

FCC CFR47 PART 22H, 24E, 27 CERTIFICATION TEST REPORT

FCC ID: 2ATQIW3

Product: Smart Phone

Trade Mark: Wings

Model Number: W3

Family Model: N/A

Report No.: S19050903502006

Prepared for

Wings Mobile Telecom SL

c/Beethoven 15, piso 4, Barcelona, Spain

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name : Wings Mobile Telecom SL

Address..... : c/Beethoven 15, piso 4, Barcelona, Spain

Manufacturer's Name..... : HK REXSO COM TECH CO., LIMITED

Address..... : UNIT 04, 7/F BRIGHT WAY TOWER NO 33 MONG KOK RD KL,
HONGKONG

Product name..... : Smart Phone

Model and/or type reference .. : W3

Family Model: N/A

Standards..... : FCC CFR 47 Part 22H, Part 24E, Part 27

Test procedure ANSI C63.26:2015
ANSI/TIA-603-E-2016

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test

Date (s) of performance of tests..... 14 May. 2019 ~ 27 Jun. 2019

Date of Issue 28 Jun. 2019

Test Result..... **Pass**

Testing Engineer :



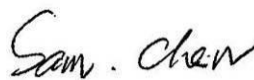
(Allen Liu)

Technical Manager :



(Jason Chen)

Authorized Signatory :



(Sam Chen)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Smart Phone
Trade Mark	Wings
Model Name	W3
Family Model	N/A
Model Difference	N/A
FCC ID:	2ATQIW3
Frequency Bands:	U.S. Bands: ☒ LTE-FDD Band 4,5,7; ☒ LTE-TDD Band 41
Frequency Range:	LTE-FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE TDD Band 41 Note2
Type of Modulation:	QPSK/16QAM
SIM Card	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 4: 2.11dBi; Band 5: -5.47 dBi; Band 7: -0.17 dBi; Band 41: -0.13 dBi;
Power Supply:	☒ DC supply: DC 3.85V/3080mAh from Battery or DC 5V from USB Port.
Adapter:	☒ Adapter supply: Model: ES568-U050200XYC Input: 100-240V~50/60Hz 0.3A Output: 5V---2000mA
Extreme Vol. Limits:	DC 3.2V to DC 4.4V (Nominal DC 3.85V) (Note 1)
HW Version	E6202-MB-P2.0
SW Version	E2009A_WINGS_V01_20190423
** Note1: The High Voltage DC 4.4V and Low Voltage 3.2V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

2. Frequency Range:

Test Frequency ID	Bandwidth(MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	5	40265	2557.5
	10	40290	2560
	15	40315	2562.5
	20	40340	2565
Mid Range	5/10/15/20	40740	2605
High Range	5	41215	2652.5
	10	41190	2650
	15	41165	2648.5
	20	41140	2645

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ATQIW3** filing to comply with the FCC Part 22H&24E &27.

1.3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI/TIA-603-E-2016, FCC CFR 47 Part 2, Part 22, Part 24, Part 27, ANSI C63.26:2015.

1.4 TEST FACILITY

The test site used to collect the radiated data is located at:

ShenZhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R.China.

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.26:2015& ANSI C63.4: 2014.

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.5dB

1.5 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

1.6 WORST-CASE CONFIGURATION AND MODE

The worst-case scenario for all measurements is based on the investigation results.

The device has LTE Bands of: Band 4, Band 5, Band 7, Band 41.

The RB Size was selected to measure for peak or average ERP and EIRP, which was based on the conducted power verification baseline data.

For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations the worst case was determined to be at X orientation for all LTE bands.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

2.3 CONFIGURATION OF EUT SYSTEM

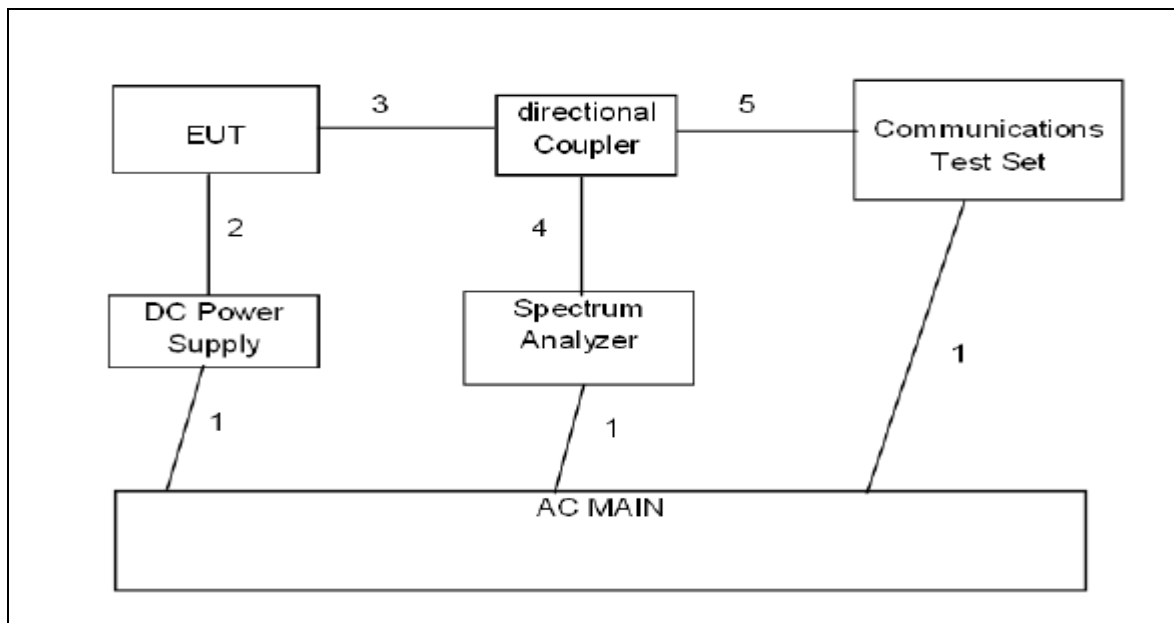
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smart Phone	W3	FCC ID: 2ATQIW3	EUT

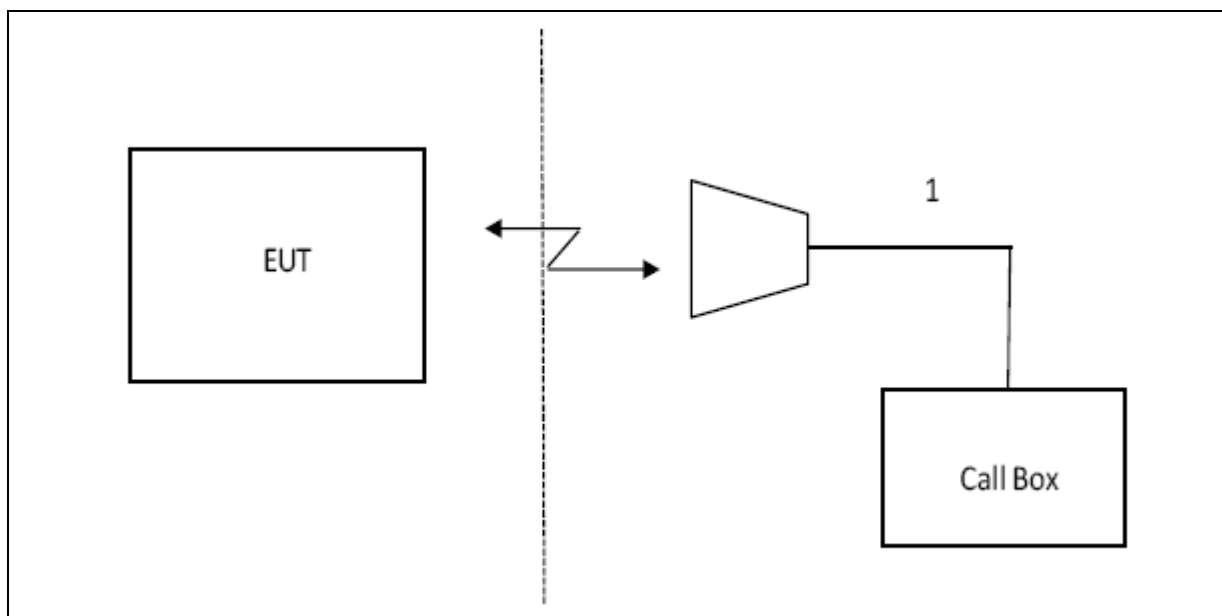
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

CONDUCTED SETUP DIAGRAM FOR TESTS



RADIATED SETUP DIAGRAM FOR TESTS



3.TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	NEXT CAL. DATE
SPECTRUM ANALYZER	AGILENT	N9020A	MY49100060	2019.10.07
TEST RECEIVER	R&S	ESCI	101318	2020.05.12
COMMUNICATION TESTER	R&S	CMU200	105747	2020.05.12
COMMUNICATION TESTER	R&S	CMW500	148500	2020.05.12
TEST RECEIVER	R&S	FCKL1528	A0304230	2020.05.12
LISN	SCHWARZBECK	NSLK8127	A0304233	2020.05.12
CLIMATE CHAMBER	ALBATROSS	--	--	2020.05.17
Loop Antenna	Daze	ZN30900N	SEL0097	2020.05.12
Biological Antenna	A.H. Systems Inc.	SAS-521-4	N/A	2020.05.12
Horn Antenna	EM	EM-AH-10180	2011071402	2020.04.14
DC Power	N/A	PS-6005D	20170402923	2020.05.12

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set. The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".3

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

4.2 LTE BAND 4

OUTPUT POWER FOR LTE BAND 4 (1.4MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	1.4MHz	19957	1710.7	QPSK	1	Low	23.20	27.60
					1	Mid	23.37	27.70
					1	High	23.15	27.56
					3	Low	23.26	27.68
					3	High	23.29	27.48
					6	Low	22.23	28.15
				16QAM	1	Low	22.40	27.55
					1	Mid	22.57	27.57
					1	High	22.54	27.51
					3	Low	22.88	27.79
					3	High	22.85	27.83
					6	Low	21.75	28.25
	1.4MHz	20175	1732.5	QPSK	1	Low	23.75	28.61
					1	Mid	23.45	28.57
					1	High	23.23	28.32
					3	Low	23.31	28.76
					3	High	23.36	28.81
					6	Low	22.29	28.19
				16QAM	1	Low	22.21	27.60
					1	Mid	22.44	27.84
					1	High	22.26	27.65
					3	Low	22.39	28.38
					3	High	22.38	28.44
					6	Low	21.25	28.34
	1.4MHz	20393	1754.3	QPSK	1	Low	23.14	27.25
					1	Mid	23.38	27.42
					1	High	23.14	27.29
					3	Low	23.26	27.41
					3	High	23.18	27.33
					6	Low	22.23	27.41
				16QAM	1	Low	22.27	26.72
					1	Mid	22.46	26.94
					1	High	22.26	26.73
					3	Low	22.13	27.36
					3	High	22.22	27.44
					6	Low	21.32	27.69

OUTPUT POWER FOR LTE BAND 4 (3.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	3.0 MHz	19965	1711.5	QPSK	1	Low	23.44	27.58
					1	Mid	23.35	27.49
					1	High	23.23	27.37
					8	Low	22.73	27.85
					8	High	22.71	27.63
					15	Low	22.70	28.00
				16QAM	1	Low	22.24	27.84
					1	Mid	22.18	27.83
					1	High	22.17	27.75
					8	Low	21.86	27.77
					8	High	21.86	27.65
					15	Low	21.76	27.89
	3.0 MHz	20175	1732.5	QPSK	1	Low	23.79	28.59
					1	Mid	23.26	28.34
					1	High	23.25	28.39
					8	Low	22.27	28.42
					8	High	22.26	28.30
					15	Low	22.28	28.87
				16QAM	1	Low	22.33	27.63
					1	Mid	22.26	27.71
					1	High	22.28	27.70
					8	Low	21.35	27.97
					8	High	21.32	27.68
					15	Low	21.33	28.75
	3.0 MHz	20385	1753.5	QPSK	1	Low	23.18	27.34
					1	Mid	23.16	27.34
					1	High	23.13	27.29
					8	Low	22.19	27.55
					8	High	22.15	27.36
					15	Low	22.43	28.13
				16QAM	1	Low	22.29	26.81
					1	Mid	22.29	26.75
					1	High	22.30	26.80
					8	Low	21.67	27.44
					8	High	21.53	27.40
					15	Low	21.60	27.80

OUTPUT POWER FOR LTE BAND 4 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	5.0 MHz	19975	1712.5	QPSK	1	Low	23.59	27.96
					1	Mid	23.74	27.84
					1	High	23.61	27.79
					12	Low	22.75	27.83
					12	High	22.70	27.87
					25	Low	22.69	28.36
				16QAM	1	Low	22.49	27.51
					1	Mid	22.62	27.46
					1	High	22.53	27.38
					12	Low	21.67	27.82
					12	High	21.63	27.77
					25	Low	21.75	28.47
	5.0 MHz	20175	1732.5	QPSK	1	Low	23.69	28.68
					1	Mid	23.58	28.85
					1	High	23.22	28.65
					12	Low	22.24	28.03
					12	High	22.31	28.14
					25	Low	22.27	28.64
				16QAM	1	Low	22.27	28.37
					1	Mid	22.36	28.64
					1	High	22.32	28.62
					12	Low	21.16	27.90
					12	High	21.30	28.24
					25	Low	21.29	28.45
	5.0 MHz	20375	1752.5	QPSK	1	Low	23.19	27.49
					1	Mid	23.20	27.33
					1	High	23.11	27.27
					12	Low	22.30	27.86
					12	High	22.07	27.43
					25	Low	22.37	28.25
				16QAM	1	Low	22.36	27.40
					1	Mid	22.71	27.38
					1	High	22.41	27.34
					12	Low	21.71	27.54
					12	High	21.52	27.47
					25	Low	21.65	28.41

OUTPUT POWER FOR LTE BAND 4 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	10.0 MHz	20000	1715.0	QPSK	1	Low	23.71	27.62
					1	Mid	23.88	27.51
					1	High	23.33	27.53
					25	Low	22.51	27.95
					25	High	22.32	27.87
					50	Low	22.64	28.55
				16QAM	1	Low	22.92	27.87
					1	Mid	22.91	27.75
					1	High	23.00	27.81
					25	Low	21.87	27.88
					25	High	21.72	27.78
					50	Low	21.78	28.63
	10.0 MHz	20175	1732.5	QPSK	1	Low	23.73	28.37
					1	Mid	23.45	28.62
					1	High	23.29	28.48
					25	Low	22.28	28.77
					25	High	22.43	29.07
					50	Low	22.35	28.63
				16QAM	1	Low	22.29	27.59
					1	Mid	22.43	27.87
					1	High	22.29	27.78
					25	Low	21.38	28.48
					25	High	21.55	28.82
					50	Low	21.39	29.07
	10.0 MHz	20350	1750.0	QPSK	1	Low	23.21	28.01
					1	Mid	23.32	27.59
					1	High	23.18	27.42
					25	Low	22.42	28.02
					25	High	22.47	27.73
					50	Low	22.72	28.33
				16QAM	1	Low	22.47	27.46
					1	Mid	22.97	27.29
					1	High	22.56	27.06
					25	Low	21.81	28.21
					25	High	21.65	27.79
					50	Low	21.70	28.22

OUTPUT POWER FOR LTE BAND 4 (15.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	15.0 MHz	20025	1717.5	QPSK	1	Low	23.59	27.59
					1	Mid	23.76	27.52
					1	High	23.23	27.89
					36	Low	22.61	28.06
					36	High	22.38	28.00
					75	Low	22.40	28.79
				16QAM	1	Low	22.89	27.82
					1	Mid	22.94	27.78
					1	High	22.70	28.06
					36	Low	21.78	28.05
					36	High	21.74	28.08
					75	Low	21.79	28.42
	15.0 MHz	20175	1732.5	QPSK	1	Low	23.58	28.07
					1	Mid	23.31	28.24
					1	High	23.13	28.09
					36	Low	22.35	28.49
					36	High	22.42	28.79
					75	Low	22.38	29.14
				16QAM	1	Low	22.59	27.53
					1	Mid	22.72	27.90
					1	High	22.53	27.73
					36	Low	21.29	28.54
					36	High	21.40	28.88
					75	Low	21.33	28.75
	15.0 MHz	20325	1747.5	QPSK	1	Low	23.14	28.36
					1	Mid	23.44	27.93
					1	High	23.10	27.41
					36	Low	22.78	28.50
					36	High	22.73	27.90
					75	Low	22.74	28.99
				16QAM	1	Low	22.78	27.69
					1	Mid	22.72	27.33
					1	High	22.56	27.05
					36	Low	21.77	28.86
					36	High	21.67	28.00
					75	Low	21.74	28.66

OUTPUT POWER FOR LTE BAND 4 (20.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 4	20.0 MHz	20050	1720.0	QPSK	1	Low	23.45	27.63
					1	Mid	23.90	27.74
					1	High	23.08	28.18
					50	Low	22.37	27.91
					50	High	22.21	28.14
					100	Low	22.33	28.43
				16QAM	1	Low	22.26	27.41
					1	Mid	22.66	27.54
					1	High	22.34	28.08
					50	Low	21.41	28.23
					50	High	21.27	28.37
					100	Low	21.40	28.56
	20.0 MHz	20175	1732.5	QPSK	1	Low	23.10	27.90
					1	Mid	23.41	28.59
					1	High	22.97	28.27
					50	Low	22.25	28.50
					50	High	22.46	28.94
					100	Low	22.35	28.99
				16QAM	1	Low	22.56	27.66
					1	Mid	22.99	28.48
					1	High	22.57	28.17
					50	Low	21.29	28.45
					50	High	21.46	28.90
					100	Low	21.39	28.94
	20.0 MHz	20300	1745.0	QPSK	1	Low	23.08	28.25
					1	Mid	23.43	27.96
					1	High	22.98	27.24
					50	Low	22.43	28.60
					50	High	22.39	27.99
					100	Low	22.57	28.80
				16QAM	1	Low	22.27	28.80
					1	Mid	22.80	28.50
					1	High	22.23	27.54
					50	Low	21.62	28.68
					50	High	21.59	27.88
					100	Low	21.66	28.81

4.3 LTE BAND 5

OUTPUT POWER FOR LTE BAND 5 (1.4MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 5	1.4MHz	20407	824.7	QPSK	1	Low	23.00	28.43
					1	Mid	23.07	28.56
					1	High	23.02	28.40
					3	Low	23.14	28.84
					3	High	23.15	28.79
					6	Low	22.11	28.26
				16QAM	1	Low	22.06	27.63
					1	Mid	22.25	27.80
					1	High	22.07	27.61
					3	Low	22.21	28.66
					3	High	22.19	28.72
					6	Low	21.07	28.33
	1.4MHz	20525	836.5	QPSK	1	Low	23.05	28.90
					1	Mid	23.16	28.99
					1	High	22.95	28.84
					3	Low	23.03	28.91
					3	High	22.94	28.90
					6	Low	22.09	28.00
				16QAM	1	Low	22.20	27.41
					1	Mid	22.38	27.77
					1	High	22.21	27.43
					3	Low	22.09	29.08
					3	High	22.12	29.04
					6	Low	21.16	28.36
	1.4MHz	20643	848.3	QPSK	1	Low	22.99	28.94
					1	Mid	23.19	29.01
					1	High	22.91	28.89
					3	Low	22.75	28.75
					3	High	22.91	28.78
					6	Low	21.85	28.72
				16QAM	1	Low	22.01	28.26
					1	Mid	22.23	28.48
					1	High	22.08	28.28
					3	Low	22.30	28.69
					3	High	22.28	28.64
					6	Low	21.11	28.69

OUTPUT POWER FOR LTE BAND 5 (3.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 5	3.0 MHz	20415	825.5	QPSK	1	Low	23.06	28.27
					1	Mid	23.04	28.20
					1	High	23.04	28.16
					8	Low	22.10	28.17
					8	High	22.09	28.23
					15	Low	22.11	28.38
				16QAM	1	Low	22.50	29.03
					1	Mid	22.45	29.03
					1	High	22.49	28.99
					8	Low	21.26	28.25
					8	High	21.28	28.25
					15	Low	21.20	28.26
	3.0 MHz	20525	836.5	QPSK	1	Low	23.04	28.62
					1	Mid	23.08	28.69
					1	High	23.09	28.67
					8	Low	22.04	28.60
					8	High	22.09	28.68
					15	Low	22.10	29.25
				16QAM	1	Low	22.13	27.74
					1	Mid	22.15	27.86
					1	High	22.15	27.84
					8	Low	21.19	27.91
					8	High	21.18	27.88
					15	Low	21.18	28.52
	3.0 MHz	20635	847.5	QPSK	1	Low	23.10	28.77
					1	Mid	23.05	28.69
					1	High	23.06	28.69
					8	Low	22.11	28.38
					8	High	22.06	28.56
					15	Low	22.10	28.41
				16QAM	1	Low	22.27	27.43
					1	Mid	22.22	27.47
					1	High	22.25	27.42
					8	Low	21.08	28.11
					8	High	21.11	27.94
					15	Low	21.08	28.17

OUTPUT POWER FOR LTE BAND 5 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 5	5.0 MHz	20425	826.5	QPSK	1	Low	23.01	29.21
					1	Mid	23.15	29.15
					1	High	23.00	29.19
					12	Low	22.04	28.30
					12	High	22.14	28.49
					25	Low	22.11	28.71
				16QAM	1	Low	21.96	27.97
					1	Mid	22.07	28.01
					1	High	21.95	27.94
					12	Low	21.03	28.73
					12	High	21.13	28.78
					25	Low	21.15	29.08
	5.0 MHz	20525	836.5	QPSK	1	Low	22.96	28.86
					1	Mid	23.10	29.05
					1	High	22.98	28.92
					12	Low	22.08	28.44
					12	High	22.09	28.18
					25	Low	22.13	28.64
				16QAM	1	Low	22.11	28.89
					1	Mid	22.23	29.03
					1	High	22.11	28.92
					12	Low	21.07	28.12
					12	High	21.09	28.23
					25	Low	21.17	29.02
	5.0 MHz	20625	846.5	QPSK	1	Low	23.03	28.59
					1	Mid	23.10	28.65
					1	High	22.97	28.54
					12	Low	22.07	28.74
					12	High	22.04	28.74
					25	Low	22.06	28.91
				16QAM	1	Low	22.32	28.39
					1	Mid	22.47	28.52
					1	High	22.35	28.45
					12	Low	21.08	28.09
					12	High	21.07	28.16
					25	Low	21.09	29.73

OUTPUT POWER FOR LTE BAND 5 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 5	10.0 MHz	20450	829.0	QPSK	1	Low	23.05	28.17
					1	Mid	23.23	28.42
					1	High	23.07	28.38
					25	Low	22.12	28.69
					25	High	22.11	28.76
					50	Low	22.12	28.50
				16QAM	1	Low	22.39	29.04
					1	Mid	22.42	29.19
					1	High	22.43	29.31
					25	Low	21.17	28.63
					25	High	21.18	28.76
					50	Low	21.15	28.82
	10.0 MHz	20525	836.5	QPSK	1	Low	23.08	28.55
					1	Mid	23.24	28.84
					1	High	23.07	28.64
					25	Low	22.19	29.43
					25	High	22.17	29.18
					50	Low	22.20	28.63
				16QAM	1	Low	22.14	27.76
					1	Mid	22.28	28.02
					1	High	22.12	27.78
					25	Low	21.32	28.98
					25	High	21.30	28.92
					50	Low	21.24	29.48
	10.0 MHz	20600	844.0	QPSK	1	Low	23.02	28.80
					1	Mid	23.22	28.86
					1	High	23.09	28.74
					25	Low	22.13	28.72
					25	High	22.10	28.76
					50	Low	22.12	28.70
				16QAM	1	Low	22.23	27.43
					1	Mid	22.41	27.79
					1	High	22.21	27.48
					25	Low	21.18	29.01
					25	High	21.18	28.86
					50	Low	21.18	28.20

4.4 LTE BAND 7

OUTPUT POWER FOR LTE BAND 7 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 7	5.0MHz	20775	2502.5	QPSK	1	Low	22.33	27.58
					1	Mid	22.44	27.43
					1	High	22.34	27.35
					12	Low	21.45	27.08
					12	High	21.44	26.98
					25	Low	21.42	27.52
				16QAM	1	Low	21.27	26.70
					1	Mid	21.41	26.79
					1	High	21.29	26.65
					12	Low	20.46	27.34
					12	High	20.42	27.26
					25	Low	20.50	27.67
	5.0MHz	21100	2535.0	QPSK	1	Low	22.37	27.26
					1	Mid	22.55	27.17
					1	High	22.39	26.89
					12	Low	21.55	26.97
					12	High	21.51	26.97
					25	Low	21.56	27.38
				16QAM	1	Low	21.53	27.22
					1	Mid	21.62	27.08
					1	High	21.54	26.92
					12	Low	20.54	27.16
					12	High	20.45	27.06
					25	Low	20.58	27.69
	5.0MHz	21425	2567.5	QPSK	1	Low	22.49	27.20
					1	Mid	22.64	27.19
					1	High	22.53	26.86
					12	Low	21.66	27.42
					12	High	21.55	27.22
					25	Low	21.62	27.70
				16QAM	1	Low	21.78	27.12
					1	Mid	21.94	27.16
					1	High	21.81	26.90
					12	Low	20.66	27.07
					12	High	20.55	26.99
					25	Low	20.59	28.13

OUTPUT POWER FOR LTE BAND 7 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 7	10.0 MHz	20800	2505.0	QPSK	1	Low	22.38	26.85
					1	Mid	22.61	26.81
					1	High	22.47	26.78
					25	Low	21.50	27.24
					25	High	21.57	27.26
					50	Low	21.51	27.54
				16QAM	1	Low	21.94	27.31
					1	Mid	21.12	27.25
					1	High	22.00	27.31
					25	Low	20.53	27.15
					25	High	20.62	27.15
					50	Low	20.55	27.91
	10.0 MHz	21100	2535.0	QPSK	1	Low	22.51	27.30
					1	Mid	22.68	27.00
					1	High	22.57	26.67
					25	Low	21.66	27.86
					25	High	21.59	27.48
					50	Low	21.65	27.69
				16QAM	1	Low	21.56	26.67
					1	Mid	21.72	26.60
					1	High	21.56	26.32
					25	Low	20.78	27.57
					25	High	20.63	27.37
					50	Low	20.66	28.08
	10.0 MHz	21400	2565.0	QPSK	1	Low	22.53	27.17
					1	Mid	22.73	27.48
					1	High	22.62	27.04
					25	Low	21.65	27.34
					25	High	21.54	27.45
					50	Low	21.55	27.70
				16QAM	1	Low	21.72	26.32
					1	Mid	21.87	26.53
					1	High	21.71	26.33
					25	Low	20.63	27.45
					25	High	20.57	27.54
					50	Low	20.53	27.52

OUTPUT POWER FOR LTE BAND 7 (15.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 7	15.0 MHz	20825	2507.5	QPSK	1	Low	22.32	26.89
					1	Mid	22.44	26.81
					1	High	22.37	26.88
					36	Low	21.56	27.24
					36	High	21.65	27.36
					75	Low	21.58	28.22
				16QAM	1	Low	21.88	27.35
					1	Mid	21.92	27.34
					1	High	21.93	27.51
					36	Low	20.53	27.34
					36	High	20.56	27.40
					75	Low	20.57	27.65
	15.0 MHz	21100	2535.0	QPSK	1	Low	22.47	27.13
					1	Mid	22.54	26.89
					1	High	22.47	26.45
					36	Low	21.71	27.79
					36	High	21.63	27.24
					75	Low	21.67	28.18
				16QAM	1	Low	21.88	26.82
					1	Mid	21.94	26.67
					1	High	21.79	26.31
					36	Low	20.63	27.80
					36	High	20.56	27.38
					75	Low	20.62	27.82
	15.0 MHz	21375	2562.5	QPSK	1	Low	22.48	26.93
					1	Mid	22.62	27.34
					1	High	22.53	27.11
					36	Low	21.66	27.24
					36	High	21.63	27.54
					75	Low	21.61	28.09
				16QAM	1	Low	21.62	26.14
					1	Mid	21.75	26.42
					1	High	21.69	26.30
					36	Low	20.60	27.65
					36	High	20.62	27.86
					75	Low	20.57	27.73

OUTPUT POWER FOR LTE BAND 7 (20.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 7	20.0 MHz	20850	2510.0	QPSK	1	Low	22.17	27.00
					1	Mid	22.66	27.18
					1	High	22.26	27.23
					50	Low	21.46	27.36
					50	High	21.63	27.49
					100	Low	21.51	27.71
				16QAM	1	Low	21.53	26.91
					1	Mid	21.97	27.07
					1	High	21.58	27.13
					50	Low	20.40	27.64
					50	High	20.61	27.72
					100	Low	20.53	28.39
	20.0 MHz	21100	2535.0	QPSK	1	Low	22.25	27.44
					1	Mid	22.70	27.31
					1	High	22.30	26.56
					50	Low	21.74	27.76
					50	High	21.56	27.20
					100	Low	21.63	27.89
				16QAM	1	Low	21.83	27.30
					1	Mid	21.28	27.22
					1	High	21.77	26.54
					50	Low	20.68	27.74
					50	High	20.49	27.22
					100	Low	20.65	27.90
	20.0 MHz	21350	2560.0	QPSK	1	Low	22.30	26.53
					1	Mid	22.75	27.22
					1	High	22.44	26.99
					50	Low	21.48	27.13
					50	High	21.52	27.51
					100	Low	21.47	27.74
				16QAM	1	Low	21.52	26.86
					1	Mid	21.92	27.47
					1	High	21.63	27.46
					50	Low	20.46	27.17
					50	High	20.51	27.34
					100	Low	20.47	27.53

4.5 LTE BAND 41

OUTPUT POWER FOR LTE BAND 41 (5MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 41	5.0 MHz	40265	2557.5	QPSK	1	Low	22.75	28.01
					1	Mid	22.87	28.44
					1	High	22.79	28.45
					12	Low	21.86	28.44
					12	High	21.80	28.45
					25	Low	21.84	28.35
				16QAM	1	Low	21.94	27.93
					1	Mid	21.99	27.99
					1	High	21.93	27.96
					12	Low	20.90	27.78
					12	High	20.86	27.78
					25	Low	20.90	28.43
	5.0 MHz	40740	2605.0	QPSK	1	Low	22.83	27.85
					1	Mid	22.93	28.07
					1	High	22.84	27.96
					12	Low	21.85	27.78
					12	High	21.90	27.87
					25	Low	21.87	28.03
				16QAM	1	Low	21.90	27.57
					1	Mid	21.92	27.75
					1	High	21.91	27.70
					12	Low	20.84	27.65
					12	High	20.87	27.73
					25	Low	20.87	28.22
	5.0 MHz	41215	2652.5	QPSK	1	Low	22.88	27.58
					1	Mid	22.92	27.75
					1	High	22.91	27.85
					12	Low	21.95	27.95
					12	High	21.97	28.07
					25	Low	21.95	28.33
				16QAM	1	Low	21.97	27.39
					1	Mid	21.99	27.40
					1	High	21.99	27.44
					12	Low	20.96	27.39
					12	High	20.97	27.43
					25	Low	21.00	28.12

OUTPUT POWER FOR LTE BAND 41 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 41	10.0 MHz	40290	2560.0	QPSK	1	Low	22.86	28.59
					1	Mid	22.21	29.03
					1	High	22.97	28.87
					25	Low	21.91	28.14
					25	High	21.84	28.23
					50	Low	21.87	28.84
				16QAM	1	Low	21.91	28.32
					1	Mid	21.94	28.74
					1	High	22.00	28.62
					25	Low	20.96	28.70
					25	High	20.87	28.77
					50	Low	20.86	28.85
	10.0 MHz	40740	2605.0	QPSK	1	Low	22.98	27.99
					1	Mid	22.30	28.20
					1	High	22.90	28.43
					25	Low	21.89	28.40
					25	High	21.95	28.62
					50	Low	21.90	28.49
				16QAM	1	Low	21.94	27.96
					1	Mid	21.98	28.06
					1	High	21.96	28.02
					25	Low	20.93	27.63
					25	High	20.98	27.69
					50	Low	20.92	28.00
	10.0 MHz	41190	2650.0	QPSK	1	Low	22.88	27.58
					1	Mid	22.37	27.78
					1	High	22.77	27.89
					25	Low	21.92	27.99
					25	High	21.95	28.06
					50	Low	21.96	28.26
				16QAM	1	Low	22.00	27.59
					1	Mid	21.96	27.82
					1	High	21.95	27.90
					25	Low	20.98	27.74
					25	High	20.91	27.83
					50	Low	20.97	28.42

OUTPUT POWER FOR LTE BAND 41 (15.0MHz)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 41	15.0 MHz	40315	2562.5	QPSK	1	Low	22.80	28.62
					1	Mid	22.99	28.95
					1	High	22.92	28.68
					36	Low	21.95	28.57
					36	High	21.92	28.82
					75	Low	21.91	28.67
				16QAM	1	Low	21.94	27.90
					1	Mid	21.91	28.20
					1	High	21.95	28.15
					36	Low	20.90	28.67
					36	High	20.91	28.81
					75	Low	20.90	29.08
	15.0 MHz	40740	2605.0	QPSK	1	Low	22.92	28.01
					1	Mid	22.93	28.06
					1	High	22.92	28.48
					36	Low	21.99	28.08
					36	High	21.92	28.24
					75	Low	22.00	28.58
				16QAM	1	Low	21.92	27.73
					1	Mid	21.97	27.84
					1	High	21.90	28.44
					36	Low	20.98	27.95
					36	High	20.92	28.16
					75	Low	21.00	28.65
	15.0 MHz	41165	2648.5	QPSK	1	Low	22.93	27.48
					1	Mid	22.97	27.66
					1	High	22.91	27.73
					36	Low	21.94	27.95
					36	High	21.95	28.24
					75	Low	21.92	28.28
				16QAM	1	Low	21.78	27.49
					1	Mid	21.90	27.64
					1	High	21.89	26.86
					36	Low	21.00	27.61
					36	High	20.92	28.05
					75	Low	20.92	28.32

OUTPUT POWER FOR LTE BAND 41 (20.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Average Power(dBm)	Peak Power(dBm)
					RB Size	RB Offset		
Band 41	20.0 MHz	40340	2565.0	QPSK	1	Low	22.67	27.74
					1	Mid	22.89	28.23
					1	High	22.80	28.07
					50	Low	21.92	28.93
					50	High	21.94	28.78
					100	Low	21.99	28.87
				16QAM	1	Low	21.85	27.52
					1	Mid	21.96	28.15
					1	High	21.95	27.85
					50	Low	20.95	28.71
					50	High	20.95	28.59
					100	Low	20.91	29.23
	20.0 MHz	40740	2605.0	QPSK	1	Low	22.82	28.19
					1	Mid	22.95	28.30
					1	High	22.83	28.78
					50	Low	21.87	28.19
					50	High	21.95	28.42
					100	Low	21.92	28.76
				16QAM	1	Low	21.92	27.57
					1	Mid	21.96	27.81
					1	High	21.92	28.00
					50	Low	20.93	28.02
					50	High	20.91	28.23
					100	Low	20.91	28.23
	20.0 MHz	41140	2645.0	QPSK	1	Low	22.67	27.69
					1	Mid	22.94	27.60
					1	High	22.81	27.62
					50	Low	21.95	27.95
					50	High	21.96	27.98
					100	Low	21.89	28.49
				16QAM	1	Low	21.81	27.60
					1	Mid	21.92	27.53
					1	High	21.74	27.49
					50	Low	20.93	27.95
					50	High	20.98	28.05
					100	Low	20.92	28.75

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 41

RESULTS

PASS

Test results:

Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 4	1.4MHz BW QPSK	6/0	1732.5	1.09	1.26
	1.4MHz BW 16QAM	6/0	1732.5	1.09	1.27
	3.0MHz BW QPSK	15/0	1732.5	2.69	2.88
	3.0MHz BW 16QAM	15/0	1732.5	2.69	2.87
	5.0MHz BW QPSK	25/0	1732.5	4.49	4.79
	5.0MHz BW 16QAM	25/0	1732.5	4.49	4.77
	10.0MHz BW QPSK	50/0	1732.5	8.97	9.50
	10.0MHz BW 16QAM	50/0	1732.5	8.97	9.49
	15.0MHz BW QPSK	75/0	1732.5	13.45	14.24
	15.0MHz BW 16QAM	75/0	1732.5	13.45	14.21
	20.0MHz BW QPSK	100/0	1732.5	17.93	19.00
	20.0MHz BW 16QAM	100/0	1732.5	17.93	18.99

Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 5	1.4MHz BAND QPSK	6/0	836.5	1.08	1.24
	1.4MHz BAND 16QAM	6/0	836.5	1.08	1.26
	3.0MHz BAND QPSK	15/0	836.5	2.69	2.87
	3.0MHz BAND 16QAM	15/0	836.5	2.69	2.86
	5.0MHz BAND QPSK	25/0	836.5	4.49	4.79
	5.0MHz BAND 16QAM	25/0	836.5	4.49	4.77
	10.0MHz BAND QPSK	50/0	836.5	8.97	9.51
	10.0MHz BAND 16QAM	50/0	836.5	8.97	9.49

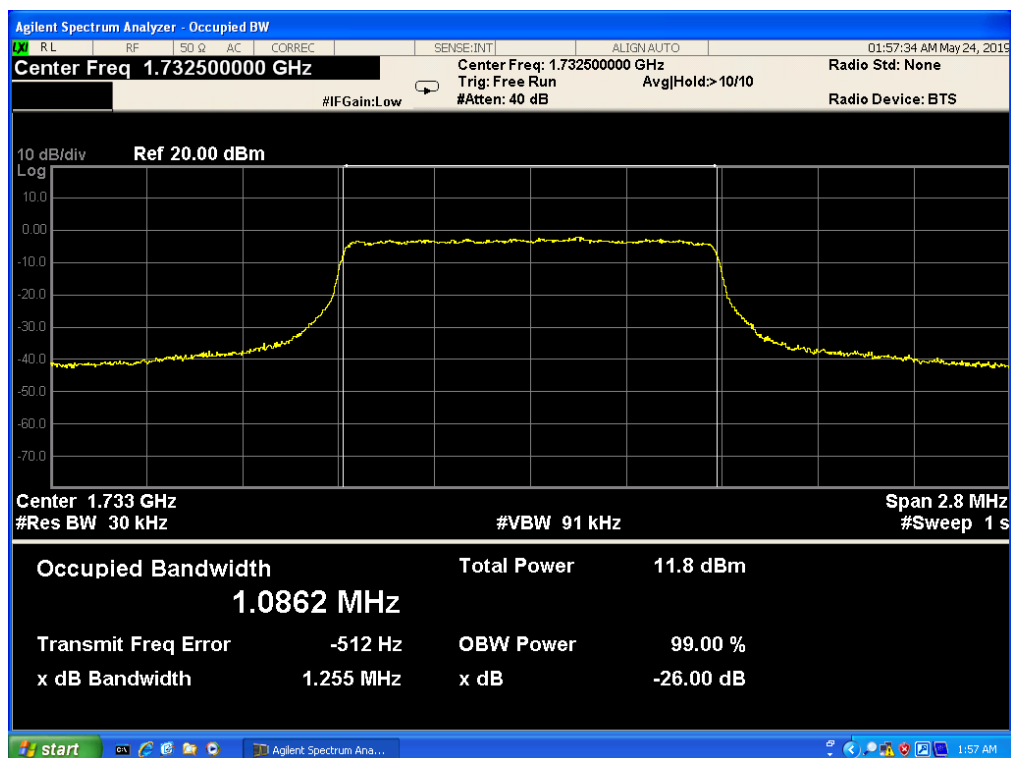
Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 7	5.0MHz BAND QPSK	25/0	2535.0	4.49	4.79
	5.0MHz BAND 16QAM	25/0	2535.0	4.49	4.78
	10.0MHz BAND QPSK	50/0	2535.0	8.98	9.52
	10.0MHz BAND 16QAM	50/0	2535.0	8.97	9.50
	15.0MHz BAND QPSK	75/0	2535.0	13.46	14.24
	15.0MHz BAND 16QAM	75/0	2535.0	13.46	14.22
	20.0MHz BAND QPSK	100/0	2535.0	17.96	19.00
	20.0MHz BAND 16QAM	100/0	2535.0	17.96	19.01

Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 41	5.0MHz BAND QPSK	25/0	2605.0	4.48	4.76
	5.0MHz BAND 16QAM	25/0	2605.0	4.48	4.77
	10.0MHz BAND QPSK	50/0	2605.0	8.95	9.48
	10.0MHz BAND 16QAM	50/0	2605.0	8.96	9.48
	15.0MHz BAND QPSK	75/0	2605.0	13.43	14.21
	15.0MHz BAND 16QAM	75/0	2605.0	13.43	14.22
	20.0MHz BAND QPSK	100/0	2605.0	17.93	19.01
	20.0MHz BAND 16QAM	100/0	2605.0	17.92	18.99

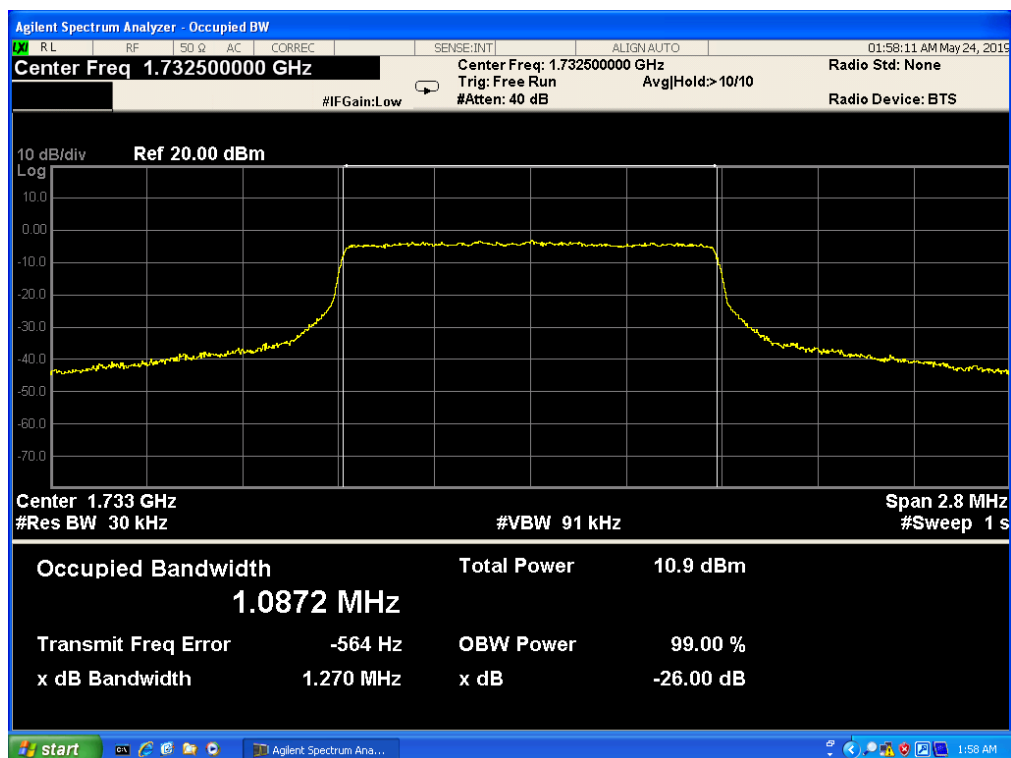
Note: This test was only measured at maximum RB allocation and at CENTER of band for each LTE BW

5.1 LTE BAND 4

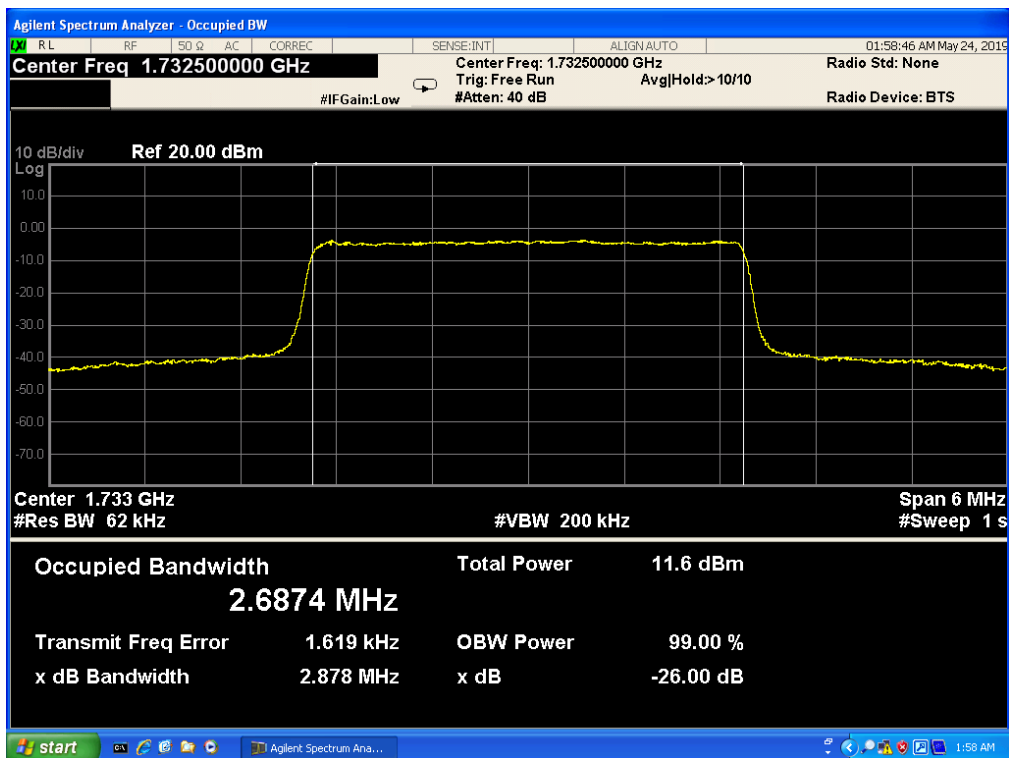
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,QPSK



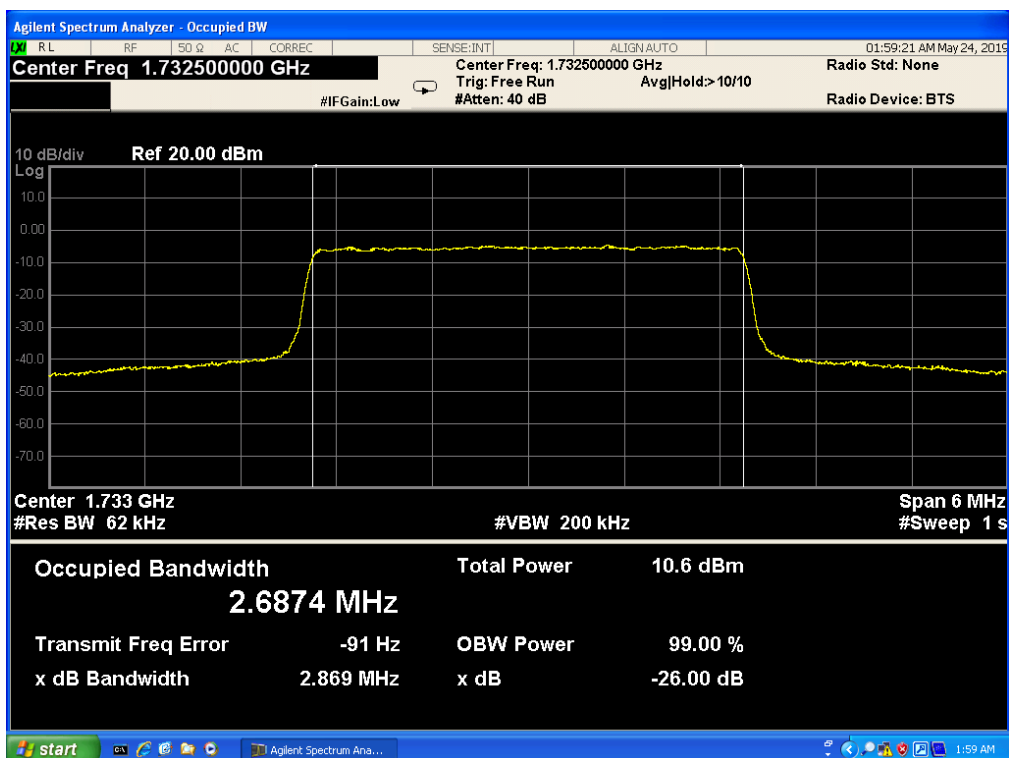
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,16-QAM



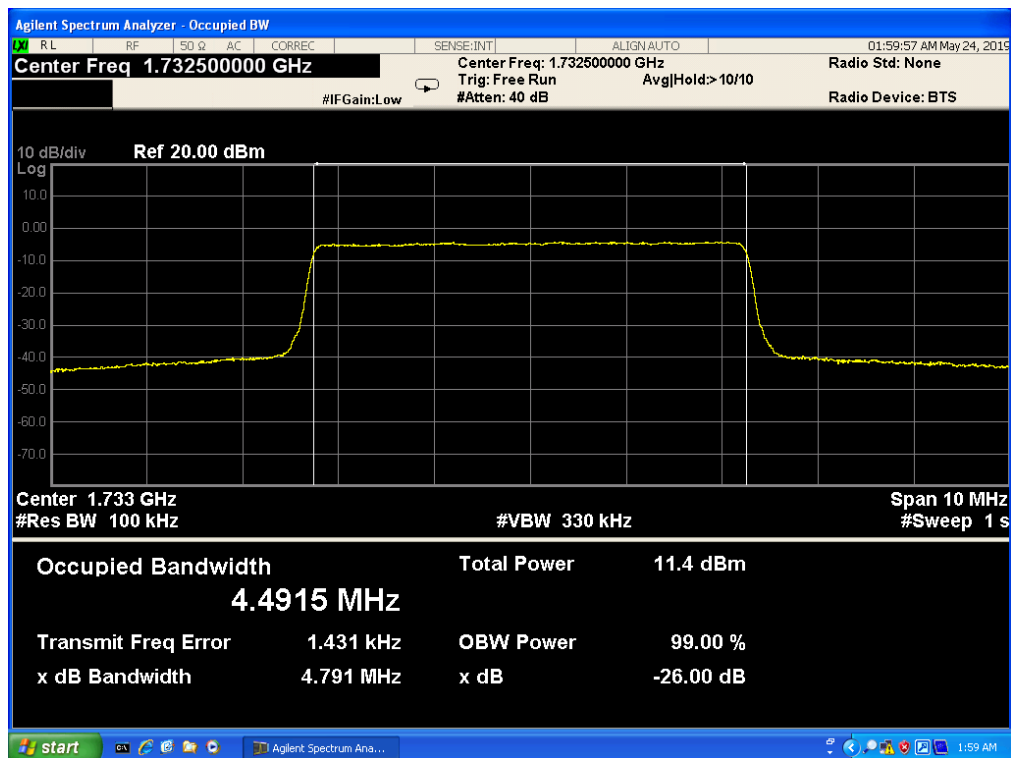
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



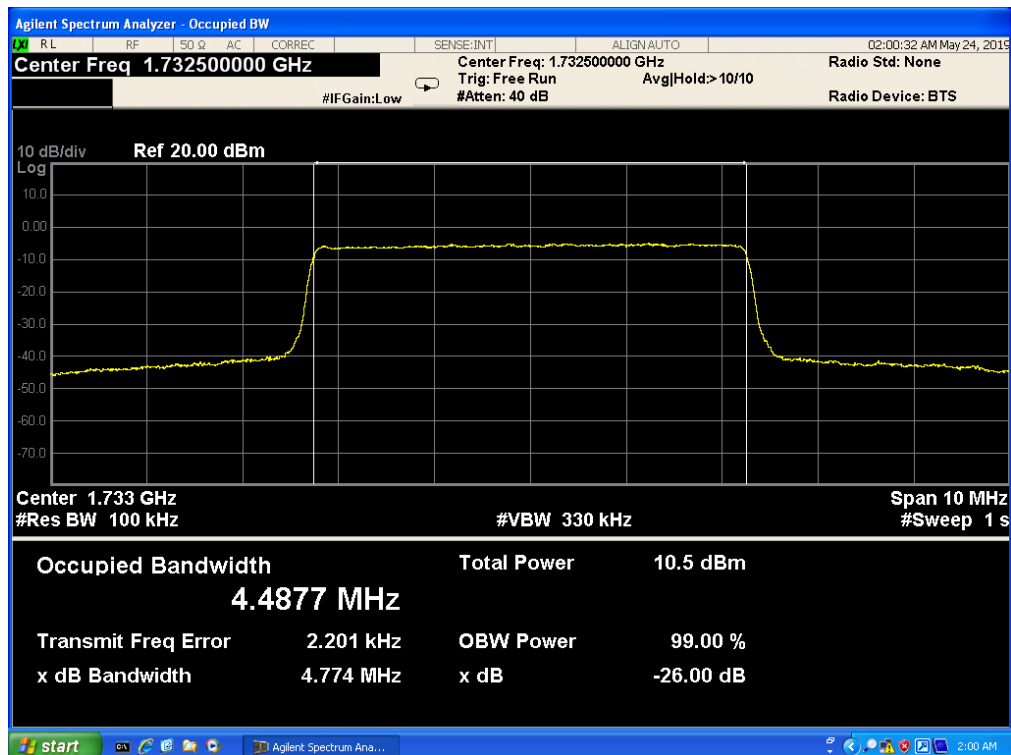
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM



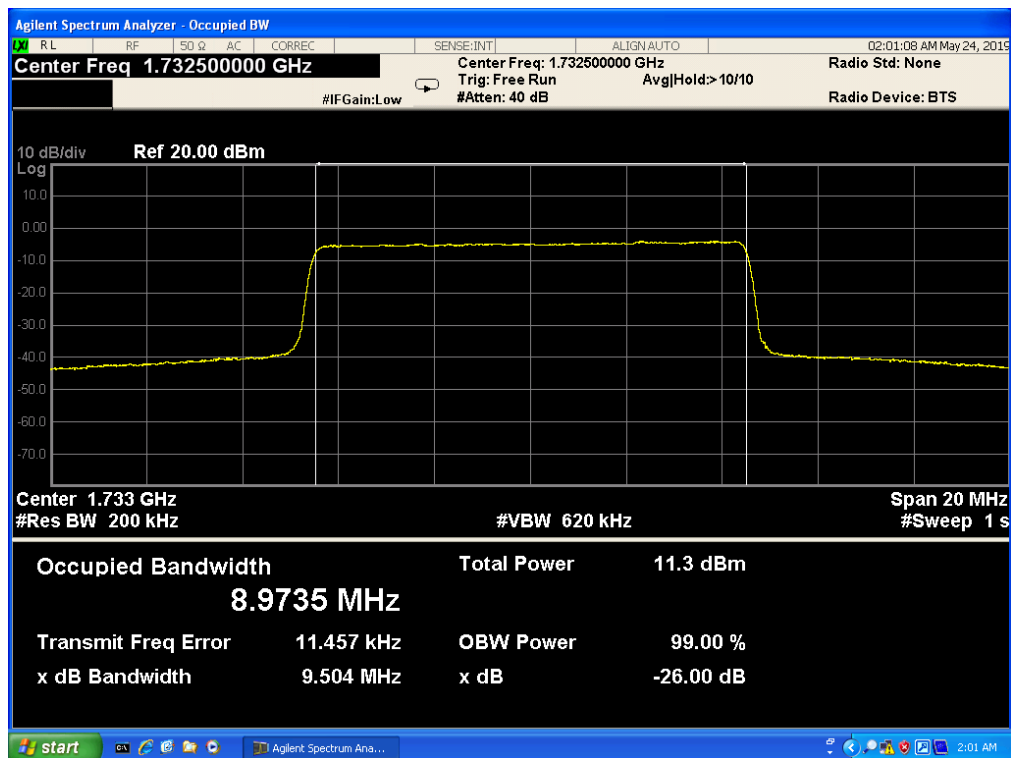
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 5.0, NO. RB 25, RB POS. Low, QPSK



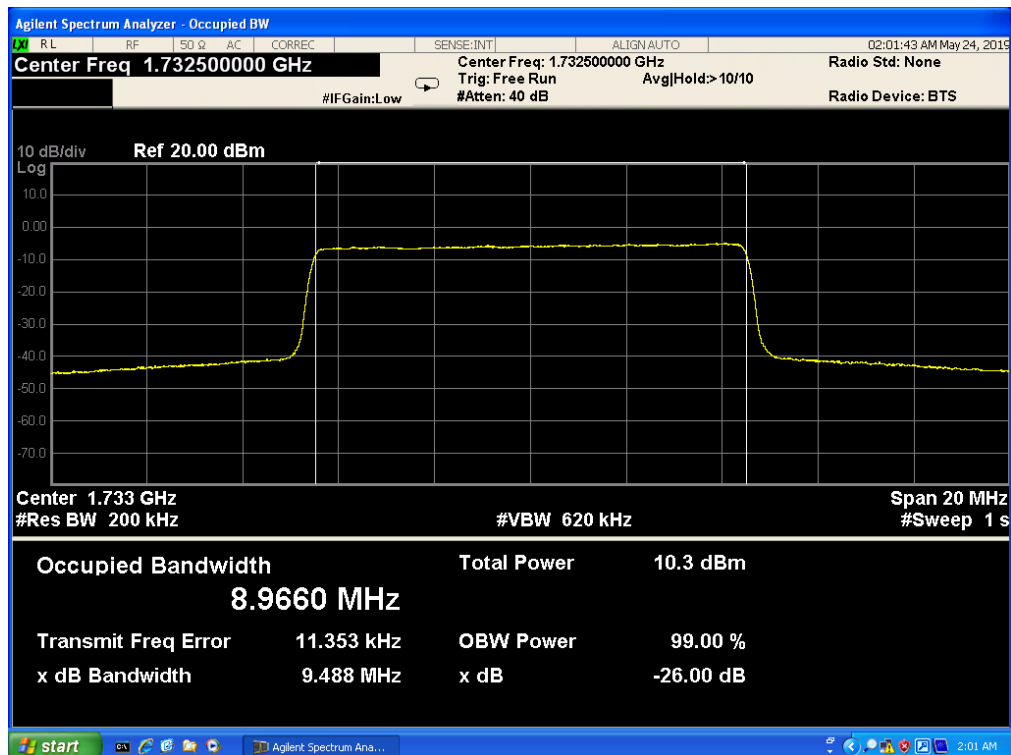
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 5.0, NO. RB 25, RB POS. Low, 16-QAM



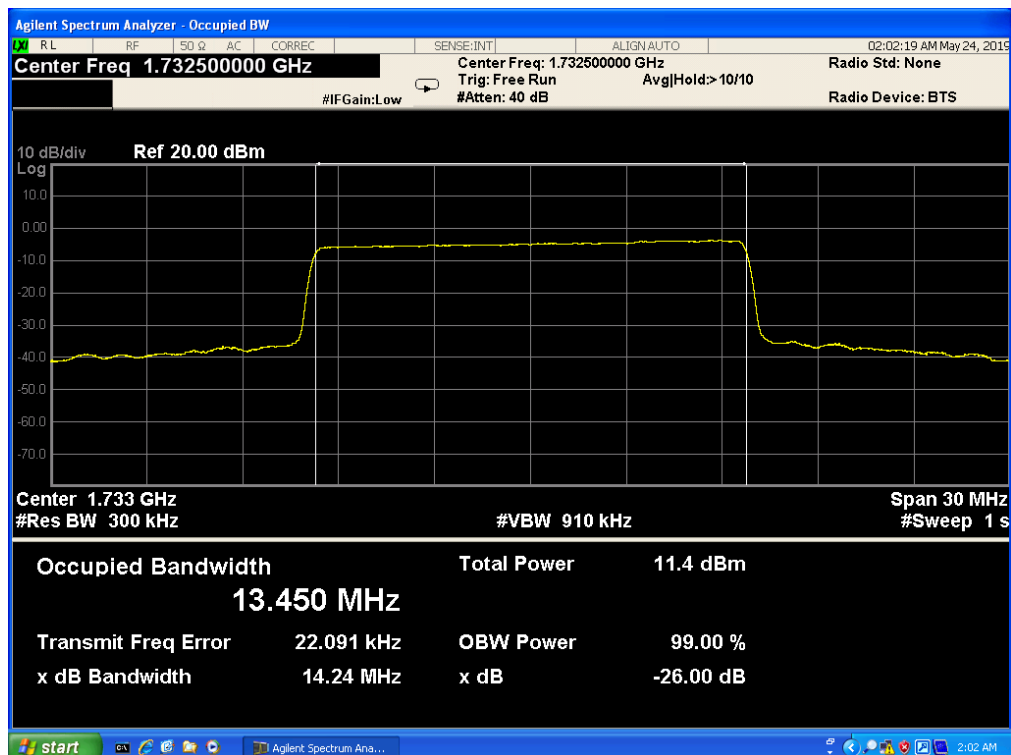
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 10.0, NO. RB 50, RB POS. Low, QPSK



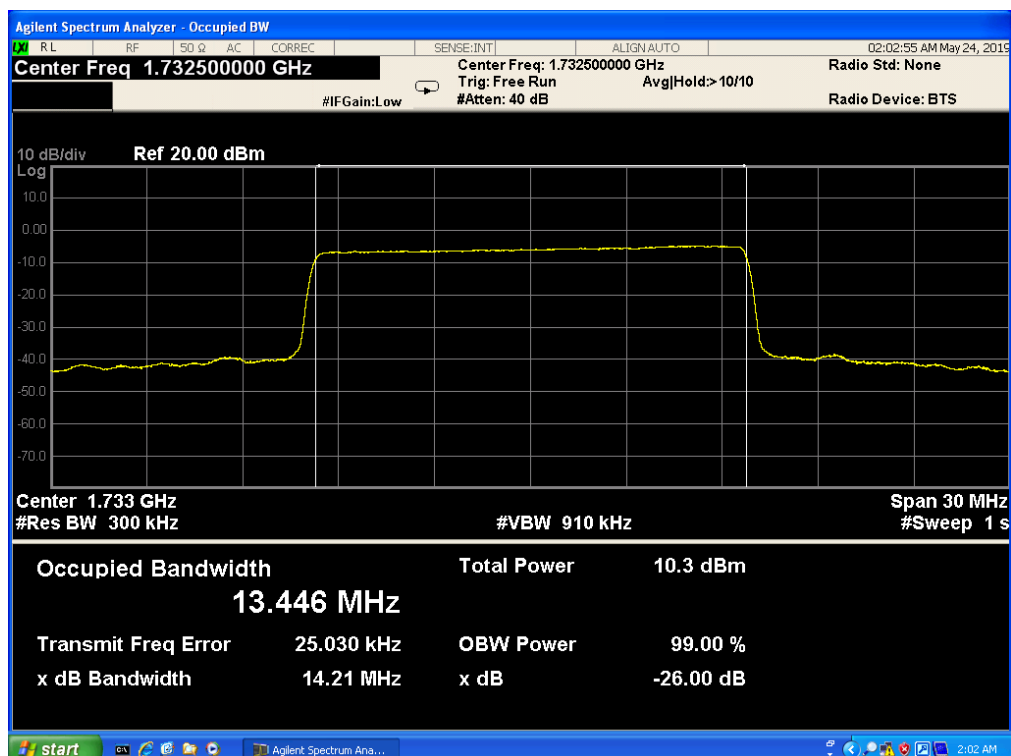
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 10.0, NO. RB 50, RB POS. Low, 16-QAM



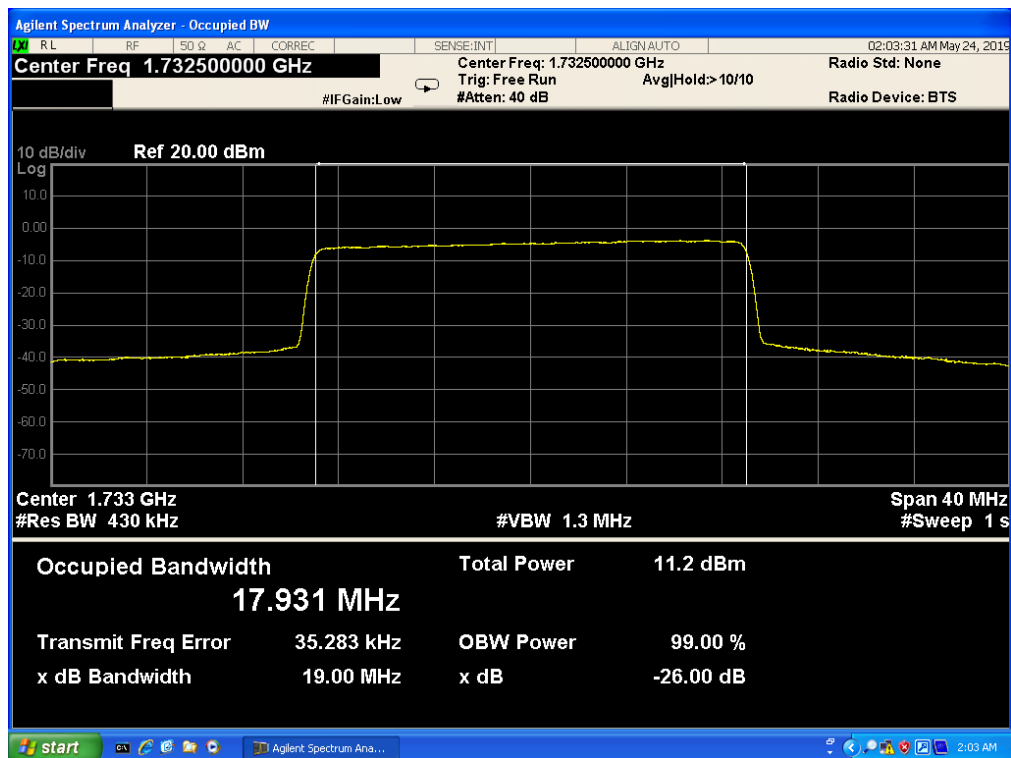
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 15.0, NO. RB 75, RB POS. Low, QPSK



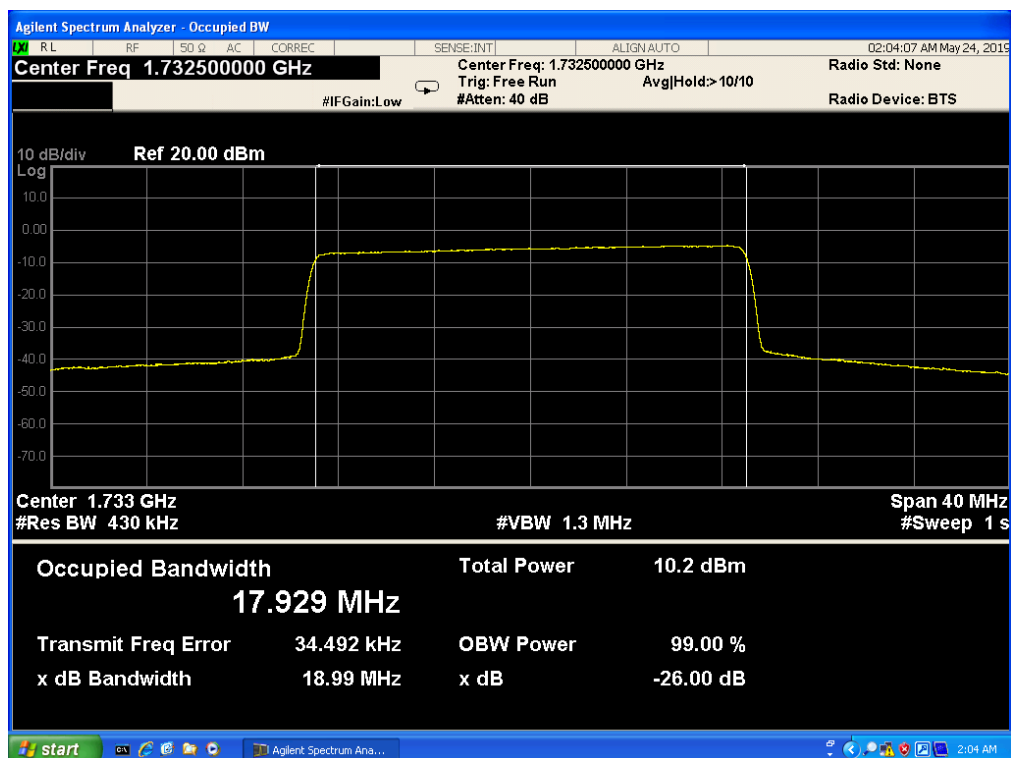
Band 4, UL Channel 20175, UL Frequency 1732.5, BW 15.0, NO. RB 75, RB POS. Low, 16-QAM



Band 4, UL Channel 20175, UL Frequency 1732.5, BW 20.0, NO. RB 100, RB POS. Low, QPSK

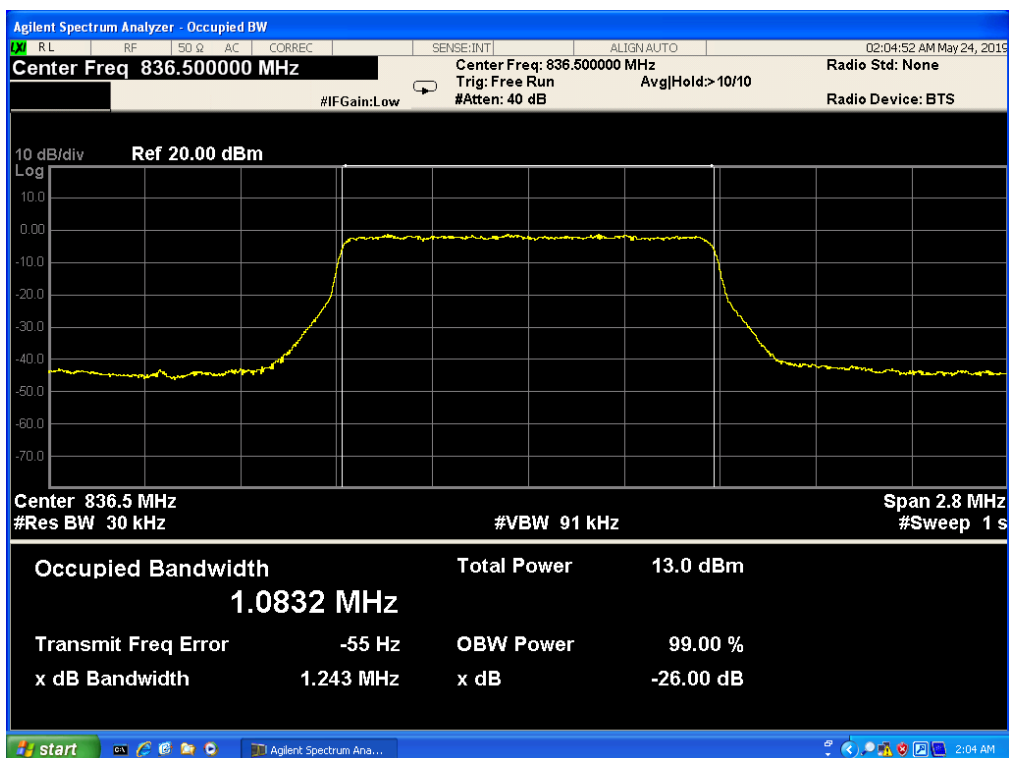


Band 4, UL Channel 20175, UL Frequency 1732.5, BW 20.0, NO. RB 100, RB POS. Low, 16-QAM

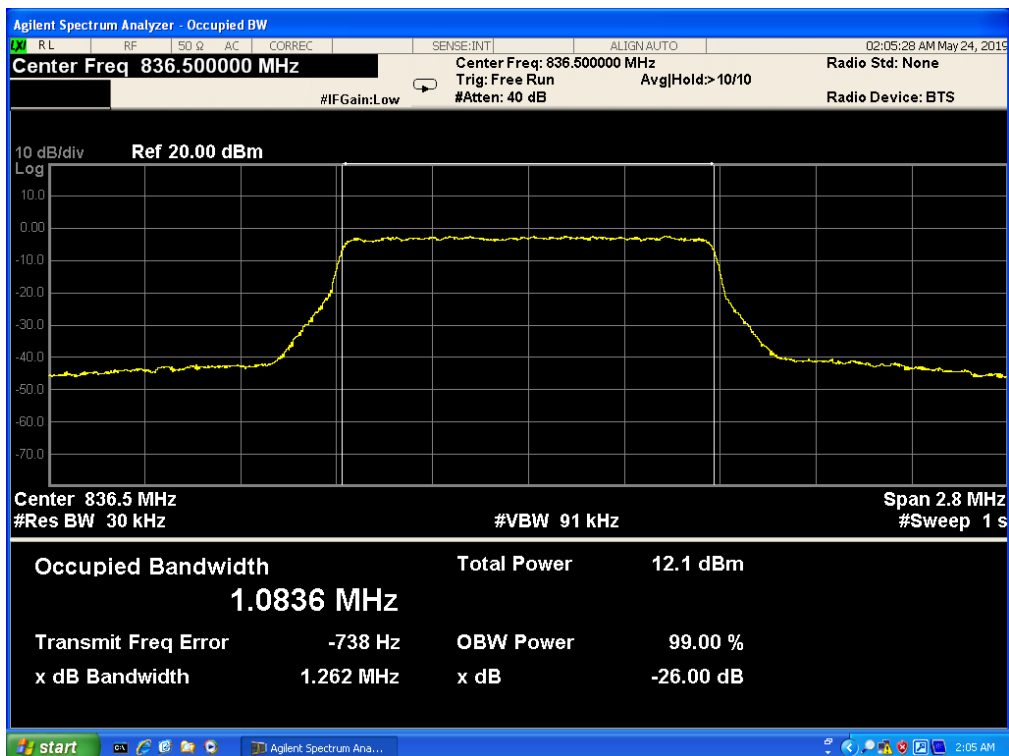


5.2 LTE BAND 5

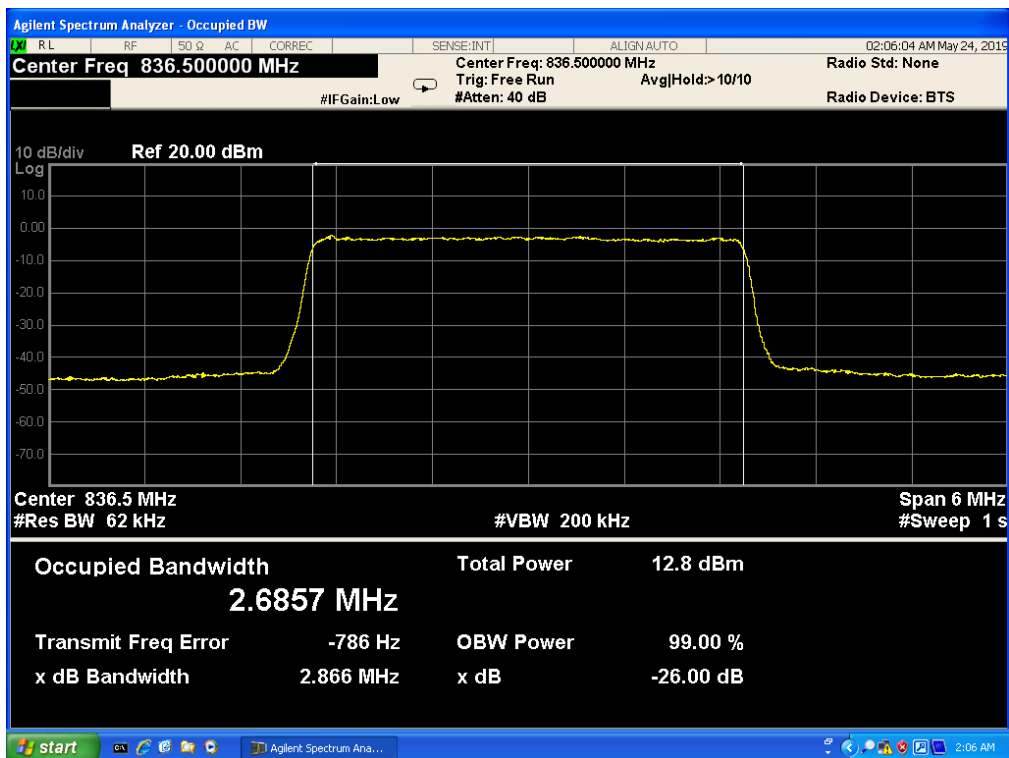
Band 5, UL Channel 20525, UL Frequency 836.5, BW 1.4, NO. RB 6, RB POS. Low, QPSK



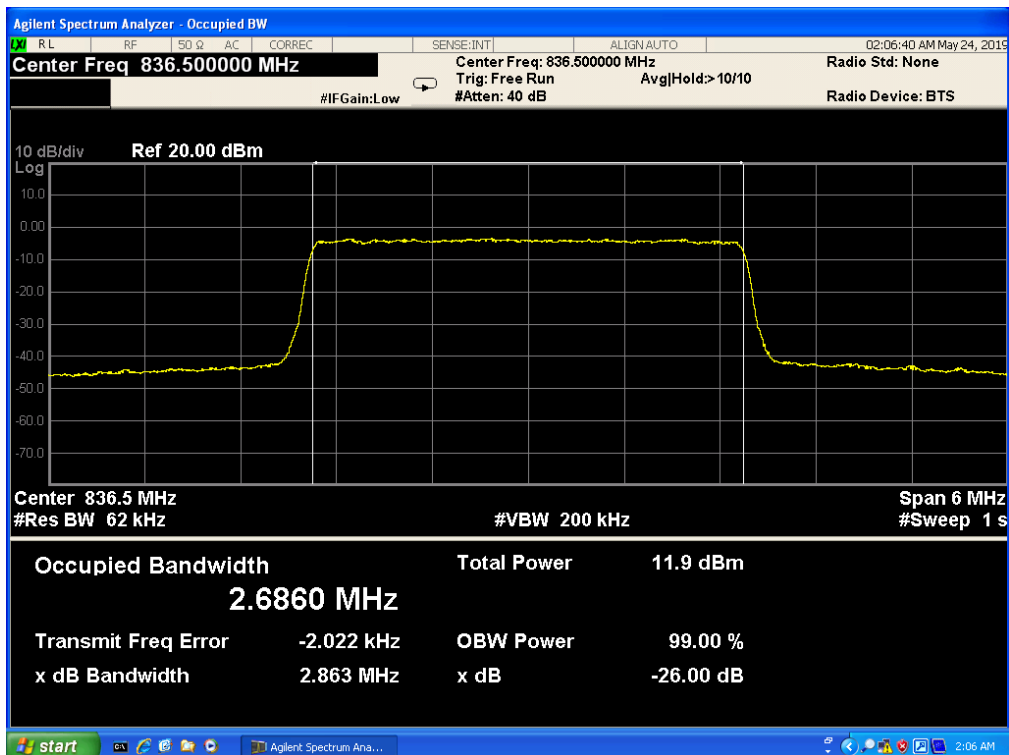
Band 5, UL Channel 20525, UL Frequency 836.5, BW 1.4, NO. RB 6, RB POS. Low, 16-QAM



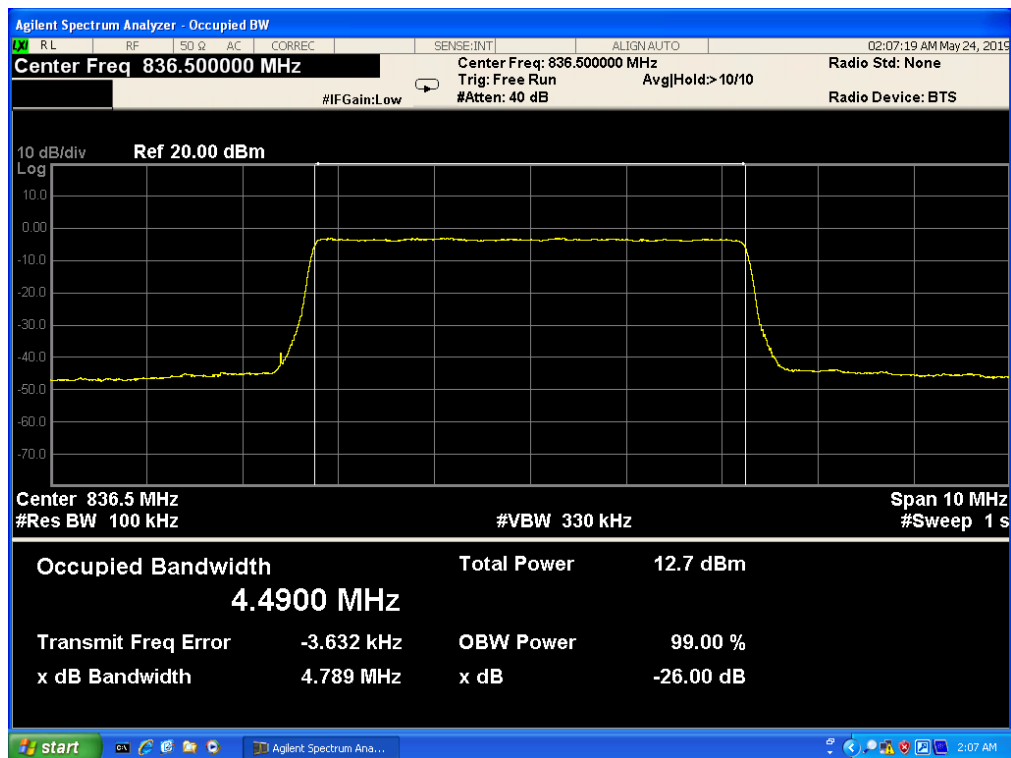
Band 5, UL Channel 20525, UL Frequency 836.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



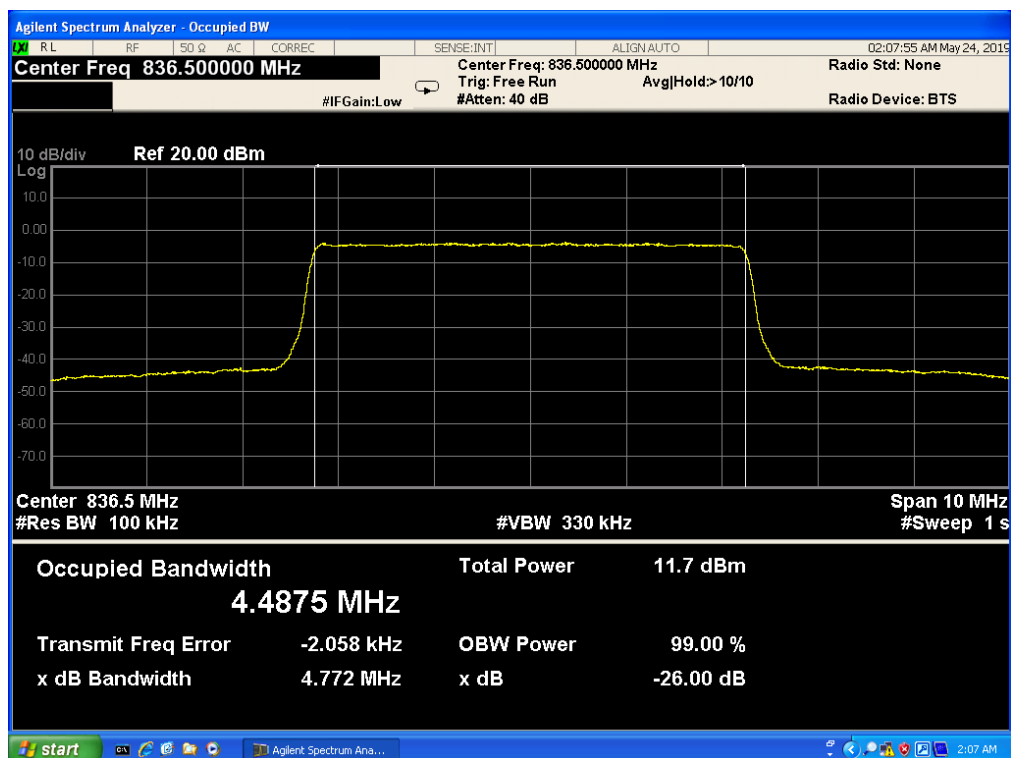
Band 5, UL Channel 20525, UL Frequency 836.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM



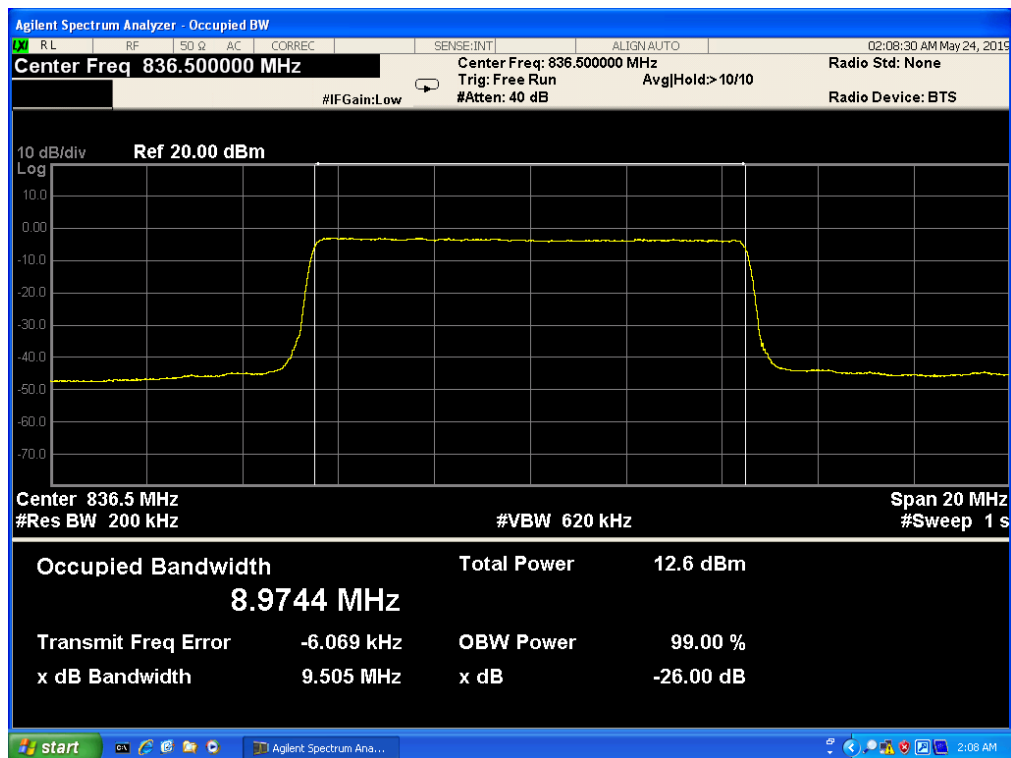
Band 5, UL Channel 20525, UL Frequency 836.5, BW 5.0, NO. RB 25, RB POS. Low, QPSK



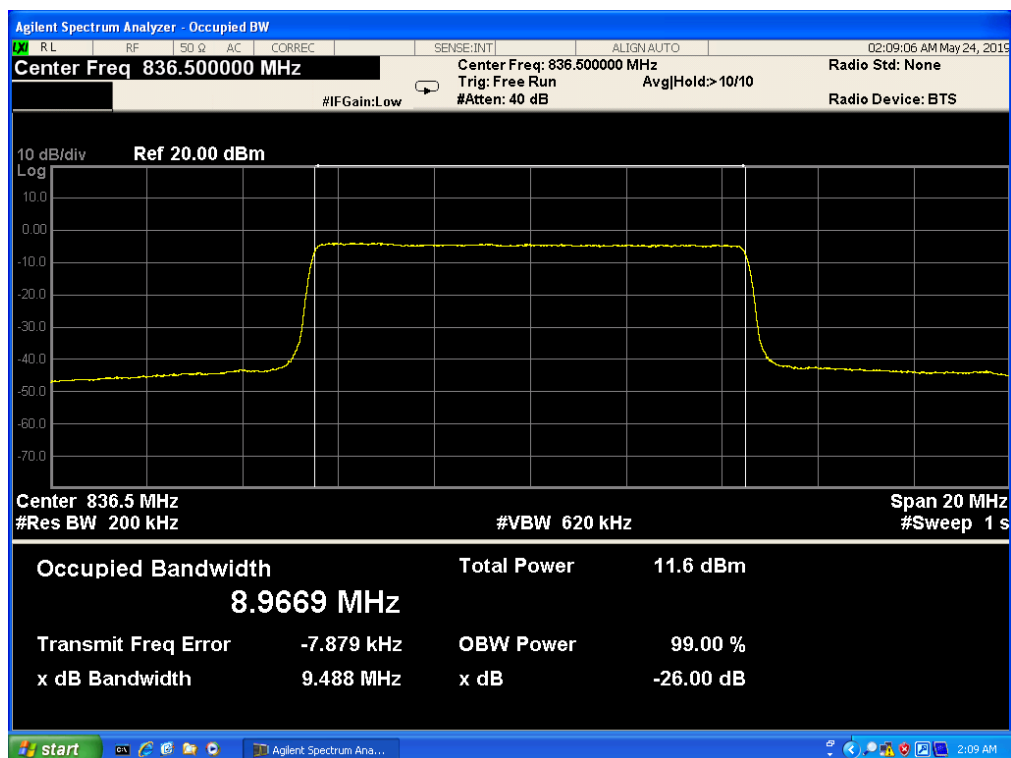
Band 5, UL Channel 20525, UL Frequency 836.5, BW 5.0, NO. RB 25, RB POS. Low, 16-QAM



Band 5, UL Channel 20525, UL Frequency 836.5, BW 10.0, NO. RB 50, RB POS. Low, QPSK

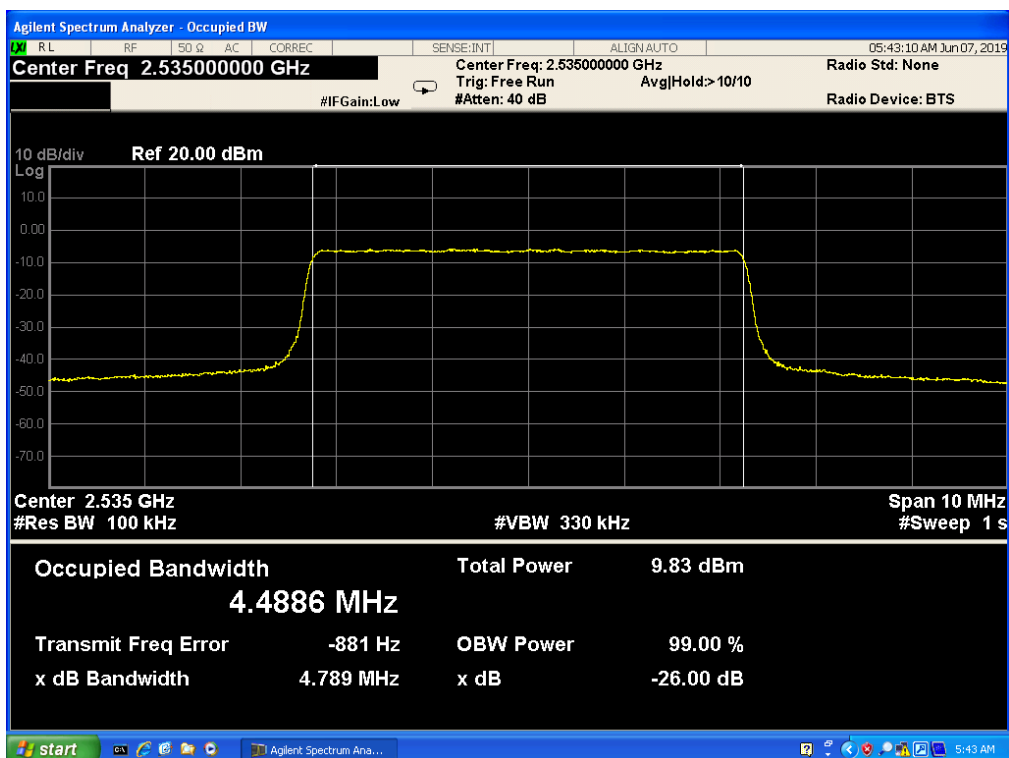


Band 5, UL Channel 20525, UL Frequency 836.5, BW 10.0, NO. RB 50, RB POS. Low, 16-QAM

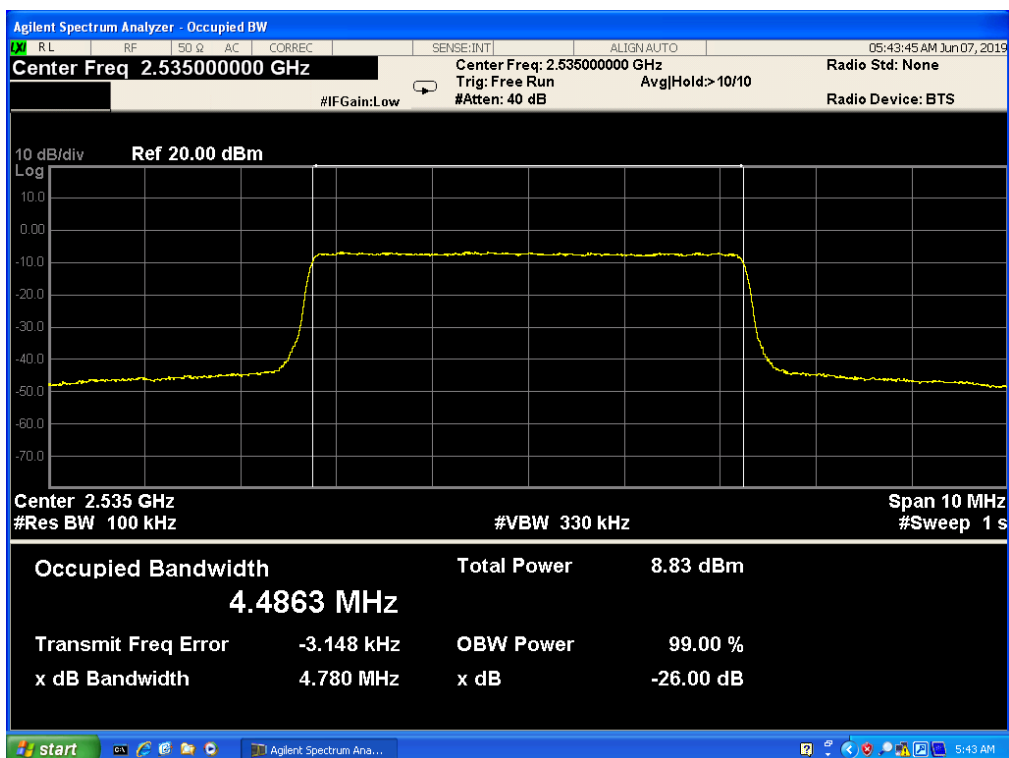


5.3 LTE BAND 7

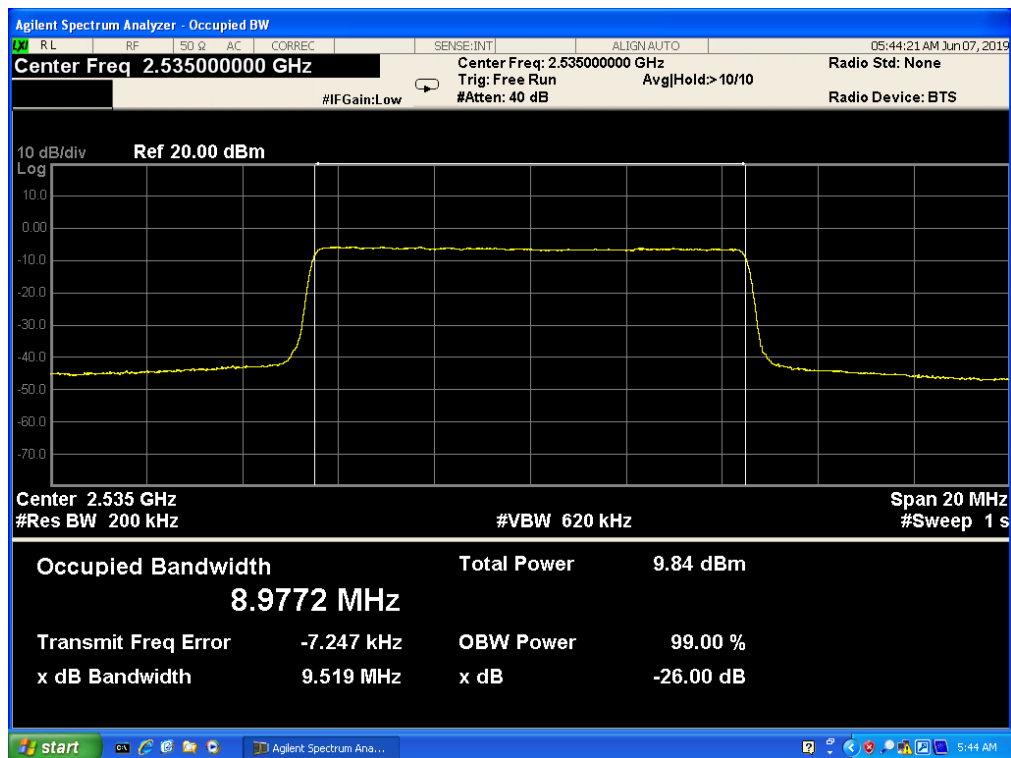
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 5.0, NO. RB 25, RB POS. Low, QPSK



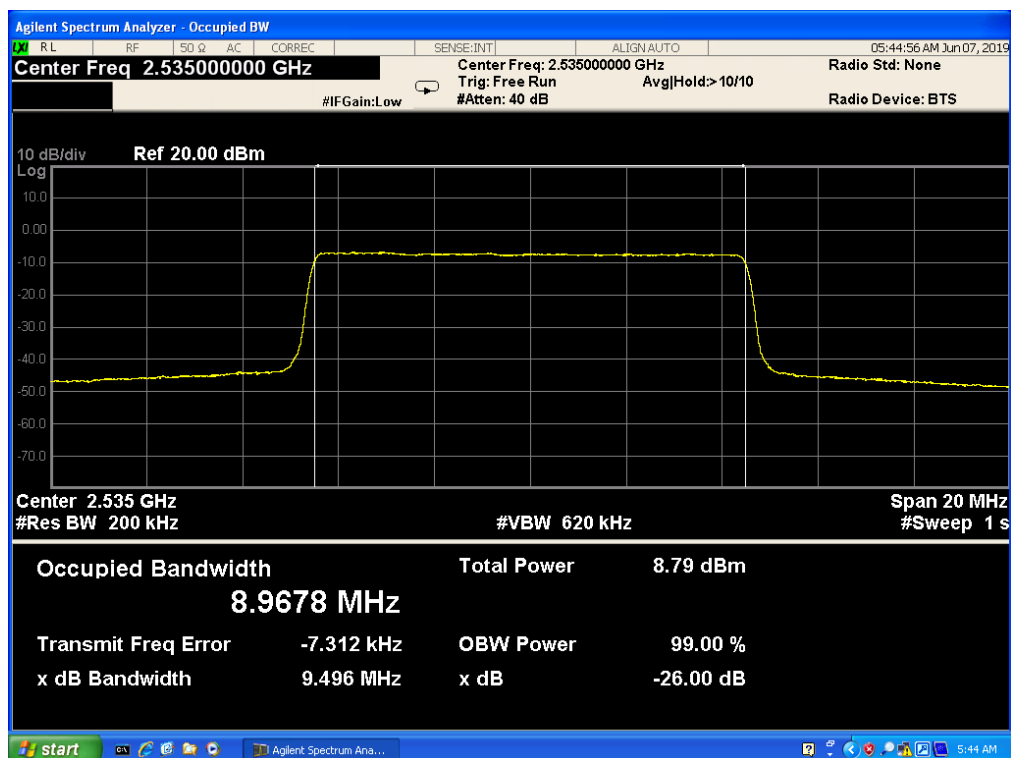
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 5.0, NO. RB 25, RB POS. Low, 16-QAM



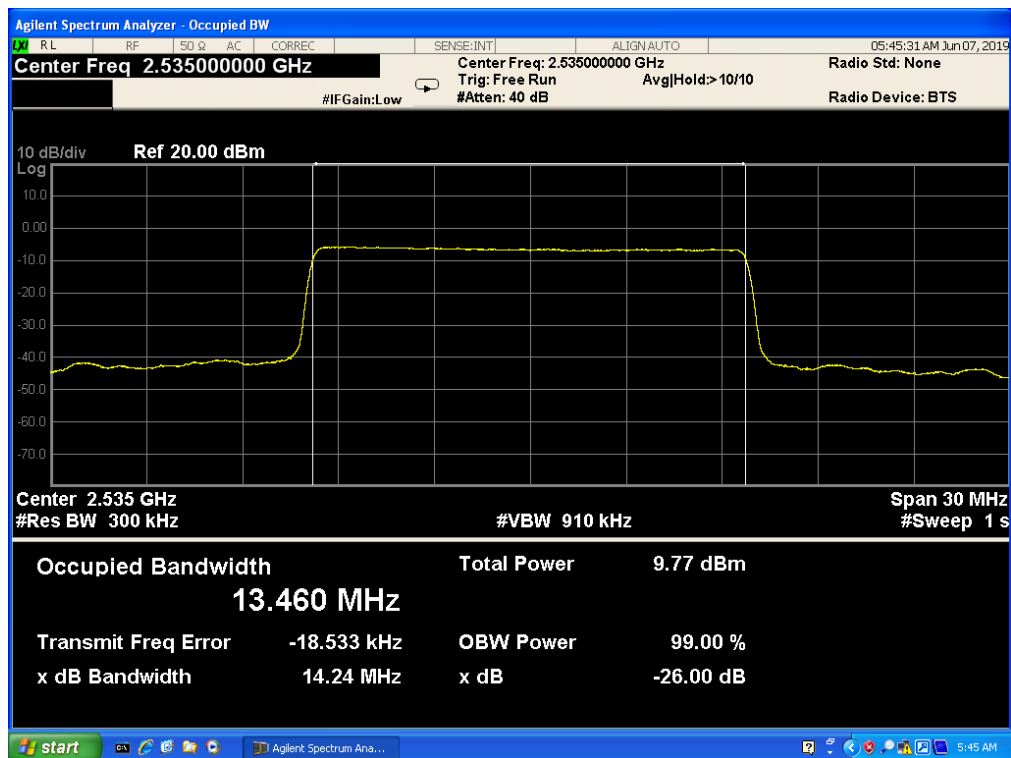
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 10.0, NO. RB 50, RB POS. Low, QPSK



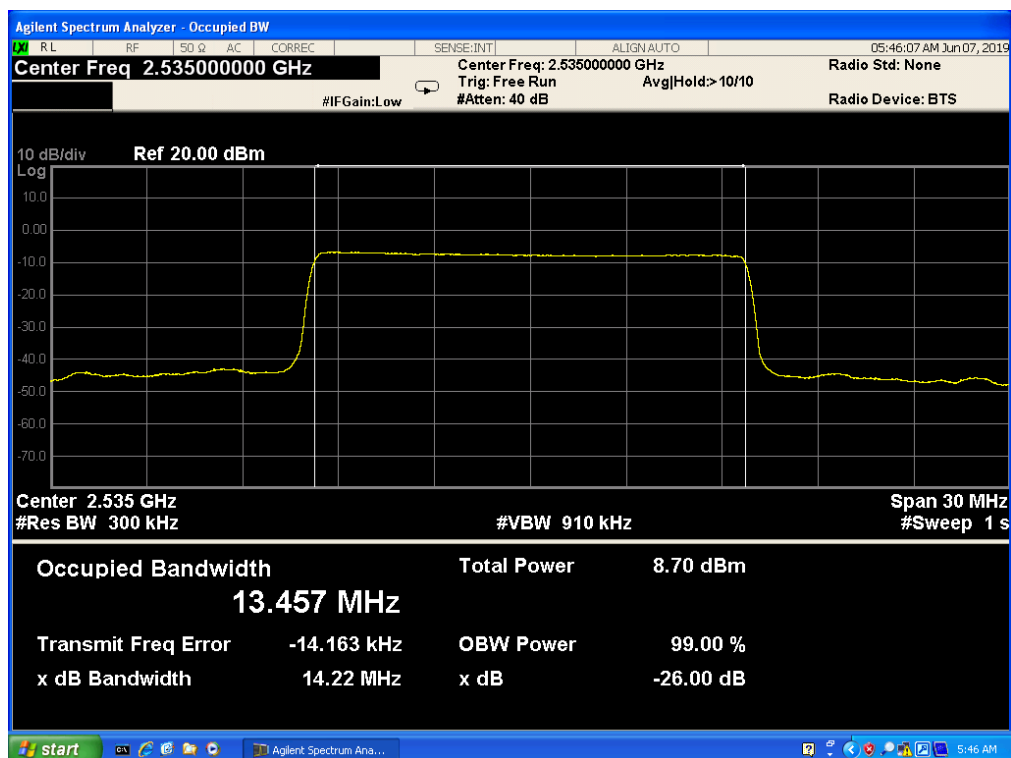
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 10.0, NO. RB 50, RB POS. Low, 16-QAM



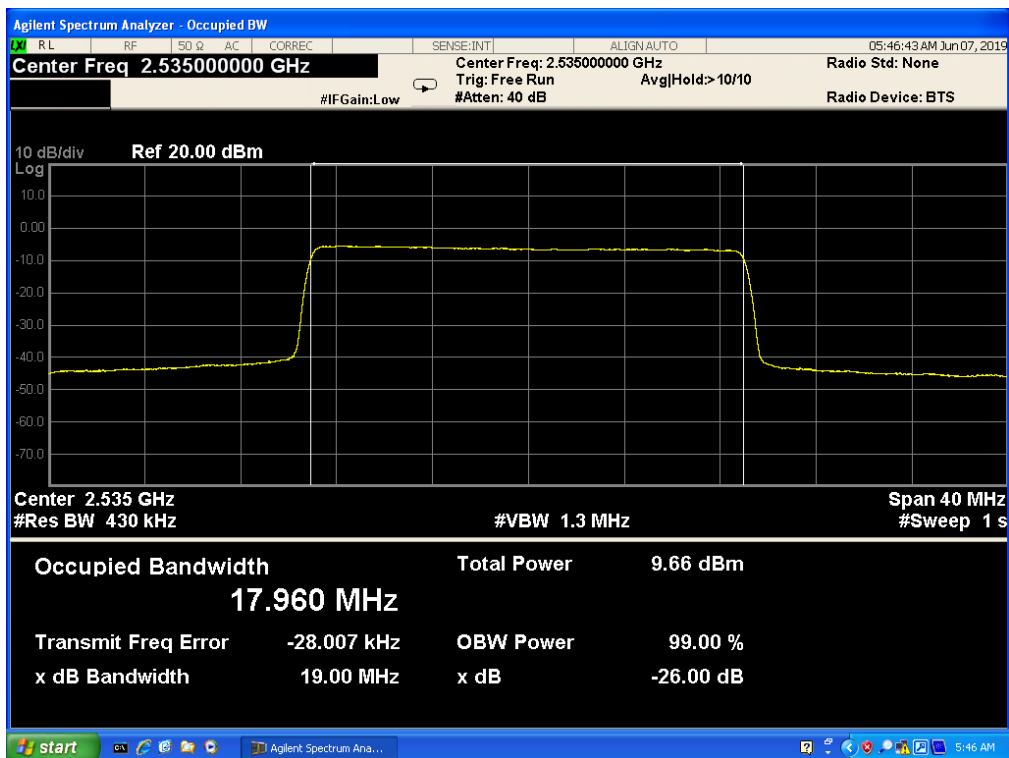
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 15.0, NO. RB 75, RB POS. Low, QPSK



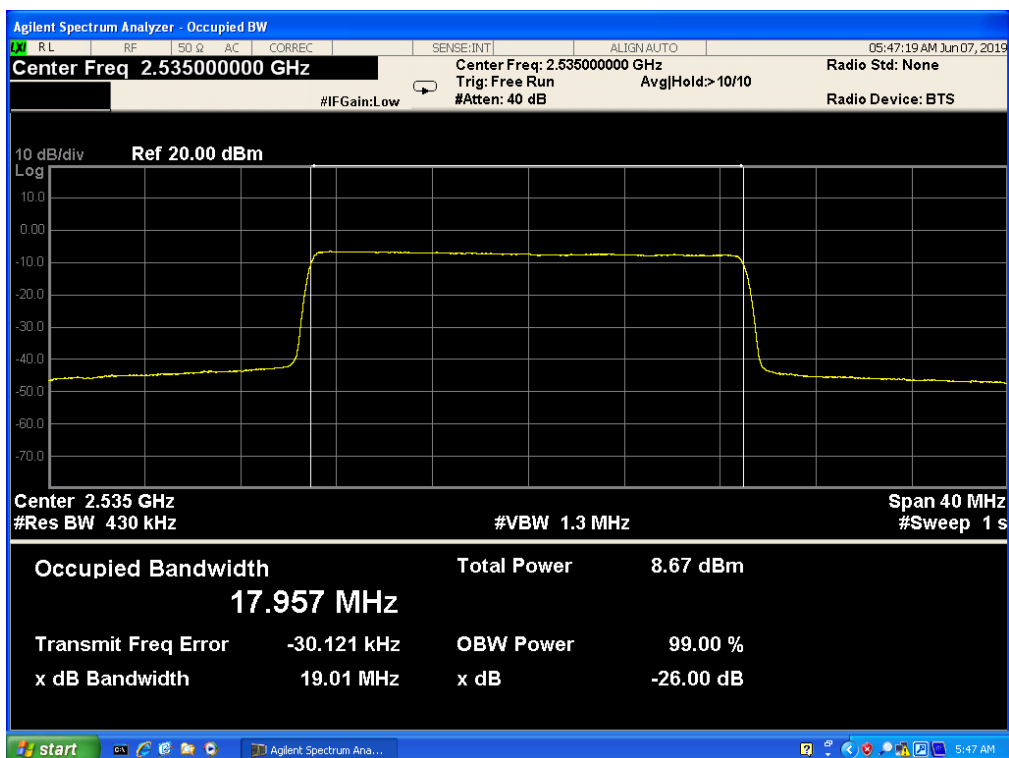
Band 7, UL Channel 21100, UL Frequency 2535.0, BW 15.0, NO. RB 75, RB POS. Low, 16-QAM



Band 7, UL Channel 21100, UL Frequency 2535.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK

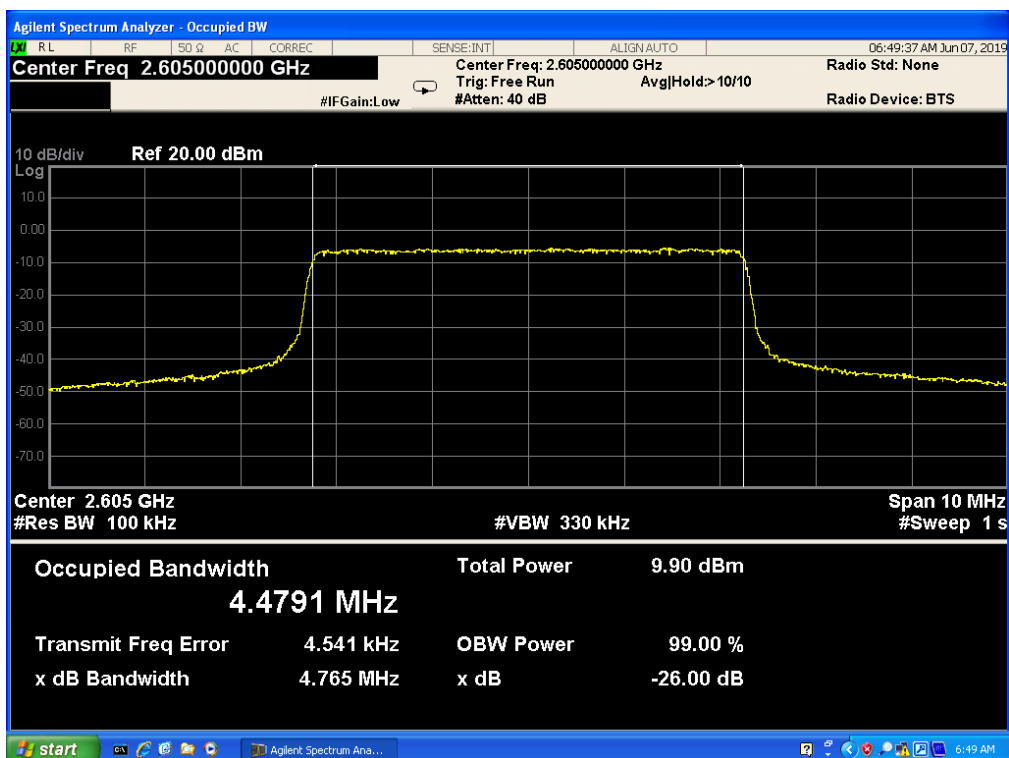


Band 7, UL Channel 21100, UL Frequency 2535.0, BW 20.0, NO. RB 100, RB POS. Low, 16-QAM

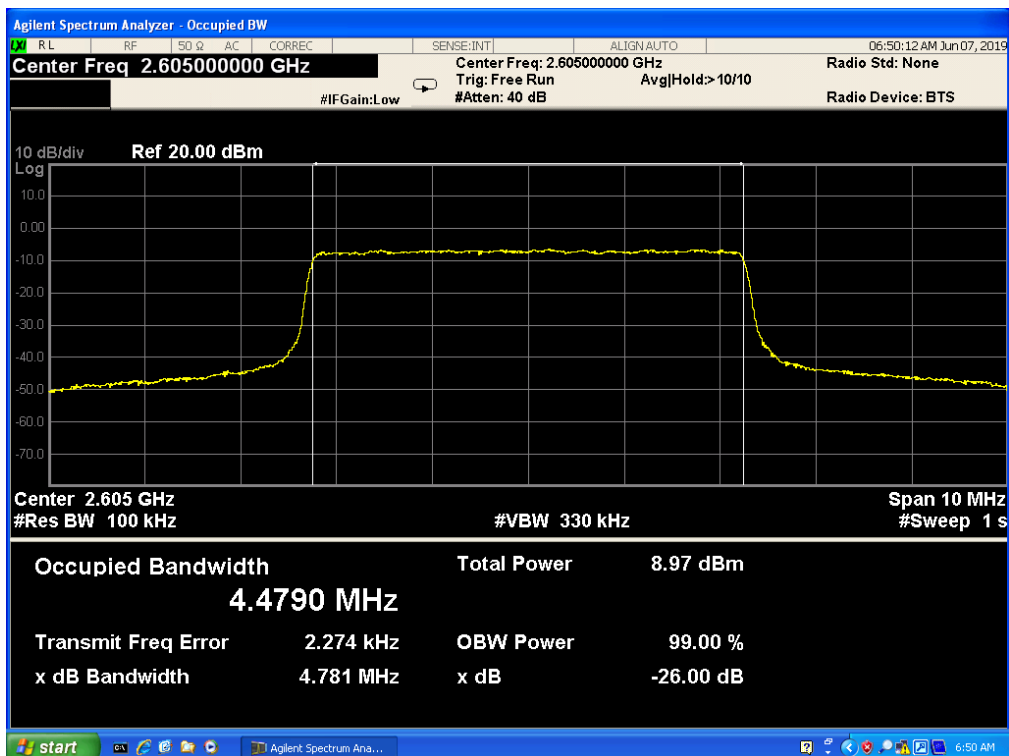


5.4 LTE BAND 41

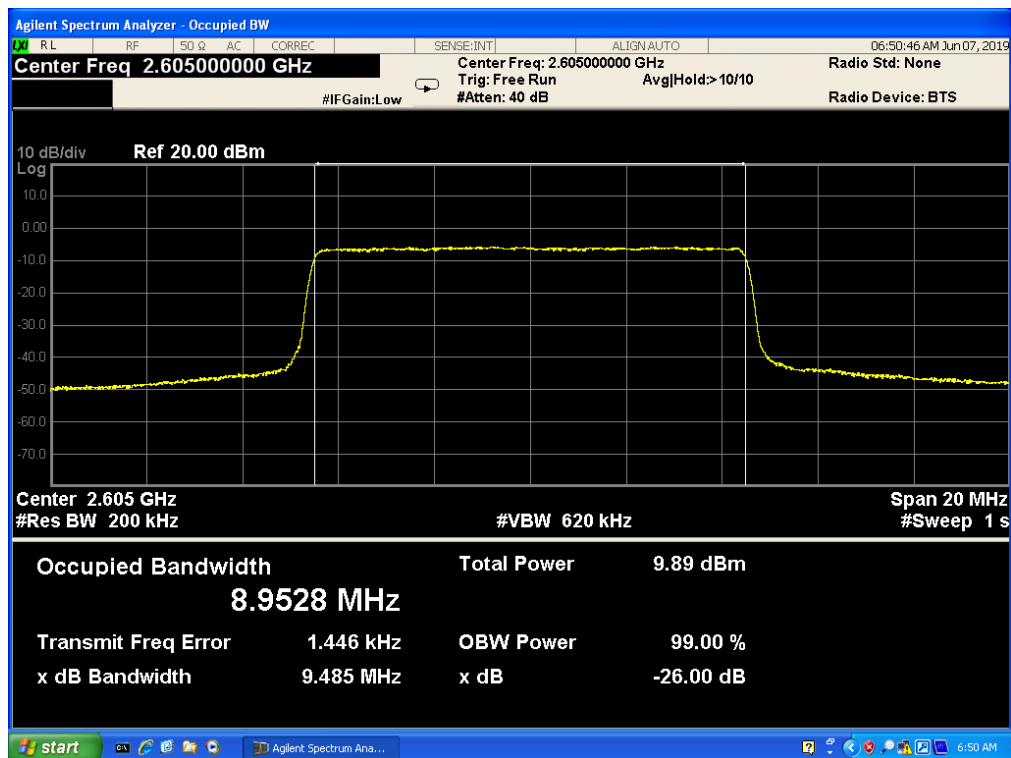
Band 41,UL Channel 40740,UL Frequency 2605.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK



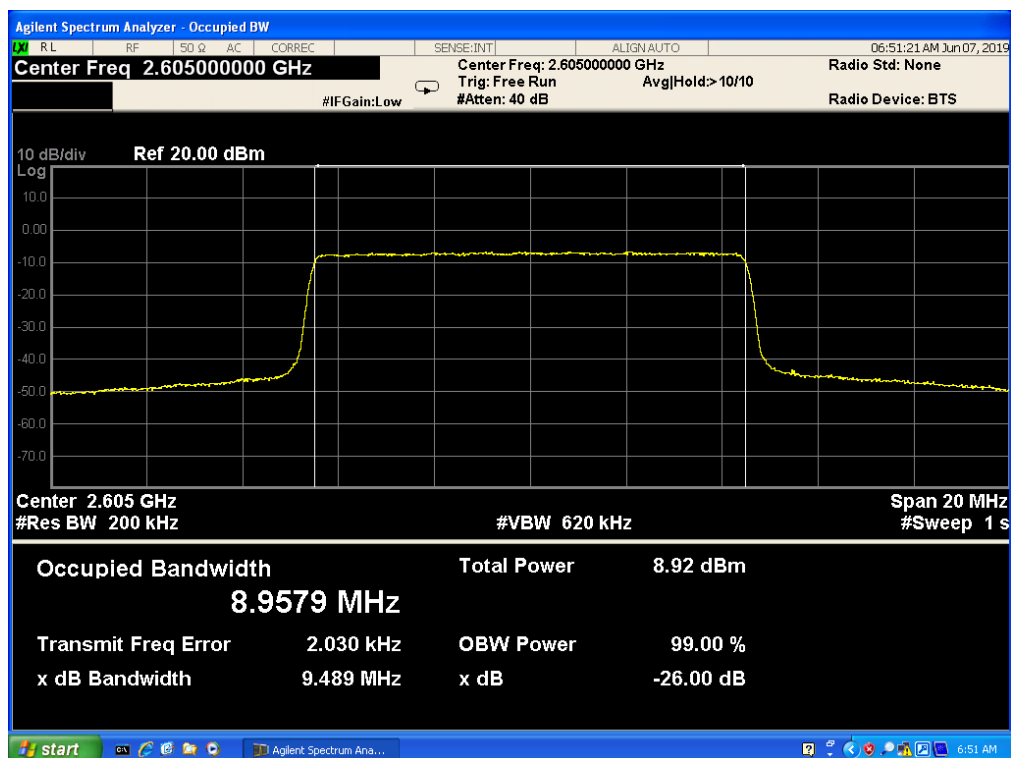
Band 41,UL Channel 40740,UL Frequency 2605.0,BW 5.0,NO. RB 25,RB POS. Low,16-QAM



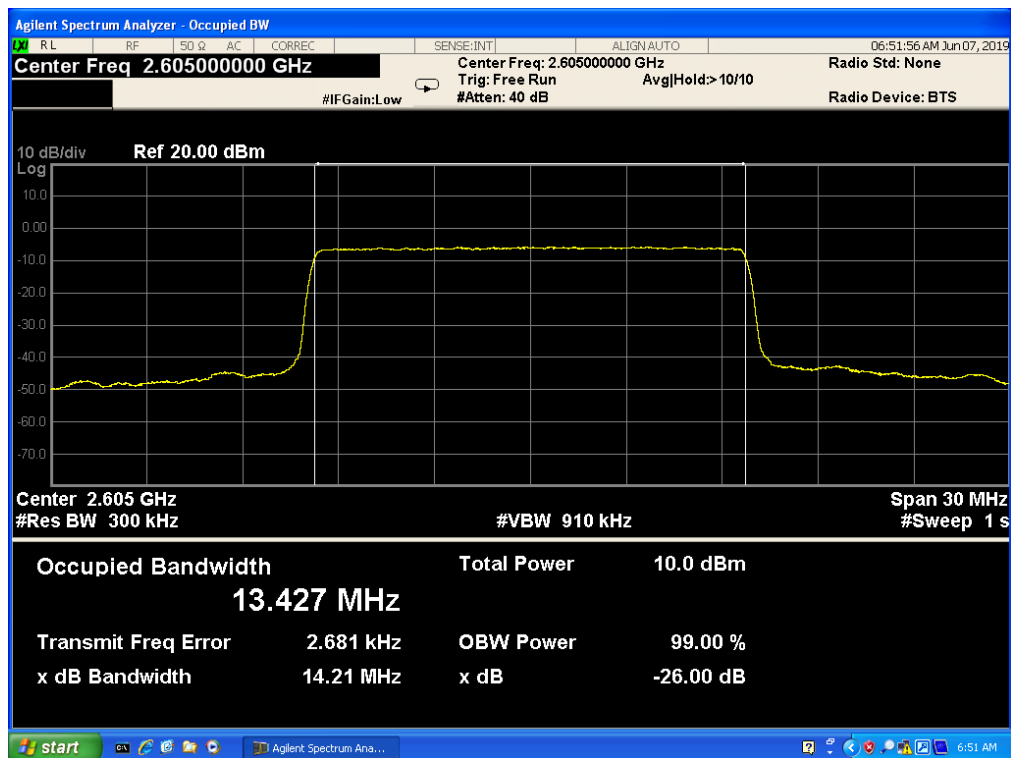
Band 41, UL Channel 40740, UL Frequency 2605.0, BW 10.0, NO. RB 50, RB POS. Low, QPSK



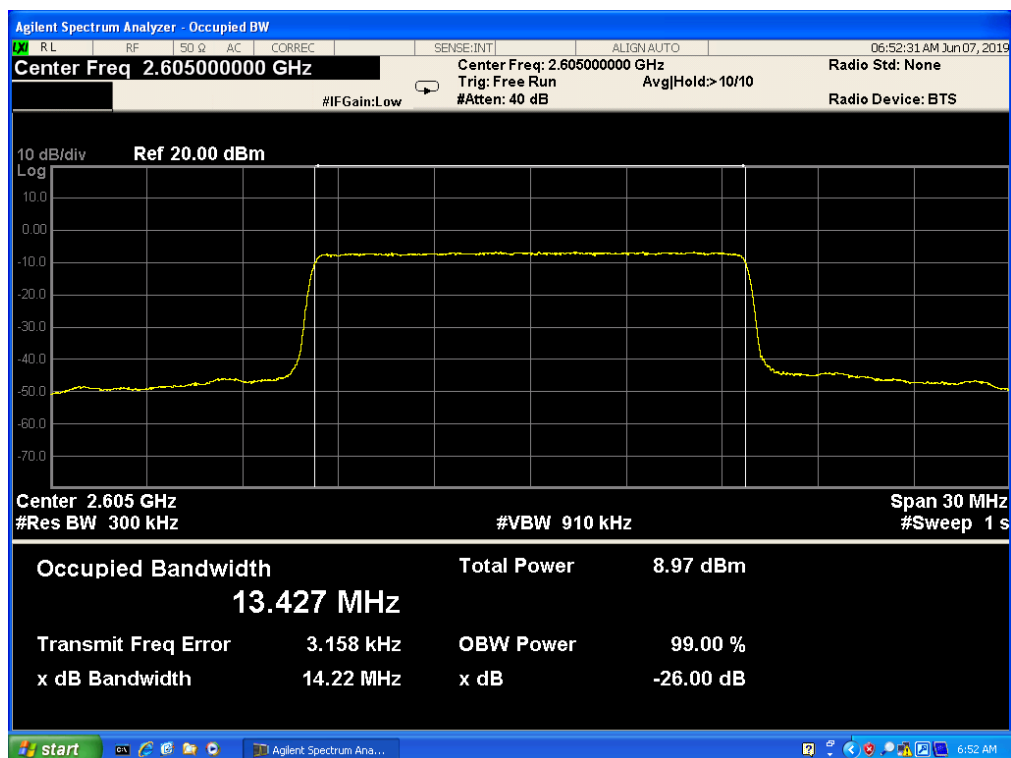
Band 41, UL Channel 40740, UL Frequency 2605.0, BW 10.0, NO. RB 50, RB POS. Low, 16-QAM



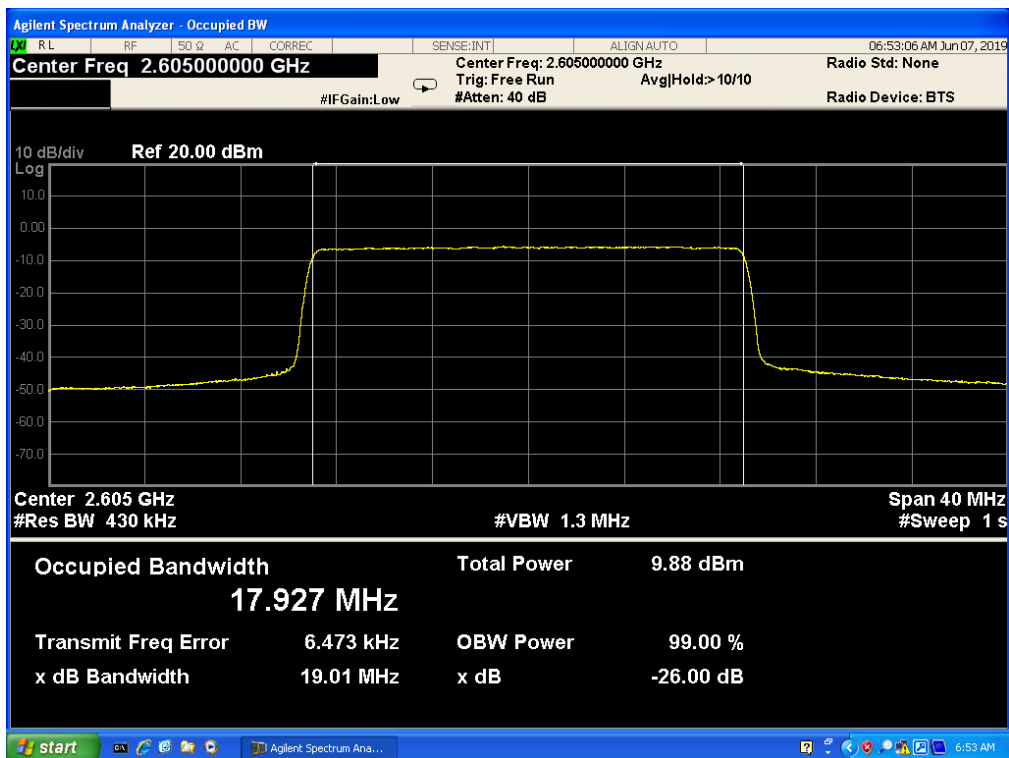
Band 41, UL Channel 40740, UL Frequency 2605.0, BW 15.0, NO. RB 75, RB POS. Low, QPSK



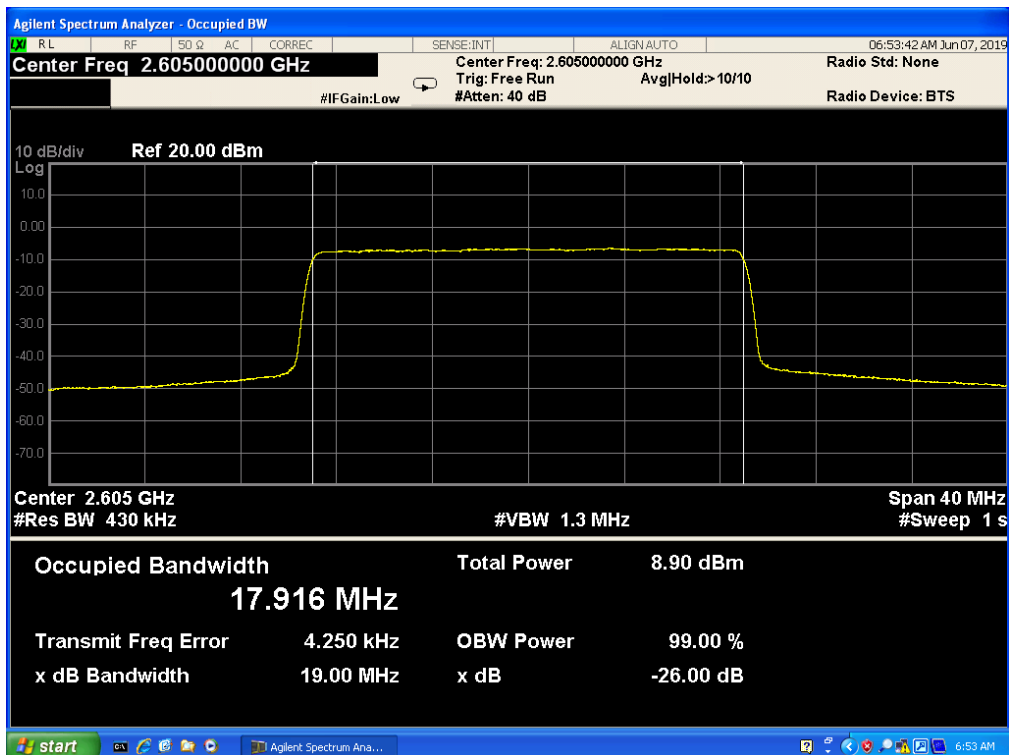
Band 41, UL Channel 40740, UL Frequency 2605.0, BW 15.0, NO. RB 75, RB POS. Low, 16-QAM



Band 41, UL Channel 40740, UL Frequency 2605.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK



Band 41, UL Channel 40740, UL Frequency 2605.0, BW 20.0, NO. RB 100, RB POS. Low, 16-QAM



6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, and §90.691

FCC: §22.359

LIMITS

FCC: §22.359, §24.238,

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

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

TEST PROCEDURE

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency (704, 716, 824, 849, 1710 and 1755, 1850 and 1910 MHz)

Set a marker to point the corresponding band edge frequency in each test case.

Set display line at -13 dBm

Set resolution bandwidth to at least 1% of emission bandwidth.

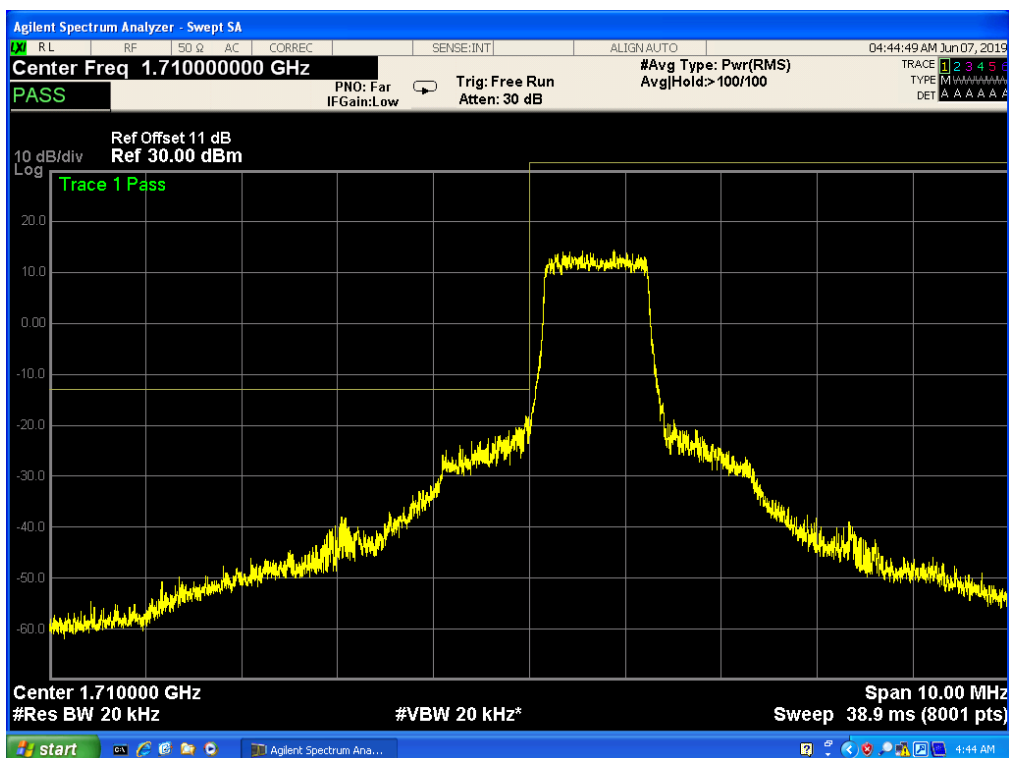
MODES TESTED

LTE Band 4
 LTE Band 5
 LTE Band 7
 LTE Band 41

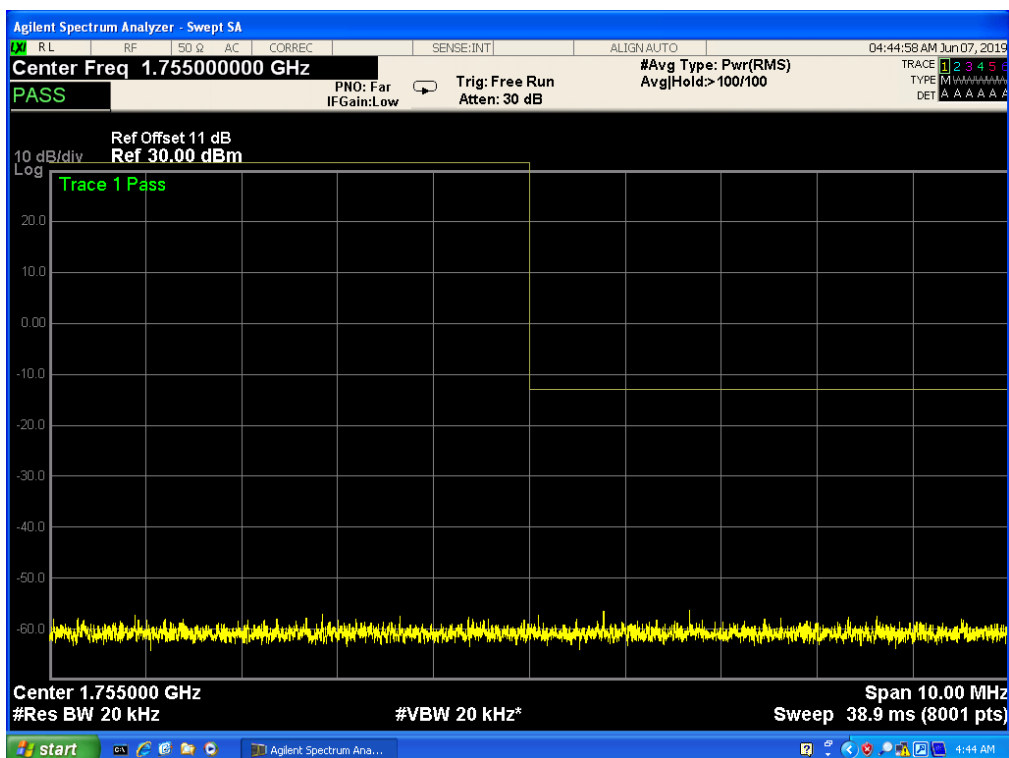
RESULTS

6.1 LTE BAND 4

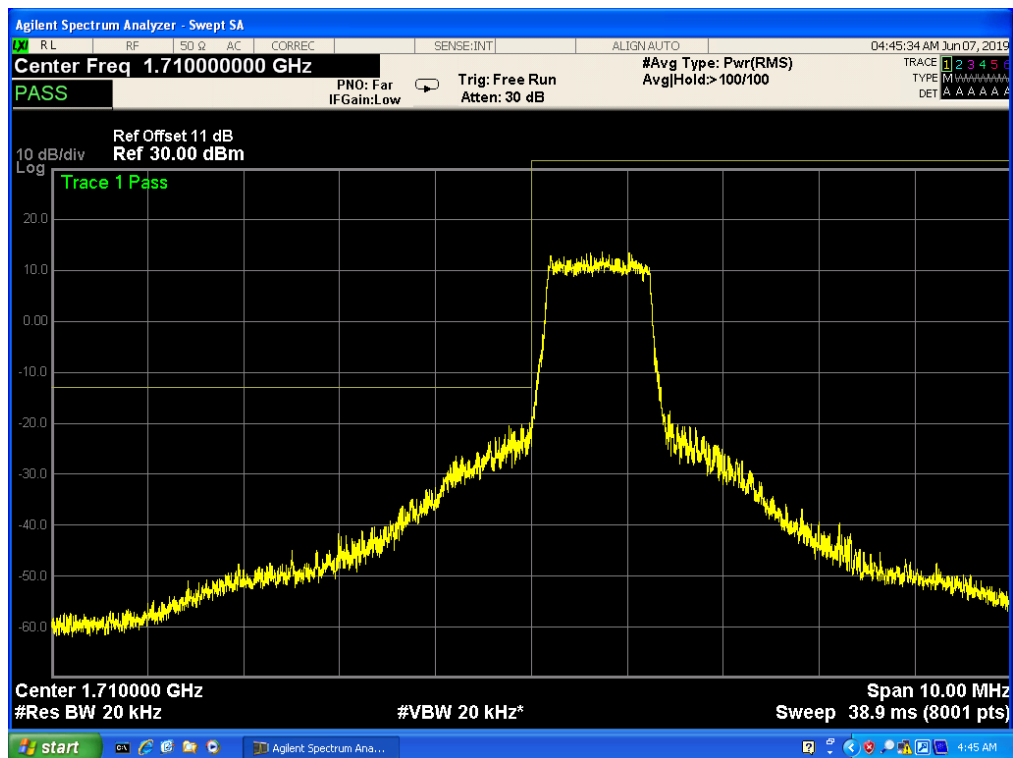
Band 4, UL Channel 19957, UL Frequency 1710.7, BW 1.4, NO. RB 6, RB POS. Low, QPSK



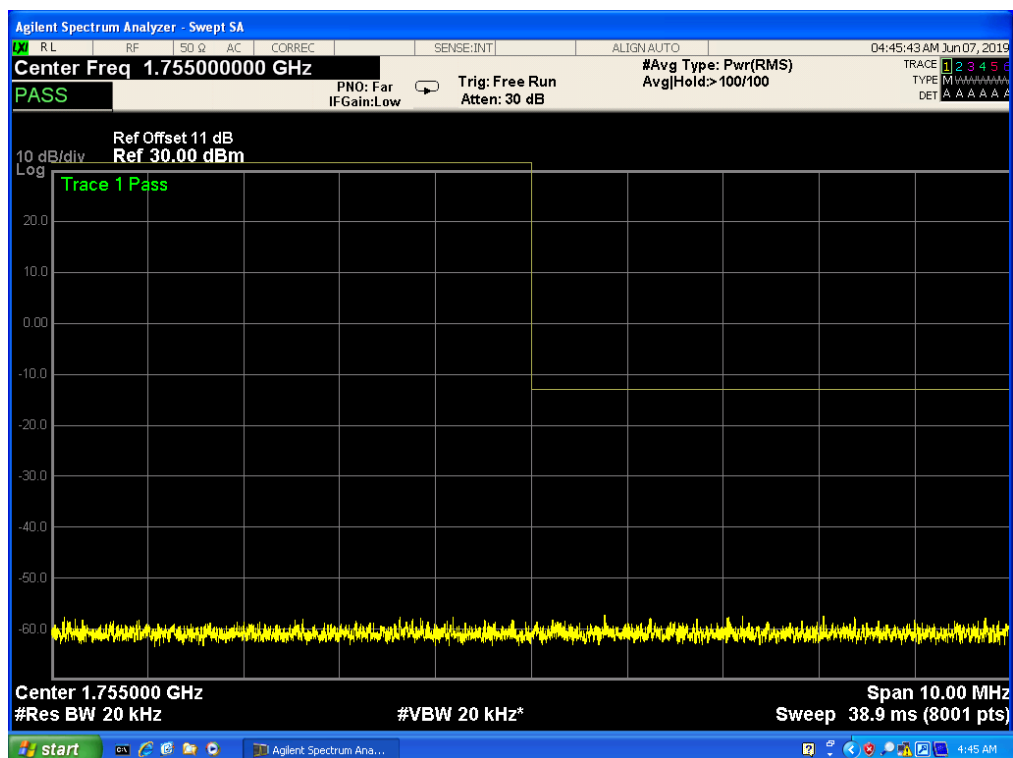
Band 4, UL Channel 19957, UL Frequency 1710.7, BW 1.4, NO. RB 6, RB POS. Low, QPSK



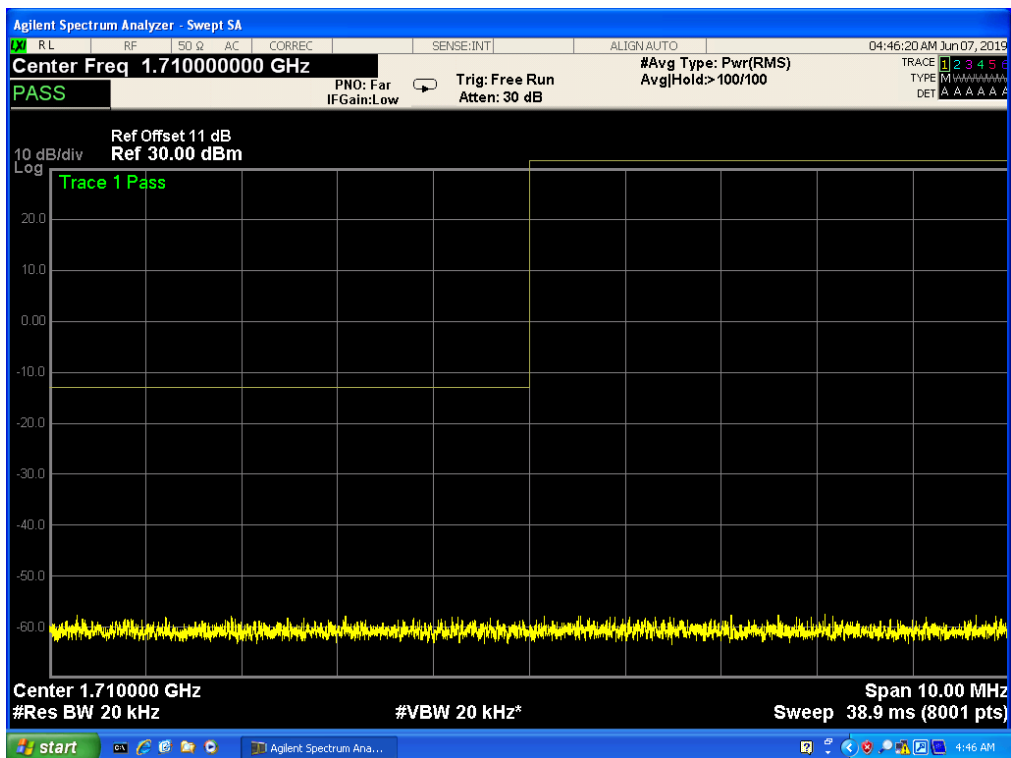
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



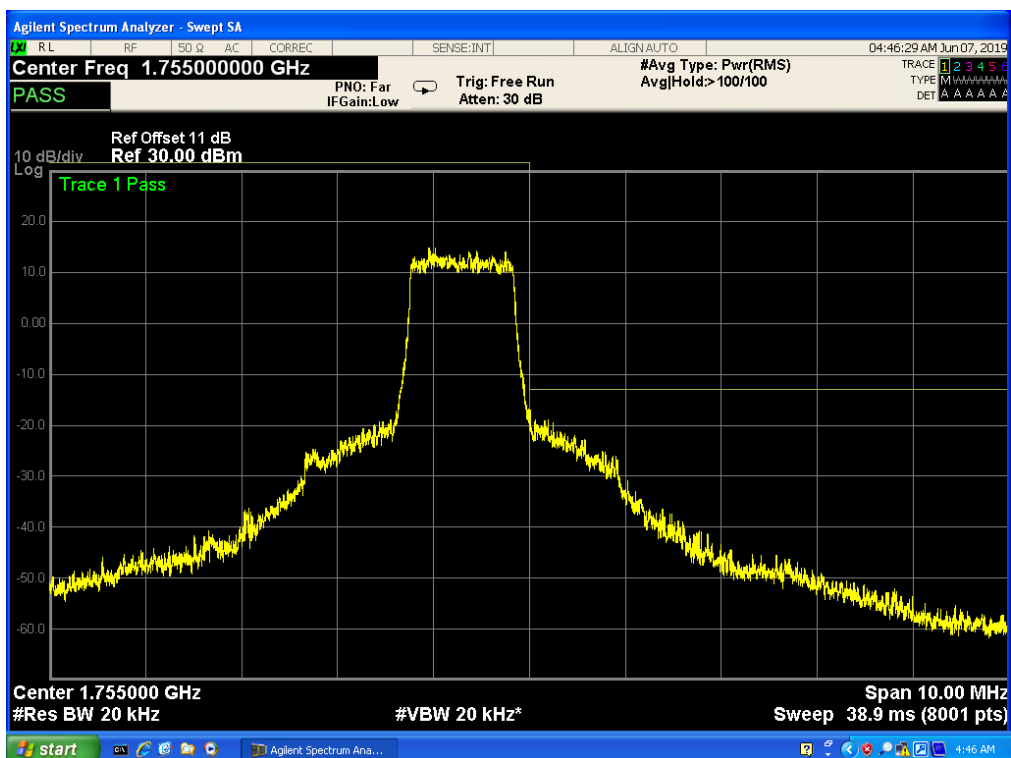
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



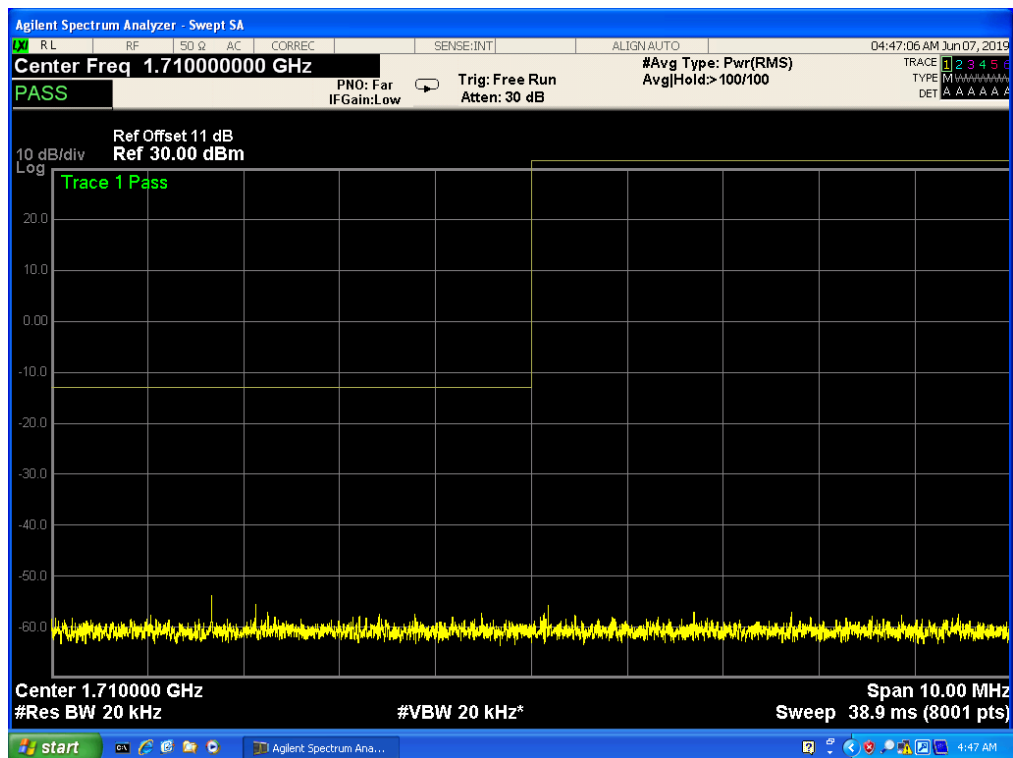
Band 4, UL Channel 20393, UL Frequency 1754.3, BW 1.4, NO. RB 6, RB POS. Low, QPSK



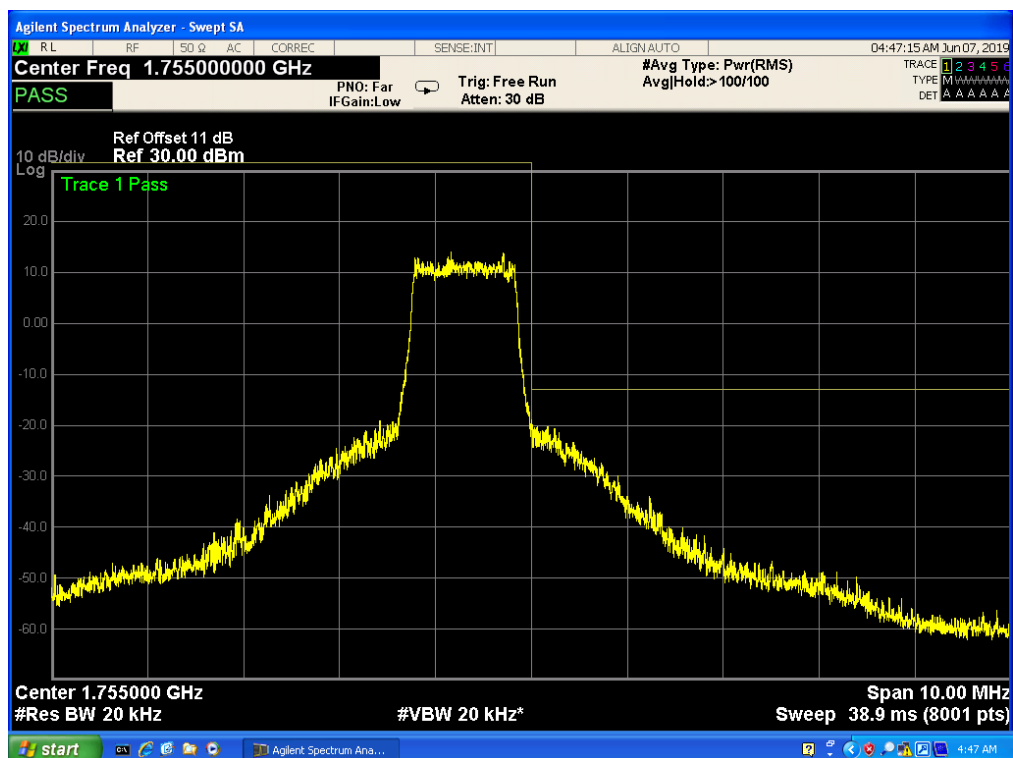
Band 4, UL Channel 20393, UL Frequency 1754.3, BW 1.4, NO. RB 6, RB POS. Low, QPSK



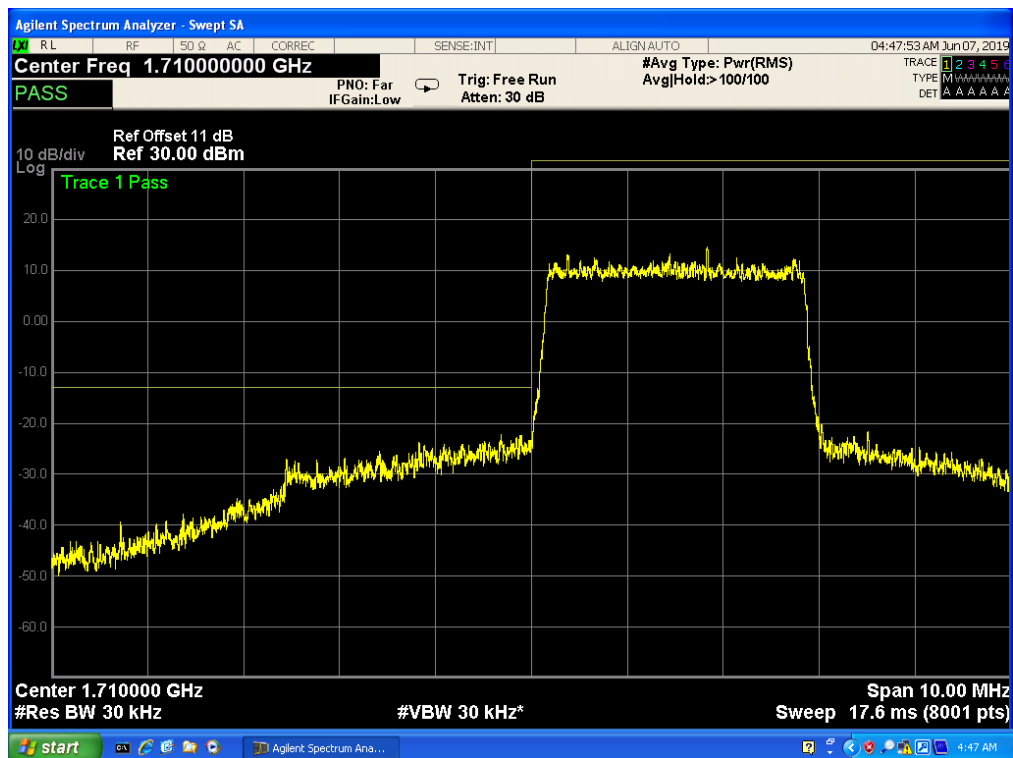
Band 4, UL Channel 20393, UL Frequency 1754.3, BW 1.4, NO. RB 6, RB POS. Low, 16QAM



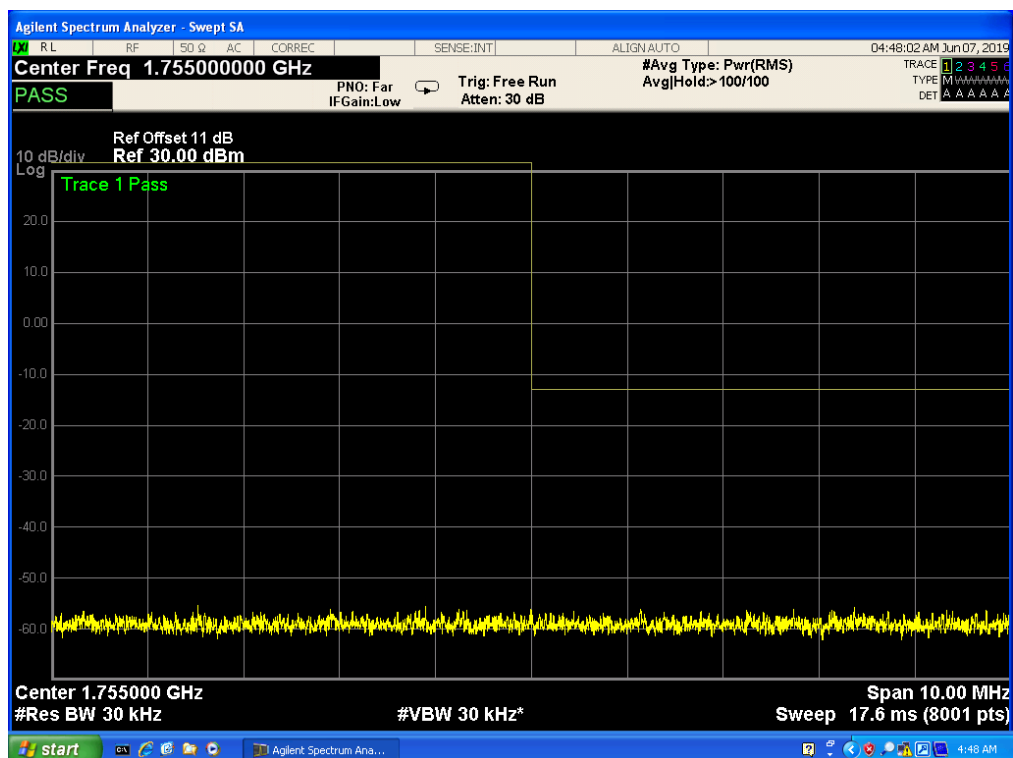
Band 4, UL Channel 20393, UL Frequency 1754.3, BW 1.4, NO. RB 6, RB POS. Low, 16QAM



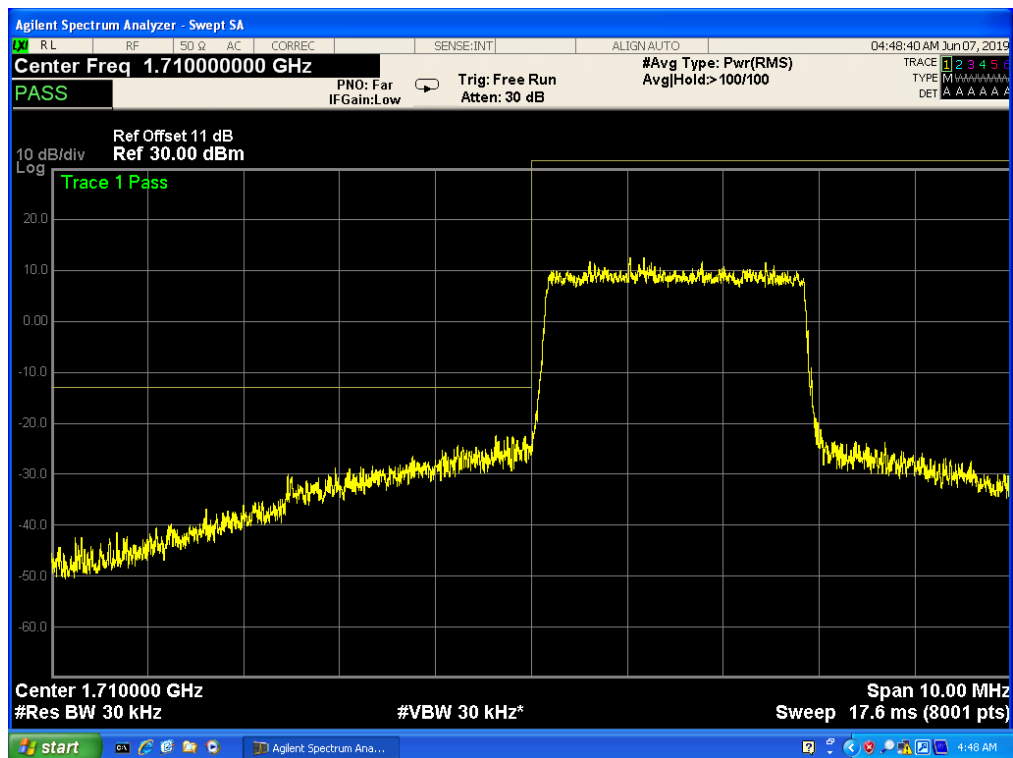
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



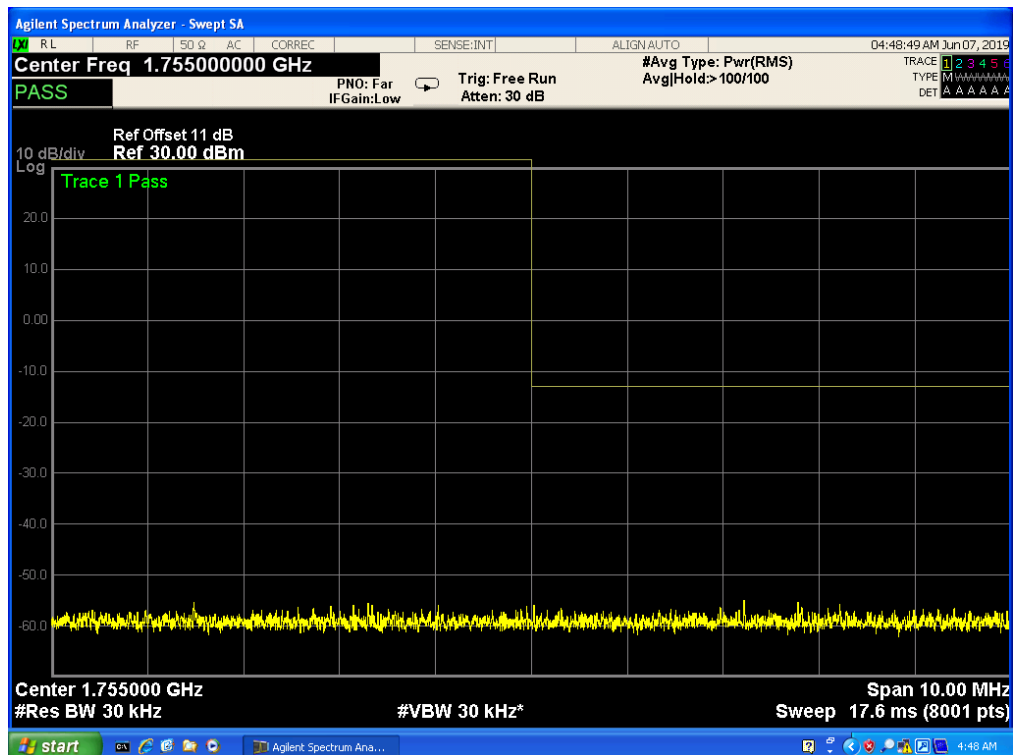
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



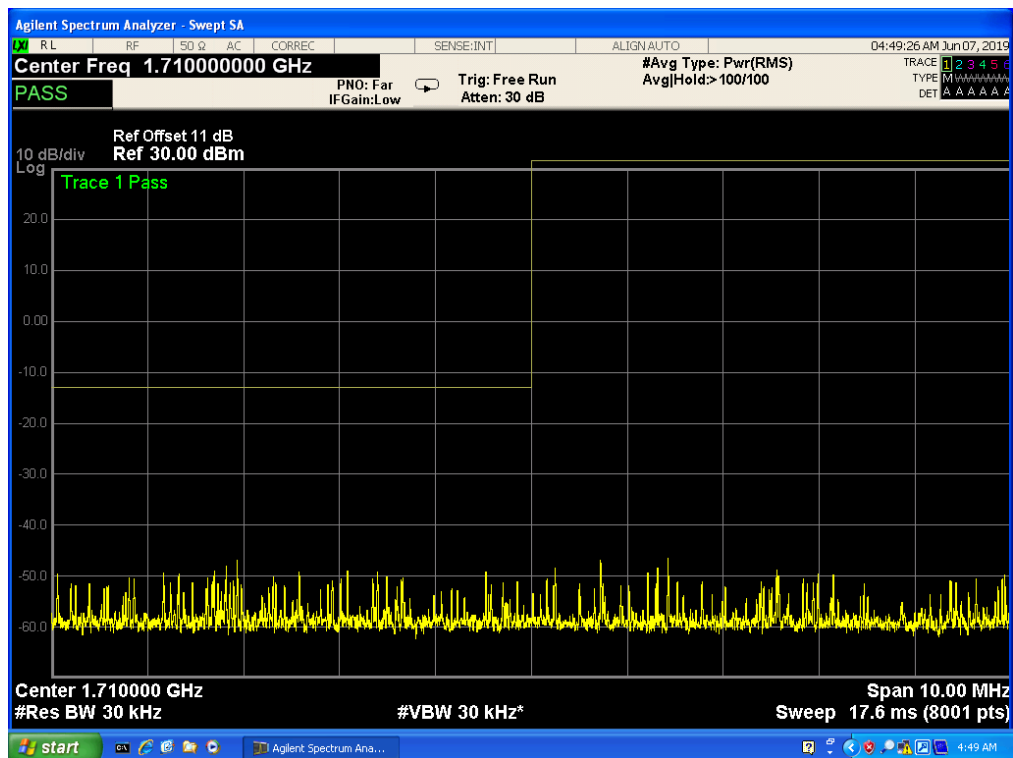
Band 4, UL Channel 19965, UL Frequency 1711.5, BW 3.0, NO. RB 15, RB POS. Low, 16QAM



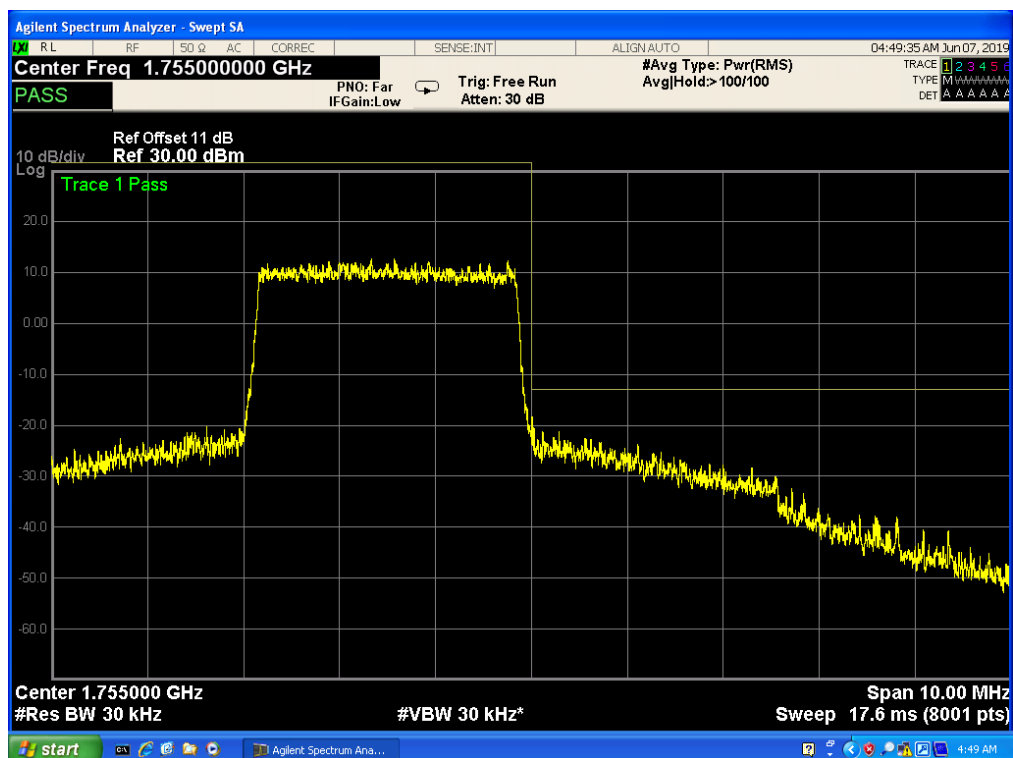
Band 4, UL Channel 19965, UL Frequency 1711.5, BW 3.0, NO. RB 15, RB POS. Low, 16QAM



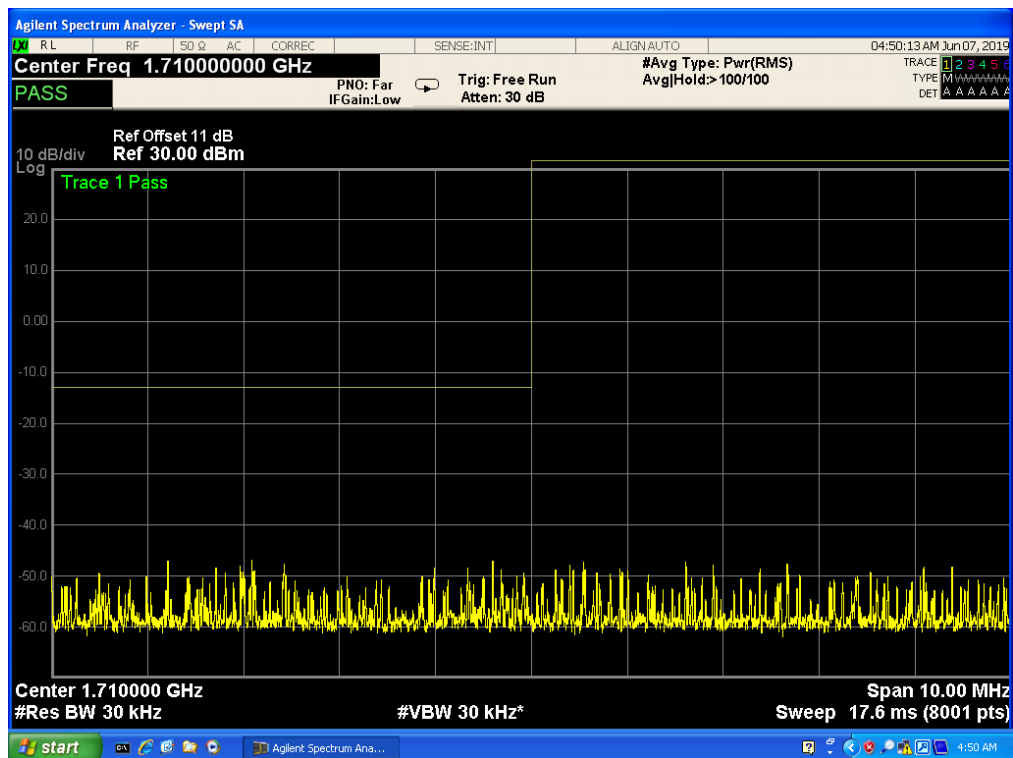
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



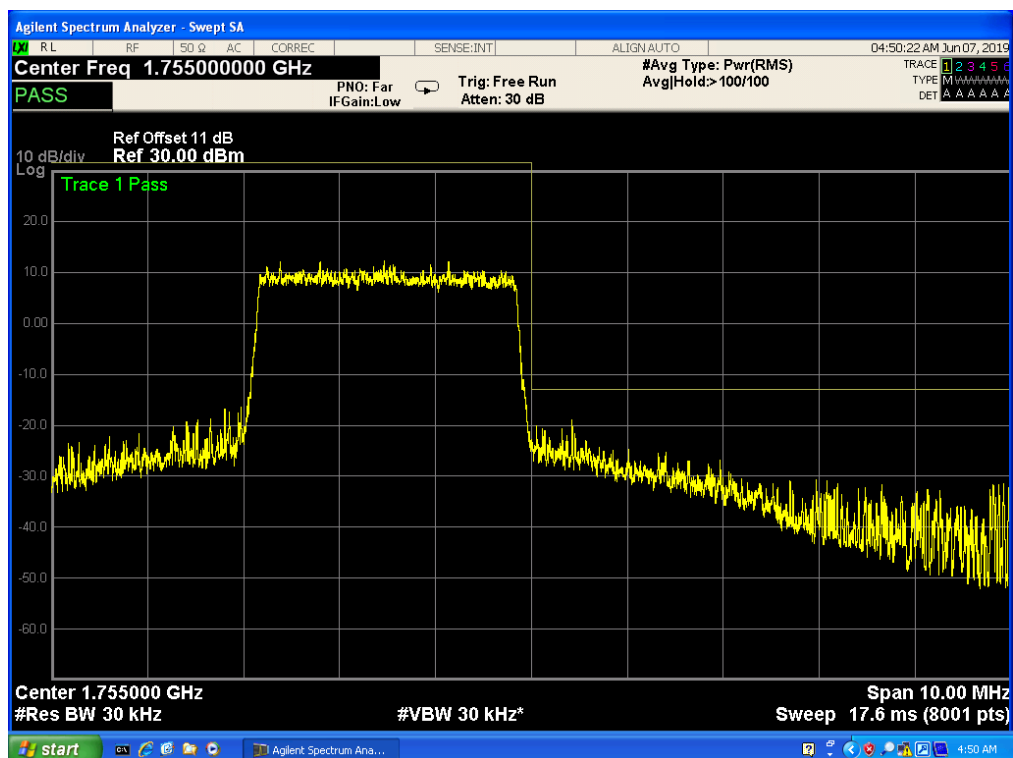
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



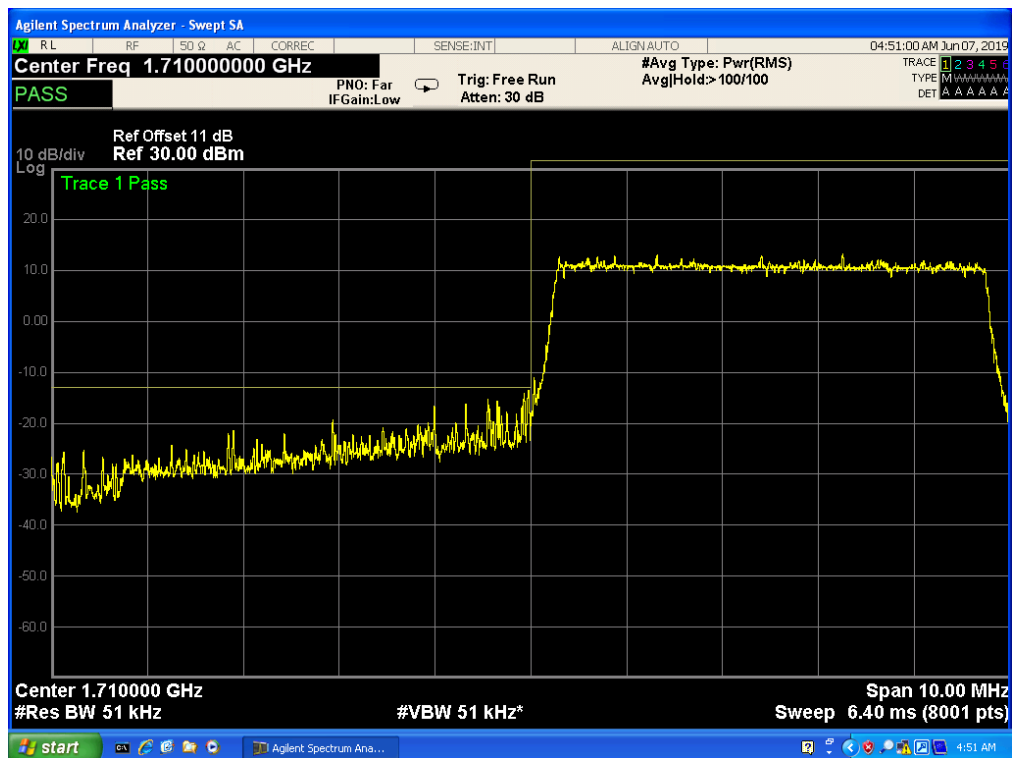
Band 4, UL Channel 20385, UL Frequency 1753.5, BW 3.0, NO. RB 15, RB POS. Low, 16QAM



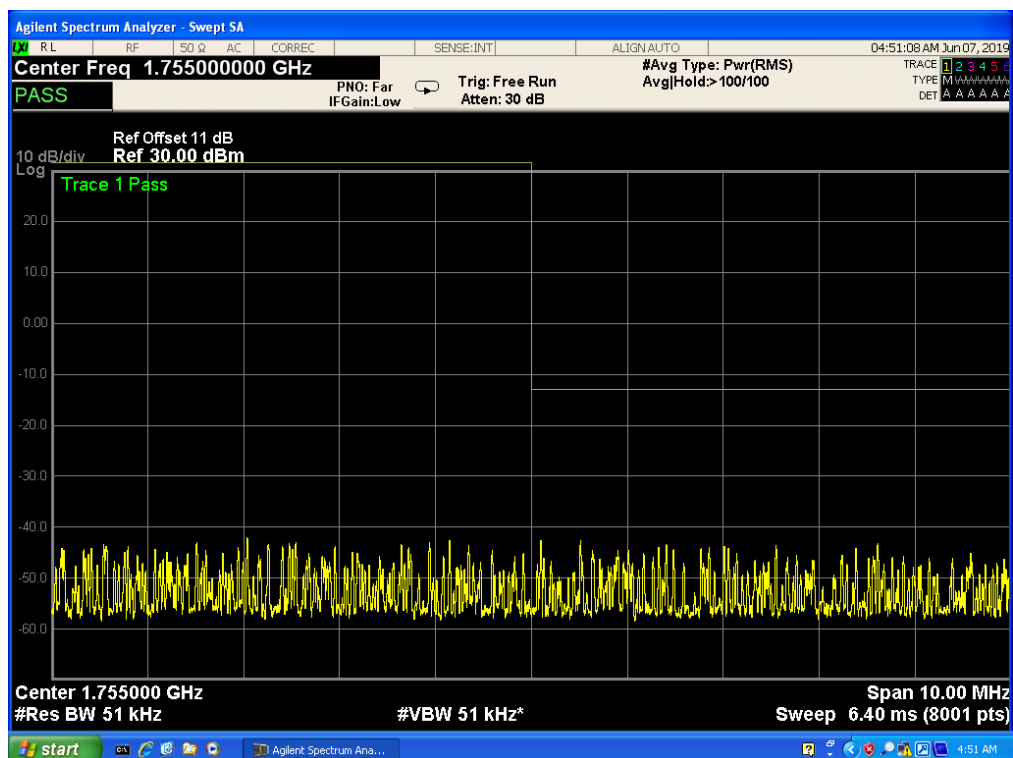
Band 4, UL Channel 20385, UL Frequency 1753.5, BW 3.0, NO. RB 15, RB POS. Low, 16QAM



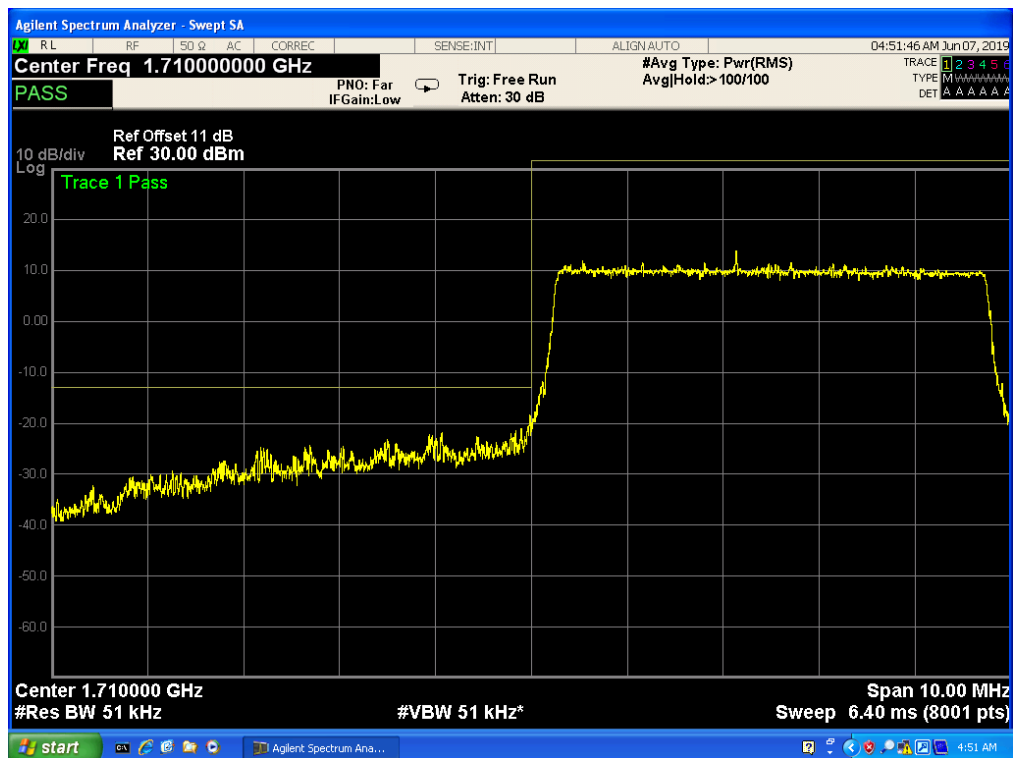
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



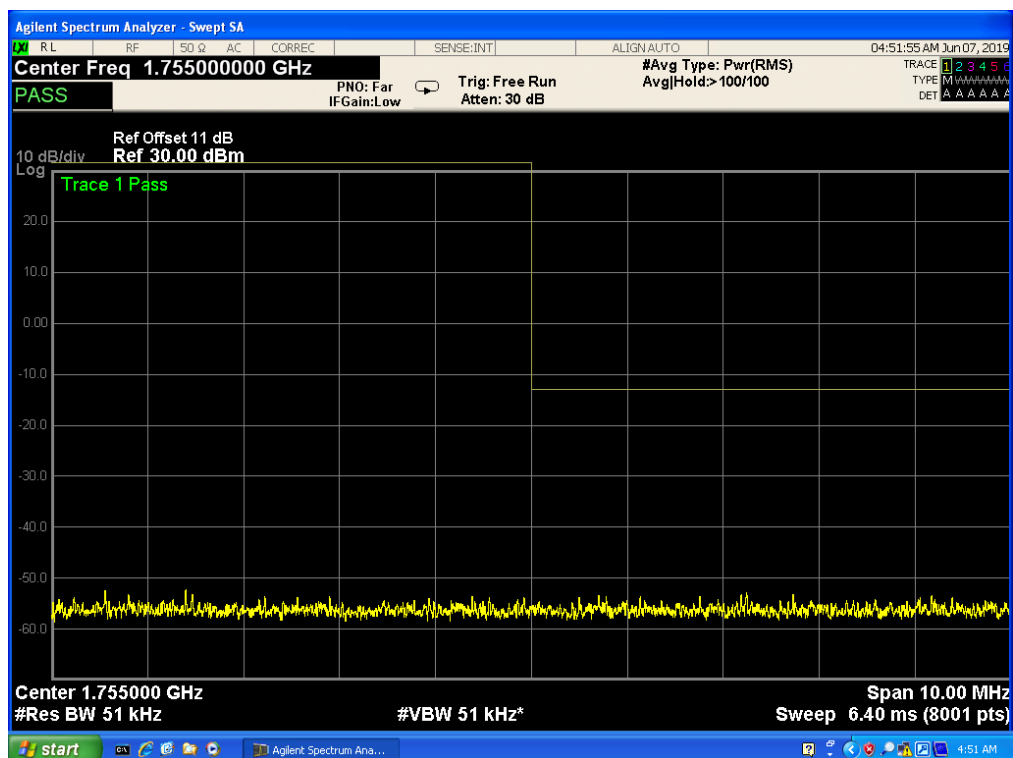
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



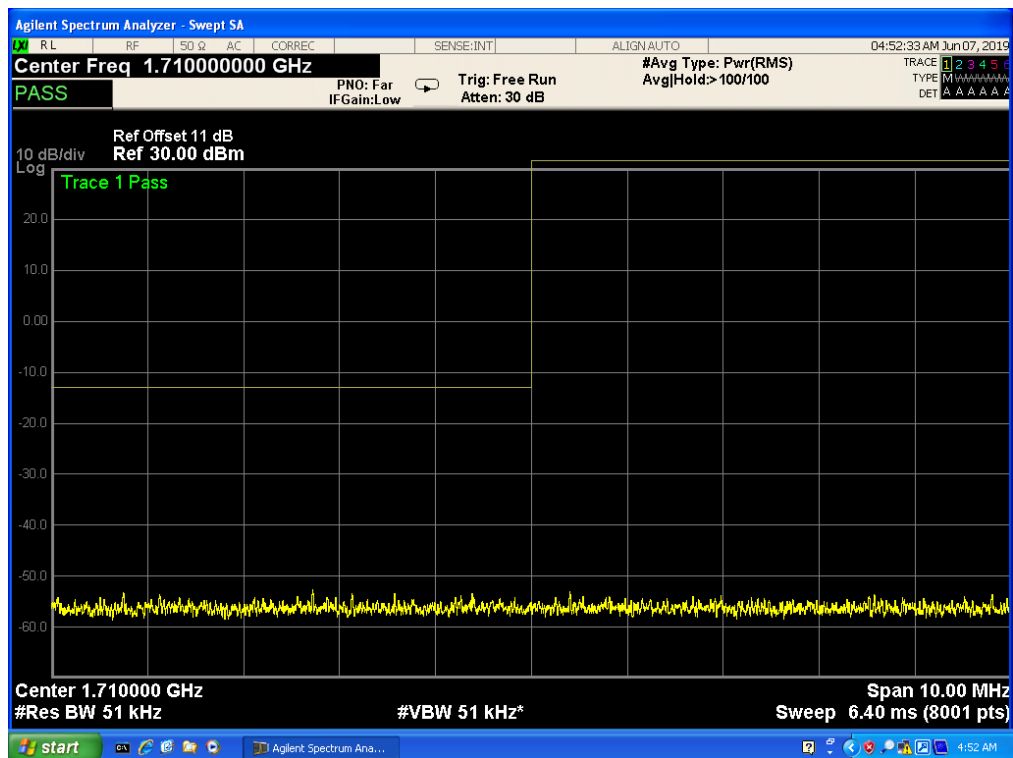
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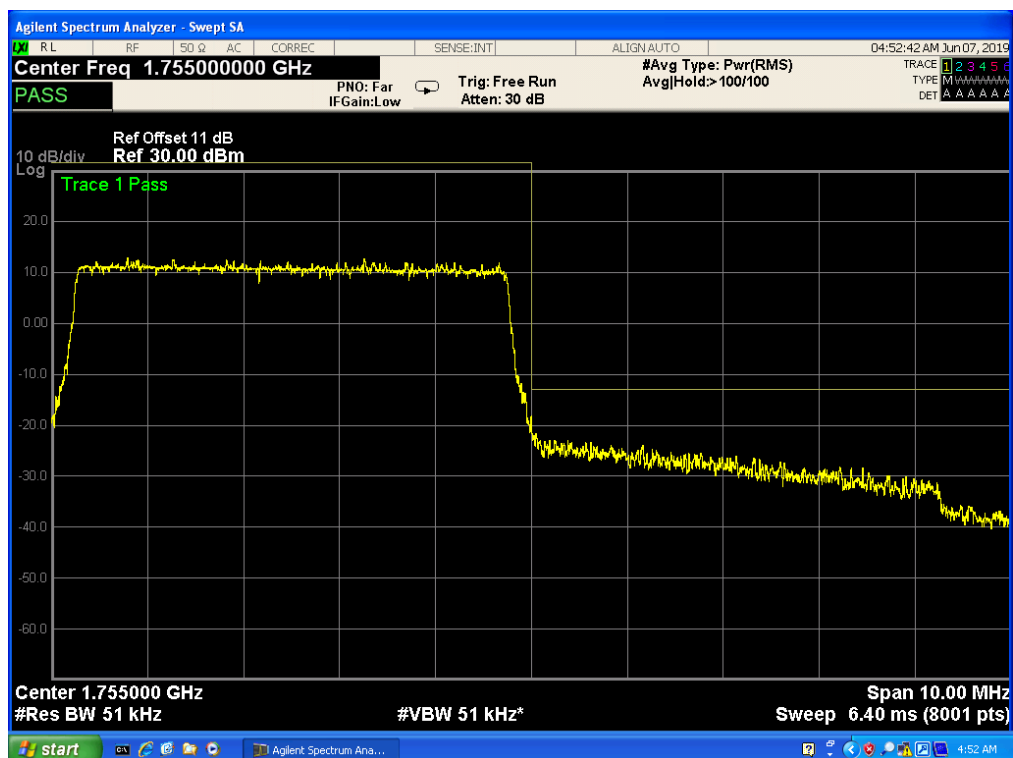
Band 4, UL Channel 19975, UL Frequency 1712.5, BW 5.0, NO. RB 25, RB POS. Low, 16QAM



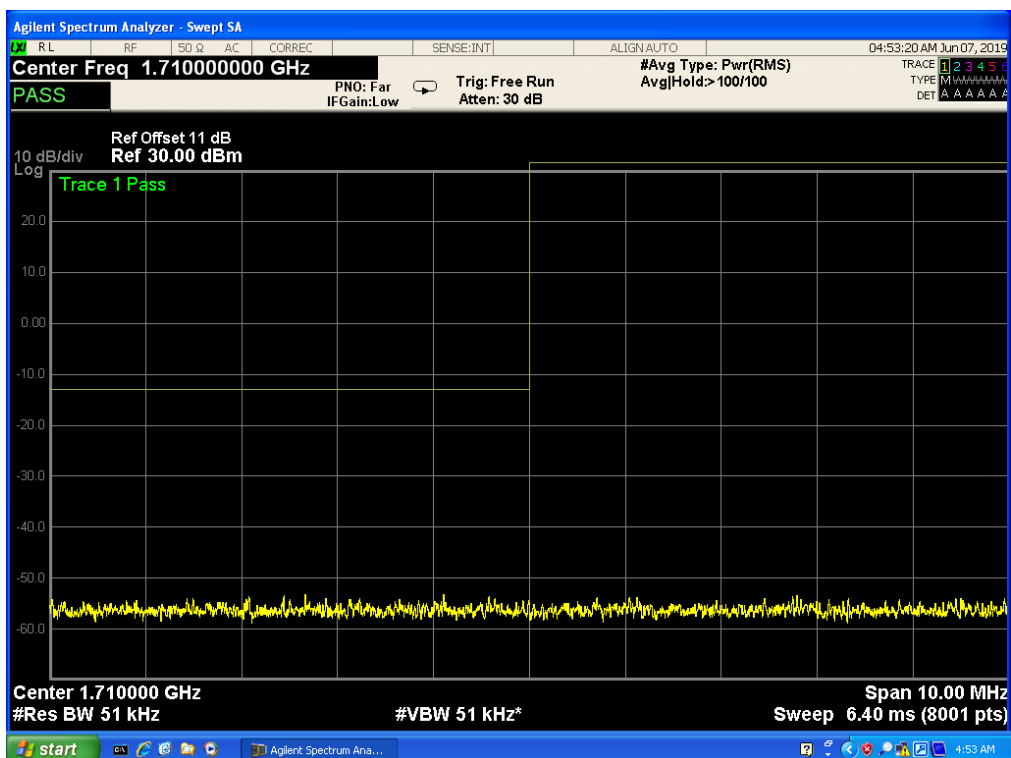
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



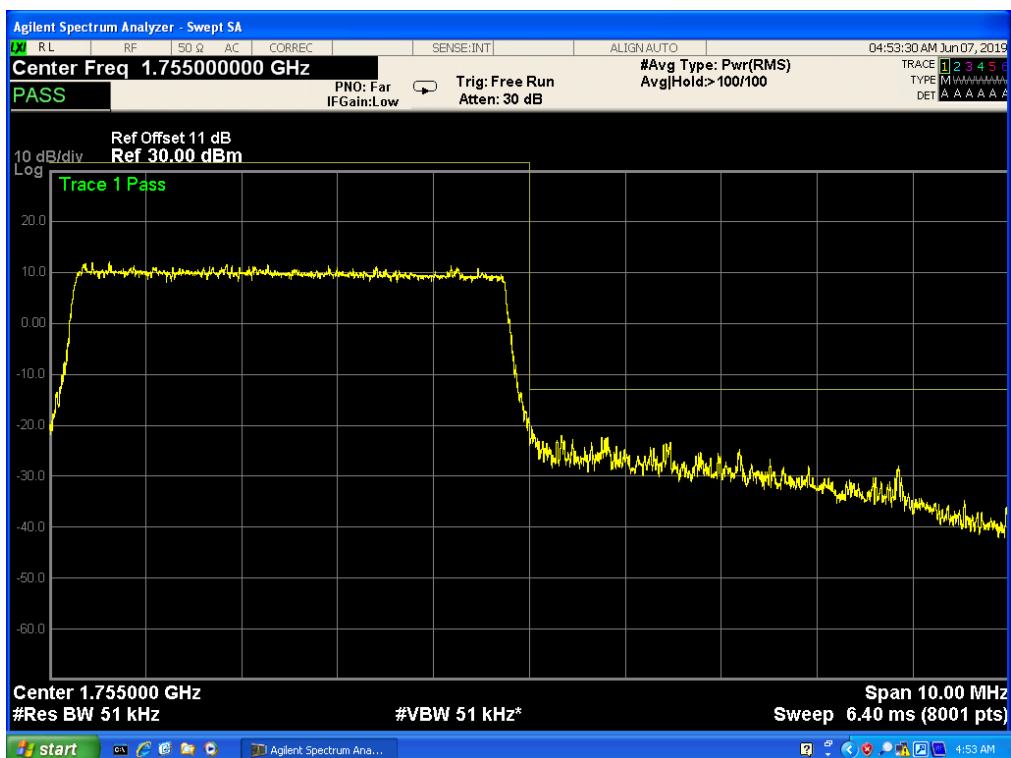
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



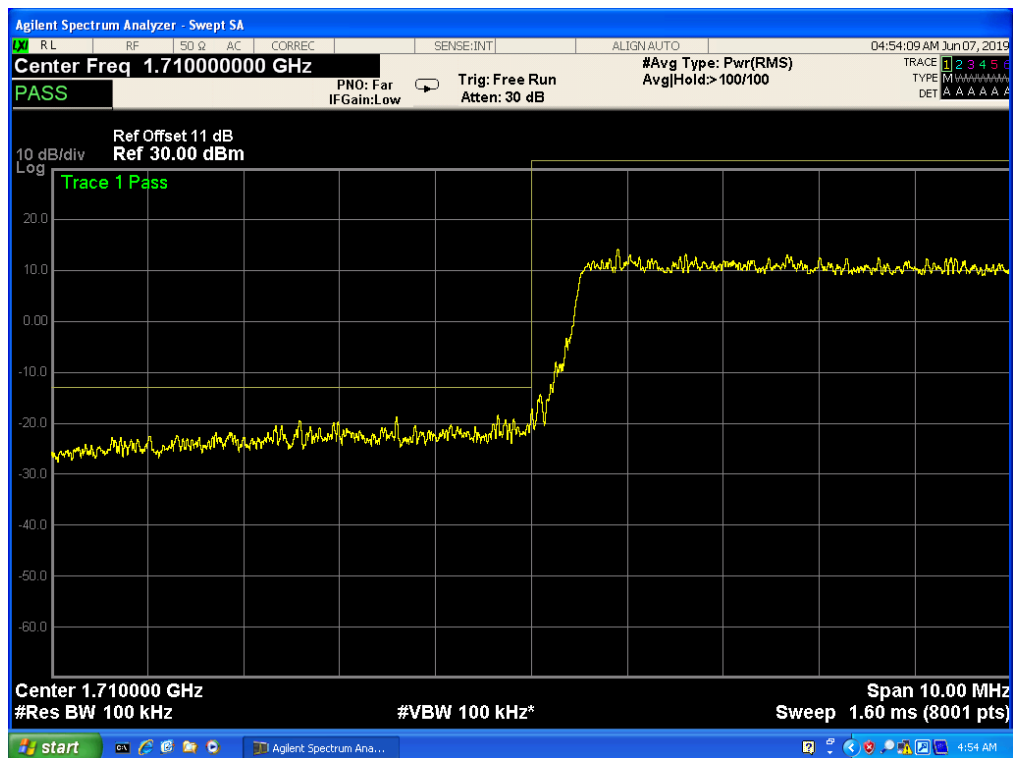
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



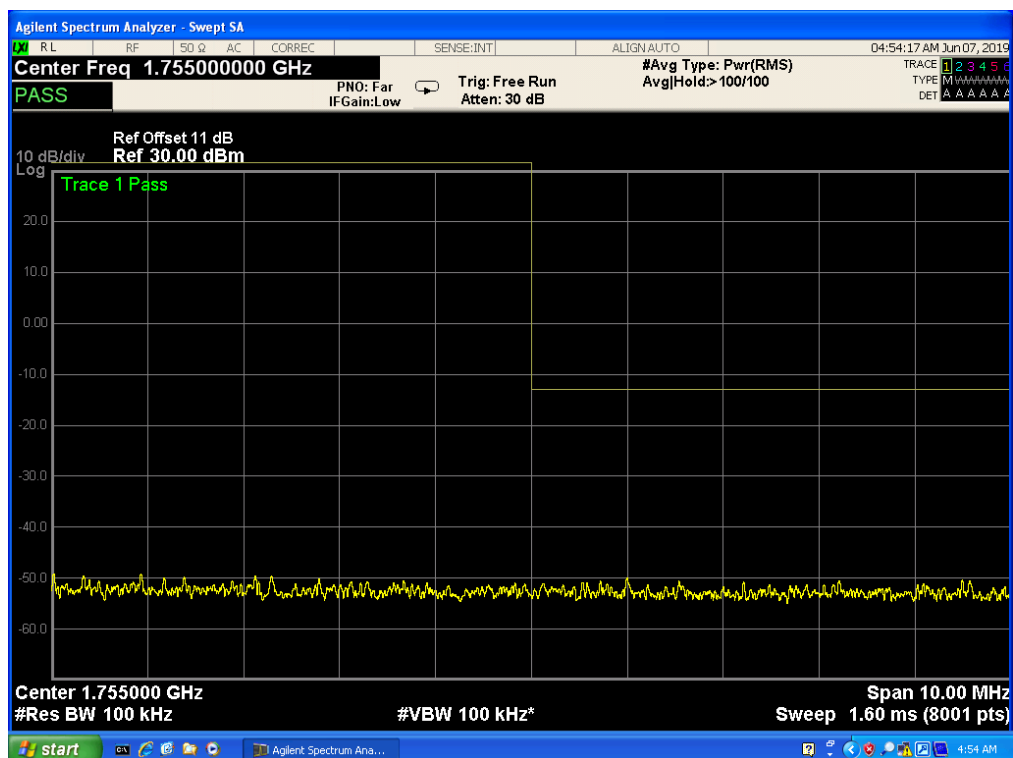
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



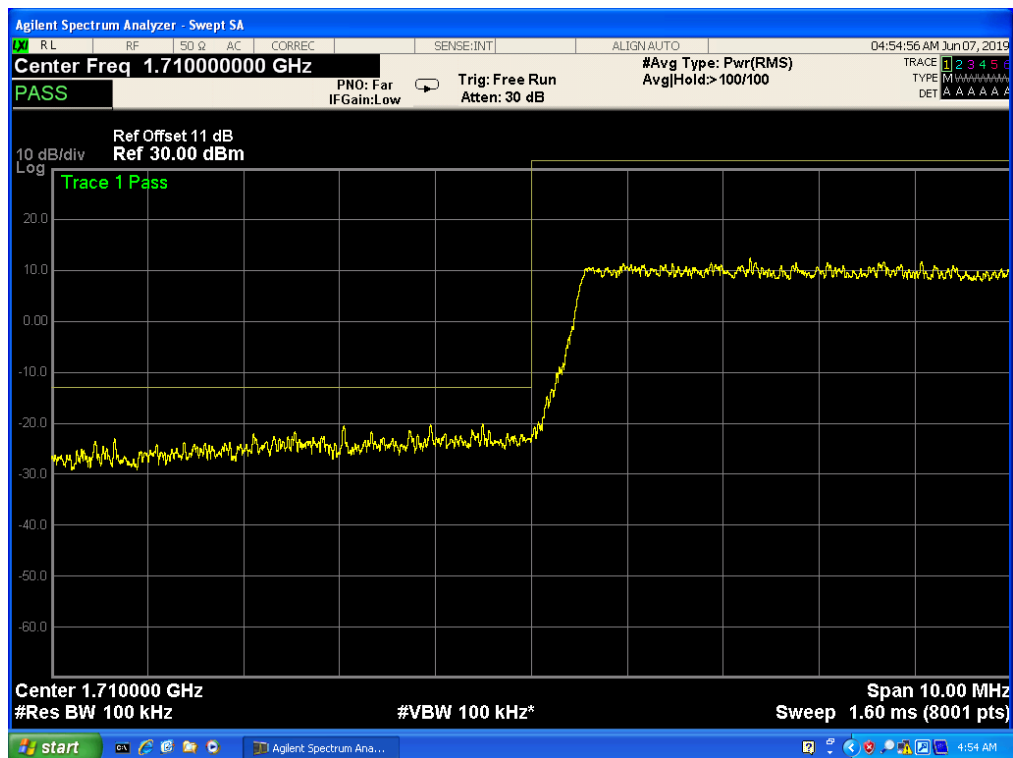
Band 4, UL Channel 20000, UL Frequency 1715.0, BW 10.0, NO. RB 50, RB POS. Low, QPSK



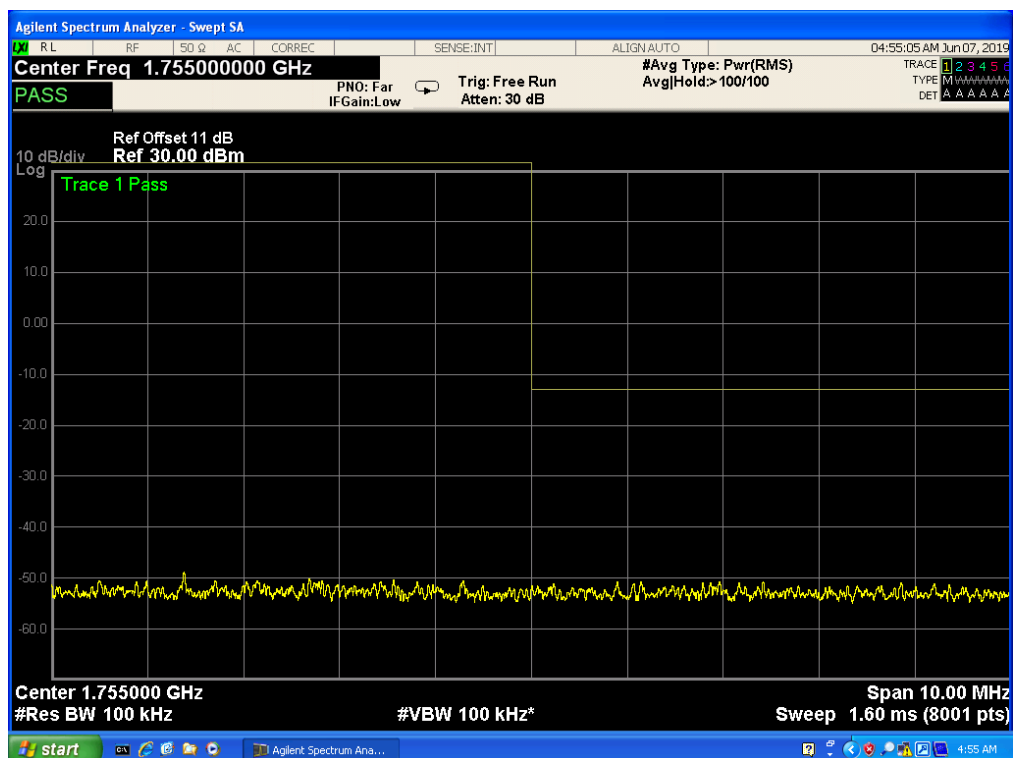
Band 4, UL Channel 20000, UL Frequency 1715.0, BW 10.0, NO. RB 50, RB POS. Low, QPSK



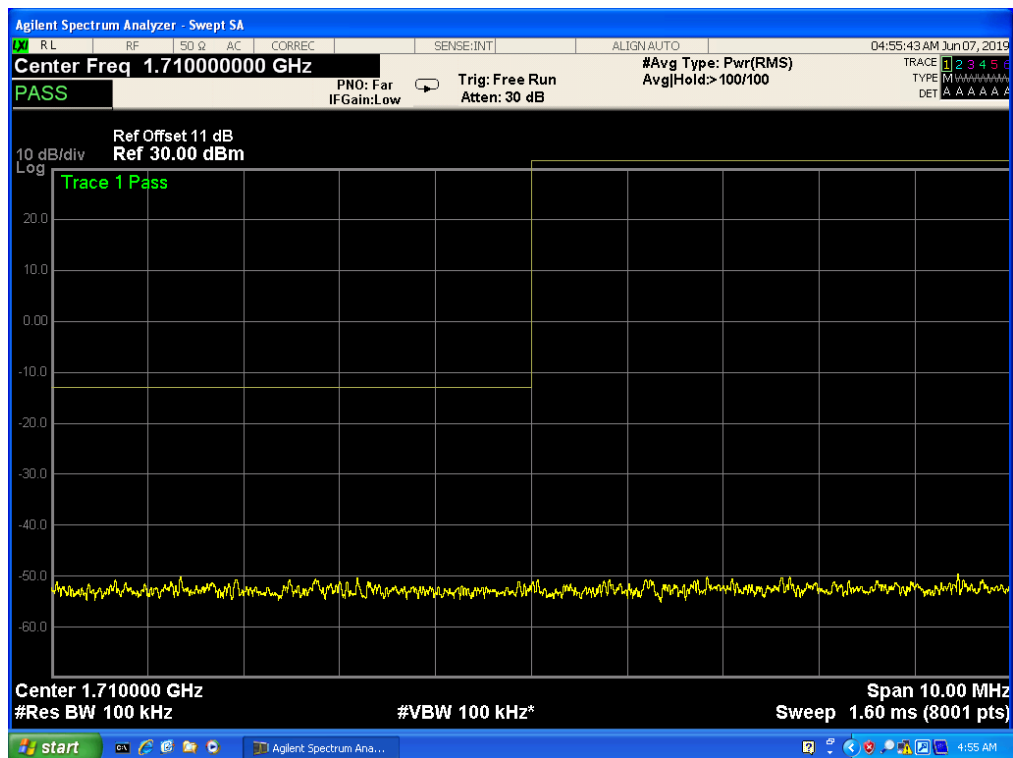
Band 4, UL Channel 20000, UL Frequency 1715.0, BW 10.0, NO. RB 50, RB POS. Low, 16QAM



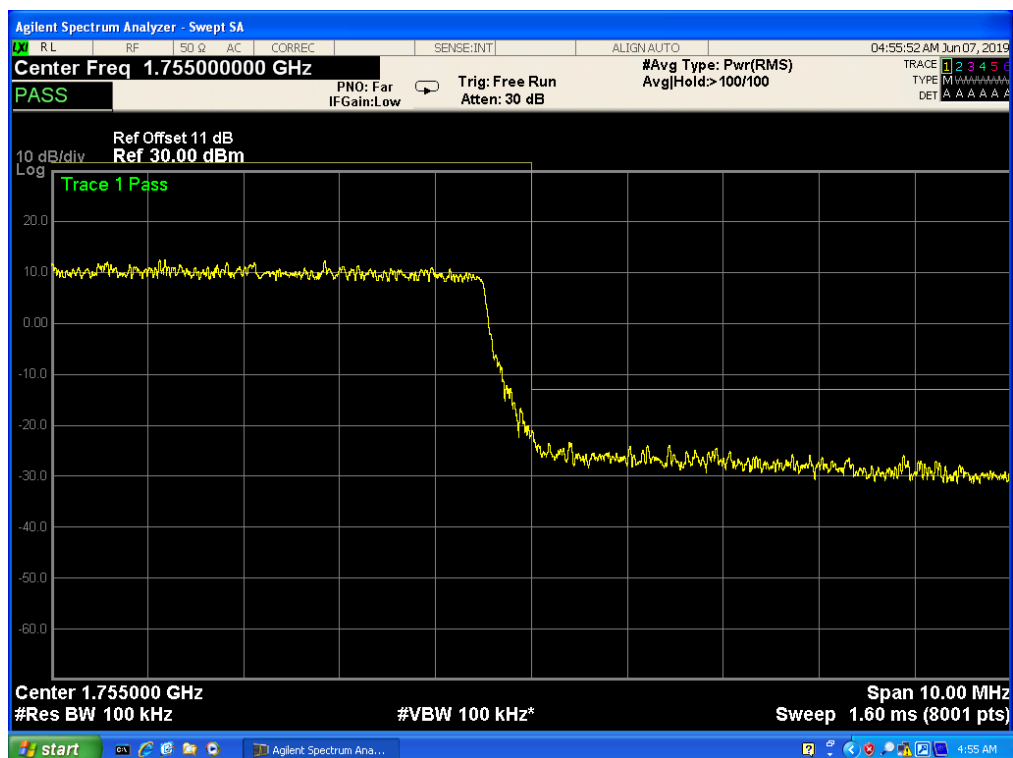
Band 4, UL Channel 20000, UL Frequency 1715.0, BW 10.0, NO. RB 50, RB POS. Low, 16QAM



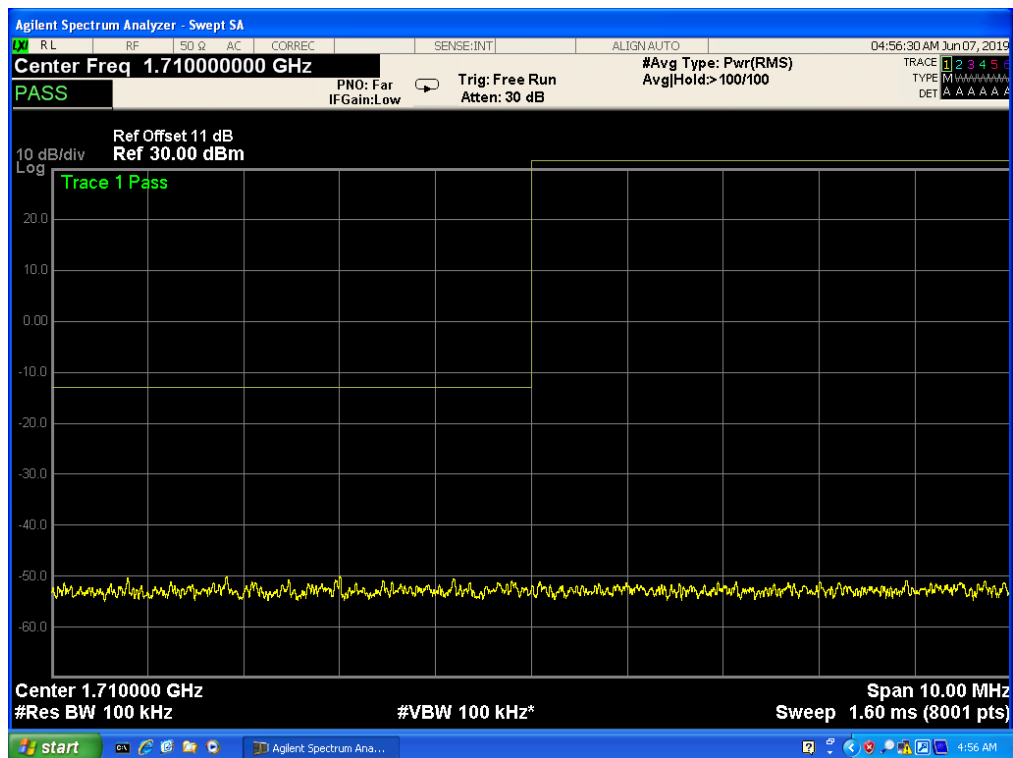
Band 4, UL Channel 20350, UL Frequency 1750.0, BW 10.0, NO. RB 50, RB POS. Low, QPSK



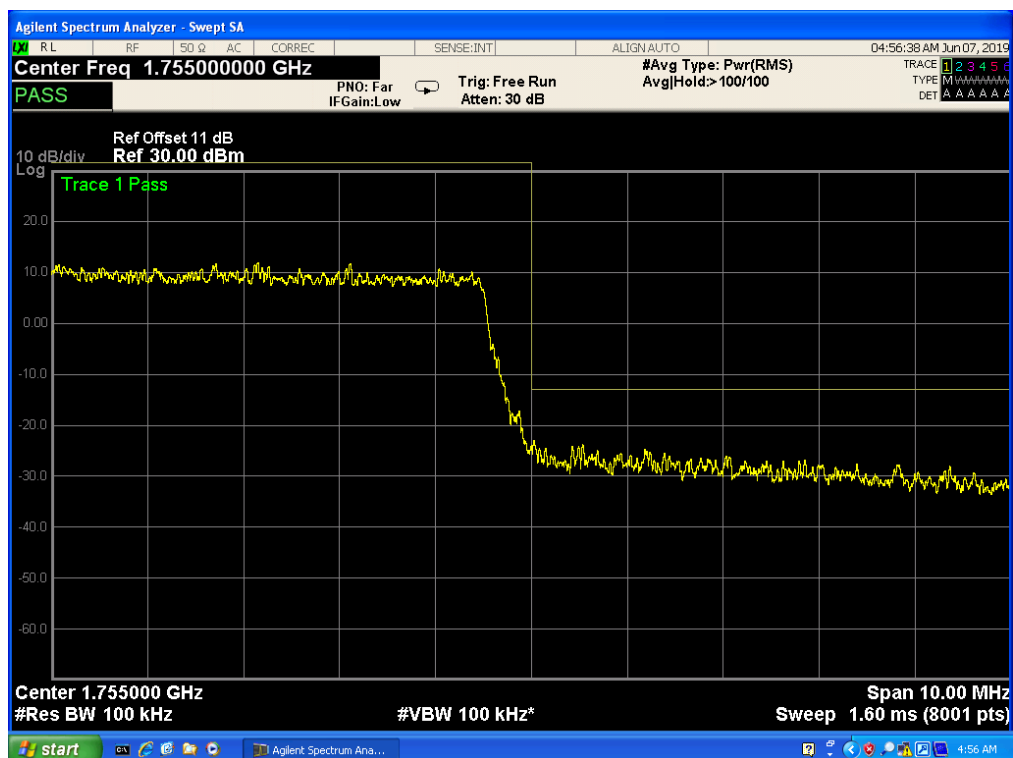
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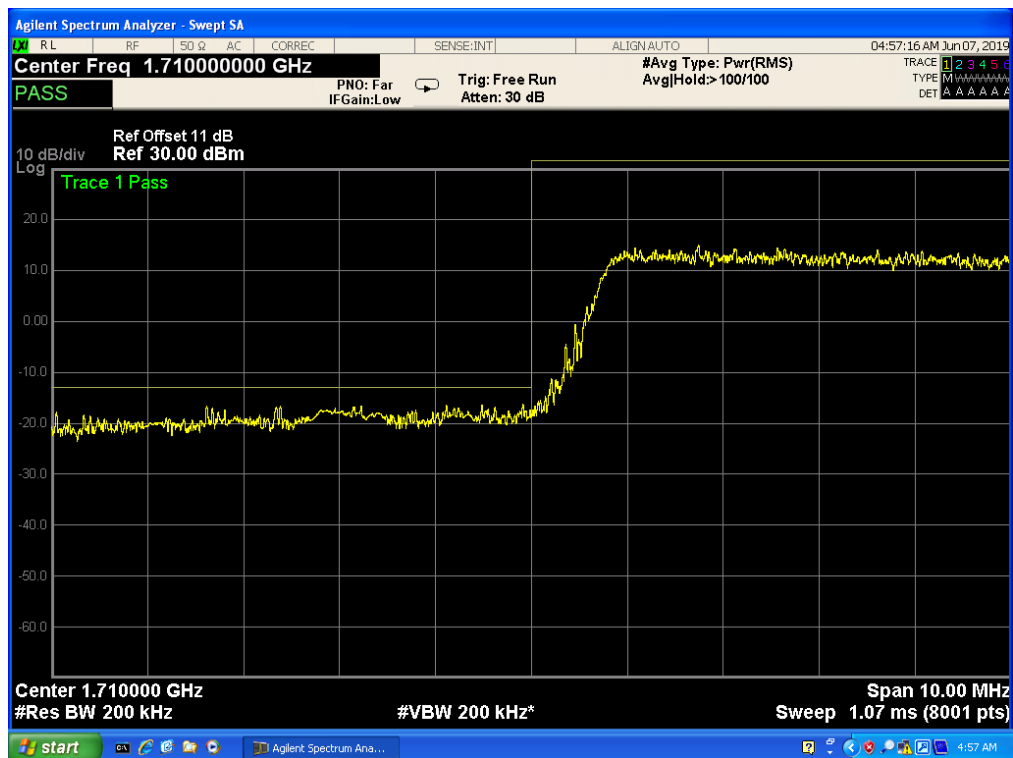
Band 4, UL Channel 20350, UL Frequency 1750.0, BW 10.0, NO. RB 50, RB POS. Low, 16QAM



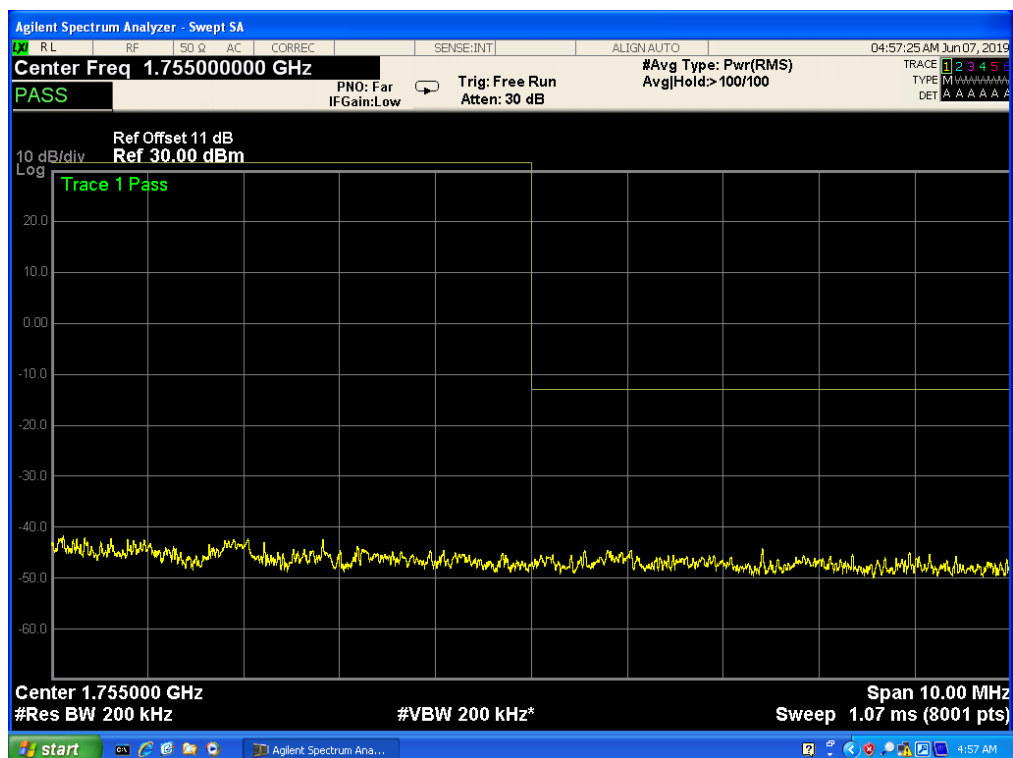
Band 4, UL Channel 20350, UL Frequency 1750.0, BW 10.0, NO. RB 50, RB POS. Low, 16QAM



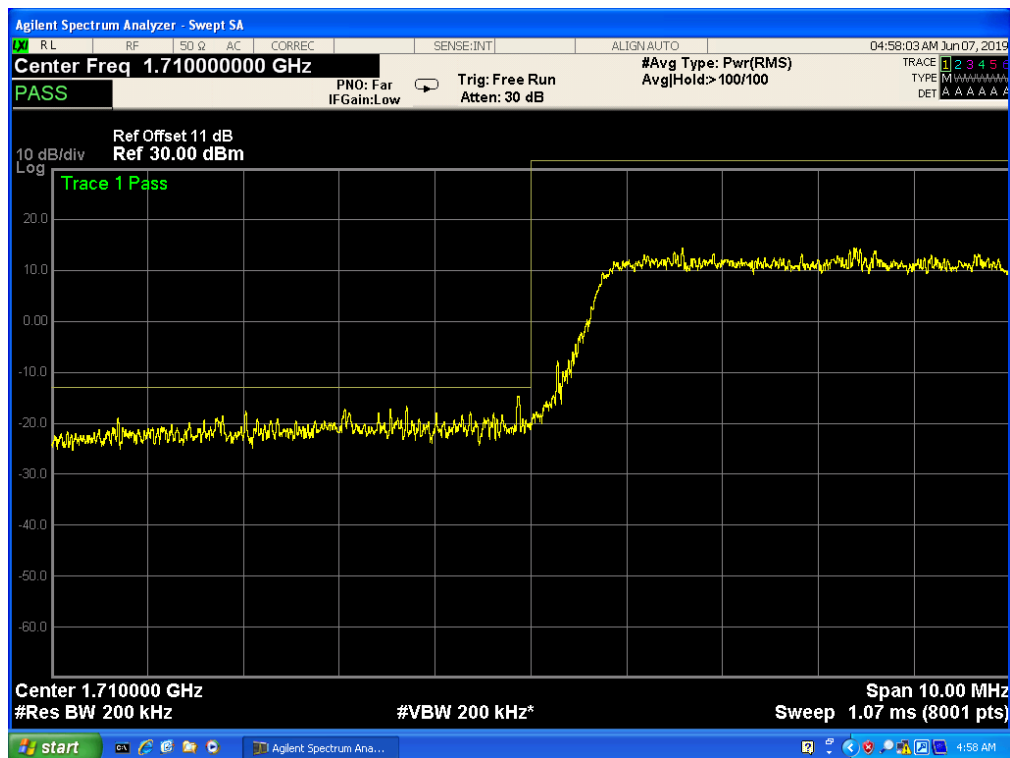
Band 4, UL Channel 20025, UL Frequency 1717.5, BW 15.0, NO. RB 75, RB POS. Low, QPSK



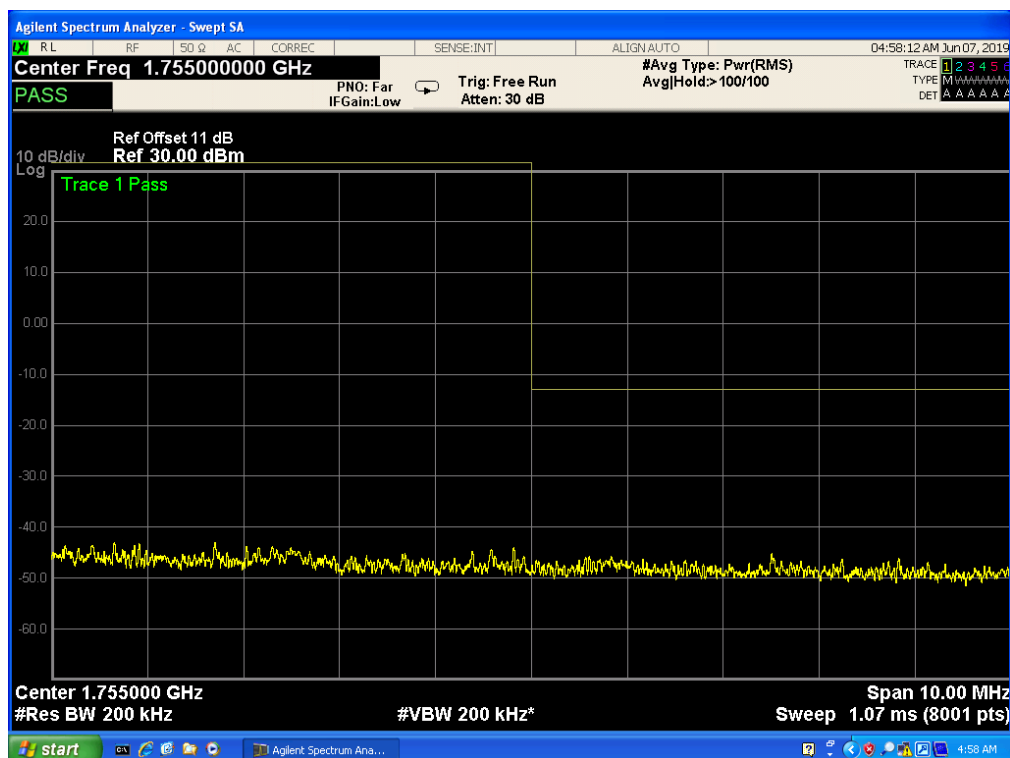
Band 4, UL Channel 20025, UL Frequency 1717.5, BW 15.0, NO. RB 75, RB POS. Low, QPSK



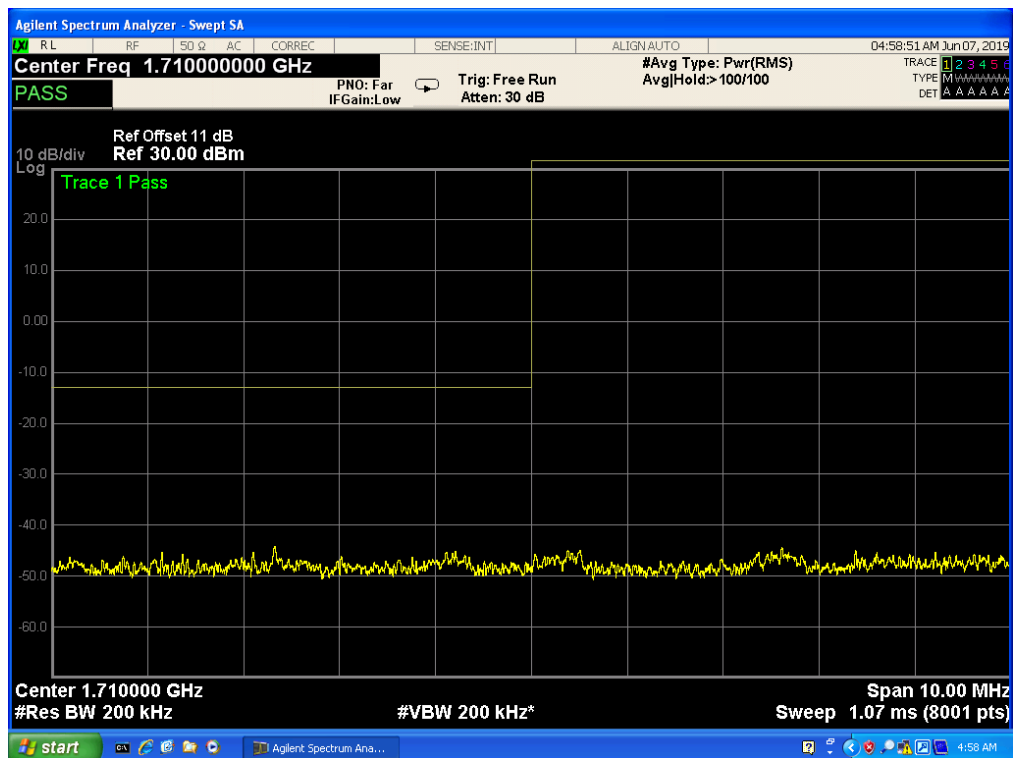
Band 4, UL Channel 20025, UL Frequency 1717.5, BW 15.0, NO. RB 75, RB POS. Low, 16QAM



Band 4, UL Channel 20025, UL Frequency 1717.5, BW 15.0, NO. RB 75, RB POS. Low, 16QAM



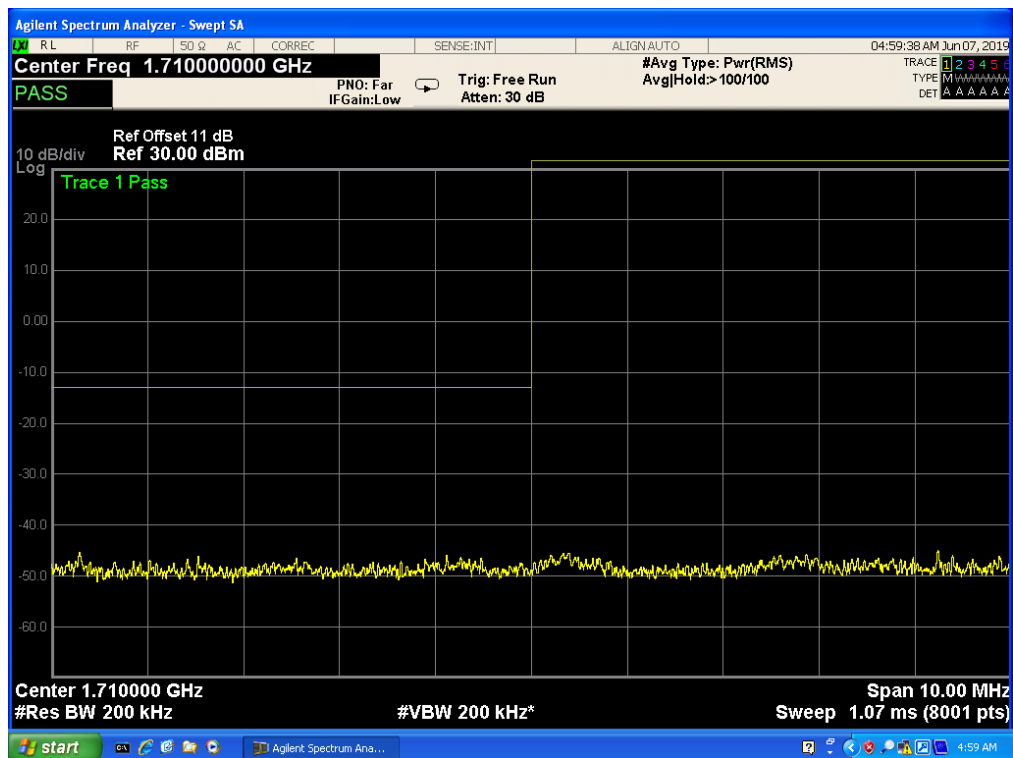
Band 4, UL Channel 20325, UL Frequency 1747.5, BW 15.0, NO. RB 75, RB POS. Low, QPSK



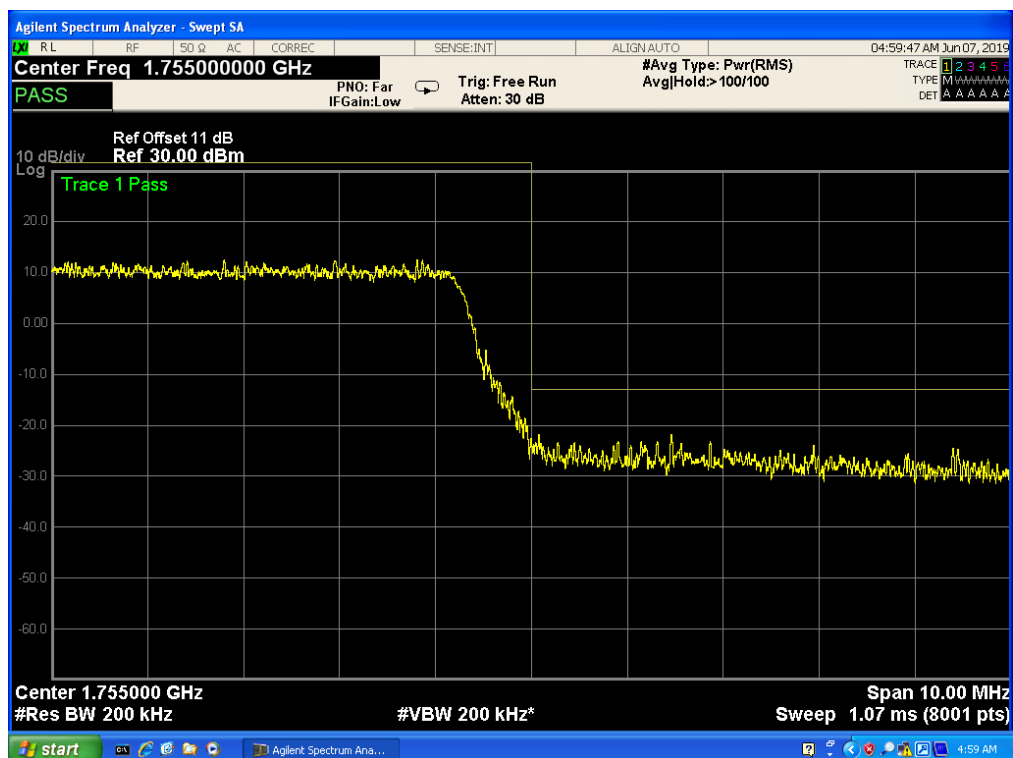
Band 4, UL Channel 20325, UL Frequency 1747.5, BW 15.0, NO. RB 75, RB POS. Low, QPSK



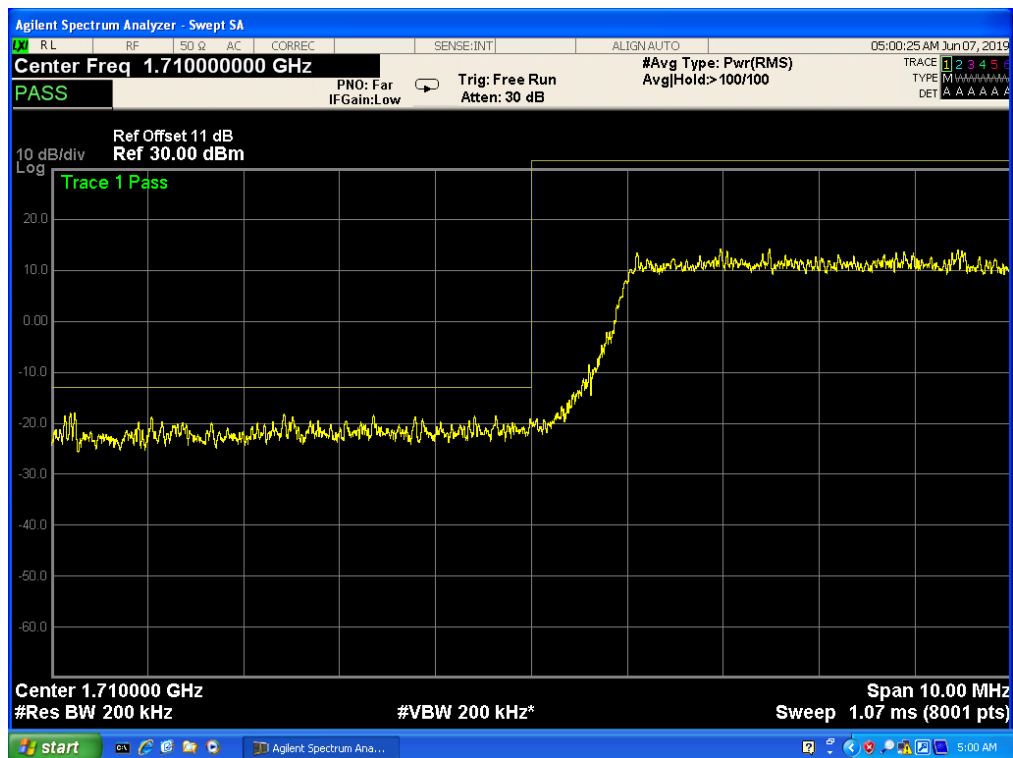
Band 4, UL Channel 20325, UL Frequency 1747.5, BW 15.0, NO. RB 75, RB POS. Low, 16QAM



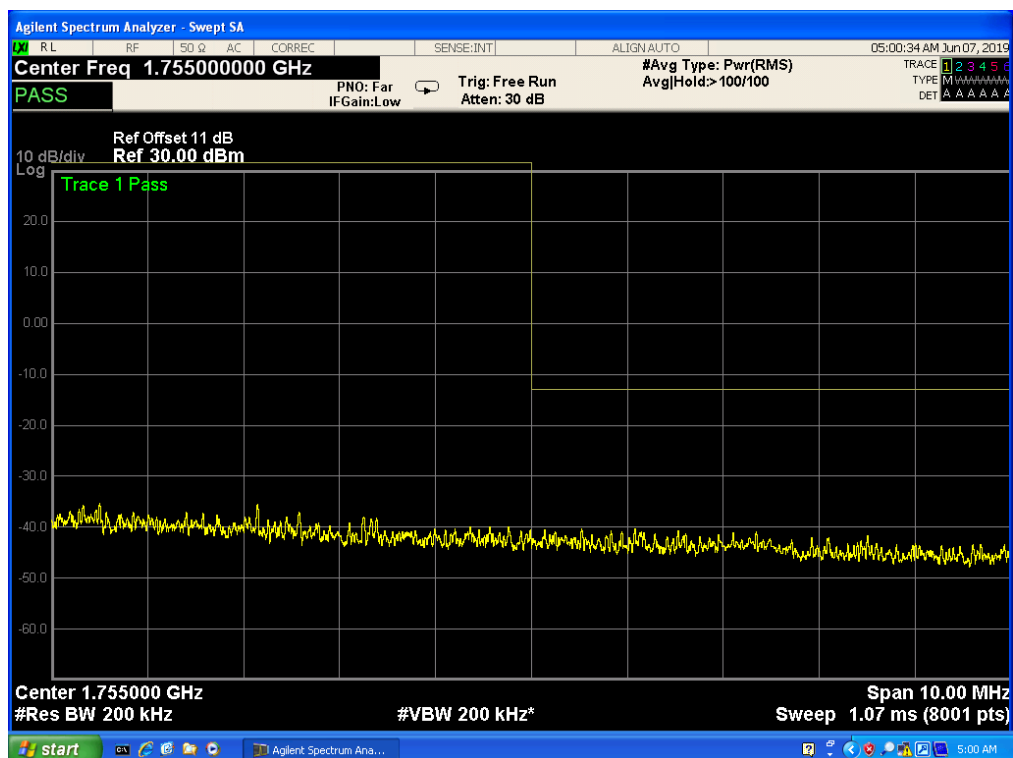
Band 4, UL Channel 20325, UL Frequency 1747.5, BW 15.0, NO. RB 75, RB POS. Low, 16QAM



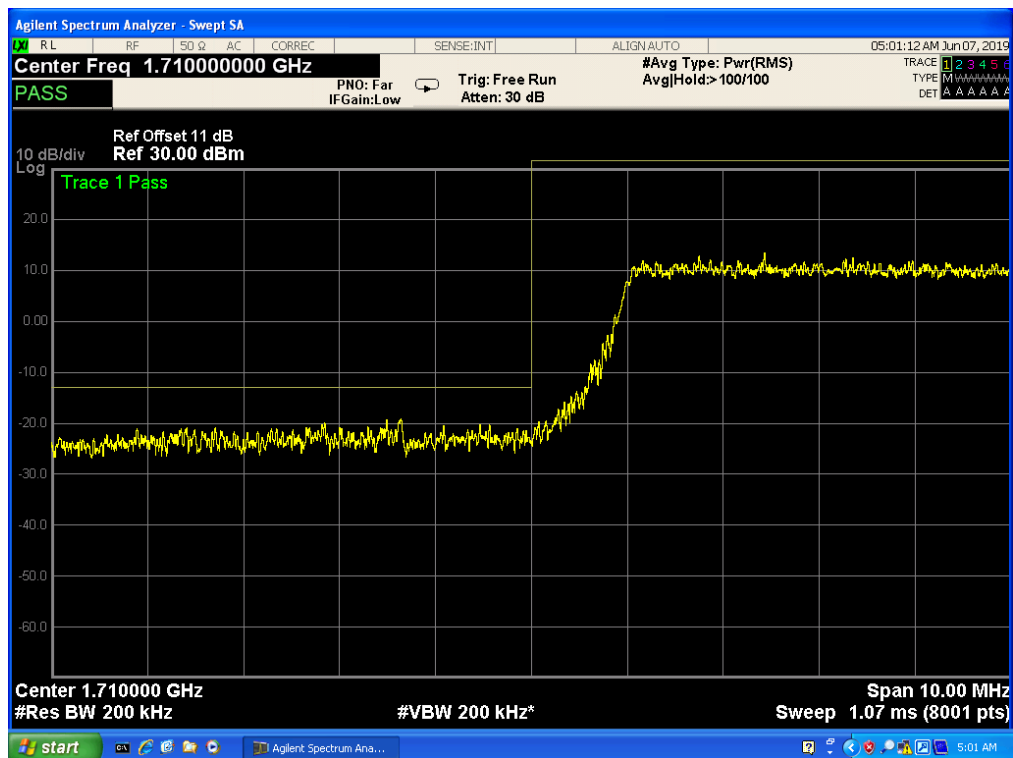
Band 4, UL Channel 20050, UL Frequency 1720.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK



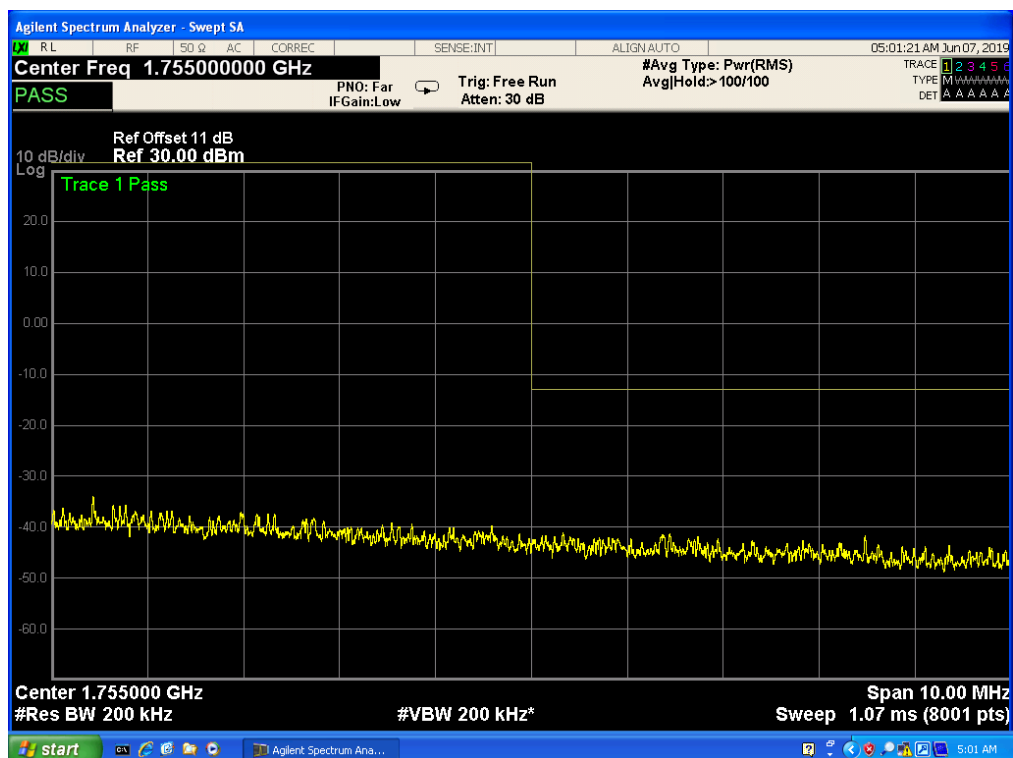
Band 4, UL Channel 20050, UL Frequency 1720.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK



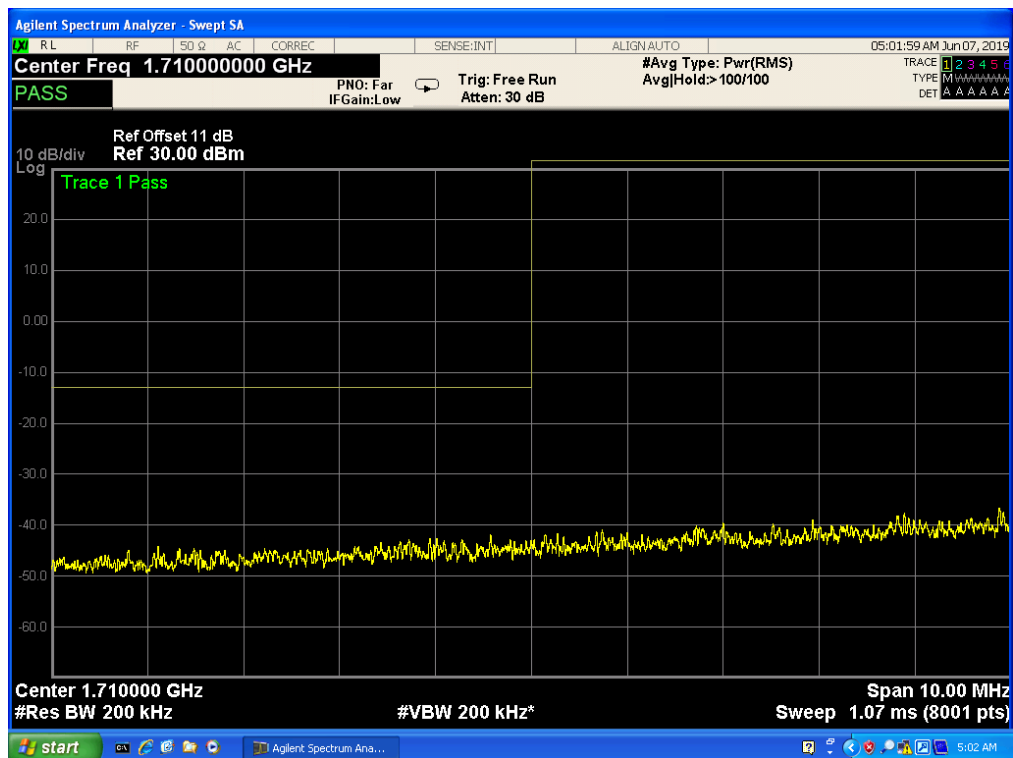
Band 4, UL Channel 20050, UL Frequency 1720.0, BW 20.0, NO. RB 100, RB POS. Low, 16QAM



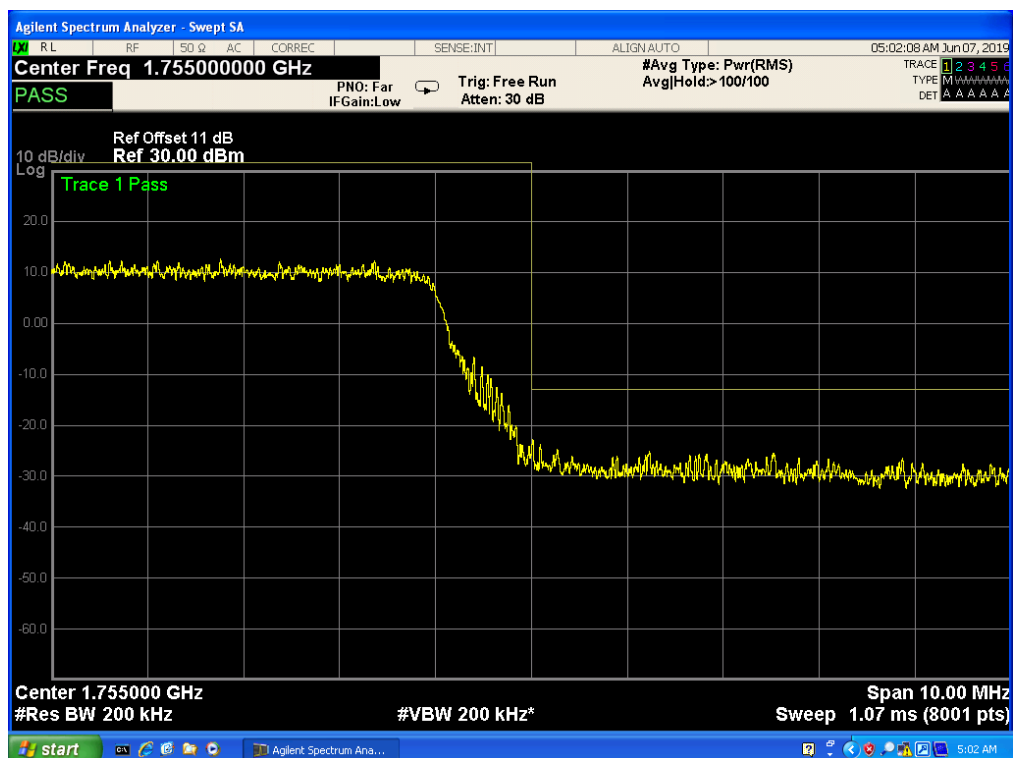
Band 4, UL Channel 20050, UL Frequency 1720.0, BW 20.0, NO. RB 100, RB POS. Low, 16QAM



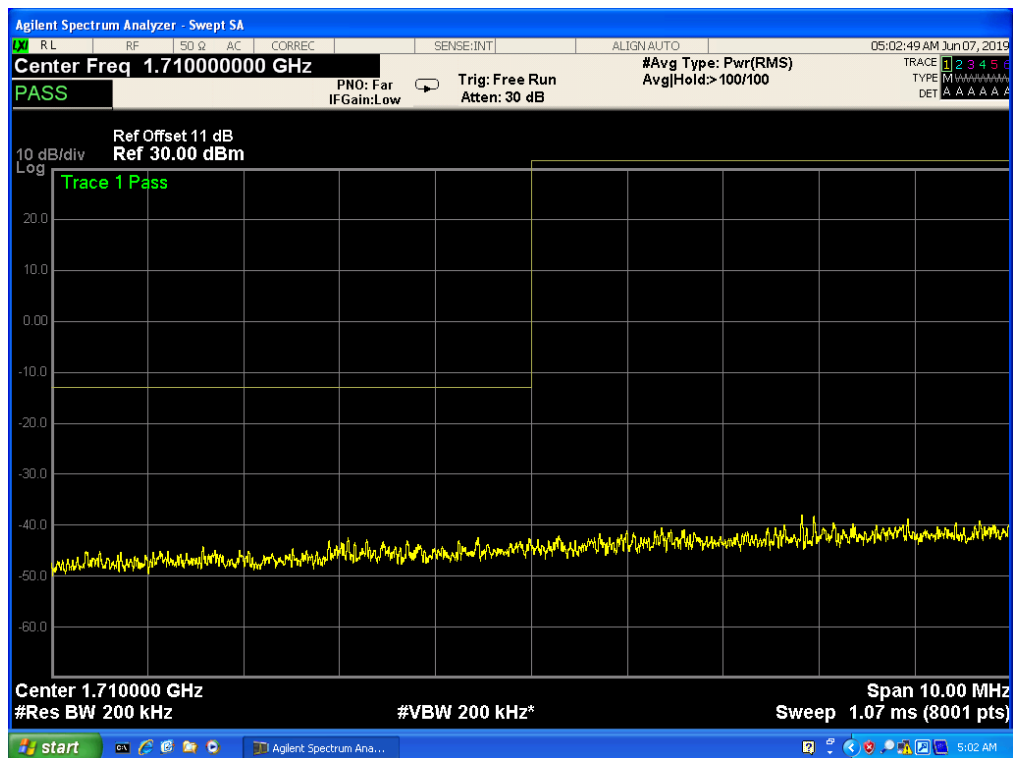
Band 4, UL Channel 20300, UL Frequency 1745.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK



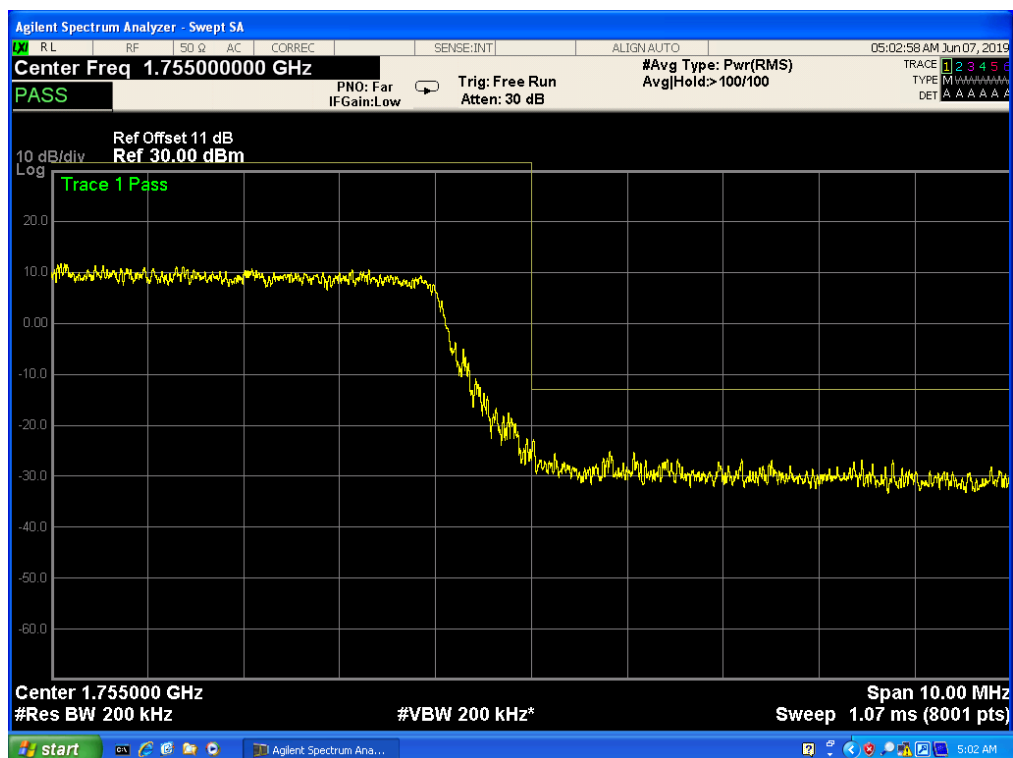
Band 4, UL Channel 20300, UL Frequency 1745.0, BW 20.0, NO. RB 100, RB POS. Low, QPSK



Band 4, UL Channel 20300, UL Frequency 1745.0, BW 20.0, NO. RB 100, RB POS. Low, 16QAM

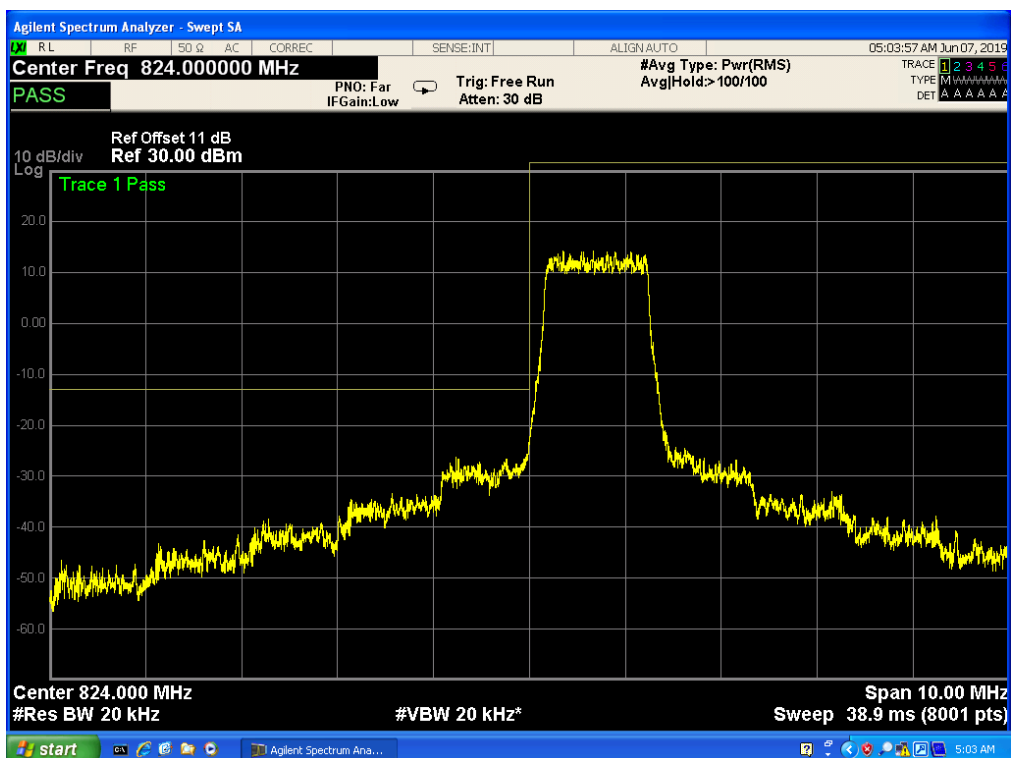


Band 4, UL Channel 20300, UL Frequency 1745.0, BW 20.0, NO. RB 100, RB POS. Low, 16QAM

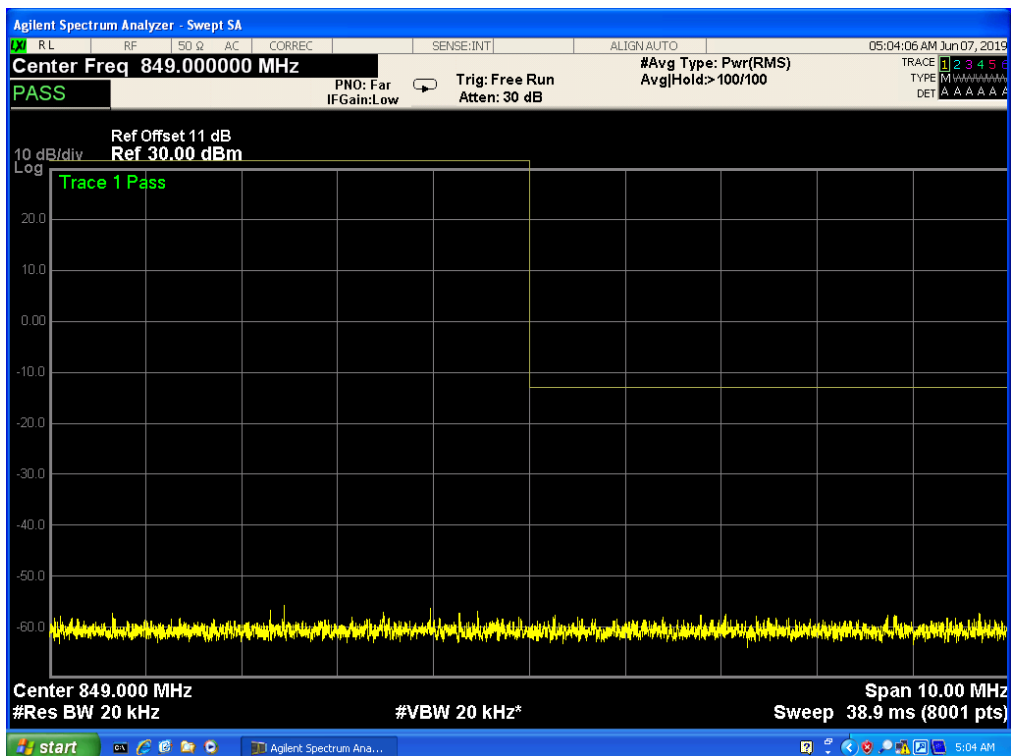


6.2 LTE BAND 5

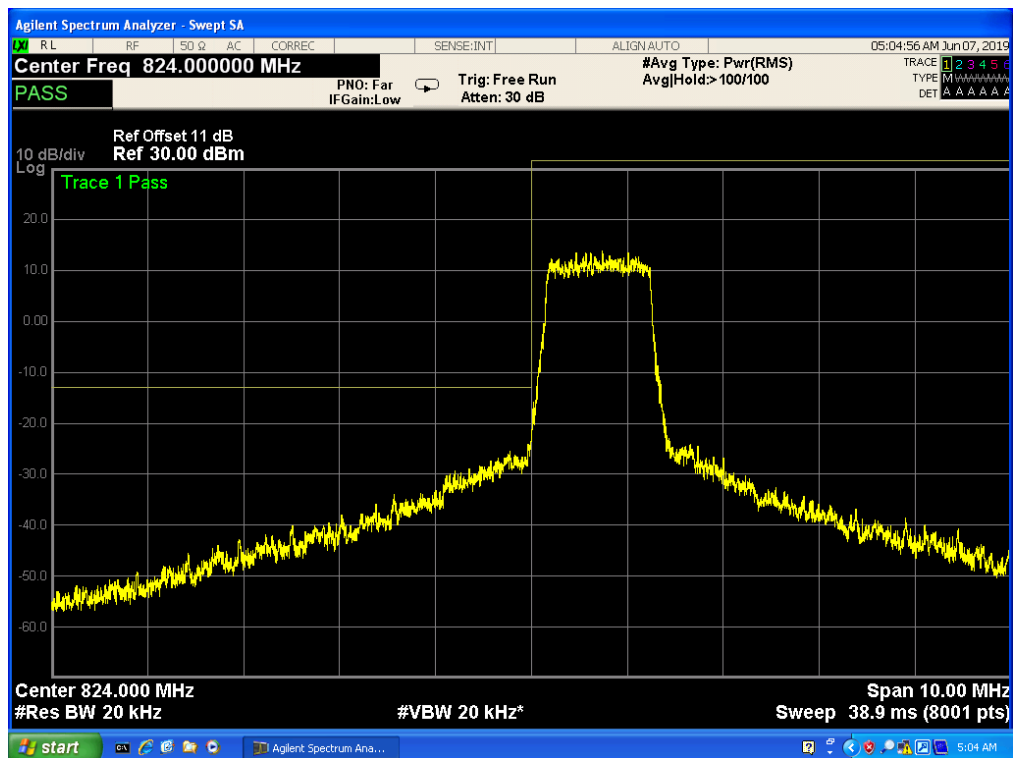
Band 5, UL Channel 20407, UL Frequency 824.7, BW 1.4, NO. RB 6, RB POS. Low, QPSK



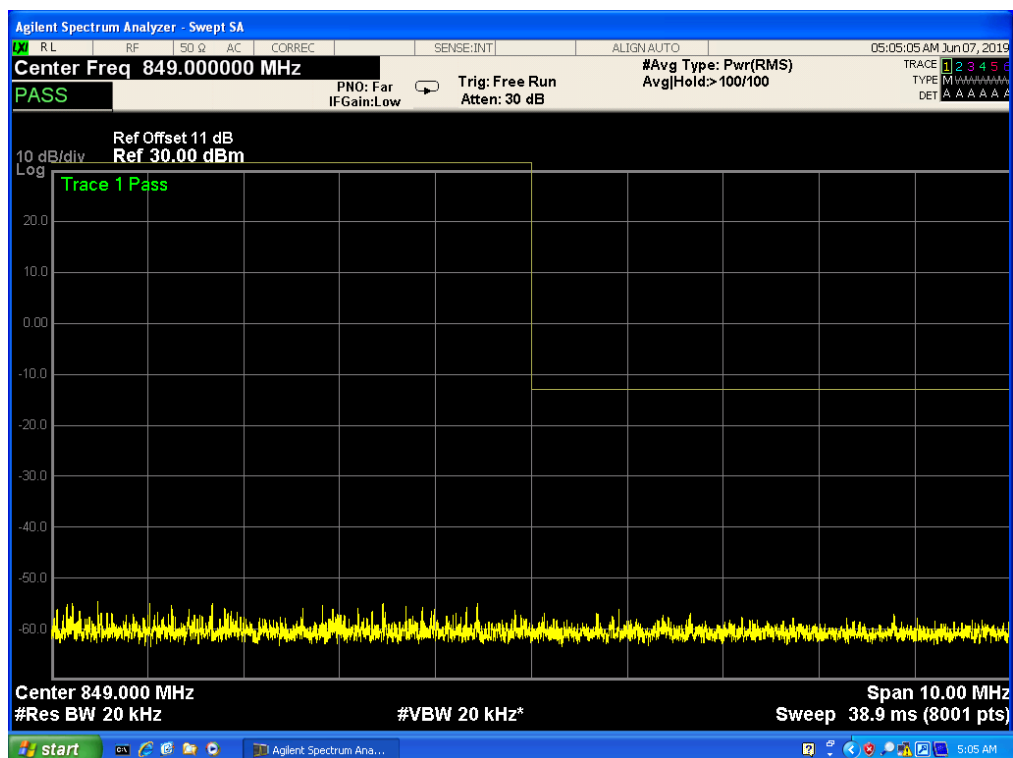
Band 5, UL Channel 20407, UL Frequency 824.7, BW 1.4, NO. RB 6, RB POS. Low, QPSK



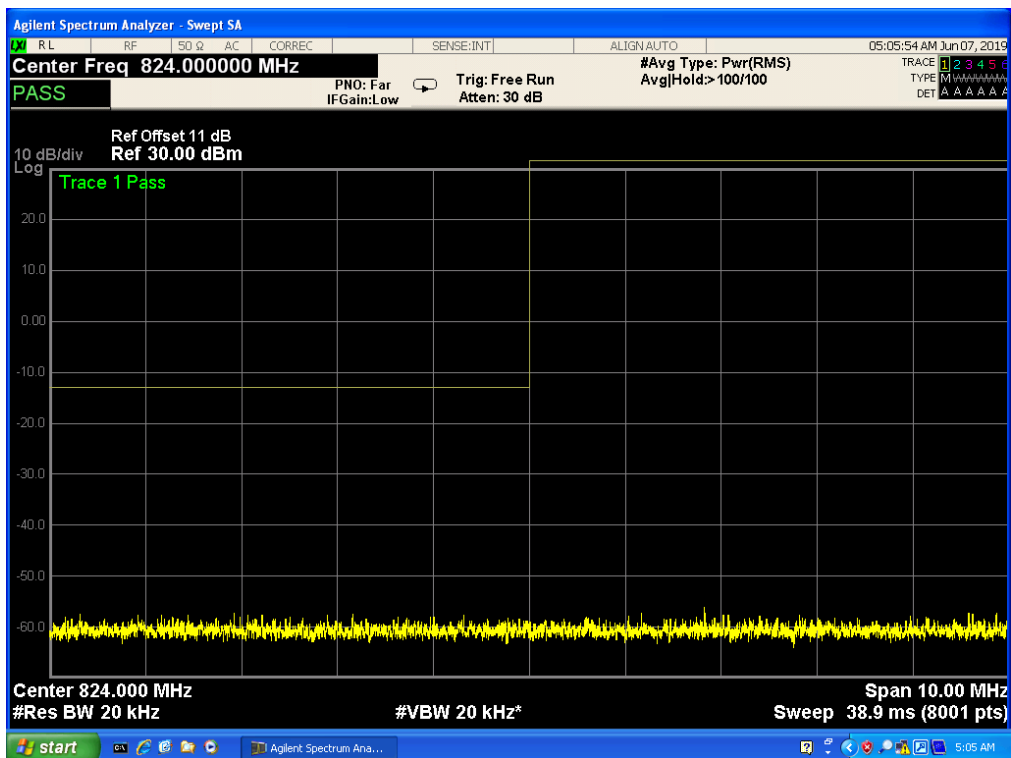
Band 5, UL Channel 20407, UL Frequency 824.7, BW 1.4, NO. RB 6, RB POS. Low, 16-QAM



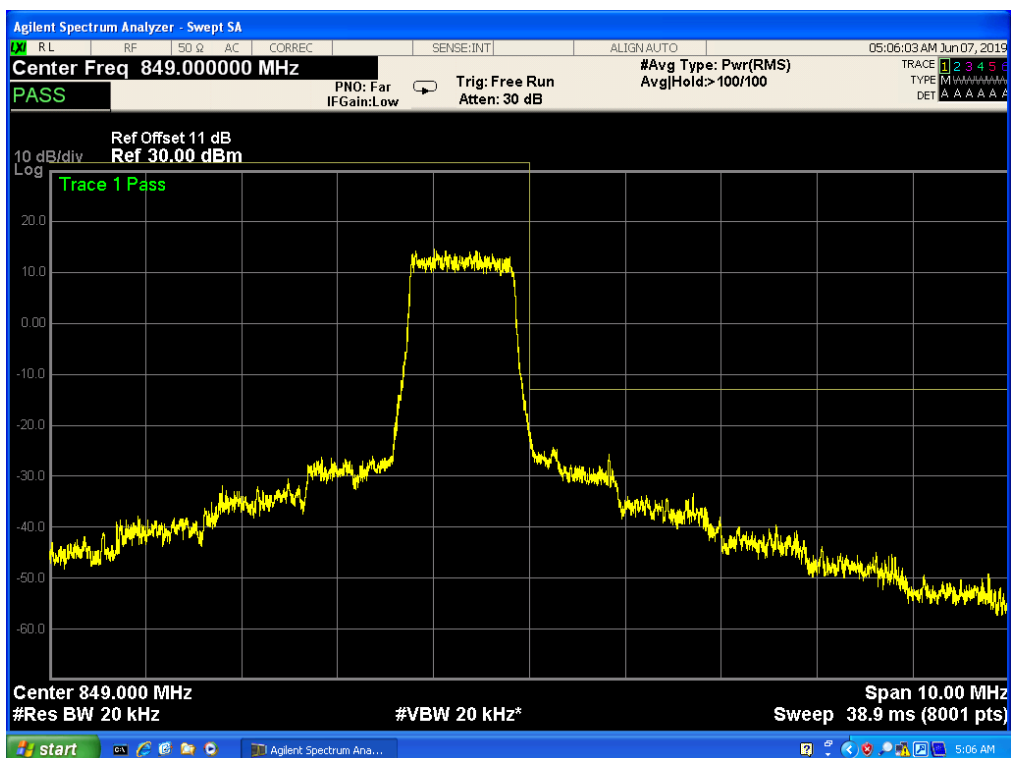
Band 5, UL Channel 20407, UL Frequency 824.7, BW 1.4, NO. RB 6, RB POS. Low, 16-QAM



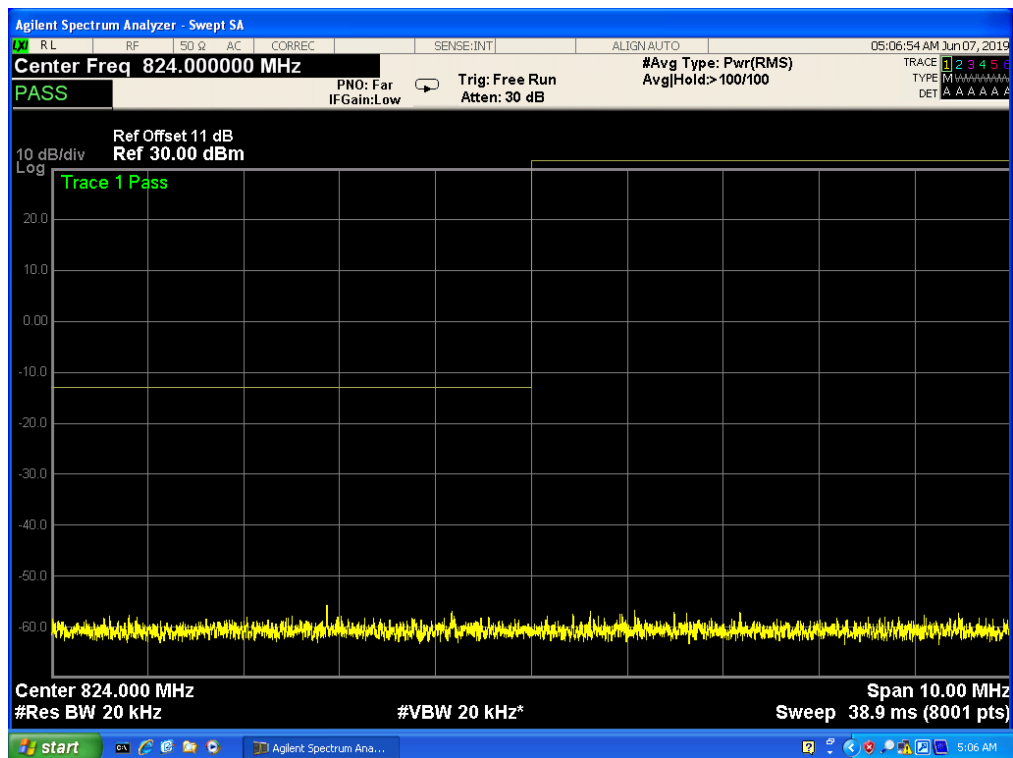
Band 5, UL Channel 20643, UL Frequency 848.3, BW 1.4, NO. RB 6, RB POS. Low, QPSK



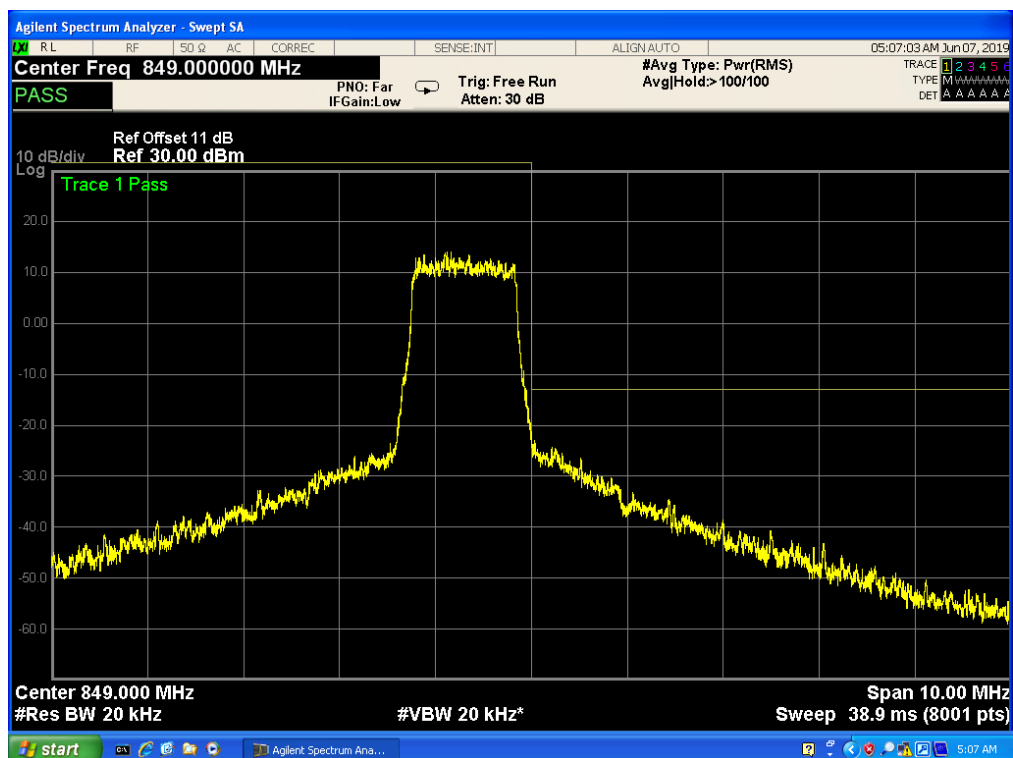
Band 5, UL Channel 20643, UL Frequency 848.3, BW 1.4, NO. RB 6, RB POS. Low, QPSK



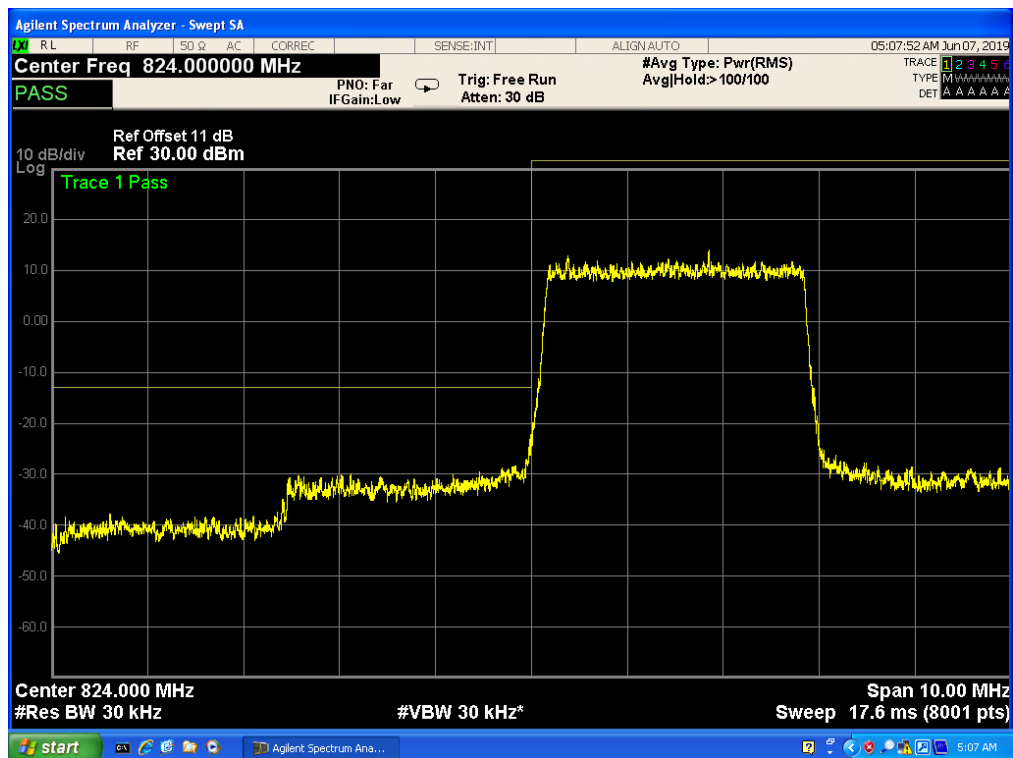
Band 5, UL Channel 20643, UL Frequency 848.3, BW 1.4, NO. RB 6, RB POS. Low, 16-QAM



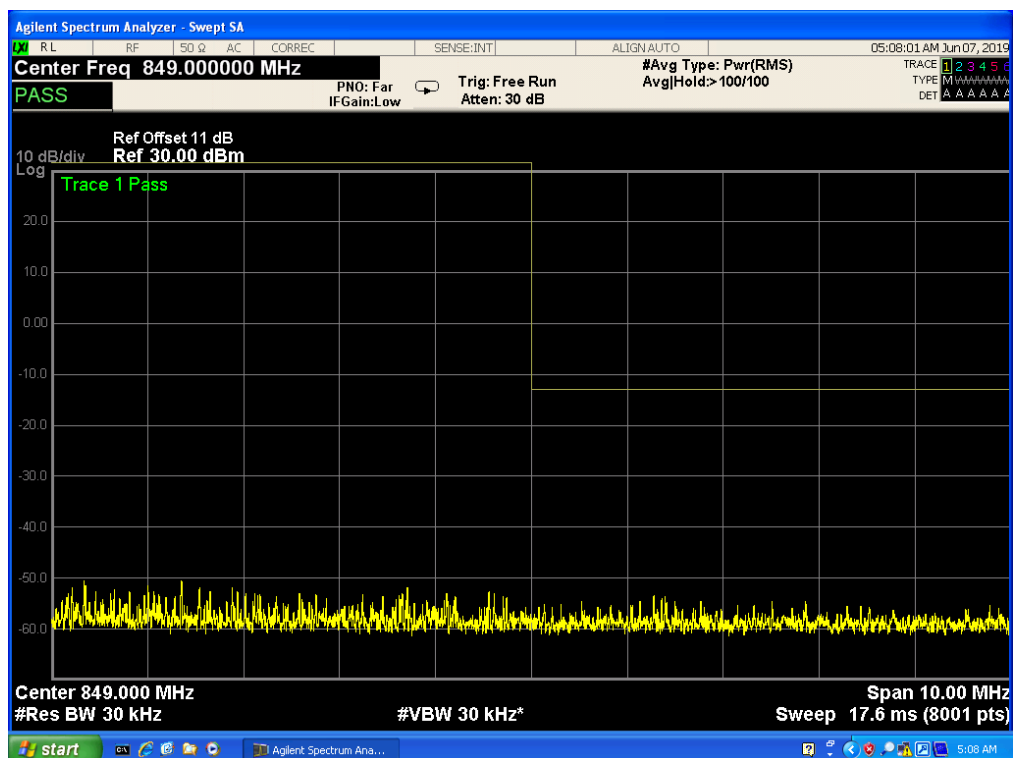
Band 5, UL Channel 20643, UL Frequency 848.3, BW 1.4, NO. RB 6, RB POS. Low, 16-QAM



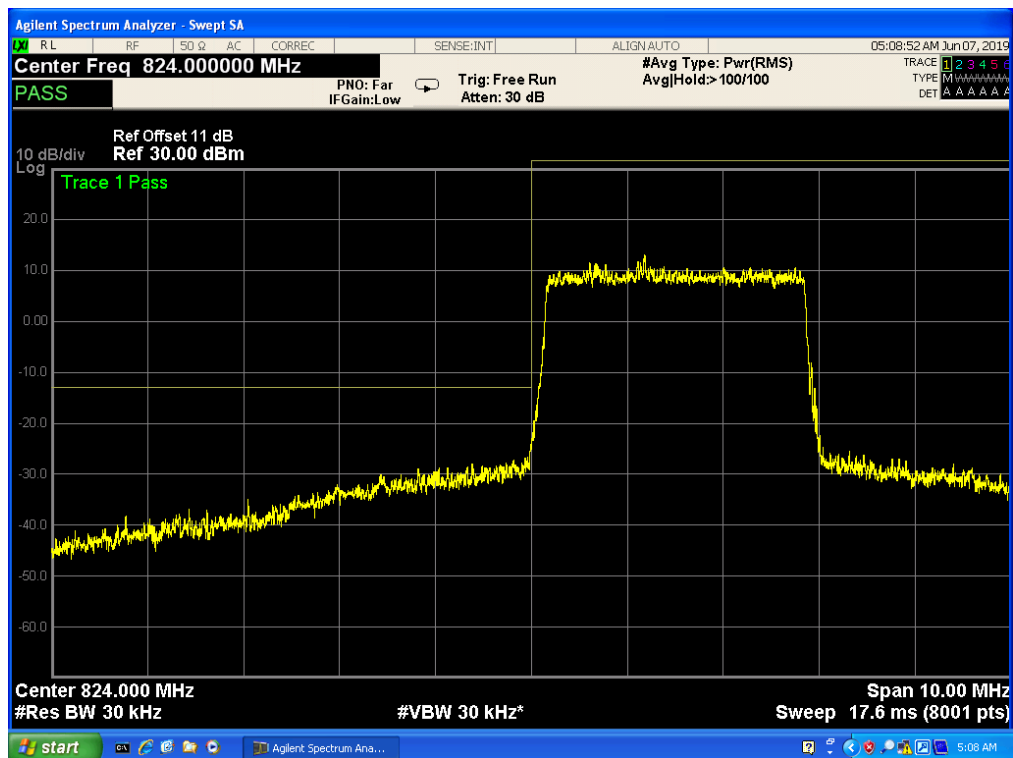
Band 5, UL Channel 20415, UL Frequency 825.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



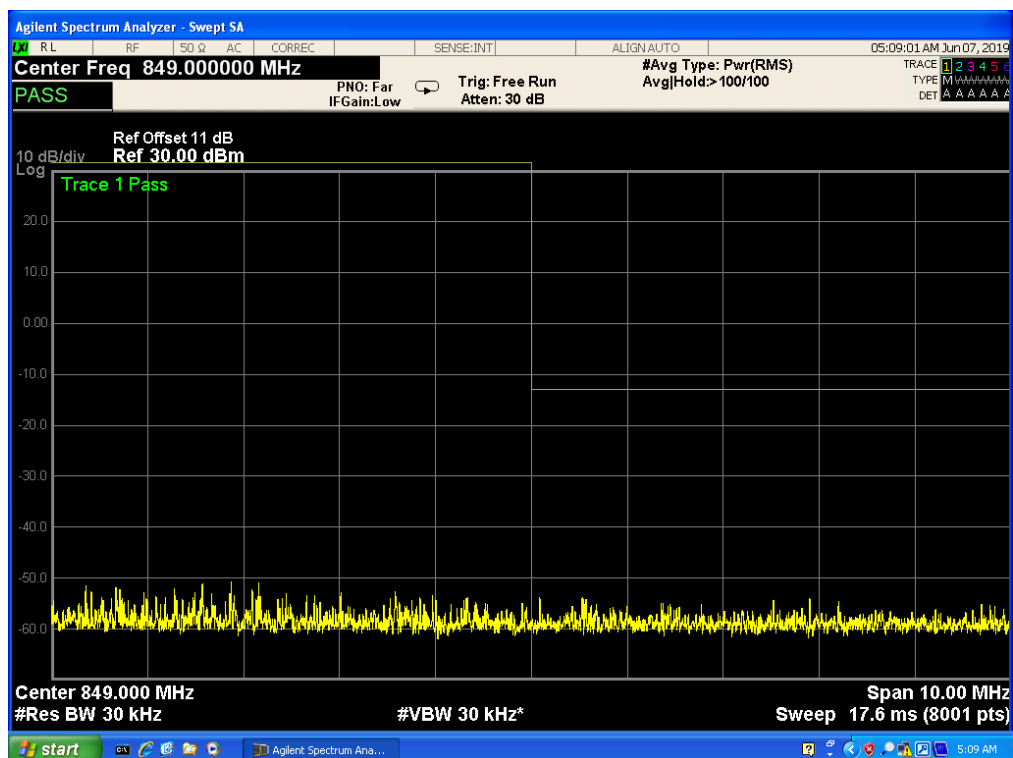
Band 5, UL Channel 20415, UL Frequency 825.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



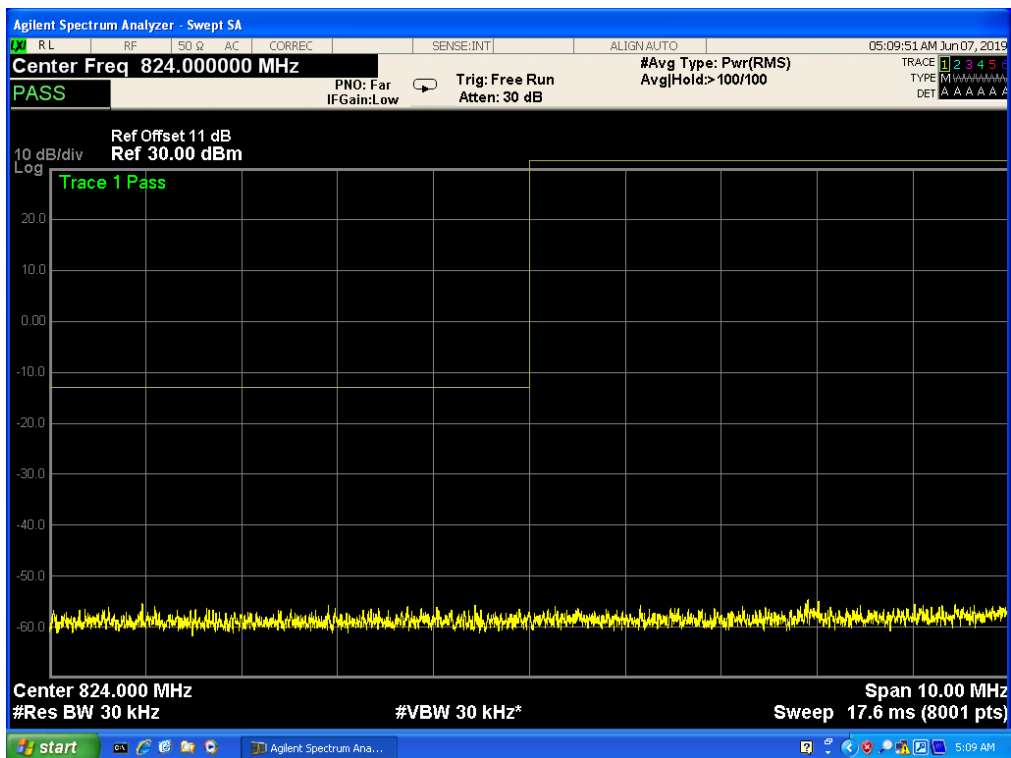
Band 5, UL Channel 20415, UL Frequency 825.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM



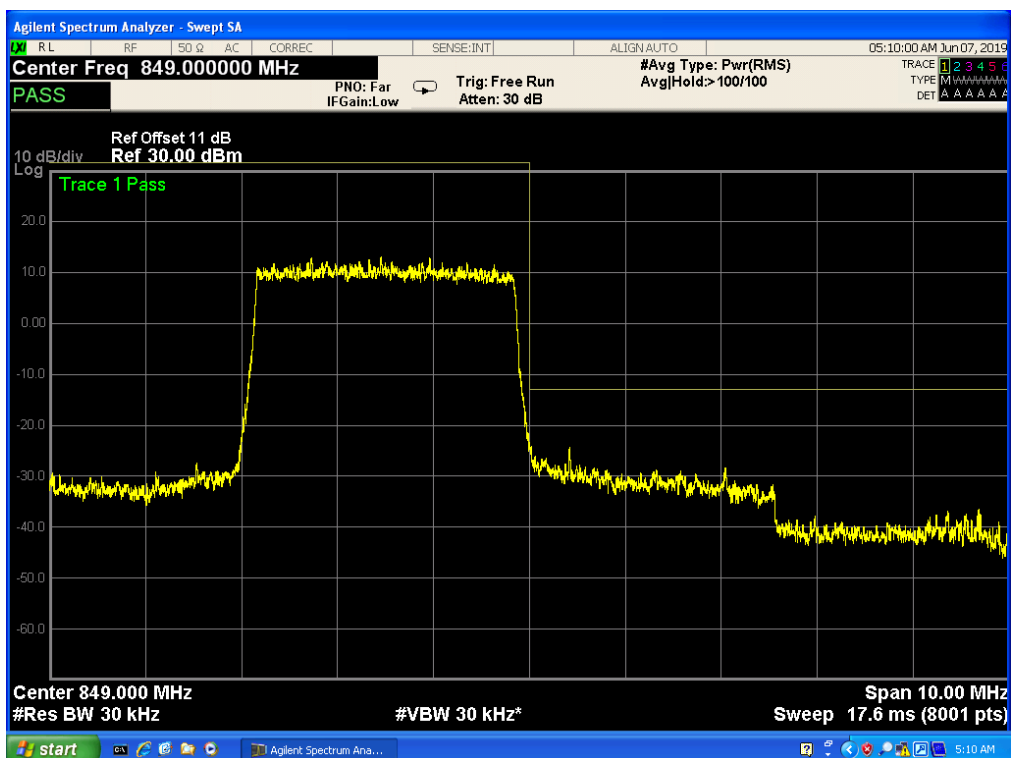
Band 5, UL Channel 20415, UL Frequency 825.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM



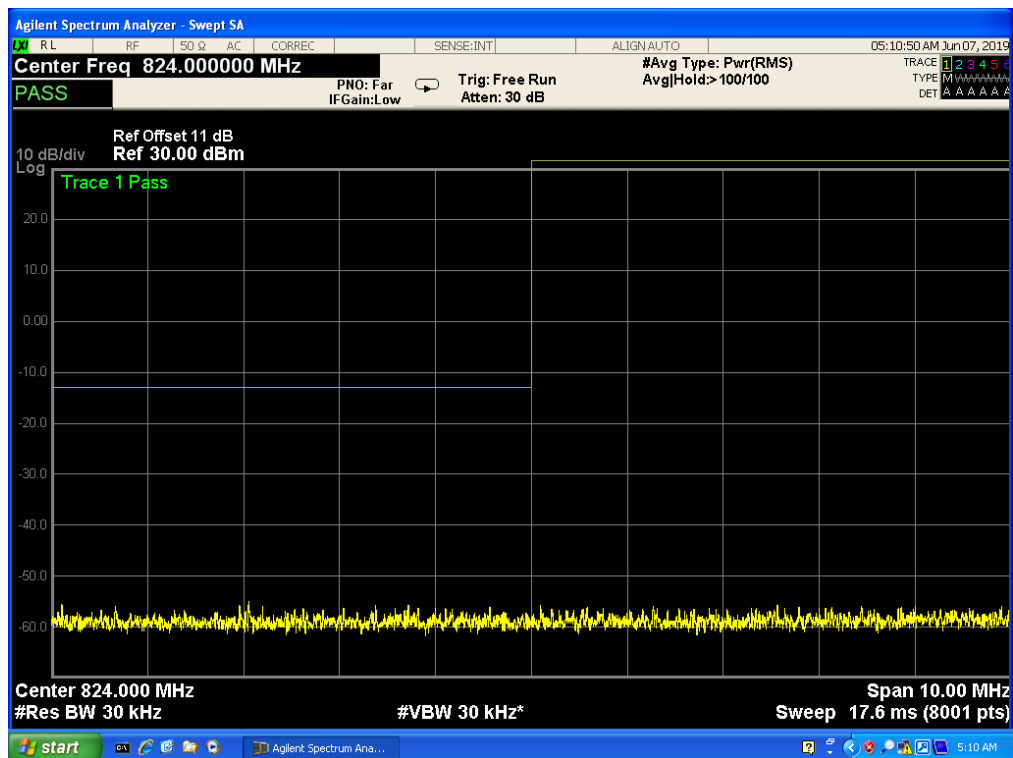
Band 5, UL Channel 20635, UL Frequency 847.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



Band 5, UL Channel 20635, UL Frequency 847.5, BW 3.0, NO. RB 15, RB POS. Low, QPSK



Band 5, UL Channel 20635, UL Frequency 847.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM



Band 5, UL Channel 20635, UL Frequency 847.5, BW 3.0, NO. RB 15, RB POS. Low, 16-QAM

