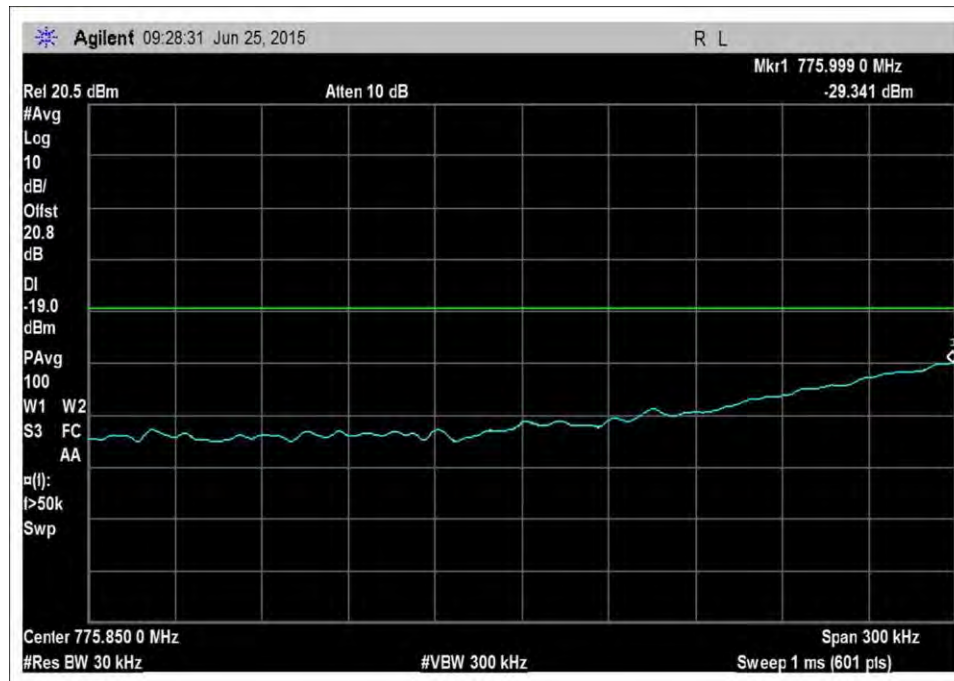
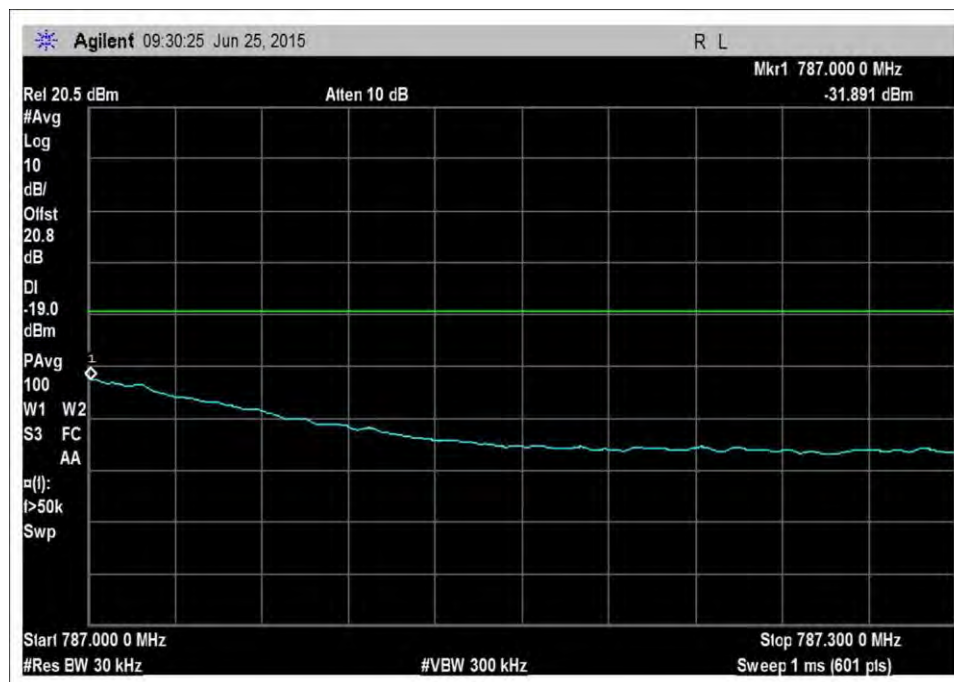
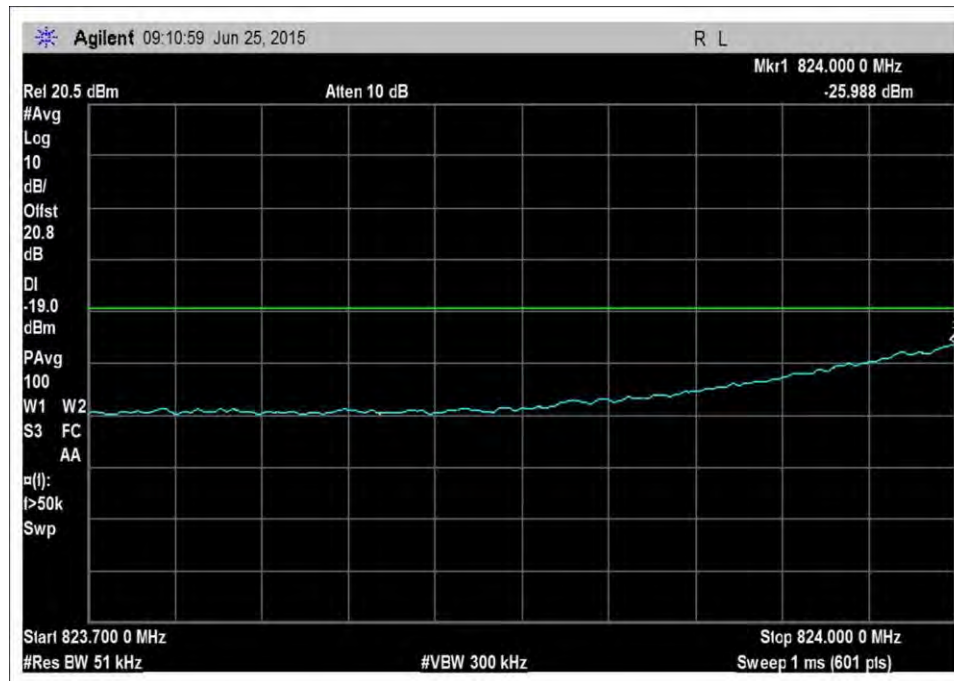




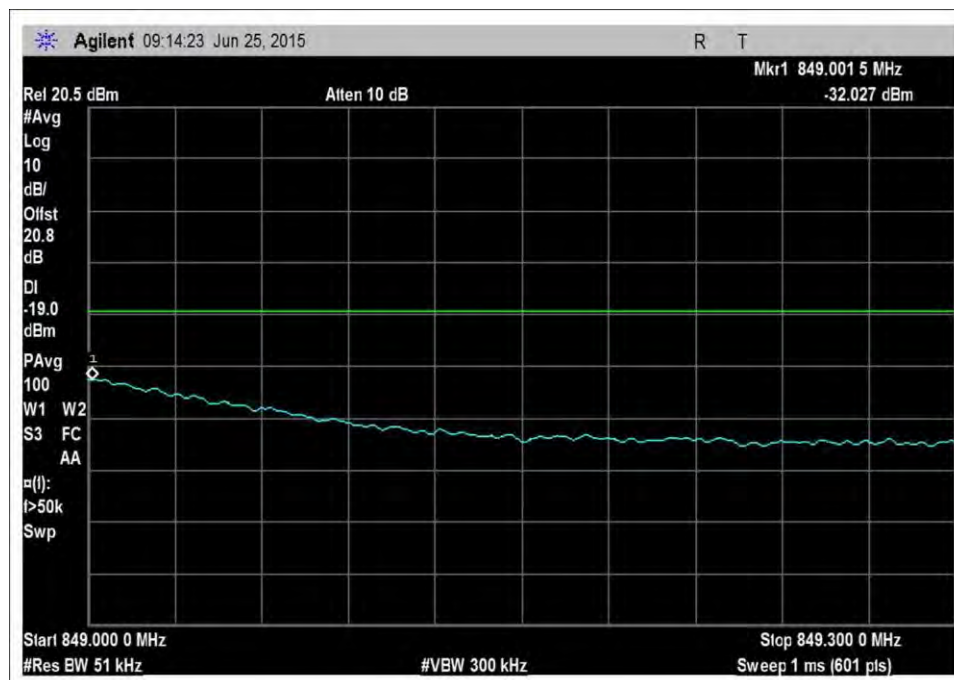
UL_776-787MHz_L_Max



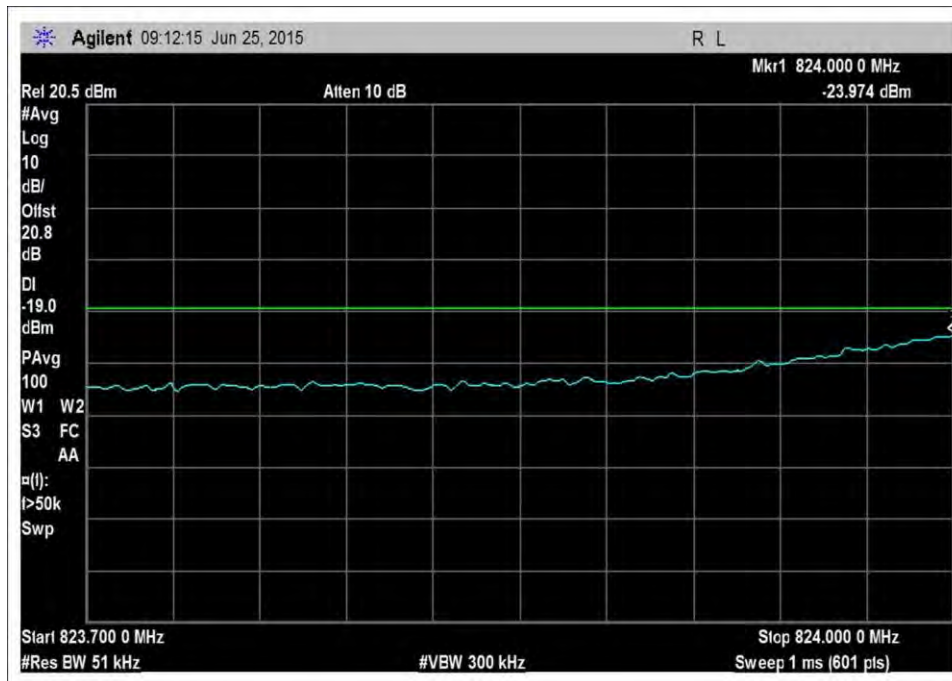
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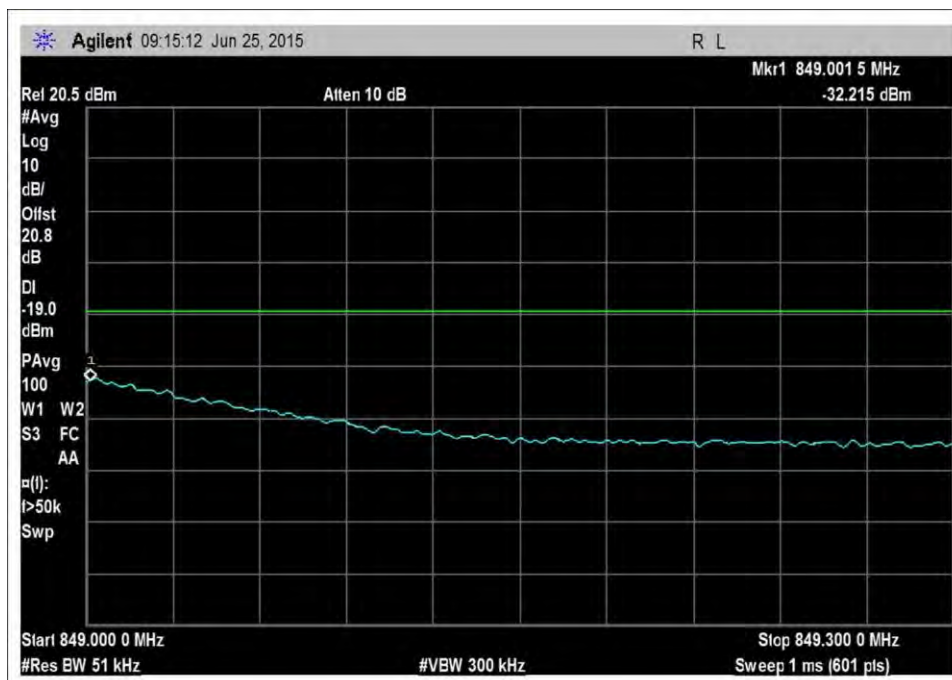
UL_824-849MHz_L_PreAGC



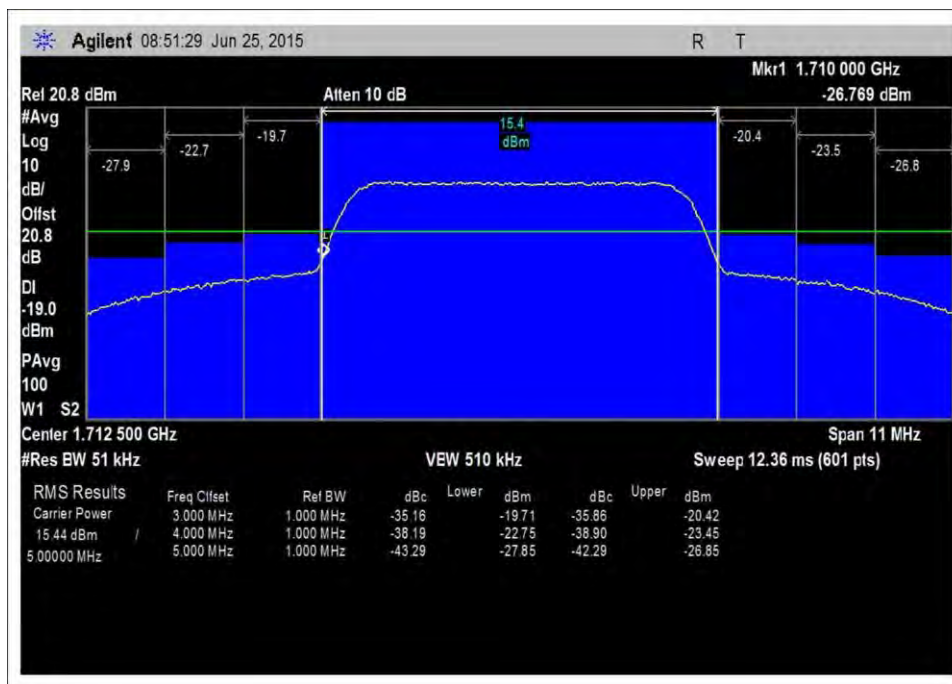
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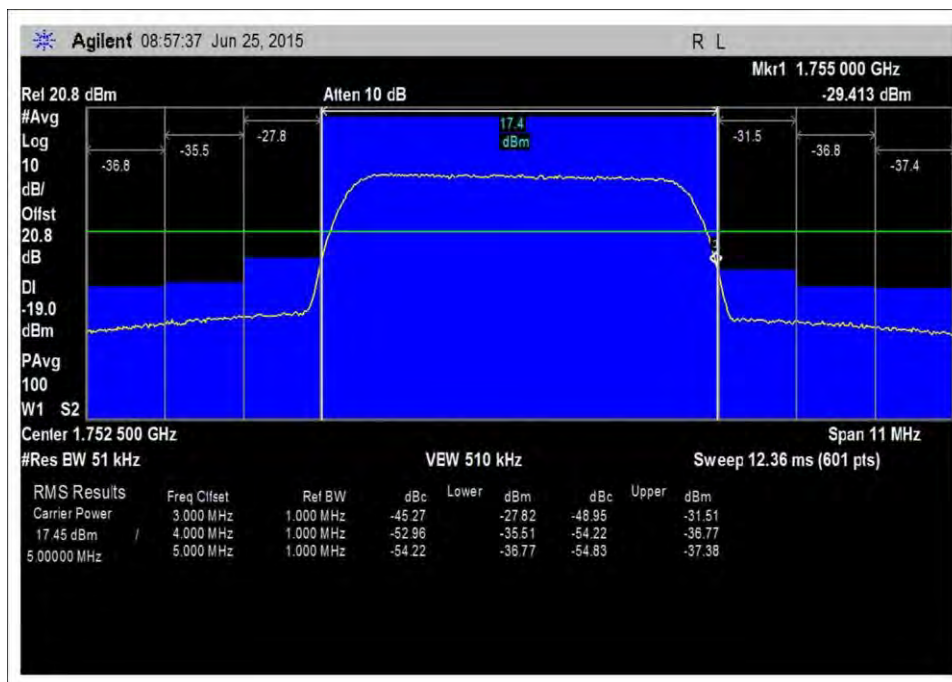
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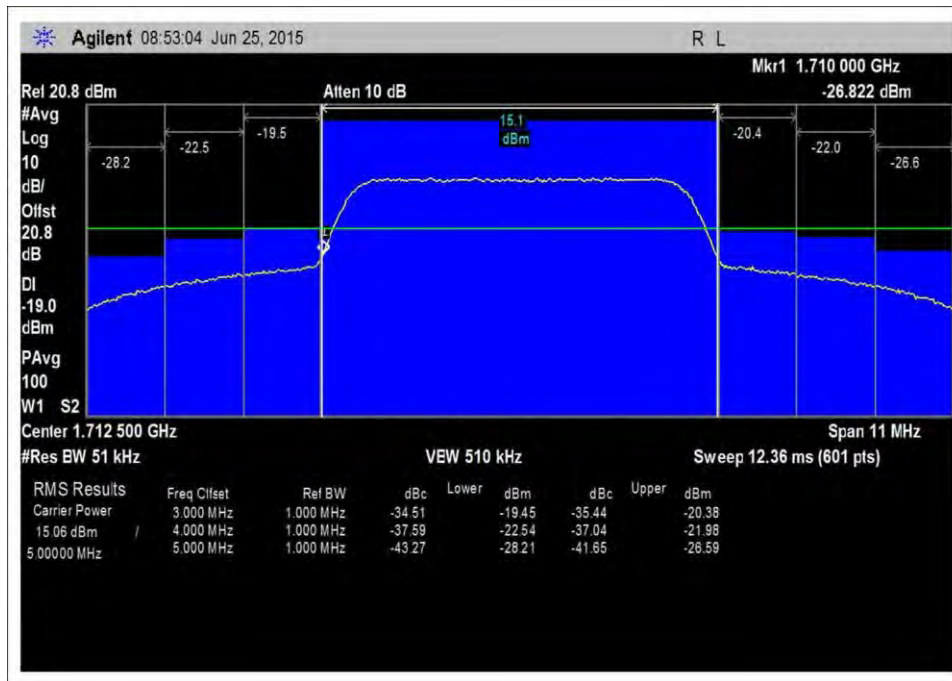
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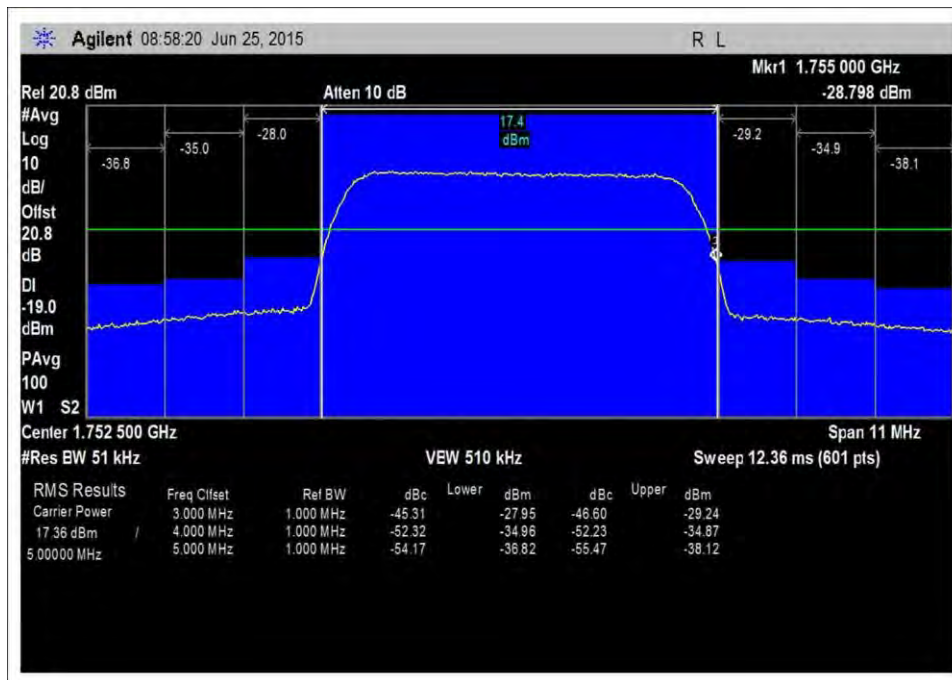
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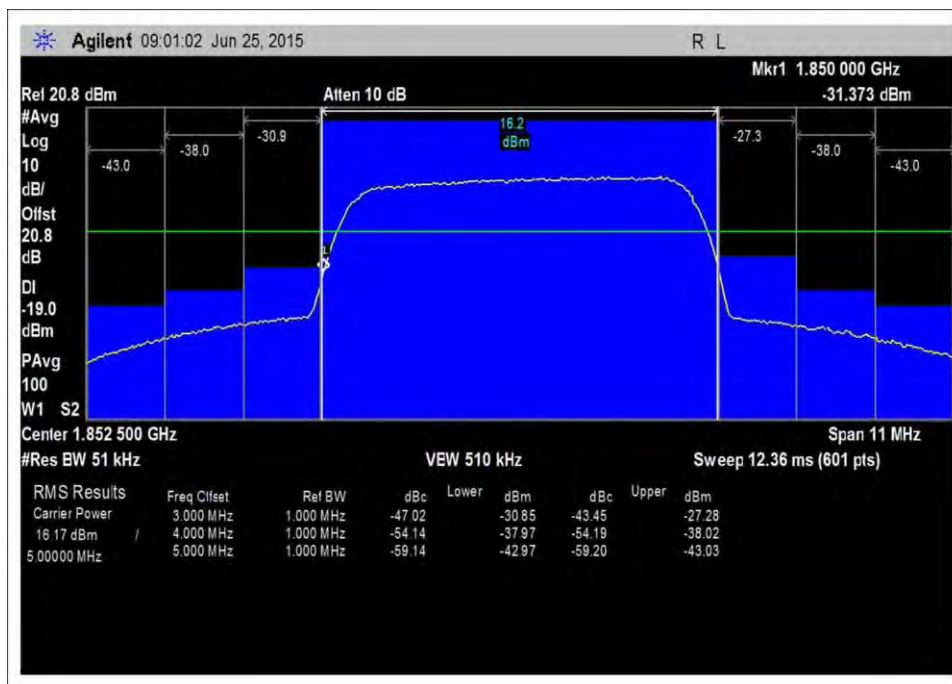
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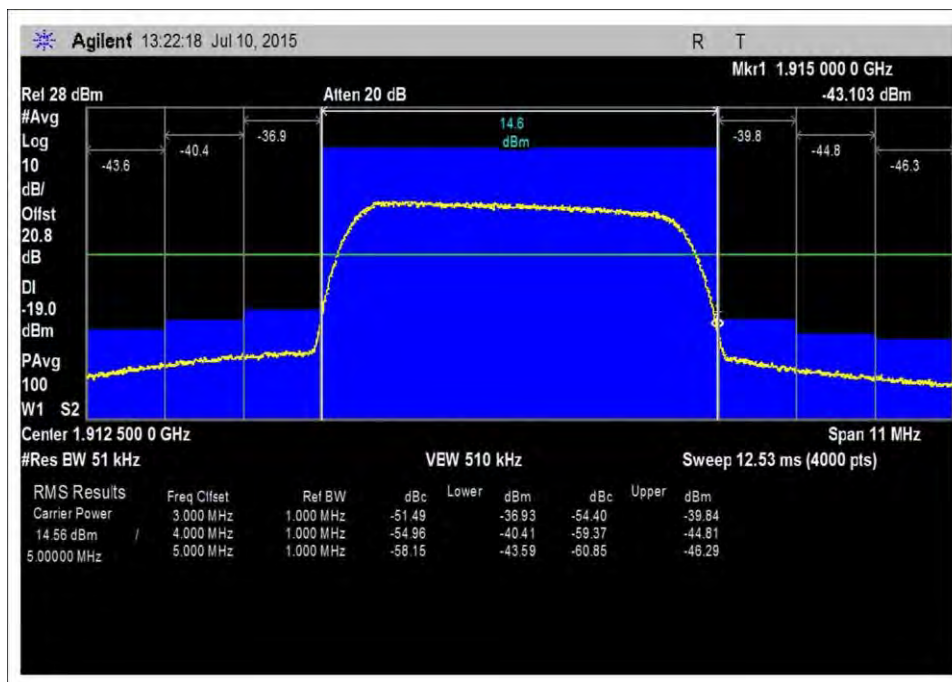
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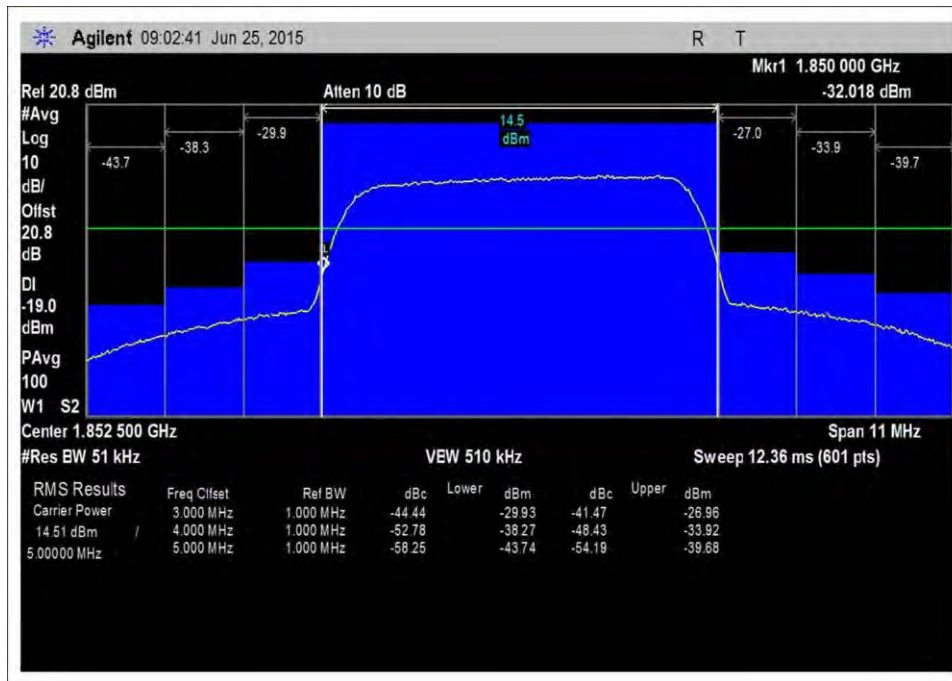
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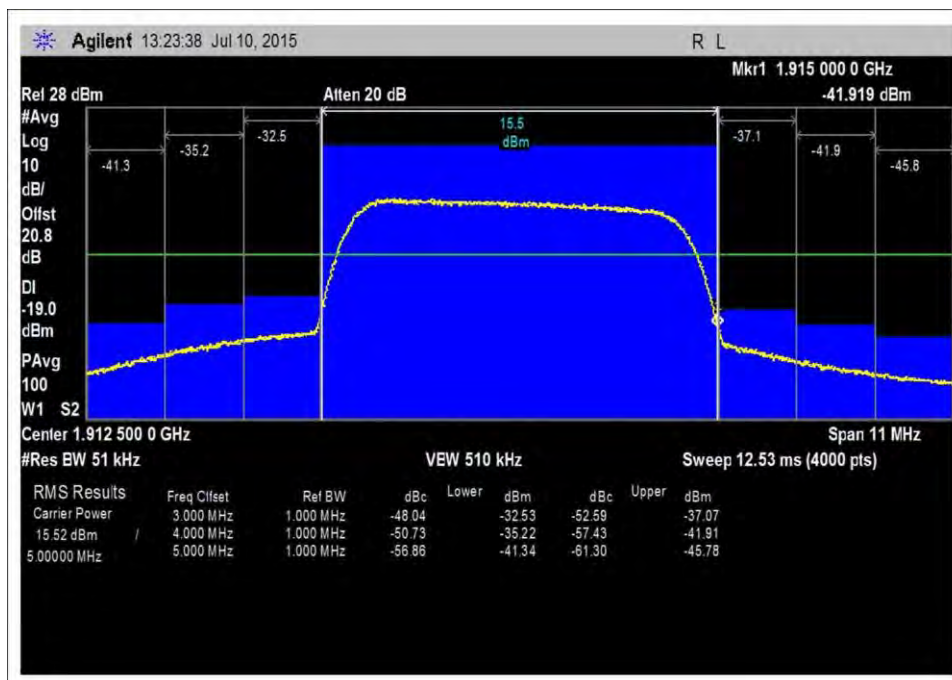
UL_1850-1915MHz_L_PreAGC



UL_1850-1915MHz_H_PreAGC

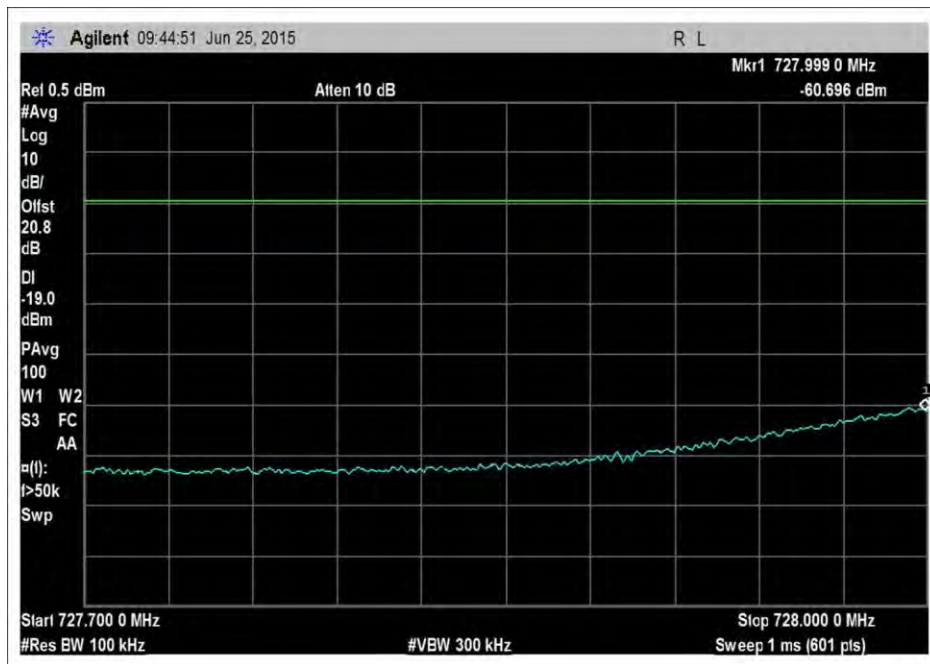


UL_1850-1915MHz_L_Max

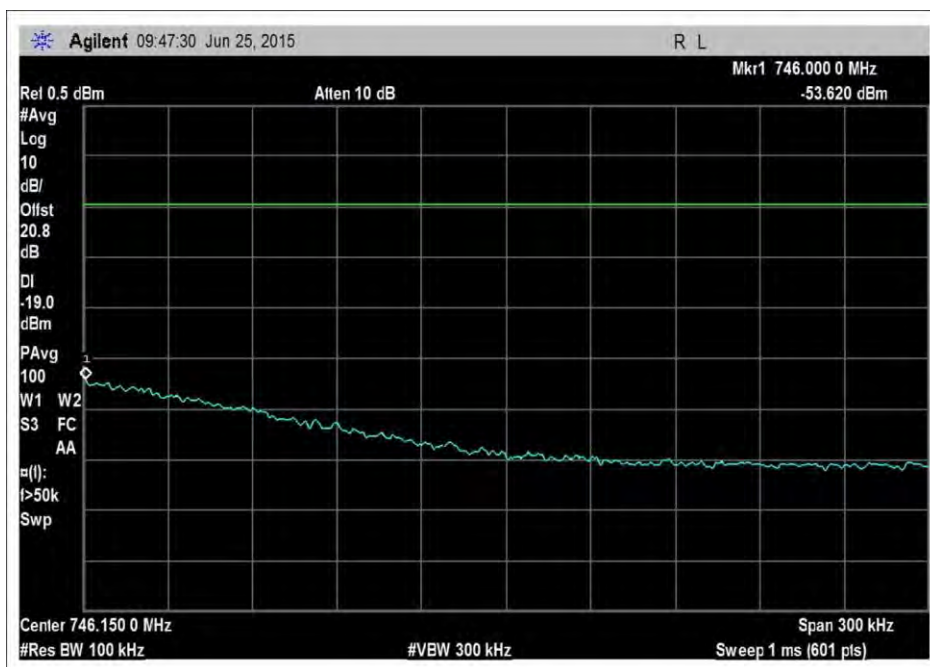


UL_1850-1915MHz_H_Max

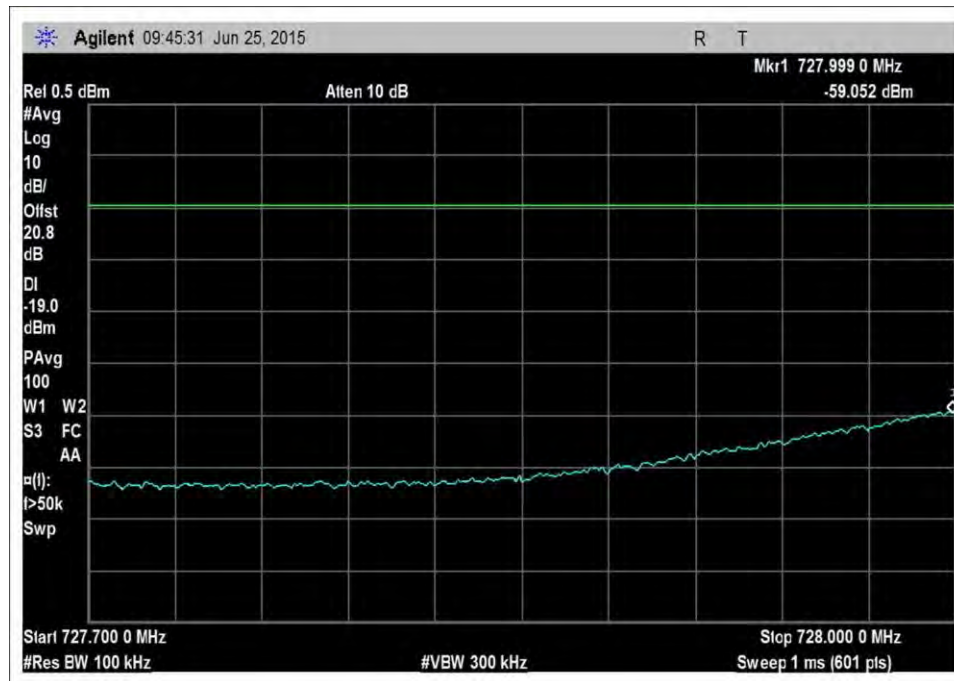
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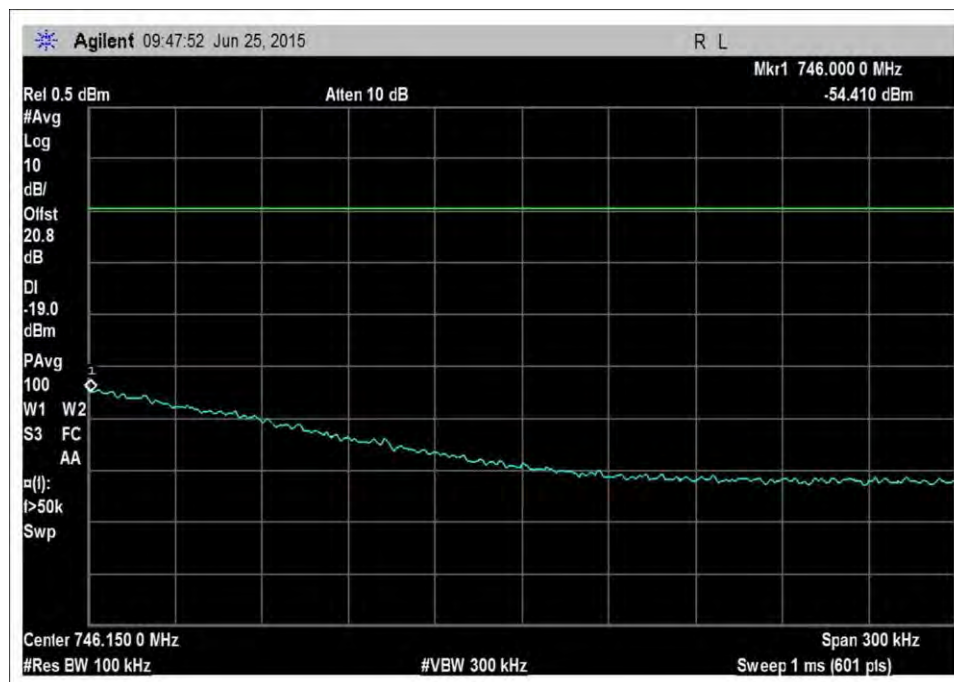
DL_728-746MHz_L_PreAGC



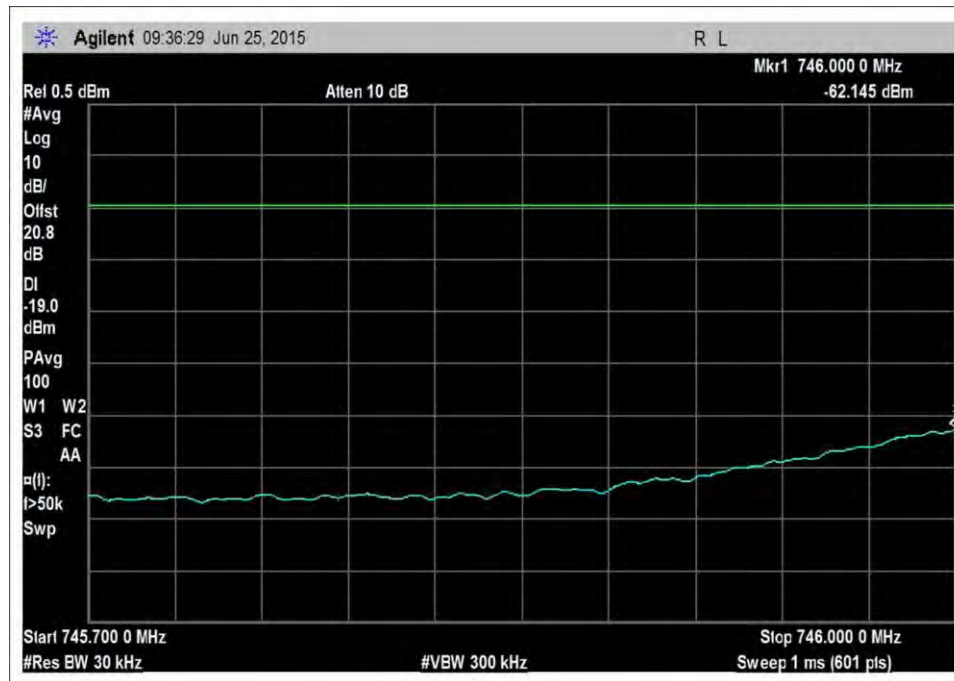
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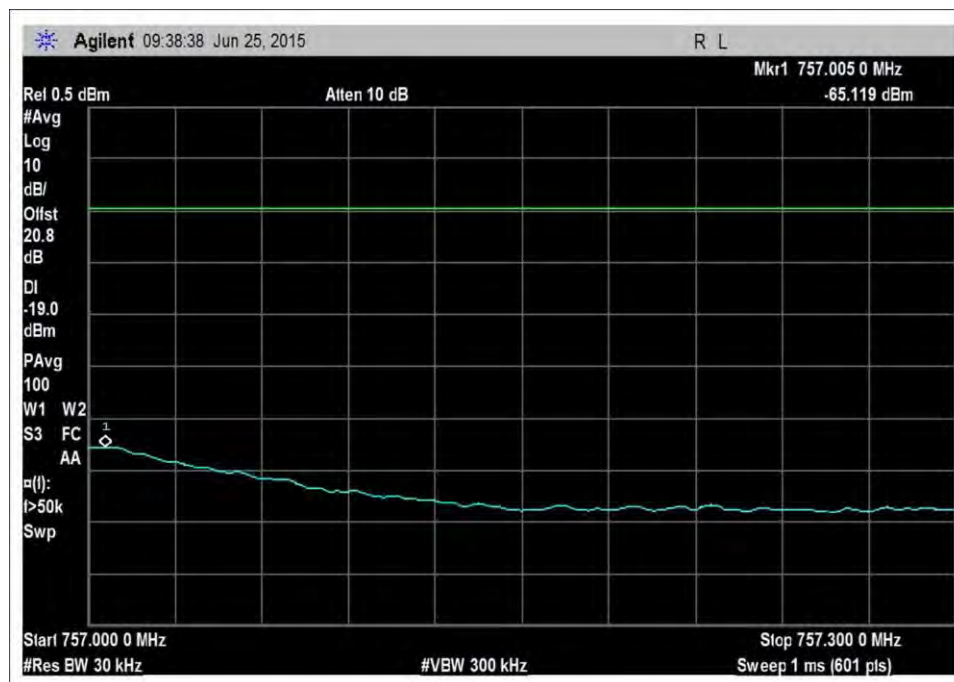
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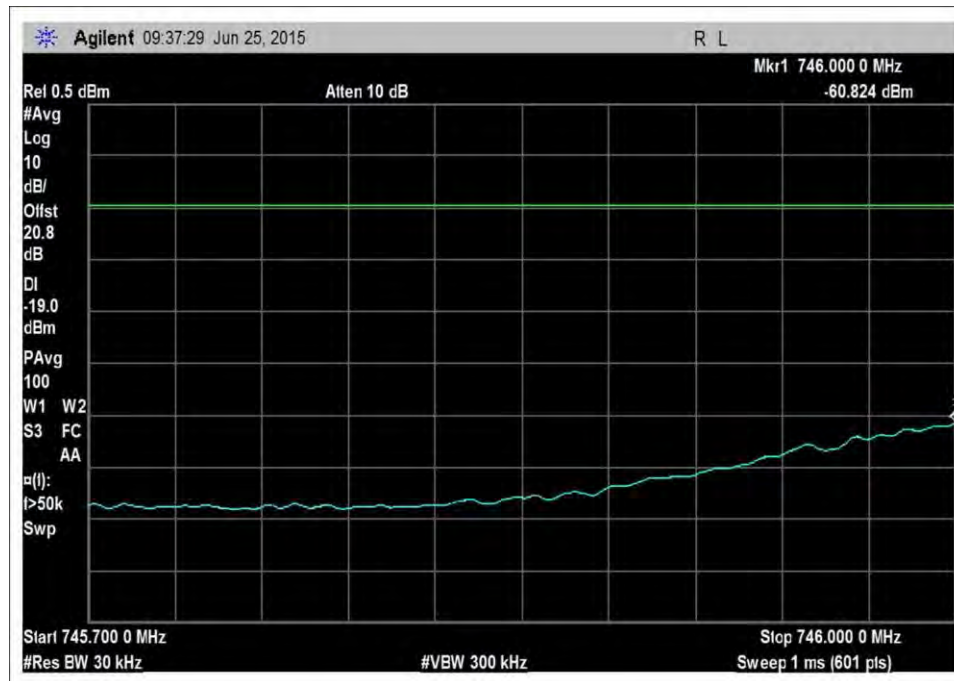
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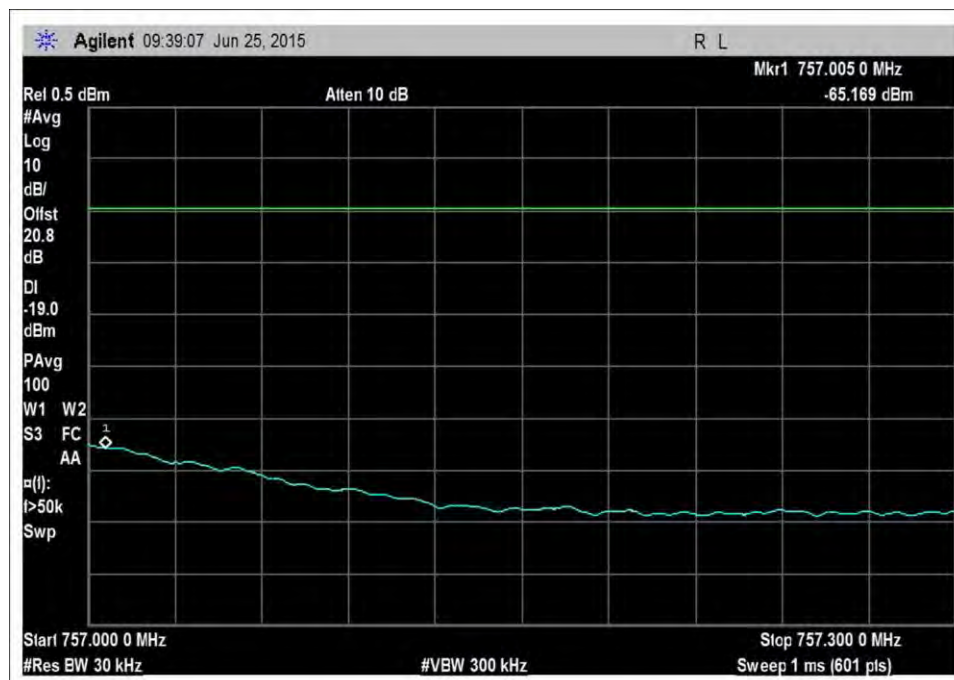
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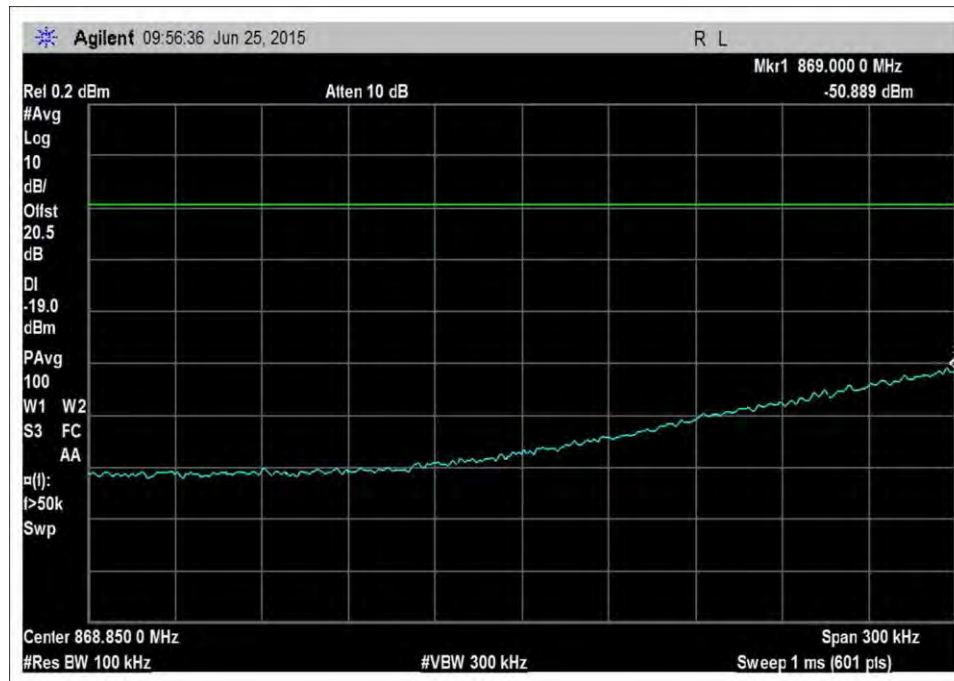
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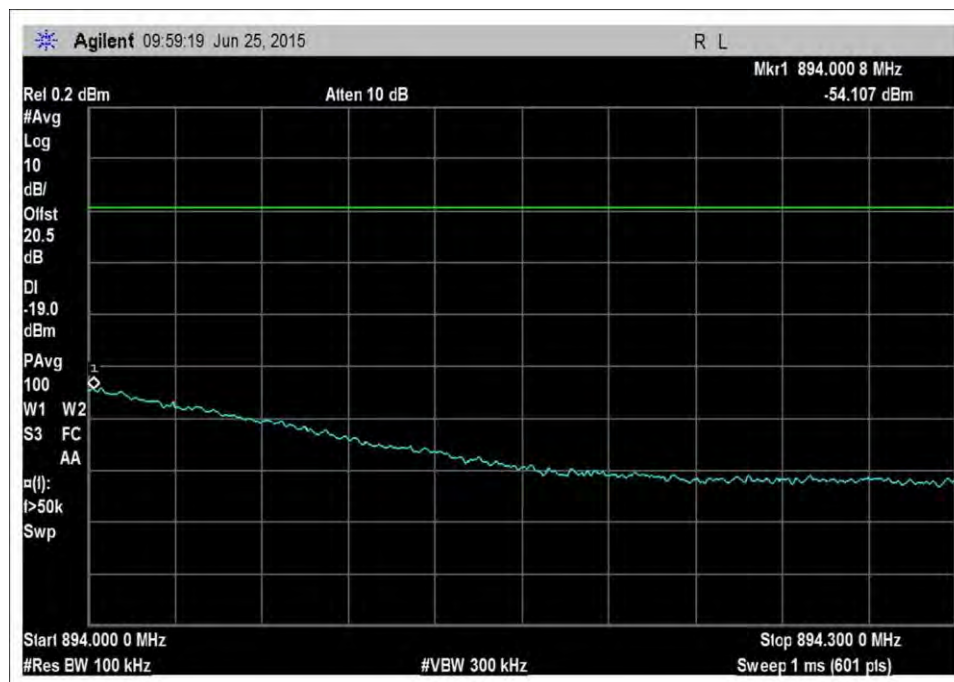
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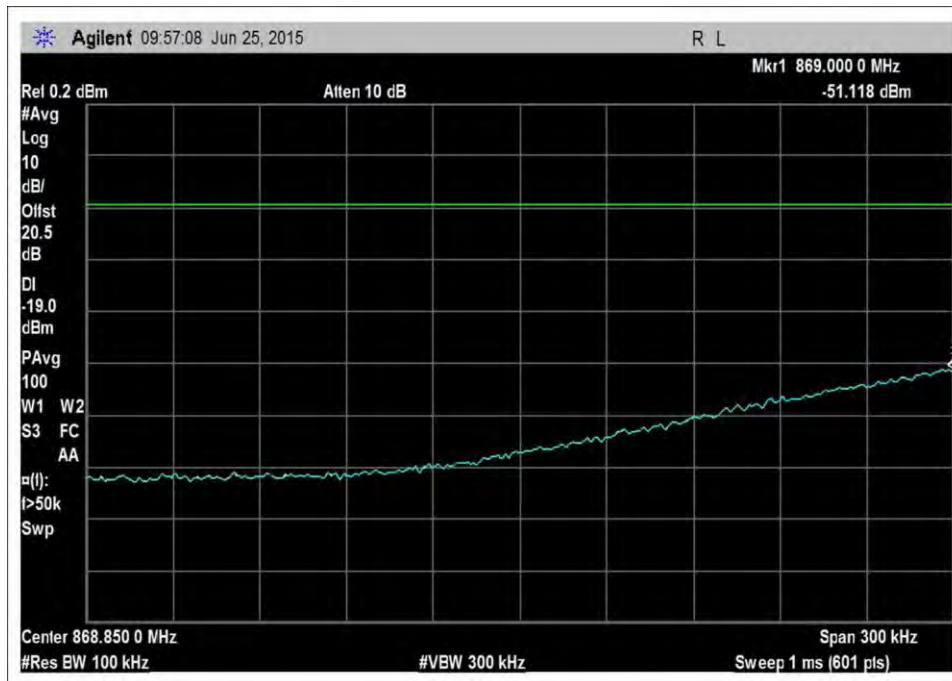
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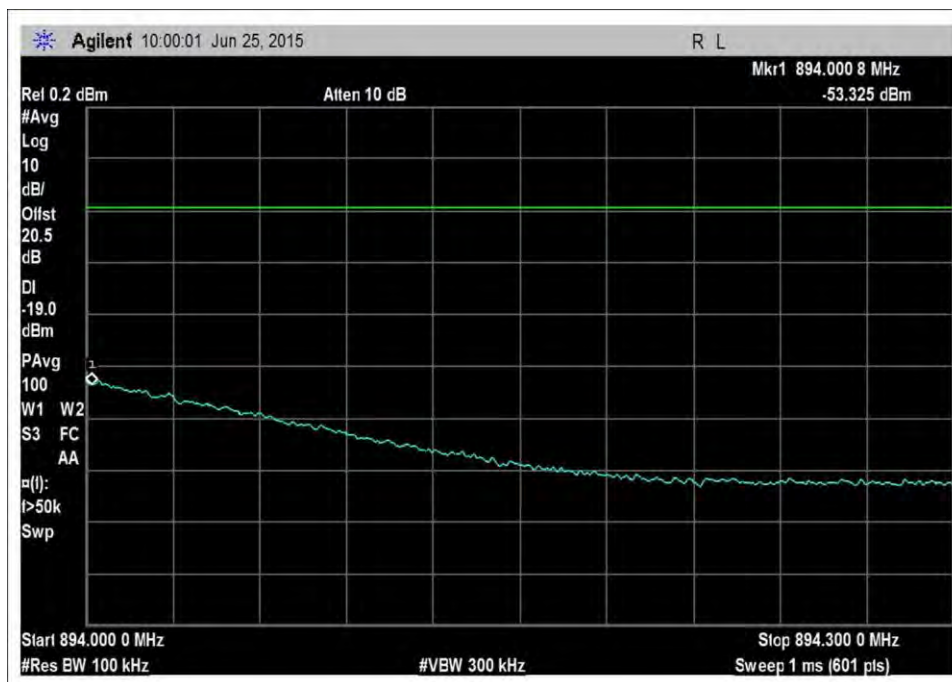
DL_869-894MHz_L_PreAGC



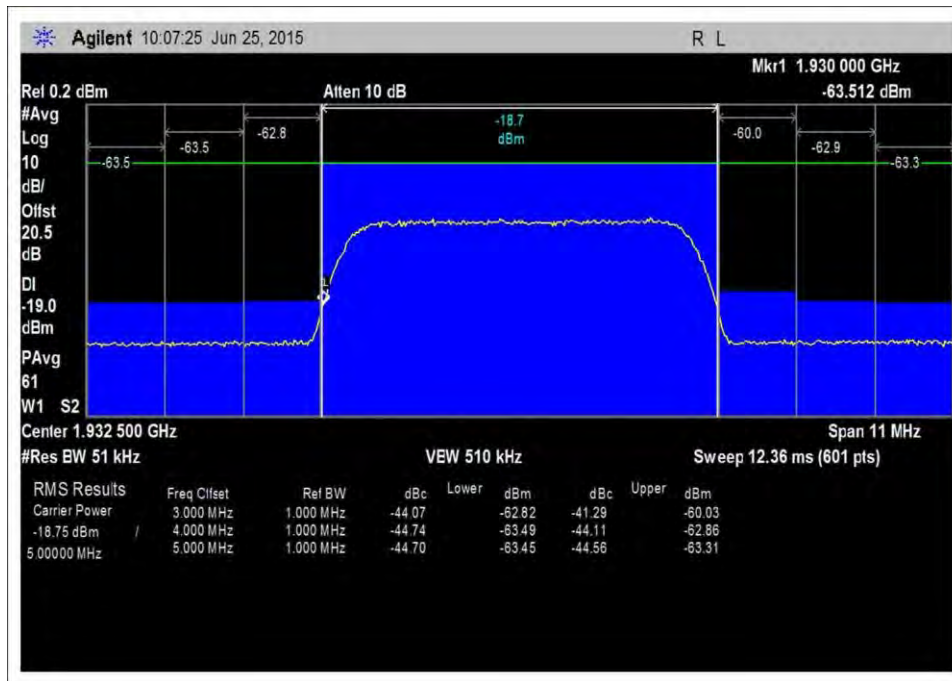
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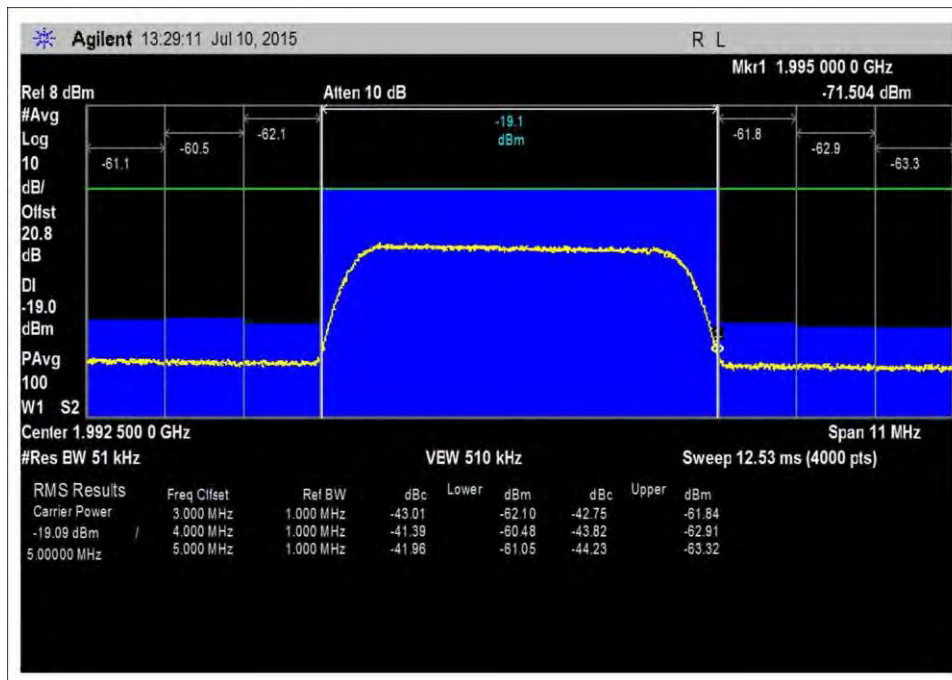
DL_869-894MHz_L_Max



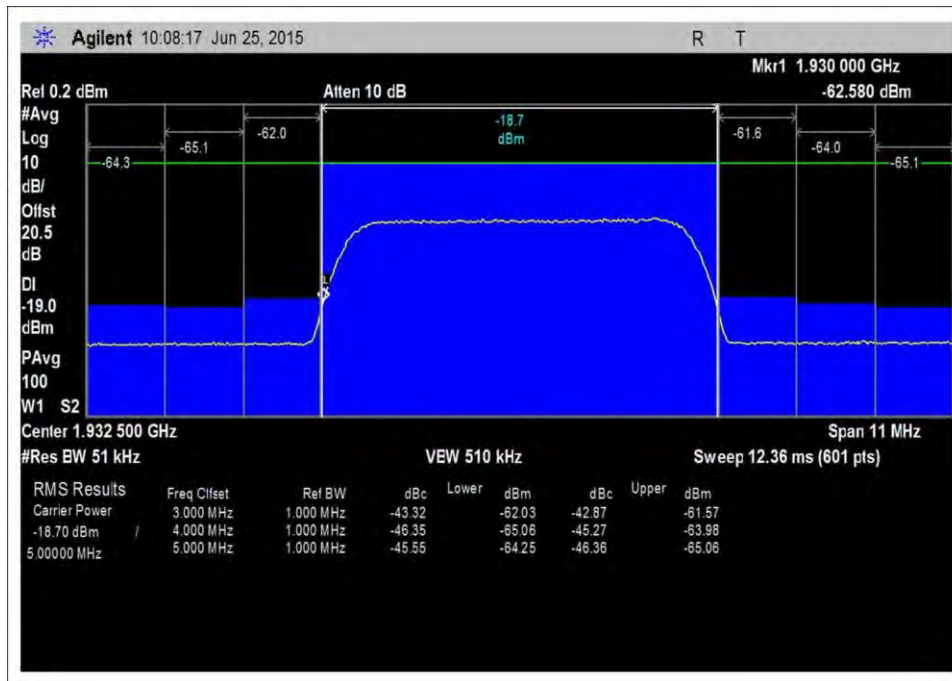
DL_869-894MHz_H_Max



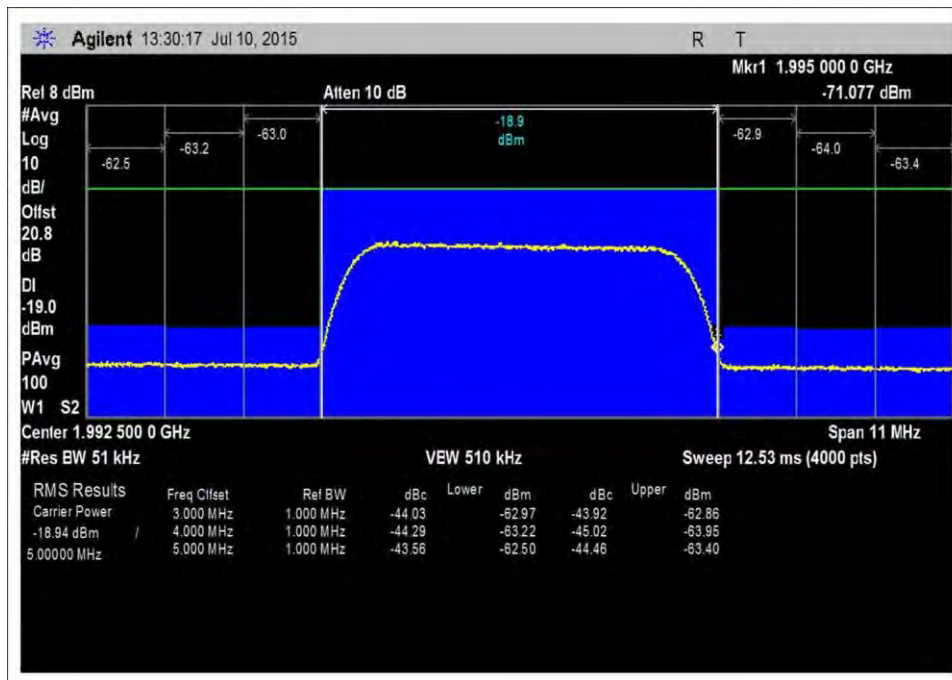
DL_1930-1995MHz_L_PreAGC



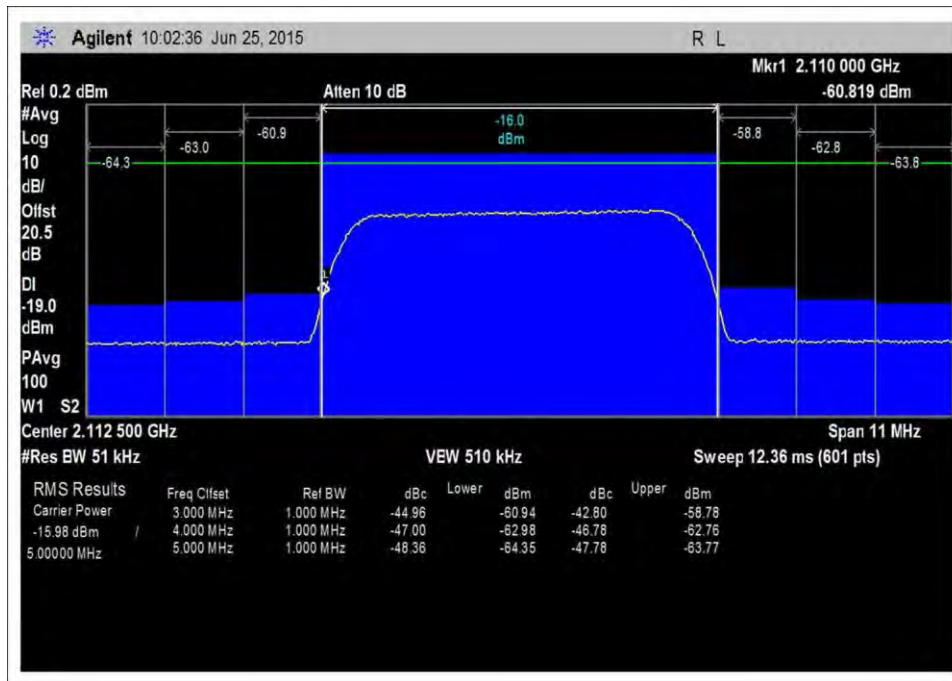
DL_1930-1995MHz_L_PreAGC



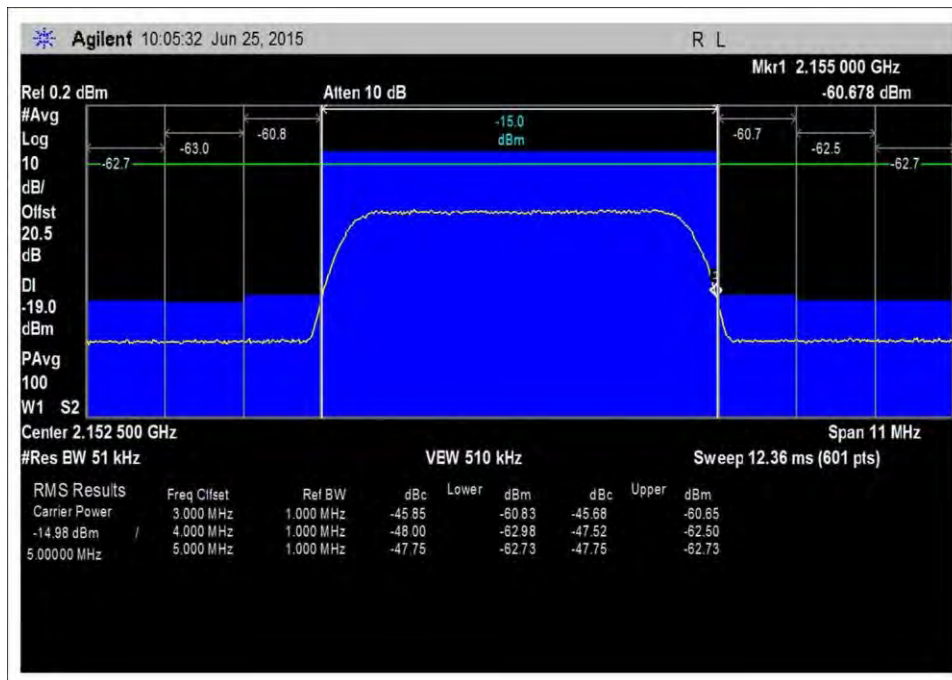
DL_1930-1995MHz_L_Max



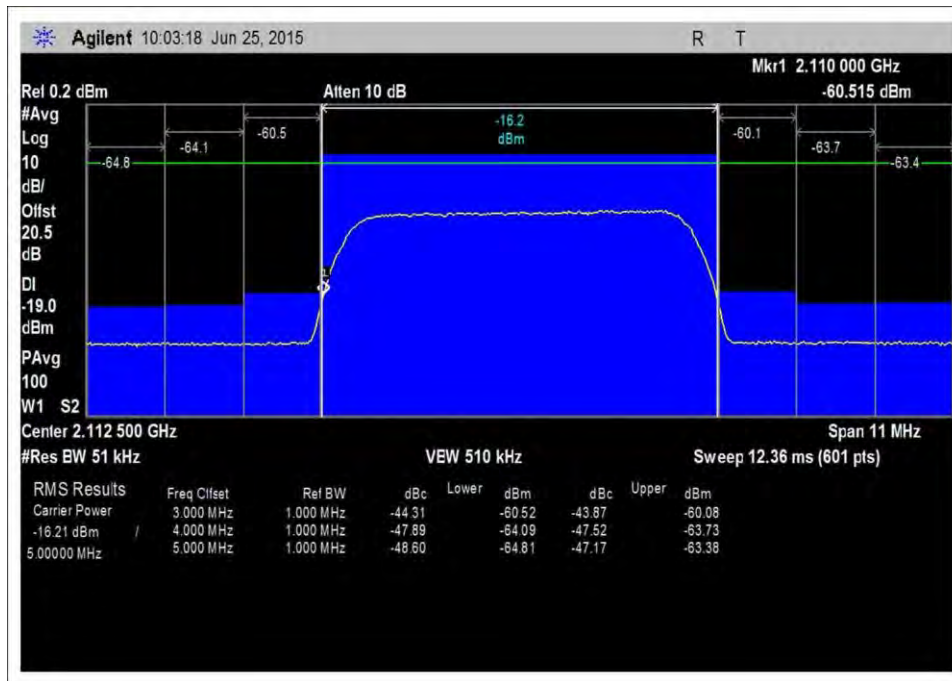
DL_1930-1995MHz_H_Max



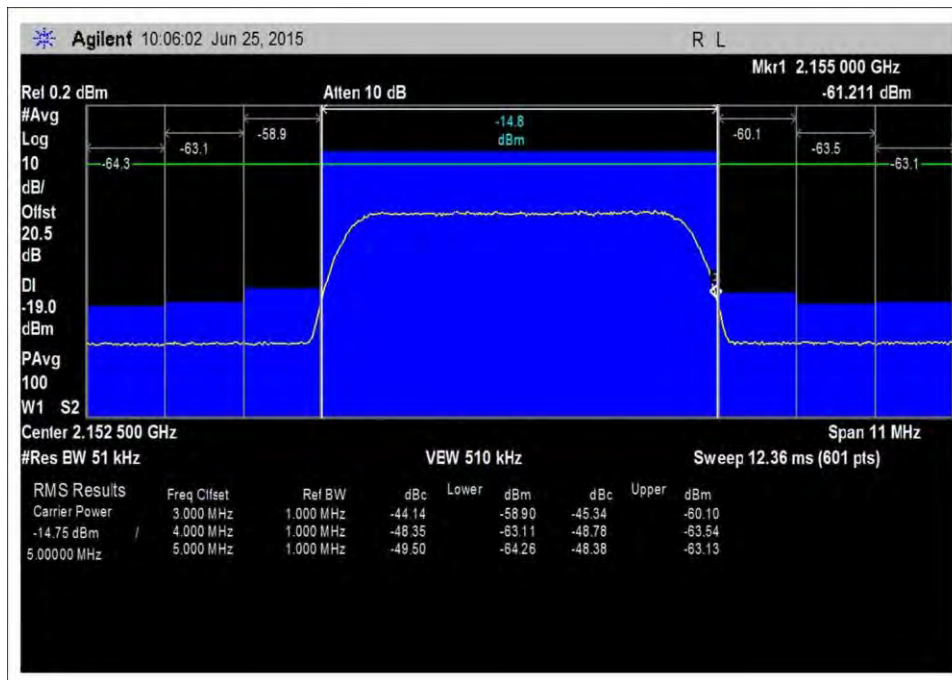
DL_2110-2155MHz_L_PreAGC



DL_2110-2155MHz_H_PreAGC



DL_2110-2155MHz_L_Max



DL_2110-2155MHz_H_Max

Clause 7.7 Noise limit

Test Equipment					
Asset #	Description	Model	Manufacturer	Cal Date	Cal Due
ANP06709	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
ANP06710	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
C00082	RF Coupler	722-10-1.500V	MECA Electronics, Inc.	08/21/2013	08/21/2015
AN02869	Spectrum Analyzer	E4440A	Agilent	07/10/2014	07/10/2015

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
 Customer: Cellphone-Mate, Inc.
 Specification: **7.7 Noise Limit (Maximum Transmitter Noise Power Level / Variable UL Noise Timing)**
 Work Order #: **97222** Date: 6/25/2015
 Test Type: **Conducted Emissions** Time: 13:53:01
 Tested By: Daniel Bertran Sequence#: 1
 Software: EMITest 5.02.00

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Configuration 1

The equipment under test (EUT) is a Mobile Wideband Consumer Booster.

The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

7.7.1 Maximum Transmitter Noise Power Level

Per figure 3, input port was terminated with 50 Ohm Weinschel load (MN:1424-4 and SN:21874).

7.7.2 Variable UL Noise Timing

Per figure 4, server port was terminated with 50 Ohm Weinschel load (MN:1424-4 and SN:21874).

Part 22

UL: 824-849MHz

DL: 869-894MHz

Part 24

UL: 1850-1915MHz

DL: 1930-1995MHz

Part 27

UL: 1710-1755MHz, 698-716MHz, 776-787MHz

DL: 2110-2155MHz, 728-746MHz, 746-757MHz

All adjustable settings on the test sample are set at max gain.

Test environment conditions: Temperature: 20.8°C, Relative Humidity: 42%, Atmospheric Pressure: 101.5kPa

Test procedure: The test was performed in accordance with section 7.7 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v03 Dated June 5, 2015.

Firmware: V1.0

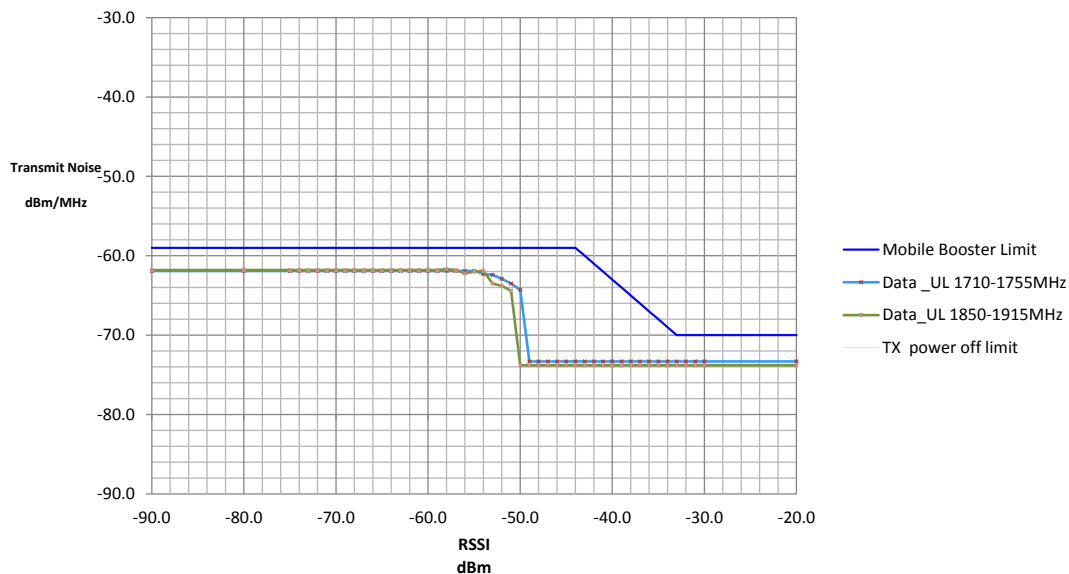
Summary of Results

7.7.1 Maximum transmitter noise power level

- 7.7.1 a-g: Maximum transmitter noise with 50-ohm shielded load.
- 7.7.1 h-n: Maximum transmitter noise when varying the DL signal generator output level with a 4.1MHz AWGN signal.

Maximum Noise Power			
Freq	Measured	Limit	Margin
MHz	dBm./MHz	dBm/MHz	
UL1710-1755	-62.5	-59	-3.5
UL1850-1915	-61.9	-59	-2.9
UL824-894	-59.3	-59	-0.3
UL 698-716	-59.8	-59	-0.8
UL776-787	-60.9	-59	-1.9
DL2110-2155	-64.6	-59	-5.6
DL1930-1995	-65.7	-59	-6.7
DL869-894	-62.4	-59	-3.4
DL:728-746	-61.8	-59	-2.8
DL 746-757	-62.0	-59	-3.0

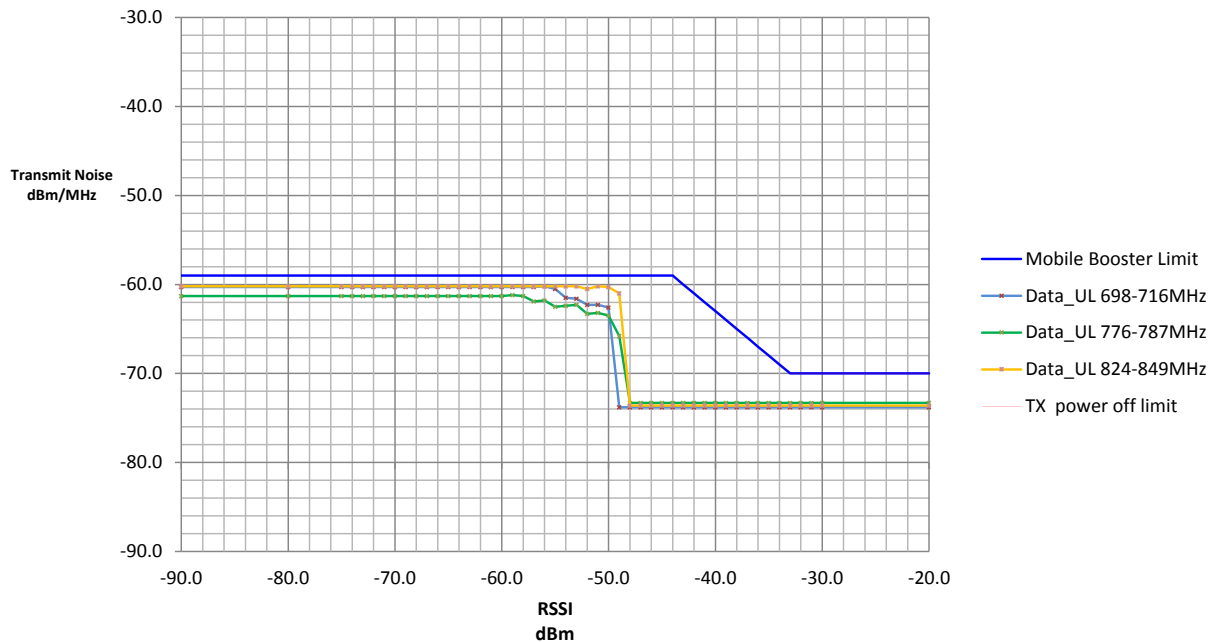
7.7 Booster UL Noise Limit



1710.0	1755.0	MHz			
		Limit			Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Mobile Booster Limit	TX off	
-69.0	-61.9		-59.0		-2.9
-59.0	-61.9		-59.0		-2.9
-37.0	-73.3	-66.0			-7.3
-36.0	-73.3	-67.0			-6.3
-35.0	-73.3	-68.0			-5.3
-34.0	-73.3	-69.0			-4.3
-20.0	-73.3			-70	-3.3

1850.0	1915.0	MHz			
		Limit			Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Mobile Booster Limit	TX off	
-69.0	-61.8		-59.0		-2.8
-58.0	-61.7		-59.0		-2.7
-37.0	-73.8	-66.0			-7.8
-36.0	-73.8	-67.0			-6.8
-35.0	-73.8	-68.0			-5.8
-34.0	-73.8	-69.0			-4.8
-20.0	-73.8			-70	-3.8

7.7 Booster UL Noise Limit



698.0 716.0		MHz			
			Limit		Margin
RSSI	Measured	RSSI	Mobile Booster Limit	TX off	
(dBm)	Noise (dBm/MHz)	Dependent			
-73.0	-60.3		-59.0		-1.3
-64.0	-60.3		-59.0		-1.3
-37.0	-73.8	-66.0			-7.8
-36.0	-73.8	-67.0			-6.8
-35.0	-73.8	-68.0			-5.8
-34.0	-73.8	-69.0			-4.8
-20.0	-73.8			-70	-3.8

776.0 787.0		MHz			
			Limit		Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Mobile Booster Limit	TX off	
-69.0	-61.3		-59.0		-2.3
-62.0	-61.3		-59.0		-2.3
-37.0	-73.3	-66.0			-7.3
-36.0	-73.3	-67.0			-6.3
-35.0	-73.3	-68.0			-5.3
-34.0	-73.3	-69.0			-4.3
-20.0	-73.3			-70	-3.3

824.0 849.0		MHz			
			Limit		Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Mobile Booster Limit	TX off	
-72.0	-60.2		-59.0		-1.2
-62.0	-60.2		-59.0		-1.2
-37.0	-73.6	-66.0			-7.6
-36.0	-73.6	-67.0			-6.6
-35.0	-73.6	-68.0			-5.6
-34.0	-73.6	-69.0			-4.6
-20.0	-73.6			-70	-3.6

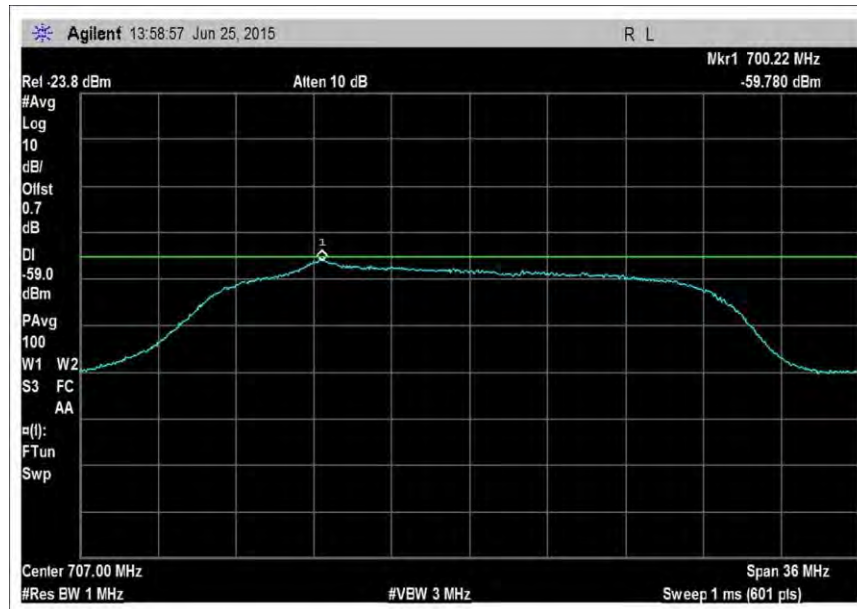
7.7.2 Variable uplink noise timing

Uplink Noise timing		
Freq	Measured	Limit
MHz	Sec	sec
UL1710-1755	0.28	1
UL1850-1915	0.17	1
UL824-894	0.30	1
UL 698-716	0.27	1
UL776-787	0.29	1

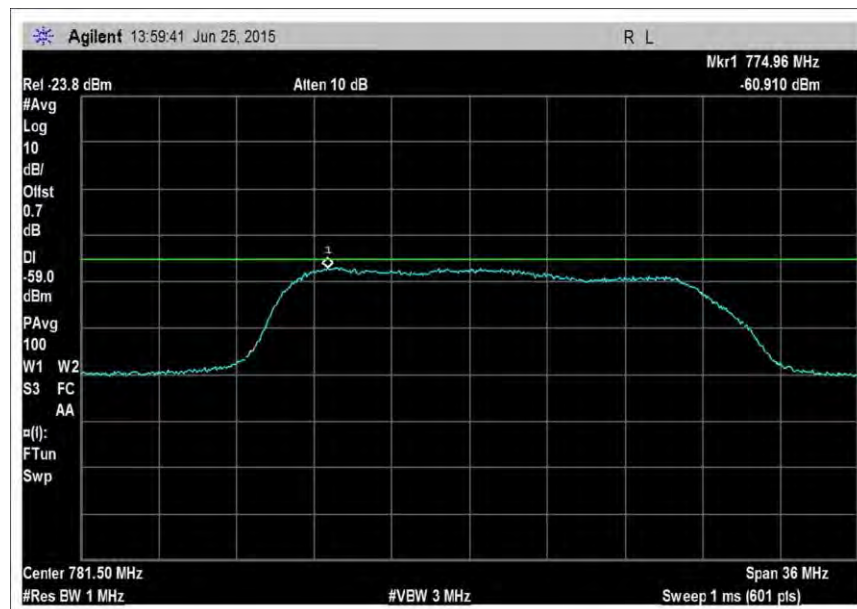
Downlink Noise timing		
Freq	Measured	Limit
MHz	Sec	sec
DL2110-2155	0.24	1
DL1930-1995	0.17	1
DL869-894	0.22	1
DL:728-746	0.17	1
DL 746-757	0.33	1

Test Data

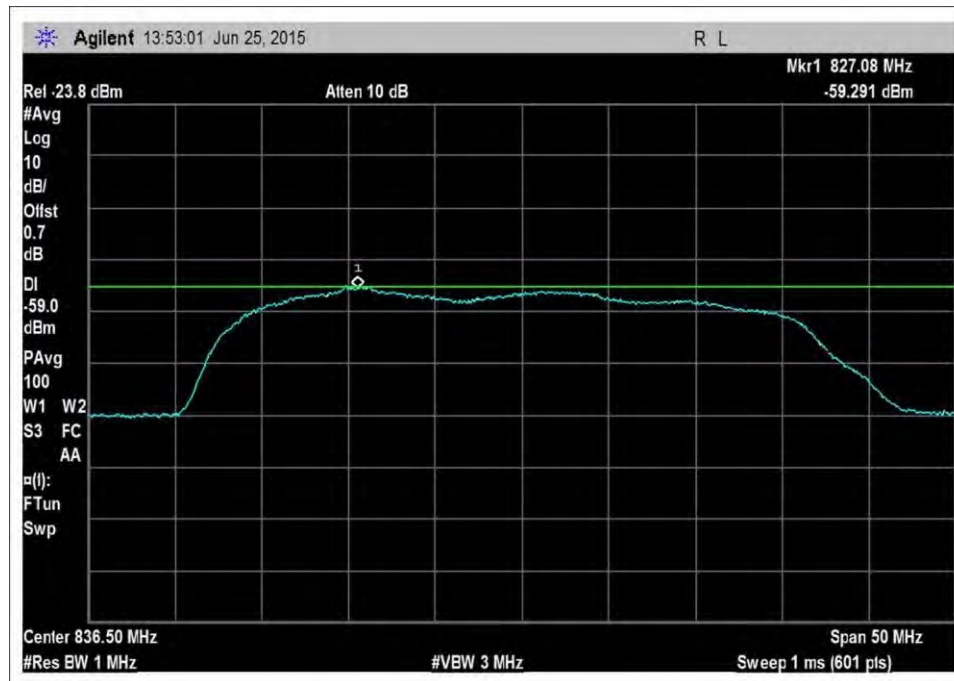
Section 7.7.1 - UL



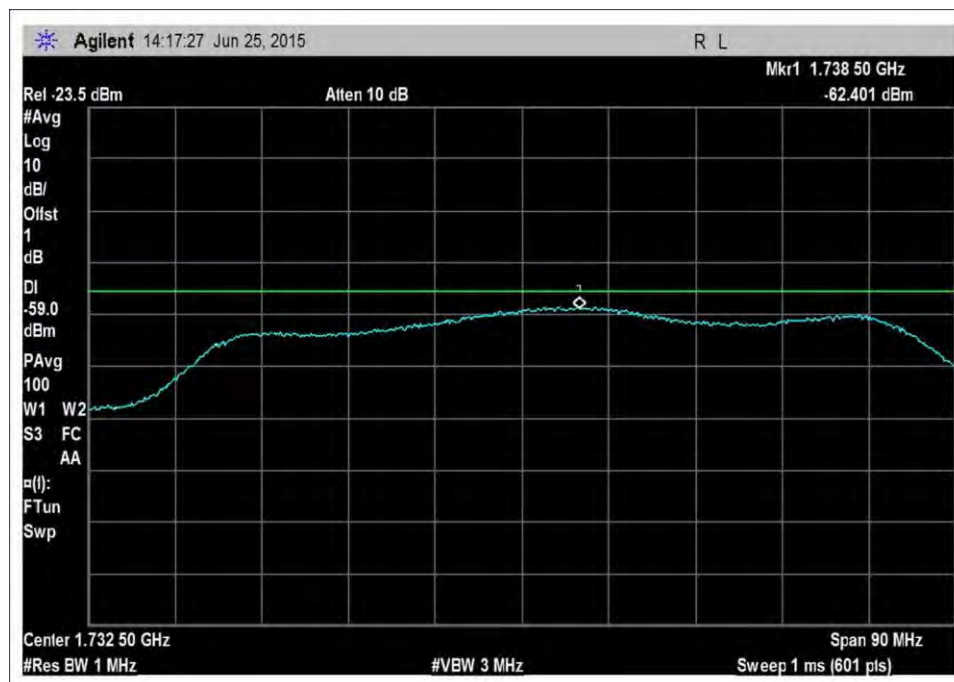
UL_698-716MHz_a-g_Noise_50



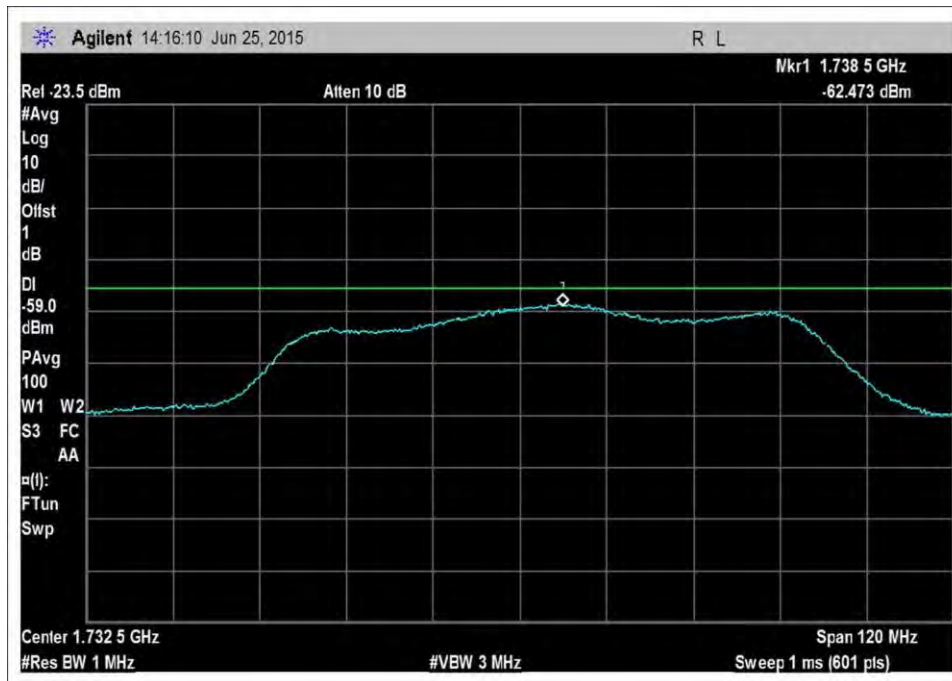
UL_776-787MHz_a-g_Noise_50



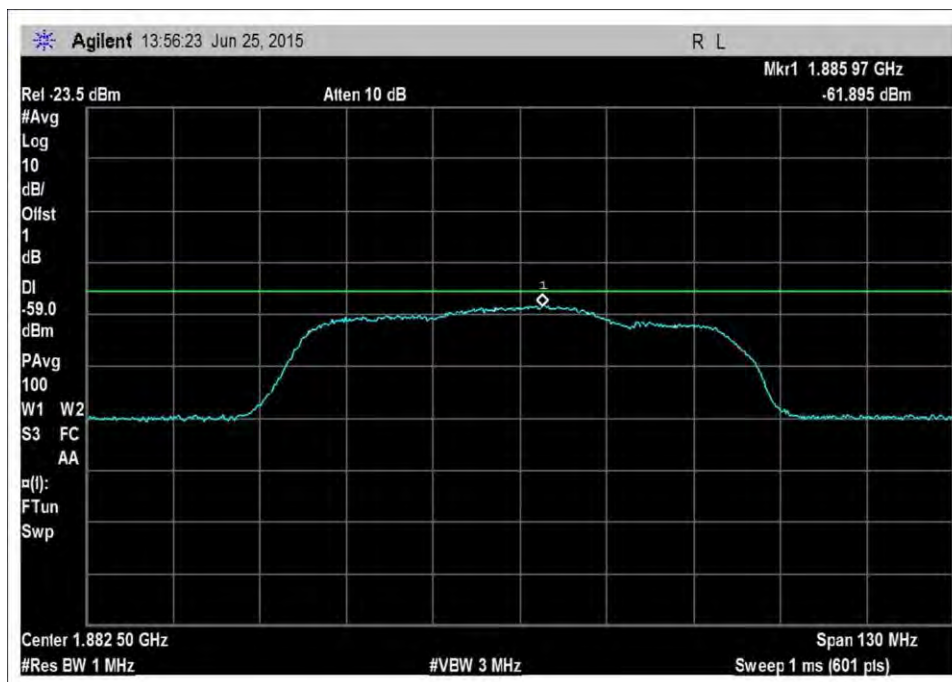
UL_824-849MHz_a-g_Noise_50



UL_1710-1755MHz_a-g_Noise_50

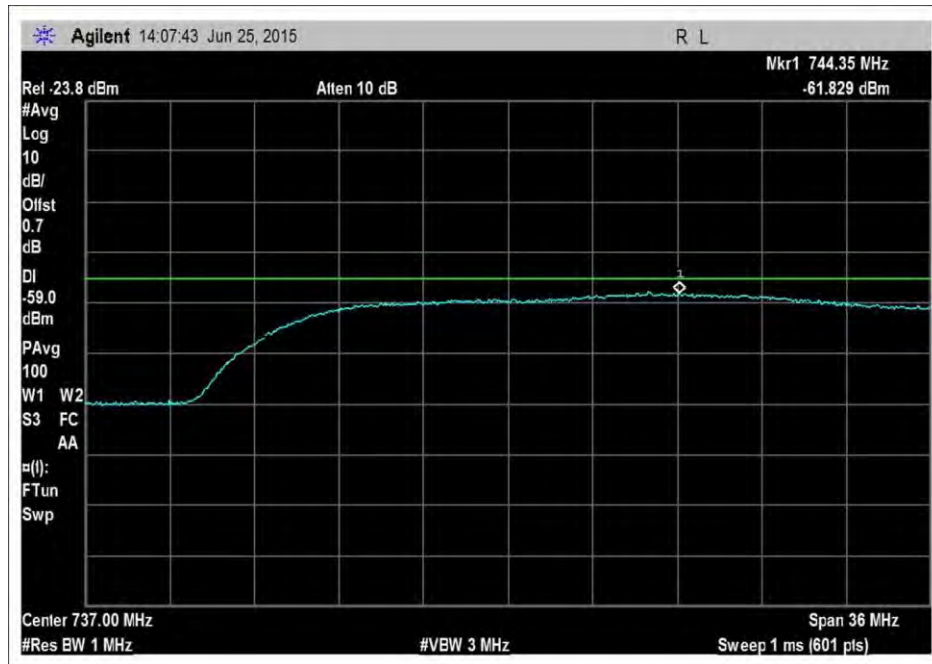


UL_1710-1755MHz-Zoom_a-g_Noise_50

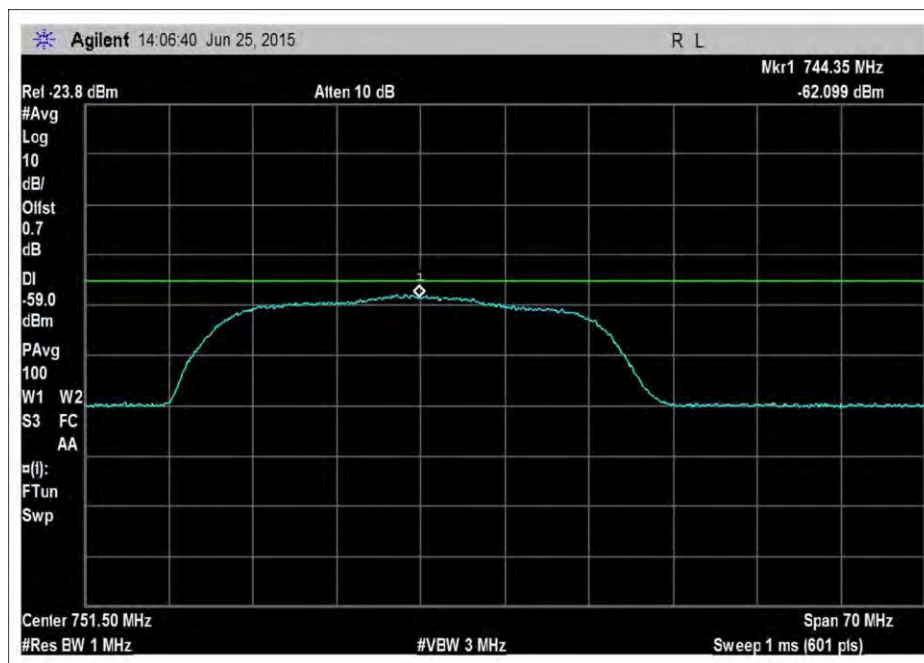


UL_1850-1915MHz_a-g_Noise_50

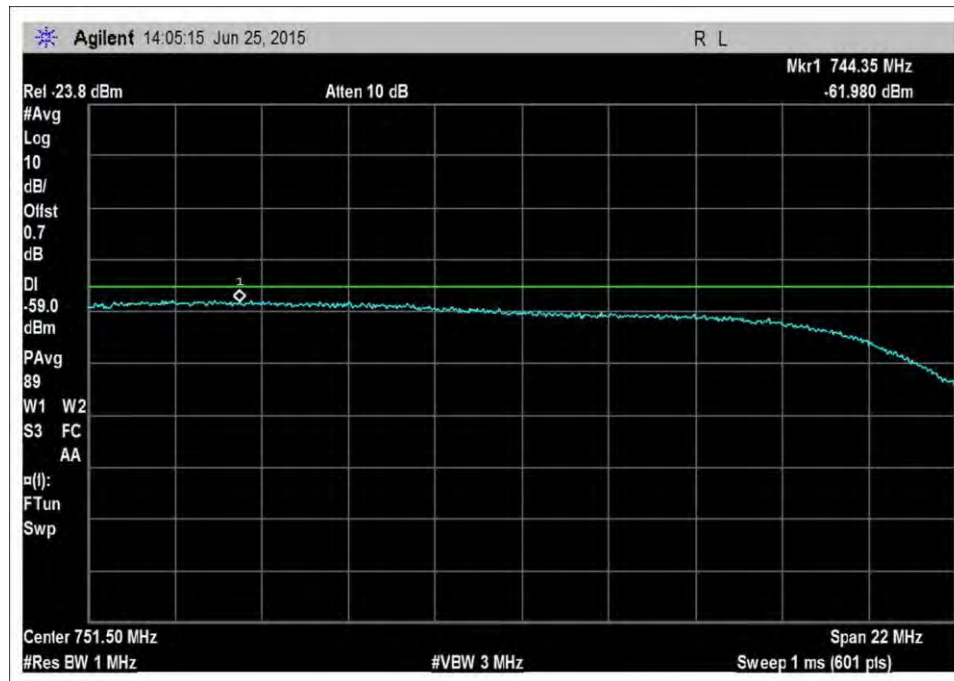
Section 7.7.1 - DL



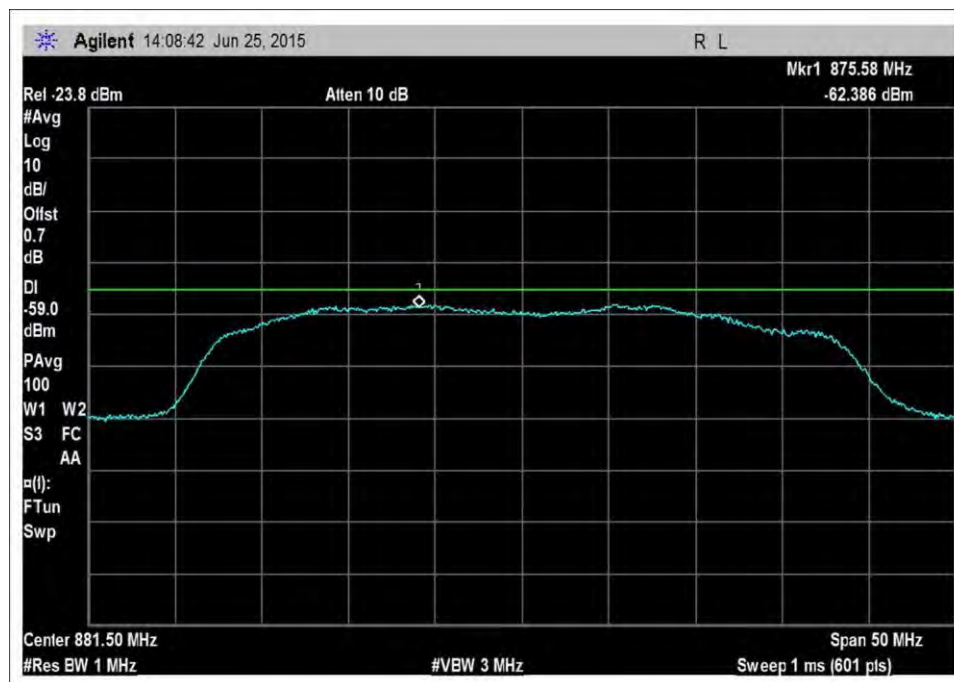
DL_728-746MHz_a-g_Noise_50



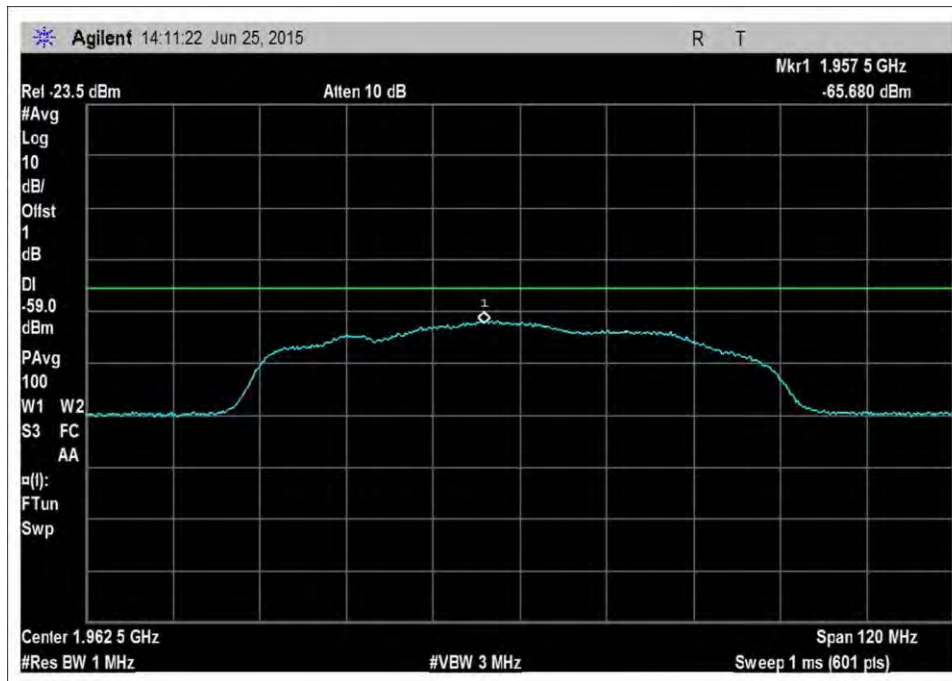
DL_728-757MHz-Zoom_a-g_Noise_50



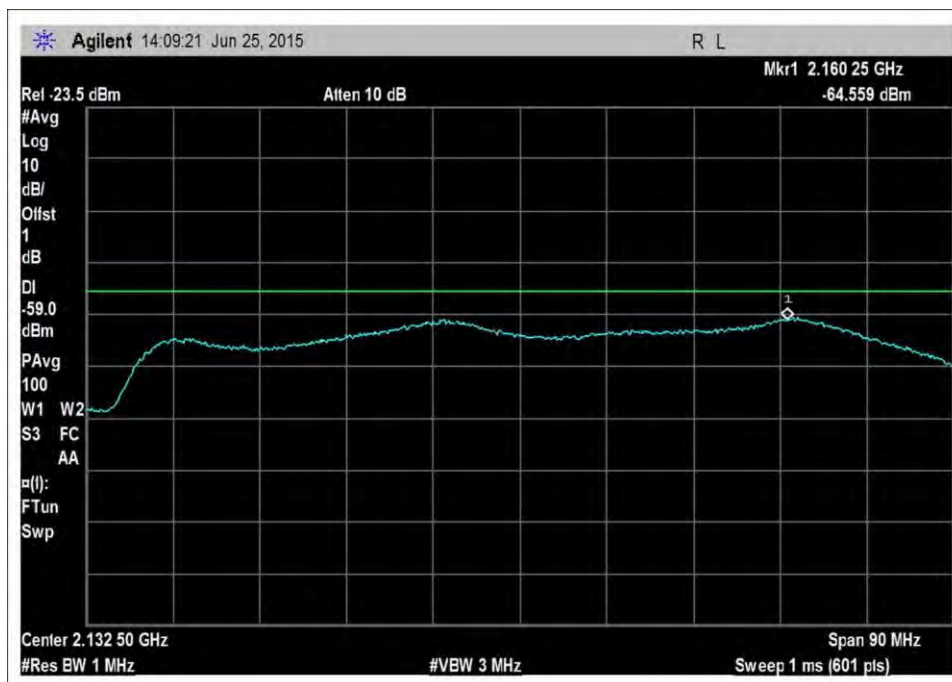
DL_746-757MHz_a-g_Noise_50



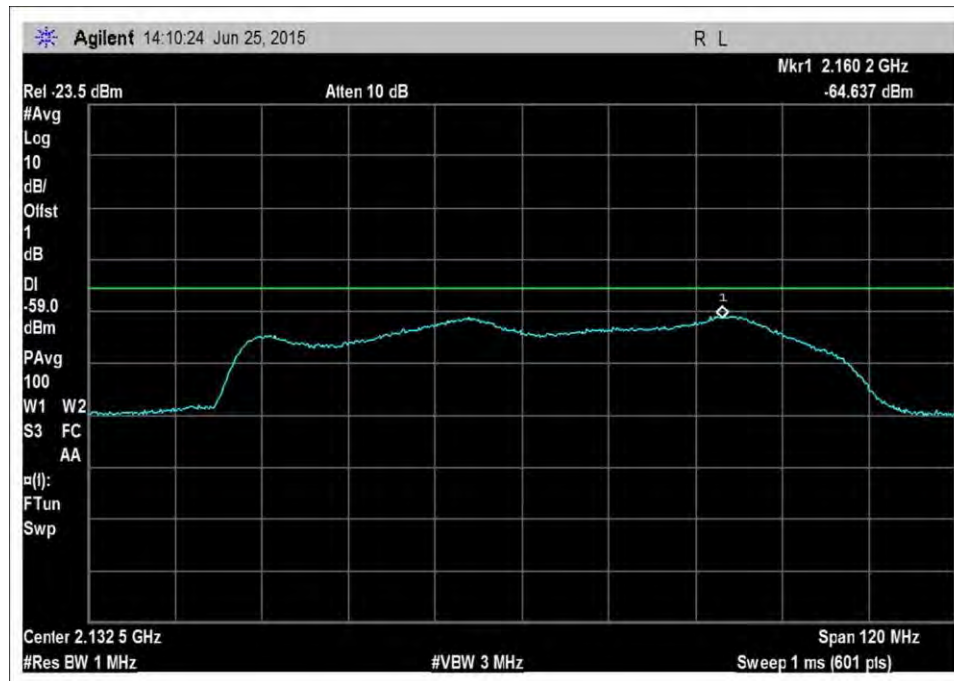
DL_869-894MHz_a-g_Noise_50



DL_1930-1995MHz_a-g_Noise_50

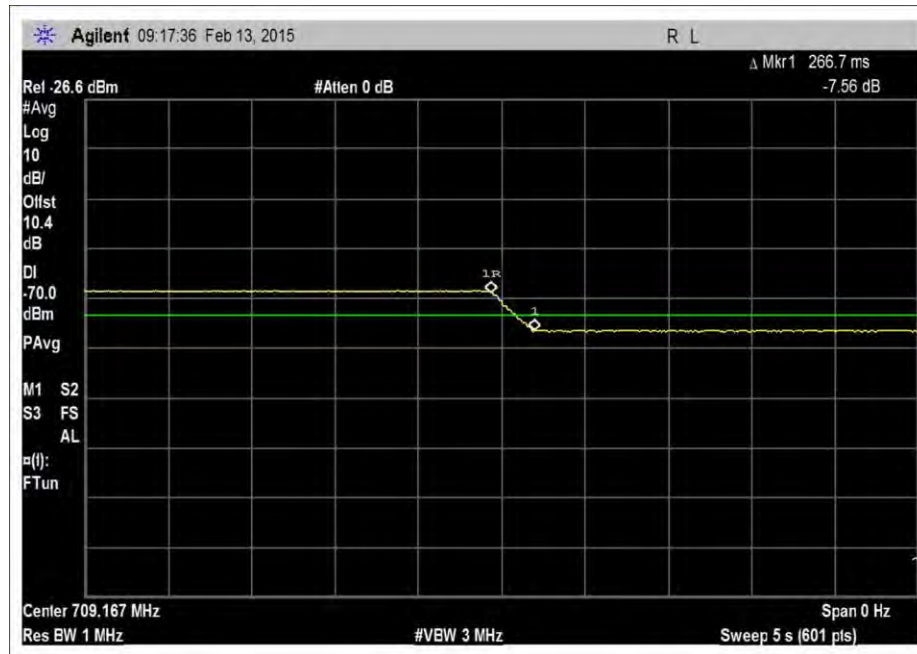


DL_2110-2155MHz_a-g_Noise_50

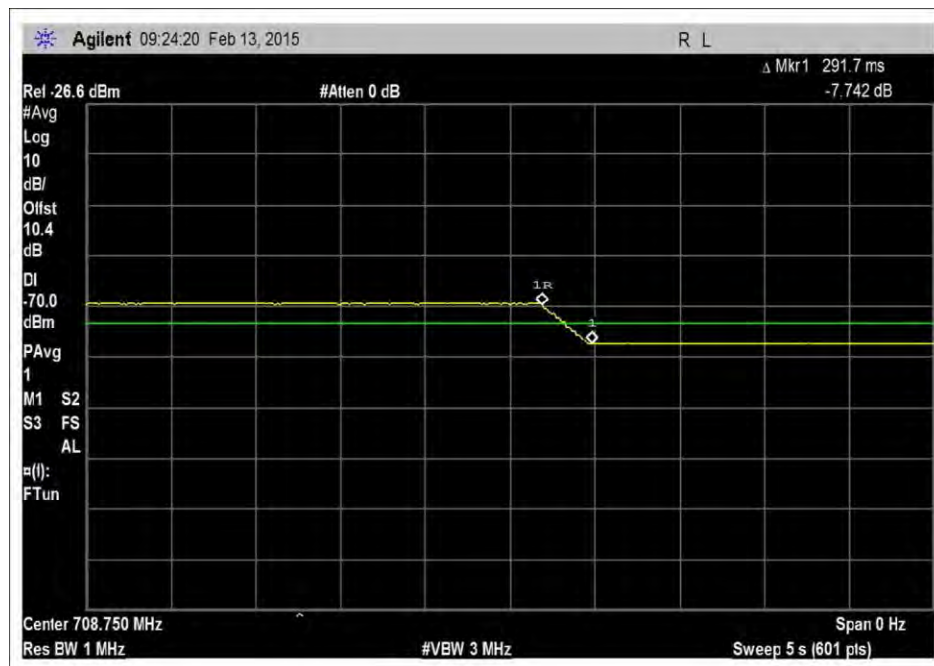


DL_2110-2155MHz-Zoom_a-g_Noise_50

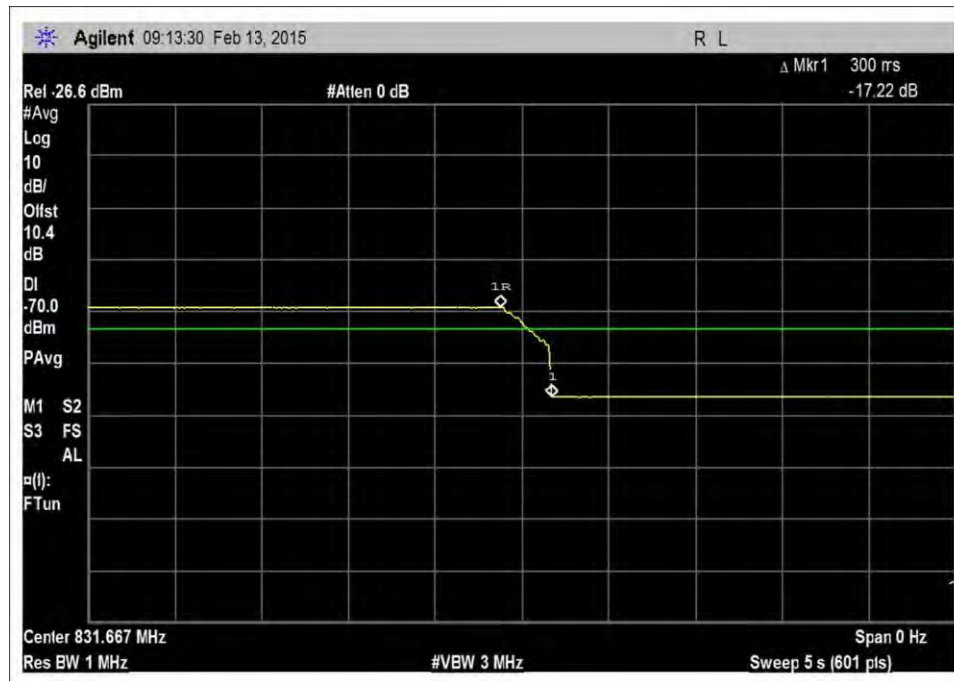
Section 7.7.2 - UL



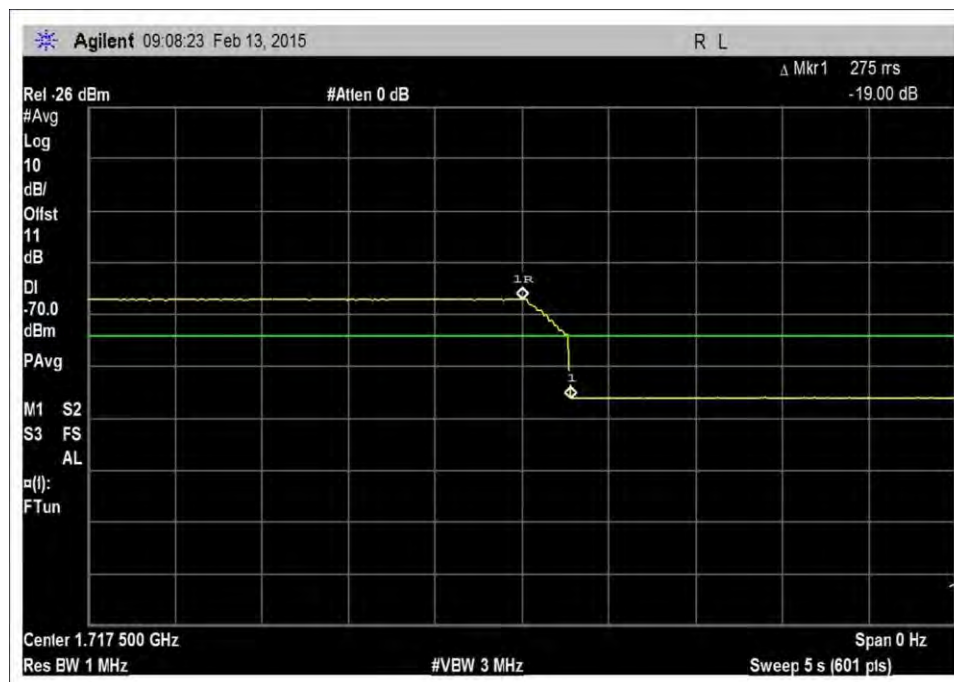
UL_698-716MHz_a-g_timing



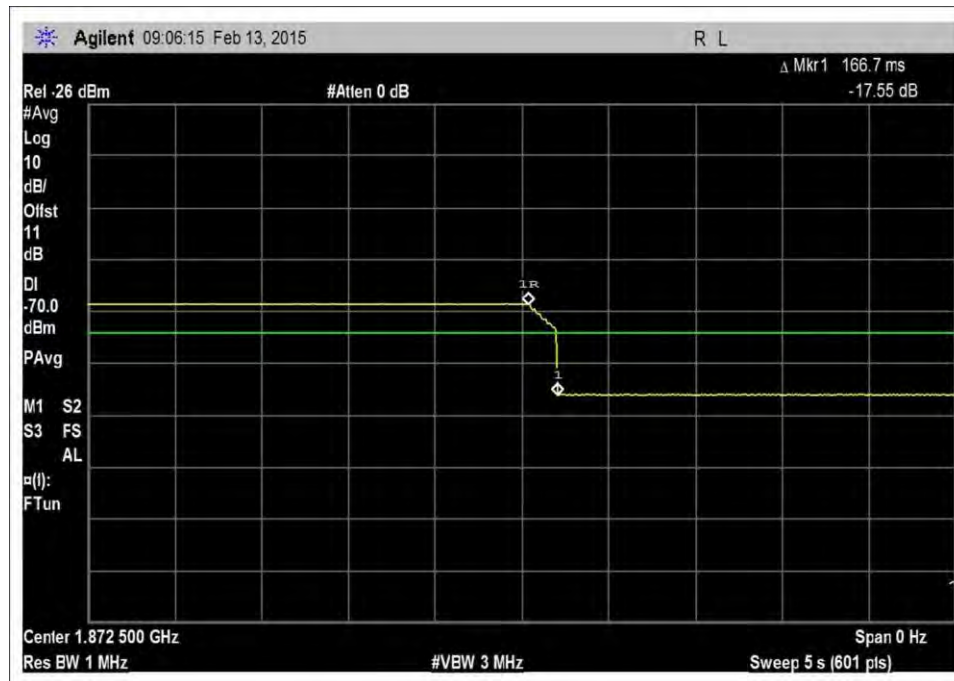
UL_776-787MHz_a-g_timing



UL_824-849MHz_a-g_timing

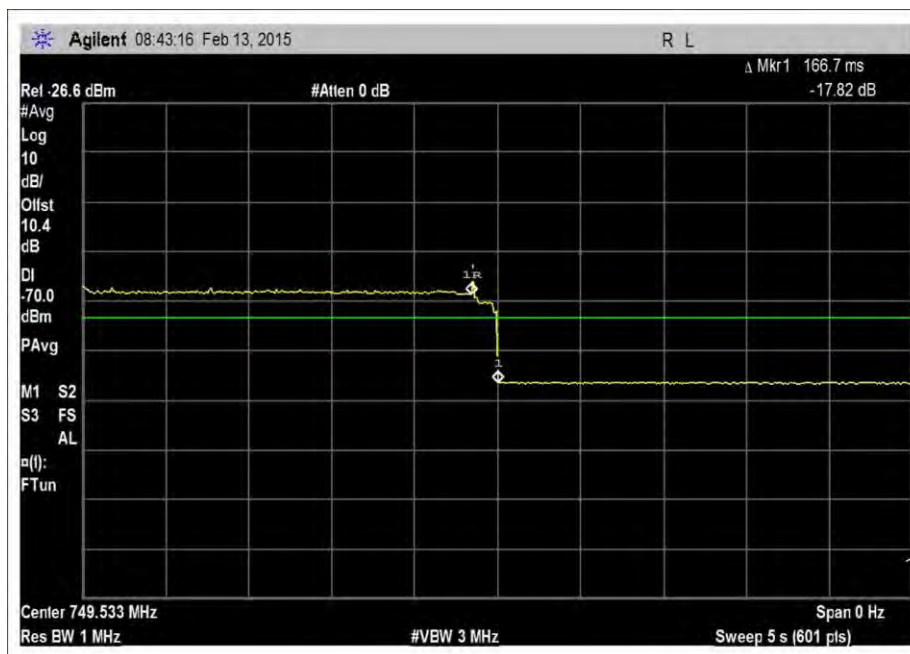


UL_824-849MHz_a-g_timing

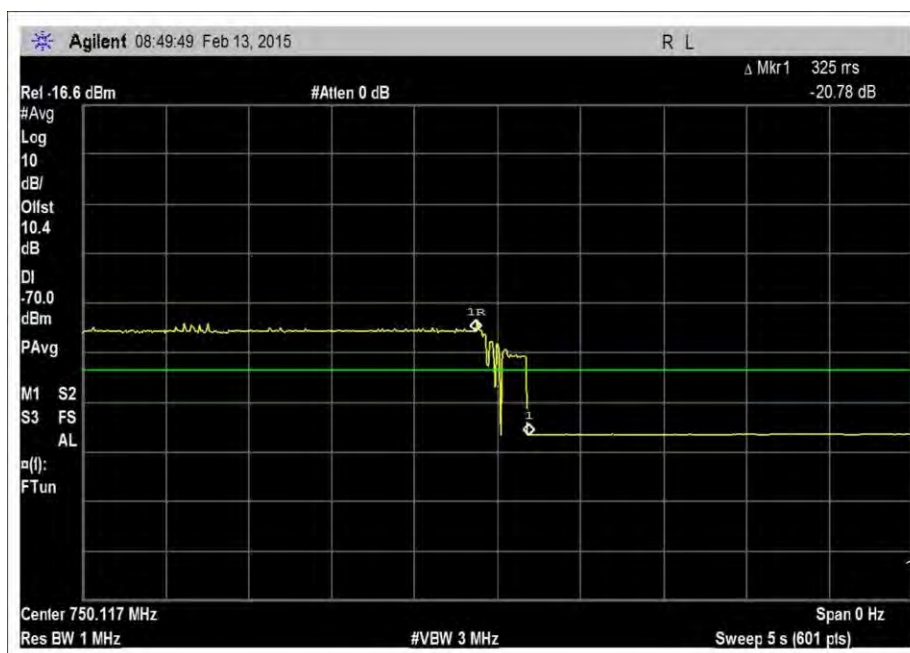


UL_1850-1915MHz_a-g_timing

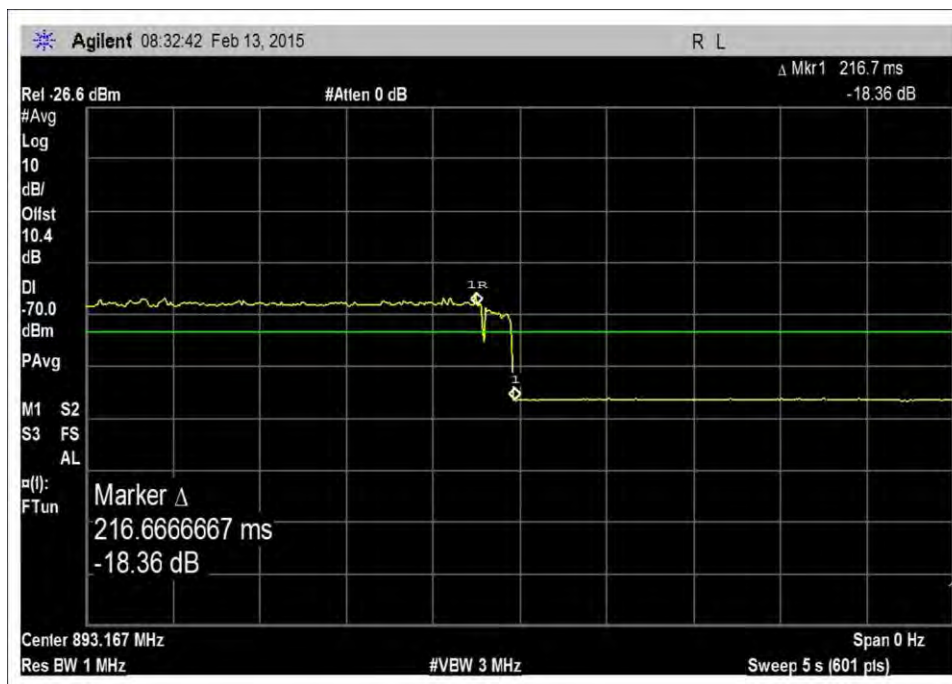
Section 7.7.2 - DL



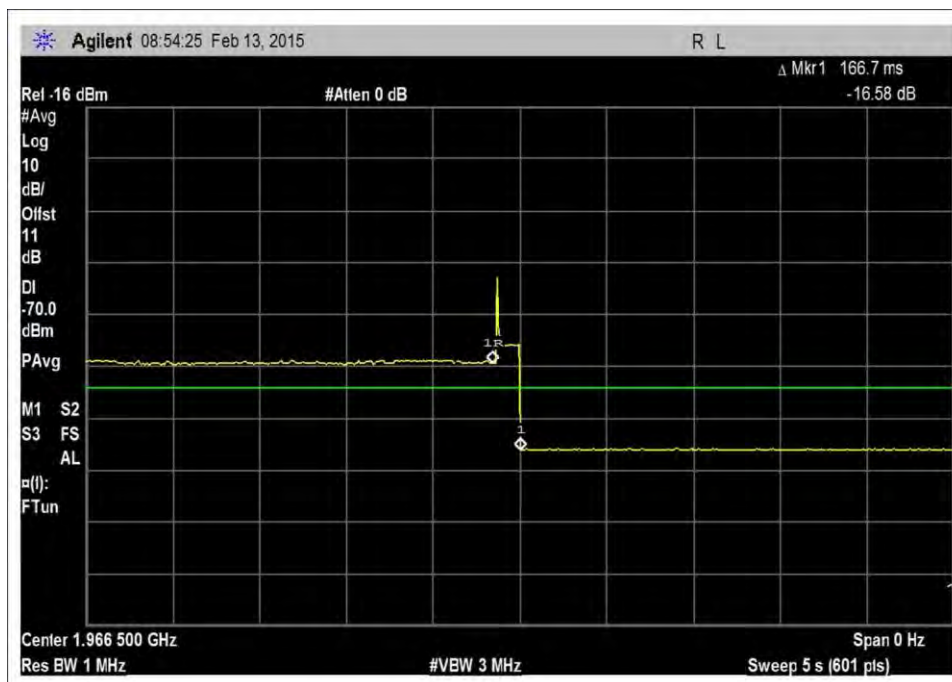
DL_728-746MHz_a-g_timing



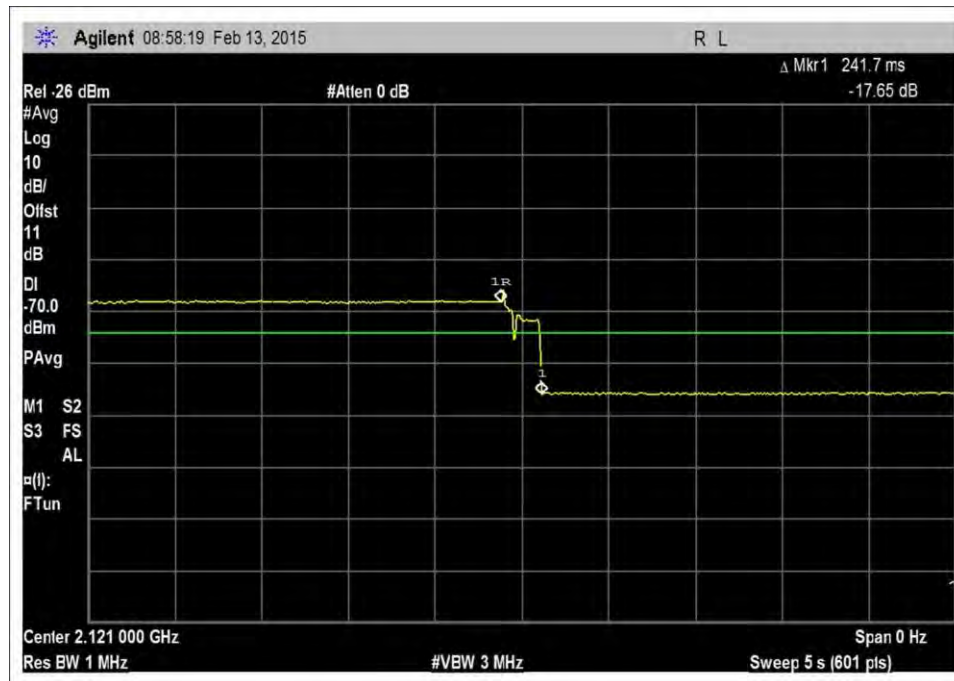
DL_728-746MHz_a-g_timing



DL_869-894MHz_a-g_timing



DL_1930-1995MHz_a-g_timing



DL_3110-2155MHz_a-g_timing

Clause 7.8 Uplink Inactivity

Test Equipment

Asset #	Description	Model	Manufacturer	Cal Date	Cal Due
ANP05389	Attenuator	766-10	Narda	02/27/2014	02/27/2016
ANP06710	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
AN02869	Spectrum Analyzer	E4440A	Agilent	07/10/2014	07/10/2015

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
 Customer: Cellphone-Mate, Inc.
 Specification: **7.8 Uplink inactivity**
 Work Order #: **97222** Date: 6/26/2015
 Test Type: **Conducted Emissions** Time: 09:17:04
 Tested By: Daniel Bertran Sequence#: 1
 Software: EMITest 5.02.00

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Configuration 1

The equipment under test (EUT) is a Mobile Wideband Consumer Booster.

The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) with the input port terminated with 50 Ohm Weinschel load (MN: 1424-4 and SN:21874).

Part 22
 UL: 824-849MHz
 DL: 869-894MHz

Part 24
 UL: 1850-1915MHz
 DL: 1930-1995MHz

Part 27
 UL: 1710-1755MHz, 698-716MHz, 776-787MHz
 DL: 2110-2155MHz, 728-746MHz, 746-757MHz

All adjustable settings on the test sample are set at max gain.

Test environment conditions: Temperature: 20.8°C, Relative Humidity: 42%, Atmospheric Pressure: 101.5kPa

Test procedure: The test was performed in accordance with section 7.8 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v03 Dated June 5, 2015.

Firmware: V1.0

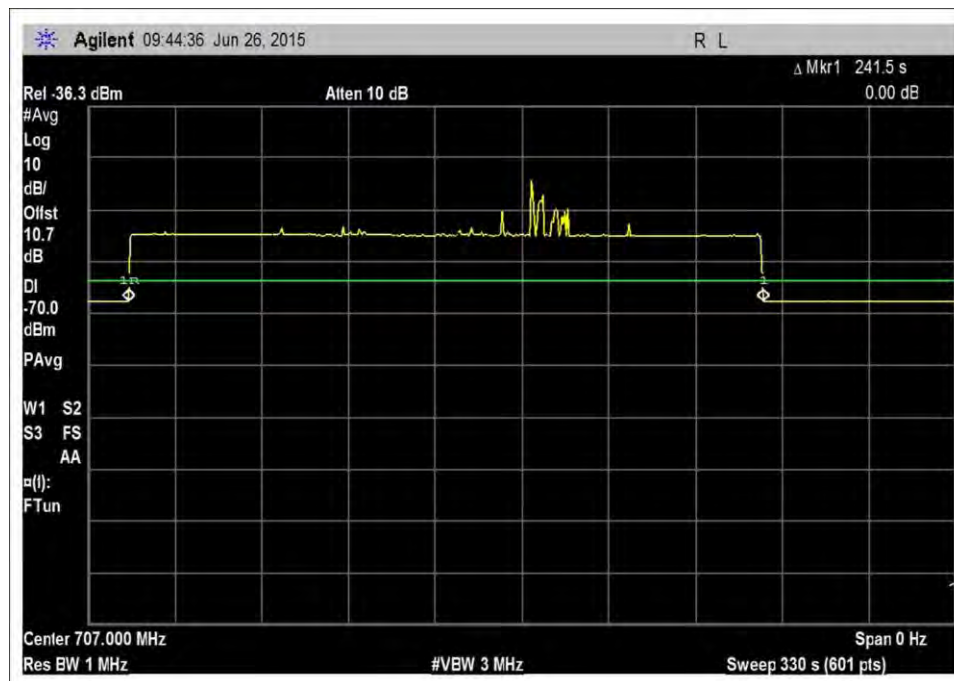
Summary of Results

Pass: As demonstrated, when the booster is not serving an active device connection after 5 minutes the uplink noise power does not exceed -70dbm/MHz

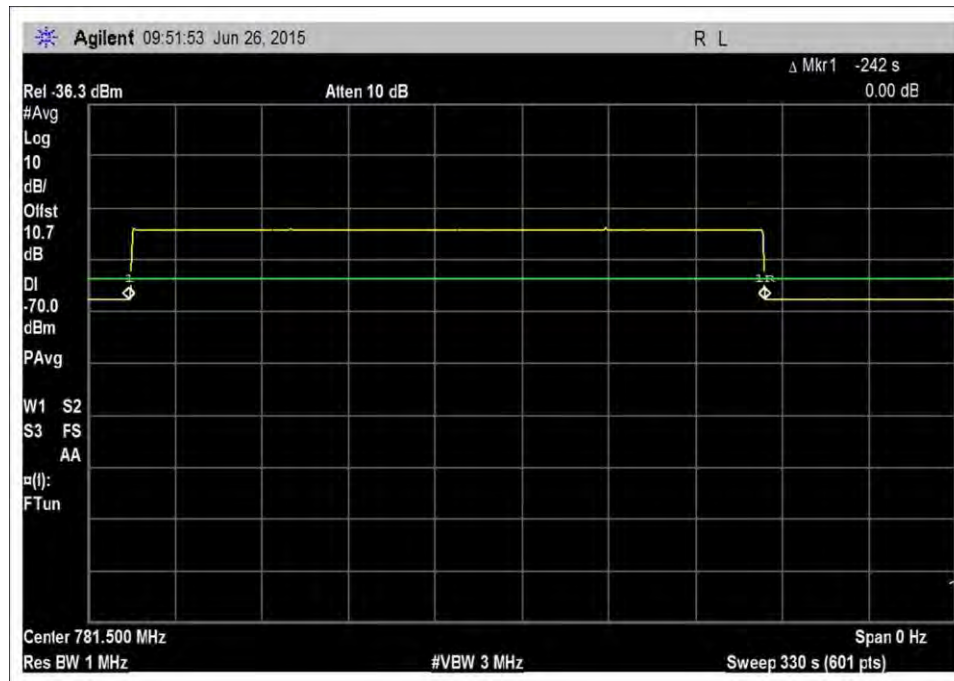
Uplink Inactivity		
Freq	Measured	Limit
MHz	Min	Min
UL1710-1755	4.02	5.0
UL1850-1915	4.02	5.0
UL824-894	4.02	5.0
UL 698-716	4.02	5.0
UL776-787	4.03	5.0

Test Data

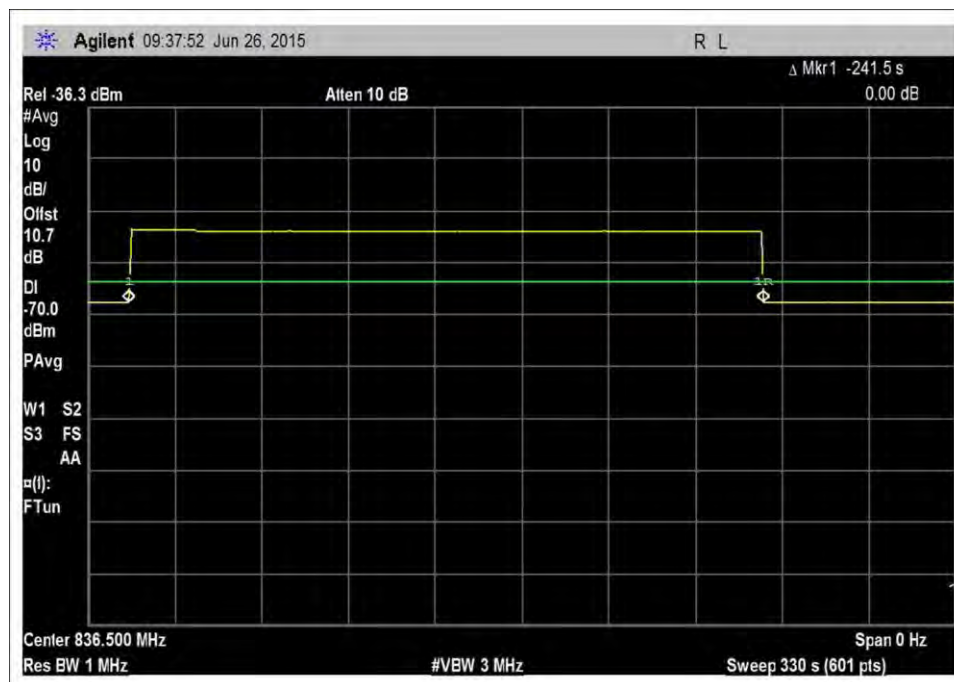
UL



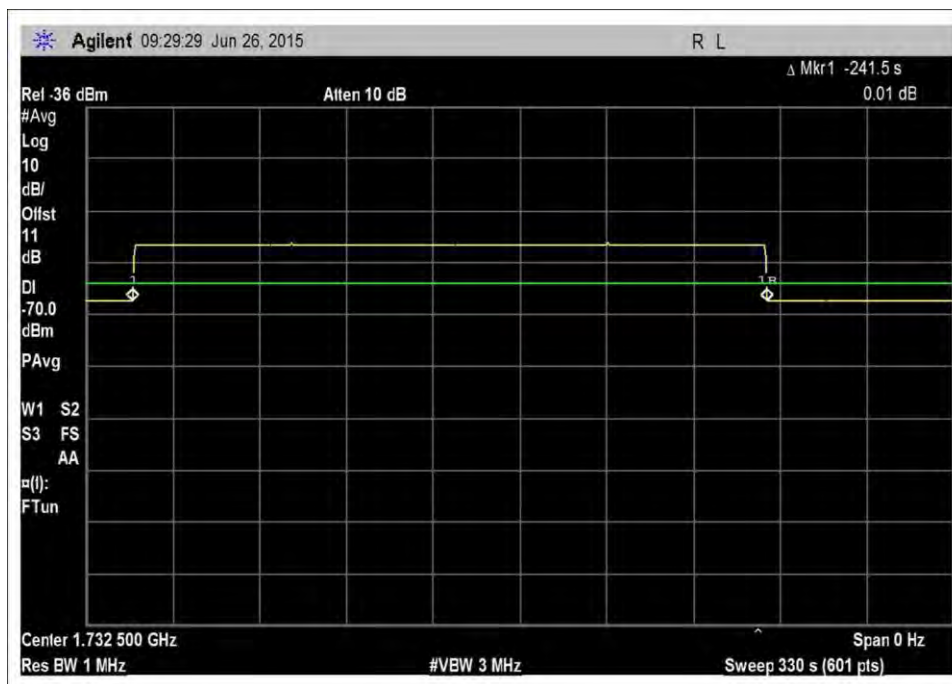
UL_698-707MHz



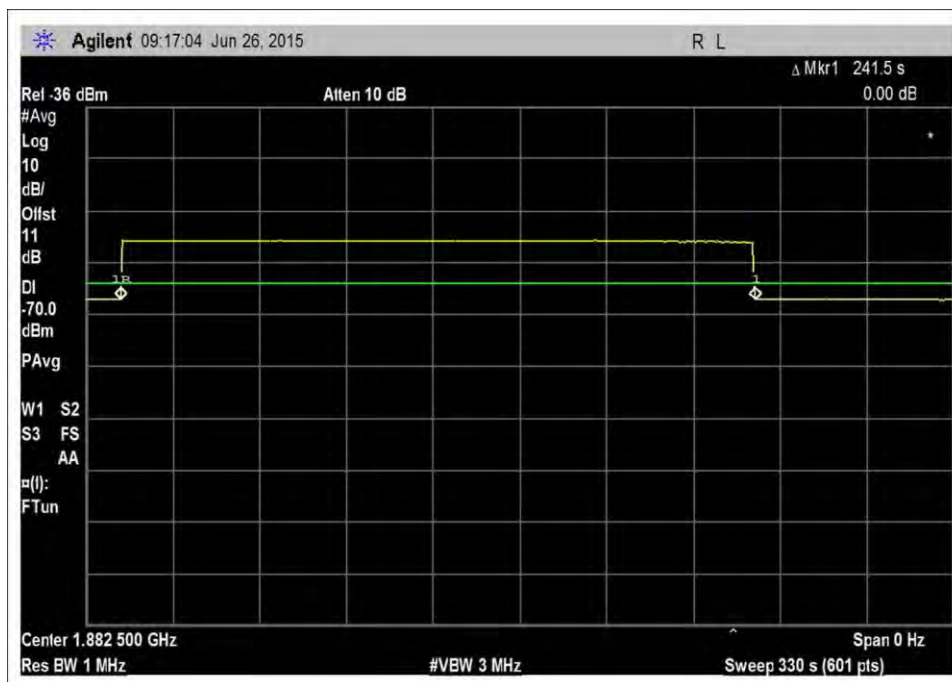
UL_776-787MHz



UL_824-849MHz



UL_1710-1755MHz



UL_1850-1915MHz

Clause 7.9 Booster Gain Limit

Test Equipment					
Asset #	Description	Model	Manufacturer	Cal Date	Cal Due
ANP05389	Attenuator	766-10	Narda	02/27/2014	02/27/2016
ANP06709	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
ANP06710	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
ANP06711	Cable	32022-29094K-29094K-132TC	AstroLab	11/21/2014	11/21/2016
C00082	RF Coupler	722-10-1.500V	MECA Electronics, Inc.	08/21/2013	08/21/2015
AN02869	Spectrum Analyzer	E4440A	Agilent	07/10/2014	07/10/2015

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
 Customer: Cellphone-Mate, Inc.
 Specification: **7.9 Variable Booster gain(Max Gain / Variable Uplink Gain Timing)**
 Work Order #: **97222** Date: 6/26/2015
 Test Type: **Conducted Emissions** Time: 14:23:22
 Tested By: Daniel Bertran Sequence#: 1
 Software: EMITest 5.02.00

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Configuration 1

The equipment under test (EUT) is a Mobile Wideband Consumer Booster.

The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

Part 22

UL: 824-849MHz

DL: 869-894MHz

Part 24

UL: 1850-1915MHz

DL: 1930-1995MHz

Part 27

UL: 1710-1755MHz, 698-716MHz, 776-787MHz

DL: 2110-2155MHz, 728-746MHz, 746-757MHz

All adjustable settings on the test sample are set at max gain.

Test environment conditions: Temperature: 20.8°C, Relative Humidity: 42%, Atmospheric Pressure: 101.5kPa

Test procedure: The test was performed in accordance with section 7.9 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v03 Dated June 5, 2015.

Firmware: V1.0

Note: Used minimum MSCL which is the “worse possible” case of the antenna kits offered by the manufacture’s antenna kitting.

Mobile station coupling loss (MSCL): the minimum coupling loss (in dB) between the wireless device and the input (server) port of the consumer booster. MSCL must be calculated or measured for each band of operation and provided in compliance test reports. MSCL includes the path loss from the wireless device, and the booster's server antenna gain and cable loss. The wireless device is assumed to be an isotropic (0 dBi) antenna reference. Minimum standoff distances from inside wireless devices to the booster's server antenna must be reasonable and specified by the manufacturer in customer provided installation manuals.

$$L P = 20 \log f + 20 \log d - 27.5$$

Where:

L P = basic free space path loss,

f = Center frequency,

d = (See table below)

Distance (m)	Vehicle Kit	Marine-1 Kit	Marine-2 Kit	Desk top RV-1 Kit	Desk top RV-2 Kit
d	0.4	0.9	0.9	0.6	0.6

Band (MHz)	MSCL (dB)	MSCL (dB)	MSCL (dB)	MSCL (dB)	MSCL (dB)
1850-1915	38.6	33.4	39.4	33.6	35.9
824-849	29.0	28.1	32.1	28.4	28.6
698-716	27.1	26.5	31.0	27.0	27.4
776-787	28.0	27.4	31.9	27.9	28.4
1710-1755	36.1	32.5	37.5	33.0	34.0

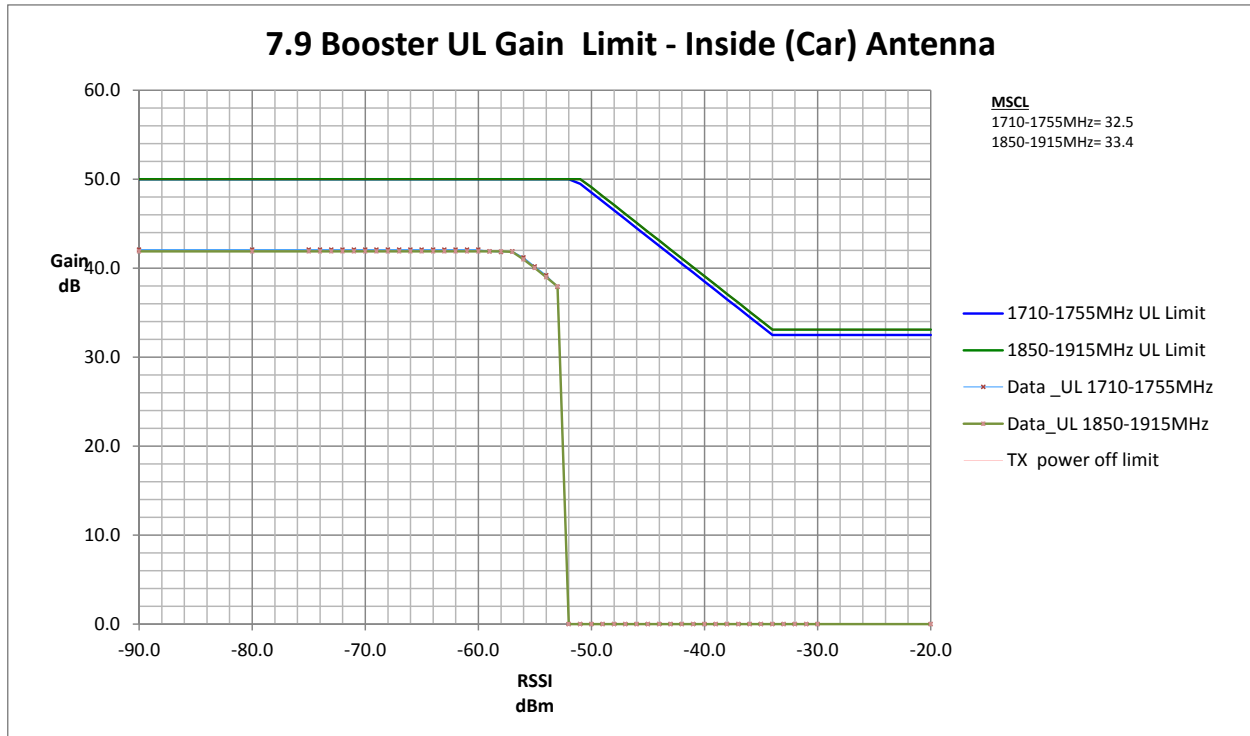
Minimum MSCL

Frequency (MHz)	MSCL (dB)
1850-1915	33.4
824-849	28.1
698-716	26.5
776-787	27.4
1710-1755	32.5

Summary of Results

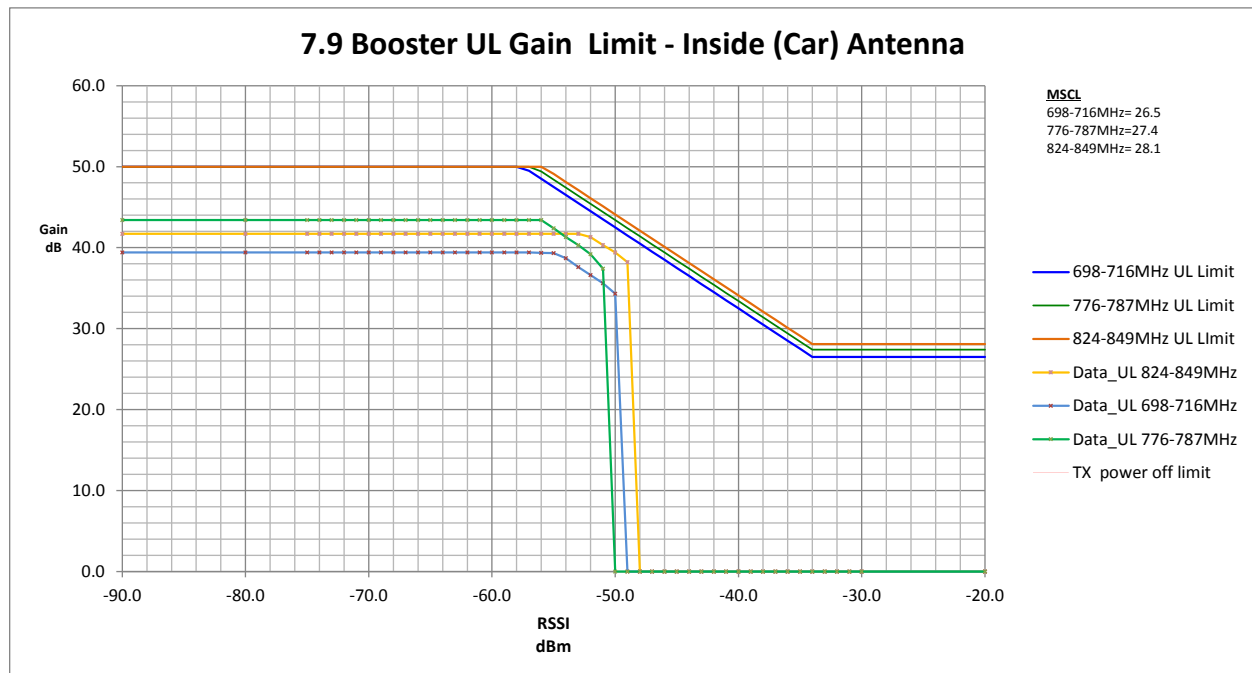
Pass: As demonstrated, computed gains are within the gain limit. All maximum variable uplink gain timings are within 1 second limit.

7.9.1 Maximum gain



1850.0				1915.0	MHz		
				Limit			Margin
RSSI (dBm)	Input (dBm)	Measured Output (dBm)	Measured Gain (dBm)	RSSI Dependent	Mobile Booster Limit	TX off	
-75.0	-29.1	12.8	41.9		50.0		-8.1
-58.0	-29.1	12.8	41.9		50.0		-8.1
-38.0	-29.1	-46.8	0.0	37.4			-37.4
-37.0	-29.1	-46.8	0.0	36.4			-36.4
-36.0	-29.1	-46.8	0.0	35.4			-35.4
-35.0	-29.1	-46.8	0.0	34.4			-34.4

1710.0				1755.0	MHz		
				Limit			Margin
RSSI (dBm)	Input (dBm)	Measured Output (dBm)	Measured Gain (dBm)	RSSI Dependent	Mobile Booster Limit	TX off	
-69.0	-30.7	11.4	42.1		50.0		-7.9
-60.0	-30.7	11.4	42.1		50.0		-7.9
-38.0	-30.7	-46.9	0.0	36.5			-36.5
-37.0	-30.7	-46.9	0.0	35.5			-35.5
-36.0	-30.7	-46.9	0.0	34.5			-34.5
-35.0	-30.7	-46.9	0.0	33.5			-33.5



824.0				849.0	MHz		
				Limit			Margin
RSSI (dBm)	Input (dBm)	Measured Output (dBm)	Measured Gain (dBm)	RSSI Dependent	Mobile Booster Limit	TX off	
-73.0	-28.1	13.6	41.7		50.0		-8.3
-65.0	-28.1	13.6	41.7		50.0		-8.3
-52.0	-28.1	13.2	41.3	46.1			-4.8
-51.0	-28.1	12.2	40.3	45.1			-4.8
-50.0	-28.1	11.3	39.4	44.1			-4.7
-49.0	-28.1	10.1	38.2	43.1			-4.9

698.0				716.0	MHz		
				Limit			Margin
RSSI (dBm)	Input (dBm)	Measured Output (dBm)	Measured Gain (dBm)	RSSI Dependent	Mobile Booster Limit	TX off	
-71.0	-26.8	12.6	39.4		50.0		-10.6
-63.0	-26.8	12.6	39.4		50.0		-10.6
-54.0	-26.8	11.9	38.7	46.5			-7.8
-53.0	-26.8	10.8	37.6	45.5			-7.9
-52.0	-26.8	9.8	36.6	44.5			-7.9
-51.0	-26.8	8.8	35.6	43.5			-7.9

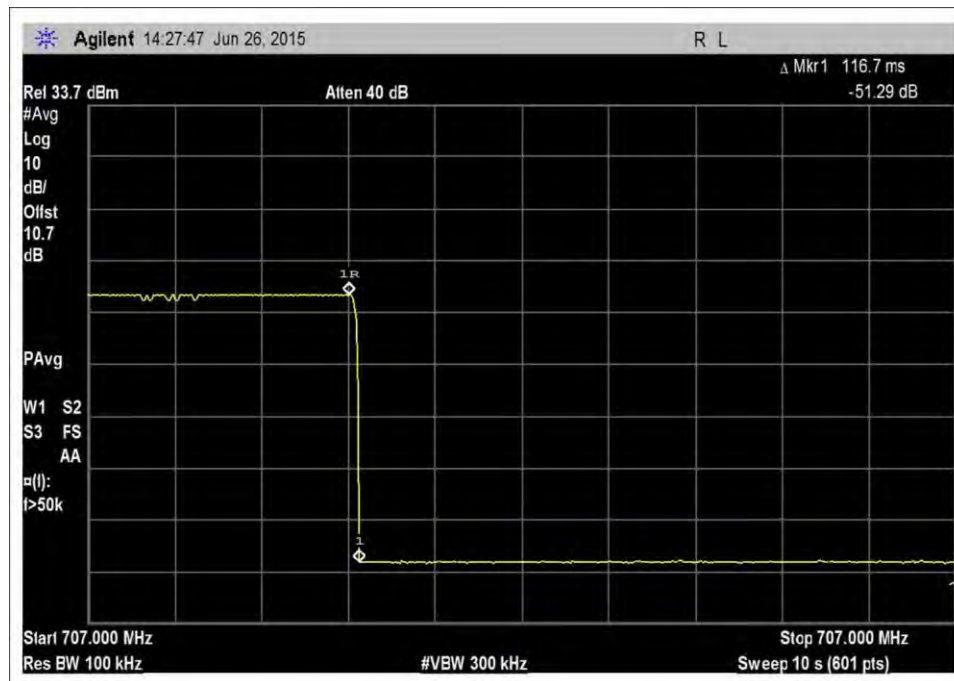
776.0				787.0	MHz		
				Limit			Margin
RSSI (dBm)	Input (dBm)	Measured Output (dBm)	Measured Gain (dBm)	RSSI Dependent	Mobile Booster Limit	TX off	
-71.0	-31.4	12.0	43.4		50.0		-6.6
-64.0	-31.4	12.0	43.4		50.0		-6.6
-56.0	-31.4	12.0	43.4	49.4			-6.0
-55.0	-31.4	11.0	42.4	48.4			-6.0
-54.0	-31.4	9.9	41.3	47.4			-6.1
-53.0	-31.4	8.9	40.3	46.4			-6.1

7.9.2 Variable uplink gain timing

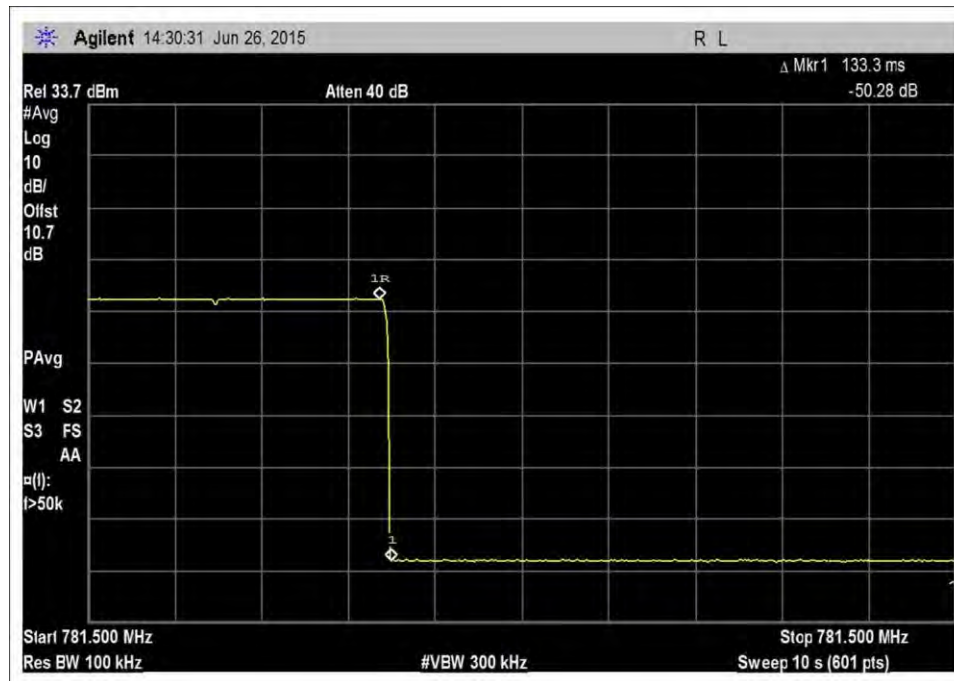
Uplink Gain Timing		
Frequency (MHz)	Measured (Sec)	Limit (Sec)
UL1710-1755	0.10	1
UL1850-1915	0.10	1
UL824-894	0.10	1
UL 698-716	0.12	1
UL776-787	0.13	1

Test Data

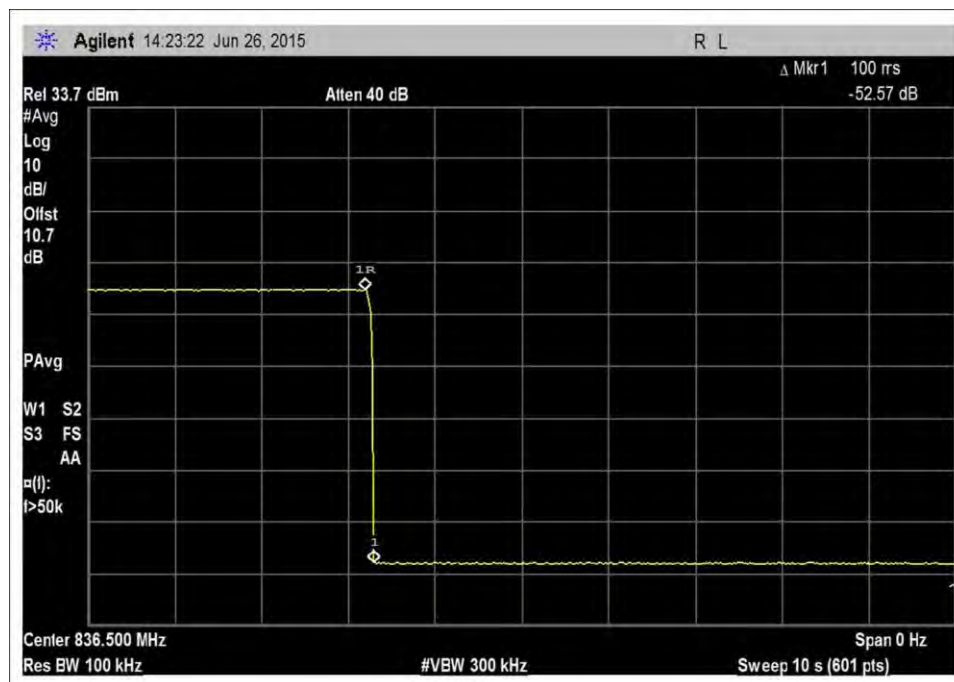
Section 7.9.2 - UL



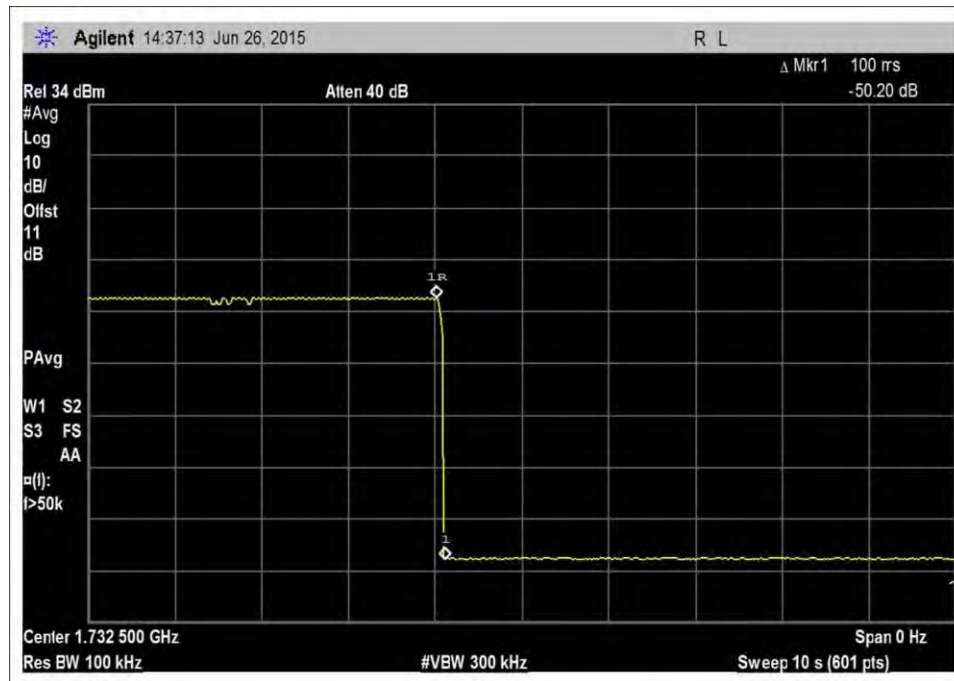
UL_698-716MHz



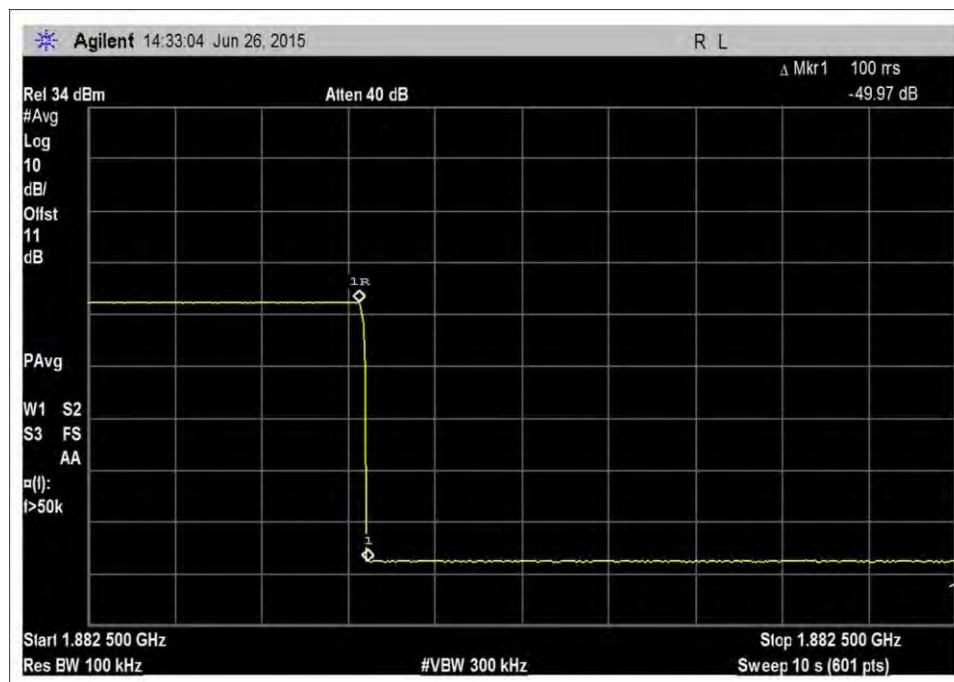
UL_776-787MHz



UL_824-849MHz



UL_1710-1755MHz



UL_1850-1915MHz

Clause 7.11 Oscillation Detection

Test Equipment					
Asset #	Description	Model	Manufacturer	Cal Date	Cal Due
ANP06138	Cable	32022-29094K-29094K-72TC	Astrolab	03/18/2015	03/18/2017
ANP06709	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
ANP06710	Cable	32026-29094K-29094K-72TC	AstroLab	09/18/2014	09/18/2016
ANP06711	Cable	32022-29094K-29094K-132TC	AstroLab	11/21/2014	11/21/2016
AN02869	Spectrum Analyzer	E4440A	Agilent	07/10/2014	07/10/2015
AN03412	Band Pass Filter	PE8705	Pasternack	08/26/2013	08/26/2015
AN03413	Band Pass Filter	PE8706	Pasternack	08/26/2013	08/26/2015
AN03414	Band Pass Filter	PE8707	Pasternack	08/26/2013	08/26/2015
AN03415	Band Pass Filter	PE8708	Pasternack	08/26/2013	08/26/2015
AN03447	Band Pass Filter	PE8710	Pasternack	09/20/2013	09/20/2015
AN03448	Band Pass Filter	PE8711	Pasternack	09/20/2013	09/20/2015
AN03446	Band Pass Filter	4FV50-707/H18-O/O	K & L	01/06/2014	01/06/2016
AN03467	Band Pass Filter	4FV50-731/H30-O/O	K & L	01/06/2014	01/06/2016
AN03468	Band Pass Filter	4CS10-781.5/E12.2-O/O	K & L	01/06/2014	01/06/2016
AN03469	Band Pass Filter	4CS10-751.5/E12-O/O	K & L	01/06/2014	01/06/2016
AN02475	1 dB step Attenuator	8494B	HP	06/29/2015	06/29/2017
AN03429	10dB step Attenuator	8496B	HP	09/05/2013	09/05/2015
C00082	RF Coupler	722-10-1.500V	MECA Electronics, Inc.	08/21/2013	08/21/2015
C00087	Combiner	44000	Anaren	01/09/2014	01/09/2016

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
 Customer: Cellphone-Mate, Inc.
 Specification: **7.11 Anti-Oscillation (Oscillation Restarts / Oscillation mitigation or shutdown)**
 Work Order #: **97222** Date: 6/30/2015
 Test Type: **Conducted Emissions** Time: 09:01:40
 Tested By: Daniel Bertran Sequence#: 1
 Software: EMITest 5.02.00

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Configuration 1 The equipment under test (EUT) is a Mobile Wideband Consumer Booster. The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port. Part 22 UL: 824-849MHz DL: 869-894MHz Part 24 UL: 1850-1915MHz DL: 1930-1995MHz Part 27 UL: 1710-1755MHz, 698-716MHz, 776-787MHz DL: 2110-2155MHz, 728-746MHz, 746-757MHz All adjustable settings on the test sample are set at max gain. Test environment conditions: Temperature: 20.8°C, Relative Humidity: 42%, Atmospheric Pressure: 101.5kPa Test procedure: The test was performed in accordance with section 7.11 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v03 Dated June 5, 2015. Firmware: V1.0 Note: UL-1710-1755-AWGNL+5: - AWGNL denotes a 4.1MHz AWGN signal (99% occupied bandwidth) tuned to the frequency of 2.5 MHz above the lower edge of the operating band 1710-1755MHz. - +5 denotes a variable attenuator adjusted such that the insertion loss for center of band under test (isolation) between the booster's donor and server ports is 5 dB greater than the maximum gain, as recorded in the maximum gain test procedure, for the band under test. UL-824-849-AWGNR+5: - AWGNR denotes a 4.1MHz AWGN signal (99% occupied bandwidth) tuned to the frequency of 2.5 MHz below the upper edge of the operating band 824-849MHz.

Summary of Results

Pass: All oscillations detections and mitigations occur within 0.3 seconds in uplink bands, within 1 second in the downlink bands and the noise level is below the -70dBm/MHz limit.

7.11.2 Oscillation restart tests

Oscillation detection				Time Between restart		Number of restart	
Freq	Measured	Limit	Peak Level	Measured	Limit	Measured	Limit
MHz	Sec	Sec	dBm	Sec	At least sec		
UL1710-1755	0.17	0.30	31.9	69.0	60	3	5
UL1850-1915	0.19	0.30	26.6	68.0	60	3	5
UL824-894	0.19	0.30	21.8	70.0	60	3	5
UL 698-716	0.16	0.30	30.4	70.2	60	3	5
UL776-787	0.18	0.30	30.0	70.2	60	3	5
DL2110-2155	0.15	1.00	9.7	69.8	60	3	5
DL1930-1995	0.15	1.00	20.9	70.2	60	3	5
DL869-894	0.19	1.00	18.8	69.6	60	3	5
DL:728-746	0.18	1.00	19.1	70.4	60	3	5
DL 746-757	0.17	1.00	16.9	69.8	60	3	5

The booster continues to mitigate at least 1 minute before restarting. The plots demonstrate after 3 restarts (the limit is 5 restart), the booster does not resume operation until manually reset.

7.11.3 Test procedure for measuring oscillation mitigation or shutdown

UL 1710-1755 MHz				
Max Gain	44			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-70.2	-75.6	5.4	12.0
+4dB	-69.7	-75.7	6.0	12.0
+3dB	-68.4	-75.9	7.6	12.0
+2dB	-67.0	-76.3	9.3	12.0
+1dB	-63.7	-76.5	(12.9)*	12.0
0dB	-60.7	-76.3	(15.6)*	12.0
-1dB	-53.3	-76.4	(23.1)*	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0
DL 2110-2155 MHz				
Max Gain	41.7			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-73.6	-77.2	3.7	12.0
+4dB	-72.9	-77.5	4.6	12.0
+3dB	-72.1	-77.1	5.0	12.0
+2dB	-68.3	-76.9	8.6	12.0
+1dB	-66.3	-76.9	(10.6)*	12.0
0dB	-63.1	-77.2	(14.2)*	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0

UL1850-1915 MHz				
Max Gain	42.2			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-71.8	-75.8	4.0	12.0
+4dB	-71.2	-75.9	4.6	12.0
+3dB	-70.4	-76.1	5.7	12.0
+2dB	-69.9	-76.2	6.3	12.0
+1dB	-69.0	-76.2	7.3	12.0
0dB	-67.8	-76.3	8.5	12.0
-1dB	-66.3	-76.5	10.2	12.0
-2dB	-63.7	-76.8	(13.1)*	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0
DL 1930-1995 MHz				
Max Gain	41.4			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-72.3	-76.4	4.1	12.0
+4dB	-73.4	-76.9	3.5	12.0
+3dB	-73.0	-77.1	4.2	12.0
+2dB	-72.1	-77.1	5.0	12.0
+1dB	-66.3	-75.5	9.2	12.0
0dB	-66.2	-75.6	9.4	12.0
-1dB	-62.9	-75.9	(12.9)*	12.0
-2dB	-59.2	-76.1	(16.9)*	12.0
-3dB	-58.1	-76.4	(18.3)*	12.0
-4dB	-36.3	-76.2	(40.0)*	12.0
-5dB	**	**	0.0	12.0

Notes:

* The measured difference exceeds the limit for a period of less than 300 second before device mitigates and shuts down. The maximum recorded time prior to shutdown was 56 second.

** The device shuts down immediately.

UL 824-894 MHz				
Max Gain	41.3			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-68.0	-80.1	12.0	12.0
+4dB	-64.6	-80.3	(15.7)*	12.0
+3dB	-62.6	-80.6	(18.0)*	12.0
+2dB	-60.2	-81.0	(20.8)*	12.0
+1dB	-44.4	-81.0	(36.7)*	12.0
0dB	-42.2	-81.3	(39.1)*	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0
DL 869-894 MHz				
Max Gain	43.2			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-67.6	-76.3	8.7	12.0
+4dB	-65.8	-76.7	10.9	12.0
+3dB	-65.6	-76.3	10.7	12.0
+2dB	-59.6	-76.6	(17.0)*	12.0
+1dB	-51.9	-76.9	(24.9)*	12.0
0dB	**	**	0.0	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0

UL 698-716 MHz				
Max Gain	40.6			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-63.4	-80.6	(17.2)*	12.0
+4dB	-62.8	-81.1	(18.3)*	12.0
+3dB	-62.3	-81.6	(19.3)*	12.0
+2dB	-59.5	-81.4	(21.9)*	12.0
+1dB	-55.4	-82.0	(26.6)*	12.0
0dB	-46.8	-82.3	(35.5)*	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0
DL 728-746 MHz				
Max Gain	45			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-71.2	-82.5	11.3	12.0
+4dB	-69.6	-82.4	(12.8)*	12.0
+3dB	-69.9	-82.9	(13.1)*	12.0
+2dB	-66.8	-83.4	(16.6)*	12.0
+1dB	-66.0	-82.1	(16.1)*	12.0
0dB	-56.5	-84.7	(28.2)*	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0

Notes:

* The measured difference exceeds the limit for a period of less than 300 second before device mitigates and shuts down. The maximum recorded time prior to shutdown was 56 second.

** The device shuts down immediately.

UL 776-787 MHz				
Max Gain	44.6			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-66.3	-76.9	10.6	12.0
+4dB	-64.7	-77.3	(12.6)*	12.0
+3dB	-63.0	-77.3	(14.3)*	12.0
+2dB	-61.5	-77.9	(16.4)*	12.0
+1dB	-59.5	-78.2	(18.7)*	12.0
0dB	-52.8	-79.4	(26.6)*	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0
DL 746-775 MHz				
Max Gain	44			
Isolation	Peak	Min	Diff	Limit
dB	Sec	Sec	dB	dB
+5dB	-75.7	-84.2	8.5	12.0
+4dB	-75.6	-82.5	6.9	12.0
+3dB	-75.2	-83.4	8.1	12.0
+2dB	-74.6	-82.4	7.8	12.0
+1dB	-71.9	-82.9	11.0	12.0
0dB	**	**	0.0	12.0
-1dB	**	**	0.0	12.0
-2dB	**	**	0.0	12.0
-3dB	**	**	0.0	12.0
-4dB	**	**	0.0	12.0
-5dB	**	**	0.0	12.0

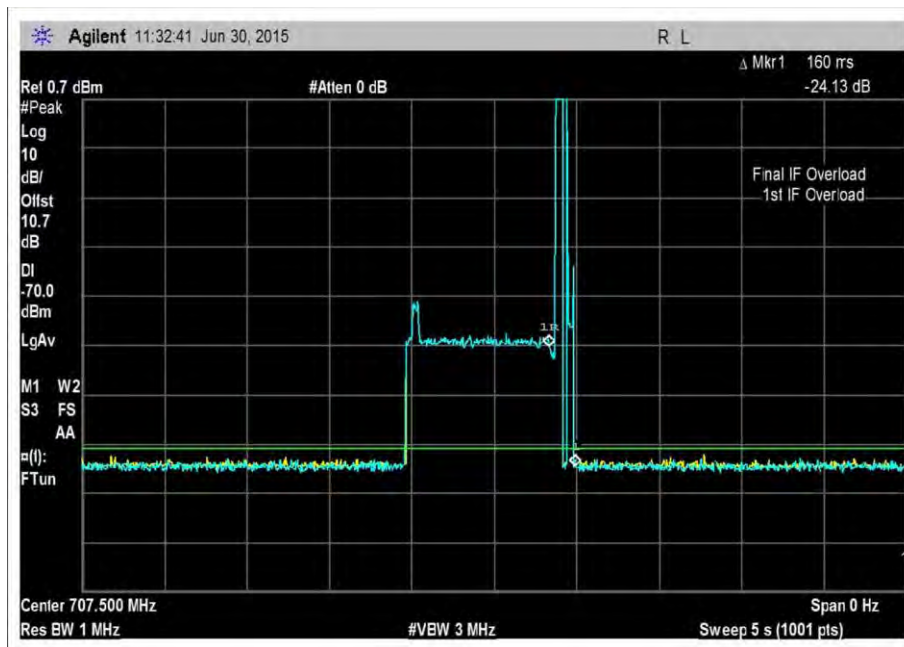
Notes:

* The measured difference exceeds the limit for a period of less than 300 second before device mitigates and shuts down. The maximum recorded time prior to shutdown was 56 second.

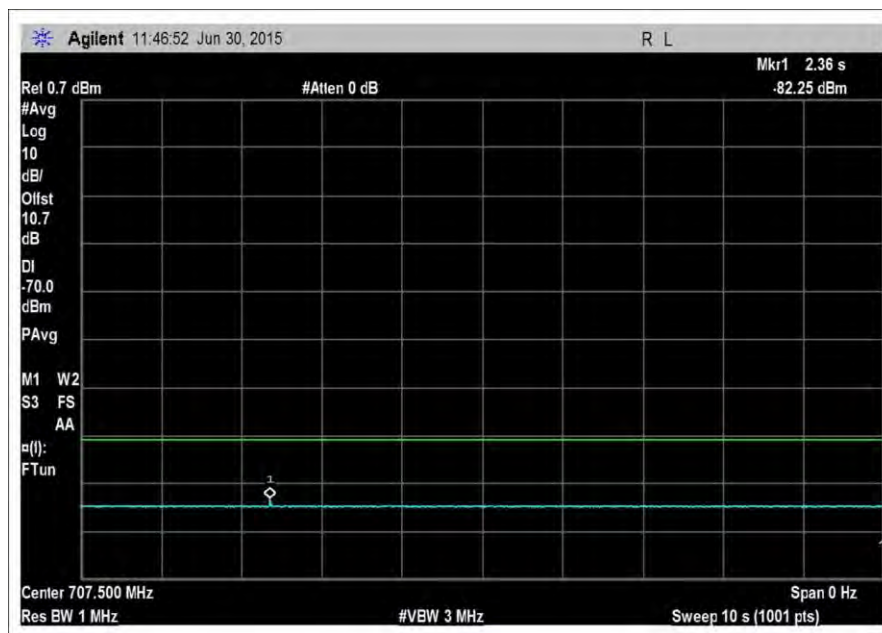
** The device shuts down immediately.

Test Data

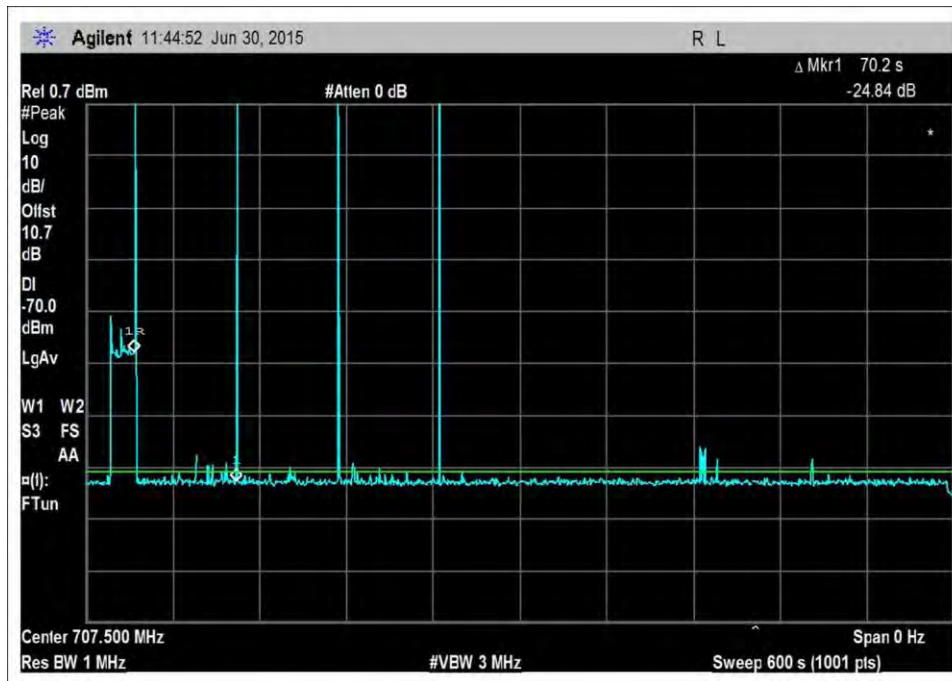
Section 7.11.2 – UL



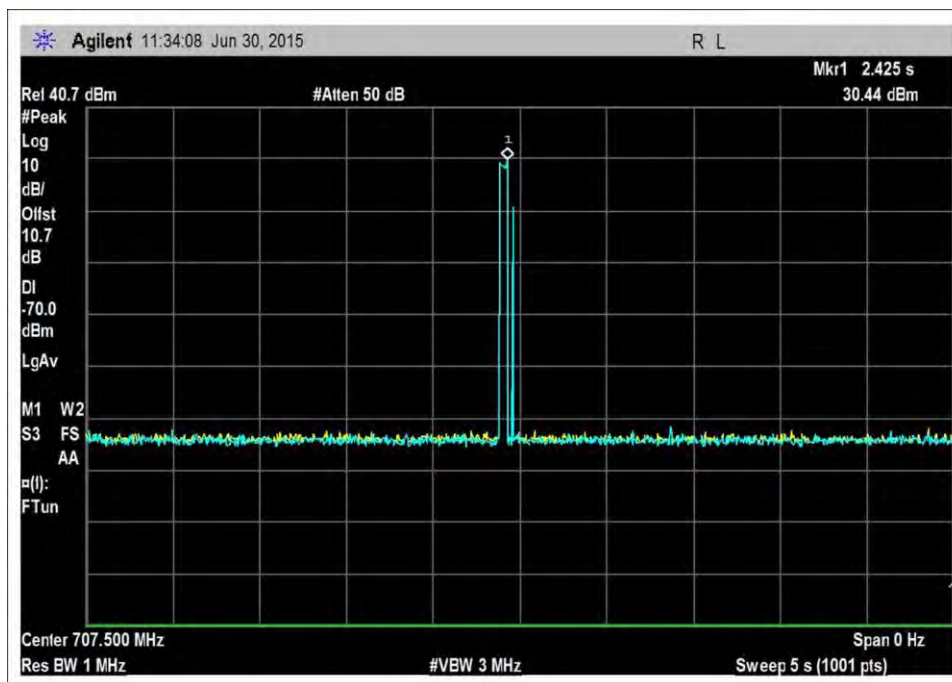
UL_698-716MHz



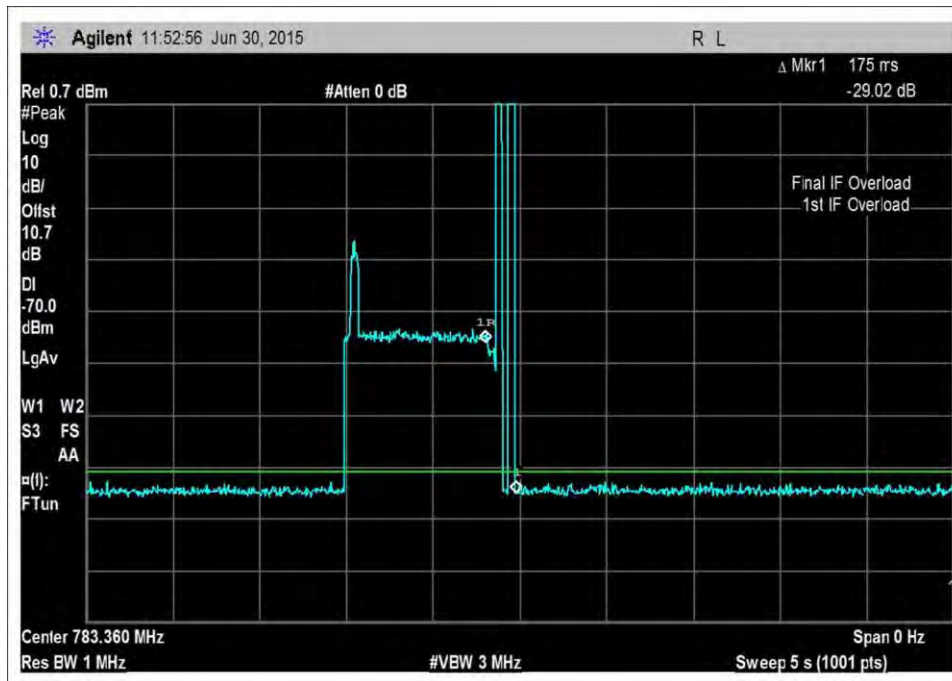
UL_698-716MHz-70dBm



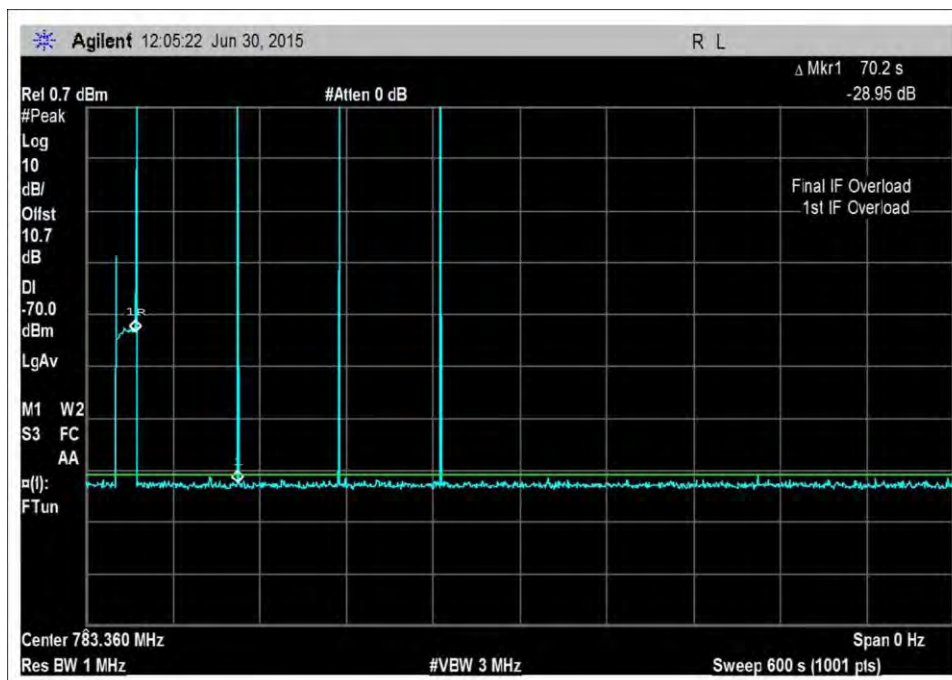
UL_698-716MHz-600sec



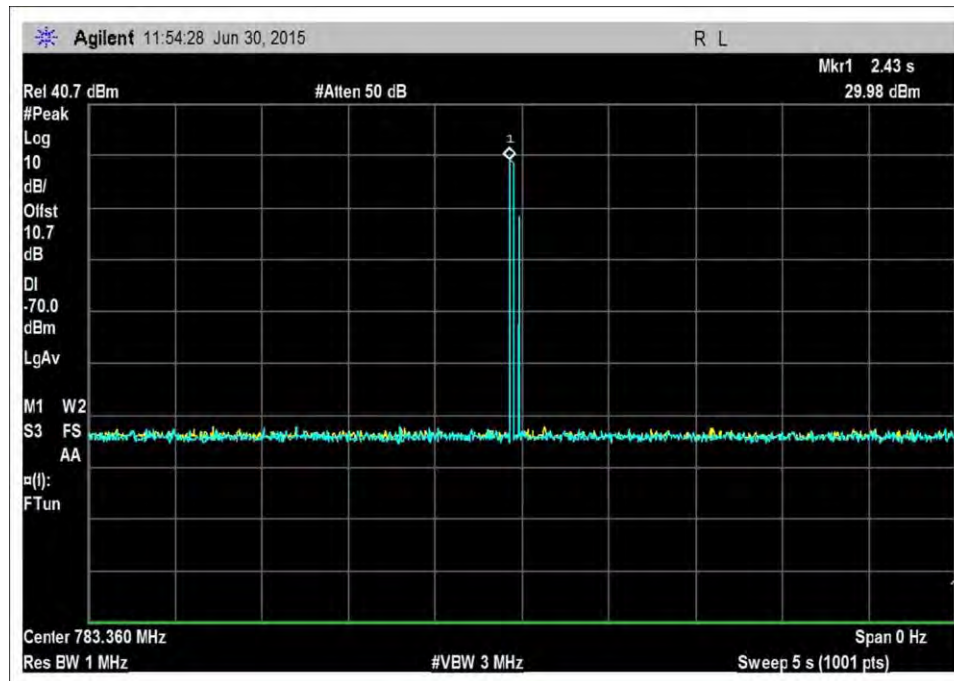
UL_698-716MHz-Pk



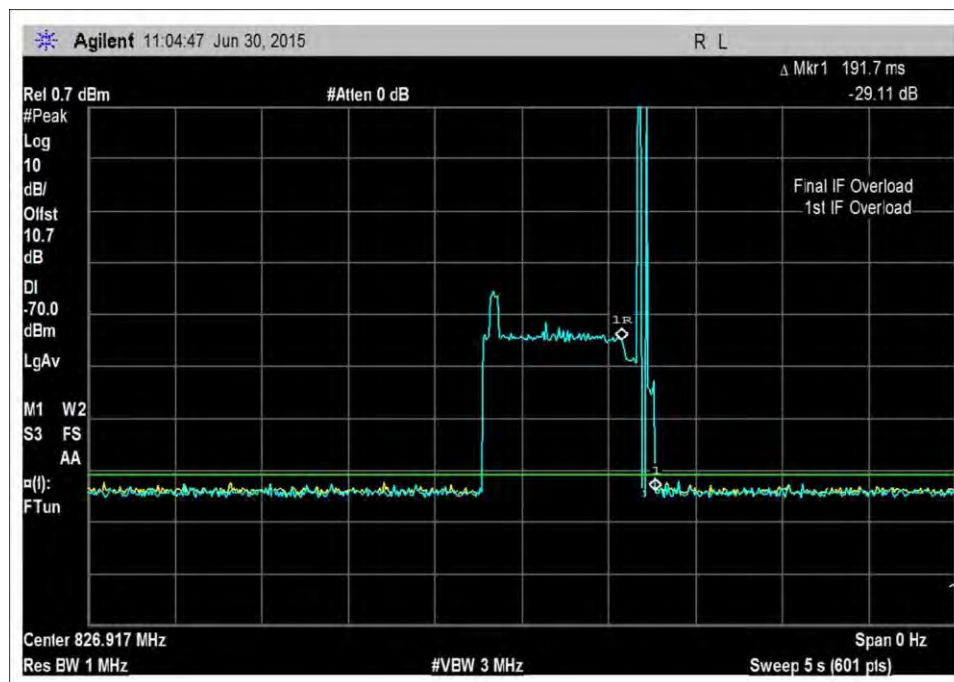
UL_776-787MHz



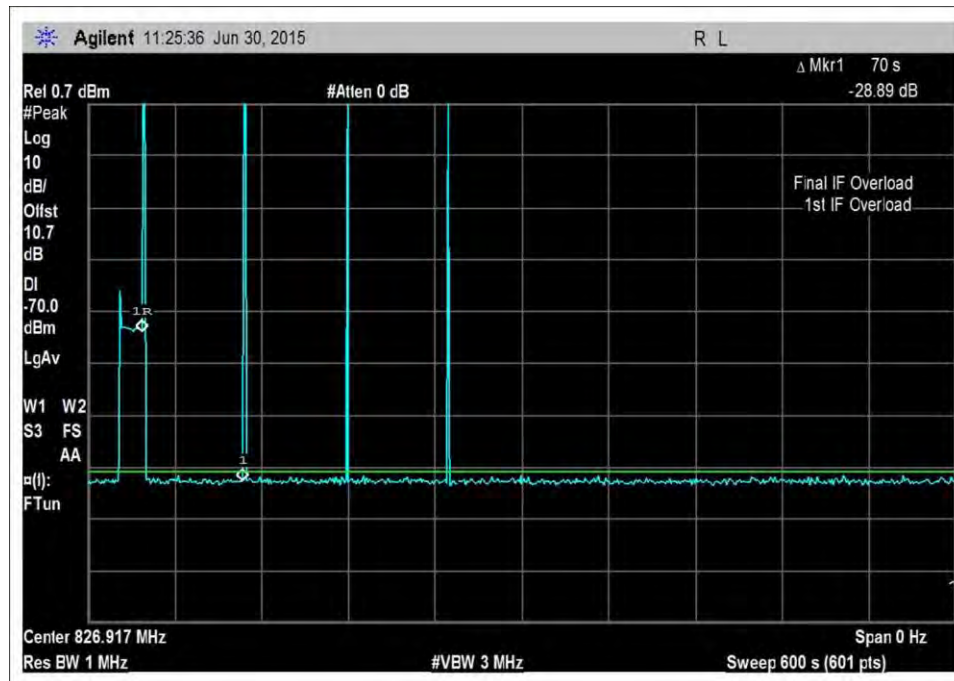
UL_776-787MHz-600sec



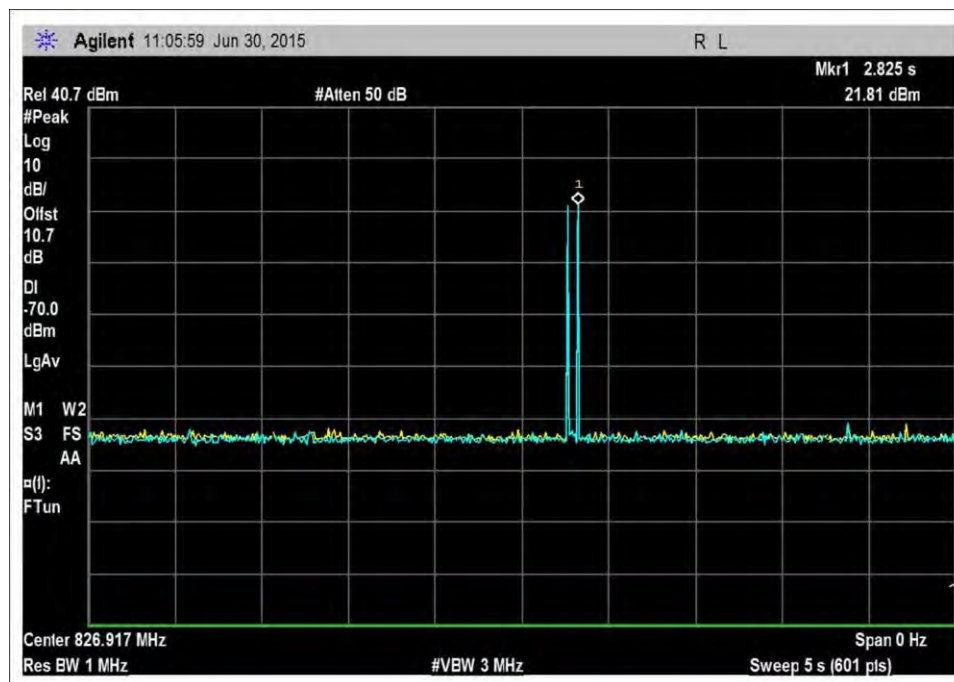
UL_776-787MHz-Pk



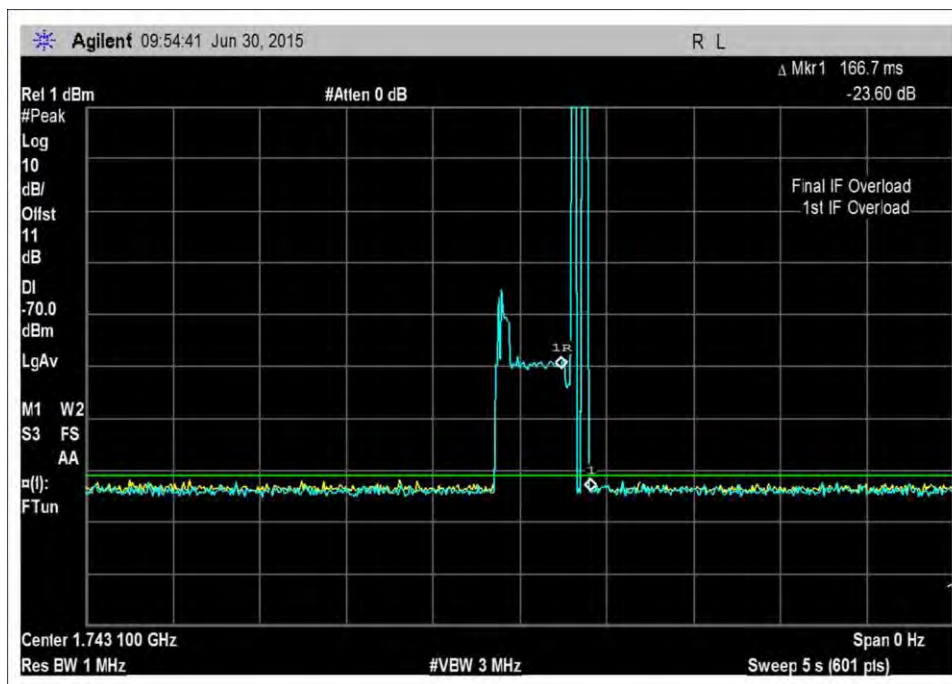
UL_824-849MHz



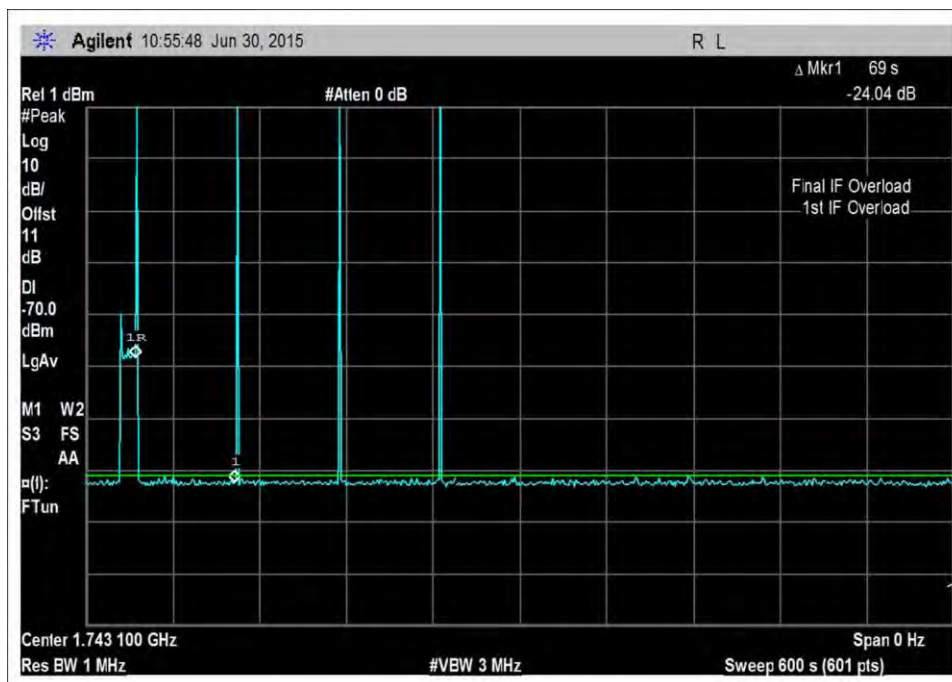
UL_824-849MHz-600sec



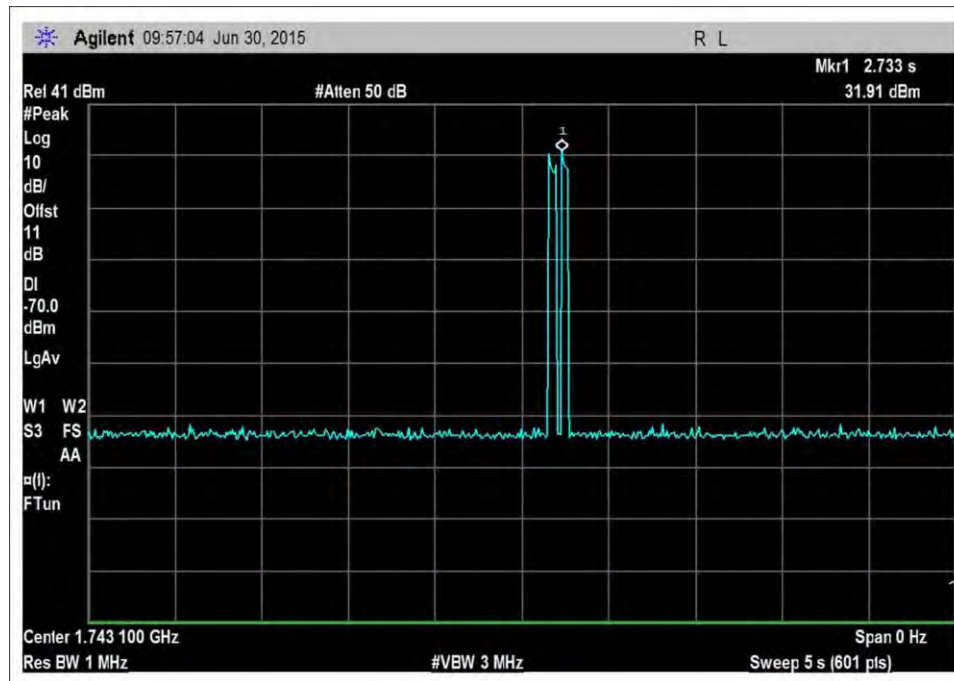
UL_824-849MHz-Pk



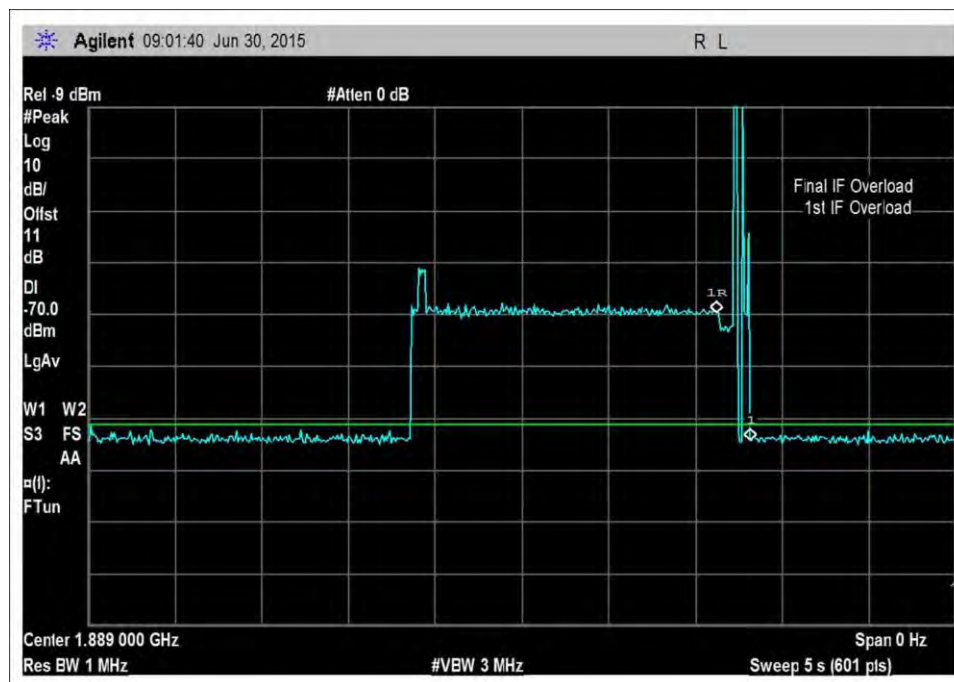
UL_1710-1755MHz



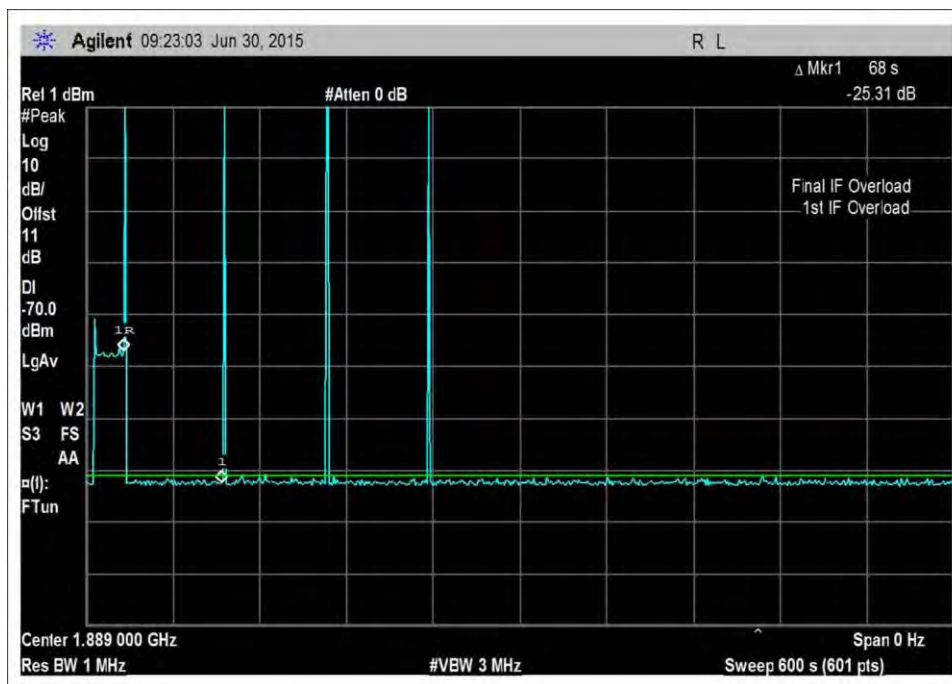
UL_1710-1755MHz-600sec



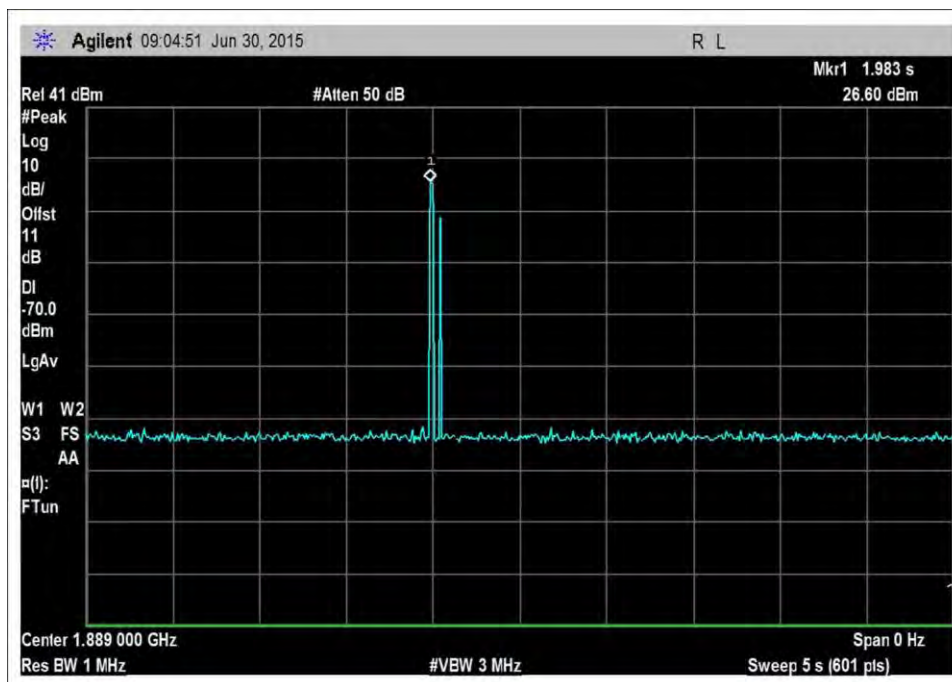
UL_1710-1755MHz-Pk



UL_1850-1915MHz

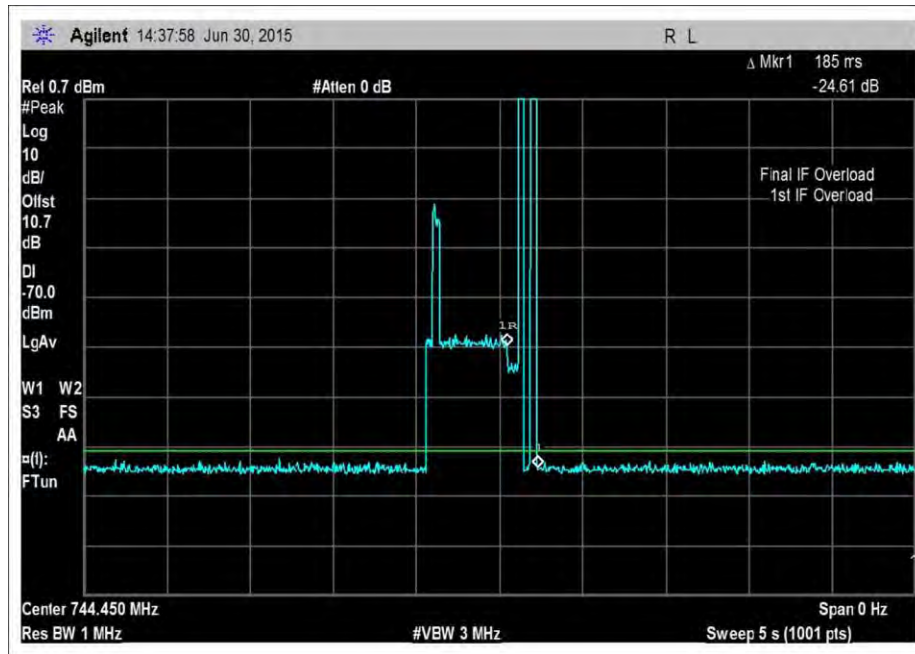


UL_1850-1915MHz-600sec

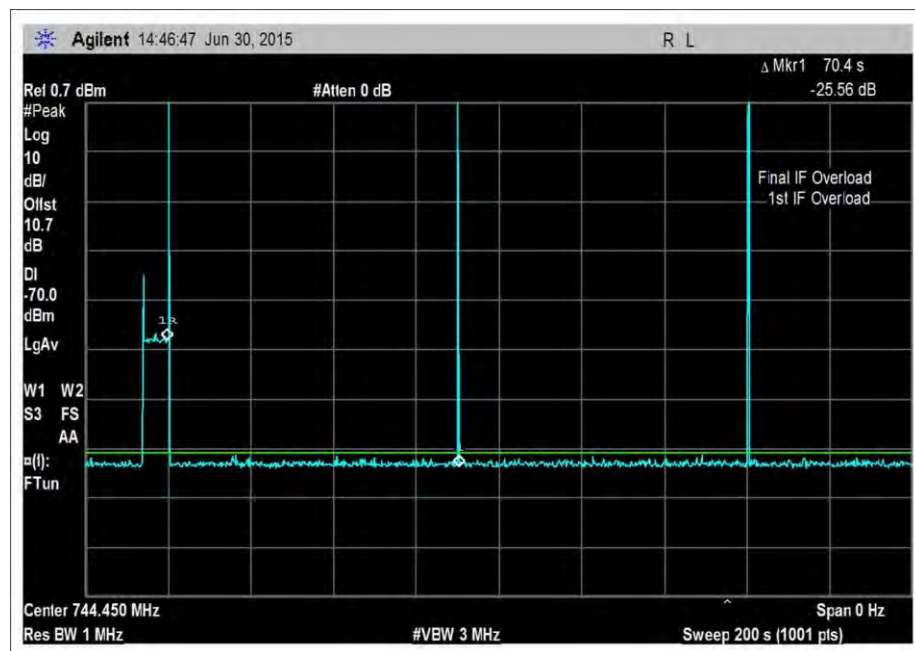


UL_1850-1915MHz-Pk

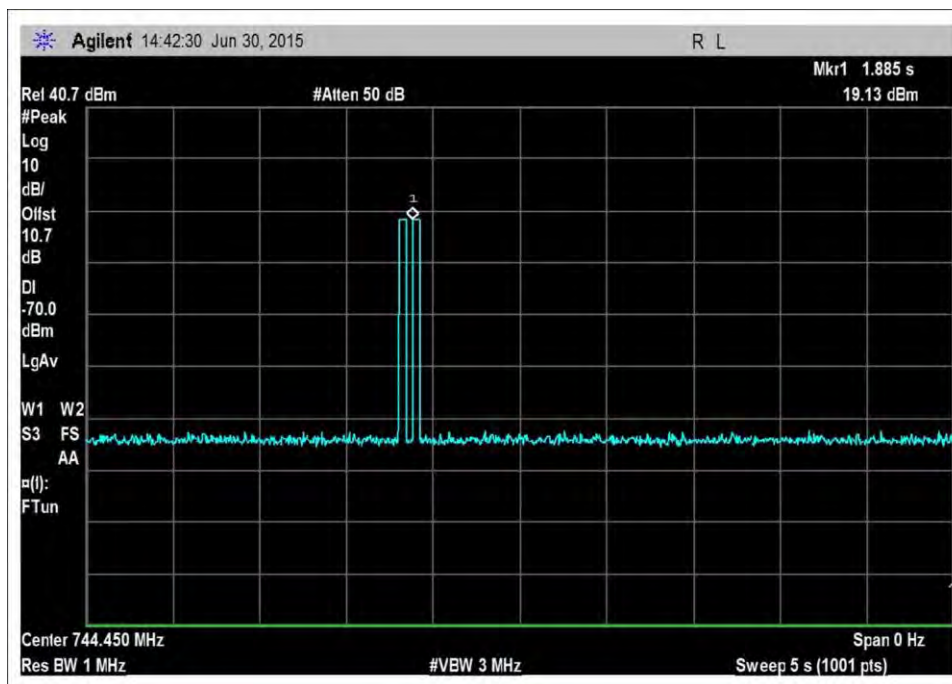
Section 7.11.2 - DL



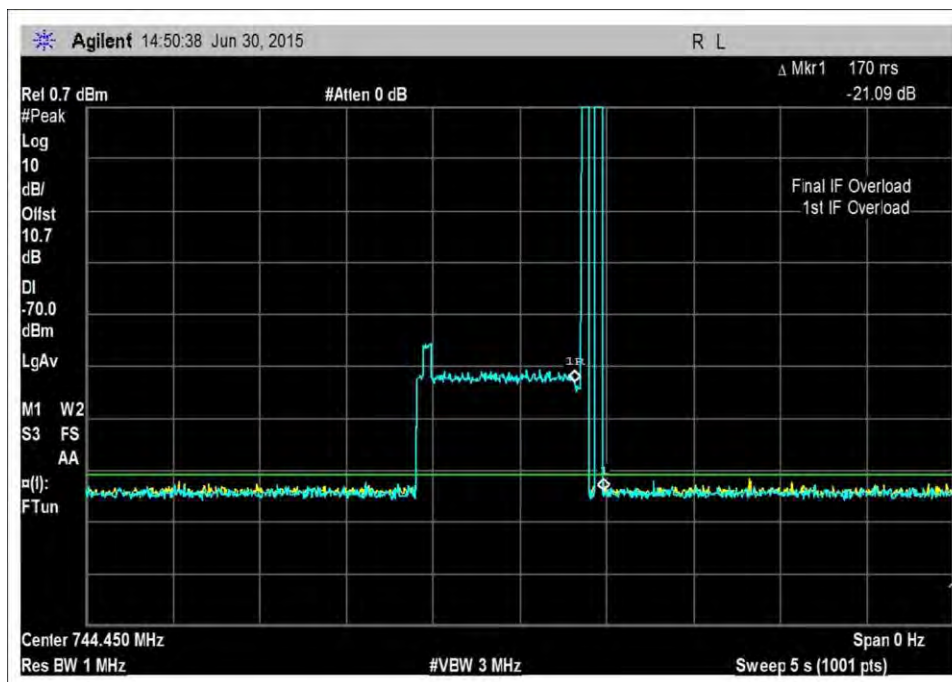
DL_728-746MHz



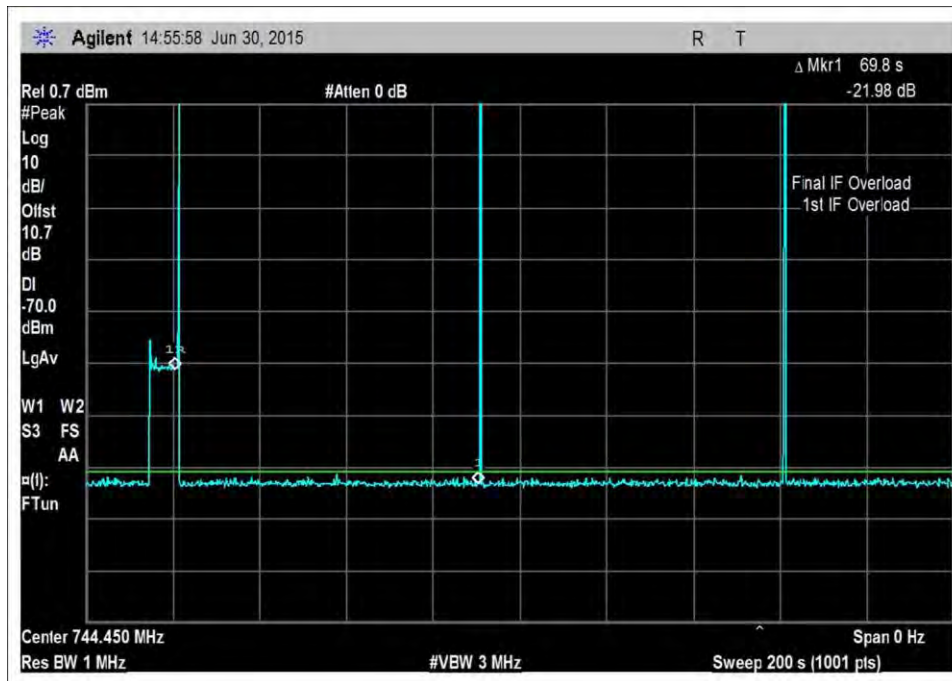
DL_728-746MHz-200sec



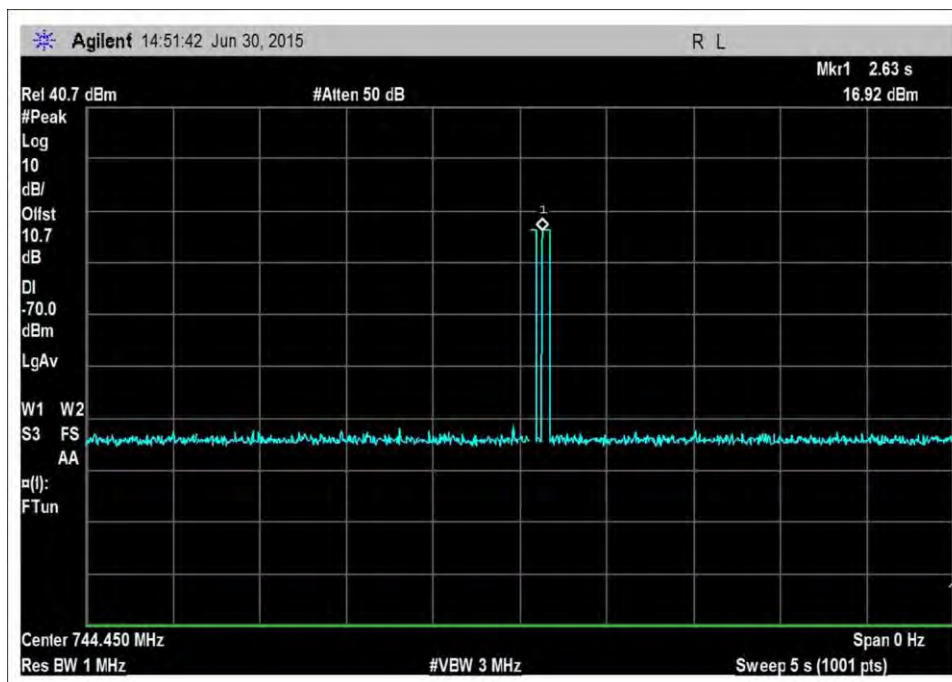
DL_728-746MHz-Pk



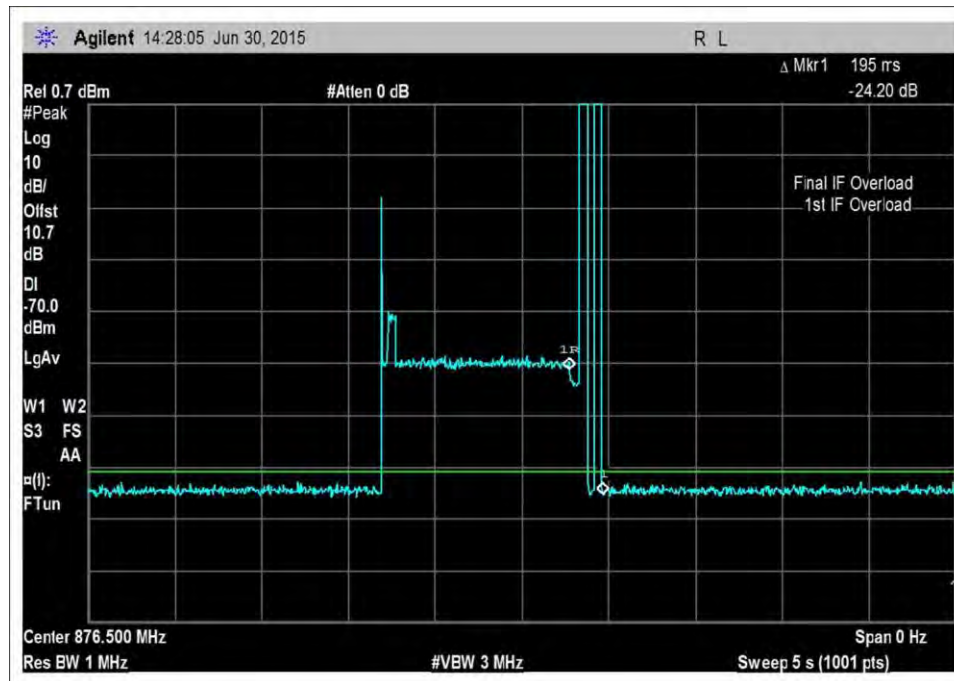
DL_746-757MHz



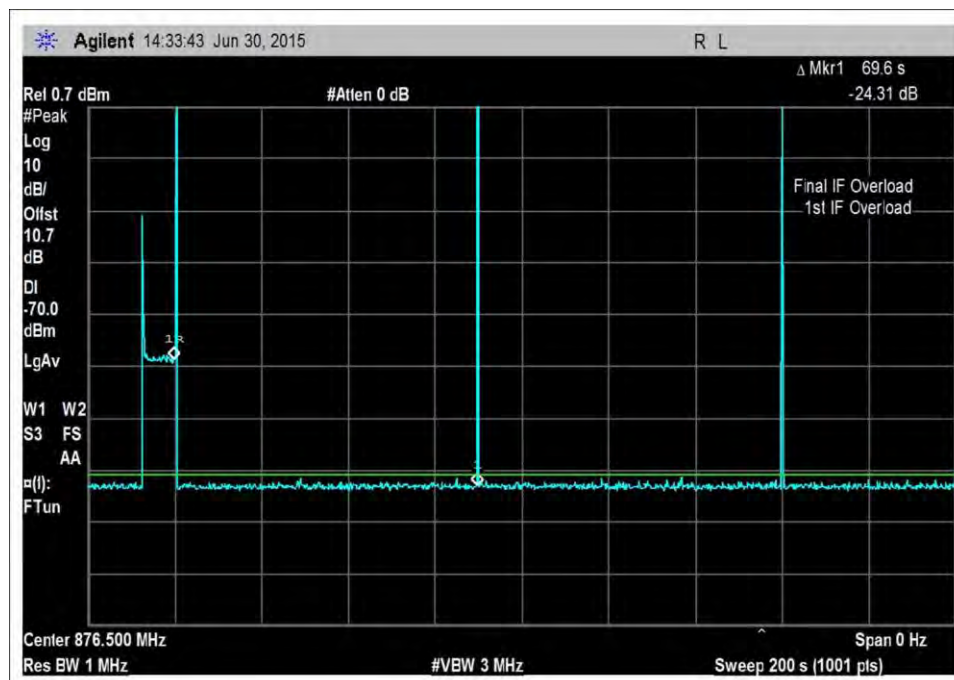
DL_746-757MHz-200sec



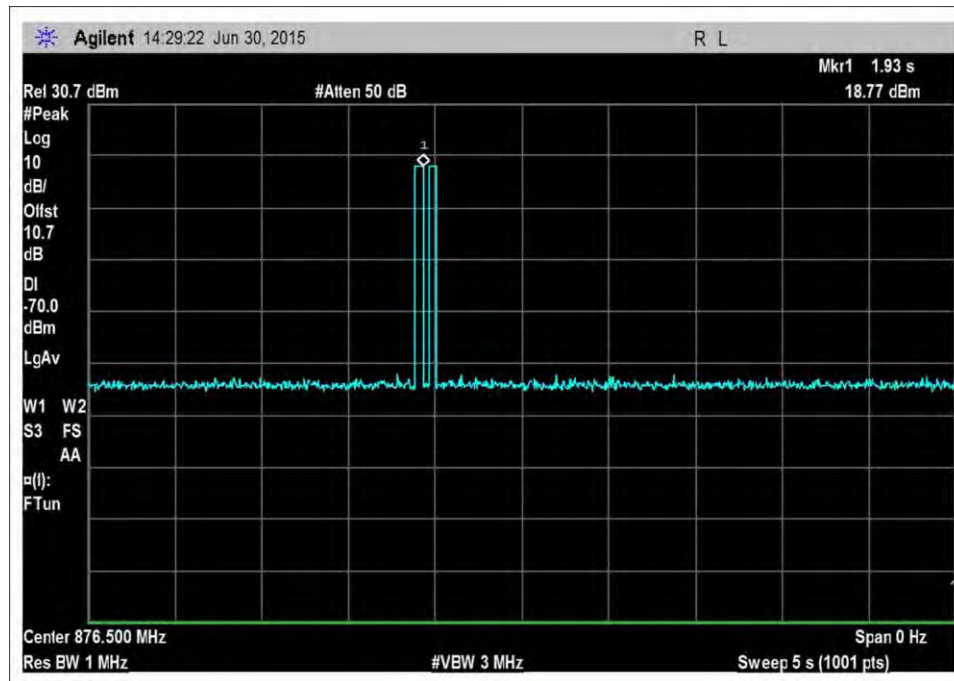
DL_746-757MHz-Pk



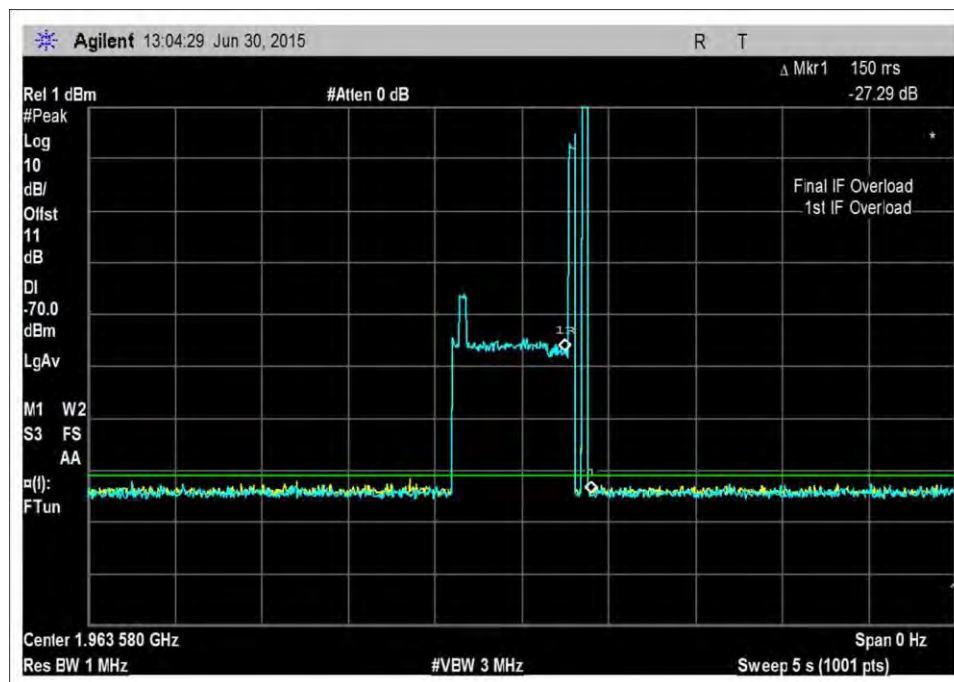
DL_869-894MHz



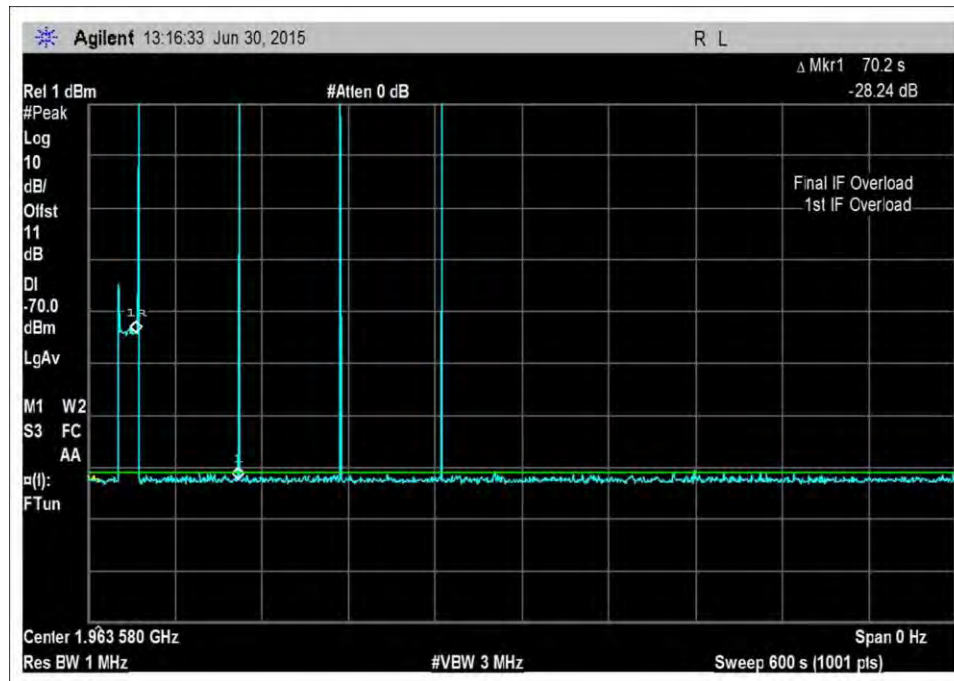
DL_869-894MHz-200sec



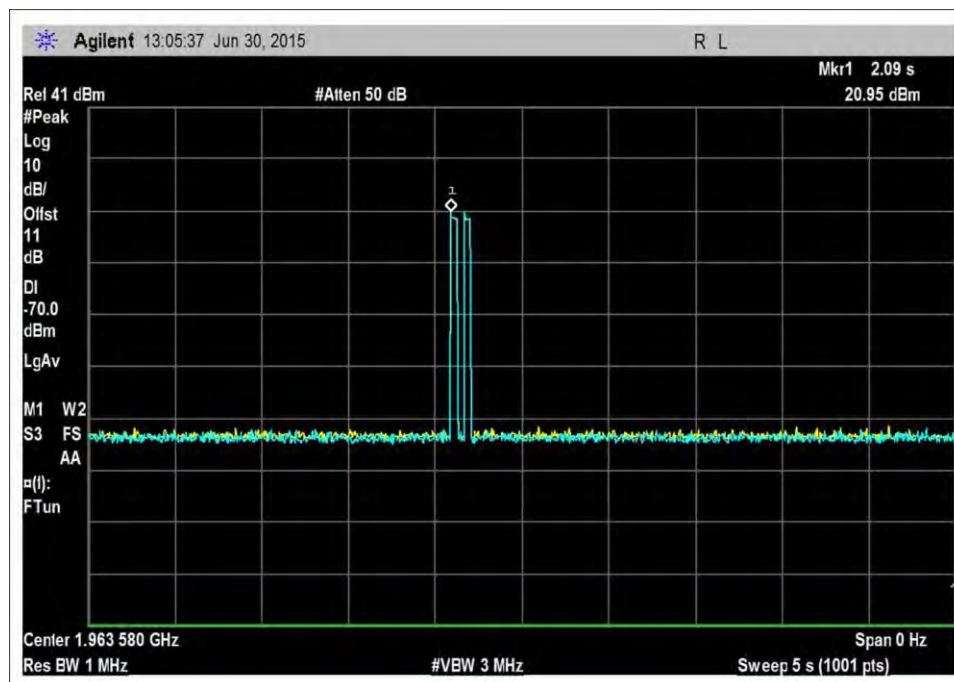
DL_869-894MHz-Pk



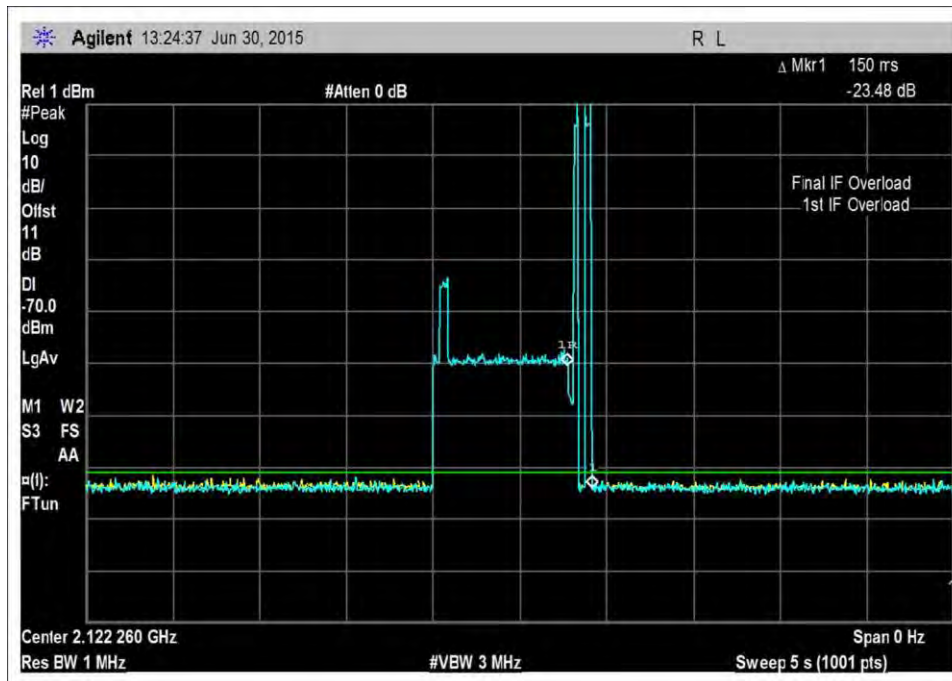
DL_1930-1995MHz



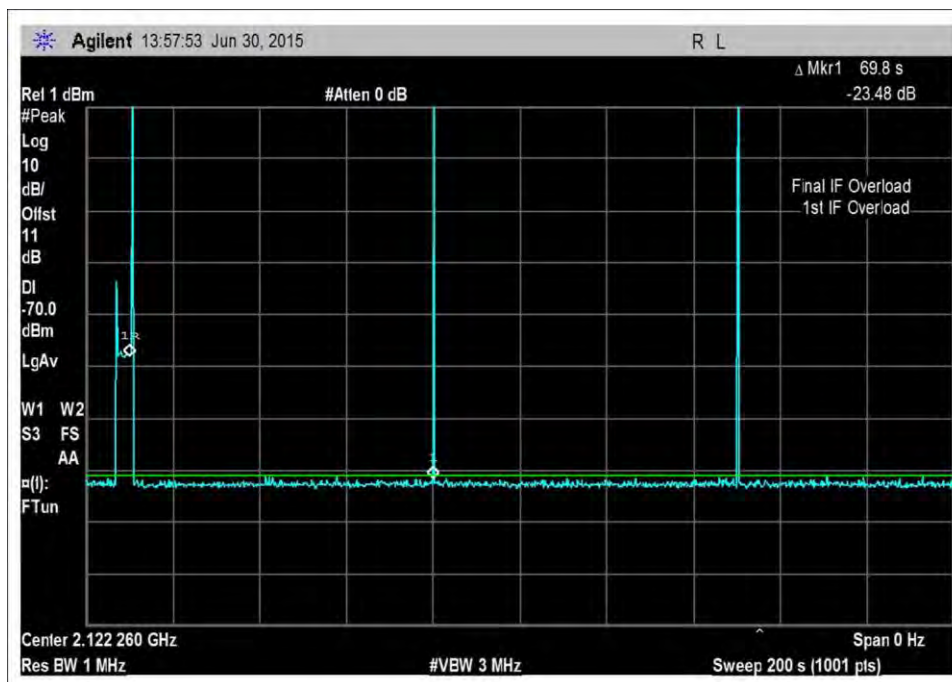
DL_1930-1995MHz-600sec



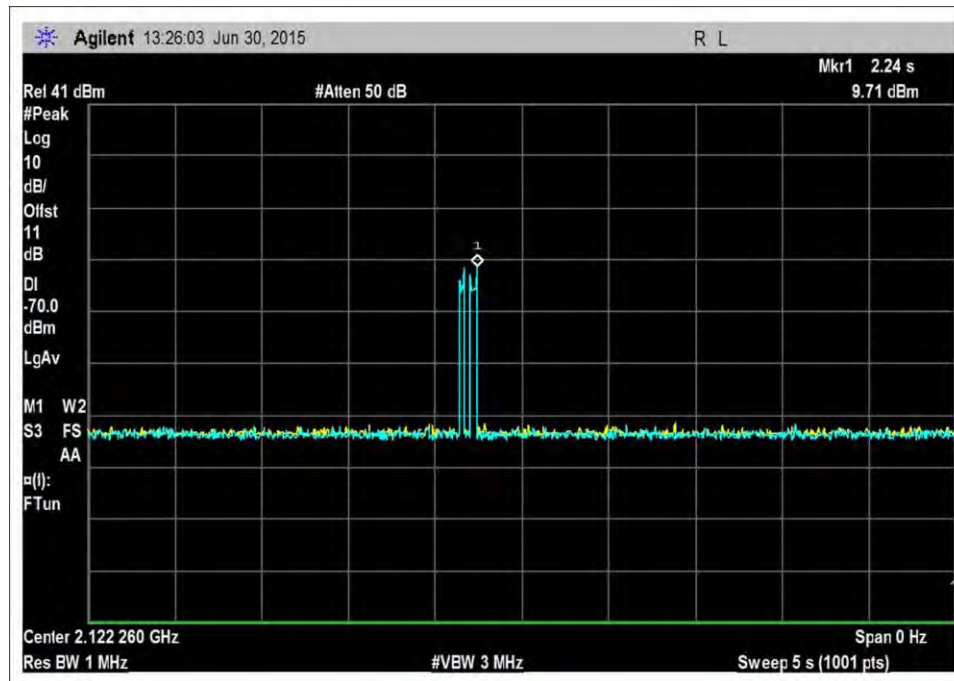
DL_1930-1995MHz-Pk



DL_2110-2155MHz

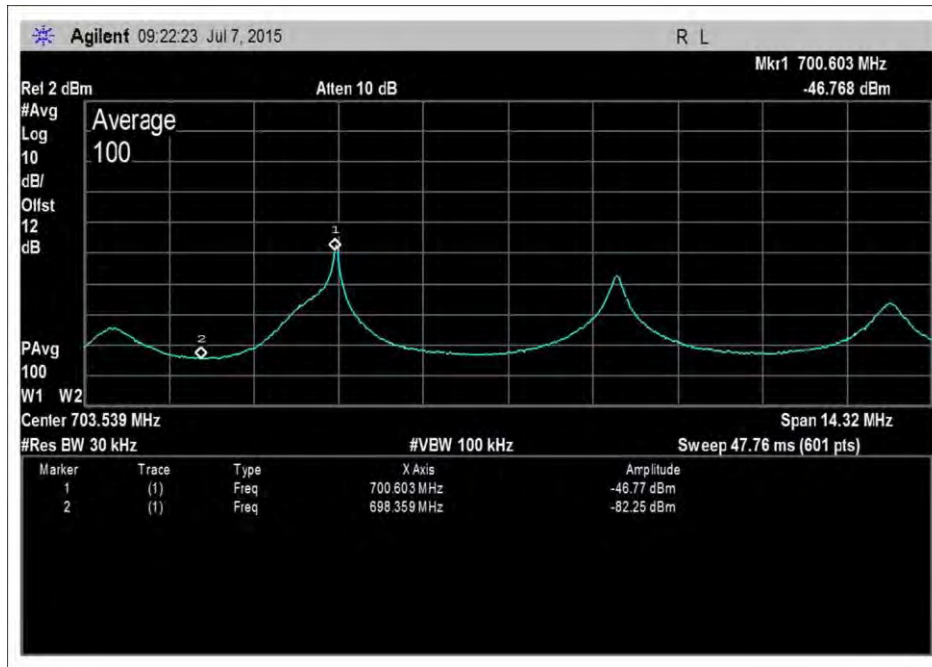


DL_2110-2155MHz-200sec

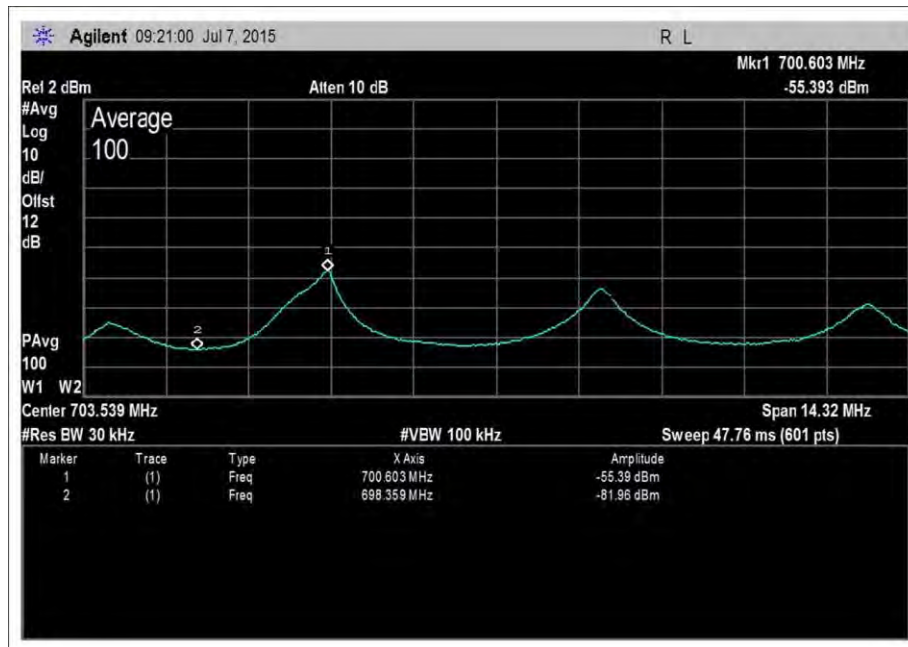


DL_2110-2155MHz-Pk

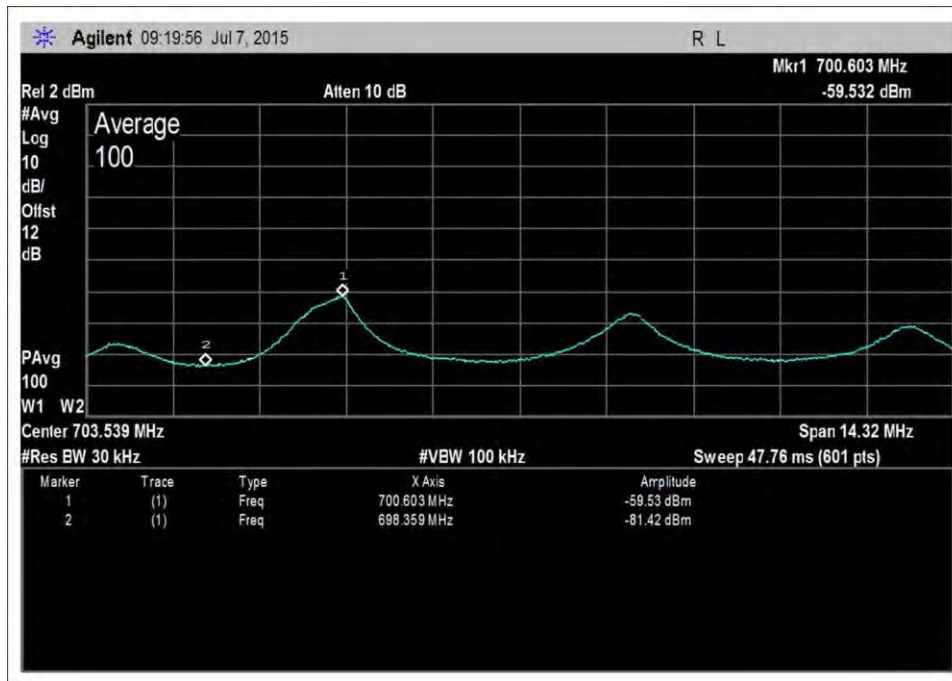
Section 7.11.3 - UL



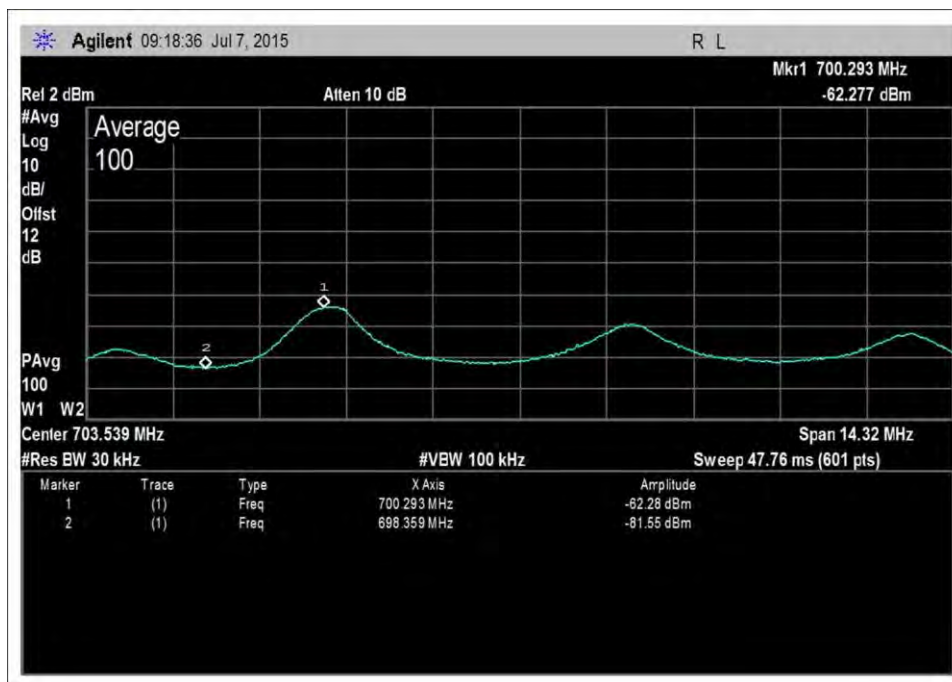
UL_698-716MHz-AWGNL+0



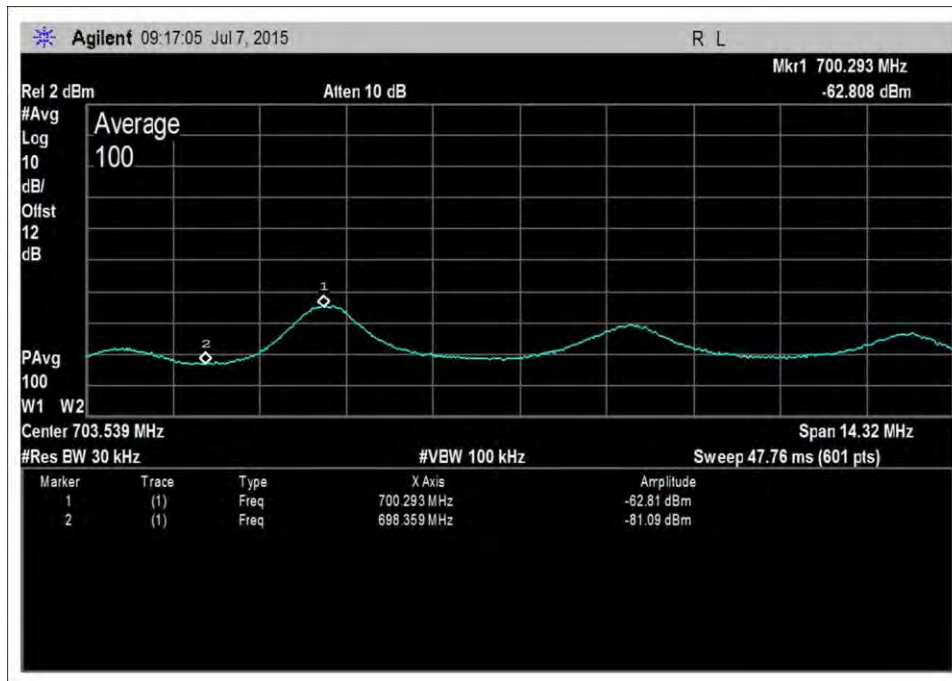
UL_698-716MHz-AWGNL+1



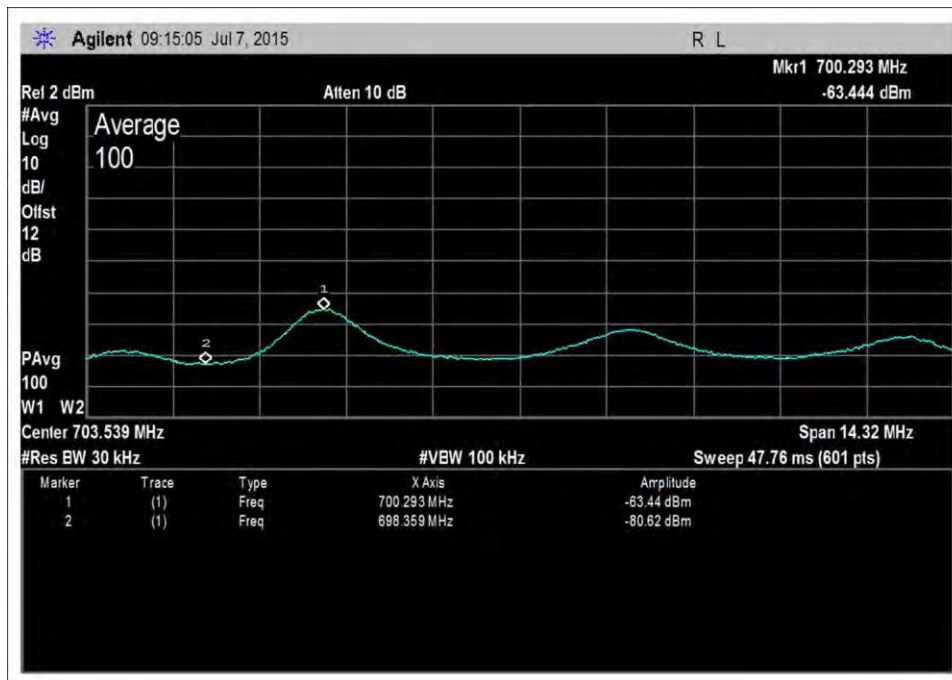
UL_698-716MHz-AWGNL+2



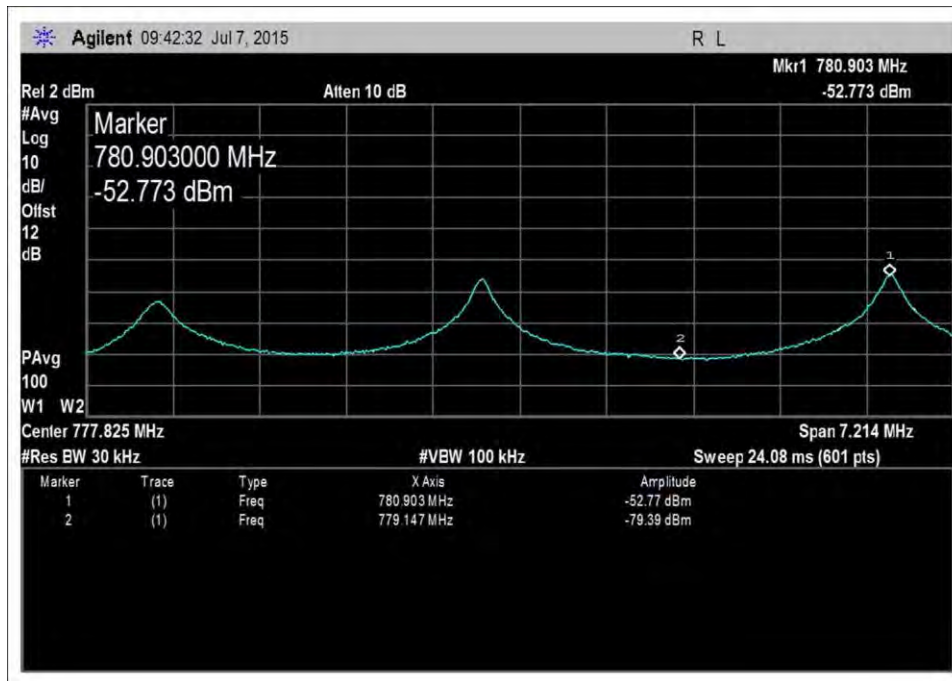
UL_698-716MHz-AWGNL+3



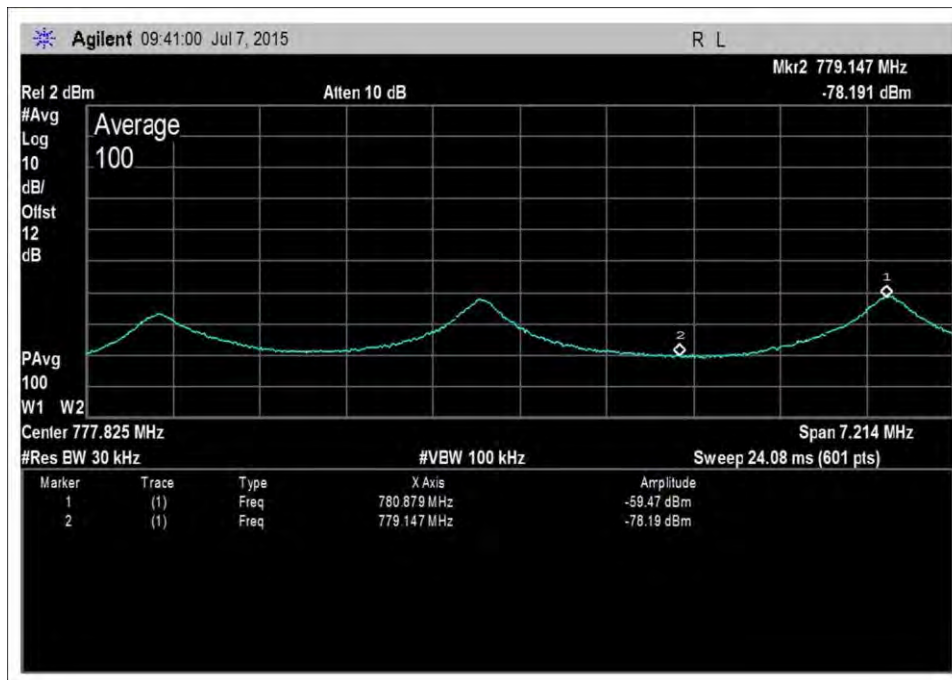
UL_698-716MHz-AWGNL+4



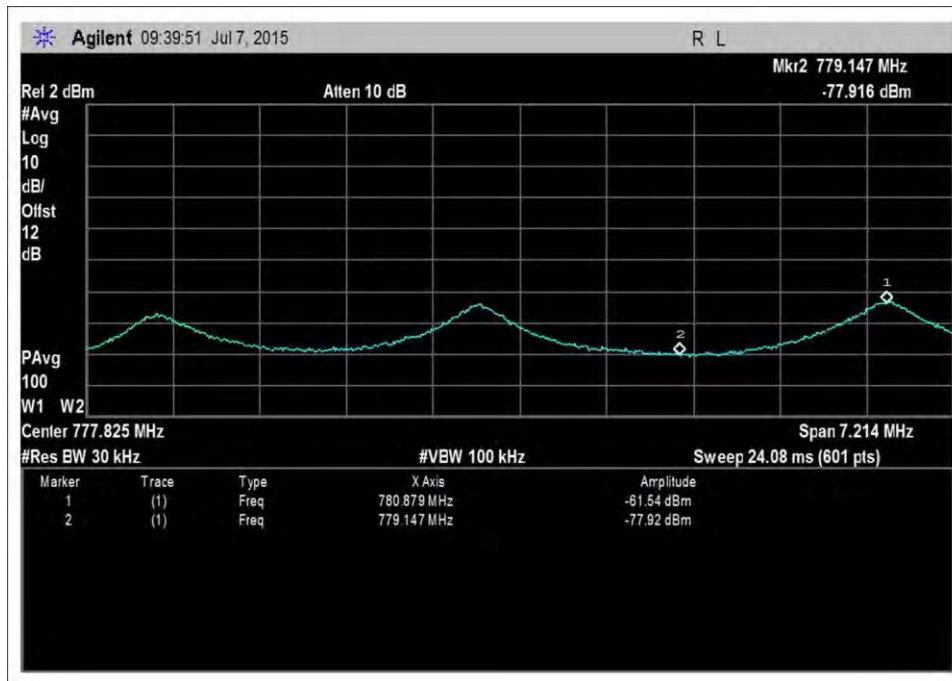
UL_698-716MHz-AWGNL+5



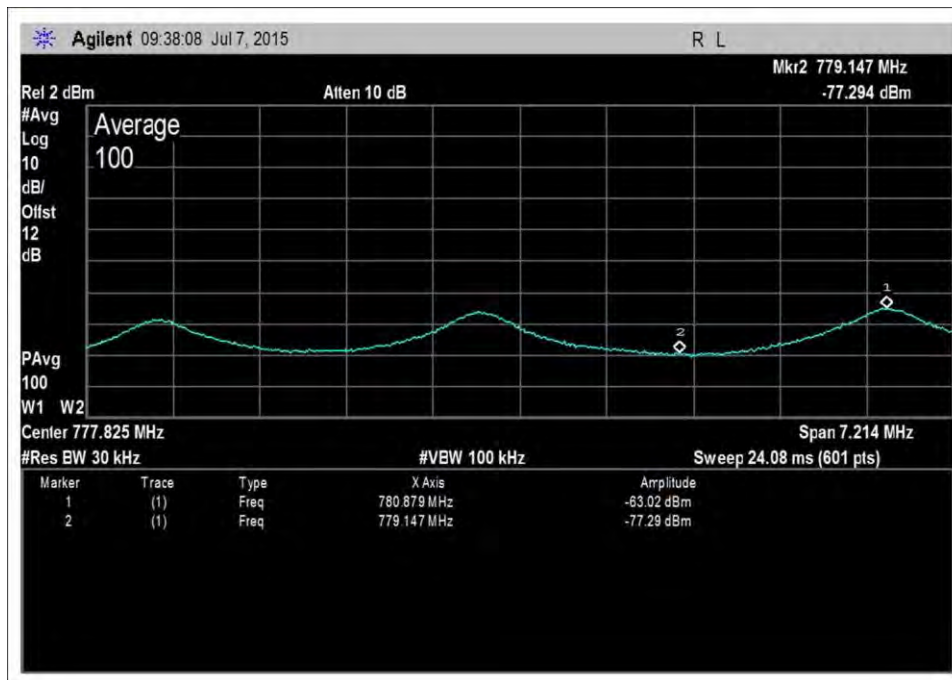
UL_776-787MHz-AWGNR+0



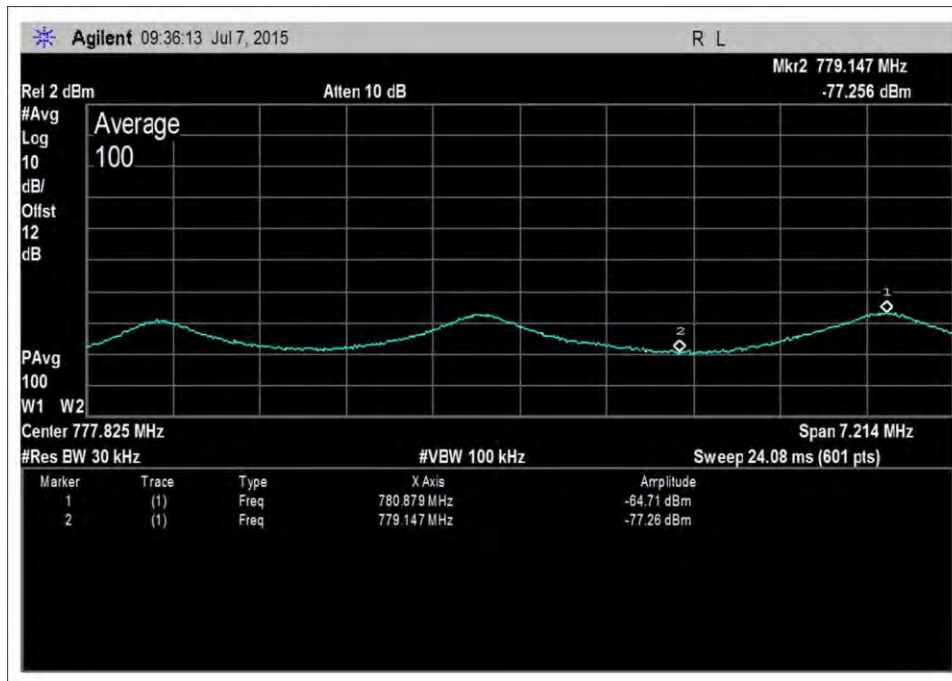
UL_776-787MHz-AWGNR+1



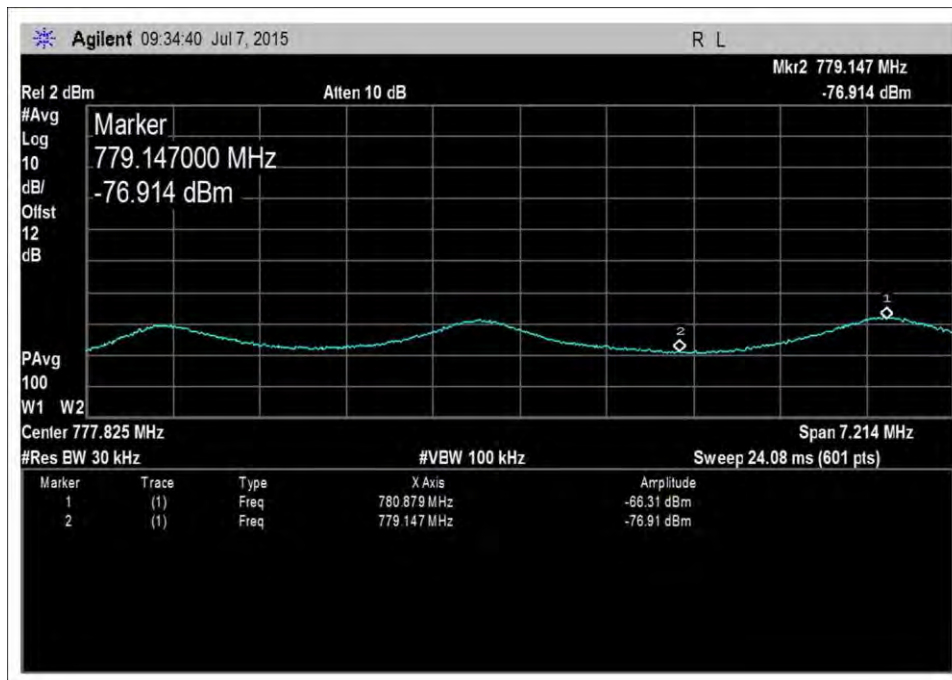
UL_776-787MHz-AWGNR+2



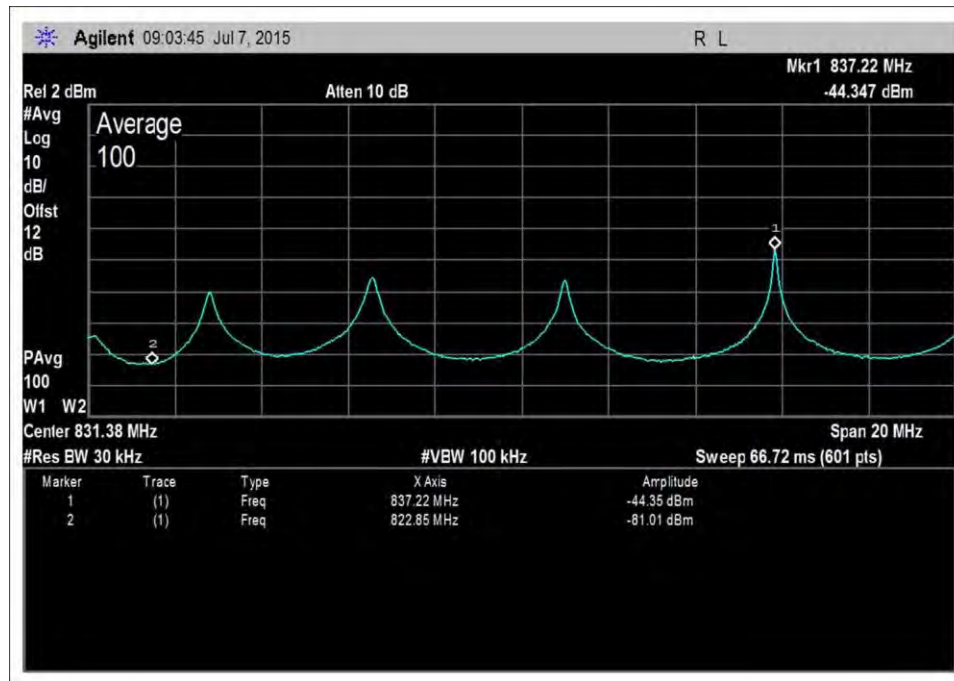
UL_776-787MHz-AWGNR+3



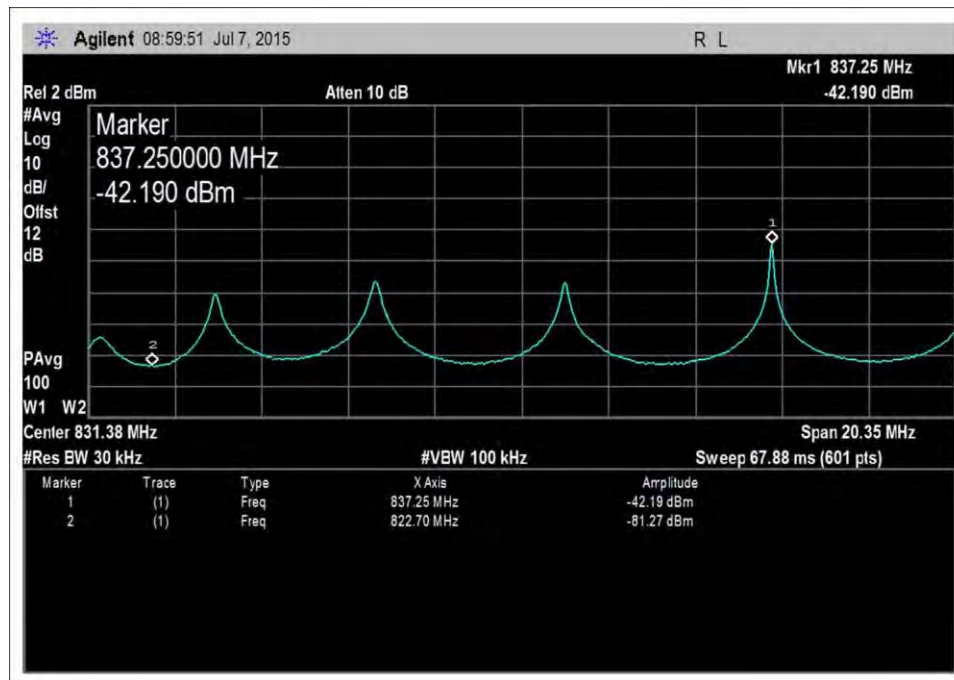
UL_776-787MHz-AWGNR+4



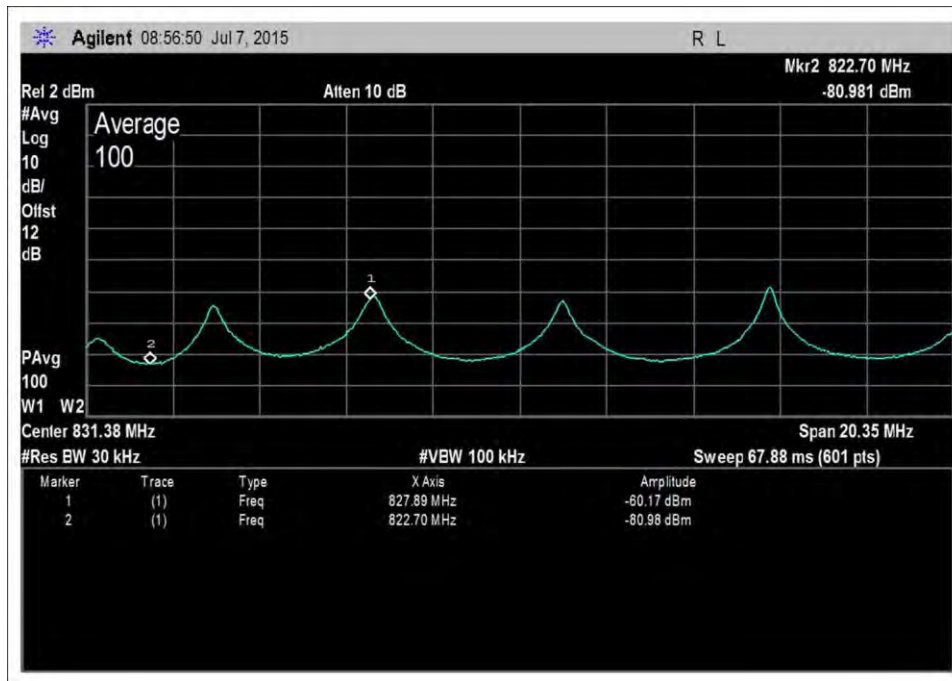
UL_776-787MHz-AWGNR+5



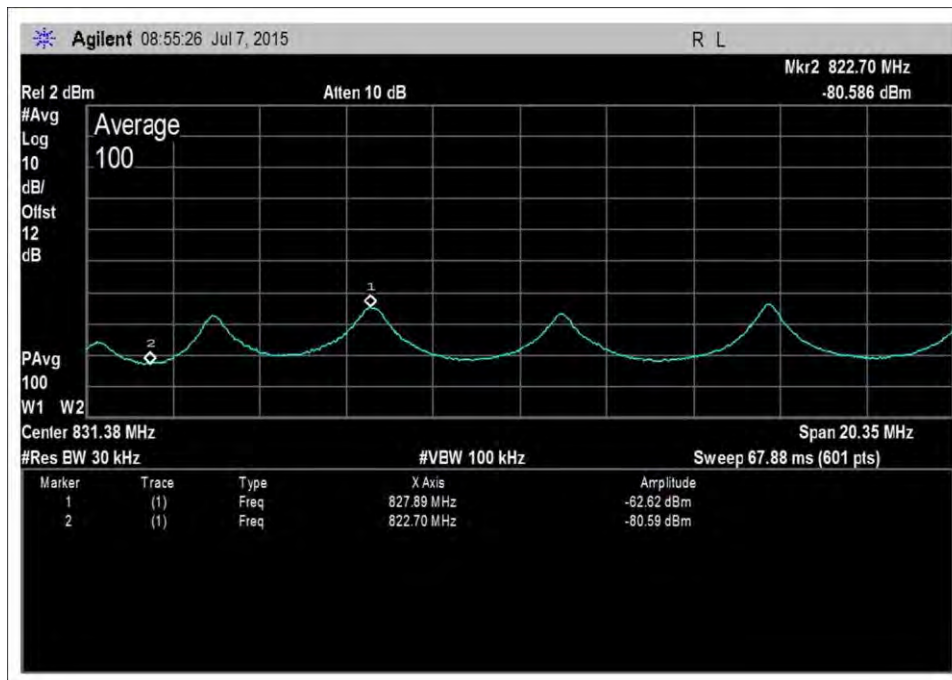
UL_824-849MHz-AWGNR+0



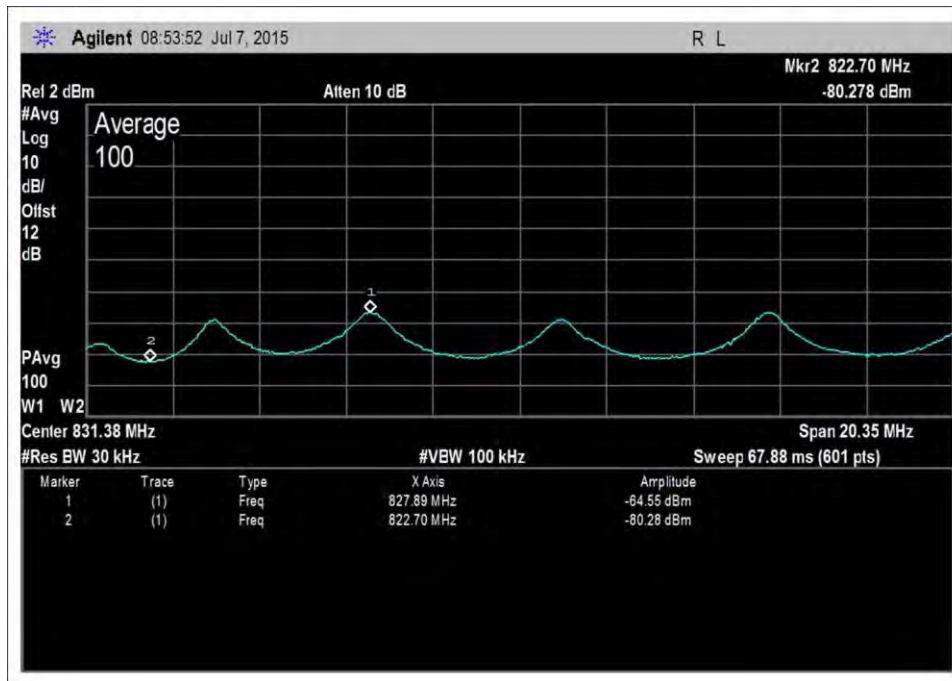
UL_824-849MHz-AWGNR+1



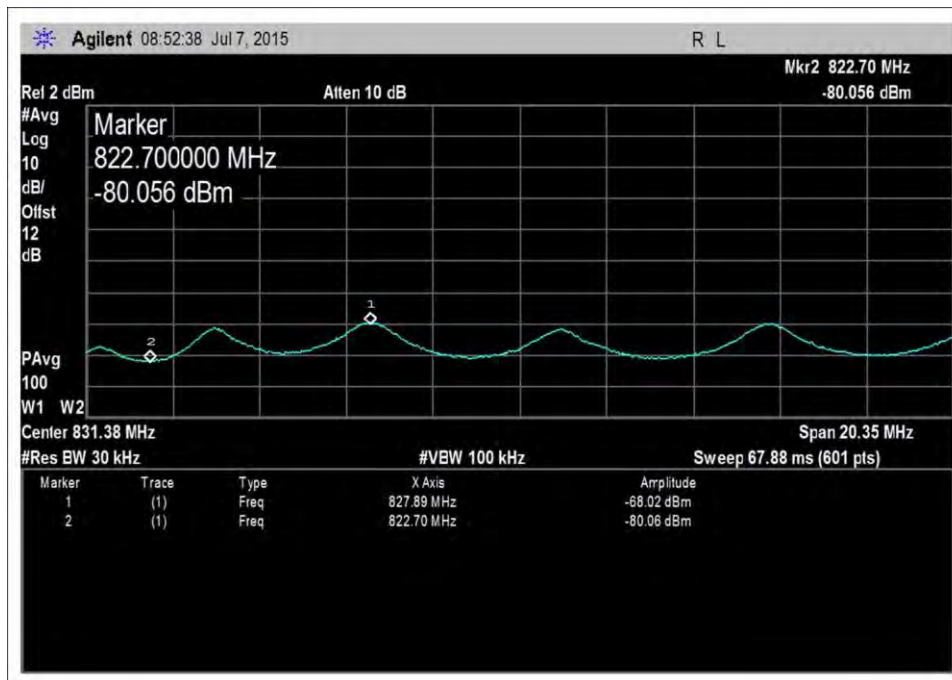
UL_824-849MHz-AWGNR+2



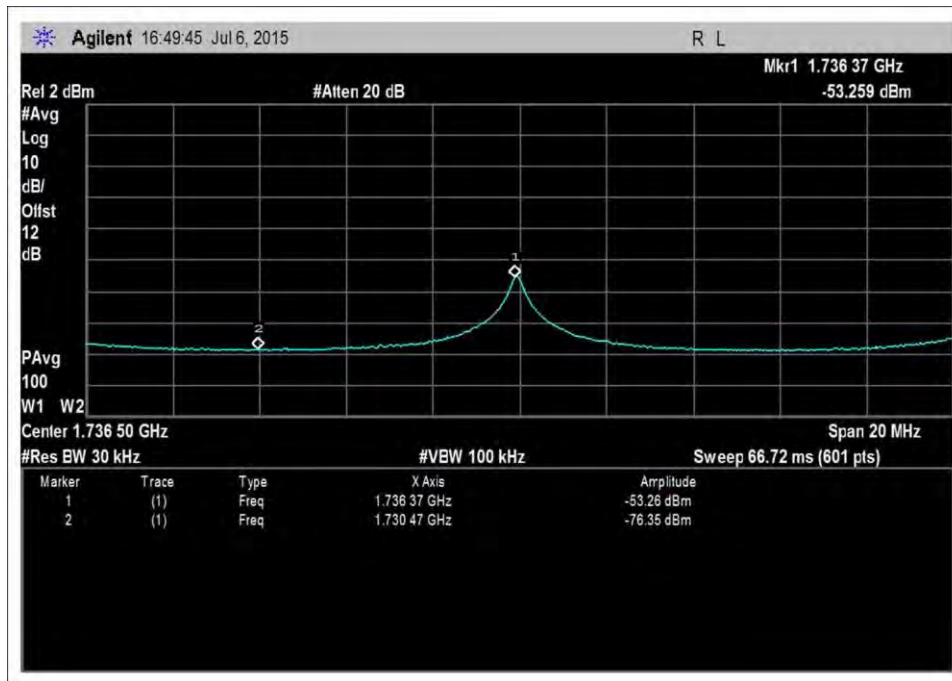
UL_824-849MHz-AWGNR+3



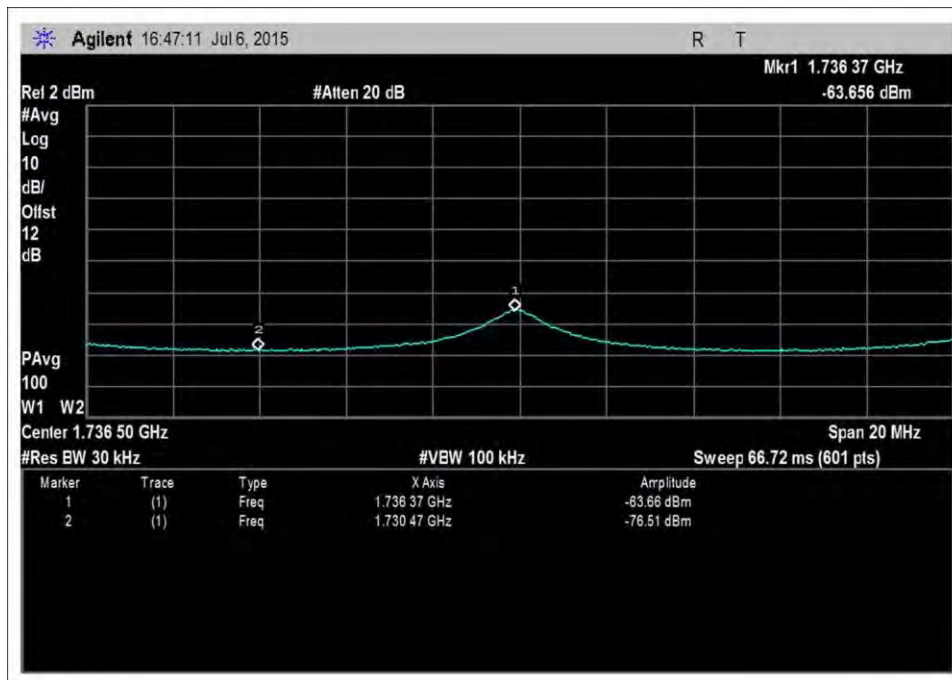
UL_824-849MHz-AWGNR+4



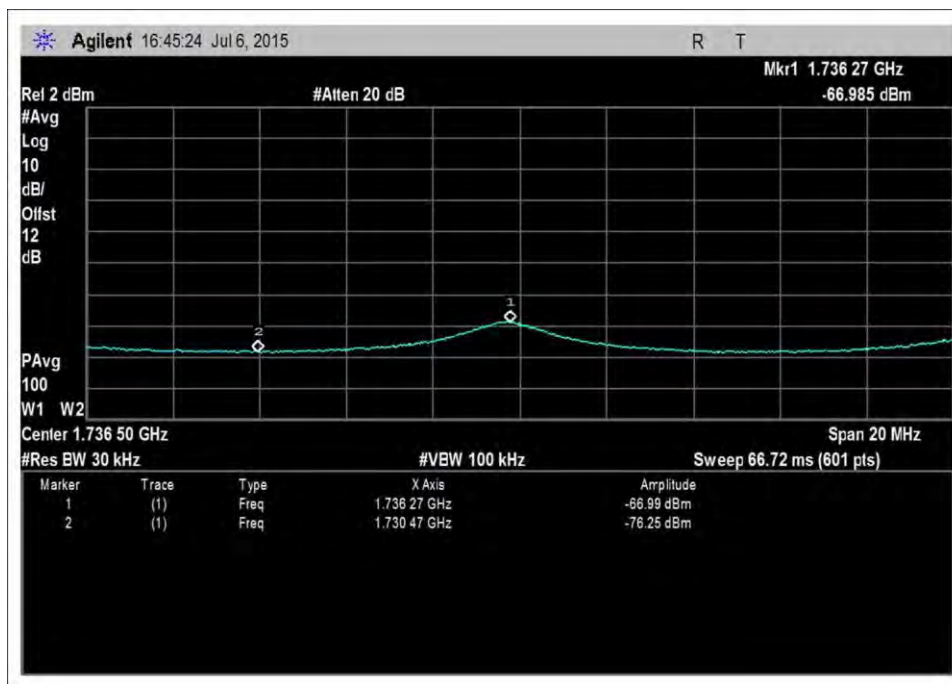
UL_824-849MHz-AWGNR+5



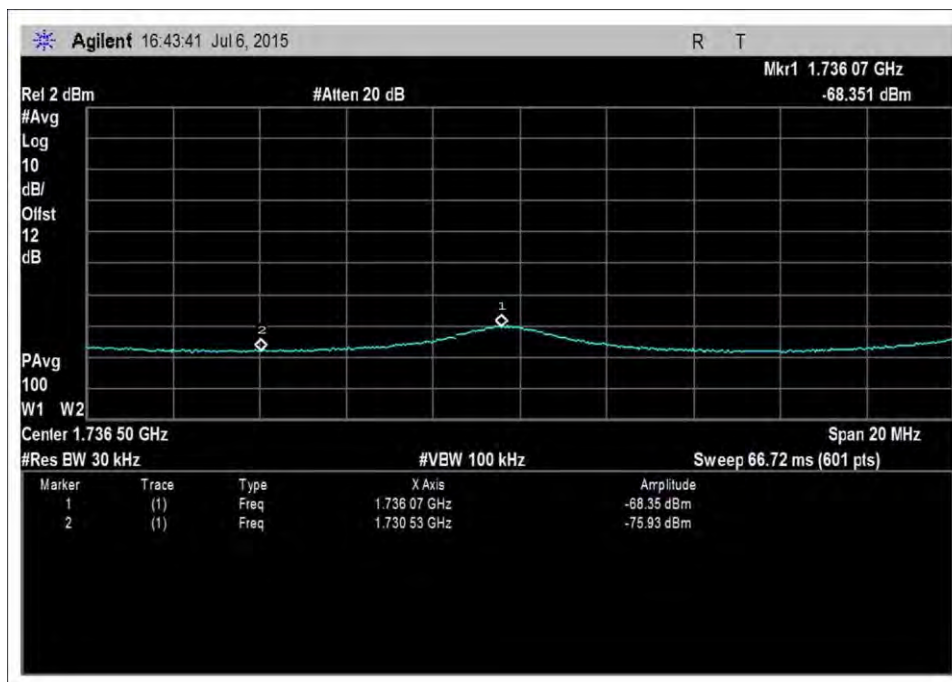
UL_1710-1755MHz-AWGNL+0



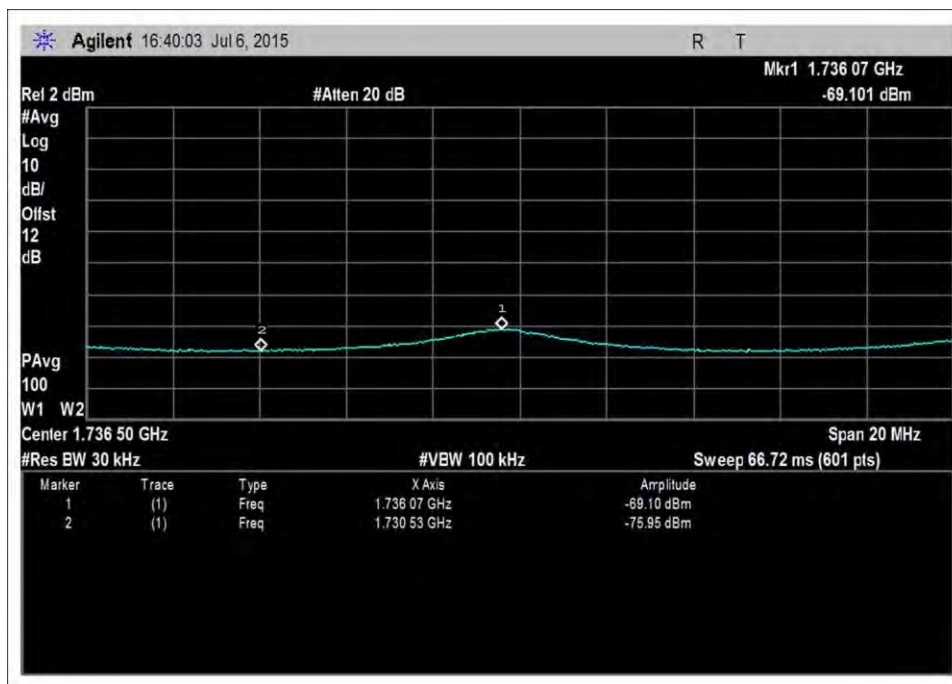
UL_1710-1755MHz-AWGNL+1



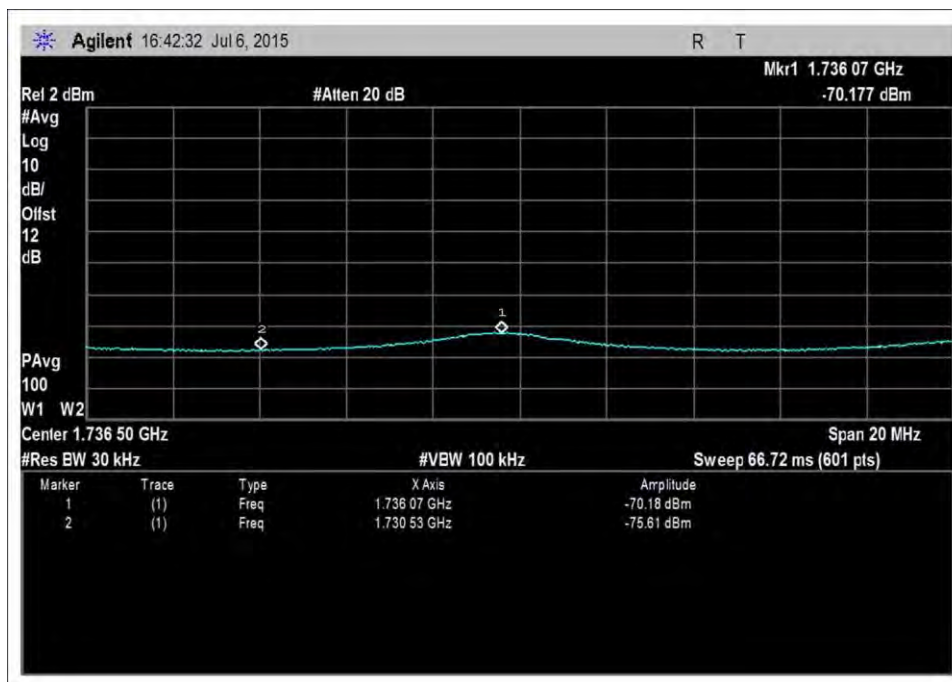
UL_1710-1755MHz-AWGNL+2



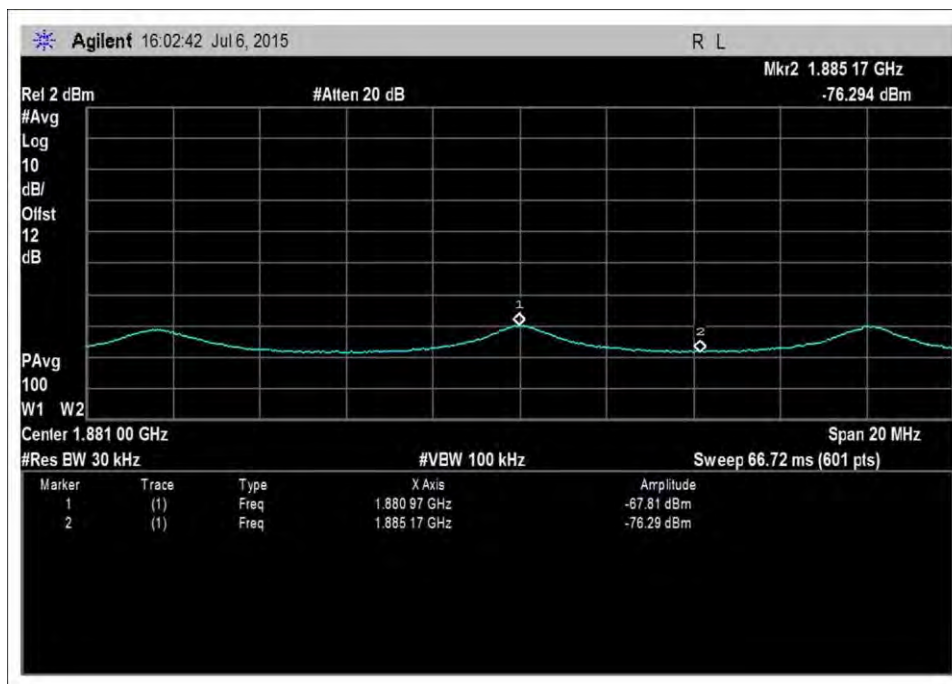
UL_1710-1755MHz-AWGNL+3



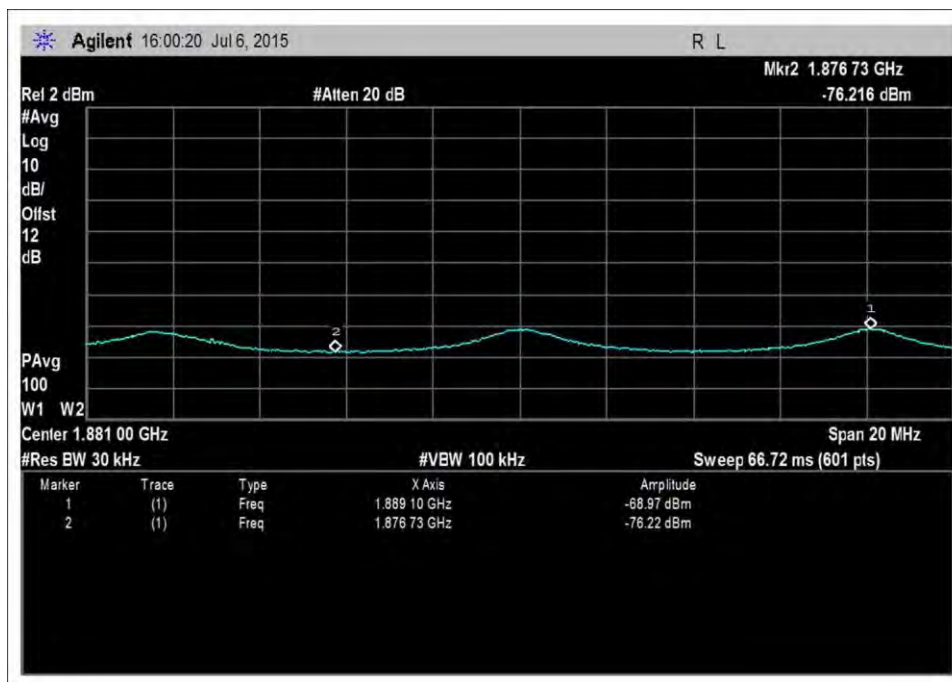
UL_1710-1755MHz-AWGNL+4



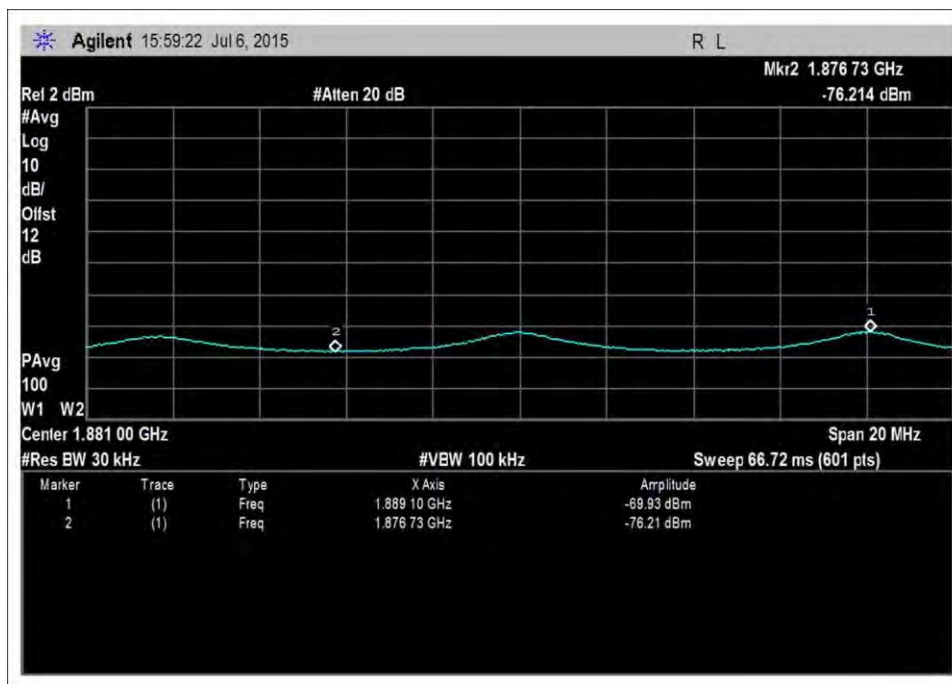
UL_1710-1755MHz-AWGNL+5



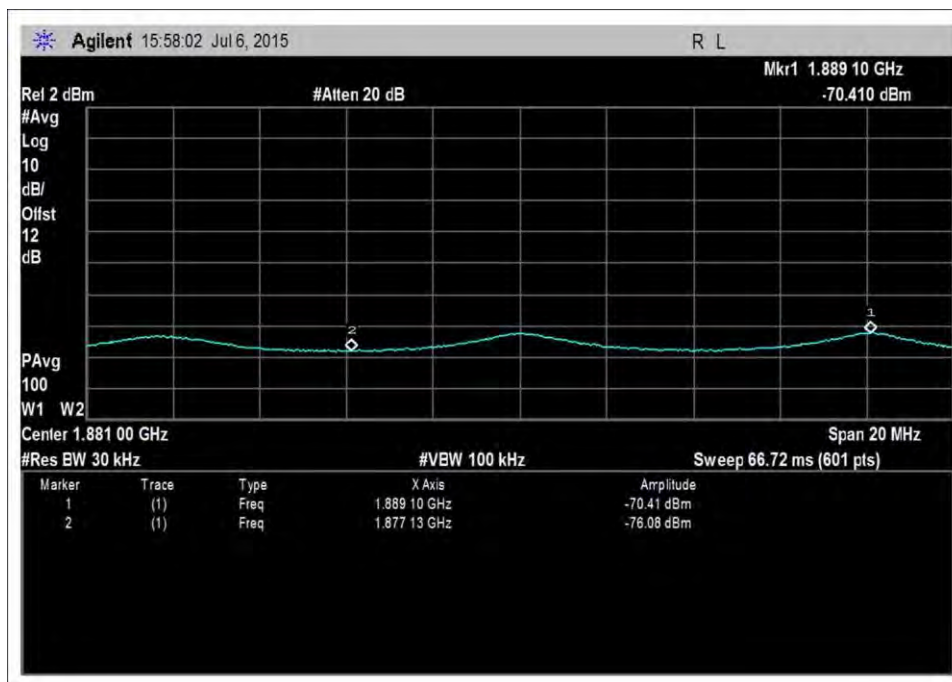
UL_1850-1915MHz-AWGNL+0



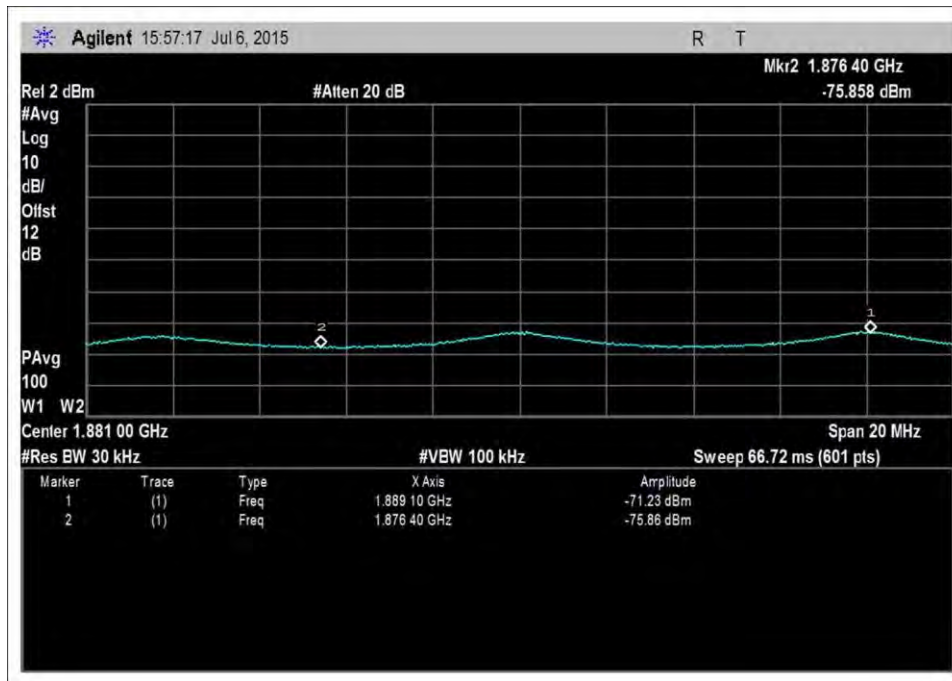
UL_1850-1915MHz-AWGNL+1



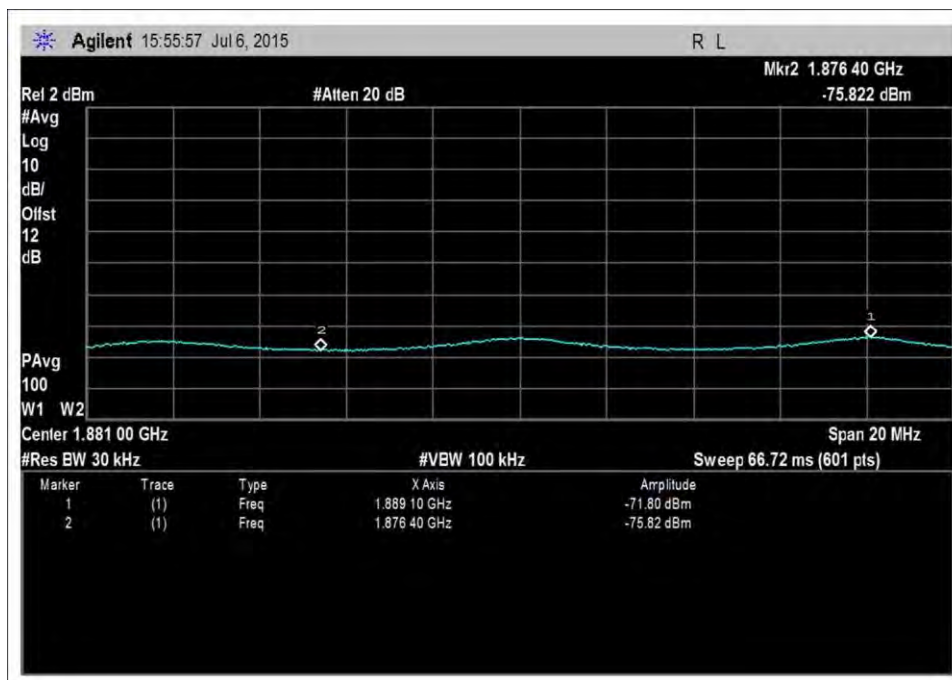
UL_1850-1915MHz-AWGNL+2



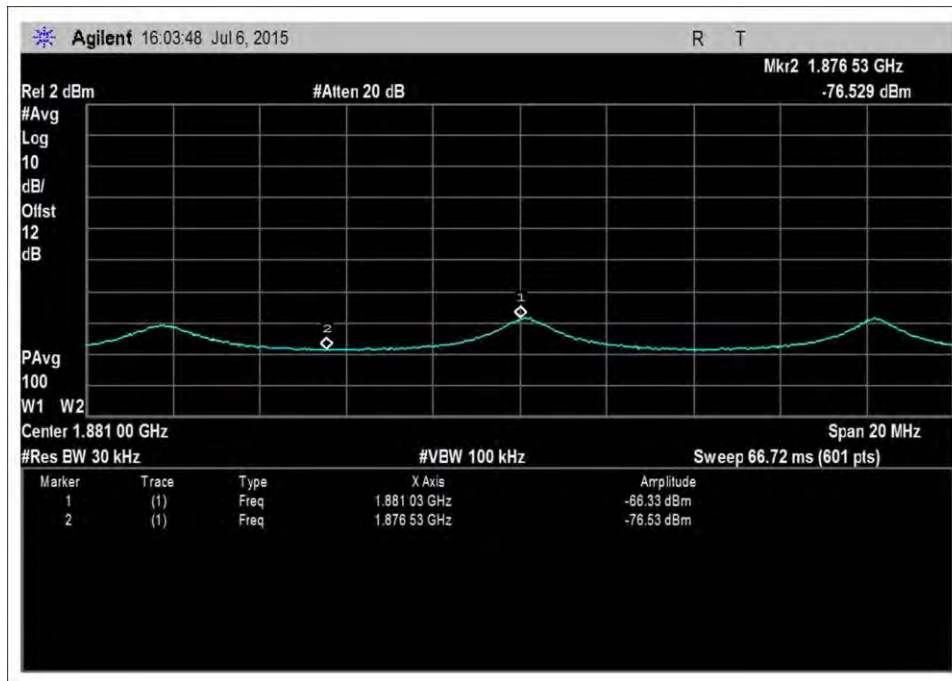
UL_1850-1915MHz-AWGNL+3



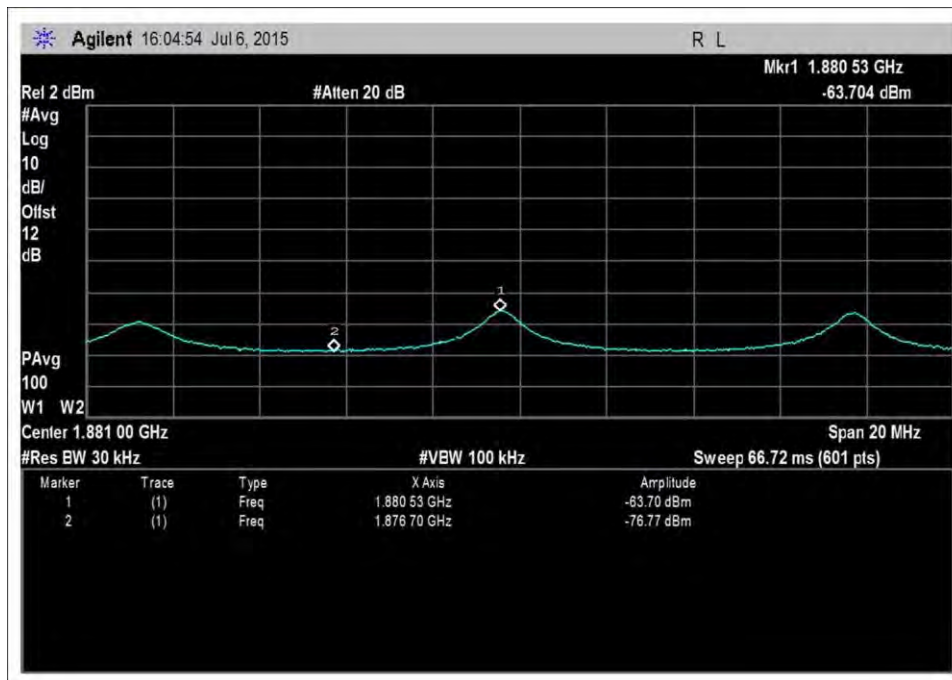
UL_1850-1915MHz-AWGNL+4



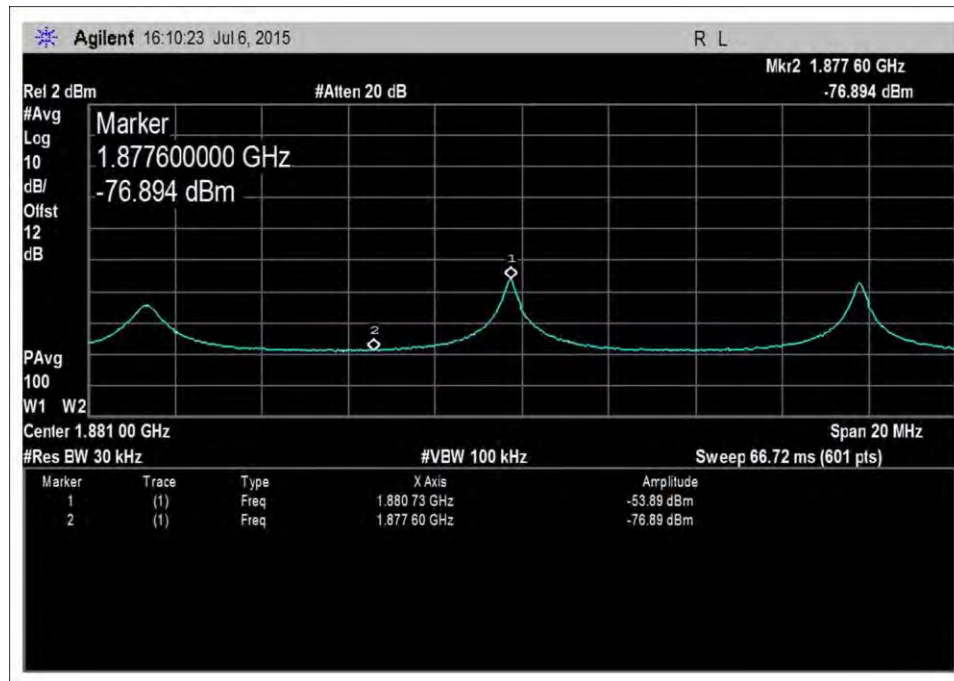
UL_1850-1915MHz-AWGNL+5



UL_1850-1915MHz-AWGNL-1

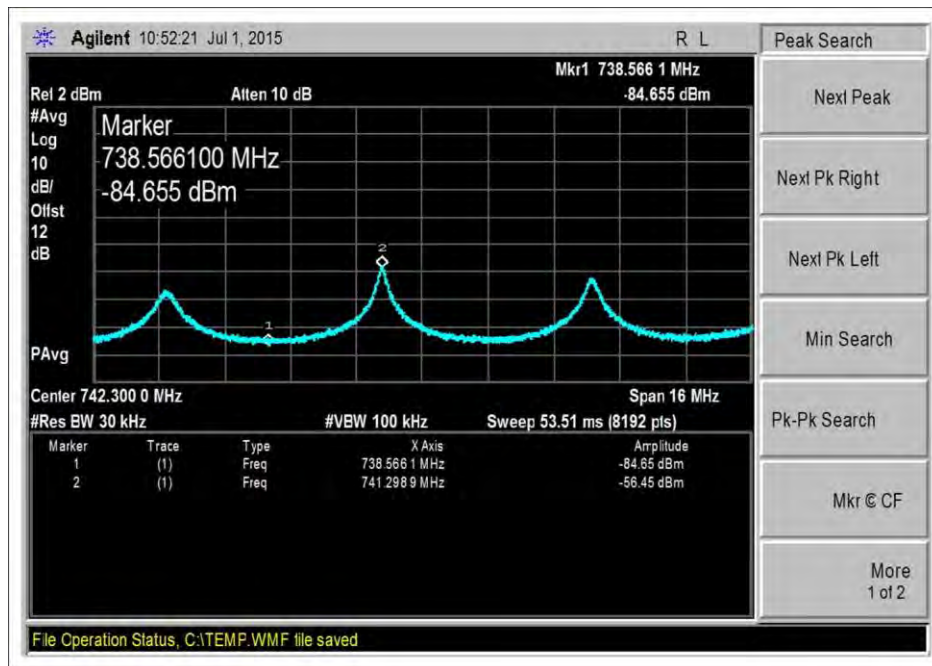


UL_1850-1915MHz-AWGNL-2

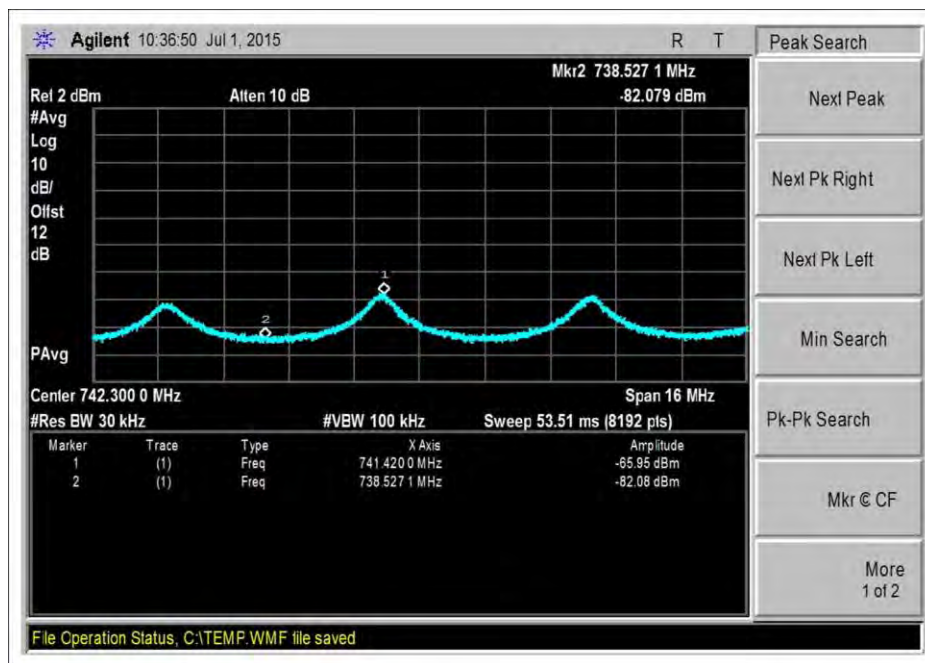


UL_1850-1915MHz-AWGNL-3

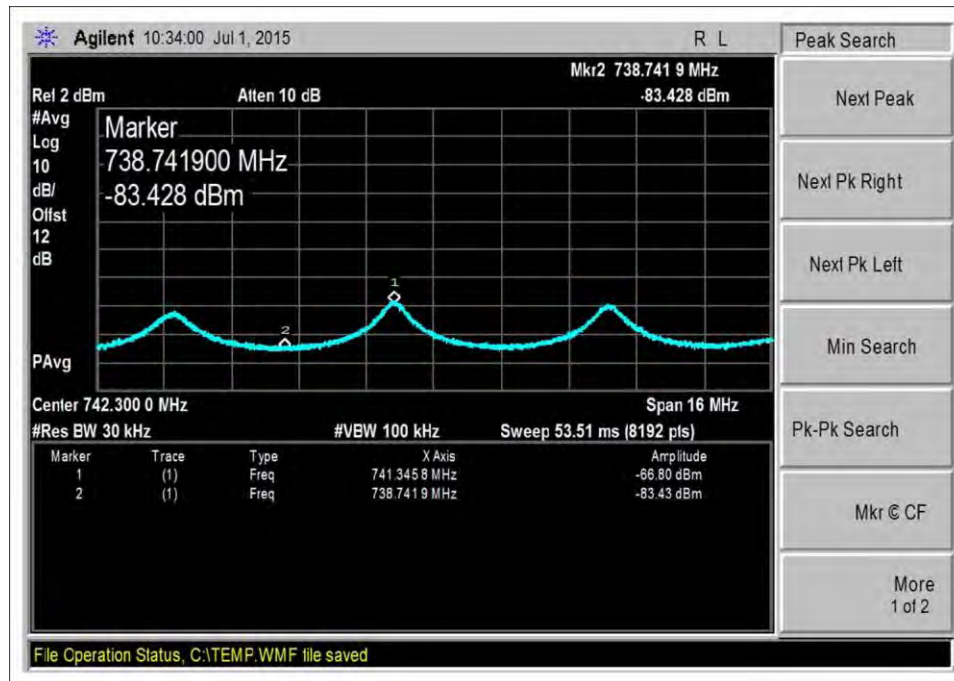
Section 7.11.3 - DL



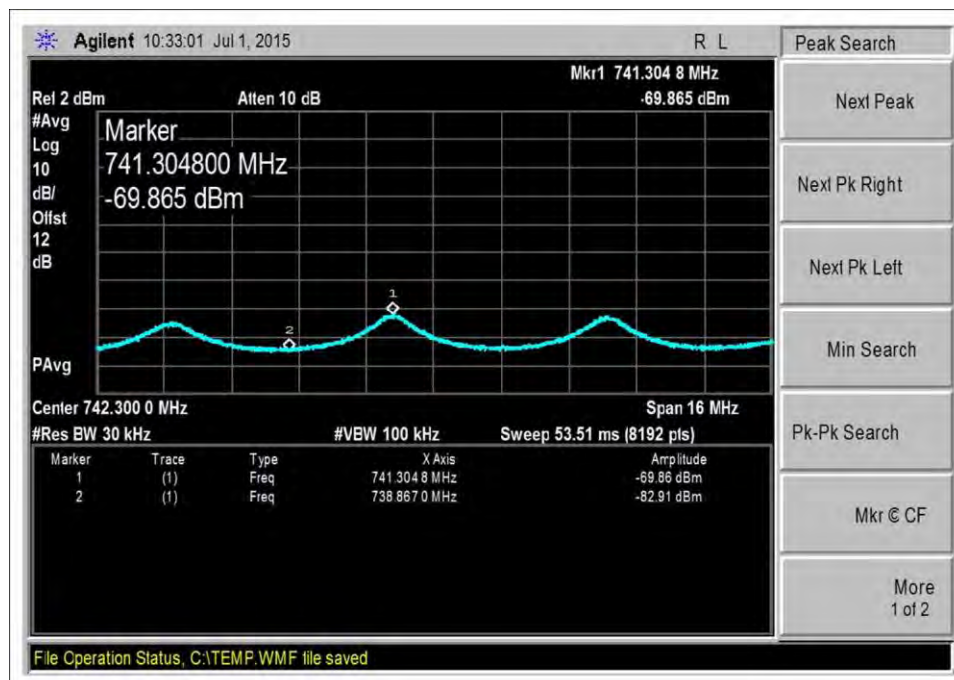
DL_728-746MHz-AWGNL+0



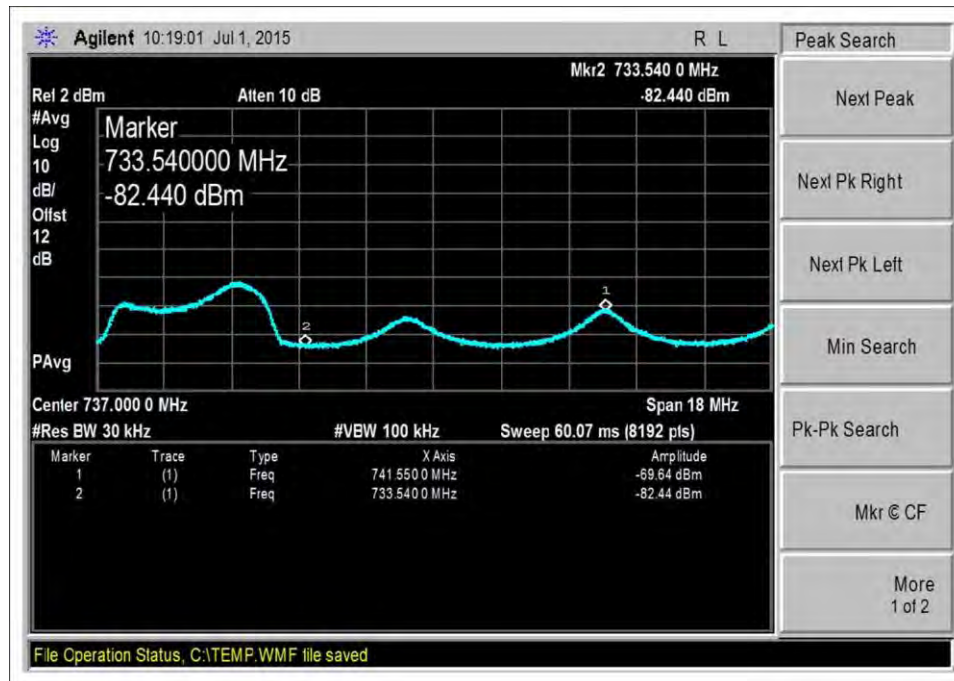
DL_728-746MHz-AWGNL+1



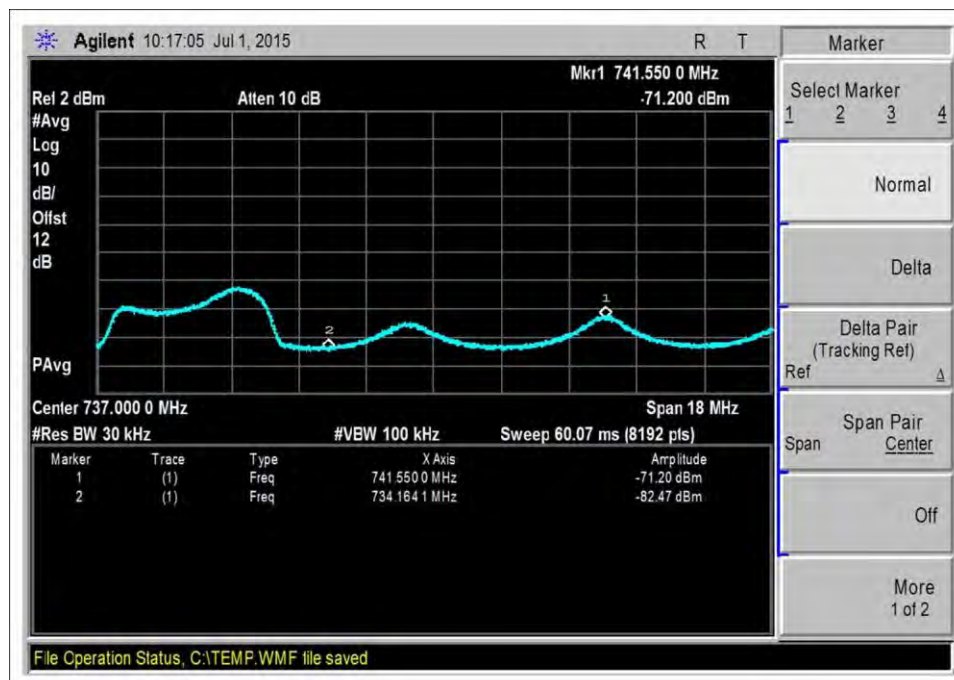
DL_728-746MHz-AWGNL+2



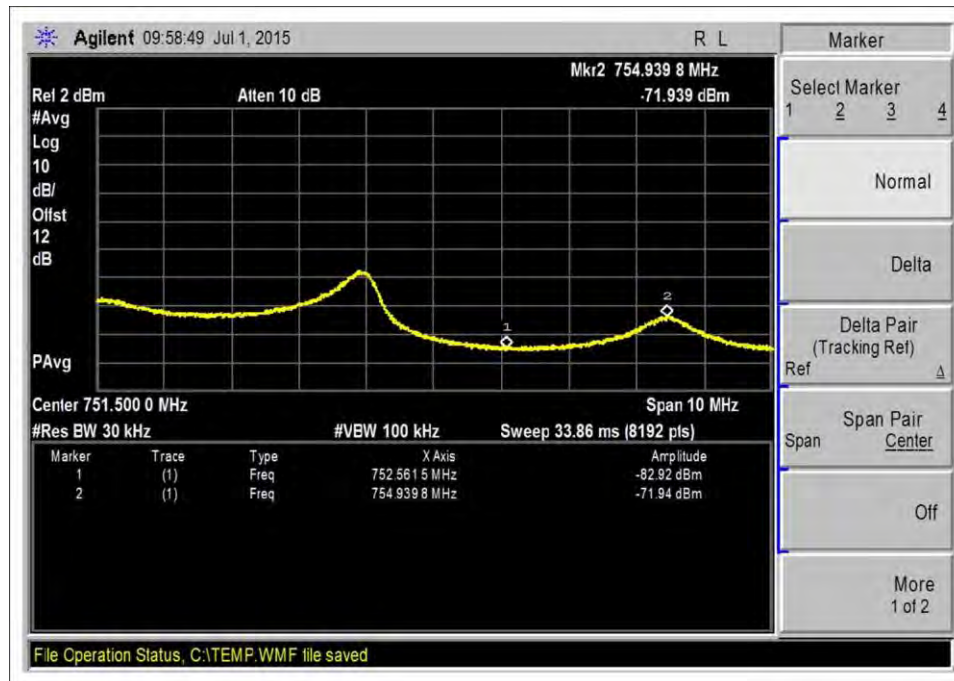
DL_728-746MHz-AWGNL+3



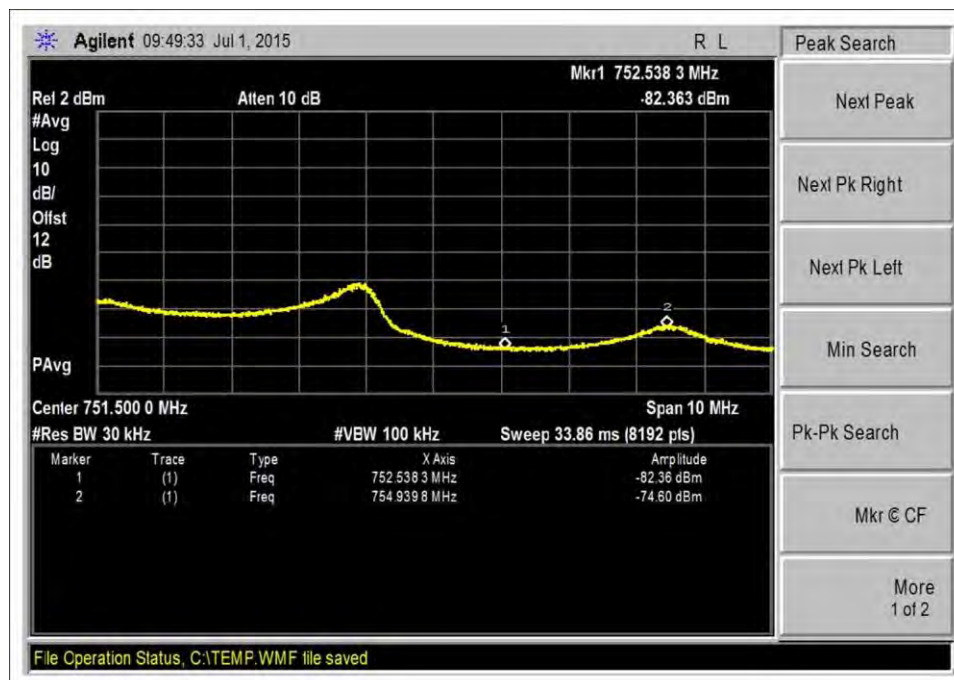
DL_728-746MHz-AWGNL+4



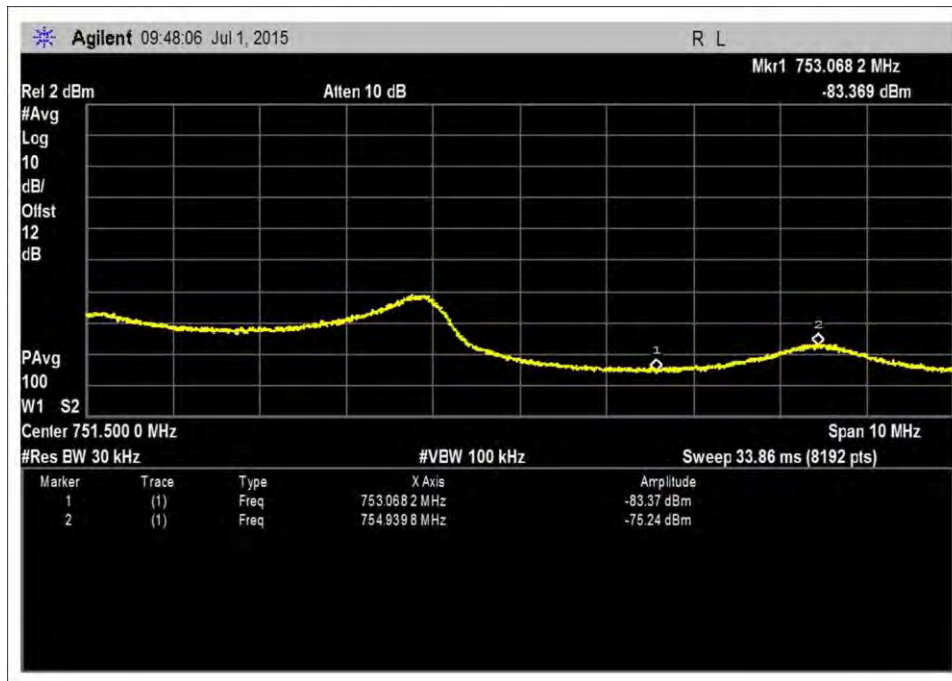
DL_728-746MHz-AWGNL+5



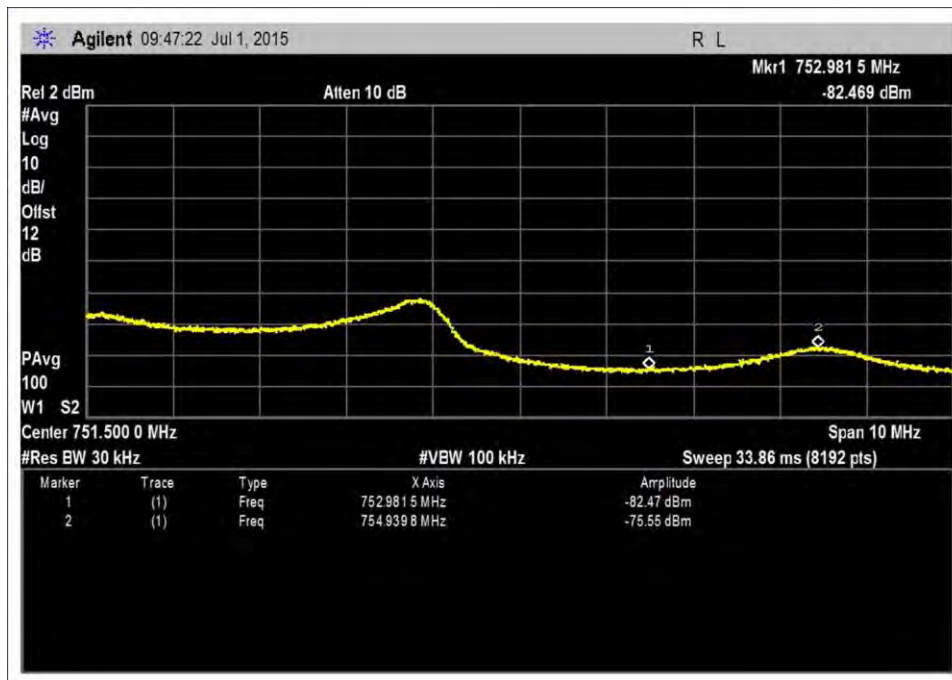
DL_746-757MHz-AWGNL+1



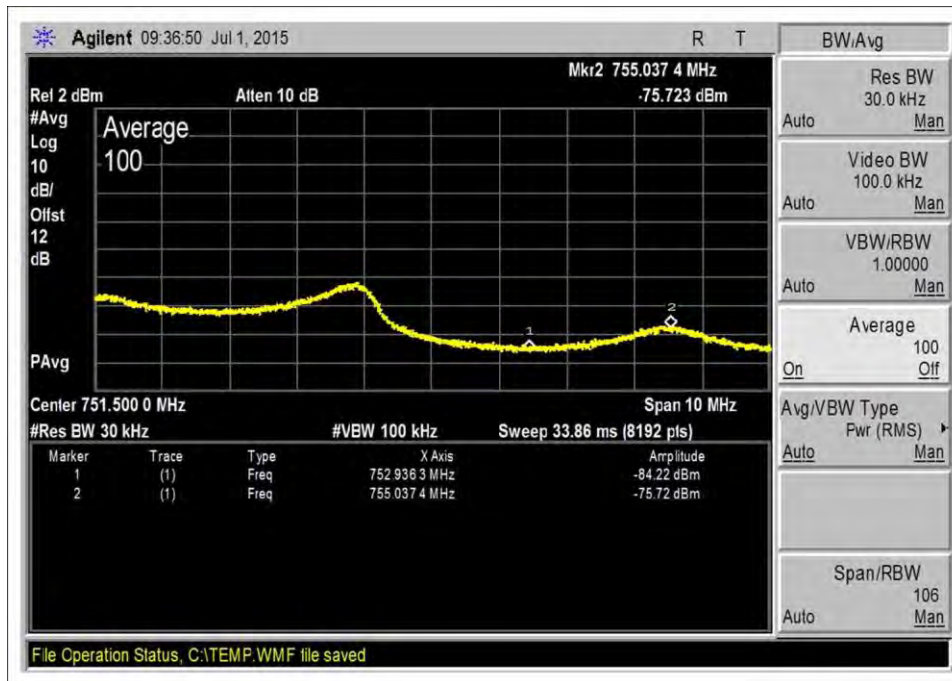
DL_746-757MHz-AWGNL+2



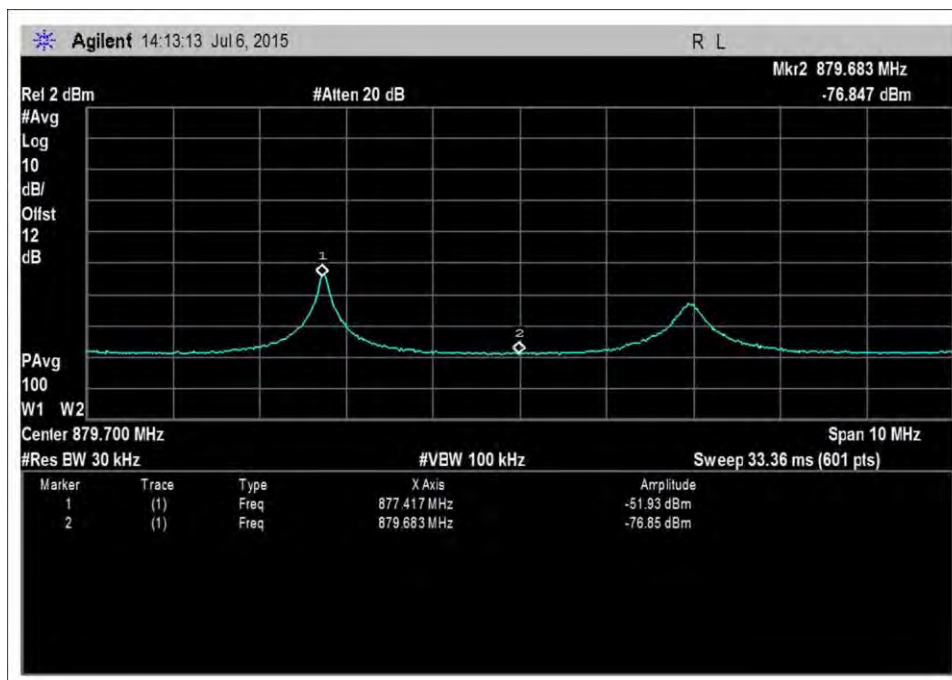
DL_746-757MHz-AWGNL+3



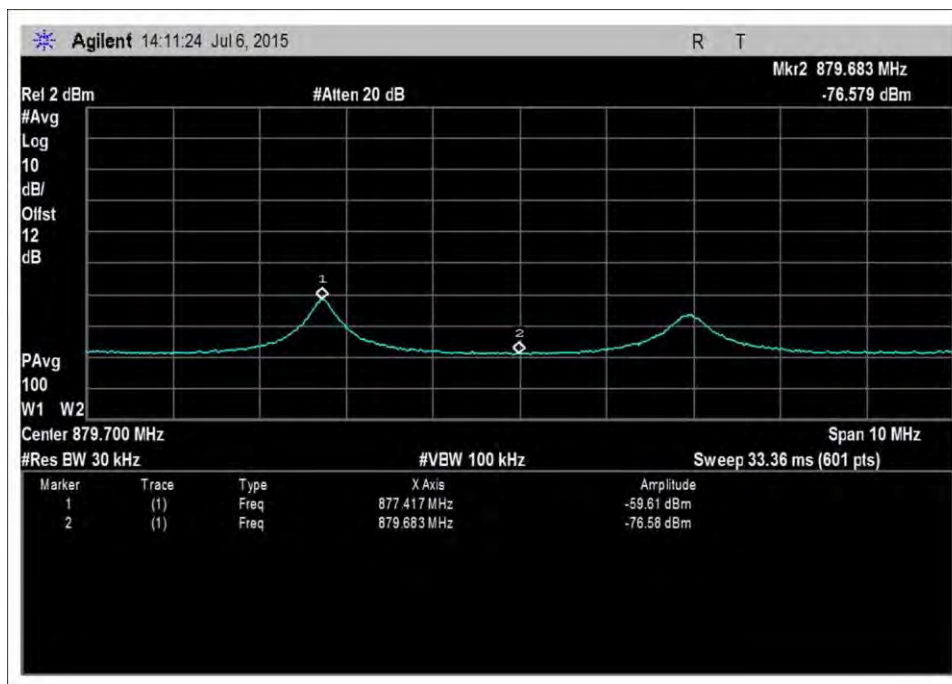
DL_746-757MHz-AWGNL+4



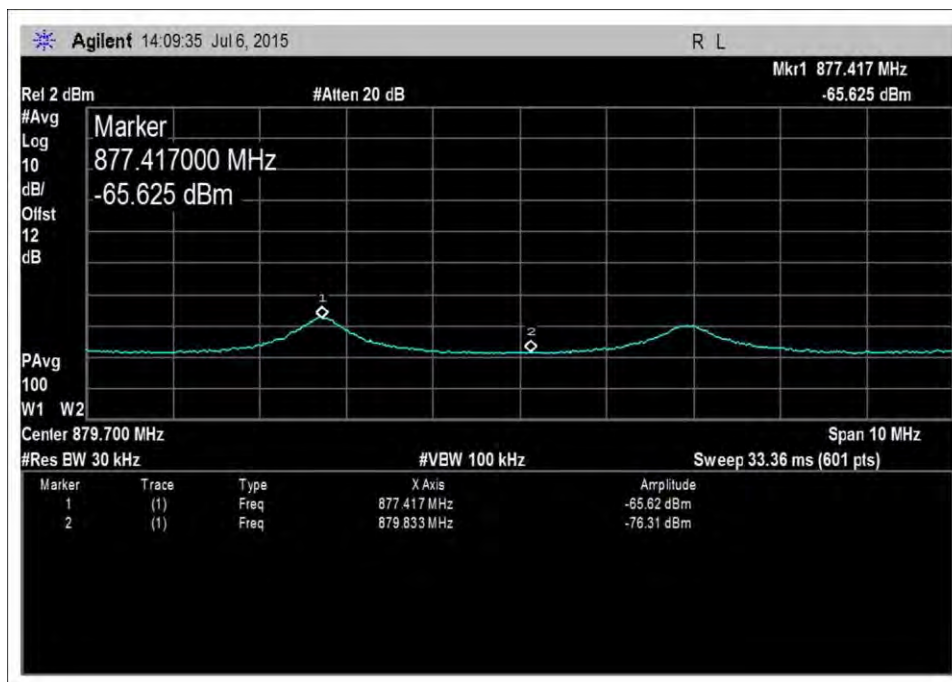
DL_746-757MHz-AWGNL+5



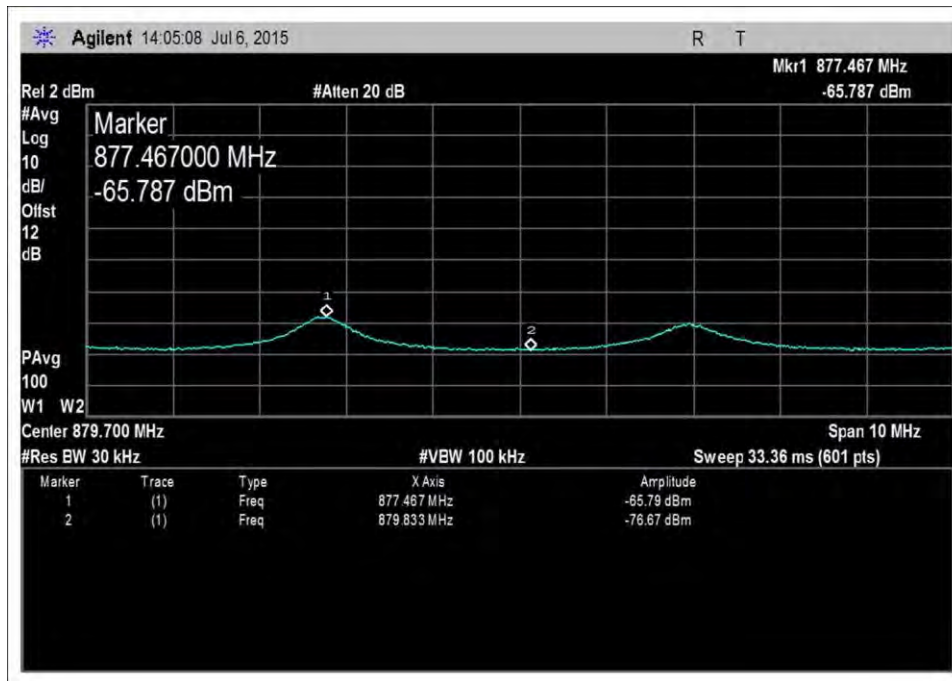
DL_869-894MHz-AWGNL+1



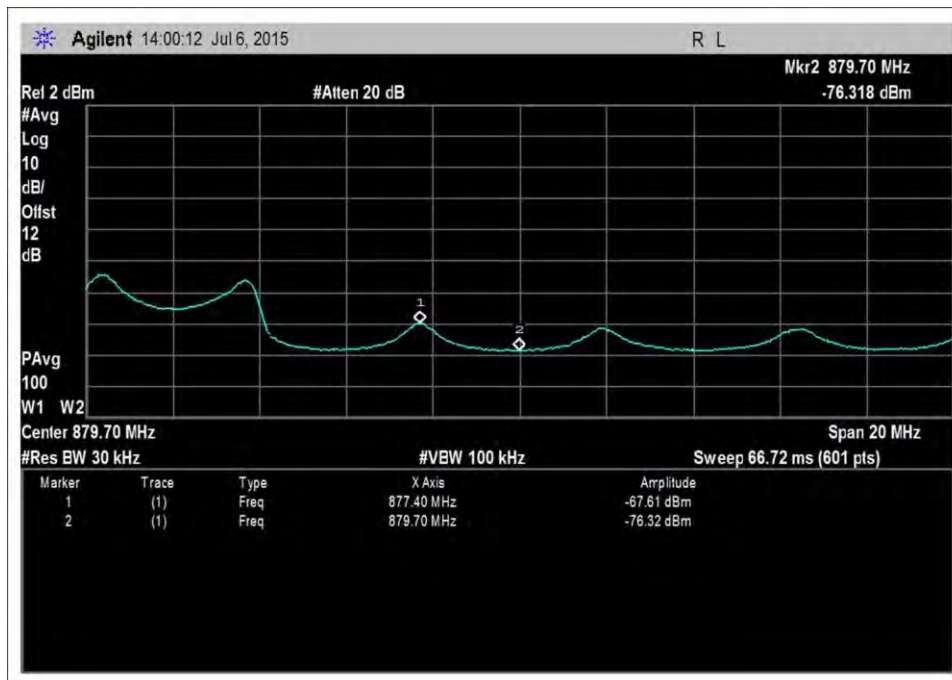
DL_869-894MHz-AWGNL+2



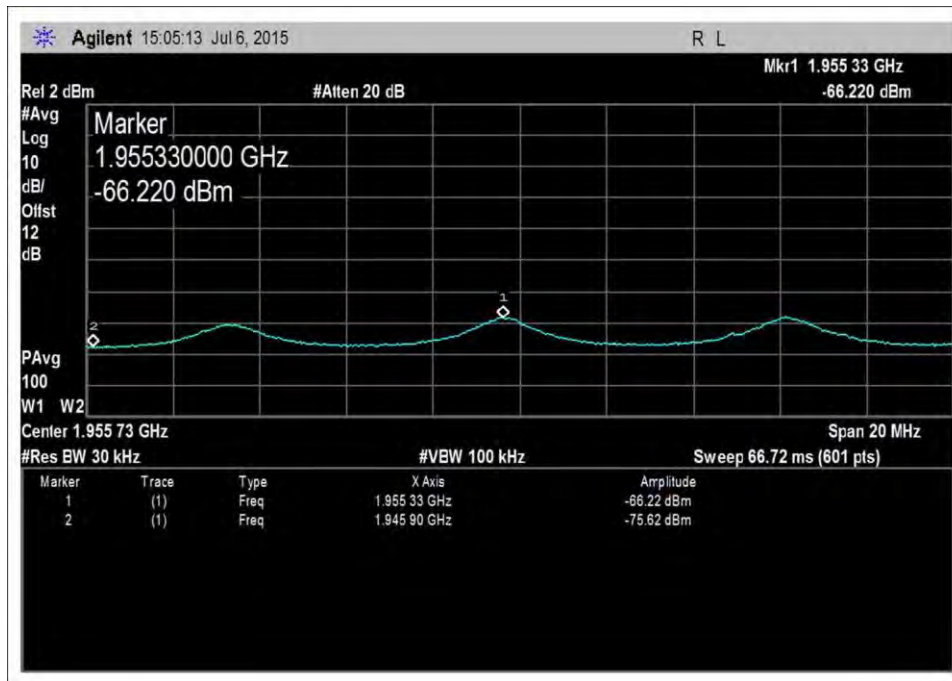
DL_869-894MHz-AWGNL+3



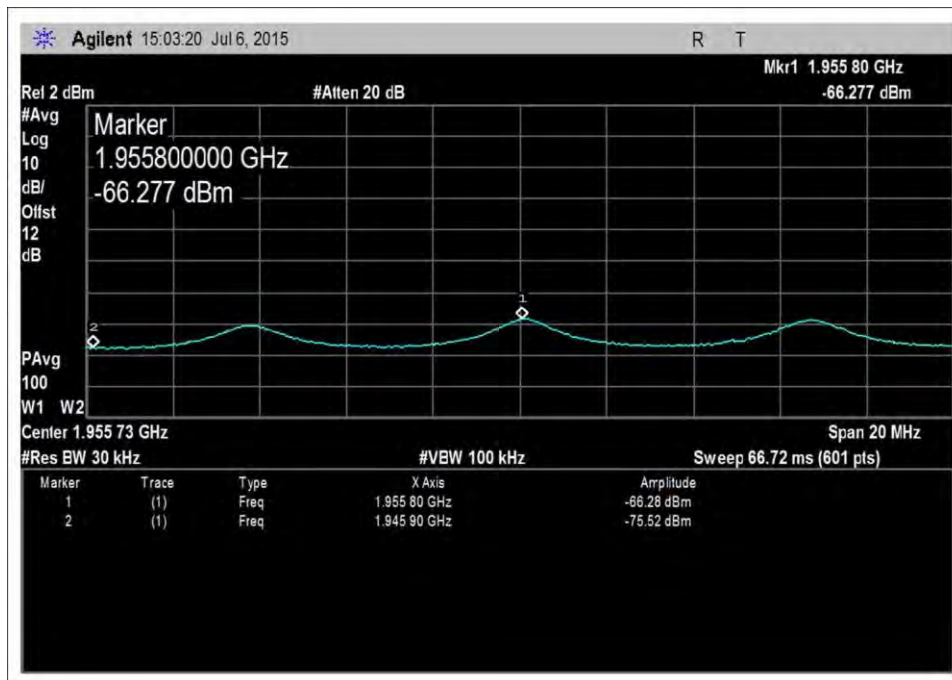
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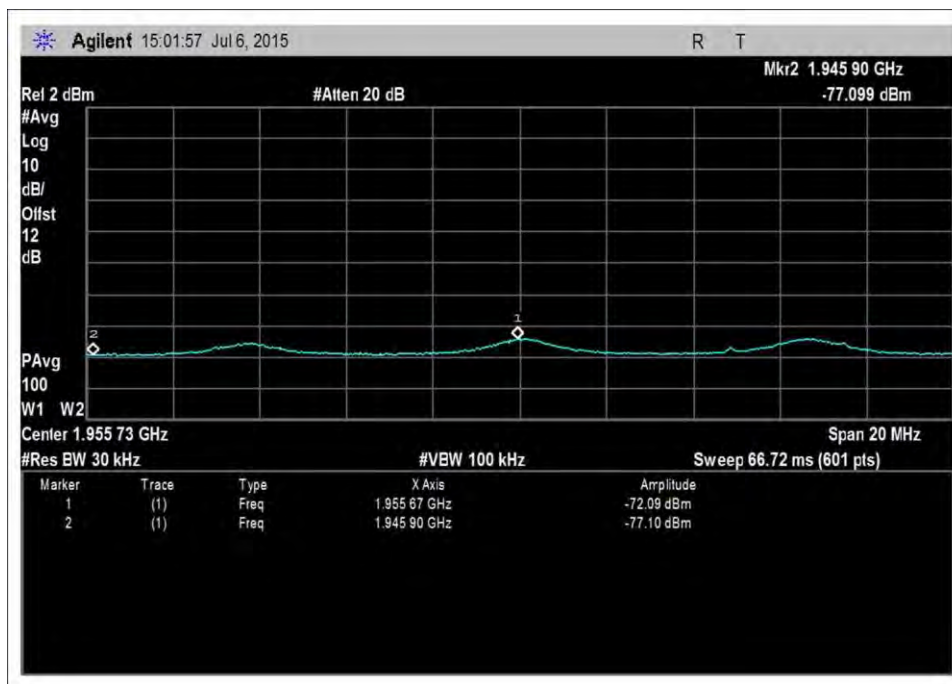
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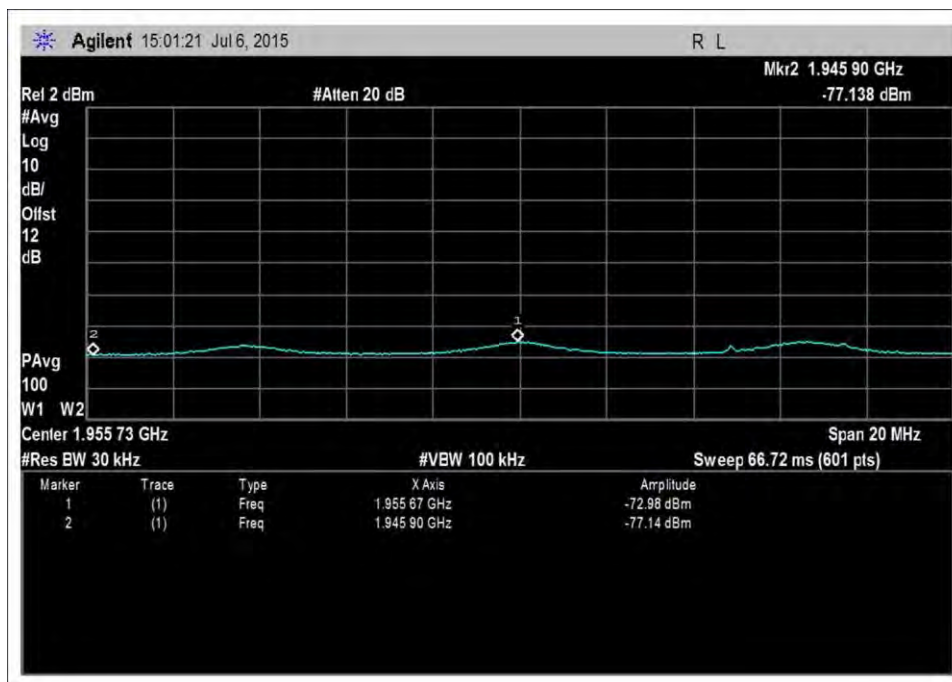
DL_1930-1995MHz-AWGNL+0



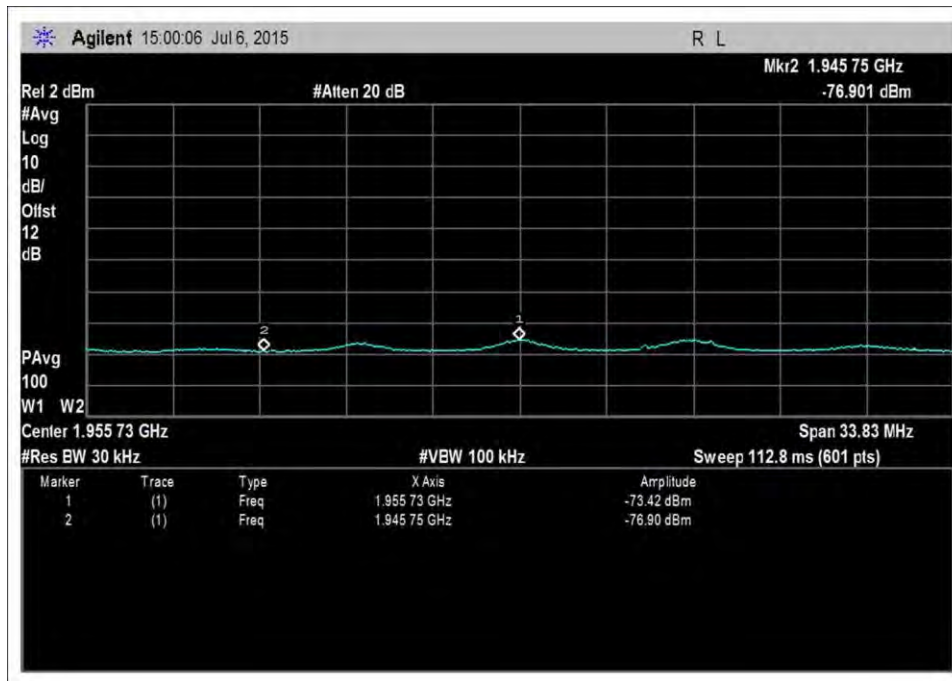
DL_1930-1995MHz-AWGNL+1



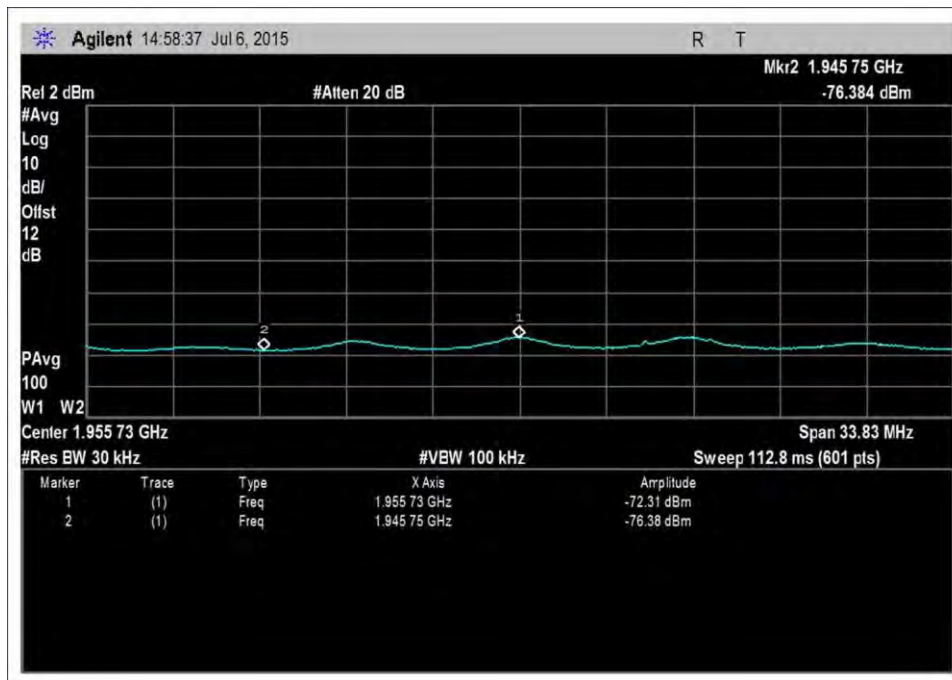
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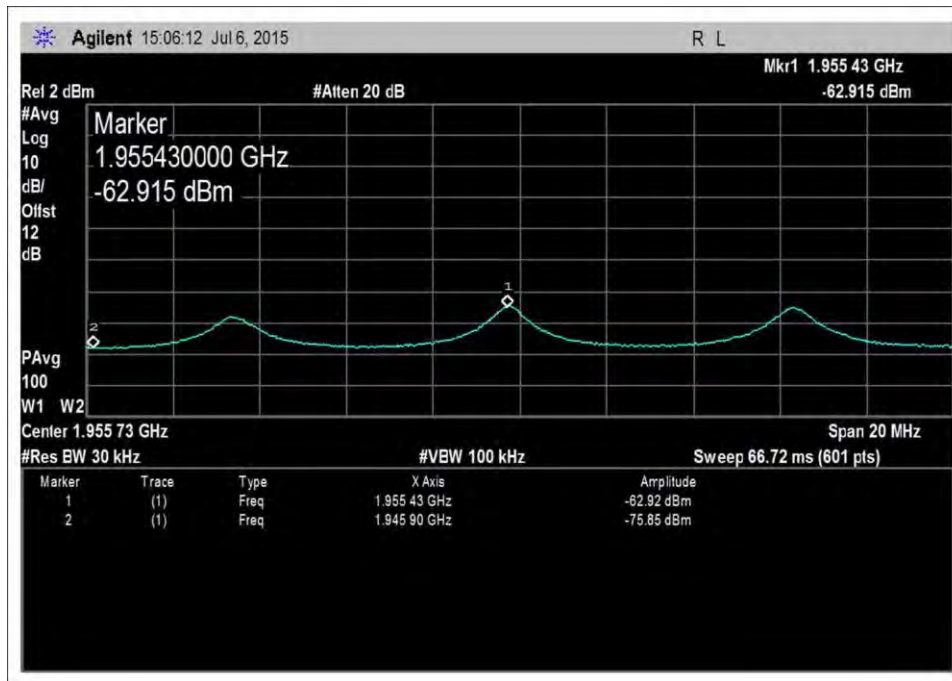
DL_1930-1995MHz-AWGNL+3



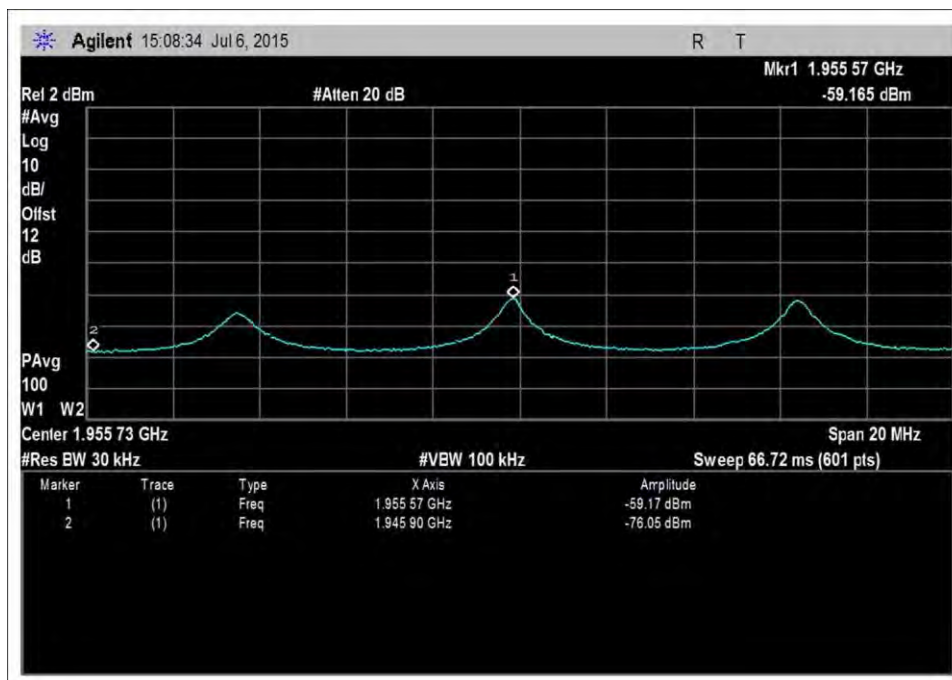
DL_1930-1995MHz-AWGNL+4



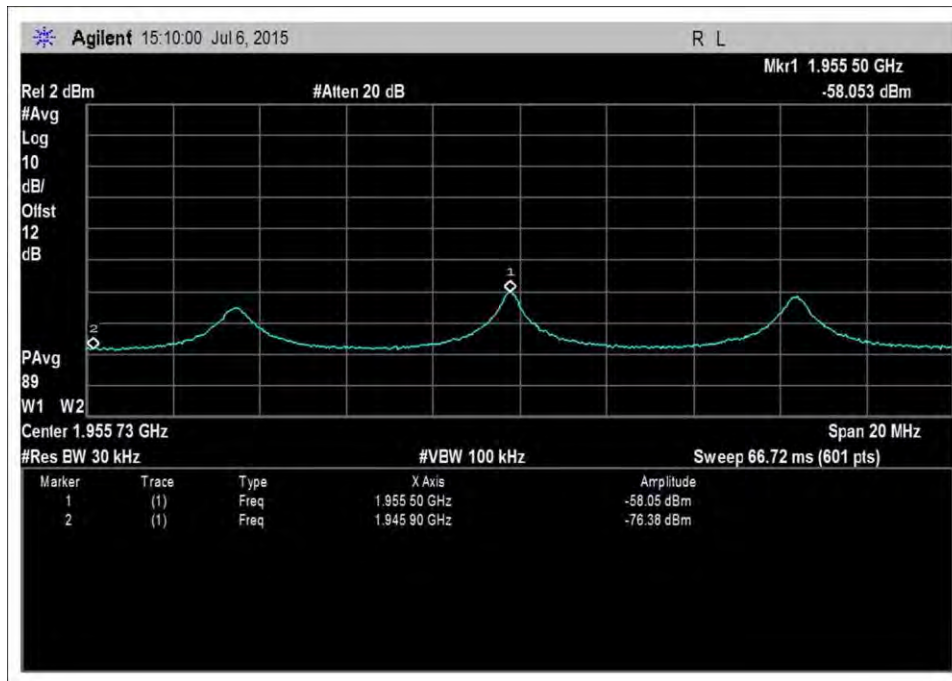
DL_1930-1995MHz-AWGNL+5



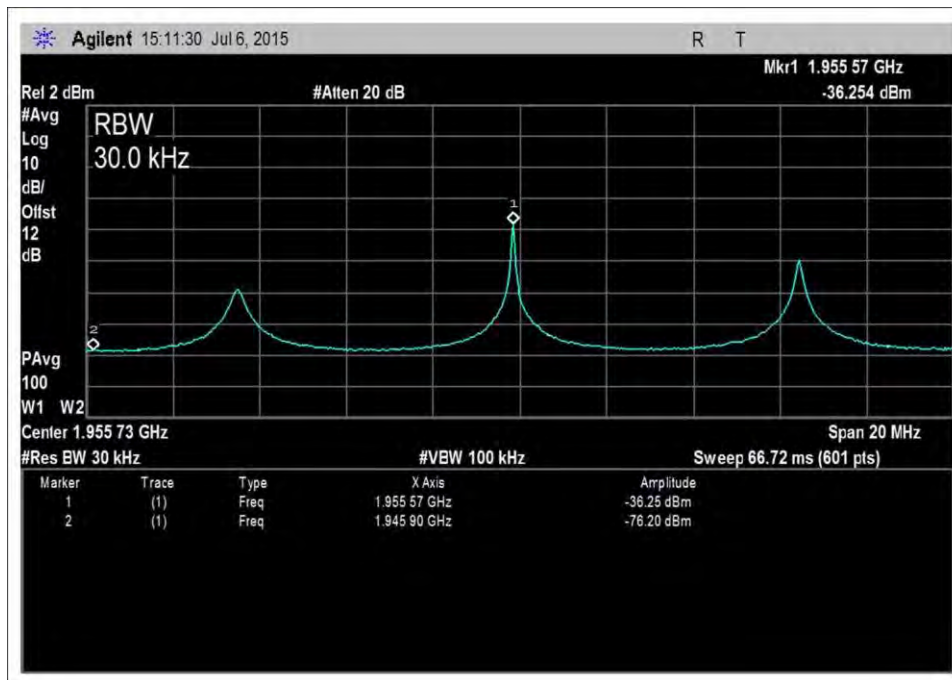
DL_1930-1995MHz-AWGNL-1



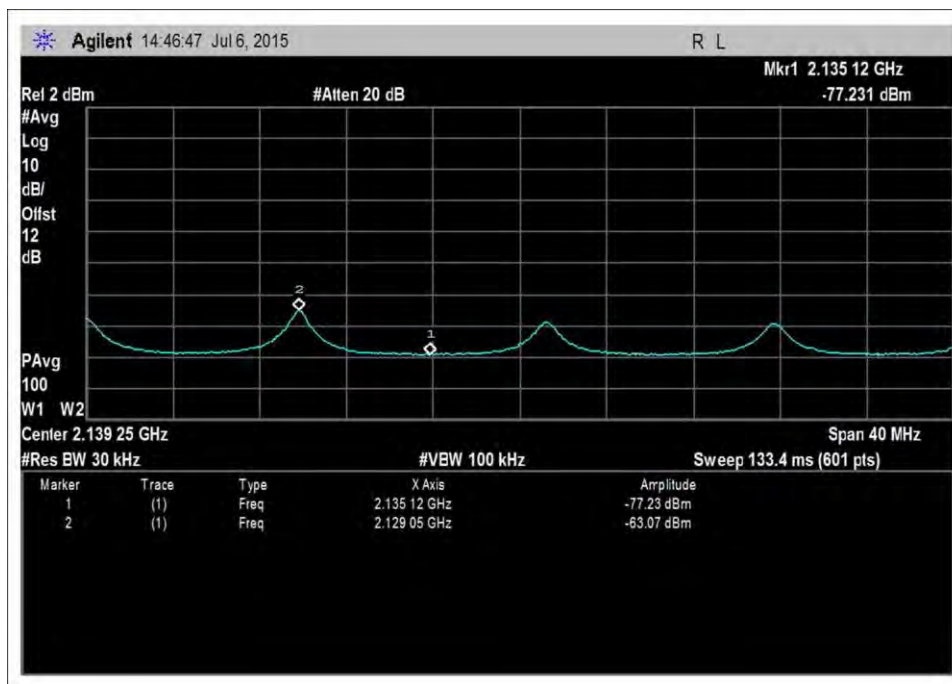
DL_1930-1995MHz-AWGNL-2



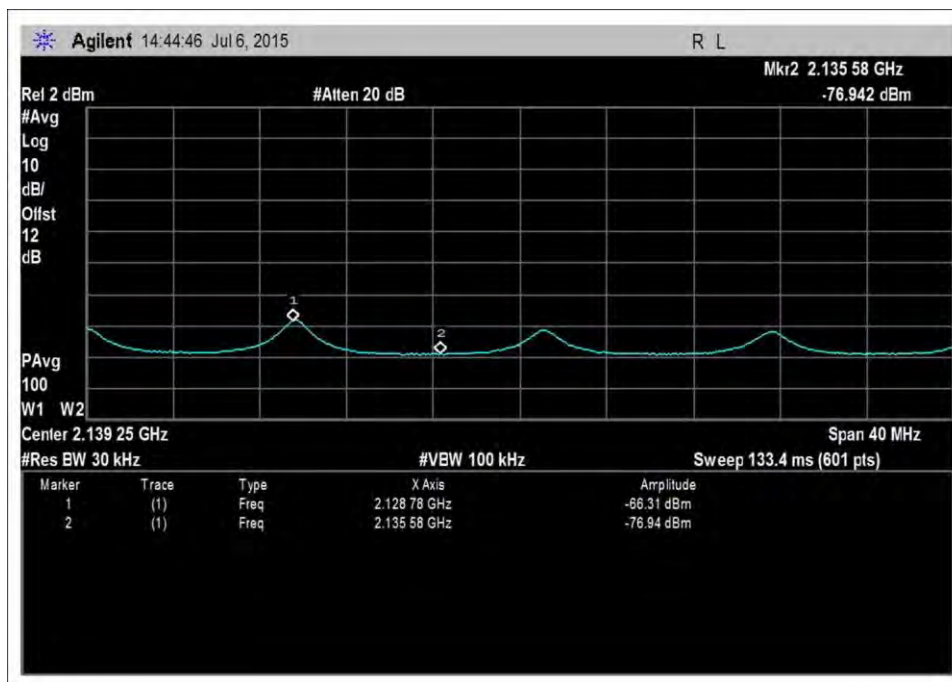
DL_1930-1995MHz-AWGNL-3



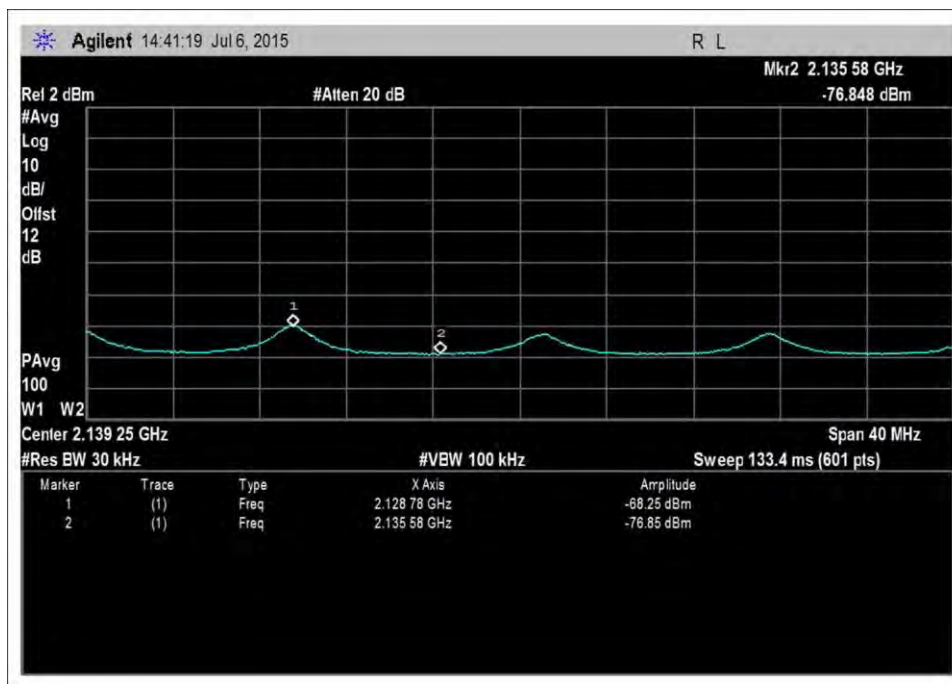
DL_1930-1995MHz-AWGNL-4



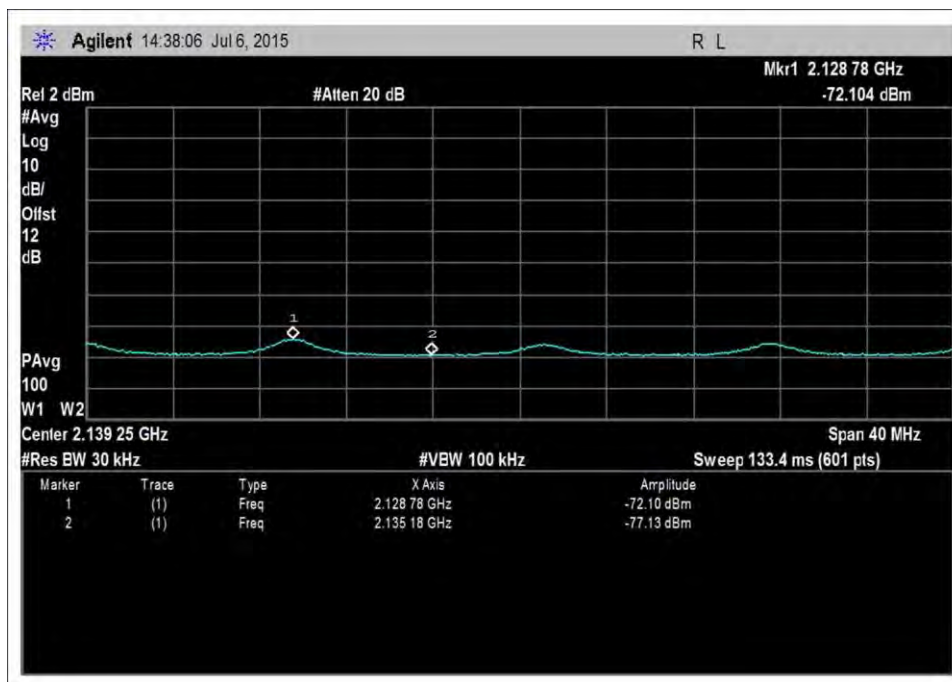
DL_2110-2155MHz-AWGNL+0



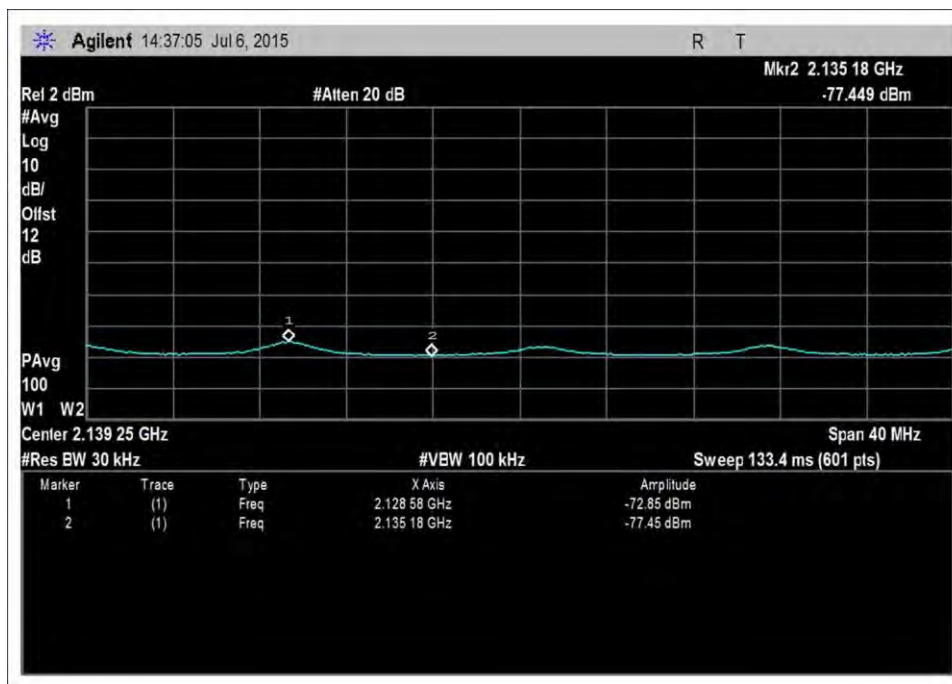
DL_2110-2155MHz-AWGNL+1



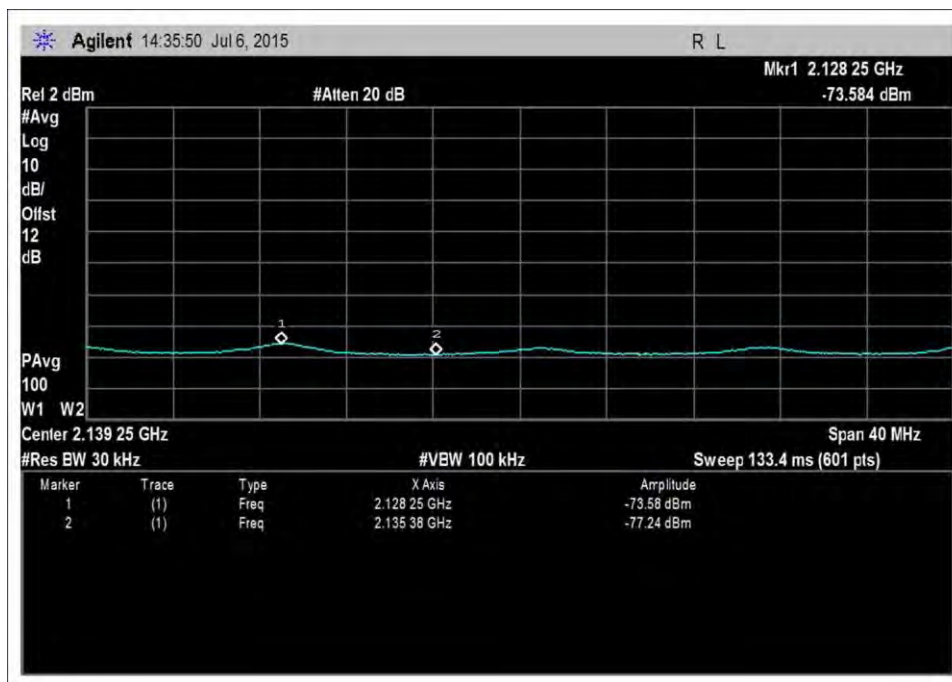
DL_2110-2155MHz-AWGNL+2



DL_2110-2155MHz-AWGNL+3



DL_2110-2155MHz-AWGNL+4

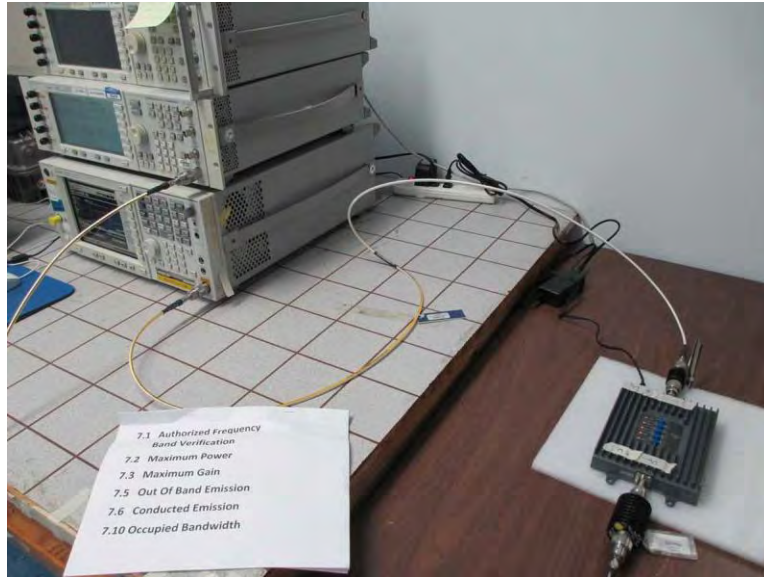


DL_2110-2155MHz-AWGNL+5

Clause 7.13 Spectrum Block Filter

Section 7.13 not applicable because the EUT does not utilize spectrum block filtering.

EXHIBIT A: TEST SETUP PHOTOS



Sections 7.1, 7.2, 7.3 & 7.5



Section 7.4



Section 7.7



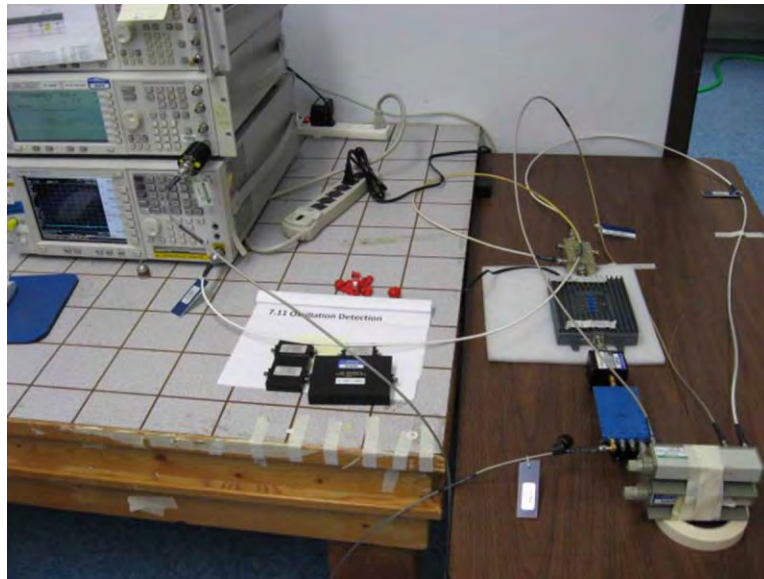
Section 7.8



Section 7.9



Section 7.11.2



Section 7.11.3