



FCC CFR47 PART 27

**UP LINK CARRIER AGGREGATION
CERTIFICATION TEST REPORT**

FOR

CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL NUMBER: A1661, A1786

**FCC ID: BCG-E3087A
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NVLAP LAB CODE 200065-0

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V1	07/26/2016	Initial Review	Mengistu Mekuria
V2	07/30/2016	Revised reports to address TCB's 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: A1661, A1786

SERIAL NUMBER: C39RV045HFNN (CONDUCTED); C39RV02LHFNN (RADIATED)

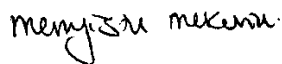
DATE TESTED: JULY 12, 2016 – JULY 26, 2016

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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MONA HUA
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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 A1661, A1786 is a mobile phone with multimedia functions (music, application support, and video), cellular GSM/GPRS/EGPRS/CDMA/EVDO/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	23.00	199.5	24.16	260.6
		16QAM	22.21	166.3	23.50	223.9
20+10		QPSK	22.91	195.4	24.16	260.6
		16QAM	22.17	164.8	23.48	222.8
15+15		QPSK	23.00	199.5	24.12	258.4
		16QAM	22.10	162.2	23.45	221.3
15+20		QPSK	23.00	199.5	24.20	263.0
		16QAM	22.17	164.8	23.49	223.4
20+15		QPSK	23.00	199.5	24.16	260.6
		16QAM	21.98	157.8	23.56	227.0
20+20		QPSK	23.00	199.5	24.24	265.5
		16QAM	22.27	168.7	23.74	236.6

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	22.50	177.8	24.60	288.4
		16QAM	21.79	151.0	24.03	252.9
20+5		QPSK	22.50	177.8	24.66	292.4
		16QAM	21.73	148.9	24.08	255.9
10+20		QPSK	22.50	177.8	24.56	285.8
		16QAM	21.84	152.8	23.94	247.7
20+10		QPSK	22.50	177.8	24.48	280.5
		16QAM	21.68	147.2	23.85	242.7
15+15		QPSK	22.50	177.8	24.69	294.4
		16QAM	21.62	145.2	23.94	247.7
15+20		QPSK	22.49	177.4	24.52	283.1
		16QAM	21.69	147.6	23.95	248.3
20+15		QPSK	22.50	177.8	24.47	279.9
		16QAM	21.63	145.5	23.64	231.2
20+20		QPSK	22.41	174.2	24.59	287.7
		16QAM	21.60	144.5	23.74	236.6

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	19.00	79.4	21.05	127.4
		16QAM	17.85	61.0	20.13	103.0
20+10		QPSK	18.97	78.9	21.13	129.7
		16QAM	17.93	62.1	20.23	105.4
15+15		QPSK	18.81	76.0	21.13	129.7
		16QAM	17.67	58.5	20.29	106.9
15+20		QPSK	18.88	77.3	21.12	129.4
		16QAM	17.96	62.5	20.14	103.3
20+15		QPSK	18.86	76.9	21.24	133.0
		16QAM	17.93	62.1	20.33	107.9
20+20		QPSK	19.00	79.4	21.14	130.0
		16QAM	18.14	65.2	20.33	107.9

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	18.00	63.1	19.71	93.5
		16QAM	17.13	51.6	19.14	82.0
20+5		QPSK	18.00	63.1	19.52	89.5
		16QAM	17.24	53.0	19.10	81.3
10+20		QPSK	18.00	63.1	20.05	101.2
		16QAM	17.17	52.1	19.56	90.4
20+10		QPSK	18.00	63.1	19.59	91.0
		16QAM	17.18	52.2	19.04	80.2
15+15		QPSK	18.00	63.1	19.81	95.7
		16QAM	17.21	52.6	19.31	85.3
15+20		QPSK	18.00	63.1	19.44	87.9
		16QAM	17.08	51.1	18.61	72.6
20+15		QPSK	18.00	63.1	19.69	93.1
		16QAM	17.10	51.3	18.89	77.4
20+20		QPSK	18.00	63.1	19.89	97.5
		16QAM	17.08	51.1	19.41	87.3

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 Portrait 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	HP	HNSTNN-DA40	WDWR70BAR9AKS8
Laptop	HP	HP ProBook 450 G2	CND5367Z97
DC power supply	Sorensen	XT 20-3	1318A00530

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

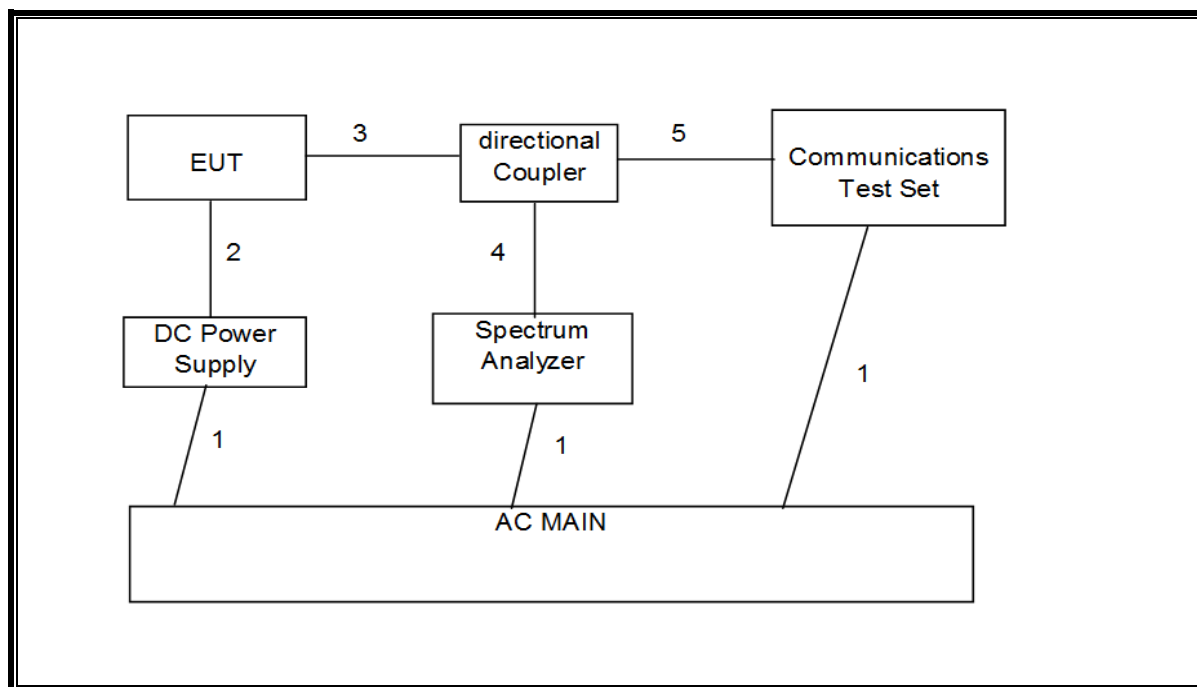
I/O CABLES (RF RADIATED TEST)

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

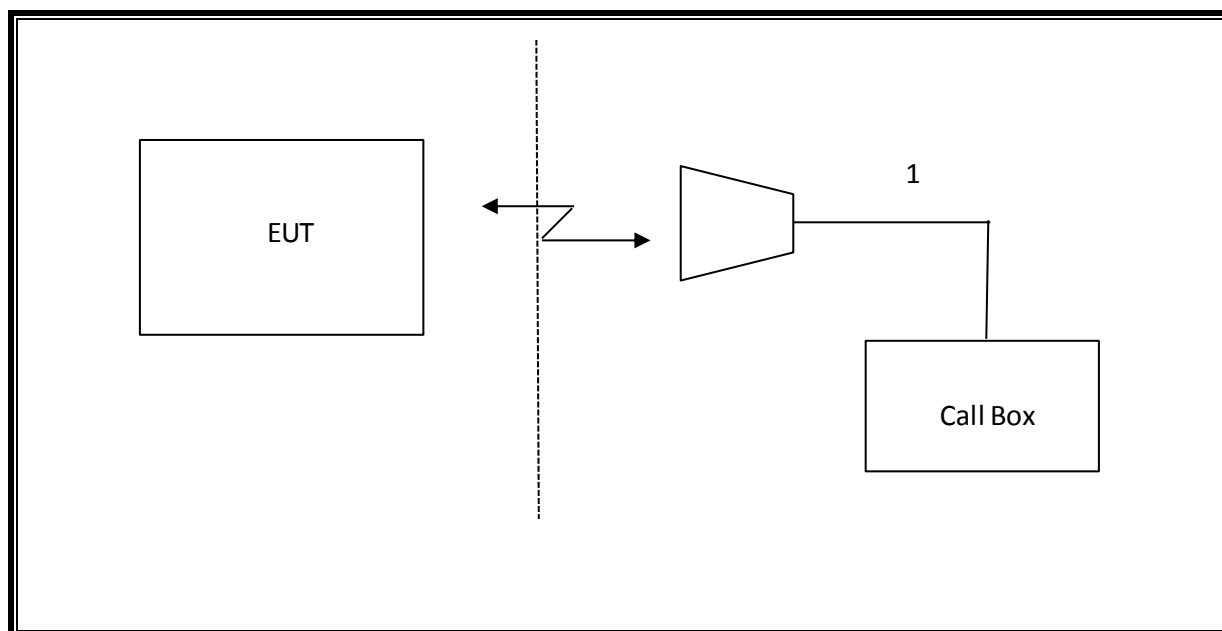
TEST SETUP

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-SCT/WC	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	07/20/17
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	05/03/17
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight	N1921A	T1228	06/20/17
Power Meter, RF	Anritsu	ML2495A	T1413	12/26/16
Power Sensor, 50MHz VBW 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	MWH-1826	T447	06/16/17
Filter, Highpass 4.0GHz	Micro-Tronics	HPM13351	T1239	07/05/17
*Filter, HPF 3.0GHz	Micro-Tronics	HPM17543	T428	01/25/17

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

**Equipment was set to test after calibration service date (equipment calibration cycle is one year).

7. RF POWER OUTPUT VERIFICATION

LTE Measurement Procedure:

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

7.1. LAT

7.1.1. LTE Band 7

ID:	37289	Date:	6/10/16
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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	22.89	27.47
				1	24	1	49	12.51	20.80
				50	0	100	0	21.25	28.07
			16QAM	1	74	1	0	22.17	27.25
				1	24	1	49	12.47	20.75
				50	0	100	0	20.18	27.64
10MHz / 20MHz	2525.6	2540.0	QPSK	1	49	1	0	23.00	27.58
				1	24	1	49	12.50	20.79
				50	0	100	0	21.32	28.14
			16QAM	1	49	1	0	21.69	27.77
				1	24	1	49	12.48	20.76
				50	0	100	0	20.30	27.76
10MHz / 20MHz	2545.6	2560.0	QPSK	1	49	1	0	22.95	27.53
				1	24	1	49	12.47	20.76
				50	0	100	0	21.08	27.90
			16QAM	1	49	1	0	22.21	27.29
				1	24	1	49	12.43	20.71
				50	0	100	0	20.33	27.79

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	12.65	19.71
				1	0	1	49	12.59	19.85
				1	0	50	0	19.13	25.57
				1	99	1	49	12.68	19.75
				1	99	50	0	20.73	27.42
				100	0	1	49	19.41	25.36
				100	0	50	0	21.03	28.26
				1	99	1	0	22.81	27.47
			16QAM	100	0	1	0	20.96	27.36
				1	0	1	0	12.66	19.72
				1	0	1	49	12.39	19.65
				1	0	50	0	19.08	25.41
				1	99	1	49	12.57	19.64
				1	99	50	0	19.69	26.38
				100	0	1	49	19.48	25.43
				100	0	50	0	20.19	27.42
				1	99	1	0	22.01	26.67
				100	0	1	0	20.23	26.63
20MHz / 10MHz	2530.1	2544.5	QPSK	1	0	1	0	12.67	19.73
				1	0	1	49	12.71	19.97
				1	0	50	0	19.23	25.87
				1	99	1	49	12.65	19.72
				1	99	50	0	20.62	27.31
				100	0	1	49	19.30	25.25
				100	0	50	0	20.96	28.19
				1	99	1	0	22.47	27.13
			16QAM	100	0	1	0	21.03	27.43
				1	0	1	0	12.75	19.81
				1	0	1	49	12.69	19.95
				1	0	50	0	19.31	25.93
				1	99	1	49	12.72	19.79
				1	99	50	0	19.80	26.49
				100	0	1	49	19.41	25.36
				100	0	50	0	20.07	27.30
				1	99	1	0	21.49	26.15
				100	0	1	0	19.99	26.39
20MHz / 10MHz	2550.1	2564.5	QPSK	1	0	1	0	12.51	19.57
				1	0	1	49	12.46	19.72
				1	0	50	0	19.12	25.88
				1	99	1	49	12.58	19.65
				1	99	50	0	20.67	27.36
				100	0	1	49	19.56	25.51
				100	0	50	0	20.99	28.22
				1	99	1	0	22.91	27.57
			16QAM	100	0	1	0	21.06	27.46
				1	0	1	0	12.53	19.59
				1	0	1	49	12.55	19.81
				1	0	50	0	18.95	25.41
				1	99	1	49	12.51	19.58
				1	99	50	0	20.11	26.80
				100	0	1	49	19.61	25.56
				100	0	50	0	20.31	27.54
				1	99	1	0	22.17	26.83
				100	0	1	0	20.21	26.61

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	22.98	27.54
				75	0	75	0	21.18	27.95
			16QAM	1	74	1	0	22.00	26.56
				75	0	75	0	20.09	26.86
15MHz / 15MHz	2527.5	2542.5	QPSK	1	74	1	0	22.94	27.50
				75	0	75	0	21.15	27.92
			16QAM	1	74	1	0	22.10	26.66
				75	0	75	0	20.32	27.09
15MHz / 15MHz	2547.5	2562.5	QPSK	1	74	1	0	23.00	27.56
				75	0	75	0	21.09	27.86
			16QAM	1	74	1	0	21.98	26.54
				75	0	75	0	20.29	27.06

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	22.94	27.52
				1	36	1	49	12.41	20.70
				75	0	100	0	21.11	27.93
			16QAM	1	74	1	0	22.05	27.13
				1	36	1	49	12.40	20.68
				75	0	100	0	20.25	27.71
15MHz / 20MHz	2525.3	2542.4	QPSK	1	74	1	0	22.94	27.52
				1	36	1	49	12.52	20.81
				75	0	100	0	21.23	28.05
			16QAM	1	74	1	0	22.17	27.25
				1	36	1	49	12.47	20.75
				75	0	100	0	20.14	27.60
15MHz / 20MHz	2542.9	2560.0	QPSK	1	74	1	0	23.00	27.58
				1	36	1	49	12.50	20.79
				75	0	100	0	22.09	28.91
			16QAM	1	74	1	0	22.04	27.12
				1	36	1	49	12.41	20.69
				75	0	100	0	20.18	27.64

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	23.00	27.56
				100	0	75	0	21.32	28.09
			16QAM	1	99	1	0	21.98	26.54
				100	0	75	0	20.45	27.22
20MHz / 15MHz	2527.6	2544.7	QPSK	1	99	1	0	22.97	27.53
				100	0	75	0	21.21	27.98
			16QAM	1	99	1	0	21.95	26.51
				100	0	75	0	20.15	26.92
20MHz / 15MHz	2545.1	2562.2	QPSK	1	99	1	0	22.98	27.54
				100	0	75	0	21.22	27.99
			16QAM	1	99	1	0	21.91	26.47
				100	0	75	0	20.19	26.96

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	12.78	19.28
				1	0	1	99	12.71	19.32
				1	0	100	0	19.55	25.72
				1	49	1	49	12.90	19.55
				1	99	1	99	12.65	19.23
				1	99	100	0	21.02	26.59
				100	0	1	99	19.50	26.49
				100	0	100	0	20.74	28.33
				1	99	1	0	23.00	27.50
				100	0	1	0	21.21	26.77
			16QAM	1	0	1	0	12.74	19.24
				1	0	1	99	12.79	19.40
				1	0	100	0	19.44	25.61
				1	49	1	49	12.71	19.36
				1	99	1	99	12.60	19.18
				1	99	100	0	20.13	25.70
				100	0	1	99	19.47	26.46
				100	0	100	0	20.09	27.68
				1	99	1	0	22.18	26.68
				100	0	1	0	19.88	25.44
20MHz/ 20MHz	2525.1	2544.9	QPSK	1	0	1	0	12.69	19.19
				1	0	1	99	12.61	19.22
				1	0	100	0	19.55	25.72
				1	49	1	49	12.84	19.49
				1	99	1	99	12.65	19.23
				1	99	100	0	21.09	26.66
				100	0	1	99	19.62	26.61
				100	0	100	0	21.23	28.82
				1	99	1	0	22.95	27.45
				100	0	1	0	21.34	26.90
			16QAM	1	0	1	0	12.65	19.15
				1	0	1	99	12.63	19.24
				1	0	100	0	19.49	25.66
				1	49	1	49	12.78	19.43
				1	99	1	99	12.59	19.17
				1	99	100	0	20.21	25.78
				100	0	1	99	19.63	26.62
				100	0	100	0	20.14	27.73
				1	99	1	0	22.27	26.77
				100	0	1	0	19.97	25.53
20MHz/ 20MHz	2540.2	2560.0	QPSK	1	0	1	0	12.59	19.09
				1	0	1	99	12.56	19.17
				1	0	100	0	19.45	25.62
				1	49	1	49	12.89	19.54
				1	99	1	99	12.61	19.19
				1	99	100	0	20.84	26.41
				100	0	1	99	19.54	26.53
				100	0	100	0	20.91	28.50
				1	99	1	0	23.00	27.49
				100	0	1	0	21.08	26.64
			16QAM	1	0	1	0	12.51	19.01
				1	0	1	99	12.47	19.08
				1	0	100	0	19.34	25.51
				1	49	1	49	12.80	19.45
				1	99	1	99	12.54	19.12
				1	99	100	0	19.96	25.53
				100	0	1	99	19.53	26.52
				100	0	100	0	19.92	27.51
				1	99	1	0	22.01	26.51
				100	0	1	0	20.00	25.56

7.1.2. LTE Band 41

ID:	52297	Date:	6/10/16
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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	22.48	27.06
				1	12	1	49	12.03	20.32
				25	0	100	0	20.68	27.50
			16QAM	1	24	1	0	21.79	26.87
				1	12	1	49	11.99	20.27
				25	0	100	0	19.55	27.01
5MHz / 20MHz	2583.8	2595.5	QPSK	1	24	1	0	22.50	27.08
				1	12	1	49	12.10	20.39
				25	0	100	0	20.64	28.10
			16QAM	1	24	1	0	21.71	26.79
				1	12	1	49	12.05	20.33
				25	0	100	0	19.56	27.02
5MHz / 20MHz	2668.3	2680.0	QPSK	1	24	1	0	22.45	27.03
				1	12	1	49	11.99	20.28
				25	0	100	0	20.51	27.33
			16QAM	1	24	1	0	21.69	26.77
				1	12	1	49	11.95	20.23
				25	0	100	0	19.65	26.47

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	12.20	19.26
				1	0	1	24	12.32	19.58
				1	0	25	0	17.00	24.53
				1	99	1	24	12.35	19.42
				1	99	25	0	20.72	27.41
				100	0	1	24	19.38	25.33
				100	0	25	0	21.00	28.23
				1	99	1	0	22.48	27.14
			16QAM	100	0	1	0	20.84	27.24
				1	0	1	0	12.32	19.38
				1	0	1	24	12.38	19.64
				1	0	25	0	16.88	24.44
				1	99	1	24	12.46	19.53
				1	99	25	0	19.88	26.57
				100	0	1	24	19.41	25.36
				100	0	25	0	20.00	27.23
20MHz / 5MHz	2590.5	2602.2	QPSK	1	99	1	0	21.73	26.39
				100	0	1	0	19.87	26.27
				1	0	1	0	12.25	19.31
				1	0	1	24	12.41	19.67
				1	0	25	0	17.16	24.03
				1	99	1	24	12.33	19.40
				1	99	25	0	20.69	27.38
				100	0	1	24	19.27	25.22
			16QAM	100	0	25	0	20.79	28.02
				1	99	1	0	22.44	27.10
				100	0	1	0	20.86	27.26
				1	0	1	0	12.29	19.35
				1	0	1	24	12.31	19.57
				1	0	25	0	17.09	23.93
				1	99	1	24	12.40	19.47
				1	99	25	0	19.76	26.45
20MHz / 5MHz	2675.0	2686.7	QPSK	100	0	1	24	19.53	25.48
				100	0	25	0	19.90	27.13
				1	99	1	0	21.70	26.32
				100	0	1	0	19.76	26.16
				1	0	1	0	12.21	19.27
				1	0	1	24	12.39	19.65
				1	0	25	0	17.20	24.06
				1	99	1	24	12.35	19.42
			16QAM	1	99	25	0	20.67	27.36
				100	0	1	24	19.25	25.20
				100	0	25	0	20.88	28.11
				1	99	1	0	22.50	27.16
				100	0	1	0	20.72	27.12
				1	0	1	0	12.32	19.38
				1	0	1	24	12.41	19.67
				1	0	25	0	17.11	23.91

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	22.50	27.08
				1	24	1	49	12.10	20.39
				50	0	100	0	20.71	27.56
			16QAM	1	49	1	0	21.84	26.92
				1	24	1	49	12.06	20.34
				50	0	100	0	20.10	27.53
10MHz / 20MHz	2583.6	2598.0	QPSK	1	49	1	0	22.45	27.03
				1	24	1	49	12.05	20.34
				50	0	100	0	20.69	27.51
			16QAM	1	49	1	0	21.78	26.86
				1	24	1	49	12.00	20.28
				50	0	100	0	20.05	27.51
10MHz / 20MHz	2665.6	2680.0	QPSK	1	49	1	0	22.47	27.05
				1	24	1	49	12.04	20.33
				50	0	100	0	20.69	27.51
			16QAM	1	49	1	0	21.80	26.88
				1	24	1	49	12.00	20.28
				50	0	100	0	19.85	27.31

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	22.50	27.06
				100	0	50	0	20.61	27.38
			16QAM	1	99	1	0	21.57	26.13
				100	0	50	0	19.75	26.52
20MHz / 10MHz	2588.1	2602.5	QPSK	1	99	1	0	22.48	27.04
				100	0	50	0	20.54	27.31
			16QAM	1	99	1	0	21.58	26.14
				100	0	50	0	19.62	26.39
20MHz / 10MHz	2670.1	2684.5	QPSK	1	99	1	0	22.45	27.01
				100	0	50	0	20.59	27.36
			16QAM	1	99	1	0	21.68	26.24
				100	0	50	0	19.73	26.50

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	22.49	27.05
				75	0	75	0	20.63	27.40
			16QAM	1	74	1	0	21.58	26.14
				75	0	75	0	19.74	26.51
15MHz / 15MHz	2585.5	2600.5	QPSK	1	74	1	0	22.50	27.06
				75	0	75	0	20.71	27.48
			16QAM	1	74	1	0	21.62	26.18
				75	0	75	0	19.86	26.63
15MHz / 15MHz	2667.5	2682.5	QPSK	1	74	1	0	22.45	27.01
				75	0	75	0	20.63	27.40
			16QAM	1	74	1	0	21.56	26.12
				75	0	75	0	19.78	26.55

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	22.49	27.07
				1	36	1	49	12.30	20.59
				75	0	100	0	20.64	27.46
			16QAM	1	74	1	0	21.62	26.70
				1	36	1	49	12.25	20.53
				75	0	100	0	19.54	27.00
15MHz / 20MHz	2583.3	2600.4	QPSK	1	74	1	0	22.45	27.03
				1	36	1	49	12.11	20.40
				75	0	100	0	20.72	27.54
			16QAM	1	74	1	0	21.69	26.77
				1	36	1	49	12.06	20.34
				75	0	100	0	19.88	27.34
15MHz / 20MHz	2662.9	2680.0	QPSK	1	74	1	0	22.43	27.01
				1	36	1	49	12.13	20.42
				75	0	100	0	20.67	27.49
			16QAM	1	74	1	0	21.59	26.67
				1	36	1	49	12.07	20.35
				75	0	100	0	19.92	27.38

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	22.50	27.06
				100	0	75	0	20.65	27.42
			16QAM	1	99	1	0	21.63	26.19
				100	0	75	0	19.58	26.35
20MHz / 15MHz	2585.6	2602.7	QPSK	1	99	1	0	22.41	26.97
				100	0	75	0	20.56	27.33
			16QAM	1	99	1	0	21.50	26.06
				100	0	75	0	19.54	26.31
20MHz / 15MHz	2665.1	2682.2	QPSK	1	99	1	0	22.44	27.00
				100	0	75	0	20.63	27.40
			16QAM	1	99	1	0	21.58	26.14
				100	0	75	0	19.59	26.36

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	12.41	18.91
				1	0	1	99	12.35	18.96
				1	0	100	0	19.30	25.47
				1	49	1	49	12.30	18.95
				1	99	1	99	12.05	18.63
				1	99	100	0	20.62	26.19
				100	0	1	99	19.32	26.31
				100	0	100	0	20.87	27.46
			16QAM	1	99	1	0	22.16	27.16
				100	0	1	0	20.77	26.33
				1	0	1	0	12.40	18.90
				1	0	1	99	11.98	18.59
				1	0	100	0	19.71	25.88
				1	49	1	49	12.22	18.87
				1	99	1	99	12.04	18.62
				1	99	100	0	19.87	25.44
20MHz/ 20MHz	2583.1	2602.9	QPSK	100	0	1	99	19.55	26.54
				100	0	100	0	19.92	26.51
				1	99	1	0	21.46	26.46
				100	0	1	0	19.77	25.33
			16QAM	1	0	1	0	12.13	18.63
				1	0	1	99	12.60	19.21
				1	0	100	0	18.92	25.09
				1	49	1	49	12.50	19.15
				1	99	1	99	11.50	18.08
				1	99	100	0	20.79	26.36
				100	0	1	99	19.25	26.24
				100	0	100	0	20.88	27.47
20MHz/ 20MHz	2583.1	2602.9	QPSK	1	99	1	0	22.25	27.25
				100	0	1	0	21.09	26.65
			16QAM	1	0	1	0	12.08	18.58
				1	0	1	99	12.06	18.67
				1	0	100	0	19.05	25.22
				1	49	1	49	12.21	18.86
				1	99	1	99	12.07	18.65
				1	99	100	0	20.11	25.68
20MHz/ 20MHz	2660.2	2680.0	QPSK	100	0	1	99	19.16	26.15
				100	0	100	0	19.85	26.44
				1	99	1	0	21.33	26.33
				100	0	1	0	20.15	25.71
			16QAM	1	0	1	0	12.52	19.02
				1	0	1	99	12.35	18.96
				1	0	100	0	19.25	25.42
				1	49	1	49	12.40	19.05
20MHz/ 20MHz	2660.2	2680.0	QPSK	1	99	1	99	11.85	18.43
				1	99	100	0	20.64	26.21
				100	0	1	99	19.21	26.20
				100	0	100	0	20.76	27.35
				1	99	1	0	22.41	27.41
				100	0	1	0	20.95	26.51
			16QAM	1	0	1	0	12.12	18.62
				1	0	1	99	11.72	18.33
				1	0	100	0	19.30	25.47
				1	49	1	49	12.10	18.75
20MHz/ 20MHz	2660.2	2680.0	QPSK	1	99	1	99	11.96	18.54
				1	99	100	0	19.63	25.20
				100	0	1	99	19.06	26.05
				100	0	100	0	19.86	26.45
				1	99	1	0	21.60	26.60
				100	0	1	0	19.84	25.40

7.2. UAT

7.2.1. LTE Band 7

ID:	37289	Date:	6/11/16
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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	19.00	23.49
				1	24	1	49	8.46	16.53
				50	0	100	0	16.79	23.85
			16QAM	1	49	1	0	17.74	22.23
				1	24	1	49	8.42	16.49
				50	0	100	0	15.62	22.68
10MHz / 20MHz	2525.6	2540.0	QPSK	1	49	1	0	18.92	23.41
				1	24	1	49	8.41	16.48
				50	0	100	0	16.74	23.80
			16QAM	1	49	1	0	17.85	22.34
				1	24	1	49	8.39	16.46
				50	0	100	0	15.86	22.92
10MHz / 20MHz	2545.6	2560.0	QPSK	1	49	1	0	18.83	23.32
				1	24	1	49	8.50	16.57
				50	0	100	0	16.76	23.82
			16QAM	1	49	1	0	17.80	22.29
				1	24	1	49	8.45	16.52
				50	0	100	0	15.93	22.99

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	8.61	15.62
				1	0	1	49	8.55	15.89
				1	0	50	0	14.77	21.36
				1	99	1	49	8.46	15.57
				1	99	50	0	16.84	23.38
				100	0	1	49	15.83	21.82
				100	0	50	0	16.97	24.27
				1	99	1	0	18.97	23.81
			16QAM	100	0	1	0	17.03	23.74
				1	0	1	0	8.59	15.60
				1	0	1	49	8.50	15.84
				1	0	50	0	14.63	21.21
				1	99	1	49	8.52	15.63
				1	99	50	0	16.05	22.59
				100	0	1	49	15.74	21.73
				100	0	50	0	16.00	23.30
20MHz / 10MHz	2530.1	2544.5	QPSK	1	99	1	0	17.87	22.71
				100	0	1	0	15.96	22.67
				1	0	1	0	8.53	15.54
				1	0	1	49	8.51	15.85
				1	0	50	0	14.82	21.40
				1	99	1	49	8.37	15.48
				1	99	50	0	16.77	23.31
				100	0	1	49	15.57	21.56
			16QAM	100	0	50	0	16.77	24.07
				1	99	1	0	18.76	23.60
				100	0	1	0	16.94	23.65
				1	0	1	0	8.29	15.30
				1	0	1	49	8.24	15.58
				1	0	50	0	14.73	21.29
				1	99	1	49	8.18	15.29
				1	99	50	0	15.59	22.13
20MHz / 10MHz	2550.1	2564.5	QPSK	100	0	1	49	15.48	21.47
				100	0	50	0	15.63	22.93
				1	99	1	0	17.93	22.77
				100	0	1	0	15.99	22.70
			16QAM	1	0	1	0	8.49	15.50
				1	0	1	49	8.39	15.73
				1	0	50	0	14.77	21.46
				1	99	1	49	8.44	15.55
				1	99	50	0	16.89	23.43
				100	0	1	49	15.44	21.43
				100	0	50	0	16.91	24.21
				1	99	1	0	18.76	23.60
20MHz / 10MHz	2550.1	2564.5	QPSK	100	0	1	0	16.88	23.59
				1	0	1	0	8.52	15.53
				1	0	1	49	8.32	15.66
				1	0	50	0	14.63	21.33
				1	99	1	49	8.29	15.40
				1	99	50	0	15.82	22.36
				100	0	1	49	15.55	21.54
				100	0	50	0	15.79	23.09
			16QAM	1	99	1	0	17.78	22.62
				100	0	1	0	16.03	22.74

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	18.81	23.50
				75	0	75	0	16.83	23.85
			16QAM	1	74	1	0	17.62	22.31
				75	0	75	0	15.77	22.79
15MHz / 15MHz	2527.5	2542.5	QPSK	1	74	1	0	18.67	23.36
				75	0	75	0	16.92	23.94
			16QAM	1	74	1	0	17.53	22.22
				75	0	75	0	15.87	22.89
15MHz / 15MHz	2547.5	2562.5	QPSK	1	74	1	0	18.70	23.39
				75	0	75	0	16.83	23.85
			16QAM	1	74	1	0	17.67	22.36
				75	0	75	0	15.98	23.00

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	18.88	23.37
				1	36	1	49	8.46	16.53
				75	0	100	0	16.64	23.70
			16QAM	1	74	1	0	17.96	22.45
				1	36	1	49	8.39	16.46
				75	0	100	0	15.87	22.93
15MHz / 20MHz	2525.3	2542.4	QPSK	1	74	1	0	18.62	23.11
				1	36	1	49	8.41	16.48
				75	0	100	0	16.77	23.83
			16QAM	1	74	1	0	17.57	22.06
				1	36	1	49	8.35	16.42
				75	0	100	0	15.94	23.00
15MHz / 20MHz	2542.9	2560.0	QPSK	1	74	1	0	18.88	23.37
				1	36	1	49	8.52	16.59
				75	0	100	0	16.91	23.97
			16QAM	1	74	1	0	17.77	22.26
				1	36	1	49	8.41	16.48
				75	0	100	0	15.95	23.01

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	18.80	23.49
				100	0	75	0	16.68	23.70
			16QAM	1	99	1	0	17.92	22.61
				100	0	75	0	15.93	22.95
20MHz / 15MHz	2527.6	2544.7	QPSK	1	99	1	0	18.86	23.55
				100	0	75	0	16.74	23.76
			16QAM	1	99	1	0	17.93	22.62
				100	0	75	0	15.91	22.93
20MHz / 15MHz	2545.1	2562.2	QPSK	1	99	1	0	18.62	23.31
				100	0	75	0	16.94	23.96
			16QAM	1	99	1	0	17.78	22.47
				100	0	75	0	15.96	22.98

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	8.36	14.38
				1	0	1	99	8.41	15.20
				1	0	100	0	15.40	21.93
				1	49	1	49	8.42	14.99
				1	99	1	99	8.46	15.53
				1	99	100	0	16.84	23.41
				100	0	1	99	15.53	21.73
				100	0	100	0	16.95	24.16
				1	99	1	0	18.74	23.81
				100	0	1	0	16.91	23.32
			16QAM	1	0	1	0	8.43	14.45
				1	0	1	99	8.39	15.18
				1	0	100	0	15.36	21.89
				1	49	1	49	8.40	14.97
				1	99	1	99	8.35	15.42
				1	99	100	0	15.74	22.31
				100	0	1	99	15.61	21.81
				100	0	100	0	15.74	22.95
				1	99	1	0	17.81	22.88
				100	0	1	0	15.93	22.34
20MHz/ 20MHz	2525.1	2544.9	QPSK	1	0	1	0	8.51	14.53
				1	0	1	99	8.55	15.34
				1	0	100	0	15.36	21.89
				1	49	1	49	8.50	15.07
				1	99	1	99	8.62	15.69
				1	99	100	0	17.08	23.65
				100	0	1	99	15.74	21.94
				100	0	100	0	16.90	24.11
				1	99	1	0	18.99	24.06
				100	0	1	0	17.16	23.57
			16QAM	1	0	1	0	8.45	14.47
				1	0	1	99	8.41	15.20
				1	0	100	0	15.22	21.75
				1	49	1	49	8.49	15.06
				1	99	1	99	8.51	15.58
				1	99	100	0	16.13	22.70
				100	0	1	99	15.79	21.99
				100	0	100	0	15.99	23.20
				1	99	1	0	18.14	23.21
				100	0	1	0	16.23	22.64
20MHz/ 20MHz	2540.2	2560.0	QPSK	1	0	1	0	8.64	14.66
				1	0	1	99	8.68	15.47
				1	0	100	0	15.43	21.96
				1	49	1	49	8.57	15.14
				1	99	1	99	8.77	15.84
				1	99	100	0	17.25	23.82
				100	0	1	99	15.65	21.85
				100	0	100	0	17.31	24.52
				1	99	1	0	19.00	24.07
				100	0	1	0	12.19	18.60
			16QAM	1	0	1	0	8.61	14.63
				1	0	1	99	8.74	15.53
				1	0	100	0	15.59	22.12
				1	49	1	49	8.49	15.06
				1	99	1	99	8.59	15.66
				1	99	100	0	16.18	22.75
				100	0	1	99	15.63	21.83
				100	0	100	0	16.08	23.29
				1	99	1	0	18.08	23.15
				100	0	1	0	16.17	22.58

7.2.2. LTE Band 41

ID:	37289	Date:	6/12/16
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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	17.95	22.44
				1	12	1	49	7.54	15.61
				25	0	100	0	16.03	23.09
			16QAM	1	24	1	0	17.13	21.62
				1	12	1	49	7.49	15.56
				25	0	100	0	15.18	22.24
5MHz / 20MHz	2583.8	2595.5	QPSK	1	24	1	0	17.98	22.47
				1	12	1	49	7.50	15.57
				25	0	100	0	16.00	23.06
			16QAM	1	24	1	0	17.10	21.59
				1	12	1	49	7.46	15.53
				25	0	100	0	14.99	22.05
5MHz / 20MHz	2668.3	2680.0	QPSK	1	24	1	0	18.00	22.49
				1	12	1	49	7.60	15.67
				25	0	100	0	16.18	23.24
			16QAM	1	24	1	0	17.09	21.58
				1	12	1	49	7.53	15.60
				25	0	100	0	14.89	21.95

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	8.00	15.06
				1	0	1	24	7.89	15.03
				1	0	25	0	13.08	19.44
				1	99	1	24	7.99	15.27
				1	99	25	0	15.85	22.59
				100	0	1	24	14.66	20.66
				100	0	25	0	16.19	23.54
				1	99	1	0	17.96	22.97
				100	0	1	0	16.29	22.76
			16QAM	1	0	1	0	7.94	15.00
				1	0	1	24	7.88	15.02
				1	0	25	0	12.93	19.29
				1	99	1	24	7.74	15.02
				1	99	25	0	14.66	21.40
				100	0	1	24	14.53	20.53
				100	0	25	0	15.35	22.70
				1	99	1	0	17.13	22.14
				100	0	1	0	15.49	21.96
20MHz / 5MHz	2590.5	2602.2	QPSK	1	0	1	0	7.65	14.71
				1	0	1	24	7.71	14.85
				1	0	25	0	13.10	19.58
				1	99	1	24	7.59	14.87
				1	99	25	0	15.74	22.48
				100	0	1	24	14.54	20.54
				100	0	25	0	16.05	23.40
				1	99	1	0	17.99	23.00
				100	0	1	0	16.24	22.71
			16QAM	1	0	1	0	7.74	14.80
				1	0	1	24	7.77	14.91
				1	0	25	0	13.00	19.42
				1	99	1	24	7.62	14.90
				1	99	25	0	14.86	21.60
				100	0	1	24	14.60	20.60
				100	0	25	0	15.11	22.46
				1	99	1	0	17.04	22.05
				100	0	1	0	15.17	21.64
20MHz / 5MHz	2675.0	2686.7	QPSK	1	0	1	0	7.89	14.95
				1	0	1	24	7.74	14.88
				1	0	25	0	13.13	19.77
				1	99	1	24	7.66	14.94
				1	99	25	0	15.98	22.72
				100	0	1	24	14.74	20.74
				100	0	25	0	16.31	23.66
				1	99	1	0	18.00	23.01
				100	0	1	0	16.27	22.74
			16QAM	1	0	1	0	7.95	15.01
				1	0	1	24	7.84	14.98
				1	0	25	0	13.01	19.60
				1	99	1	24	7.81	15.09
				1	99	25	0	14.74	21.48
				100	0	1	24	14.66	20.66
				100	0	25	0	15.29	22.64
				1	99	1	0	17.24	22.25
				100	0	1	0	15.36	21.83

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	17.95	22.44
				1	24	1	49	7.70	15.77
				50	0	100	0	15.84	22.90
			16QAM	1	49	1	0	16.80	21.29
				1	24	1	49	7.61	15.68
				50	0	100	0	14.91	21.97
10MHz / 20MHz	2583.6	2598.0	QPSK	1	49	1	0	17.94	22.43
				1	24	1	49	7.49	15.56
				50	0	100	0	15.95	23.01
			16QAM	1	49	1	0	16.92	21.41
				1	24	1	49	7.42	15.49
				50	0	100	0	14.99	22.05
10MHz / 20MHz	2665.6	2680.0	QPSK	1	49	1	0	18.00	22.49
				1	24	1	49	7.46	15.53
				50	0	100	0	15.99	23.05
			16QAM	1	49	1	0	17.17	21.66
				1	24	1	49	7.39	15.46
				50	0	100	0	15.09	22.15

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	17.97	22.66
				100	0	50	0	16.00	23.02
			16QAM	1	99	1	0	17.15	21.84
				100	0	50	0	15.09	22.11
20MHz / 10MHz	2588.1	2602.5	QPSK	1	99	1	0	17.95	22.64
				100	0	50	0	15.99	23.01
			16QAM	1	99	1	0	17.08	21.77
				100	0	50	0	15.15	22.17
20MHz / 10MHz	2670.1	2684.5	QPSK	1	99	1	0	18.00	22.69
				100	0	50	0	15.97	22.99
			16QAM	1	99	1	0	17.18	21.87
				100	0	50	0	14.99	22.01

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	17.95	22.64
				75	0	75	0	16.04	23.06
			16QAM	1	74	1	0	16.94	21.63
				75	0	75	0	15.27	22.29
15MHz / 15MHz	2585.5	2600.5	QPSK	1	74	1	0	17.97	22.66
				75	0	75	0	16.09	23.11
			16QAM	1	74	1	0	17.01	21.70
				75	0	75	0	14.99	22.01
15MHz / 15MHz	2667.5	2682.5	QPSK	1	74	1	0	18.00	22.69
				75	0	75	0	16.10	23.12
			16QAM	1	74	1	0	17.21	21.90
				75	0	75	0	15.23	22.25

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	17.95	22.44
				1	36	1	49	7.50	15.57
				75	0	100	0	15.91	22.97
			16QAM	1	74	1	0	16.99	21.48
				1	36	1	49	7.44	15.51
				75	0	100	0	14.98	22.04
15MHz / 20MHz	2583.3	2600.4	QPSK	1	74	1	0	18.00	22.49
				1	36	1	49	7.58	15.65
				75	0	100	0	15.99	23.05
			16QAM	1	74	1	0	17.08	21.57
				1	36	1	49	7.52	15.59
				75	0	100	0	15.07	22.13
15MHz / 20MHz	2662.9	2680.0	QPSK	1	74	1	0	17.93	22.42
				1	36	1	49	7.63	15.70
				75	0	100	0	16.00	23.06
			16QAM	1	74	1	0	16.99	21.48
				1	36	1	49	7.55	15.62
				75	0	100	0	15.05	22.11

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		
20MHz / 15MHz	2506.0	2523.1	QPSK	1	99	1	0	17.97	22.66
				100	0	75	0	16.09	23.11
			16QAM	1	99	1	0	17.10	21.79
				100	0	75	0	15.21	22.23
20MHz / 15MHz	2585.6	2602.7	QPSK	1	99	1	0	17.95	22.64
				100	0	75	0	16.00	23.02
			16QAM	1	99	1	0	17.04	21.73
				100	0	75	0	15.22	22.24
20MHz / 15MHz	2665.1	2682.2	QPSK	1	99	1	0	18.00	22.69
				100	0	75	0	15.99	23.01
			16QAM	1	99	1	0	17.08	21.77
				100	0	75	0	14.99	22.01

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	7.71	13.73
				1	0	1	99	7.60	14.39
				1	0	100	0	14.48	21.01
				1	49	1	49	7.55	14.12
				1	99	1	99	7.73	14.80
				1	99	100	0	16.09	22.66
				100	0	1	99	14.31	20.51
				100	0	100	0	16.11	23.32
				1	99	1	0	17.95	23.02
				100	0	1	0	16.08	22.49
			16QAM	1	0	1	0	7.77	13.79
				1	0	1	99	7.69	14.48
				1	0	100	0	14.44	20.97
				1	49	1	49	7.54	14.11
				1	99	1	99	7.67	14.74
				1	99	100	0	15.18	21.75
				100	0	1	99	14.45	20.65
				100	0	100	0	15.05	22.26
				1	99	1	0	16.99	22.06
				100	0	1	0	15.02	21.43
20MHz/ 20MHz	2583.1	2602.9	QPSK	1	0	1	0	7.65	13.67
				1	0	1	99	7.55	14.34
				1	0	100	0	14.51	21.04
				1	49	1	49	7.50	14.07
				1	99	1	99	7.61	14.68
				1	99	100	0	16.00	22.57
				100	0	1	99	14.44	20.64
				100	0	100	0	16.05	23.26
				1	99	1	0	17.95	23.02
				100	0	1	0	16.07	22.48
			16QAM	1	0	1	0	7.69	13.71
				1	0	1	99	7.66	14.45
				1	0	100	0	14.59	21.12
				1	49	1	49	7.44	14.01
				1	99	1	99	7.71	14.78
				1	99	100	0	15.05	21.62
				100	0	1	99	14.47	20.67
				100	0	100	0	15.18	22.39
				1	99	1	0	17.03	22.10
				100	0	1	0	15.08	21.49
20MHz/ 20MHz	2660.2	2680.0	QPSK	1	0	1	0	7.74	13.76
				1	0	1	99	7.69	14.48
				1	0	100	0	14.55	21.08
				1	49	1	49	7.59	14.16
				1	99	1	99	7.65	14.72
				1	99	100	0	16.12	22.69
				100	0	1	99	14.47	20.67
				100	0	100	0	16.23	23.44
				1	99	1	0	18.00	23.07
				100	0	1	0	16.01	22.42
			16QAM	1	0	1	0	7.75	13.77
				1	0	1	99	7.73	14.52
				1	0	100	0	14.61	21.14
				1	49	1	49	7.53	14.10
				1	99	1	99	7.55	14.62
				1	99	100	0	15.08	21.65
				100	0	1	99	14.55	20.75
				100	0	100	0	15.13	22.34
				1	99	1	0	17.08	22.15
				100	0	1	0	15.09	21.50

7.2.3. CONDUCTED TEST RESULTS

7.3. 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	28.0545	30.851
	20MHz + 10MHz BAND 16QAM	100/0 + 50/0	2535	28.0295	32.342
	10.0 MHz BAND QPSK	50/0	2544.5	9.0441	9.945
	10.0 MHz BAND 16QAM	50/0	2544.5	9.0377	9.947
	10.0 MHz BAND QPSK	1/0	2544.5	0.2405273	0.385677
	10.0 MHz BAND 16QAM	1/0	2544.5	0.2302208	0.408557
	20MHz + 20MHz BAND QPSK	100/0 + 1000/0	2535	37.6151	39.898
	20MHz + 20MHz BAND 16QAM	100/0 + 100/0	2535	37.5353	40.022
	20.0 MHz BAND QPSK	100/0	2525.1	17.8595	19.552
	20.0 MHz BAND 16QAM	100/0	2525.1	17.8705	19.566
	20.0 MHz BAND QPSK	1/0	2525.1	0.2497391	0.431715
	20.0 MHz BAND 16QAM	1/0	2525.1	0.2497391	0.431715

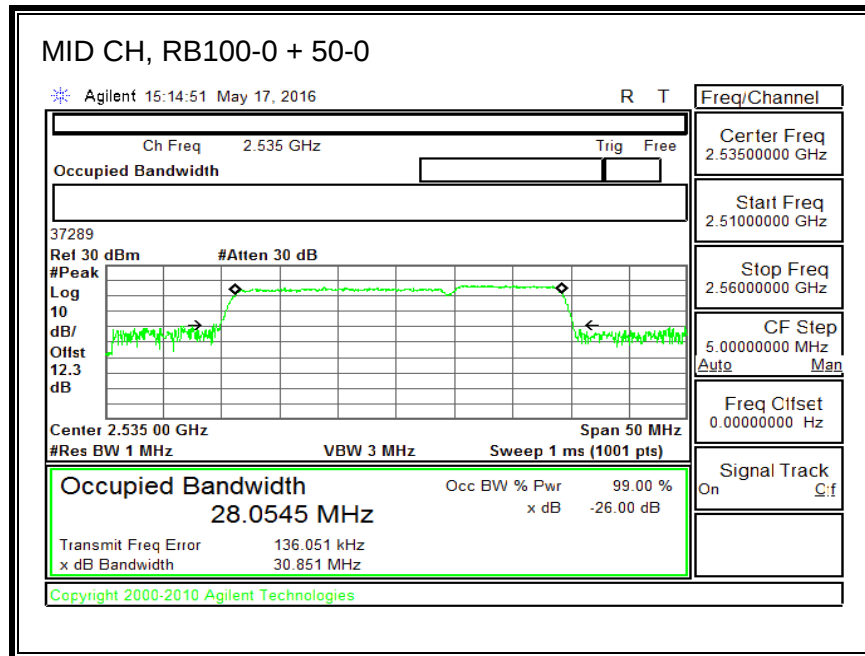
BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 7	10MHz + 20MHz BAND QPSK	50/0 + 100/0	2535	27.9449	30.039
	10MHz + 20MHz BAND 16QAM	50/0 + 100/0	2535	27.9528	30.033
	15MHz + 15MHz BAND QPSK	75/0 + 75/0	2535	28.5700	30.677
	15MHz + 15MHz BAND 16QAM	75/0 + 75/0	2535	28.5395	30.637
	15MHz + 20MHz BAND QPSK	75/0 + 100/0	2535	32.7431	34.816
	15MHz + 20MHz BAND 16QAM	75/0 + 100/0	2535	32.7312	34.939
	20MHz + 15MHz BAND QPSK	100/0 + 75/0	2535	32.6586	34.957
	20MHz + 15MHz BAND 16QAM	100/0 + 75/0	2535	32.7684	34.835

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	23.2724	24.979
	20MHz + 5MHz BAND 16QAM	100/0 + 25/0	2593	23.3367	24.983
	5.0 MHz BAND QPSK	25/0	2602.2	4.5523	4.994
	5.0 MHz BAND 16QAM	25/0	2602.2	4.5772	4.998
	5.0 MHz BAND QPSK	1/0	2602.2	0.2354255	0.356199
	5.0 MHz BAND 16QAM	1/0	2602.2	0.2348843	0.361051
	20MHz + 20MHz BAND QPSK	100/0 + 100/0	2593	37.4507	39.949
	20MHz + 20MHz BAND 16QAM	100/0 + 100/0	2593	37.482	39.899
	20.0 MHz BAND QPSK	100/0	2583.1	17.8653	19.015
	20.0 MHz BAND 16QAM	100/0	2583.1	17.7591	19.510
	20.0 MHz BAND QPSK	1/0	2583.1	0.2748268	0.44630
	20.0 MHz BAND 16QAM	1/0	2583.1	0.286852	0.42178

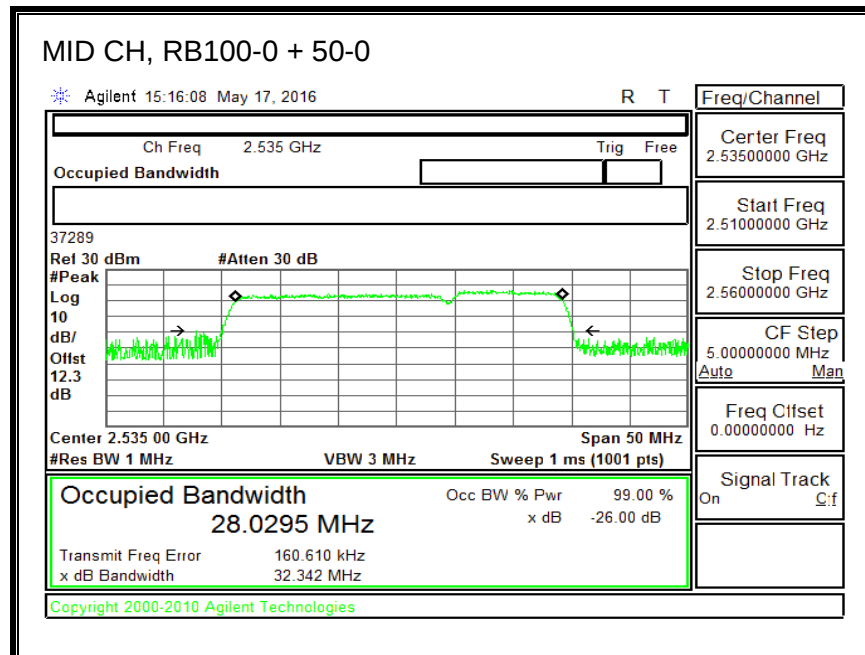
BAND	MODE	RB SIZE/ RB OFFSET	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 41	5MHz + 20MHz BAND QPSK	25/0 + 100/0	2593	23.2772	24.937
	5MHz + 20MHz BAND 16QAM	25/0 + 100/0	2593	23.2872	25.013
	10MHz + 20MHz BAND QPSK	50/0 + 100/0	2593	27.9977	30.130
	10MHz + 20MHz BAND 16QAM	50/0 + 100/0	2593	28.0407	30.003
	20MHz + 10MHz BAND QPSK	100/0 + 50/0	2593	27.9667	30.056
	20MHz + 10MHz BAND 16QAM	100/0 + 50/0	2593	27.9616	30.065
	15MHz + 15MHz BAND QPSK	75/0 + 75/0	2593	28.4984	30.608
	15MHz + 15MHz BAND 16QAM	75/0 + 75/0	2593	28.5528	30.633
	15MHz + 20MHz BAND QPSK	75/0 + 100/0	2593	32.7912	34.903
	15MHz + 20MHz BAND 16QAM	75/0 + 100/0	2593	32.7817	34.883
	20MHz + 15MHz BAND QPSK	100/0 + 75/0	2593	32.6023	34.780
	20MHz + 15MHz BAND 16QAM	100/0 + 75/0	2593	32.6489	34.805

7.3.1. LTE BAND 7

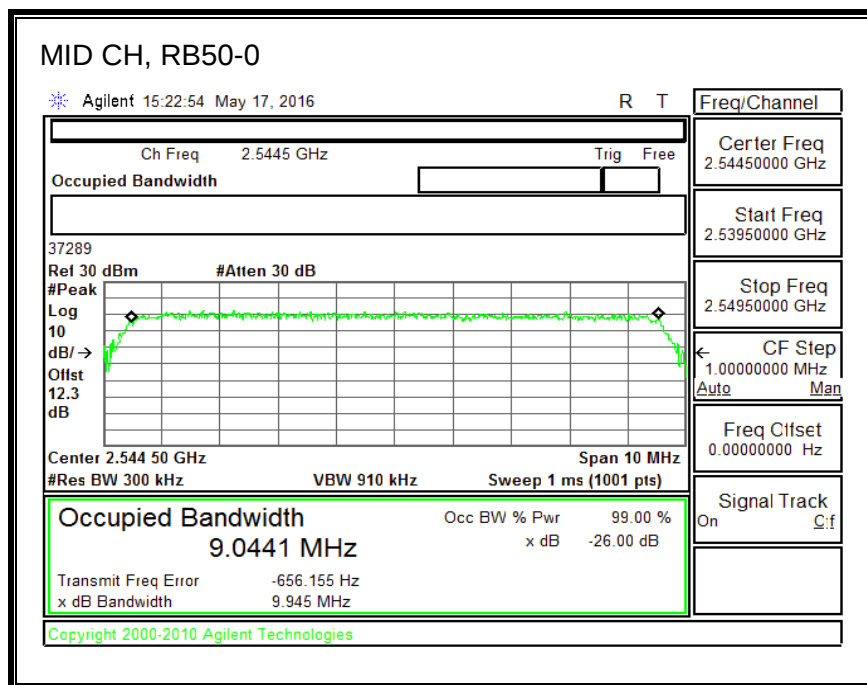
QPSK, (20.0MHz + 10.0MHz BAND WIDTH)



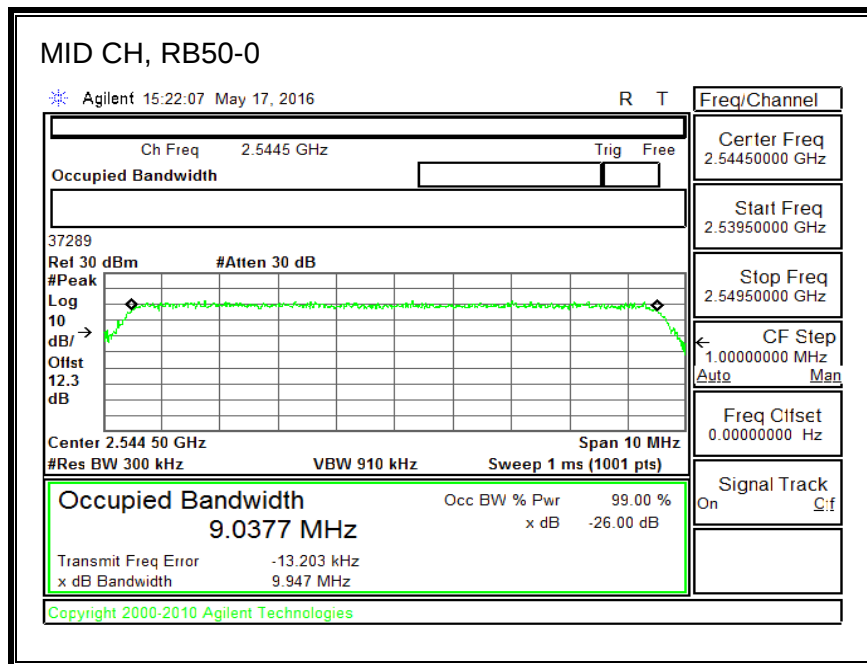
16QAM, (20.0MHz + 10.0MHz BAND WIDTH)



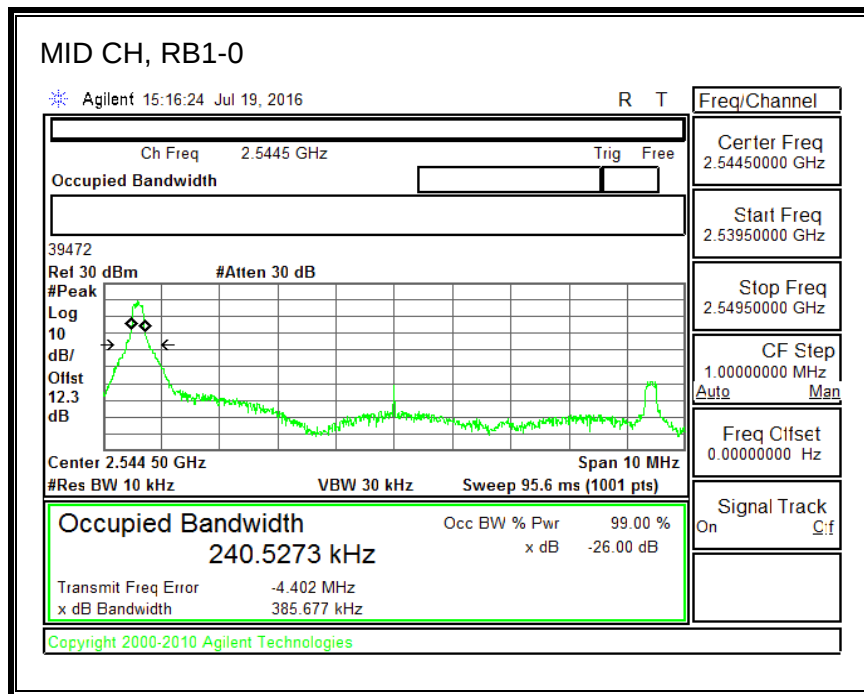
QPSK, (10.0MHz BAND WIDTH)



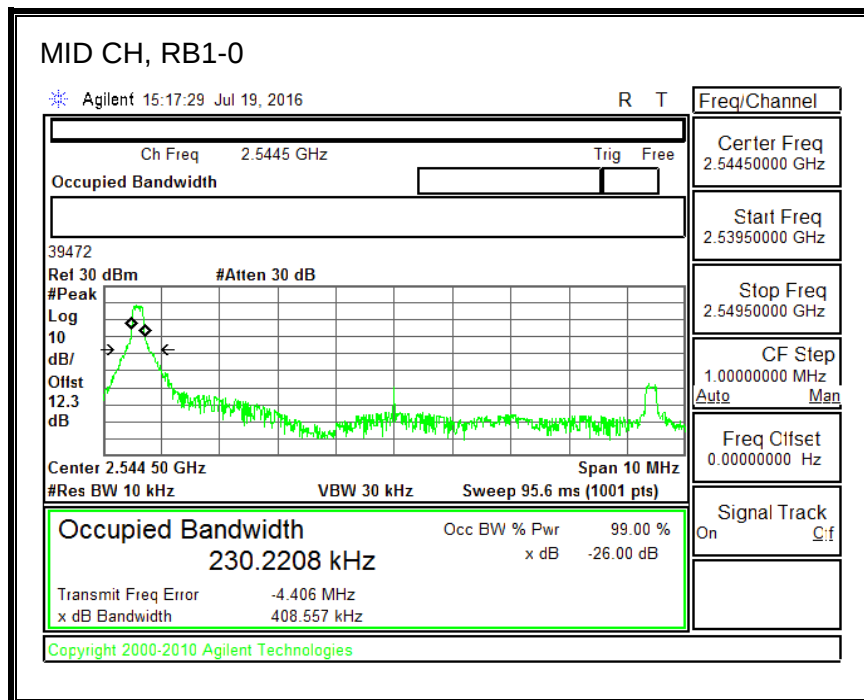
16QAM, (10.0MHz BAND WIDTH)



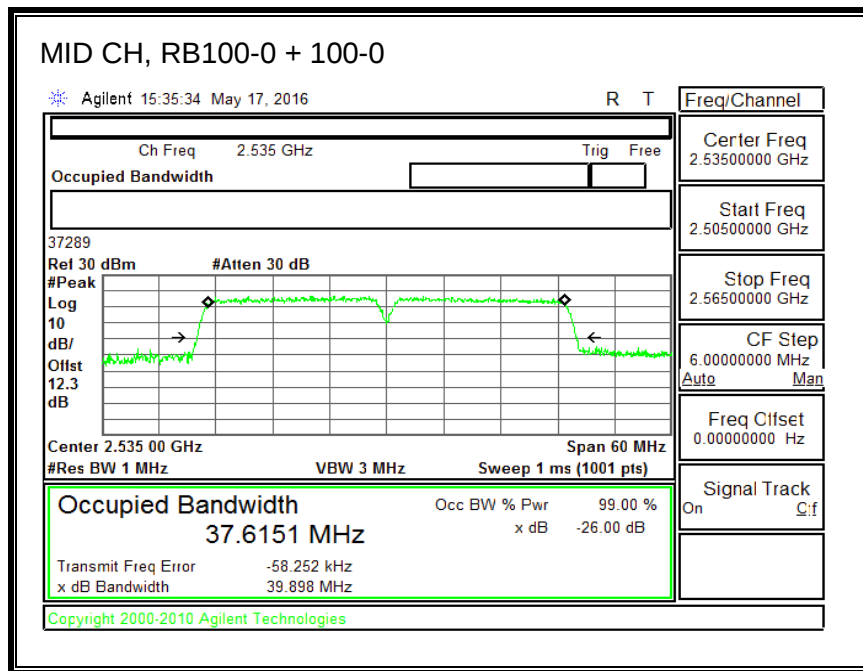
QPSK, (10.0MHz BAND WIDTH)



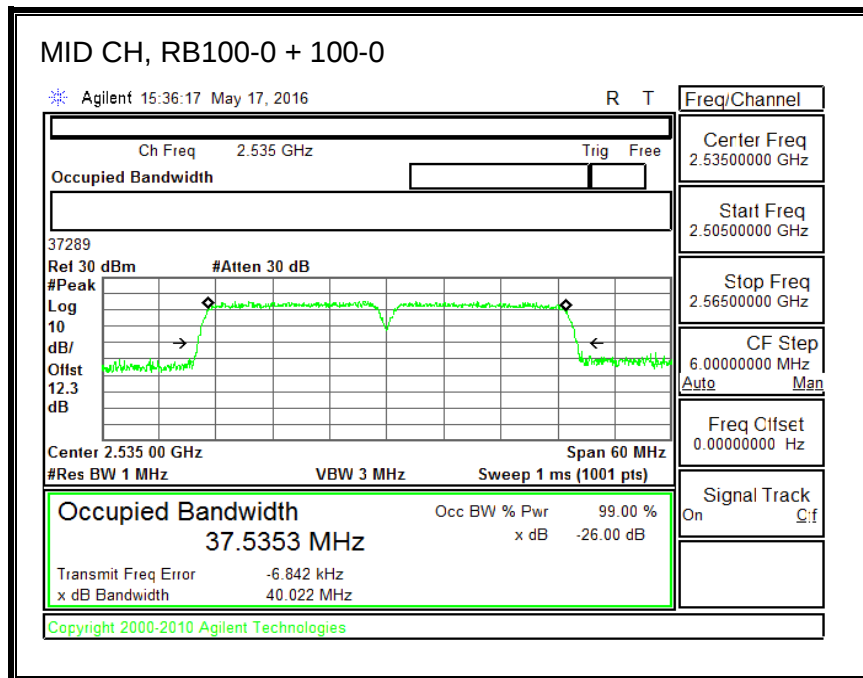
16QAM, (10.0MHz BAND WIDTH)



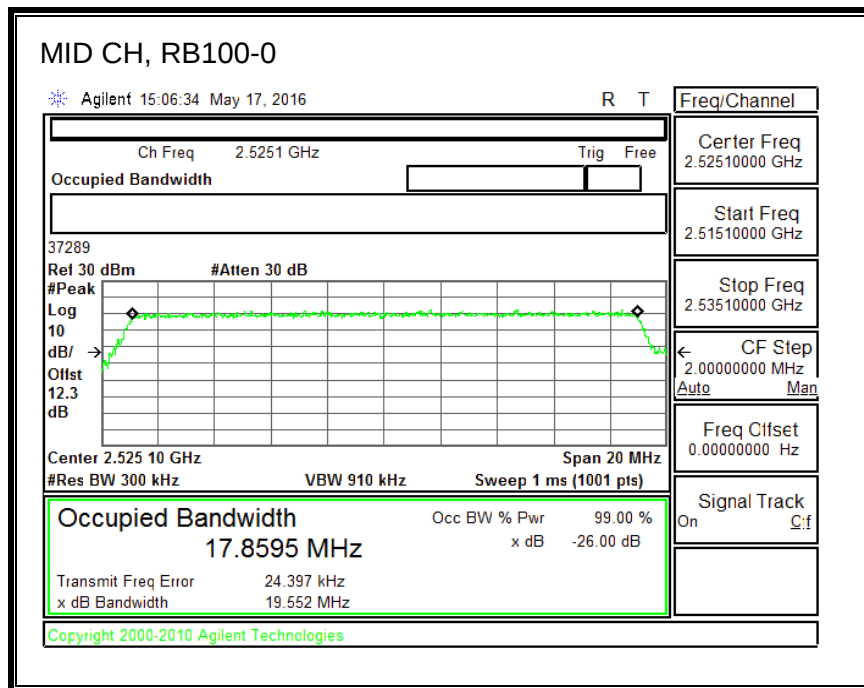
QPSK, (20.0MHz + 20.0MHz BAND WIDTH)



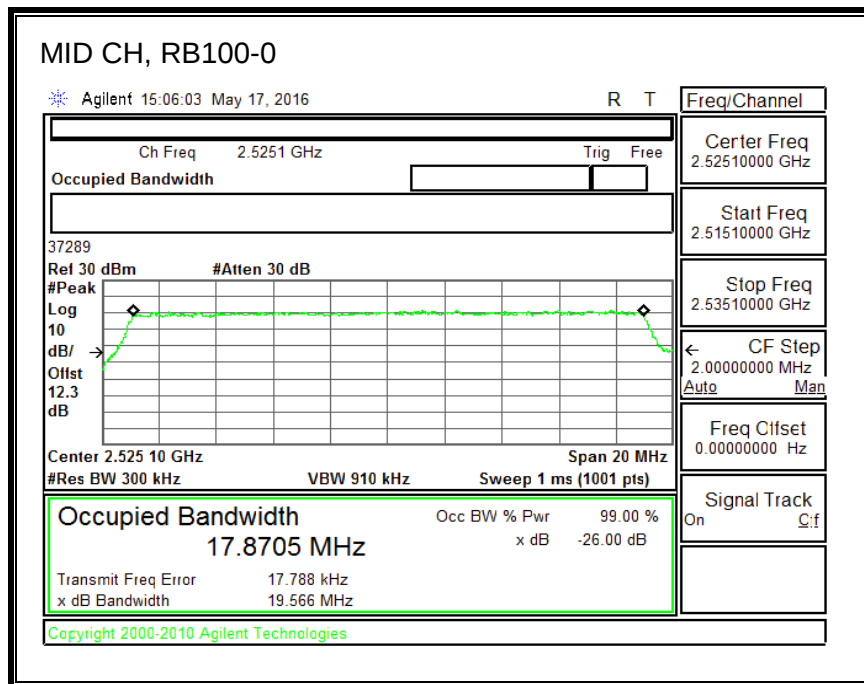
16QAM, (20.0MHz + 20.0MHz BAND WIDTH)



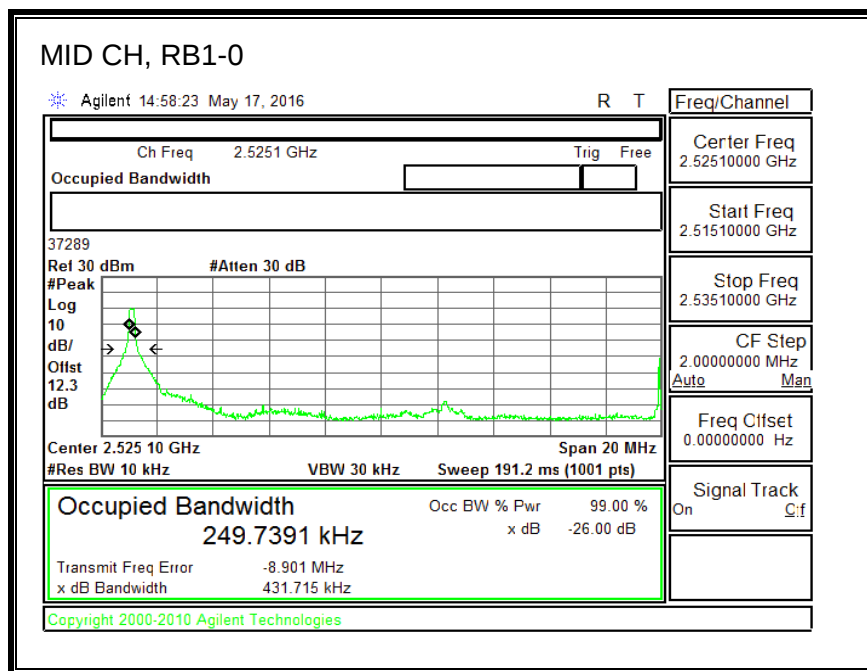
QPSK, (20.0MHz BAND WIDTH)



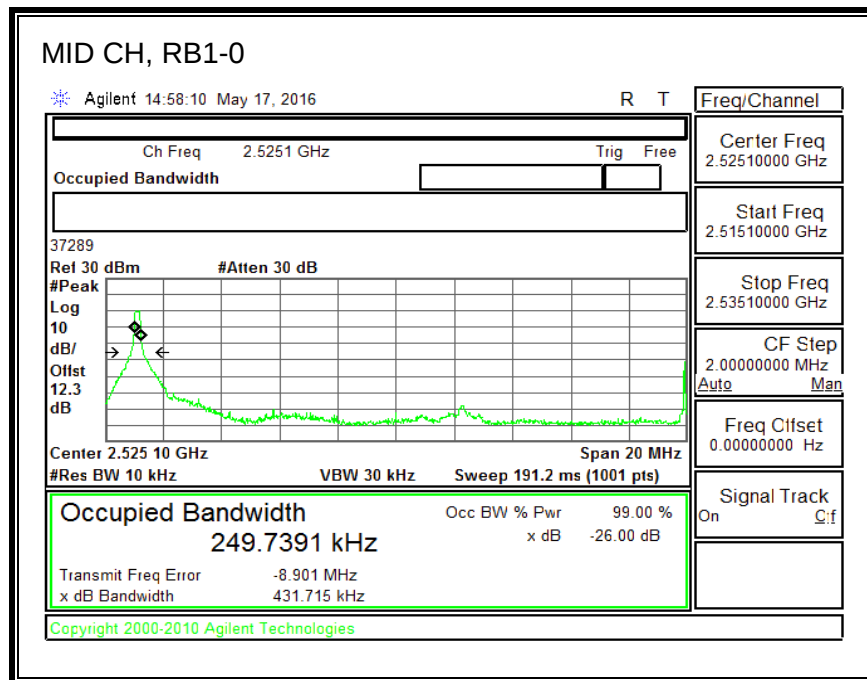
16QAM, (20.0MHz BAND WIDTH)



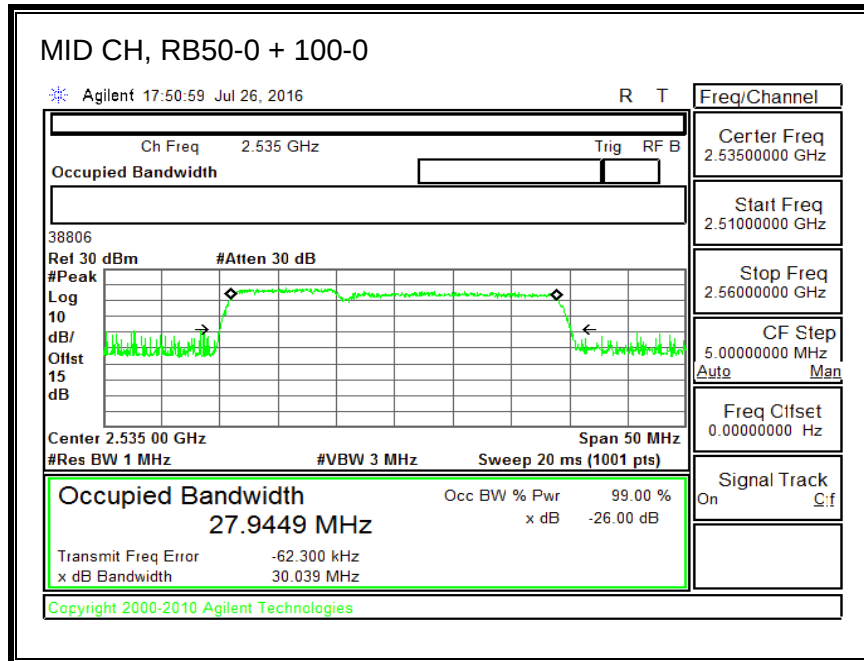
QPSK, (20.0MHz BAND WIDTH)



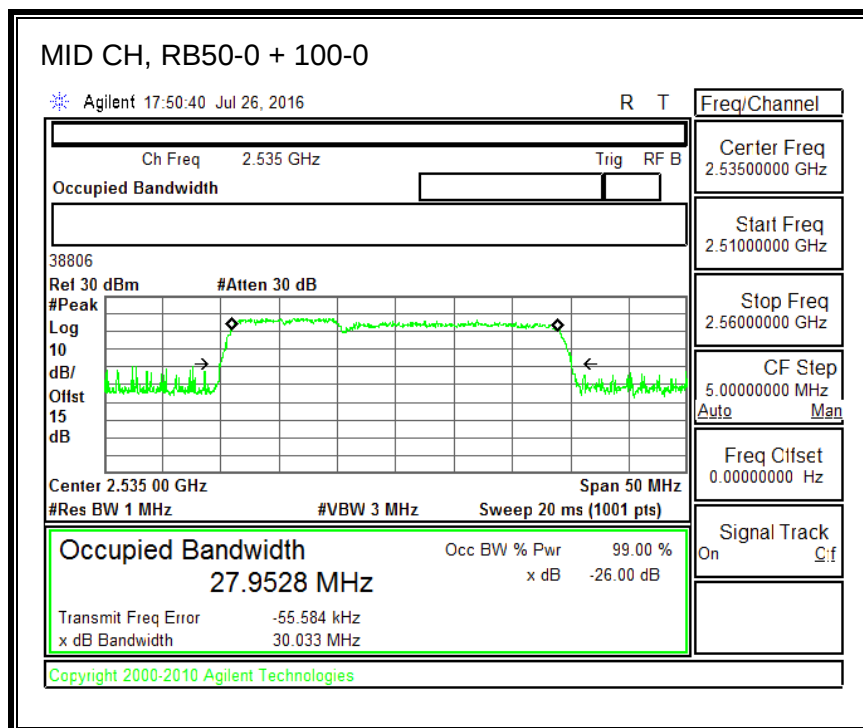
16QAM, (20.0MHz BAND WIDTH)



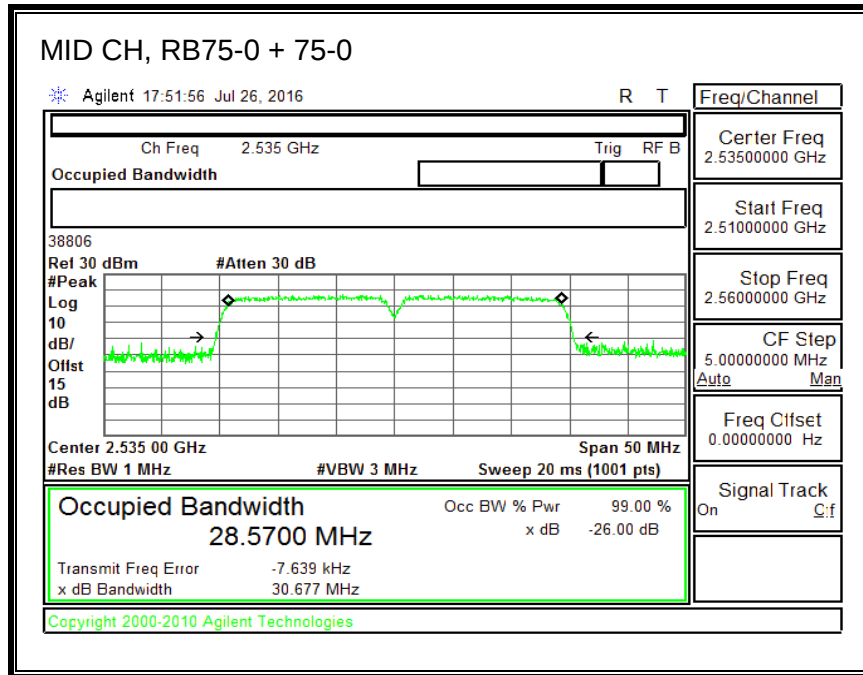
QPSK, (10.0MHz + 20.0MHz BAND WIDTH)



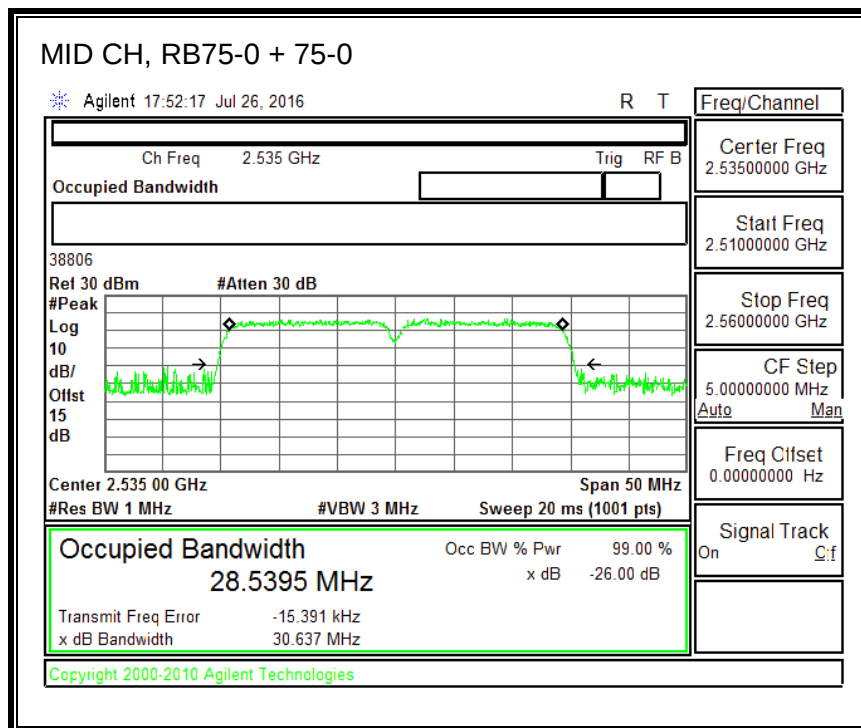
16QAM, (10.0MHz + 20.0MHz BAND WIDTH)



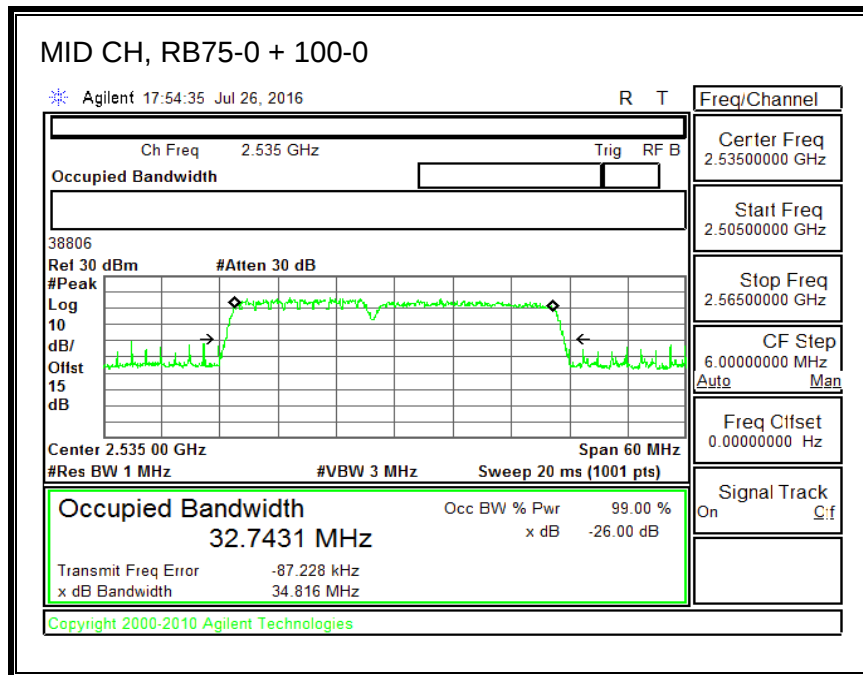
QPSK, (15.0MHz + 15.0MHz BAND WIDTH)



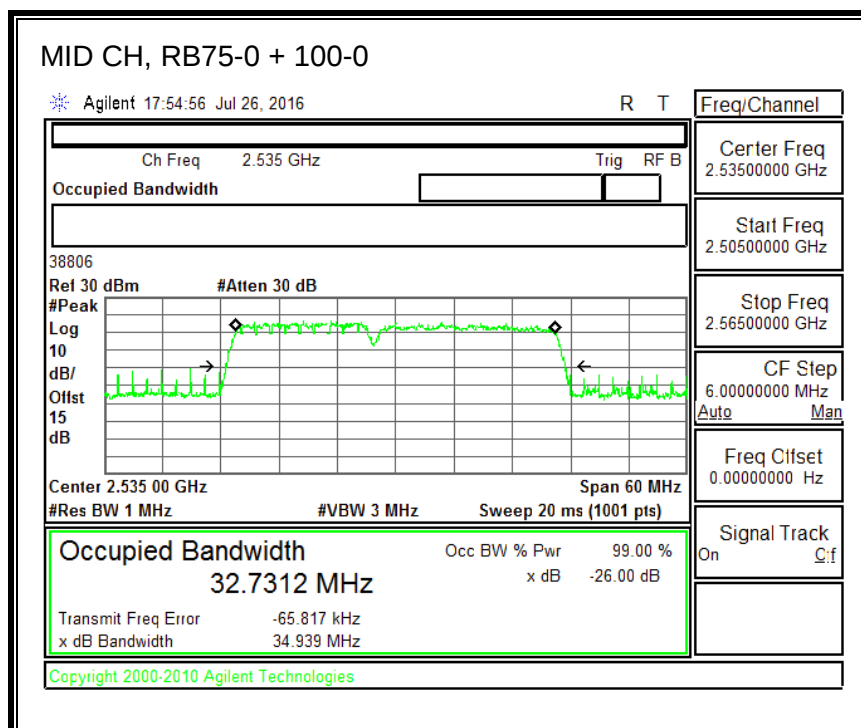
16QAM, (15.0MHz + 15.0MHz BAND WIDTH)



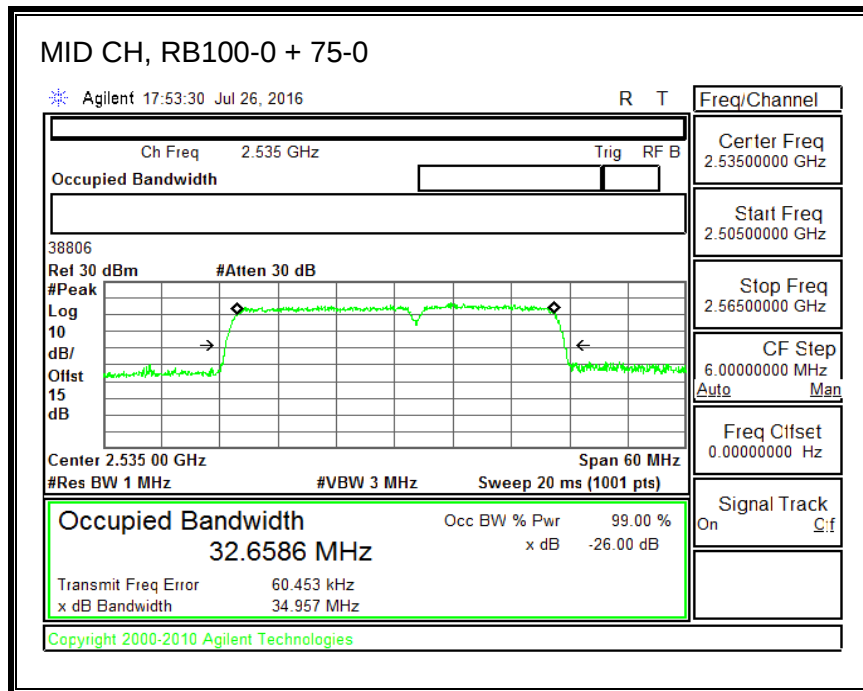
QPSK, (15.0MHz + 20.0MHz BAND WIDTH)



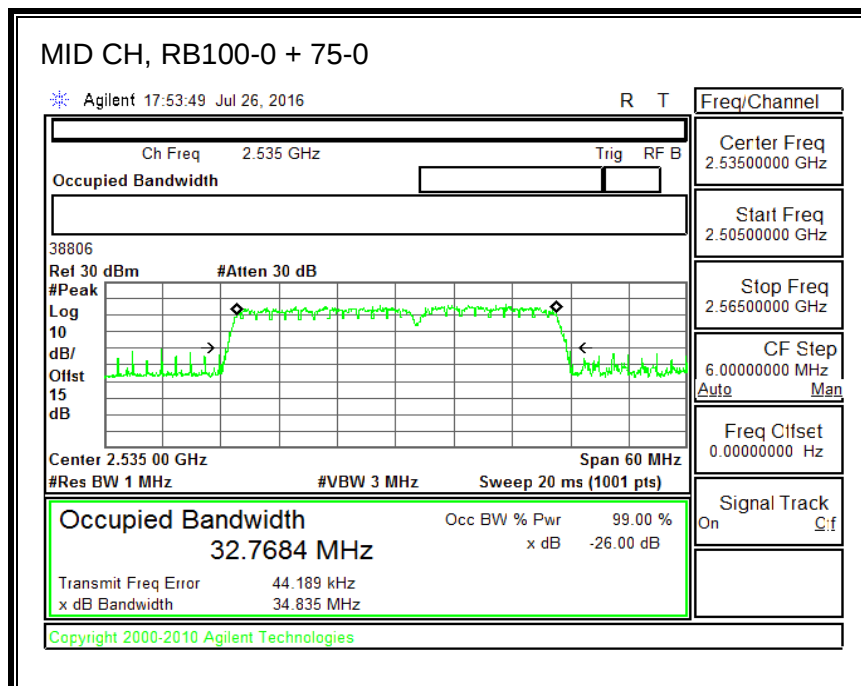
16QAM, (15.0MHz + 20.0MHz BAND WIDTH)



QPSK, (20.0MHz + 15.0MHz BAND WIDTH)

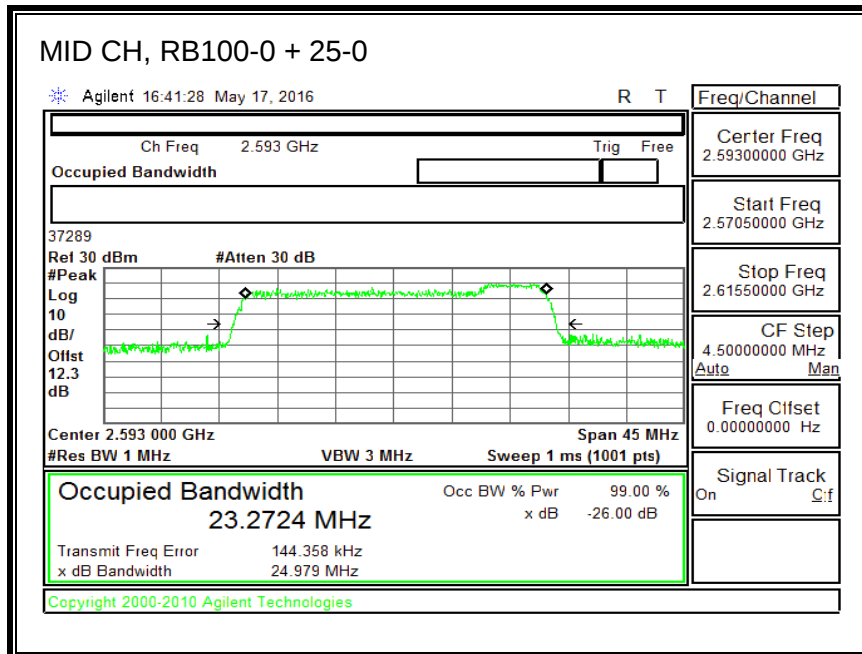


16QAM, (20.0MHz + 15.0MHz BAND WIDTH)

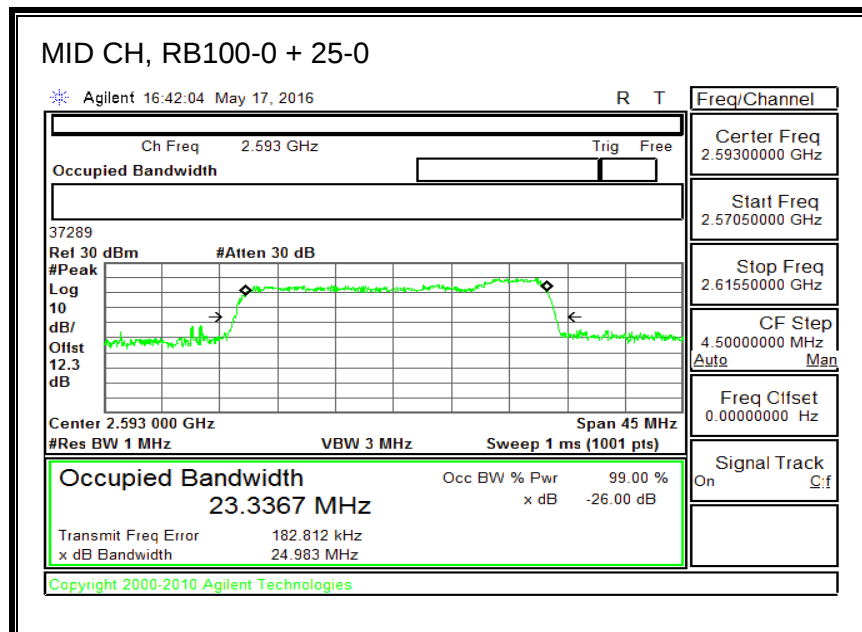


7.3.2. LTE BAND 41

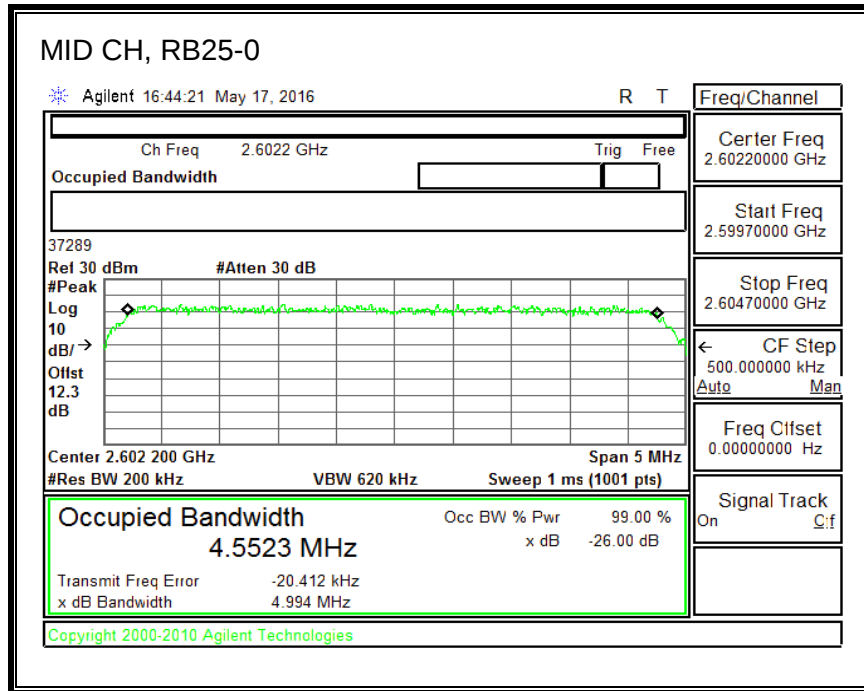
QPSK, (20.0MHz + 5.0MHz BAND WIDTH)



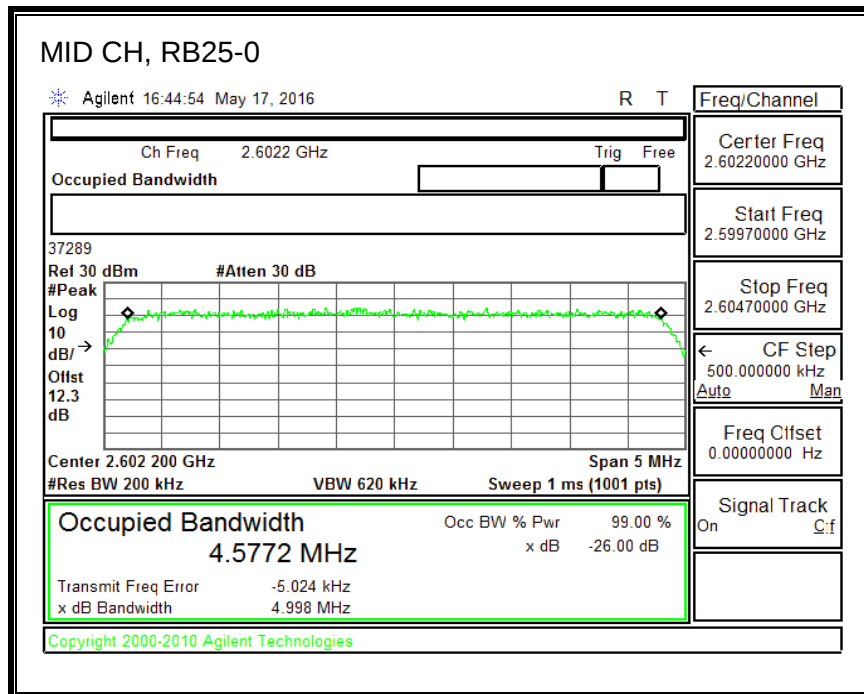
16QAM, (20.0MHz + 5.0MHz BAND WIDTH)



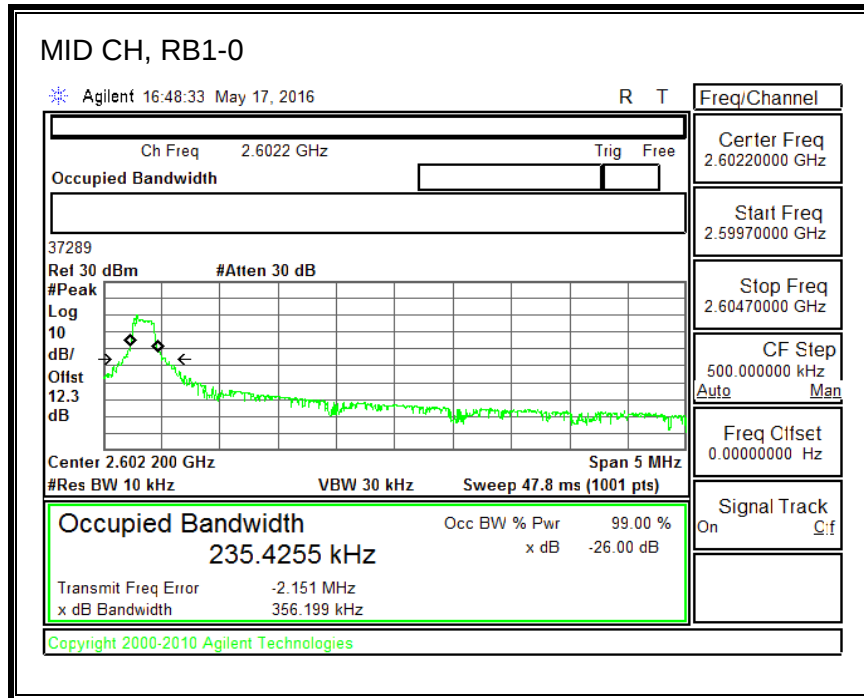
QPSK, (5.0MHz BAND WIDTH)



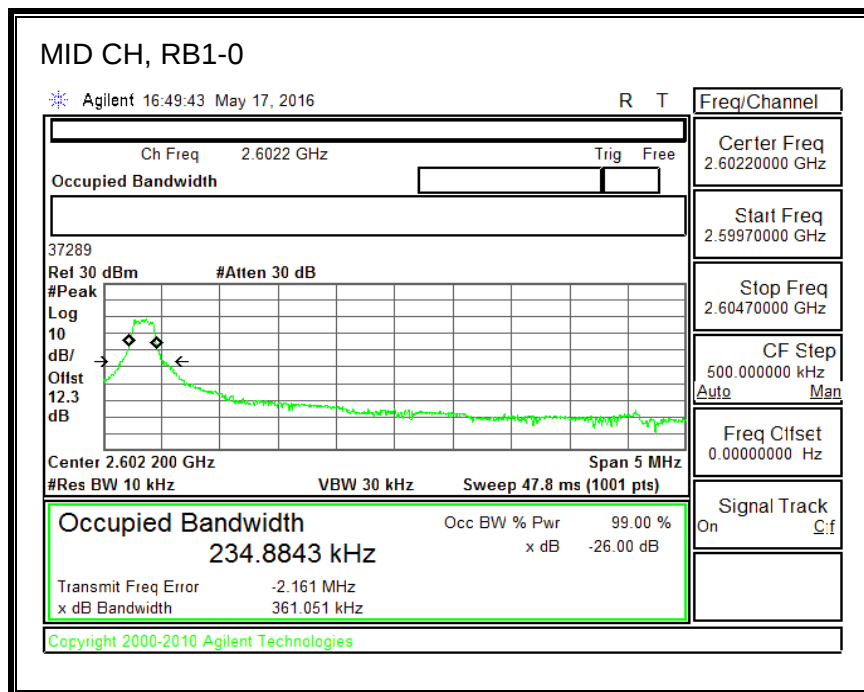
16QAM, (5.0MHz BAND WIDTH)



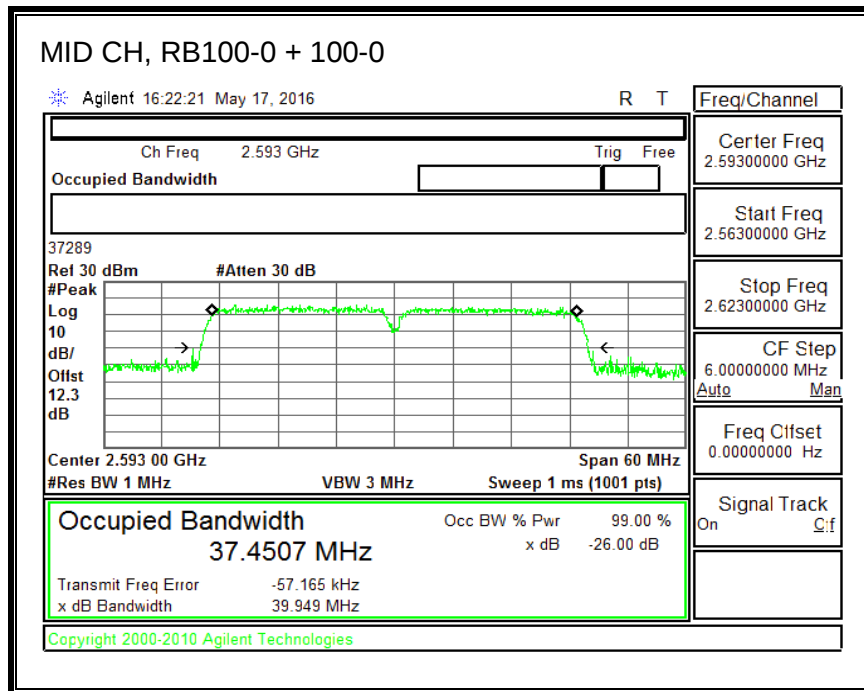
QPSK, (5.0MHz BAND WIDTH)



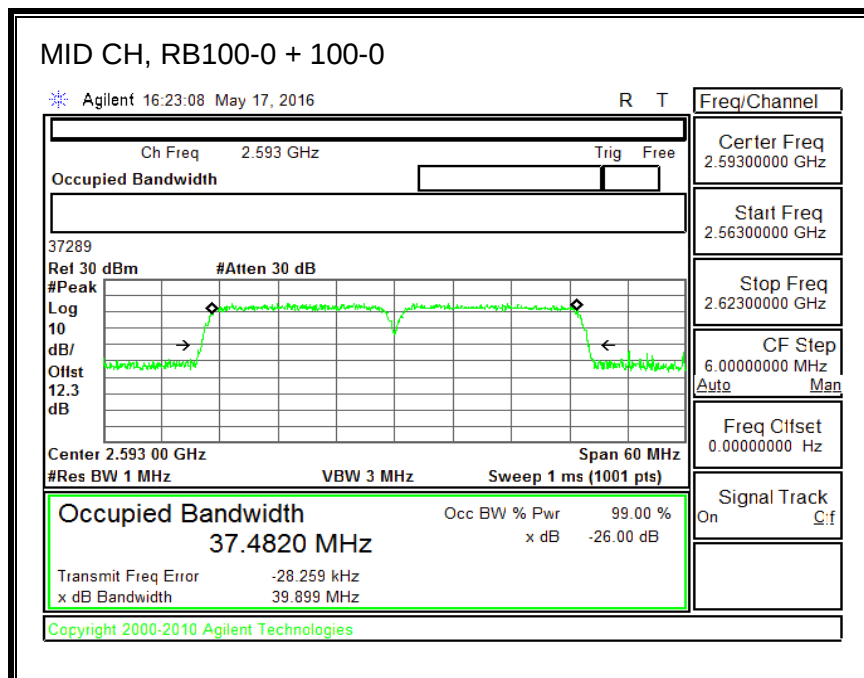
16QAM, (5.0MHz BAND WIDTH)



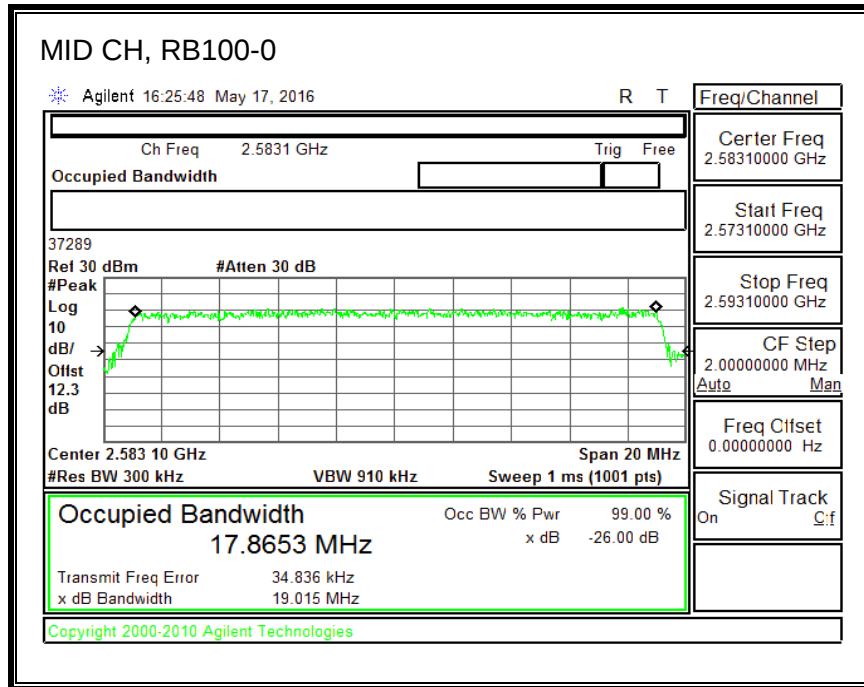
QPSK, (20.0MHz + 20.0MHz BAND WIDTH)



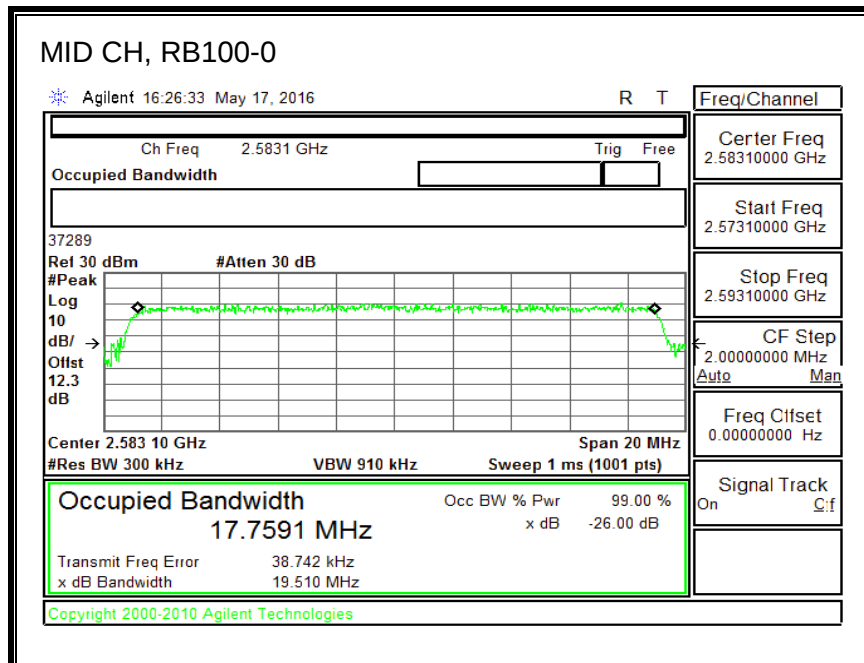
16QAM, (20.0MHz + 20.0MHz BAND WIDTH)



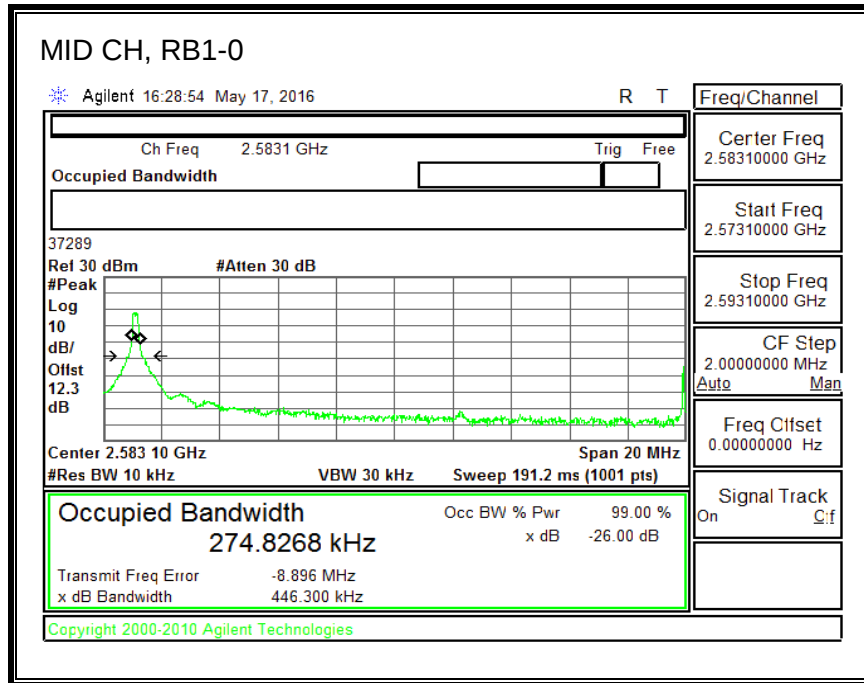
QPSK, (20.0MHz BAND WIDTH)



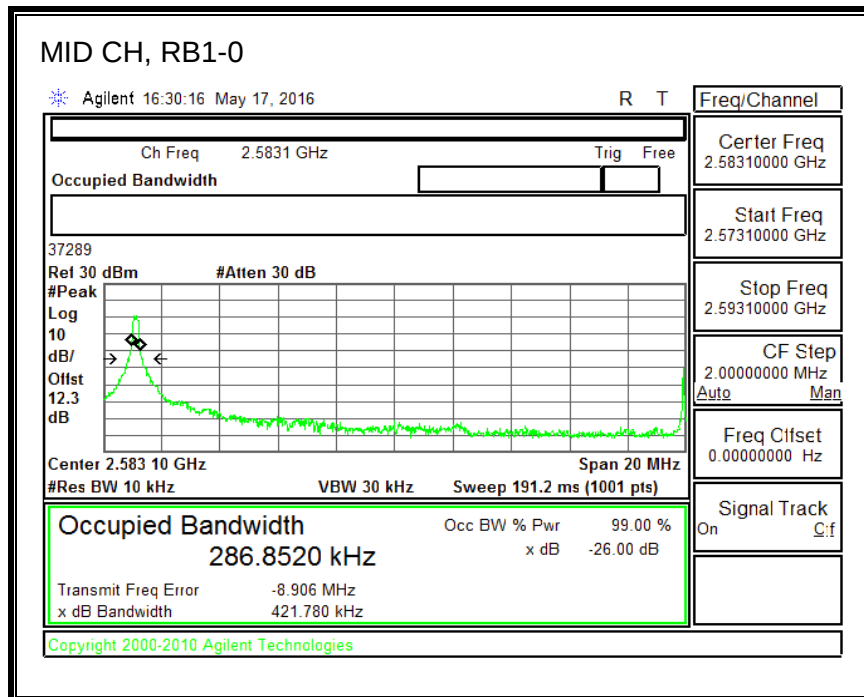
16QAM, (20.0MHz BAND WIDTH)



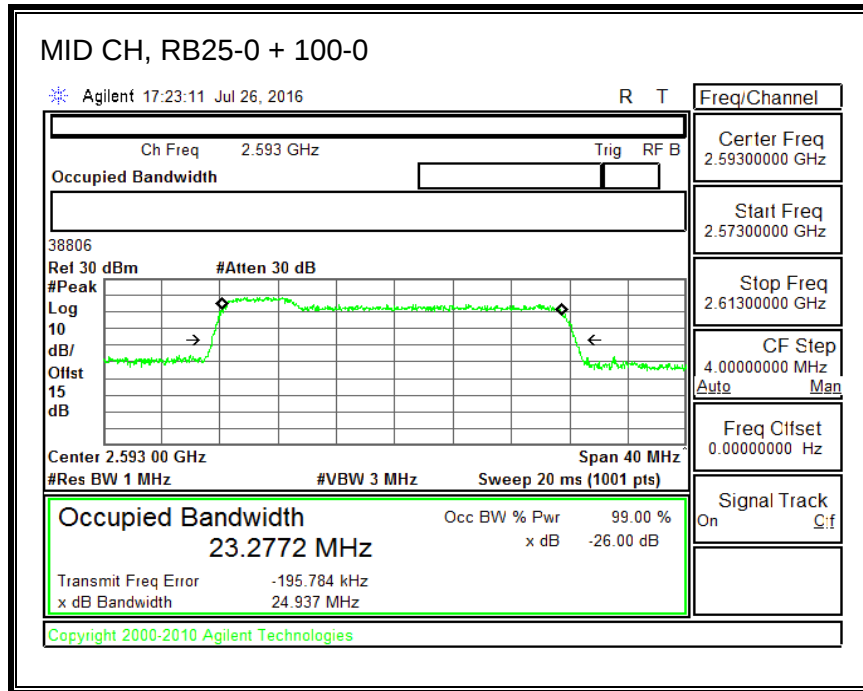
QPSK, (20.0MHz BAND WIDTH)



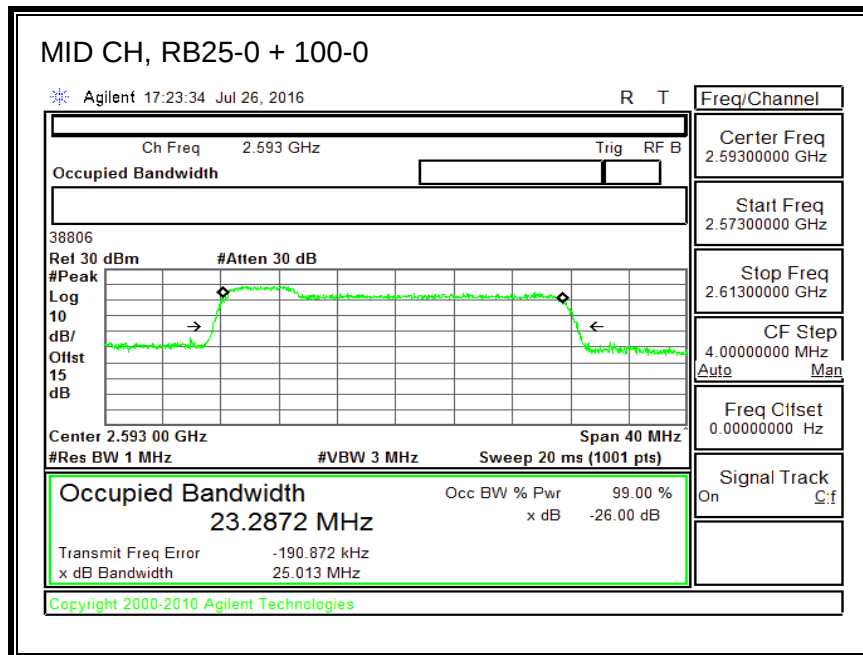
16QAM, (20.0MHz BAND WIDTH)



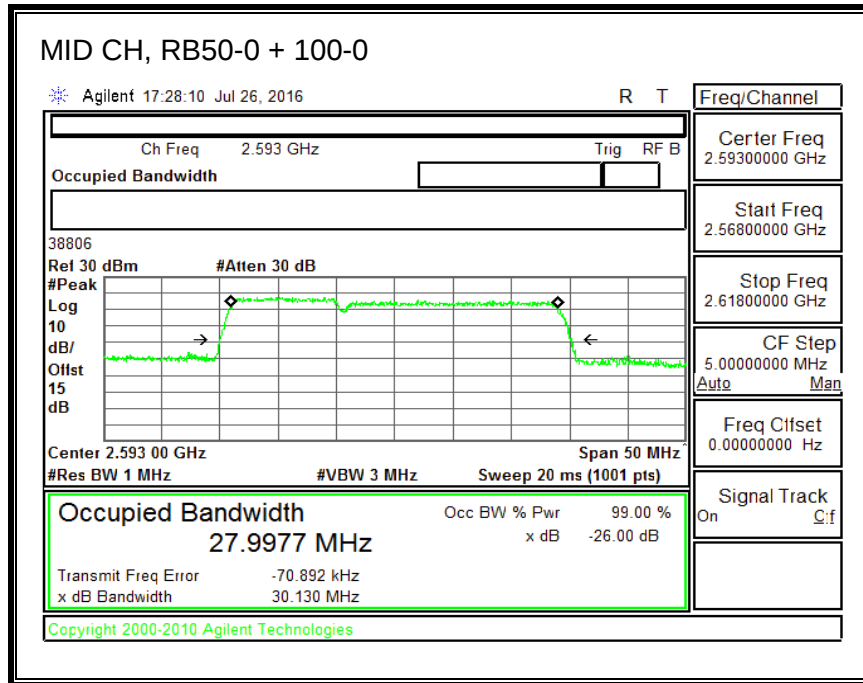
QPSK, (5.0MHz + 20.0MHz BAND WIDTH)



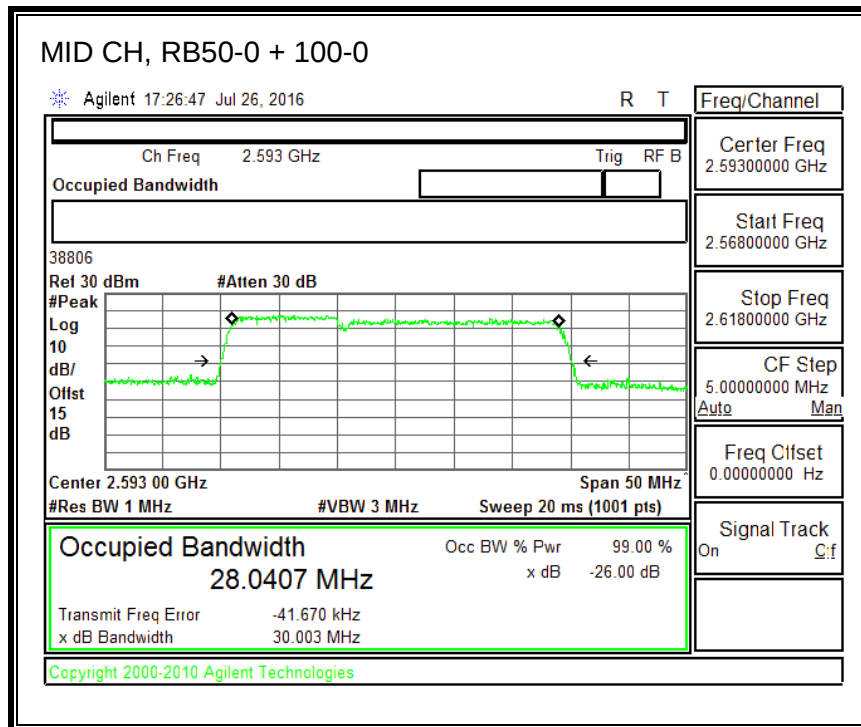
16QAM, (5.0MHz + 20.0MHz BAND WIDTH)



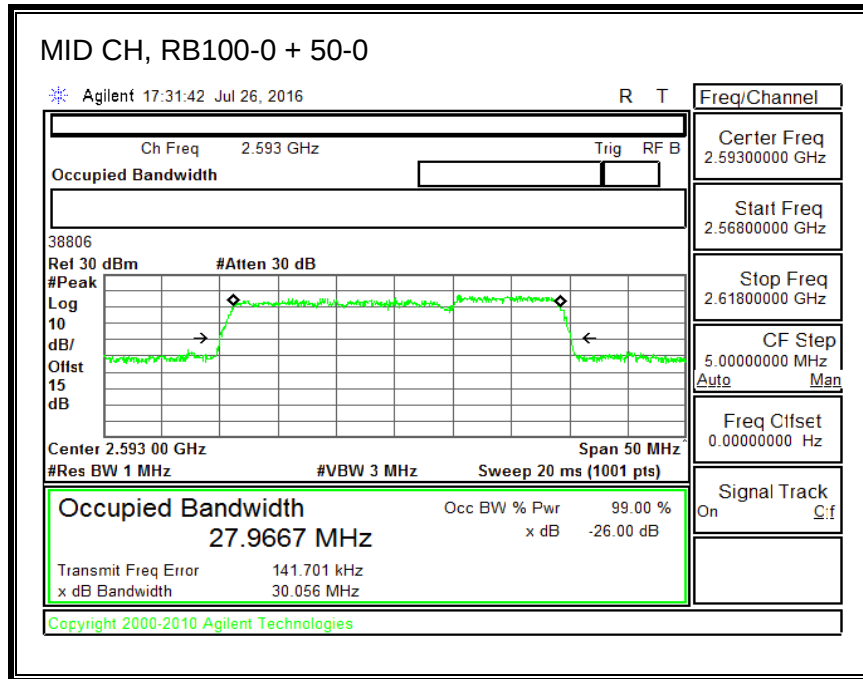
QPSK, (10.0MHz + 20.0MHz BAND WIDTH)



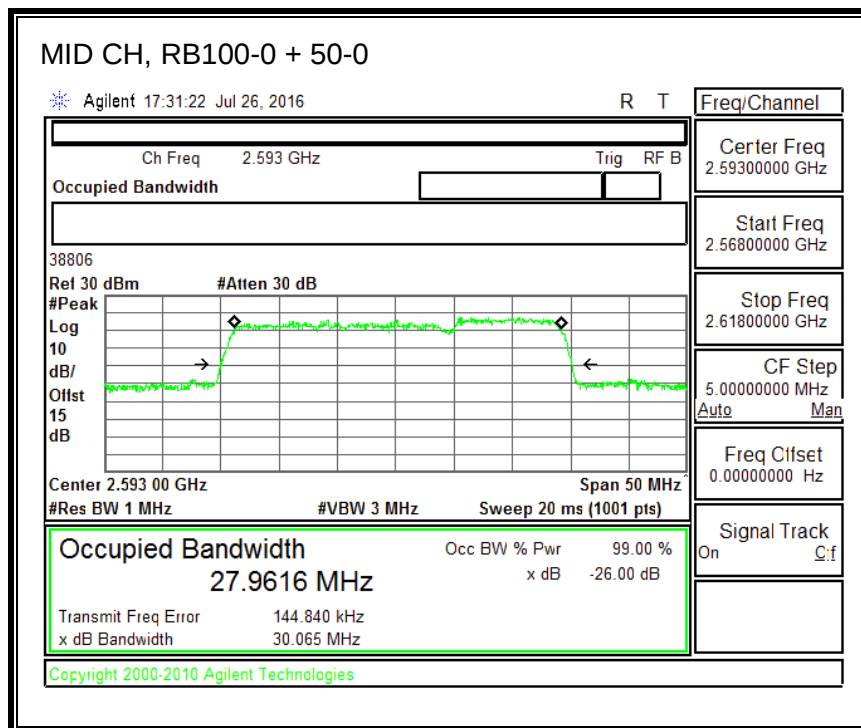
16QAM, (10.0MHz + 20.0MHz BAND WIDTH)



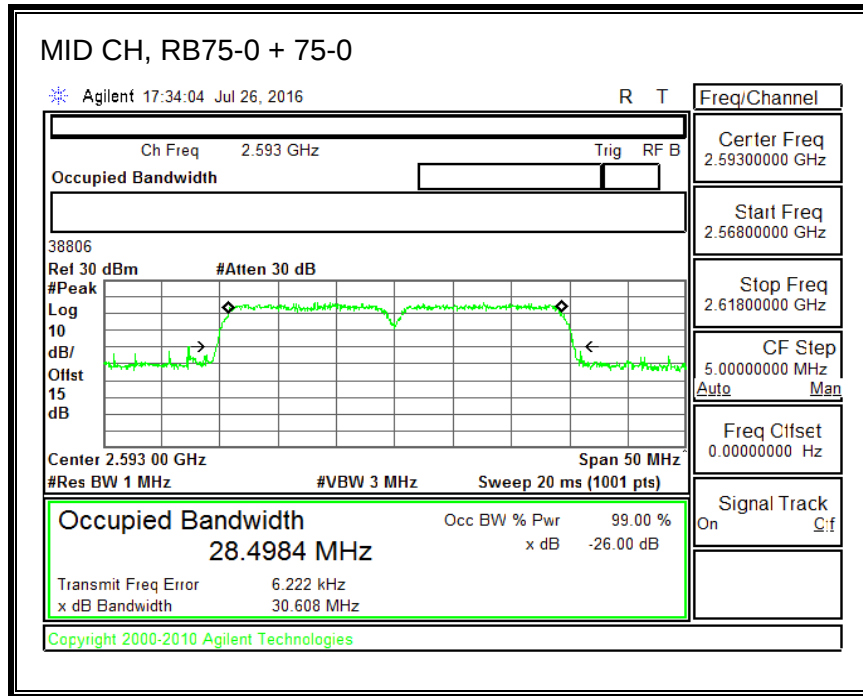
QPSK, (20.0MHz + 10.0MHz BAND WIDTH)



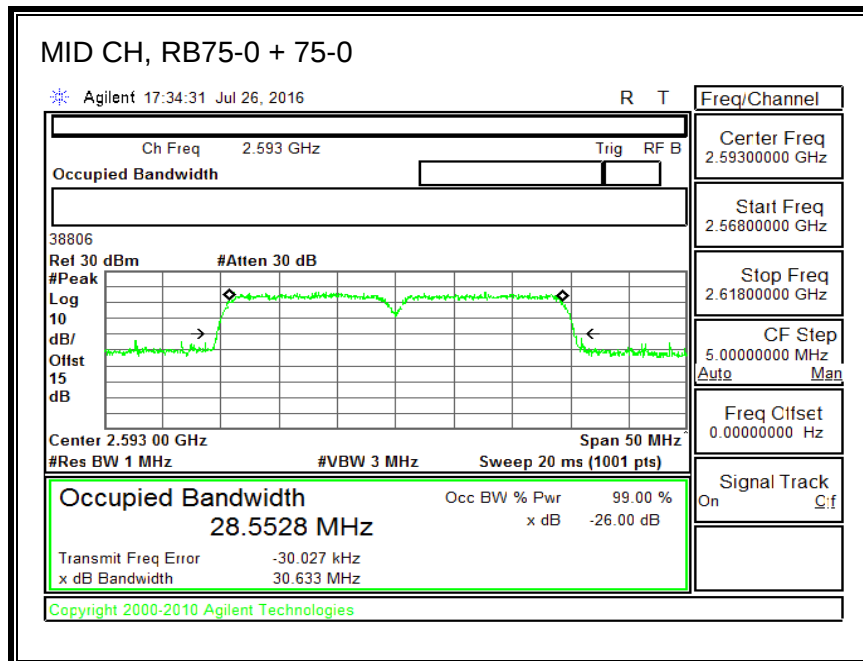
16QAM, (20.0MHz + 10.0MHz BAND WIDTH)



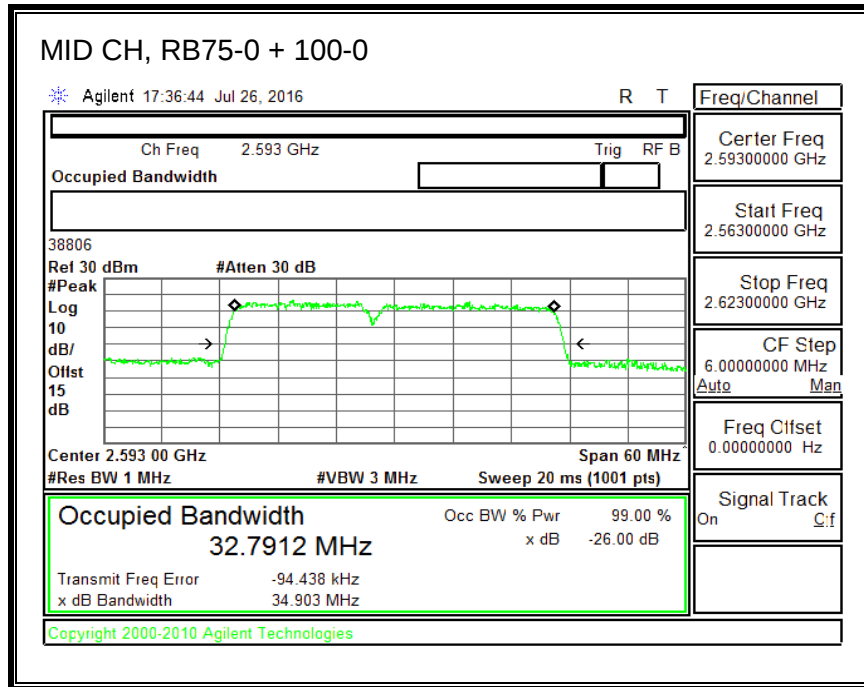
QPSK, (15.0MHz + 15.0MHz BAND WIDTH)



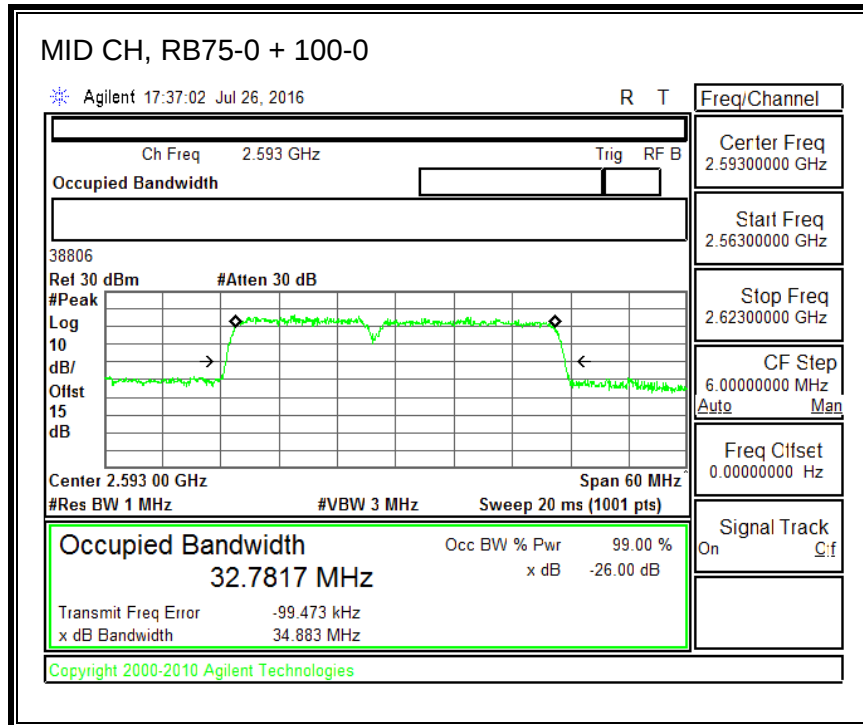
16QAM, (15.0MHz + 15.0MHz BAND WIDTH)



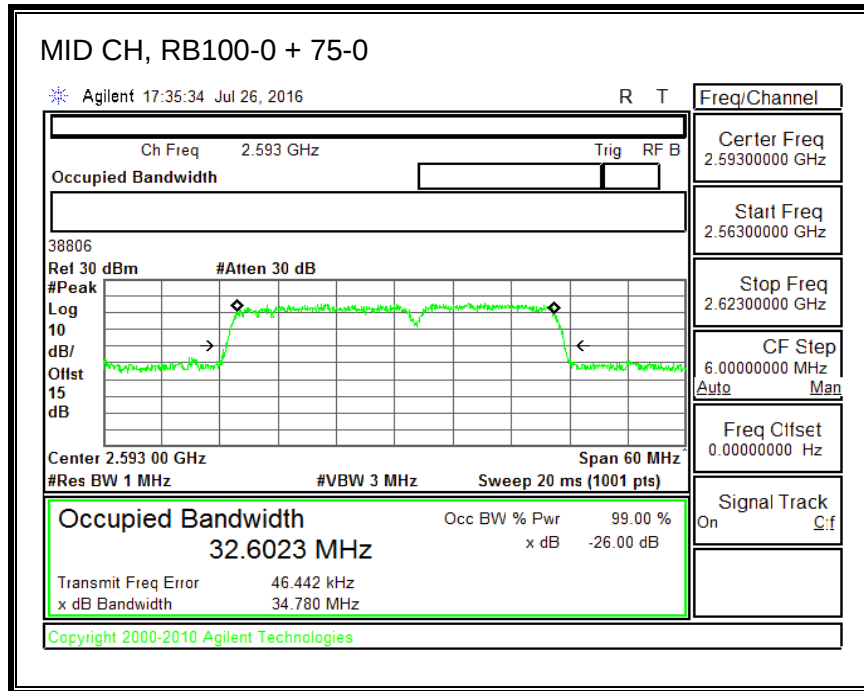
QPSK, (15.0MHz + 20.0MHz BAND WIDTH)



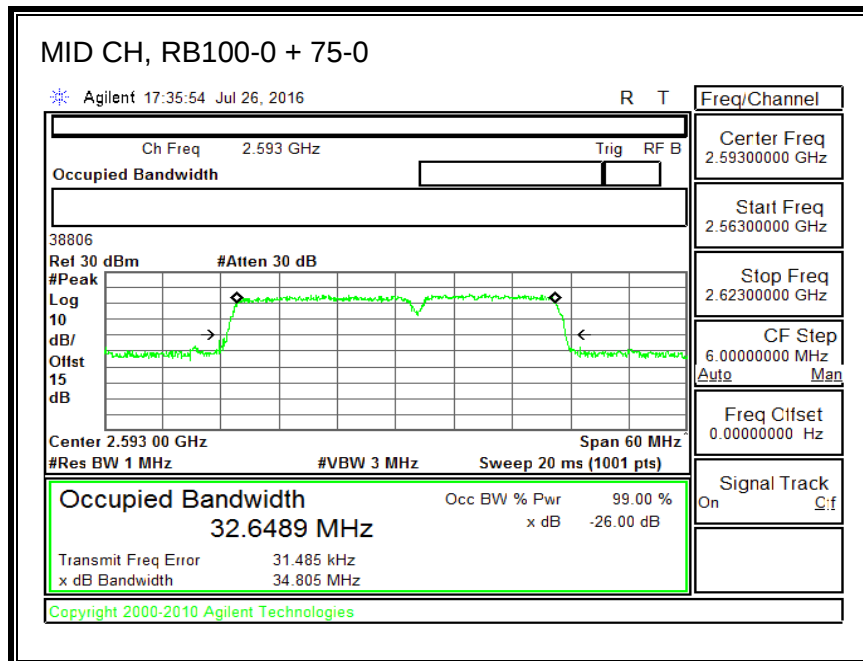
16QAM, (15.0MHz + 20.0MHz BAND WIDTH)



QPSK, (20.0MHz + 15.0MHz BAND WIDTH)



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



7.4. 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.

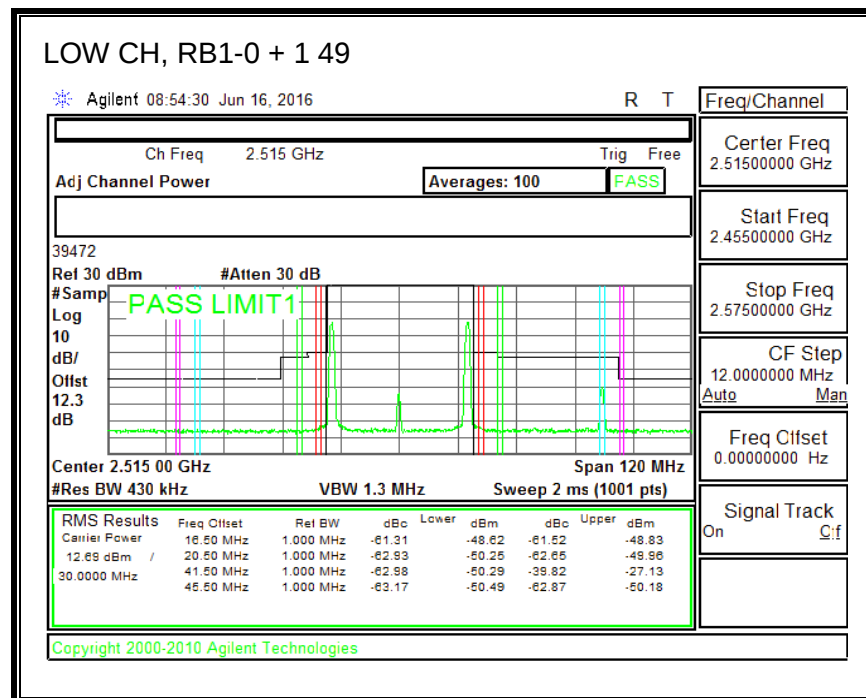
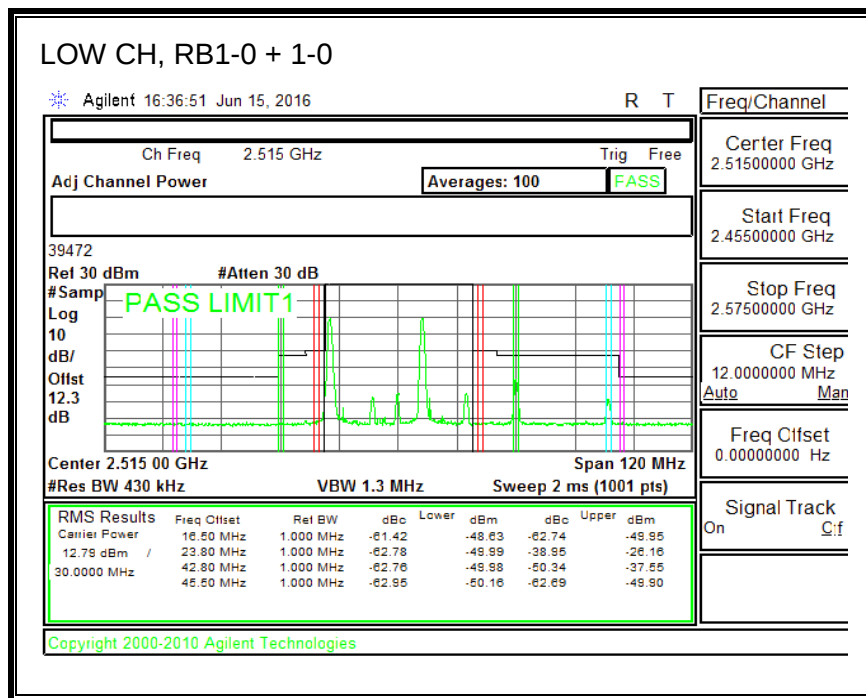
MODES TESTED

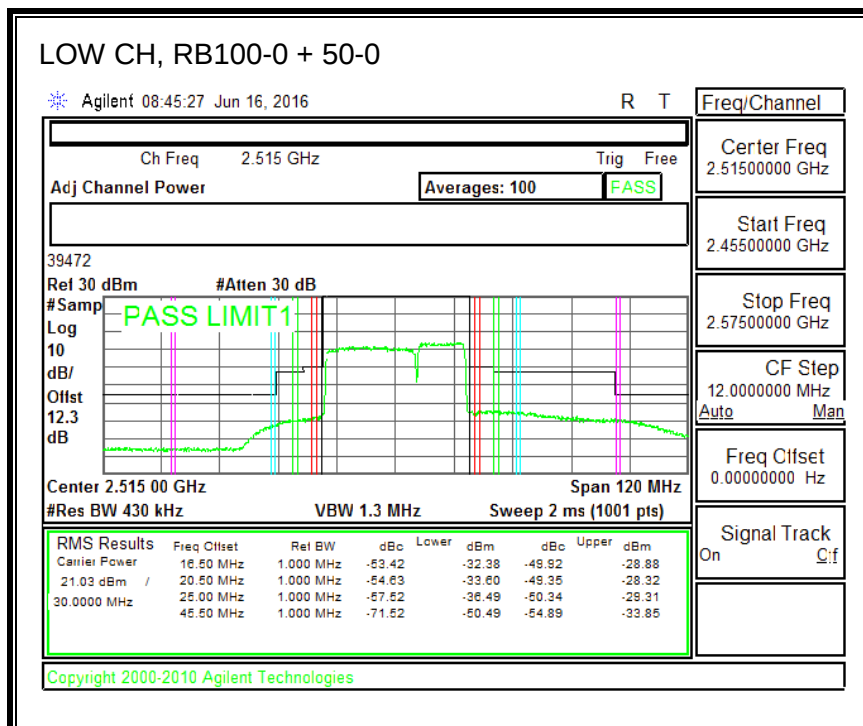
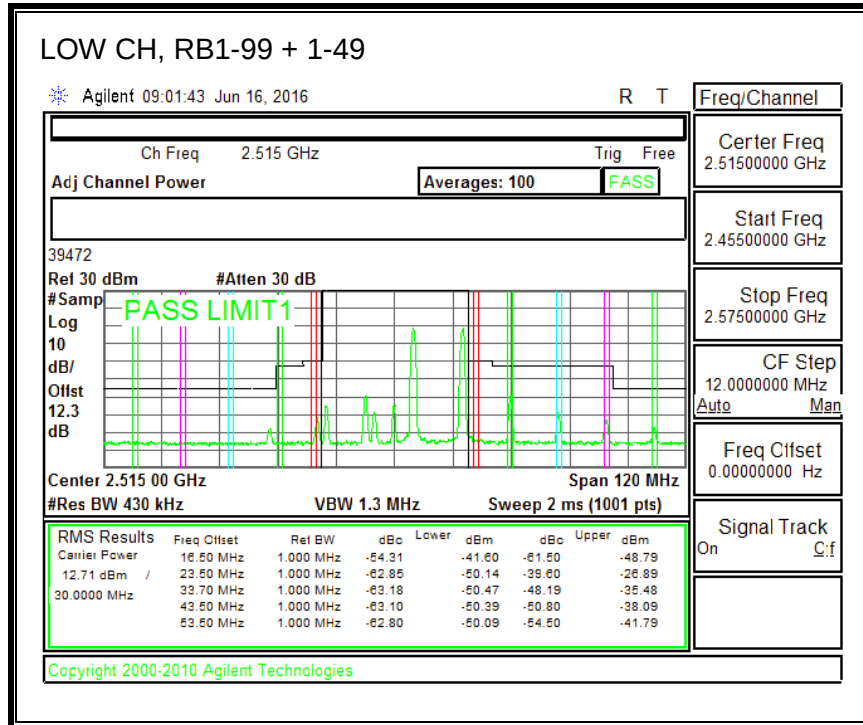
- LTE Band 7
- LTE Band 41

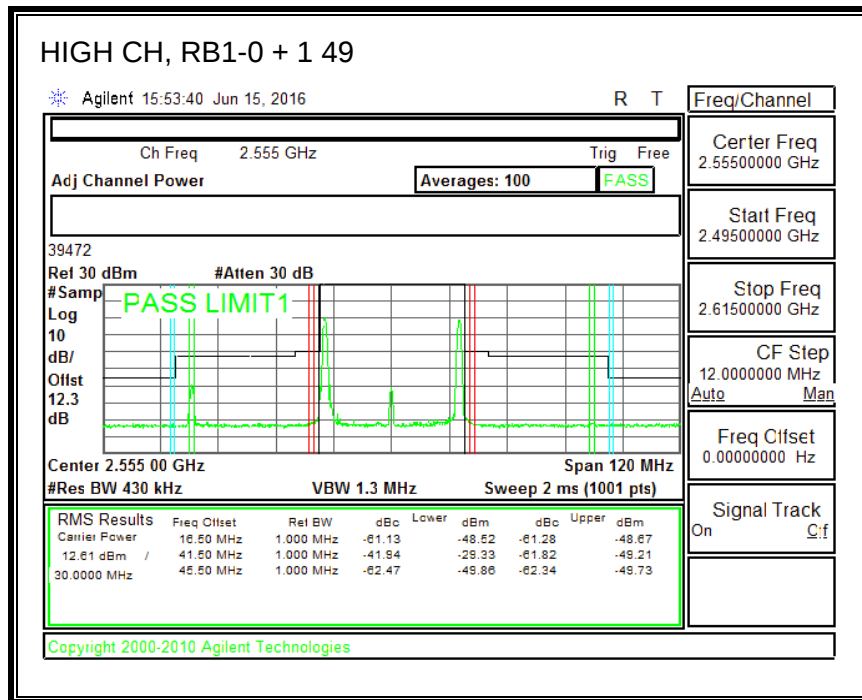
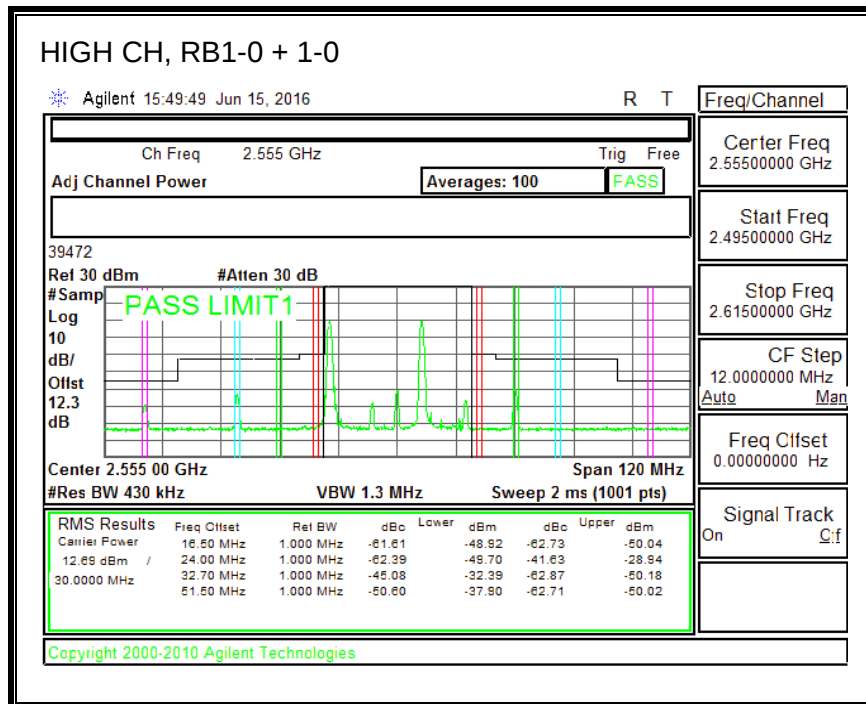
RESULTS

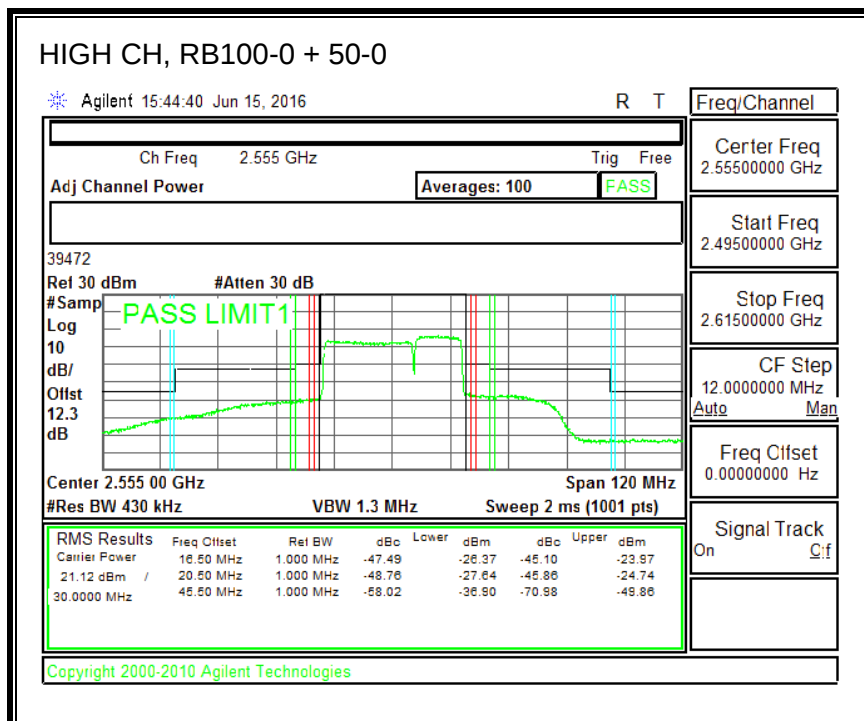
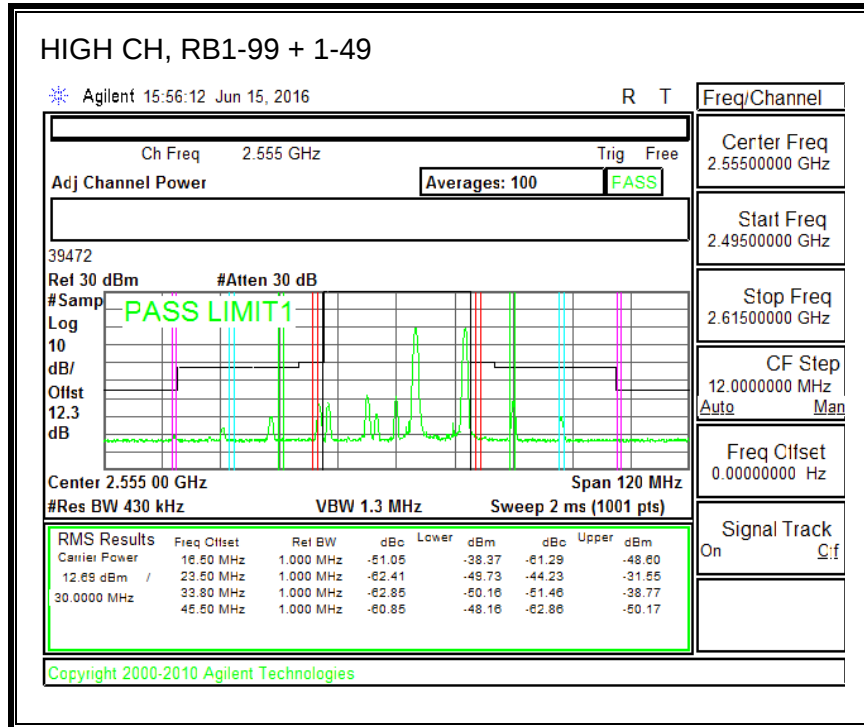
7.4.1. LTE BAND 7

QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)

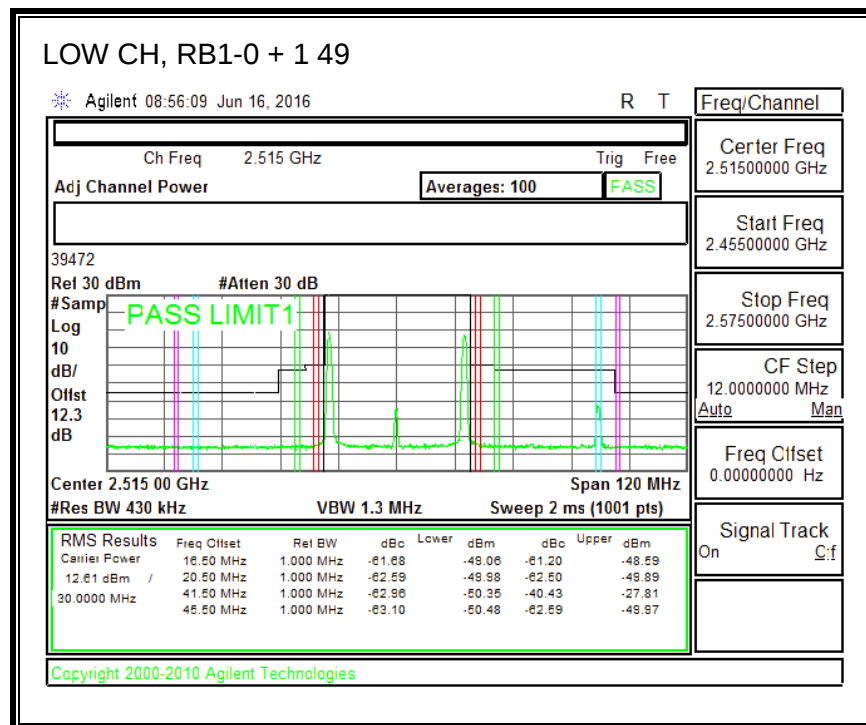
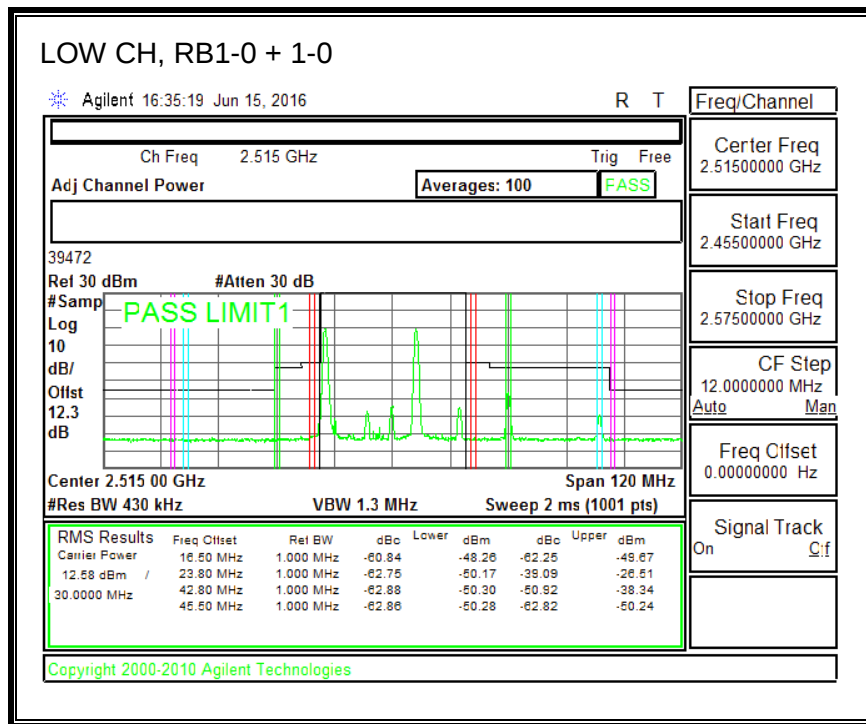


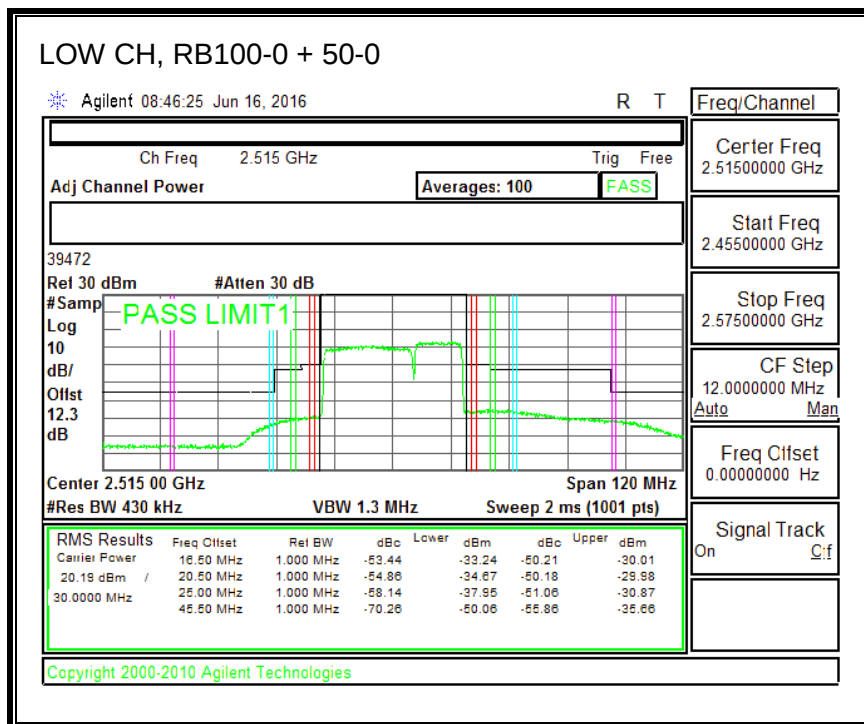
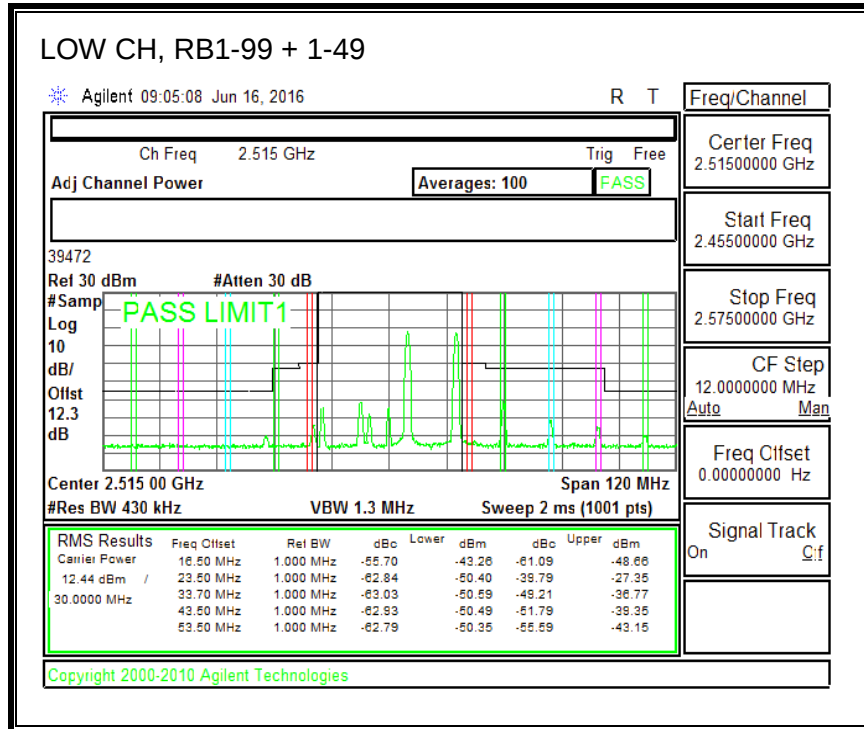


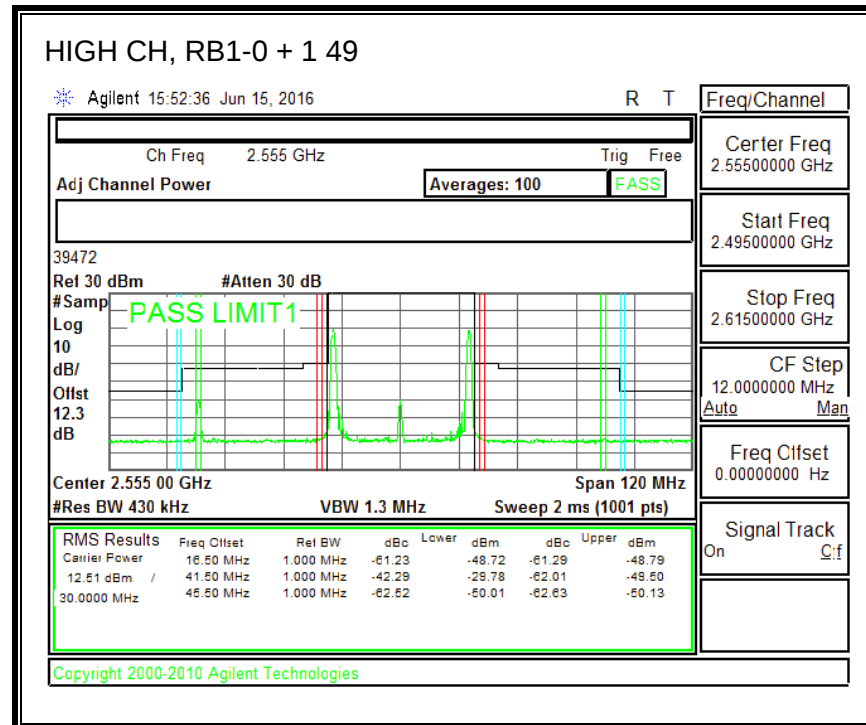
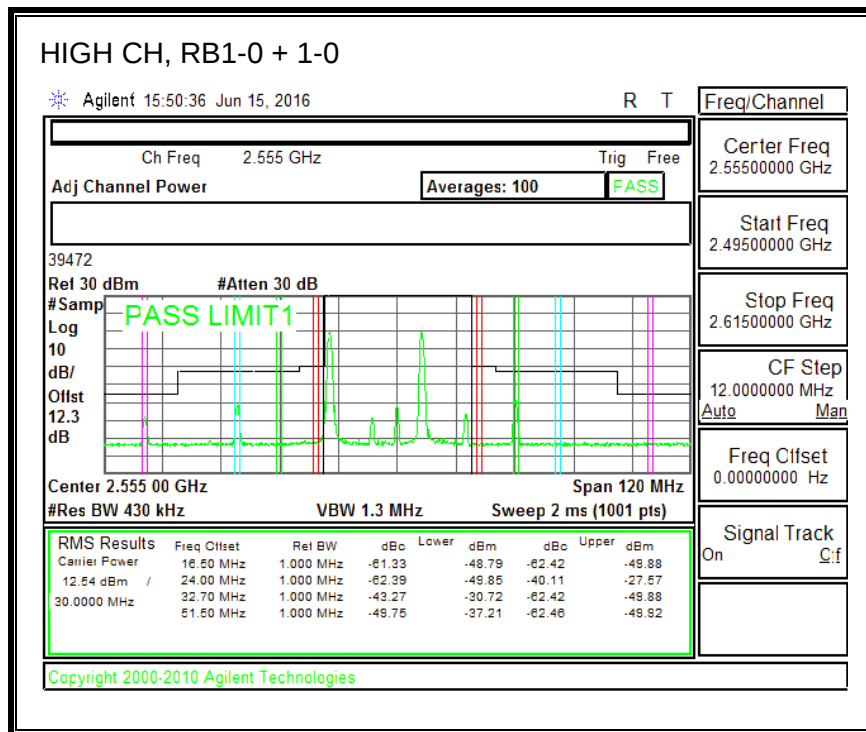


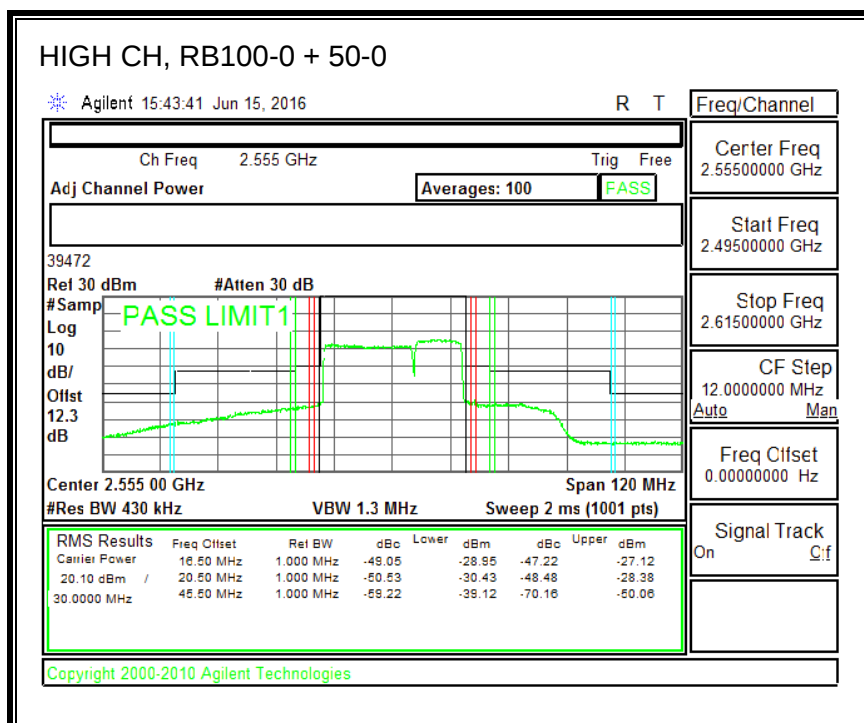
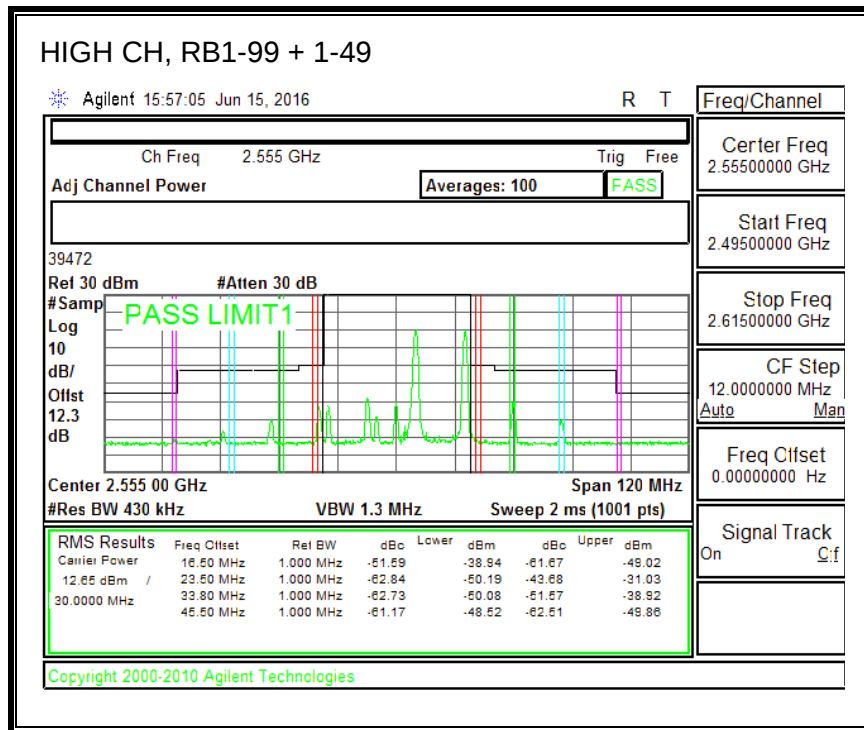


16QAM (20.0 MHz + 10.0 MHz BAND WIDTH)

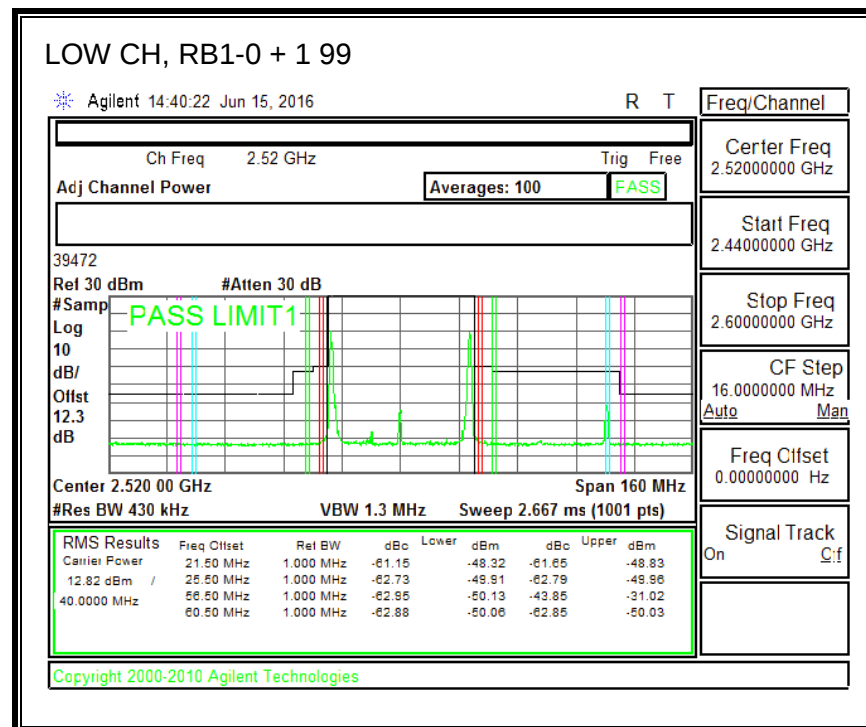
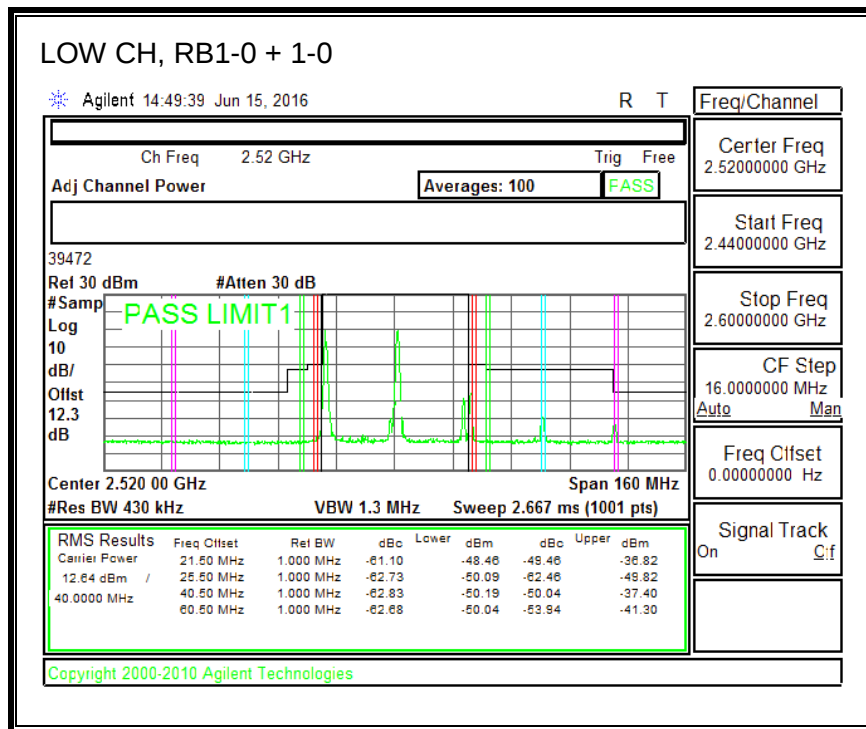


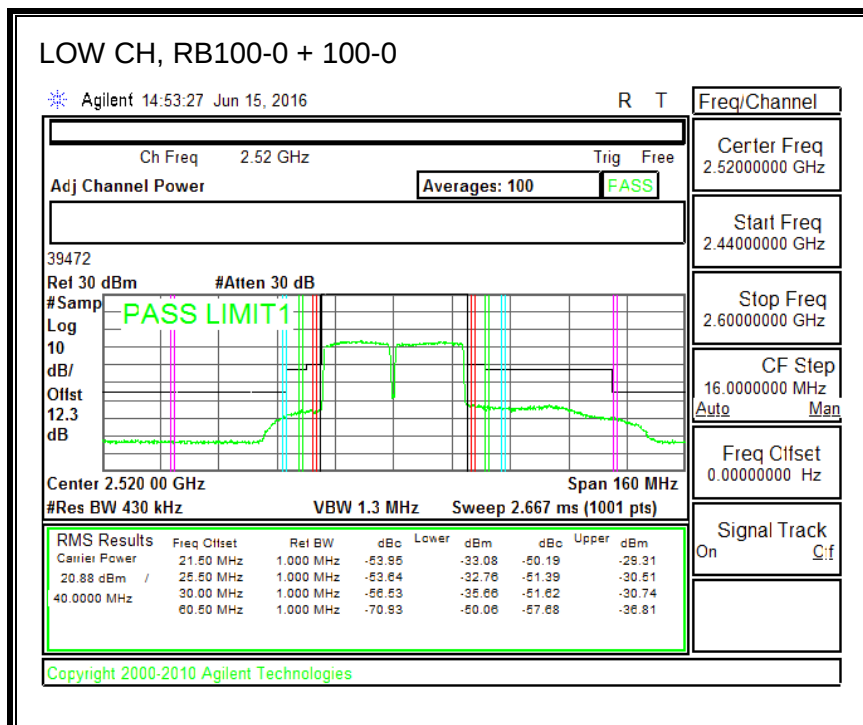
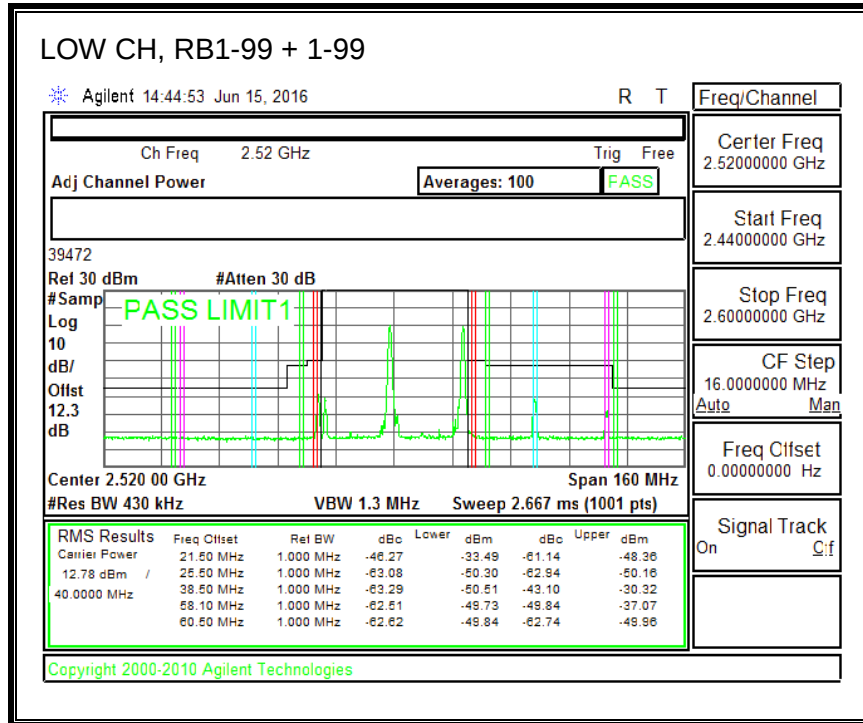


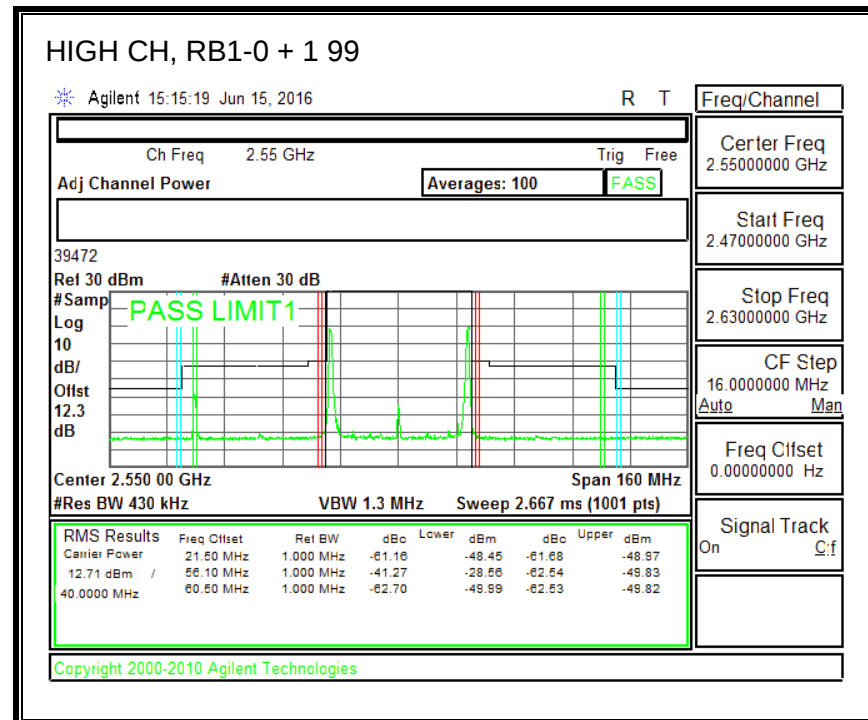
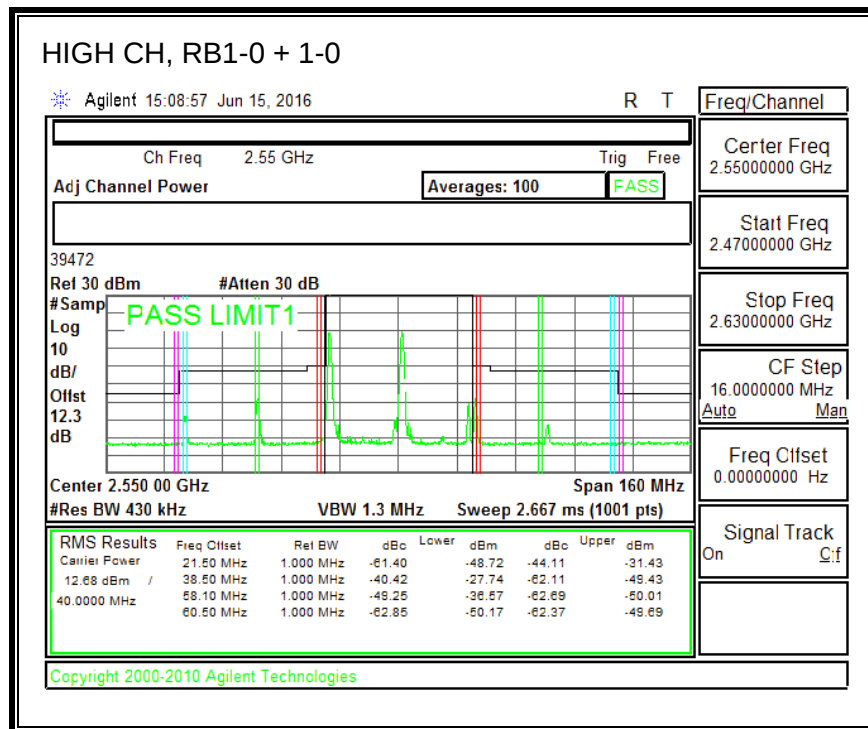


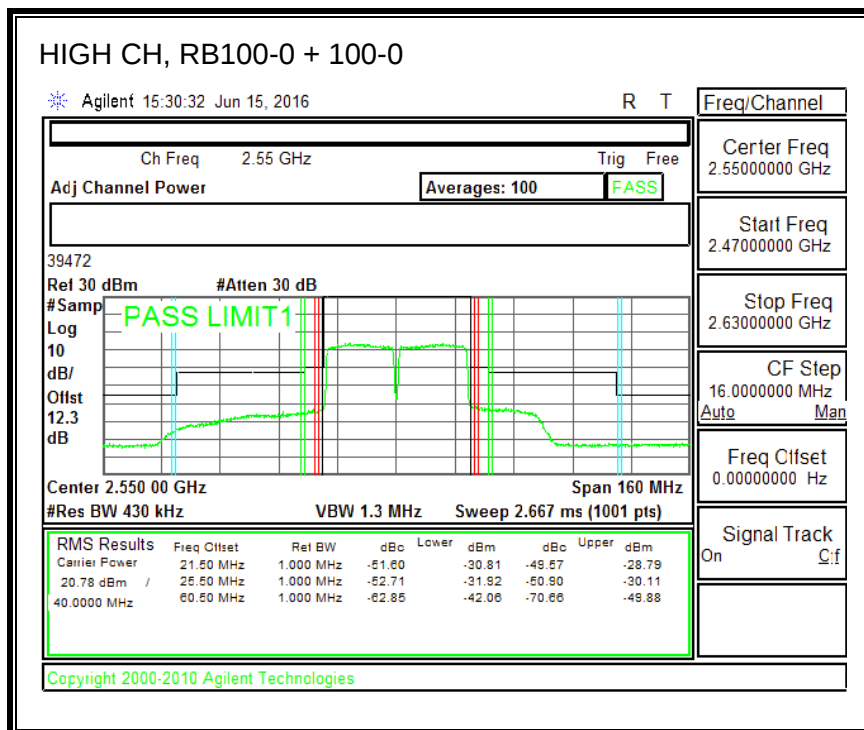
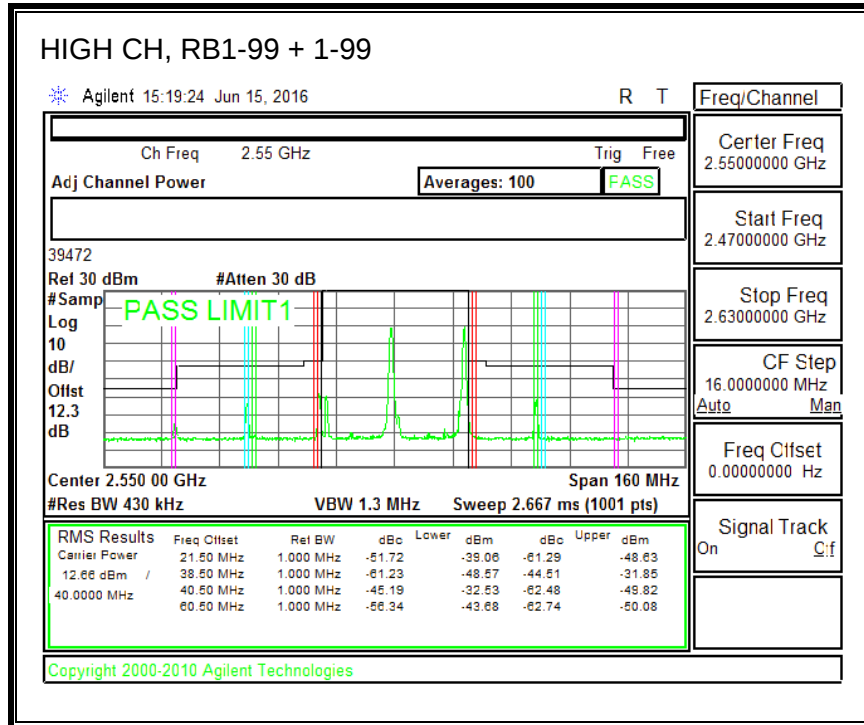


QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

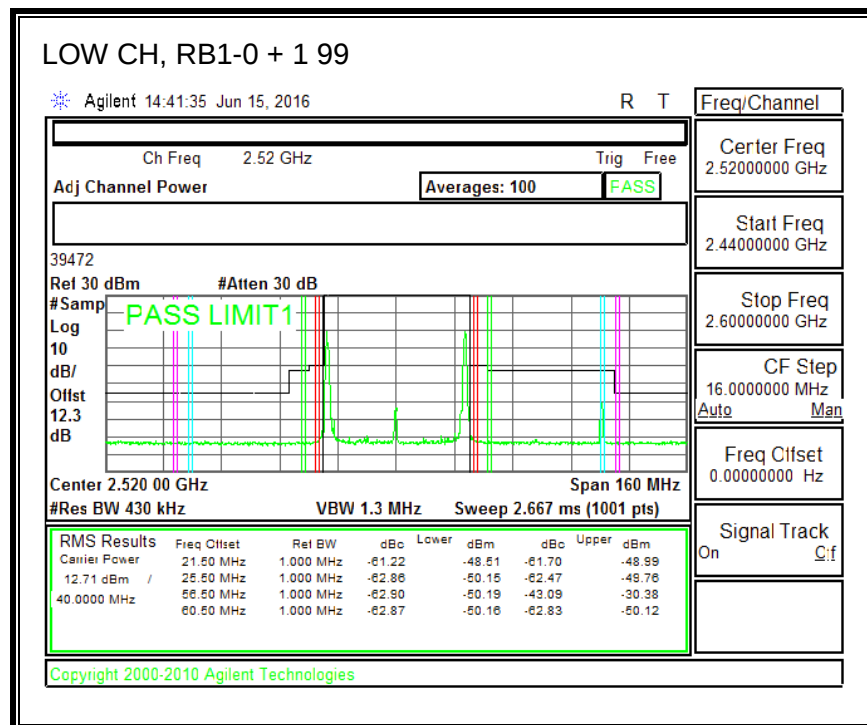
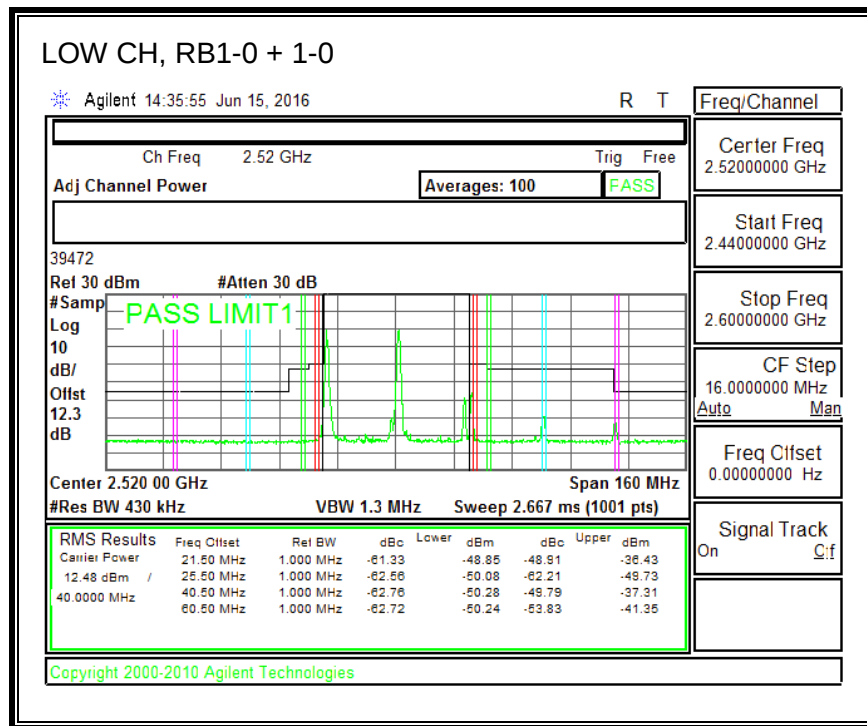


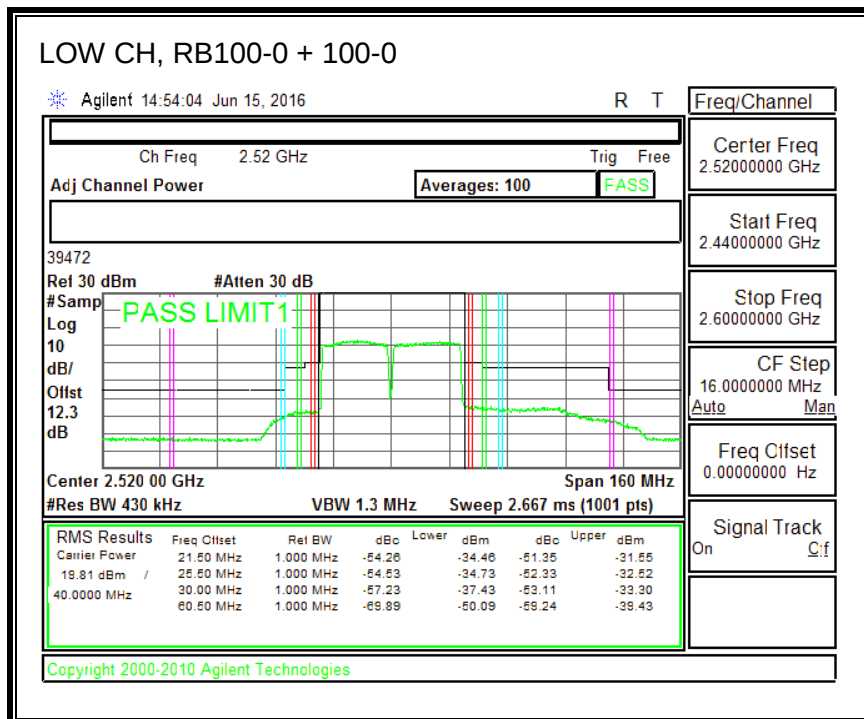
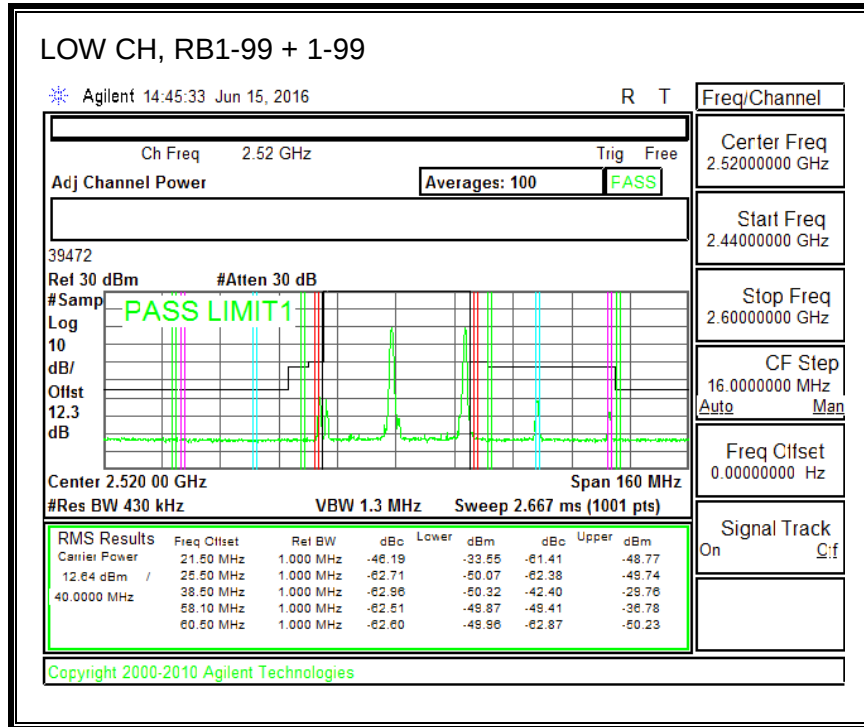


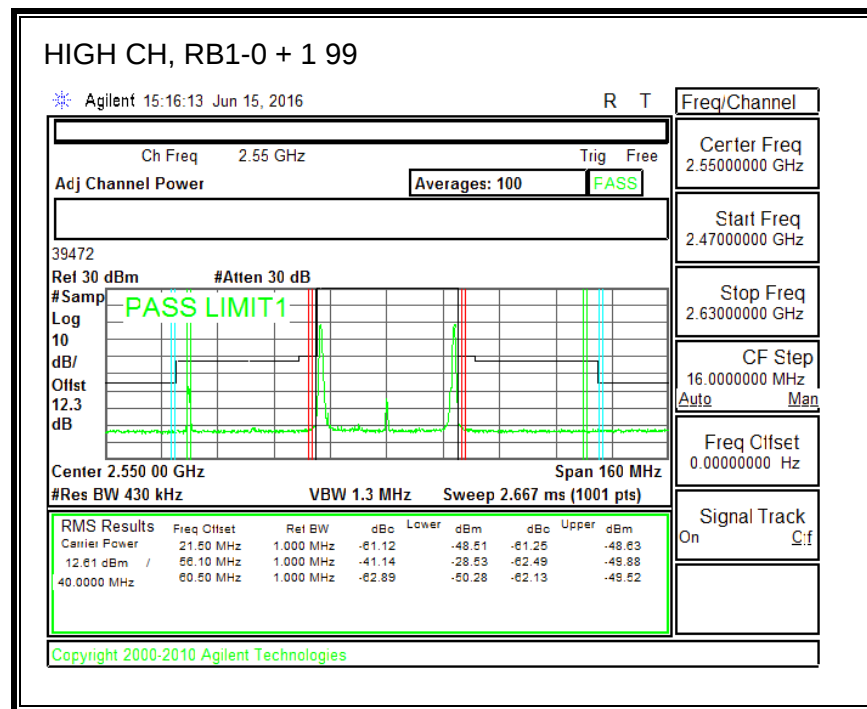
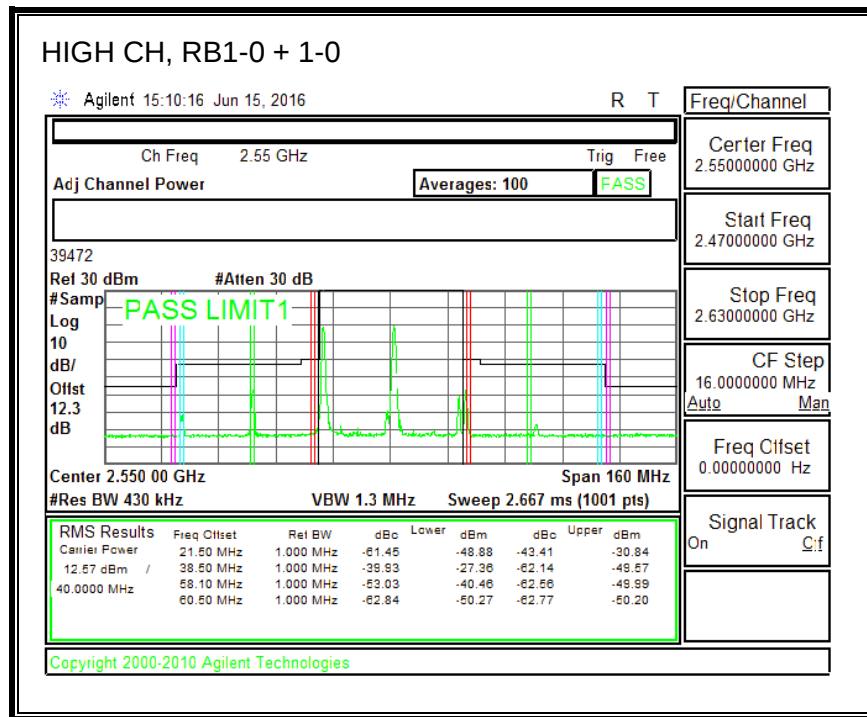


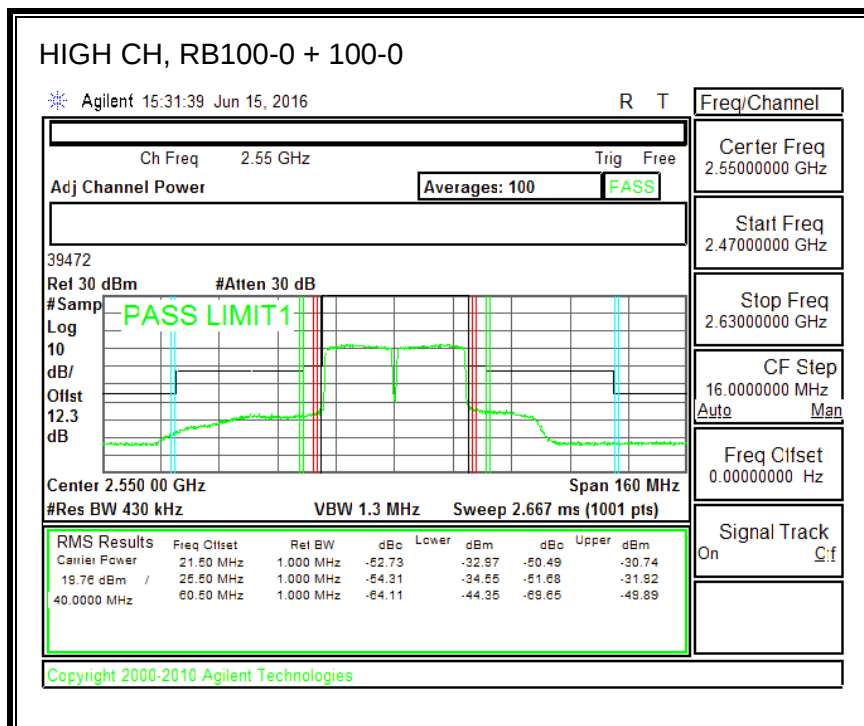
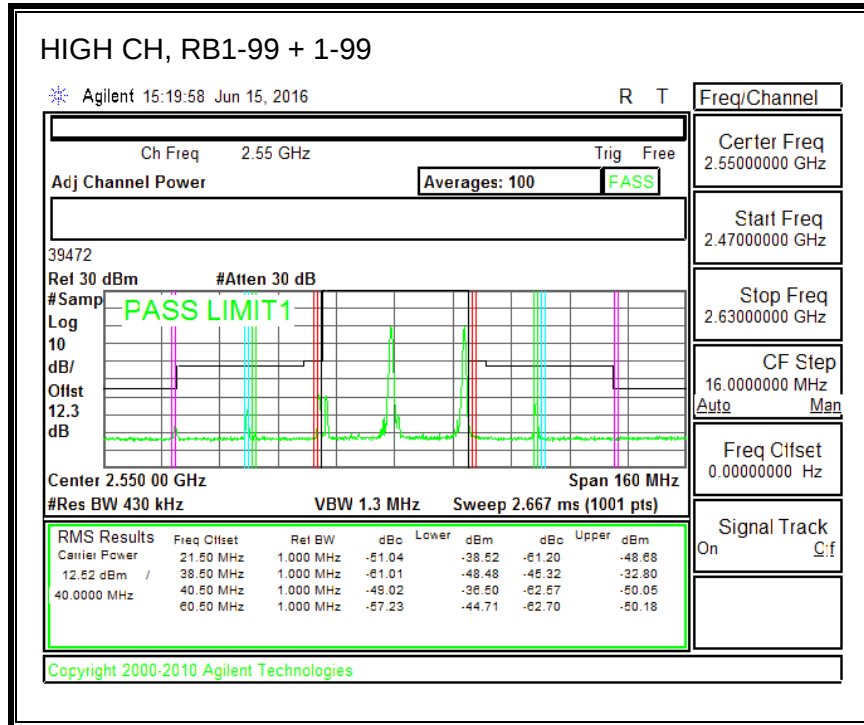


16QAM (20.0 MHz + 20.0 MHz BAND WIDTH)



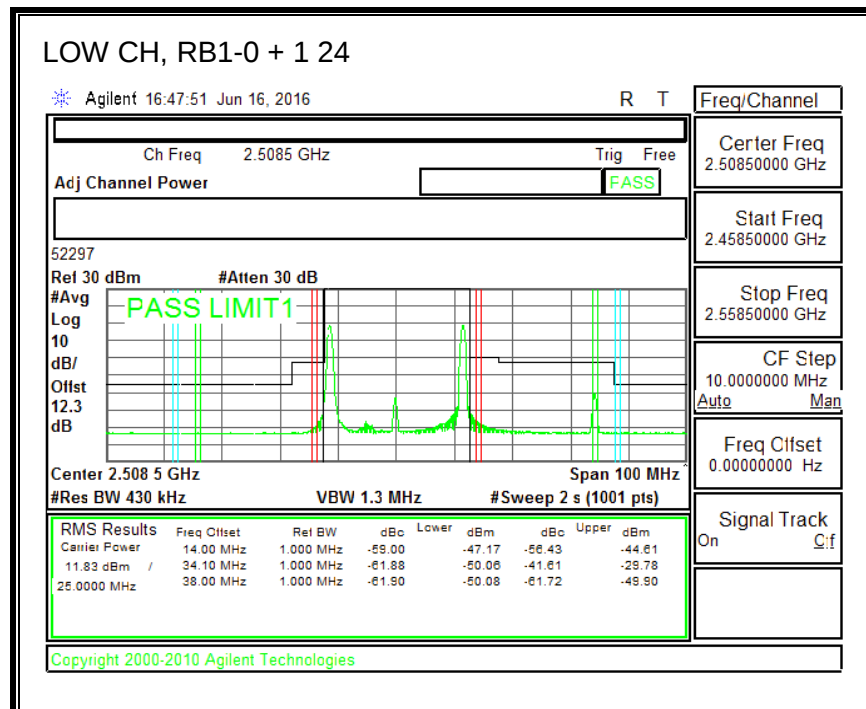
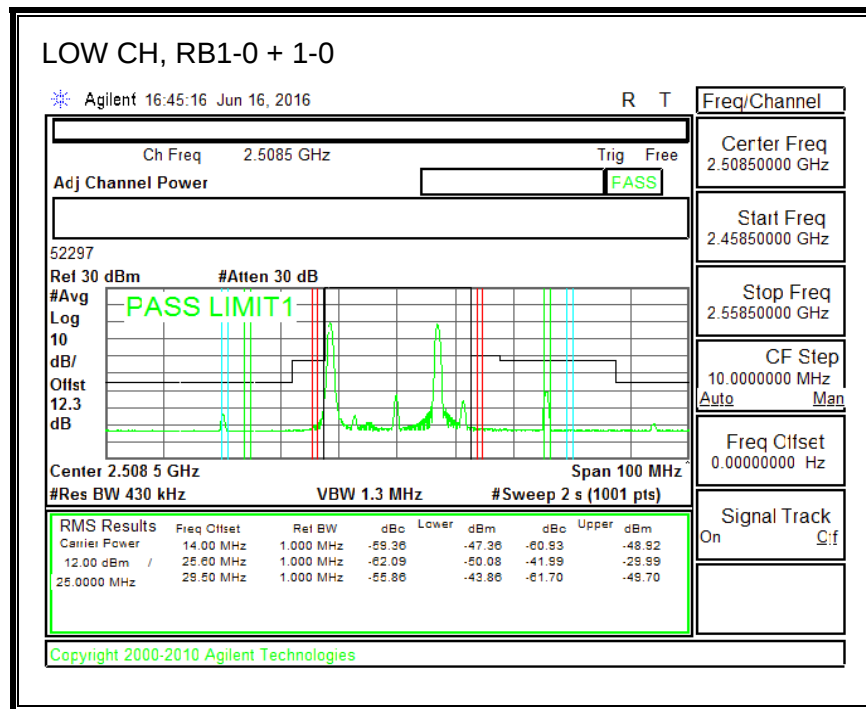


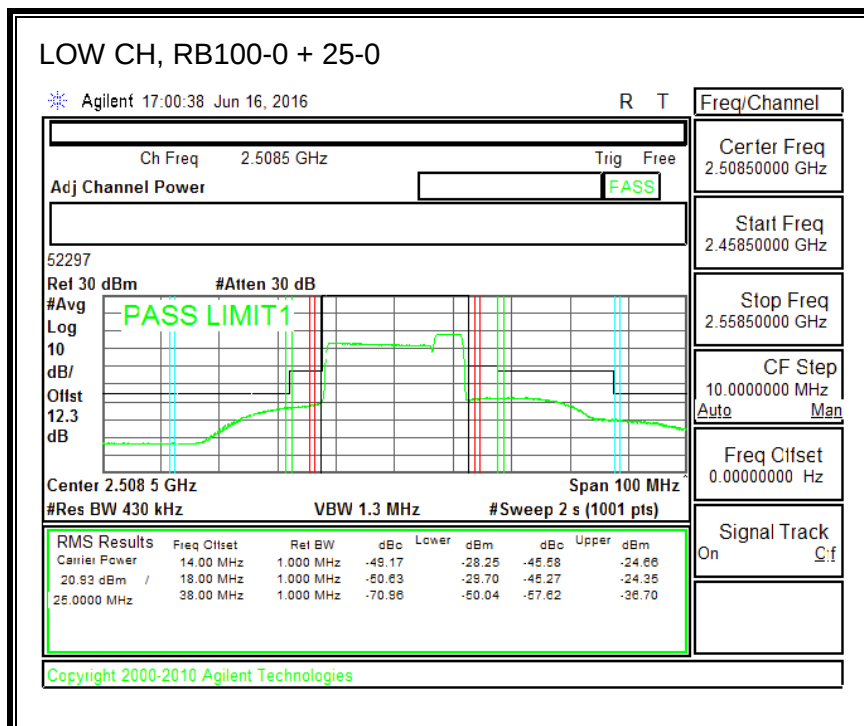
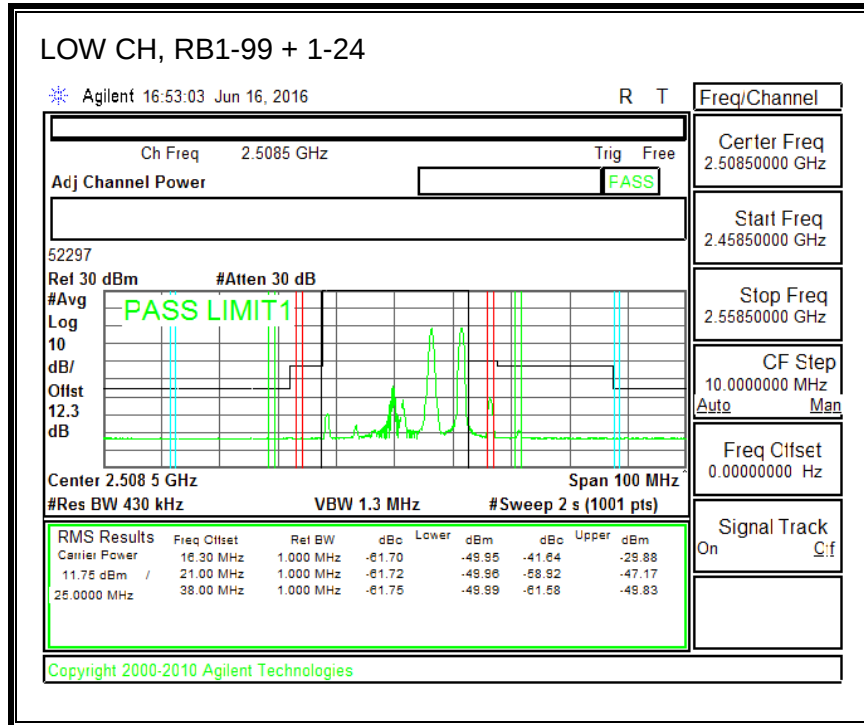


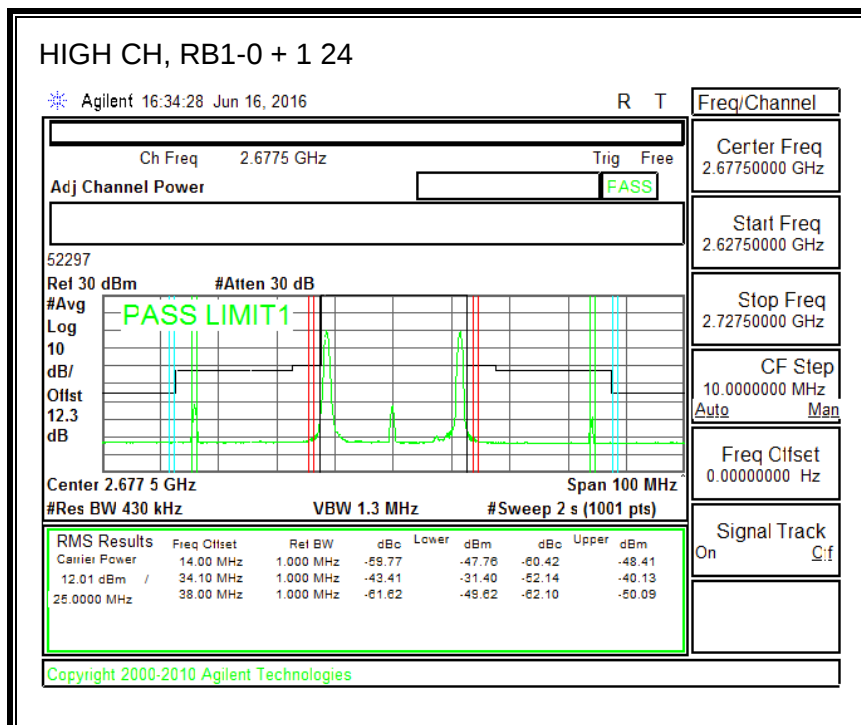
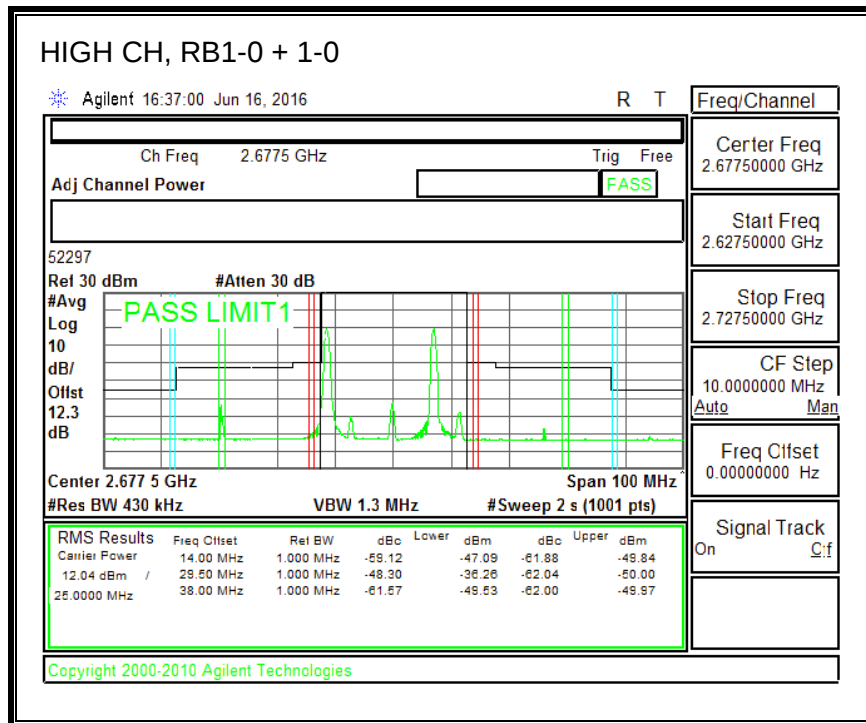


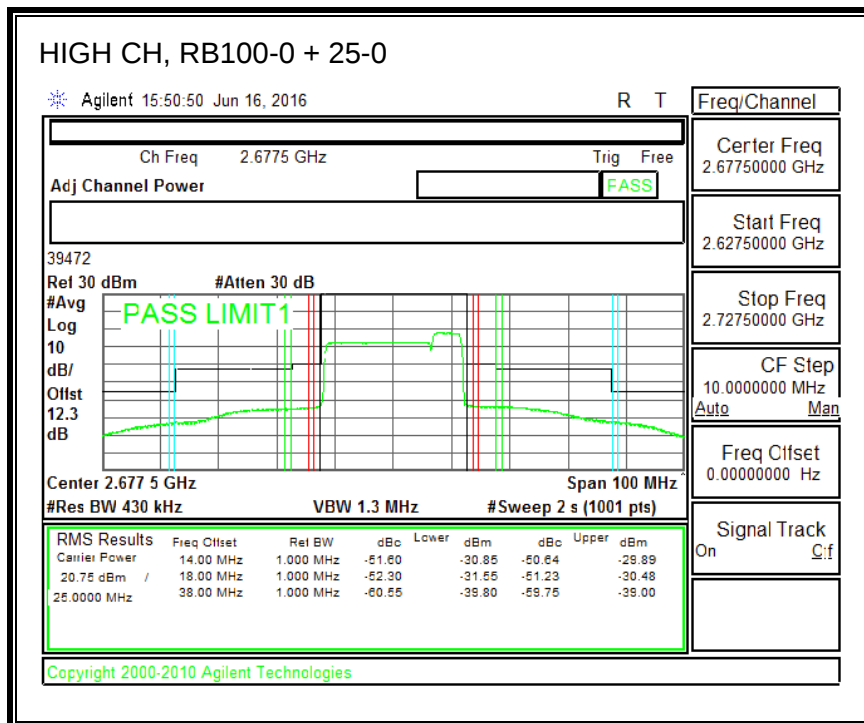
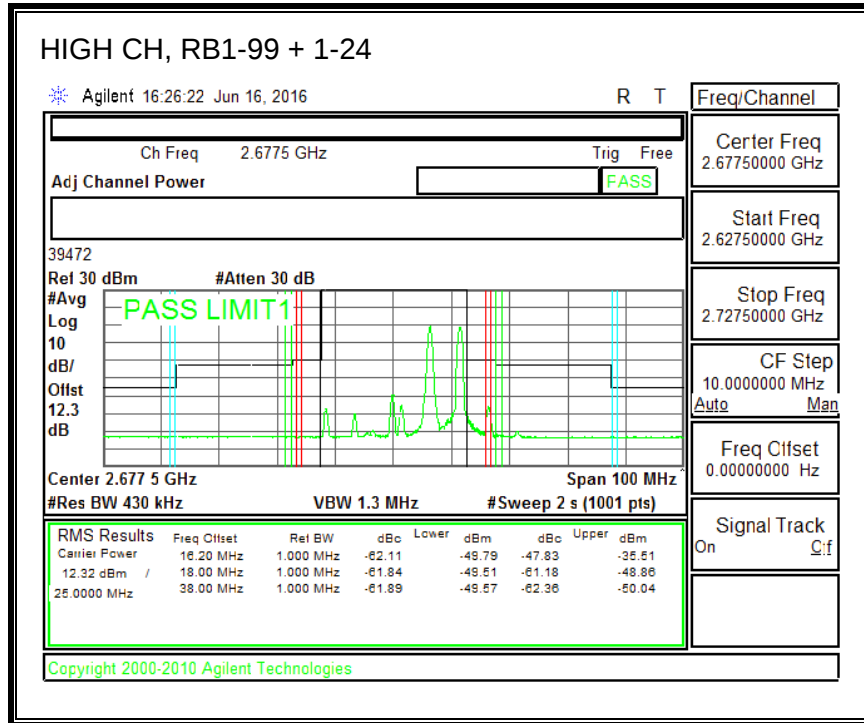
7.4.2. LTE BAND 41

QPSK, (20.0 MHz + 5.0 MHz BAND WIDTH)

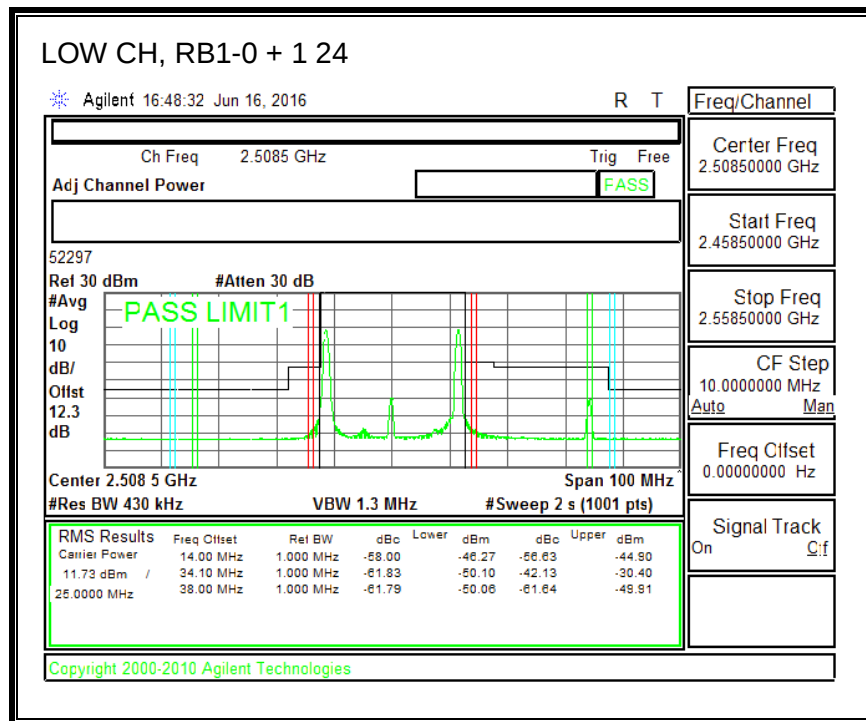
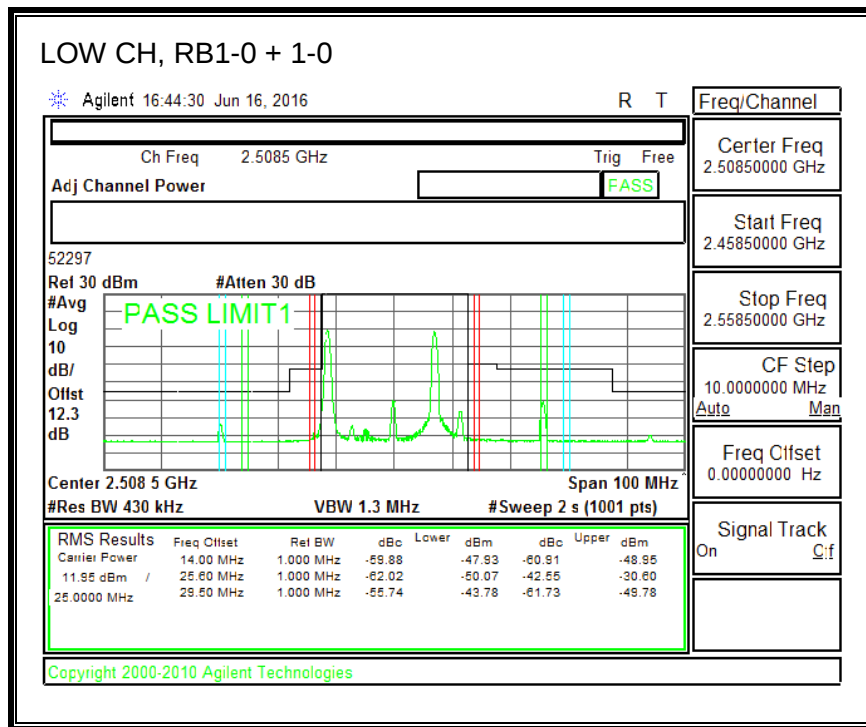


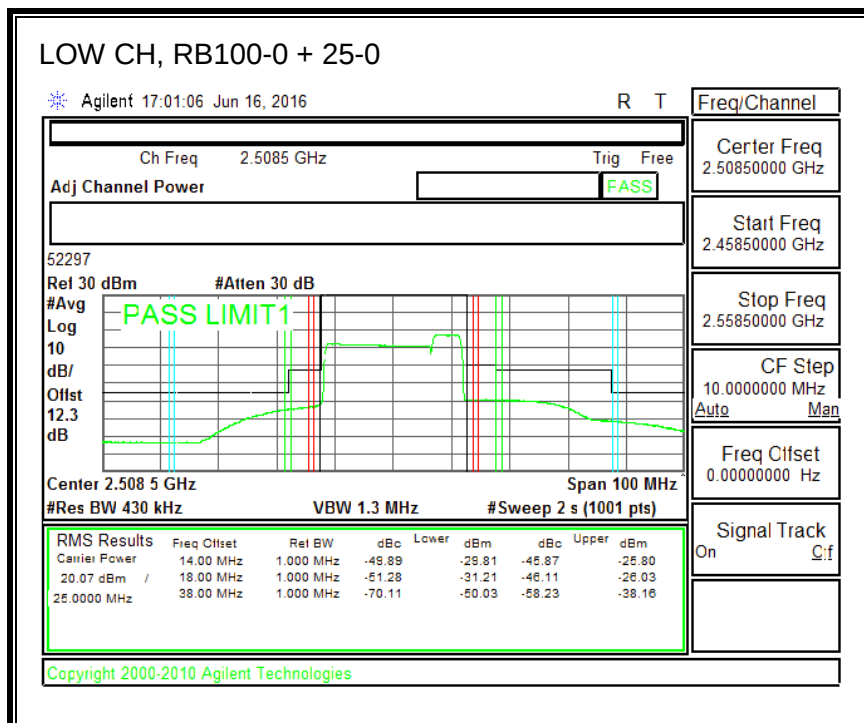
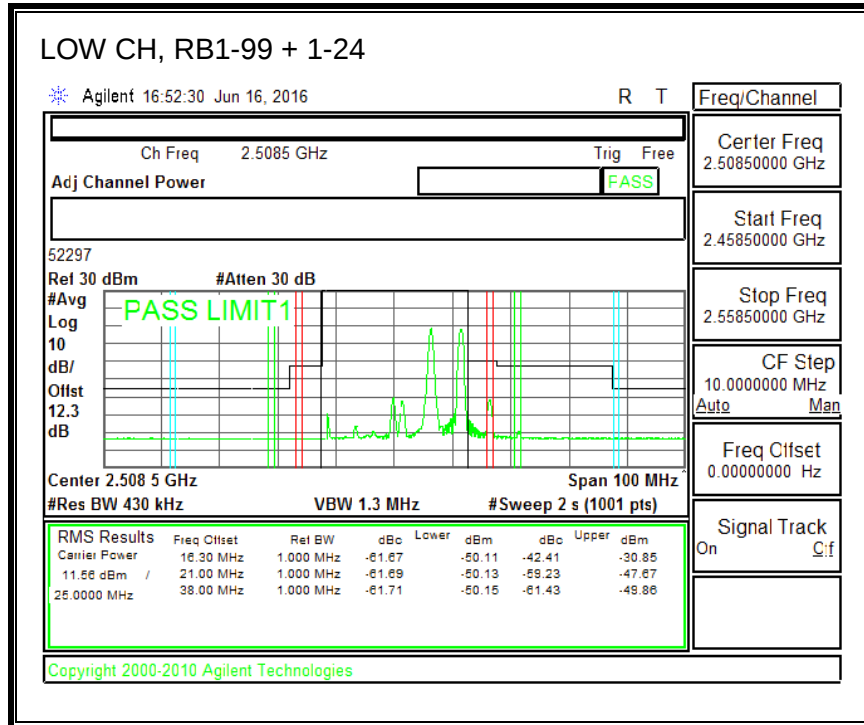


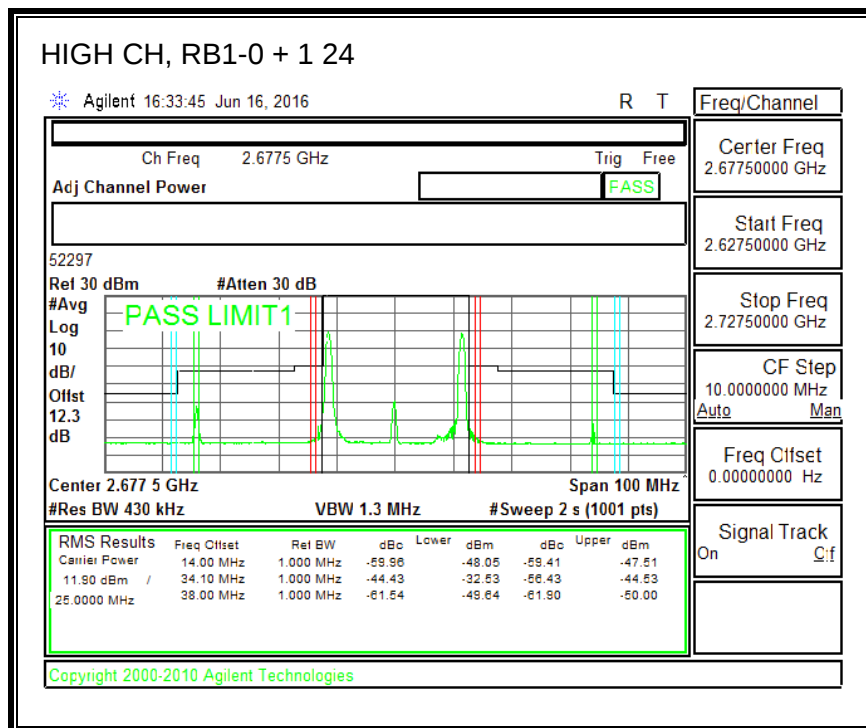
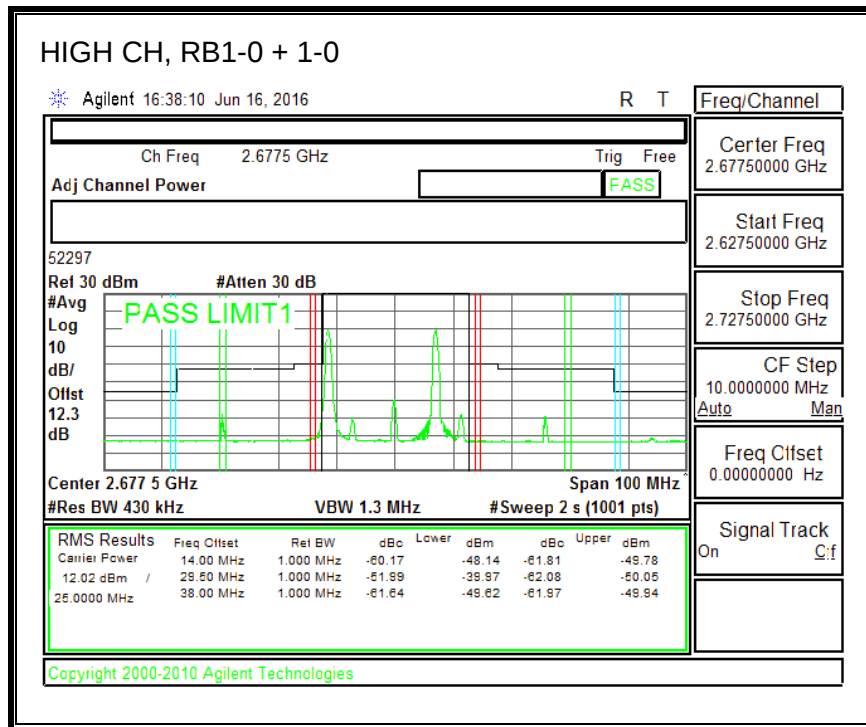


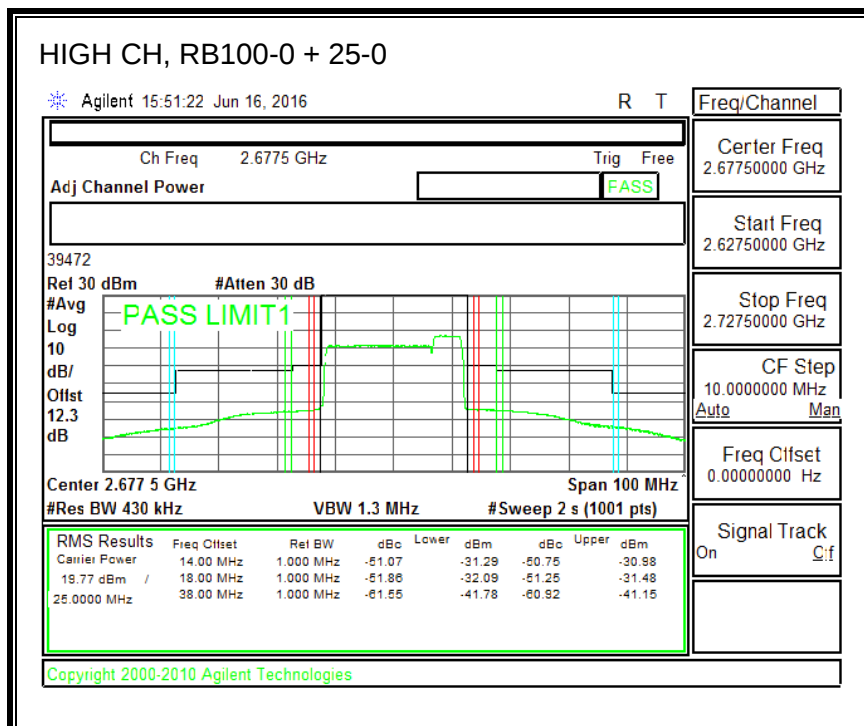
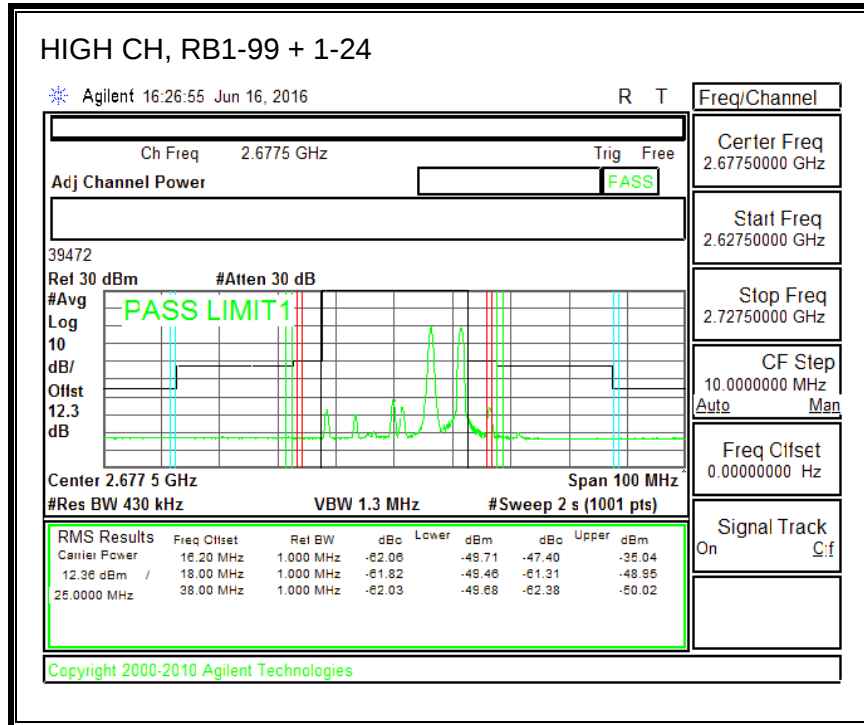


16QAM (20.0 MHz + 5.0 MHz BAND WIDTH)

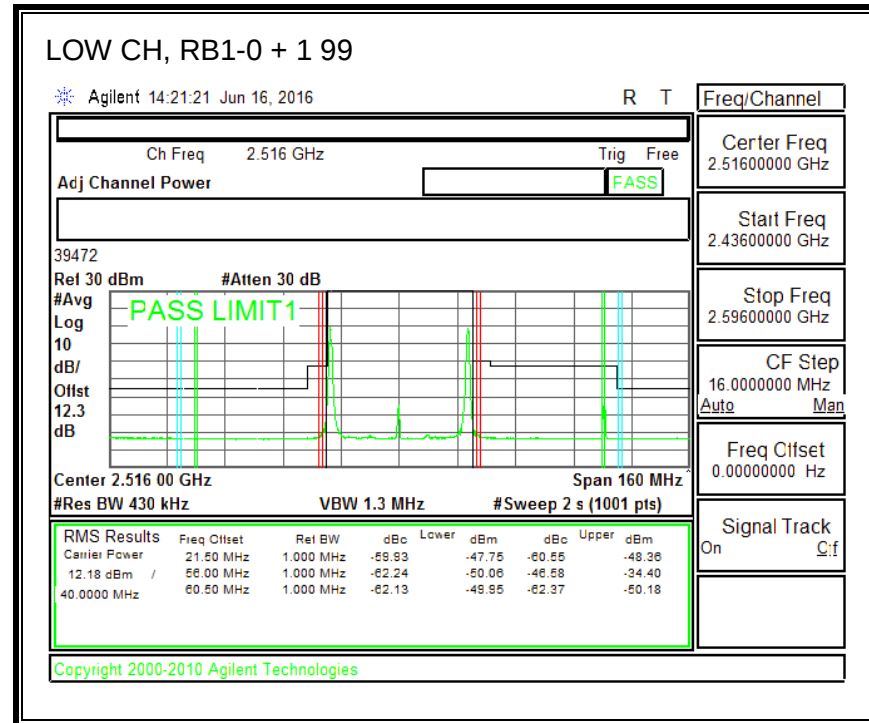
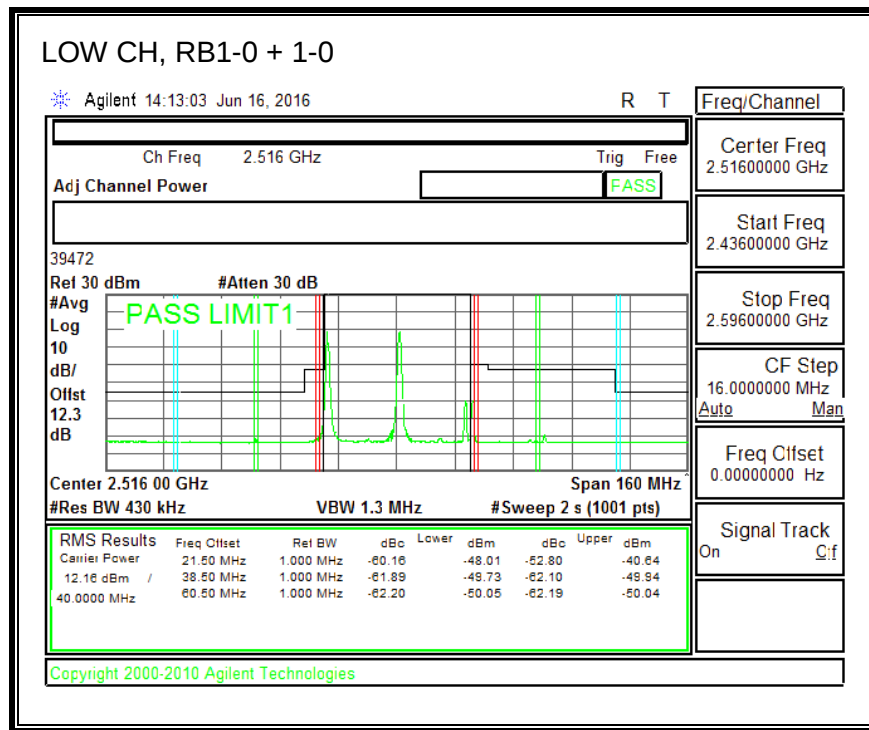


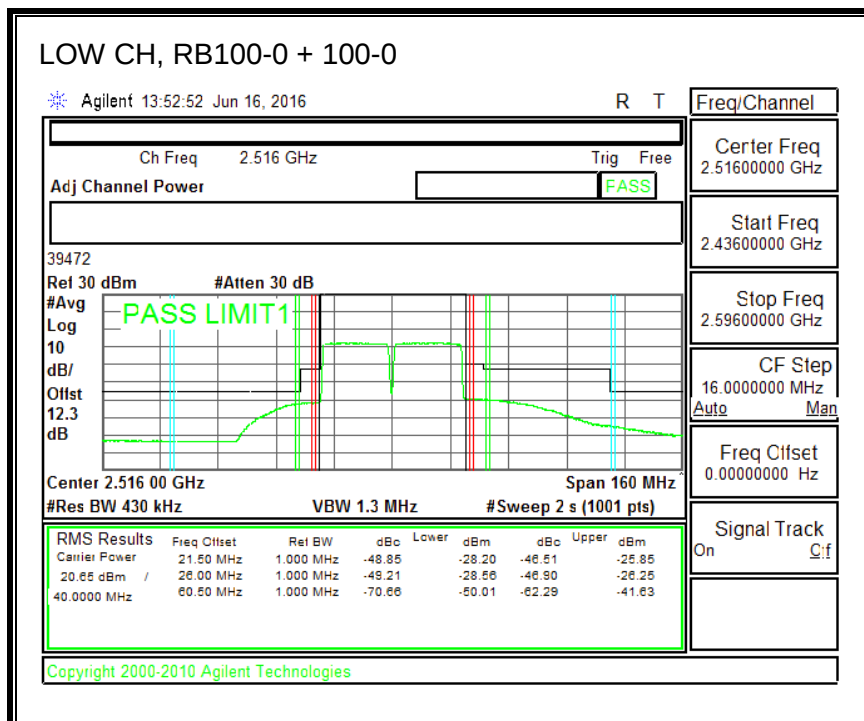
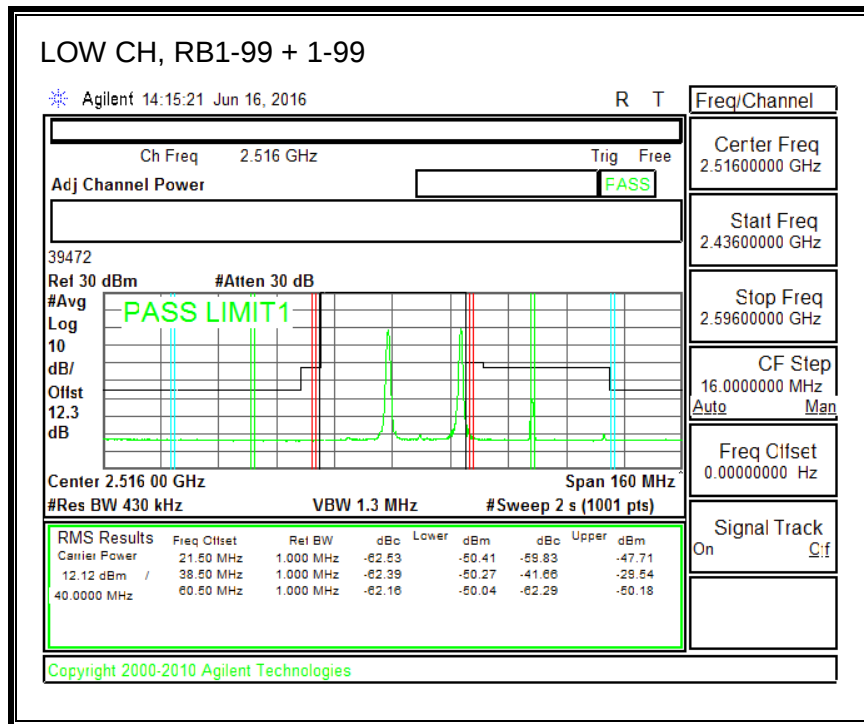


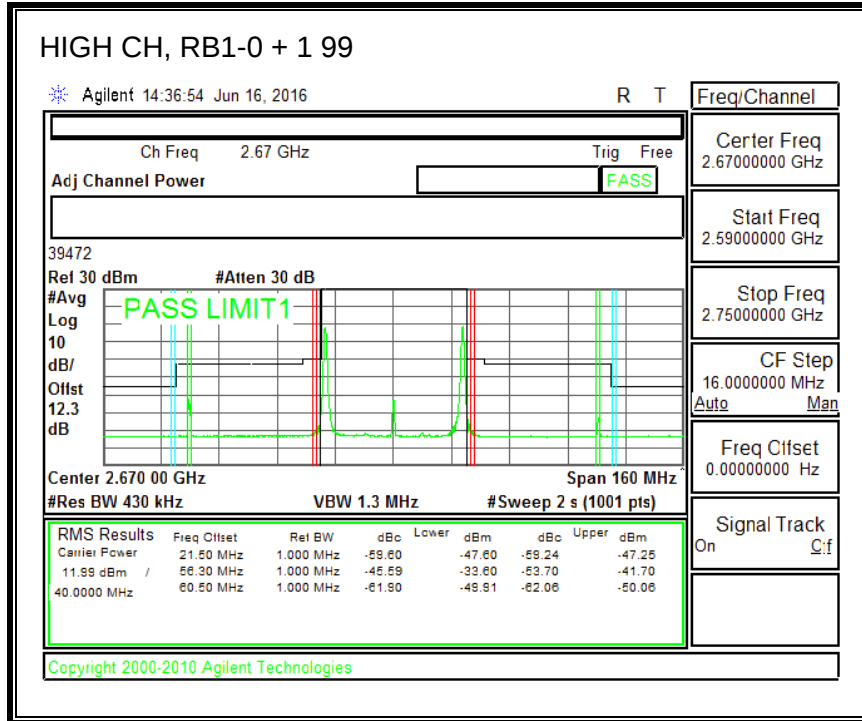
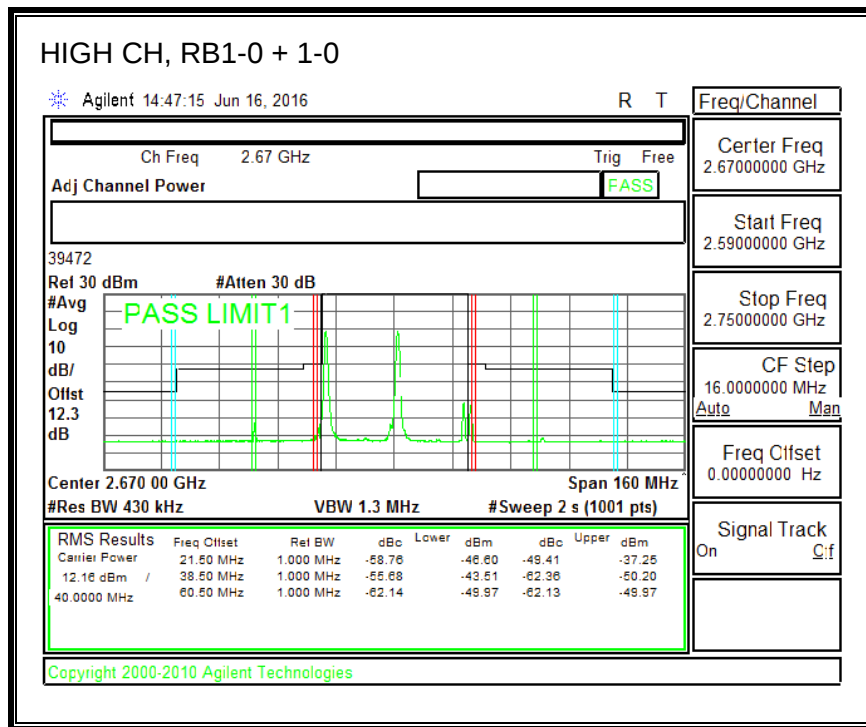


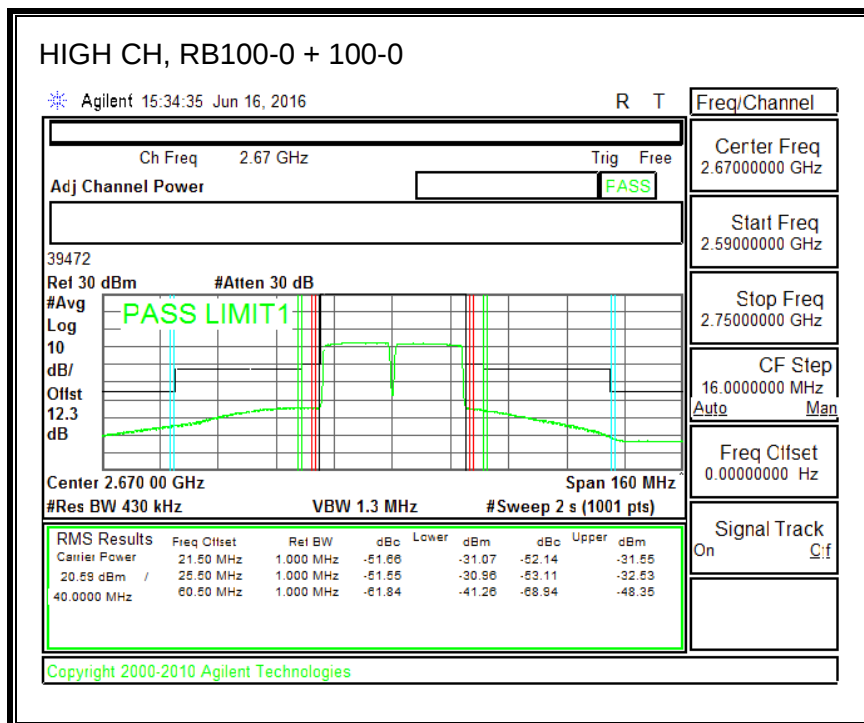
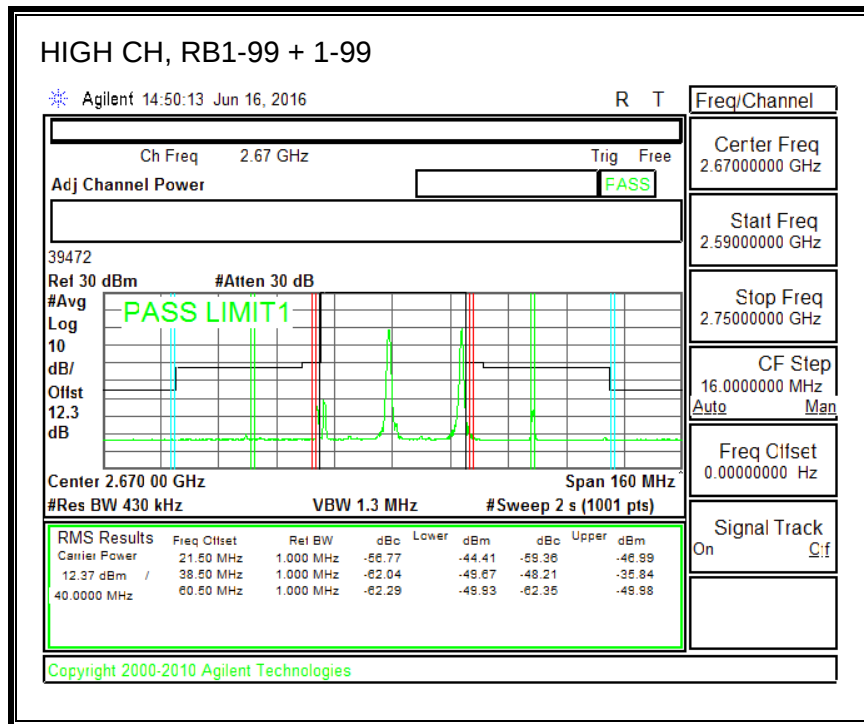


QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

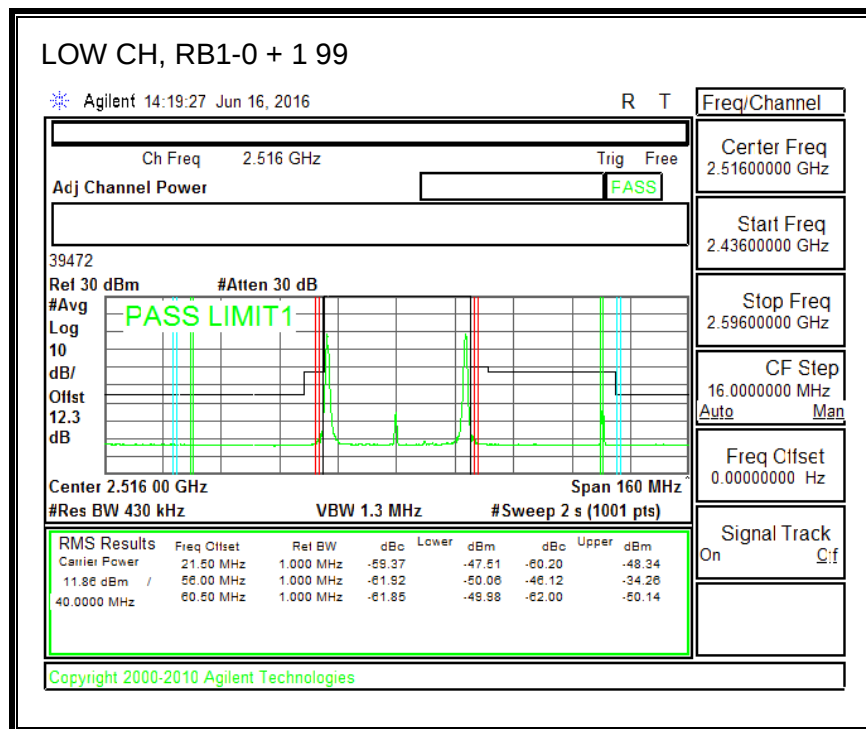
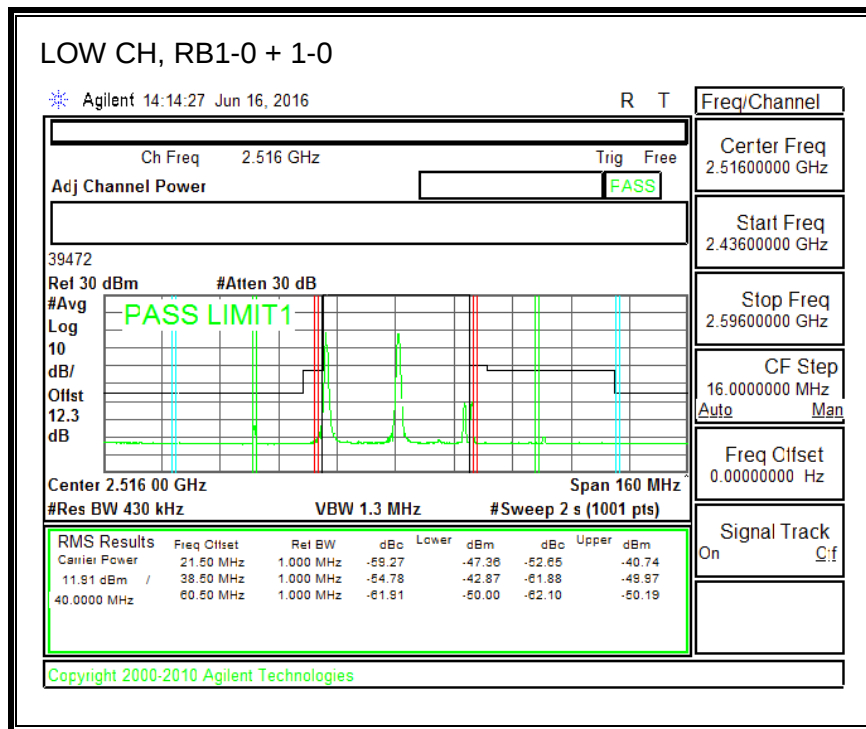


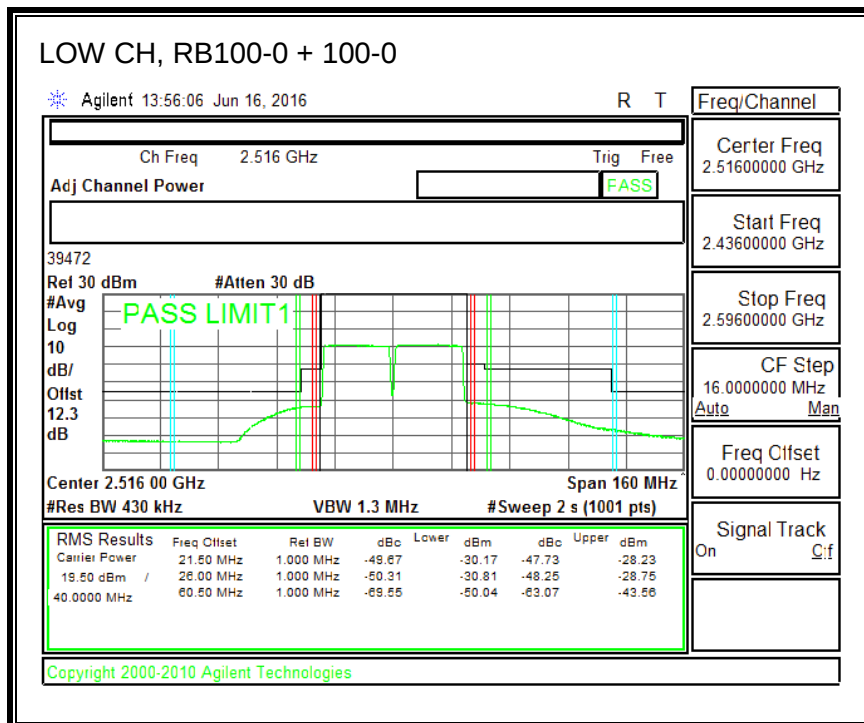
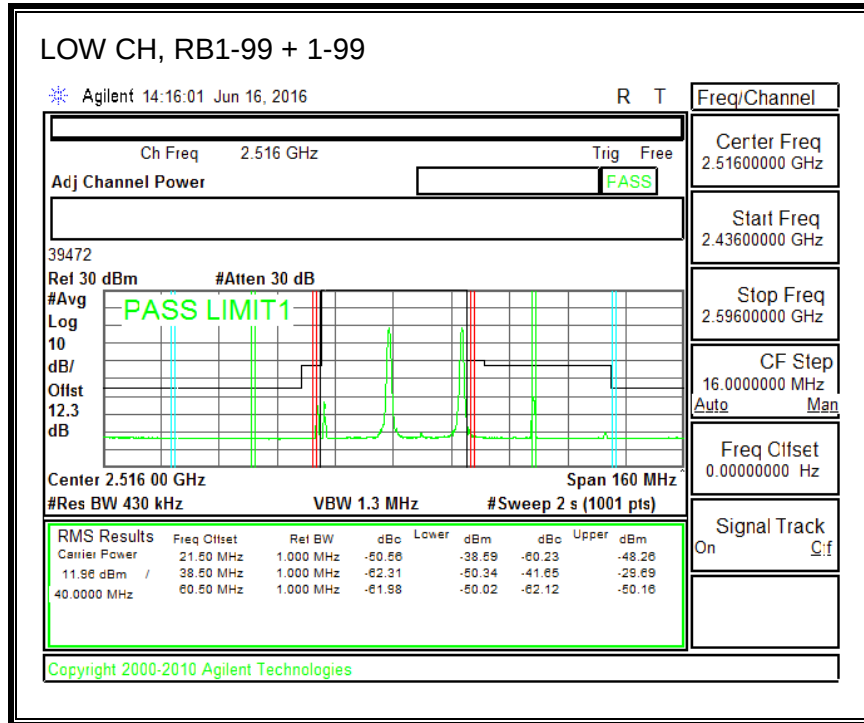


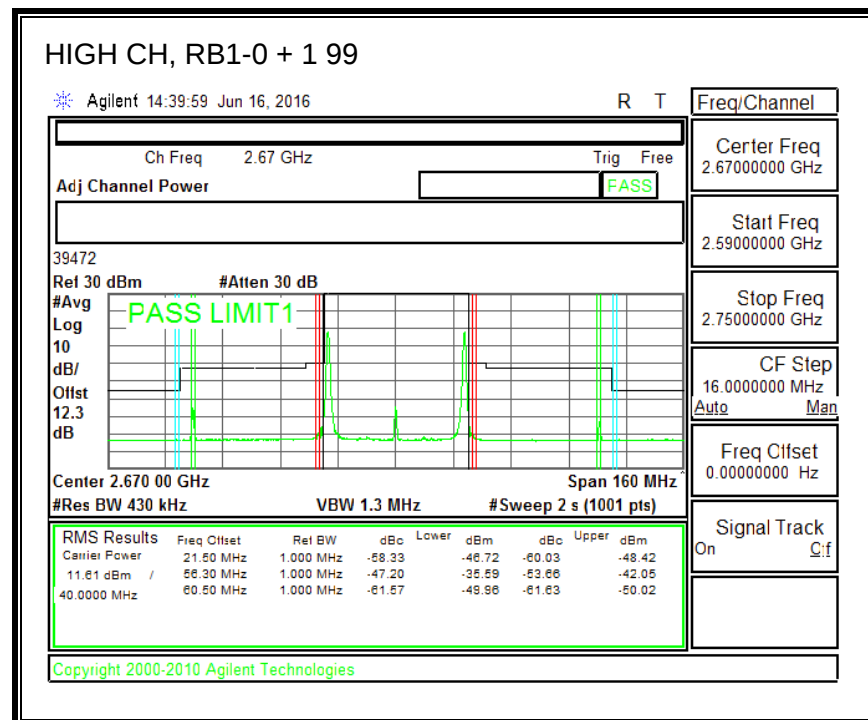
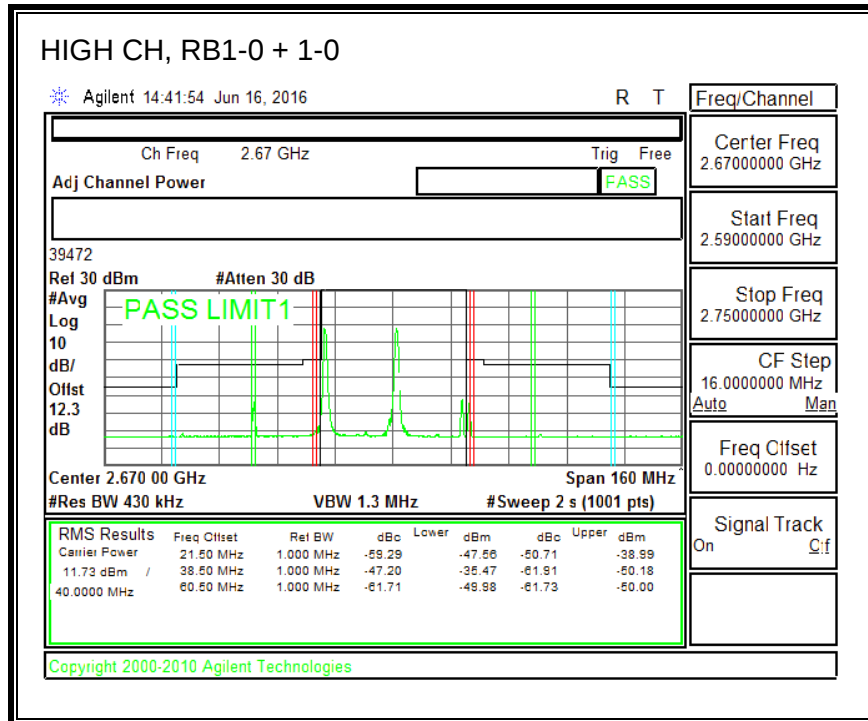


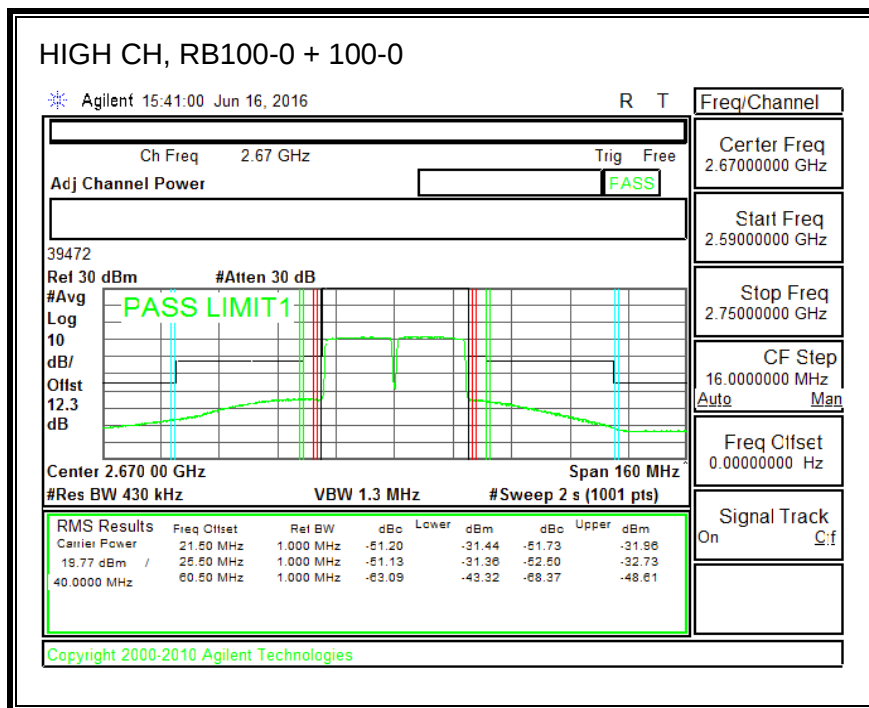
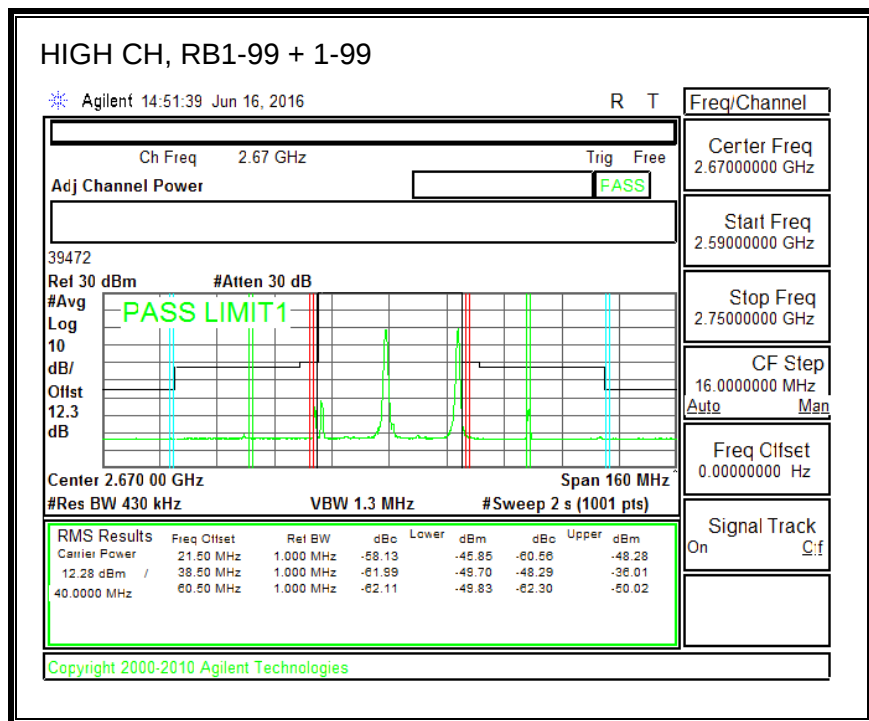


16QAM (20.0 MHz + 20.0 MHz BAND WIDTH)









7.5. OUT OF BAND EMISSIONS

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:

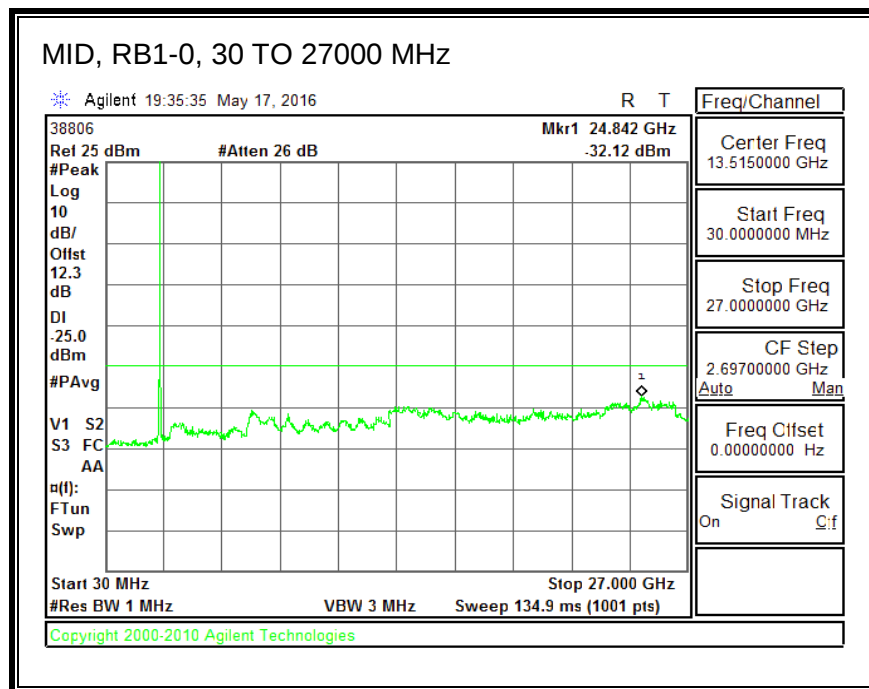
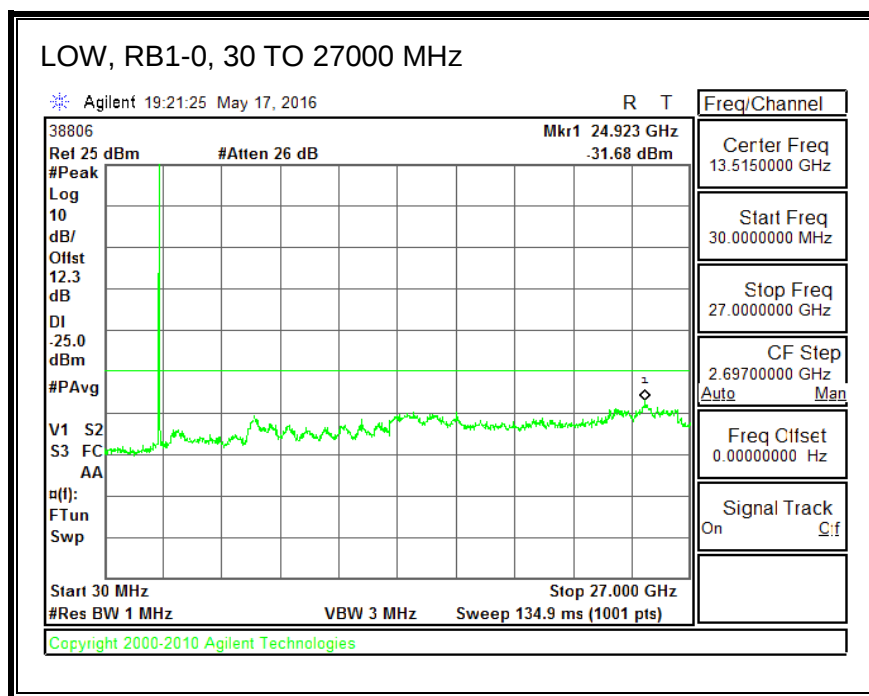
- Set display line at -25 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

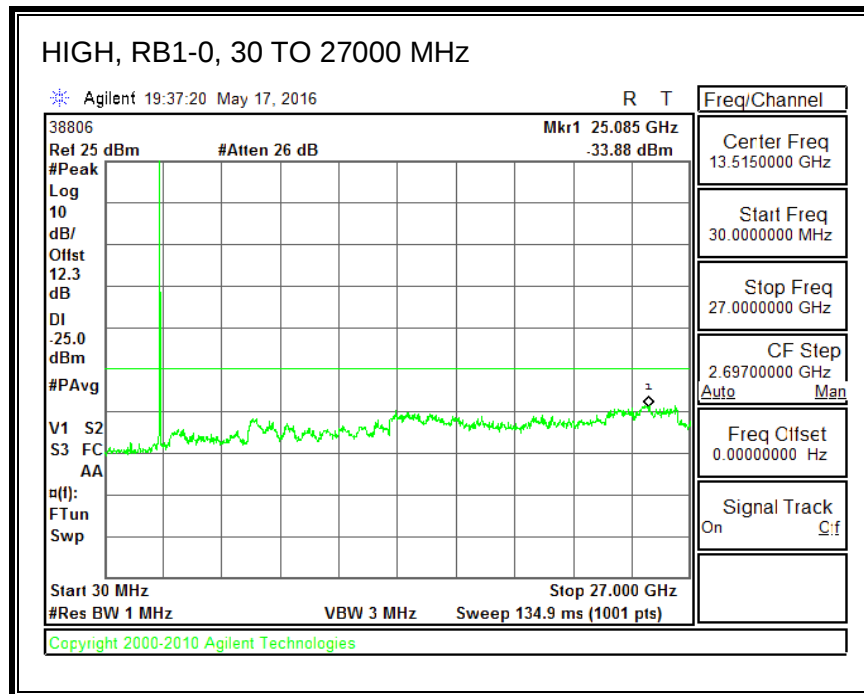
MODES TESTED

- LTE Band 7
- LTE Band 41

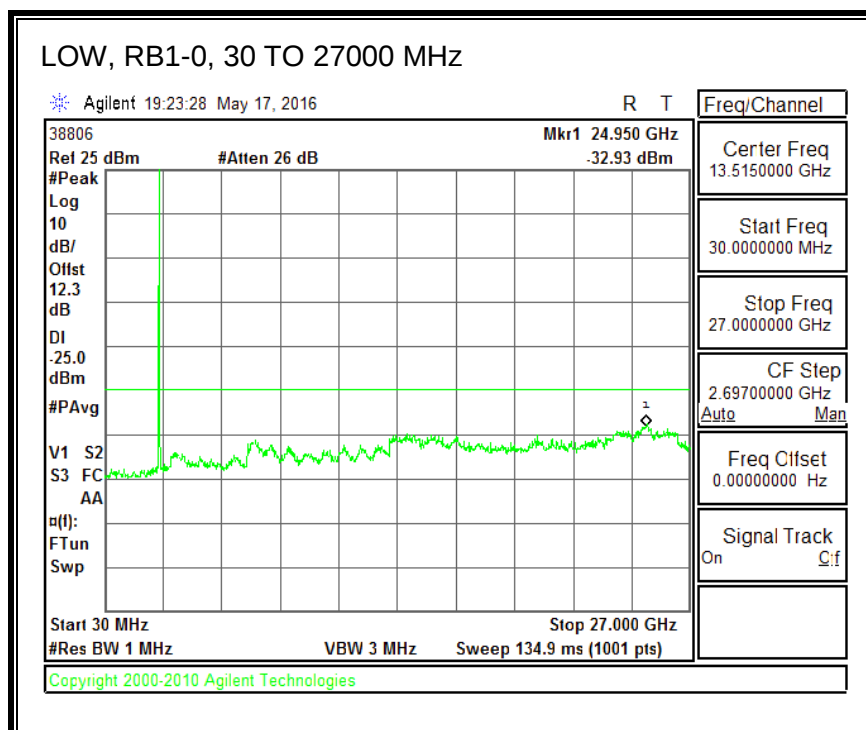
7.5.1. LTE BAND 7

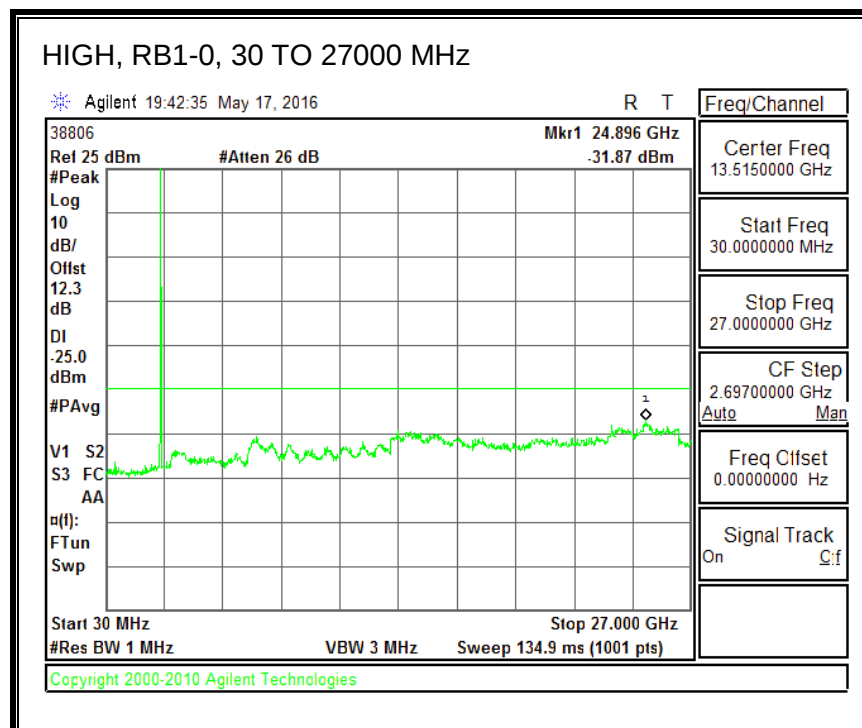
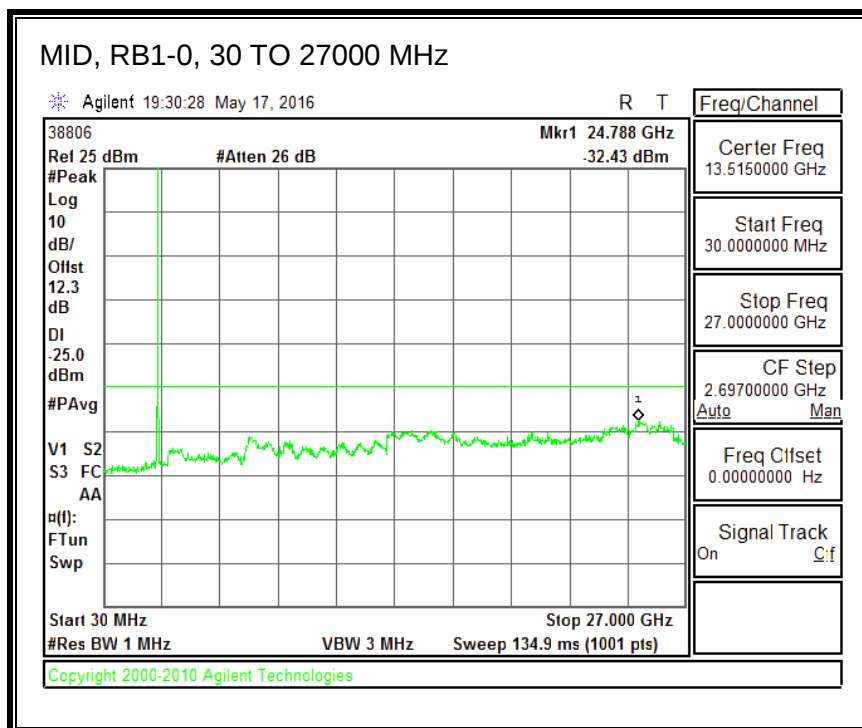
QPSK, (20.0 MHz+ 10.0 MHz BAND WIDTH)



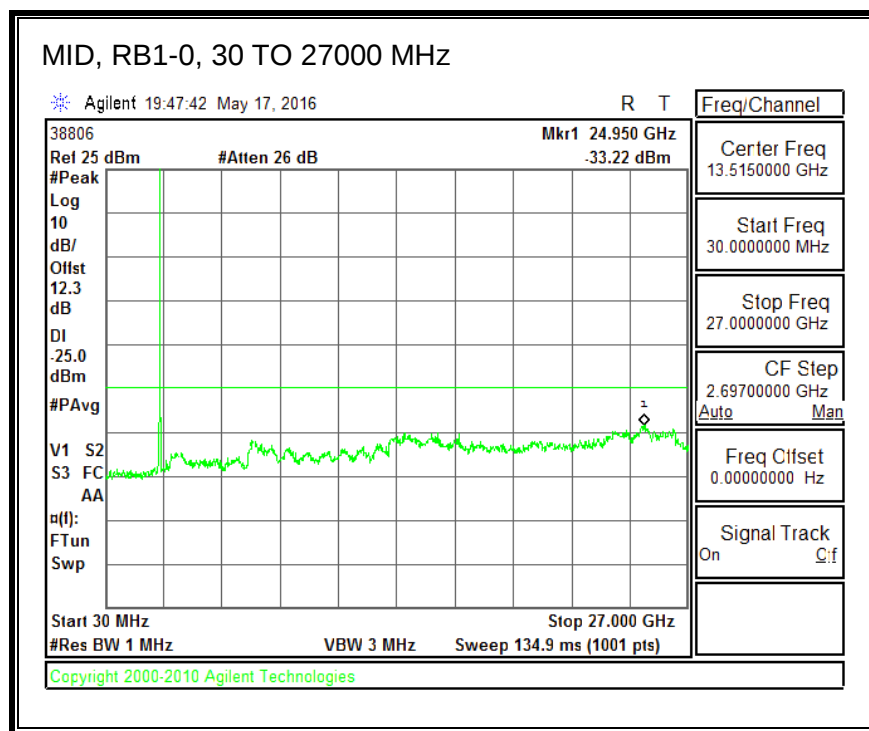
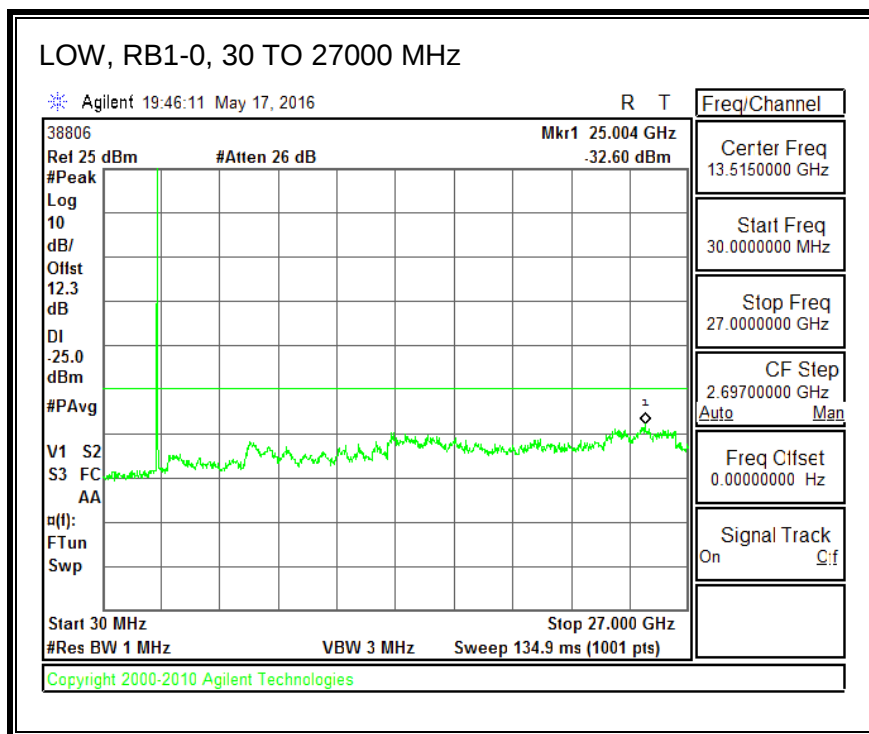


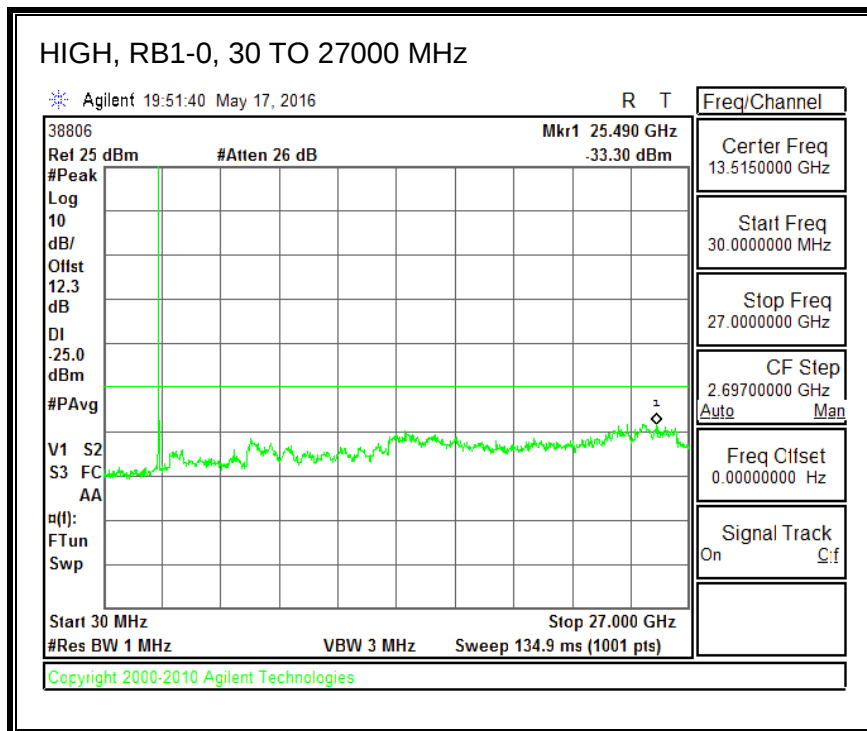
16QAM, (20.0 MHz+ 10.0 MHz BAND WIDTH)



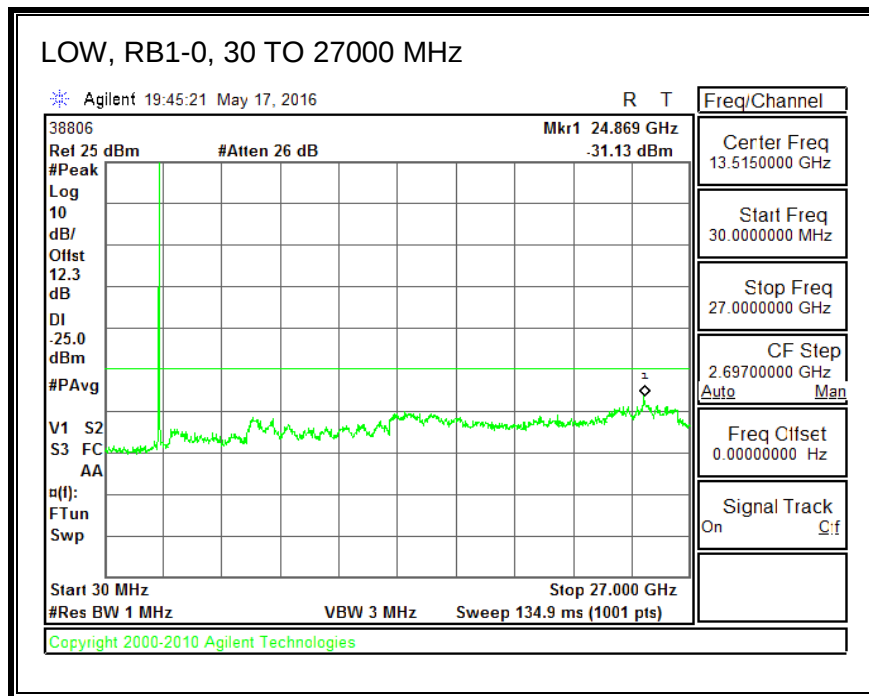


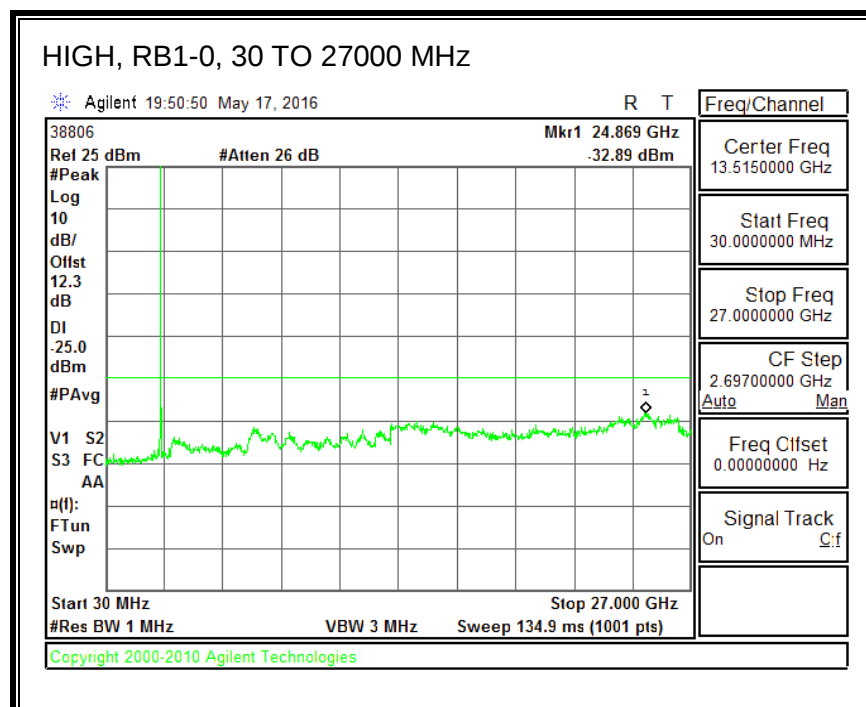
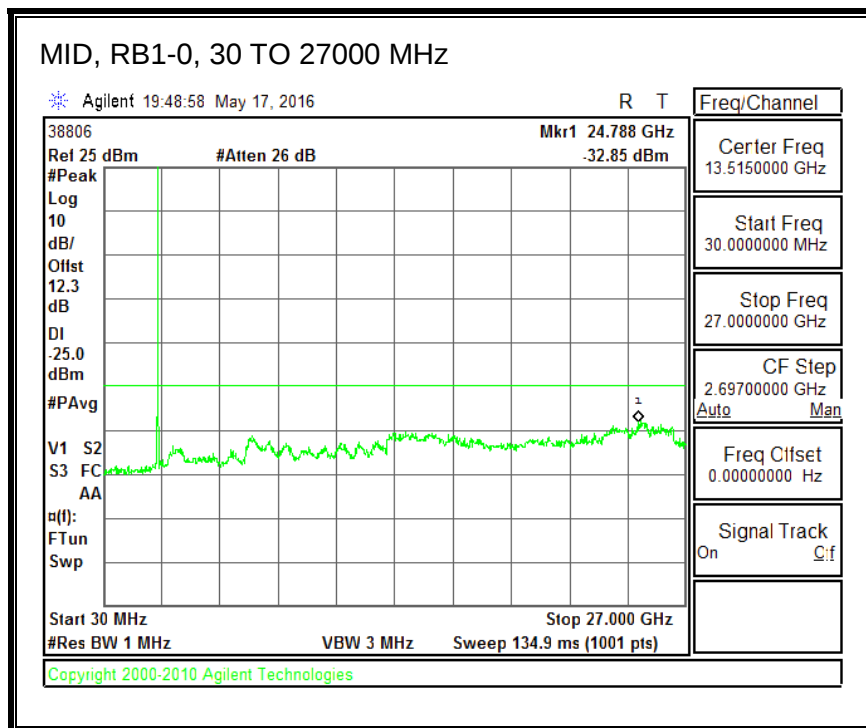
QPSK, (20.0 MHz+ 20.0 MHz BAND WIDTH)





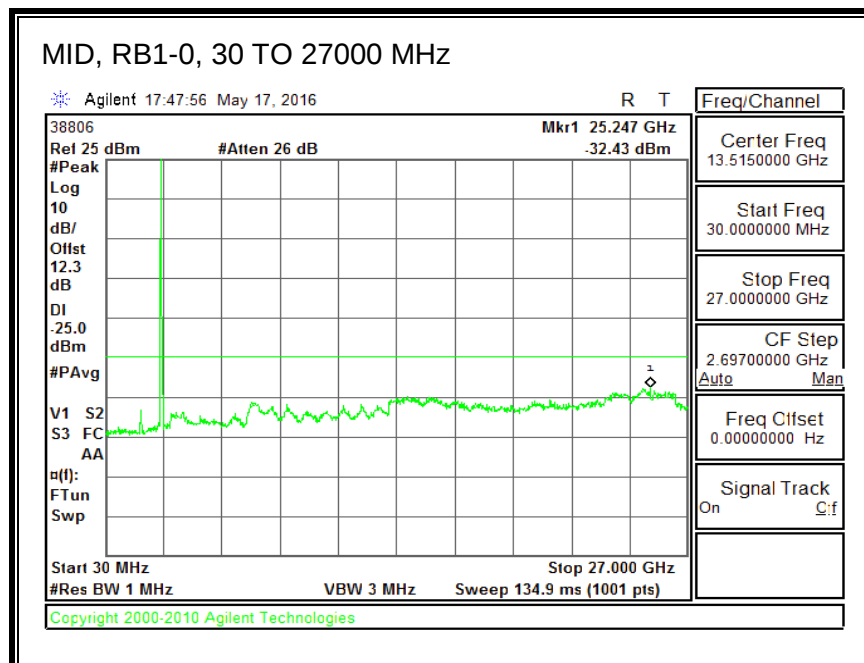
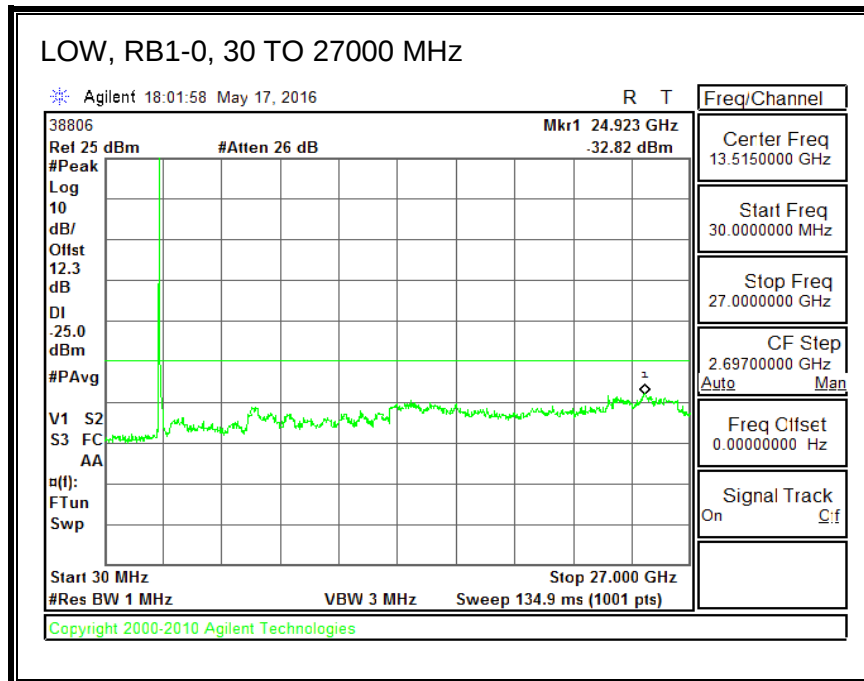
16QAM, (20.0 MHz+ 20.0 MHz BAND WIDTH)

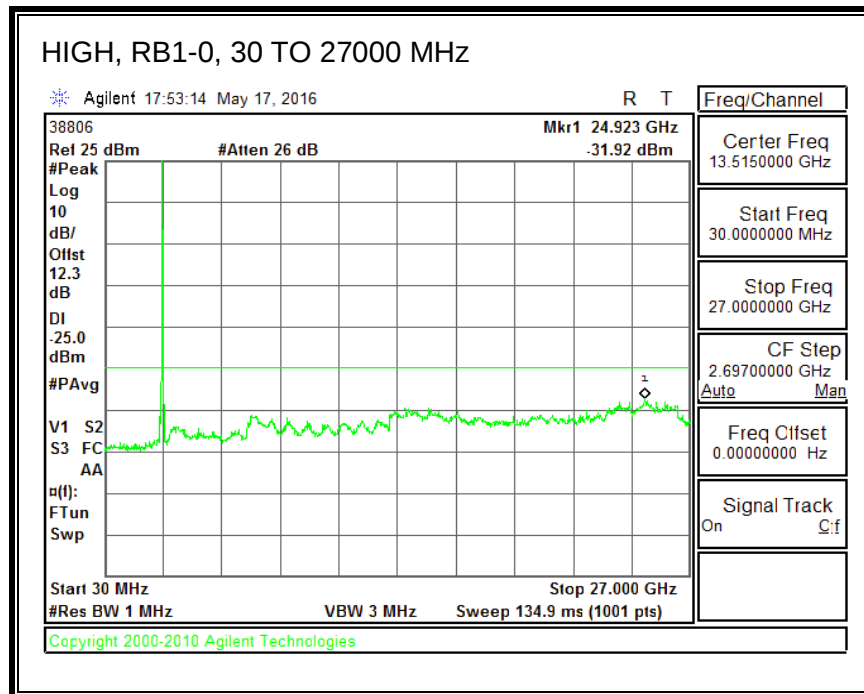




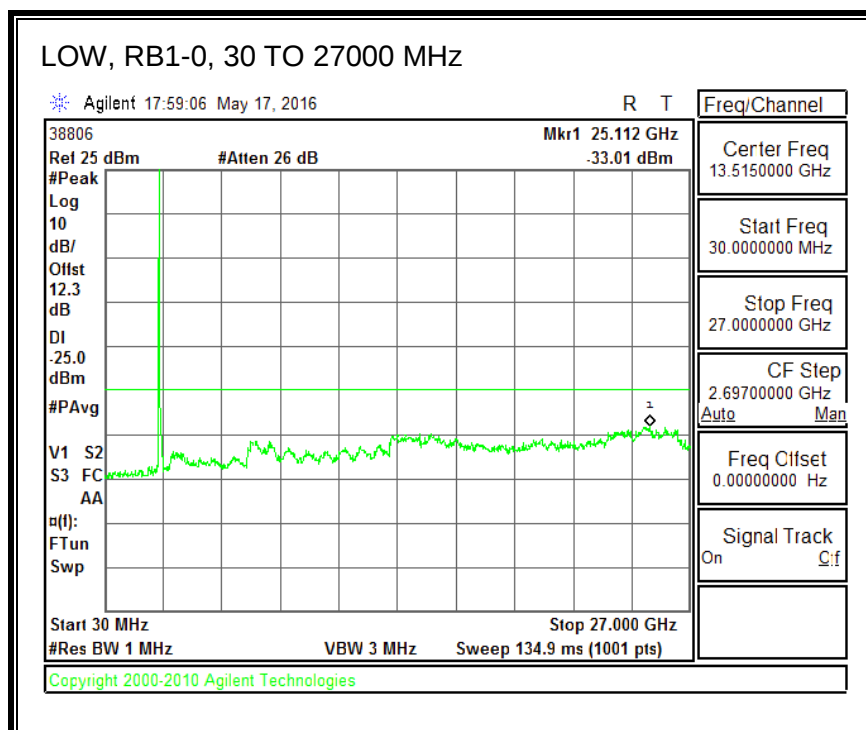
7.5.2. LTE BAND 41

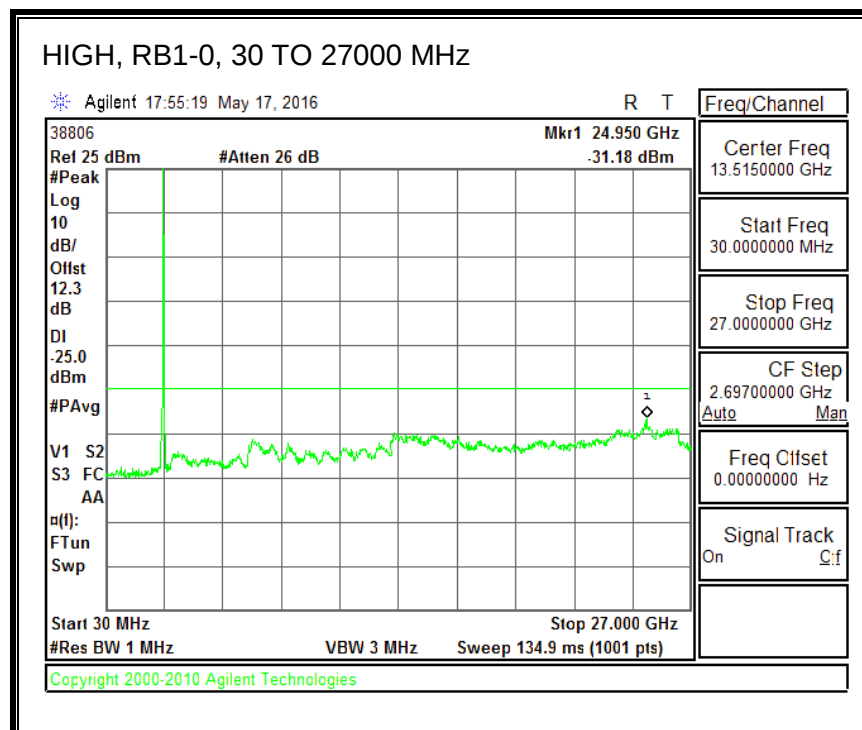
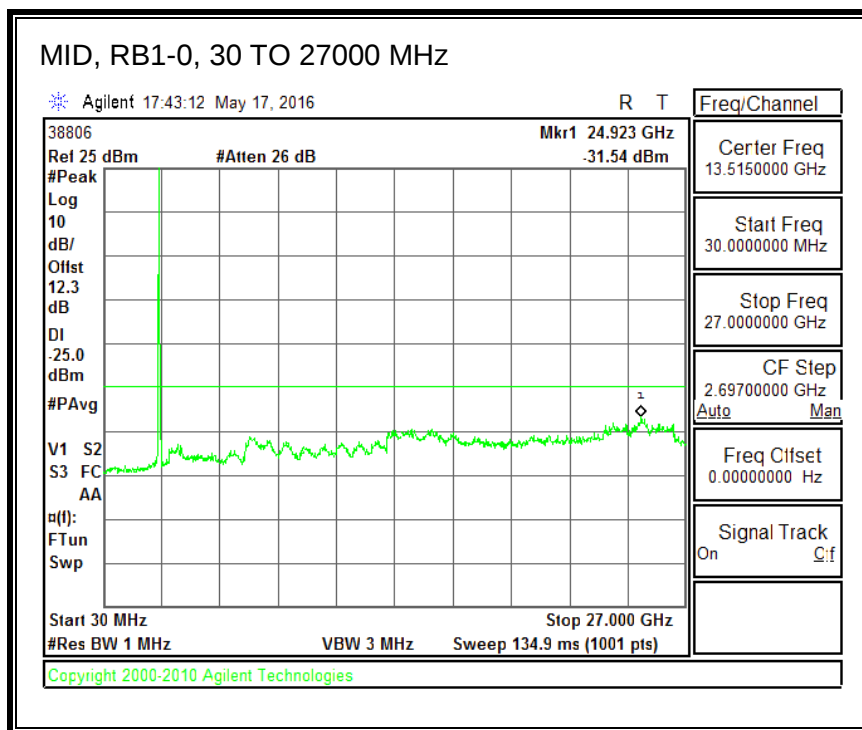
QPSK, (20.0 MHz+ 5.0 MHz BAND WIDTH)



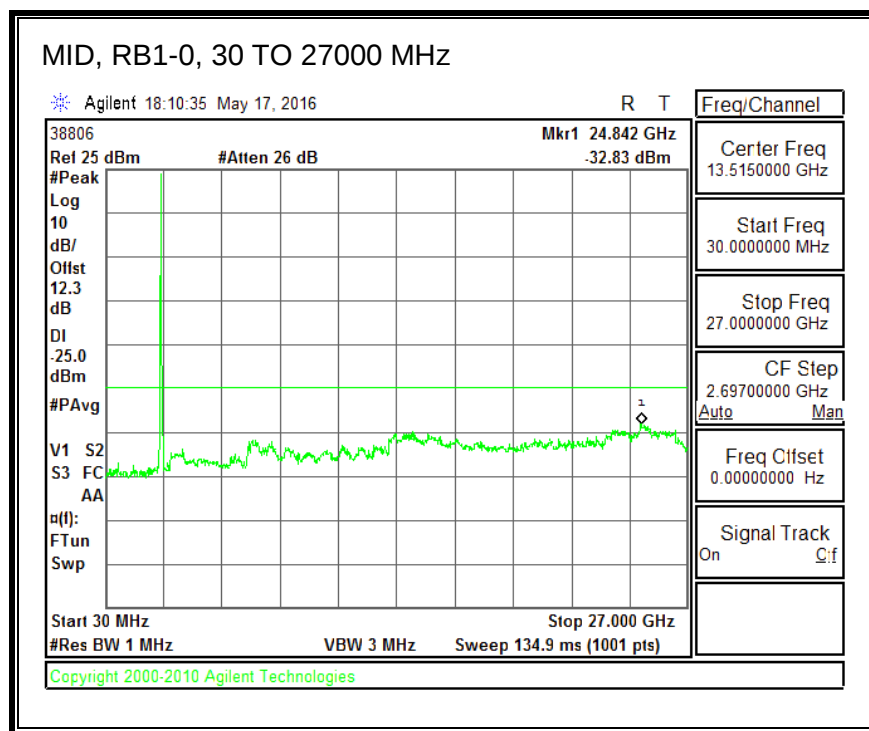
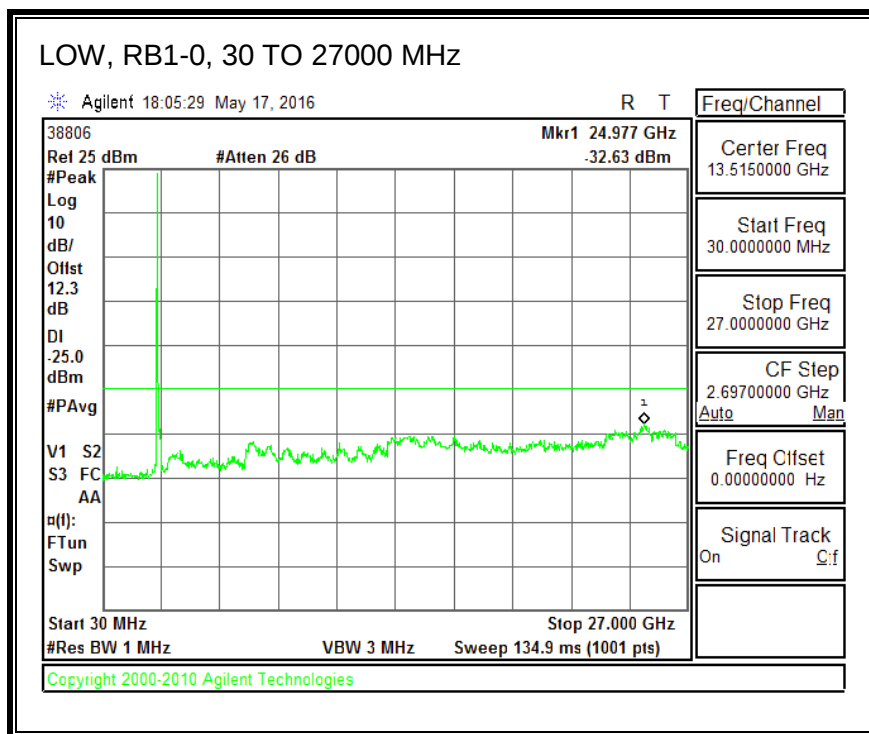


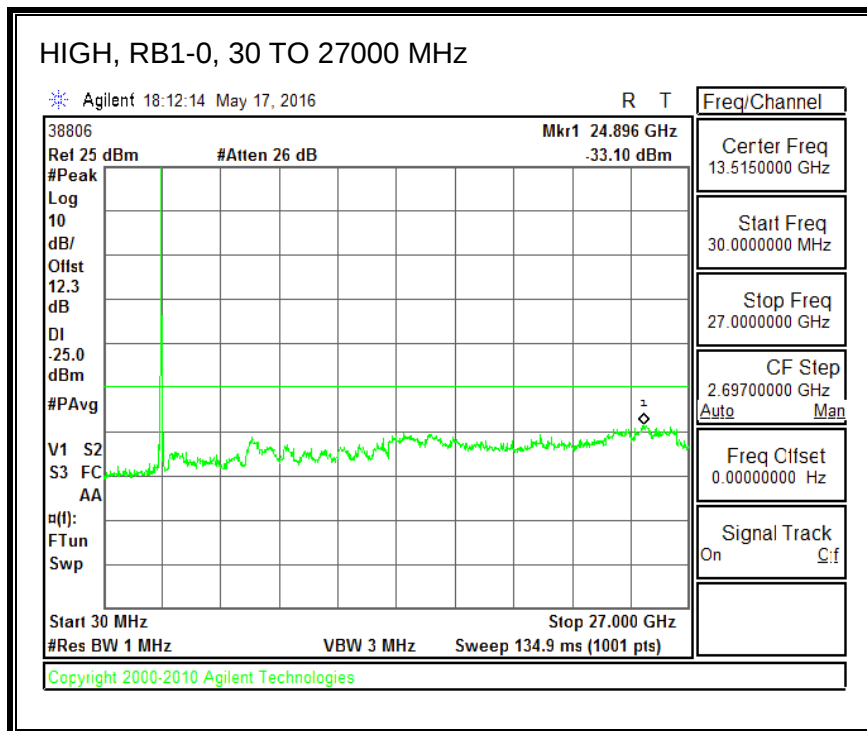
16QAM, (20.0 MHz+ 5.0 MHz BAND WIDTH)



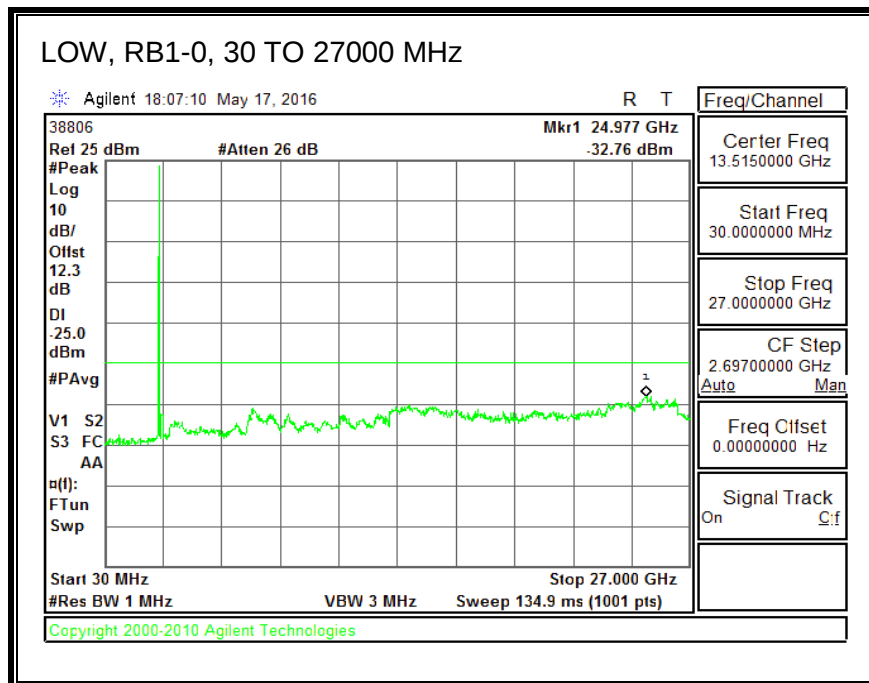


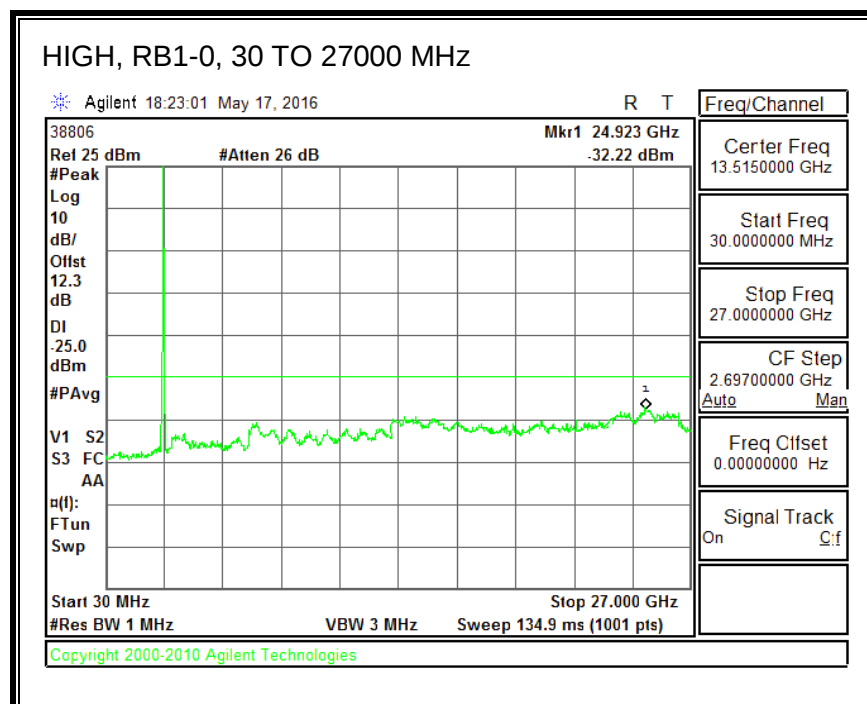
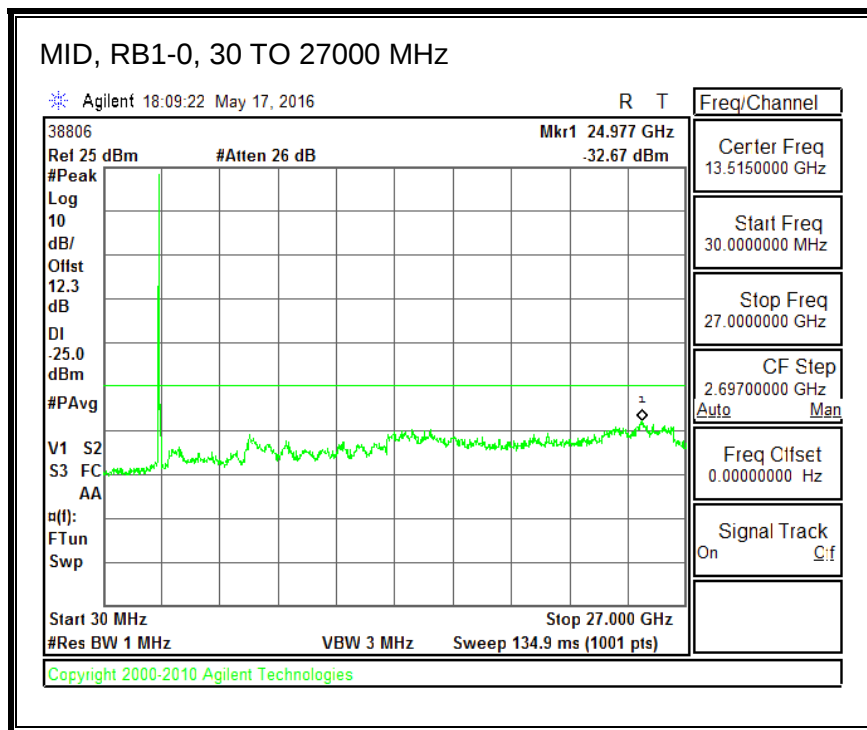
QPSK, (20.0 MHz+ 20.0 MHz BAND WIDTH)





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





8. 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.

8.1. LTE BAND 7

ID:	39004	Date:	6/8/16
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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	2500.5213	2568.5999		
Extreme (50C)		2500.5214	2568.5999	31.6	0.012
Extreme (40C)		2500.5214	2568.6000	52.2	0.021
Extreme (30C)		2500.5214	2568.5999	31.2	0.012
Extreme (10C)		2500.5213	2568.5999	16.0	0.006
Extreme (0C)		2500.5214	2568.5999	34.7	0.014
Extreme (-10C)		2500.5214	2568.5999	35.4	0.014
Extreme (-20C)		2500.5214	2568.5999	35.6	0.014
Extreme (-30C)		2500.5214	2568.6000	58.1	0.023
25C	10%	2500.5214	2568.6000	54.2	0.021
	-10%	2500.5214	2568.5999	46.5	0.018
	End Point	2500.5214	2568.6000	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	2501.0267	2568.9749		
Extreme (50C)		2501.0267	2568.9749	38.7	0.015
Extreme (40C)		2501.0267	2568.9749	46.1	0.018
Extreme (30C)		2501.0267	2568.9749	28.7	0.011
Extreme (10C)		2501.0267	2568.9749	14.2	0.006
Extreme (0C)		2501.0267	2568.9749	30.7	0.012
Extreme (-10C)		2501.0267	2568.9749	36.1	0.014
Extreme (-20C)		2501.0267	2568.9749	48.4	0.019
Extreme (-30C)		2501.0267	2568.9749	34.9	0.014
25C	10%	2501.0268	2568.9749	78.6	0.031
	-10%	2501.0268	2568.9749	53.8	0.021
	End Point	2501.0268	2568.9749	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	2501.1754	2568.9682		
Extreme (50C)		2501.1755	2568.9682	50.2	0.020
Extreme (40C)		2501.1755	2568.9682	38.5	0.015
Extreme (30C)		2501.1755	2568.9682	31.6	0.012
Extreme (10C)		2501.1754	2568.9682	20.1	0.008
Extreme (0C)		2501.1755	2568.9682	35.0	0.014
Extreme (-10C)		2501.1755	2568.9682	43.2	0.017
Extreme (-20C)		2501.1755	2568.9682	54.5	0.021
Extreme (-30C)		2501.1755	2568.9682	47.8	0.019
25C	10%	2501.1755	2568.9682	42.2	0.017
	-10%	2501.1755	2568.9682	41.2	0.016
	End Point	2501.1755	2568.9682	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	2501.0254	2568.9648		
Extreme (50C)		2501.0255	2568.9648	44.9	0.018
Extreme (40C)		2501.0255	2568.9648	42.8	0.017
Extreme (30C)		2501.0255	2568.9648	38.9	0.015
Extreme (10C)		2501.0255	2568.9648	21.2	0.008
Extreme (0C)		2501.0255	2568.9648	31.7	0.013
Extreme (-10C)		2501.0255	2568.9648	50.9	0.020
Extreme (-20C)		2501.0255	2568.9648	58.8	0.023
Extreme (-30C)		2501.0255	2568.9648	52.3	0.021
25C	10%	2501.0255	2568.9648	45.1	0.018
	-10%	2501.0255	2568.9648	41.9	0.017
	End Point	2501.0255	2568.9648	52.3	0.021

8.2. LTE BAND 41

ID:	39004	Date:	6/8/16
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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	2496.9358	2689.0538		
Extreme (50C)		2496.9358	2689.0538	47.3	0.018
Extreme (40C)		2496.9358	2689.0538	39.6	0.015
Extreme (30C)		2496.9358	2689.0538	38.1	0.015
Extreme (10C)		2496.9358	2689.0538	35.1	0.014
Extreme (0C)		2496.9358	2689.0538	48.9	0.019
Extreme (-10C)		2496.9358	2689.0538	41.9	0.016
Extreme (-20C)		2496.9358	2689.0538	48.6	0.019
Extreme (-30C)		2496.9358	2689.0538	51.2	0.020
25C	10%	2496.9358	2689.0538	51.1	0.020
	-10%	2496.9358	2689.0538	40.7	0.016
	End Point	2496.9358	2689.0538	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	2497.0081	2689.0397		
Extreme (50C)		2497.0082	2689.0398	57.6	0.022
Extreme (40C)		2497.0082	2689.0398	56.2	0.022
Extreme (30C)		2497.0082	2689.0398	43.5	0.017
Extreme (10C)		2497.0082	2689.0398	47.1	0.018
Extreme (0C)		2497.0082	2689.0398	58.1	0.022
Extreme (-10C)		2497.0082	2689.0398	57.3	0.022
Extreme (-20C)		2497.0082	2689.0398	54.4	0.021
Extreme (-30C)		2497.0082	2689.0398	41.7	0.016
25C	10%	2497.0082	2689.0398	45.6	0.018
	-10%	2497.0082	2689.0398	51.9	0.020
	End Point	2497.0082	2689.0398	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	2496.9238	2688.8645		
Extreme (50C)		2496.9239	2688.8646	48.3	0.019
Extreme (40C)		2496.9239	2688.8646	51.8	0.020
Extreme (30C)		2496.9239	2688.8646	44.9	0.017
Extreme (10C)		2496.9239	2688.8646	34.4	0.013
Extreme (0C)		2496.9239	2688.8646	40.9	0.016
Extreme (-10C)		2496.9239	2688.8646	48.7	0.019
Extreme (-20C)		2496.9239	2688.8646	56.1	0.022
Extreme (-30C)		2496.9239	2688.8646	55.3	0.021
25C	10%	2496.9239	2688.8646	51.9	0.020
	-10%	2496.9239	2688.8646	47.4	0.018
	End Point	2496.9239	2688.8646	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	2496.9110	2689.0382		
Extreme (50C)		2496.9111	2689.0382	59.7	0.023
Extreme (40C)		2496.9111	2689.0382	48.3	0.019
Extreme (30C)		2496.9111	2689.0382	57.4	0.022
Extreme (10C)		2496.9111	2689.0382	52.6	0.020
Extreme (0C)		2496.9111	2689.0382	51.1	0.020
Extreme (-10C)		2496.9111	2689.0382	46.5	0.018
Extreme (-20C)		2496.9111	2689.0382	58.8	0.023
Extreme (-30C)		2496.9111	2689.0382	49.4	0.019
25C	10%	2496.9111	2689.0382	54.7	0.021
	-10%	2496.9111	2689.0382	51.9	0.020
	End Point	2496.9111	2689.0383	63.8	0.025

9. RADIATED TEST RESULTS

9.1. 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

LAT

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	23.94	247.74
		2525.6 + 2540	23.69	233.88
		2545.6 + 2560	24.16	260.62
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2505.5 + 2519.9	23.41	219.28
		2525.6 + 2540	23.20	208.93
		2545.6 + 2560	23.50	223.87

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	23.98	250.03
		2530.1 + 2544.5	23.66	232.27
		2550.1 + 2564.5	24.16	260.62
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2524.4	23.40	218.78
		2530.1 + 2544.5	23.08	203.24
		2550.1 + 2564.5	23.48	222.84

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	23.87	243.78
		2527.5 + 2542.5	23.61	229.61
		2547.5 + 2562.5	24.12	258.23
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2507.5 + 2522.5	23.40	218.78
		2527.5 + 2542.5	23.14	206.06
		2547.5 + 2562.5	23.45	221.31

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	23.52	224.91
		2525.3 + 2542.4	23.75	237.14
		2542.9 + 2560	24.20	263.03
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2507.8 + 2524.9	22.97	198.15
		2525.3 + 2542.4	23.24	210.86
		2542.9 + 2560	23.49	223.36

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	23.88	244.34
		2527.6 + 2544.7	23.61	229.61
		2545.1 + 2562.2	24.16	260.62
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2527.1	23.39	218.27
		2527.6 + 2544.7	23.04	201.37
		2545.1 + 2562.2	23.56	226.99

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	23.83	241.55
		2525.1 + 2544.9	23.76	237.68
		2540.2 + 2560	24.24	265.46
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2529.8	23.32	214.78
		2525.1 + 2544.9	23.00	199.53
		2540.2 + 2560	23.74	236.59

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	22.65	184.08
		2583.8 + 2595.5	24.50	281.84
		2668.3 + 2680	24.60	288.40
5.0MHZ + 20.0MHZ BAND 16QAM	1/24 + 1/0	2499.3 + 2511	22.11	162.55
		2583.8 + 2595.5	23.96	248.89
		2668.3 + 2680	24.03	252.93

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	22.52	178.65
		2590.5 + 2602.2	24.66	292.42
		2675 + 2686.7	24.45	278.61
20.0MHZ + 5.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2517.7	21.94	156.31
		2590.5 + 2602.2	24.08	255.86
		2675 + 2686.7	23.87	243.78

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	22.58	181.13
		2583.6 + 2598	24.48	280.54
		2665.6 + 2680	24.56	285.76
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2501.5 + 2515.9	21.96	157.04
		2583.6 + 2598	23.86	243.22
		2665.6 + 2680	23.94	247.74

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	22.55	179.89
		2588.1 + 2602.5	24.17	261.22
		2670.1 + 2684.5	24.48	280.54
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2520.4	21.92	155.60
		2588.1 + 2602.5	23.54	225.94
		2670.1 + 2684.5	23.85	242.66

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	22.52	178.65
		2585.5 + 2600.5	24.25	266.07
		2667.5 + 2682.5	24.69	294.44
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2503.5 + 2518.5	21.77	150.31
		2585.5 + 2600.5	23.50	223.87
		2667.5 + 2682.5	23.94	247.74

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	22.62	182.81
		2583.3 + 2600.4	24.52	283.14
		2662.9 + 2680	24.51	282.49
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2503.8 + 2520.9	22.05	160.32
		2583.3 + 2600.4	23.95	248.31
		2662.9 + 2680	23.94	247.74

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	22.43	174.98
		2585.6 + 2602.7	24.16	260.62
		2665.1 + 2682.2	24.47	279.90
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2523.1	21.60	144.54
		2585.6 + 2602.7	23.33	215.28
		2665.1 + 2682.2	23.64	231.21

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	22.41	174.18
		2583.1 + 2602.9	24.59	287.74
		2660.2 + 2680	24.51	282.49
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2525.8	22.33	171.00
		2583.1 + 2602.9	23.70	234.42
		2660.2 + 2680	23.74	236.59

9.1.1. LTE BAND 7

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23287						
Date:		6/23/2016						
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	11.5	V	1.15	9.35	19.73	33.0	-13.3	
2.515	15.7	H	1.15	9.35	23.94	33.0	-9.1	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	11.7	V	1.16	9.38	19.91	33.0	-13.1	
2.535	15.5	H	1.16	9.38	23.69	33.0	-9.3	
High Ch (2545.6MHz + 2560MHz)								
2.555	10.6	V	1.17	9.41	18.79	33.0	-14.2	
2.555	15.9	H	1.17	9.41	24.16	33.0	-8.8	
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 #:		16U23287						
Date:		6/23/2016						
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	11.2	V	1.15	9.35	19.37	33.0	-13.6	
2.515	15.2	H	1.15	9.35	23.41	33.0	-9.6	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	11.2	V	1.16	9.38	19.46	33.0	-13.5	
2.535	15.0	H	1.16	9.38	23.20	33.0	-9.8	
High Ch (2545.6MHz + 2560MHz)								
2.555	10.1	V	1.17	9.41	18.33	33.0	-14.7	
2.555	15.3	H	1.17	9.41	23.50	33.0	-9.5	
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 #: 16U23287								
Date: 6/23/2016								
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	11.2	V	1.15	9.35	19.41	33.0	-13.6	
2.515	15.8	H	1.15	9.35	23.98	33.0	-9.0	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	11.7	V	1.16	9.38	19.94	33.0	-13.1	
2.535	15.4	H	1.16	9.38	23.66	33.0	-9.3	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	10.5	V	1.17	9.41	18.76	33.0	-14.2	
2.555	15.9	H	1.17	9.41	24.16	33.0	-8.8	
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 #:		16U23287						
Date:		6/23/2016						
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	10.7	V	1.15	9.35	18.91	33.0	-14.1	
2.515	15.2	H	1.15	9.35	23.40	33.0	-9.6	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	11.3	V	1.16	9.38	19.53	33.0	-13.5	
2.535	14.9	H	1.16	9.38	23.08	33.0	-9.9	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	10.0	V	1.17	9.41	18.28	33.0	-14.7	
2.555	15.2	H	1.17	9.41	23.48	33.0	-9.5	
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 #: 16U23287								
Date: 6/23/2016								
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	11.5	V	1.15	9.35	19.71	33.0	-13.3	
2.515	15.7	H	1.15	9.35	23.87	33.0	-9.1	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	11.7	V	1.16	9.38	19.95	33.0	-13.0	
2.535	15.4	H	1.16	9.38	23.61	33.0	-9.4	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	10.5	V	1.17	9.41	18.76	33.0	-14.2	
2.555	15.9	H	1.17	9.41	24.12	33.0	-8.9	
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 #:		16U23287						
Date:		6/23/2016						
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	11.1	V	1.15	9.35	19.25	33.0	-13.7	
2.515	15.2	H	1.15	9.35	23.40	33.0	-9.6	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	11.2	V	1.16	9.38	19.43	33.0	-13.6	
2.535	14.9	H	1.16	9.38	23.14	33.0	-9.9	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	10.1	V	1.17	9.41	18.31	33.0	-14.7	
2.555	15.2	H	1.17	9.41	23.45	33.0	-9.5	
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 #: 16U23287								
Date: 6/23/2016								
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	11.6	V	1.15	9.36	19.85	33.0	-13.2	
2.518	15.3	H	1.15	9.36	23.52	33.0	-9.5	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	11.7	V	1.16	9.38	19.87	33.0	-13.1	
2.535	15.5	H	1.16	9.38	23.75	33.0	-9.2	
High Ch (2542.9MHz + 2560MHz)								
2.553	10.4	V	1.17	9.41	18.68	33.0	-14.3	
2.553	16.0	H	1.17	9.41	24.20	33.0	-8.8	
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 #: 16U23287 Date: 6/23/2016 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	11.1	V	1.15	9.36	19.32	33.0	-13.7	
2.518	14.8	H	1.15	9.36	22.97	33.0	-10.0	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	11.2	V	1.16	9.38	19.44	33.0	-13.6	
2.535	15.0	H	1.16	9.38	23.24	33.0	-9.8	
High Ch (2542.9MHz + 2560MHz)								
2.553	9.9	V	1.17	9.41	18.12	33.0	-14.9	
2.553	15.3	H	1.17	9.41	23.49	33.0	-9.5	
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 #:		16U23287						
Date:		6/23/2016						
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	11.5	V	1.15	9.36	19.74	33.0	-13.3	
2.518	15.7	H	1.15	9.36	23.88	33.0	-9.1	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	11.7	V	1.16	9.38	19.87	33.0	-13.1	
2.535	15.4	H	1.16	9.38	23.61	33.0	-9.4	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	10.5	V	1.17	9.41	18.74	33.0	-14.3	
2.553	15.9	H	1.17	9.41	24.16	33.0	-8.8	
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 #: 16U23287 Date: 6/23/2016 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	11.1	V	1.15	9.36	19.35	33.0	-13.7	
2.518	15.2	H	1.15	9.36	23.39	33.0	-9.6	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	11.2	V	1.16	9.38	19.42	33.0	-13.6	
2.535	14.8	H	1.16	9.38	23.04	33.0	-10.0	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	10.1	V	1.17	9.41	18.30	33.0	-14.7	
2.553	15.3	H	1.17	9.41	23.56	33.0	-9.4	
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 #:		16U23287						
Date:		6/23/2016						
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	12.0	V	1.15	9.36	20.17	33.0	-12.8	
2.520	15.6	H	1.15	9.36	23.83	33.0	-9.2	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	12.2	V	1.16	9.38	20.39	33.0	-12.6	
2.535	15.5	H	1.16	9.38	23.76	33.0	-9.2	
High Ch (2540.2MHz + 2560MHz)								
2.550	10.6	V	1.17	9.41	18.84	33.0	-14.2	
2.550	16.0	H	1.17	9.41	24.24	33.0	-8.8	
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 #:		16U23287						
Date:		6/23/2016						
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	11.2	V	1.15	9.36	19.38	33.0	-13.6	
2.520	15.1	H	1.15	9.36	23.32	33.0	-9.7	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	11.2	V	1.16	9.38	19.46	33.0	-13.5	
2.535	14.8	H	1.16	9.38	23.00	33.0	-10.0	
High Ch (2540.2MHz + 2560MHz)								
2.550	10.1	V	1.17	9.41	18.34	33.0	-14.7	
2.550	15.5	H	1.17	9.41	23.74	33.0	-9.3	
Rev. 05.25.16								

9.1.3. 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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 5MHz+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 (2499.3MHz + 2511MHz)								
2.509	11.8	V	1.15	9.35	19.98	33.0	-13.0	
2.509	14.5	H	1.15	9.35	22.65	33.0	-10.4	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	13.7	V	1.16	9.47	21.97	33.0	-11.0	
2.593	16.2	H	1.16	9.47	24.50	33.0	-8.5	
High Ch (2668.3MHz + 2680MHz)								
2.678	13.0	V	1.17	9.75	21.62	33.0	-11.4	
2.678	16.0	H	1.17	9.75	24.60	33.0	-8.4	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 5MHz+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 (2499.3MHz + 2511MHz)								
2.509	11.2	V	1.15	9.35	19.44	33.0	-13.6	
2.509	13.9	H	1.15	9.35	22.11	33.0	-10.9	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	13.1	V	1.16	9.47	21.43	33.0	-11.6	
2.593	15.7	H	1.16	9.47	23.96	33.0	-9.0	
High Ch (2668.3MHz + 2680MHz)								
2.678	12.5	V	1.17	9.75	21.08	33.0	-11.9	
2.678	15.5	H	1.17	9.75	24.03	33.0	-9.0	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber G								
Company:								
Project #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 20MHz+5MHz 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 + 2517.7MHz)								
2.509	11.6	V	1.15	9.35	19.82	33.0	-13.2	
2.509	14.3	H	1.15	9.35	22.52	33.0	-10.5	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	13.5	V	1.16	9.47	21.79	33.0	-11.2	
2.593	16.4	H	1.16	9.47	24.66	33.0	-8.3	
High Ch (2675MHz + 2686.7MHz)								
2.678	12.9	V	1.17	9.75	21.43	33.0	-11.6	
2.678	15.9	H	1.17	9.75	24.45	33.0	-8.6	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+5MHz 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 + 2517.7MHz)								
2.509	11.0	V	1.15	9.35	19.24	33.0	-13.8	
2.509	13.7	H	1.15	9.35	21.94	33.0	-11.1	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	12.9	V	1.16	9.47	21.21	33.0	-11.8	
2.593	15.8	H	1.16	9.47	24.08	33.0	-8.9	
High Ch (2675MHz + 2686.7MHz)								
2.678	12.3	V	1.17	9.75	20.85	33.0	-12.2	
2.678	15.3	H	1.17	9.75	23.87	33.0	-9.1	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
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	11.6	V	1.15	9.35	19.83	33.0	-13.2	
2.511	14.4	H	1.15	9.35	22.58	33.0	-10.4	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	13.6	V	1.16	9.47	21.86	33.0	-11.1	
2.593	16.2	H	1.16	9.47	24.48	33.0	-8.5	
High Ch (2665.6MHz + 2680MHz)								
2.675	12.5	V	1.17	9.74	21.10	33.0	-11.9	
2.675	16.0	H	1.17	9.74	24.56	33.0	-8.4	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
Configuration: EUT Only								
Mode: CA LTE B41 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 (2501.5MHz + 2515.9MHz)								
2.511	11.0	V	1.15	9.35	19.21	33.0	-13.8	
2.511	13.8	H	1.15	9.35	21.96	33.0	-11.0	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	12.9	V	1.16	9.47	21.24	33.0	-11.8	
2.593	15.6	H	1.16	9.47	23.86	33.0	-9.1	
High Ch (2665.6MHz + 2680MHz)								
2.675	11.9	V	1.17	9.74	20.48	33.0	-12.5	
2.675	15.4	H	1.17	9.74	23.94	33.0	-9.1	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
Configuration:		EUT Only						
Mode:		CA LTE B41 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 (2506MHz + 2520.4MHz)								
2.511	11.7	V	1.15	9.35	19.92	33.0	-13.1	
2.511	14.4	H	1.15	9.35	22.55	33.0	-10.5	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	13.5	V	1.16	9.47	21.82	33.0	-11.2	
2.593	15.9	H	1.16	9.47	24.17	33.0	-8.8	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	12.4	V	1.17	9.74	20.94	33.0	-12.1	
2.675	15.9	H	1.17	9.74	24.48	33.0	-8.5	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
Configuration:		EUT Only						
Mode:		CA LTE B41 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 (2506MHz + 2520.4MHz)								
2.511	11.1	V	1.15	9.35	19.29	33.0	-13.7	
2.511	13.7	H	1.15	9.35	21.92	33.0	-11.1	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	12.9	V	1.16	9.47	21.19	33.0	-11.8	
2.593	15.2	H	1.16	9.47	23.54	33.0	-9.5	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	11.7	V	1.17	9.74	20.31	33.0	-12.7	
2.675	15.3	H	1.17	9.74	23.85	33.0	-9.2	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
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	11.7	V	1.15	9.35	19.88	33.0	-13.1	
2.511	14.3	H	1.15	9.35	22.52	33.0	-10.5	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	13.6	V	1.16	9.47	21.89	33.0	-11.1	
2.593	15.9	H	1.16	9.47	24.25	33.0	-8.8	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	12.5	V	1.17	9.74	21.11	33.0	-11.9	
2.675	16.1	H	1.17	9.74	24.69	33.0	-8.3	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
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	10.9	V	1.15	9.35	19.13	33.0	-13.9	
2.511	13.6	H	1.15	9.35	21.77	33.0	-11.2	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	12.8	V	1.16	9.47	21.14	33.0	-11.9	
2.593	15.2	H	1.16	9.47	23.50	33.0	-9.5	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	11.8	V	1.17	9.74	20.36	33.0	-12.6	
2.675	15.4	H	1.17	9.74	23.94	33.0	-9.1	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
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	11.7	V	1.15	9.35	19.90	33.0	-13.1	
2.514	14.4	H	1.15	9.35	22.62	33.0	-10.4	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	13.6	V	1.16	9.47	21.88	33.0	-11.1	
2.593	16.2	H	1.16	9.47	24.52	33.0	-8.5	
High Ch (2662.9MHz + 2680MHz)								
2.673	12.7	V	1.17	9.73	21.24	33.0	-11.8	
2.673	16.0	H	1.17	9.73	24.51	33.0	-8.5	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
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	11.1	V	1.15	9.35	19.33	33.0	-13.7	
2.514	13.9	H	1.15	9.35	22.05	33.0	-10.9	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	13.0	V	1.16	9.47	21.31	33.0	-11.7	
2.593	15.6	H	1.16	9.47	23.95	33.0	-9.1	
High Ch (2662.9MHz + 2680MHz)								
2.673	12.1	V	1.17	9.73	20.67	33.0	-12.3	
2.673	15.4	H	1.17	9.73	23.94	33.0	-9.1	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
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	11.8	V	1.15	9.35	19.95	33.0	-13.0	
2.514	14.2	H	1.15	9.35	22.43	33.0	-10.6	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	13.8	V	1.16	9.47	22.09	33.0	-10.9	
2.593	15.9	H	1.16	9.47	24.16	33.0	-8.8	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	12.6	V	1.17	9.73	21.13	33.0	-11.9	
2.673	15.9	H	1.17	9.73	24.47	33.0	-8.5	
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 #: 16U23287								
Date: 6/24/2016								
Test Engineer: 38602								
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	10.9	V	1.15	9.35	19.12	33.0	-13.9	
2.514	13.4	H	1.15	9.35	21.60	33.0	-11.4	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	13.0	V	1.16	9.47	21.26	33.0	-11.7	
2.593	15.0	H	1.16	9.47	23.33	33.0	-9.7	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	11.7	V	1.17	9.73	20.30	33.0	-12.7	
2.673	15.1	H	1.17	9.73	23.64	33.0	-9.4	
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 #:		16U23287						
Date:		6/24/2016						
Test Engineer:		38602						
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	11.9	V	1.15	9.36	20.09	33.0	-12.9	
2.516	14.2	H	1.15	9.36	22.41	33.0	-10.6	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	13.9	V	1.16	9.47	22.16	33.0	-10.8	
2.593	16.3	H	1.16	9.47	24.59	33.0	-8.4	
High Ch (2660.2MHz + 2680MHz)								
2.670	12.9	V	1.17	9.72	21.43	33.0	-11.6	
2.670	16.0	H	1.17	9.72	24.51	33.0	-8.5	
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 #: 16U23287 Date: 6/23/2016 Test Engineer: 39004 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	5.0	V	1.15	9.36	13.18	33.0	-19.8	
2.516	14.1	H	1.15	9.36	22.33	33.0	-10.7	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	11.6	V	1.16	9.47	19.93	33.0	-13.1	
2.593	15.4	H	1.16	9.47	23.70	33.0	-9.3	
High Ch (2660.2MHz + 2680MHz)								
2.670	9.8	V	1.17	9.72	18.34	33.0	-14.7	
2.670	15.2	H	1.17	9.72	23.74	33.0	-9.3	
Rev. 05.25.16								

9.2. 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	21.05	127.35
		2525.6 + 2540	18.74	74.82
		2545.6 + 2560	19.81	95.72
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2505.5 + 2519.9	20.13	103.04
		2525.6 + 2540	17.89	61.52
		2545.6 + 2560	19.28	84.72

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	21.13	129.72
		2530.1 + 2544.5	18.02	63.39
		2550.1 + 2564.5	19.48	88.72
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2524.4	20.23	105.44
		2530.1 + 2544.5	17.18	52.24
		2550.1 + 2564.5	18.64	73.11

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	21.13	129.72
		2527.5 + 2542.5	17.89	61.52
		2547.5 + 2562.5	19.52	89.54
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2507.5 + 2522.5	20.29	106.91
		2527.5 + 2542.5	17.04	50.58
		2547.5 + 2562.5	18.67	73.62

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	21.12	129.42
		2525.3 + 2542.4	17.84	60.81
		2542.9 + 2560	19.71	93.54
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2507.8 + 2524.9	20.14	103.28
		2525.3 + 2542.4	17.04	50.58
		2542.9 + 2560	18.83	76.38

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	21.24	133.05
		2527.6 + 2544.7	17.49	56.10
		2545.1 + 2562.2	19.83	96.16
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2527.1	20.33	107.89
		2527.6 + 2544.7	16.74	47.21
		2545.1 + 2562.2	18.99	79.25

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	21.14	130.02
		2525.1 + 2544.9	18.98	79.07
		2540.2 + 2560	19.73	93.97
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2510 + 2529.8	20.33	107.89
		2525.1 + 2544.9	18.17	65.61
		2540.2 + 2560	18.92	77.98

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	19.71	93.54
		2583.8 + 2595.5	19.63	91.83
		2668.3 + 2680	18.99	79.25
5.0MHZ + 20.0MHZ BAND 16QAM	1/24 + 1/0	2499.3 + 2511	19.14	82.04
		2583.8 + 2595.5	19.11	81.47
		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	19.42	87.50
		2590.5 + 2602.2	19.52	89.54
		2675 + 2686.7	18.22	66.37
20.0MHZ + 5.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2517.7	18.94	78.34
		2590.5 + 2602.2	19.10	81.28
		2675 + 2686.7	17.80	60.26

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	20.05	101.16
		2583.6 + 2598	19.92	98.17
		2665.6 + 2680	19.17	82.60
10.0MHZ + 20.0MHZ BAND 16QAM	1/49 + 1/0	2501.5 + 2515.9	19.56	90.36
		2583.6 + 2598	19.27	84.53
		2665.6 + 2680	18.65	73.28

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	19.56	90.36
		2588.1 + 2602.5	19.59	90.99
		2670.1 + 2684.5	19.18	82.79
20.0MHZ + 10.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2520.4	19.04	80.17
		2588.1 + 2602.5	18.96	78.70
		2670.1 + 2684.5	18.58	72.11

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	19.33	85.70
		2585.5 + 2600.5	19.81	95.72
		2667.5 + 2682.5	18.08	64.27
15.0MHZ + 15.0MHZ BAND 16QAM	1/74 + 1/0	2503.5 + 2518.5	18.97	78.89
		2585.5 + 2600.5	19.31	85.31
		2667.5 + 2682.5	17.43	55.34

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	18.82	76.21
		2583.3 + 2600.4	19.44	87.90
		2662.9 + 2680	19.25	84.14
15.0MHZ + 20.0MHZ BAND 16QAM	1/74 + 1/0	2503.8 + 2520.9	18.27	67.14
		2583.3 + 2600.4	18.61	72.61
		2662.9 + 2680	18.60	72.44

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	19.44	87.90
		2585.6 + 2602.7	18.90	77.62
		2665.1 + 2682.2	19.69	93.11
20.0MHZ + 15.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2523.1	18.37	68.71
		2585.6 + 2602.7	18.44	69.82
		2665.1 + 2682.2	18.89	77.45

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	19.57	90.57
		2583.1 + 2602.9	19.89	97.50
		2660.2 + 2680	19.14	82.04
20.0MHZ + 20.0MHZ BAND 16QAM	1/99 + 1/0	2506 + 2525.8	19.09	81.10
		2583.1 + 2602.9	19.41	87.30
		2660.2 + 2680	18.66	73.45

9.2.1. LTE BAND 7

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23287								
Date: 6/25/2016								
Test Engineer: 38602								
Configuration: EUT only								
Mode: CA LTE B7 QPSK 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 (2505.5MHz + 2519.9MHz)								
2.515	6.9	V	1.15	9.35	15.06	33.0	-17.9	
2.515	12.9	H	1.15	9.35	21.05	33.0	-11.9	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	7.1	V	1.16	9.38	15.27	33.0	-17.7	
2.535	10.5	H	1.16	9.38	18.74	33.0	-14.3	
High Ch (2545.6MHz + 2560MHz)								
2.555	6.5	V	1.17	9.41	14.71	33.0	-18.3	
2.555	11.6	H	1.17	9.41	19.81	33.0	-13.2	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company: Project #: 16U23287 Date: 6/25/2016 Test Engineer: 38602 Configuration: EUT only Mode: CA LTE B7 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 (2505.5MHz + 2519.9MHz)								
2.515	6.0	V	1.15	9.35	14.21	33.0	-18.8	
2.515	11.9	H	1.15	9.35	20.13	33.0	-12.9	
Mid Ch (2525.6MHz + 2540MHz)								
2.535	6.2	V	1.16	9.38	14.42	33.0	-18.6	
2.535	9.7	H	1.16	9.38	17.89	33.0	-15.1	
High Ch (2545.6MHz + 2560MHz)								
2.555	5.6	V	1.17	9.41	13.86	33.0	-19.1	
2.555	11.0	H	1.17	9.41	19.28	33.0	-13.7	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		CA LTE B7 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 (2510MHz + 2524.4MHz)								
2.515	6.8	V	1.15	9.35	14.96	33.0	-18.0	
2.515	12.9	H	1.15	9.35	21.13	33.0	-11.9	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	7.1	V	1.16	9.38	15.30	33.0	-17.7	
2.535	9.8	H	1.16	9.38	18.02	33.0	-15.0	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	6.6	V	1.17	9.41	14.84	33.0	-18.2	
2.555	11.2	H	1.17	9.41	19.48	33.0	-13.5	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		CA LTE B7 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 (2510MHz + 2524.4MHz)								
2.515	6.1	V	1.15	9.35	14.32	33.0	-18.7	
2.515	12.0	H	1.15	9.35	20.23	33.0	-12.8	
Mid Ch (2530.1MHz + 2544.5MHz)								
2.535	6.2	V	1.16	9.38	14.46	33.0	-18.5	
2.535	9.0	H	1.16	9.38	17.18	33.0	-15.8	
High Ch (2550.1MHz + 2564.5MHz)								
2.555	5.8	V	1.17	9.41	14.00	33.0	-19.0	
2.555	10.4	H	1.17	9.41	18.64	33.0	-14.4	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23287								
Date: 6/25/2016								
Test Engineer: 38602								
Configuration: EUT only								
Mode: CA LTE B7 QPSK 15MHz+15MHz 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 (2507.5MHz + 2522.5MHz)								
2.515	6.8	V	1.15	9.35	15.05	33.0	-17.9	
2.515	12.9	H	1.15	9.35	21.13	33.0	-11.9	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	7.1	V	1.16	9.38	15.28	33.0	-17.7	
2.535	9.7	H	1.16	9.38	17.89	33.0	-15.1	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	6.6	V	1.17	9.41	14.80	33.0	-18.2	
2.555	11.3	H	1.17	9.41	19.52	33.0	-13.5	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		LTE B7 16QAM 15MHz+15MHz 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 (2507.5MHz + 2522.5MHz)								
2.515	6.3	V	1.15	9.35	14.52	33.0	-18.5	
2.515	12.1	H	1.15	9.35	20.29	33.0	-12.7	
Mid Ch (2527.5MHz + 2542.5MHz)								
2.535	6.2	V	1.16	9.38	14.43	33.0	-18.6	
2.535	8.8	H	1.16	9.38	17.04	33.0	-16.0	
High Ch (2547.5MHz + 2562.5MHz)								
2.555	5.7	V	1.17	9.41	13.95	33.0	-19.0	
2.555	10.4	H	1.17	9.41	18.67	33.0	-14.3	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23287								
Date: 6/25/2016								
Test Engineer: 38602								
Configuration: EUT only								
Mode: CA LTE B7 QPSK 15MHz+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 (2507.8MHz + 2524.9MHz)								
2.518	6.8	V	1.15	9.36	15.02	33.0	-18.0	
2.518	12.9	H	1.15	9.36	21.12	33.0	-11.9	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	6.9	V	1.16	9.38	15.12	33.0	-17.9	
2.535	9.6	H	1.16	9.38	17.84	33.0	-15.2	
High Ch (2542.9MHz + 2560MHz)								
2.553	6.2	V	1.17	9.41	14.41	33.0	-18.6	
2.553	11.5	H	1.17	9.41	19.71	33.0	-13.3	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company: Project #: 16U23287 Date: 6/25/2016 Test Engineer: 38602 Configuration: EUT only Mode: LTE B7 16QAM 15MHz+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 (2507.8MHz + 2524.9MHz)								
2.518	6.1	V	1.15	9.36	14.27	33.0	-18.7	
2.518	11.9	H	1.15	9.36	20.14	33.0	-12.9	
Mid Ch (2525.3MHz + 2542.4MHz)								
2.535	6.0	V	1.16	9.38	14.24	33.0	-18.8	
2.535	8.8	H	1.16	9.38	17.04	33.0	-16.0	
High Ch (2542.9MHz + 2560MHz)								
2.553	5.3	V	1.17	9.41	13.53	33.0	-19.5	
2.553	10.6	H	1.17	9.41	18.83	33.0	-14.2	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 20MHz+15MHz 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 (2510MHz + 2527.1MHz)								
2.518	6.6	V	1.15	9.36	14.76	33.0	-18.2	
2.518	13.0	H	1.15	9.36	21.24	33.0	-11.8	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	7.2	V	1.16	9.38	15.39	33.0	-17.6	
2.535	9.3	H	1.16	9.38	17.49	33.0	-15.5	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	6.4	V	1.17	9.41	14.60	33.0	-18.4	
2.553	11.6	H	1.17	9.41	19.83	33.0	-13.2	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		LTE B7 16QAM 20MHz+15MHz 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 (2510MHz + 2527.1MHz)								
2.518	5.7	V	1.15	9.36	13.93	33.0	-19.1	
2.518	12.1	H	1.15	9.36	20.33	33.0	-12.7	
Mid Ch (2527.6MHz + 2544.7MHz)								
2.535	6.3	V	1.16	9.38	14.55	33.0	-18.4	
2.535	8.5	H	1.16	9.38	16.74	33.0	-16.3	
High Ch (2545.1MHz + 2562.2MHz)								
2.553	5.5	V	1.17	9.41	13.76	33.0	-19.2	
2.553	10.8	H	1.17	9.41	18.99	33.0	-14.0	
Rev. 10.24.13								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		CA LTE B7 QPSK 20MHz+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 (2510MHz + 2529.8MHz)								
2.520	7.2	V	1.15	9.36	15.37	33.0	-17.6	
2.520	12.9	H	1.15	9.36	21.14	33.0	-11.9	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	7.2	V	1.16	9.38	15.46	33.0	-17.5	
2.535	10.8	H	1.16	9.38	18.98	33.0	-14.0	
High Ch (2540.2MHz + 2560MHz)								
2.550	6.6	V	1.17	9.41	14.79	33.0	-18.2	
2.550	11.5	H	1.17	9.41	19.73	33.0	-13.3	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/25/2016						
Test Engineer:		38602						
Configuration:		EUT only						
Mode:		CA LTE B7 16QAM 20MHz+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 (2510MHz + 2529.8MHz)								
2.520	6.3	V	1.15	9.36	14.56	33.0	-18.4	
2.520	12.1	H	1.15	9.36	20.33	33.0	-12.7	
Mid Ch (2525.1MHz + 2544.9MHz)								
2.535	6.4	V	1.16	9.38	14.65	33.0	-18.3	
2.535	10.0	H	1.16	9.38	18.17	33.0	-14.8	
High Ch (2540.2MHz + 2560MHz)								
2.550	5.7	V	1.17	9.41	13.98	33.0	-19.0	
2.550	10.7	H	1.17	9.41	18.92	33.0	-14.1	
Rev. 05.25.16								

9.2.2. LTE BAND 41

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
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	5.0	V	1.15	9.35	13.23	33.0	-19.8	
2.509	11.5	H	1.15	9.35	19.71	33.0	-13.3	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	10.7	V	1.16	9.47	19.04	33.0	-14.0	
2.593	11.3	H	1.16	9.47	19.63	33.0	-13.4	
High Ch (2668.3MHz + 2680MHz)								
2.678	9.5	V	1.17	9.75	18.09	33.0	-14.9	
2.678	10.4	H	1.17	9.75	18.99	33.0	-14.0	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23287								
Date: 6/26/2016								
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	4.5	V	1.15	9.35	12.68	33.0	-20.3	
2.509	10.9	H	1.15	9.35	19.14	33.0	-13.9	
Mid Ch (2583.8MHz + 2595.5MHz)								
2.593	10.3	V	1.16	9.47	18.62	33.0	-14.4	
2.593	10.8	H	1.16	9.47	19.11	33.0	-13.9	
High Ch (2668.3MHz + 2680MHz)								
2.678	9.0	V	1.17	9.75	17.60	33.0	-15.4	
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 #:		16U23287						
Date:		6/26/2016						
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	4.9	V	1.15	9.35	13.05	33.0	-20.0	
2.509	11.2	H	1.15	9.35	19.42	33.0	-13.6	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	11.1	V	1.16	9.47	19.44	33.0	-13.6	
2.593	11.2	H	1.16	9.47	19.52	33.0	-13.5	
High Ch (2675MHz + 2686.7MHz)								
2.678	8.9	V	1.17	9.75	17.49	33.0	-15.5	
2.678	9.6	H	1.17	9.75	18.22	33.0	-14.8	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
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	4.3	V	1.15	9.35	12.53	33.0	-20.5	
2.509	10.7	H	1.15	9.35	18.94	33.0	-14.1	
Mid Ch (2590.5MHz + 2602.2MHz)								
2.593	10.7	V	1.16	9.47	19.04	33.0	-14.0	
2.593	10.8	H	1.16	9.47	19.10	33.0	-13.9	
High Ch (2675MHz + 2686.7MHz)								
2.678	8.4	V	1.17	9.75	16.93	33.0	-16.1	
2.678	9.2	H	1.17	9.75	17.80	33.0	-15.2	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 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	6.0	V	1.15	9.35	14.23	33.0	-18.8	
2.511	11.9	H	1.15	9.35	20.05	33.0	-13.0	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	11.5	V	1.16	9.47	19.80	33.0	-13.2	
2.593	11.6	H	1.16	9.47	19.92	33.0	-13.1	
High Ch (2665.6MHz + 2680MHz)								
2.675	8.6	V	1.17	9.74	17.19	33.0	-15.8	
2.675	10.6	H	1.17	9.74	19.17	33.0	-13.8	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #: 16U23287								
Date: 6/26/2016								
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	5.4	V	1.15	9.35	13.60	33.0	-19.4	
2.511	11.4	H	1.15	9.35	19.56	33.0	-13.4	
Mid Ch (2583.6MHz + 2598MHz)								
2.593	10.9	V	1.16	9.47	19.22	33.0	-13.8	
2.593	11.0	H	1.16	9.47	19.27	33.0	-13.7	
High Ch (2665.6MHz + 2680MHz)								
2.675	8.1	V	1.17	9.74	16.66	33.0	-16.3	
2.675	10.1	H	1.17	9.74	18.65	33.0	-14.4	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
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	7.1	V	1.15	9.35	15.25	33.0	-17.8	
2.511	11.4	H	1.15	9.35	19.56	33.0	-13.4	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	11.2	V	1.16	9.47	19.52	33.0	-13.5	
2.593	11.3	H	1.16	9.47	19.59	33.0	-13.4	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	8.5	V	1.17	9.74	17.08	33.0	-15.9	
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 E								
Company:								
Project #: 16U23287								
Date: 6/26/2016								
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	6.5	V	1.15	9.35	14.68	33.0	-18.3	
2.511	10.8	H	1.15	9.35	19.04	33.0	-14.0	
Mid Ch (2588.1MHz + 2602.5MHz)								
2.593	10.7	V	1.16	9.47	19.01	33.0	-14.0	
2.593	10.7	H	1.16	9.47	18.96	33.0	-14.0	
High Ch (2670.1MHz + 2684.5MHz)								
2.675	8.1	V	1.17	9.74	16.66	33.0	-16.3	
2.675	10.0	H	1.17	9.74	18.58	33.0	-14.4	
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 #: 16U23287								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 QPSK 15MHz+15MHz 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 (2503.5MHz + 2518.5MHz)								
2.511	6.9	V	1.15	9.35	15.09	33.0	-17.9	
2.511	11.1	H	1.15	9.35	19.33	33.0	-13.7	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	10.4	V	1.16	9.47	18.75	33.0	-14.3	
2.593	11.5	H	1.16	9.47	19.81	33.0	-13.2	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	7.7	V	1.17	9.74	16.28	33.0	-16.7	
2.675	9.5	H	1.17	9.74	18.08	33.0	-14.9	
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 #: 16U23287								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 15MHz+15MHz 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 (2503.5MHz + 2518.5MHz)								
2.511	6.4	V	1.15	9.35	14.58	33.0	-18.4	
2.511	10.8	H	1.15	9.35	18.97	33.0	-14.0	
Mid Ch (2585.5MHz + 2600.5MHz)								
2.593	10.0	V	1.16	9.47	18.29	33.0	-14.7	
2.593	11.0	H	1.16	9.47	19.31	33.0	-13.7	
High Ch (2667.5MHz + 2682.5MHz)								
2.675	7.5	V	1.17	9.74	16.04	33.0	-17.0	
2.675	8.9	H	1.17	9.74	17.43	33.0	-15.6	
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 #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 15MHz+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 (2503.8MHz + 2520.9MHz)								
2.514	6.9	V	1.15	9.35	15.09	33.0	-17.9	
2.514	10.6	H	1.15	9.35	18.82	33.0	-14.2	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	8.9	V	1.16	9.47	17.22	33.0	-15.8	
2.593	11.1	H	1.16	9.47	19.44	33.0	-13.6	
High Ch (2662.9MHz + 2680MHz)								
2.673	7.9	V	1.17	9.73	16.46	33.0	-16.5	
2.673	10.7	H	1.17	9.73	19.25	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 #: 16U23287								
Date: 6/26/2016								
Test Engineer: 39004								
Configuration: EUT Only								
Mode: CA LTE B41 16QAM 15MHz+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 (2503.8MHz + 2520.9MHz)								
2.514	6.3	V	1.15	9.35	14.54	33.0	-18.5	
2.514	10.1	H	1.15	9.35	18.27	33.0	-14.7	
Mid Ch (2583.3MHz + 2600.4MHz)								
2.593	8.3	V	1.16	9.47	16.64	33.0	-16.4	
2.593	10.3	H	1.16	9.47	18.61	33.0	-14.4	
High Ch (2662.9MHz + 2680MHz)								
2.673	7.2	V	1.17	9.73	15.75	33.0	-17.3	
2.673	10.0	H	1.17	9.73	18.60	33.0	-14.4	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 QPSK 20MHz+15MHz 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 + 2523.1MHz)								
2.514	6.9	V	1.15	9.35	15.14	33.0	-17.9	
2.514	11.2	H	1.15	9.35	19.44	33.0	-13.6	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	8.6	V	1.16	9.47	16.95	33.0	-16.1	
2.593	10.6	H	1.16	9.47	18.90	33.0	-14.1	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	7.6	V	1.17	9.73	16.11	33.0	-16.9	
2.673	11.1	H	1.17	9.73	19.69	33.0	-13.3	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
Configuration:		EUT Only						
Mode:		CA LTE B41 16QAM 20MHz+15MHz 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 + 2523.1MHz)								
2.514	6.4	V	1.15	9.35	14.61	33.0	-18.4	
2.514	10.2	H	1.15	9.35	18.37	33.0	-14.6	
Mid Ch (2585.6MHz + 2602.7MHz)								
2.593	8.1	V	1.16	9.47	16.42	33.0	-16.6	
2.593	10.1	H	1.16	9.47	18.44	33.0	-14.6	
High Ch (2665.1MHz + 2682.2MHz)								
2.673	7.1	V	1.17	9.73	15.70	33.0	-17.3	
2.673	10.3	H	1.17	9.73	18.89	33.0	-14.1	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
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	7.1	V	1.15	9.36	15.30	33.0	-17.7	
2.516	11.4	H	1.15	9.36	19.57	33.0	-13.4	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	10.6	V	1.16	9.47	18.92	33.0	-14.1	
2.593	11.6	H	1.16	9.47	19.89	33.0	-13.1	
High Ch (2660.2MHz + 2680MHz)								
2.670	9.6	V	1.17	9.72	18.16	33.0	-14.8	
2.670	10.6	H	1.17	9.72	19.14	33.0	-13.9	
Rev. 05.25.16								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber E								
Company:								
Project #:		16U23287						
Date:		6/26/2016						
Test Engineer:		39004						
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	6.6	V	1.15	9.36	14.82	33.0	-18.2	
2.516	10.9	H	1.15	9.36	19.09	33.0	-13.9	
Mid Ch (2583.1MHz + 2602.9MHz)								
2.593	10.1	V	1.16	9.47	18.44	33.0	-14.6	
2.593	11.1	H	1.16	9.47	19.41	33.0	-13.6	
High Ch (2660.2MHz + 2680MHz)								
2.670	9.1	V	1.17	9.72	17.68	33.0	-15.3	
2.670	10.1	H	1.17	9.72	18.66	33.0	-14.3	
Rev. 05.25.16								

9.3. PEAK-TO-AVERAGE RATIO

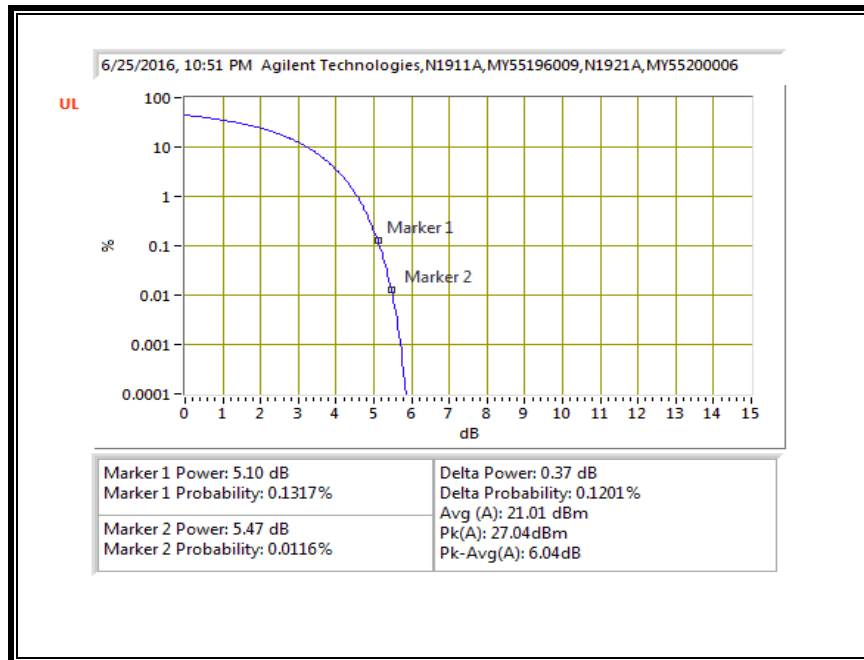
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB

RESULT

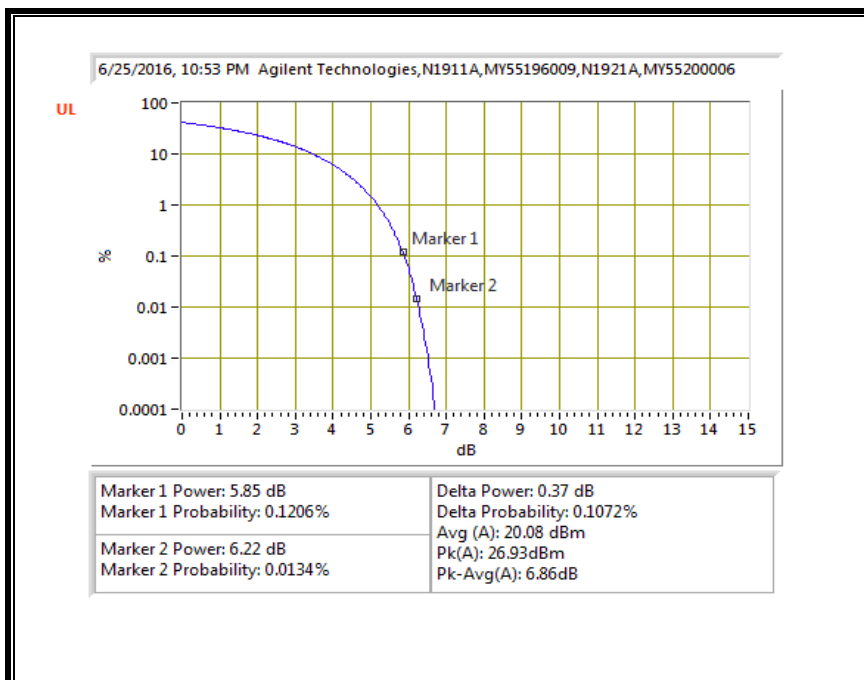
The results from all CCDF plots are passed with 13dB peak-to-average ratio criteria.

9.3.1. LTE BAND 7

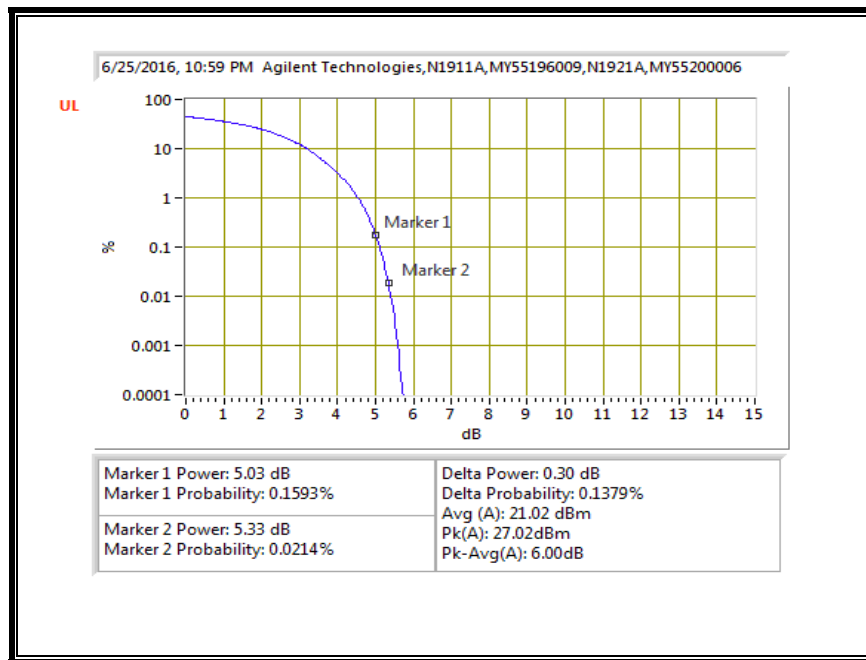
QPSK, (10.0 MHz + 20.0 MHz BAND WIDTH)



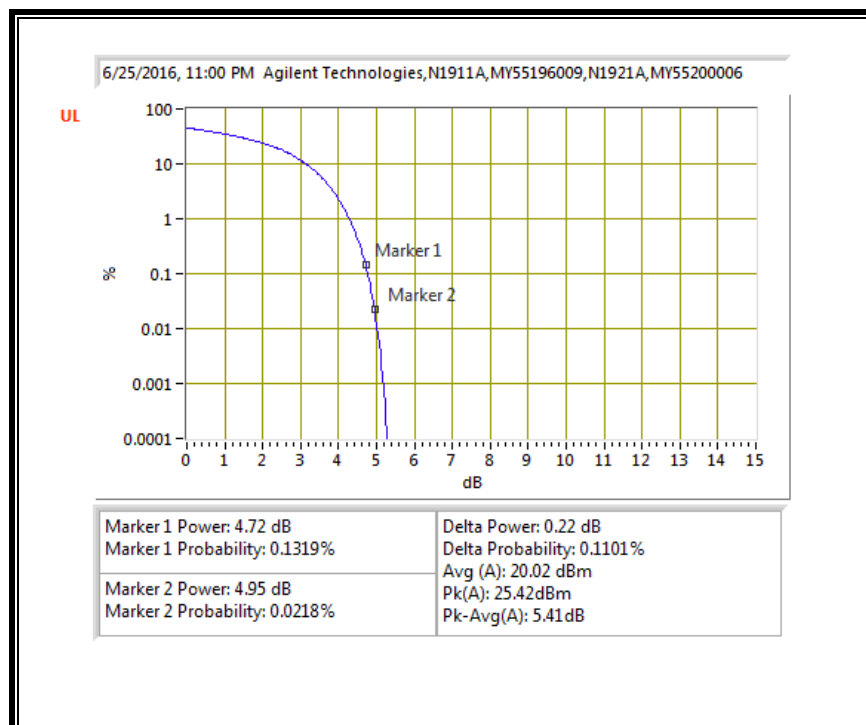
16QAM, (10.0 MHz + 20.0 MHz BAND WIDTH)



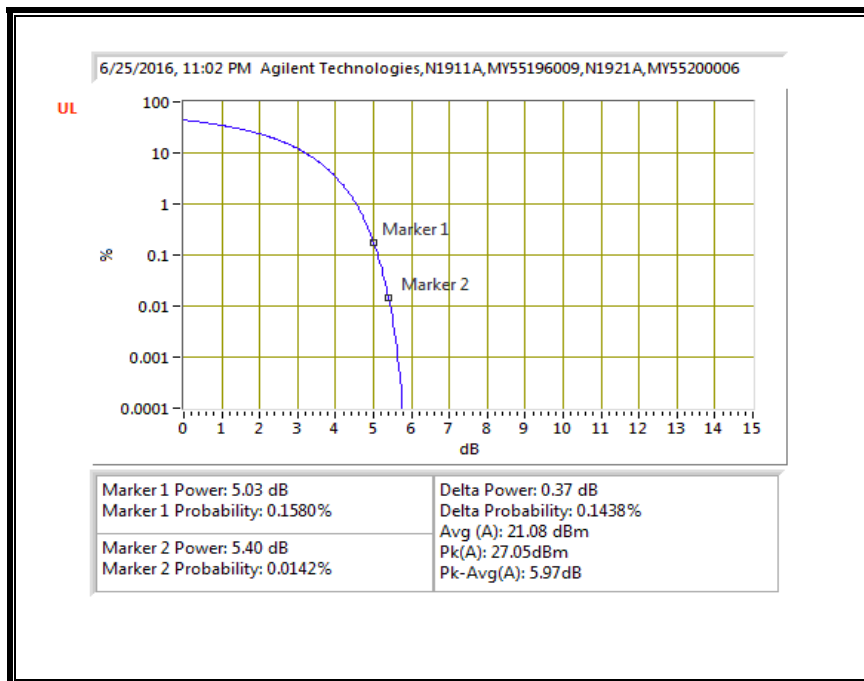
QPSK, (15.0 MHz + 15 MHz BAND WIDTH)



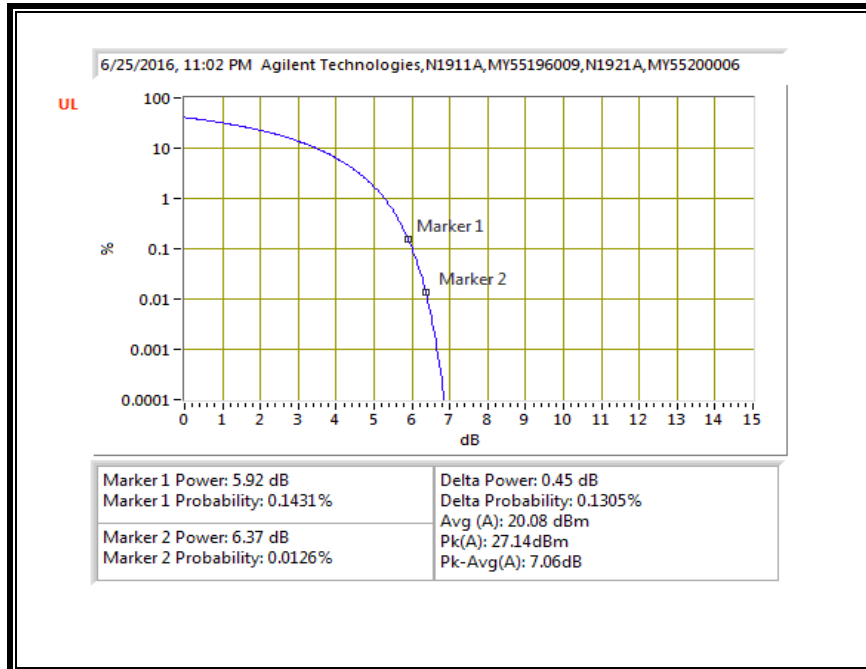
16QAM, (15.0 MHz + 15.0 MHz BAND WIDTH)



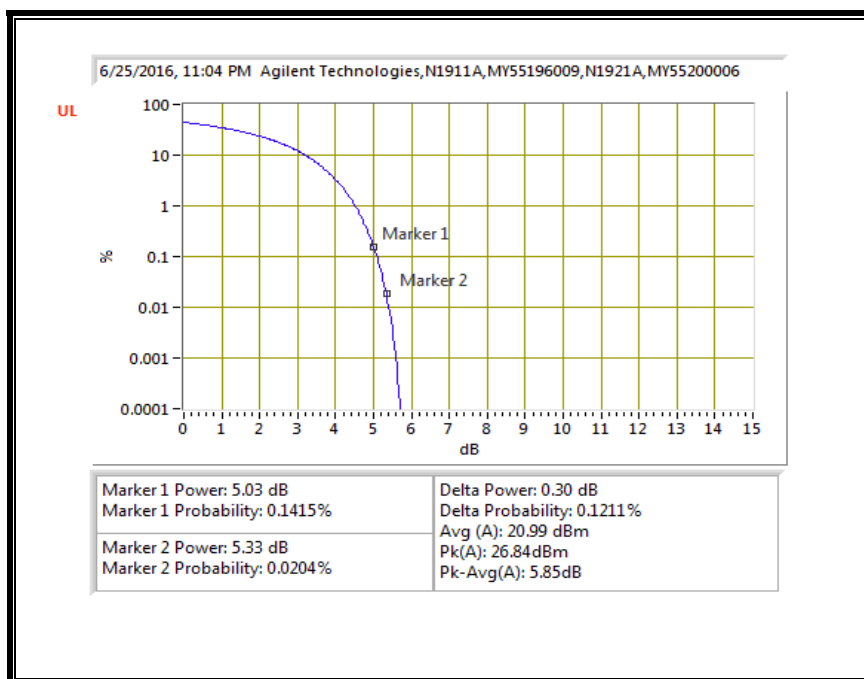
QPSK, (15.0 MHz + 20.0 MHz BAND WIDTH)



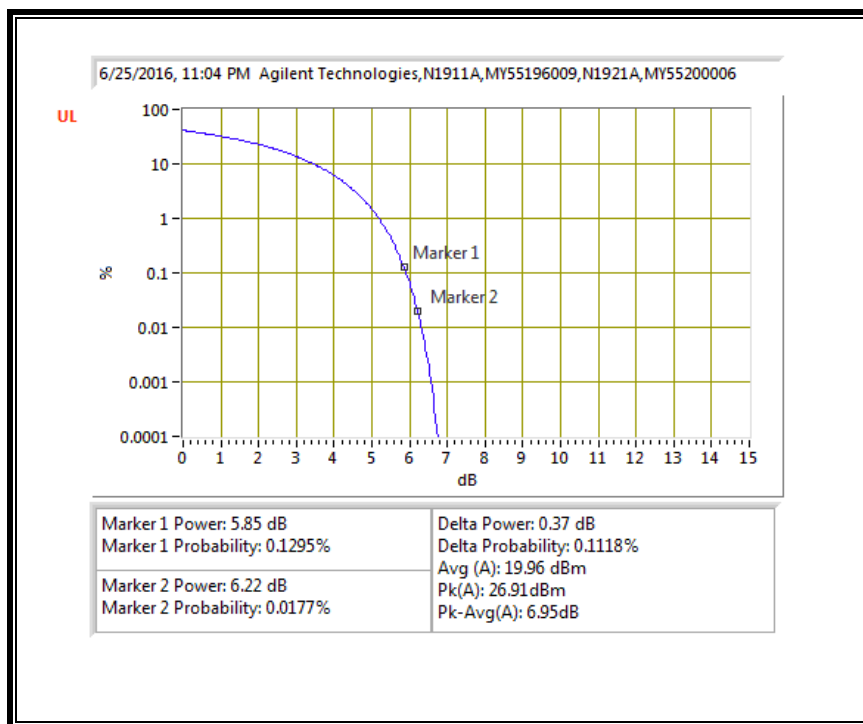
16QAM, (15.0 MHz + 20.0 MHz BAND WIDTH)



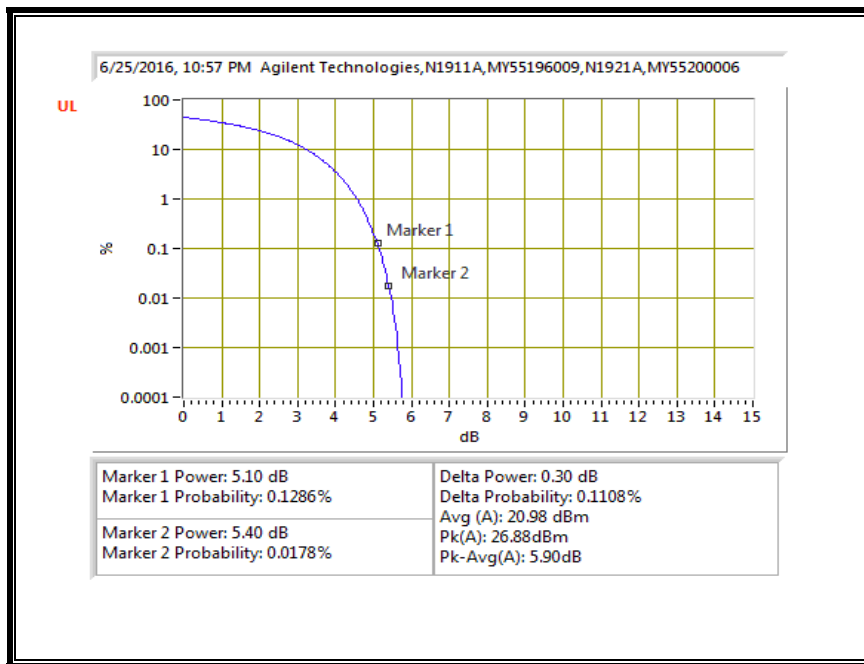
QPSK, (20.0 MHz + 15.0 MHz BAND WIDTH)



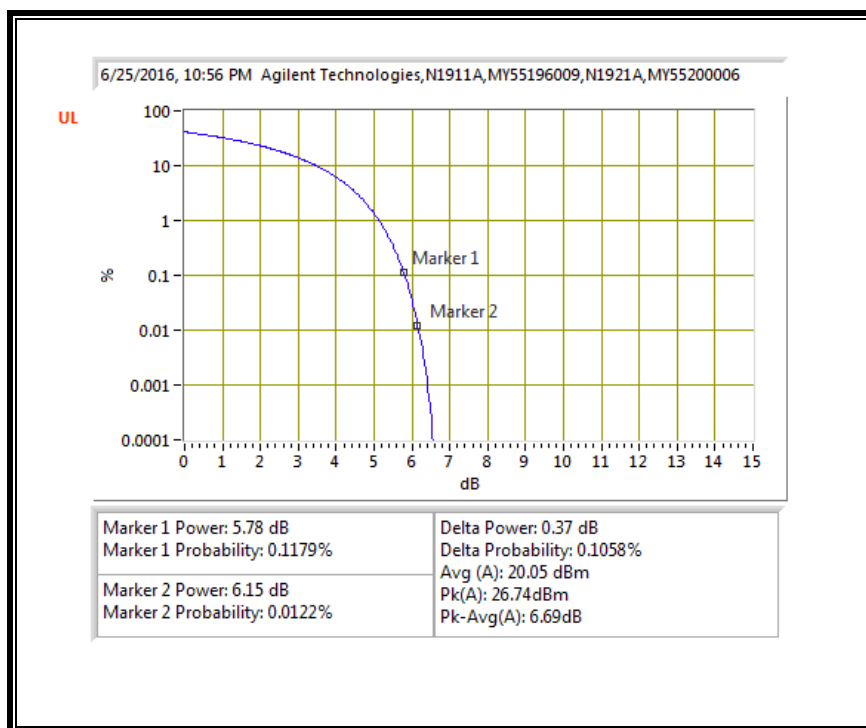
16QAM, (20.0 MHz + 15.0 MHz BAND WIDTH)



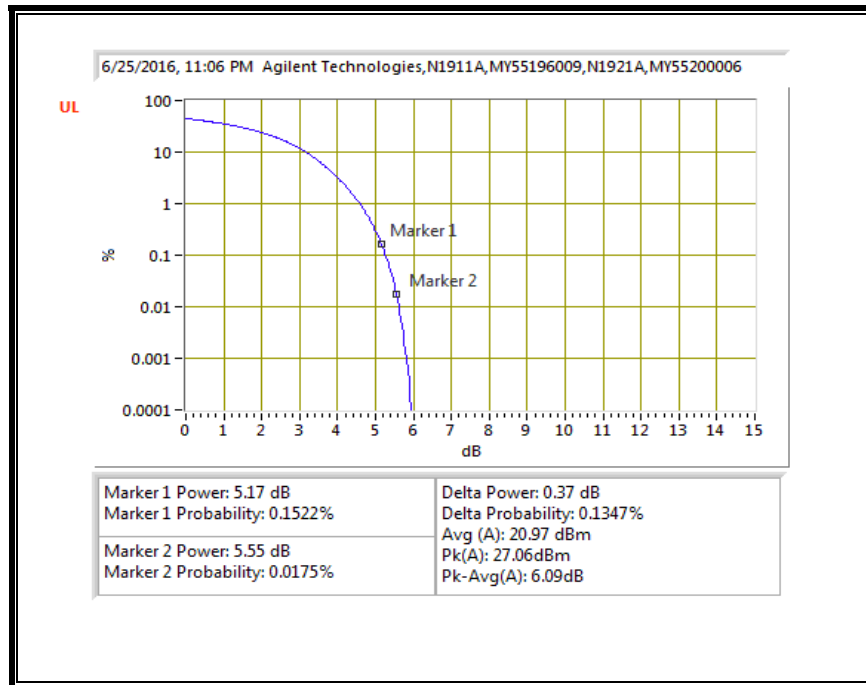
QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)



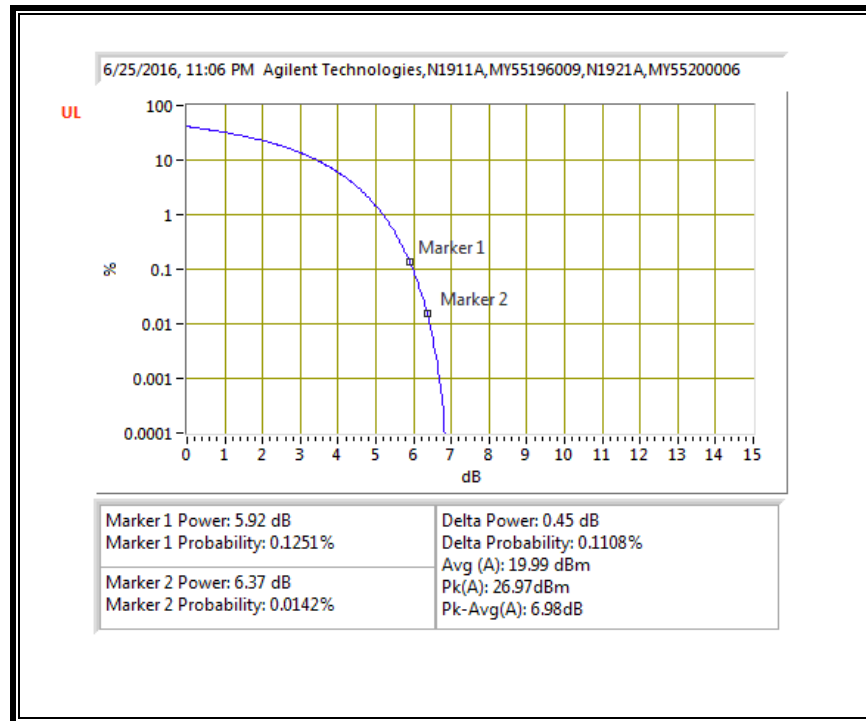
16QAM, (20.0 MHz + 10.0 MHz BAND WIDTH)



QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)

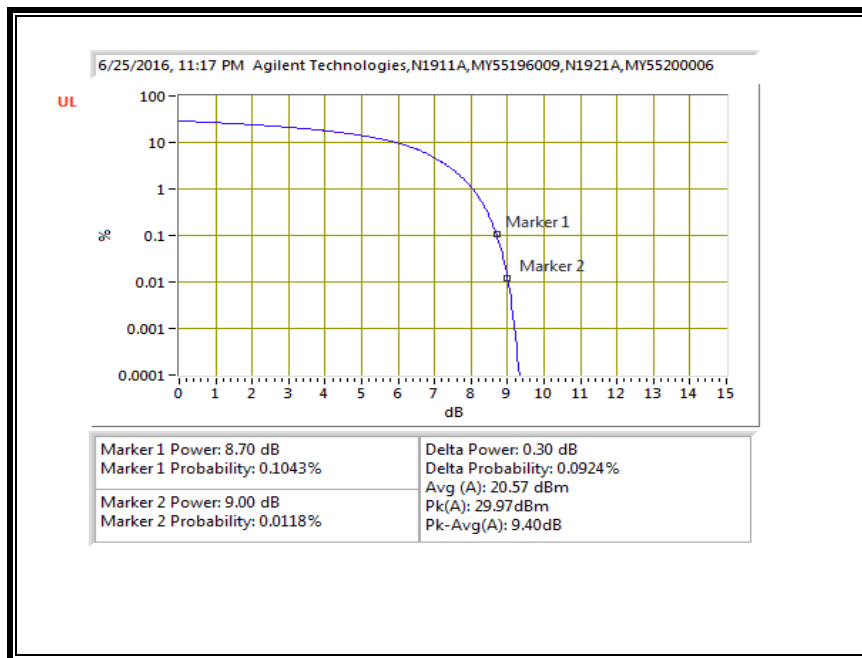


16QAM, (20.0 MHz + 20.0 MHz BAND WIDTH)

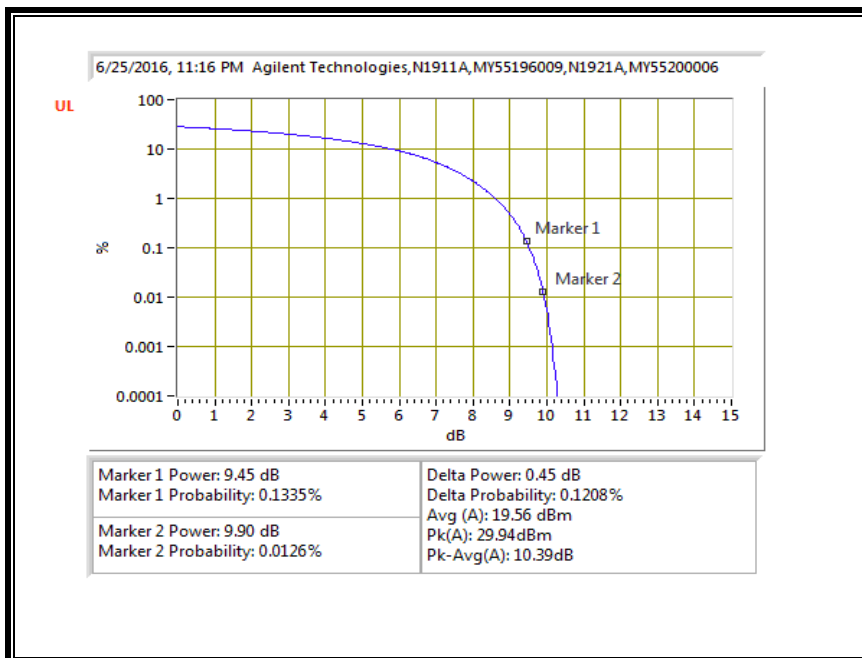


9.3.2. LTE BAND 41

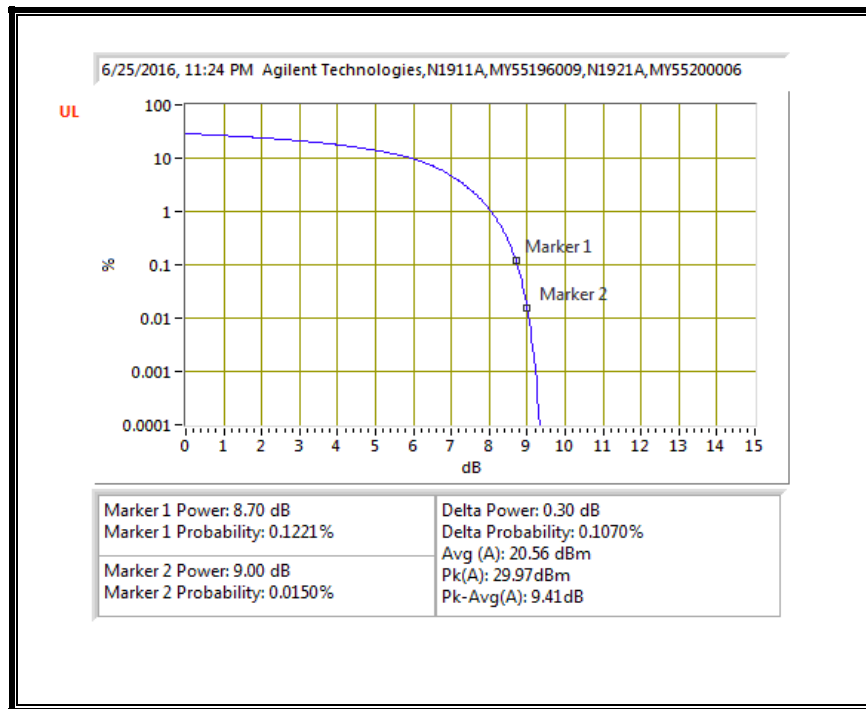
QPSK, (5.0 MHz + 20.0 MHz BAND WIDTH)



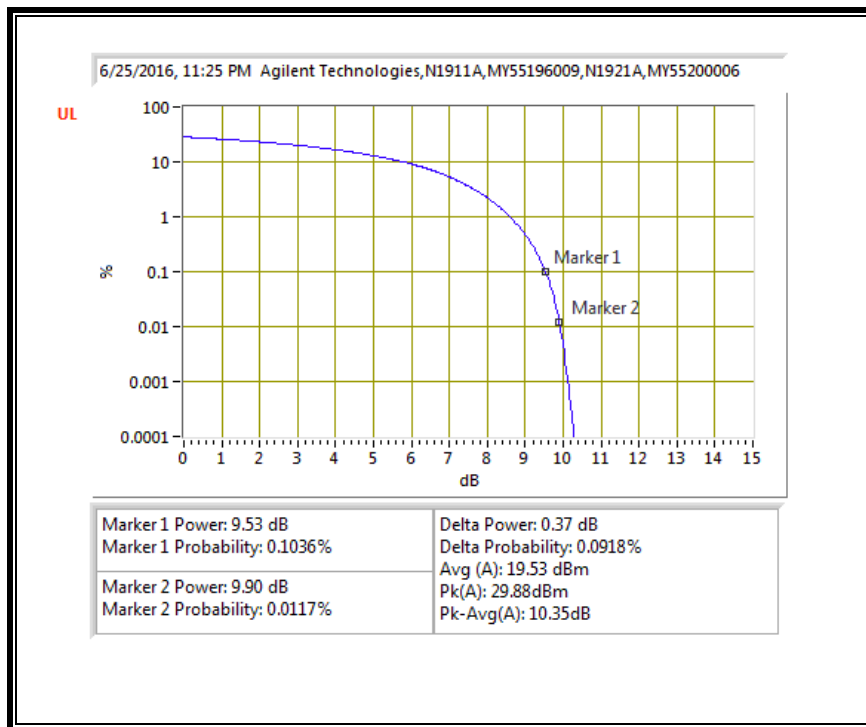
16 QAM, (5.0 MHz + 20.0 MHz BAND WIDTH)



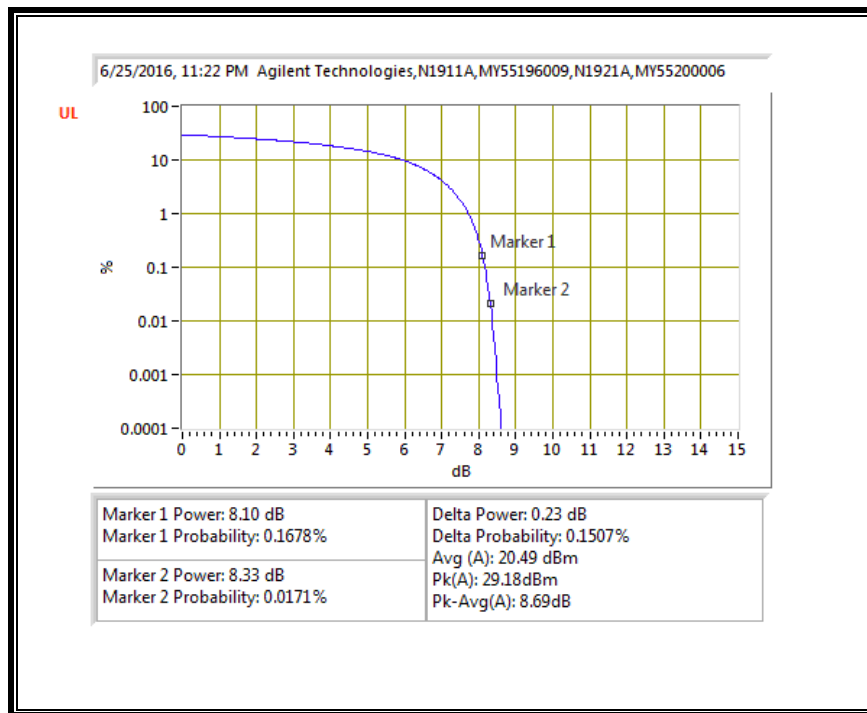
QPSK, (10.0 MHz + 20.0 MHz BAND WIDTH)



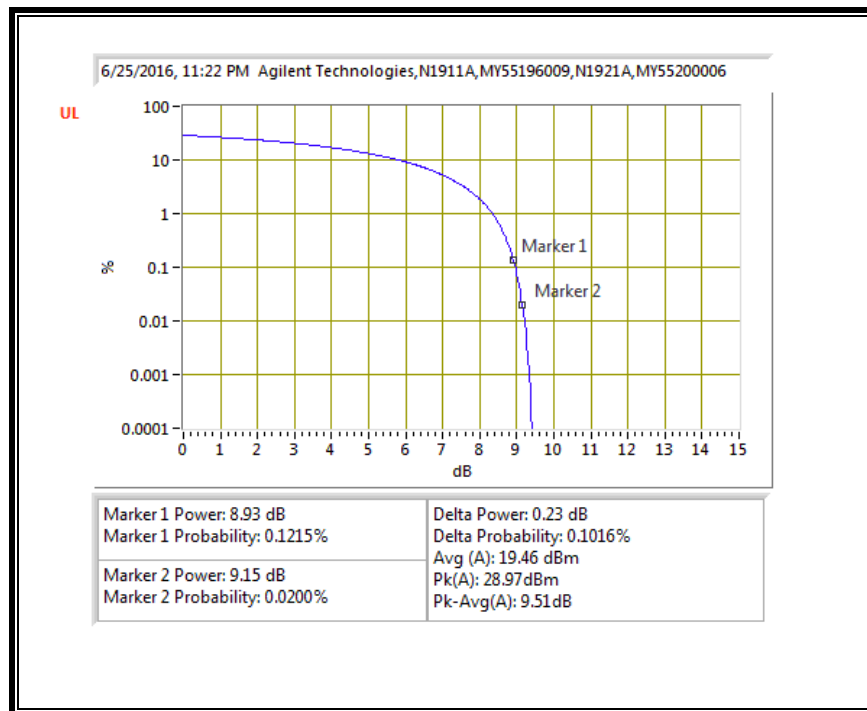
16QAM, (10.0 MHz + 20.0 MHz BAND WIDTH)



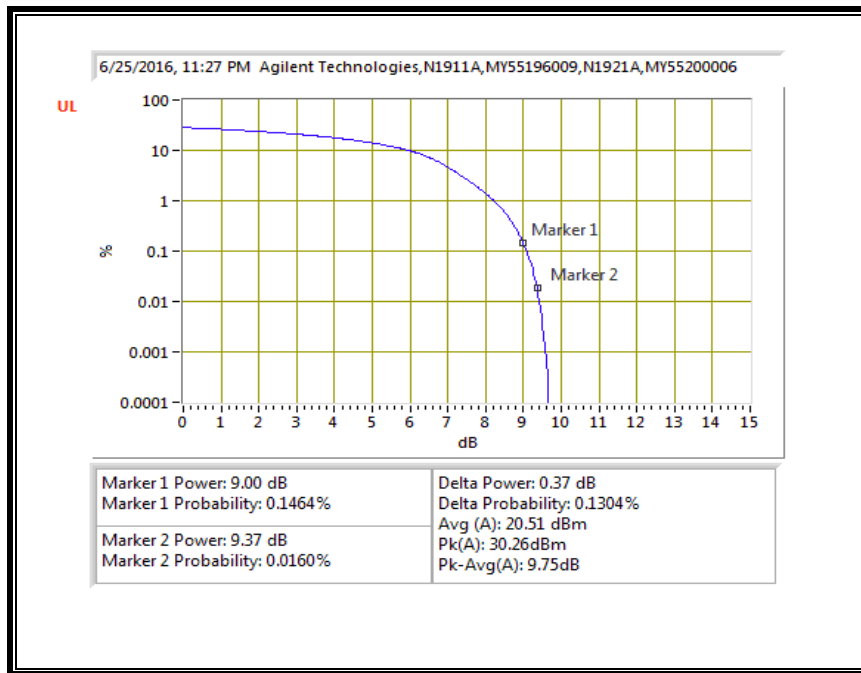
QPSK, (20.0 MHz + 10.0 MHz BAND WIDTH)



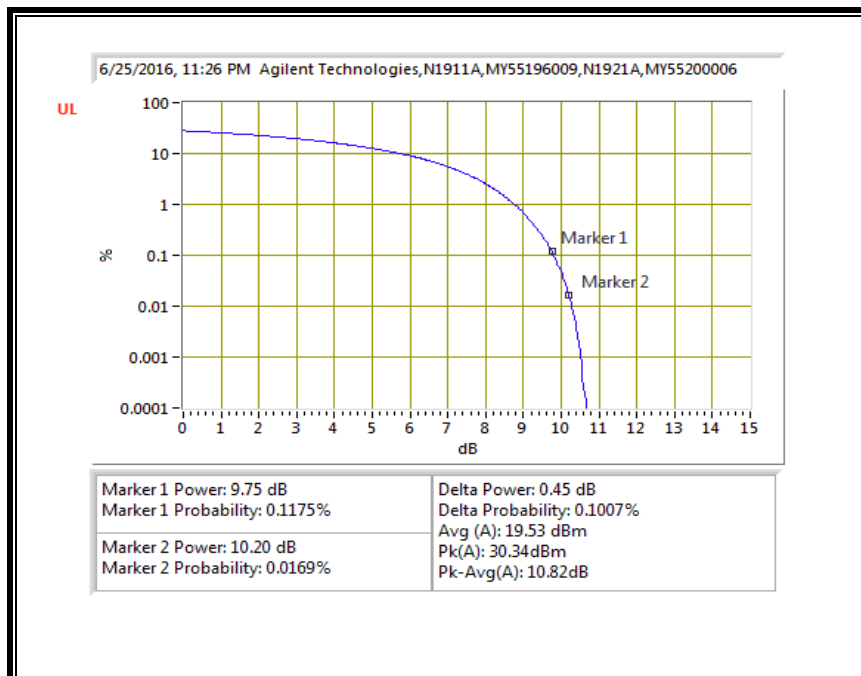
16QAM, (20.0 MHz + 10.0 MHz BAND WIDTH)



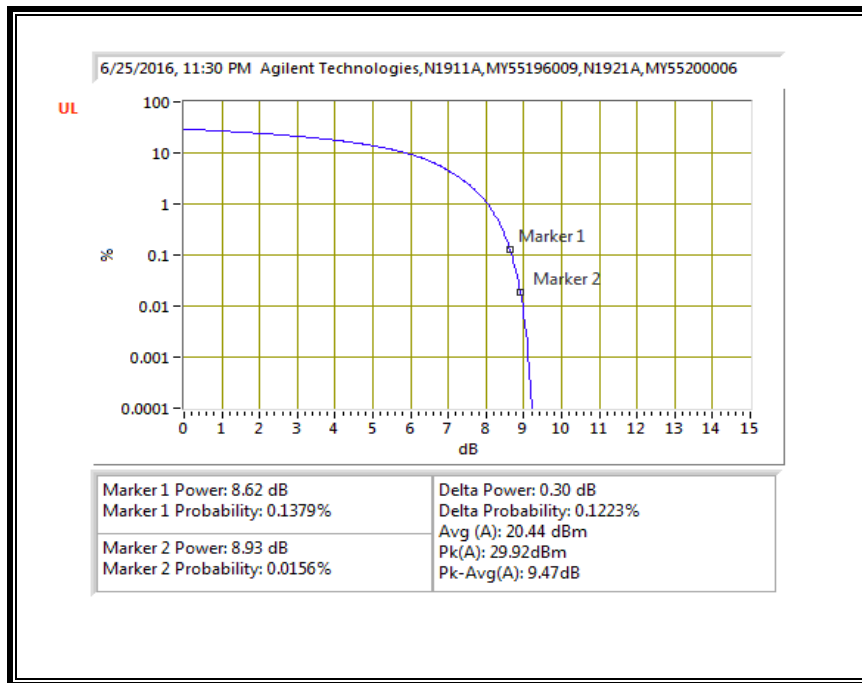
QPSK, (15.0 MHz + 15.0 MHz BAND WIDTH)



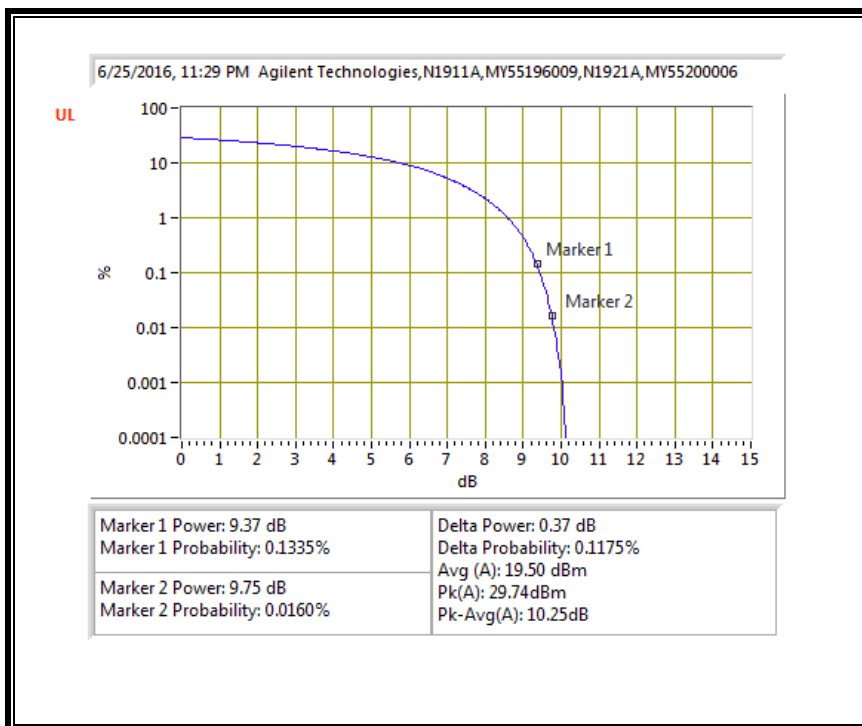
16QAM, (15.0 MHz + 15.0 MHz BAND WIDTH)



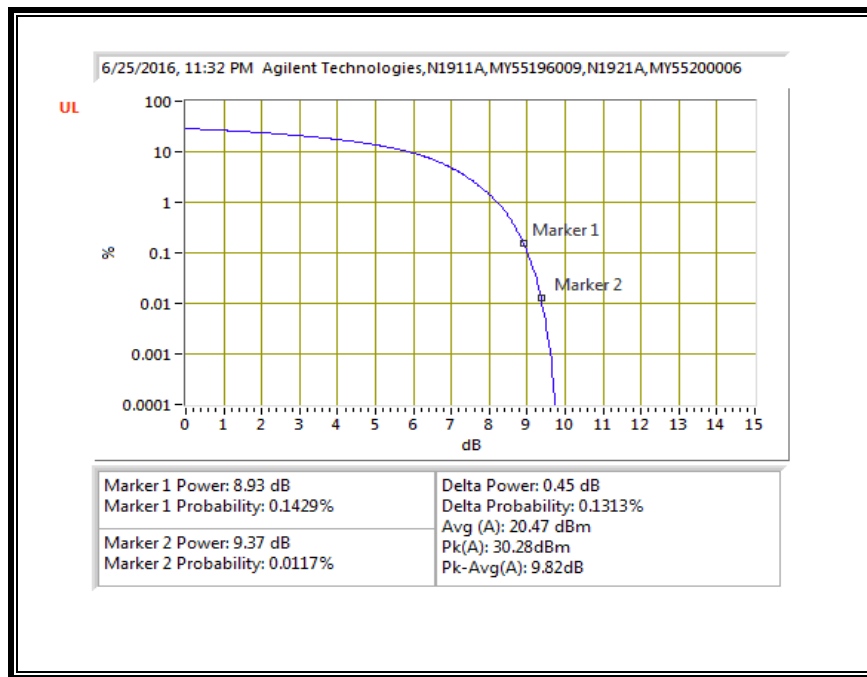
QPSK, (15.0 MHz + 20.0 MHz BAND WIDTH)



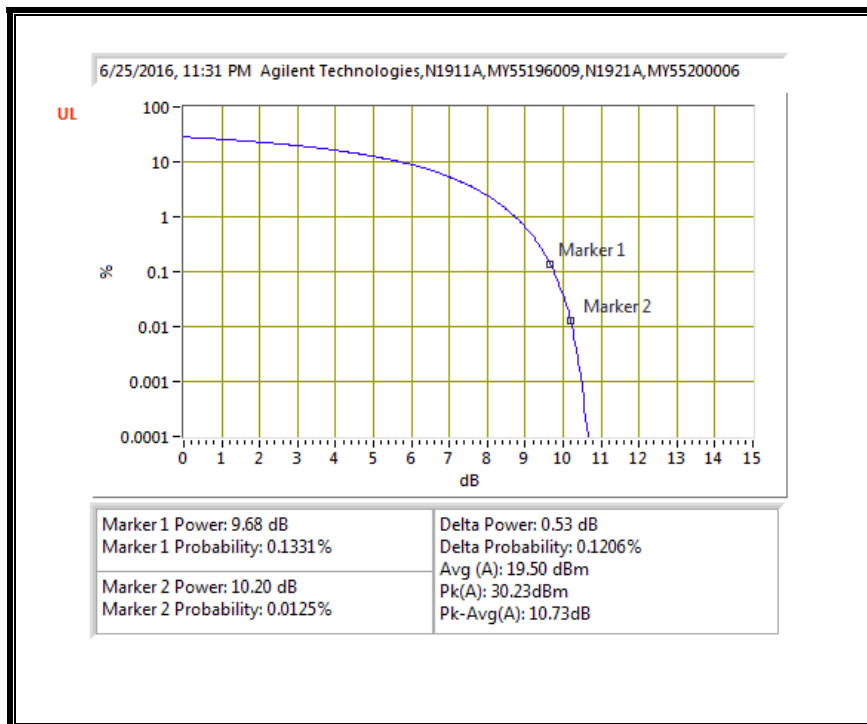
16 QAM, (15.0 MHz + 20.0 MHz BAND WIDTH)



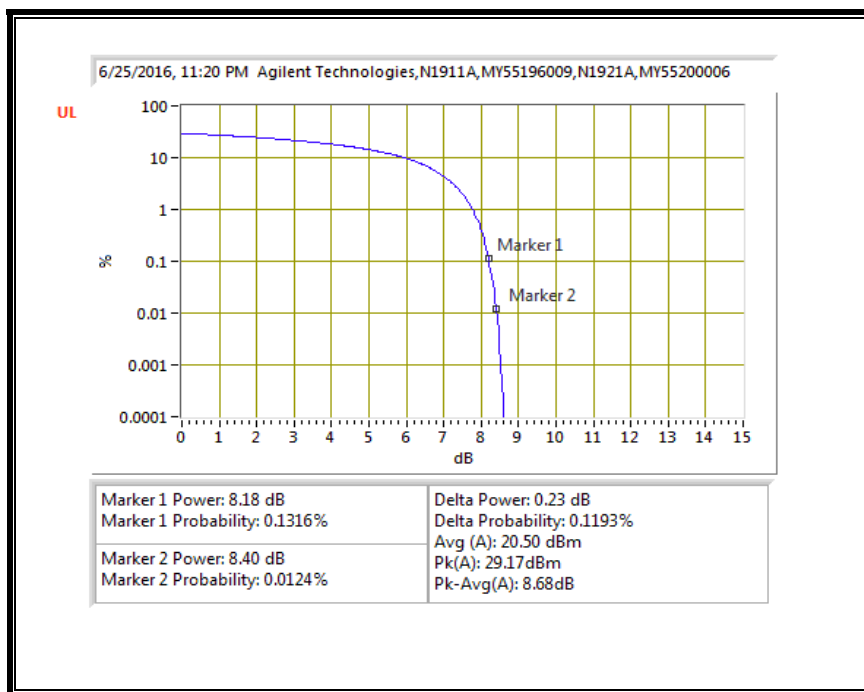
QPSK, (20.0 MHz + 15.0 MHz BAND WIDTH)



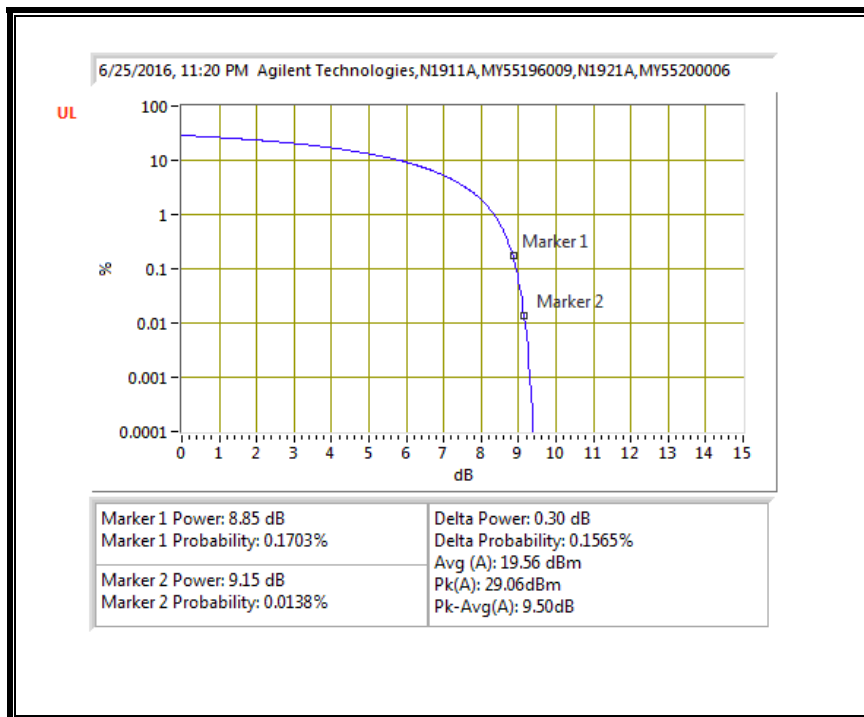
16QAM, (20.0 MHz + 15.0 MHz BAND WIDTH)



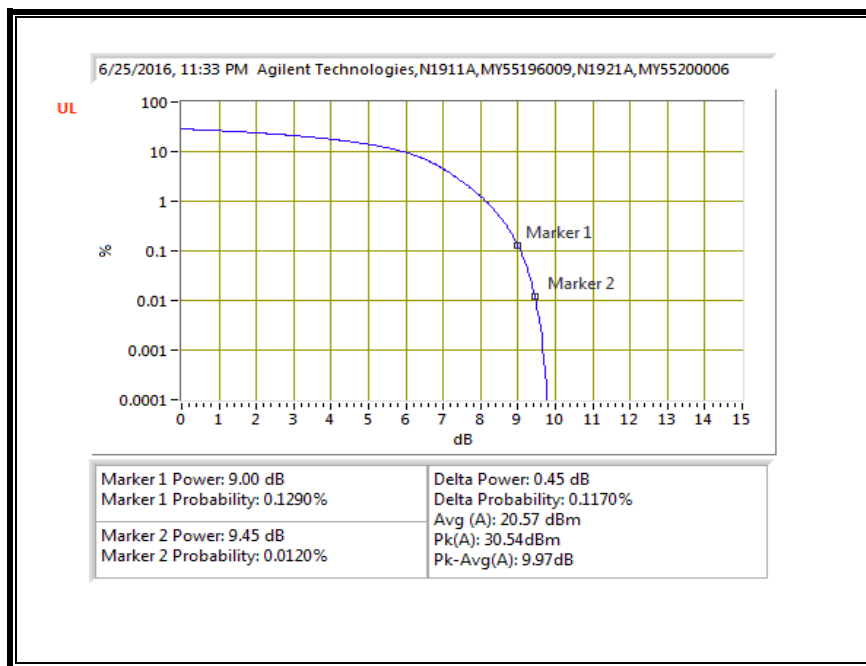
QPSK, (20.0 MHz + 5.0 MHz BAND WIDTH)



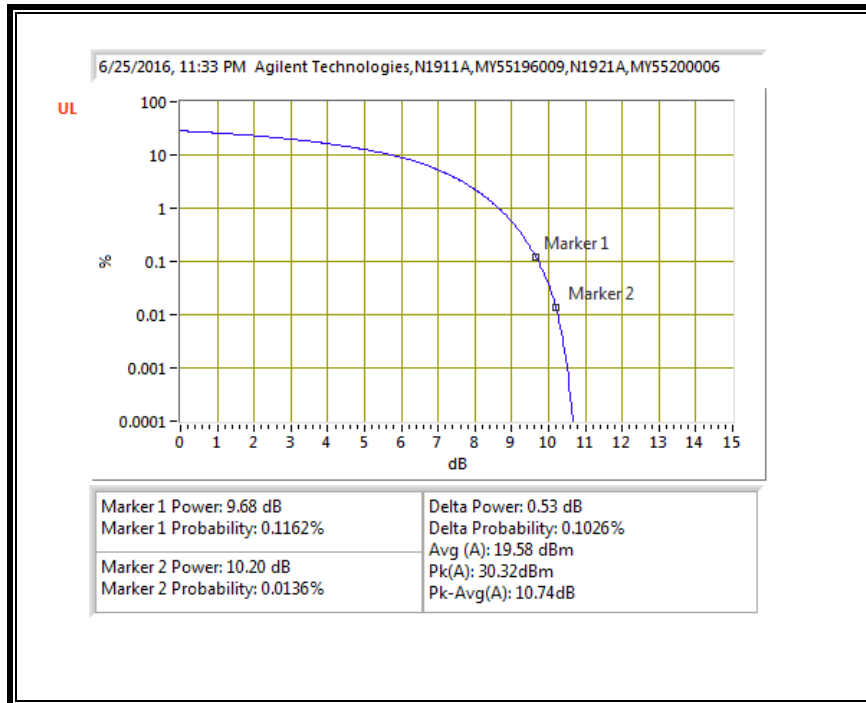
16QAM, (20.0 MHz + 5.0 MHz BAND WIDTH)



QPSK, (20.0 MHz + 20.0 MHz BAND WIDTH)



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



9.4. 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

9.4.1. 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 #: 16U23287
Date: 05/19/16
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

Pre-amplifier

Filter

Limit

3m Chamber G

3m Chamber G

Filter

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										
4.53	-64.2	H	3.0	-15.8	36.1	1.0	-50.9	-25.0	-25.9	
5.80	-64.5	H	3.0	-13.8	36.0	1.0	-48.8	-25.0	-23.8	
8.23	-65.1	H	3.0	-11.3	34.6	1.0	-44.9	-25.0	-19.9	
4.44	-63.8	V	3.0	-15.2	36.1	1.0	-50.3	-25.0	-25.3	
5.15	-63.5	V	3.0	-14.0	36.3	1.0	-49.3	-25.0	-24.3	
8.14	-65.2	V	3.0	-11.5	34.7	1.0	-45.2	-25.0	-20.2	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.62	-63.9	H	3.0	-15.3	36.2	1.0	-50.4	-25.0	-25.4	
6.21	-64.0	H	3.0	-12.6	35.8	1.0	-47.5	-25.0	-22.5	
8.14	-65.1	H	3.0	-11.4	34.7	1.0	-45.0	-25.0	-20.0	
4.63	-63.5	V	3.0	-14.7	36.2	1.0	-49.9	-25.0	-24.9	
5.19	-64.6	V	3.0	-15.1	36.3	1.0	-50.4	-25.0	-25.4	
9.04	-65.2	V	3.0	-10.7	34.0	1.0	-43.8	-25.0	-18.8	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.78	-64.3	H	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
6.83	-64.6	H	3.0	-12.2	35.6	1.0	-46.7	-25.0	-21.7	
8.17	-65.3	H	3.0	-11.5	34.7	1.0	-45.2	-25.0	-20.2	
5.29	-63.2	V	3.0	-13.6	36.2	1.0	-48.8	-25.0	-23.8	
7.18	-64.2	V	3.0	-11.4	35.4	1.0	-45.8	-25.0	-20.8	
9.20	-65.4	V	3.0	-10.8	33.9	1.0	-43.7	-25.0	-18.7	

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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 #: 16U23287
Date: 05/19/16
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										
4.53	-64.7	H	3.0	-16.3	36.1	1.0	-51.4	-25.0	-26.4	
5.83	-64.8	H	3.0	-14.1	36.0	1.0	-49.1	-25.0	-24.1	
8.23	-65.1	H	3.0	-11.3	34.6	1.0	-44.9	-25.0	-19.9	
4.41	-64.1	V	3.0	-15.5	36.1	1.0	-50.6	-25.0	-25.6	
5.19	-63.7	V	3.0	-14.3	36.3	1.0	-49.5	-25.0	-24.5	
8.14	-65.1	V	3.0	-11.4	34.7	1.0	-45.1	-25.0	-20.1	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.65	-64.1	H	3.0	-15.5	36.2	1.0	-50.6	-25.0	-25.6	
6.21	-63.9	H	3.0	-12.5	35.8	1.0	-47.4	-25.0	-22.4	
8.15	-65.6	H	3.0	-11.8	34.7	1.0	-45.5	-25.0	-20.5	
4.63	-63.6	V	3.0	-14.8	36.2	1.0	-50.0	-25.0	-25.0	
5.22	-64.6	V	3.0	-15.0	36.3	1.0	-50.3	-25.0	-25.3	
9.11	-65.4	V	3.0	-10.9	34.0	1.0	-43.9	-25.0	-18.9	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.80	-64.8	H	3.0	-15.9	36.2	1.0	-51.1	-25.0	-26.1	
6.84	-64.4	H	3.0	-12.0	35.6	1.0	-46.5	-25.0	-21.5	
8.15	-65.1	H	3.0	-11.4	34.7	1.0	-45.0	-25.0	-20.0	
5.31	-63.7	V	3.0	-14.0	36.2	1.0	-49.3	-25.0	-24.3	
7.20	-64.6	V	3.0	-11.8	35.4	1.0	-46.2	-25.0	-21.2	
9.57	-65.6	V	3.0	-10.6	33.7	1.0	-43.3	-25.0	-18.3	

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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 #: 16U23287
Date: 05/19/16
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										
4.51	-64.3	H	3.0	-16.2	36.1	1.0	-51.3	-25.0	-26.3	
5.83	-64.6	H	3.0	-14.9	36.3	1.0	-50.1	-25.0	-25.1	
8.17	-65.1	H	3.0	-9.7	33.4	1.0	-42.2	-25.0	-17.2	
4.40	-63.8	V	3.0	-14.2	36.3	1.0	-49.5	-25.0	-24.5	
5.07	-63.5	V	3.0	-9.9	34.8	1.0	-43.6	-25.0	-18.6	
8.01	-65.5	V	3.0	-9.5	32.1	1.0	-40.6	-25.0	-15.6	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.51	-64.3	H	3.0	-13.3	36.0	1.0	-48.3	-25.0	-23.3	
5.85	-63.8	H	3.0	-10.7	35.2	1.0	-44.9	-25.0	-19.9	
8.18	-65.1	H	3.0	-8.8	32.0	1.0	-39.9	-25.0	-14.9	
4.52	-63.6	V	3.0	-15.9	36.1	1.0	-51.0	-25.0	-26.0	
5.10	-64.2	V	3.0	-14.9	36.3	1.0	-50.1	-25.0	-25.1	
8.02	-65.1	V	3.0	-11.6	34.8	1.0	-45.3	-25.0	-20.3	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.86	-64.5	H	3.0	-15.3	36.2	1.0	-50.6	-25.0	-25.6	
6.40	-64.3	H	3.0	-13.6	36.0	1.0	-48.6	-25.0	-23.6	
8.01	-65.2	H	3.0	-9.0	32.0	1.0	-40.0	-25.0	-15.0	
4.77	-64.0	V	3.0	-17.0	36.3	1.0	-52.2	-25.0	-27.2	
6.05	-64.2	V	3.0	-13.0	35.8	1.0	-47.8	-25.0	-22.8	
8.15	-65.3	V	3.0	-11.7	34.7	1.0	-45.3	-25.0	-20.3	

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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 #: 16U23287 Date: 05/19/16 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										
4.55	-64.6	H	3.0	-16.1	36.1	1.0	-51.2	-25.0	-26.2	
5.80	-64.7	H	3.0	-14.0	36.0	1.0	-49.0	-25.0	-24.0	
9.02	-65.3	H	3.0	-10.7	34.1	1.0	-43.8	-25.0	-18.8	
4.48	-64.3	V	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.37	-63.9	V	3.0	-14.1	36.2	1.0	-49.3	-25.0	-24.3	
8.86	-65.4	V	3.0	-11.0	34.2	1.0	-44.2	-25.0	-19.2	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.46	-64.4	H	3.0	-16.1	36.1	1.0	-51.2	-25.0	-26.2	
6.52	-63.8	H	3.0	-11.9	35.7	1.0	-46.6	-25.0	-21.6	
7.46	-65.4	H	3.0	-12.2	35.2	1.0	-46.4	-25.0	-21.4	
4.63	-63.8	V	3.0	-15.0	36.2	1.0	-50.2	-25.0	-25.2	
6.50	-64.5	V	3.0	-12.7	35.7	1.0	-47.5	-25.0	-22.5	
9.00	-65.4	V	3.0	-10.9	34.1	1.0	-44.0	-25.0	-19.0	
High Channel (2540.2MHz)+2560Mhz 1-99 1-0										
4.46	-64.4	H	3.0	-16.1	36.1	1.0	-51.2	-25.0	-26.2	
6.43	-64.6	H	3.0	-12.9	35.7	1.0	-47.6	-25.0	-22.6	
7.45	-64.7	H	3.0	-11.6	35.2	1.0	-45.8	-25.0	-20.8	
4.66	-64.6	V	3.0	-15.7	36.2	1.0	-50.9	-25.0	-25.9	
6.55	-64.0	V	3.0	-12.1	35.7	1.0	-46.8	-25.0	-21.8	
8.45	-65.4	V	3.0	-11.4	34.5	1.0	-44.9	-25.0	-19.9	
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9.4.2. 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 #: 16U23287
Date: 05/20/16
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										
4.82	-63.4	H	3.0	-14.4	36.2	1.0	-49.6	-25.0	-24.6	
5.94	-64.2	H	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
8.19	-64.5	H	3.0	-10.7	34.6	1.0	-44.4	-25.0	-19.4	
4.78	-64.2	V	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.94	-64.0	V	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
8.20	-64.7	V	3.0	-11.0	34.6	1.0	-44.6	-25.0	-19.6	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.80	-63.9	H	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
5.93	-64.6	H	3.0	-13.6	36.0	1.0	-48.6	-25.0	-23.6	
7.95	-64.8	H	3.0	-11.3	34.8	1.0	-45.1	-25.0	-20.1	
4.53	-64.3	V	3.0	-15.6	36.1	1.0	-50.7	-25.0	-25.7	
6.02	-64.5	V	3.0	-13.6	35.9	1.0	-48.5	-25.0	-23.5	
7.73	-64.6	V	3.0	-11.3	35.0	1.0	-45.3	-25.0	-20.3	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.84	-64.0	H	3.0	-15.0	36.2	1.0	-50.2	-25.0	-25.2	
6.54	-64.8	H	3.0	-12.9	35.7	1.0	-47.6	-25.0	-22.6	
8.15	-64.5	H	3.0	-10.7	34.7	1.0	-44.4	-25.0	-19.4	
4.81	-64.4	V	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
6.06	-64.4	V	3.0	-13.4	35.9	1.0	-48.3	-25.0	-23.3	
8.80	-64.5	V	3.0	-10.3	34.2	1.0	-43.5	-25.0	-18.5	

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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 #: 16U23287
Date: 05/19/16
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										
4.82	-63.9	H	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
5.94	-64.5	H	3.0	-13.6	36.0	1.0	-48.5	-25.0	-23.5	
8.19	-64.5	H	3.0	-10.7	34.6	1.0	-44.3	-25.0	-19.3	
4.78	-64.2	V	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.94	-64.3	V	3.0	-13.6	36.0	1.0	-48.5	-25.0	-23.5	
8.20	-64.8	V	3.0	-11.1	34.6	1.0	-44.7	-25.0	-19.7	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.80	-64.1	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.93	-64.8	H	3.0	-13.9	36.0	1.0	-48.9	-25.0	-23.9	
7.95	-64.8	H	3.0	-11.2	34.8	1.0	-45.0	-25.0	-20.0	
4.53	-64.5	V	3.0	-15.8	36.1	1.0	-50.9	-25.0	-25.9	
6.02	-64.6	V	3.0	-13.7	35.9	1.0	-48.6	-25.0	-23.6	
7.73	-64.5	V	3.0	-11.2	35.0	1.0	-45.2	-25.0	-20.2	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.84	-63.9	H	3.0	-14.8	36.2	1.0	-50.0	-25.0	-25.0	
6.54	-64.8	H	3.0	-12.9	35.7	1.0	-47.6	-25.0	-22.6	
8.15	-64.6	H	3.0	-10.8	34.7	1.0	-44.5	-25.0	-19.5	
4.81	-64.5	V	3.0	-15.5	36.2	1.0	-50.6	-25.0	-25.6	
6.06	-64.2	V	3.0	-13.2	35.9	1.0	-48.1	-25.0	-23.1	
8.80	-64.4	V	3.0	-10.1	34.2	1.0	-43.3	-25.0	-18.3	

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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 #: 16U23287
Date: 05/19/16
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										
4.72	-64.8	H	3.0	-16.0	36.2	1.0	-51.2	-25.0	-26.2	
5.90	-64.7	H	3.0	-13.8	36.0	1.0	-48.7	-25.0	-23.7	
7.45	-64.4	H	3.0	-11.3	35.2	1.0	-45.5	-25.0	-20.5	
4.73	-64.4	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
5.84	-64.6	V	3.0	-13.9	36.0	1.0	-49.0	-25.0	-24.0	
9.23	-65.0	V	3.0	-10.3	33.9	1.0	-43.2	-25.0	-18.2	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
4.85	-64.4	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
6.00	-64.6	H	3.0	-13.6	35.9	1.0	-48.5	-25.0	-23.5	
8.24	-64.4	H	3.0	-10.5	34.6	1.0	-44.1	-25.0	-19.1	
5.36	-64.6	V	3.0	-14.8	36.2	1.0	-50.0	-25.0	-25.0	
6.57	-64.8	V	3.0	-13.0	35.7	1.0	-47.6	-25.0	-22.6	
8.53	-65.7	V	3.0	-11.6	34.4	1.0	-45.0	-25.0	-20.0	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.79	-64.5	H	3.0	-15.6	36.2	1.0	-50.7	-25.0	-25.7	
6.05	-64.2	H	3.0	-13.1	35.9	1.0	-48.0	-25.0	-23.0	
8.35	-65.0	H	3.0	-11.0	34.5	1.0	-44.5	-25.0	-19.5	
4.82	-64.4	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.96	-64.6	V	3.0	-13.7	36.0	1.0	-48.7	-25.0	-23.7	
8.03	-65.2	V	3.0	-11.7	34.8	1.0	-45.4	-25.0	-20.4	

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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 #: 16U23287 Date: 05/19/16 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		Pre-amplifier		Filter		Limit					
3m Chamber G		3m Chamber G		Filter		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											
4.73	-64.6	H	3.0	-15.8	36.2	1.0	-50.9	-25.0	-25.9		
5.88	-64.8	H	3.0	-14.0	36.0	1.0	-49.0	-25.0	-24.0		
7.43	-64.9	H	3.0	-11.8	35.2	1.0	-46.0	-25.0	-21.0		
4.76	-64.4	V	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6		
5.83	-64.7	V	3.0	-14.1	36.0	1.0	-49.1	-25.0	-24.1		
9.25	-65.2	V	3.0	-10.5	33.9	1.0	-43.4	-25.0	-18.4		
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0											
4.86	-64.5	H	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7		
6.12	-64.6	H	3.0	-13.4	35.9	1.0	-48.3	-25.0	-23.3		
8.25	-64.4	H	3.0	-10.6	34.6	1.0	-44.2	-25.0	-19.2		
5.39	-64.8	V	3.0	-15.0	36.2	1.0	-50.2	-25.0	-25.2		
6.55	-64.9	V	3.0	-13.0	35.7	1.0	-47.7	-25.0	-22.7		
8.59	-65.7	V	3.0	-11.6	34.4	1.0	-45.0	-25.0	-20.0		
High Channel (2660.2MHz) + 2680MHz 1-99 1-0											
4.77	-64.3	H	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6		
6.11	-64.2	H	3.0	-13.0	35.9	1.0	-47.9	-25.0	-22.9		
8.36	-64.8	H	3.0	-10.9	34.5	1.0	-44.4	-25.0	-19.4		
4.84	-64.9	V	3.0	-15.8	36.2	1.0	-51.0	-25.0	-26.0		
5.98	-64.6	V	3.0	-13.7	35.9	1.0	-48.7	-25.0	-23.7		
8.05	-64.8	V	3.0	-11.2	34.8	1.0	-44.9	-25.0	-19.9		
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9.5. FIELD STRENGTH OF SPURIOUS RADIATION, UAT

9.5.1. 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 #: 16U23287
Date: 05/20/16
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										
4.18	-64.2	H	3.0	-16.5	36.0	1.0	-51.5	-25.0	-26.5	
5.38	-63.8	H	3.0	-13.8	36.2	1.0	-49.0	-25.0	-24.0	
7.13	-64.4	H	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
4.79	-63.8	V	3.0	-14.8	36.2	1.0	-50.0	-25.0	-25.0	
5.91	-64.0	V	3.0	-13.3	36.0	1.0	-48.2	-25.0	-23.2	
7.10	-64.4	V	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.83	-63.7	H	3.0	-14.7	36.2	1.0	-49.9	-25.0	-24.9	
5.94	-64.2	H	3.0	-13.2	36.0	1.0	-48.2	-25.0	-23.2	
7.10	-64.0	H	3.0	-11.2	35.4	1.0	-45.6	-25.0	-20.6	
4.21	-64.2	V	3.0	-15.9	36.1	1.0	-50.9	-25.0	-25.9	
5.33	-64.5	V	3.0	-14.8	36.2	1.0	-50.0	-25.0	-25.0	
7.11	-64.7	V	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.80	-63.7	H	3.0	-14.7	36.2	1.0	-49.9	-25.0	-24.9	
5.42	-64.1	H	3.0	-14.0	36.2	1.0	-49.2	-25.0	-24.2	
7.16	-63.8	H	3.0	-11.0	35.4	1.0	-45.3	-25.0	-20.3	
4.81	-63.9	V	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
5.98	-64.2	V	3.0	-13.3	35.9	1.0	-48.3	-25.0	-23.3	
7.14	-64.6	V	3.0	-11.8	35.4	1.0	-46.2	-25.0	-21.2	

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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 #: 16U23287 Date: 05/20/16 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		Pre-amplifier		Filter		Limit				
3m Chamber G		3m Chamber G		Filter		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										
4.18	-64.5	H	3.0	-16.8	36.0	1.0	-51.8	-25.0	-26.8	
5.38	-64.2	H	3.0	-14.2	36.2	1.0	-49.4	-25.0	-24.4	
7.13	-64.8	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
4.79	-64.3	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.91	-64.4	V	3.0	-13.7	36.0	1.0	-48.6	-25.0	-23.6	
7.10	-65.0	V	3.0	-12.3	35.4	1.0	-46.7	-25.0	-21.7	
Mid Channel (2530.1MHz)+2544.5MHz 1-99 1-0										
4.83	-64.2	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.94	-64.5	H	3.0	-13.5	36.0	1.0	-48.5	-25.0	-23.5	
7.10	-64.5	H	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
4.21	-64.6	V	3.0	-16.3	36.1	1.0	-51.3	-25.0	-26.3	
5.33	-64.9	V	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
7.11	-65.1	V	3.0	-12.4	35.4	1.0	-46.8	-25.0	-21.8	
High Channel (2550.1MHz)+2564.5MHz 1-99 1-0										
4.80	-64.2	H	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.42	-64.5	H	3.0	-14.4	36.2	1.0	-49.6	-25.0	-24.6	
7.16	-64.6	H	3.0	-11.8	35.4	1.0	-46.1	-25.0	-21.1	
4.81	-64.4	V	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
5.98	-64.7	V	3.0	-13.8	35.9	1.0	-48.8	-25.0	-23.8	
7.14	-65.0	V	3.0	-12.2	35.4	1.0	-46.6	-25.0	-21.6	
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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 #: 16U23287
Date: 05/20/16
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										
4.54	-64.6	H	3.0	-16.5	36.1	1.0	-51.6	-25.0	-26.6	
5.86	-64.6	H	3.0	-14.9	36.3	1.0	-50.2	-25.0	-25.2	
8.20	-65.2	H	3.0	-9.8	33.4	1.0	-42.3	-25.0	-17.3	
4.48	-63.9	V	3.0	-14.3	36.3	1.0	-49.6	-25.0	-24.6	
5.13	-63.5	V	3.0	-9.9	34.8	1.0	-43.7	-25.0	-18.7	
8.23	-65.7	V	3.0	-9.7	32.1	1.0	-40.7	-25.0	-15.7	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.59	-64.1	H	3.0	-13.1	36.0	1.0	-48.1	-25.0	-23.1	
5.81	-63.6	H	3.0	-10.5	35.2	1.0	-44.7	-25.0	-19.7	
8.23	-65.0	H	3.0	-8.7	32.0	1.0	-39.8	-25.0	-14.8	
4.81	-63.3	V	3.0	-15.6	36.1	1.0	-50.7	-25.0	-25.7	
5.85	-64.2	V	3.0	-13.5	36.0	1.0	-48.5	-25.0	-23.5	
8.65	-65.1	V	3.0	-11.0	34.3	1.0	-44.3	-25.0	-19.3	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.65	-64.0	H	3.0	-14.9	36.2	1.0	-50.1	-25.0	-25.1	
6.49	-64.2	H	3.0	-13.5	36.0	1.0	-48.6	-25.0	-23.6	
8.33	-65.2	H	3.0	-8.9	32.0	1.0	-40.0	-25.0	-15.0	
4.84	-63.9	V	3.0	-16.8	36.3	1.0	-52.1	-25.0	-27.1	
6.56	-64.1	V	3.0	-12.9	35.8	1.0	-47.7	-25.0	-22.7	
8.88	-65.3	V	3.0	-11.0	34.2	1.0	-44.1	-25.0	-19.1	

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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 #: 16U23287
Date: 05/20/16
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										
4.56	-64.8	H	3.0	-16.4	36.1	1.0	-51.5	-25.0	-26.5	
5.86	-64.9	H	3.0	-14.0	36.0	1.0	-49.0	-25.0	-24.0	
8.21	-65.6	H	3.0	-11.7	34.6	1.0	-45.4	-25.0	-20.4	
4.48	-63.7	V	3.0	-15.1	36.1	1.0	-50.2	-25.0	-25.2	
5.13	-63.7	V	3.0	-14.2	36.3	1.0	-49.5	-25.0	-24.5	
8.25	-65.7	V	3.0	-11.9	34.6	1.0	-45.5	-25.0	-20.5	
Mid Channel (2525.1MHz)+2544.9MHz 1-99 1-0										
4.60	-64.3	H	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.81	-63.7	H	3.0	-12.9	36.0	1.0	-47.9	-25.0	-22.9	
8.23	-65.3	H	3.0	-11.5	34.6	1.0	-45.1	-25.0	-20.1	
4.81	-63.4	V	3.0	-14.3	36.2	1.0	-49.5	-25.0	-24.5	
5.86	-64.3	V	3.0	-13.6	36.0	1.0	-48.6	-25.0	-23.6	
8.65	-65.2	V	3.0	-11.1	34.3	1.0	-44.4	-25.0	-19.4	
High Channel (2540.2MHz)+2560MHz 1-99 1-0										
4.65	-64.2	H	3.0	-15.6	36.2	1.0	-50.7	-25.0	-25.7	
6.49	-64.6	H	3.0	-12.7	35.7	1.0	-47.4	-25.0	-22.4	
8.34	-65.5	H	3.0	-11.6	34.5	1.0	-45.1	-25.0	-20.1	
4.84	-63.4	V	3.0	-14.3	36.2	1.0	-49.5	-25.0	-24.5	
6.56	-64.2	V	3.0	-12.3	35.7	1.0	-47.0	-25.0	-22.0	
8.88	-65.4	V	3.0	-11.0	34.2	1.0	-44.2	-25.0	-19.2	

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9.5.2. 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 #: 16U23287
Date: 05/20/16
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										
4.67	-64.3	H	3.0	-15.6	36.2	1.0	-50.7	-25.0	-25.7	
5.79	-64.0	H	3.0	-13.3	36.0	1.0	-48.4	-25.0	-23.4	
8.37	-65.1	H	3.0	-11.1	34.5	1.0	-44.6	-25.0	-19.6	
4.66	-64.3	V	3.0	-15.5	36.2	1.0	-50.6	-25.0	-25.6	
6.37	-63.9	V	3.0	-12.4	35.8	1.0	-47.1	-25.0	-22.1	
8.03	-65.1	V	3.0	-11.5	34.8	1.0	-45.3	-25.0	-20.3	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.60	-64.2	H	3.0	-15.7	36.1	1.0	-50.8	-25.0	-25.8	
5.73	-64.1	H	3.0	-13.5	36.1	1.0	-48.5	-25.0	-23.5	
8.34	-65.7	H	3.0	-11.8	34.5	1.0	-45.3	-25.0	-20.3	
4.84	-64.0	V	3.0	-15.0	36.2	1.0	-50.2	-25.0	-25.2	
6.69	-64.6	V	3.0	-12.5	35.6	1.0	-47.1	-25.0	-22.1	
8.15	-64.8	V	3.0	-11.2	34.7	1.0	-44.8	-25.0	-19.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.64	-64.8	H	3.0	-16.2	36.2	1.0	-51.3	-25.0	-26.3	
6.00	-64.8	H	3.0	-13.7	35.9	1.0	-48.6	-25.0	-23.6	
9.16	-65.4	H	3.0	-10.7	34.0	1.0	-43.6	-25.0	-18.6	
4.67	-64.4	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
6.09	-63.5	V	3.0	-12.4	35.9	1.0	-47.3	-25.0	-22.3	
7.69	-64.3	V	3.0	-11.1	35.0	1.0	-45.1	-25.0	-20.1	

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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 #: 16U23287
Date: 05/20/16
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										
4.70	-64.3	H	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
5.61	-63.9	H	3.0	-13.5	36.1	1.0	-48.6	-25.0	-23.6	
8.08	-65.5	H	3.0	-11.8	34.7	1.0	-45.5	-25.0	-20.5	
4.46	-64.7	V	3.0	-16.0	36.1	1.0	-51.2	-25.0	-26.2	
6.37	-63.9	V	3.0	-12.4	35.8	1.0	-47.1	-25.0	-22.1	
8.04	-65.7	V	3.0	-12.1	34.8	1.0	-45.8	-25.0	-20.8	
Mid Channel (2590.5MHz)+2602.2MHz 1-99, 1-0										
4.62	-64.4	H	3.0	-15.8	36.2	1.0	-51.0	-25.0	-26.0	
5.73	-64.2	H	3.0	-13.6	36.1	1.0	-48.7	-25.0	-23.7	
8.36	-65.8	H	3.0	-11.9	34.5	1.0	-45.4	-25.0	-20.4	
4.85	-64.6	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
6.69	-64.3	V	3.0	-12.2	35.6	1.0	-46.8	-25.0	-21.8	
8.18	-64.9	V	3.0	-11.2	34.7	1.0	-44.8	-25.0	-19.8	
High Channel (2675MHz)+2686.7MHz 1-99, 1-0										
4.64	-64.9	H	3.0	-16.3	36.2	1.0	-51.5	-25.0	-26.5	
6.10	-64.8	H	3.0	-13.6	35.9	1.0	-48.5	-25.0	-23.5	
9.16	-65.8	H	3.0	-11.1	34.0	1.0	-44.0	-25.0	-19.0	
4.68	-64.4	V	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
6.09	-64.0	V	3.0	-12.9	35.9	1.0	-47.8	-25.0	-22.8	
7.69	-64.6	V	3.0	-11.3	35.0	1.0	-45.3	-25.0	-20.3	

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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 #: 16U23287
Date: 05/20/16
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										
4.82	-64.3	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.93	-64.0	H	3.0	-13.1	36.0	1.0	-48.0	-25.0	-23.0	
7.15	-64.4	H	3.0	-11.6	35.4	1.0	-46.0	-25.0	-21.0	
4.82	-64.2	V	3.0	-15.2	36.2	1.0	-50.4	-25.0	-25.4	
5.97	-64.3	V	3.0	-13.5	35.9	1.0	-48.4	-25.0	-23.4	
7.16	-64.3	V	3.0	-11.5	35.4	1.0	-45.9	-25.0	-20.9	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
4.79	-64.2	H	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.92	-64.4	H	3.0	-13.5	36.0	1.0	-48.4	-25.0	-23.4	
7.16	-64.4	H	3.0	-11.6	35.4	1.0	-45.9	-25.0	-20.9	
4.80	-64.1	V	3.0	-15.1	36.2	1.0	-50.3	-25.0	-25.3	
5.98	-64.3	V	3.0	-13.4	35.9	1.0	-48.4	-25.0	-23.4	
7.17	-64.5	V	3.0	-11.7	35.4	1.0	-46.1	-25.0	-21.1	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.79	-64.3	H	3.0	-15.4	36.2	1.0	-50.6	-25.0	-25.6	
5.38	-64.3	H	3.0	-14.3	36.2	1.0	-49.5	-25.0	-24.5	
7.13	-64.2	H	3.0	-11.4	35.4	1.0	-45.8	-25.0	-20.8	
4.81	-64.3	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.99	-64.0	V	3.0	-13.1	35.9	1.0	-48.1	-25.0	-23.1	
7.14	-64.3	V	3.0	-11.5	35.4	1.0	-45.9	-25.0	-20.9	

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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 #: 16U23287
Date: 05/20/16
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										
4.82	-64.5	H	3.0	-15.5	36.2	1.0	-50.7	-25.0	-25.7	
5.93	-64.4	H	3.0	-13.5	36.0	1.0	-48.4	-25.0	-23.4	
7.15	-64.6	H	3.0	-11.8	35.4	1.0	-46.2	-25.0	-21.2	
4.82	-64.3	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.97	-64.7	V	3.0	-13.9	35.9	1.0	-48.8	-25.0	-23.8	
7.16	-65.0	V	3.0	-12.2	35.4	1.0	-46.6	-25.0	-21.6	
Mid Channel (2583.1MHz) + 2602.9MHz 1-99 1-0										
4.79	-64.5	H	3.0	-15.6	36.2	1.0	-50.8	-25.0	-25.8	
5.92	-65.0	H	3.0	-14.1	36.0	1.0	-49.0	-25.0	-24.0	
7.16	-65.1	H	3.0	-12.3	35.4	1.0	-46.6	-25.0	-21.6	
4.80	-64.3	V	3.0	-15.3	36.2	1.0	-50.5	-25.0	-25.5	
5.98	-64.9	V	3.0	-14.0	35.9	1.0	-49.0	-25.0	-24.0	
7.17	-65.1	V	3.0	-12.3	35.4	1.0	-46.7	-25.0	-21.7	
High Channel (2660.2MHz) + 2680MHz 1-99 1-0										
4.79	-64.6	H	3.0	-15.7	36.2	1.0	-50.9	-25.0	-25.9	
5.38	-64.6	H	3.0	-14.6	36.2	1.0	-49.8	-25.0	-24.8	
7.13	-64.8	H	3.0	-12.0	35.4	1.0	-46.4	-25.0	-21.4	
4.81	-64.7	V	3.0	-15.7	36.2	1.0	-50.9	-25.0	-25.9	
5.99	-64.5	V	3.0	-13.6	35.9	1.0	-48.6	-25.0	-23.6	
7.14	-65.0	V	3.0	-12.2	35.4	1.0	-46.6	-25.0	-21.6	

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