



FCC CFR47 PART 27

**UP LINK CARRIER AGGREGATION
CERTIFICATION TEST REPORT**

FOR

CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL NUMBER: A1784

FCC ID: BCG-E3092A

REPORT NUMBER: 16U23366-E11V3

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	07/27/2016	Initial Review	Mengistu Mekuria
V2	07/31/2016	Addressed TCB Questions	Tina Chu
V3	08/16/2016	Specify correct RB combination in radiated section	Mona Hua

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL: A1784

SERIAL NUMBER: C39RV054HFPQ (CONDUCTED); C39RV064HFPQ (RADIATED)

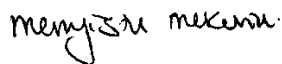
DATE TESTED: MAY 17, 2016 – JULY 27, 2016

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC CFR47 PART 27	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

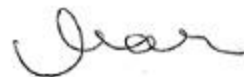
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-D, FCC CFR 47 Part 2, FCC KDB 971168 D01 v02r02, Part 27.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☐ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F
	☒ Chamber G
	☒ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamplifier Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT Model A1784 is a mobile phone with multimedia functions (music, application support, and video), cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/LTE-radio, IEEE 802.11a/b/g/n/ac, NFC and Bluetooth radio. The rechargeable battery is not user accessible.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted and ERP / EIRP output powers as follows:

5.2.1. LAT

OUTPUT POWER FOR LTE BAND 7

Part 27 / RSS199 LTE Band 7						
Bandwidth (MHz)	Frequency Range	Modulation	Conducted (Average)		EIRP (Average)	
			dBm	mW	dBm	mW
10+20	2500 - 2570	QPSK	23.77	238.2	25.50	354.8
		16QAM	22.72	187.1	24.58	287.1
20+10		QPSK	23.85	242.7	25.25	335.0
		16QAM	22.91	195.4	24.35	272.3
15+15		QPSK	23.92	246.6	25.59	362.2
		16QAM	22.83	191.9	24.71	295.8
15+20		QPSK	23.93	247.2	25.25	335.0
		16QAM	22.92	195.9	24.36	272.9
20+15		QPSK	24.00	251.2	25.44	349.9
		16QAM	22.97	198.2	24.52	283.1
20+20		QPSK	23.88	244.3	25.46	351.6
		16QAM	23.17	207.5	24.52	283.1

OUTPUT POWER FOR LTE BAND 41

Part 27 LTE Band 41						
Bandwidth (MHz)	Frequency Range	Modulation	Conducted (Average)		EIRP (Average)	
			dBm	mW	dBm	mW
5+20	2496-2690	QPSK	24.00	251.2	25.26	335.7
		16QAM	23.06	202.3	24.33	271.0
20+5		QPSK	23.98	250.0	25.69	370.7
		16QAM	23.00	199.5	24.76	299.2
10+20		QPSK	24.00	251.2	25.87	386.4
		16QAM	23.10	204.2	24.92	310.5
20+10		QPSK	24.00	251.2	25.88	387.3
		16QAM	23.16	207.0	24.88	307.6
15+15		QPSK	24.00	251.2	25.90	389.0
		16QAM	22.97	198.2	24.95	312.6
15+20		QPSK	24.00	251.2	26.82	480.8
		16QAM	23.18	208.0	25.77	377.6
20+15		QPSK	23.96	248.9	25.92	390.8
		16QAM	22.99	199.1	24.57	286.4
20+20		QPSK	23.97	249.5	25.83	382.8
		16QAM	23.18	208.0	24.79	301.3

5.2.2. UAT

OUTPUT POWER FOR LTE BAND 7

Part 27 / RSS199 LTE Band 7						
Bandwidth (MHz)	Frequency Range	Modulation	Conducted (Average)		EIRP (Average)	
			dBm	mW	dBm	mW
10+20	2500 - 2570	QPSK	18.93	78.2	20.06	101.4
		16QAM	18.09	64.4	19.39	86.9
20+10		QPSK	18.97	78.9	19.88	97.3
		16QAM	18.37	68.7	19.26	84.3
15+15		QPSK	18.92	78.0	19.80	95.5
		16QAM	18.09	64.4	19.16	82.4
15+20		QPSK	18.92	78.0	20.70	117.5
		16QAM	18.07	64.1	19.36	86.3
20+15		QPSK	18.93	78.2	20.66	116.4
		16QAM	17.93	62.1	20.25	105.9
20+20		QPSK	18.99	79.3	20.97	125.0
		16QAM	18.08	64.3	19.94	98.6

OUTPUT POWER FOR LTE BAND 41

Part 27 LTE Band 41						
Bandwidth (MHz)	Frequency Range	Modulation	Conducted (Average)		EIRP (Average)	
			dBm	mW	dBm	mW
5+20	2496-2690	QPSK	19.50	89.1	20.15	103.5
		16QAM	18.63	72.9	19.25	84.1
20+5		QPSK	19.40	87.1	20.12	102.8
		16QAM	18.43	69.7	19.28	84.7
10+20		QPSK	19.50	89.1	20.15	103.5
		16QAM	18.62	72.8	19.35	86.1
20+10		QPSK	19.50	89.1	20.19	104.5
		16QAM	18.61	72.6	19.29	84.9
15+15		QPSK	19.50	89.1	20.12	102.8
		16QAM	18.63	72.9	19.32	85.5
15+20		QPSK	19.50	89.1	20.17	104.0
		16QAM	18.63	72.9	19.32	85.5
20+15		QPSK	19.50	89.1	20.24	105.7
		16QAM	18.56	71.8	19.39	86.9
20+20		QPSK	19.49	88.9	20.20	104.7
		16QAM	18.51	71.0	19.34	85.9

5.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.26.02.

5.4. MAXIMUM ANTENNA GAIN

Please see table below:

LTE BANDS	Port A (LAT) Antenna Gain (dBi)	Port B (UAT) Antenna Gain (dBi)
LTE Band 7, 2500 – 2570 MHz	-0.23	0.59
LTE Band 41, 2496 – 2690 MHz	0.66	0.59

5.5. 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 7 and 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.

The fundamental of the EUT was investigated in three orthogonal orientations X/Y/Z, it was determined that Landscape orientation was worst-case orientation for Band 41 and Band 7 without AC/DC adapter and headset.

All of the test modes for each test items are the worst case configuration after investigation.

5.6. DESCRIPTION OF TEST SETUP

TESTS SUPPORT EQUIPMENT

Support Equipment List			
Description	Manufacturer	Model	Serial Number
AC/DC adapter	APPLE	A1222	N/A
Laptop	Apple	MacBook Pro	730374GJAGW
DC power supply	Sorensen	XT 20-3	1318A00529

I/O CABLES (RF CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	3	US 115V	Un-shielded	2m	N/A
2	DC	1	DC	Un-shielded	1.4m	N/A
3	RF In/Out	1	EUT	Un-shielded	0.4m	N/A
4	RF In/Out	1	Barrel	N/A	N/A	N/A
5	RF In/Out	1	Communication Test Set	Un-shielded	1m	N/A

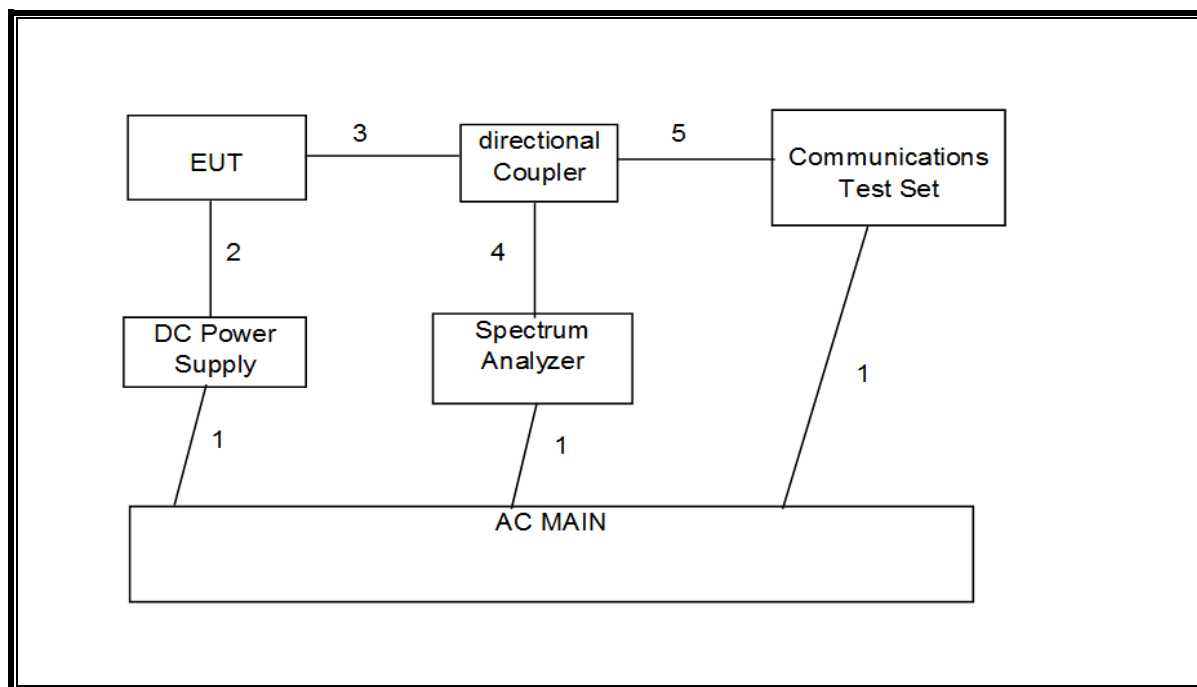
I/O CABLES (RF RADIATED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF In/Out	1	Antenna	Un-shielded	5m	NA

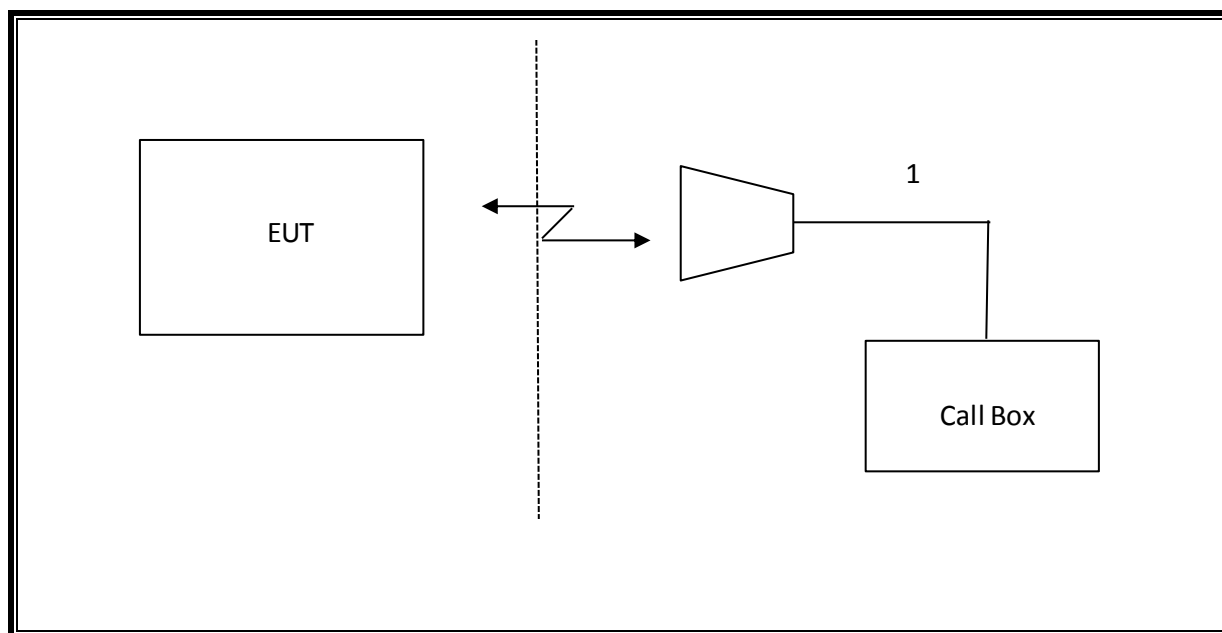
TEST SETUP

SETUP DIAGRAM FOR TESTS

CONDUCTED SETUP



RADIATED SETUP



6. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	T No.	Cal Due
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight	E4446A	T1239	10/22/16
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	T971	07/23/16
Directional Coupler, 10dB SMA, 0.5GHz to 26.5GHz	Krytar	152610	T922	06/17/17
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCTWC	T1154	09/14/16
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	T260	07/10/16
Wireless Communications Test Set, 8960 Series 10	Keysight	E5515C	T211	11/19/16
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T341	10/15/16
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T344	02/22/17
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T185	03/09/17
*Amplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	T740	01/25/17
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T173	06/17/17
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	T260	07/10/16
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T340	11/16/16
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T834	06/17/17
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T906	02/03/17
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	T259	10/23/16
Power Meter, P-series single channel	Keysight	N1911A	T1245	07/02/16
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight	N1921A	T1227	07/07/16
Power Meter, RF	Anritsu	ML2495A	T1413	12/26/16
Power Sensor, 50MHz VSW Pulsed Radar & Comm Signals	Anritsu	MA2411B	T1415	12/16/16
Antenna, Horn 1-18GHz	Emco	3117	T136	03/14/17
Antenna, Horn 18 to 26.5GHz	ARA	MVH-1826	T447	06/16/17
Filter, Highpass 4.0GHz	Micro-Tronics	HPM13351	T1239	06/24/17
*Filter, HPF 3.0GHz	Micro-Tronics	HPM17543	T428	01/25/17

NOTE: * testing is completed before equipment calibration expiration date.

7. RF POWER OUTPUT VERIFICATION

LTE Measurement Procedure:

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set.

TEST PROCEDURE

3GPP TR 36.827, TR.36 830 and TR 36.831

7.1. LAT

7.1.1. LTE Band 7

ID:	37289	Date:	5/26/16
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OUTPUT POWER FOR LTE BAND 7 (10.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
10MHz / 20MHz	2505.5	2519.9	QPSK	1	49	1	0	23.60	27.41
				1	24	1	49	12.63	19.19
				50	0	100	0	21.85	28.14
			16QAM	1	49	1	0	22.63	27.40
				1	24	1	49	12.58	19.26
				50	0	100	0	20.67	27.88
10MHz / 20MHz	2525.6	2540.0	QPSK	1	49	1	0	23.77	27.58
				1	24	1	49	12.70	19.26
				50	0	100	0	21.95	28.24
			16QAM	1	49	1	0	22.72	27.49
				1	24	1	49	12.68	19.36
				50	0	100	0	20.98	28.19
10MHz / 20MHz	2545.6	2560.0	QPSK	1	49	1	0	23.59	27.40
				1	24	1	49	12.73	19.29
				50	0	100	0	21.95	28.23
			16QAM	1	49	1	0	22.38	27.15
				1	24	1	49	12.56	19.24
				50	0	100	0	20.94	28.15

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 10.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 10MHz	2510.0	2524.4	QPSK	1	0	1	0	12.76	19.74
				1	0	1	49	12.98	20.09
				1	0	50	0	20.00	27.32
				1	99	1	49	12.90	19.91
				1	99	50	0	21.85	28.12
				100	0	1	49	20.50	27.81
				100	0	50	0	21.82	28.22
				1	99	1	0	23.76	27.87
			16QAM	100	0	1	0	21.88	28.01
				1	0	1	0	13.00	20.23
				1	0	1	49	12.98	20.15
				1	0	50	0	19.90	27.53
				1	99	1	49	12.76	19.86
				1	99	50	0	20.81	27.96
				100	0	1	49	20.35	27.97
				100	0	50	0	20.76	28.08
20MHz / 10MHz	2530.1	2544.5	QPSK	1	99	1	0	22.87	27.66
				100	0	1	0	21.02	28.05
			16QAM	1	0	1	0	12.70	19.68
				1	0	1	49	12.94	20.05
				1	0	50	0	20.10	27.40
				1	99	1	49	12.99	20.00
				1	99	50	0	21.87	28.24
				100	0	1	49	20.49	27.80
				100	0	50	0	21.93	28.33
			16QAM	1	99	1	0	23.85	27.96
				100	0	1	0	21.99	28.12
				1	0	1	0	12.80	20.03
				1	0	1	49	12.97	20.14
				1	0	50	0	19.89	27.65
				1	99	1	49	12.92	20.02
				1	99	50	0	20.94	28.09
				100	0	1	49	20.32	27.94
20MHz / 10MHz	2550.1	2564.5	QPSK	100	0	50	0	20.89	28.13
				1	99	1	0	22.91	27.70
				100	0	1	0	21.01	28.04
			16QAM	1	0	1	0	12.61	19.59
				1	0	1	49	12.91	20.02
				1	0	50	0	20.01	27.20
				1	99	1	49	12.87	19.88
				1	99	50	0	21.68	28.15
				100	0	1	49	20.48	27.79
				100	0	50	0	21.81	28.21
			16QAM	1	99	1	0	23.69	27.80
				100	0	1	0	21.58	27.71
				1	0	1	0	12.56	19.79
				1	0	1	49	12.73	19.90
				1	0	50	0	19.86	28.15
				1	99	1	49	12.93	20.03
				1	99	50	0	20.99	28.04
				100	0	1	49	20.37	27.99
				100	0	50	0	20.67	27.91
				1	99	1	0	22.74	27.53
				100	0	1	0	20.73	27.76

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 15MHz	2507.5	2522.5	QPSK	1	74	1	0	23.71	27.90
				75	0	75	0	21.56	27.93
			16QAM	1	74	1	0	22.61	27.79
				75	0	75	0	20.60	27.78
15MHz / 15MHz	2527.5	2542.5	QPSK	1	74	1	0	23.92	23.92
				75	0	75	0	22.00	28.37
			16QAM	1	74	1	0	22.83	28.01
				75	0	75	0	20.94	28.12
15MHz / 15MHz	2547.5	2562.5	QPSK	1	74	1	0	23.62	27.81
				75	0	75	0	21.93	28.30
			16QAM	1	74	1	0	22.81	28.01
				75	0	75	0	20.82	28.00

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 20MHz	2507.8	2524.9	QPSK	1	74	1	0	23.53	27.42
				1	36	1	49	12.90	20.42
				75	0	100	0	21.53	28.02
			16QAM	1	74	1	0	22.92	27.62
				1	36	1	49	12.76	20.14
				75	0	100	0	20.87	27.97
15MHz / 20MHz	2525.3	2542.4	QPSK	1	74	1	0	23.93	27.82
				1	36	1	49	12.59	20.11
				75	0	100	0	21.76	28.25
			16QAM	1	74	1	0	22.84	27.84
				1	36	1	49	12.70	20.08
				75	0	100	0	20.69	28.07
15MHz / 20MHz	2542.9	2560.0	QPSK	1	74	1	0	23.71	27.60
				1	36	1	49	12.51	20.03
				75	0	100	0	21.89	28.38
			16QAM	1	74	1	0	22.76	27.76
				1	36	1	49	12.69	20.07
				75	0	100	0	20.79	27.85

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 15MHz	2510.0	2527.1	QPSK	1	99	1	0	23.99	27.95
				100	0	75	0	21.73	28.38
			16QAM	1	99	1	0	22.96	27.91
				100	0	75	0	20.66	28.20
20MHz / 15MHz	2527.6	2544.7	QPSK	1	99	1	0	24.00	28.36
				100	0	75	0	21.79	28.44
			16QAM	1	99	1	0	22.97	28.12
				100	0	75	0	20.73	28.27
20MHz / 15MHz	2545.1	2562.2	QPSK	1	99	1	0	23.96	27.87
				100	0	75	0	21.85	28.50
			16QAM	1	99	1	0	22.96	27.81
				100	0	75	0	20.66	28.20

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz/ 20MHz	2510.0	2529.8	QPSK	1	0	1	0	13.00	19.73
				1	0	1	99	12.95	18.83
				1	0	100	0	20.46	27.92
				1	49	1	49	12.93	20.26
				1	99	1	99	12.82	18.94
				1	99	100	0	21.81	28.25
				100	0	1	99	20.57	27.81
				100	0	100	0	21.64	28.58
				1	99	1	0	23.70	28.45
			100	0	1	0	22.09	28.32	
			16QAM	1	0	1	0	12.95	19.68
				1	0	1	99	12.78	18.66
				1	0	100	0	20.43	27.89
				1	49	1	49	12.77	20.10
				1	99	1	99	12.91	19.43
				1	99	100	0	20.84	27.28
				100	0	1	99	20.33	27.57
				100	0	100	0	20.69	27.63
1	99	1		0	22.74	27.49			
100	0	1	0	21.06	27.29				
20MHz/ 20MHz	2525.1	2544.9	QPSK	1	0	1	0	12.92	19.65
				1	0	1	99	12.89	18.77
				1	0	100	0	20.67	28.13
				1	49	1	49	12.80	20.13
				1	99	1	99	12.95	19.47
				1	99	100	0	21.89	28.33
				100	0	1	99	20.74	27.98
				100	0	100	0	22.08	29.02
				1	99	1	0	23.88	28.63
			100	0	1	0	21.70	27.93	
			16QAM	1	0	1	0	12.88	19.61
				1	0	1	99	12.72	18.60
				1	0	100	0	20.47	27.93
				1	49	1	49	12.94	20.27
				1	99	1	99	12.76	19.28
				1	99	100	0	20.98	27.42
				100	0	1	99	20.47	27.71
				100	0	100	0	21.05	27.99
1	99	1		0	23.11	27.86			
100	0	1	0	20.74	26.97				
20MHz/ 20MHz	2540.2	2560.0	QPSK	1	0	1	0	12.96	19.69
				1	0	1	99	12.72	18.60
				1	0	100	0	20.45	27.91
				1	49	1	49	12.86	20.19
				1	99	1	99	12.94	19.46
				1	99	100	0	21.86	28.30
				100	0	1	99	20.42	27.63
				100	0	100	0	21.86	28.80
				1	99	1	0	23.78	28.53
			100	0	1	0	22.04	28.27	
			16QAM	1	0	1	0	12.88	19.61
				1	0	1	99	12.68	18.56
				1	0	100	0	20.37	27.83
				1	49	1	49	12.76	20.09
				1	99	1	99	12.82	19.34
				1	99	100	0	20.86	27.30
				100	0	1	99	20.39	27.63
				100	0	100	0	20.86	27.80
1	99	1		0	23.17	27.92			
100	0	1	0	21.11	27.34				

7.1.2. LTE Band 41

ID:	44388	Date:	6/24/16
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OUTPUT POWER FOR LTE BAND 41 (5.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
5MHz / 20MHz	2499.3	2511.0	QPSK	1	24	1	0	23.64	27.97
				1	12	1	49	12.26	19.62
				25	0	100	0	21.87	28.51
			16QAM	1	24	1	0	22.85	28.09
				1	12	1	49	12.56	20.03
				25	0	100	0	20.86	28.60
5MHz / 20MHz	2583.8	2595.5	QPSK	1	24	1	0	24.00	28.33
				1	12	1	49	12.13	19.49
				25	0	100	0	21.96	28.71
			16QAM	1	24	1	0	23.06	28.30
				1	12	1	49	12.05	19.52
				25	0	100	0	20.77	28.62
5MHz / 20MHz	2668.3	2680.0	QPSK	1	24	1	0	24.00	28.33
				1	12	1	49	12.04	19.40
				25	0	100	0	21.77	28.41
			16QAM	1	24	1	0	23.02	28.26
				1	12	1	49	12.00	19.47
				25	0	100	0	20.66	28.51

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 5.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 5MHz	2506.0	2517.7	QPSK	1	0	1	0	13.00	19.81
				1	0	1	24	12.97	19.76
				1	0	25	0	19.02	26.56
				1	99	1	24	12.70	19.05
				1	99	25	0	21.98	28.61
				100	0	1	24	20.25	28.38
				100	0	25	0	21.77	28.61
				1	99	1	0	23.96	28.89
				100	0	1	0	21.90	27.71
			16QAM	1	0	1	0	12.78	19.80
				1	0	1	24	12.83	19.64
				1	0	25	0	18.68	26.83
				1	99	1	24	12.68	18.99
				1	99	25	0	21.09	28.75
				100	0	1	24	20.00	28.02
				100	0	25	0	20.57	28.77
				1	99	1	0	22.92	28.30
				100	0	1	0	20.92	28.68
20MHz / 5MHz	2590.5	2602.2	QPSK	1	0	1	0	12.88	19.69
				1	0	1	24	12.82	19.61
				1	0	25	0	19.20	26.56
				1	99	1	24	12.71	19.06
				1	99	25	0	21.80	28.43
				100	0	1	24	20.47	28.60
				100	0	25	0	21.96	28.80
				1	99	1	0	23.84	28.77
				100	0	1	0	22.91	28.72
			16QAM	1	0	1	0	12.99	20.01
				1	0	1	24	12.84	19.65
				1	0	25	0	18.90	26.54
				1	99	1	24	12.95	19.26
				1	99	25	0	20.82	28.48
				100	0	1	24	20.36	28.38
				100	0	25	0	21.04	28.74
				1	99	1	0	22.92	28.30
				100	0	1	0	20.94	28.70
20MHz / 5MHz	2675.0	2686.7	QPSK	1	0	1	0	12.88	19.69
				1	0	1	24	12.81	19.60
				1	0	25	0	19.10	26.80
				1	99	1	24	12.70	19.05
				1	99	25	0	21.96	28.56
				100	0	1	24	20.23	28.36
				100	0	25	0	21.72	28.96
				1	99	1	0	23.98	28.91
				100	0	1	0	21.78	27.59
			16QAM	1	0	1	0	12.70	19.72
				1	0	1	24	12.95	19.76
				1	0	25	0	19.21	26.70
				1	99	1	24	12.94	19.25
				1	99	25	0	20.89	28.52
				100	0	1	24	20.20	28.22
				100	0	25	0	20.77	28.47
				1	99	1	0	23.00	28.38
				100	0	1	0	20.90	28.66

OUTPUT POWER FOR LTE BAND 41 (10.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
10MHz / 20MHz	2501.5	2515.9	QPSK	1	49	1	0	23.90	29.92
				1	24	1	49	12.12	19.33
				50	0	100	0	21.84	29.93
			16QAM	1	49	1	0	22.88	27.87
				1	24	1	49	12.04	19.21
				50	0	100	0	20.79	28.06
10MHz / 20MHz	2583.6	2598.0	QPSK	1	49	1	0	23.76	28.75
				1	24	1	49	12.02	19.19
				50	0	100	0	21.68	28.95
			16QAM	1	49	1	0	22.54	28.56
				1	24	1	49	11.81	19.02
				50	0	100	0	20.67	28.84
10MHz / 20MHz	2665.6	2680.0	QPSK	1	49	1	0	24.00	29.92
				1	24	1	49	12.15	19.36
				50	0	100	0	21.92	29.99
			16QAM	1	49	1	0	23.10	28.09
				1	24	1	49	12.10	19.27
				50	0	100	0	20.89	28.16

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 10.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 10MHz	2506.0	2520.4	QPSK	1	99	1	0	23.98	29.62
				100	0	50	0	21.90	29.83
			16QAM	1	99	1	0	23.00	27.97
				100	0	50	0	20.61	27.70
20MHz / 10MHz	2588.1	2602.5	QPSK	1	99	1	0	23.69	28.69
				100	0	50	0	21.62	28.71
			16QAM	1	99	1	0	22.74	28.38
				100	0	50	0	20.65	28.65
20MHz / 10MHz	2670.1	2684.5	QPSK	1	99	1	0	24.00	29.64
				100	0	50	0	21.98	29.91
			16QAM	1	99	1	0	23.16	28.13
				100	0	50	0	20.23	27.32

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 15MHz	2503.5	2518.5	QPSK	1	74	1	0	23.86	29.04
				75	0	75	0	21.69	28.93
			16QAM	1	74	1	0	22.95	29.03
				75	0	75	0	20.55	28.64
15MHz / 15MHz	2585.5	2600.5	QPSK	1	74	1	0	23.66	28.84
				75	0	75	0	21.68	28.92
			16QAM	1	74	1	0	22.53	28.61
				75	0	75	0	20.61	28.70
15MHz / 15MHz	2667.5	2682.5	QPSK	1	74	1	0	24.00	29.18
				75	0	75	0	21.99	29.23
			16QAM	1	74	1	0	22.97	29.05
				75	0	75	0	21.02	29.11

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 20MHz	2503.8	2520.9	QPSK	1	74	1	0	23.97	28.94
				1	36	1	49	12.21	19.17
				75	0	100	0	21.80	28.96
			16QAM	1	74	1	0	23.18	29.02
				1	36	1	49	12.16	20.13
				75	0	100	0	20.71	28.49
15MHz / 20MHz	2583.3	2600.4	QPSK	1	74	1	0	23.79	28.76
				1	36	1	49	12.05	19.01
				75	0	100	0	21.66	28.82
			16QAM	1	74	1	0	22.63	28.67
				1	36	1	49	11.92	19.89
				75	0	100	0	20.96	29.04
15MHz / 20MHz	2662.9	2680.0	QPSK	1	74	1	0	24.00	28.97
				1	36	1	49	12.07	19.03
				75	0	100	0	21.98	29.14
			16QAM	1	74	1	0	23.03	28.97
				1	36	1	49	12.01	19.98
				75	0	100	0	21.06	28.84

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 15MHz	2506.0	2523.1	QPSK	1	99	1	0	23.88	28.77
				100	0	75	0	21.77	28.72
			16QAM	1	99	1	0	22.90	28.81
				100	0	75	0	20.69	28.62
20MHz / 15MHz	2585.6	2602.7	QPSK	1	99	1	0	23.82	28.71
				100	0	75	0	21.96	28.91
			16QAM	1	99	1	0	22.80	28.71
				100	0	75	0	20.97	28.90
20MHz / 15MHz	2665.1	2682.2	QPSK	1	99	1	0	23.96	28.85
				100	0	75	0	21.91	28.86
			16QAM	1	99	1	0	22.99	28.81
				100	0	75	0	20.83	28.76

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz/ 20MHz	2506.0	2525.8	QPSK	1	0	1	0	12.77	19.75
				1	0	1	99	12.55	18.64
				1	0	100	0	20.35	27.40
				1	49	1	49	12.60	19.03
				1	99	1	99	12.67	19.10
				1	99	100	0	21.92	28.79
				100	0	1	99	20.23	27.32
				100	0	100	0	21.79	28.82
				1	99	1	0	23.95	28.79
				100	0	1	0	21.87	28.83
			16QAM	1	0	1	0	12.97	20.00
				1	0	1	99	13.00	19.07
				1	0	100	0	20.21	27.32
				1	49	1	49	12.52	19.00
				1	99	1	99	12.82	19.30
				1	99	100	0	21.20	29.05
				100	0	1	99	20.16	27.62
				100	0	100	0	20.72	28.94
				1	99	1	0	22.91	28.67
				100	0	1	0	20.91	28.73
20MHz/ 20MHz	2583.1	2602.9	QPSK	1	0	1	0	13.01	19.99
				1	0	1	99	12.88	18.97
				1	0	100	0	20.40	27.48
				1	49	1	49	12.54	19.27
				1	99	1	99	12.96	19.39
				1	99	100	0	21.81	28.68
				100	0	1	99	20.40	27.49
				100	0	100	0	21.98	28.84
				1	99	1	0	23.94	28.78
				100	0	1	0	21.78	28.74
			16QAM	1	0	1	0	13.02	20.05
				1	0	1	99	13.00	19.07
				1	0	100	0	20.49	27.69
				1	49	1	49	12.64	19.39
				1	99	1	99	12.97	19.45
				1	99	100	0	20.96	28.83
				100	0	1	99	20.19	27.65
				100	0	100	0	20.93	28.85
				1	99	1	0	22.95	28.71
				100	0	1	0	20.89	28.71
20MHz/ 20MHz	2660.2	2680.0	QPSK	1	0	1	0	12.88	19.86
				1	0	1	99	12.96	19.05
				1	0	100	0	20.30	27.40
				1	49	1	49	12.43	18.86
				1	99	1	99	12.95	19.38
				1	99	100	0	22.00	28.87
				100	0	1	99	20.37	27.46
				100	0	100	0	22.00	29.09
				1	99	1	0	23.97	28.81
				100	0	1	0	22.00	28.86
			16QAM	1	0	1	0	13.00	20.03
				1	0	1	99	12.89	18.96
				1	0	100	0	20.25	27.45
				1	49	1	49	12.45	18.88
				1	99	1	99	12.82	19.30
				1	99	100	0	21.20	29.07
				100	0	1	99	20.25	27.71
				100	0	100	0	20.97	28.93
				1	99	1	0	23.18	28.94
				100	0	1	0	21.14	28.96

7.2. UAT

7.2.1. LTE Band 7

ID:	39472	Date:	5/28/16
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OUTPUT POWER FOR LTE BAND 7 (10.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
10MHz / 20MHz	2505.5	2519.9	QPSK	1	49	1	0	18.91	23.83
				1	24	1	49	7.93	15.83
				50	0	100	0	17.02	25.11
			16QAM	1	49	1	0	18.09	23.70
				1	24	1	49	7.91	15.29
				50	0	100	0	15.87	25.02
10MHz / 20MHz	2525.6	2540.0	QPSK	1	49	1	0	18.93	23.85
				1	24	1	49	7.87	15.77
				50	0	100	0	17.03	25.34
			16QAM	1	49	1	0	17.78	23.39
				1	24	1	49	7.82	15.20
				50	0	100	0	16.19	25.12
10MHz / 20MHz	2545.6	2560.0	QPSK	1	49	1	0	18.92	23.84
				1	24	1	49	7.99	15.89
				50	0	100	0	16.98	25.07
			16QAM	1	49	1	0	18.08	23.69
				1	24	1	49	7.95	15.33
				50	0	100	0	15.84	24.99

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 10.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 10MHz	2510.0	2524.4	QPSK	1	0	1	0	8.18	16.50
				1	0	1	49	8.04	15.43
				1	0	50	0	15.30	23.01
				1	99	1	49	8.09	15.86
				1	99	50	0	16.86	23.65
				100	0	1	49	15.16	22.57
				100	0	50	0	17.12	24.90
				1	99	1	0	18.97	23.97
			16QAM	100	0	1	0	16.66	23.40
				1	0	1	0	7.84	16.16
				1	0	1	49	8.01	15.40
				1	0	50	0	15.12	22.91
				1	99	1	49	7.96	15.73
				1	99	50	0	15.88	22.67
				100	0	1	49	15.26	22.67
				100	0	50	0	16.00	23.78
20MHz / 10MHz	2530.1	2544.5	QPSK	1	99	1	0	18.02	23.02
				100	0	1	0	15.81	22.55
				1	0	1	0	7.96	16.28
				1	0	1	49	7.80	15.19
				1	0	50	0	15.01	22.55
				1	99	1	49	8.23	16.00
				1	99	50	0	16.69	23.48
				100	0	1	49	15.31	22.72
			16QAM	100	0	50	0	17.14	24.92
				1	99	1	0	18.93	23.93
				100	0	1	0	17.30	24.04
				1	0	1	0	7.95	16.27
				1	0	1	49	7.93	15.32
				1	0	50	0	15.23	23.11
				1	99	1	49	8.18	15.95
				1	99	50	0	16.01	22.80
20MHz / 10MHz	2550.1	2564.5	QPSK	100	0	1	49	15.53	22.94
				100	0	50	0	16.10	23.88
				1	99	1	0	18.37	23.37
				100	0	1	0	15.87	22.61
			16QAM	1	0	1	0	7.88	16.20
				1	0	1	49	8.22	15.61
				1	0	50	0	14.89	22.56
				1	99	1	49	8.14	15.91
				1	99	50	0	16.86	23.65
				100	0	1	49	15.63	23.04
				100	0	50	0	16.97	24.75
				1	99	1	0	18.95	23.95
20MHz / 10MHz	2550.1	2564.5	QPSK	100	0	1	0	17.01	23.75
				1	0	1	0	7.86	16.18
				1	0	1	49	8.22	15.61
				1	0	50	0	14.98	22.96
				1	99	1	49	7.98	15.75
				1	99	50	0	15.95	22.74
				100	0	1	49	15.56	22.97
				100	0	50	0	15.98	23.76
			16QAM	1	99	1	0	17.99	22.99
				100	0	1	0	15.93	22.67

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 15MHz	2507.5	2522.5	QPSK	1	74	1	0	18.90	23.85
				75	0	75	0	16.92	24.93
			16QAM	1	74	1	0	17.94	22.89
				75	0	75	0	15.91	23.92
15MHz / 15MHz	2527.5	2542.5	QPSK	1	74	1	0	18.92	23.87
				75	0	75	0	16.87	24.88
			16QAM	1	74	1	0	18.09	23.04
				75	0	75	0	15.92	23.93
15MHz / 15MHz	2547.5	2562.5	QPSK	1	74	1	0	18.90	23.85
				75	0	75	0	16.93	24.94
			16QAM	1	74	1	0	18.08	23.03
				75	0	75	0	15.80	23.81

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 20MHz	2507.8	2524.9	QPSK	1	74	1	0	18.87	23.79
				1	36	1	49	7.86	15.76
				75	0	100	0	16.85	24.94
			16QAM	1	74	1	0	17.93	23.54
				1	36	1	49	7.80	15.18
				75	0	100	0	15.74	24.89
15MHz / 20MHz	2525.3	2542.4	QPSK	1	74	1	0	18.92	23.84
				1	36	1	49	7.98	15.88
				75	0	100	0	16.84	24.93
			16QAM	1	74	1	0	18.07	23.68
				1	36	1	49	7.93	15.31
				75	0	100	0	15.77	24.92
15MHz / 20MHz	2542.9	2560.0	QPSK	1	74	1	0	18.92	23.84
				1	36	1	49	7.95	15.85
				75	0	100	0	16.87	25.19
			16QAM	1	74	1	0	17.73	23.34
				1	36	1	49	7.92	15.30
				75	0	100	0	16.04	24.96

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 15MHz	2510.0	2527.1	QPSK	1	99	1	0	18.90	23.85
				100	0	75	0	16.92	24.93
			16QAM	1	99	1	0	17.88	22.83
				100	0	75	0	16.03	24.04
20MHz / 15MHz	2527.6	2544.7	QPSK	1	99	1	0	18.88	23.83
				100	0	75	0	16.91	24.92
			16QAM	1	99	1	0	17.93	22.88
				100	0	75	0	15.84	23.85
20MHz / 15MHz	2545.1	2562.2	QPSK	1	99	1	0	18.93	23.88
				100	0	75	0	16.91	24.92
			16QAM	1	99	1	0	17.91	22.86
				100	0	75	0	16.16	24.17

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz/ 20MHz	2510.0	2529.8	QPSK	1	0	1	0	7.80	15.52
				1	0	1	99	7.78	14.84
				1	0	100	0	15.60	22.99
				1	49	1	49	7.93	16.03
				1	99	1	99	8.01	16.14
				1	99	100	0	17.28	23.55
				100	0	1	99	15.83	23.22
				100	0	100	0	17.24	24.34
				1	99	1	0	18.99	23.98
				100	0	1	0	17.20	24.01
			16QAM	1	0	1	0	8.05	15.77
				1	0	1	99	7.93	14.99
				1	0	100	0	15.58	22.97
				1	49	1	49	7.88	15.98
				1	99	1	99	8.07	16.20
				1	99	100	0	16.26	22.53
				100	0	1	99	15.57	22.96
				100	0	100	0	16.24	23.34
				1	99	1	0	18.04	23.03
				100	0	1	0	16.16	22.97
20MHz/ 20MHz	2525.1	2544.9	QPSK	1	0	1	0	8.03	15.75
				1	0	1	99	7.88	14.94
				1	0	100	0	15.42	22.81
				1	49	1	49	7.98	16.08
				1	99	1	99	8.12	16.25
				1	99	100	0	17.25	23.52
				100	0	1	99	15.49	22.88
				100	0	100	0	16.91	24.01
				1	99	1	0	18.83	23.82
				100	0	1	0	17.30	24.11
			16QAM	1	0	1	0	8.09	15.81
				1	0	1	99	8.02	15.08
				1	0	100	0	15.80	23.19
				1	49	1	49	7.91	16.01
				1	99	1	99	8.09	16.22
				1	99	100	0	16.20	22.47
				100	0	1	99	15.62	23.01
				100	0	100	0	16.40	23.50
				1	99	1	0	17.97	22.96
				100	0	1	0	16.25	23.06
20MHz/ 20MHz	2540.2	2560.0	QPSK	1	0	1	0	8.03	15.75
				1	0	1	99	8.16	15.22
				1	0	100	0	15.82	23.21
				1	49	1	49	7.93	16.03
				1	99	1	99	7.95	16.08
				1	99	100	0	17.28	23.55
				100	0	1	99	15.69	23.08
				100	0	100	0	17.31	24.41
				1	99	1	0	18.95	23.94
				100	0	1	0	17.42	24.23
			16QAM	1	0	1	0	8.11	15.83
				1	0	1	99	7.81	14.87
				1	0	100	0	15.76	23.15
				1	49	1	49	7.88	15.98
				1	99	1	99	8.05	16.18
				1	99	100	0	16.28	22.55
				100	0	1	99	15.52	22.91
				100	0	100	0	16.20	23.30
				1	99	1	0	18.08	23.07
				100	0	1	0	16.22	23.03

7.2.2. LTE Band 41

ID:	37289	Date:	5/31/16
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OUTPUT POWER FOR LTE BAND 41 (5.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
5MHz / 20MHz	2499.3	2511.0	QPSK	1	24	1	0	19.45	24.37
				1	12	1	49	8.41	16.31
				25	0	100	0	17.55	25.73
			16QAM	1	24	1	0	18.61	24.22
				1	12	1	49	8.38	15.76
				25	0	100	0	16.51	25.66
5MHz / 20MHz	2583.8	2595.5	QPSK	1	24	1	0	19.48	24.40
				1	12	1	49	8.45	16.35
				25	0	100	0	17.50	25.59
			16QAM	1	24	1	0	18.55	24.16
				1	12	1	49	8.40	15.78
				25	0	100	0	16.53	25.68
5MHz / 20MHz	2668.3	2680.0	QPSK	1	24	1	0	19.50	24.42
				1	12	1	49	8.35	16.25
				25	0	100	0	17.52	25.61
			16QAM	1	24	1	0	18.63	24.24
				1	12	1	49	8.30	15.68
				25	0	100	0	16.58	25.64

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 5.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 5MHz	2506.0	2517.7	QPSK	1	0	1	0	8.53	15.07
				1	0	1	24	8.43	14.74
				1	0	25	0	14.51	21.02
				1	99	1	24	8.44	14.88
				1	99	25	0	17.87	23.88
				100	0	1	24	16.25	21.32
				100	0	25	0	17.29	24.29
				1	99	1	0	19.40	23.55
			16QAM	100	0	1	0	17.43	22.52
				1	0	1	0	8.44	14.98
				1	0	1	24	8.15	14.46
				1	0	25	0	14.44	21.00
				1	99	1	24	8.21	14.65
				1	99	25	0	16.42	22.43
				100	0	1	24	15.72	20.79
				100	0	25	0	16.09	23.09
20MHz / 5MHz	2590.5	2602.2	QPSK	1	99	1	0	18.41	22.56
				100	0	1	0	16.45	21.54
			16QAM	1	0	1	0	8.29	14.83
				1	0	1	24	8.36	14.67
				1	0	25	0	14.37	21.12
				1	99	1	24	8.41	14.85
				1	99	25	0	17.61	23.62
				100	0	1	24	16.22	21.29
				100	0	25	0	17.12	24.12
			16QAM	1	99	1	0	19.40	23.55
				100	0	1	0	17.37	22.46
				1	0	1	0	8.08	14.62
				1	0	1	24	8.12	14.43
				1	0	25	0	14.28	21.07
				1	99	1	24	8.23	14.67
				1	99	25	0	16.36	22.37
				100	0	1	24	15.73	20.80
20MHz / 5MHz	2675.0	2686.7	QPSK	100	0	25	0	16.07	23.07
				1	99	1	0	18.43	22.58
				100	0	1	0	16.35	21.44
			16QAM	1	0	1	0	8.47	15.01
				1	0	1	24	8.21	14.52
				1	0	25	0	14.37	21.76
				1	99	1	24	8.13	14.57
				1	99	25	0	17.36	23.37
				100	0	1	24	16.26	21.33
			16QAM	100	0	25	0	17.22	24.22
				1	99	1	0	19.18	23.33
				100	0	1	0	17.01	22.10
				1	0	1	0	8.39	14.93
				1	0	1	24	8.10	14.41
				1	0	25	0	14.31	21.72
				1	99	1	24	8.09	14.53
				1	99	25	0	16.25	22.26
				100	0	1	24	15.59	20.66
				100	0	25	0	16.18	23.18
				1	99	1	0	18.04	22.19
				100	0	1	0	16.06	21.15

OUTPUT POWER FOR LTE BAND 41 (10.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
10MHz / 20MHz	2501.5	2515.9	QPSK	1	49	1	0	19.50	24.42
				1	24	1	49	8.41	16.31
				50	0	100	0	17.49	25.58
			16QAM	1	49	1	0	18.62	24.23
				1	24	1	49	8.33	15.71
				50	0	100	0	16.58	25.73
10MHz / 20MHz	2583.6	2598.0	QPSK	1	49	1	0	19.45	24.37
				1	24	1	49	8.38	16.28
				50	0	100	0	18.50	26.59
			16QAM	1	49	1	0	18.53	24.14
				1	24	1	49	8.35	15.73
				50	0	100	0	17.49	26.64
10MHz / 20MHz	2665.6	2680.0	QPSK	1	49	1	0	19.48	24.40
				1	24	1	49	8.39	16.29
				50	0	100	0	18.61	26.81
			16QAM	1	49	1	0	18.55	24.16
				1	24	1	49	8.37	15.75
				50	0	100	0	17.66	26.70

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 10.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 10MHz	2506.0	2520.4	QPSK	1	99	1	0	19.45	24.40
				100	0	50	0	17.50	25.51
			16QAM	1	99	1	0	18.51	23.46
				100	0	50	0	16.58	24.59
20MHz / 10MHz	2588.1	2602.5	QPSK	1	99	1	0	19.47	24.42
				100	0	50	0	17.59	25.60
			16QAM	1	99	1	0	18.56	23.51
				100	0	50	0	16.61	24.62
20MHz / 10MHz	2670.1	2684.5	QPSK	1	99	1	0	19.50	24.45
				100	0	50	0	17.62	25.63
			16QAM	1	99	1	0	18.61	23.56
				100	0	50	0	16.55	24.56

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 15MHz	2503.5	2518.5	QPSK	1	74	1	0	19.48	24.43
				75	0	75	0	17.65	25.66
			16QAM	1	74	1	0	18.53	23.48
				75	0	75	0	16.59	24.60
15MHz / 15MHz	2585.5	2600.5	QPSK	1	74	1	0	19.50	24.45
				75	0	75	0	17.56	25.57
			16QAM	1	74	1	0	18.63	23.58
				75	0	75	0	16.49	24.50
15MHz / 15MHz	2667.5	2682.5	QPSK	1	74	1	0	19.45	24.40
				75	0	75	0	17.44	25.45
			16QAM	1	74	1	0	18.40	23.35
				75	0	75	0	16.52	24.53

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
15MHz / 20MHz	2503.8	2520.9	QPSK	1	74	1	0	19.47	24.39
				1	36	1	49	8.49	16.39
				75	0	100	0	17.45	25.54
			16QAM	1	74	1	0	18.51	24.12
				1	36	1	49	8.44	15.82
				75	0	100	0	16.52	25.67
15MHz / 20MHz	2583.3	2600.4	QPSK	1	74	1	0	19.50	24.42
				1	36	1	49	8.43	16.33
				75	0	100	0	17.50	25.59
			16QAM	1	74	1	0	18.63	24.24
				1	36	1	49	8.36	15.74
				75	0	100	0	16.51	25.66
15MHz / 20MHz	2662.9	2680.0	QPSK	1	74	1	0	19.44	24.36
				1	36	1	49	8.54	16.44
				75	0	100	0	17.59	25.81
			16QAM	1	74	1	0	18.51	24.12
				1	36	1	49	8.46	15.84
				75	0	100	0	16.66	25.68

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 15.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz / 15MHz	2506.0	2523.1	QPSK	1	99	1	0	19.50	24.45
				100	0	75	0	17.49	25.50
			16QAM	1	99	1	0	18.55	23.50
				100	0	75	0	16.61	24.62
20MHz / 15MHz	2585.6	2602.7	QPSK	1	99	1	0	19.45	24.40
				100	0	75	0	17.55	25.56
			16QAM	1	99	1	0	18.54	23.49
				100	0	75	0	16.47	24.48
20MHz / 15MHz	2665.1	2682.2	QPSK	1	99	1	0	19.48	24.43
				100	0	75	0	17.61	25.62
			16QAM	1	99	1	0	18.56	23.51
				100	0	75	0	16.49	24.50

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 20.0MHz)

BW	Freq	Freq	Mode	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Average (dBm)	Peak (dBm)
				Size	Offset	Size	Offset		
20MHz/ 20MHz	2506.0	2525.8	QPSK	1	0	1	0	8.30	14.80
				1	0	1	99	8.46	15.07
				1	0	100	0	15.72	21.89
				1	49	1	49	8.20	14.85
				1	99	1	99	8.66	15.24
				1	99	100	0	17.49	23.06
				100	0	1	99	15.91	22.90
				100	0	100	0	17.37	23.96
				1	99	1	0	19.49	23.47
				100	0	1	0	17.31	22.87
			16QAM	1	0	1	0	8.07	14.57
				1	0	1	99	8.37	14.98
				1	0	100	0	15.95	22.12
				1	49	1	49	8.50	15.15
				1	99	1	99	8.41	14.99
				1	99	100	0	16.44	22.01
				100	0	1	99	16.01	23.00
				100	0	100	0	16.61	23.20
				1	99	1	0	18.51	22.49
				100	0	1	0	16.33	21.89
20MHz/ 20MHz	2583.1	2602.9	QPSK	1	0	1	0	8.54	15.04
				1	0	1	99	8.46	15.07
				1	0	100	0	15.72	21.89
				1	49	1	49	8.20	14.85
				1	99	1	99	8.66	15.24
				1	99	100	0	17.49	23.06
				100	0	1	99	15.91	22.90
				100	0	100	0	17.37	23.96
				1	99	1	0	19.49	23.47
				100	0	1	0	17.18	22.74
			16QAM	1	0	1	0	8.43	14.93
				1	0	1	99	8.37	14.98
				1	0	100	0	15.95	22.12
				1	49	1	49	8.50	15.15
				1	99	1	99	8.41	14.99
				1	99	100	0	16.44	22.01
				100	0	1	99	16.01	23.00
				100	0	100	0	16.61	23.20
				1	99	1	0	18.51	22.49
				100	0	1	0	16.01	21.57
20MHz/ 20MHz	2660.2	2680.0	QPSK	1	0	1	0	8.34	14.84
				1	0	1	99	8.14	14.75
				1	0	100	0	15.93	22.10
				1	49	1	49	8.23	14.88
				1	99	1	99	8.23	14.81
				1	99	100	0	17.53	23.10
				100	0	1	99	16.01	23.00
				100	0	100	0	17.02	23.61
				1	99	1	0	19.48	23.46
				100	0	1	0	17.11	22.67
			16QAM	1	0	1	0	8.45	14.95
				1	0	1	99	8.50	15.11
				1	0	100	0	16.18	22.35
				1	49	1	49	8.17	14.82
				1	99	1	99	8.38	14.96
				1	99	100	0	16.62	22.19
				100	0	1	99	15.97	22.96
				100	0	100	0	16.53	23.12
				1	99	1	0	18.48	22.46
				100	0	1	0	16.33	21.89

8. CONDUCTED TEST RESULTS

8.1. 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 7
- LTE Band 41

RESULTS

BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 7	20MHz + 10MHz BAND QPSK	100/0 + 50/0	2535	28.194	31.015
	20MHz + 10MHz BAND 16QAM	100/0 + 50/0	2535	28.1329	30.598
	10.0 MHz BAND QPSK	50/0	2544.5	9.0779	10.000
	10.0 MHz BAND 16QAM	50/0	2544.5	9.1263	10.000
	10.0 MHz BAND QPSK	1/0	2544.5	0.2732466	0.393959
	10.0 MHz BAND 16QAM	1/0	2544.5	0.3157611	0.418276
	20MHz + 20MHz BAND QPSK	100/0 + 1000/0	2535	37.7558	41.251
	20MHz + 20MHz BAND 16QAM	100/0 + 100/0	2535	37.8036	40.941
	20.0 MHz BAND QPSK	100/0	2525.1	17.9160	20.000
	20.0 MHz BAND 16QAM	100/0	2525.1	17.9585	20.000
	20.0 MHz BAND QPSK	1/0	2525.1	0.6246865	0.52839
	20.0 MHz BAND 16QAM	1/0	2525.1	0.6925279	0.589075

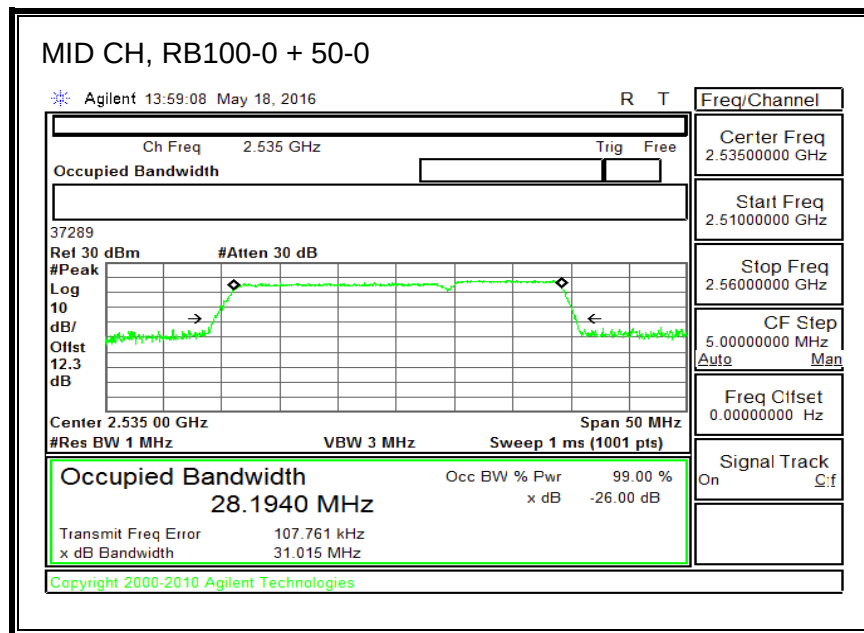
BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 7	10MHz + 20MHz BAND QPSK	50/0 + 100/0	2535	28.104	30.944
	10MHz + 20MHz BAND 16QAM	50/0 + 100/0	2535	28.1579	30.930
	15MHz + 15MHz BAND QPSK	75/0 + 75/0	2535	28.6776	31.539
	15MHz + 15MHz BAND 16QAM	75/0 + 75/0	2535	28.6296	31.356
	15MHz + 20MHz BAND QPSK	75/0 + 100/0	2535	32.8741	35.913
	15MHz + 20MHz BAND 16QAM	75/0 + 100/0	2535	32.8965	36.052
	20MHz + 15MHz BAND QPSK	100/0 + 75/0	2535	32.8211	35.875
	20MHz + 15MHz BAND 16QAM	100/0 + 75/0	2535	32.8514	35.693

BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 41	20MHz + 5MHz BAND QPSK	100/0 + 25/0	2593	23.2513	24.831
	20MHz + 5MHz BAND 16QAM	100/0 + 25/0	2593	23.2754	25.011
	5.0 MHz BAND QPSK	25/0	2602.2	4.5926	5.000
	5.0 MHz BAND 16QAM	25/0	2602.2	4.6099	5.000
	5.0 MHz BAND QPSK	1/0	2602.2	0.3102711	0.457389
	5.0 MHz BAND 16QAM	1/0	2602.2	0.3162902	0.468666
	20MHz + 20MHz BAND QPSK	100/0 + 100/0	2593	37.7365	39.850
	20MHz + 20MHz BAND 16QAM	100/0 + 100/0	2593	37.7058	40.124
	20.0 MHz BAND QPSK	100/0	2583.1	17.8939	20.000
	20.0 MHz BAND 16QAM	100/0	2583.1	17.9106	20.000
	20.0 MHz BAND QPSK	1/0	2583.1	0.6260957	0.553672
	20.0 MHz BAND 16QAM	1/0	2583.1	0.7338334	0.637337

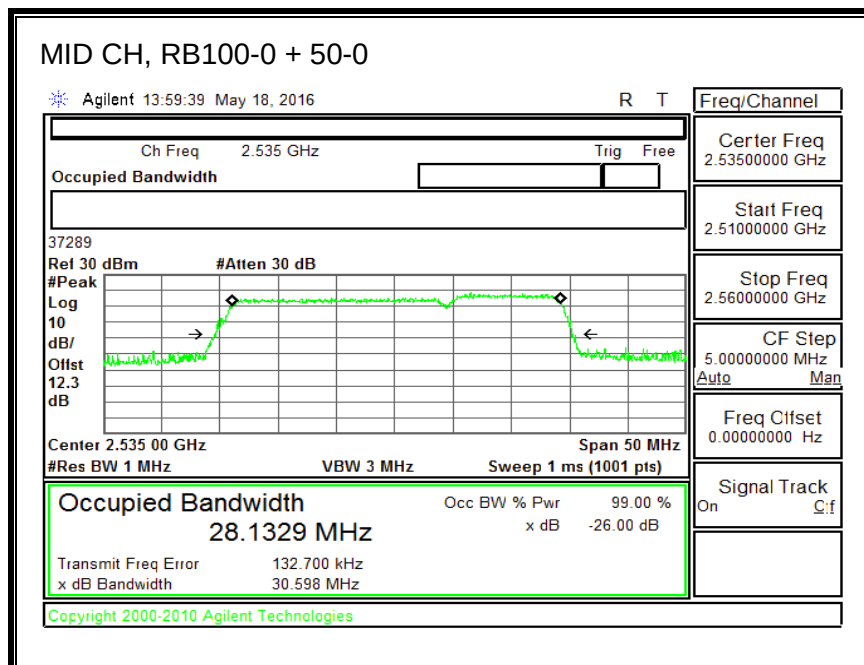
BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 41	5MHz + 20MHz BAND QPSK	25/0 + 100/0	2593	23.284	25.451
	5MHz + 20MHz BAND 16QAM	25/0 + 100/0	2593	23.3122	25.643
	10MHz + 20MHz BAND QPSK	50/0 + 100/0	2593	28.0119	30.572
	10MHz + 20MHz BAND 16QAM	50/0 + 100/0	2593	28.0634	30.796
	20MHz + 10MHz BAND QPSK	100/0 + 50/0	2593	28.0659	30.791
	20MHz + 10MHz BAND 16QAM	100/0 + 50/0	2593	27.9463	30.038
	15MHz + 15MHz BAND QPSK	75/0 + 75/0	2593	28.5800	31.150
	15MHz + 15MHz BAND 16QAM	75/0 + 75/0	2593	28.5976	31.127
	15MHz + 20MHz BAND QPSK	75/0 + 100/0	2593	32.9101	35.870
	15MHz + 20MHz BAND 16QAM	75/0 + 100/0	2593	32.802	35.872
	20MHz + 15MHz BAND QPSK	100/0 + 75/0	2593	32.8449	35.470
	20MHz + 15MHz BAND 16QAM	100/0 + 75/0	2593	32.9755	36.044

8.1.1. LTE BAND 7

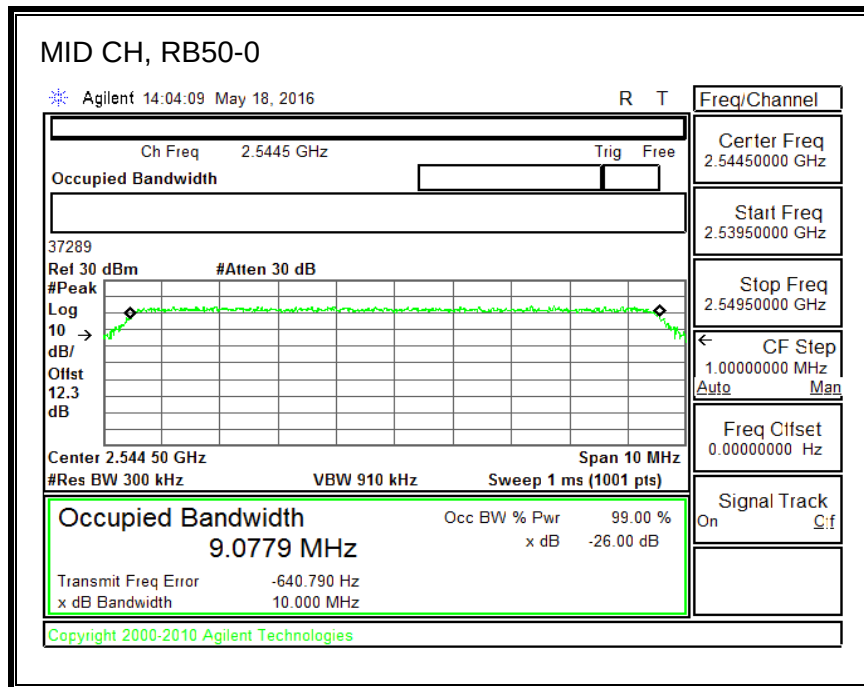
QPSK, (20.0MHz + 10.0MHz BAND WIDTH)



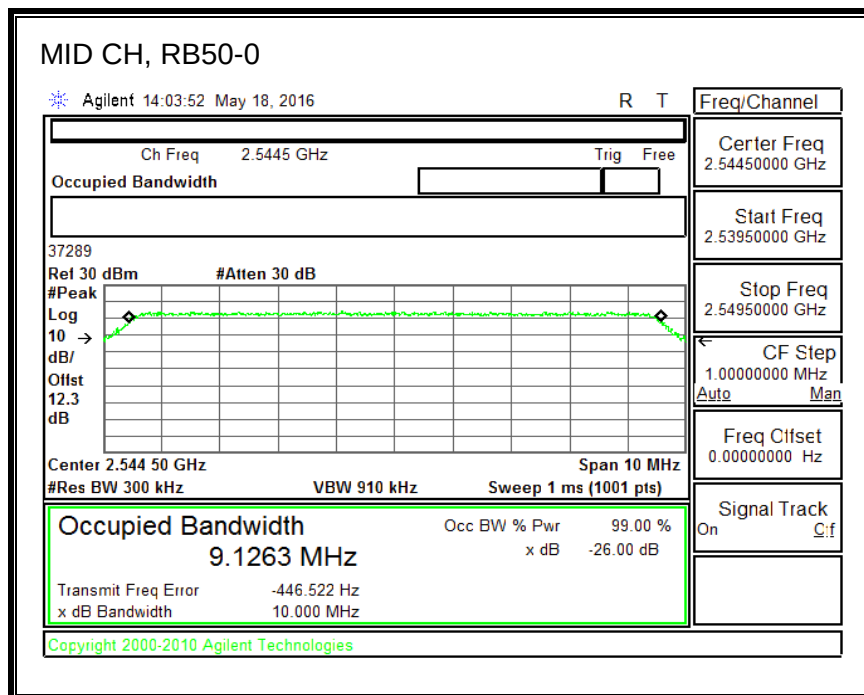
16QAM, (20.0MHz + 10.0MHz BAND WIDTH)



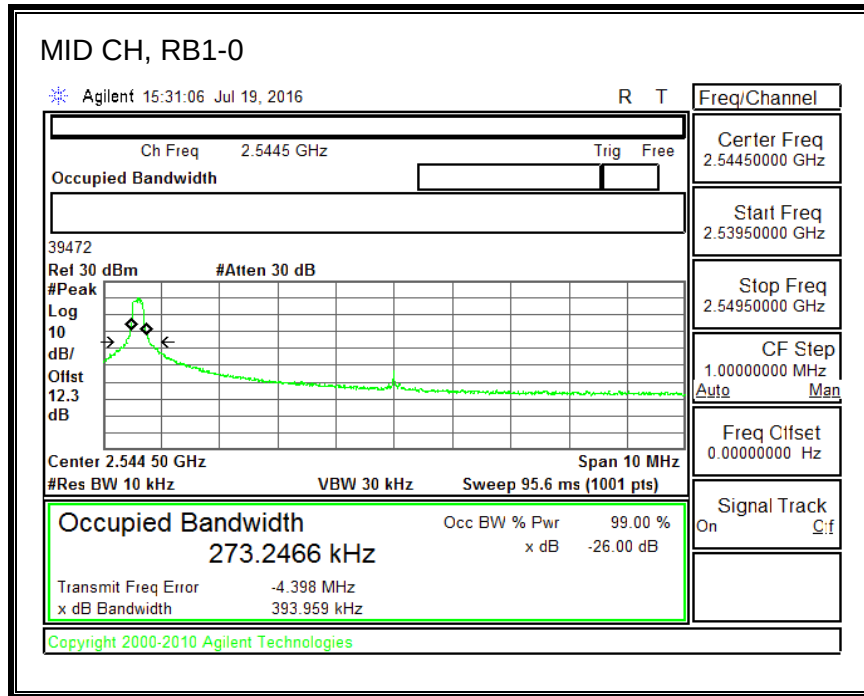
QPSK, (10.0MHz BAND WIDTH)



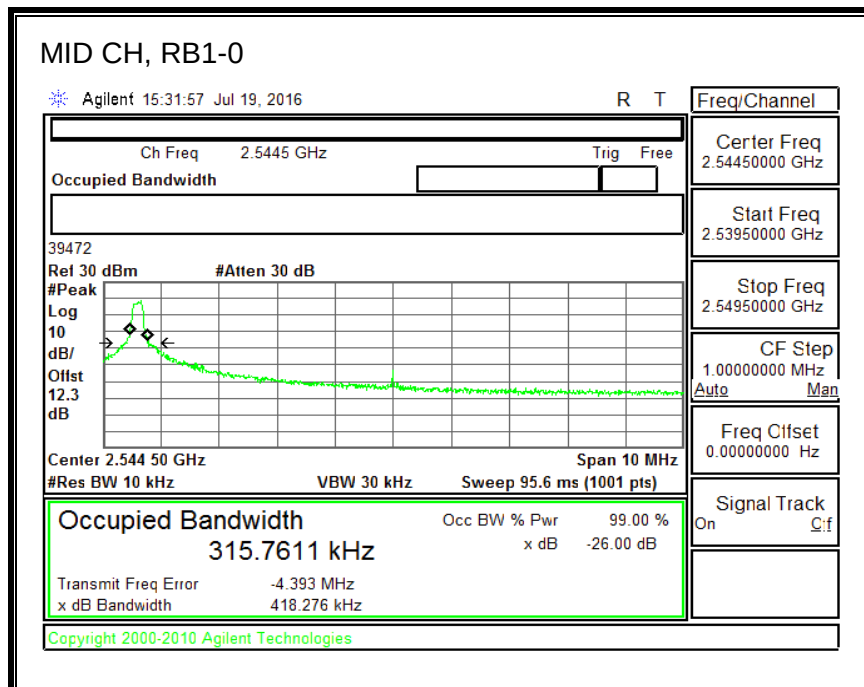
16QAM, (10.0MHz BAND WIDTH)



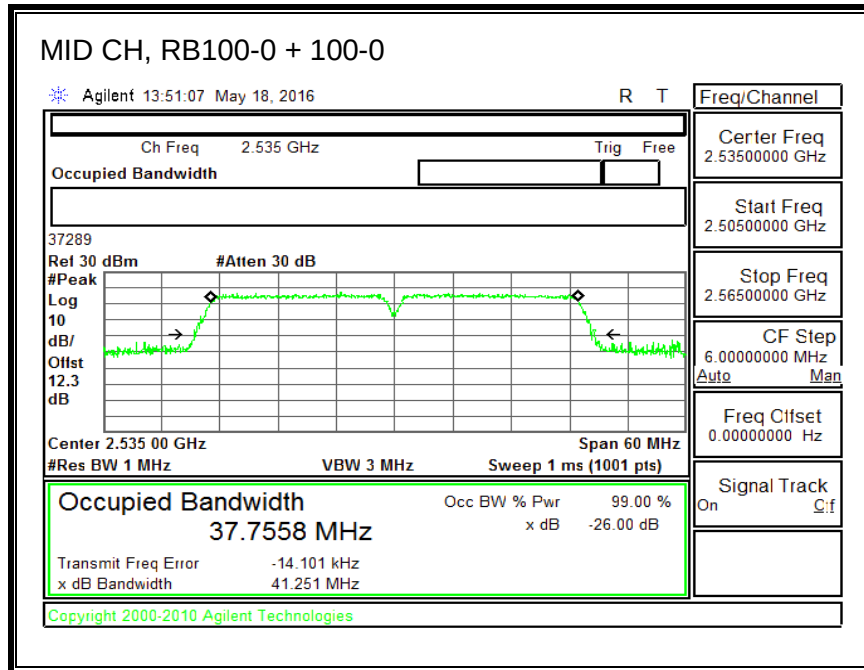
QPSK, (10.0MHz BAND WIDTH)



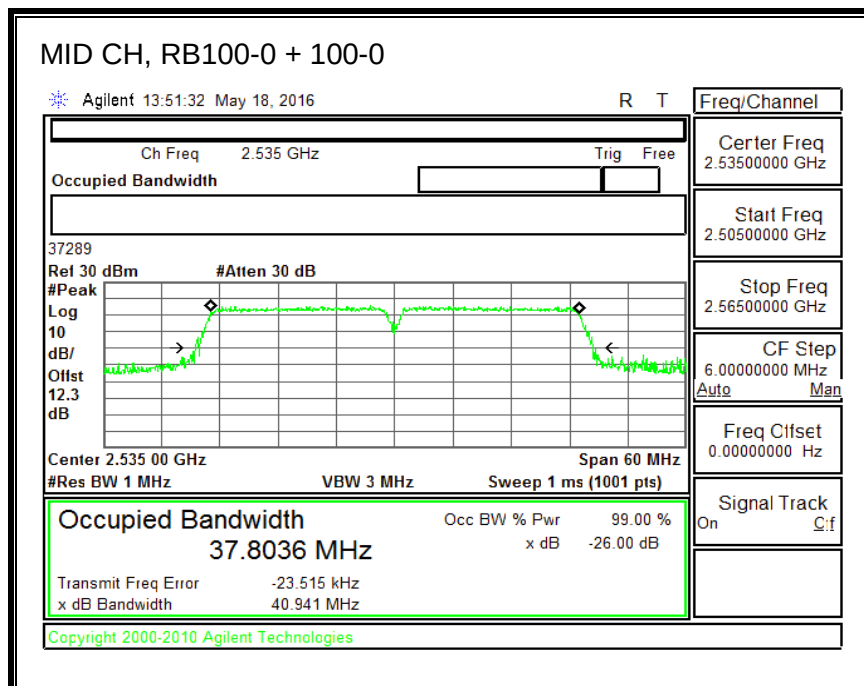
16QAM, (10.0MHz BAND WIDTH)



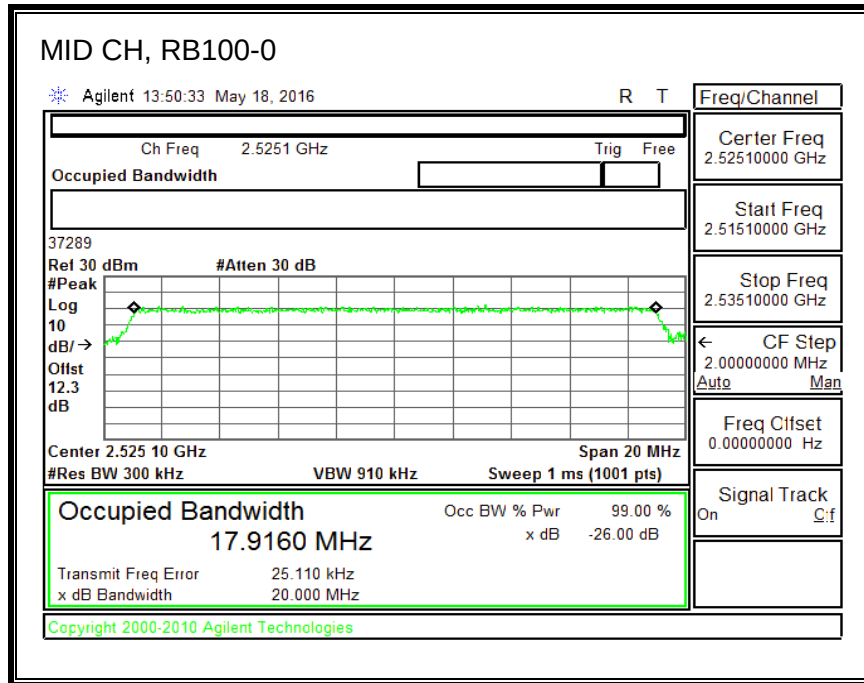
QPSK, (20.0MHz + 20.0MHz BAND WIDTH)



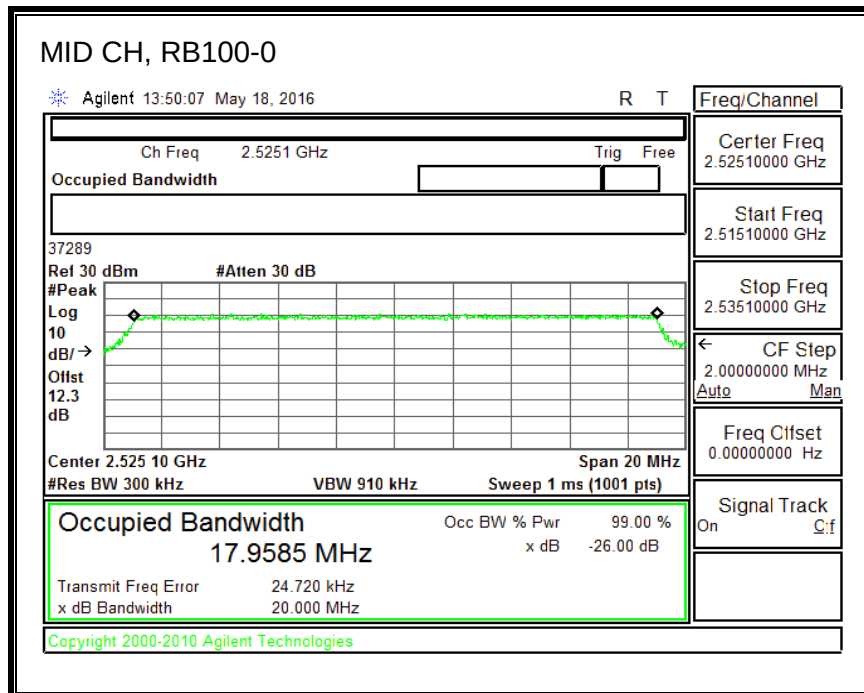
16QAM, (20.0MHz + 20.0MHz BAND WIDTH)



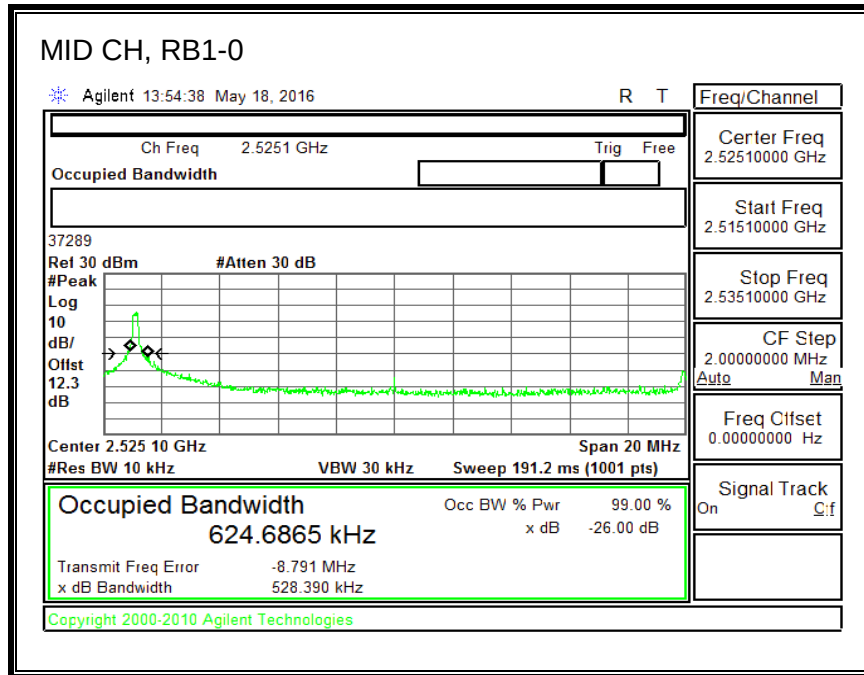
QPSK, (20.0MHz BAND WIDTH)



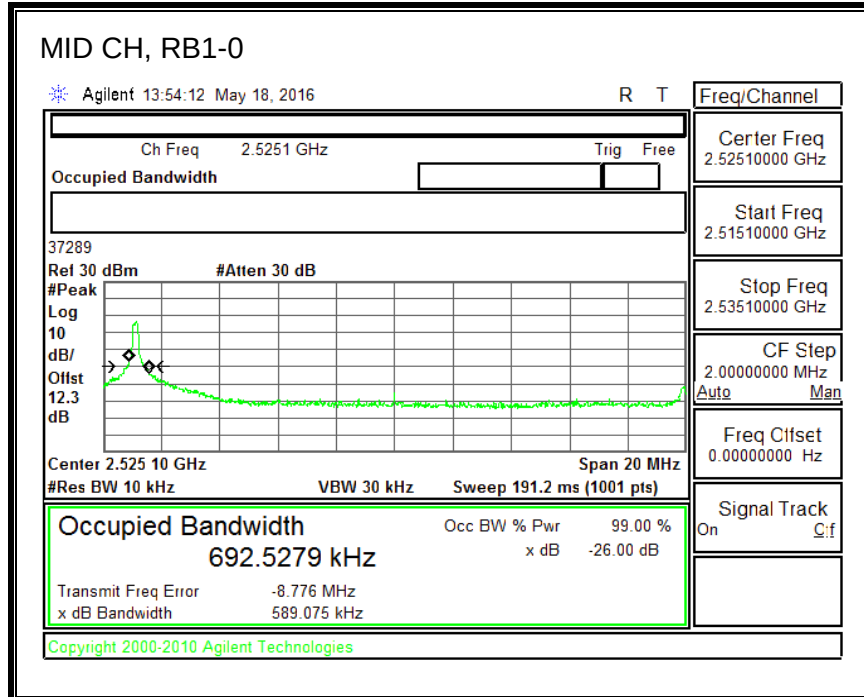
16QAM, (20.0MHz BAND WIDTH)



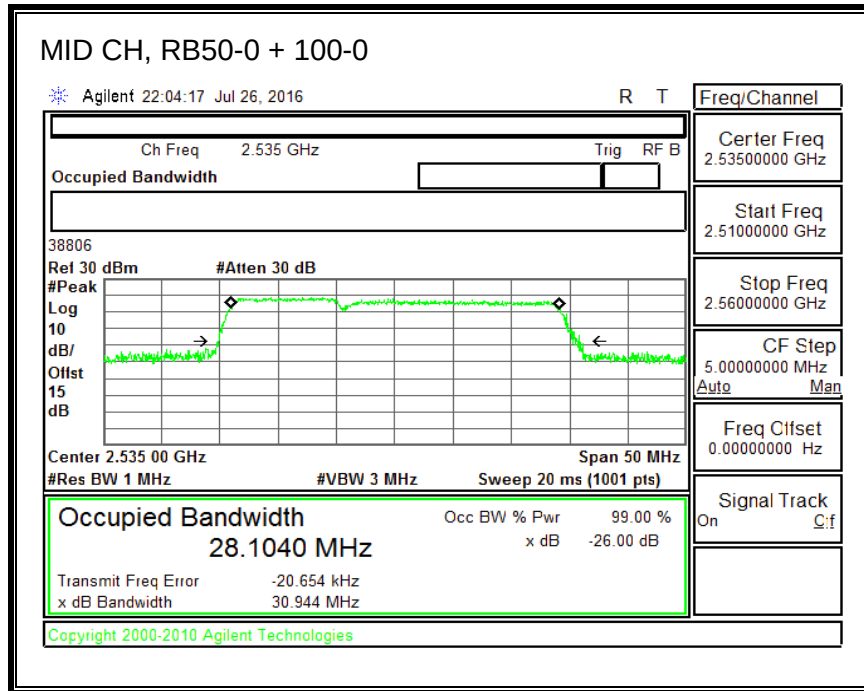
QPSK, (20.0MHz BAND WIDTH)



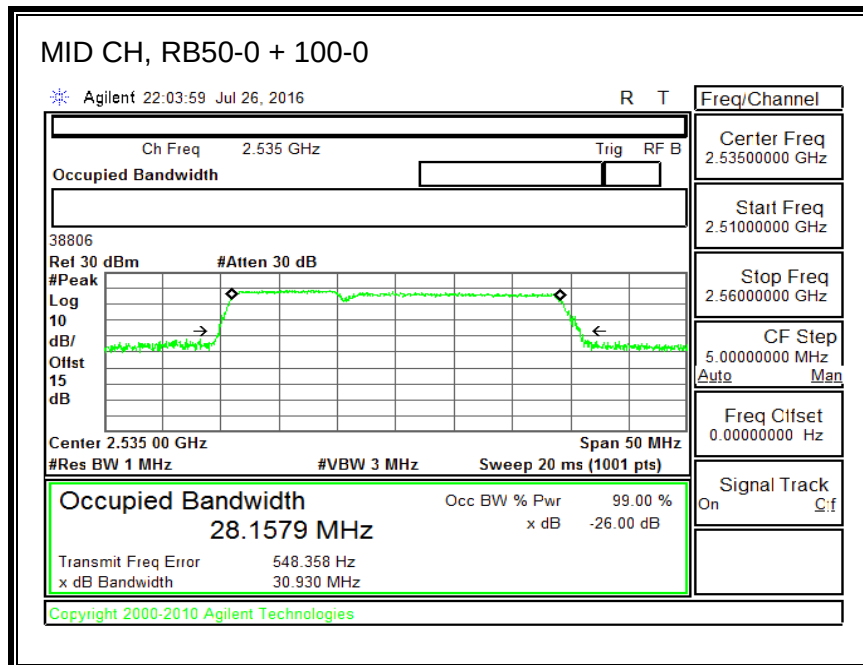
16QAM, (20.0MHz BAND WIDTH)



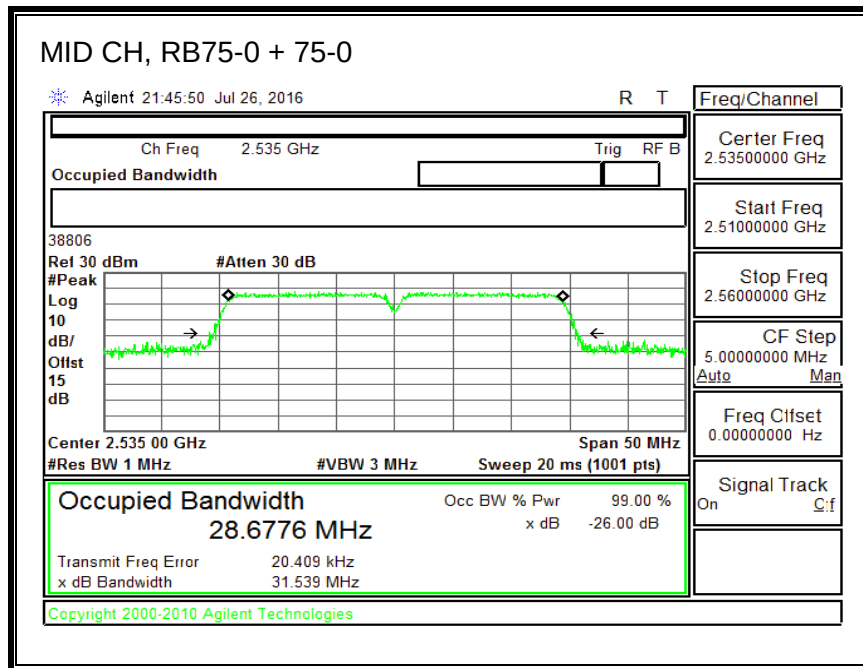
QPSK, (10.0MHz + 20.0MHz BAND WIDTH)



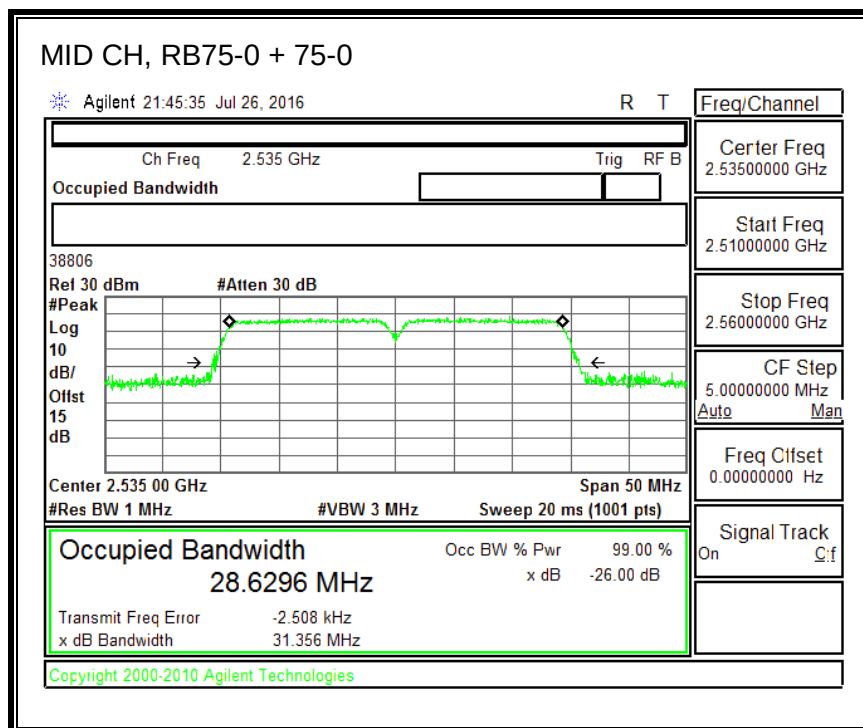
16QAM, (10.0MHz + 20.0MHz BAND WIDTH)



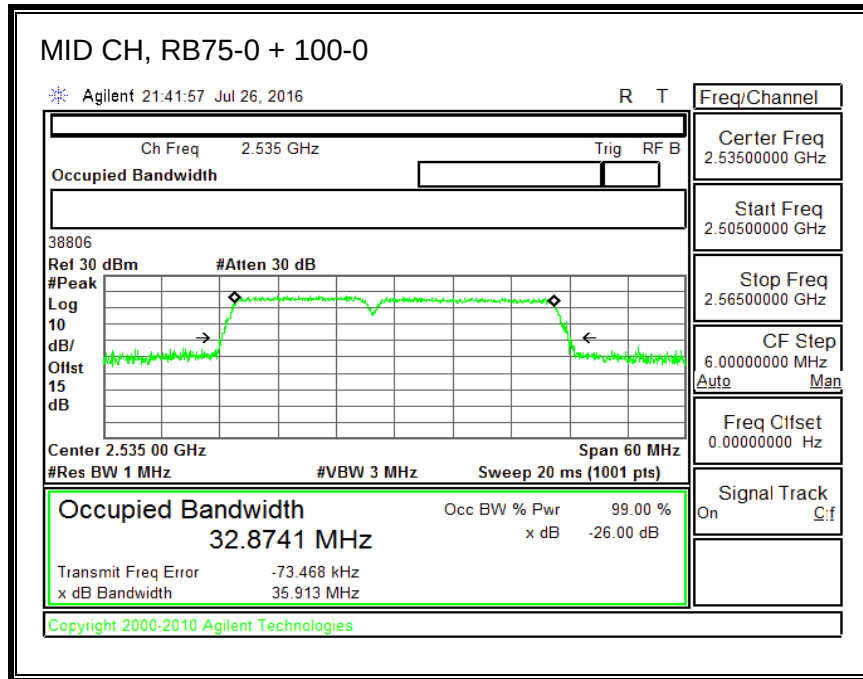
QPSK, (15.0MHz + 15.0MHz BAND WIDTH)



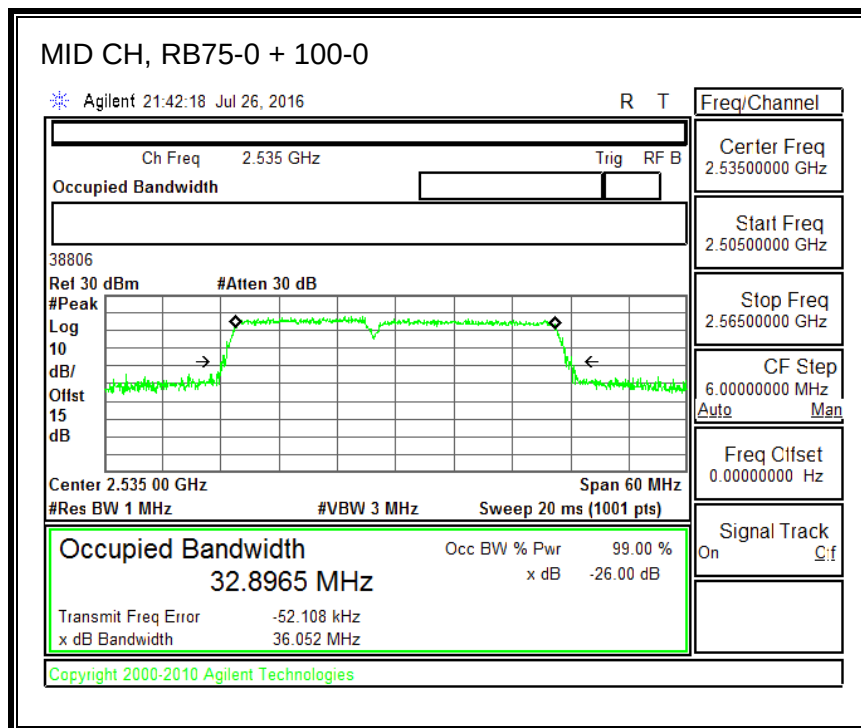
16QAM, (15.0MHz + 15.0MHz BAND WIDTH)



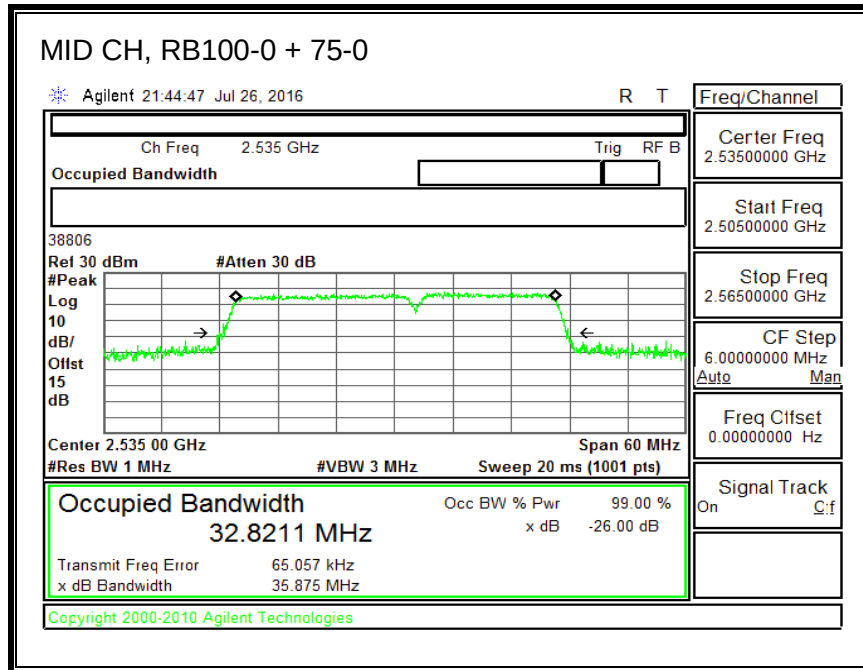
QPSK, (15.0MHz + 20.0MHz BAND WIDTH)



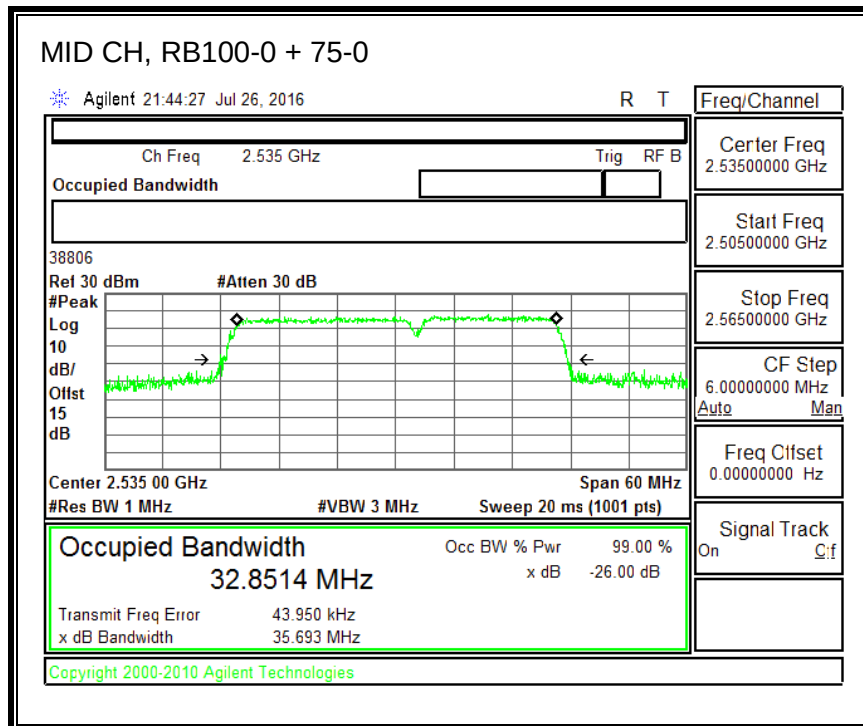
16QAM, (15.0MHz + 20.0MHz BAND WIDTH)



QPSK, (20.0MHz + 15.0MHz BAND WIDTH)

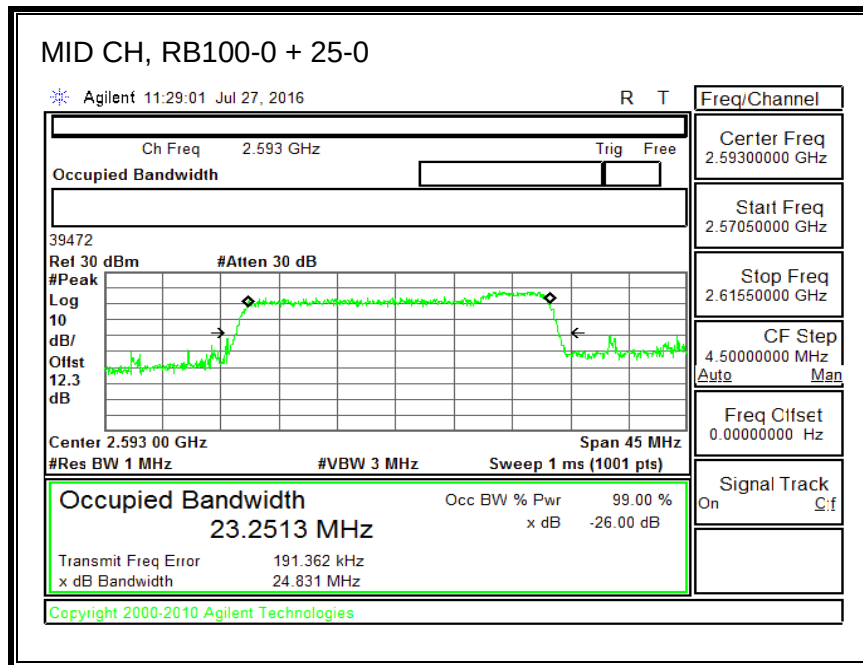


16QAM, (20.0MHz + 15.0MHz BAND WIDTH)

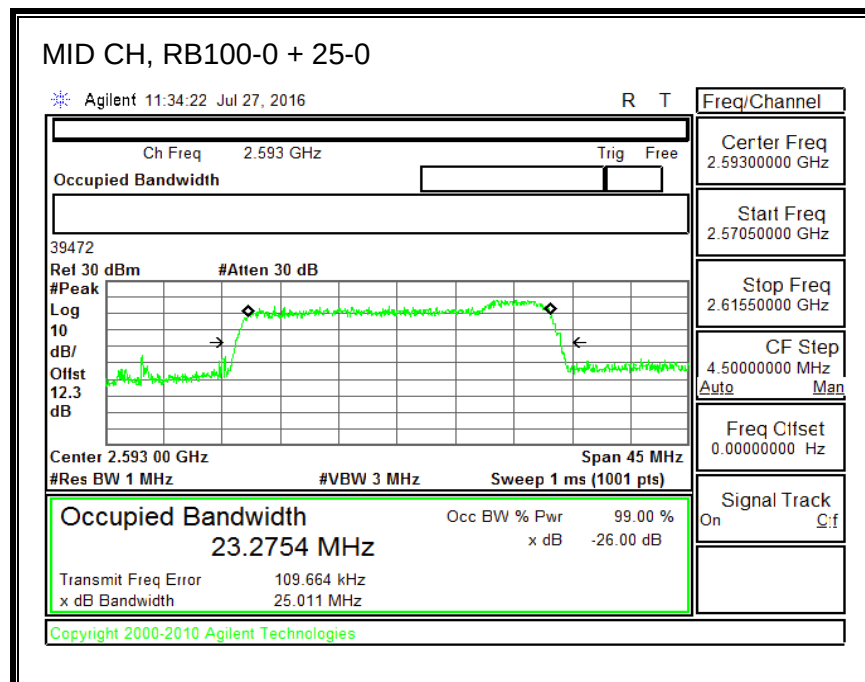


8.1.2. LTE BAND 41

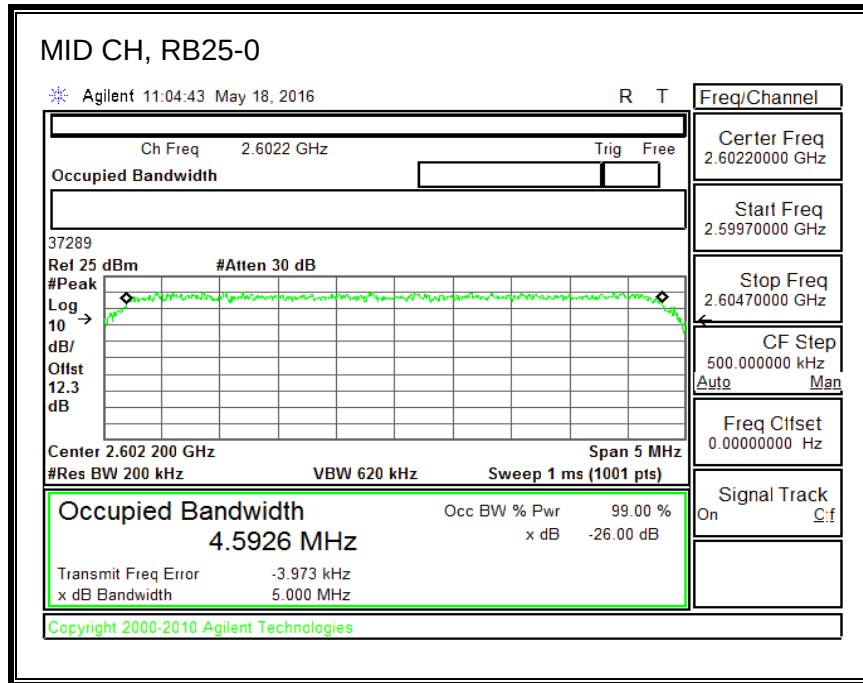
QPSK, (20.0MHz + 5.0MHz BAND WIDTH)



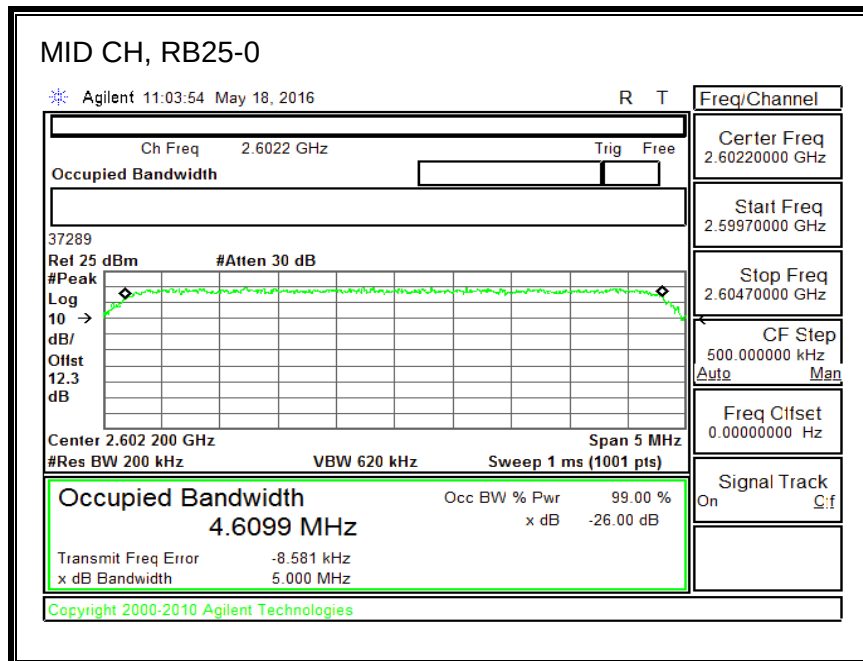
16QAM, (20.0MHz + 5.0MHz BAND WIDTH)



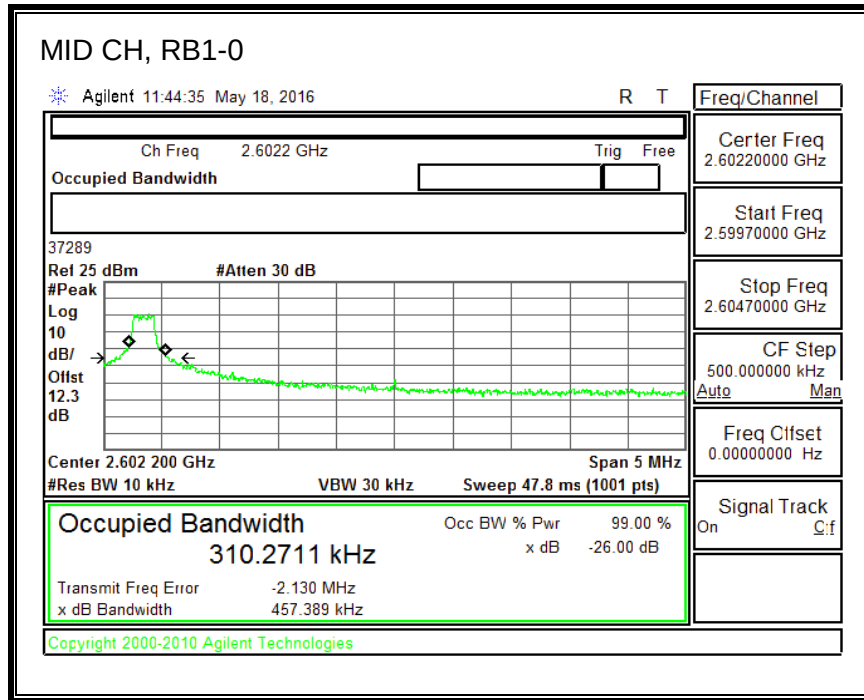
QPSK, (5.0MHz BAND WIDTH)



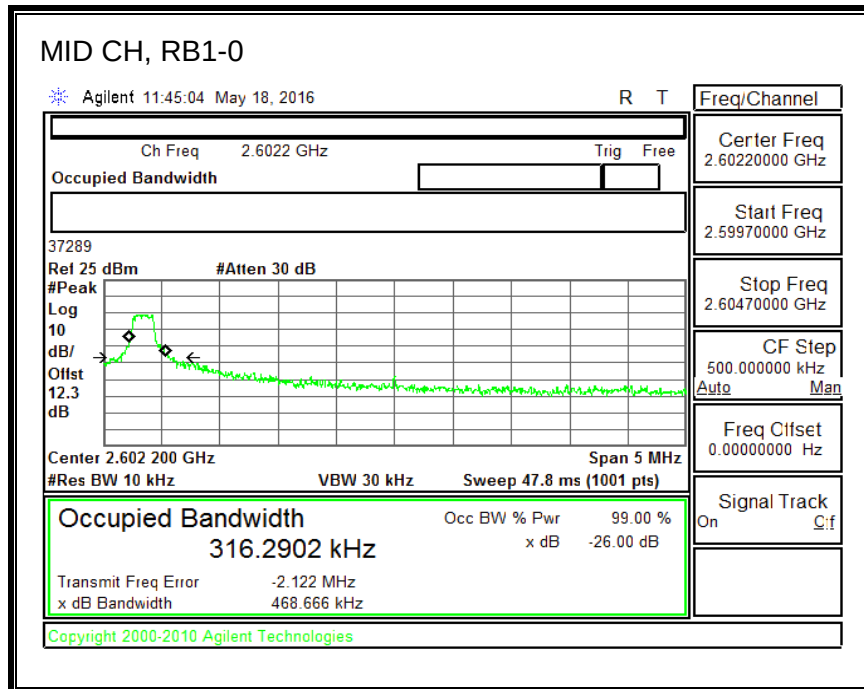
16QAM, (5.0MHz BAND WIDTH)



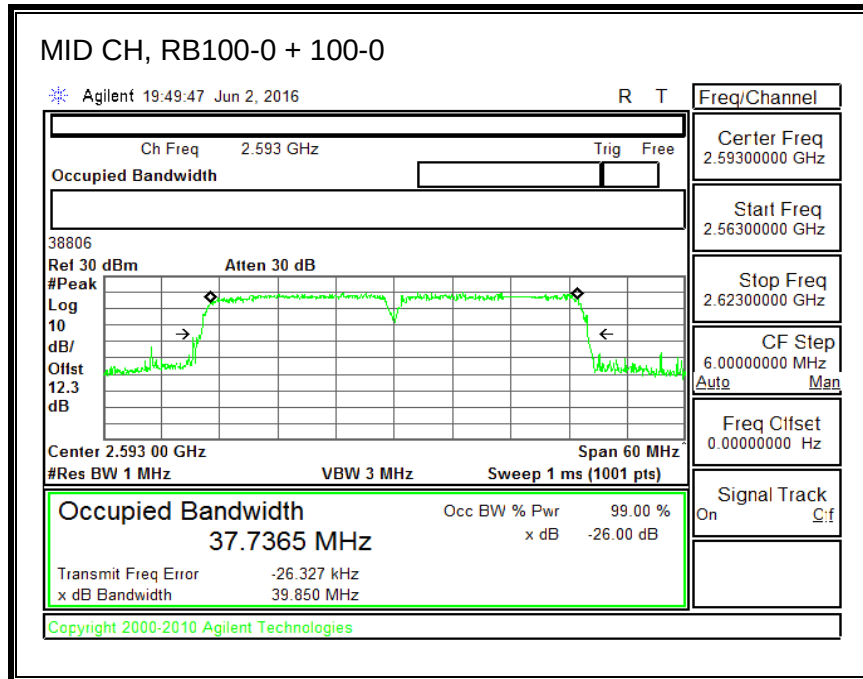
QPSK, (5.0MHz BAND WIDTH)



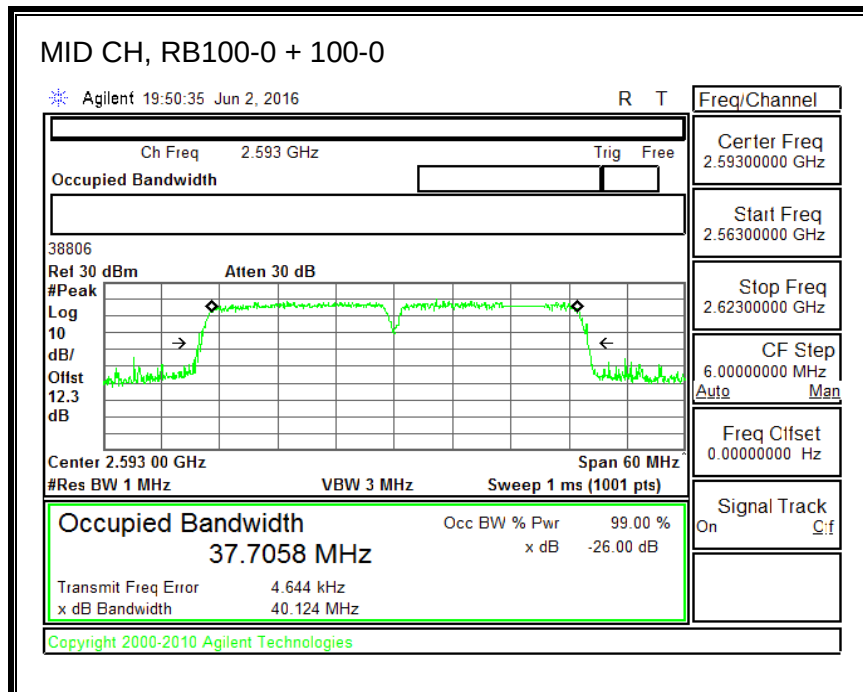
16QAM, (5.0MHz BAND WIDTH)



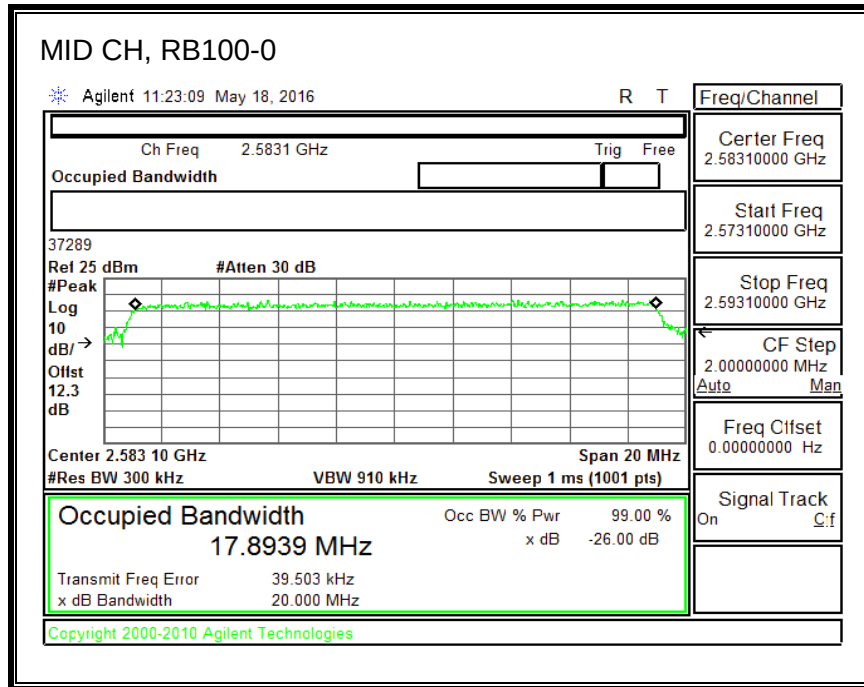
QPSK, (20.0MHz + 20.0MHz BAND WIDTH)



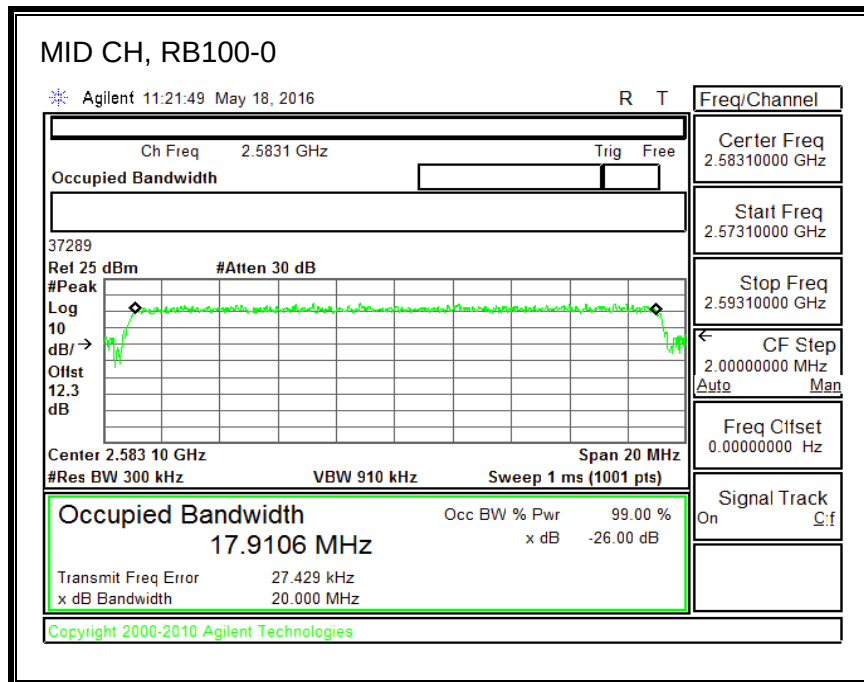
16QAM, (20.0MHz + 20.0MHz BAND WIDTH)



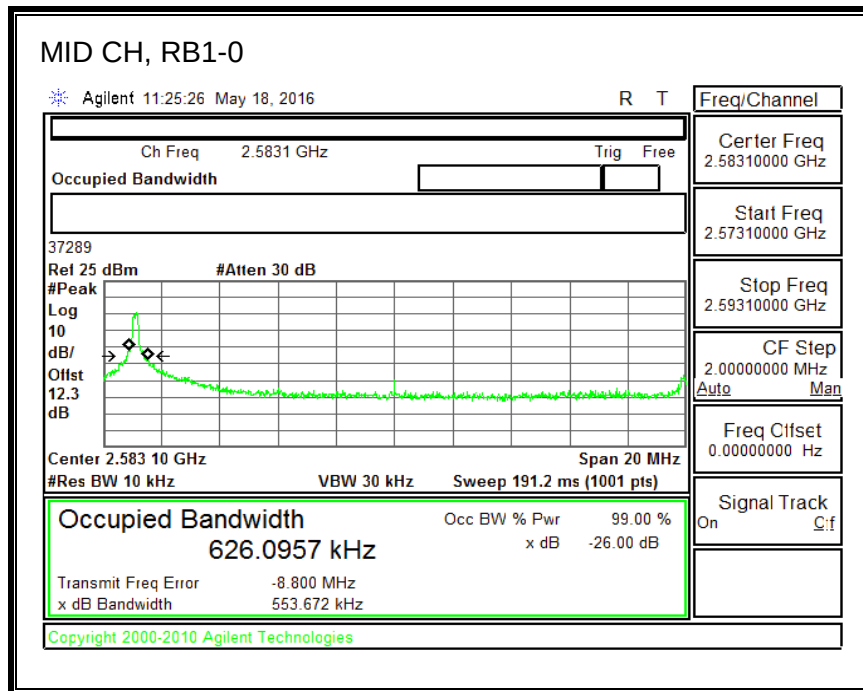
QPSK, (20.0MHz BAND WIDTH)



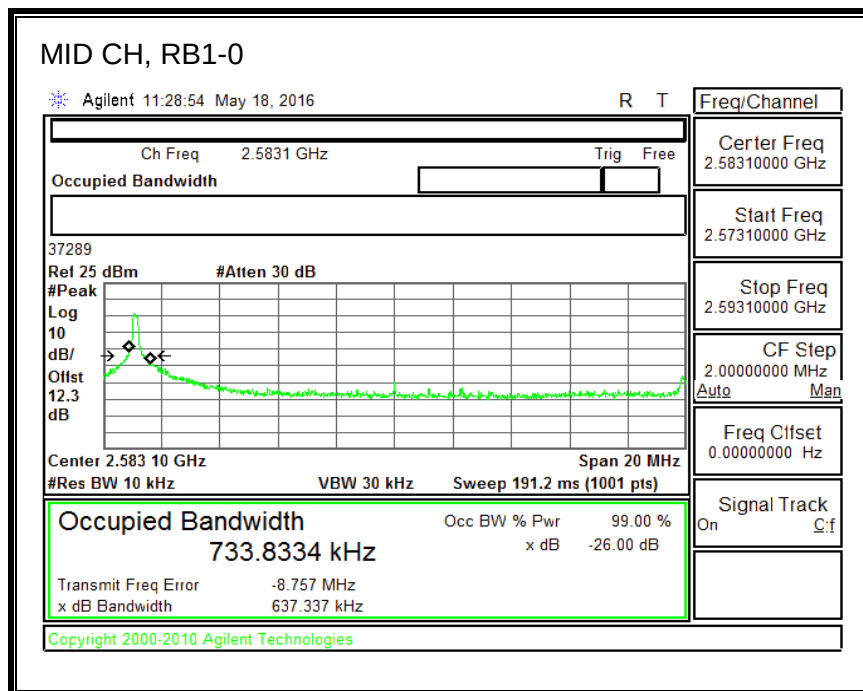
16QAM, (20.0MHz BAND WIDTH)



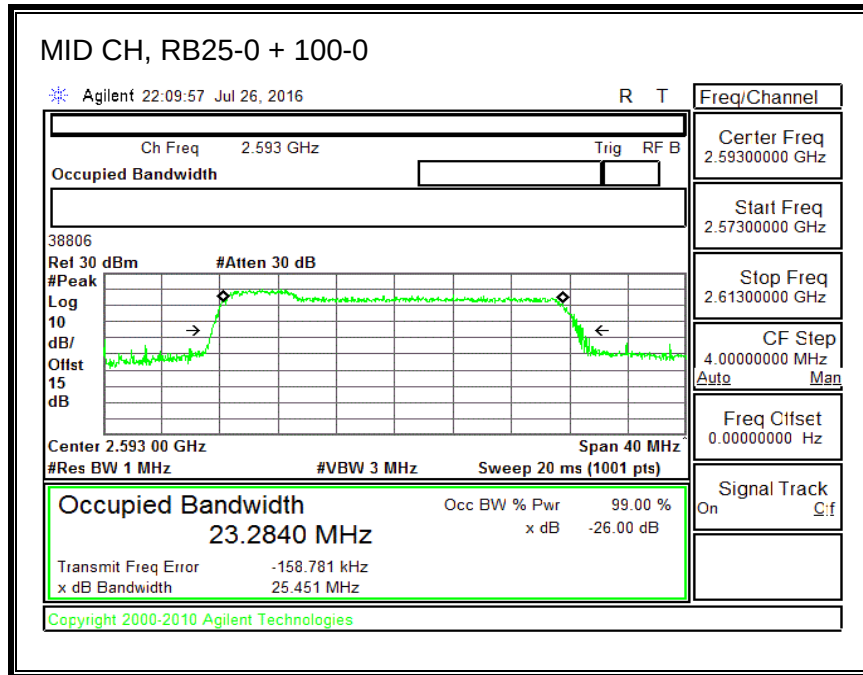
QPSK, (20.0MHz BAND WIDTH)



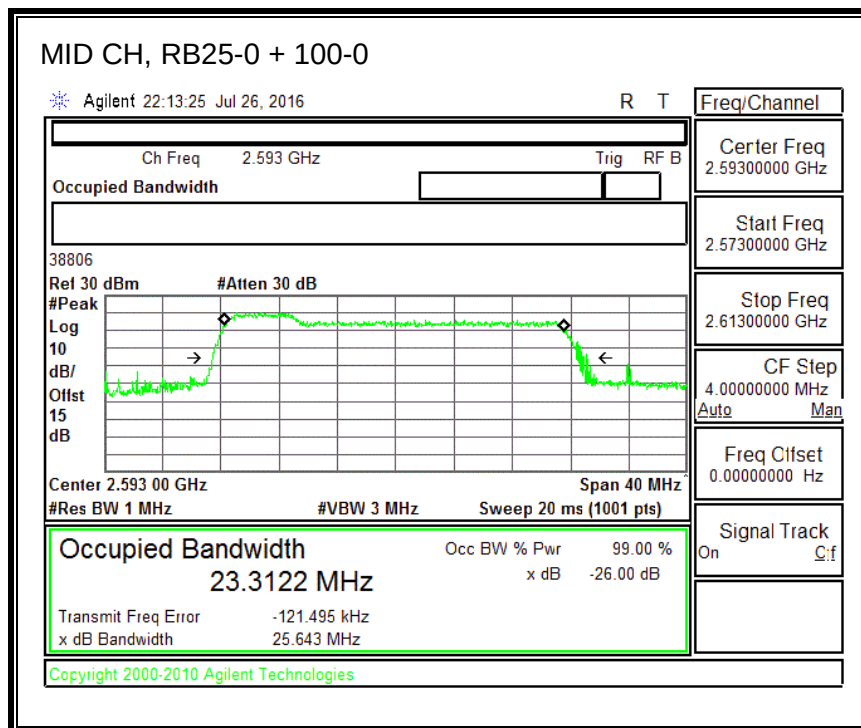
16QAM, (20.0MHz BAND WIDTH)



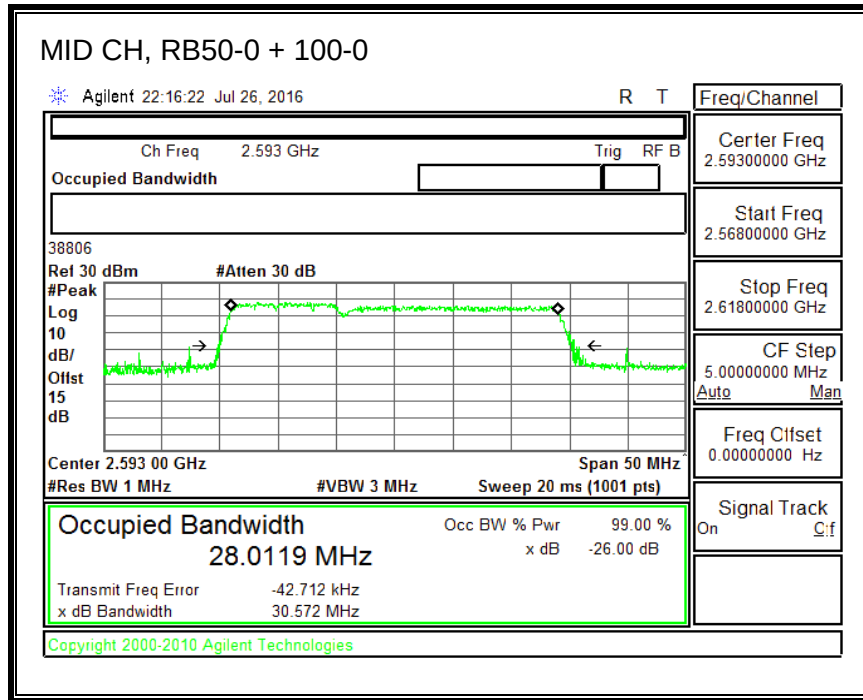
QPSK, (5.0MHz + 20.0MHz BAND WIDTH)



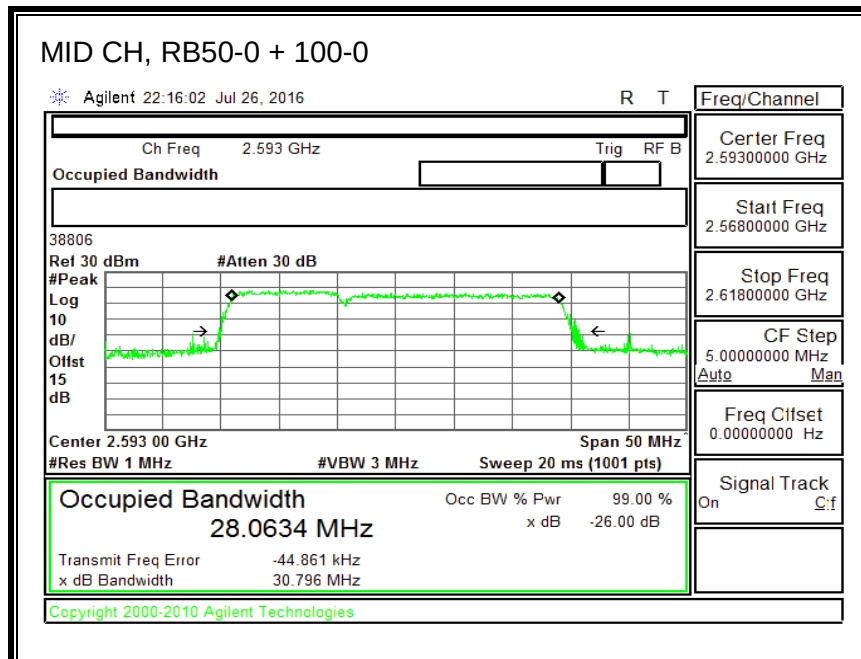
16QAM, (5.0MHz + 20.0MHz BAND WIDTH)



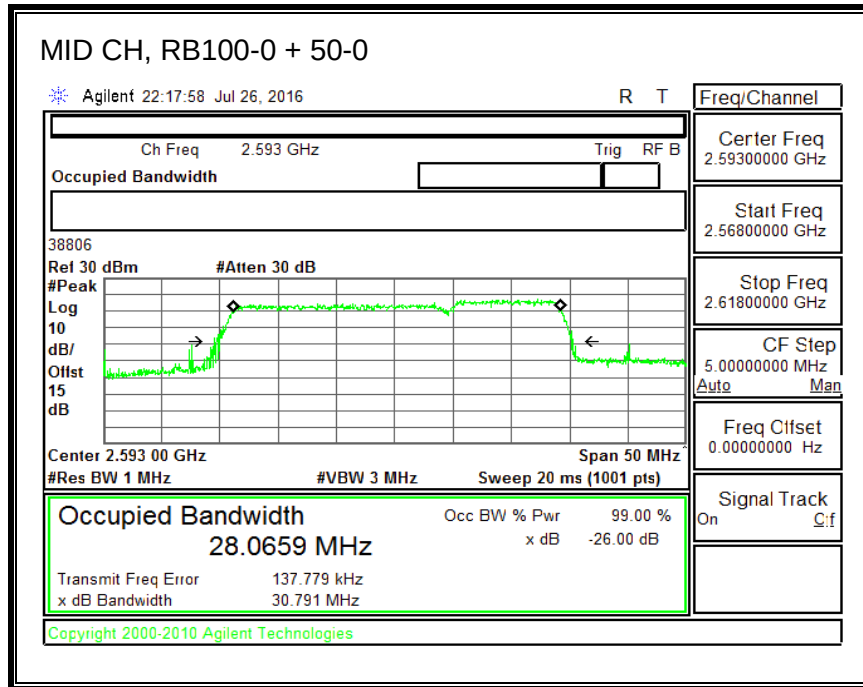
QPSK, (10.0MHz + 20.0MHz BAND WIDTH)



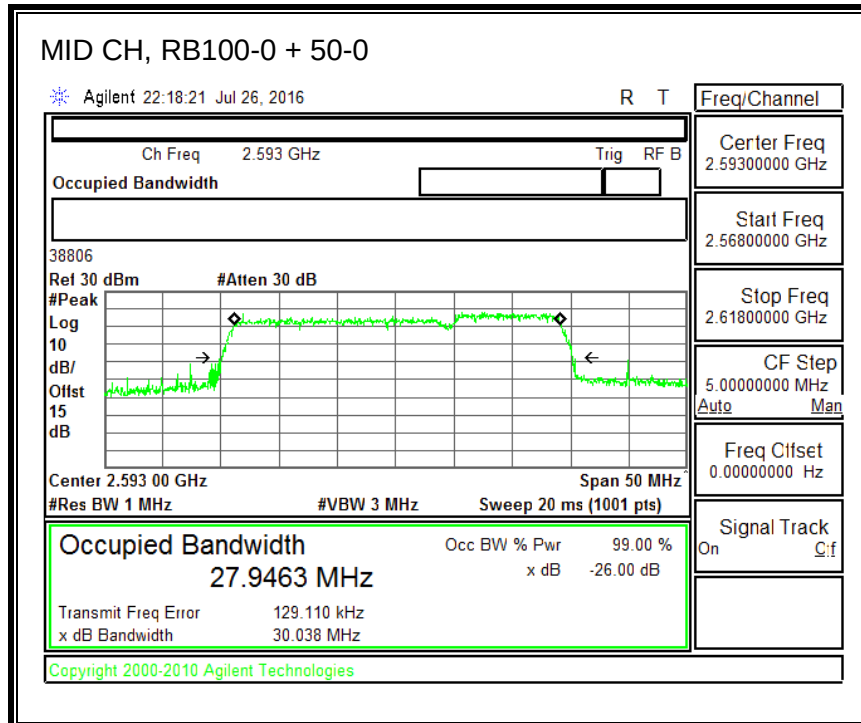
16QAM, (10.0MHz + 20.0MHz BAND WIDTH)



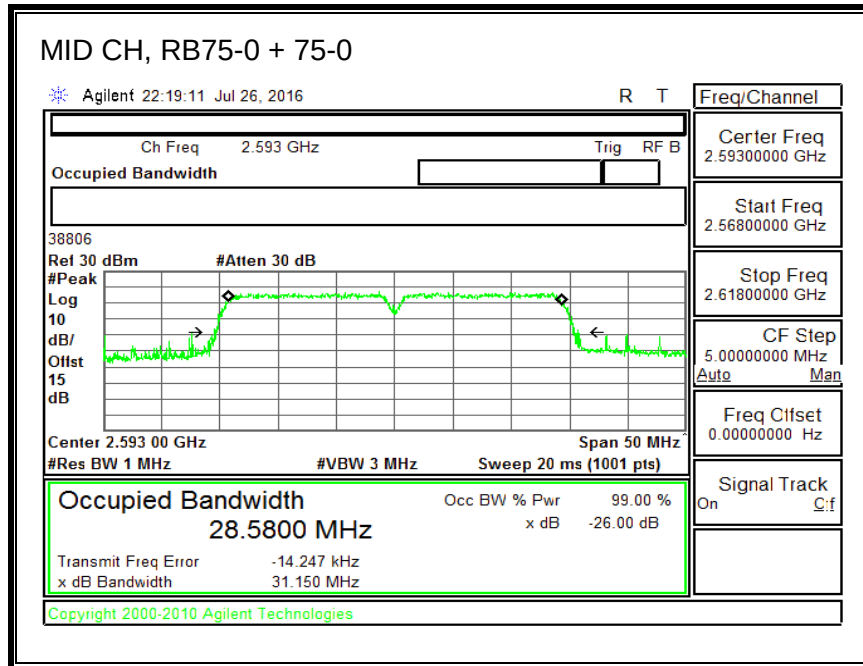
QPSK, (20.0MHz + 10.0MHz BAND WIDTH)



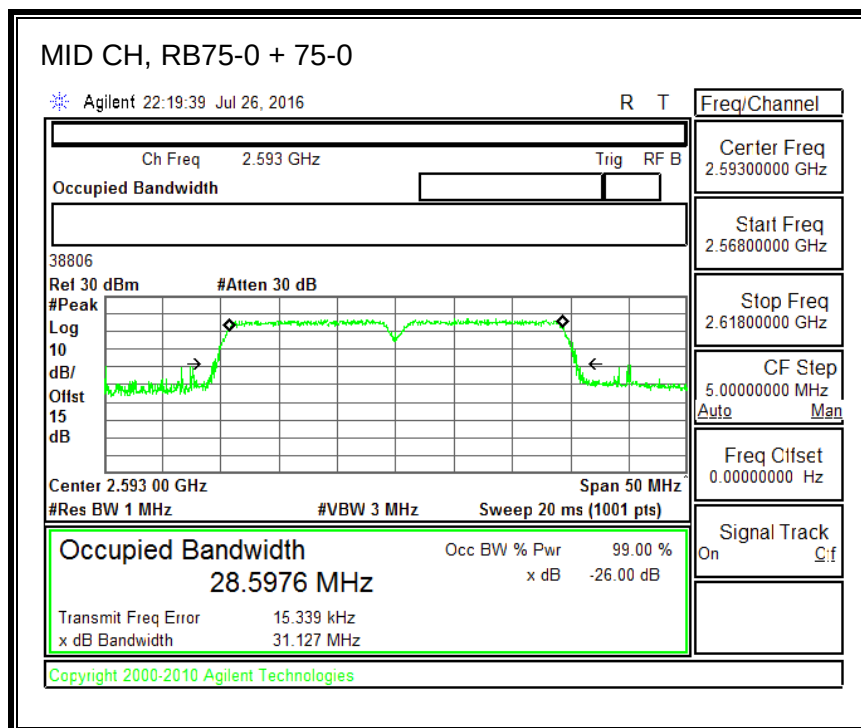
16QAM, (20.0MHz + 10.0MHz BAND WIDTH)



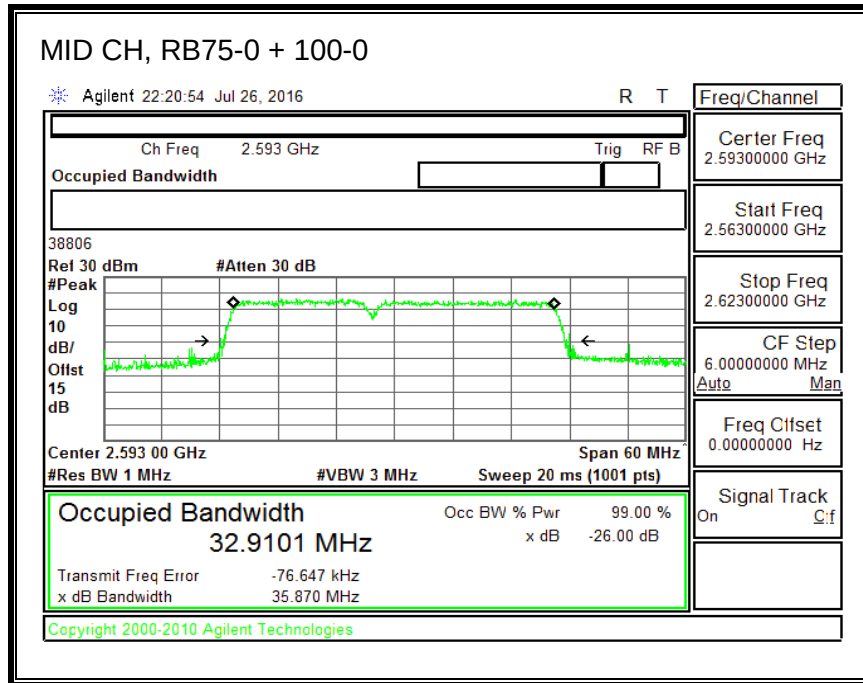
QPSK, (15.0MHz + 15.0MHz BAND WIDTH)



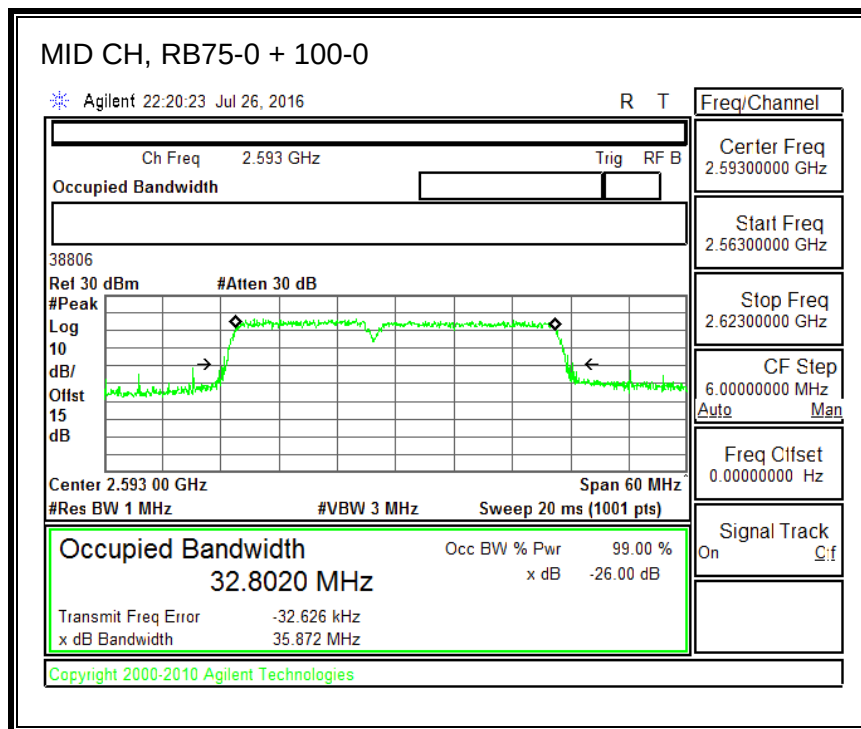
16QAM, (15.0MHz + 15.0MHz BAND WIDTH)



QPSK, (15.0MHz + 20.0MHz BAND WIDTH)



16QAM, (15.0MHz + 20.0MHz BAND WIDTH)



MID CH, RB100-0 + 75-0

Agilent 22:22:24 Jul 26, 2016 R T

Ch Freq 2.593 GHz		Trig	RF B
Occupied Bandwidth			
38806 Ref 30 dBm #Peak Log 10 dB/ Offst 15 dB			
#Atten 30 dB			
Center 2.593 00 GHz		Span 60 MHz	
#Res BW 1 MHz	#VBW 3 MHz	Sweep 20 ms (1001 pts)	
Occupied Bandwidth 32.8449 MHz		Occ BW % Pwr 99.00 % x dB -26.00 dB	
Transmit Freq Error 86.605 kHz			
x dB Bandwidth 35.470 MHz			
Copyright 2000-2010 Agilent Technologies			

Freq/Channel
Center Freq 2.59300000 GHz
Start Freq 2.56300000 GHz
Stop Freq 2.62300000 GHz
CF Step 6.00000000 MHz
Auto Man
Freq Offset 0.00000000 Hz
Signal Track
On Off

MID CH, RB100-0 + 75-0

Agilent 22:22:43 Jul 26, 2016 R T

Ch Freq 2.593 GHz		Trig RF B	Freq/Channel
Occupied Bandwidth		Center Freq 2.59300000 GHz	
38806		Start Freq 2.56300000 GHz	
Rel 30 dBm		Stop Freq 2.62300000 GHz	
#Atten 30 dB		CF Step 6.00000000 MHz	
#Peak		Auto Man	
Log		Freq Offset 0.00000000 Hz	
10			
dB/			
Offset			
15			
dB			
Center 2.593 00 GHz		Span 60 MHz	
#Res BW 1 MHz		#VBW 3 MHz	
		Sweep 20 ms (1001 pts)	
Occupied Bandwidth		Occ BW % Pwr 99.00 %	
32.9755 MHz		x dB -26.00 dB	
Transmit Freq Error 80.447 kHz			
x dB Bandwidth 36.044 MHz			
Signal Track			
On Off			
Copyright 2000-2010 Agilent Technologies			

8.2. EMISSION MASK

RULE PART(S)

FCC: §2.1051, §27.53

LIMITS

FCC: §27.53

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

(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.

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

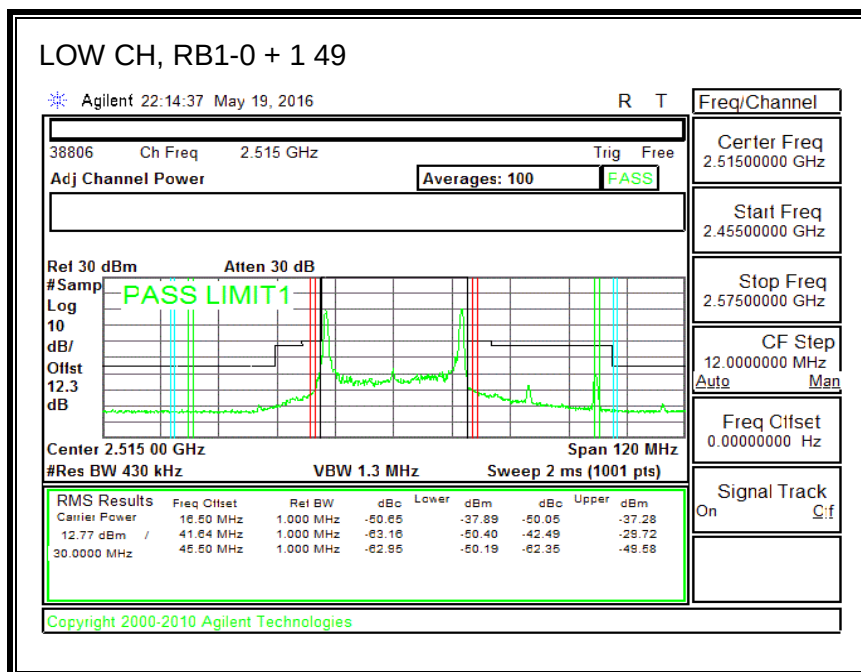
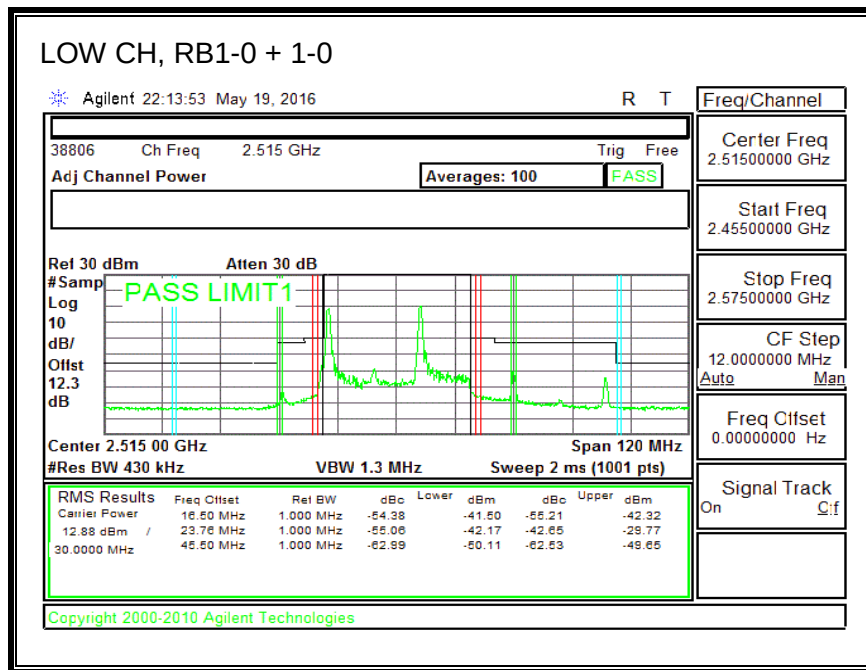
MODES TESTED

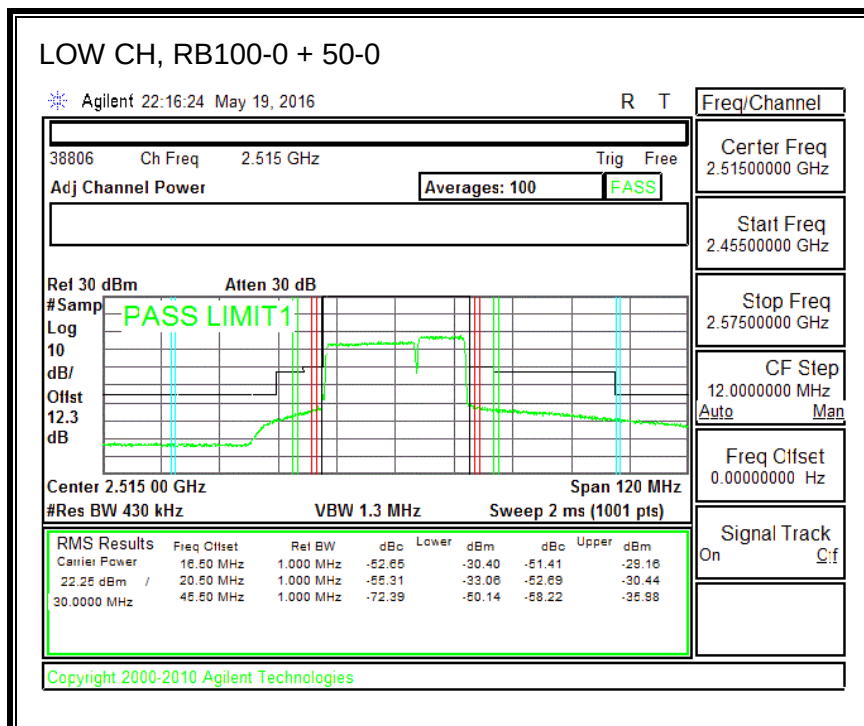
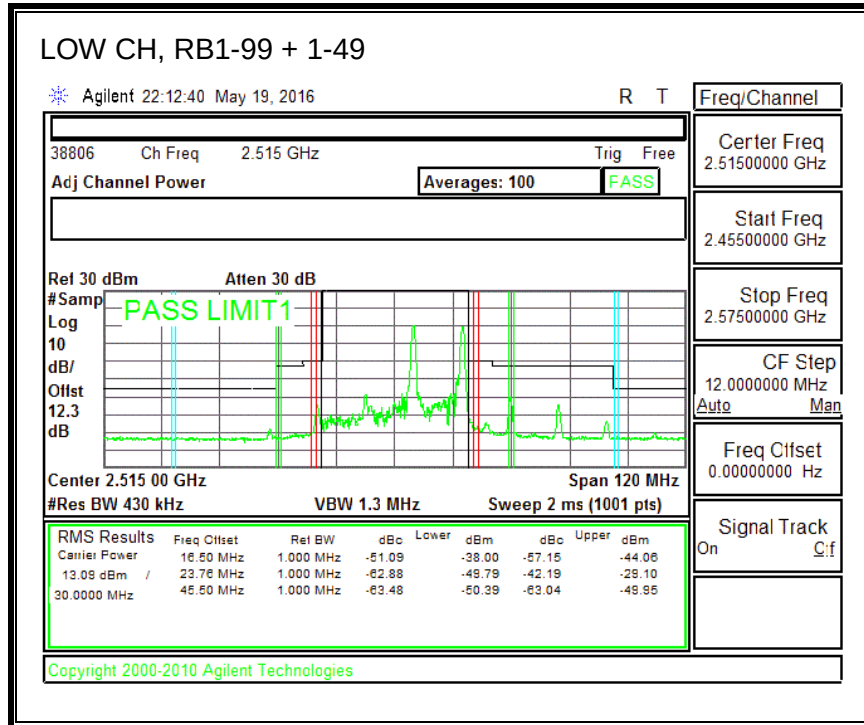
- LTE Band 7
- LTE Band 41

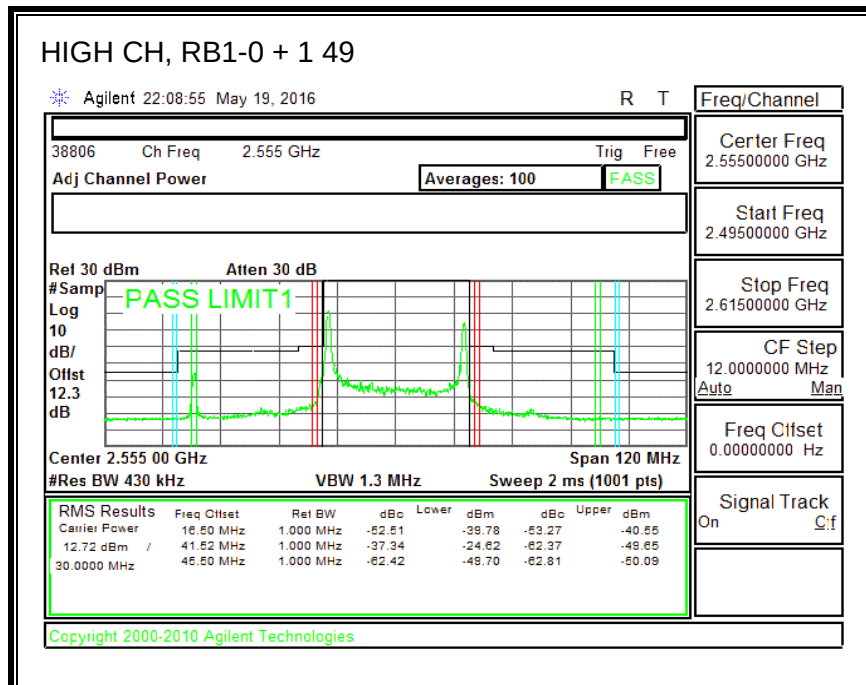
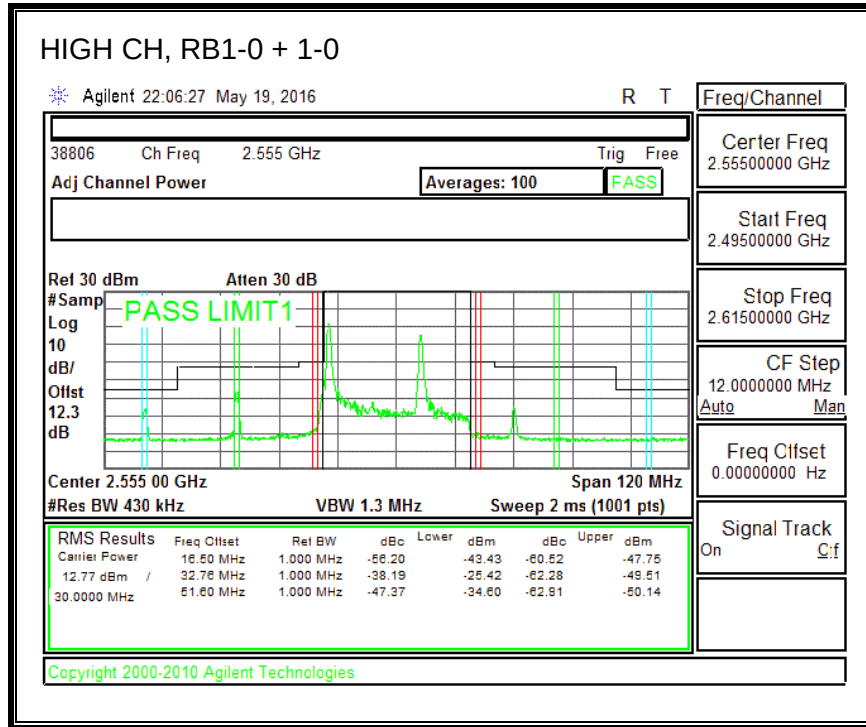
RESULTS

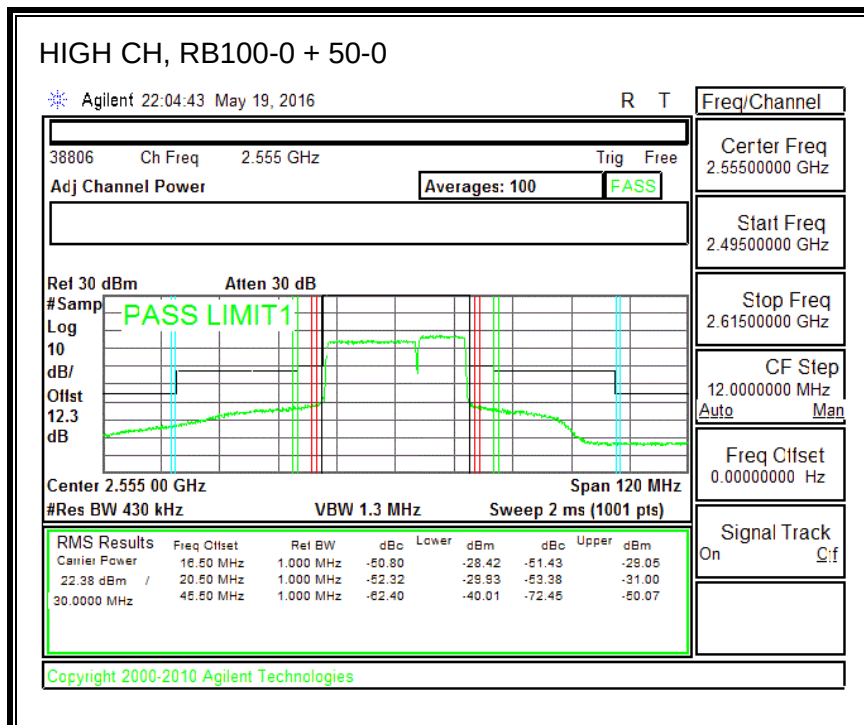
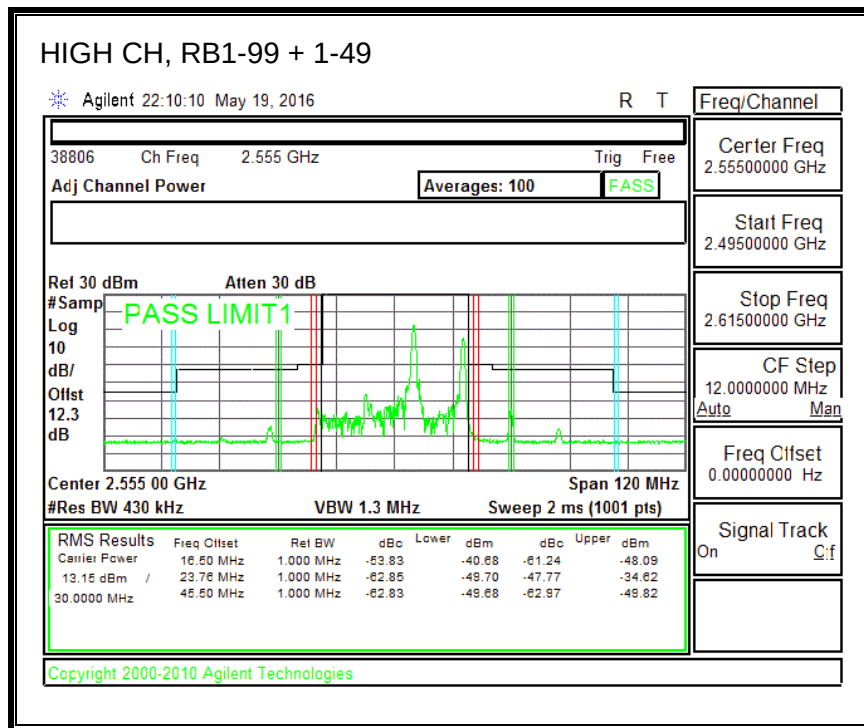
8.2.1. LTE BAND 7

QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)

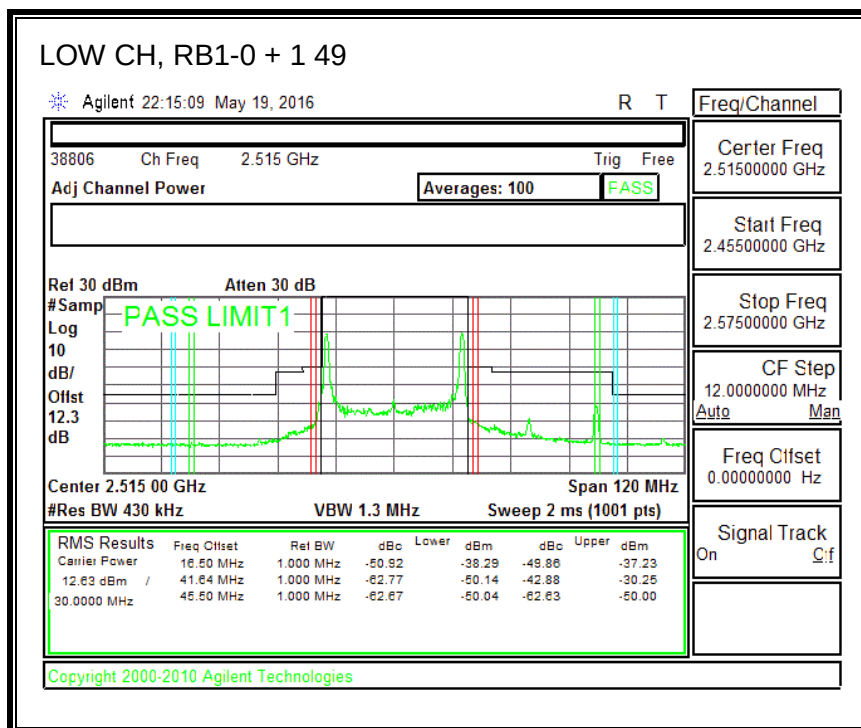
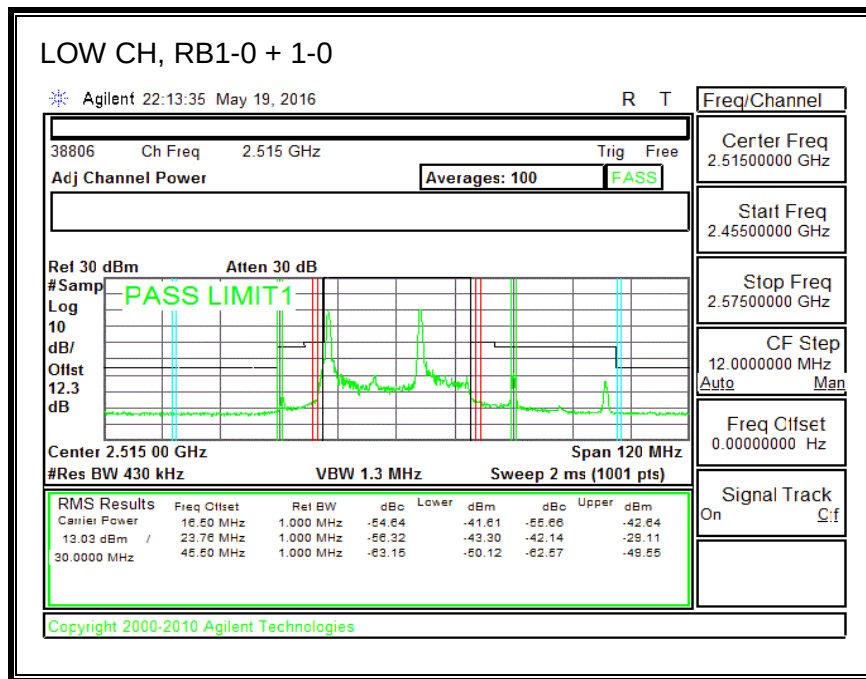


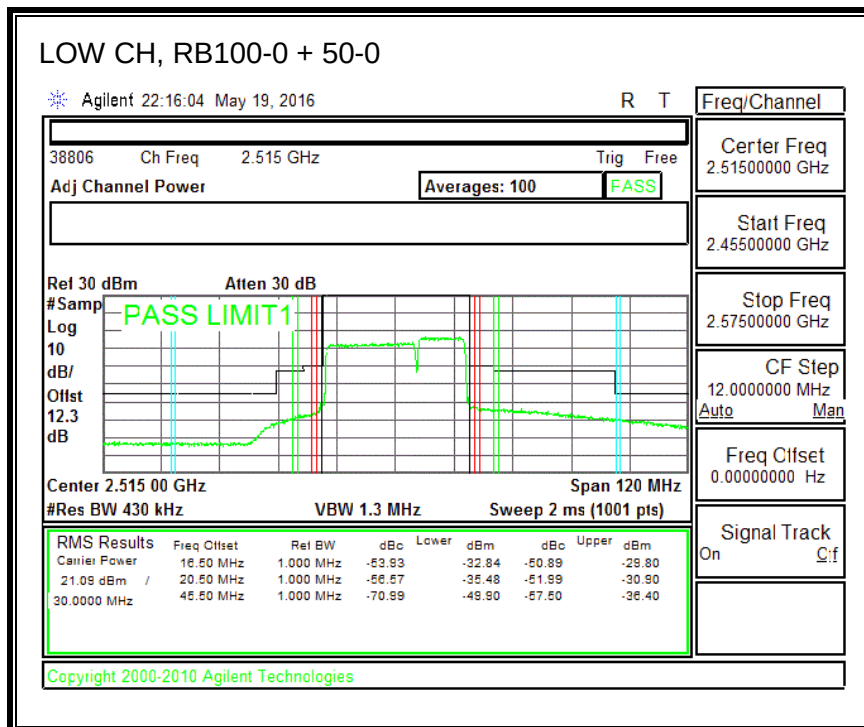
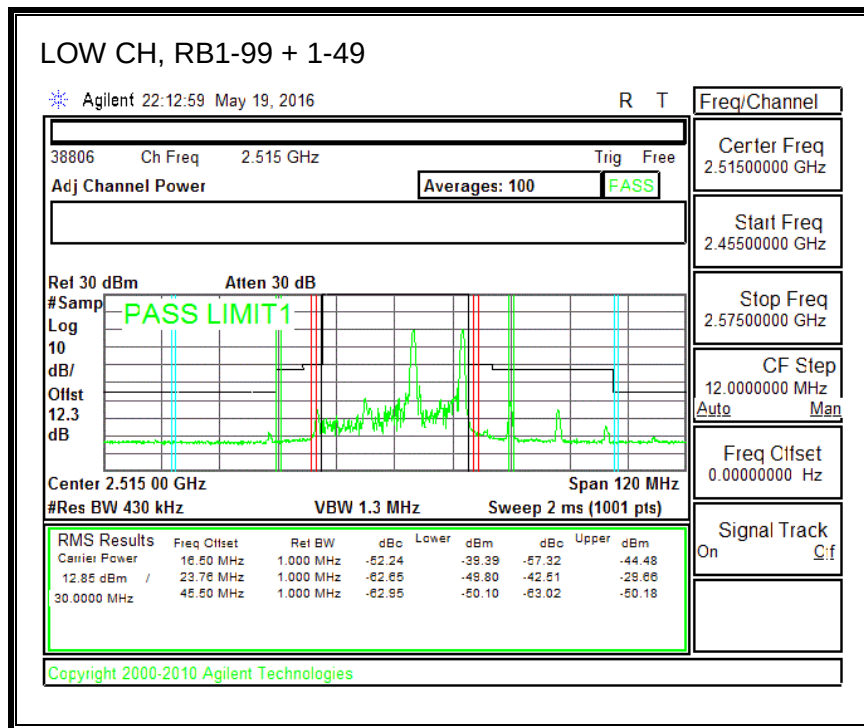


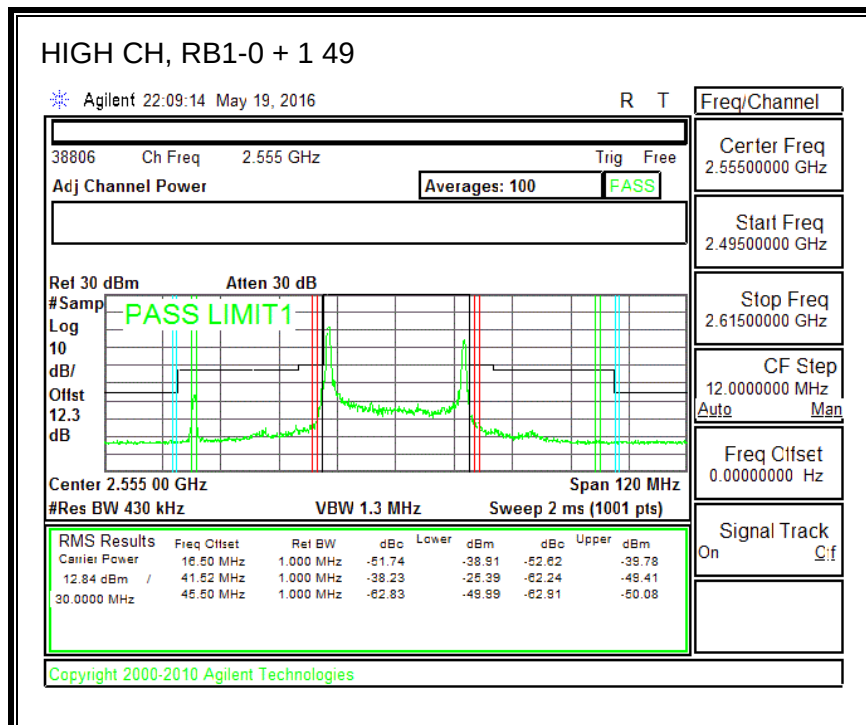
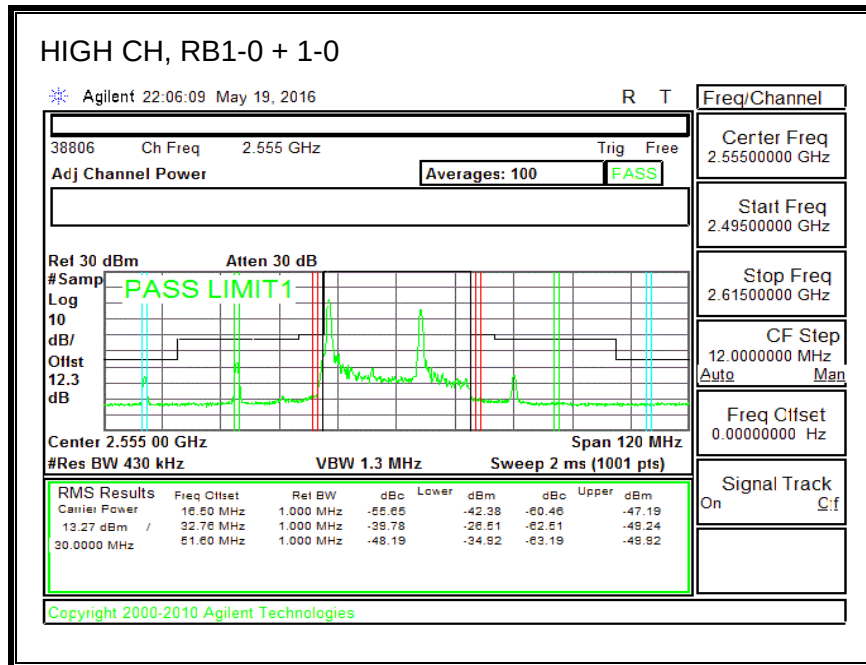


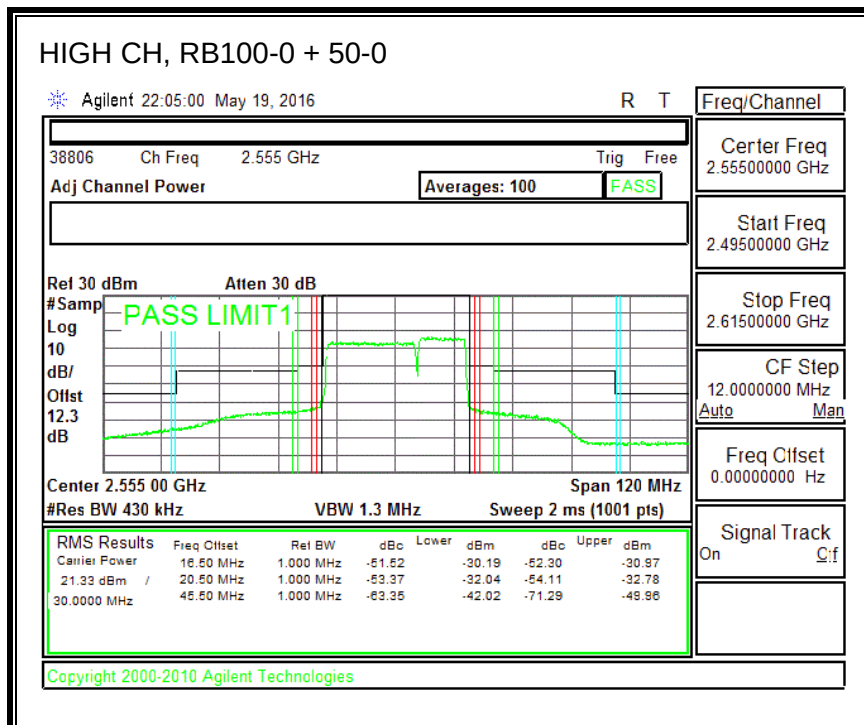
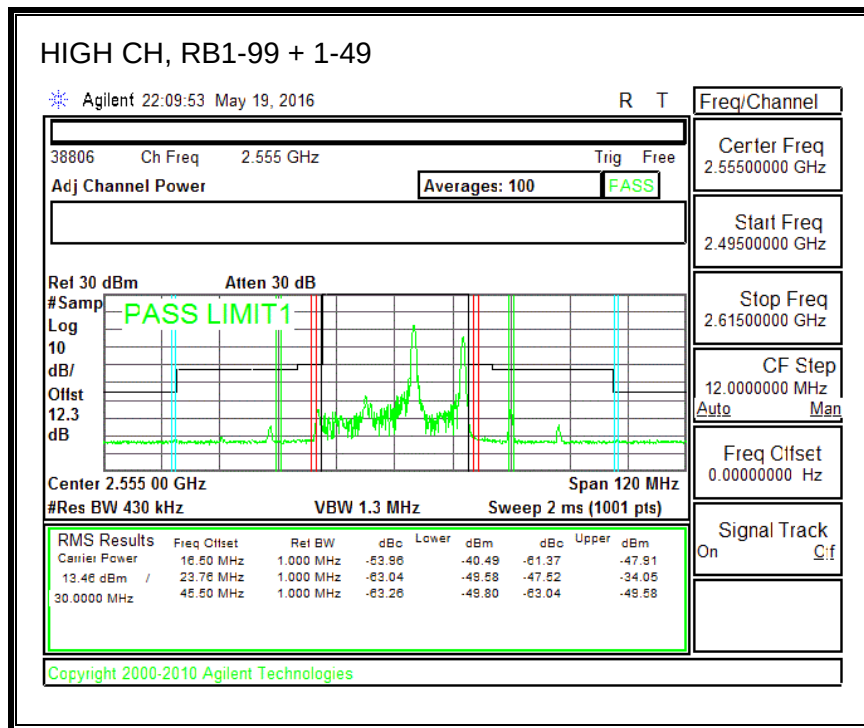


16QAM (20.0 MHz + 10.0 MHz BAND WIDTH)

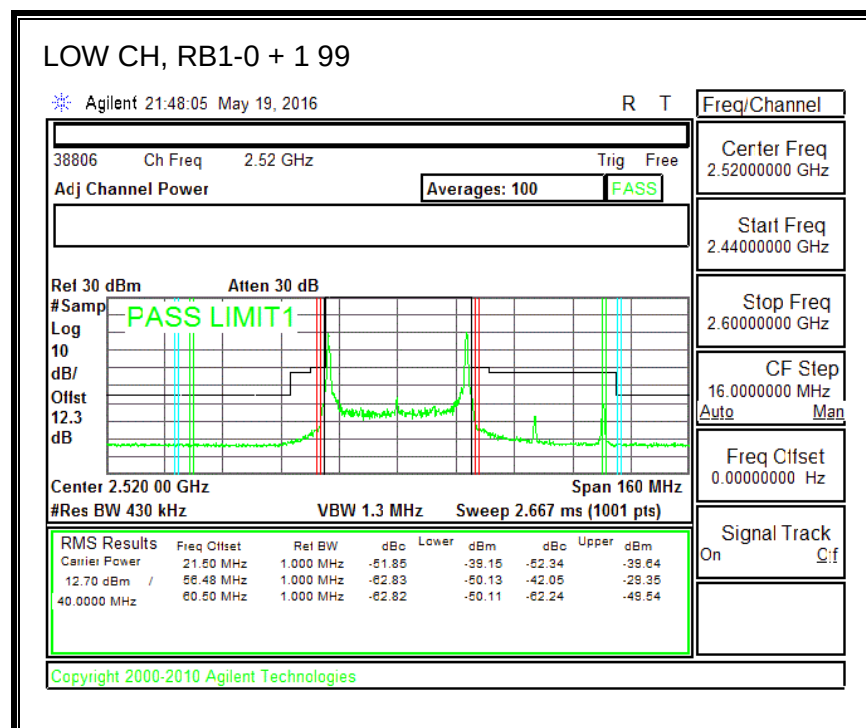
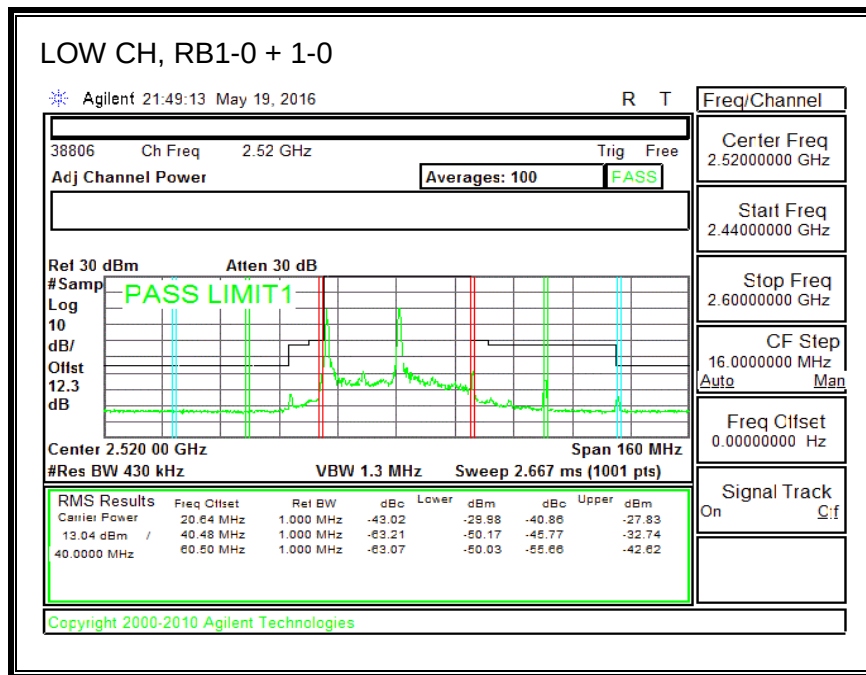


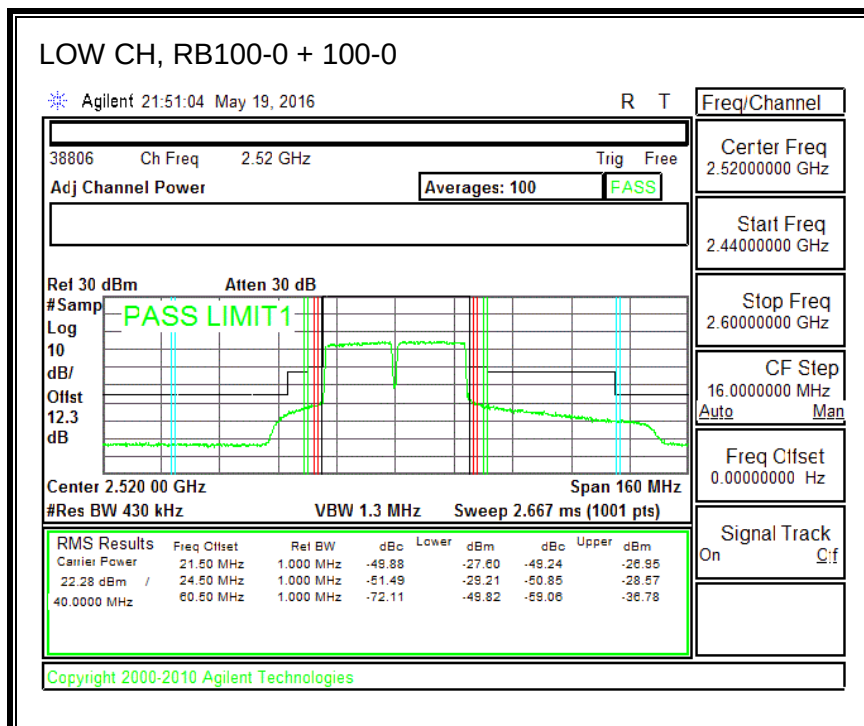
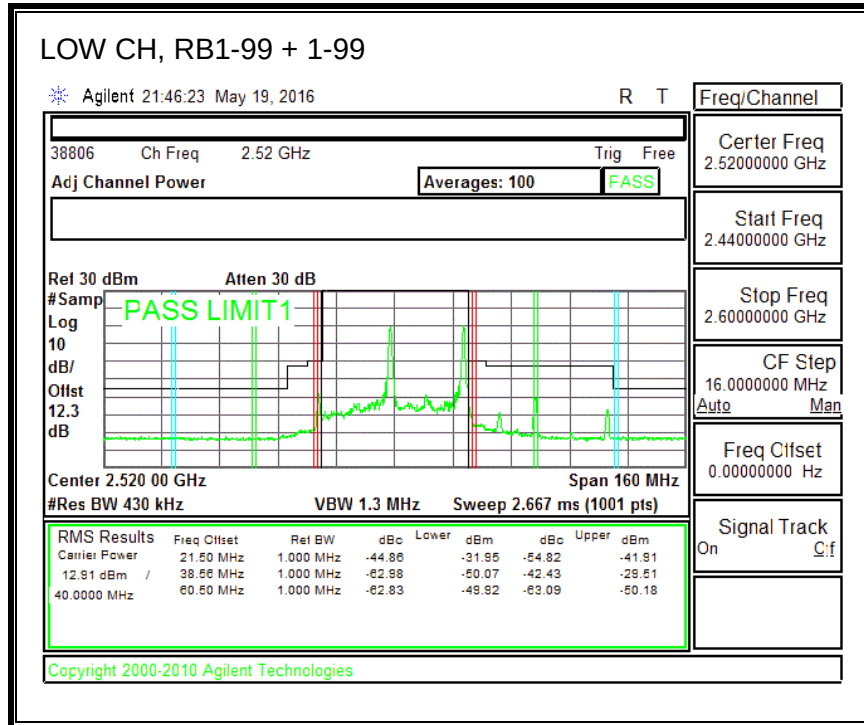


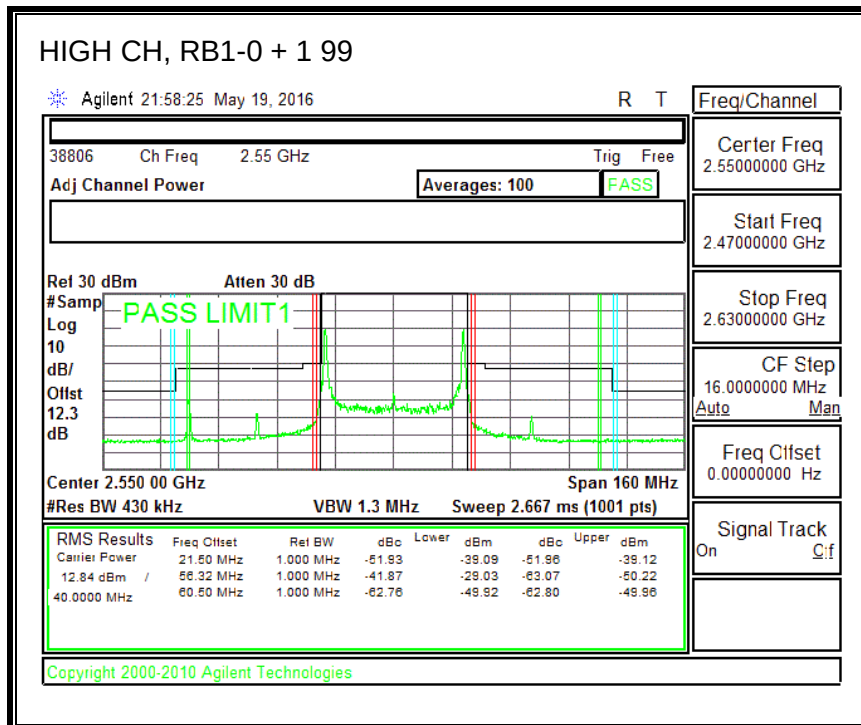
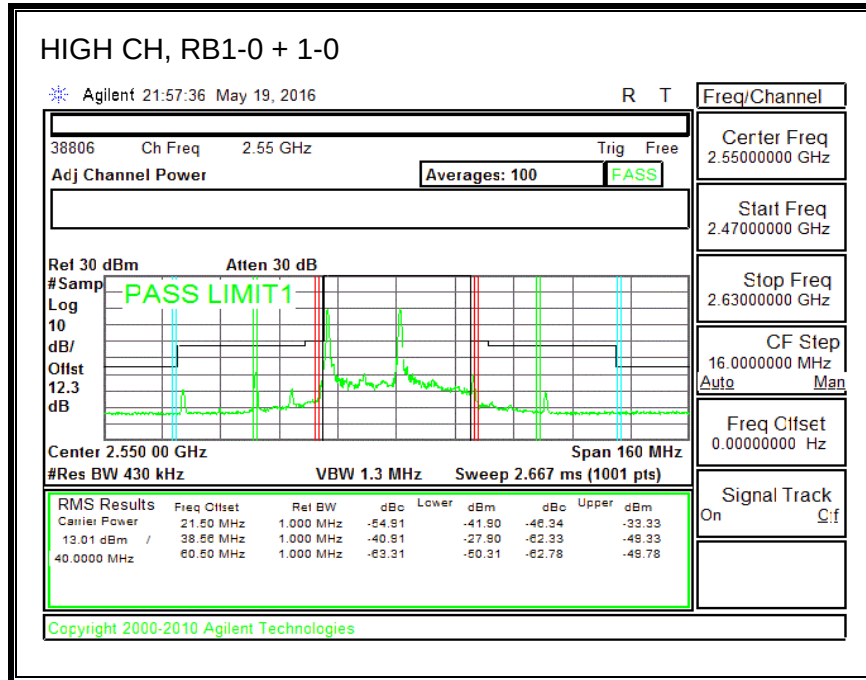


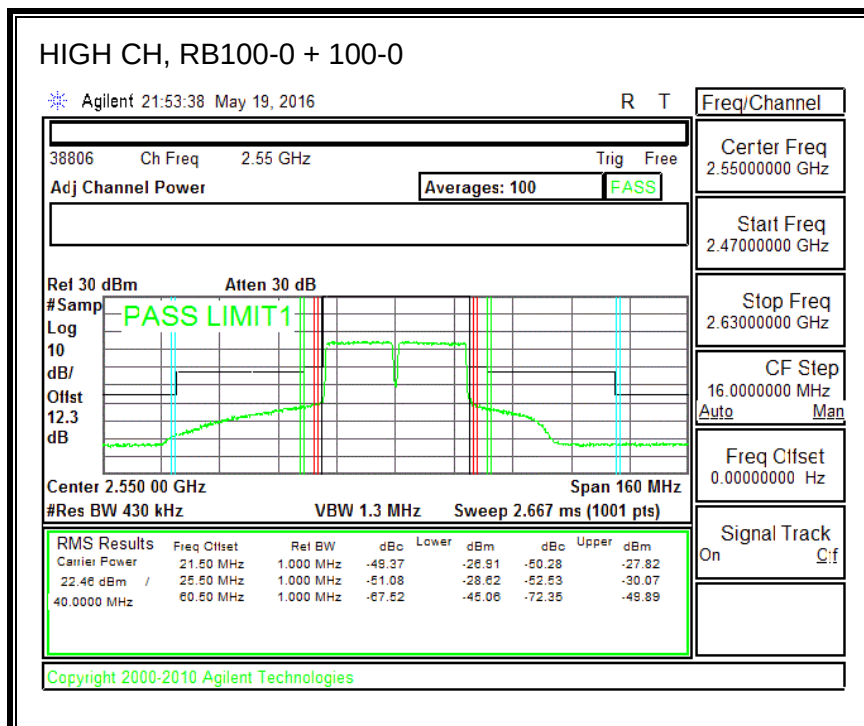
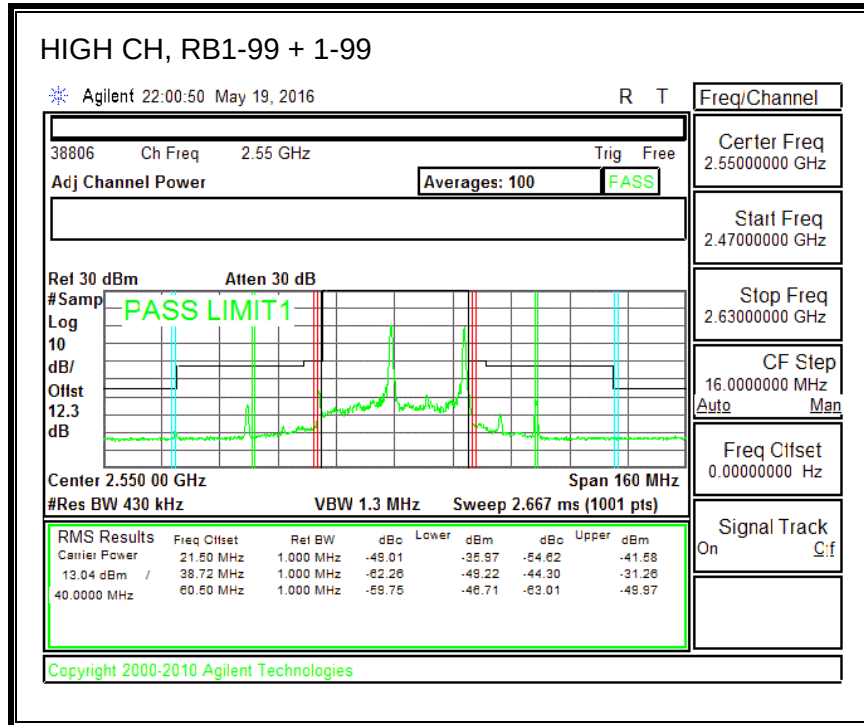


QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

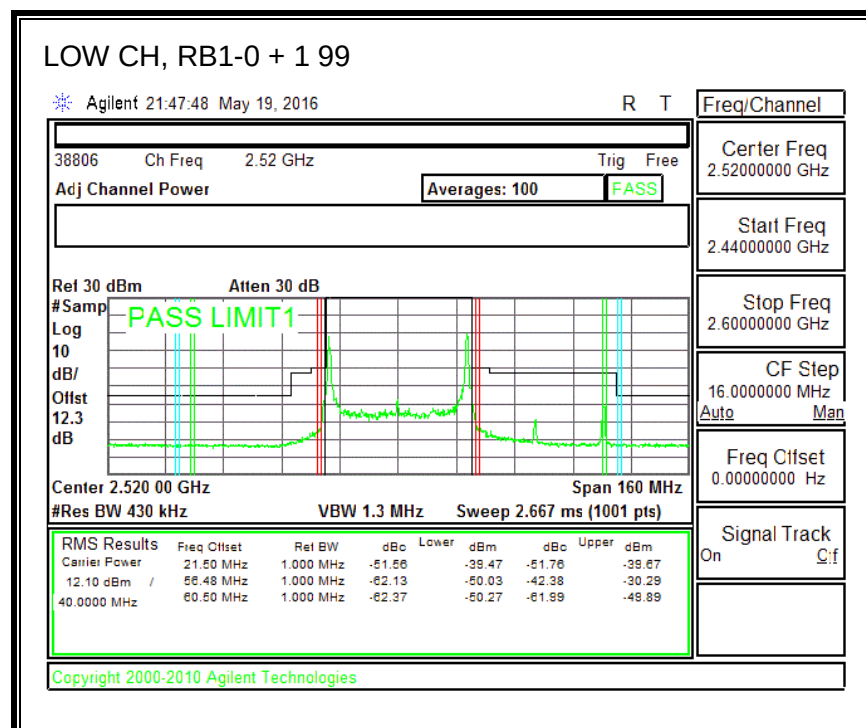
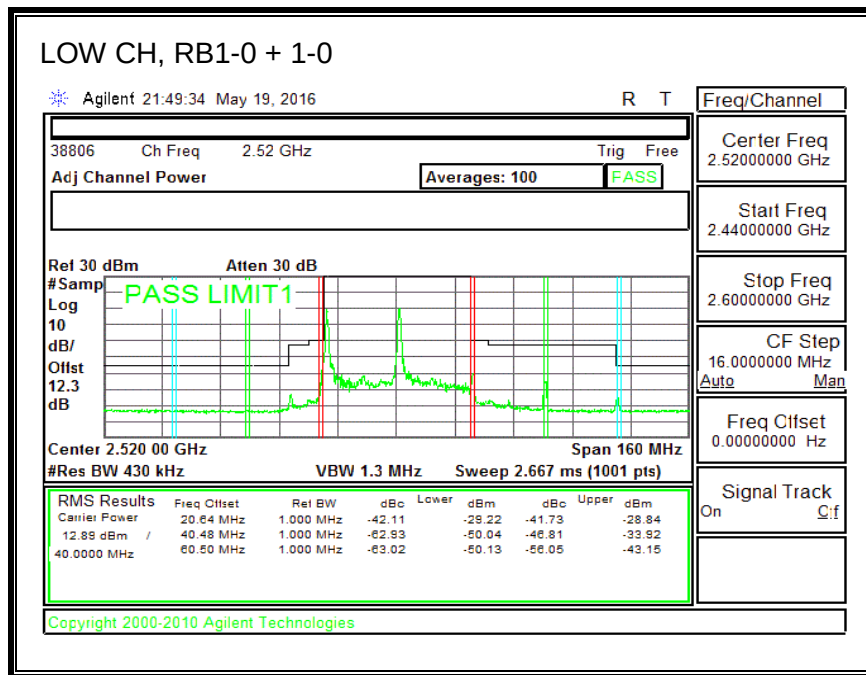


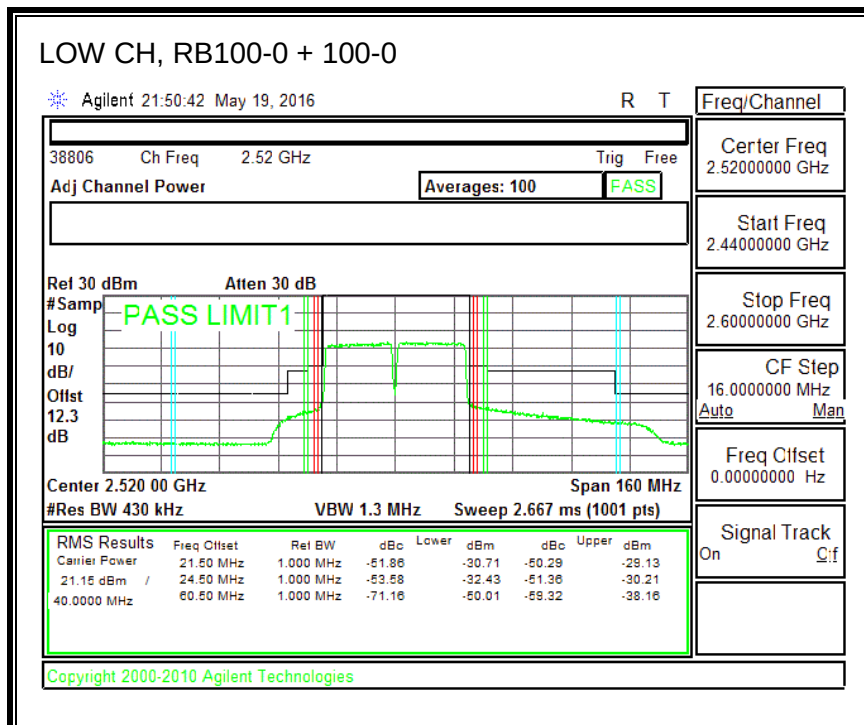
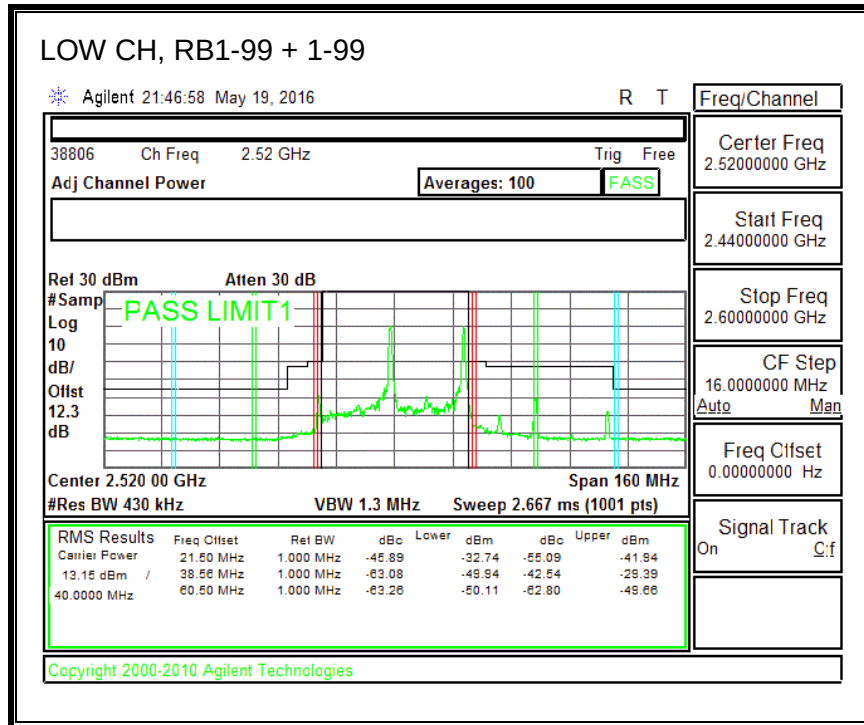


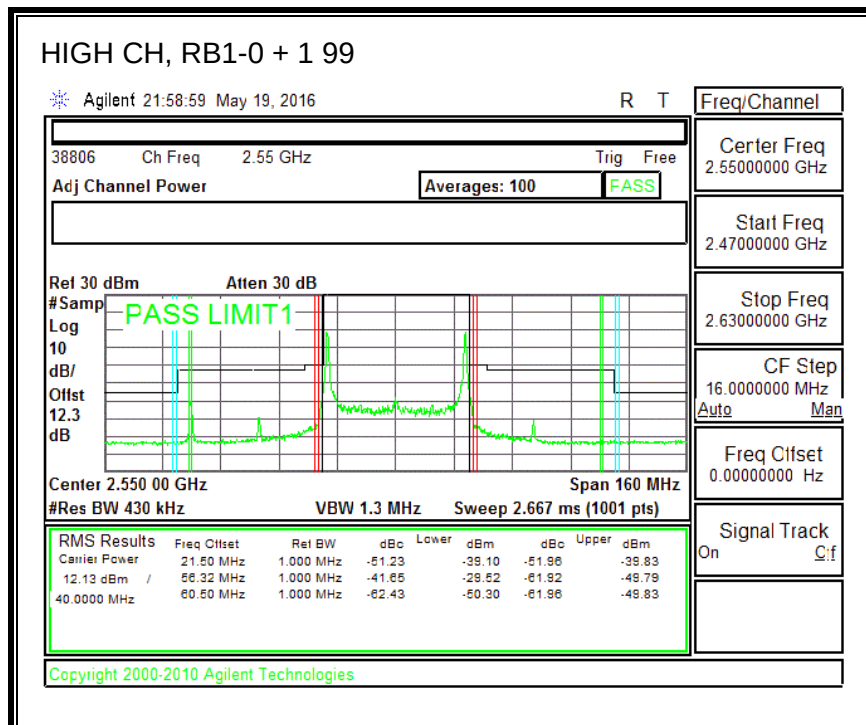
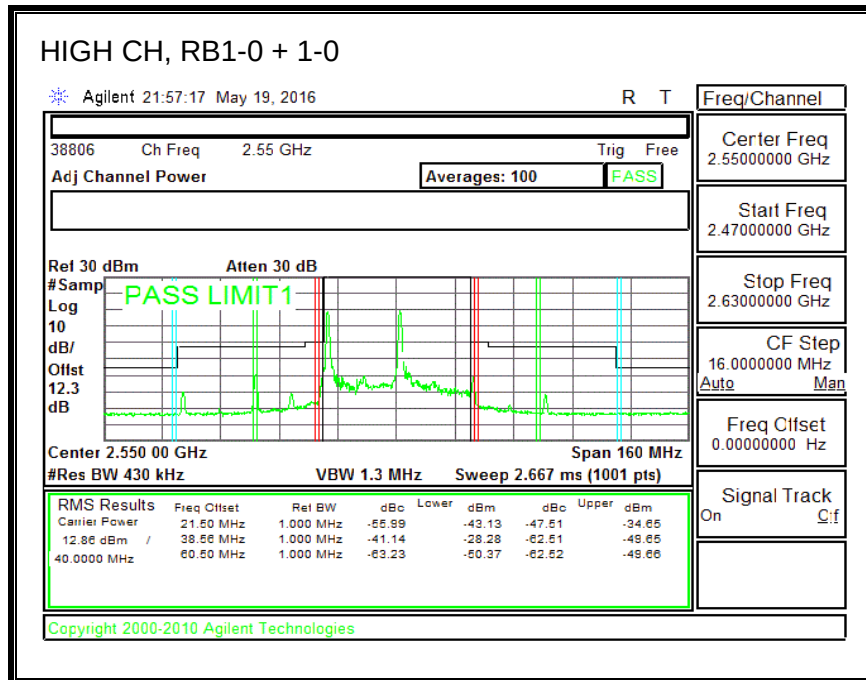


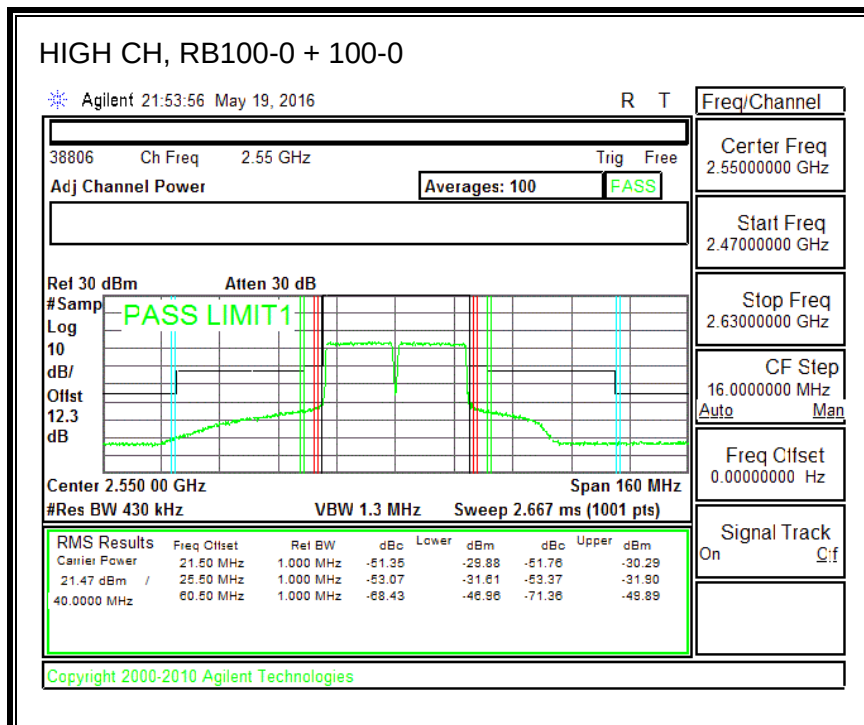
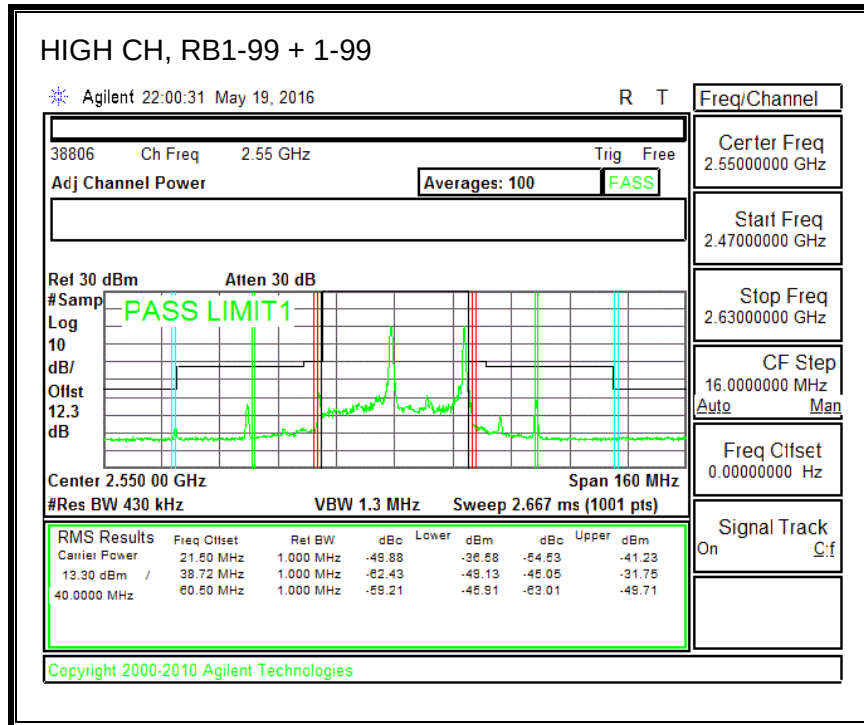


16QAM (20.0 MHz + 20.0 MHz BAND WIDTH)



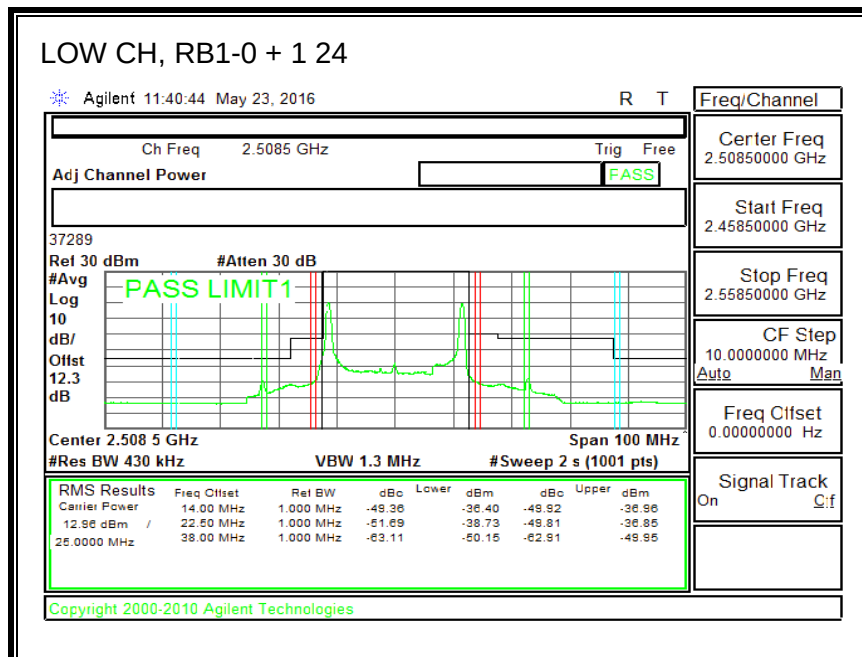
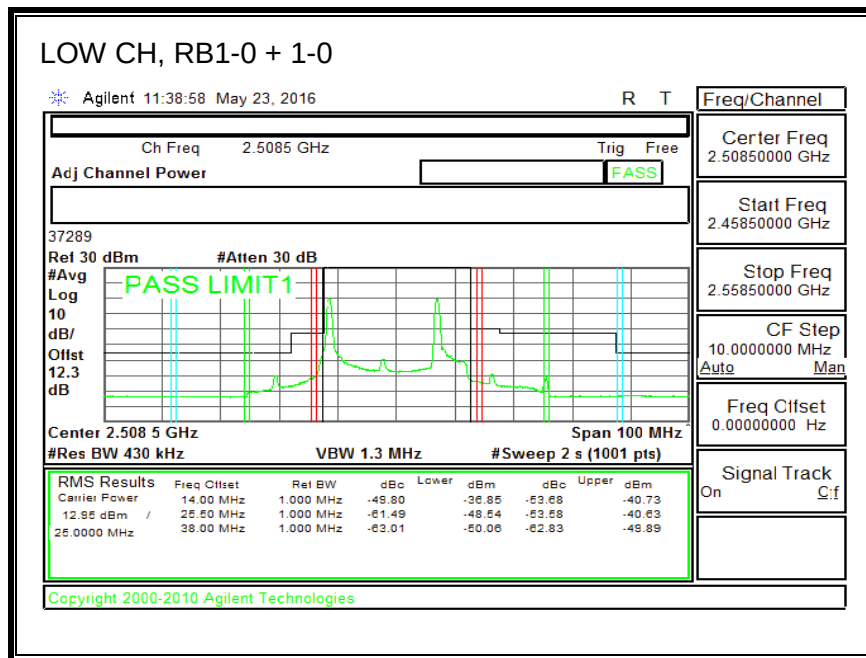


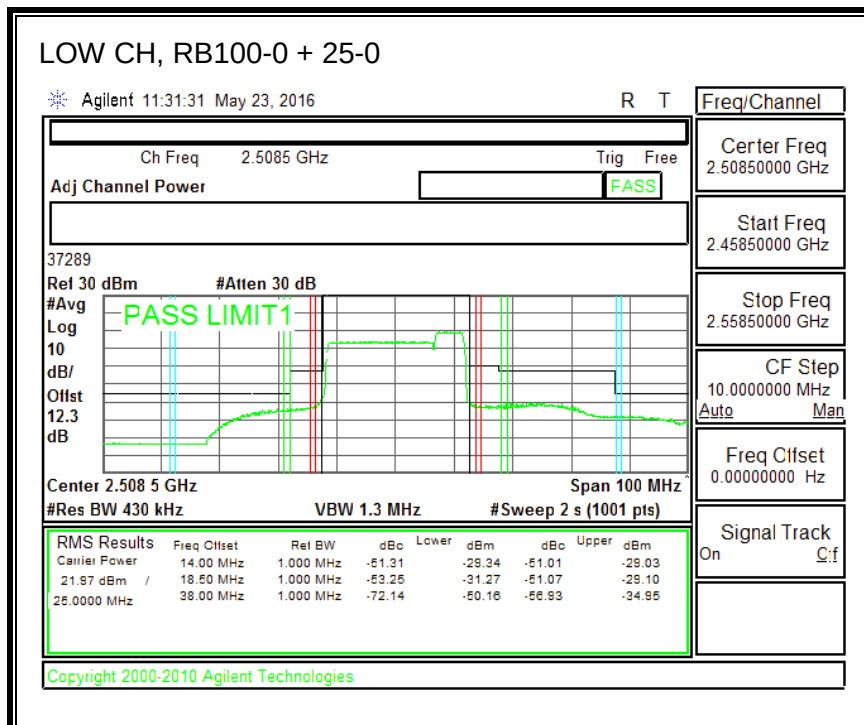
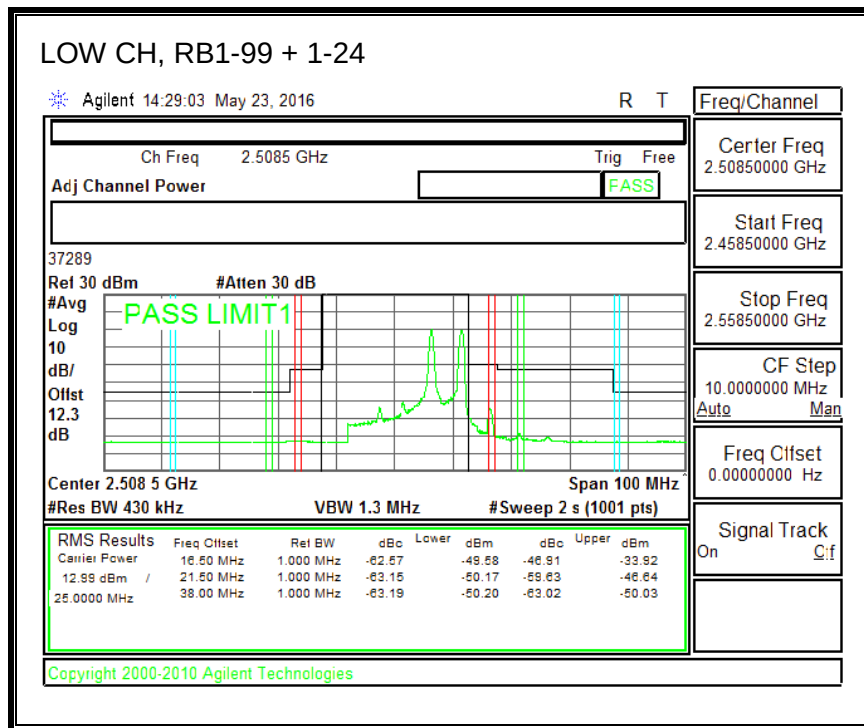


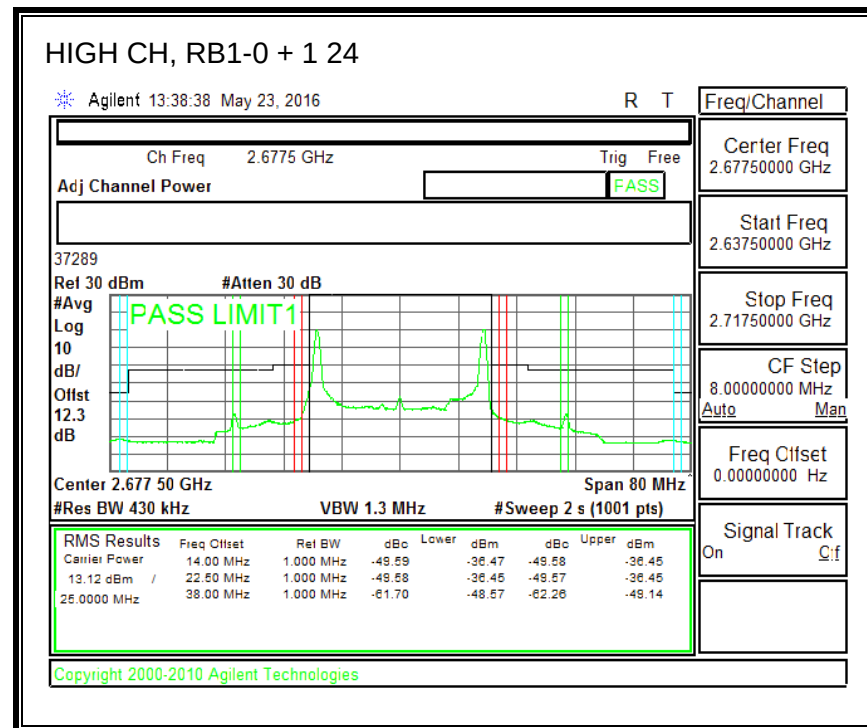
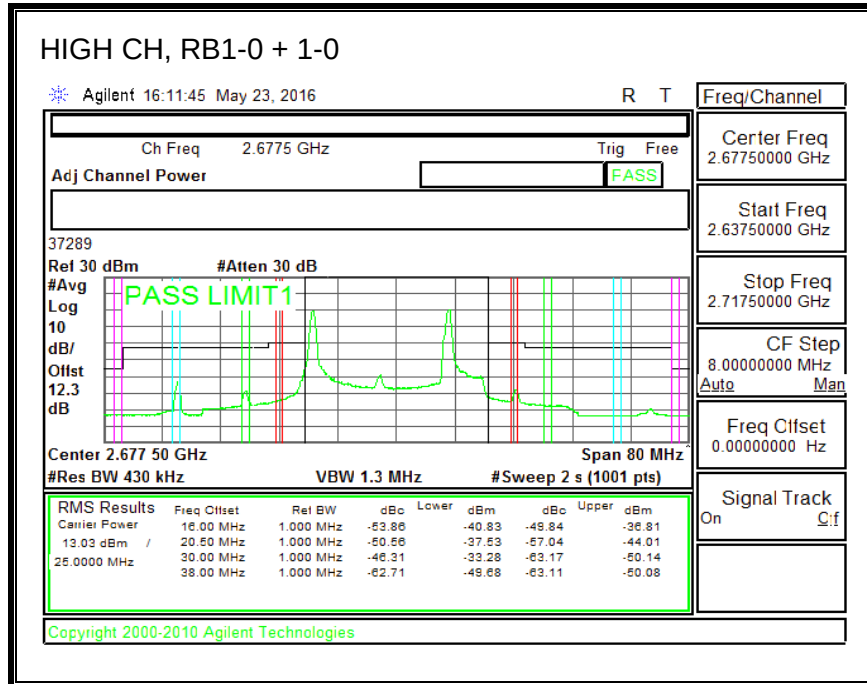


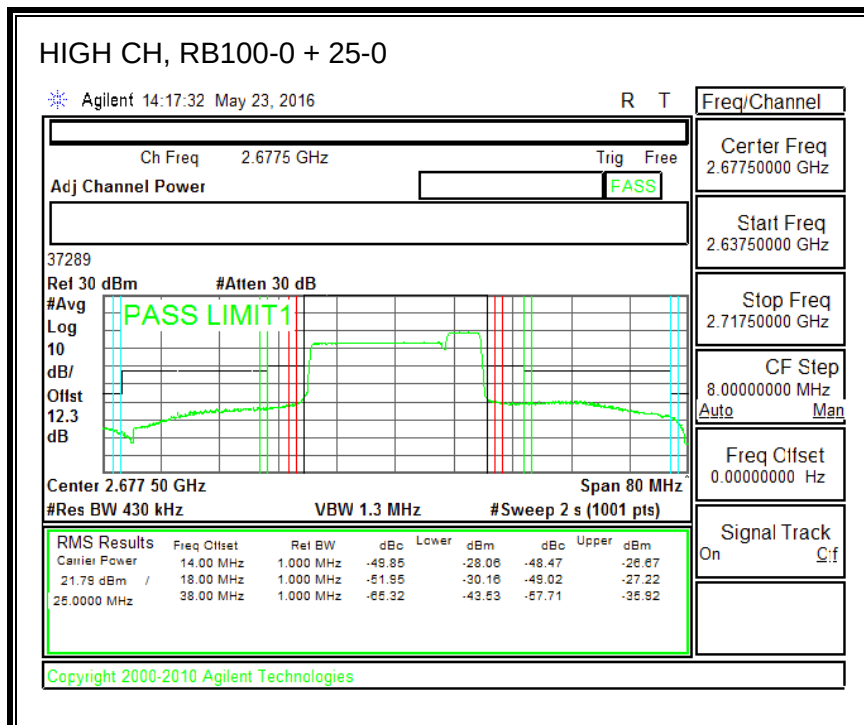
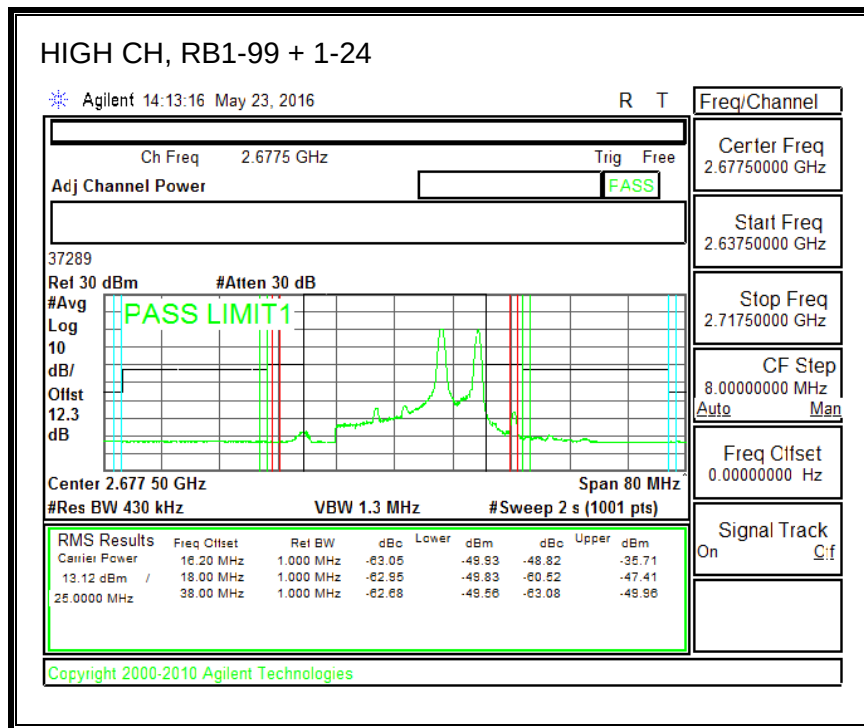
8.2.2. LTE BAND 41

QPSK, (20.0 MHz + 5.0 MHz BAND WIDTH)

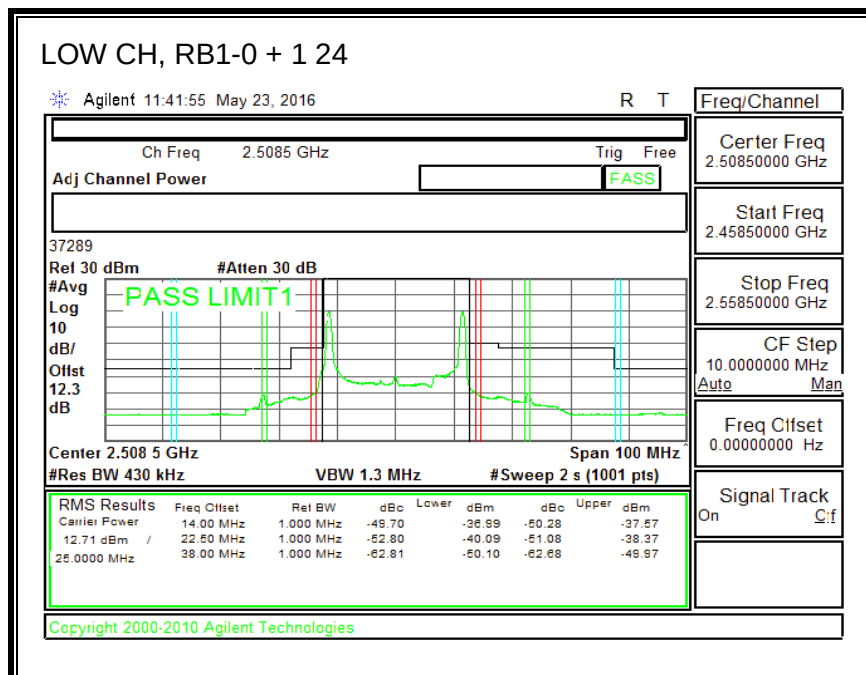
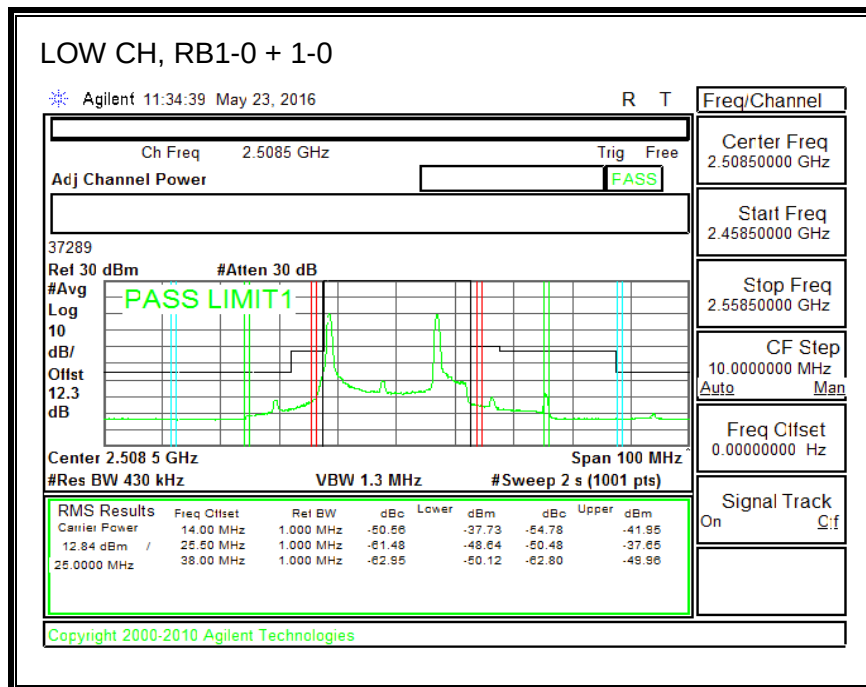


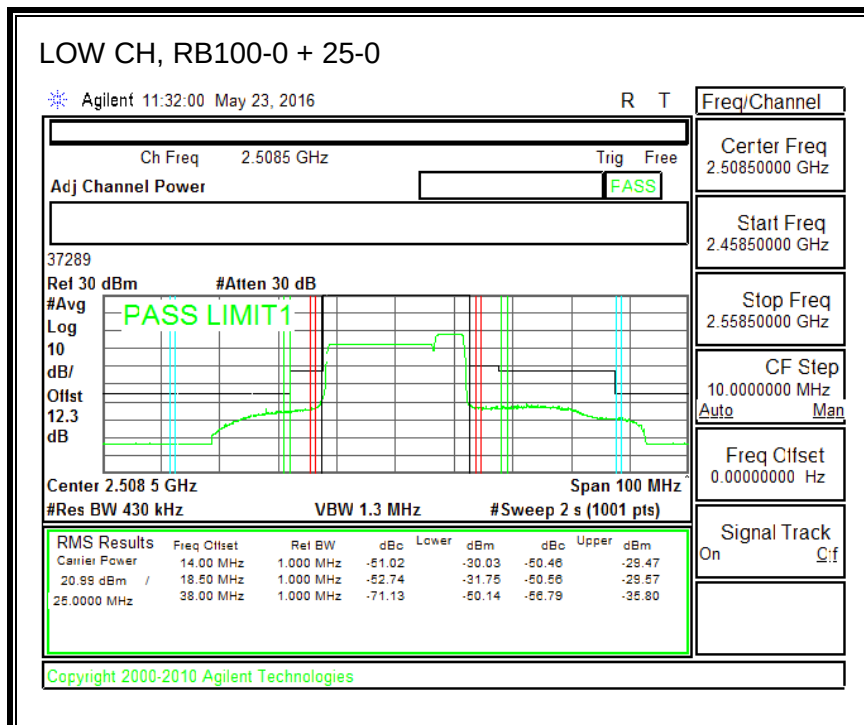
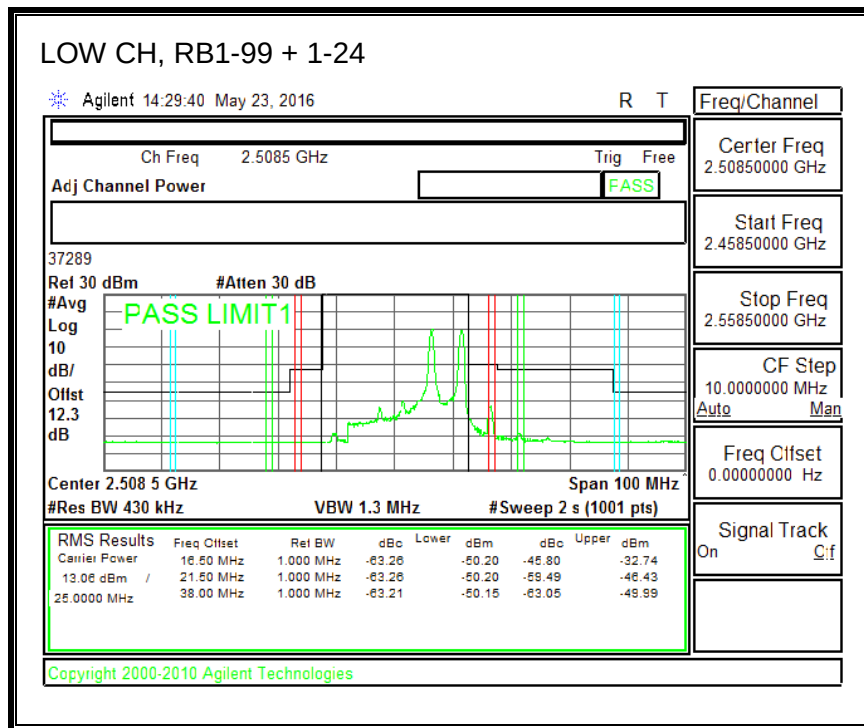


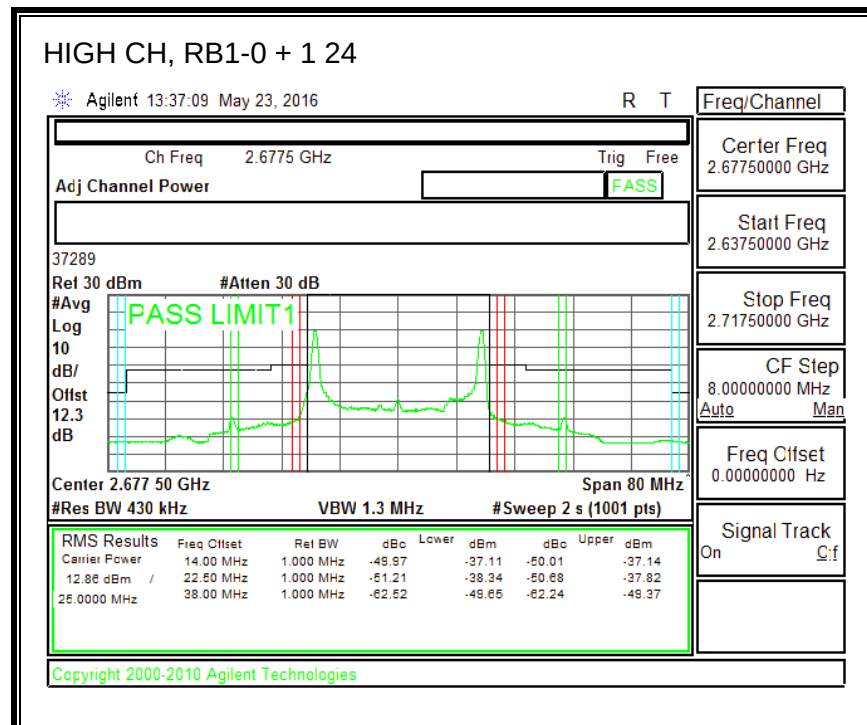
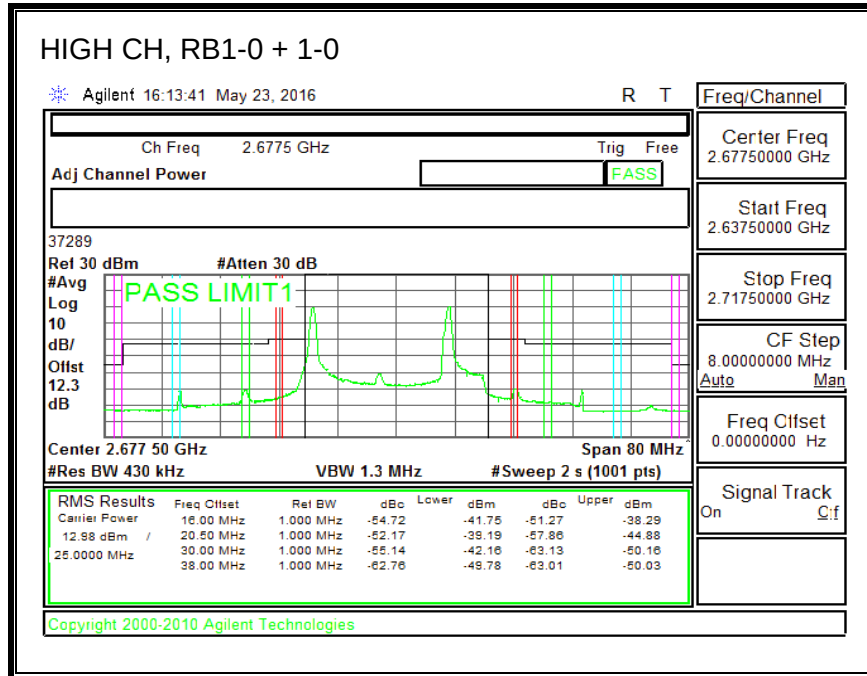


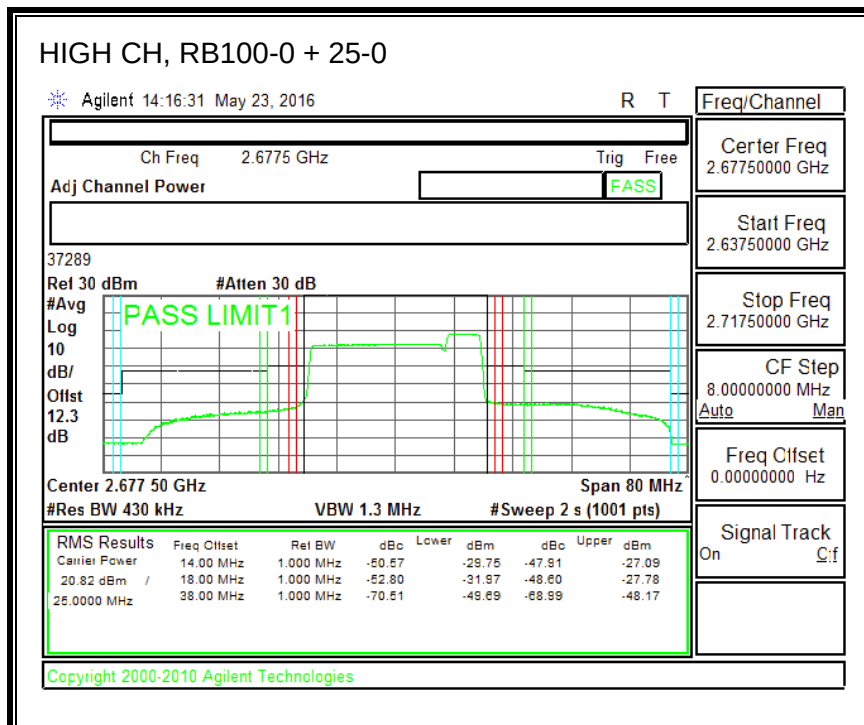
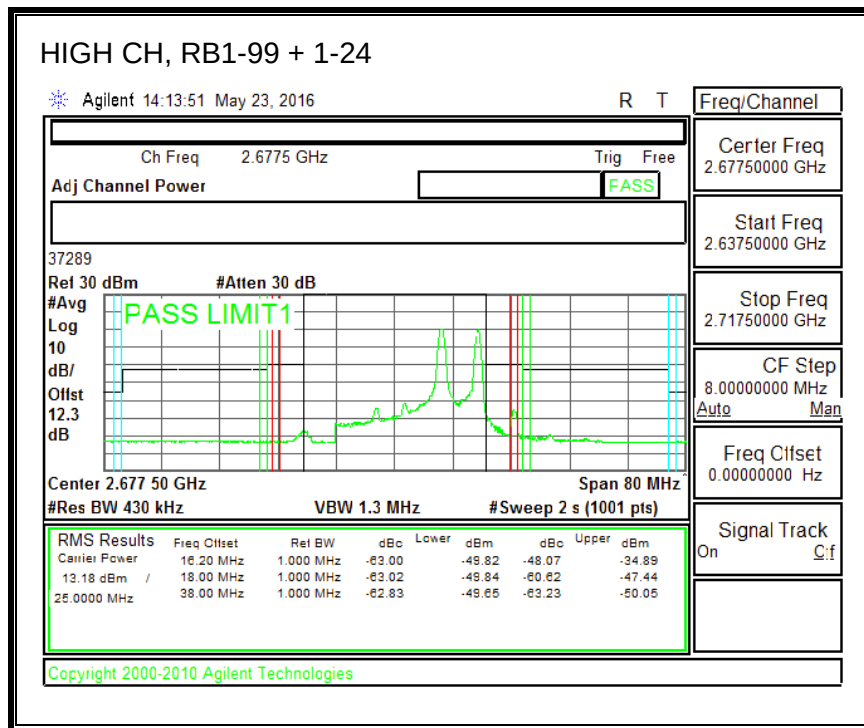


16QAM (20.0 MHz + 5.0 MHz BAND WIDTH)

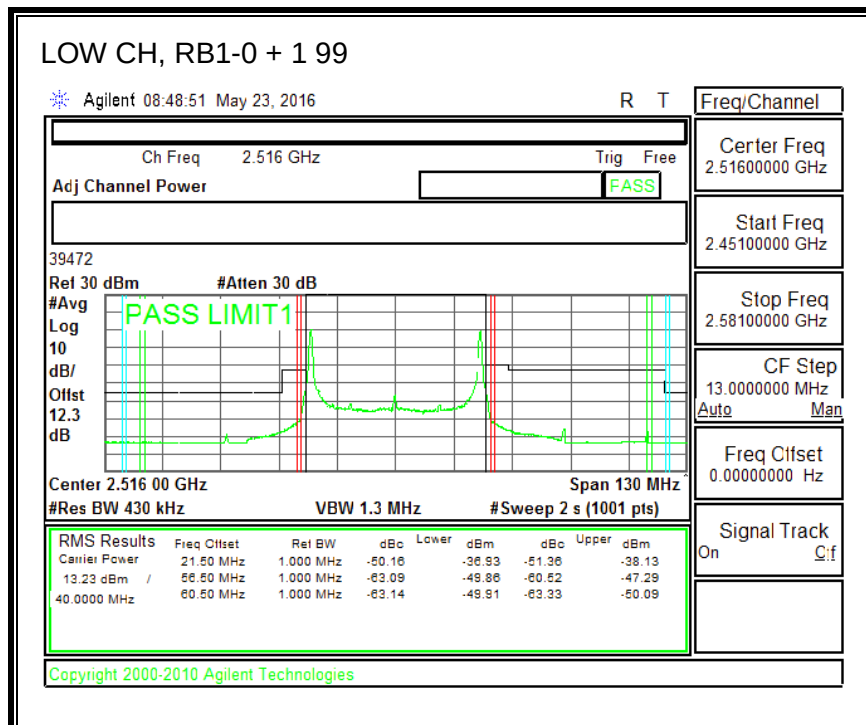
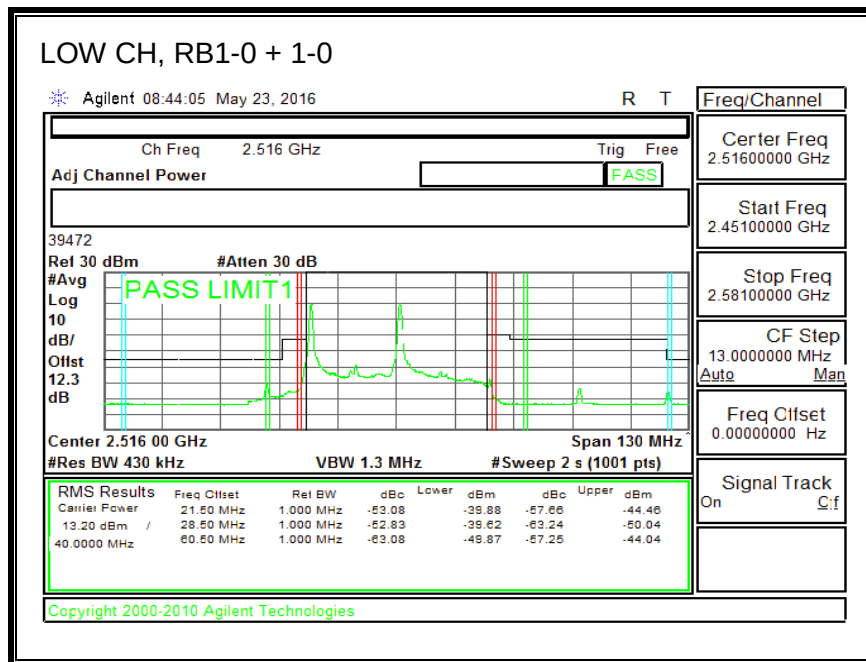


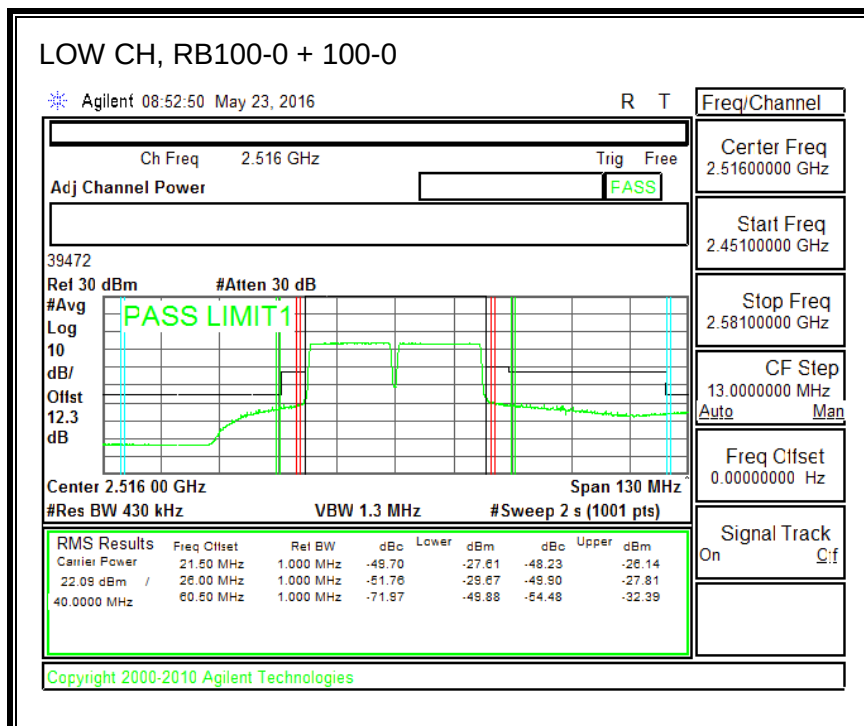
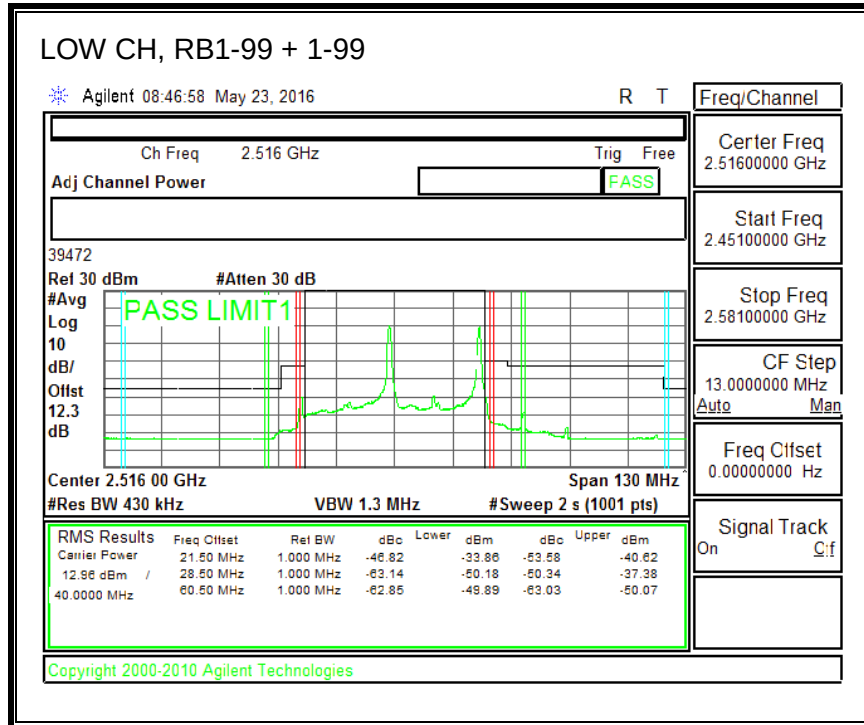


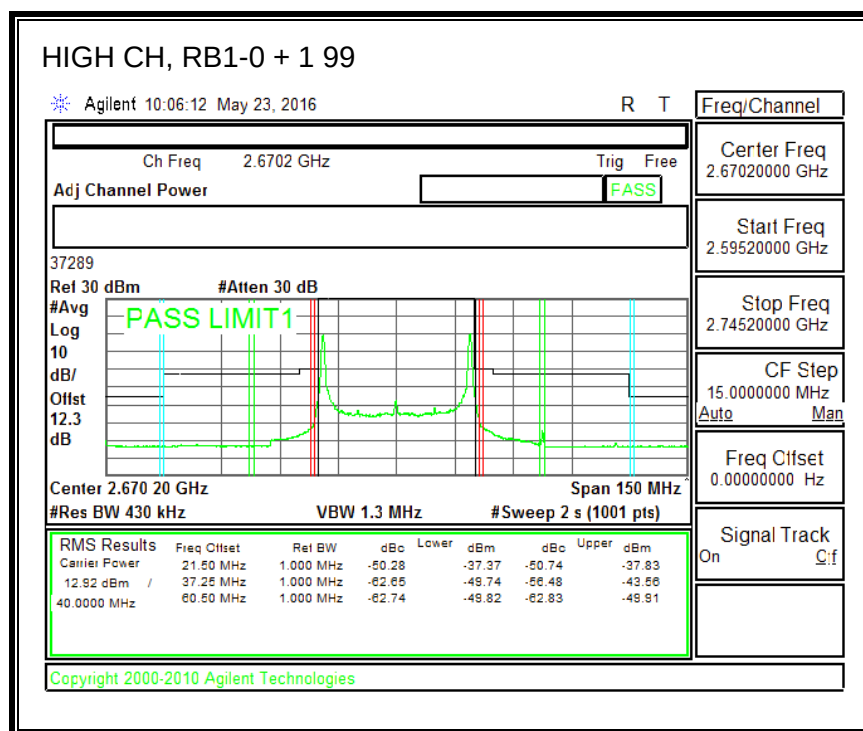
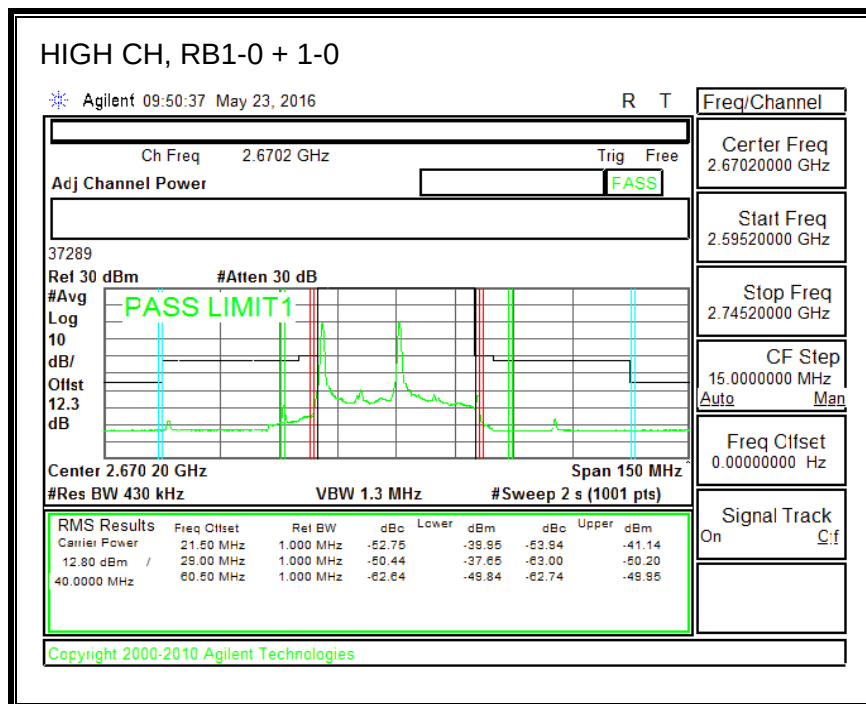


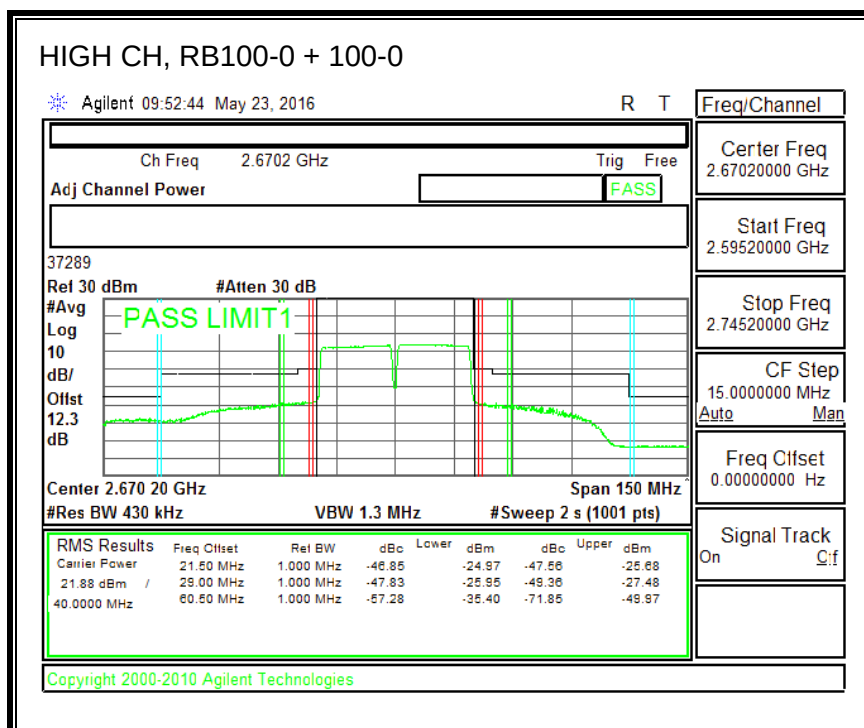
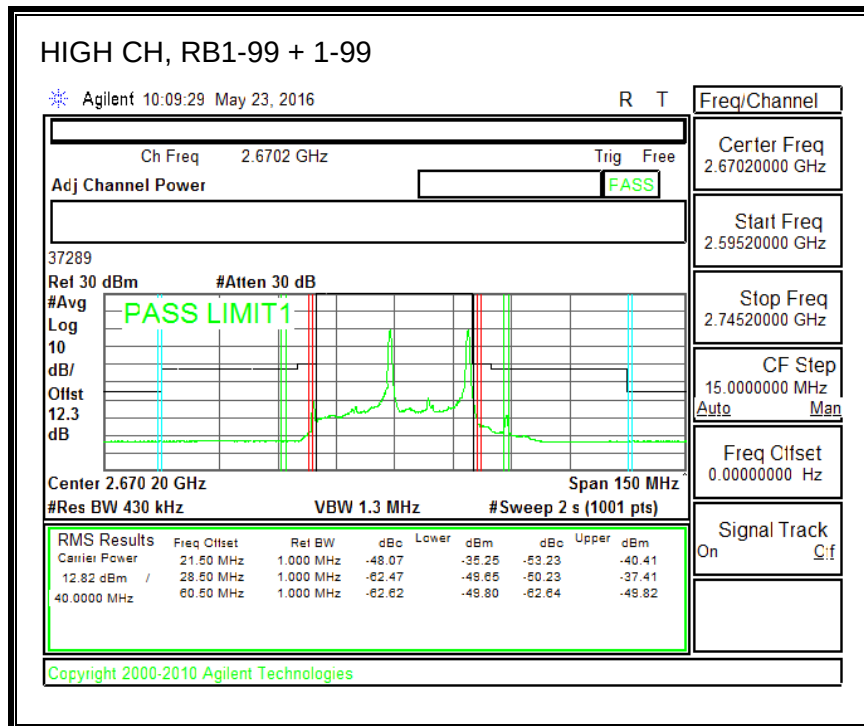


QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

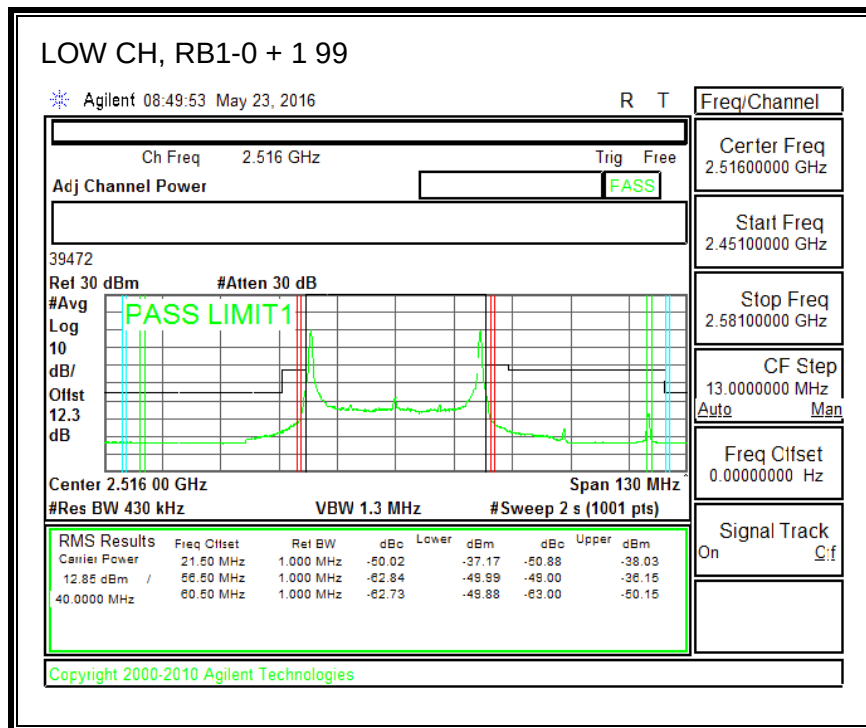
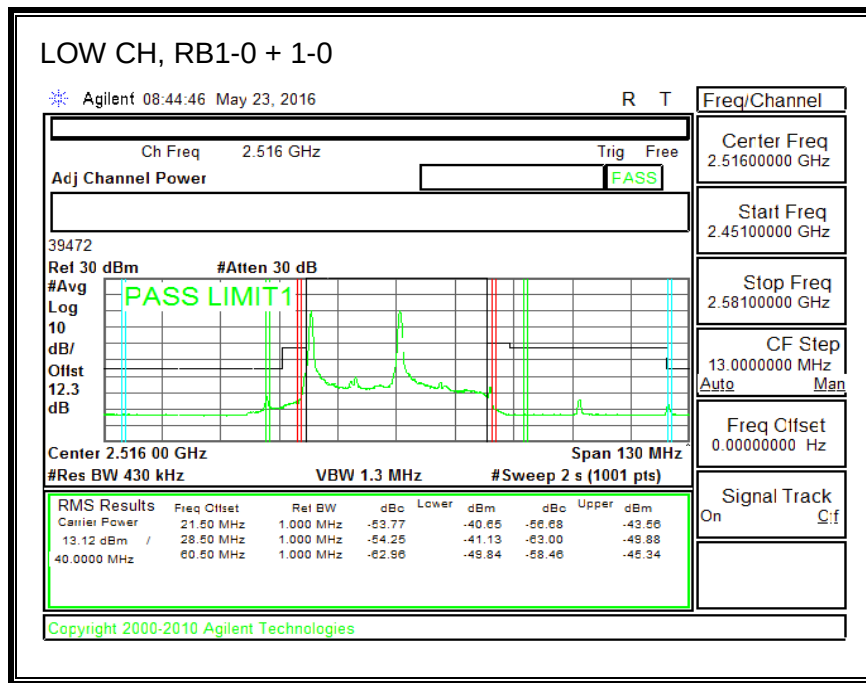


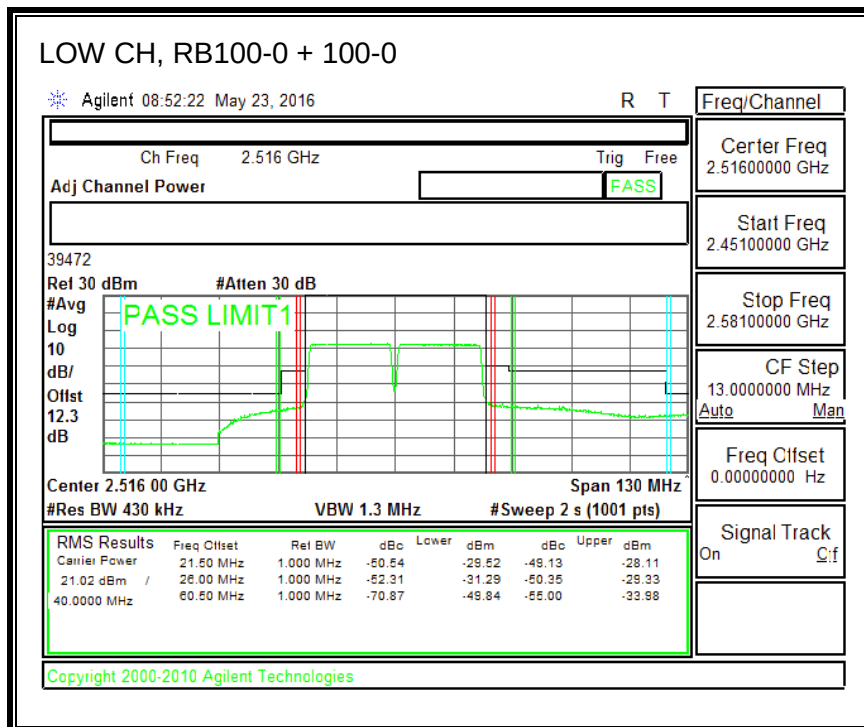
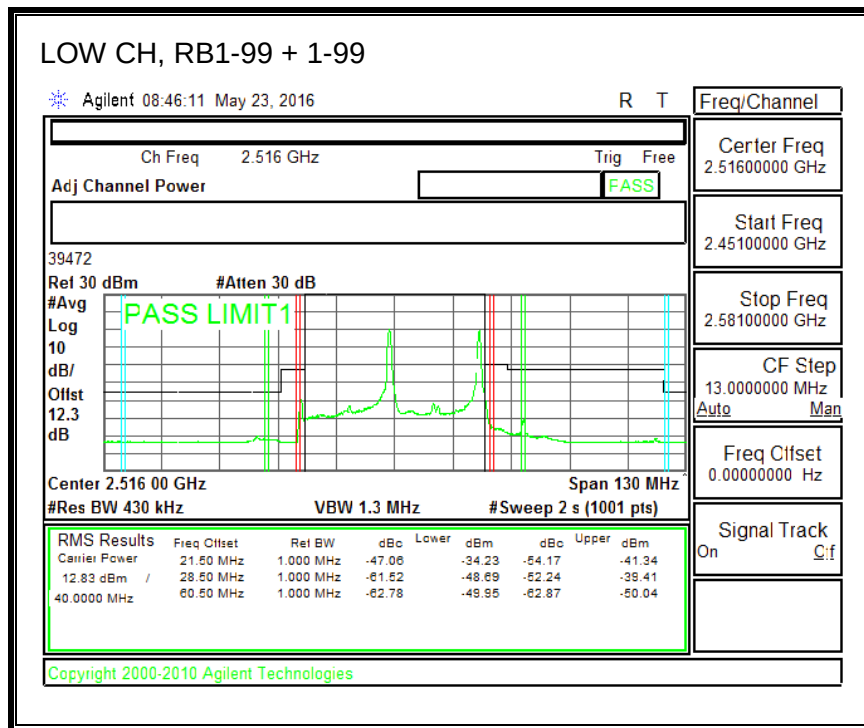


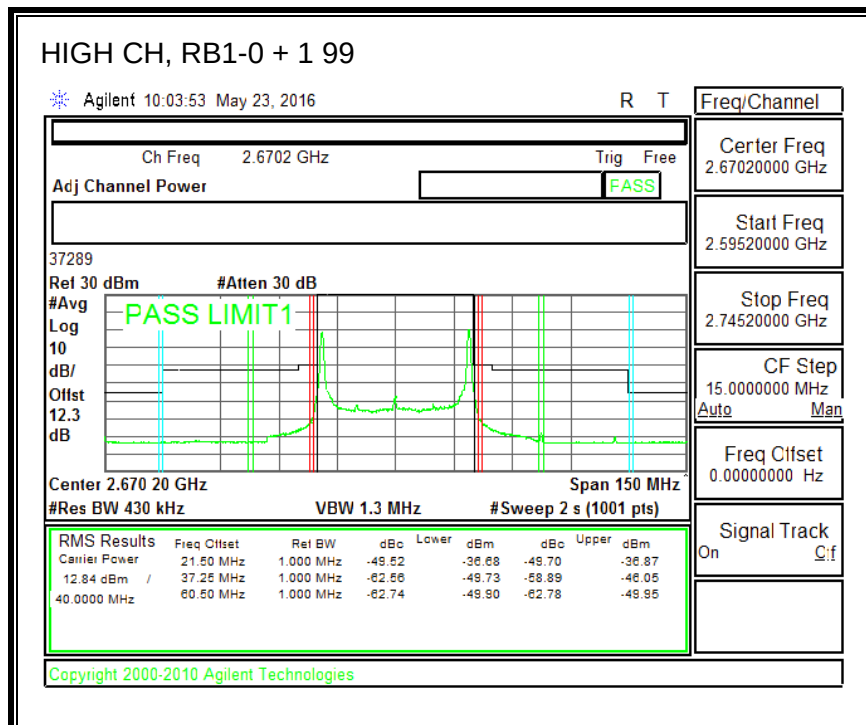
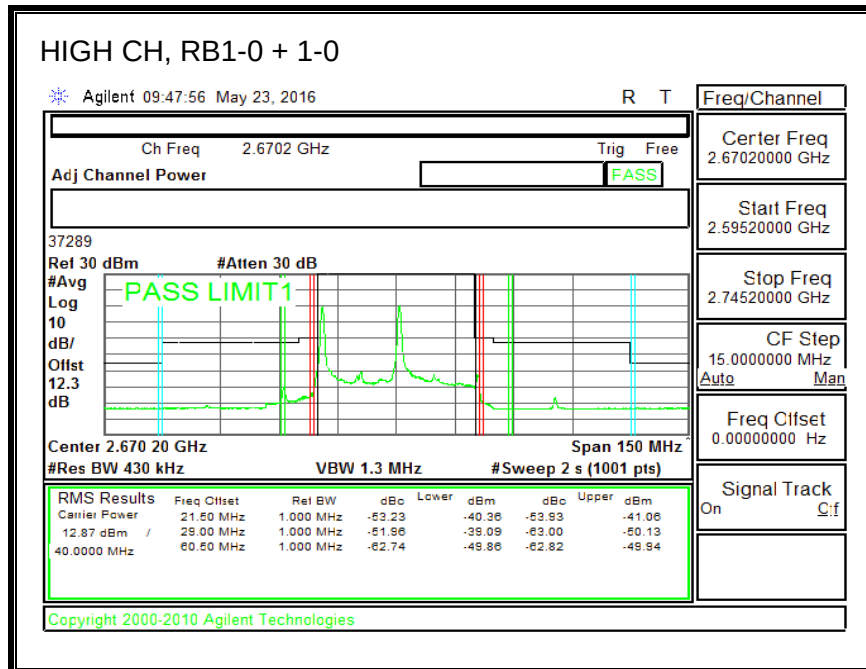


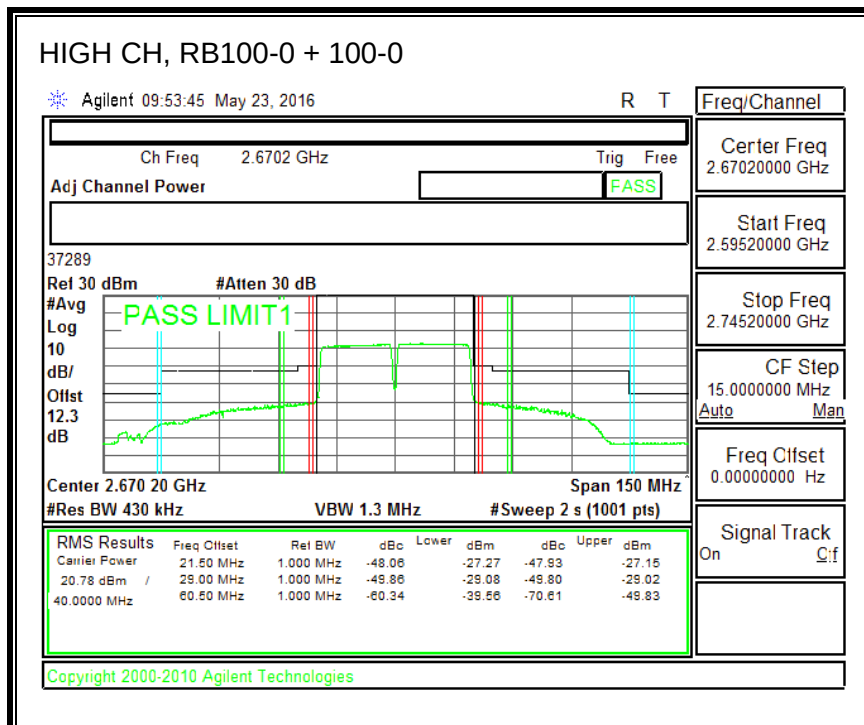
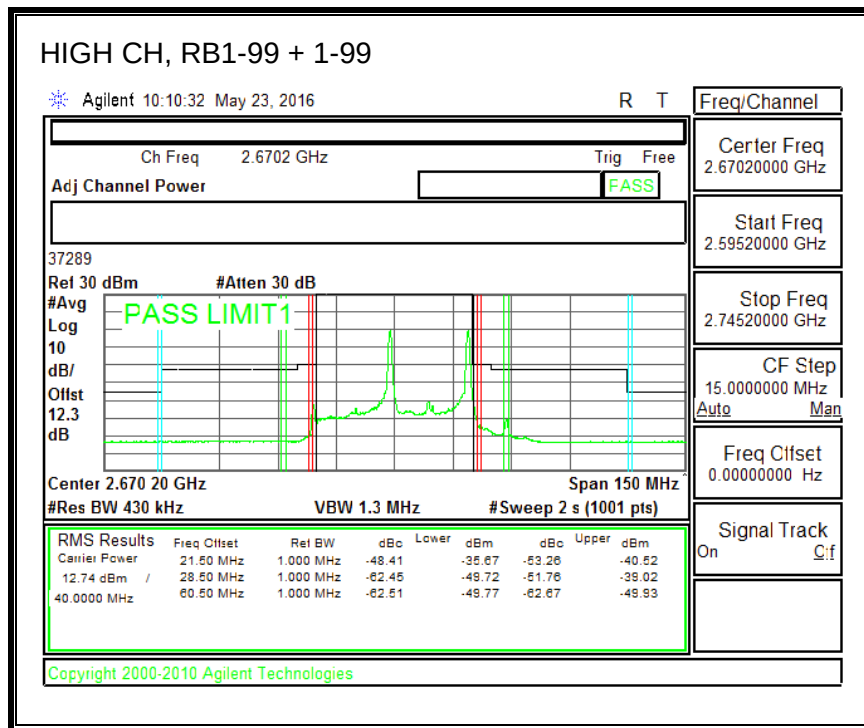


16QAM (20.0 MHz + 20.0 MHz BAND WIDTH)









8.3. OUT OF BAND EMISSIONS

RULE PART(S)

RULE PART(S)

FCC: §2.1051, 27.53

LIMITS

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.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

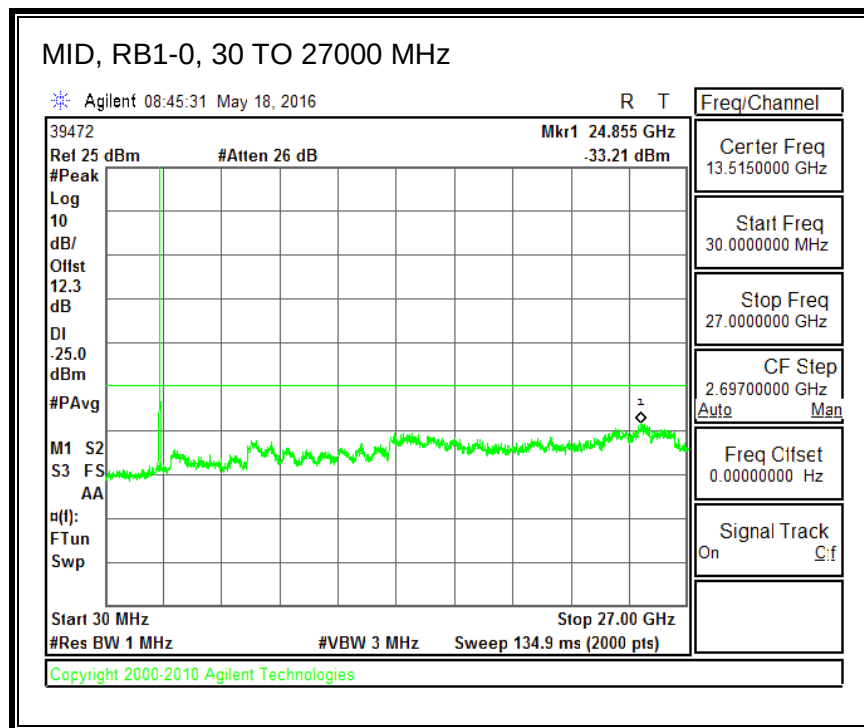
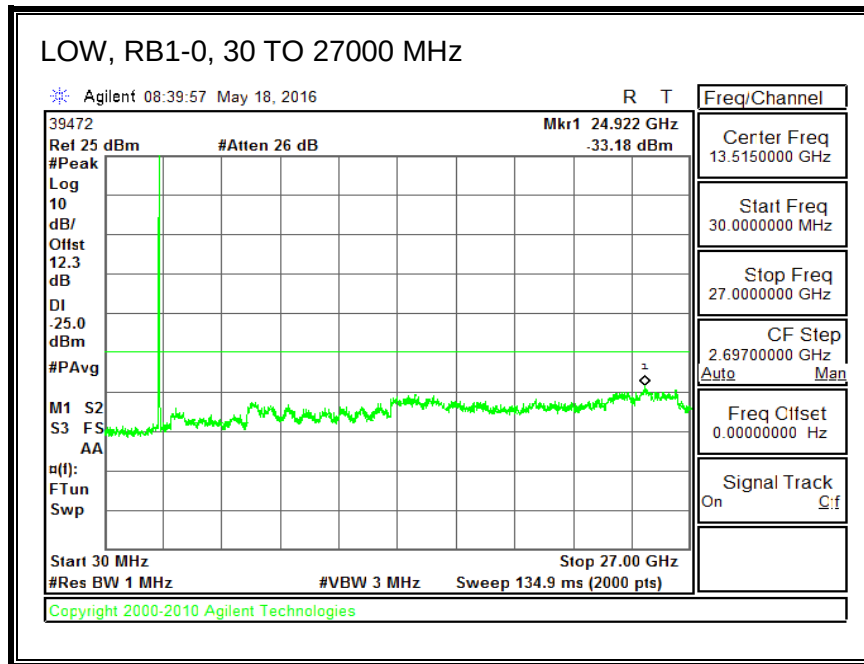
- Set display line at -25 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

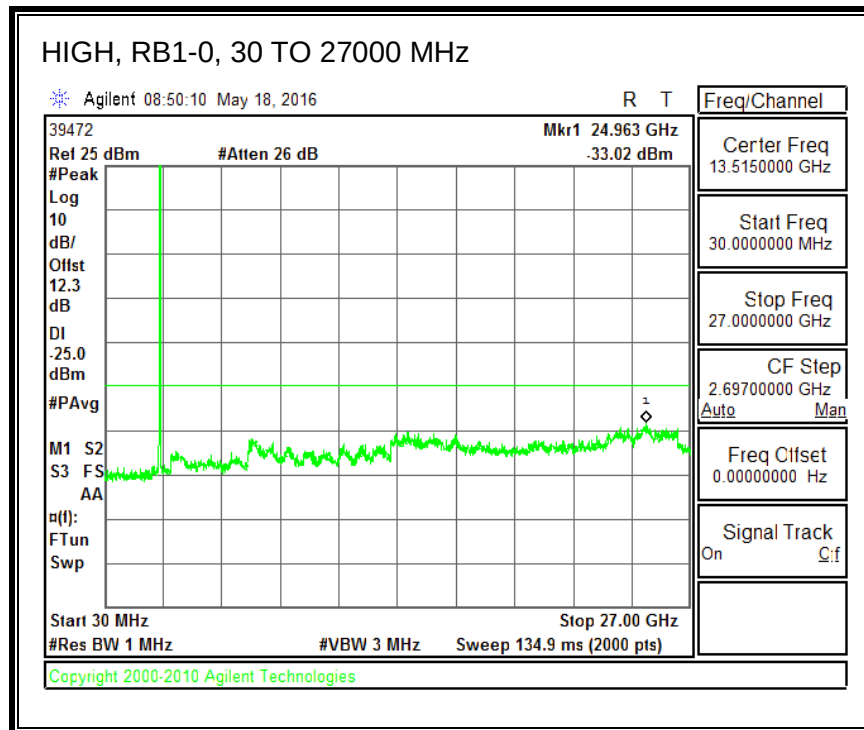
MODES TESTED

- LTE Band 7
- LTE Band 41

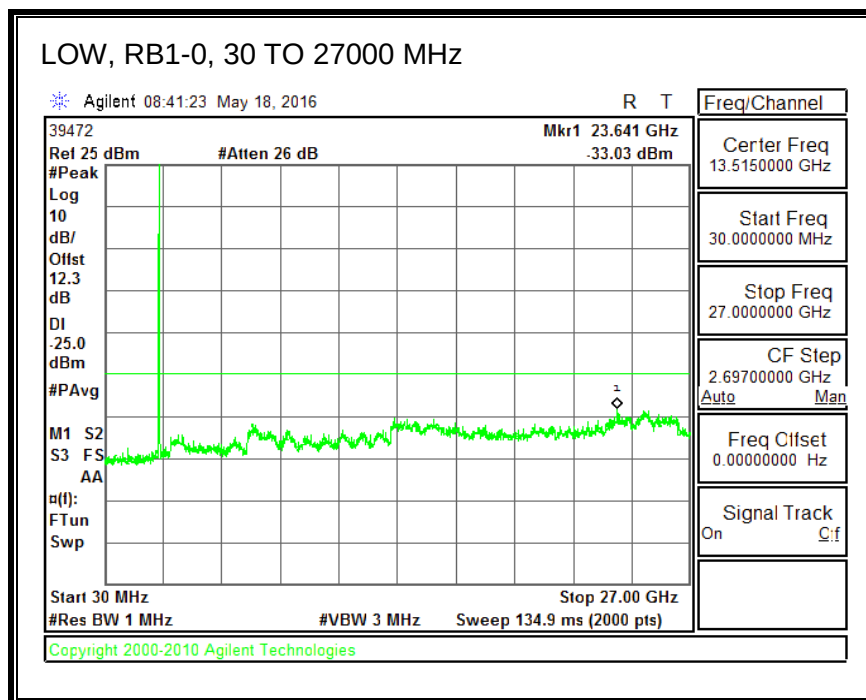
8.3.1. LTE BAND 7

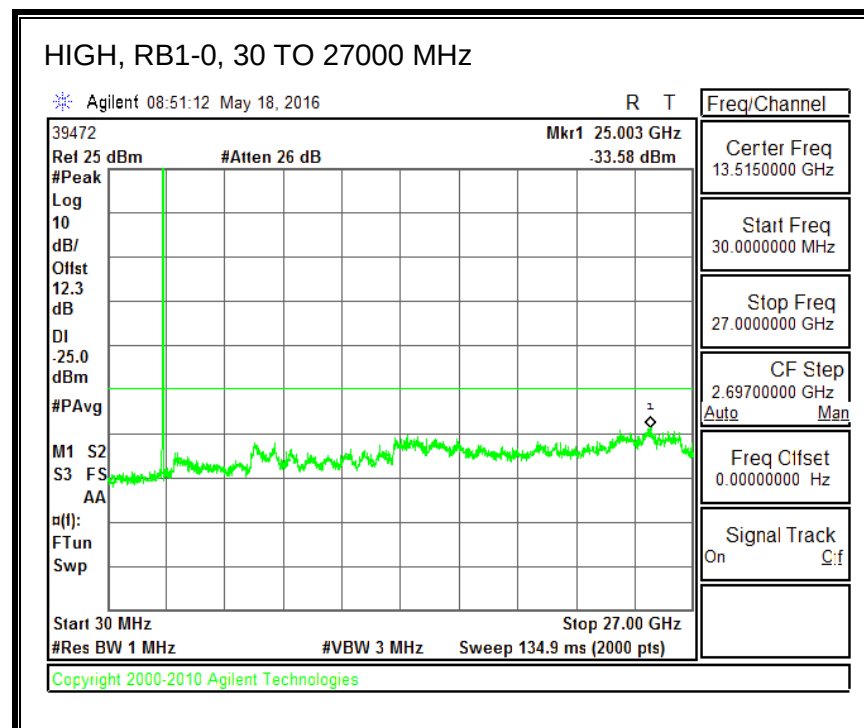
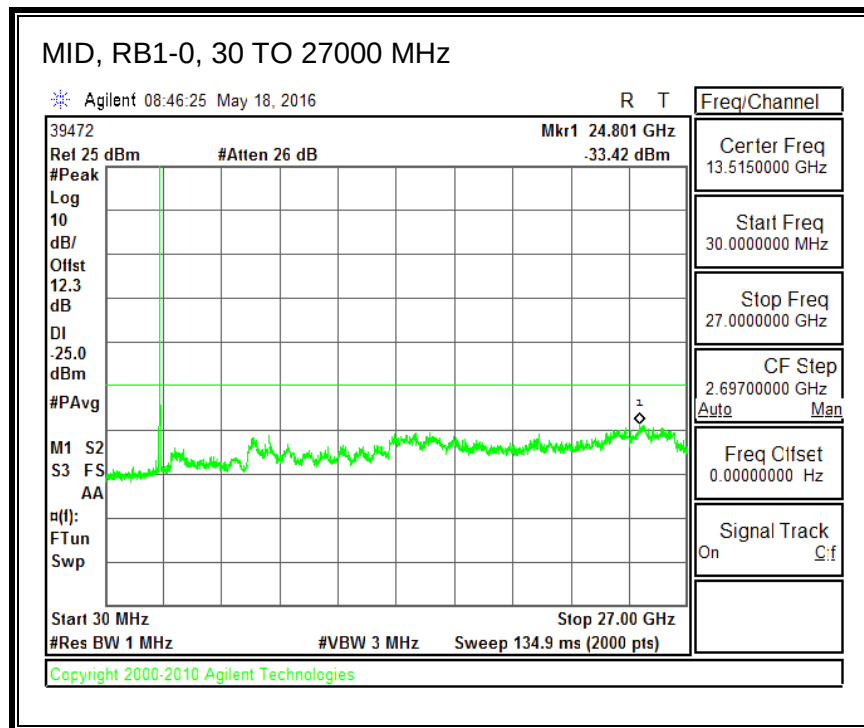
QPSK, (20.0 MHz+ 10.0 MHz BAND WIDTH)



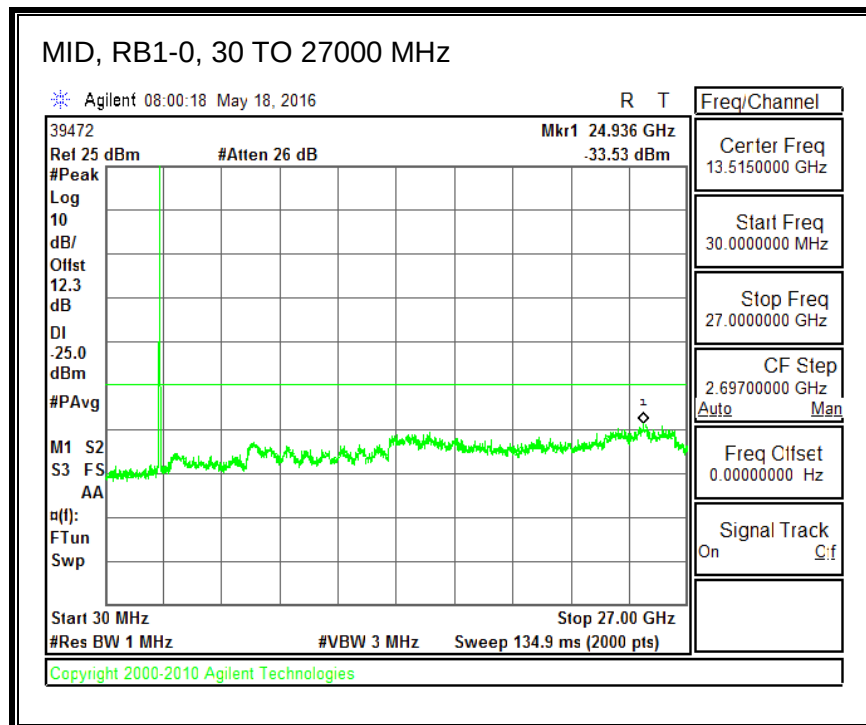
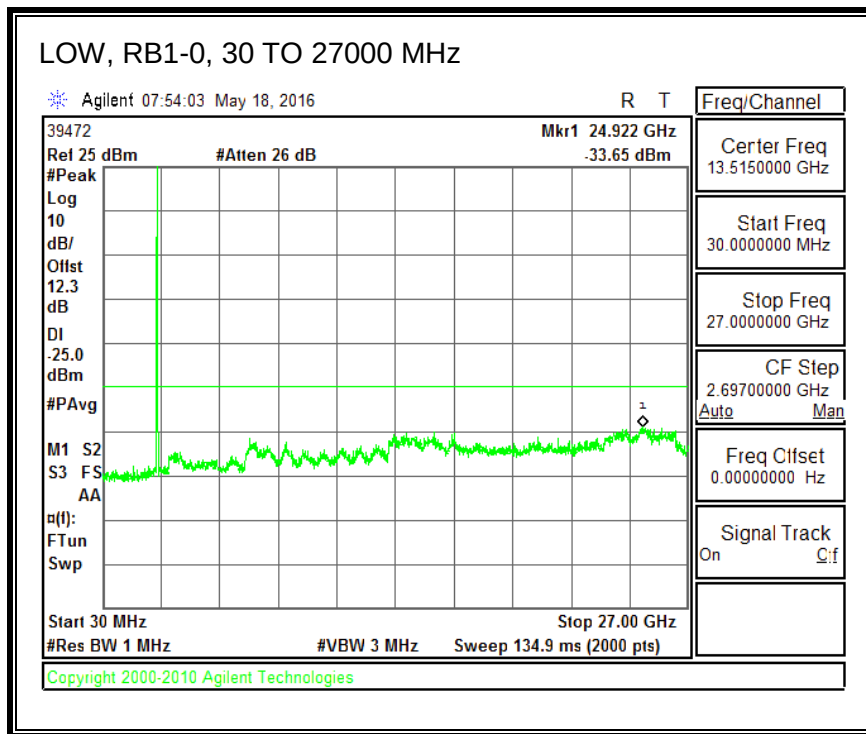


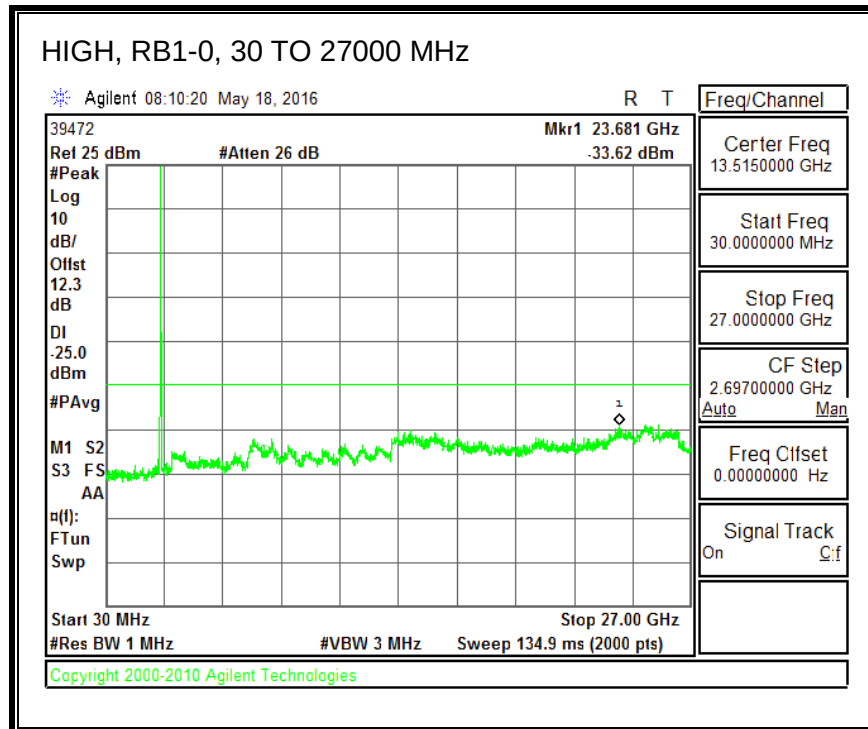
16QAM, (20.0 MHz+ 10.0 MHz BAND WIDTH)



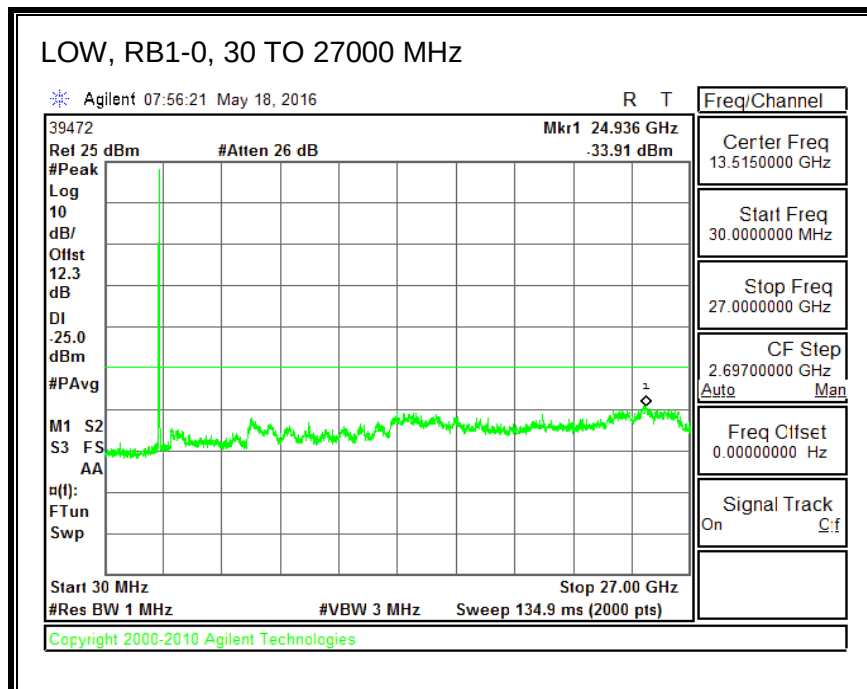


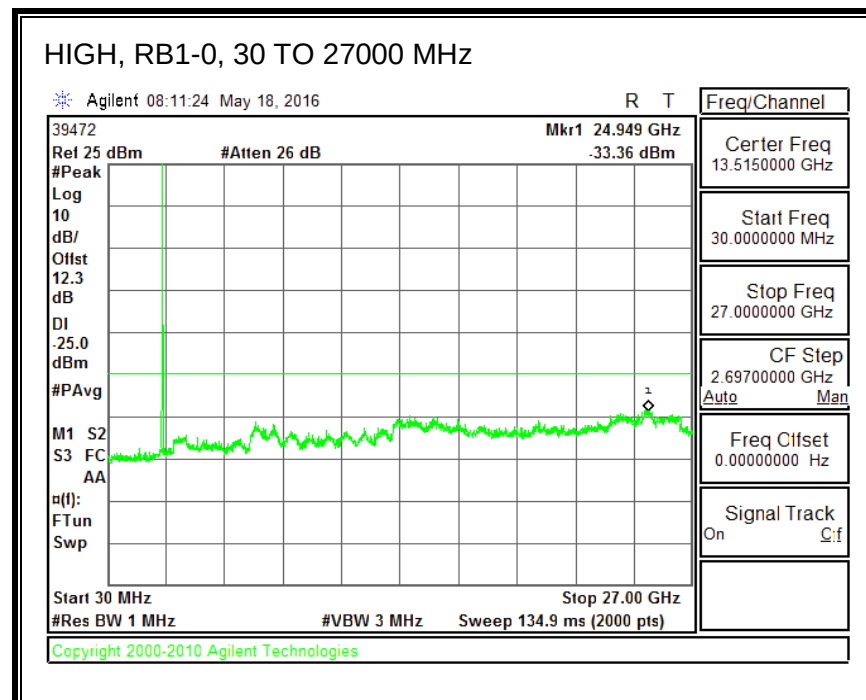
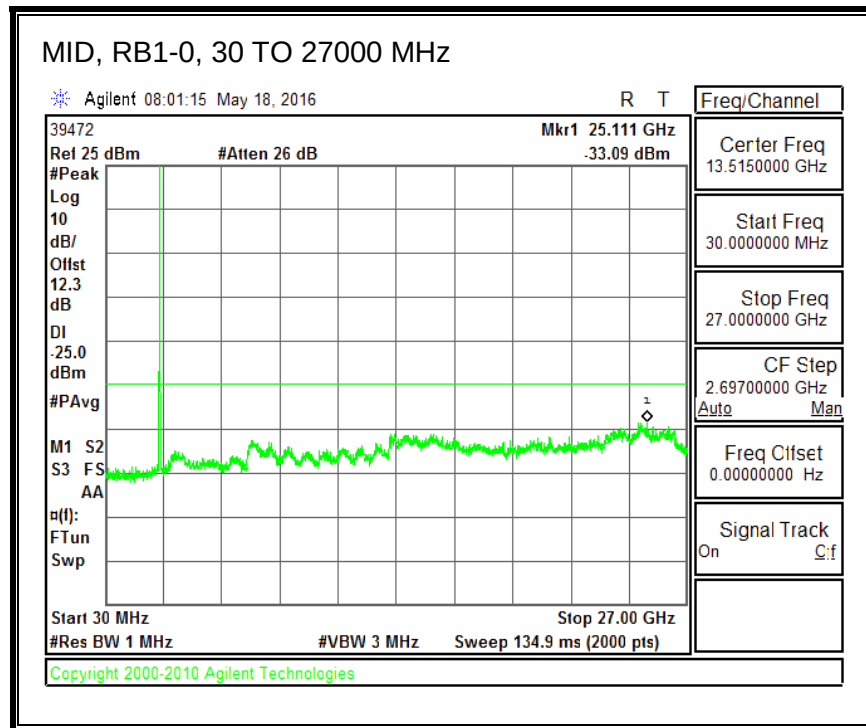
QPSK, (20.0 MHz+ 20.0 MHz BAND WIDTH)





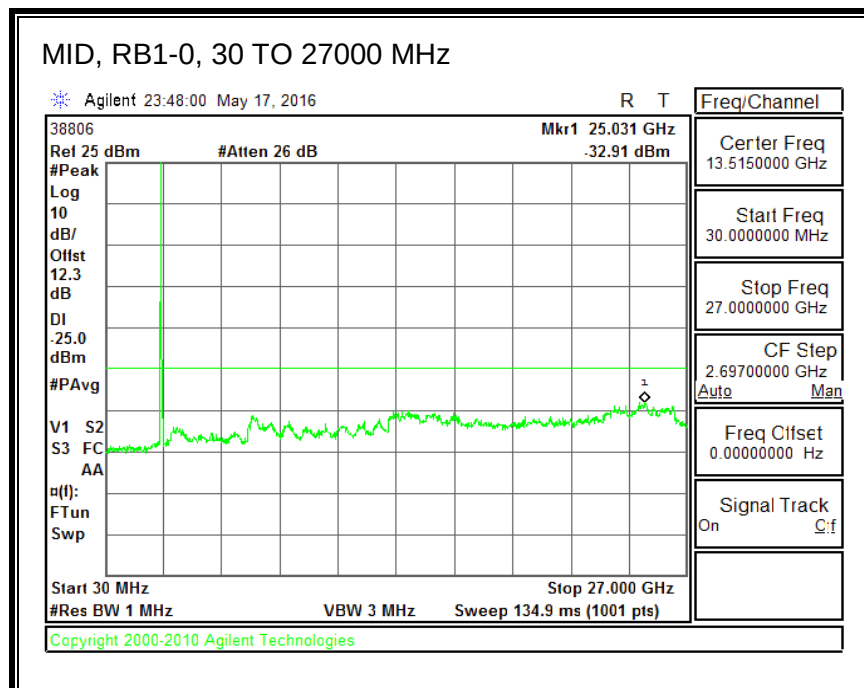
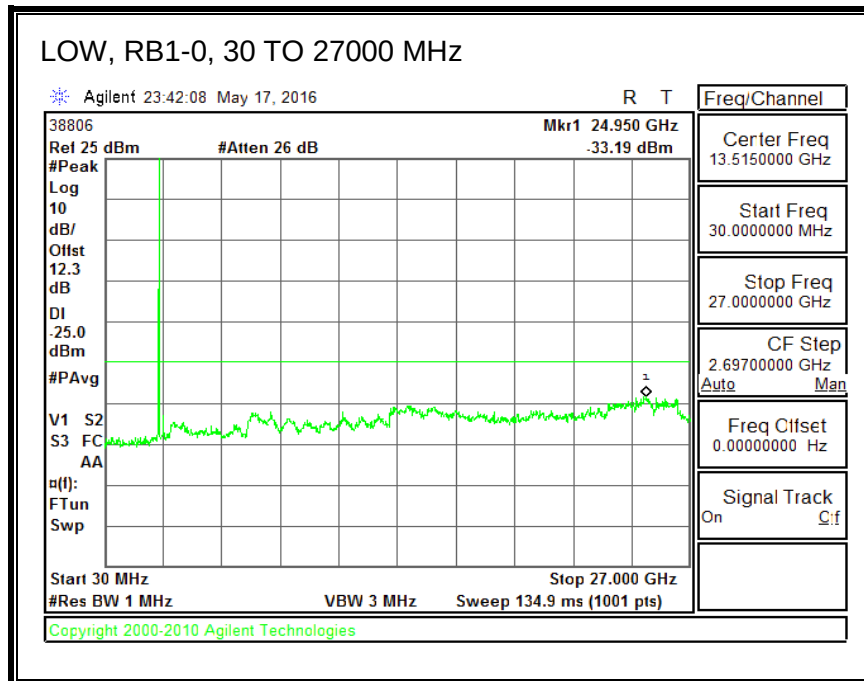
16QAM, (20.0 MHz+ 20.0 MHz BAND WIDTH)

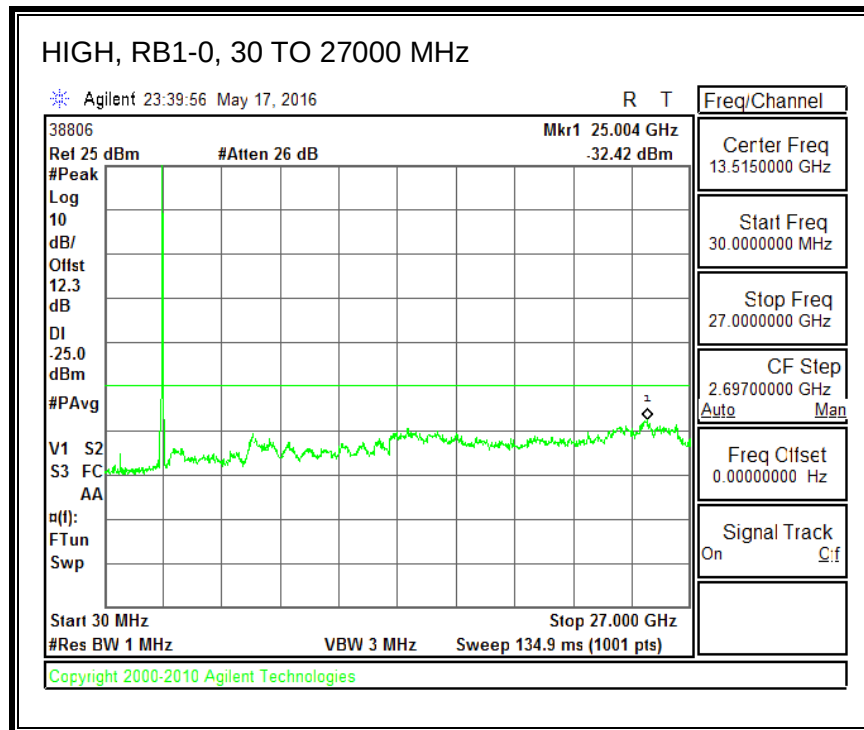




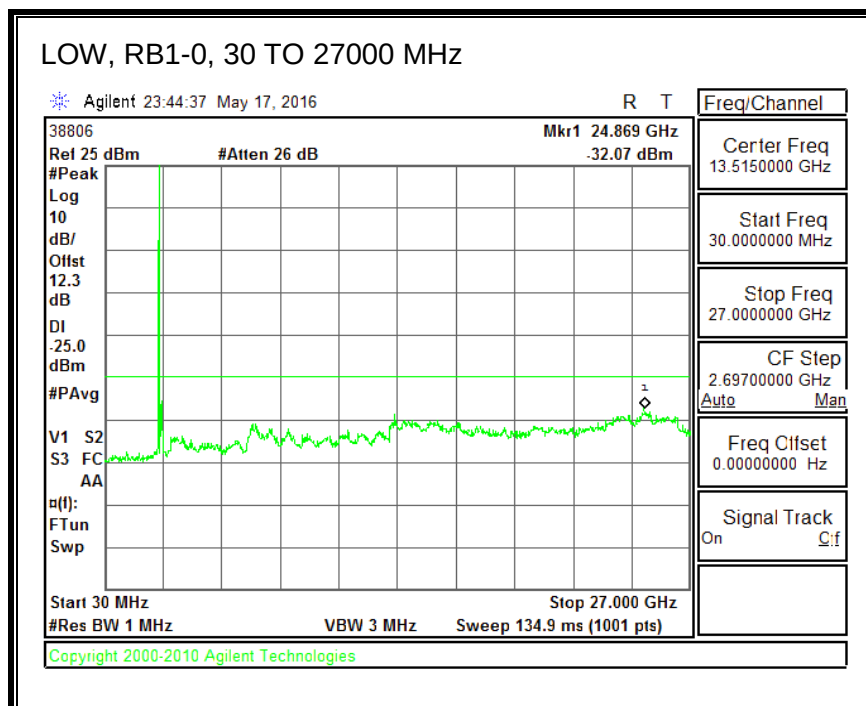
8.3.2. LTE BAND 41

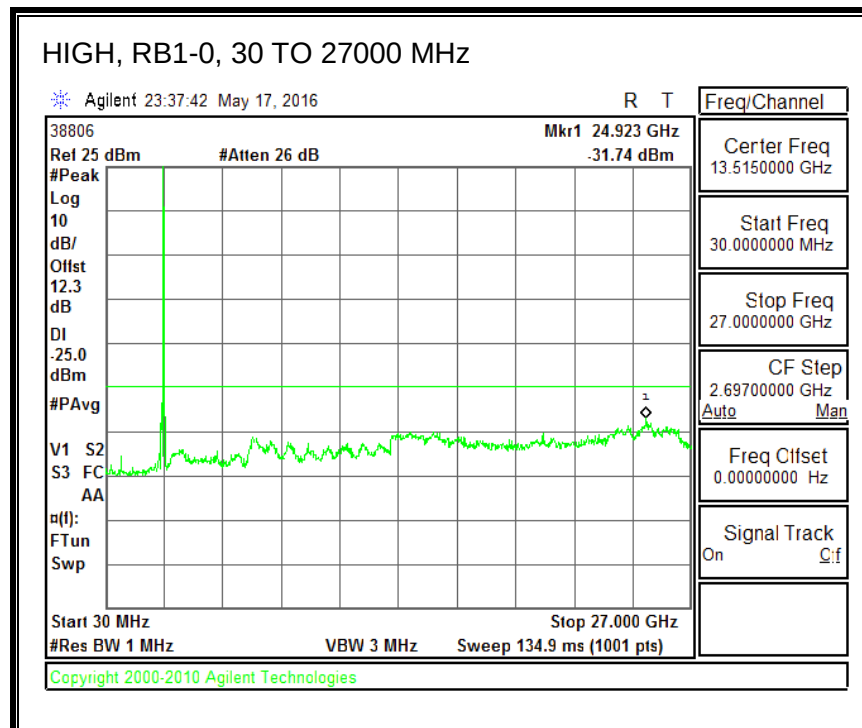
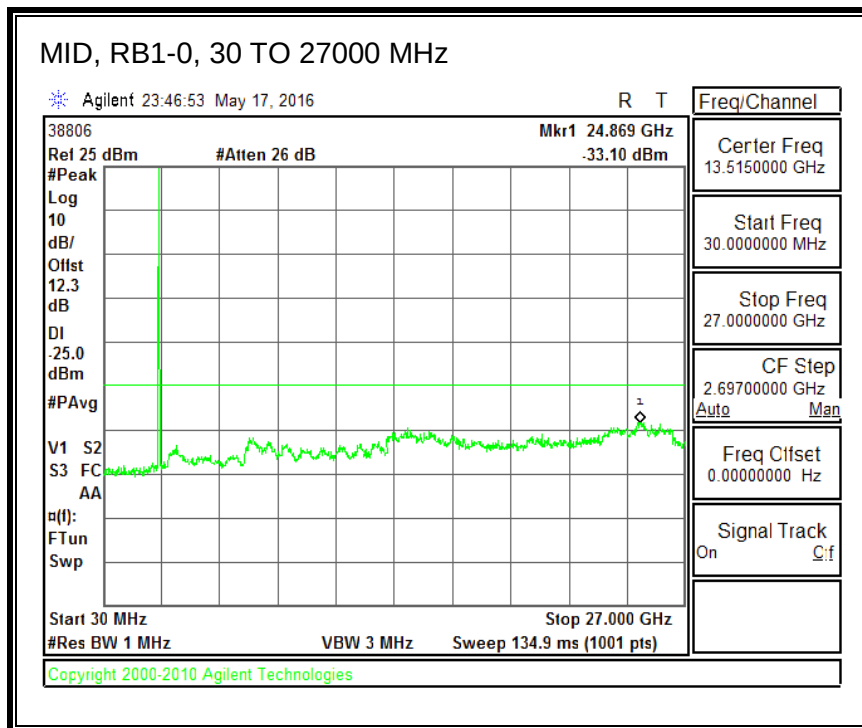
QPSK, (20.0 MHz+ 5.0 MHz BAND WIDTH)



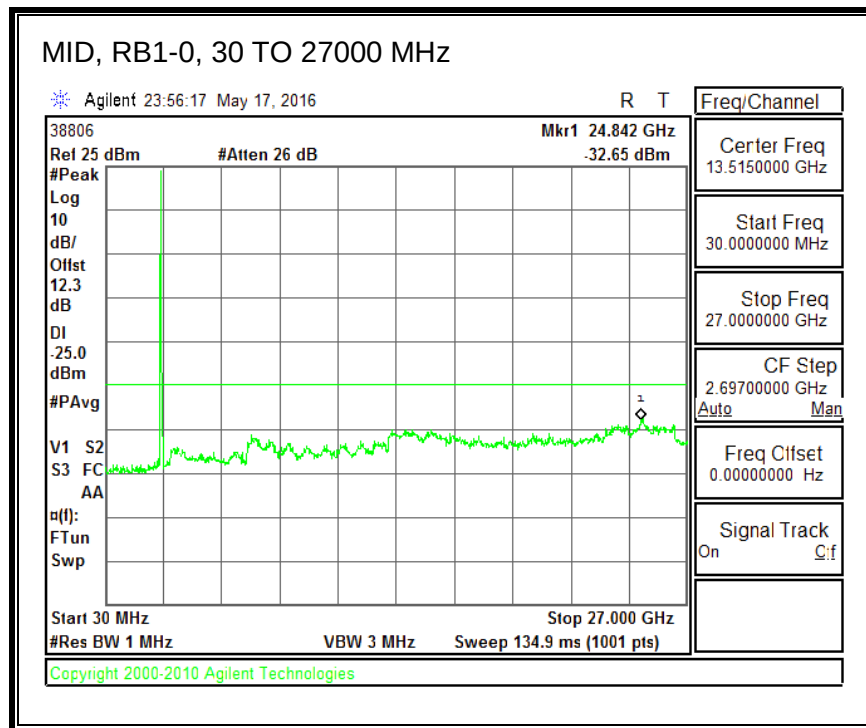
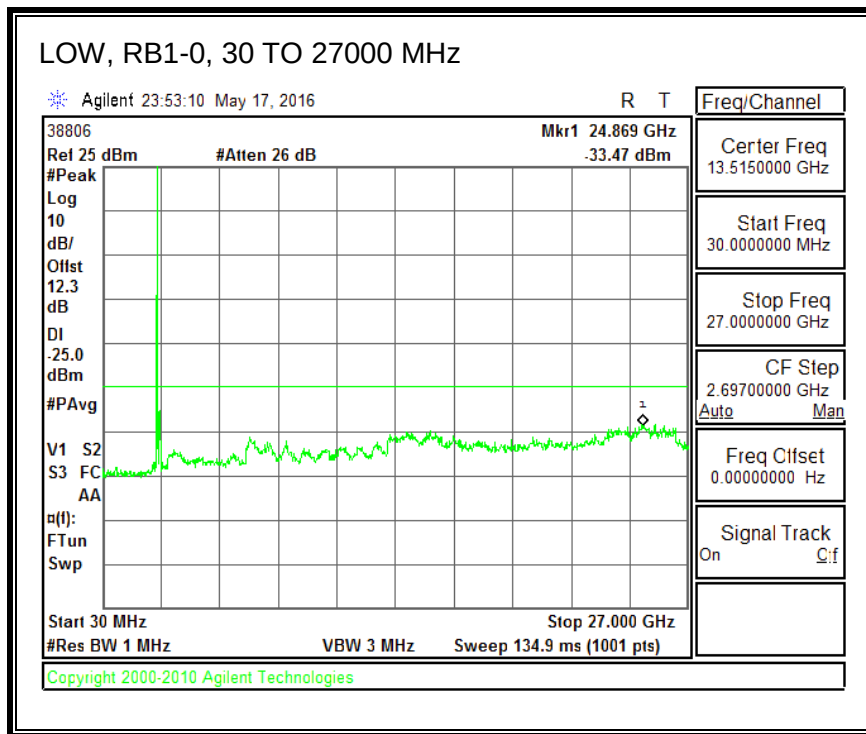


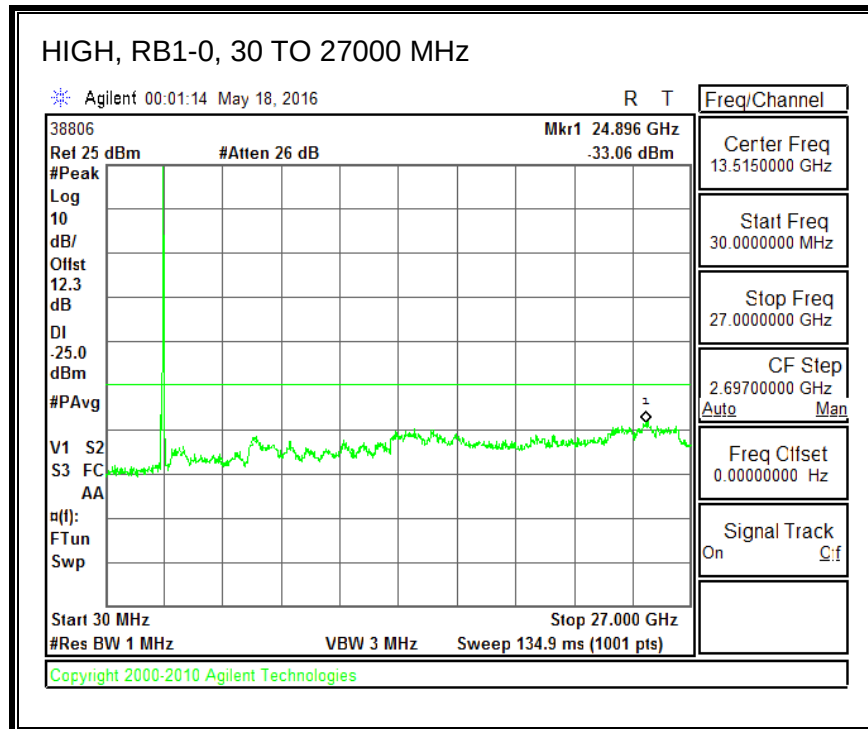
16QAM, (20.0 MHz+ 5.0 MHz BAND WIDTH)



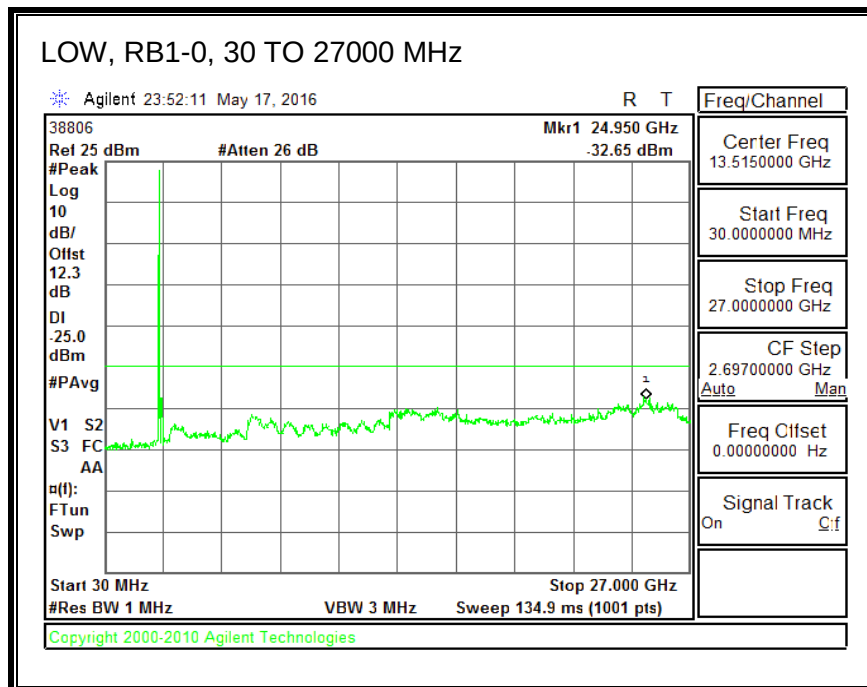


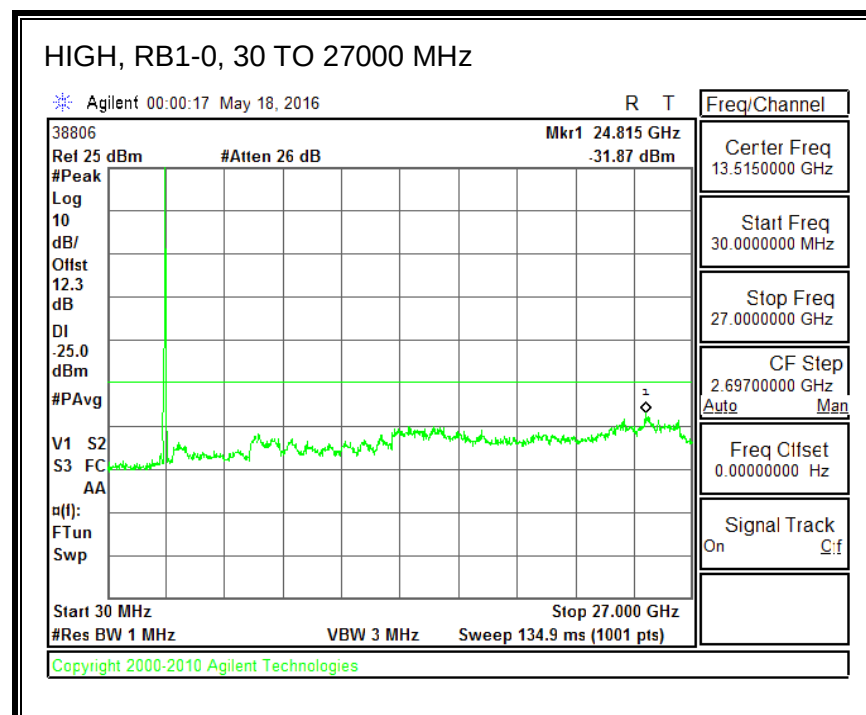
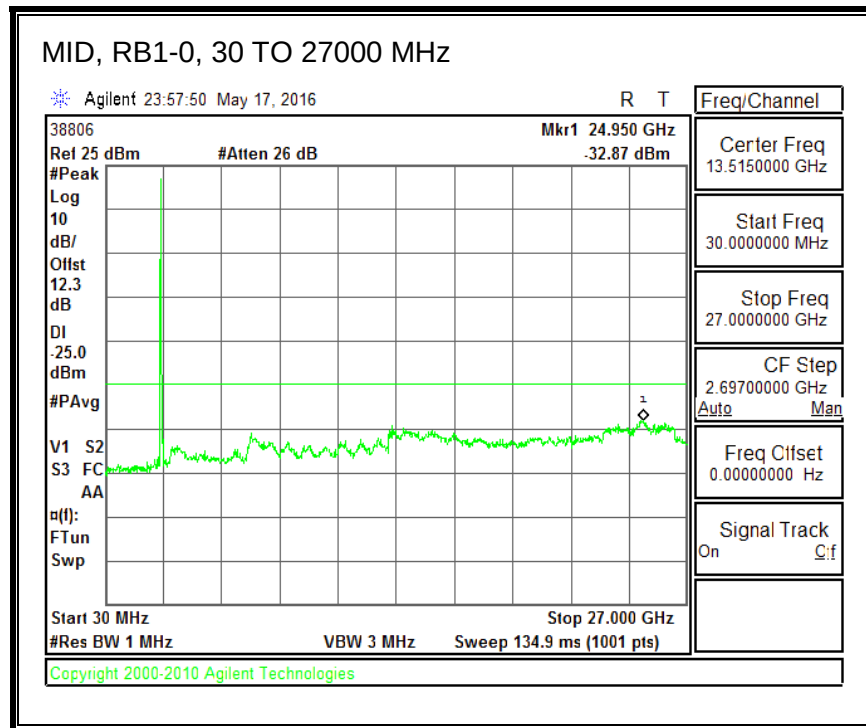
QPSK, (20.0 MHz+ 20.0 MHz BAND WIDTH)





16QAM, (20.0 MHz+ 20.0 MHz BAND WIDTH)





9. FREQUENCY STABILITY

FCC: §2.1055, §27.54

LIMITS

§27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = -30° to $+50^{\circ}\text{C}$
- Voltage = low voltage, 3.4VDC, Normal, 3.8VDC and High voltage, 4.3VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until $+50^{\circ}\text{C}$ is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- LTE Band 7
- LTE Band 41

RESULTS

See the following pages.

9.1. LTE BAND 7

ID:	38806	Date:	5/19/16
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QPSK, (20MHz + 10MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0245	2568.9816		
Extreme (50C)		2501.0246	2568.9816	31.6	0.012
Extreme (40C)		2501.0246	2568.9816	52.2	0.021
Extreme (30C)		2501.0246	2568.9816	31.2	0.012
Extreme (10C)		2501.0245	2568.9816	16.0	0.006
Extreme (0C)		2501.0246	2568.9816	34.7	0.014
Extreme (-10C)		2501.0246	2568.9816	35.4	0.014
Extreme (-20C)		2501.0246	2568.9816	35.6	0.014
Extreme (-30C)		2501.0246	2568.9816	58.1	0.023
25C	10%	2501.0246	2568.9816	54.2	0.021
	-10%	2501.0246	2568.9816	46.5	0.018
	End Point	2501.0246	2568.9816	67.7	0.027

16QAM, (20MHz + 10MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0274	2568.9813		
Extreme (50C)		2501.0274	2568.9814	38.7	0.015
Extreme (40C)		2501.0274	2568.9814	46.1	0.018
Extreme (30C)		2501.0274	2568.9813	28.7	0.011
Extreme (10C)		2501.0274	2568.9813	14.2	0.006
Extreme (0C)		2501.0274	2568.9813	30.7	0.012
Extreme (-10C)		2501.0274	2568.9813	36.1	0.014
Extreme (-20C)		2501.0274	2568.9814	48.4	0.019
Extreme (-30C)		2501.0274	2568.9813	34.9	0.014
25C	10%	2501.0275	2568.9814	78.6	0.031
	-10%	2501.0274	2568.9814	53.8	0.021
	End Point	2501.0275	2568.9814	82.9	0.033

QPSK, (20MHz + 20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0266	2568.9753		
Extreme (50C)		2501.0267	2568.9753	50.2	0.020
Extreme (40C)		2501.0267	2568.9753	38.5	0.015
Extreme (30C)		2501.0267	2568.9753	31.6	0.012
Extreme (10C)		2501.0267	2568.9753	20.1	0.008
Extreme (0C)		2501.0267	2568.9753	35.0	0.014
Extreme (-10C)		2501.0267	2568.9753	43.2	0.017
Extreme (-20C)		2501.0267	2568.9753	54.5	0.021
Extreme (-30C)		2501.0267	2568.9753	47.8	0.019
25C	10%	2501.0267	2568.9753	42.2	0.017
	-10%	2501.0267	2568.9753	41.2	0.016
	End Point	2501.0267	2568.9753	58.8	0.023

16QAM, (20MHz + 20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2501.0266	2568.9700		
Extreme (50C)		2501.0267	2568.9701	44.9	0.018
Extreme (40C)		2501.0267	2568.9701	42.8	0.017
Extreme (30C)		2501.0267	2568.9701	38.9	0.015
Extreme (10C)		2501.0267	2568.9700	21.2	0.008
Extreme (0C)		2501.0267	2568.9701	31.7	0.013
Extreme (-10C)		2501.0267	2568.9701	50.9	0.020
Extreme (-20C)		2501.0267	2568.9701	58.8	0.023
Extreme (-30C)		2501.0267	2568.9701	52.3	0.021
25C	10%	2501.0267	2568.9701	45.1	0.018
	-10%	2501.0267	2568.9701	41.9	0.017
	End Point	2501.0267	2568.9701	52.3	0.021

9.3. LTE BAND 41

ID:	39472	Date:	5/20/16
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QPSK, (20MHz + 5MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2496.8760	2665.8930		
Extreme (50C)		2496.8760	2665.8930	47.3	0.018
Extreme (40C)		2496.8760	2665.8930	39.6	0.015
Extreme (30C)		2496.8760	2665.8930	38.1	0.015
Extreme (10C)		2496.8760	2665.8930	35.1	0.014
Extreme (0C)		2496.8760	2665.8930	48.9	0.019
Extreme (-10C)		2496.8760	2665.8930	41.9	0.016
Extreme (-20C)		2496.8760	2665.8930	48.6	0.019
Extreme (-30C)		2496.8761	2665.8931	51.2	0.020
25C	10%	2496.8761	2665.8931	51.1	0.020
	-10%	2496.8760	2665.8930	40.7	0.016
	End Point	2496.8761	2665.8931	50.7	0.020

16QAM, (20MHz + 5MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2496.8930	2665.9090		
Extreme (50C)		2496.8931	2665.9091	57.6	0.022
Extreme (40C)		2496.8931	2665.9091	56.2	0.022
Extreme (30C)		2496.8930	2665.9090	43.5	0.017
Extreme (10C)		2496.8930	2665.9090	47.1	0.018
Extreme (0C)		2496.8931	2665.9091	58.1	0.022
Extreme (-10C)		2496.8931	2665.9091	57.3	0.022
Extreme (-20C)		2496.8931	2665.9091	54.4	0.021
Extreme (-30C)		2496.8930	2665.9090	41.7	0.016
25C	10%	2496.8930	2665.9090	45.6	0.018
	-10%	2496.8931	2665.9091	51.9	0.020
	End Point	2496.8930	2665.9090	47.1	0.018

QPSK, (20MHz + 20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2496.9090	2689.1760		
Extreme (50C)		2496.9090	2689.1760	48.3	0.019
Extreme (40C)		2496.9091	2689.1761	51.8	0.020
Extreme (30C)		2496.9090	2689.1760	44.9	0.017
Extreme (10C)		2496.9090	2689.1760	34.4	0.013
Extreme (0C)		2496.9090	2689.1760	40.9	0.016
Extreme (-10C)		2496.9090	2689.1760	48.7	0.019
Extreme (-20C)		2496.9091	2689.1761	56.1	0.022
Extreme (-30C)		2496.9091	2689.1761	55.3	0.021
25C	10%	2496.9091	2689.1761	51.9	0.020
	-10%	2496.9090	2689.1760	47.4	0.018
	End Point	2496.9091	2689.1761	50.7	0.020

16QAM, (20MHz + 20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	2496.9430	2689.1760		
Extreme (50C)		2496.9431	2689.1761	59.7	0.023
Extreme (40C)		2496.9430	2689.1760	48.3	0.019
Extreme (30C)		2496.9431	2689.1761	57.4	0.022
Extreme (10C)		2496.9431	2689.1761	52.6	0.020
Extreme (0C)		2496.9431	2689.1761	51.1	0.020
Extreme (-10C)		2496.9430	2689.1760	46.5	0.018
Extreme (-20C)		2496.9431	2689.1761	58.8	0.023
Extreme (-30C)		2496.9430	2689.1760	49.4	0.019
25C	10%	2496.9431	2689.1761	54.7	0.021
	-10%	2496.9431	2689.1761	51.9	0.020
	End Point	2496.9431	2689.1761	63.8	0.025

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP), LAT

FCC: §2.1046, §27.50

LIMITS:

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

ANSI / TIA / EIA 603-D Clause 2.2.17

KDB 971168 D01 RF power output using broadband peak and average power meter method.

MODES TESTED

- LTE Band 7
- LTE Band 41

RESULTS

EIRP POWER FOR LTE BAND 7 (10.0MHZ+ 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHZ + 20.0MHZ BAND QPSK	1/49 + 1/0	2505.5 + 2519.9	24.23	264.85
		2525.6 + 2540	24.56	285.76
		2545.6 + 2560	25.50	354.81
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2505.5 + 2519.9	23.31	214.29
		2525.6 + 2540	23.64	231.21
		2545.6 + 2560	24.58	287.08

EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 10.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2524.4	24.53	283.79
		2530.1 + 2544.5	25.25	334.97
		2550.1 + 2564.5	24.90	309.03
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2524.4	23.60	229.09
		2530.1 + 2544.5	24.35	272.27
		2550.1 + 2564.5	23.97	249.46

EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 15.0MHZ BAND QPSK	1/74 + 1/0	2507.5 + 2522.5	24.28	267.92
		2527.5 + 2542.5	25.21	331.89
		2547.5 + 2562.5	25.59	362.24
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2507.5 + 2522.5	23.40	218.78
		2527.5 + 2542.5	24.33	271.02
		2547.5 + 2562.5	24.71	295.80

EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 20.0MHZ BAND QPSK	1/74 + 1/0	2507.8 + 2524.9	22.43	174.98
		2525.3 + 2542.4	25.25	334.97
		2542.9 + 2560	24.51	282.49
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2507.8 + 2524.9	21.73	148.94
		2525.3 + 2542.4	24.36	272.90
		2542.9 + 2560	23.62	230.14

EIRP POWER FOR LTE BAND 7 (20.0MHZ + 15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 15.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2527.1	24.79	301.30
		2527.6 + 2544.7	25.44	349.95
		2545.1 + 2562.2	23.91	246.04
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2527.1	23.87	243.78
		2527.6 + 2544.7	24.52	283.14
		2545.1 + 2562.2	22.99	199.07

EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 20.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2529.8	25.11	324.34
		2525.1 + 2544.9	25.22	332.66
		2540.2 + 2560	25.46	351.56
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2529.8	24.20	263.03
		2525.1 + 2544.9	24.33	271.02
		2540.2 + 2560	24.52	283.14

EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHZ + 20.0MHZ BAND QPSK	1/24 + 1/0	2499.3 + 2511	23.71	234.96
		2583.8 + 2595.5	25.26	335.74
		2668.3 + 2680	23.76	237.68
5.0MHZ + 20.0MHZ BAND 16QAM	1/24 + 1/0	2499.3 + 2511	22.78	189.67
		2583.8 + 2595.5	24.33	271.02
		2668.3 + 2680	22.94	196.79

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 5.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2517.7	23.11	204.64
		2590.5 + 2602.2	25.69	370.68
		2675 + 2686.7	25.52	356.45
20.0MHZ + 5.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2517.7	22.18	165.20
		2590.5 + 2602.2	24.76	299.23
		2675 + 2686.7	24.59	287.74

EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHZ + 20.0MHZ BAND QPSK	1/49 + 1/0	2501.5 + 2515.9	23.51	224.39
		2583.6 + 2598	25.87	386.37
		2665.6 + 2680	25.01	316.96
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2501.5 + 2515.9	22.56	180.30
		2583.6 + 2598	24.92	310.46
		2665.6 + 2680	24.06	254.68

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 10.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2520.4	23.63	230.67
		2588.1 + 2602.5	25.88	387.26
		2670.1 + 2684.5	25.53	357.27
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2520.4	22.63	183.23
		2588.1 + 2602.5	24.88	307.61
		2670.1 + 2684.5	24.53	283.79

EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 15.0MHZ BAND QPSK	1/74 + 1/0	2503.5 + 2518.5	23.46	221.82
		2585.5 + 2600.5	25.90	389.05
		2667.5 + 2682.5	25.81	381.07
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2503.5 + 2518.5	22.51	178.24
		2585.5 + 2600.5	24.95	312.61
		2667.5 + 2682.5	24.86	306.20

EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 20.0MHZ BAND QPSK	1/74 + 1/0	2503.8 + 2520.9	23.30	213.80
		2583.3 + 2600.4	26.82	480.84
		2662.9 + 2680	25.97	395.37
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2503.8 + 2520.9	22.36	172.19
		2583.3 + 2600.4	25.77	377.57
		2662.9 + 2680	25.03	318.42

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 15.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2523.1	23.66	232.27
		2585.6 + 2602.7	25.49	354.00
		2665.1 + 2682.2	25.92	390.84
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2523.1	22.66	184.50
		2585.6 + 2602.7	24.49	281.19
		2665.1 + 2682.2	24.57	286.42

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 20.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2525.8	24.01	251.77
		2583.1 + 2602.9	25.83	382.82
		2660.2 + 2680	25.65	367.28
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2525.8	23.07	202.77
		2583.1 + 2602.9	24.79	301.30
		2660.2 + 2680	24.63	290.40

10.1.1. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52268						
Configuration:		EUT Only						
Mode:		CA LTE B7 QPSK 10MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2505.5MHz + 2519.9MHz)								
2.515	13.7	V	1.15	9.35	21.86	33.0	-11.1	
2.515	16.0	H	1.15	9.35	24.23	33.0	-8.8	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	13.5	V	1.16	9.38	21.69	33.0	-11.3	
2.535	16.3	H	1.16	9.38	24.56	33.0	-8.4	
High Ch (2545.6MHz + 2560MHz)								
2.555	14.3	V	1.17	9.41	22.57	33.0	-10.4	
2.555	17.3	H	1.17	9.41	25.50	33.0	-7.5	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52268								
Configuration: EUT Only								
Mode: CA LTE B7 16QAM 10MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2505.5MHz + 2519.9MHz)								
2.515	12.7	V	1.15	9.35	20.94	33.0	-12.1	
2.515	15.1	H	1.15	9.35	23.31	33.0	-9.7	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	12.5	V	1.16	9.38	20.77	33.0	-12.2	
2.535	15.4	H	1.16	9.38	23.64	33.0	-9.4	
High Ch (2545.6MHz + 2560MHz)								
2.555	13.4	V	1.17	9.41	21.65	33.0	-11.4	
2.555	16.3	H	1.17	9.41	24.58	33.0	-8.4	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52268						
Configuration:		EUT Only						
Mode:		CA LTE B7 QPSK 20MHz+10MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2524.4MHz)								
2.515	12.2	V	1.15	9.35	20.36	33.0	-12.6	
2.515	16.3	H	1.15	9.35	24.53	33.0	-8.5	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	13.7	V	1.16	9.38	21.89	33.0	-11.1	
2.535	17.0	H	1.16	9.38	25.25	33.0	-7.8	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	14.3	V	1.17	9.41	22.52	33.0	-10.5	
2.555	16.7	H	1.17	9.41	24.90	33.0	-8.1	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52268								
Configuration: EUT Only								
Mode: CA LTE B7 16QAM 20MHz+10MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2524.4MHz)								
2.515	11.2	V	1.15	9.35	19.43	33.0	-13.6	
2.515	15.4	H	1.15	9.35	23.60	33.0	-9.4	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	12.7	V	1.16	9.38	20.96	33.0	-12.0	
2.535	16.1	H	1.16	9.38	24.35	33.0	-8.7	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	13.3	V	1.17	9.41	21.59	33.0	-11.4	
2.555	15.7	H	1.17	9.41	23.97	33.0	-9.0	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/24/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B7 QPSK 15MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.5MHz + 2522.5MHz)								
2.515	14.1	V	1.15	9.35	22.27	33.0	-10.7	
2.515	16.1	H	1.15	9.35	24.28	33.0	-8.7	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	15.3	V	1.16	9.38	23.57	33.0	-9.4	
2.535	17.0	H	1.16	9.38	25.21	33.0	-7.8	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	15.1	V	1.17	9.41	23.31	33.0	-9.7	
2.555	17.3	H	1.17	9.41	25.59	33.0	-7.4	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/24/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: LTE B7 16QAM 15MHz+15MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.5MHz + 2522.5MHz)								
2.515	13.2	V	1.15	9.35	21.39	33.0	-11.6	
2.515	15.2	H	1.15	9.35	23.40	33.0	-9.6	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	14.5	V	1.16	9.38	22.69	33.0	-10.3	
2.535	16.1	H	1.16	9.38	24.33	33.0	-8.7	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	14.2	V	1.17	9.41	22.43	33.0	-10.6	
2.555	16.5	H	1.17	9.41	24.71	33.0	-8.3	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52268								
Configuration: EUT Only								
Mode: CA LTE B7 QPSK 15MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.8MHz + 2524.9MHz)								
2.518	12.0	V	1.15	9.36	20.16	33.0	-12.8	
2.518	14.2	H	1.15	9.36	22.43	33.0	-10.6	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	13.6	V	1.16	9.38	21.79	33.0	-11.2	
2.535	17.0	H	1.16	9.38	25.25	33.0	-7.8	
High Ch (2542.9MHz + 2560MHz)								
2.553	13.2	V	1.17	9.41	21.43	33.0	-11.6	
2.553	16.3	H	1.17	9.41	24.51	33.0	-8.5	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 16U23366 Date: 6/25/2016 Test Engineer: 52268 Configuration: EUT Only Mode: LTE B7 16QAM 15MHz+20MHz BW								
Test Equipment: Receiving: Horn T120, and Chamber H SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.8MHz + 2524.9MHz)								
2.518	11.1	V	1.15	9.36	19.27	33.0	-13.7	
2.518	13.5	H	1.15	9.36	21.73	33.0	-11.3	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	12.7	V	1.16	9.38	20.90	33.0	-12.1	
2.535	16.1	H	1.16	9.38	24.36	33.0	-8.6	
High Ch (2542.9MHz + 2560MHz)								
2.553	12.3	V	1.17	9.41	20.54	33.0	-12.5	
2.553	15.4	H	1.17	9.41	23.62	33.0	-9.4	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/24/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B7 QPSK 20MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2527.1MHz)								
2.518	12.9	V	1.15	9.36	21.08	33.0	-11.9	
2.518	16.6	H	1.15	9.36	24.79	33.0	-8.2	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	15.2	V	1.16	9.38	23.44	33.0	-9.6	
2.535	17.2	H	1.16	9.38	25.44	33.0	-7.6	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	14.9	V	1.17	9.41	23.17	33.0	-9.8	
2.553	15.7	H	1.17	9.41	23.91	33.0	-9.1	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 16U23366 Date: 6/24/2016 Test Engineer: 52298 Configuration: EUT Only Mode: LTE B7 16QAM 20MHz+15MHz BW								
Test Equipment: Receiving: Horn T120, and Chamber H SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2527.1MHz)								
2.518	12.0	V	1.15	9.36	20.16	33.0	-12.8	
2.518	15.7	H	1.15	9.36	23.87	33.0	-9.1	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	14.3	V	1.16	9.38	22.52	33.0	-10.5	
2.535	16.3	H	1.16	9.38	24.52	33.0	-8.5	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	14.0	V	1.17	9.41	22.25	33.0	-10.7	
2.553	14.7	H	1.17	9.41	22.99	33.0	-10.0	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/24/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: CA LTE B7 QPSK 20MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2529.8MHz)								
2.520	12.5	V	1.15	9.36	20.66	33.0	-12.3	
2.520	16.9	H	1.15	9.36	25.11	33.0	-7.9	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	13.7	V	1.16	9.38	21.95	33.0	-11.1	
2.535	17.0	H	1.16	9.38	25.22	33.0	-7.8	
High Ch (2540.2MHz + 2560MHz)								
2.550	15.0	V	1.17	9.41	23.19	33.0	-9.8	
2.550	17.2	H	1.17	9.41	25.46	33.0	-7.5	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52268						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2529.8MHz)								
2.520	11.5	V	1.15	9.36	19.67	33.0	-13.3	
2.520	16.0	H	1.15	9.36	24.20	33.0	-8.8	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	12.7	V	1.16	9.38	20.95	33.0	-12.0	
2.535	16.1	H	1.16	9.38	24.33	33.0	-8.7	
High Ch (2540.2MHz + 2560MHz)								
2.550	14.0	V	1.17	9.41	22.26	33.0	-10.7	
2.550	16.3	H	1.17	9.41	24.52	33.0	-8.5	
Rev. 06.08.16								

10.1.2. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 5MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2499.3MHz + 2511MHz)								
2.509	12.9	V	1.15	9.35	21.07	33.0	-11.9	
2.509	15.5	H	1.15	9.35	23.71	33.0	-9.3	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	14.3	V	1.16	9.47	22.65	33.0	-10.4	
2.593	17.0	H	1.16	9.47	25.26	33.0	-7.7	
High Ch (2668.3MHz + 2680MHz)								
2.678	14.4	V	1.17	9.75	22.99	33.0	-10.0	
2.678	15.2	H	1.17	9.75	23.76	33.0	-9.2	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 5MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2499.3MHz + 2511MHz)								
2.509	11.9	V	1.15	9.35	20.14	33.0	-12.9	
2.509	14.6	H	1.15	9.35	22.78	33.0	-10.2	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	13.4	V	1.16	9.47	21.72	33.0	-11.3	
2.593	16.0	H	1.16	9.47	24.33	33.0	-8.7	
High Ch (2668.3MHz + 2680MHz)								
2.678	13.5	V	1.17	9.75	22.06	33.0	-10.9	
2.678	14.4	H	1.17	9.75	22.94	33.0	-10.1	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 20MHz+5MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2517.7MHz)								
2.509	12.7	V	1.15	9.35	20.93	33.0	-12.1	
2.509	14.9	H	1.15	9.35	23.11	33.0	-9.9	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	14.7	V	1.16	9.47	23.02	33.0	-10.0	
2.593	17.4	H	1.16	9.47	25.69	33.0	-7.3	
High Ch (2675MHz + 2686.7MHz)								
2.678	14.4	V	1.17	9.75	23.02	33.0	-10.0	
2.678	16.9	H	1.17	9.75	25.52	33.0	-7.5	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+5MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2517.7MHz)								
2.509	11.8	V	1.15	9.35	20.00	33.0	-13.0	
2.509	14.0	H	1.15	9.35	22.18	33.0	-10.8	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	13.8	V	1.16	9.47	22.09	33.0	-10.9	
2.593	16.5	H	1.16	9.47	24.76	33.0	-8.2	
High Ch (2675MHz + 2686.7MHz)								
2.678	13.5	V	1.17	9.75	22.09	33.0	-10.9	
2.678	16.0	H	1.17	9.75	24.59	33.0	-8.4	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 10MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2501.5MHz + 2515.9MHz)								
2.511	13.2	V	1.15	9.35	21.41	33.0	-11.6	
2.511	15.3	H	1.15	9.35	23.51	33.0	-9.5	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	15.2	V	1.16	9.47	23.56	33.0	-9.4	
2.593	17.6	H	1.16	9.47	25.87	33.0	-7.1	
High Ch (2665.6MHz + 2680MHz)								
2.675	13.9	V	1.17	9.74	22.49	33.0	-10.5	
2.675	16.4	H	1.17	9.74	25.01	33.0	-8.0	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 10MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2501.5MHz + 2515.9MHz)								
2.511	12.3	V	1.15	9.35	20.46	33.0	-12.5	
2.511	14.4	H	1.15	9.35	22.56	33.0	-10.4	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	14.3	V	1.16	9.47	22.61	33.0	-10.4	
2.593	16.6	H	1.16	9.47	24.92	33.0	-8.1	
High Ch (2665.6MHz + 2680MHz)								
2.675	13.0	V	1.17	9.74	21.54	33.0	-11.5	
2.675	15.5	H	1.17	9.74	24.06	33.0	-8.9	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 20MHz+10MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2520.4MHz)								
2.511	13.4	V	1.15	9.35	21.59	33.0	-11.4	
2.511	15.4	H	1.15	9.35	23.63	33.0	-9.4	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	15.1	V	1.16	9.47	23.45	33.0	-9.6	
2.593	17.6	H	1.16	9.47	25.88	33.0	-7.1	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	13.9	V	1.17	9.74	22.44	33.0	-10.6	
2.675	17.0	H	1.17	9.74	25.53	33.0	-7.5	

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+10MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2520.4MHz)								
2.511	12.4	V	1.15	9.35	20.59	33.0	-12.4	
2.511	14.4	H	1.15	9.35	22.63	33.0	-10.4	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	14.1	V	1.16	9.47	22.45	33.0	-10.6	
2.593	16.6	H	1.16	9.47	24.88	33.0	-8.1	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	12.9	V	1.17	9.74	21.44	33.0	-11.6	
2.675	16.0	H	1.17	9.74	24.53	33.0	-8.5	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 15MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.5MHz + 2518.5MHz)								
2.511	13.1	V	1.15	9.35	21.29	33.0	-11.7	
2.511	15.3	H	1.15	9.35	23.46	33.0	-9.5	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	15.1	V	1.16	9.47	23.38	33.0	-9.6	
2.593	17.6	H	1.16	9.47	25.90	33.0	-7.1	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	14.4	V	1.17	9.74	23.00	33.0	-10.0	
2.675	17.2	H	1.17	9.74	25.81	33.0	-7.2	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52298								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 15MHz+15MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.5MHz + 2518.5MHz)								
2.511	12.1	V	1.15	9.35	20.34	33.0	-12.7	
2.511	14.3	H	1.15	9.35	22.51	33.0	-10.5	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	14.1	V	1.16	9.47	22.43	33.0	-10.6	
2.593	16.6	H	1.16	9.47	24.95	33.0	-8.0	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	13.5	V	1.17	9.74	22.05	33.0	-10.9	
2.675	16.3	H	1.17	9.74	24.86	33.0	-8.1	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 15MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.8MHz + 2520.9MHz)								
2.514	13.1	V	1.15	9.35	21.33	33.0	-11.7	
2.514	15.1	H	1.15	9.35	23.30	33.0	-9.7	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	14.8	V	1.16	9.47	23.16	33.0	-9.8	
2.593	18.5	H	1.16	9.47	26.82	33.0	-6.2	
High Ch (2662.9MHz + 2680MHz)								
2.673	13.8	V	1.17	9.73	22.41	33.0	-10.6	
2.673	17.4	H	1.17	9.73	25.97	33.0	-7.0	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52298						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 15MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.8MHz + 2520.9MHz)								
2.514	12.2	V	1.15	9.35	20.39	33.0	-12.6	
2.514	14.2	H	1.15	9.35	22.36	33.0	-10.6	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	13.9	V	1.16	9.47	22.22	33.0	-10.8	
2.593	17.5	H	1.16	9.47	25.77	33.0	-7.2	
High Ch (2662.9MHz + 2680MHz)								
2.673	12.9	V	1.17	9.73	21.47	33.0	-11.5	
2.673	16.5	H	1.17	9.73	25.03	33.0	-8.0	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 16U23366 Date: 6/25/2016 Test Engineer: 52268 Configuration: EUT Only Mode: CA LTE B41 QPSK 20MHz+15MHz BW								
Test Equipment: Receiving: Horn T120, and Chamber H SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2523.1MHz)								
2.514	13.1	V	1.15	9.35	21.29	33.0	-11.7	
2.514	15.5	H	1.15	9.35	23.66	33.0	-9.3	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	14.8	V	1.16	9.47	23.09	33.0	-9.9	
2.593	17.2	H	1.16	9.47	25.49	33.0	-7.5	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	14.0	V	1.17	9.73	22.60	33.0	-10.4	
2.673	17.4	H	1.17	9.73	25.92	33.0	-7.1	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company: Project #: 16U23366 Date: 6/25/2016 Test Engineer: 52268 Configuration: EUT Only Mode: CA LTE B41 16QAM 20MHz+15MHz BW								
Test Equipment: Receiving: Horn T120, and Chamber H SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2523.1MHz)								
2.514	12.1	V	1.15	9.35	20.29	33.0	-12.7	
2.514	14.5	H	1.15	9.35	22.66	33.0	-10.3	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	13.8	V	1.16	9.47	22.09	33.0	-10.9	
2.593	16.2	H	1.16	9.47	24.49	33.0	-8.5	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	13.0	V	1.17	9.73	21.60	33.0	-11.4	
2.673	16.0	H	1.17	9.73	24.57	33.0	-8.4	
Rev. 06.08.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #: 16U23366								
Date: 6/25/2016								
Test Engineer: 52268								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 20MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2525.8MHz)								
2.516	13.8	V	1.15	9.36	22.05	33.0	-11.0	
2.516	15.8	H	1.15	9.36	24.01	33.0	-9.0	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	14.5	V	1.16	9.47	22.83	33.0	-10.2	
2.593	17.5	H	1.16	9.47	25.83	33.0	-7.2	
High Ch (2660.2MHz + 2680MHz)								
2.670	14.0	V	1.17	9.72	22.52	33.0	-10.5	
2.670	17.1	H	1.17	9.72	25.65	33.0	-7.4	
Rev. 06.08.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber H								
Company:								
Project #:		16U23366						
Date:		6/25/2016						
Test Engineer:		52268						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T120, and Chamber H SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2525.8MHz)								
2.516	12.9	V	1.15	9.36	21.11	33.0	-11.9	
2.516	14.9	H	1.15	9.36	23.07	33.0	-9.9	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	13.6	V	1.16	9.47	21.89	33.0	-11.1	
2.593	16.5	H	1.16	9.47	24.79	33.0	-8.2	
High Ch (2660.2MHz + 2680MHz)								
2.670	13.0	V	1.17	9.72	21.58	33.0	-11.4	
2.670	16.1	H	1.17	9.72	24.63	33.0	-8.4	
Rev. 06.08.16								

10.2. RADIATED POWER (ERP & EIRP), UAT

EIRP POWER FOR LTE BAND 7 (10.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHZ + 20.0MHZ BAND QPSK	1/49 + 1/0	2505.5 + 2519.9	19.56	90.36
		2525.6 + 2540	20.06	101.39
		2545.6 + 2560	18.42	69.50
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2505.5 + 2519.9	18.95	78.52
		2525.6 + 2540	19.39	86.90
		2545.6 + 2560	17.70	58.88

EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 10.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2524.4	19.03	79.98
		2530.1 + 2544.5	19.88	97.27
		2550.1 + 2564.5	18.71	74.30
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2524.4	18.42	69.50
		2530.1 + 2544.5	19.26	84.33
		2550.1 + 2564.5	18.08	64.27

EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 15.0MHZ BAND QPSK	1/74 + 1/0	2507.5 + 2522.5	18.65	73.28
		2527.5 + 2542.5	19.80	95.50
		2547.5 + 2562.5	17.67	58.48
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2507.5 + 2522.5	18.00	63.10
		2527.5 + 2542.5	19.16	82.41
		2547.5 + 2562.5	17.02	50.35

EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 20.0MHZ BAND QPSK	1/74 + 1/0	2507.8 + 2524.9	19.82	95.94
		2525.3 + 2542.4	20.70	117.49
		2542.9 + 2560	18.72	74.47
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2507.8 + 2524.9	19.15	82.22
		2525.3 + 2542.4	19.36	86.30
		2542.9 + 2560	18.08	64.27

EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 15.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2527.1	19.08	80.91
		2527.6 + 2544.7	20.66	116.41
		2545.1 + 2562.2	18.44	69.82
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2527.1	18.45	69.98
		2527.6 + 2544.7	20.25	105.93
		2545.1 + 2562.2	17.79	60.12

EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 20.0MHZ BAND QPSK	1/99 + 1/0	2510 + 2529.8	19.93	98.40
		2525.1 + 2544.9	20.97	125.03
		2540.2 + 2560	18.91	77.80
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2529.8	18.94	78.34
		2525.1 + 2544.9	19.94	98.63
		2540.2 + 2560	17.91	61.80

EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHZ + 20.0MHZ BAND QPSK	1/24 + 1/0	2499.3 + 2511	20.15	103.51
		2583.8 + 2595.5	18.69	73.96
		2668.3 + 2680	19.08	80.91
5.0MHZ + 20.0MHZ BAND 16QAM	1/24 + 1/0	2499.3 + 2511	19.25	84.14
		2583.8 + 2595.5	17.89	61.52
		2668.3 + 2680	18.29	67.45

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 5.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2517.7	20.12	102.80
		2590.5 + 2602.2	18.72	74.47
		2675 + 2686.7	19.19	82.99
20.0MHZ + 5.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2517.7	19.28	84.72
		2590.5 + 2602.2	17.88	61.38
		2675 + 2686.7	18.35	68.39

EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0MHZ + 20.0MHZ BAND QPSK	1/49 + 1/0	2501.5 + 2515.9	20.15	103.51
		2583.6 + 2598	18.78	75.51
		2665.6 + 2680	19.14	82.04
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2501.5 + 2515.9	19.35	86.10
		2583.6 + 2598	17.98	62.81
		2665.6 + 2680	18.34	68.23

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 10.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2520.4	20.19	104.47
		2588.1 + 2602.5	18.58	72.11
		2670.1 + 2684.5	19.18	82.79
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2520.4	19.29	84.92
		2588.1 + 2602.5	17.68	58.61
		2670.1 + 2684.5	18.28	67.30

EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 15.0MHZ BAND QPSK	1/74 + 1/0	2503.5 + 2518.5	20.12	102.80
		2585.5 + 2600.5	18.79	75.68
		2667.5 + 2682.5	19.03	79.98
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2503.5 + 2518.5	19.32	85.51
		2585.5 + 2600.5	17.99	62.95
		2667.5 + 2682.5	18.23	66.53

EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0MHZ + 20.0MHZ BAND QPSK	1/74 + 1/0	2503.8 + 2520.9	20.17	103.99
		2583.3 + 2600.4	18.55	71.61
		2662.9 + 2680	19.18	82.79
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2503.8 + 2520.9	19.32	85.51
		2583.3 + 2600.4	17.70	58.88
		2662.9 + 2680	18.33	68.08

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 15.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2523.1	20.24	105.68
		2585.6 + 2602.7	18.49	70.63
		2665.1 + 2682.2	19.27	84.53
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2523.1	19.39	86.90
		2585.6 + 2602.7	17.64	58.08
		2665.1 + 2682.2	18.42	69.50

EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHZ + 20.0MHZ BAND QPSK	1/99 + 1/0	2506 + 2525.8	20.20	104.71
		2583.1 + 2602.9	18.39	69.02
		2660.2 + 2680	19.21	83.37
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2525.8	19.34	85.90
		2583.1 + 2602.9	17.53	56.62
		2660.2 + 2680	18.35	68.39

10.2.1. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT only								
Mode: CA LTE B7 QPSK 10MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2505.5MHz + 2519.9MHz)								
2.515	6.1	V	1.15	9.35	14.26	33.0	-18.7	
2.515	11.4	H	1.15	9.35	19.56	33.0	-13.4	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	8.3	V	1.16	9.38	16.50	33.0	-16.5	
2.535	11.8	H	1.16	9.38	20.06	33.0	-12.9	
High Ch (2545.6MHz + 2560MHz)								
2.555	9.1	V	1.17	9.41	17.36	33.0	-15.6	
2.555	10.2	H	1.17	9.41	18.42	33.0	-14.6	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 7 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 16QAM 10MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2505.5MHz + 2519.9MHz)								
2.515	5.6	V	1.15	9.35	13.77	33.0	-19.2	
2.515	10.7	H	1.15	9.35	18.95	33.0	-14.1	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	7.7	V	1.16	9.38	15.94	33.0	-17.1	
2.535	11.2	H	1.16	9.38	19.39	33.0	-13.6	
High Ch (2545.6MHz + 2560MHz)								
2.555	8.5	V	1.17	9.41	16.75	33.0	-16.2	
2.555	9.5	H	1.17	9.41	17.70	33.0	-15.3	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 20MHz+10MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2524.4MHz)								
2.515	6.1	V	1.15	9.35	14.30	33.0	-18.7	
2.515	10.8	H	1.15	9.35	19.03	33.0	-14.0	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	7.0	V	1.16	9.38	15.21	33.0	-17.8	
2.535	11.7	H	1.16	9.38	19.88	33.0	-13.1	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	9.1	V	1.17	9.41	17.33	33.0	-15.7	
2.555	10.5	H	1.17	9.41	18.71	33.0	-14.3	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT only								
Mode: CA LTE B7 16QAM 20MHz+10MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2524.4MHz)								
2.515	5.5	V	1.15	9.35	13.69	33.0	-19.3	
2.515	10.2	H	1.15	9.35	18.42	33.0	-14.6	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	6.3	V	1.16	9.38	14.47	33.0	-18.5	
2.535	11.0	H	1.16	9.38	19.26	33.0	-13.7	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	8.5	V	1.17	9.41	16.71	33.0	-16.3	
2.555	9.8	H	1.17	9.41	18.08	33.0	-14.9	
Rev. 10.24.13								

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 15MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.5MHz + 2522.5MHz)								
2.515	6.2	V	1.15	9.35	14.35	33.0	-18.6	
2.515	10.4	H	1.15	9.35	18.65	33.0	-14.4	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	6.9	V	1.16	9.38	15.15	33.0	-17.8	
2.535	11.6	H	1.16	9.38	19.80	33.0	-13.2	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	7.5	V	1.17	9.41	15.74	33.0	-17.3	
2.555	9.4	H	1.17	9.41	17.67	33.0	-15.3	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		LTE B7 16QAM 15MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.5MHz + 2522.5MHz)								
2.515	5.6	V	1.15	9.35	13.79	33.0	-19.2	
2.515	9.8	H	1.15	9.35	18.00	33.0	-15.0	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	6.2	V	1.16	9.38	14.43	33.0	-18.6	
2.535	10.9	H	1.16	9.38	19.16	33.0	-13.8	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	6.9	V	1.17	9.41	15.14	33.0	-17.9	
2.555	8.8	H	1.17	9.41	17.02	33.0	-16.0	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT only								
Mode: CA LTE B7 QPSK 15MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.8MHz + 2524.9MHz)								
2.518	6.8	V	1.15	9.36	15.04	33.0	-18.0	
2.518	11.6	H	1.15	9.36	19.82	33.0	-13.2	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	7.0	V	1.16	9.38	15.24	33.0	-17.8	
2.535	12.5	H	1.16	9.38	20.70	33.0	-12.3	
High Ch (2542.9MHz + 2560MHz)								
2.553	9.0	V	1.17	9.41	17.24	33.0	-15.8	
2.553	10.5	H	1.17	9.41	18.72	33.0	-14.3	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 7 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		LTE B7 16QAM 15MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2507.8MHz + 2524.9MHz)								
2.518	6.3	V	1.15	9.36	14.46	33.0	-18.5	
2.518	10.9	H	1.15	9.36	19.15	33.0	-13.9	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	6.4	V	1.16	9.38	14.63	33.0	-18.4	
2.535	11.1	H	1.16	9.38	19.36	33.0	-13.6	
High Ch (2542.9MHz + 2560MHz)								
2.553	8.3	V	1.17	9.41	16.53	33.0	-16.5	
2.553	9.8	H	1.17	9.41	18.08	33.0	-14.9	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 20MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2527.1MHz)								
2.518	6.0	V	1.15	9.36	14.25	33.0	-18.8	
2.518	10.9	H	1.15	9.36	19.08	33.0	-13.9	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	6.9	V	1.16	9.38	15.07	33.0	-17.9	
2.535	12.4	H	1.16	9.38	20.66	33.0	-12.3	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	7.8	V	1.17	9.41	16.03	33.0	-17.0	
2.553	10.2	H	1.17	9.41	18.44	33.0	-14.6	
Rev. 10.24.13								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		LTE B7 16QAM 20MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2527.1MHz)								
2.518	5.4	V	1.15	9.36	13.64	33.0	-19.4	
2.518	10.2	H	1.15	9.36	18.45	33.0	-14.6	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	6.3	V	1.16	9.38	14.49	33.0	-18.5	
2.535	12.0	H	1.16	9.38	20.25	33.0	-12.7	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	7.4	V	1.17	9.41	15.59	33.0	-17.4	
2.553	9.6	H	1.17	9.41	17.79	33.0	-15.2	
Rev. 10.24.13								

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2529.8MHz)								
2.520	6.0	V	1.15	9.36	14.23	33.0	-18.8	
2.518	11.7	H	1.15	9.36	19.93	33.0	-13.1	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	8.0	V	1.16	9.38	16.24	33.0	-16.8	
2.535	12.8	H	1.16	9.38	20.97	33.0	-12.0	
High Ch (2540.2MHz + 2560MHz)								
2.550	9.4	V	1.17	9.41	17.68	33.0	-15.3	
2.550	10.7	H	1.17	9.41	18.91	33.0	-14.1	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT only						
Mode:		CA LTE B7 16QAM 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2510MHz + 2529.8MHz)								
2.520	5.3	V	1.15	9.36	13.54	33.0	-19.5	
2.518	10.7	H	1.15	9.36	18.94	33.0	-14.1	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	6.0	V	1.16	9.38	14.20	33.0	-18.8	
2.535	11.7	H	1.16	9.38	19.94	33.0	-13.1	
High Ch (2540.2MHz + 2560MHz)								
2.550	7.5	V	1.17	9.41	15.70	33.0	-17.3	
2.550	9.7	H	1.17	9.41	17.91	33.0	-15.1	
Rev. 05.25.16								

10.2.2. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/27/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 5MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2499.3MHz + 2511MHz)								
2.509	8.4	V	1.15	9.35	16.56	33.0	-16.4	
2.509	12.0	H	1.15	9.35	20.15	33.0	-12.9	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	8.1	V	1.16	9.47	16.41	33.0	-16.6	
2.593	10.4	H	1.16	9.47	18.69	33.0	-14.3	
High Ch (2668.3MHz + 2680MHz)								
2.678	8.3	V	1.17	9.75	16.91	33.0	-16.1	
2.678	10.5	H	1.17	9.75	19.08	33.0	-13.9	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (5.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/27/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 5MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2499.3MHz + 2511MHz)								
2.509	7.5	V	1.15	9.35	15.66	33.0	-17.3	
2.509	11.1	H	1.15	9.35	19.25	33.0	-13.8	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	7.2	V	1.16	9.47	15.51	33.0	-17.5	
2.593	9.6	H	1.16	9.47	17.89	33.0	-15.1	
High Ch (2668.3MHz + 2680MHz)								
2.678	7.4	V	1.17	9.75	16.01	33.0	-17.0	
2.678	9.7	H	1.17	9.75	18.29	33.0	-14.7	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23366						
Date:		6/27/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 20MHz+5MHz BW						
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2517.7MHz)								
2.509	8.1	V	1.15	9.35	16.32	33.0	-16.7	
2.509	11.9	H	1.15	9.35	20.12	33.0	-12.9	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	8.3	V	1.16	9.47	16.59	33.0	-16.4	
2.593	10.4	H	1.16	9.47	18.72	33.0	-14.3	
High Ch (2675MHz + 2686.7MHz)								
2.678	8.3	V	1.17	9.75	16.91	33.0	-16.1	
2.678	10.6	H	1.17	9.75	19.19	33.0	-13.8	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/27/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+5MHz BW						
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2517.7MHz)								
2.509	7.3	V	1.15	9.35	15.48	33.0	-17.5	
2.509	11.1	H	1.15	9.35	19.28	33.0	-13.7	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	7.4	V	1.16	9.47	15.75	33.0	-17.3	
2.593	9.6	H	1.16	9.47	17.88	33.0	-15.1	
High Ch (2675MHz + 2686.7MHz)								
2.678	7.5	V	1.17	9.75	16.07	33.0	-16.9	
2.678	9.8	H	1.17	9.75	18.35	33.0	-14.7	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/27/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 10MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2501.5MHz + 2515.9MHz)								
2.511	8.5	V	1.15	9.35	16.70	33.0	-16.3	
2.511	12.0	H	1.15	9.35	20.15	33.0	-12.9	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	8.2	V	1.16	9.47	16.51	33.0	-16.5	
2.593	10.5	H	1.16	9.47	18.78	33.0	-14.2	
High Ch (2665.6MHz + 2680MHz)								
2.675	8.0	V	1.17	9.74	16.58	33.0	-16.4	
2.675	10.6	H	1.17	9.74	19.14	33.0	-13.9	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (10.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/27/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 10MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2501.5MHz + 2515.9MHz)								
2.511	7.7	V	1.15	9.35	15.90	33.0	-17.1	
2.511	11.2	H	1.15	9.35	19.35	33.0	-13.7	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	7.4	V	1.16	9.47	15.71	33.0	-17.3	
2.593	9.7	H	1.16	9.47	17.98	33.0	-15.0	
High Ch (2665.6MHz + 2680MHz)								
2.675	7.2	V	1.17	9.74	15.78	33.0	-17.2	
2.675	9.8	H	1.17	9.74	18.34	33.0	-14.7	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company: Project #: 16U23366 Date: 6/27/2016 Test Engineer: 39004 Configuration: EUT Only Mode: CA LTE B41 QPSK 20MHz+10MHz BW								
Test Equipment: Receiving: Horn T346, and Chamber E SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2520.4MHz)								
2.511	8.6	V	1.15	9.35	16.80	33.0	-16.2	
2.511	12.0	H	1.15	9.35	20.19	33.0	-12.8	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	8.3	V	1.16	9.47	16.59	33.0	-16.4	
2.593	10.3	H	1.16	9.47	18.58	33.0	-14.4	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	8.0	V	1.17	9.74	16.60	33.0	-16.4	
2.675	10.6	H	1.17	9.74	19.18	33.0	-13.8	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/27/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+10MHz BW						
Test Equipment:								
Receiving: Horn T346, and Chamber E SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2520.4MHz)								
2.511	7.7	V	1.15	9.35	15.90	33.0	-17.1	
2.511	11.1	H	1.15	9.35	19.29	33.0	-13.7	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	7.4	V	1.16	9.47	15.69	33.0	-17.3	
2.593	9.4	H	1.16	9.47	17.68	33.0	-15.3	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	7.1	V	1.17	9.74	15.70	33.0	-17.3	
2.675	9.7	H	1.17	9.74	18.28	33.0	-14.7	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/27/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 15MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.5MHz + 2518.5MHz)								
2.511	8.7	V	1.15	9.35	16.92	33.0	-16.1	
2.511	11.9	H	1.15	9.35	20.12	33.0	-12.9	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	8.5	V	1.16	9.47	16.77	33.0	-16.2	
2.593	10.5	H	1.16	9.47	18.79	33.0	-14.2	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	8.2	V	1.17	9.74	16.75	33.0	-16.3	
2.675	10.5	H	1.17	9.74	19.03	33.0	-14.0	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/27/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 15MHz+15MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.5MHz + 2518.5MHz)								
2.511	7.9	V	1.15	9.35	16.12	33.0	-16.9	
2.511	11.1	H	1.15	9.35	19.32	33.0	-13.7	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	7.7	V	1.16	9.47	15.97	33.0	-17.0	
2.593	9.7	H	1.16	9.47	17.99	33.0	-15.0	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	7.4	V	1.17	9.74	15.95	33.0	-17.1	
2.675	9.7	H	1.17	9.74	18.23	33.0	-14.8	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 52298								
Configuration: EUT only								
Mode: CA LTE B41 QPSK 15MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.8MHz + 2520.9MHz)								
2.514	8.6	V	1.15	9.35	16.75	33.0	-16.2	
2.514	12.0	H	1.15	9.35	20.17	33.0	-12.8	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	8.6	V	1.16	9.47	16.91	33.0	-16.1	
2.593	10.2	H	1.16	9.47	18.55	33.0	-14.5	
High Ch (2662.9MHz + 2680MHz)								
2.673	8.4	V	1.17	9.73	16.95	33.0	-16.1	
2.673	10.6	H	1.17	9.73	19.18	33.0	-13.8	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (15.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 52298								
Configuration: EUT only								
Mode: CA LTE B41 16QAM 15MHz+20MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2503.8MHz + 2520.9MHz)								
2.514	7.7	V	1.15	9.35	15.90	33.0	-17.1	
2.514	11.1	H	1.15	9.35	19.32	33.0	-13.7	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	7.8	V	1.16	9.47	16.06	33.0	-16.9	
2.593	9.4	H	1.16	9.47	17.70	33.0	-15.3	
High Ch (2662.9MHz + 2680MHz)								
2.673	7.5	V	1.17	9.73	16.10	33.0	-16.9	
2.673	9.8	H	1.17	9.73	18.33	33.0	-14.7	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #: 16U23366								
Date: 6/26/2016								
Test Engineer: 52298								
Configuration: EUT only								
Mode: CA LTE B41 QPSK 20MHz+15MHz BW								
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2523.1MHz)								
2.514	8.5	V	1.15	9.35	16.68	33.0	-16.3	
2.514	12.0	H	1.15	9.35	20.24	33.0	-12.8	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	8.5	V	1.16	9.47	16.81	33.0	-16.2	
2.593	10.2	H	1.16	9.47	18.49	33.0	-14.5	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	8.1	V	1.17	9.73	16.69	33.0	-16.3	
2.673	10.7	H	1.17	9.73	19.27	33.0	-13.7	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 15.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		52298						
Configuration:		EUT only						
Mode:		CA LTE B41 16QAM 20MHz+15MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2523.1MHz)								
2.514	7.6	V	1.15	9.35	15.83	33.0	-17.2	
2.514	11.2	H	1.15	9.35	19.39	33.0	-13.6	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	7.7	V	1.16	9.47	15.96	33.0	-17.0	
2.593	9.3	H	1.16	9.47	17.64	33.0	-15.4	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	7.3	V	1.17	9.73	15.84	33.0	-17.2	
2.673	9.9	H	1.17	9.73	18.42	33.0	-14.6	
Rev. 05.25.16								

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		52298						
Configuration:		EUT only						
Mode:		CA LTE B41 QPSK 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2525.8MHz)								
2.516	8.6	V	1.15	9.36	16.81	33.0	-16.2	
2.516	12.0	H	1.15	9.36	20.20	33.0	-12.8	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	8.3	V	1.16	9.47	16.61	33.0	-16.4	
2.593	10.1	H	1.16	9.47	18.39	33.0	-14.6	
High Ch (2660.2MHz + 2680MHz)								
2.670	8.2	V	1.17	9.72	16.73	33.0	-16.3	
2.670	10.7	H	1.17	9.72	19.21	33.0	-13.8	
Rev. 05.25.16								

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23366						
Date:		6/26/2016						
Test Engineer:		52298						
Configuration:		EUT only						
Mode:		CA LTE B41 16QAM 20MHz+20MHz BW						
Test Equipment:								
Receiving: Horn T136, and Chamber G SMA Cables								
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch (2506MHz + 2525.8MHz)								
2.516	7.7	V	1.15	9.36	15.95	33.0	-17.1	
2.516	11.1	H	1.15	9.36	19.34	33.0	-13.7	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	7.4	V	1.16	9.47	15.75	33.0	-17.3	
2.593	9.2	H	1.16	9.47	17.53	33.0	-15.5	
High Ch (2660.2MHz + 2680MHz)								
2.670	7.3	V	1.17	9.72	15.87	33.0	-17.1	
2.670	9.8	H	1.17	9.72	18.35	33.0	-14.6	
Rev. 05.25.16								

10.3. PEAK-TO-AVERAGE RATIO

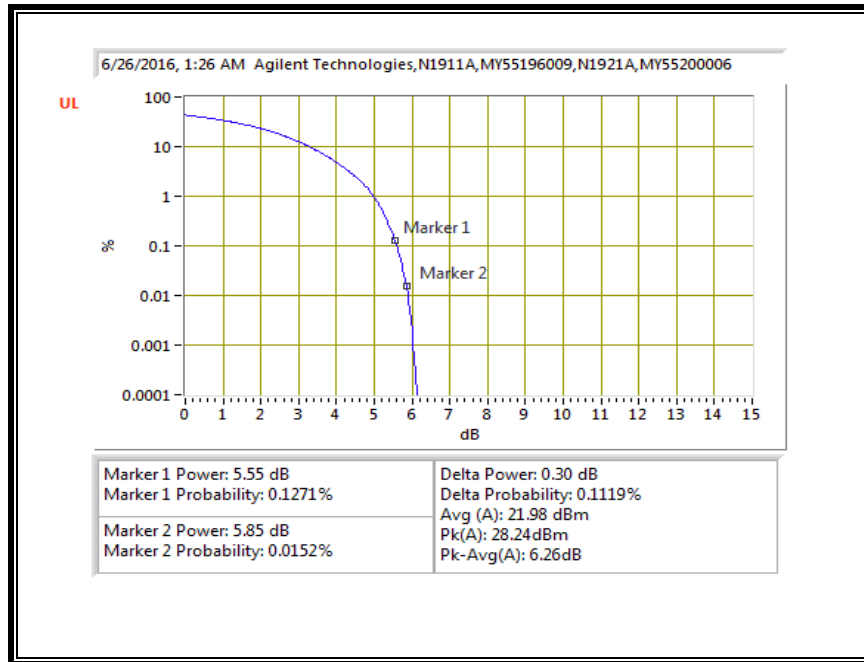
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB

RESULT

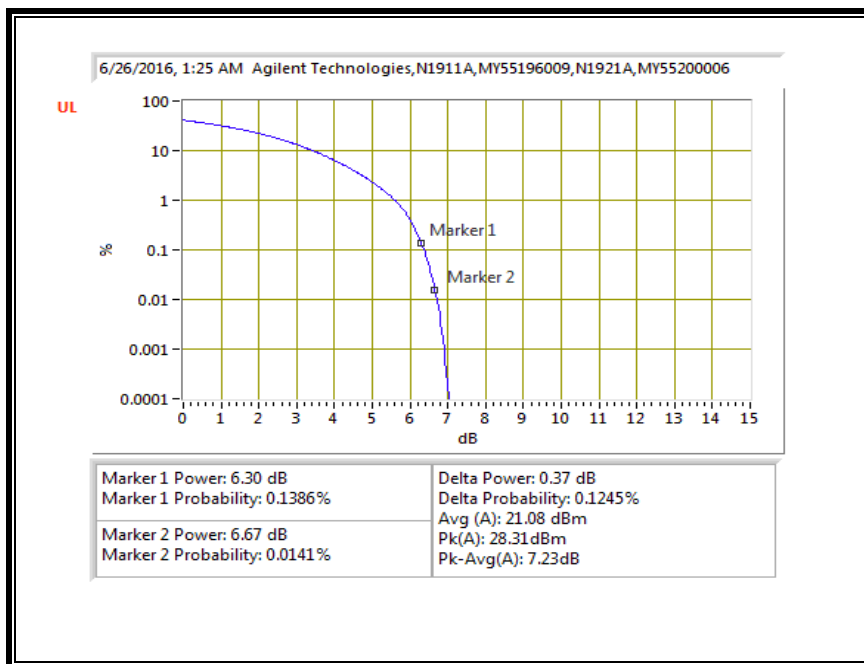
The results from all CCDF plots are passed with 13dB peak-to-average ratio criteria.

10.3.1. LTE BAND 7

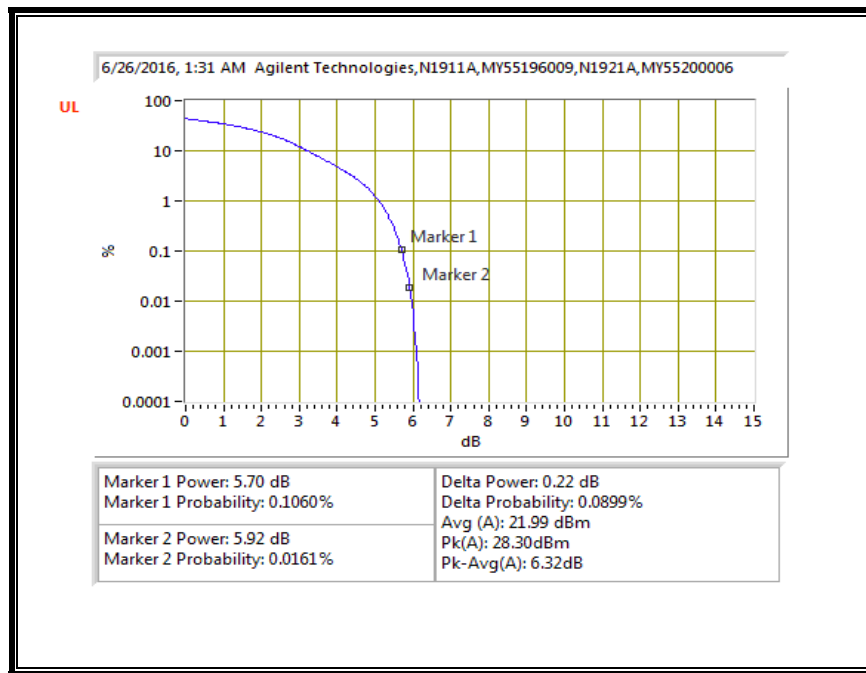
QPSK, (10.0 MHz + 20.0 MHz BAND WIDTH)



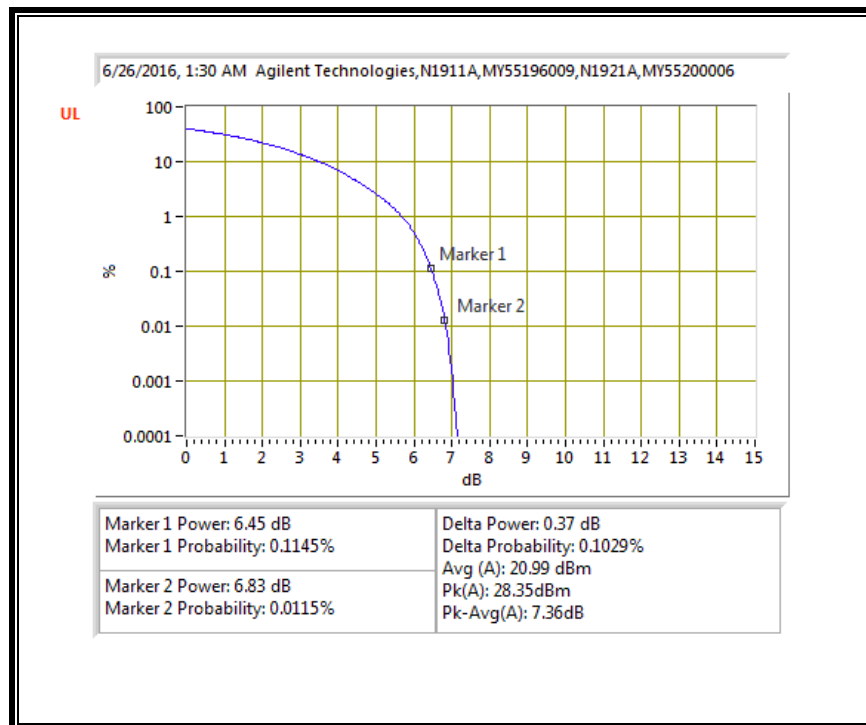
16QAM, (10.0 MHz + 20.0 MHz BAND WIDTH)



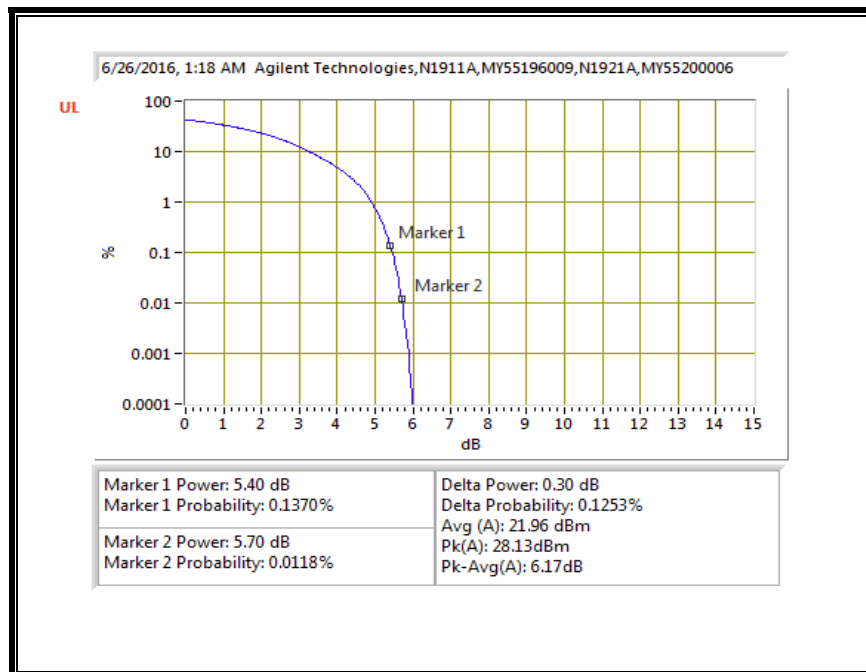
QPSK, (15.0 MHz + 15 MHz BAND WIDTH)



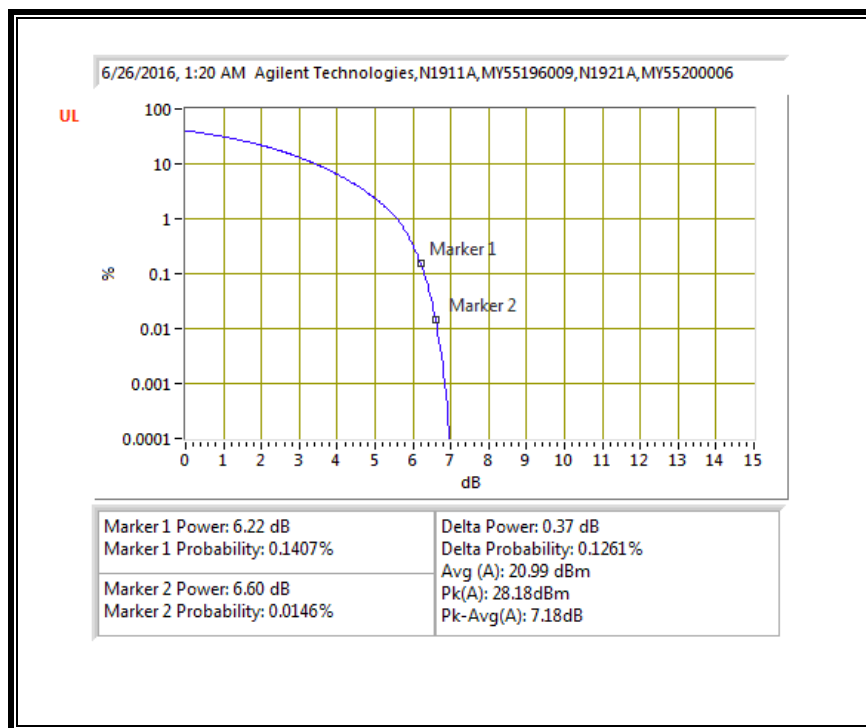
16QAM, (15.0 MHz + 15.0 MHz BAND WIDTH)



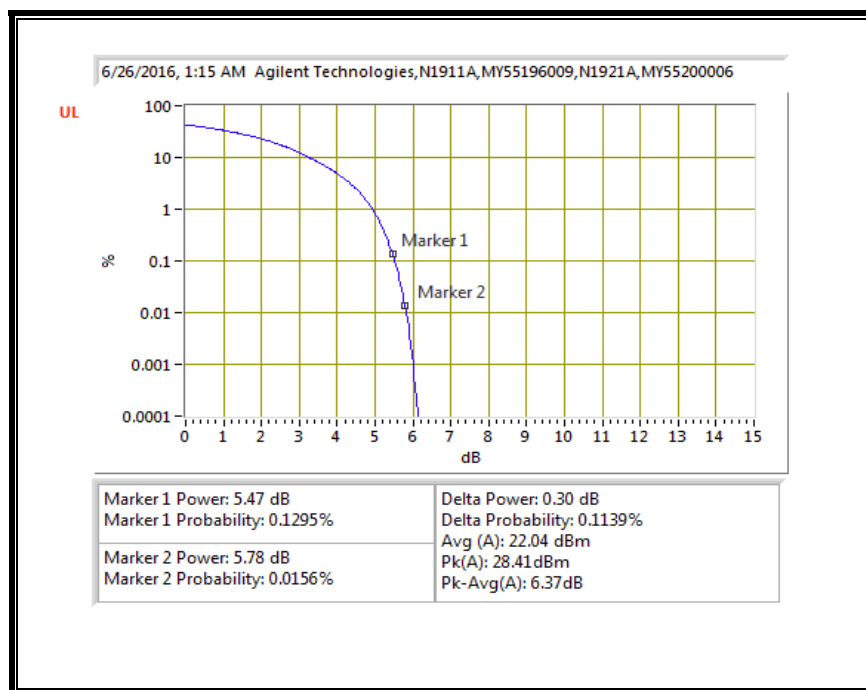
QPSK, (15.0 MHz + 20.0 MHz BAND WIDTH)



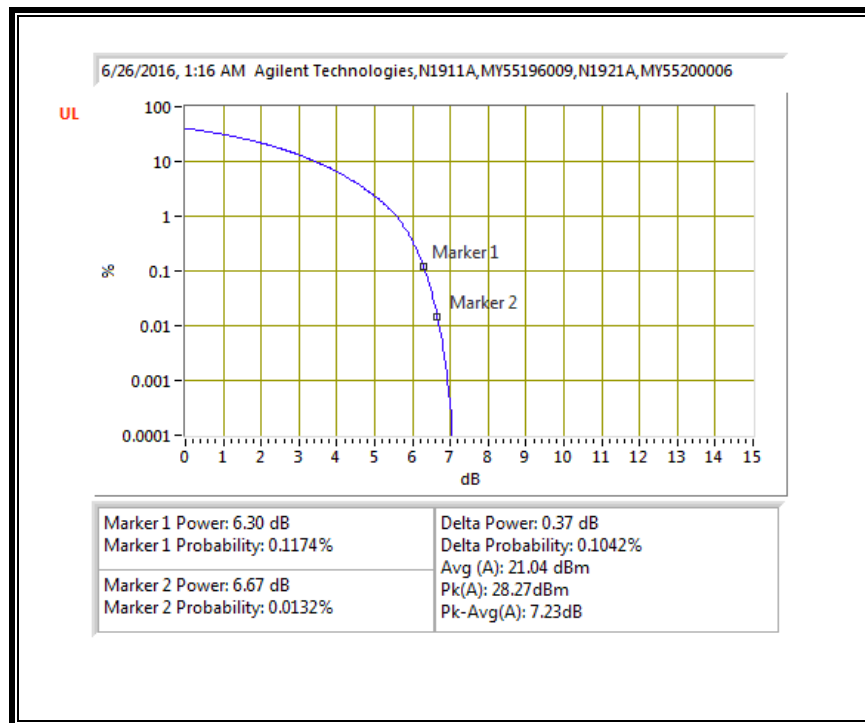
16QAM, (15.0 MHz + 20.0 MHz BAND WIDTH)



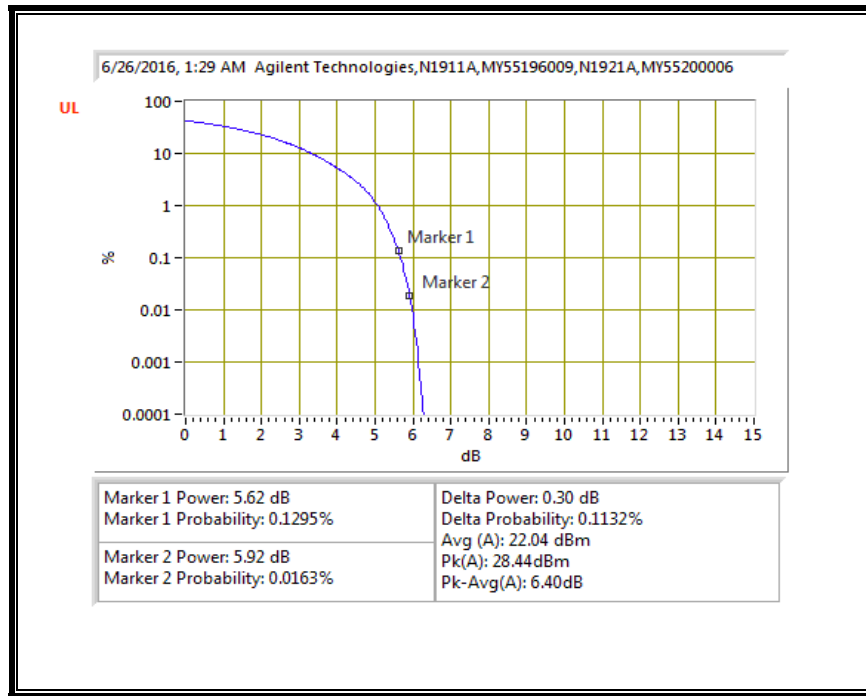
QPSK, (20.0 MHz + 15.0 MHz BAND WIDTH)



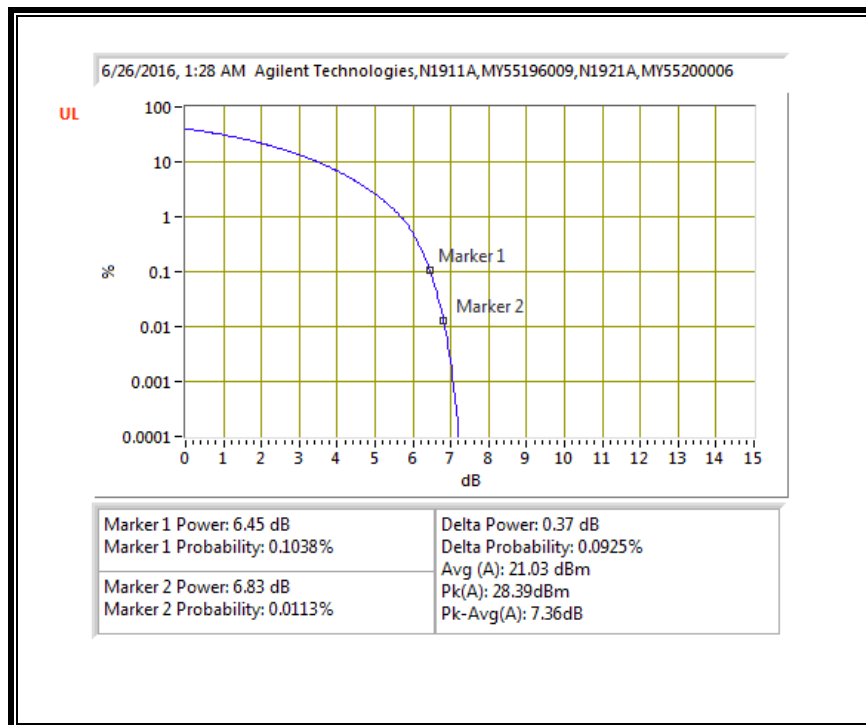
16QAM, (20.0 MHz + 15.0 MHz BAND WIDTH)



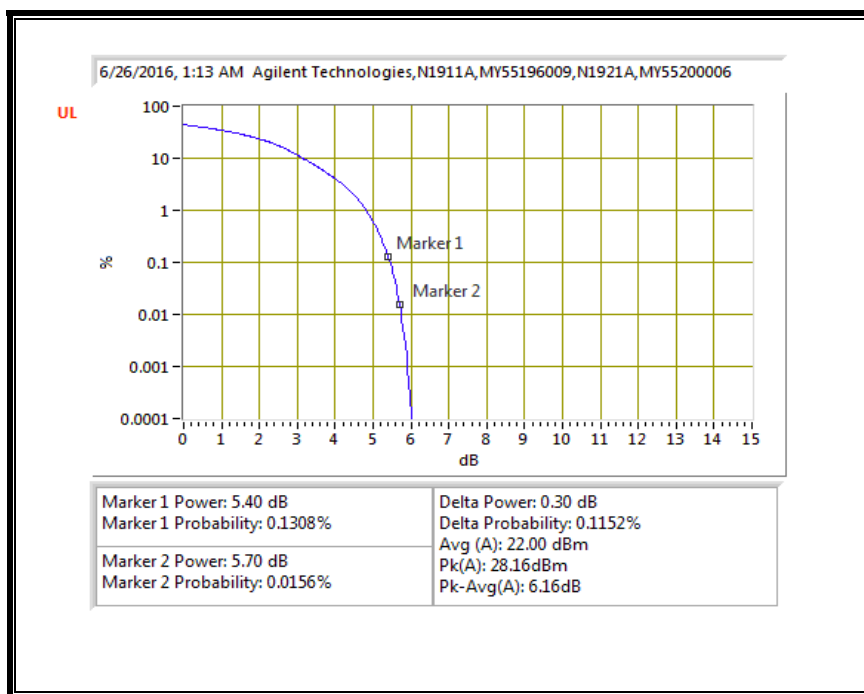
QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)



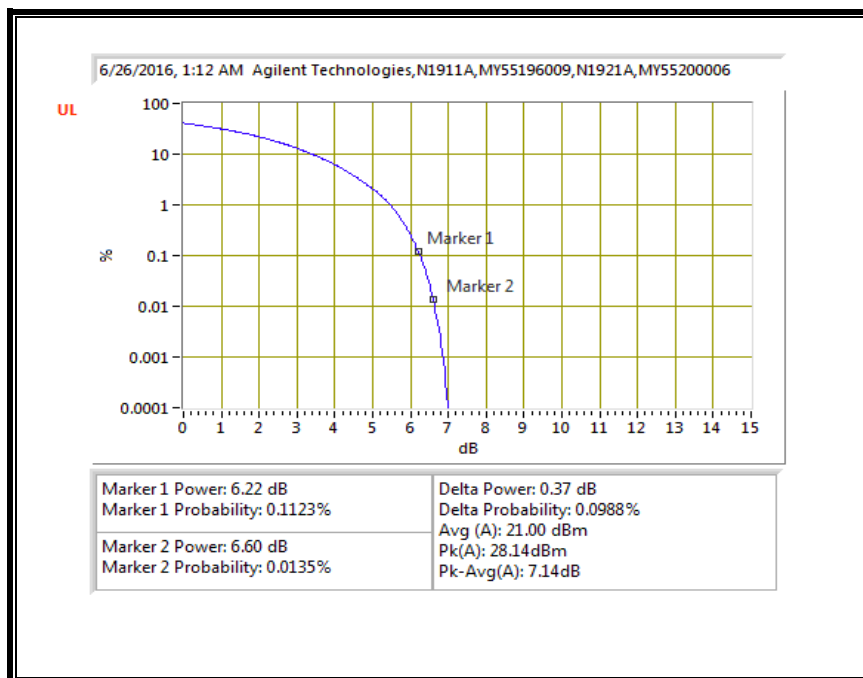
16QAM, (20.0 MHz + 10.0 MHz BAND WIDTH)



QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

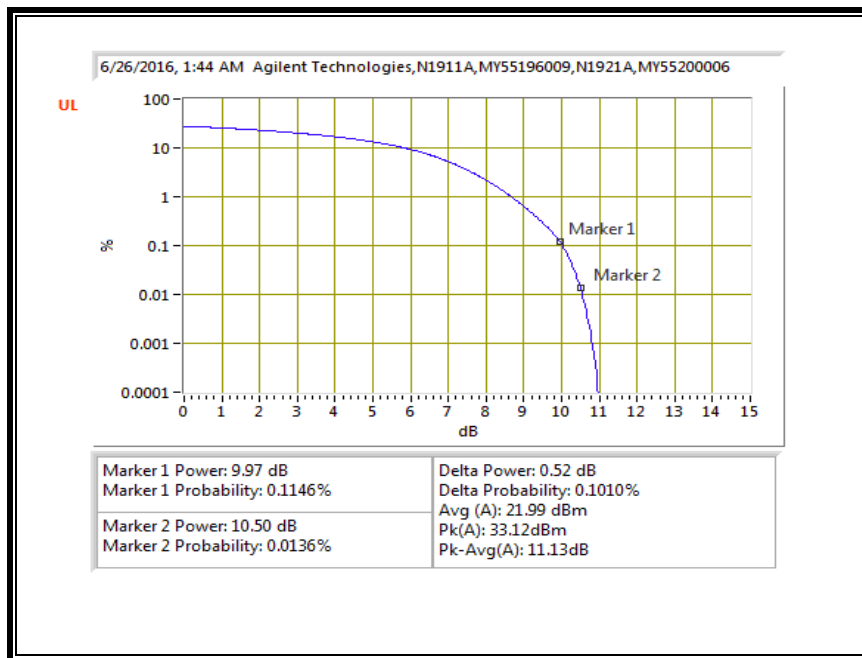


16QAM, (20.0 MHz + 20.0 MHz BAND WIDTH)

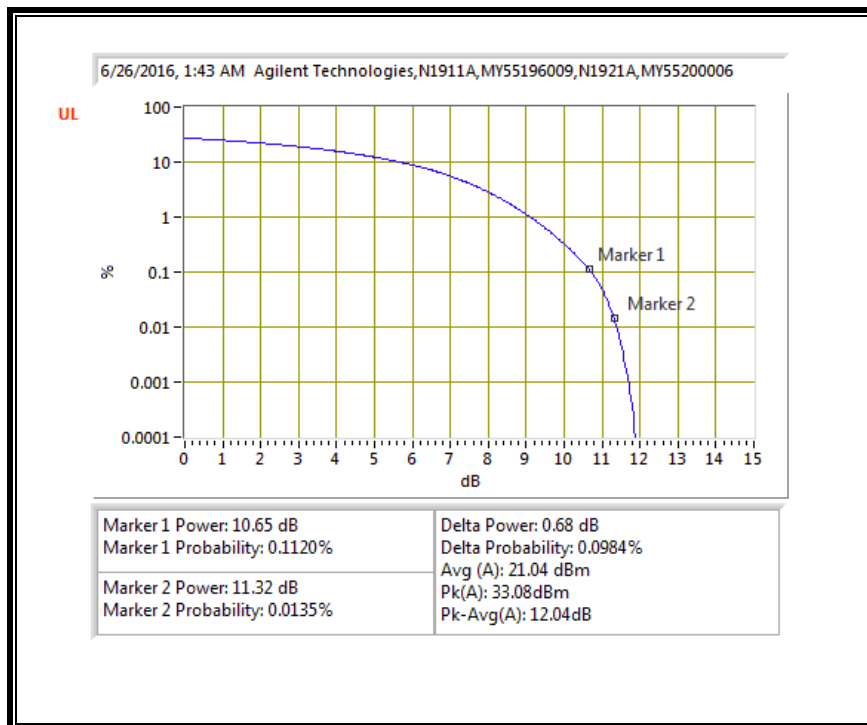


10.3.2. LTE BAND 41

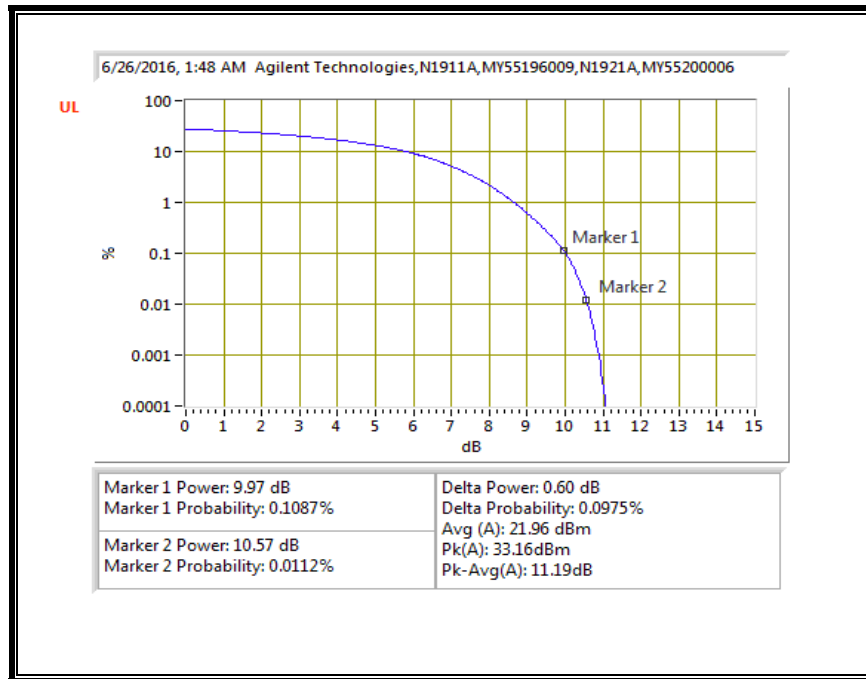
QPSK, (5.0 MHz + 20.0 MHz BAND WIDTH)



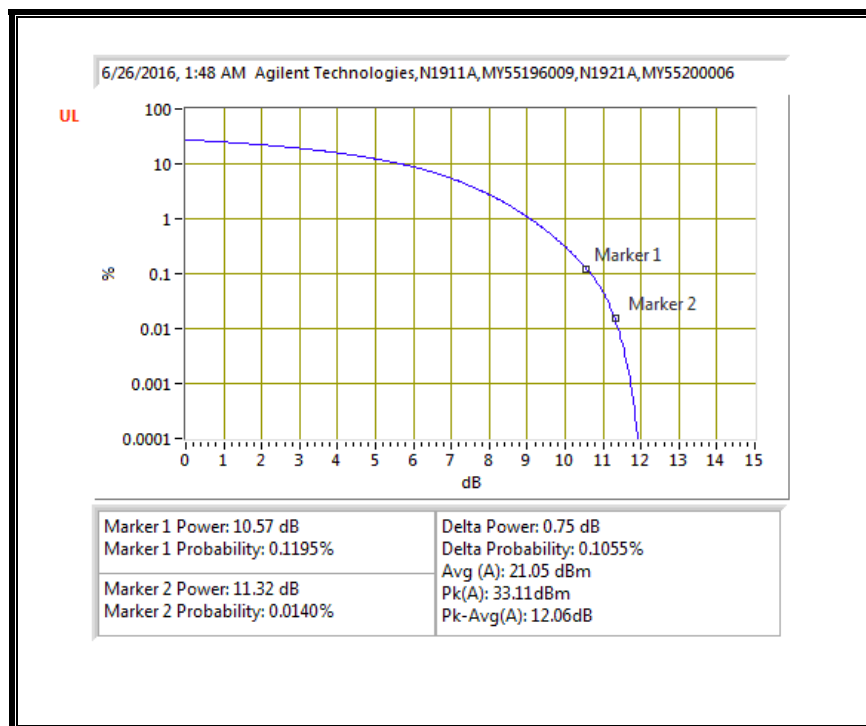
16 QAM, (5.0 MHz + 20.0 MHz BAND WIDTH)



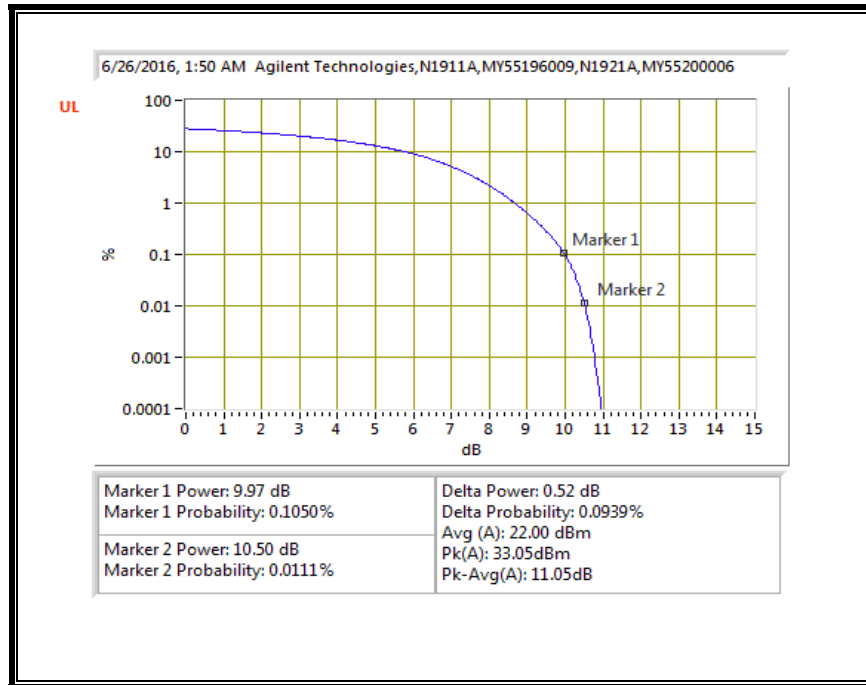
QPSK, (10.0 MHz + 20.0 MHz BAND WIDTH)



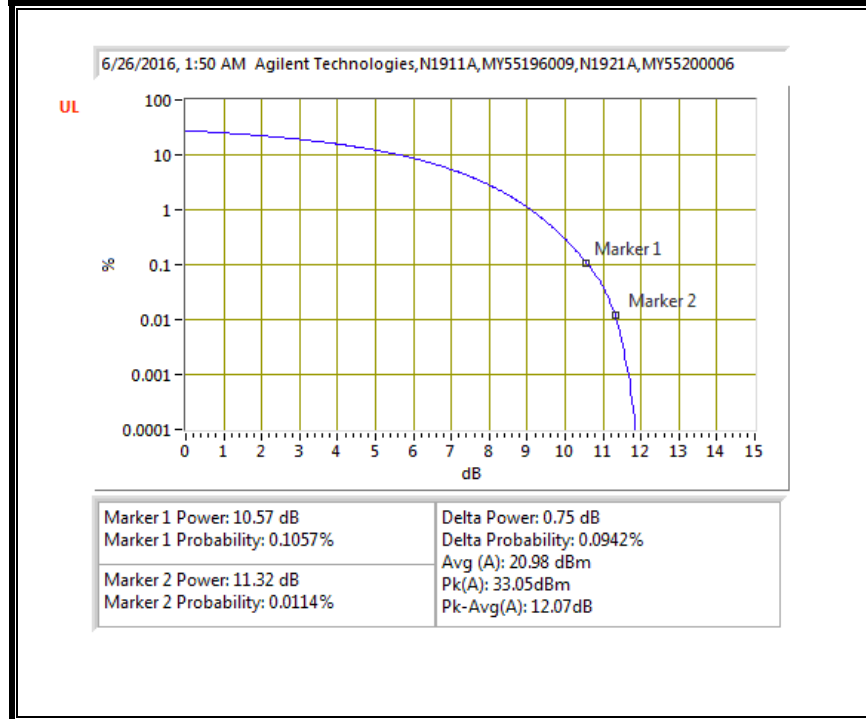
16QAM, (10.0 MHz + 20.0 MHz BAND WIDTH)



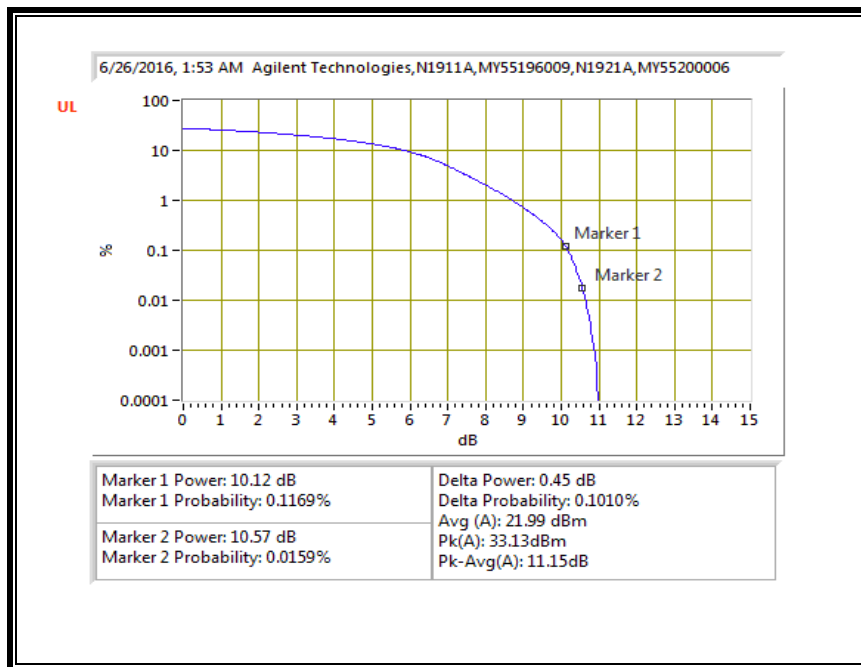
QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)



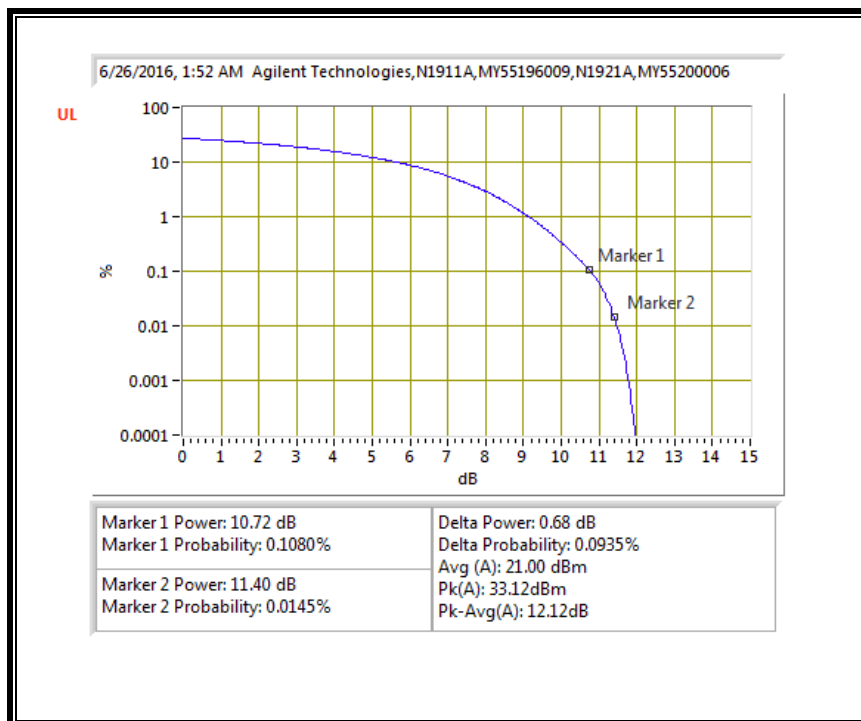
16QAM, (20.0 MHz + 10.0 MHz BAND WIDTH)



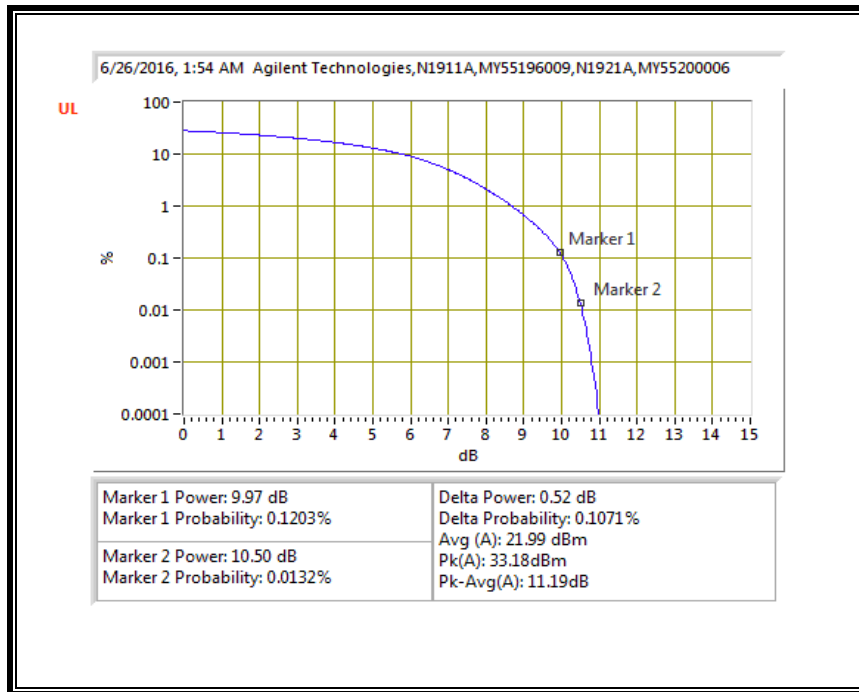
QPSK, (15.0 MHz + 15.0 MHz BAND WIDTH)



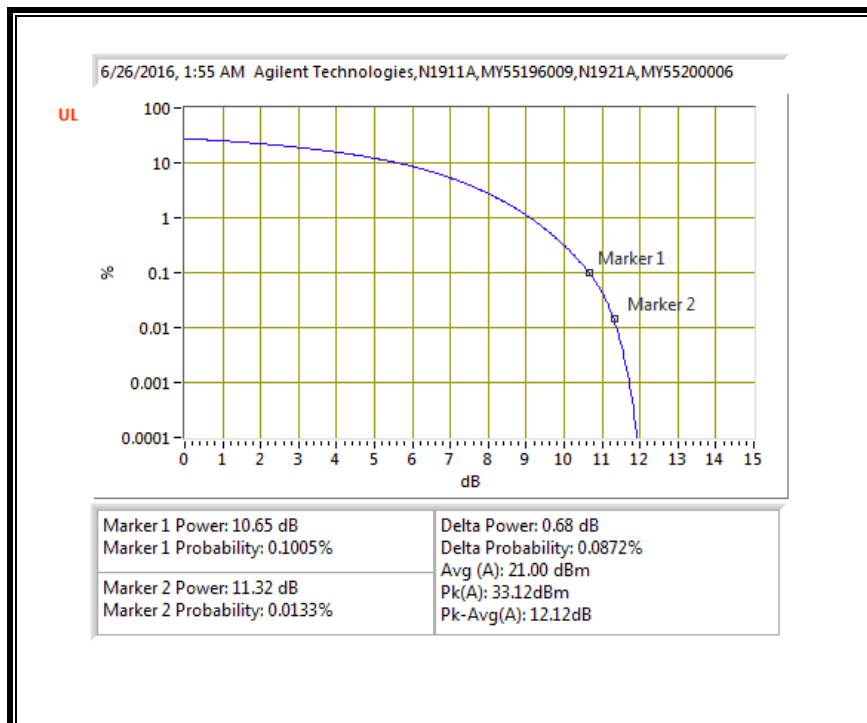
16QAM, (15.0 MHz + 15.0 MHz BAND WIDTH)



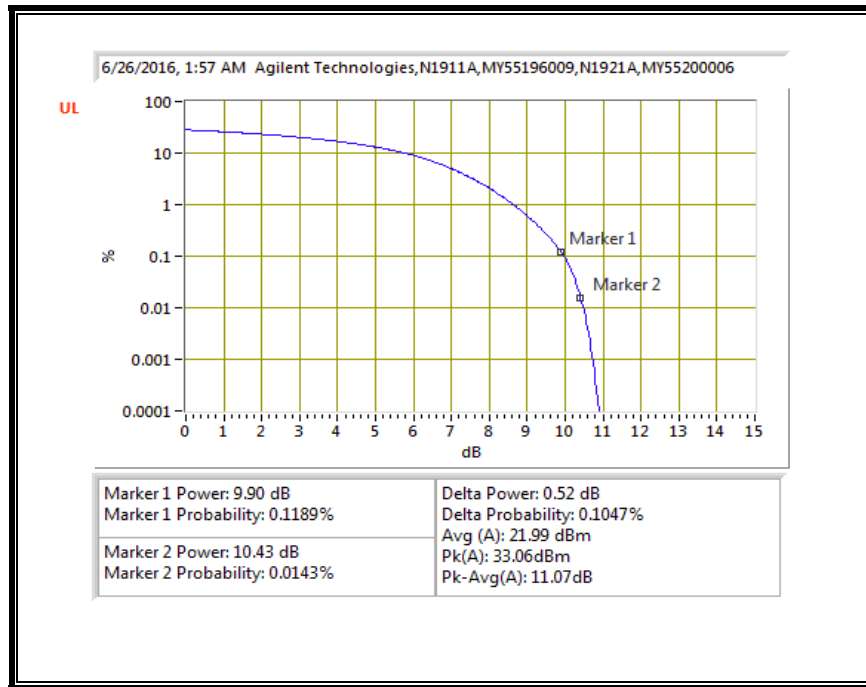
QPSK, (15.0 MHz + 20.0 MHz BAND WIDTH)



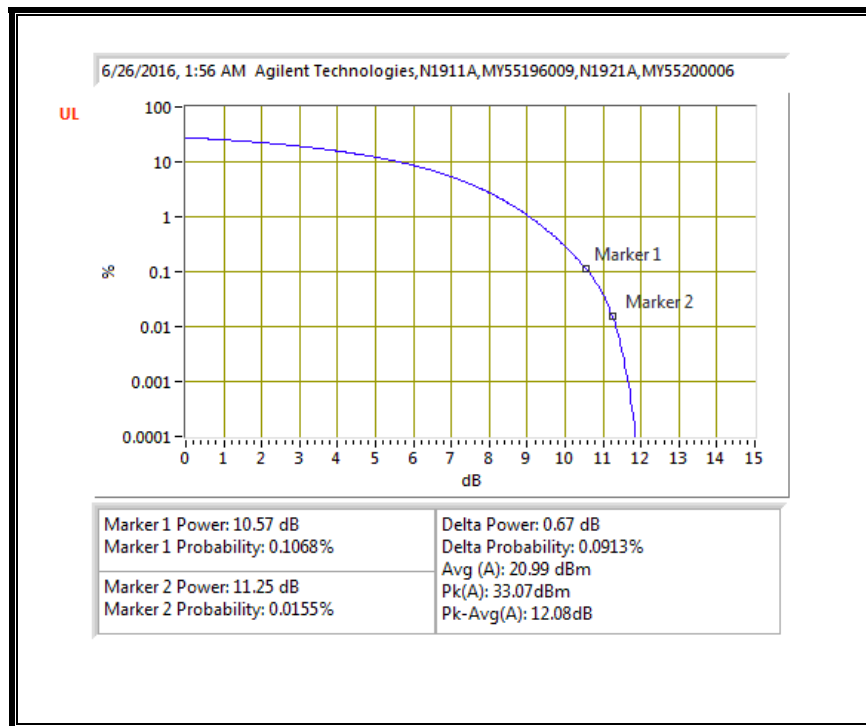
16 QAM, (15.0 MHz + 20.0 MHz BAND WIDTH)



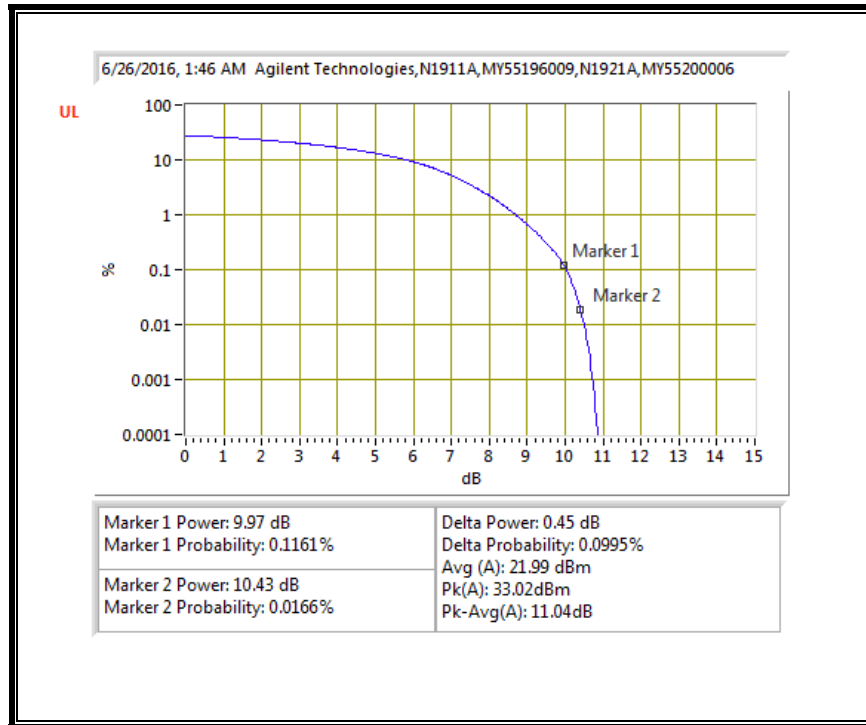
QPSK, (20.0 MHz + 15.0 MHz BAND WIDTH)



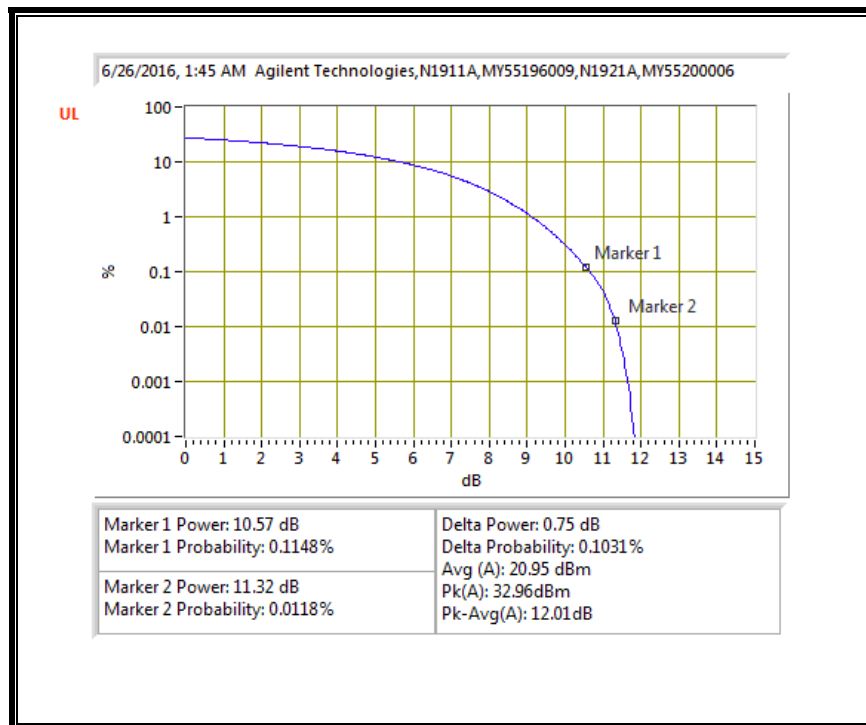
16QAM, (20.0 MHz + 15.0 MHz BAND WIDTH)



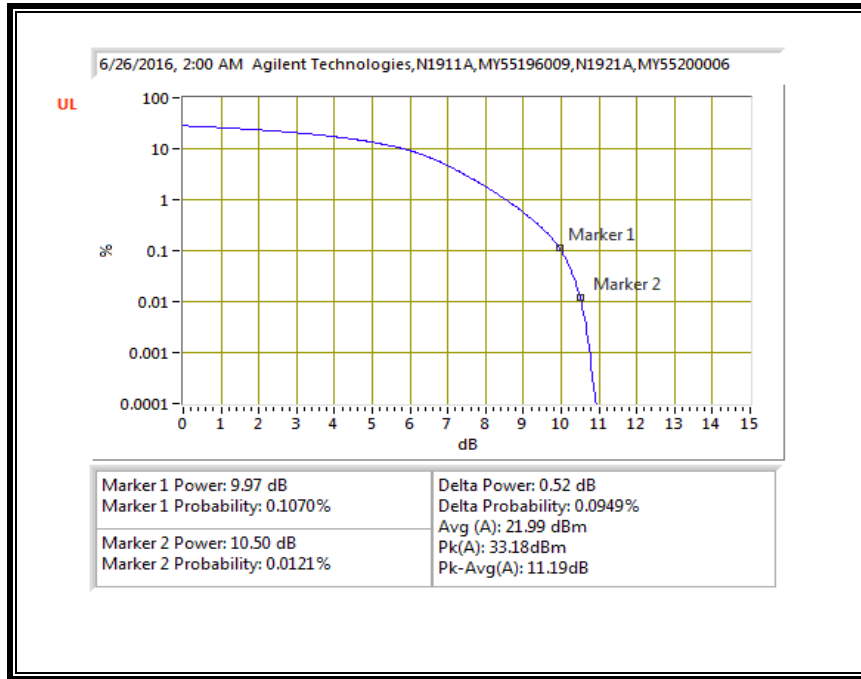
QPSK, (20.0 MHz + 5.0 MHz BAND WIDTH)



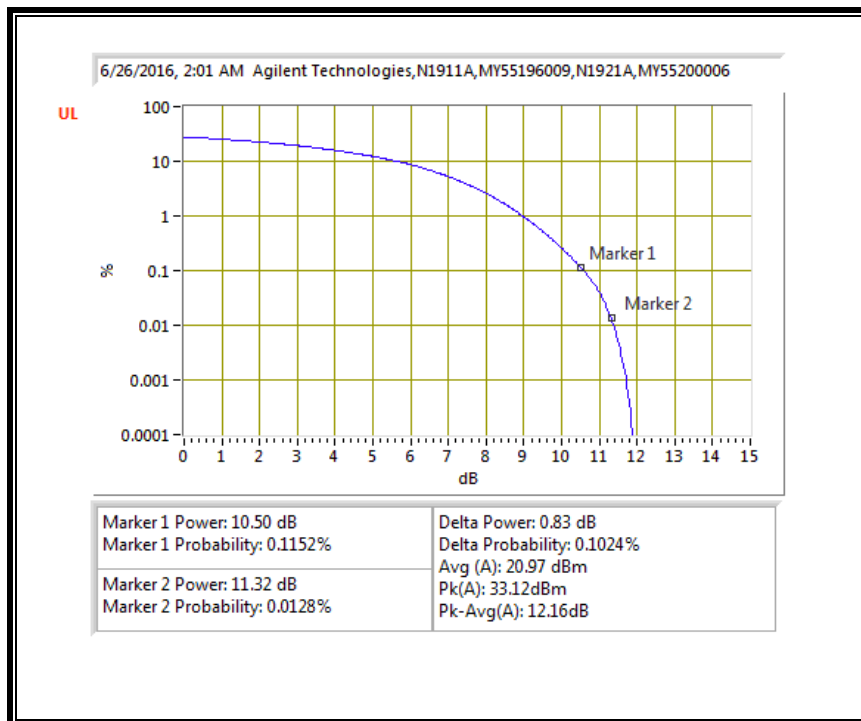
16QAM, (20.0 MHz + 5.0 MHz BAND WIDTH)



QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)



16QAM, (20.0 MHz + 20.0 MHz BAND WIDTH)



10.4. FIELD STRENGTH OF SPURIOUS RADIATION, LAT

RULE PART(S)

FCC: §2.1053, §27.53

LIMIT.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:

- a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB at the channel edges and $55 + 10 \log_{10}(p)$ at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- LTE Band 7
- LTE Band 41

RESULTS

10.4.1. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 7, 10MHz QPSK UL CA 20/10

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
4.68	-64.1	H	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
5.88	-63.9	H	3.0	-13.0	36.0	1.0	-48.0	-25.0	-23.0	
7.68	-64.3	H	3.0	-10.9	35.0	1.0	-44.9	-25.0	-19.9	
4.60	-64.6	V	3.0	-15.8	36.1	1.0	-51.0	-25.0	-26.0	
5.58	-64.4	V	3.0	-14.3	36.1	1.0	-49.4	-25.0	-24.4	
7.30	-64.7	V	3.0	-11.8	35.3	1.0	-46.1	-25.0	-21.1	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.70	-64.0	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
6.19	-64.1	H	3.0	-12.7	35.9	1.0	-47.6	-25.0	-22.6	
7.81	-65.1	H	3.0	-11.6	34.9	1.0	-45.6	-25.0	-20.6	
4.29	-64.2	V	3.0	-15.8	36.1	1.0	-50.8	-25.0	-25.8	
5.41	-63.4	V	3.0	-13.5	36.2	1.0	-48.7	-25.0	-23.7	
7.19	-64.9	V	3.0	-12.1	35.4	1.0	-46.5	-25.0	-21.5	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.66	-64.5	H	3.0	-15.9	36.2	1.0	-51.0	-25.0	-26.0	
6.05	-64.5	H	3.0	-13.4	35.9	1.0	-48.3	-25.0	-23.3	
7.13	-64.7	H	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
4.47	-64.5	V	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.74	-64.1	V	3.0	-13.7	36.1	1.0	-48.7	-25.0	-23.7	
7.65	-64.8	V	3.0	-11.6	35.0	1.0	-45.7	-25.0	-20.7	

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16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 7, 10MHz 16QAM UL CA 20/10

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber G

Pre-amplifier

3m Chamber G

Filter

Filter

Limit

LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
4.60	-64.8	H	3.0	-16.2	36.1	1.0	-51.4	-25.0	-26.4	
5.57	-64.1	H	3.0	-13.8	36.1	1.0	-48.9	-25.0	-23.9	
7.19	-64.6	H	3.0	-11.7	35.4	1.0	-46.0	-25.0	-21.0	
4.50	-63.7	V	3.0	-15.1	36.1	1.0	-50.2	-25.0	-25.2	
5.59	-64.5	V	3.0	-14.3	36.1	1.0	-49.4	-25.0	-24.4	
7.38	-65.0	V	3.0	-12.0	35.2	1.0	-46.2	-25.0	-21.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.72	-64.2	H	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
6.19	-64.6	H	3.0	-13.2	35.9	1.0	-48.1	-25.0	-23.1	
7.16	-64.9	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
4.45	-65.0	V	3.0	-16.4	36.1	1.0	-51.5	-25.0	-26.5	
5.87	-64.2	V	3.0	-13.6	36.0	1.0	-48.6	-25.0	-23.6	
7.11	-64.3	V	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.66	-64.9	H	3.0	-16.2	36.2	1.0	-51.4	-25.0	-26.4	
6.29	-64.5	H	3.0	-13.0	35.8	1.0	-47.8	-25.0	-22.8	
7.54	-64.9	H	3.0	-11.7	35.1	1.0	-45.8	-25.0	-20.8	
4.50	-65.0	V	3.0	-16.3	36.1	1.0	-51.5	-25.0	-26.5	
5.77	-64.7	V	3.0	-14.2	36.0	1.0	-49.2	-25.0	-24.2	
7.56	-65.2	V	3.0	-12.1	35.1	1.0	-46.2	-25.0	-21.2	

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QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:

Project #: 16U23366

Date: 05/23/16

Test Engineer: 39005

Configuration: EUT only

Mode: LTE Band 7, 20MHz QPSK UL CA 20/20

Test Equipment:

Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber G

Pre-amplifier

3m Chamber G

Filter

Filter

Limit

LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
4.25	-64.8	H	3.0	-16.8	36.1	1.0	-51.9	-25.0	-26.9	
5.05	-63.9	H	3.0	-13.7	36.1	1.0	-48.9	-25.0	-23.9	
6.36	-64.3	H	3.0	-10.3	35.2	1.0	-44.5	-25.0	-19.5	
4.46	-64.4	V	3.0	-15.1	36.1	1.0	-50.2	-25.0	-25.2	
5.00	-63.6	V	3.0	-12.3	36.1	1.0	-47.4	-25.0	-22.4	
6.36	-63.9	V	3.0	-10.1	35.3	1.0	-44.4	-25.0	-19.4	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.83	-63.8	H	3.0	-14.1	36.2	1.0	-49.3	-25.0	-24.3	
5.53	-64.5	H	3.0	-13.2	36.1	1.0	-48.3	-25.0	-23.3	
6.24	-63.8	H	3.0	-10.0	35.5	1.0	-44.5	-25.0	-19.5	
4.47	-64.8	V	3.0	-16.8	36.1	1.0	-52.0	-25.0	-27.0	
5.58	-64.2	V	3.0	-13.8	36.0	1.0	-48.8	-25.0	-23.8	
7.18	-64.2	V	3.0	-11.7	35.5	1.0	-46.2	-25.0	-21.2	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.39	-63.9	H	3.0	-15.3	36.1	1.0	-50.4	-25.0	-25.4	
5.78	-64.4	H	3.0	-13.6	36.0	1.0	-48.6	-25.0	-23.6	
7.98	-64.8	H	3.0	-10.3	34.8	1.0	-44.1	-25.0	-19.1	
4.55	-64.6	V	3.0	-16.9	36.1	1.0	-52.1	-25.0	-27.1	
5.74	-64.2	V	3.0	-12.8	35.8	1.0	-47.6	-25.0	-22.6	
7.04	-64.6	V	3.0	-11.6	35.0	1.0	-45.7	-25.0	-20.7	

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16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 7, 20MHz 16QAM UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
4.28	-65.0	H	3.0	-17.0	36.1	1.0	-52.1	-25.0	-27.1	
5.58	-64.3	H	3.0	-13.9	36.1	1.0	-49.0	-25.0	-24.0	
7.42	-64.5	H	3.0	-11.4	35.2	1.0	-45.6	-25.0	-20.6	
4.53	-63.6	V	3.0	-14.9	36.1	1.0	-50.1	-25.0	-25.1	
5.58	-64.3	V	3.0	-14.2	36.1	1.0	-49.3	-25.0	-24.3	
7.23	-64.5	V	3.0	-11.7	35.3	1.0	-46.0	-25.0	-21.0	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.78	-64.2	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.58	-64.4	H	3.0	-14.1	36.1	1.0	-49.2	-25.0	-24.2	
6.94	-64.9	H	3.0	-12.3	35.5	1.0	-46.8	-25.0	-21.8	
4.50	-65.1	V	3.0	-16.4	36.1	1.0	-51.5	-25.0	-26.5	
5.78	-65.0	V	3.0	-14.5	36.0	1.0	-49.5	-25.0	-24.5	
6.89	-64.7	V	3.0	-12.3	35.5	1.0	-46.8	-25.0	-21.8	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.42	-64.3	H	3.0	-16.1	36.1	1.0	-51.2	-25.0	-26.2	
5.86	-64.6	H	3.0	-13.8	36.0	1.0	-48.7	-25.0	-23.7	
8.03	-65.1	H	3.0	-11.4	34.8	1.0	-45.2	-25.0	-20.2	
4.46	-64.2	V	3.0	-15.6	36.1	1.0	-50.7	-25.0	-25.7	
6.32	-63.8	V	3.0	-12.3	35.8	1.0	-47.1	-25.0	-22.1	
7.66	-64.9	V	3.0	-11.7	35.0	1.0	-45.7	-25.0	-20.7	

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10.4.2. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 41, 5MHz QPSK UL CA 20/5

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)+2517.7MHz 1-99, 1-0										
4.38	-64.5	H	3.0	-16.4	36.1	1.0	-51.5	-25.0	-26.5	
5.66	-64.5	H	3.0	-14.0	36.1	1.0	-49.1	-25.0	-24.1	
7.52	-64.8	H	3.0	-11.6	35.1	1.0	-45.7	-25.0	-20.7	
4.45	-64.5	V	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.78	-63.5	V	3.0	-13.0	36.0	1.0	-48.0	-25.0	-23.0	
7.32	-64.9	V	3.0	-12.0	35.3	1.0	-46.3	-25.0	-21.3	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.45	-64.4	H	3.0	-16.1	36.1	1.0	-51.2	-25.0	-26.2	
5.86	-64.3	H	3.0	-13.5	36.0	1.0	-48.5	-25.0	-23.5	
7.10	-64.2	H	3.0	-11.4	35.4	1.0	-45.8	-25.0	-20.8	
4.33	-63.9	V	3.0	-15.5	36.1	1.0	-50.6	-25.0	-25.6	
6.31	-64.4	V	3.0	-13.0	35.8	1.0	-47.8	-25.0	-22.8	
7.39	-64.7	V	3.0	-11.7	35.2	1.0	-45.9	-25.0	-20.9	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.86	-64.4	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
6.29	-64.3	H	3.0	-12.8	35.8	1.0	-47.6	-25.0	-22.6	
7.65	-64.5	H	3.0	-11.2	35.0	1.0	-45.2	-25.0	-20.2	
4.58	-64.4	V	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.90	-64.2	V	3.0	-13.5	36.0	1.0	-48.5	-25.0	-23.5	
7.32	-64.8	V	3.0	-11.9	35.3	1.0	-46.2	-25.0	-21.2	

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16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 41, 5MHz 16QAM UL CA 20/5

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber

3m Chamber G

Pre-amplifier

3m Chamber G

Filter

Filter

Limit

LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)+2517.7MHz 1-99, 1-0										
4.38	-64.6	H	3.0	-16.5	36.1	1.0	-51.6	-25.0	-26.6	
5.63	-64.6	H	3.0	-14.1	36.1	1.0	-49.2	-25.0	-24.2	
7.50	-64.8	H	3.0	-11.6	35.1	1.0	-45.8	-25.0	-20.8	
4.45	-64.7	V	3.0	-16.1	36.1	1.0	-51.3	-25.0	-26.3	
5.78	-63.6	V	3.0	-13.1	36.0	1.0	-48.1	-25.0	-23.1	
7.36	-65.0	V	3.0	-12.0	35.2	1.0	-46.3	-25.0	-21.3	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.55	-64.3	H	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.78	-64.4	H	3.0	-13.7	36.0	1.0	-48.7	-25.0	-23.7	
7.16	-64.2	H	3.0	-11.4	35.4	1.0	-45.8	-25.0	-20.8	
4.33	-63.9	V	3.0	-15.4	36.1	1.0	-50.5	-25.0	-25.5	
6.36	-64.8	V	3.0	-13.3	35.8	1.0	-48.1	-25.0	-23.1	
7.39	-64.7	V	3.0	-11.7	35.2	1.0	-45.9	-25.0	-20.9	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.82	-64.7	H	3.0	-15.7	36.2	1.0	-50.9	-25.0	-25.9	
6.30	-64.8	H	3.0	-13.2	35.8	1.0	-48.0	-25.0	-23.0	
7.69	-64.5	H	3.0	-11.1	35.0	1.0	-45.2	-25.0	-20.2	
4.48	-64.9	V	3.0	-16.2	36.1	1.0	-51.4	-25.0	-26.4	
5.94	-64.5	V	3.0	-13.7	36.0	1.0	-48.7	-25.0	-23.7	
7.30	-64.9	V	3.0	-12.0	35.3	1.0	-46.3	-25.0	-21.3	

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QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 41, 20MHz QPSK UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 1-99 1-0										
4.36	-64.6	H	3.0	-16.6	36.1	1.0	-51.7	-25.0	-26.7	
5.61	-64.2	H	3.0	-13.8	36.1	1.0	-48.9	-25.0	-23.9	
7.46	-64.8	H	3.0	-11.7	35.2	1.0	-45.9	-25.0	-20.9	
4.48	-64.5	V	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.77	-63.5	V	3.0	-13.0	36.0	1.0	-48.0	-25.0	-23.0	
7.01	-64.8	V	3.0	-12.2	35.5	1.0	-46.7	-25.0	-21.7	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
4.59	-64.5	H	3.0	-16.0	36.1	1.0	-51.1	-25.0	-26.1	
5.79	-64.4	H	3.0	-13.6	36.0	1.0	-48.7	-25.0	-23.7	
7.02	-64.0	H	3.0	-11.3	35.5	1.0	-45.8	-25.0	-20.8	
4.35	-63.8	V	3.0	-15.3	36.1	1.0	-50.4	-25.0	-25.4	
6.25	-64.2	V	3.0	-12.8	35.8	1.0	-47.7	-25.0	-22.7	
7.35	-64.9	V	3.0	-11.9	35.3	1.0	-46.2	-25.0	-21.2	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.79	-64.2	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
6.29	-64.2	H	3.0	-12.6	35.8	1.0	-47.4	-25.0	-22.4	
7.63	-64.6	H	3.0	-11.3	35.1	1.0	-45.3	-25.0	-20.3	
4.58	-64.4	V	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.92	-63.9	V	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
7.16	-64.7	V	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	

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16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/23/16
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 41, 20MHz 16QAM UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 1-99 1-0										
4.36	-64.8	H	3.0	-16.7	36.1	1.0	-51.8	-25.0	-26.8	
5.62	-64.5	H	3.0	-14.0	36.1	1.0	-49.1	-25.0	-24.1	
7.46	-64.9	H	3.0	-11.8	35.2	1.0	-45.9	-25.0	-20.9	
4.49	-64.4	V	3.0	-15.8	36.1	1.0	-50.9	-25.0	-25.9	
5.85	-63.8	V	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
7.12	-64.9	V	3.0	-12.1	35.4	1.0	-46.5	-25.0	-21.5	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
4.60	-64.7	H	3.0	-16.1	36.1	1.0	-51.3	-25.0	-26.3	
5.79	-64.5	H	3.0	-13.8	36.0	1.0	-48.8	-25.0	-23.8	
7.05	-64.3	H	3.0	-11.5	35.5	1.0	-46.0	-25.0	-21.0	
4.38	-63.9	V	3.0	-15.4	36.1	1.0	-50.5	-25.0	-25.5	
6.20	-64.4	V	3.0	-13.1	35.8	1.0	-48.0	-25.0	-23.0	
7.30	-65.1	V	3.0	-12.2	35.3	1.0	-46.5	-25.0	-21.5	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.75	-64.4	H	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
6.31	-64.2	H	3.0	-12.6	35.8	1.0	-47.4	-25.0	-22.4	
7.63	-64.6	H	3.0	-11.3	35.1	1.0	-45.4	-25.0	-20.4	
4.59	-64.4	V	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.95	-64.1	V	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
7.18	-64.8	V	3.0	-12.0	35.4	1.0	-46.3	-25.0	-21.3	

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10.5. FIELD STRENGTH OF SPURIOUS RADIATION, UAT

10.5.1. LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7, 10MHz QPSK UL CA 20/10

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
3.64	-63.9	H	3.0	-17.3	36.3	1.0	-52.5	-25.0	-27.5	
5.38	-64.2	H	3.0	-14.2	36.2	1.0	-49.4	-25.0	-24.4	
7.15	-64.4	H	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
4.77	-63.9	V	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
5.97	-64.0	V	3.0	-13.2	35.9	1.0	-48.1	-25.0	-23.1	
7.12	-64.6	V	3.0	-11.8	35.4	1.0	-46.3	-25.0	-21.3	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
3.60	-63.9	H	3.0	-17.4	36.3	1.0	-52.6	-25.0	-27.6	
5.38	-63.8	H	3.0	-13.8	36.2	1.0	-49.0	-25.0	-24.0	
7.16	-64.3	H	3.0	-11.5	35.4	1.0	-45.8	-25.0	-20.8	
3.64	-63.9	V	3.0	-16.9	36.3	1.0	-52.2	-25.0	-27.2	
4.78	-64.1	V	3.0	-15.1	36.2	1.0	-50.3	-25.0	-25.3	
7.15	-64.4	V	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.82	-64.2	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.97	-64.3	H	3.0	-13.3	35.9	1.0	-48.2	-25.0	-23.2	
7.10	-64.3	H	3.0	-11.5	35.4	1.0	-45.9	-25.0	-20.9	
4.18	-64.1	V	3.0	-15.8	36.0	1.0	-50.9	-25.0	-25.9	
5.93	-63.7	V	3.0	-12.9	36.0	1.0	-47.9	-25.0	-22.9	
7.14	-64.0	V	3.0	-11.2	35.4	1.0	-45.6	-25.0	-20.6	

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16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7, 10MHz 16QAM UL CA 20/10

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+2524.4MHz 1-99 1-0										
3.66	-64.2	H	3.0	-17.5	36.3	1.0	-52.8	-25.0	-27.8	
5.35	-64.4	H	3.0	-14.4	36.2	1.0	-49.6	-25.0	-24.6	
7.14	-64.7	H	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
4.78	-64.3	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.97	-64.5	V	3.0	-13.7	35.9	1.0	-48.6	-25.0	-23.6	
7.14	-65.2	V	3.0	-12.4	35.4	1.0	-46.8	-25.0	-21.8	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
3.61	-64.2	H	3.0	-17.6	36.3	1.0	-52.9	-25.0	-27.9	
5.39	-64.4	H	3.0	-14.3	36.2	1.0	-49.5	-25.0	-24.5	
7.15	-64.8	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
3.66	-64.2	V	3.0	-17.2	36.3	1.0	-52.4	-25.0	-27.4	
4.80	-64.5	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
7.17	-65.1	V	3.0	-12.3	35.4	1.0	-46.7	-25.0	-21.7	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.85	-64.4	H	3.0	-15.3	36.2	1.0	-50.6	-25.0	-25.6	
5.99	-64.7	H	3.0	-13.7	35.9	1.0	-48.6	-25.0	-23.6	
7.12	-64.7	H	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
4.20	-64.3	V	3.0	-16.0	36.1	1.0	-51.1	-25.0	-26.1	
5.95	-64.2	V	3.0	-13.4	36.0	1.0	-48.3	-25.0	-23.3	
7.13	-64.8	V	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	

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QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7, 20MHz QPSK UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
4.82	-63.6	H	3.0	-15.5	36.1	1.0	-50.6	-25.0	-25.6	
5.40	-63.5	H	3.0	-13.8	36.3	1.0	-49.1	-25.0	-24.1	
7.09	-64.0	H	3.0	-8.6	33.4	1.0	-41.0	-25.0	-16.0	
4.82	-64.1	V	3.0	-14.5	36.3	1.0	-49.8	-25.0	-24.8	
5.97	-64.0	V	3.0	-10.4	34.8	1.0	-44.2	-25.0	-19.2	
7.14	-64.3	V	3.0	-8.3	32.1	1.0	-39.4	-25.0	-14.4	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.19	-64.0	H	3.0	-13.0	36.0	1.0	-48.0	-25.0	-23.0	
5.99	-63.9	H	3.0	-10.8	35.2	1.0	-45.1	-25.0	-20.1	
7.16	-64.1	H	3.0	-7.8	32.0	1.0	-38.8	-25.0	-13.8	
4.19	-64.3	V	3.0	-16.6	36.1	1.0	-51.7	-25.0	-26.7	
5.99	-63.7	V	3.0	-12.8	35.9	1.0	-47.8	-25.0	-22.8	
7.19	-64.4	V	3.0	-11.6	35.4	1.0	-45.9	-25.0	-20.9	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.20	-64.3	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.95	-64.1	H	3.0	-13.4	36.0	1.0	-48.4	-25.0	-23.4	
7.19	-64.4	H	3.0	-8.1	32.0	1.0	-39.2	-25.0	-14.2	
3.62	-64.2	V	3.0	-17.2	36.3	1.0	-52.4	-25.0	-27.4	
5.36	-64.2	V	3.0	-12.9	35.8	1.0	-47.8	-25.0	-22.8	
7.16	-64.4	V	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	

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16QAM EIRP POWER FOR LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7, 20MHz 16QAM UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B7

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2510MHz)+ 2529.8MHz 1-99 1-0										
4.82	-64.0	H	3.0	-15.0	36.2	1.0	-50.2	-25.0	-25.2	
5.40	-64.1	H	3.0	-14.0	36.2	1.0	-49.2	-25.0	-24.2	
7.09	-64.2	H	3.0	-11.4	35.4	1.0	-45.9	-25.0	-20.9	
4.82	-64.4	V	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
5.97	-64.4	V	3.0	-13.6	35.9	1.0	-48.5	-25.0	-23.5	
7.14	-65.0	V	3.0	-12.2	35.4	1.0	-46.6	-25.0	-21.6	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.19	-64.2	H	3.0	-16.5	36.1	1.0	-51.5	-25.0	-26.5	
5.99	-64.3	H	3.0	-13.3	35.9	1.0	-48.2	-25.0	-23.2	
7.16	-64.7	H	3.0	-11.9	35.4	1.0	-46.2	-25.0	-21.2	
4.19	-64.6	V	3.0	-16.3	36.1	1.0	-51.4	-25.0	-26.4	
5.99	-64.2	V	3.0	-13.3	35.9	1.0	-48.3	-25.0	-23.3	
7.19	-65.1	V	3.0	-12.3	35.4	1.0	-46.6	-25.0	-21.6	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.20	-64.4	H	3.0	-16.6	36.1	1.0	-51.7	-25.0	-26.7	
5.95	-64.3	H	3.0	-13.3	36.0	1.0	-48.3	-25.0	-23.3	
7.19	-64.8	H	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
3.62	-64.3	V	3.0	-17.4	36.3	1.0	-52.7	-25.0	-27.7	
5.36	-64.5	V	3.0	-14.7	36.2	1.0	-49.9	-25.0	-24.9	
7.16	-64.9	V	3.0	-12.1	35.4	1.0	-46.5	-25.0	-21.5	

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10.5.2. LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41, 5MHz QPSK UL CA 20/5

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz)+2517.7MHz 1-99, 1-0										
4.79	-64.0	H	3.0	-15.1	36.2	1.0	-50.3	-25.0	-25.3	
5.99	-64.0	H	3.0	-13.0	35.9	1.0	-47.9	-25.0	-22.9	
7.10	-64.4	H	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
3.66	-63.9	V	3.0	-16.9	36.3	1.0	-52.1	-25.0	-27.1	
5.94	-64.0	V	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
7.15	-64.4	V	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
3.60	-63.6	H	3.0	-17.1	36.3	1.0	-52.3	-25.0	-27.3	
5.38	-64.0	H	3.0	-14.0	36.2	1.0	-49.2	-25.0	-24.2	
7.10	-64.4	H	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
3.60	-63.6	V	3.0	-16.8	36.3	1.0	-52.1	-25.0	-27.1	
5.36	-63.9	V	3.0	-14.1	36.2	1.0	-49.3	-25.0	-24.3	
7.11	-64.0	V	3.0	-11.3	35.4	1.0	-45.7	-25.0	-20.7	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.78	-64.2	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.98	-64.2	H	3.0	-13.2	35.9	1.0	-48.1	-25.0	-23.1	
7.13	-64.5	H	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
3.62	-63.5	V	3.0	-16.6	36.3	1.0	-51.9	-25.0	-26.9	
4.79	-63.9	V	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
7.13	-64.4	V	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	

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16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41, 5MHz 16QAM UL CA 20/5

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) +2517.7MHz 1-99, 1-0										
4.79	-64.2	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.99	-64.4	H	3.0	-13.4	35.9	1.0	-48.3	-25.0	-23.3	
7.10	-64.9	H	3.0	-12.1	35.4	1.0	-46.5	-25.0	-21.5	
3.66	-64.1	V	3.0	-17.1	36.3	1.0	-52.3	-25.0	-27.3	
5.94	-64.3	V	3.0	-13.5	36.0	1.0	-48.5	-25.0	-23.5	
7.15	-64.7	V	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
Mid Channel (2590.5MHz) +2602.2MHz 1-99, 1-0										
3.60	-64.0	H	3.0	-17.5	36.3	1.0	-52.7	-25.0	-27.7	
5.38	-64.3	H	3.0	-14.3	36.2	1.0	-49.5	-25.0	-24.5	
7.10	-64.6	H	3.0	-11.8	35.4	1.0	-46.2	-25.0	-21.2	
3.60	-64.1	V	3.0	-17.3	36.3	1.0	-52.6	-25.0	-27.6	
5.36	-64.3	V	3.0	-14.5	36.2	1.0	-49.7	-25.0	-24.7	
7.11	-64.5	V	3.0	-11.8	35.4	1.0	-46.2	-25.0	-21.2	
High Channel (2675MHz) +2686.7MHz 1-99, 1-0										
4.78	-64.4	H	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
5.98	-64.6	H	3.0	-13.6	35.9	1.0	-48.5	-25.0	-23.5	
7.13	-65.1	H	3.0	-12.3	35.4	1.0	-46.7	-25.0	-21.7	
3.62	-64.1	V	3.0	-17.2	36.3	1.0	-52.5	-25.0	-27.5	
4.79	-64.5	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
7.13	-65.2	V	3.0	-12.4	35.4	1.0	-46.8	-25.0	-21.8	

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QPSK EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41, 20MHz QPSK UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 1-99 1-0										
4.19	-64.1	H	3.0	-16.4	36.1	1.0	-51.4	-25.0	-26.4	
5.99	-63.8	H	3.0	-12.8	35.9	1.0	-47.7	-25.0	-22.7	
7.15	-64.0	H	3.0	-11.2	35.4	1.0	-45.6	-25.0	-20.6	
4.81	-63.7	V	3.0	-14.7	36.2	1.0	-49.9	-25.0	-24.9	
6.00	-64.0	V	3.0	-13.1	35.9	1.0	-48.0	-25.0	-23.0	
7.12	-64.3	V	3.0	-11.5	35.4	1.0	-46.0	-25.0	-21.0	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
3.63	-64.3	H	3.0	-17.7	36.3	1.0	-53.0	-25.0	-28.0	
5.98	-64.1	H	3.0	-13.1	35.9	1.0	-48.0	-25.0	-23.0	
7.13	-64.3	H	3.0	-11.5	35.4	1.0	-45.9	-25.0	-20.9	
4.24	-64.0	V	3.0	-15.6	36.1	1.0	-50.7	-25.0	-25.7	
5.96	-63.7	V	3.0	-12.9	36.0	1.0	-47.8	-25.0	-22.8	
7.09	-63.8	V	3.0	-11.1	35.4	1.0	-45.5	-25.0	-20.5	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.19	-64.2	H	3.0	-16.5	36.1	1.0	-51.5	-25.0	-26.5	
5.36	-64.0	H	3.0	-14.0	36.2	1.0	-49.2	-25.0	-24.2	
7.18	-64.4	H	3.0	-11.5	35.4	1.0	-45.9	-25.0	-20.9	
4.20	-63.9	V	3.0	-15.6	36.1	1.0	-50.7	-25.0	-25.7	
5.38	-64.2	V	3.0	-14.4	36.2	1.0	-49.6	-25.0	-24.6	
7.11	-64.4	V	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	

Rev. 05.21.15

16QAM EIRP POWER FOR LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #: 16U23366
Date: 05/24/16
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41, 20MHz 16QAM UL CA 20/20

Test Equipment:
 Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber
 3m Chamber G

Pre-amplifier
 3m Chamber G

Filter
 Filter

Limit
 LTE B41

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (2506MHz) + 2525.8MHz 1-99 1-0										
4.19	-64.4	H	3.0	-16.7	36.1	1.0	-51.7	-25.0	-26.7	
5.99	-64.3	H	3.0	-13.3	35.9	1.0	-48.2	-25.0	-23.2	
7.15	-64.5	H	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
4.81	-64.2	V	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
6.00	-64.6	V	3.0	-13.7	35.9	1.0	-48.6	-25.0	-23.6	
7.12	-65.0	V	3.0	-12.2	35.4	1.0	-46.7	-25.0	-21.7	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
3.63	-64.4	H	3.0	-17.8	36.3	1.0	-53.1	-25.0	-28.1	
5.98	-64.5	H	3.0	-13.5	35.9	1.0	-48.4	-25.0	-23.4	
7.13	-64.8	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
4.24	-64.3	V	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.96	-64.4	V	3.0	-13.6	36.0	1.0	-48.5	-25.0	-23.5	
7.09	-64.6	V	3.0	-11.9	35.4	1.0	-46.3	-25.0	-21.3	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.19	-64.4	H	3.0	-16.7	36.1	1.0	-51.7	-25.0	-26.7	
5.36	-64.4	H	3.0	-14.4	36.2	1.0	-49.6	-25.0	-24.6	
7.18	-64.9	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
4.20	-64.3	V	3.0	-16.0	36.1	1.0	-51.1	-25.0	-26.1	
5.38	-64.7	V	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
7.11	-64.9	V	3.0	-12.2	35.4	1.0	-46.6	-25.0	-21.6	

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