAM	3	1	16.65	16.64	16.64
1.4	64QAM	3	3	16.56	16.56	16.64
1.4	64QAM	6	0	16.64	16.61	16.62

LTE Band 40 Block A				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				/	38750	/
Frequency (MHz)				/	2310	/
10	QPSK	1	0	/	21.15	/
10	QPSK	1	25	/	21.11	/
10	QPSK	1	49	/	21.22	/



10	QPSK	25	0	/	20.04	/
10	QPSK	25	12	/	20.01	/
10	QPSK	25	25	/	20.01	/
10	QPSK	50	0	/	20.02	/
10	16QAM	1	0	/	20.41	/
10	16QAM	1	25	/	20.39	/
10	16QAM	1	49	/	20.37	/
10	16QAM	25	0	/	19.24	/
10	16QAM	25	12	/	19.20	/
10	16QAM	25	25	/	19.12	/
10	16QAM	50	0	/	19.16	/
10	64QAM	1	0	/	19.07	/
10	64QAM	1	25	/	19.11	/
10	64QAM	1	49	/	19.03	/
10	64QAM	25	0	/	18.16	/
10	64QAM	25	12	/	18.20	/
10	64QAM	25	25	/	18.10	/
10	64QAM	50	0	/	18.29	/

LTE Band 40 Block A				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				38725	38750	38775
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	21.02	20.94	20.91
5	QPSK	1	12	21.00	20.95	20.93
5	QPSK	1	24	20.90	20.82	20.87
5	QPSK	12	0	20.07	20.06	20.03
5	QPSK	12	7	20.08	20.06	20.08
5	QPSK	12	13	20.02	20.01	20.01
5	QPSK	25	0	20.08	20.09	20.06
5	16QAM	1	0	20.25	20.29	20.14
5	16QAM	1	12	20.30	20.33	20.64
5	16QAM	1	24	20.30	20.12	20.09
5	16QAM	12	0	19.15	19.15	19.14
5	16QAM	12	7	19.14	19.12	19.17
5	16QAM	12	13	19.11	19.05	19.12



5	16QAM	25	0	19.21	19.22	19.16
5	64QAM	1	0	19.06	19.08	19.10
5	64QAM	1	12	19.00	19.00	19.03
5	64QAM	1	24	19.04	19.02	19.05
5	64QAM	12	0	18.25	18.23	18.24
5	64QAM	12	7	18.01	18.03	18.03
5	64QAM	12	13	18.10	18.09	18.02
5	64QAM	25	0	18.03	18.05	18.00

LTE Band 40 Block B				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				/	39200	/
Frequency (MHz)				/	2355	/
10	QPSK	1	0	/	23.25	/
10	QPSK	1	25	/	23.21	/
10	QPSK	1	49	/	23.32	/
10	QPSK	25	0	/	22.14	/
10	QPSK	25	12	/	22.11	/
10	QPSK	25	25	/	22.11	/
10	QPSK	50	0	/	22.12	/
10	16QAM	1	0	/	22.51	/
10	16QAM	1	25	/	22.49	/
10	16QAM	1	49	/	22.47	/
10	16QAM	25	0	/	21.34	/
10	16QAM	25	12	/	21.30	/
10	16QAM	25	25	/	21.22	/
10	16QAM	50	0	/	21.26	/
10	64QAM	1	0	/	21.17	/
10	64QAM	1	25	/	21.21	/
10	64QAM	1	49	/	21.13	/
10	64QAM	25	0	/	20.26	/
10	64QAM	25	12	/	20.30	/
10	64QAM	25	25	/	20.20	/
10	64QAM	50	0	/	20.39	/



LTE Band 40 Block B				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				39175	39200	39225
Frequency (MHz)				2352.5	2355	2357.5
5	QPSK	1	0	23.12	23.04	23.01
5	QPSK	1	12	23.10	23.05	23.03
5	QPSK	1	24	23.00	22.92	22.97
5	QPSK	12	0	22.17	22.16	22.13
5	QPSK	12	7	22.18	22.16	22.18
5	QPSK	12	13	22.12	22.11	22.11
5	QPSK	25	0	22.18	22.19	22.16
5	16QAM	1	0	22.35	22.39	22.24
5	16QAM	1	12	22.40	22.43	22.74
5	16QAM	1	24	22.40	22.22	22.19
5	16QAM	12	0	21.25	21.25	21.24
5	16QAM	12	7	21.24	21.22	21.27
5	16QAM	12	13	21.21	21.15	21.22
5	16QAM	25	0	21.31	21.32	21.26
5	64QAM	1	0	21.16	21.18	21.20
5	64QAM	1	12	21.10	21.10	21.13
5	64QAM	1	24	21.14	21.12	21.15
5	64QAM	12	0	20.35	20.33	20.34
5	64QAM	12	7	20.11	20.13	20.13
5	64QAM	12	13	20.20	20.19	20.12
5	64QAM	25	0	20.13	20.15	20.10

LTE Band 41				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				39750	40620	41490
Frequency (MHz)				2506.0	2593.0	2680.0
20	QPSK	1	0	19.66	19.66	19.67
20	QPSK	1	49	19.99	20	19.96
20	QPSK	1	99	19.51	19.48	19.54
20	QPSK	50	0	19.08	19.05	19.04



20	QPSK	50	24	19.01	19.09	19
20	QPSK	50	50	19.06	18.99	18.98
20	QPSK	100	0	19.05	19.05	18.94
20	16QAM	1	0	19.04	19.06	18.93
20	16QAM	1	49	19.3	19.3	19.23
20	16QAM	1	99	18.96	18.85	18.87
20	16QAM	50	0	18.17	18.08	18
20	16QAM	50	24	18.13	18.07	17.95
20	16QAM	50	50	18.13	18.02	17.95
20	16QAM	100	0	18.03	18.09	17.96
20	64QAM	1	0	18.05	18	18.1
20	64QAM	1	49	18.1	18.05	18.07
20	64QAM	1	99	18.09	18.09	18.06
20	64QAM	50	0	17.04	17.1	17.2
20	64QAM	50	24	17.08	17.05	17.12
20	64QAM	50	50	17.05	17.09	17.05
20	64QAM	100	0	17.09	17.1	17.13

LTE Band 41				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				39725	40620	41515
Frequency (MHz)				2503.5	2593.0	2682.5
15	QPSK	1	0	19.64	19.84	19.82
15	QPSK	1	37	19.93	19.92	19.92
15	QPSK	1	74	19.84	19.83	19.73
15	QPSK	36	0	19.07	19.03	19.05
15	QPSK	36	20	18.92	19.05	18.99
15	QPSK	36	39	18.99	19.08	18.93
15	QPSK	75	0	18.97	19.03	18.98
15	16QAM	1	0	19.16	19.25	19.15
15	16QAM	1	37	19.26	19.3	19.21
15	16QAM	1	74	19.1	19.13	19.01
15	16QAM	36	0	17.96	18	17.97
15	16QAM	36	20	18.04	17.94	17.96
15	16QAM	36	39	17.98	17.96	17.92



15	16QAM	75	0	18.01	18.01	17.91
15	64QAM	1	0	18.01	18.05	18.02
15	64QAM	1	37	18.06	18.05	18.03
15	64QAM	1	74	18.04	18.02	18.09
15	64QAM	36	0	17.51	17.49	17.44
15	64QAM	36	20	17.55	17.57	17.51
15	64QAM	36	39	17.48	17.51	17.46
15	64QAM	75	0	17.47	17.59	17.41

LTE Band 41				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				39700	40620	41540
Frequency (MHz)				2501.0	2593.0	2685.0
10	QPSK	1	0	19.92	19.88	19.79
10	QPSK	1	25	19.93	19.95	19.89
10	QPSK	1	49	19.78	19.83	19.8
10	QPSK	25	0	19.07	19.06	19.02
10	QPSK	25	12	19.07	19.04	19.02
10	QPSK	25	25	18.93	19.04	19.03
10	QPSK	50	0	18.97	19.03	19.01
10	16QAM	1	0	19.27	19.36	19.22
10	16QAM	1	25	19.29	19.35	19.18
10	16QAM	1	49	19.28	19.29	19.08
10	16QAM	25	0	18.08	18.14	18.01
10	16QAM	25	12	18.06	18.07	17.99
10	16QAM	25	25	18.01	18.06	17.99
10	16QAM	50	0	18.04	18.1	18
10	64QAM	1	0	18.09	18	18.01
10	64QAM	1	25	18.01	18.09	18.05
10	64QAM	1	49	18.05	18.07	18.04
10	64QAM	25	0	17.49	17.46	17.46
10	64QAM	25	12	17.47	17.45	17.5
10	64QAM	25	25	17.4	17.48	17.47
10	64QAM	50	0	17.55	17.54	17.48



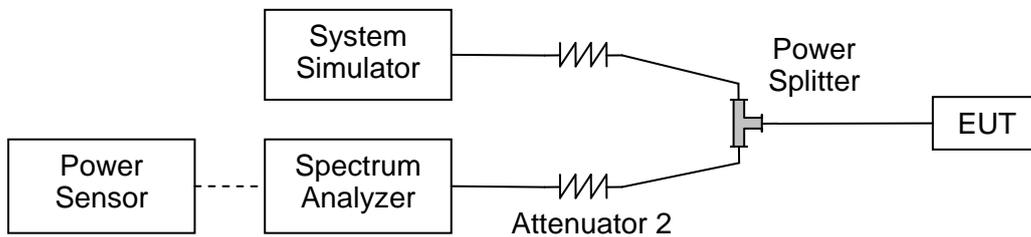
LTE Band 41				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				39675	40620	41565
Frequency (MHz)				2498.5	2593.0	2687.5
5	QPSK	1	0	19.42	19.7	19.74
5	QPSK	1	12	19.79	19.91	19.86
5	QPSK	1	24	19.87	19.76	19.65
5	QPSK	12	0	18.95	18.99	18.94
5	QPSK	12	7	19.06	19.02	18.98
5	QPSK	12	13	19	19.02	18.89
5	QPSK	25	0	18.95	18.99	18.89
5	16QAM	1	0	19.09	19.14	19.05
5	16QAM	1	12	19.15	19.25	19.18
5	16QAM	1	24	19.21	19.13	19.07
5	16QAM	12	0	17.99	17.98	18.03
5	16QAM	12	7	18.05	18.1	17.94
5	16QAM	12	13	17.96	18	17.98
5	16QAM	25	0	18.03	18	17.9
5	64QAM	1	0	18.05	18	18.06
5	64QAM	1	12	18	18.1	18.05
5	64QAM	1	24	18.04	18.02	18.07
5	64QAM	12	0	17.5	17.5	17.48
5	64QAM	12	7	17.44	17.49	17.5
5	64QAM	12	13	17.47	17.55	17.49
5	64QAM	25	0	17.57	17.46	17.42

## 2.2. Occupied Bandwidth

### 2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth 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 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

### 2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

### 2.2.4. Test Result

LTE Band 5, BW: 1.4MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20407	824.7	1.09	1.26	1.10	1.29	1.09	1.27
20525	836.5	1.09	1.27	1.10	1.30	1.10	1.29
20643	848.3	1.10	1.28	1.10	1.30	1.09	1.3

LTE Band 5, BW: 3MHz							
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Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20415	825.5	2.69	2.92	2.69	2.93	2.69	2.93
20525	836.5	2.69	2.92	2.69	2.93	2.69	2.93
20635	847.5	2.69	2.92	2.69	2.92	2.69	2.92

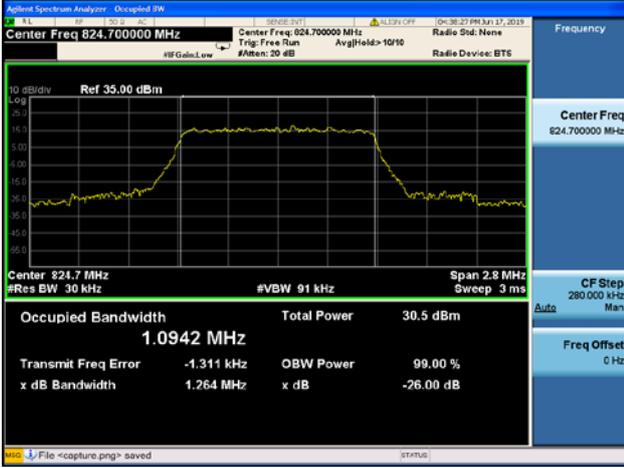
LTE Band 5, BW: 5MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20425	826.5	4.50	4.96	4.50	4.89	4.51	4.92
20525	836.5	4.49	4.93	4.50	4.90	4.50	4.93
20625	846.5	4.50	4.95	4.50	4.93	4.50	4.93

LTE Band 5, BW: 10MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
20450	829.0	9.01	9.73	8.98	9.71	8.96	9.69
20525	836.5	9.01	9.76	8.97	9.68	8.96	9.70
20600	844.0	9.00	9.70	8.96	9.72	8.97	9.74

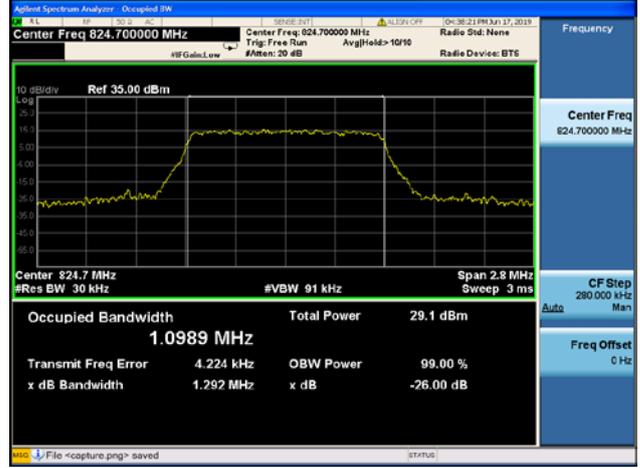


LTE Band 5 99%&26dB Bandwidth

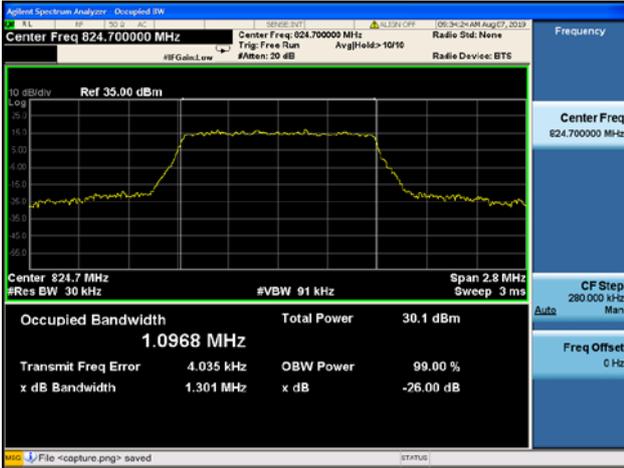
1.4MHz/QPSK/Low CH



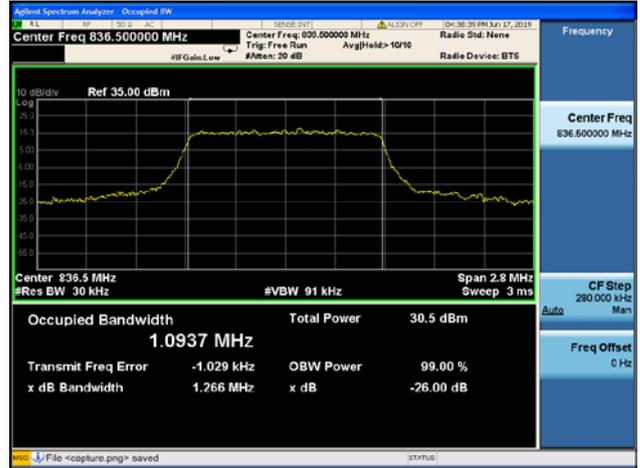
1.4MHz/16QAM/Low CH



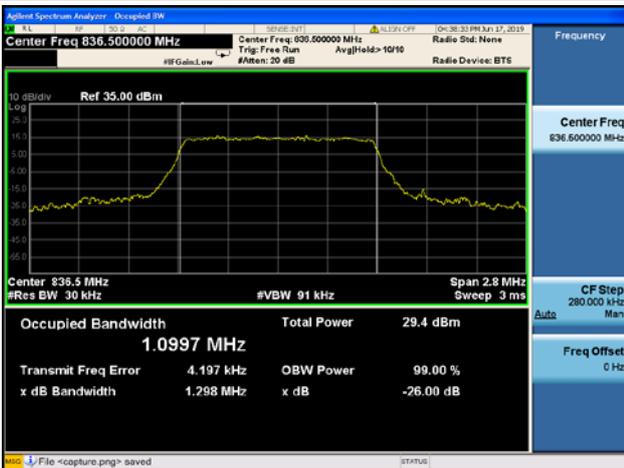
1.4MHz/64QAM/Low CH



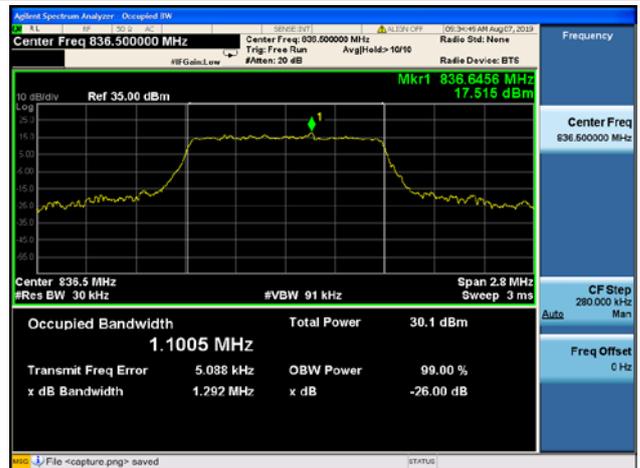
1.4MHz/QPSK/ Mid CH

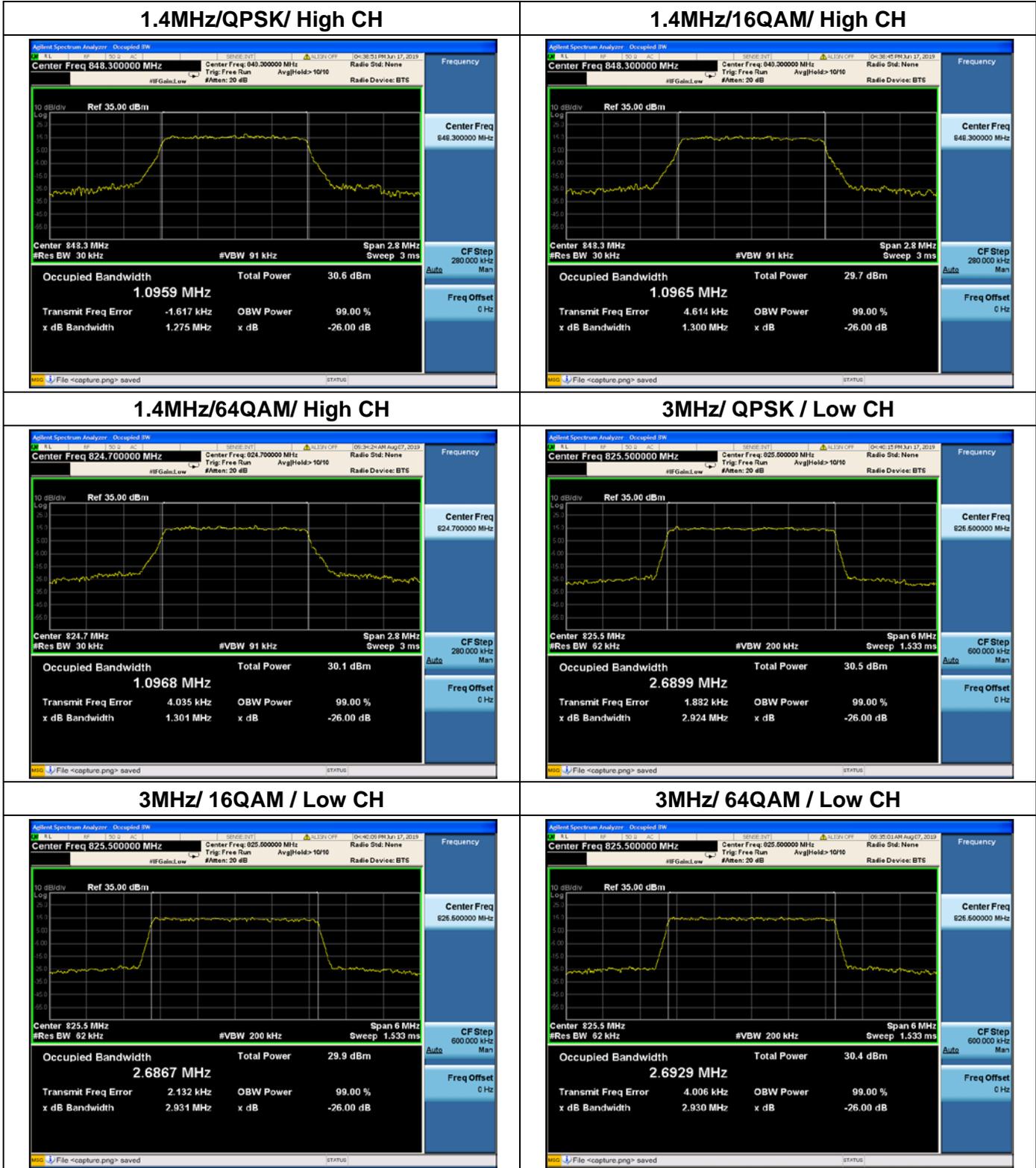


1.4MHz/16QAM/ Mid CH



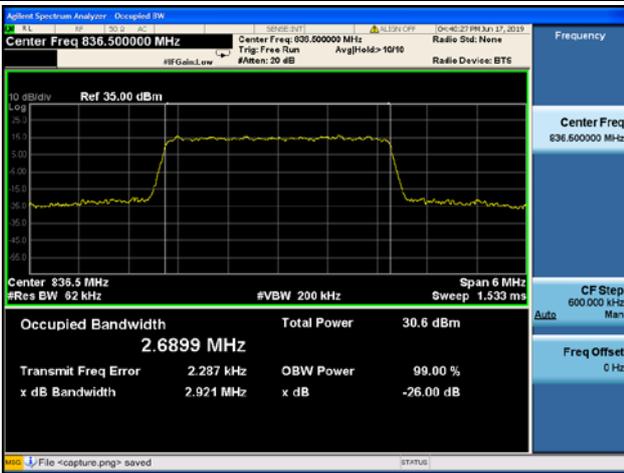
1.4MHz/64QAM/ Mid CH



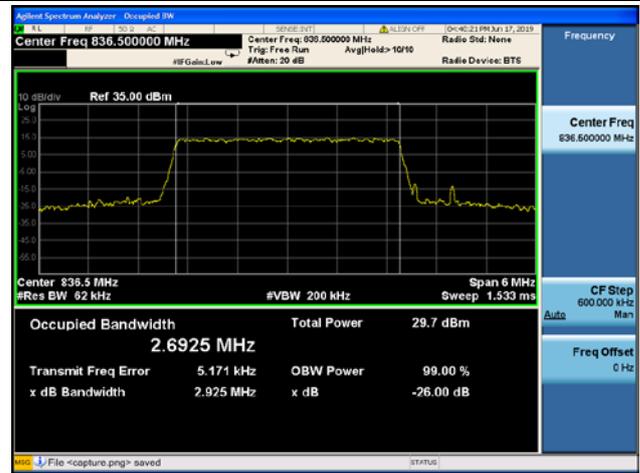




**3MHz/ QPSK / Mid CH**



**3MHz/ 16QAM / Mid CH**



**3MHz/ 64QAM / Mid CH**



**3MHz/ QPSK / High CH**



**3MHz/ 16QAM / High CH**



**3MHz/ 64QAM / High CH**





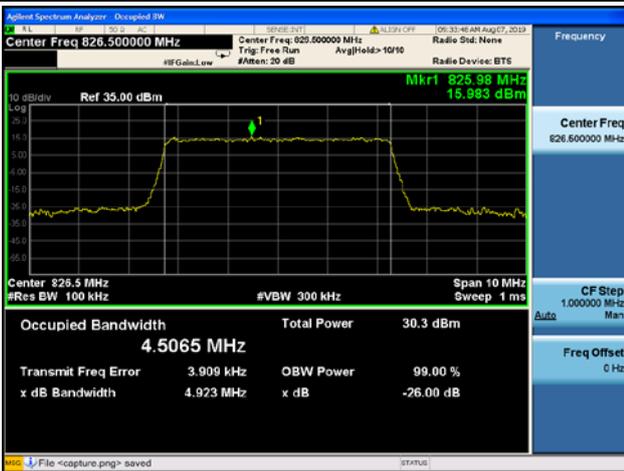
**5MHz/ QPSK /Low CH**



**5MHz/ 16QAM /Low CH**



**5MHz/ 64QAM /Low CH**



**5MHz/ QPSK /Mid CH**



**5MHz/ 16QAM /Mid CH**

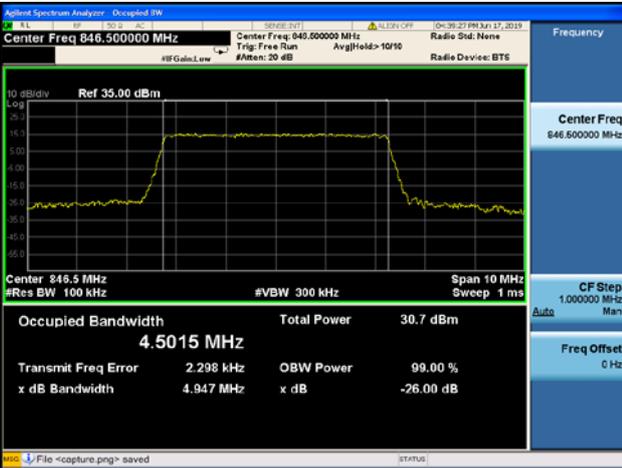


**5MHz/ 64QAM /Mid CH**

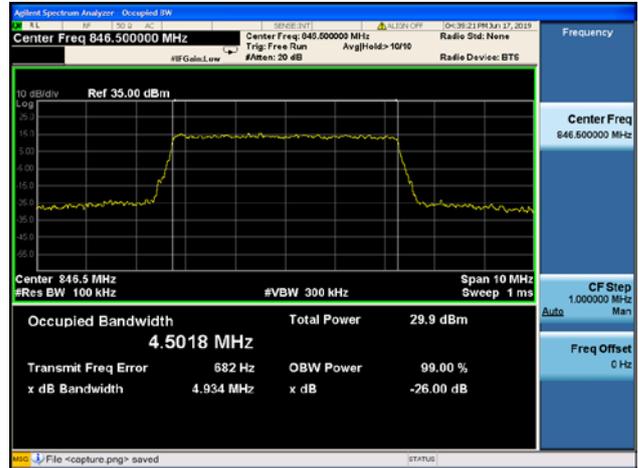




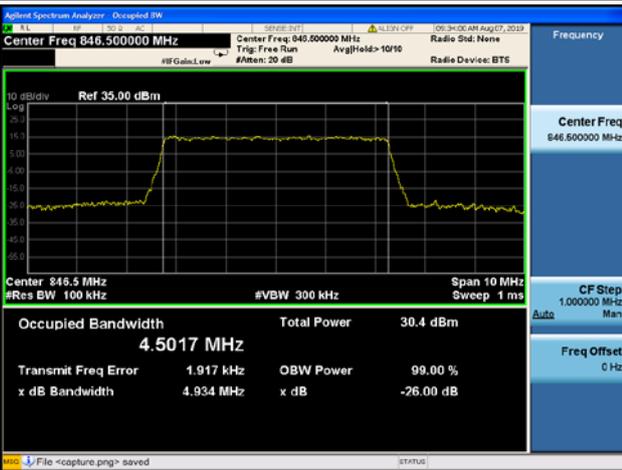
**5MHz/ QPSK /High CH**



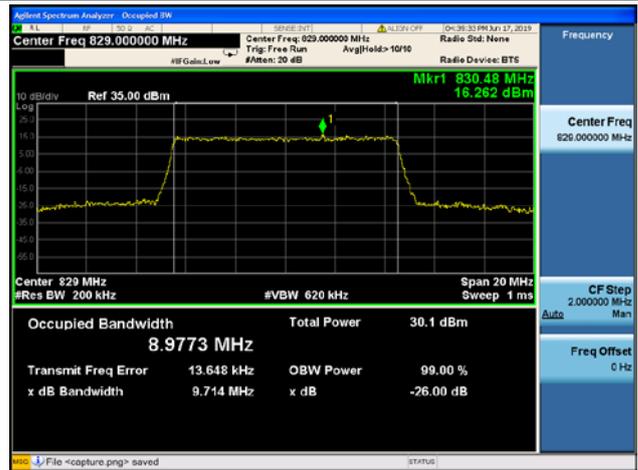
**5MHz/ 16QAM /High CH**



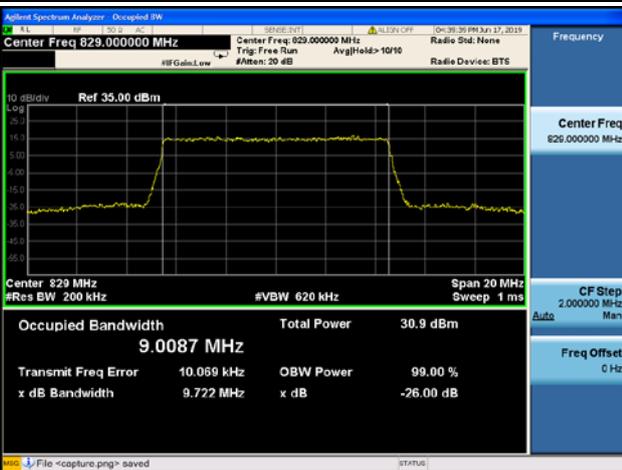
**5MHz/ 64QAM /High CH**



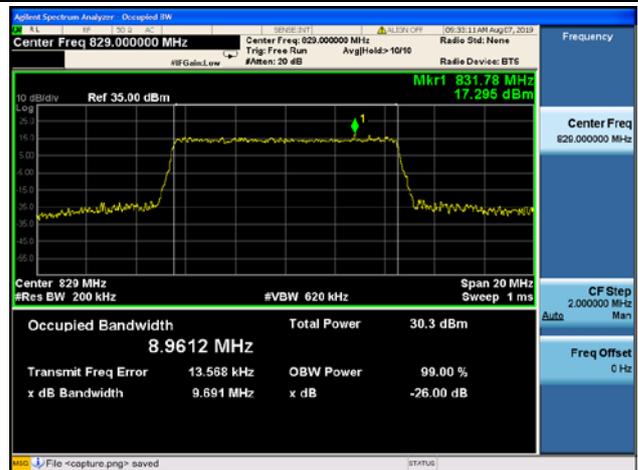
**10MHz/ QPSK /Low CH**

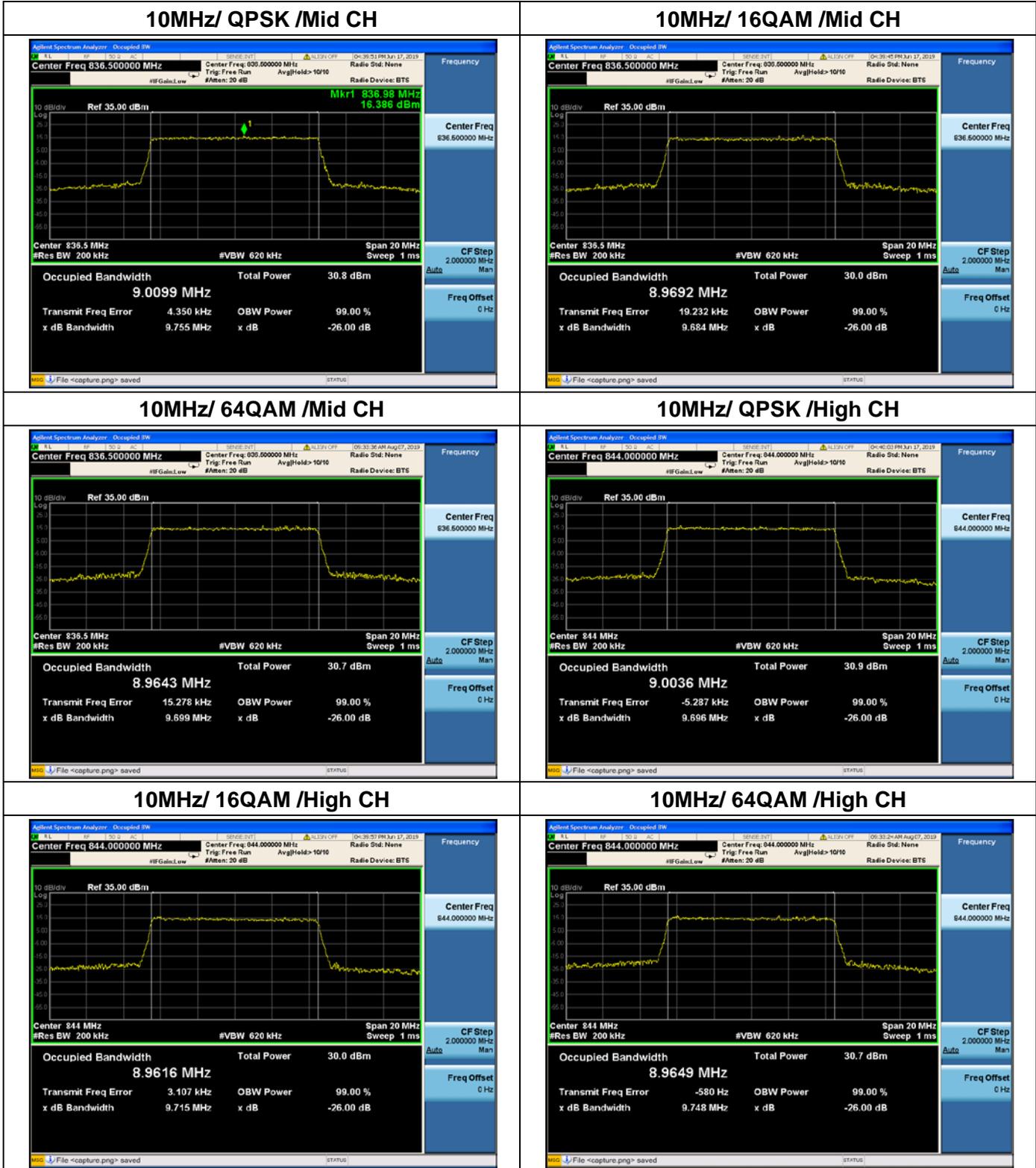


**10MHz/ 16QAM /Low CH**



**10MHz/ 64QAM /Low CH**







LTE Band 40 (2305MHz ~ 2315MHz) ,BW: 5MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
38750	2307.5	4.50	5.19	4.50	5.03	4.48	5.02
38750	2310	4.50	5.18	4.51	5.04	4.48	5.00
38775	2312.5	4.50	5.14	4.50	5.07	4.49	5.10

LTE Band 40 (2305MHz ~ 2315MHz) ,BW: 10MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
/	/	/	/	/	/	/	/
38750	2310	8.97	10.01	8.99	10.58	8.98	10.03
/	/	/	/	/	/	/	/

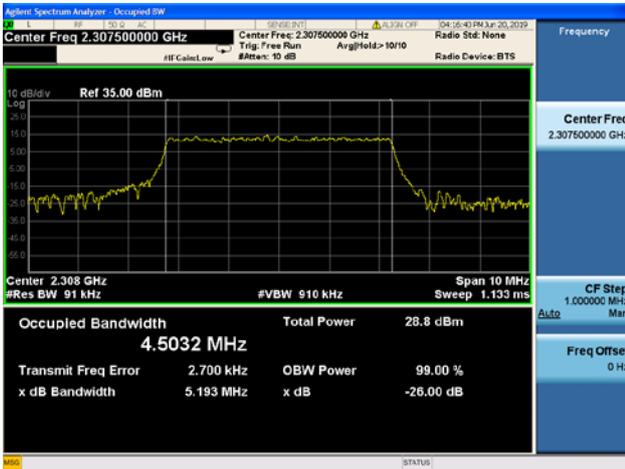
LTE Band 40 (2350MHz ~ 2360MHz) ,BW: 5MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
39175	2342.5	4.51	5.11	4.51	5.00	4.50	5.09
39200	2355	4.51	5.19	4.51	5.10	4.50	5.13
39225	2357.5	4.51	5.10	4.52	5.14	4.50	5.13

LTE Band 40 (2350MHz ~ 2360MHz) ,BW: 10MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
/	/	/	/	/	/	/	/
39200	2355	8.96	9.92	8.98	9.95	8.96	9.97
/	/	/	/	/	/	/	/

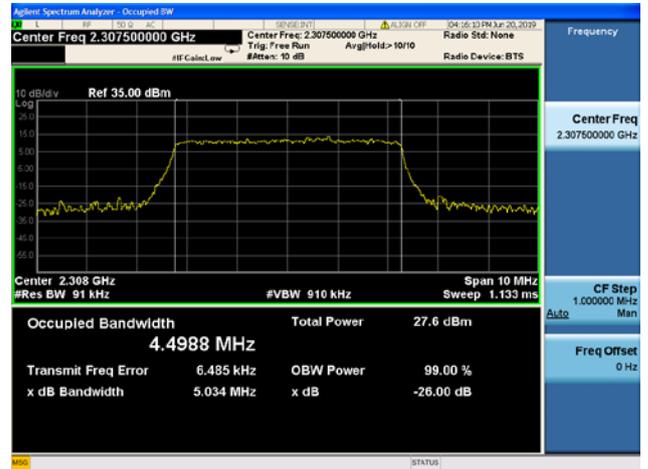


LTE Band 40 (2305MHz ~ 2315MHz) 99%&26dB Bandwidth

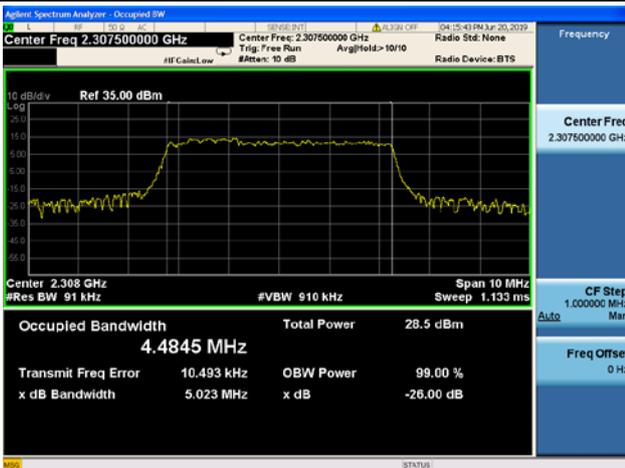
5MHz/QPSK/Low CH



5MHz/16QAM/Low CH



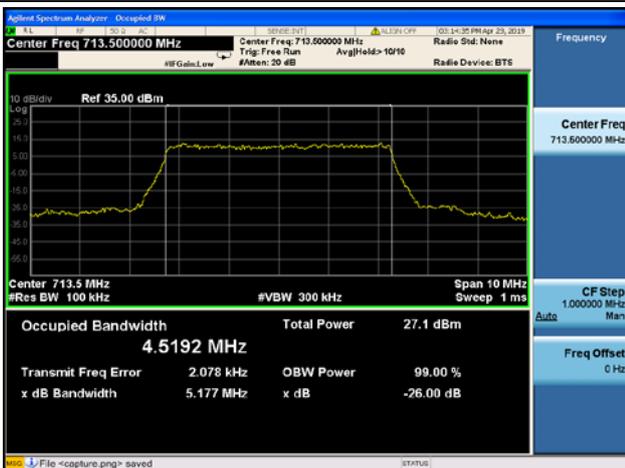
5MHz/64QAM/Low CH



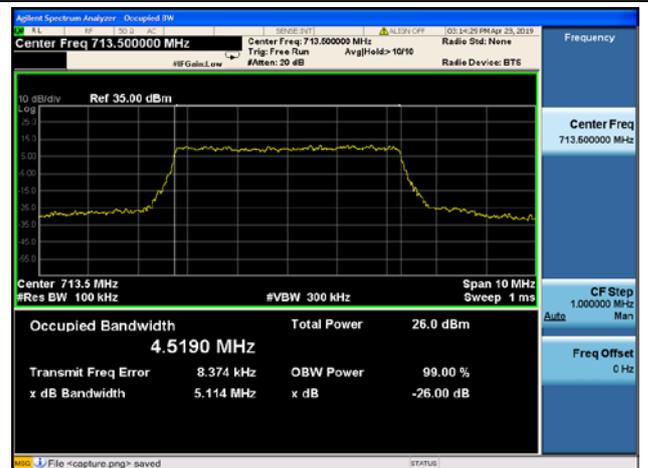
5MHz/QPSK/Mid CH



5MHz/16QAM/Mid CH



5MHz/64QAM/Mid CH

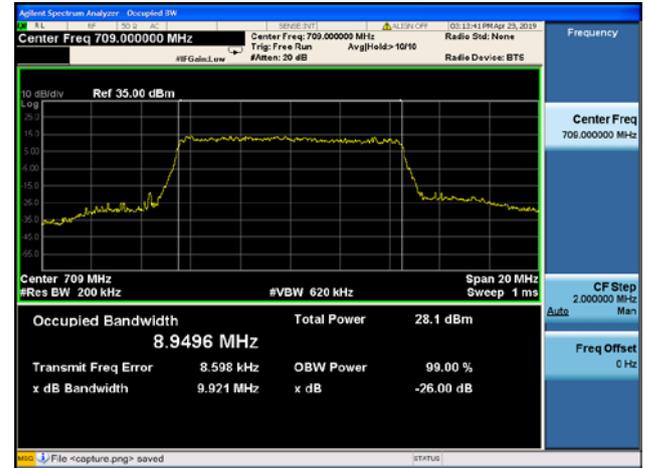




**5MHz/QPSK/High CH**



**5MHz/16QAM/High CH**



**5MHz/64QAM/High CH**



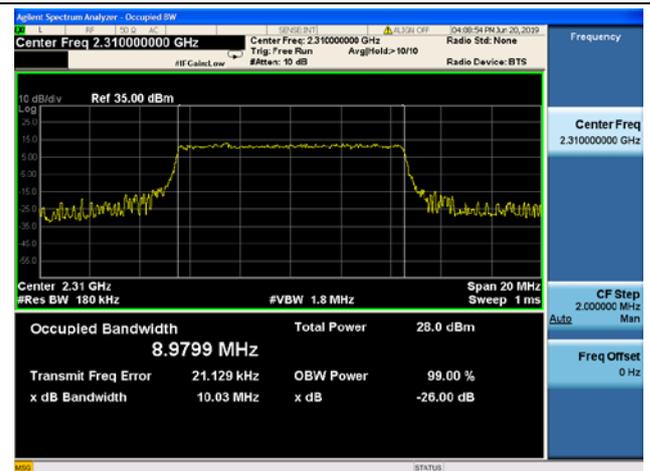
**10MHz/QPSK/Mid CH**



**10MHz/16QAM/Mid CH**



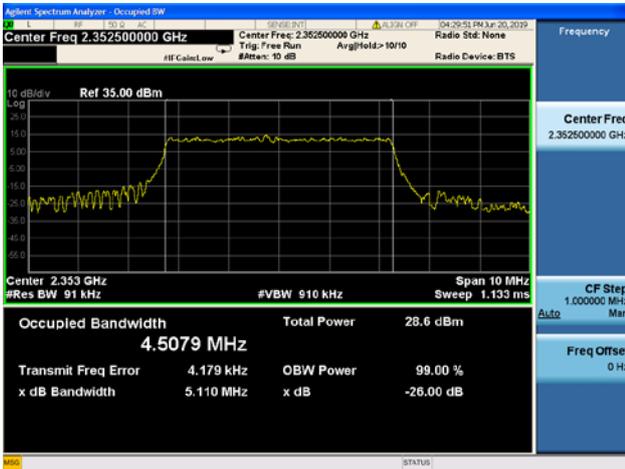
**10MHz/64QAM/Mid CH**



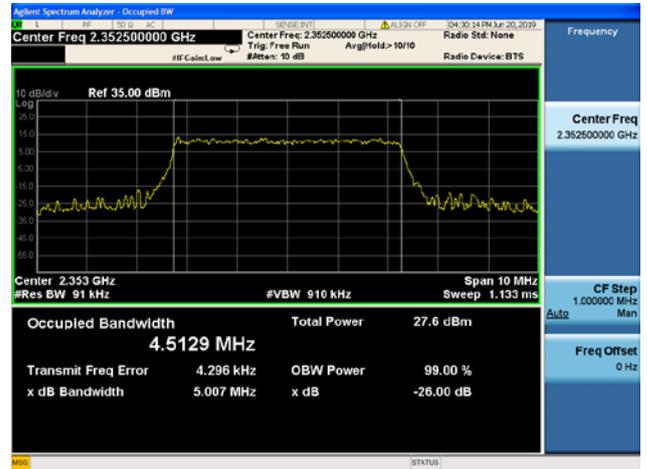


LTE Band 40 (2350MHz ~ 2360MHz) 99%&26dB Bandwidth

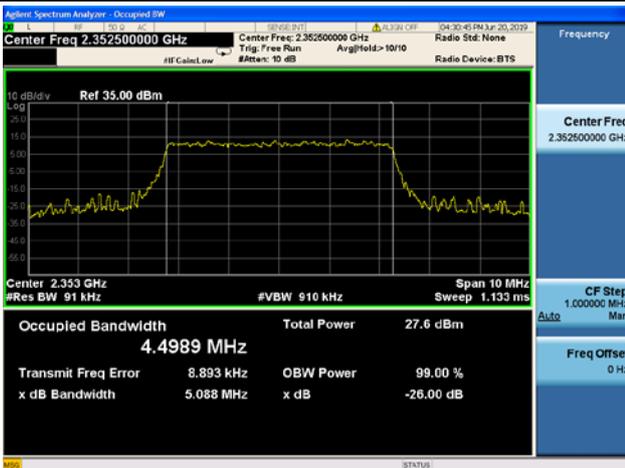
5MHz/QPSK/Low CH



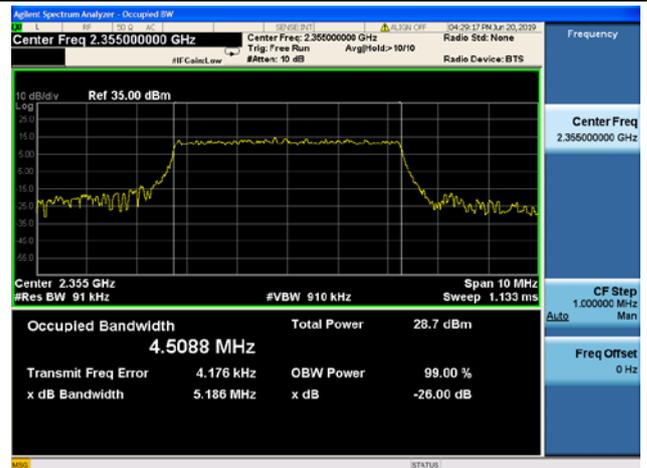
5MHz/16QAM/Low CH



5MHz/64QAM/Low CH



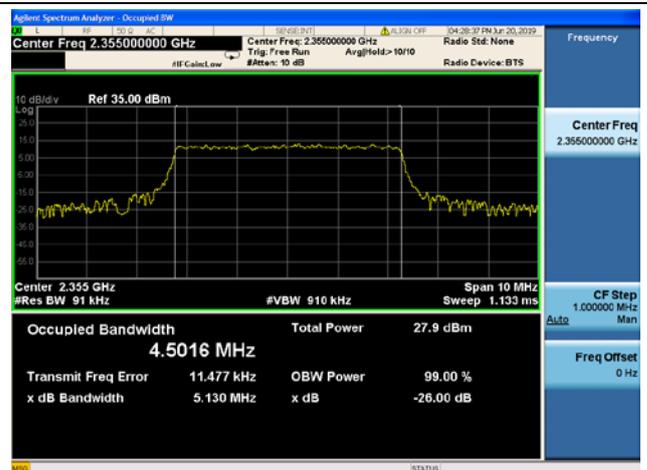
5MHz/QPSK/Mid CH



5MHz/16QAM/Mid CH



5MHz/64QAM/Mid CH

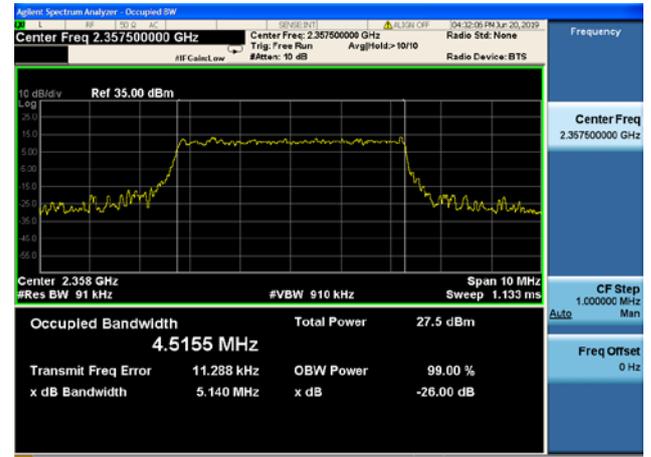




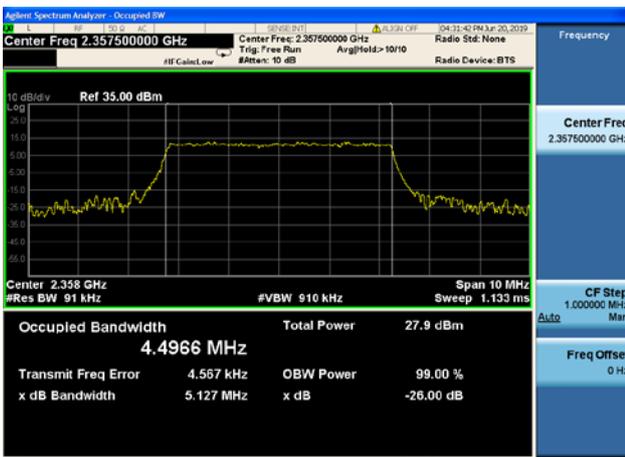
**5MHz/QPSK/High CH**



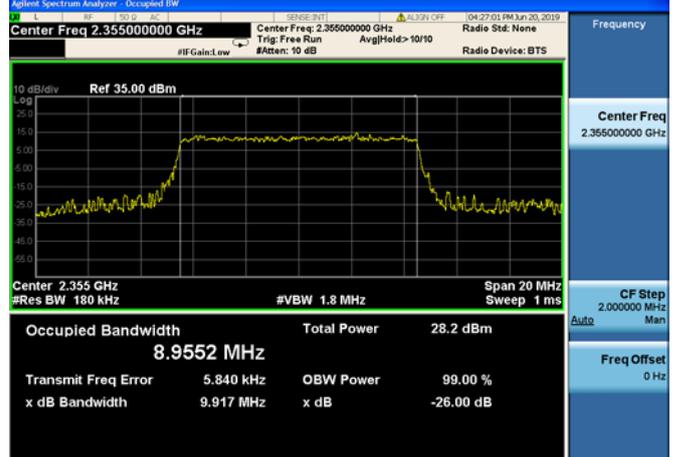
**5MHz/16QAM/High CH**



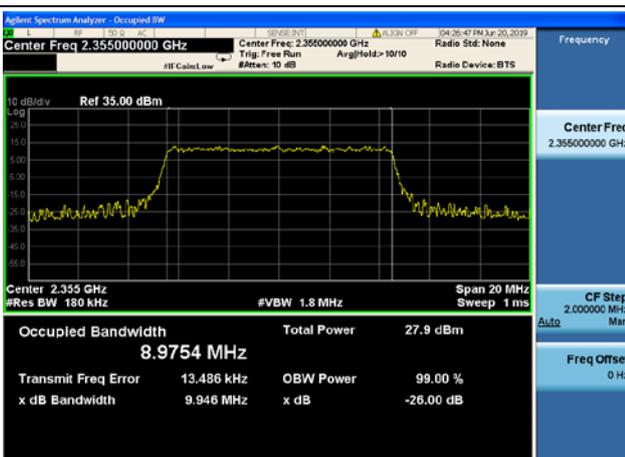
**5MHz/64QAM/High CH**



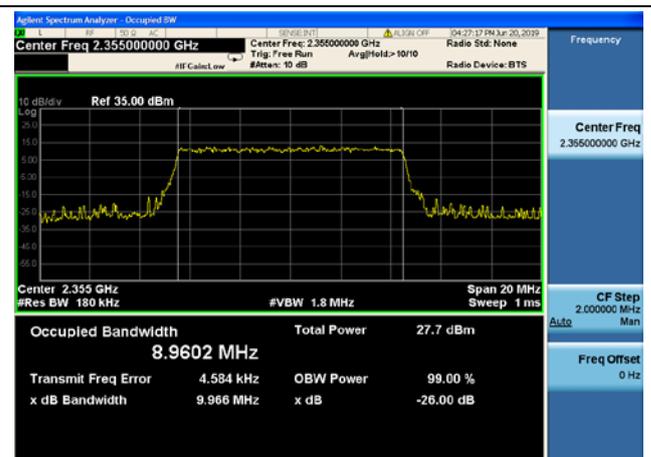
**10MHz/QPSK/Mid CH**



**10MHz/16QAM/Mid CH**



**10MHz/64QAM/Mid CH**





LTE Band 41, BW: 5MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
40265	2557.5	4.49	5.10	4.48	4.83	4.48	4.87
40740	2605	4.49	5.13	4.49	4.83	4.49	4.99
41215	2652.5	4.49	5.14	4.49	4.83	4.48	4.91

LTE Band 41, BW: 10MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
40290	2560	8.91	9.42	8.91	9.47	8.92	9.39
40740	2605	8.93	9.53	8.93	9.52	8.92	9.51
41190	2650	8.92	9.46	8.92	9.52	8.92	9.51

LTE Band 41, BW: 15MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
40315	2562.5	13.45	14.85	13.47	15.22	13.44	15.63
40740	2605	13.47	14.88	13.46	15.09	13.47	14.81
41165	2647.5	13.44	14.60	13.50	15.65	13.44	15.17

LTE Band 41, BW: 20MHz							
Channel	Frequency (MHz)	QPSK		16QAM		64QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
40340	2565	17.91	18.98	17.89	18.95	17.89	18.97
40740	2605	17.91	19.35	17.91	18.86	17.90	19.12
41140	2645	17.90	19.36	17.85	18.94	17.90	19.00

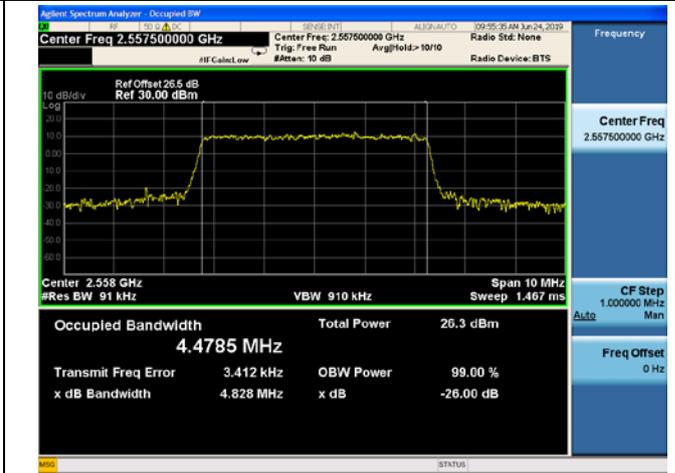


LTE Band 41 99%&26dB Bandwidth

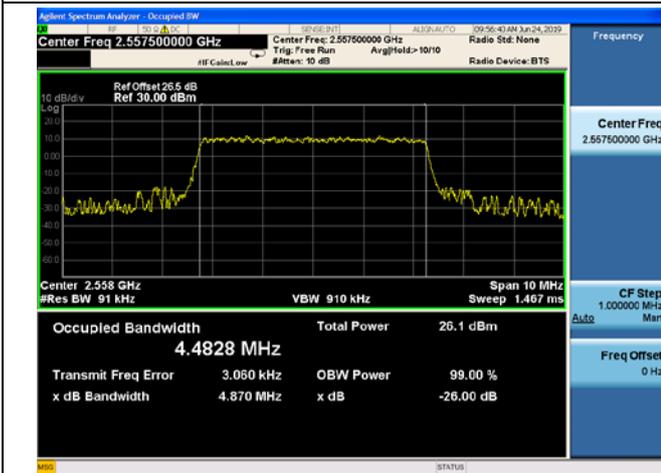
5MHz/QPSK/Low CH



5MHz/16QAM/Low CH



5MHz/64QAM/Low CH



5MHz/QPSK/ Mid CH



5MHz/16QAM/ Mid CH



5MHz/64QAM/ Mid CH

