

Cellphone-Mate, Inc.

ADDENDUM TEST REPORT TO 95115-7A

**Dual Band Cellphone Signal Booster
Model: Dual Force**

Tested To The Following Standards:

FCC Part 20.21

Report No.: 95115-7B

Date of issue: April 2, 2014

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Cellphone-Mate, Inc.
48346 Milmont Dr.
Fremont, CA 94538

Representative: Hongtao Zhan
Customer Reference Number: CKC20131113

DATE OF EQUIPMENT RECEIPT:**DATE(S) OF TESTING:****REPORT PREPARED BY:**

Dianne Dudley
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 95115

November 7, 2013

November 7, 2013- January 9, 2014

Revision History

Original: Testing of the Dual Band Cellphone Signal Booster, Dual Force to FCC Part 20.21.

Addendum A: In section 7.9 the uplink gain plot was recalculated with the manufacturer's MSCL value.

Addendum B: Test summary table added to Clause 7.7 Noise Limits and Clause 7.9, Booster Gain Limits.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Brea A	US0060	SL2-IN-E-1146R	3082D-1	90473	A-0147

SUMMARY OF RESULTS

Standard / Specification: FCC Part 20.21

Description	Test Procedure/Method	Results
Authorized Frequency Band Verification	Clause 7.1	Pass
Power Gain	Clause 7.2 & 7.3	Pass
Intermodulation Product	Clause 7.4	Pass
Out of Band Emissions	Clause 7.5	Pass
Noise limit	Clause 7.7 / KDB935210 D03	Pass
Uplink Inactivity	Clause 7.8	Pass
Booster Gain Limit	Clause 7.9	Pass
Anti-Oscillation	Clause 7.11	Pass
Spectrum Mask	Clause 7.13	NA

NA = Not applicable

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Dual Band Cellphone Signal Booster

Manuf: Cellphone-Mate, Inc.

Model: Dual Force

Serial: 2

PERIPHERAL DEVICES

The EUT was tested with the following peripheral devices:

Signal Generator

Manuf: Agilent.

Model: E4438C

Serial: MY42082260

Power Supply

Manuf: Surecall

Model: GFP451DA-0945-1

Serial: 1211-0000323

Signal Generator

Manuf: Agilent.

Model: E4438B

Serial: US40052164

FCC PART 20.21

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR Part 20.21 requirements for Commercial Mobile Services, Signal Boosters.

Clause 7.1 Authorized Frequency Band Verification

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **7.1 Authorized Frequency band verification.**

Work Order #: **94297** Date: 11/9/2013

Test Type: **Conducted Emissions** Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster Sequence#: 1

Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong

Model: Dual Force 110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e.: toward the 1 2 4 8 16 direction. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

CMRS band.

UL: 824-849MHz, 1850-1915MHz

DL: 869-894MHz, 1930-1995MHz

The booster operates in the following frequency band.

UL: 824-849, 1850-1915 MHz

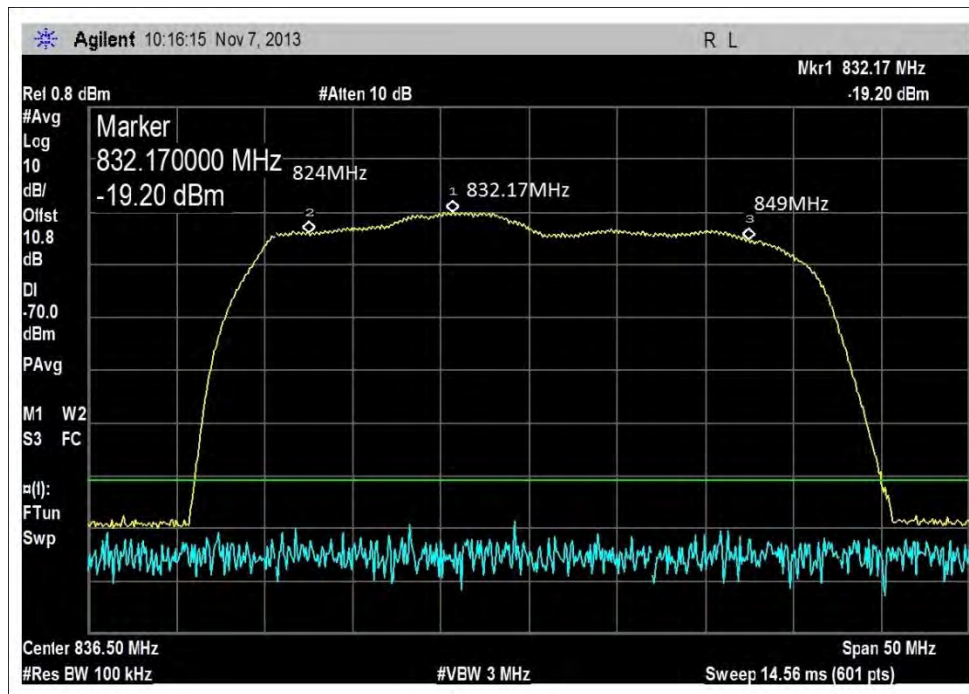
DL: 869-894, 1930-1995 MHz

Authorized Band Verification

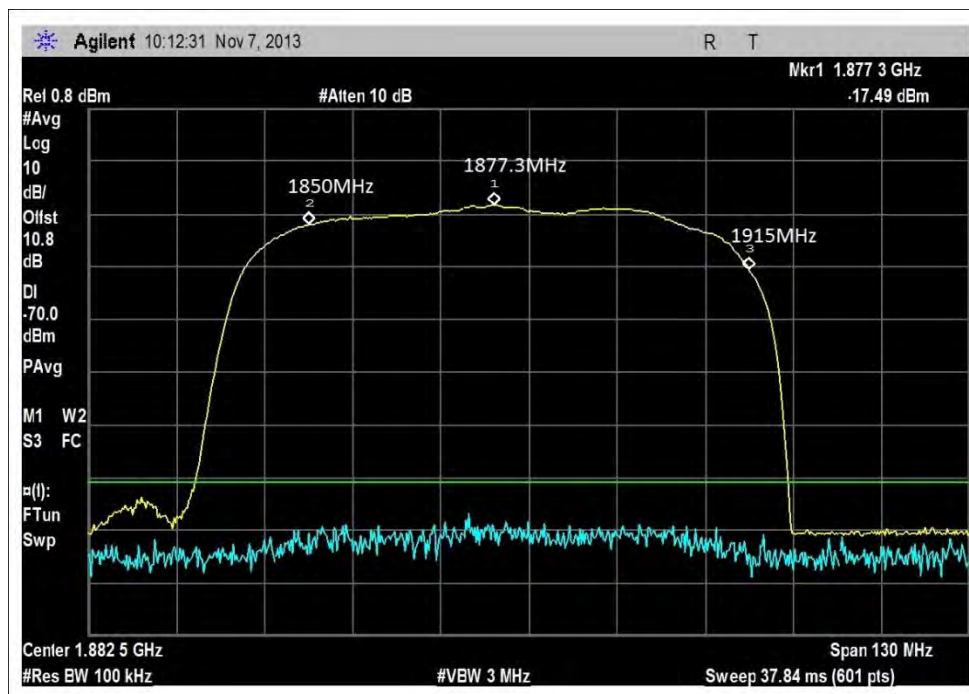
Test procedure: The test was performed in accordance with section 7.1 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516: August 7, 2013.

Test environment conditions: 23.9°C, 7% Relative Humidity, 100kPa

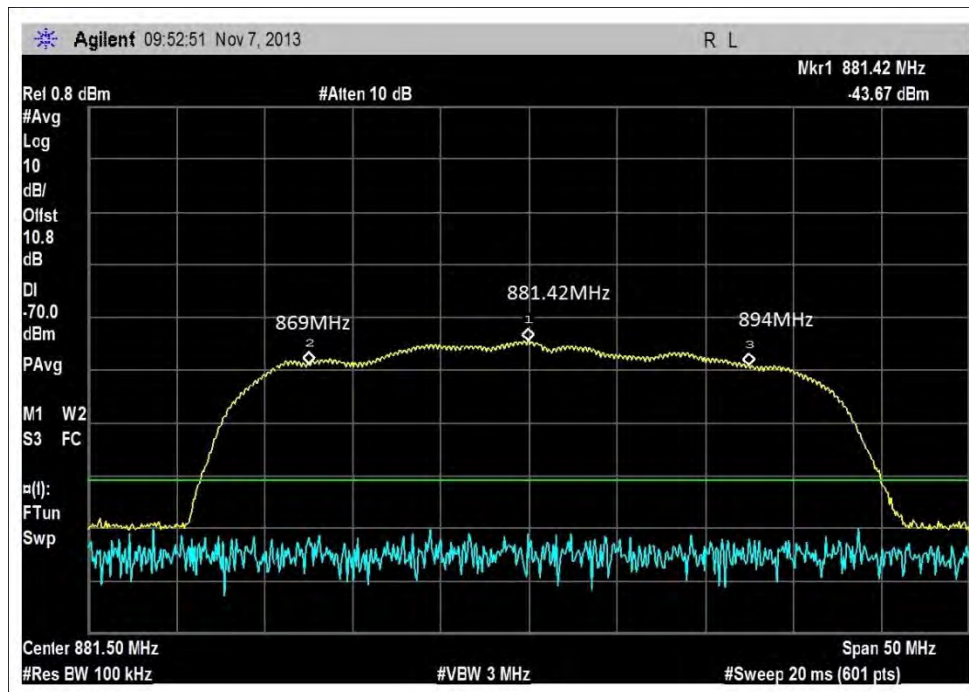
Test Data



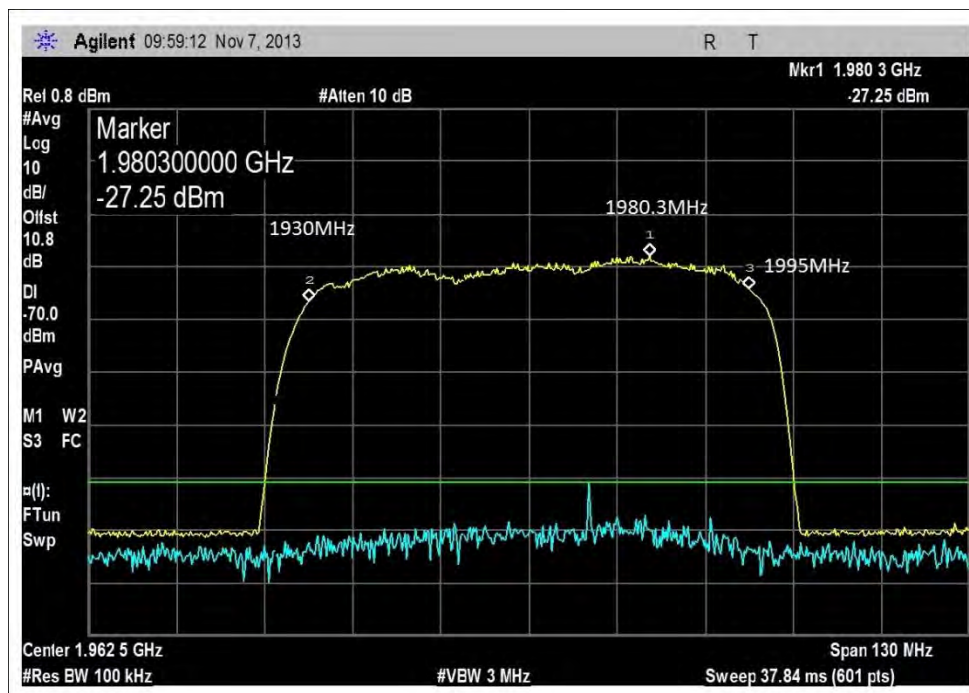
UL 824-849MHz



UL 1850-1915MHz

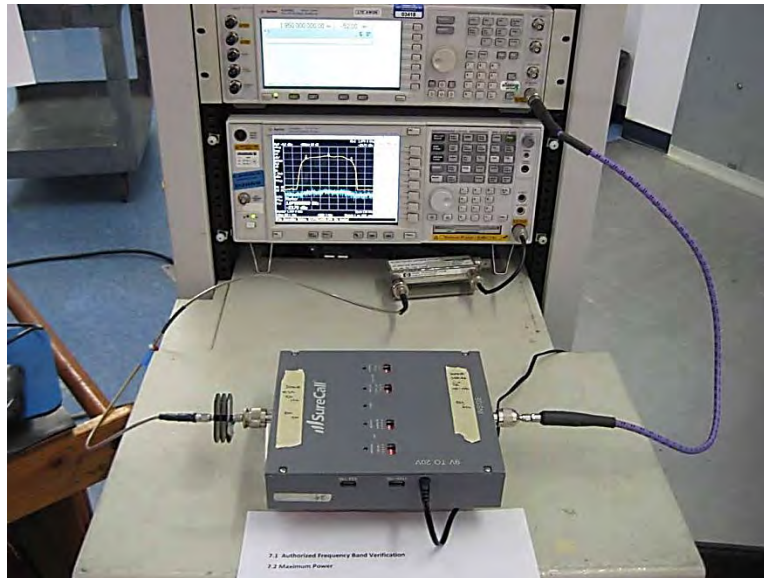


DL 869-894MHz



DL 1930-1995MHz

Test Setup Photos



Dip Setup

Clause 7.2 & 7.3 Power Gain

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **20.21(e)(8)(i)(B) Bidirectional Capability.**

20.21(e)(8)(i)(C)(2)

20.21(e)(8)(i)(D) Power Limit.

Work Order #: **94297**

Date: 11/9/2013

Test Type: Conducted Emissions

Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster

Sequence#: 1

Manufacturer: Cellphone-Mate, Inc.

Tested By: E. Wong

Model: Dual Force

110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster*	Cellphone-Mate, Inc.	Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port. CMRS band.
UL: 824-849MHz, 1850-1915MHz
DL: 869-894MHz, 1930-1995MHz
The booster operates in the following frequency band.
UL: 824-849, 1850-1915 MHz
DL: 869-894, 1930-1995 MHz
20.12(e)(8)(i)(B), 20.12(e)(9)(i)(D)
Test procedure: The test was performed in accordance with section 7.2, 7.3 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 August 7, 2013.
Test environment conditions: 23.9°C, 7% Relative Humidity, 100kPa

Test Data

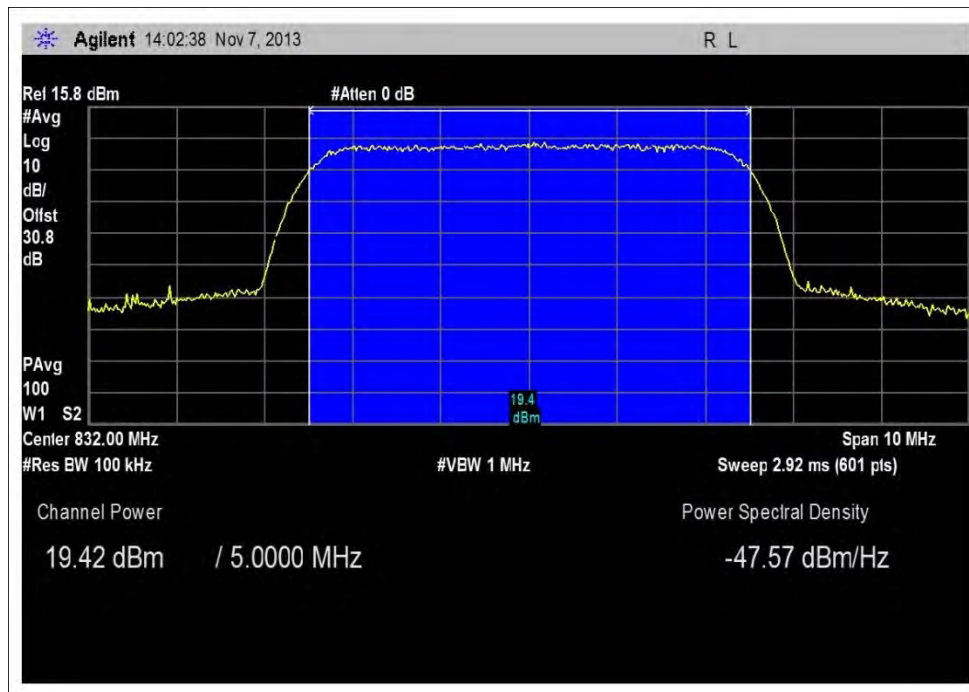
Pulse GSM				4.1 MHz AWGN		
Frequency	Input (dBm)	Output (dBm)	Gain (dB)	Input (dBm)	Output (dBm)	Gain (dB)
UL 1850-1915	-48.0	18.6	66.6	-48.0	17.3	65.3
UL 824-849	-40.1	20.5	60.6	-42.1	19.4	61.5
DL 1930-1995	-65.0	0.9	65.9	-65.0	1.0	66.0
DL 869-894	-66.0	-6.1	59.9	-66.0	-6.5	59.5
UL gain vs DL gain 1850/1930			0.7		-0.7	
UL gain vs DL gain 824/894			0.7		2.0	
UL vs DL gain Limit			9		9	

Pulse GSM

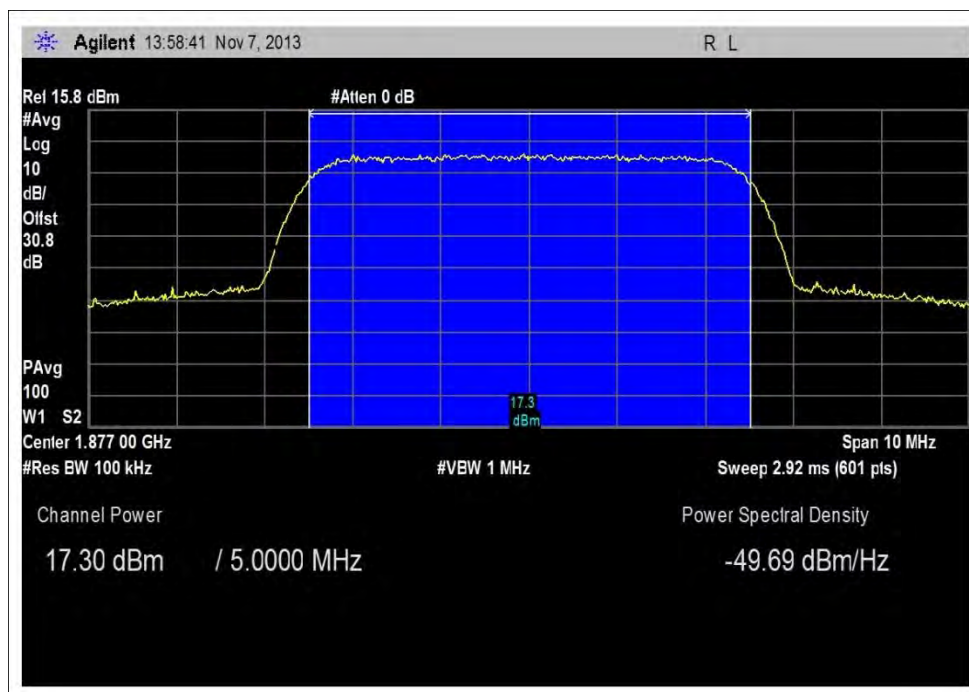
Frequency	Output Power	Ant Gain	Cable Loss	EIRP(dBm)	Limit(dBm)
UL 1850-1915	18.6	10	5.43	23.2	Min17 /Max 30
UL 824-849	20.5	10	3.89	26.6	Min 17/ Max30
DL 1930-1995	0.9	10	3.57	7.3	Max 17
DL 869-894	-6.1	7	2.63	-1.7	Max 17

4.1MHz AWGN

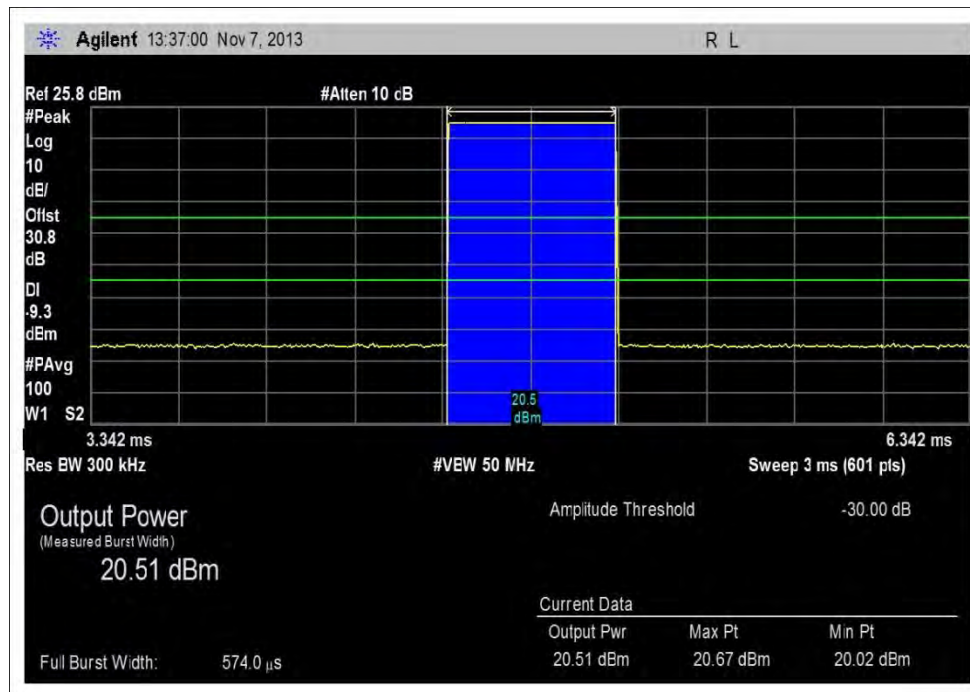
Frequency	Output Power	Ant Gain	Cable Loss	EIRP(dBm)	Limit(dBm)
UL 1850-1915	17.3	10	5.43	21.9	Min17 /Max 30
UL 824-849	19.4	10	3.89	25.5	Min 17/ Max30
DL 1930-1995	1.0	10	3.57	7.4	Max 17
DL 869-894	-6.5	7	2.63	-2.1	Max 17



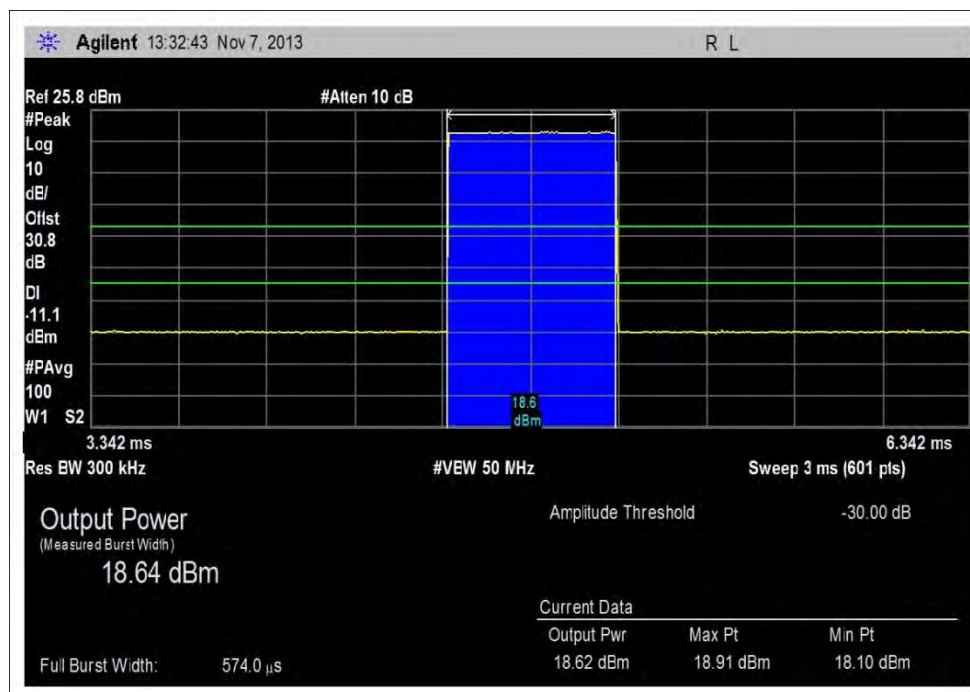
UL 824-849MHz AWGN



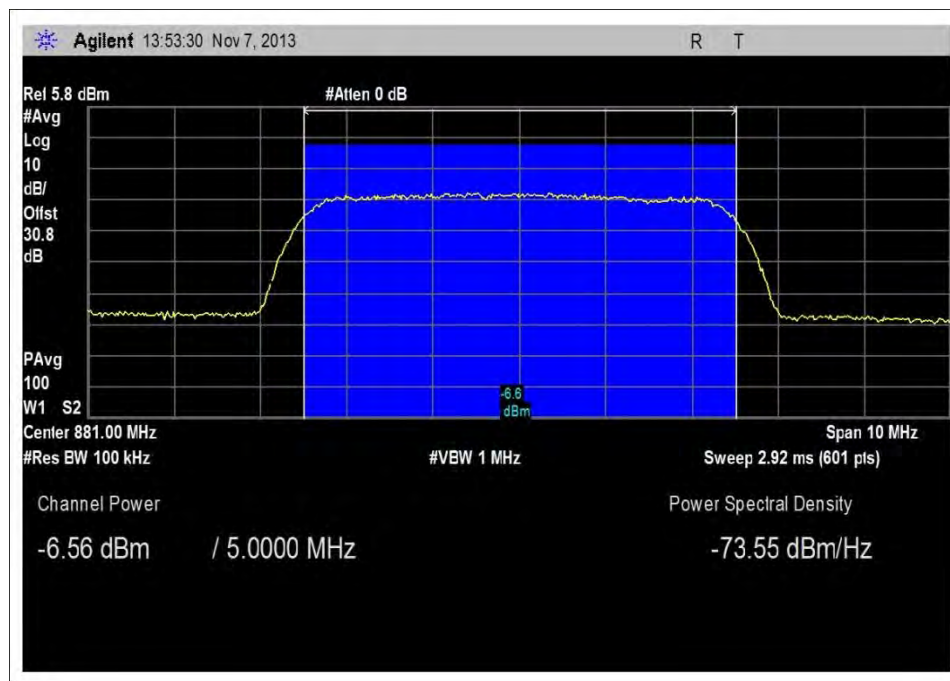
UL 1850-1915MHz AWGN



UL 824-849MHz GSM



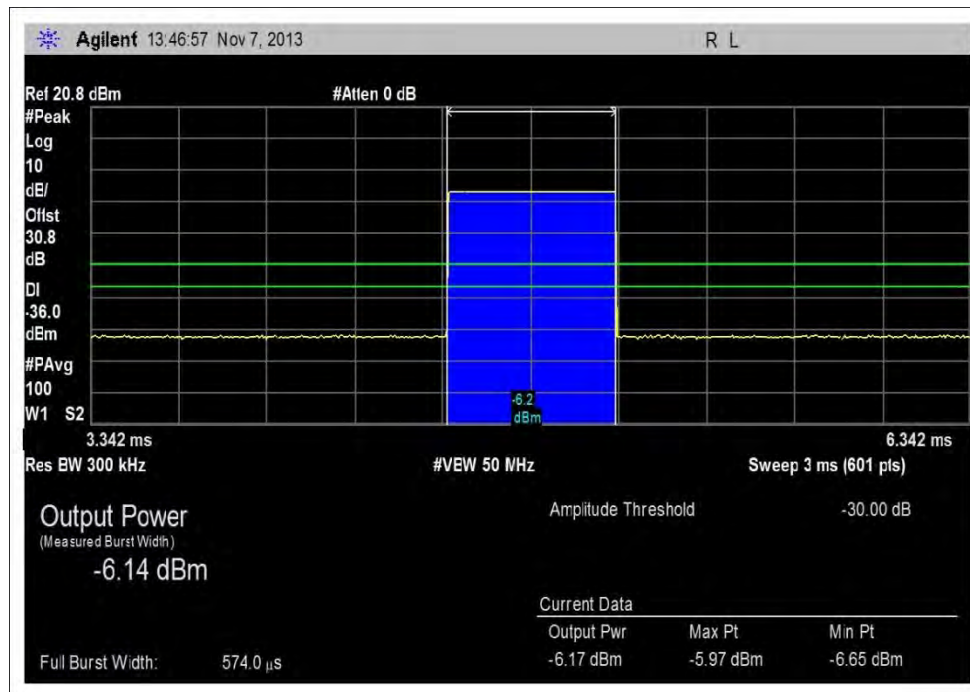
UL 1850-1915MHz GSM



DL 869-894MHz AWGN



DL 1930-1995MHz AWGN

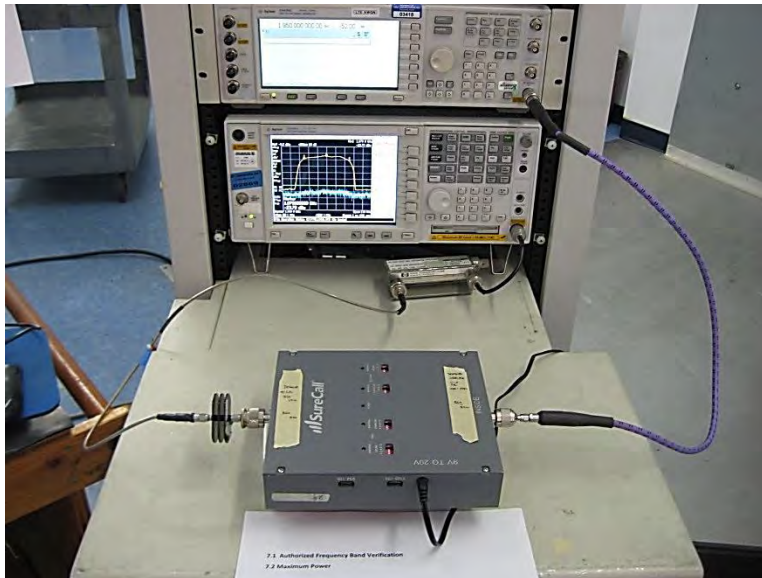


DL 869-894MHz GSM



DL 1930-1995MHz GSM

Test Setup Photos



Clause 7.4 Intermodulation Product

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**
 Specification: **7.4 Intermodulation Product**
 Work Order #: **94297** Date: 11/9/2013
 Test Type: **Conducted Emissions** Time: 10:07:44
 Equipment: Dual Band Cellphone Signal Booster Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Dual Force 110V 60Hz
 S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

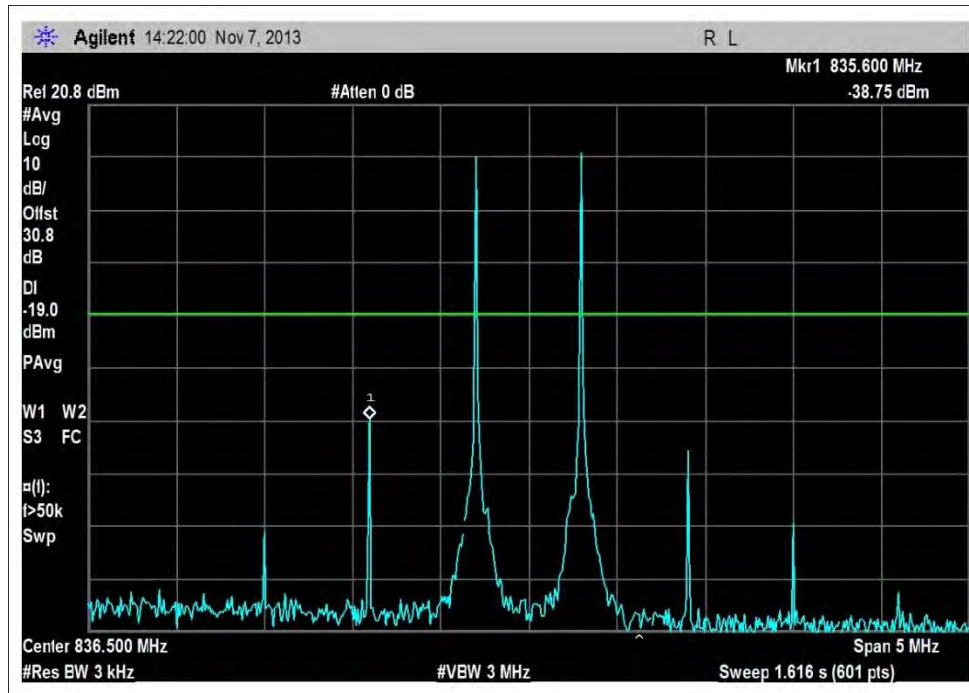
Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Signal Generator	Agilent	E4433B	US40052164
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

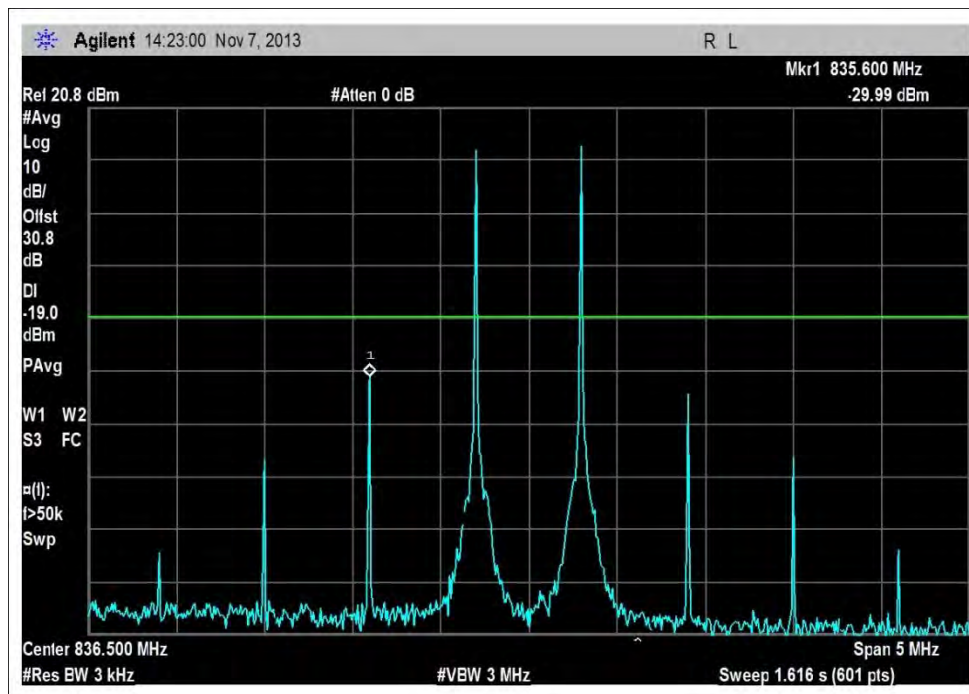
Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction.
 Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
 CMRS band.
 UL: 824-849MHz, 1850-1915MHz
 DL: 869-894MHz, 1930-1995MHz
 The booster operates in the following frequency band.
 UL: 824-849, 1850-1915 MHz
 DL: 869-894, 1930-1995 MHz
 Additional plots were captured with 2 dB increment of input power to demonstrate compliance prior to equipment shutdown as applicable.
 Test procedure: The test was performed in accordance with section 7.4 of the FCC document 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 .August 7, 2013.
 Test environment conditions: 23.9°C, 7% Relative Humidity, 100kPa

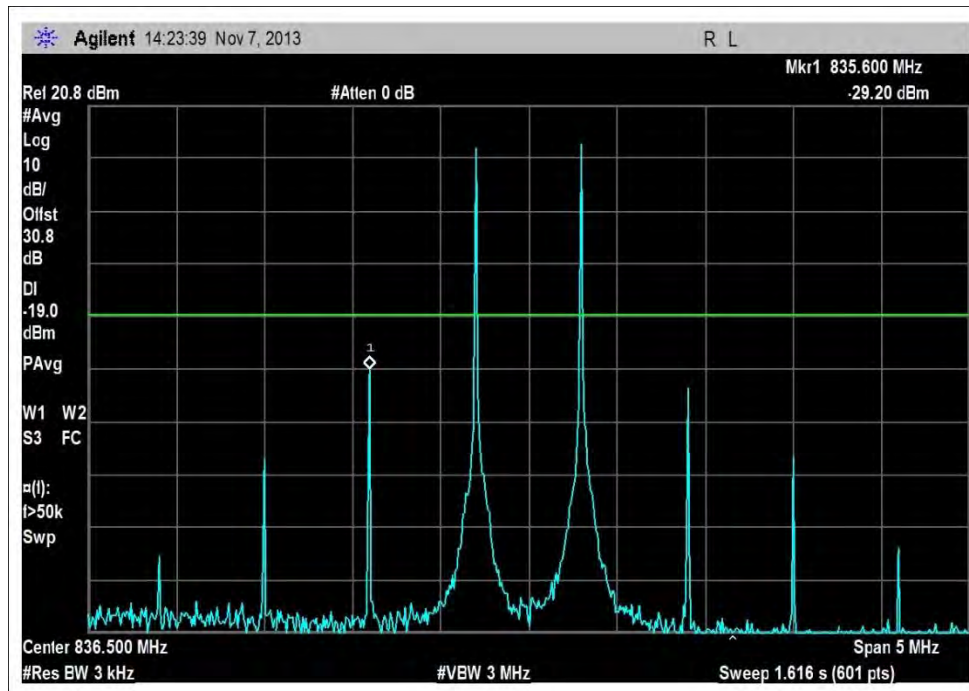
Test Data



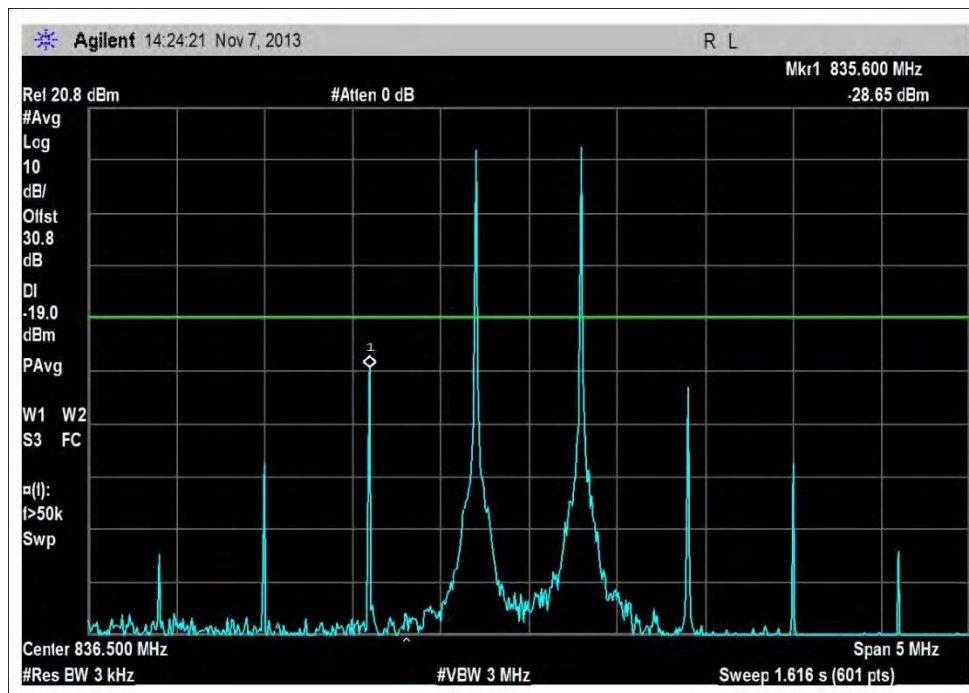
UL 824-849MHz



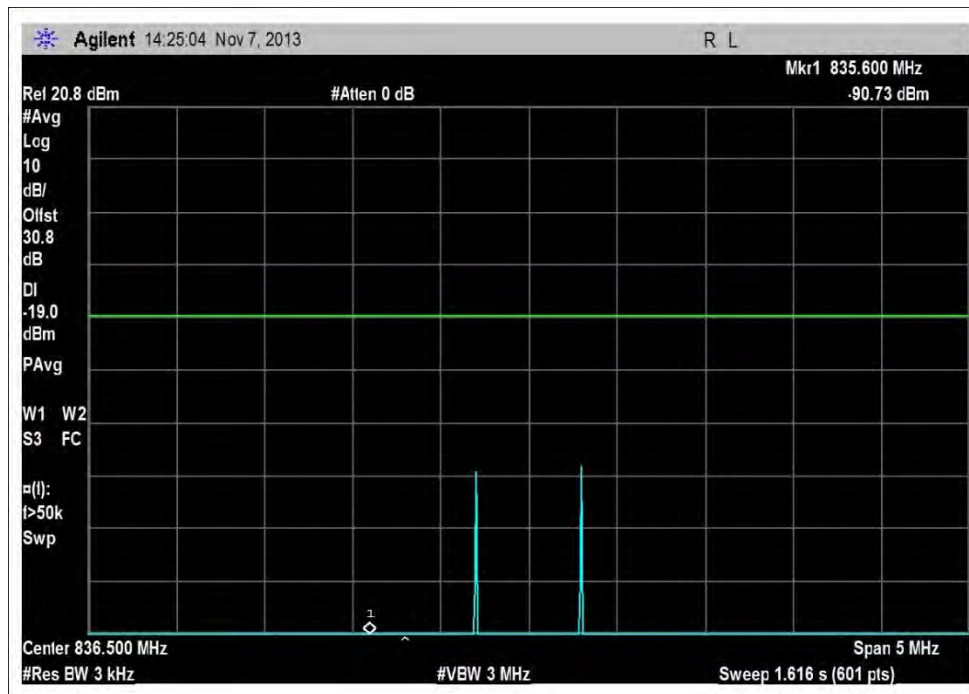
UL 824-849MHz +2dB



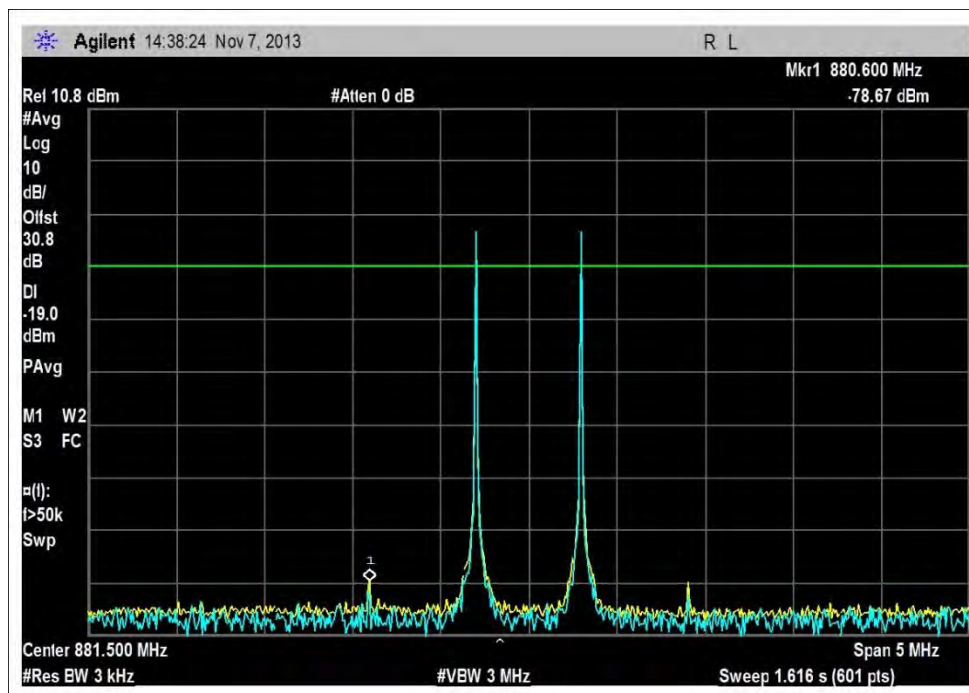
UL 824-849MHz +4dB



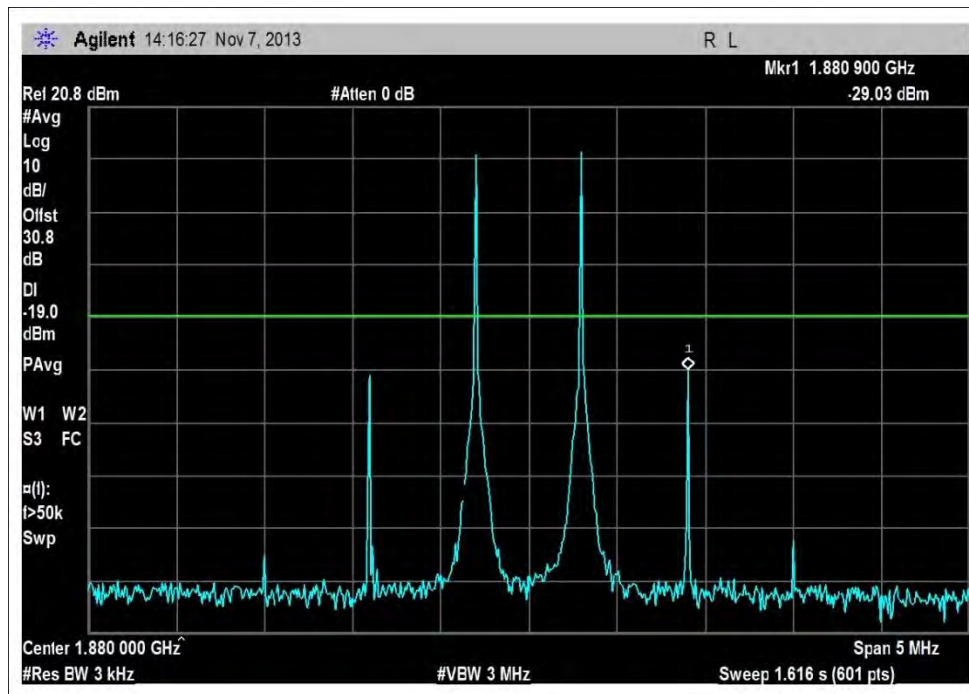
UL 824-849MHz +6dB



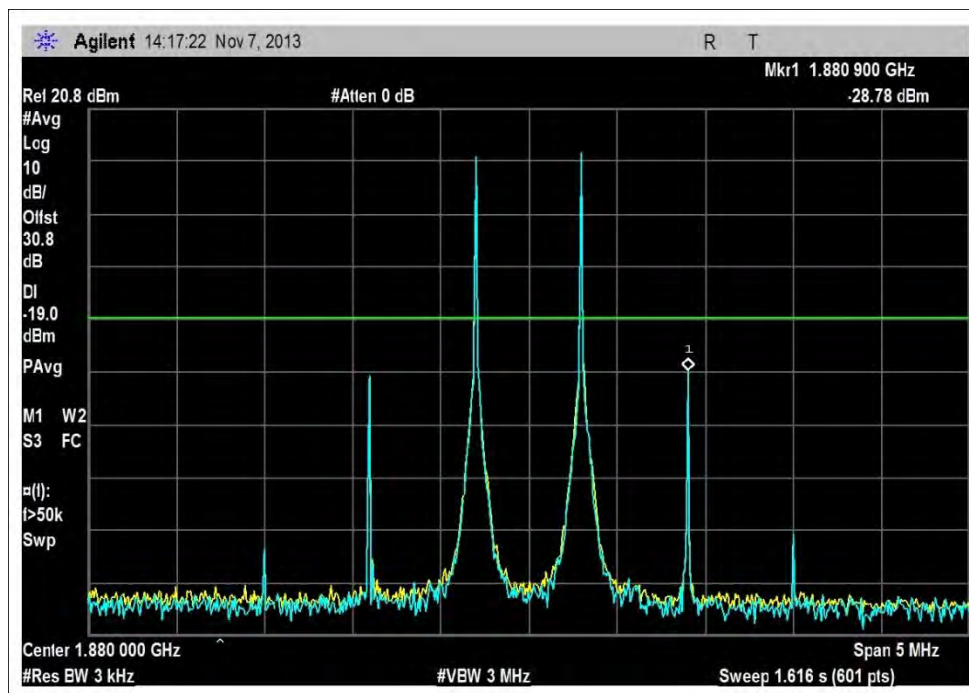
UL 824-849MHz +8dB_shutdown



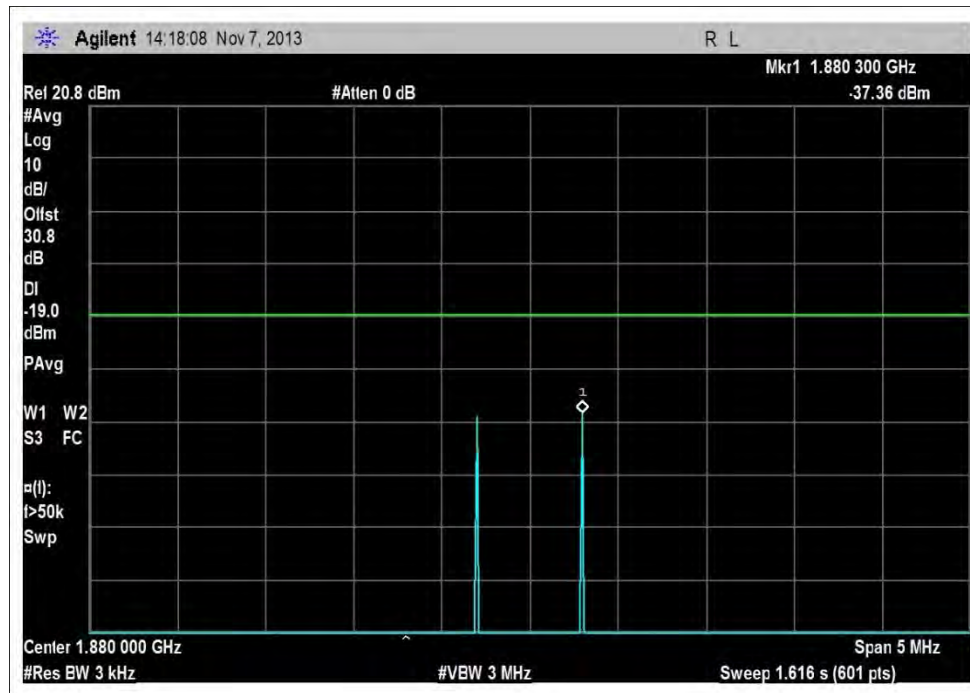
DL 869-894MHz +10dB



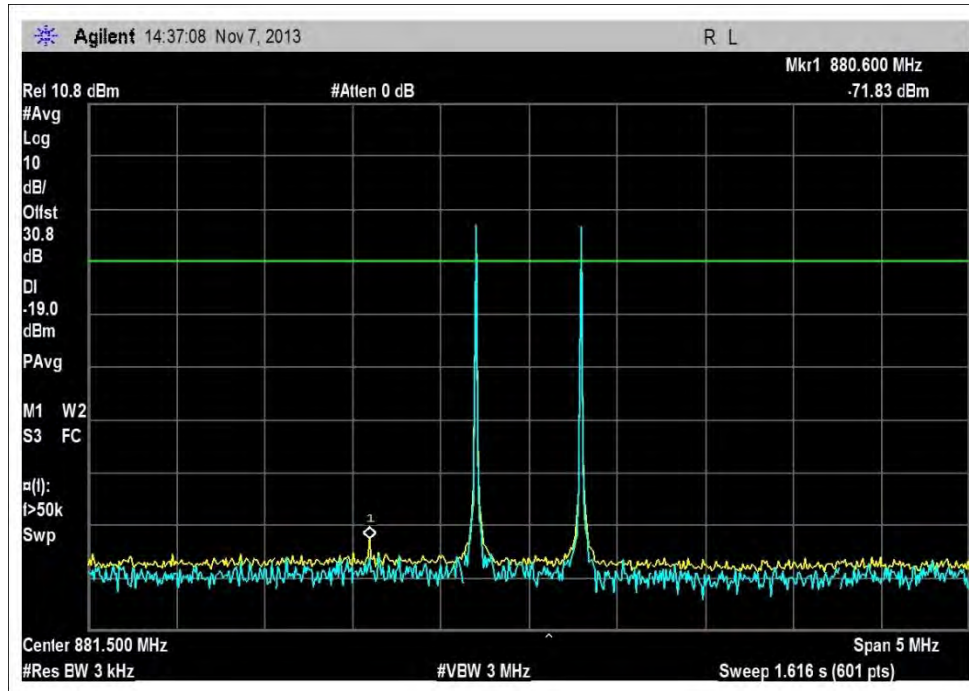
UL 1850-1915MHz



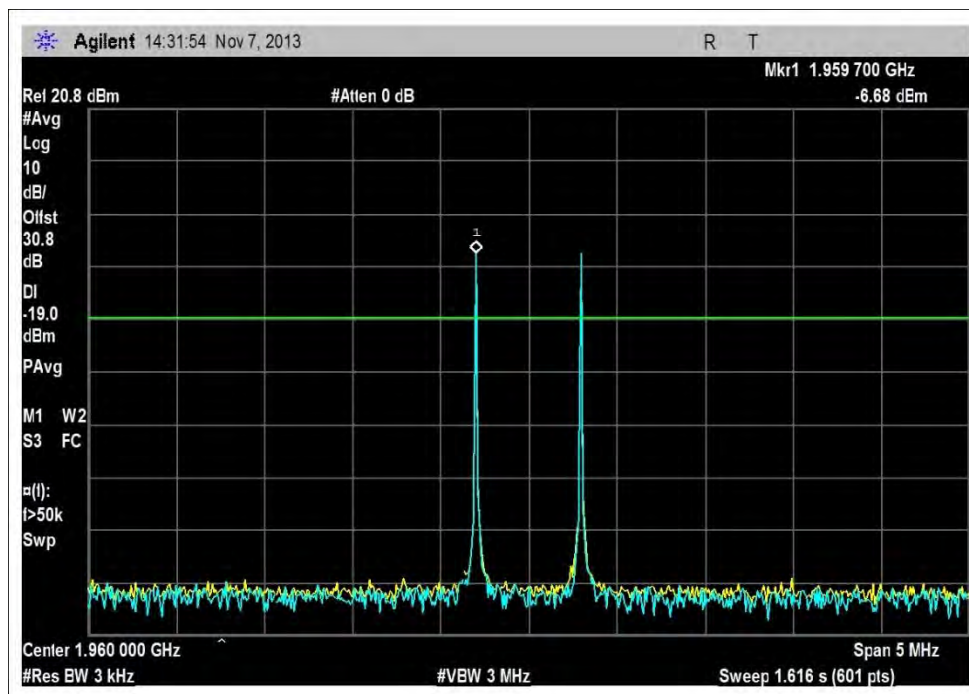
UL 1850-1915MHz +2dB



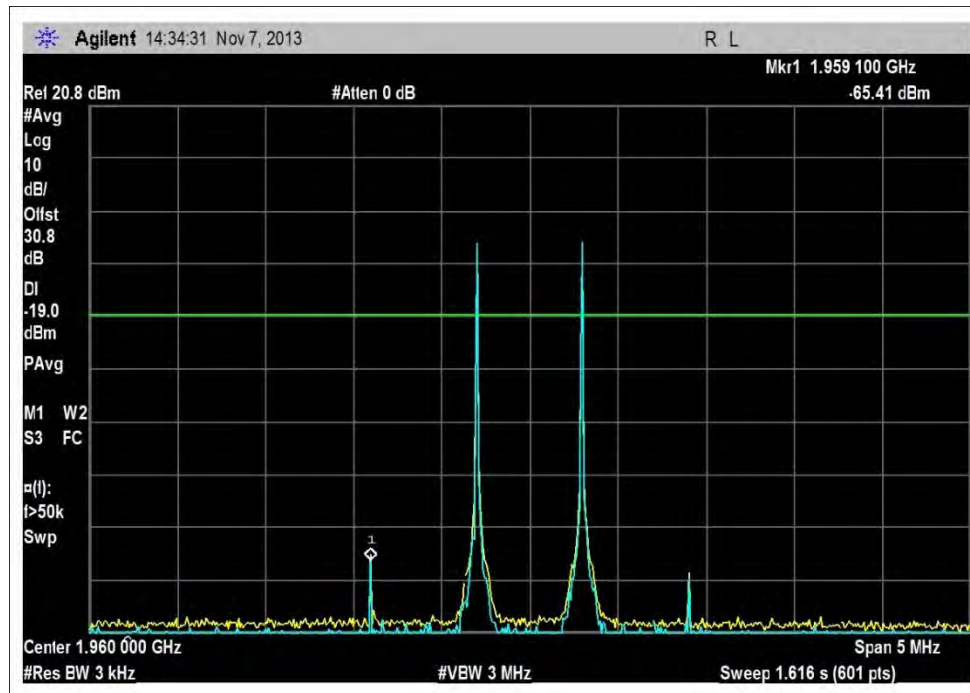
UL 1850-1915MHz+4dB Shutdown



DL 869-894MHz

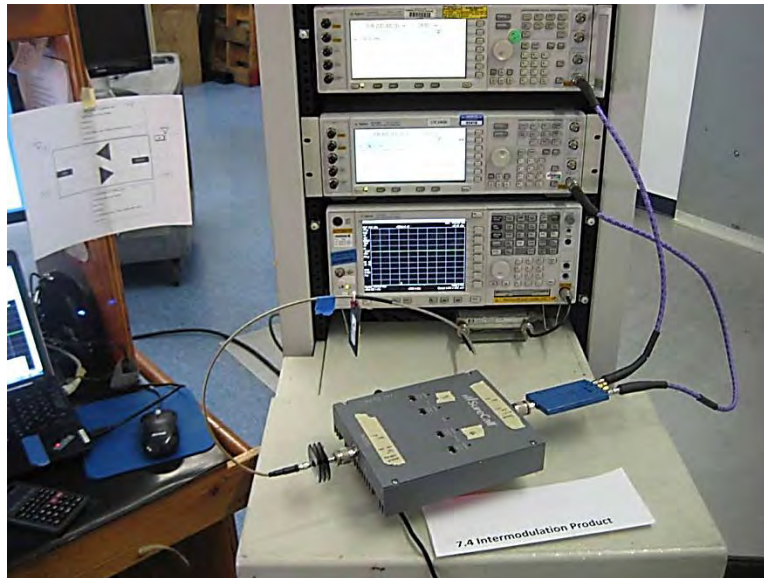


DL 1930-1995MHz



DL 1930-1995MHz +10dB

Test Setup Photo



Clause 7.5 Out of Band Emissions

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **7.5 Out of Band Emissions**

Work Order #: **94297** Date: 11/9/2013

Test Type: **Conducted Emissions** Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster Sequence#: 1

Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong

Model: Dual Force 110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

CMRS band.

UL: 824-849MHz, 1850-1915MHz

DL: 869-894MHz, 1930-1995MHz

The booster operates in the following frequency band.

UL: 824-849, 1850-1915 MHz

DL: 869-894, 1930-1995 MHz

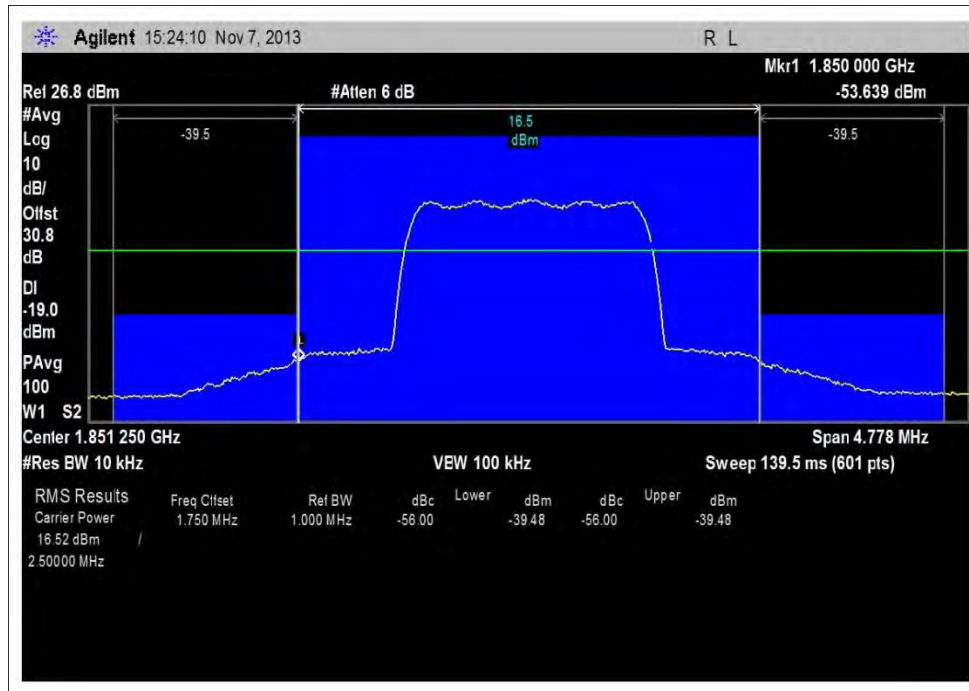
Modulation: GSM, CDMA, 5MHz LTE

Note device shut done prior to power input power listed in section 5.4 of the KDB. Additional OBE measured at power level prior to shut down. Adjacent channel function of a spectrum analyzer was used to integrate measurement made with lower RBW into RBW of 100kHz/1MHz as applicable. Marker denotes the low and high band edges.

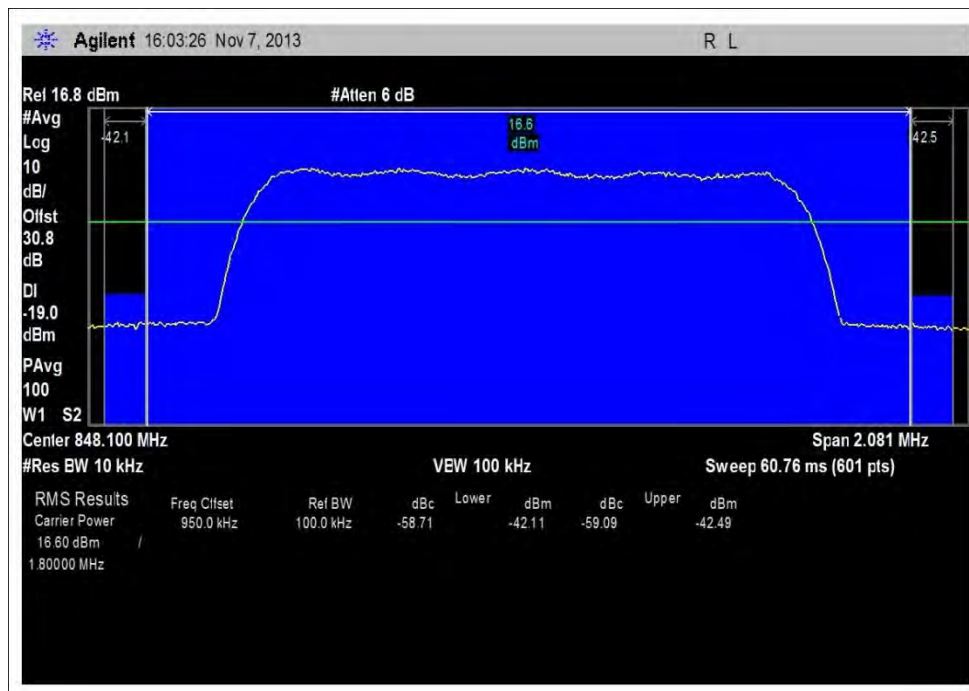
Test procedure: The test was performed in accordance with section 7.5 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516. August 7, 2013.

Test environment conditions: 23.9°C, 7% Relative Humidity, 100kPa

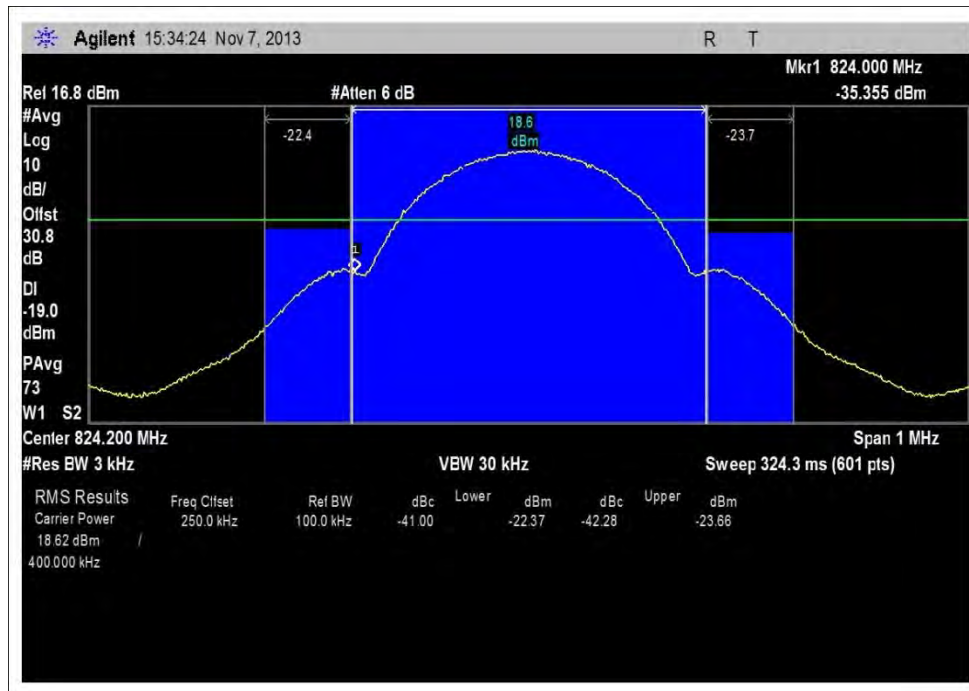
Test Data



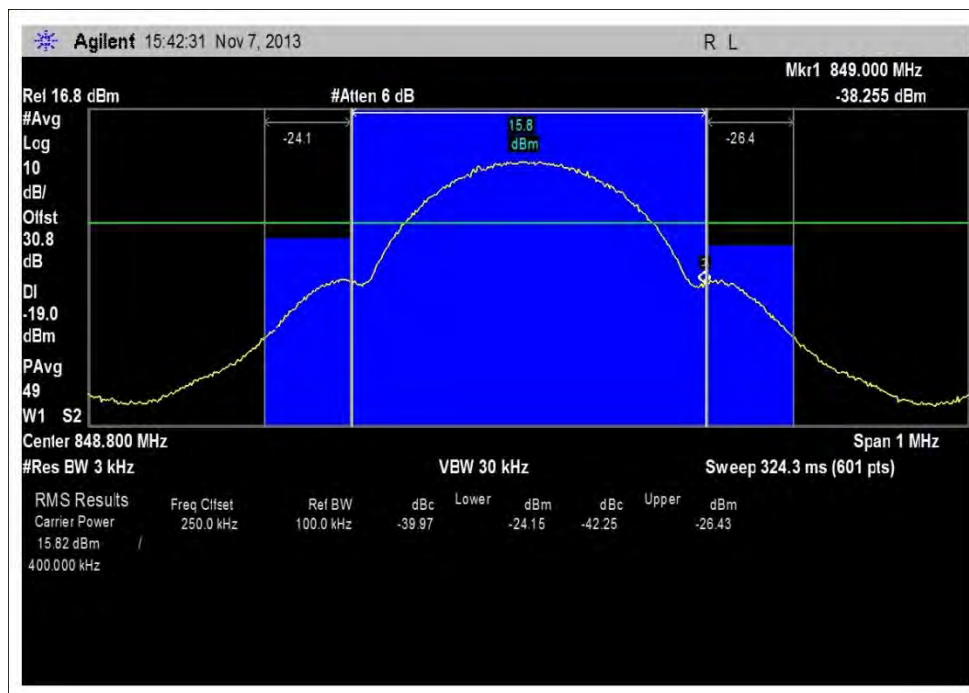
UL 824-849MHz Low, CDMA-40dBm



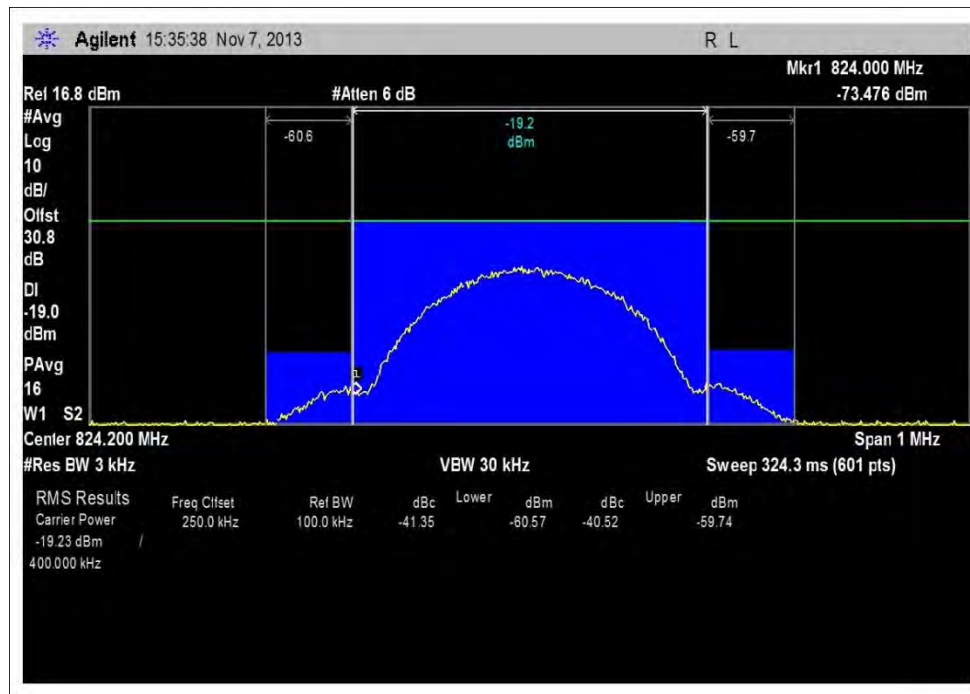
UL 824-849MHz High, CDMA-40dBm



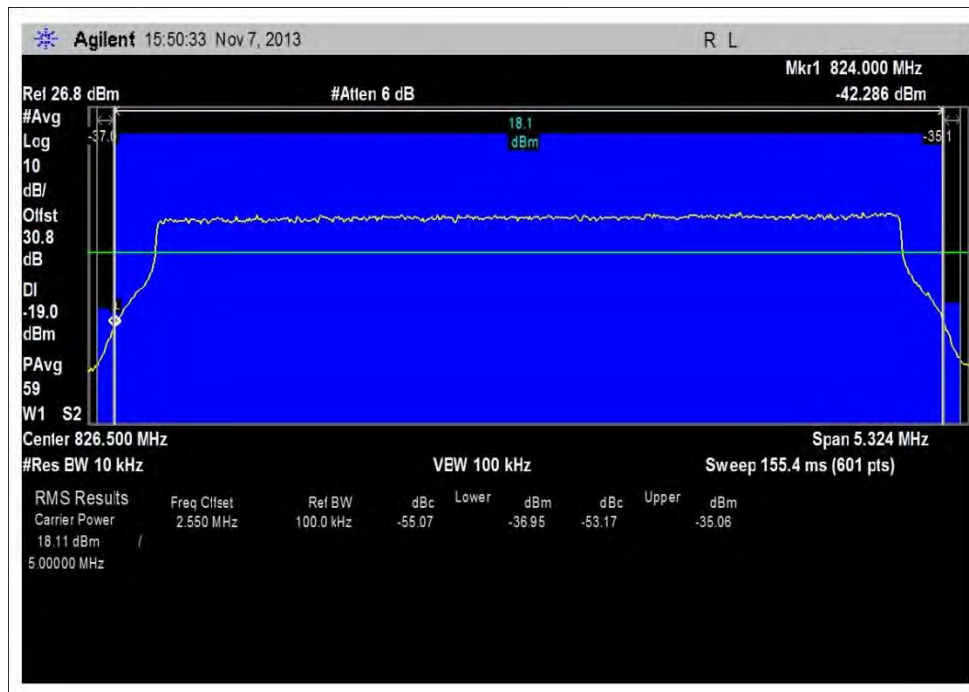
UL 824-849MHz Low, GSM-40dBm



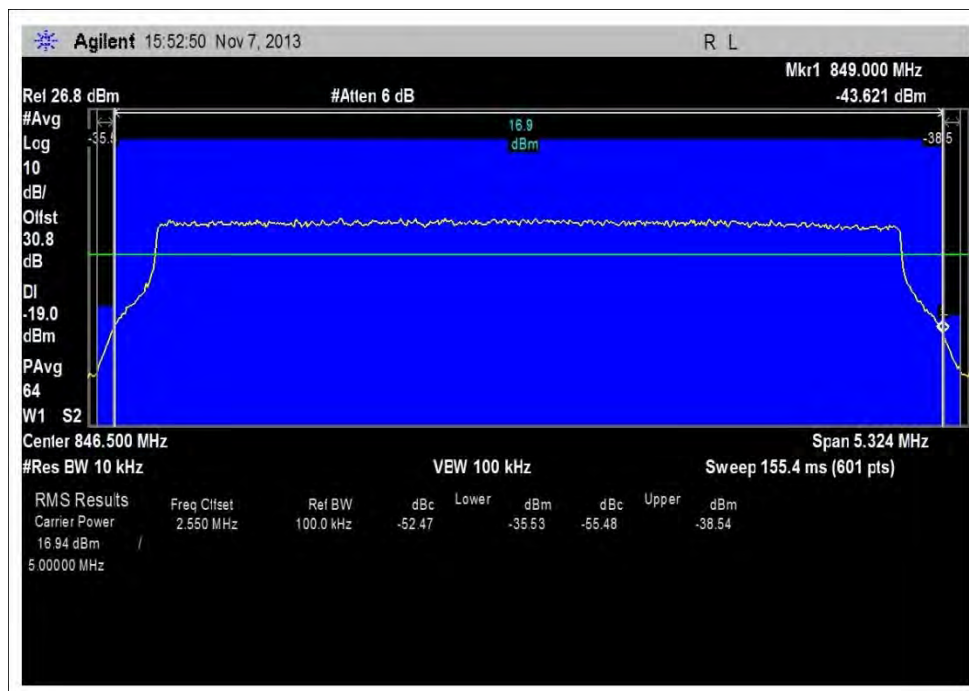
UL 824-849MHz High, GSM-40dBm



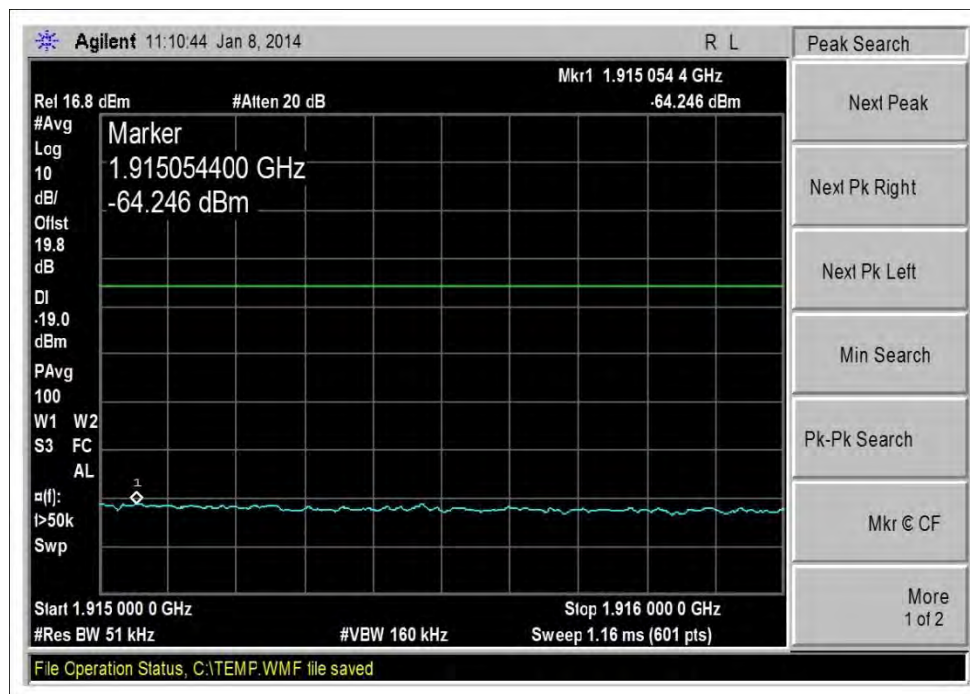
UL 824-849MHz Low, GSM- 0dBm Shutdown



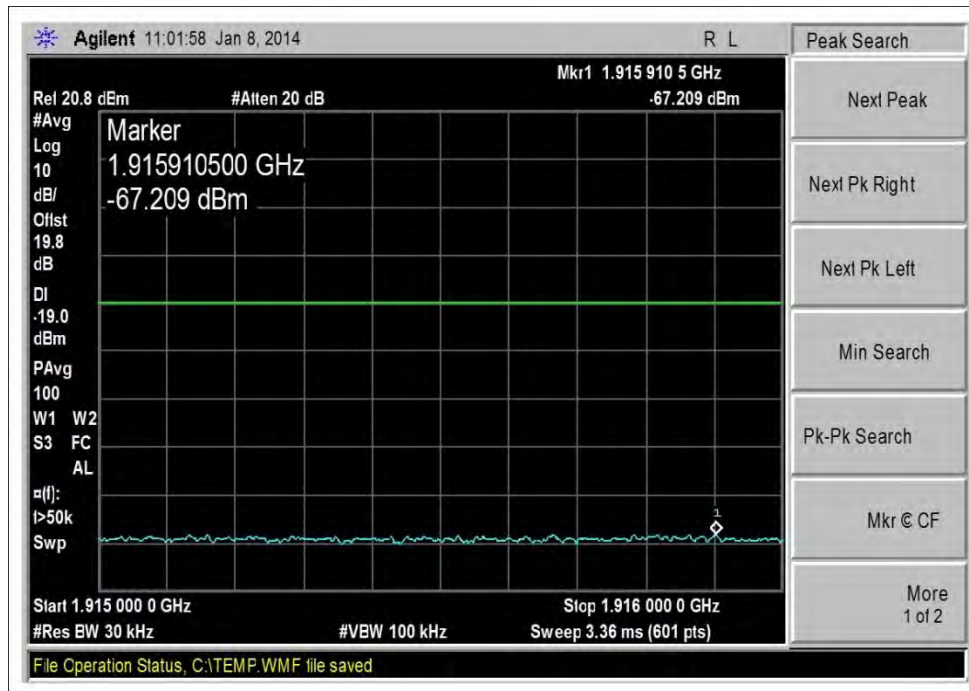
UL 824-849MHz Low, LTE-40dBm



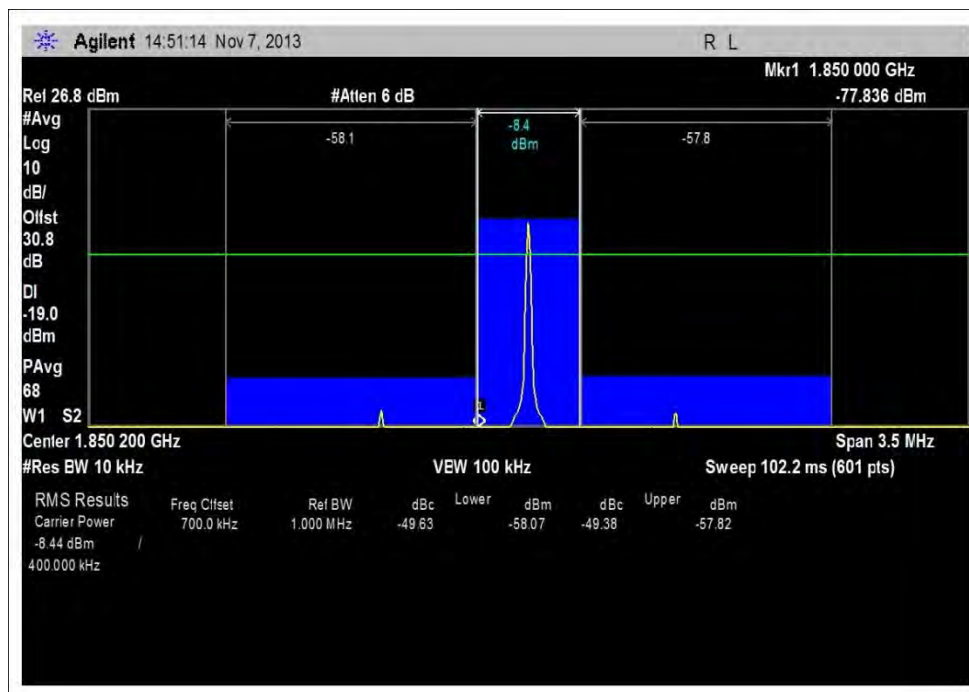
UL 824-849MHz High, LTE-40dBm



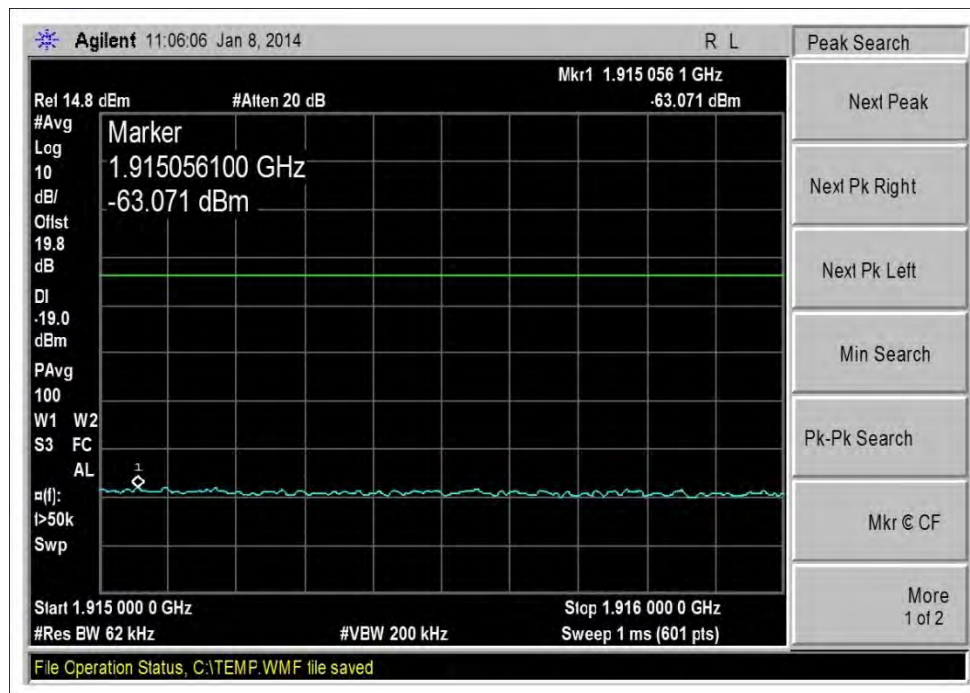
UL 1850-1915MHz High, CDMA 0dBm



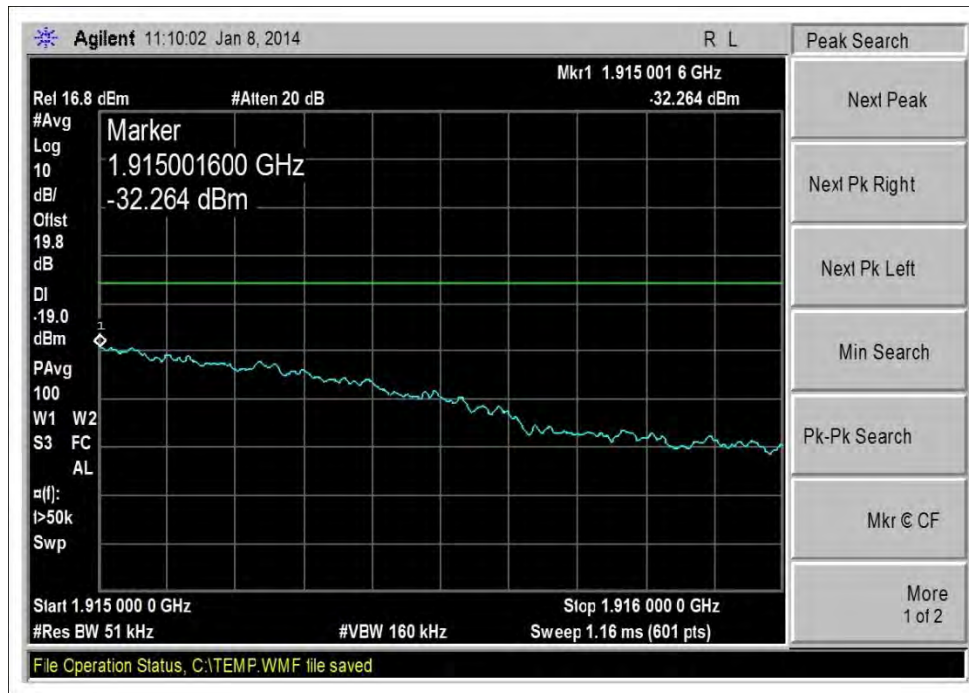
UL 1850-1915MHz High, GSM 0dBm



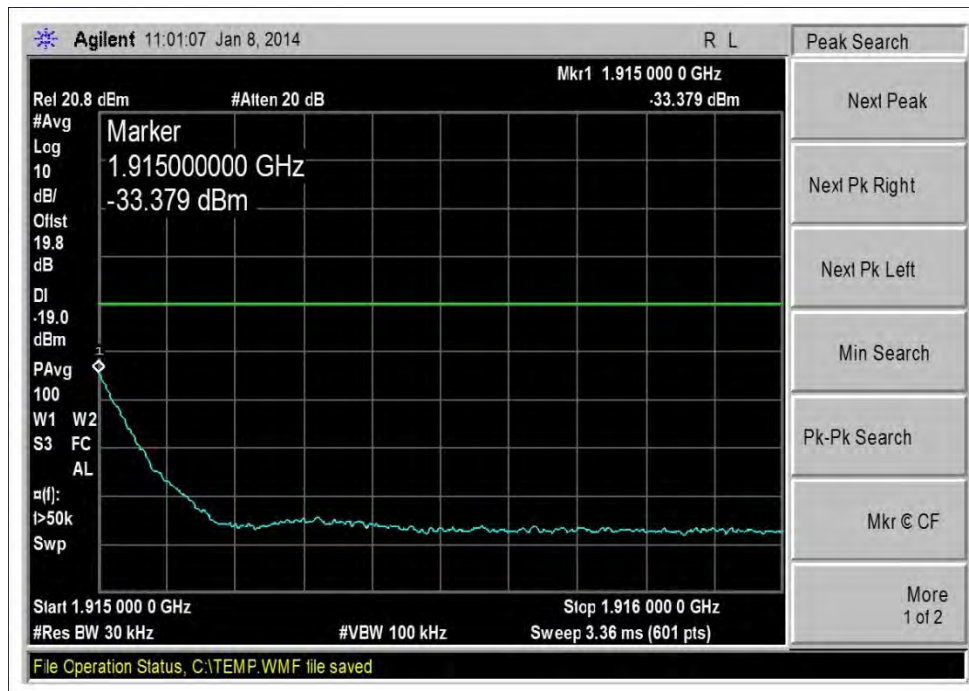
UL 1850-1915MHz Low, GSM 0dBm Shutdown



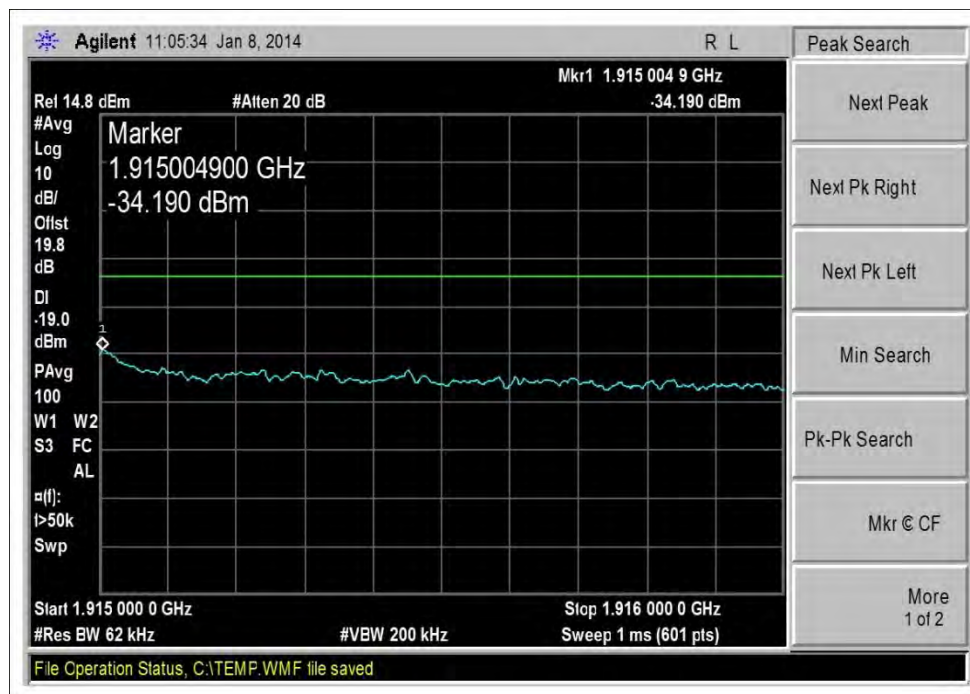
UL 1850-1915MHz High, LTE 0dBm



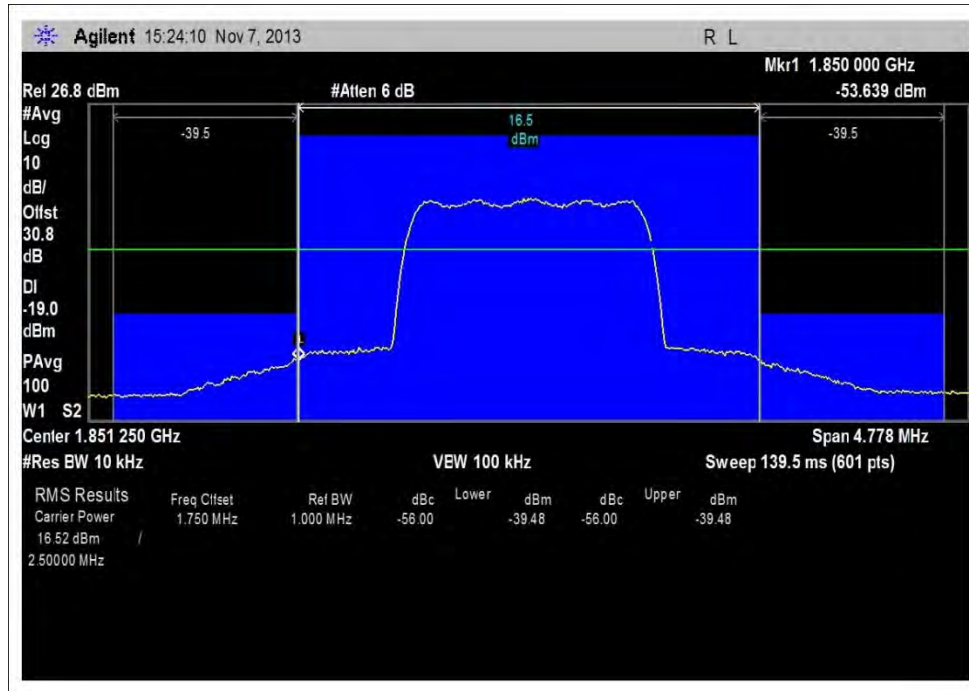
UL 1850-1915MHz High, CDMA -38dBm



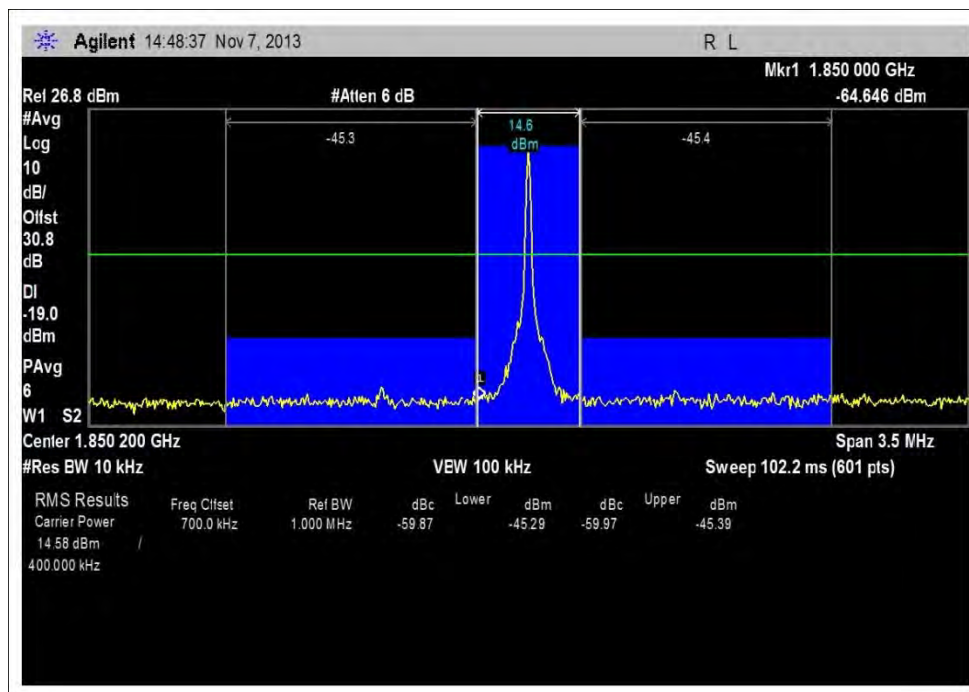
UL 1850-1915MHz High, GSM-37dBm



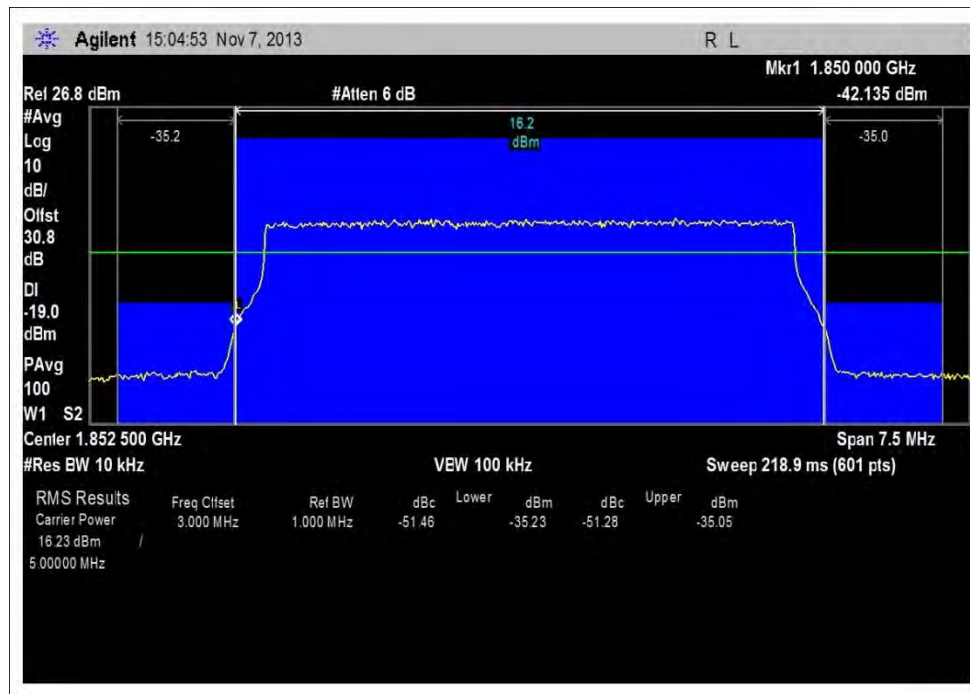
UL 1850-1915MHz High, LTE-40dBm



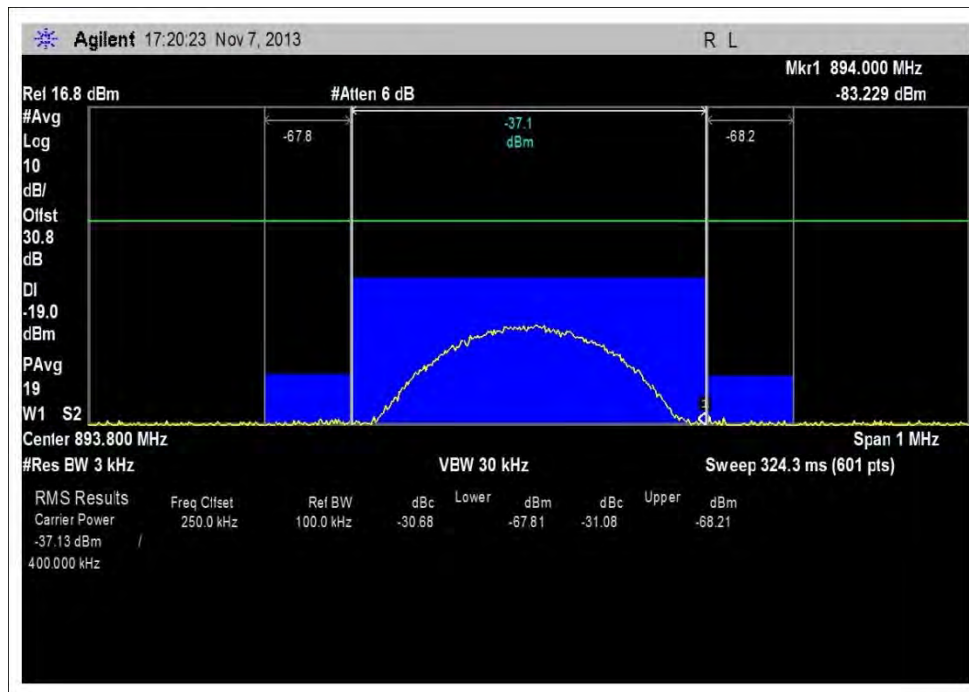
UL_1850-1915MHz, Low CDMA-48dBm



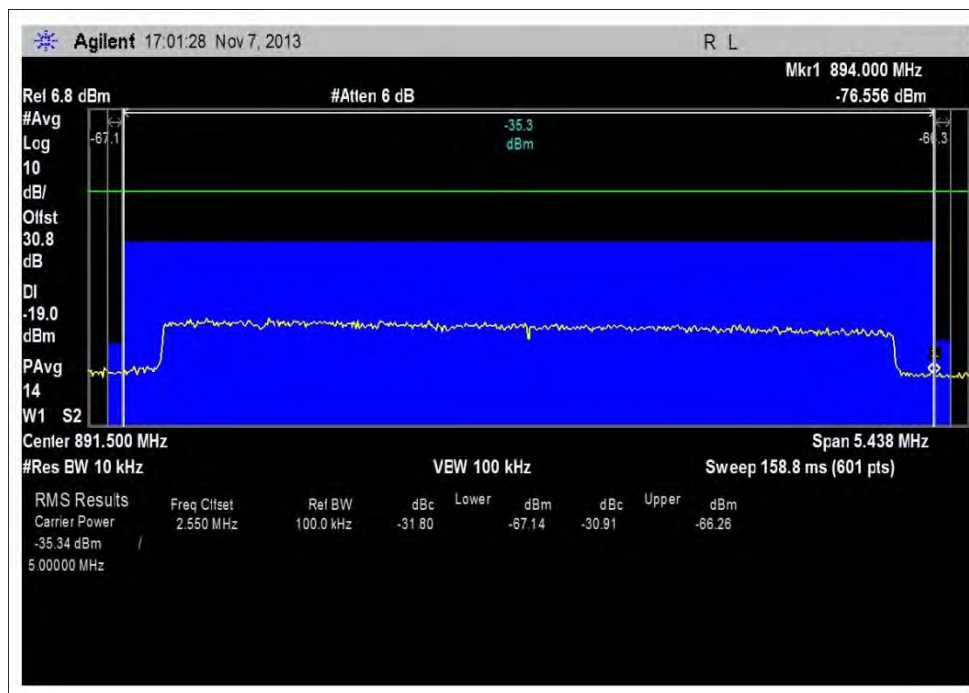
UL 1850-1915MHz Low, GSM-48dBm



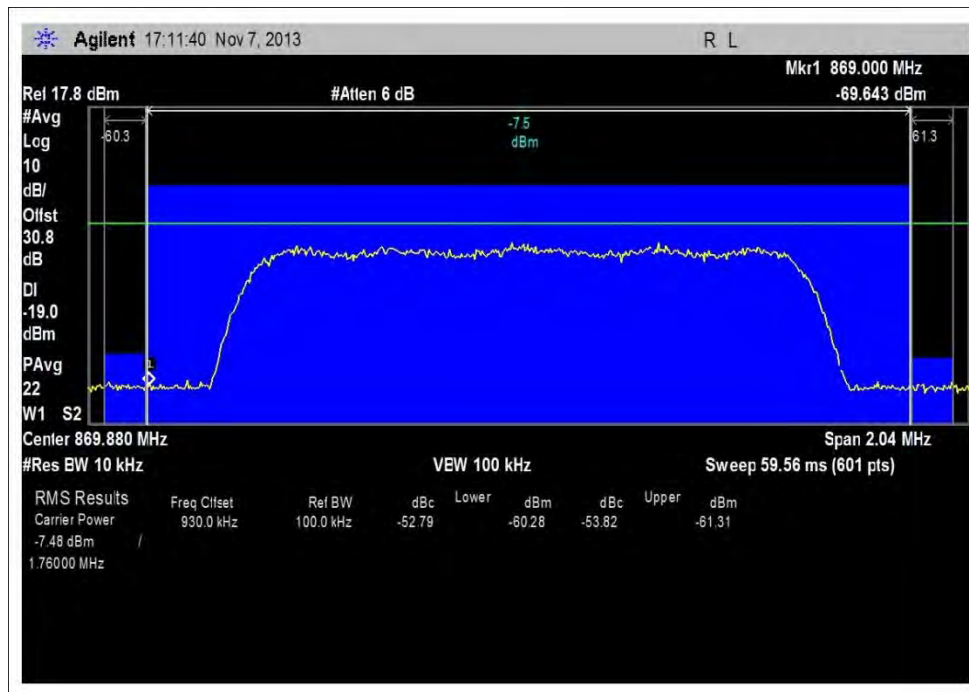
UL 1850-1915MHz Low, LTE-48dBm



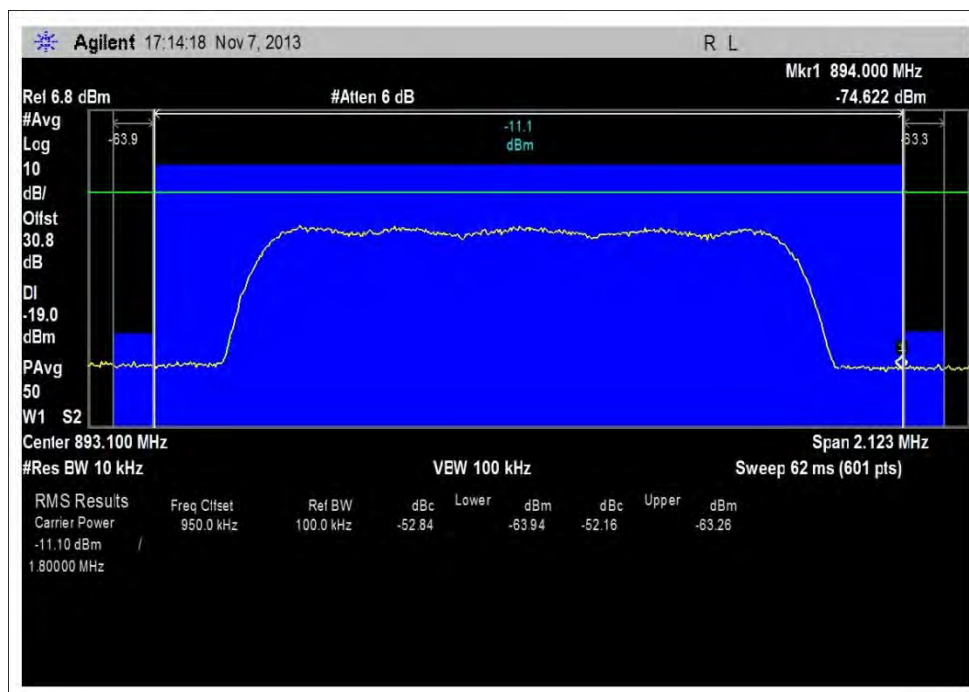
DL 869-894MHz High, GSM 20dBm Shutdown



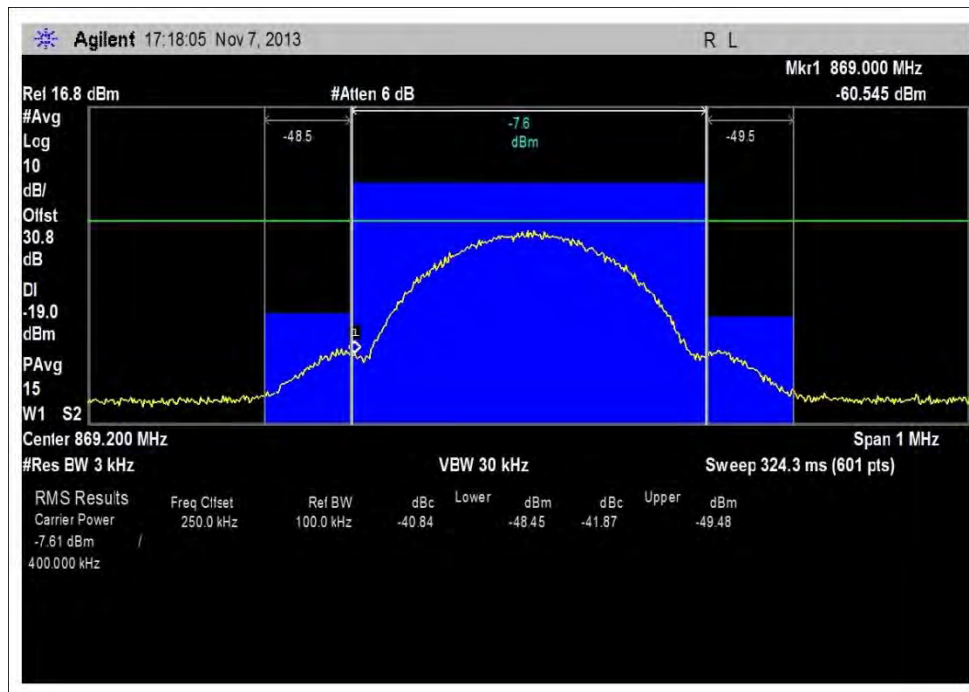
DL 869-894MHz, Low LTE -20dBm Shutdown



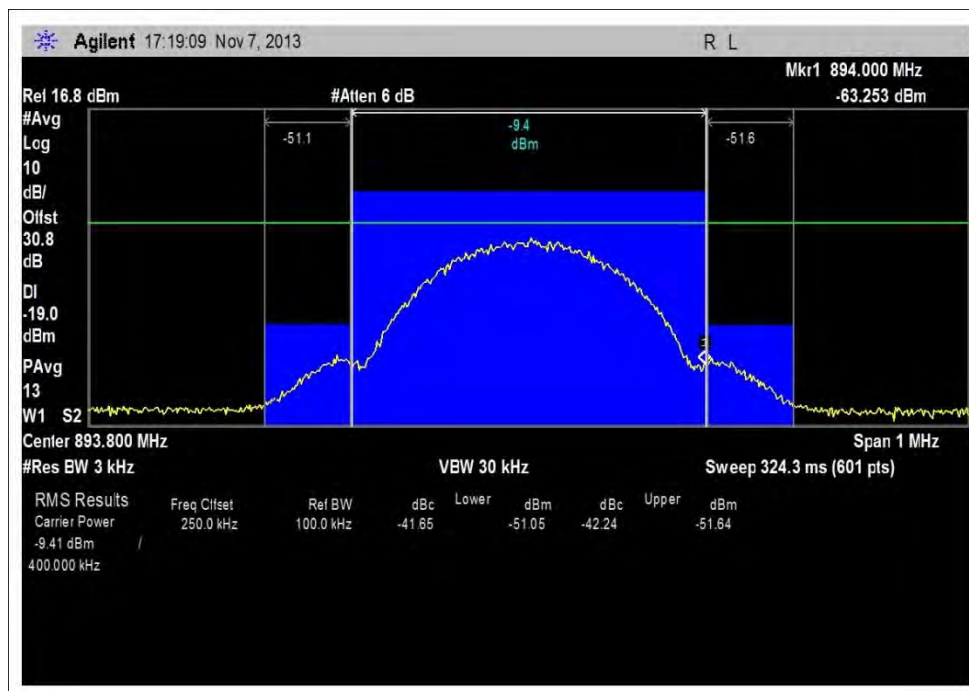
DL 869-894MHz Low, CDMA-65dBm



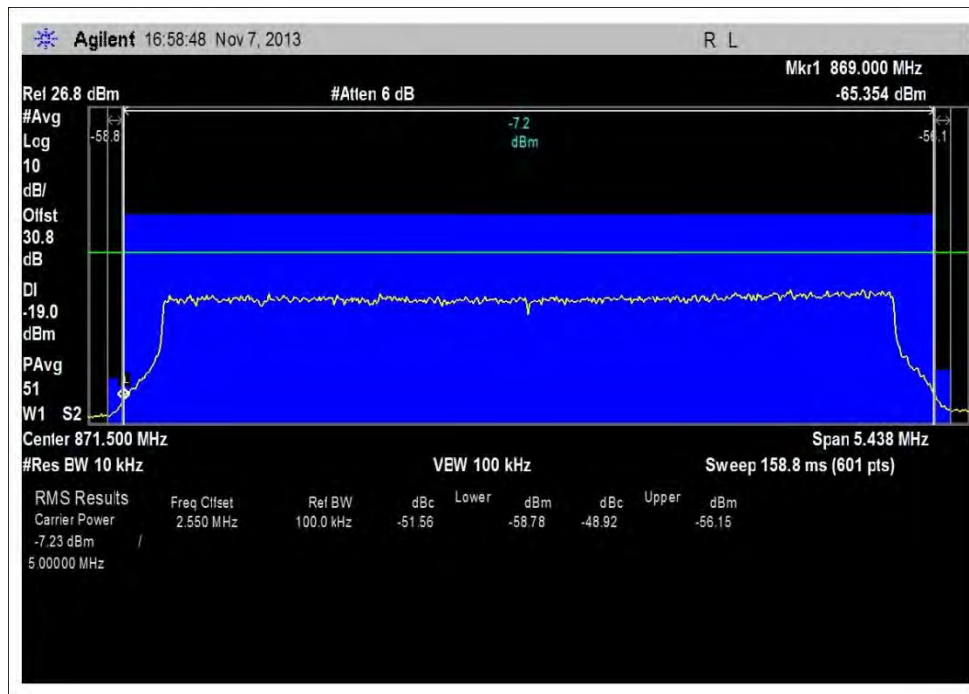
DL 869-894MHz High, CDMA -65dBm



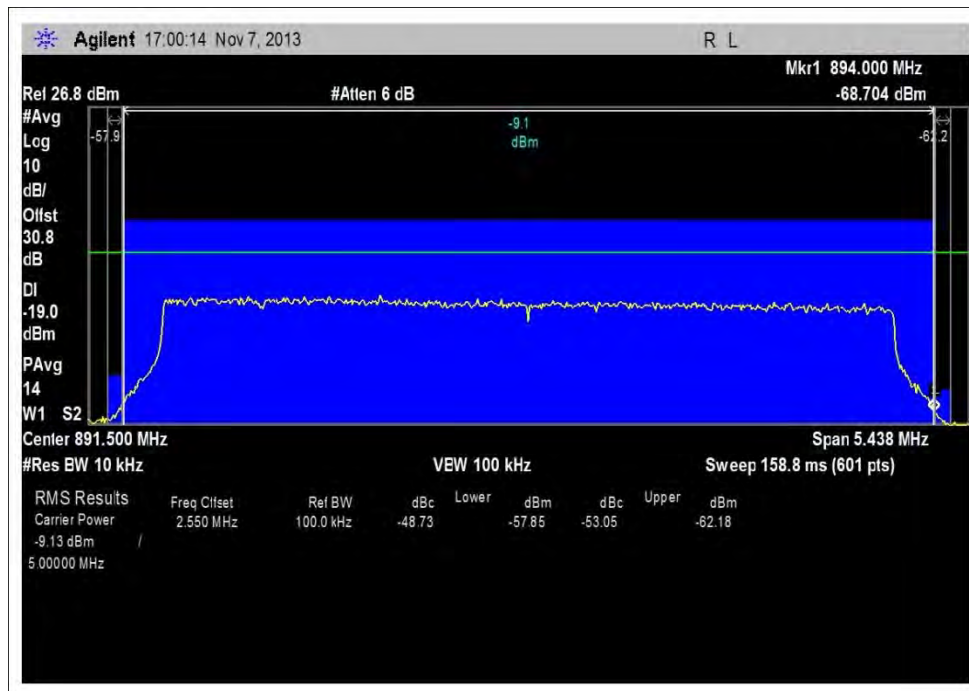
DL 869-894MHz Low , GSM-66dBm



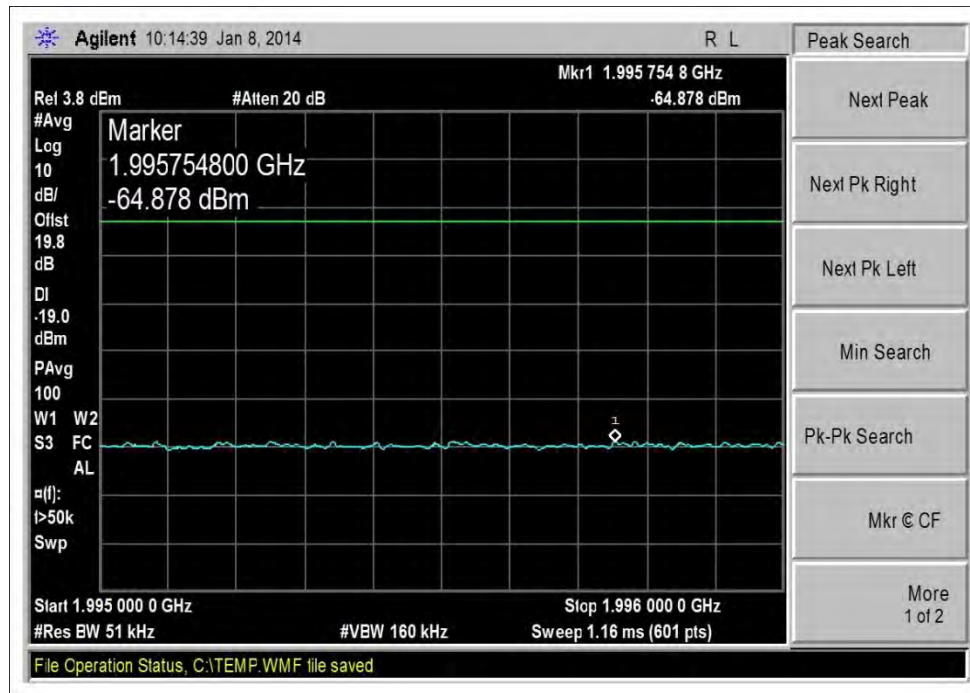
DL 869-894MHz High, GSM-66dBm



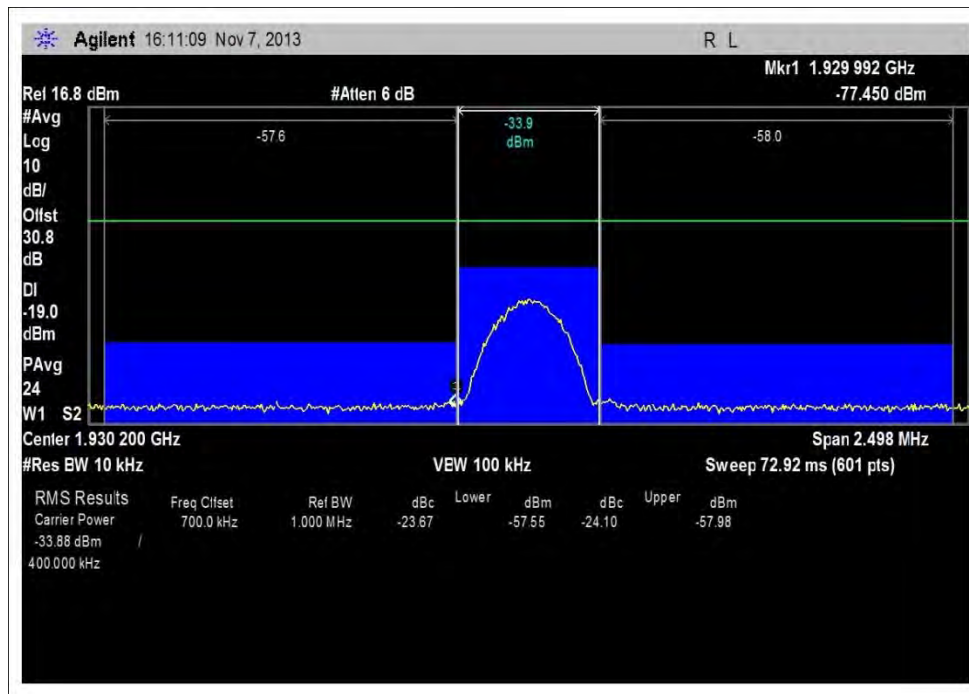
DL 869-894MHz Low, LTE-66dBm



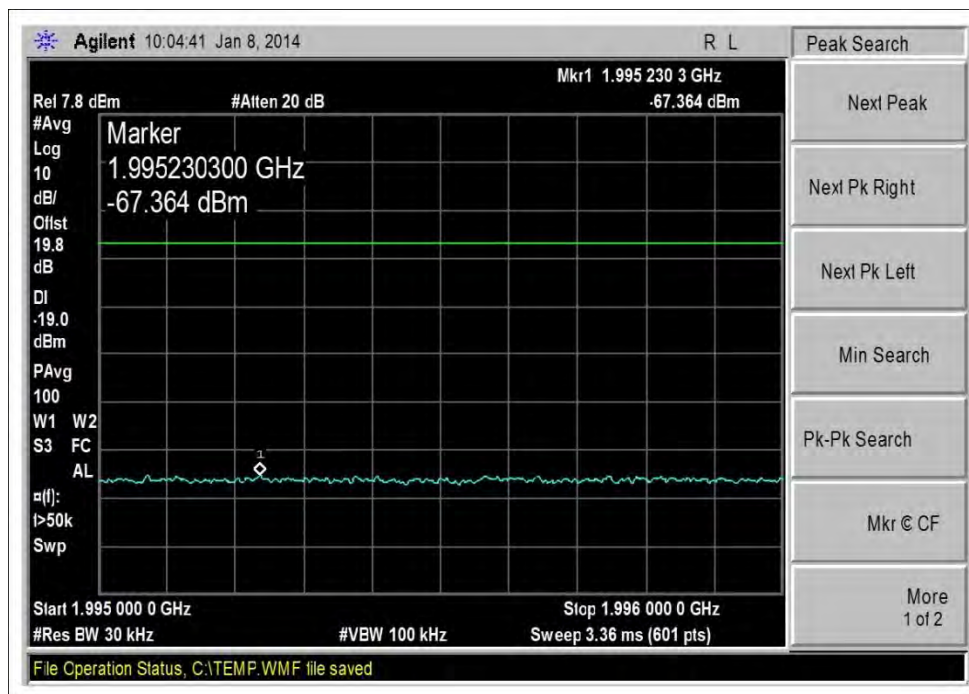
DL 869-894MHz High, LTE-66dBm



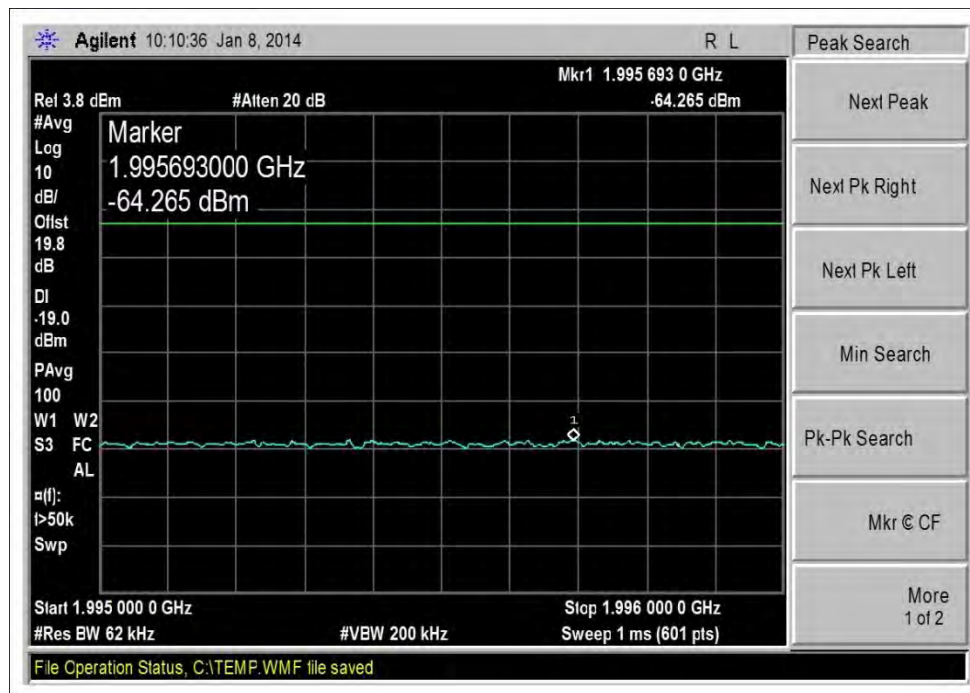
DL 1930-1995MHz High, CDMA -20dBm



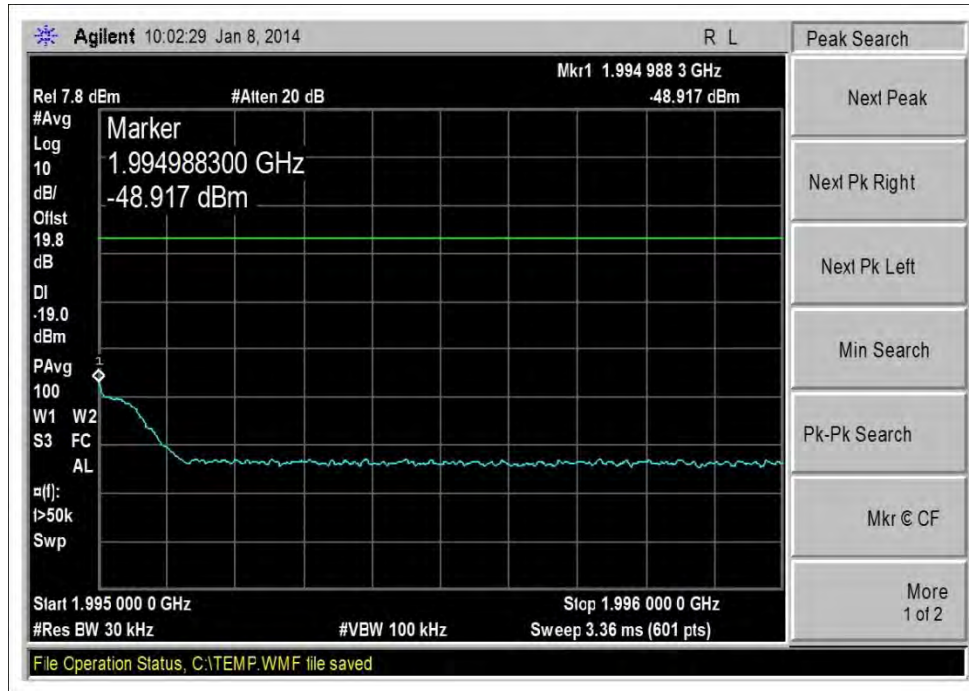
DL 1930-1995MHz Low, GSM-20dBm Shutdown



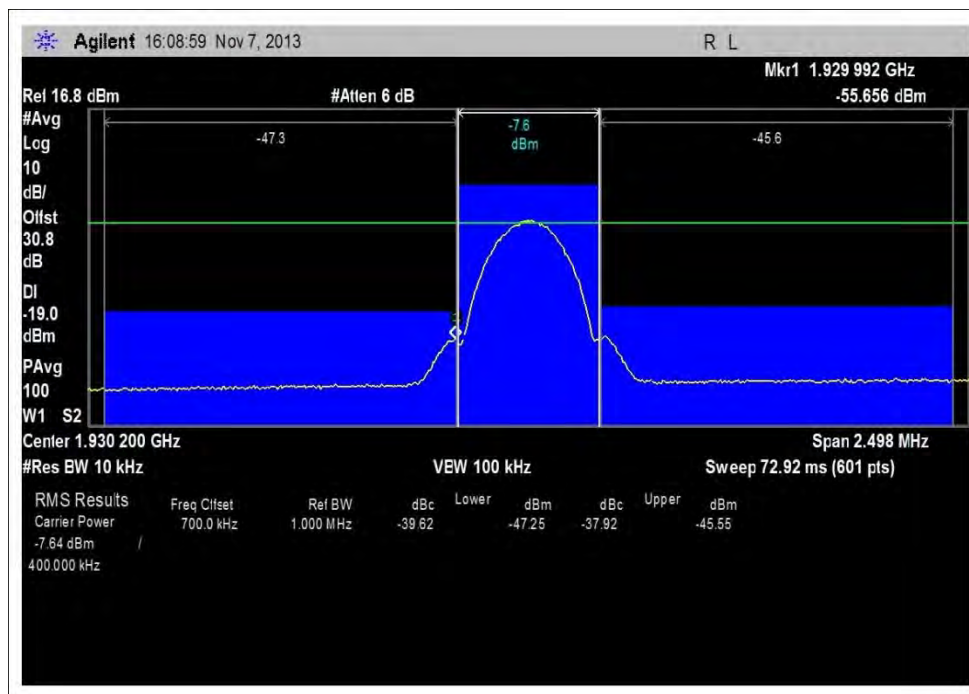
DL 1930-1995MHz High, GSM-20dBm Shutdown



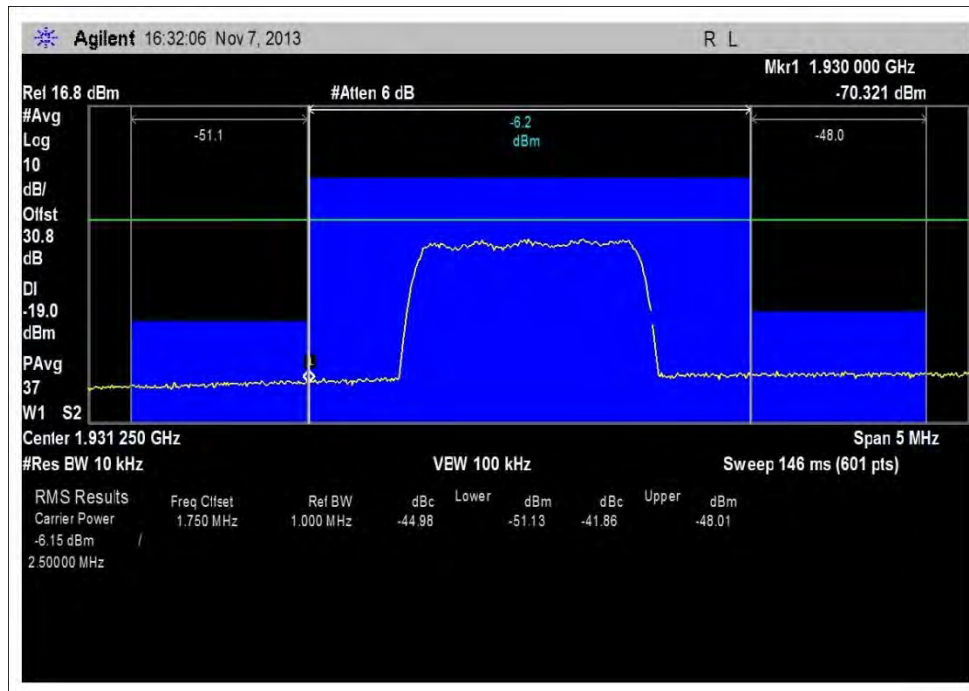
DL 1930-1995MHz High, LTE -20dBm shutdown



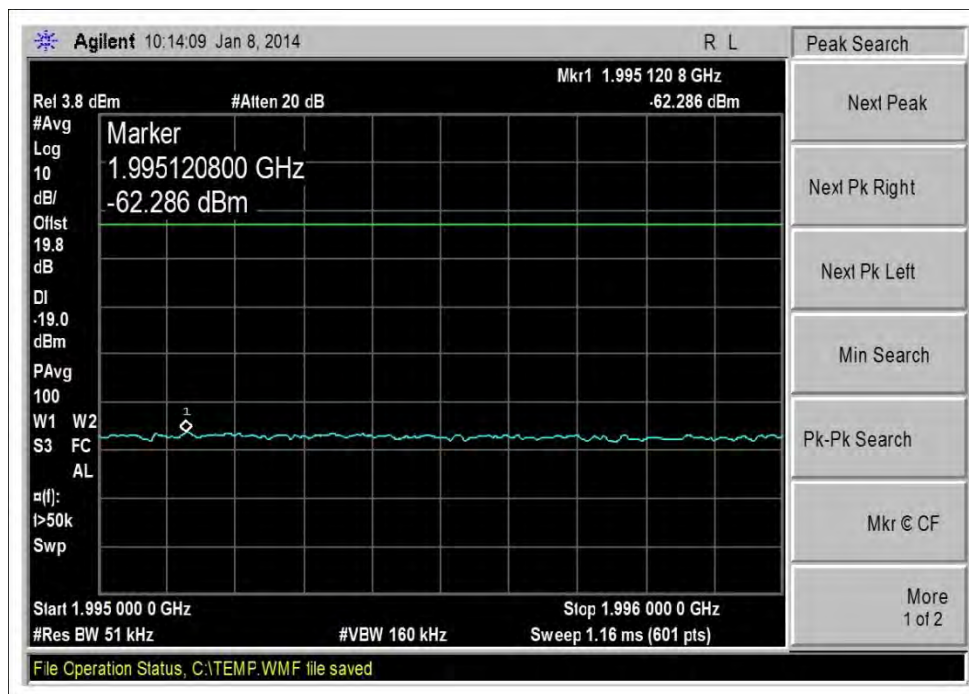
DL 1930-1995MHz High, GSM-63dBm



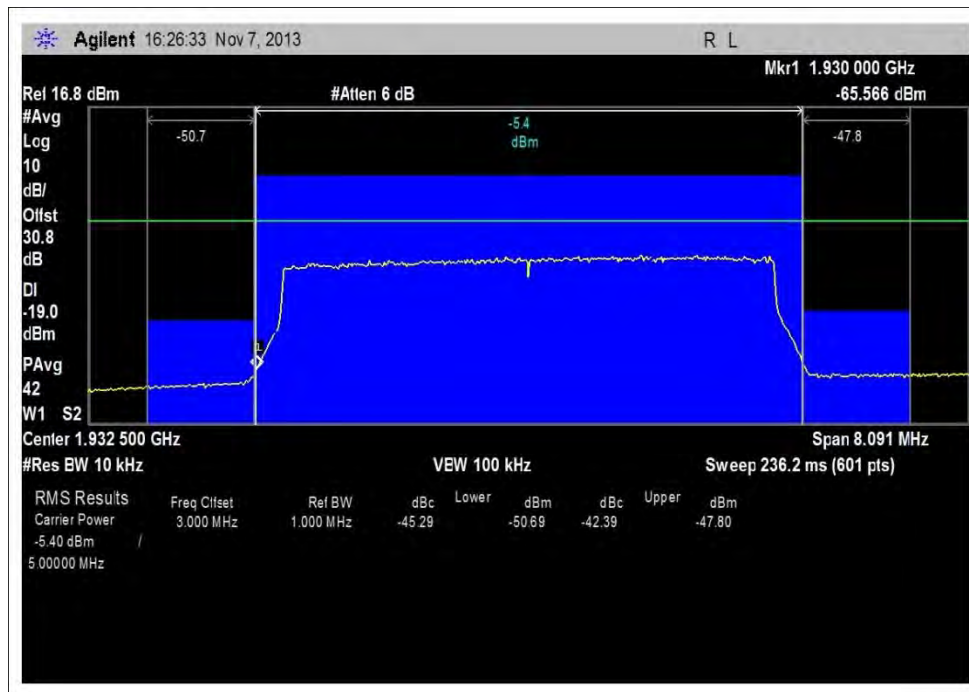
DL 1930-1995MHz Low, GSM-65dBm



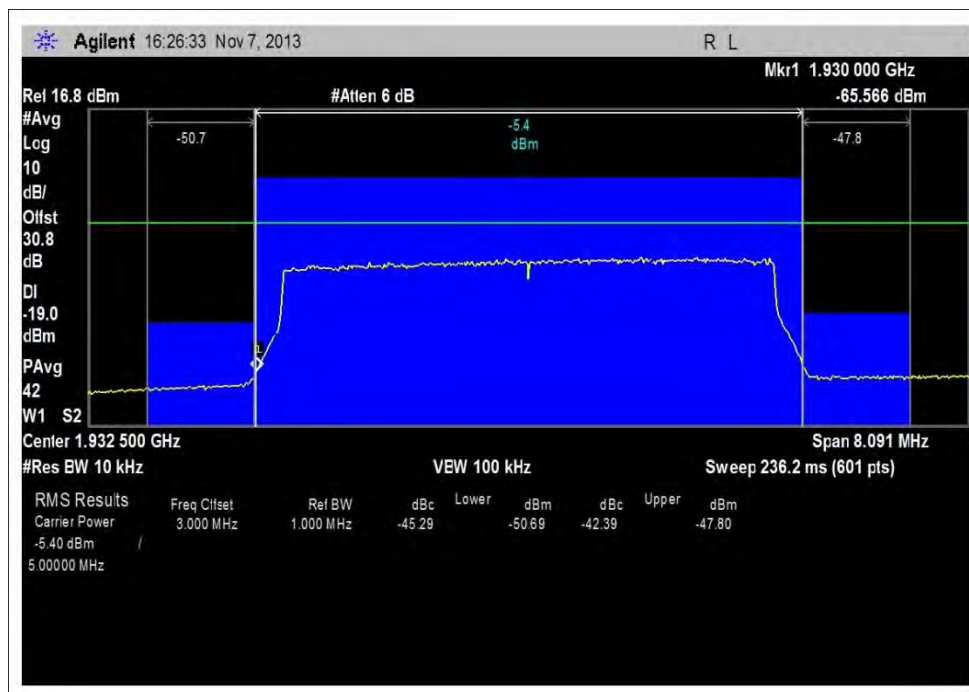
DL 1930-1995MHz Low, CDMA-65dBm



DL 1930-1995MHz Low, CDMA-65dBm



DL 1930-1995MHz Low, LTE -65dBm



DL 1930-1995MHz High, LTE -65dBm

Test Setup Photo



Clause 7.7 Noise Limit

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **7.7 Noise limit**

Work Order #: **94297**

Date: 11/9/2013

Test Type: **Conducted Emissions**

Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster

Sequence#: 1

Manufacturer: Cellphone-Mate, Inc.

Tested By: E. Wong

Model: Dual Force

110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Signal Generator	Agilent	E4433B	US40052164
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction.

Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

CMRS band.

UL: 824-849MHz, 1850-1915MHz

DL: 869-894MHz, 1930-1995MHz

The booster operates in the following frequency band.

UL: 824-849, 1850-1915 MHz

DL: 869-894, 1930-1995 MHz

Test procedure: The test was performed in accordance with section 7.7.2, 7.7.8, 7.7.14 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516: August 7, 2013.

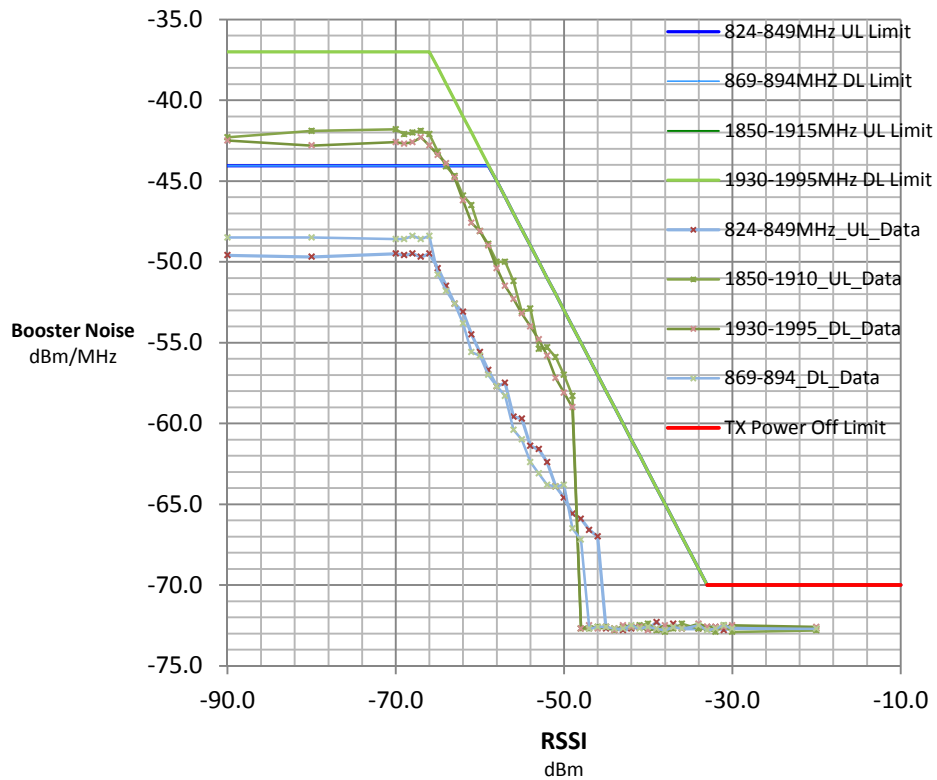
On the Noise limit plot, green limit and green data represent 1900MHz band, blue limit and blue data point represent 800MHz band. Timing presented in 7.7.14 is the time for the booster to reduce to the intended noise level when the RSSI is reduced in 20dB step. Limit is 3 second

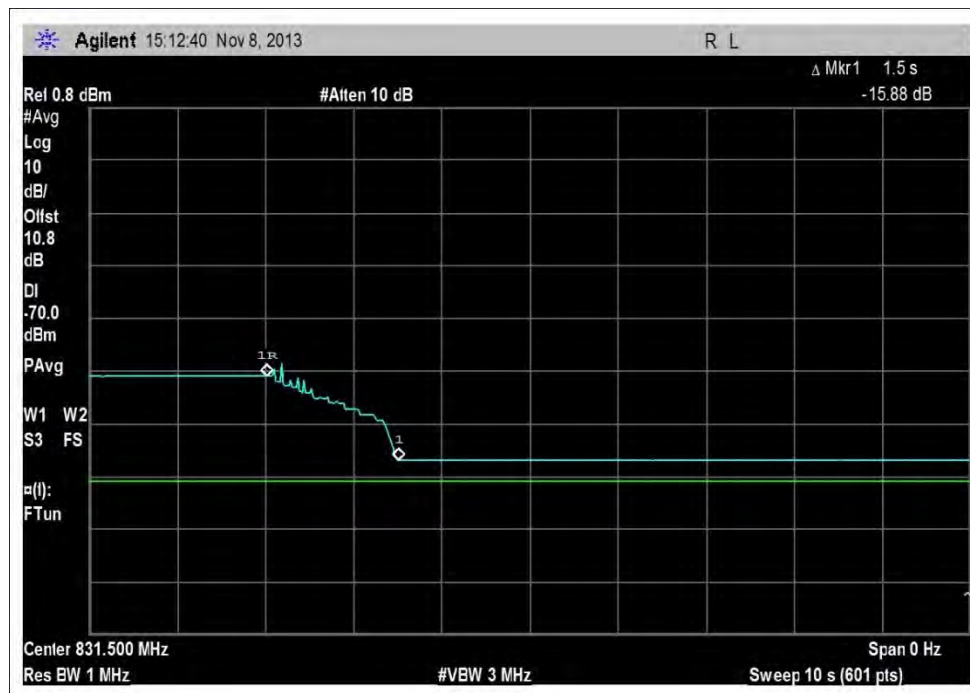
Test environment conditions: 23.9°C, 7% Relative Humidity, 100kPa

Test Data

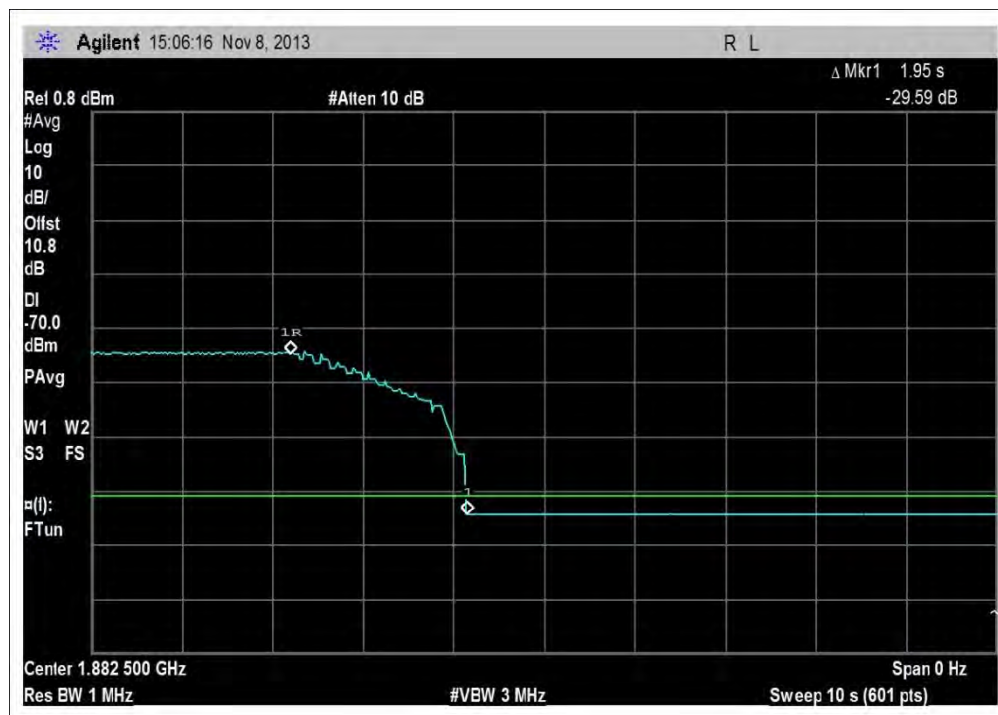
Noise Limits Summary Table / Six Values Closest To Limit					
RSSI Level (dBm)	Measured Noise Power Level (dBm/MHz)	Limit Region	Limit Line (dBm/MHz)	Margin (dB)	Frequency Band (MHz)
-32	-72.6	Frequency Dependent	-70	-2.6	824-849 MHz UL
-31	-72.8	Frequency Dependent	-70	-2.8	824-849 MHz UL
-30	-72.6	Frequency Dependent	-70	-2.6	824-849 MHz UL
-20	-72.7	Frequency Dependent	-70	-2.7	824-849 MHz UL
-33	-72.6	RSSI Dependent	-70	-2.6	824-849 MHz UL
-34	-72.7	RSSI Dependent	-69	-3.7	824-849 MHz UL
-32	-72.7	Frequency Dependent	-70	-2.7	869-894 MHz DL
-31	-72.5	Frequency Dependent	-70	-2.5	869-894 MHz DL
-30	-72.7	Frequency Dependent	-70	-2.7	869-894 MHz DL
-20	-72.7	Frequency Dependent	-70	-2.7	869-894 MHz DL
-33	-72.8	RSSI Dependent	-70	-2.8	869-894 MHz DL
-34	-72.5	RSSI Dependent	-69	-3.5	869-894 MHz DL
-32	-72.9	Frequency Dependent	-70	-2.9	1850-1910 MHz UL
-31	-72.5	Frequency Dependent	-70	-2.5	1850-1910 MHz UL
-30	-72.9	Frequency Dependent	-70	-2.9	1850-1910 MHz UL
-20	-72.8	Frequency Dependent	-70	-2.8	1850-1910 MHz UL
-33	-72.7	RSSI Dependent	-70	-2.7	1850-1910 MHz UL
-34	-72.7	RSSI Dependent	-69	-3.7	1850-1910 MHz UL
-32	-72.6	Frequency Dependent	-70	-2.6	1930-1990 MHz DL
-31	-72.6	Frequency Dependent	-70	-2.6	1930-1990 MHz DL
-30	-72.5	Frequency Dependent	-70	-2.5	1930-1990 MHz DL
-20	-72.6	Frequency Dependent	-70	-2.6	1930-1990 MHz DL
-33	-72.6	RSSI Dependent	-70	-2.6	1930-1990 MHz DL
-34	-72.4	RSSI Dependent	-69	-3.4	1930-1990 MHz DL

Booster Noise Limit

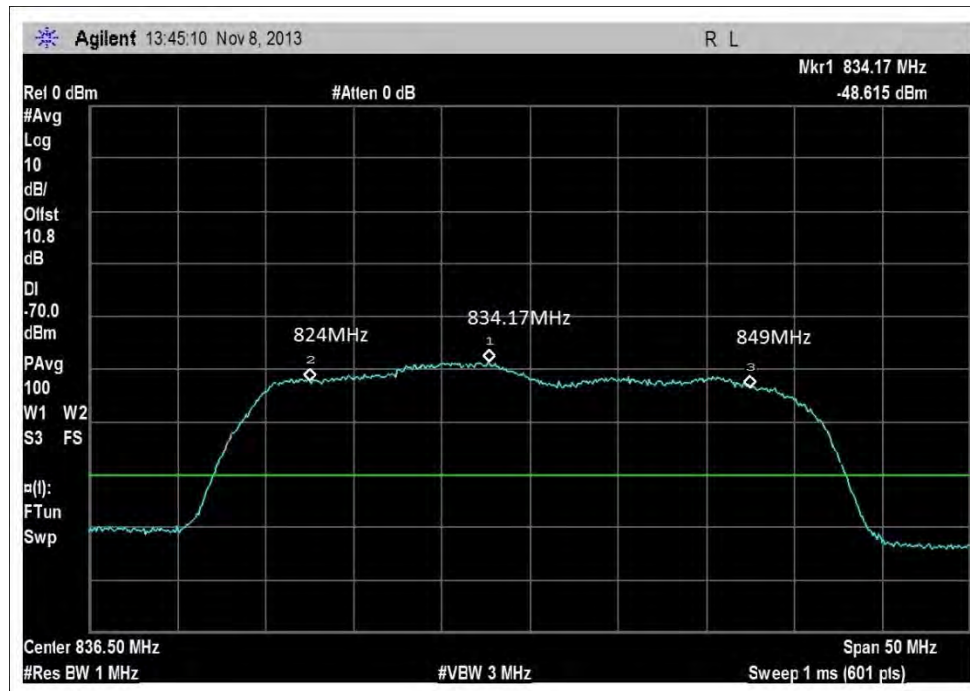




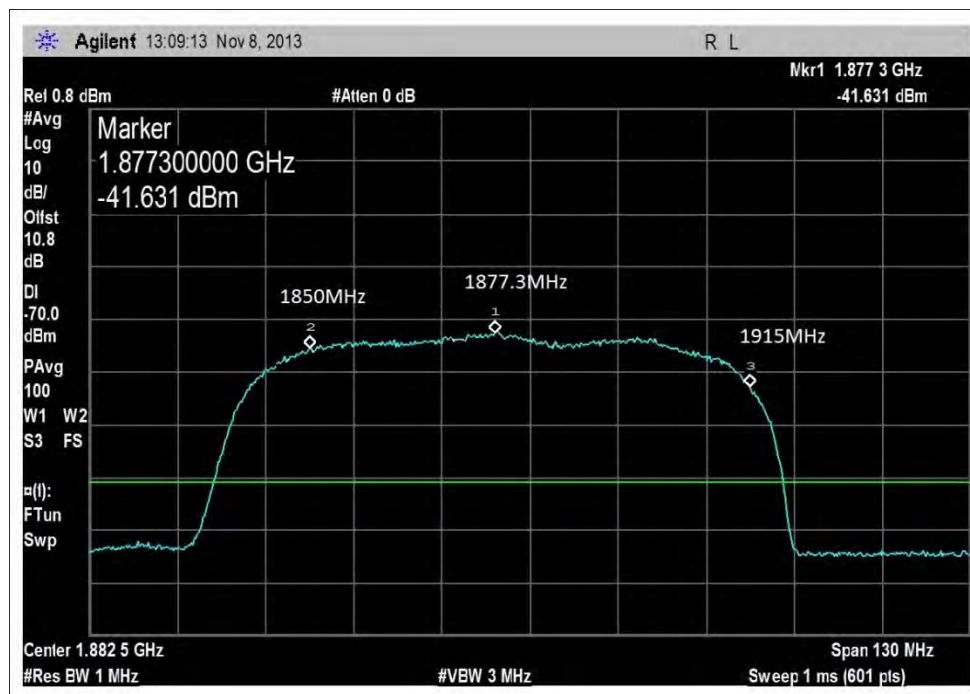
Noise Time, UL 824-849MHz



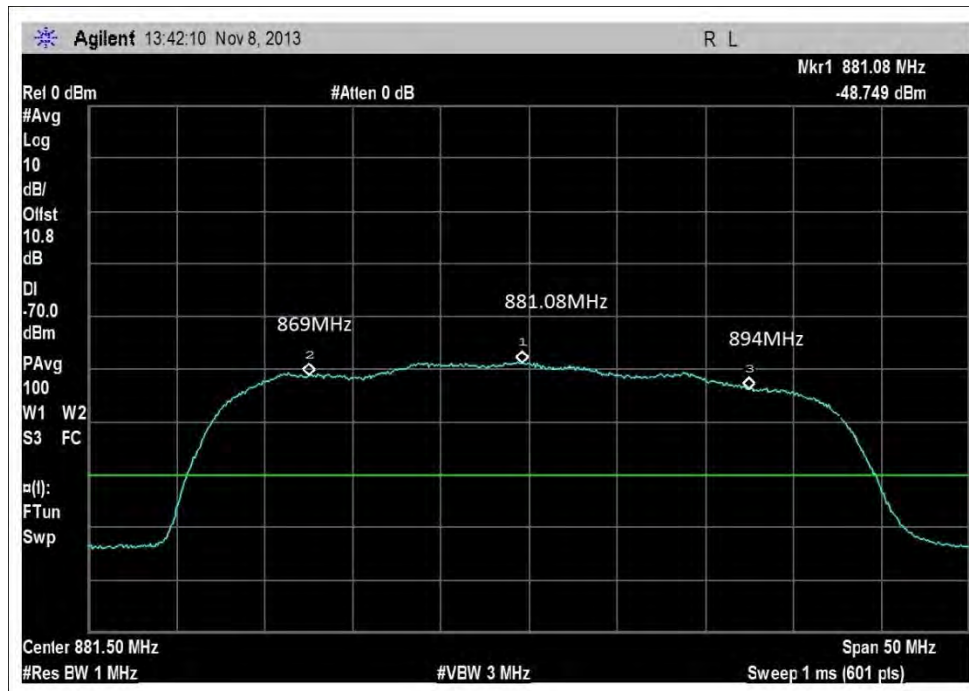
Noise Time, UL 1850-1915MHz



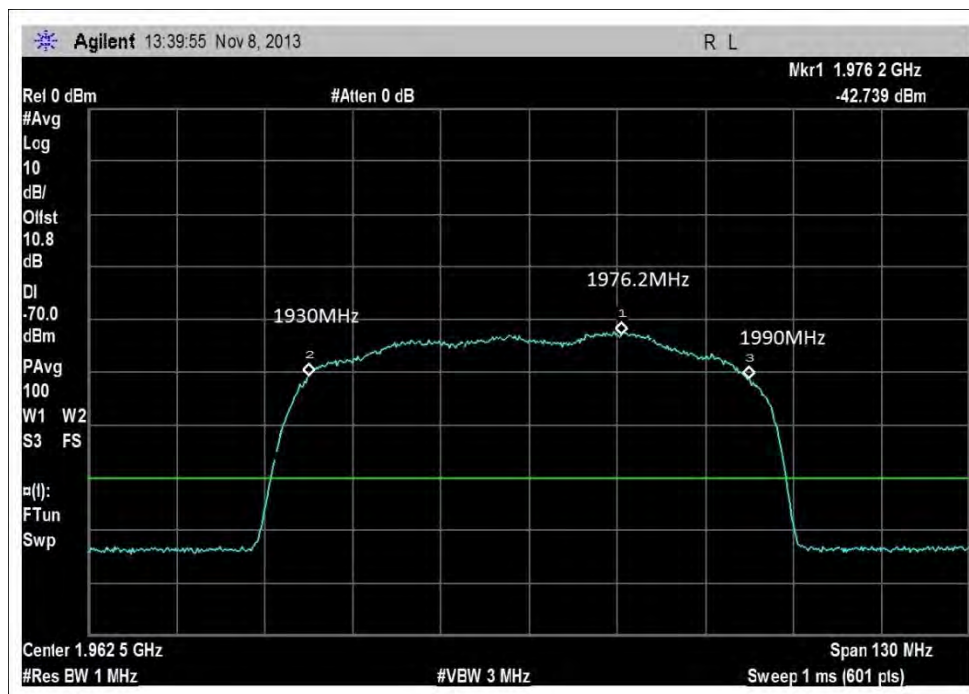
UL 824-849MHz



UL 1850-1915MHz

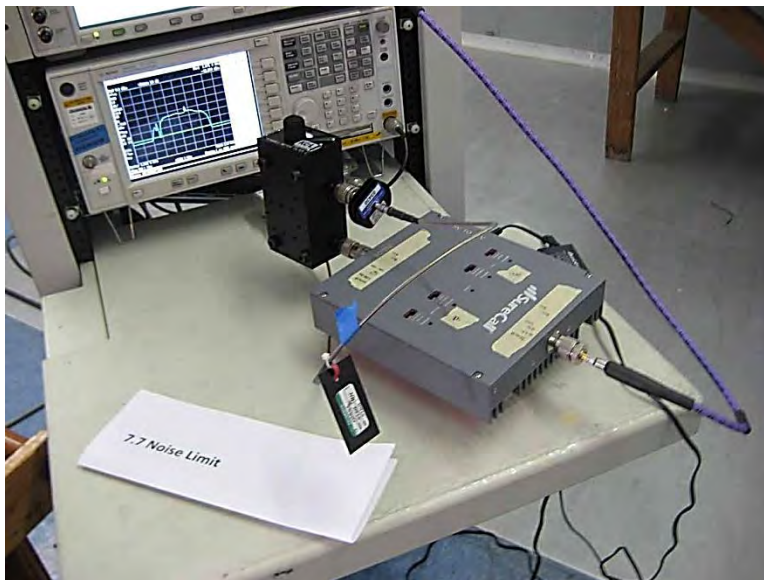


DL 869-894MHz



DL 1930-1995MHz

Test Setup Photos



Clause 7.8 Uplink Activity

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **7.8 Uplink inactivity**

Work Order #: **94297**

Date: 11/9/2013

Test Type: **Conducted Emissions**

Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster

Sequence#: 1

Manufacturer: Cellphone-Mate, Inc.

Tested By: E. Wong

Model: Dual Force

110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

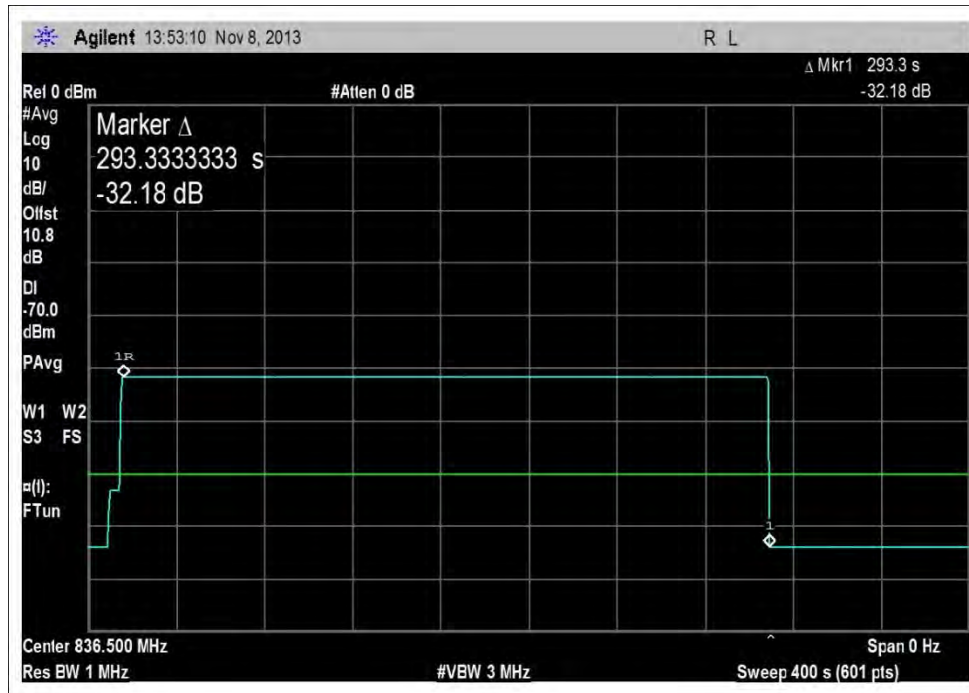
Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

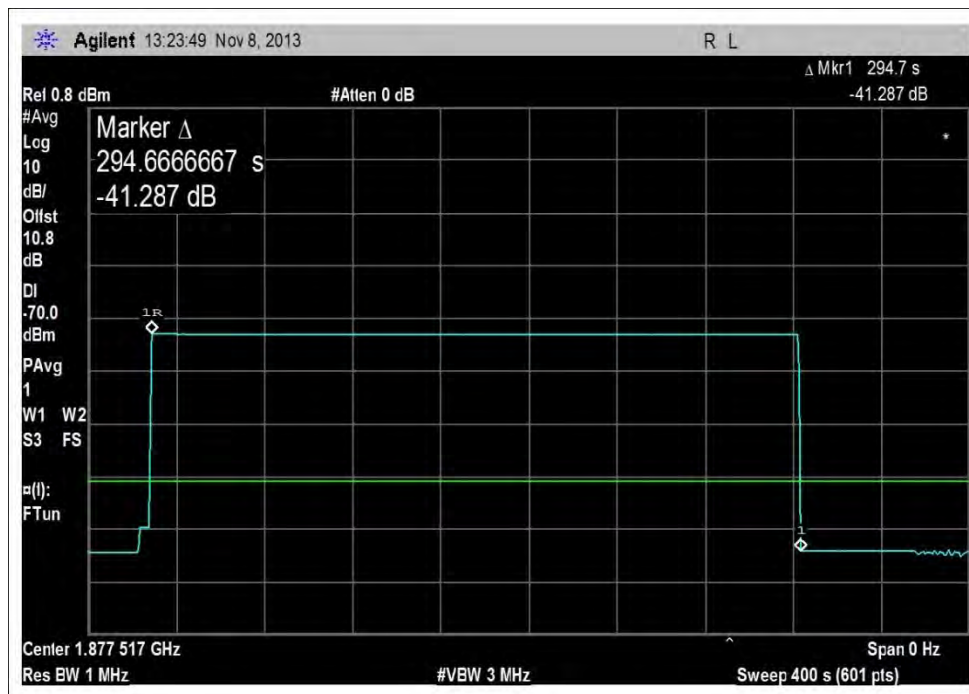
Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port. CMRS band.
UL: 824-849MHz, 1850-1915MHz
DL: 869-894MHz, 1930-1995MHz
The booster operates in the following frequency band.
UL: 824-849, 1850-1915 MHz
DL: 869-894, 1930-1995 MHz
Test procedure: The test was performed in accordance with section 7.8 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 August 7, 2013.
Measured time presented as marker delta is the time from power up to TX off mode when Uplink signal was not detected. Limit is 300 second (5 minutes)
Test environment conditions: 23.9° C, 7% Relative Humidity, 100kPa

Test Data

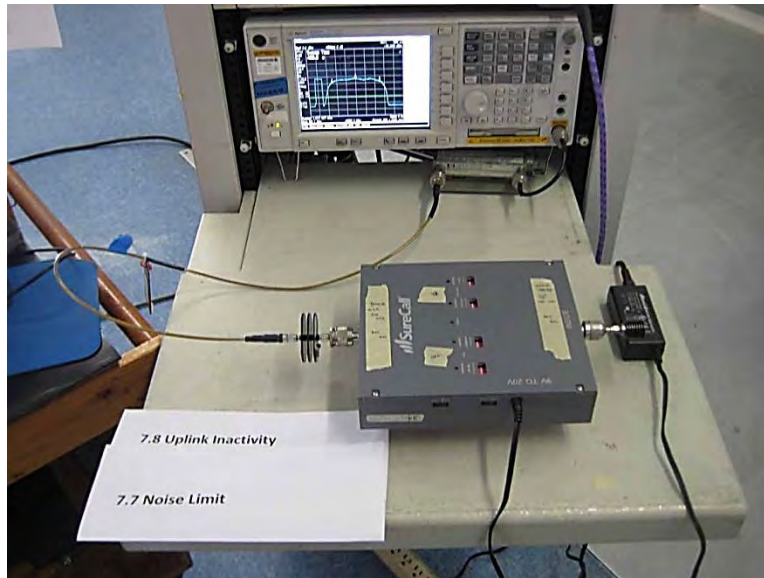


UL 824-849MHz



UL 1850-1915MHz

Test Setup Photos



Clause 7.9 Booster Gain Limit

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Cellphone-Mate, Inc**

Specification: **7.9 Variable Booster gain, Variable Uplink Gain Timing**

Work Order #: **94297**

Date: 11/9/2013

Test Type: **Conducted Emissions**

Time: 10:07:44

Equipment: Dual Band Cellphone Signal Booster

Sequence#: 1

Manufacturer: Cellphone-Mate, Inc.

Tested By: E. Wong

Model: CM Dual Force

110V 60Hz

S/N: 2

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T2	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
T3	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	CM Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4438C	MY42082260
Signal Generator	Agilent	E4433B	US40052164
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction.

Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

CMRS band.

UL: 824-849MHz, 1850-1915MHz

DL: 869-894MHz, 1930-1995MHz

The booster operates in the following frequency band.

UL: 824-849, 1850-1915 MHz

DL: 869-894, 1930-1995 MHz

Test procedure:

The test was performed IAW section 7.9 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516: August 7, 2013.

Test environment conditions: 23.9°C, 7% relative humidity:100kPa

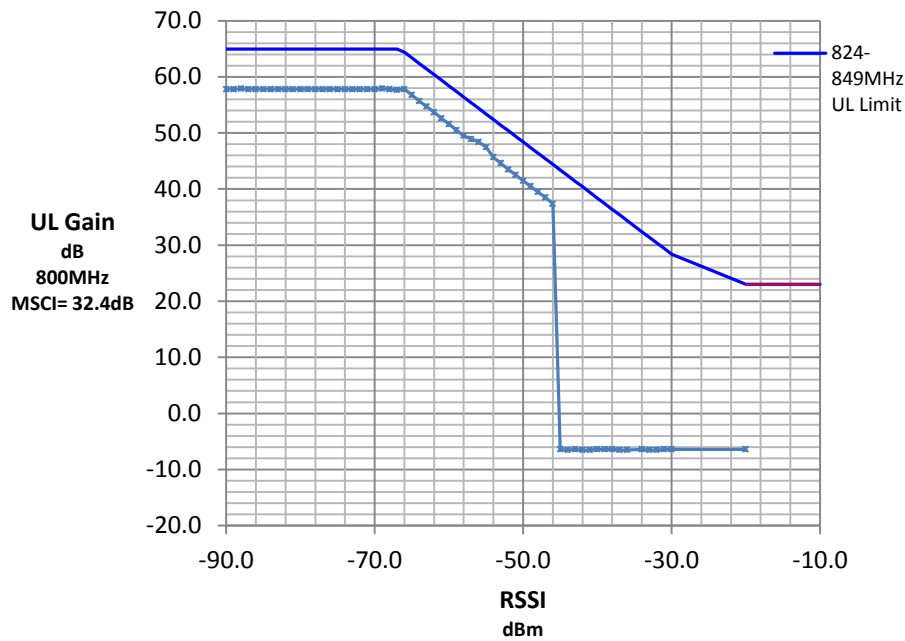
The MSCL values are 37.4 dB at PCS band and 32.4dB at Cellular band, based on provided MSCL calculation: MSCL Calculations Dual Force 1-28-14 V1.0. pdf.

Gain timing per 7.9.13- 7.9.19: Timing between Marker 1 and Marker 1R is the time required to drop to the appropriate gain level when RSSI is reduce by 20 dB, limit is 3 second.

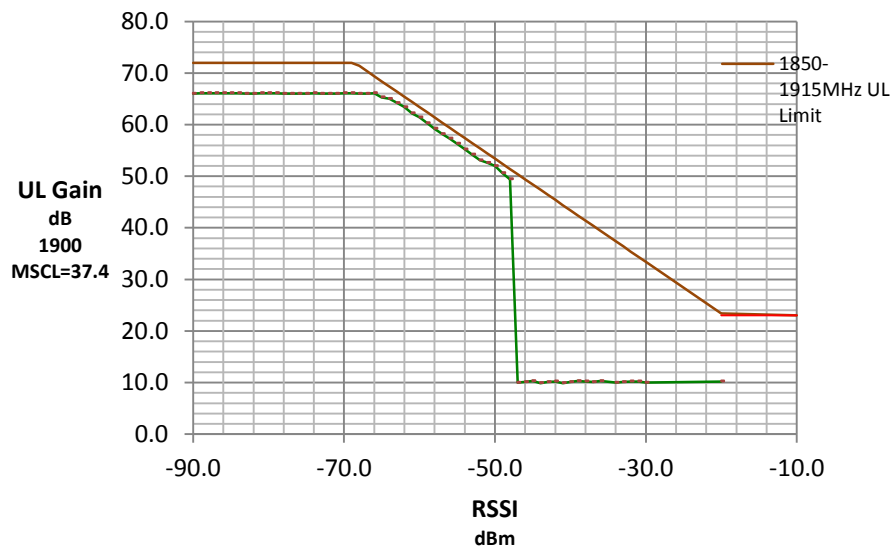
Test Data

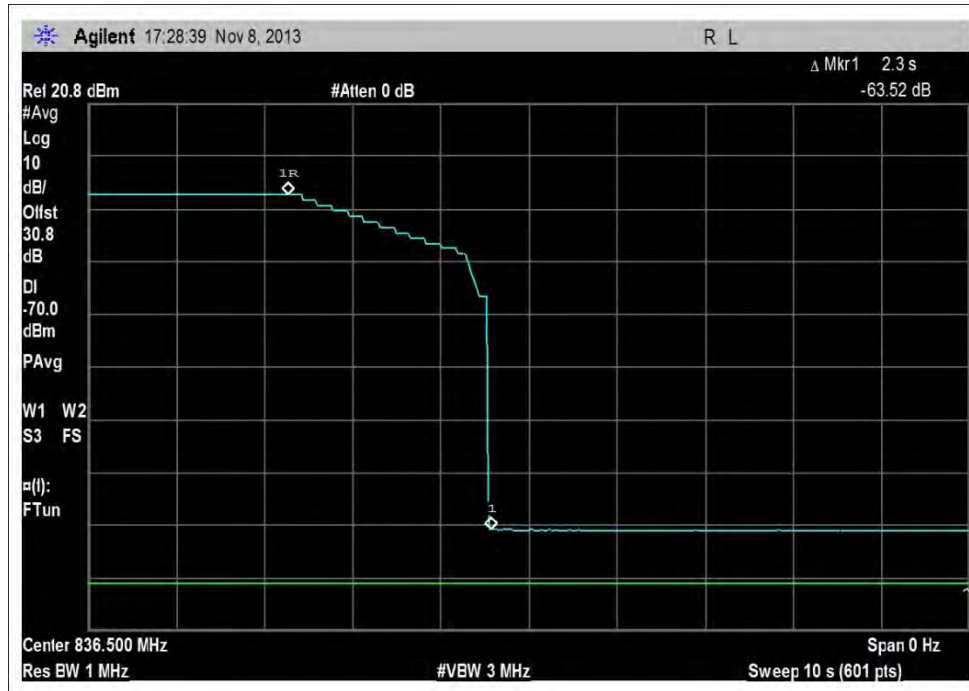
Booster Gain Summary Table / Six Values Closest To Limit					
RSSI Level (dBm)	Measured Uplink Gain Level (dB)	Limit Region	Limit Line (dB)	Margin (dB)	Frequency Band (MHz)
-66.0	57.8	RSSI Dependent	64.4	-6.6	824-849 MHz UL
-65.0	56.8	RSSI Dependent	63.4	-6.6	824-849 MHz UL
-64.0	55.7	RSSI Dependent	62.4	-6.7	824-849 MHz UL
-63.0	54.7	RSSI Dependent	61.4	-6.7	824-849 MHz UL
-56	48.4	RSSI Dependent	54.4	-6	824-849 MHz UL
-55	47.5	RSSI Dependent	53.4	-5.9	824-849 MHz UL
-51.0	52.6	RSSI Dependent	54.4	-1.8	1850-1910 MHz UL
-50.0	52.0	RSSI Dependent	53.4	-1.4	1850-1910 MHz UL
-49.0	50.6	RSSI Dependent	52.4	-1.8	1850-1910 MHz UL
-48.0	49.4	RSSI Dependent	51.4	-2.0	1850-1910 MHz UL
-62	63.4	RSSI Dependent	65.4	-2	1850-1910 MHz UL
-60	61.4	RSSI Dependent	63.4	-2	1850-1910 MHz UL

Booster Gain Limit

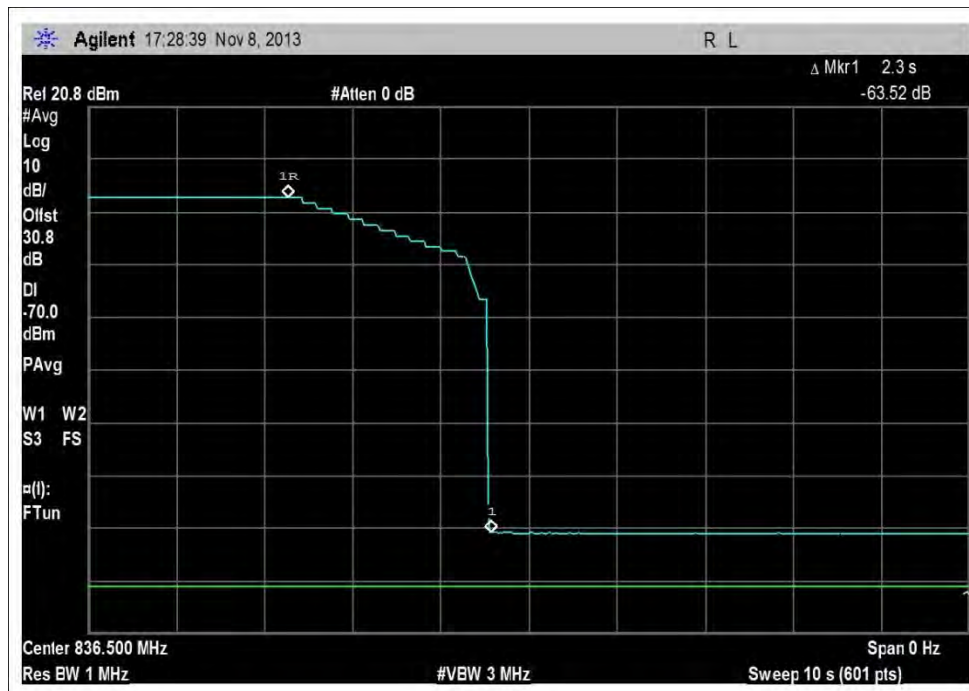


Booster Gain Limit



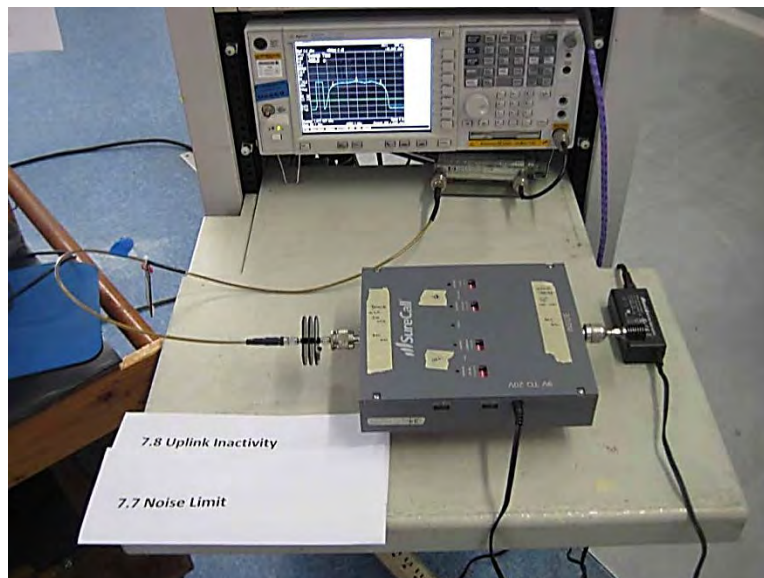
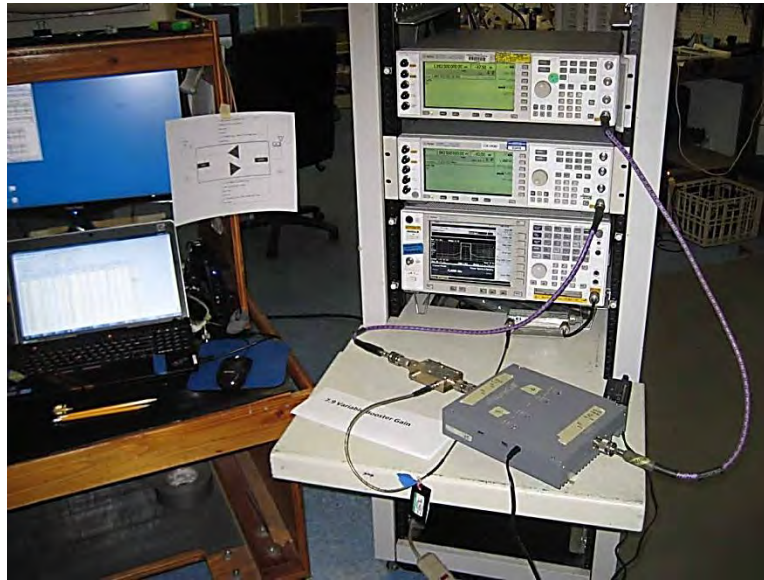


UL 824-849MHz



UL 1850-1915MHz

Test Setup Photo



Clause 7.11 Anti-Oscillation

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 North Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**

Specification: **7.10 Anti-Oscillation**

Work Order #: **95115** Date: 12/18/2013, 01/02/2014

Test Type: **Conducted Emissions**

Equipment: Dual Band Cellphone Signal Booster Sequence#: 1

Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong, S. Yamamoto

Model: Dual Force 110V 60Hz

S/N: 2

Test Equipment:

Asset #	Description	Model	Calibration Date	Cal Due Date
AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
AN03431	Attenuator	89-20-21	9/5/2013	9/5/2015
AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015
AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
AN03412	Band Pass Filter	PE8705	8/26/2013	8/26/2015
AN03413	Band Pass Filter	PE8706	8/26/2013	8/26/2015
AN03414	Band Pass Filter	PE8707	8/26/2013	8/26/2015
AN03415	Band Pass Filter	PE8708	8/26/2013	8/26/2015
AN03429	Attenuator	8496B	9/5/2013	9/5/2015
AN02475	Attenuator	8494B	6/17/2013	6/17/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Dual Band Cellphone Signal Booster *	Cellphone-Mate, Inc.	Dual Force	2

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain and PCS-1900 Gain is set at max gain. All dip switches are set to Off position, i.e. toward the 1 2 4 8 16 direction. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

CMRS band.

UL: 824-849MHz, 1850-1915MHz

DL: 869-894MHz, 1930-1995MHz

The booster operates in the following frequency band.

UL: 824-849, 1850-1915 MHz

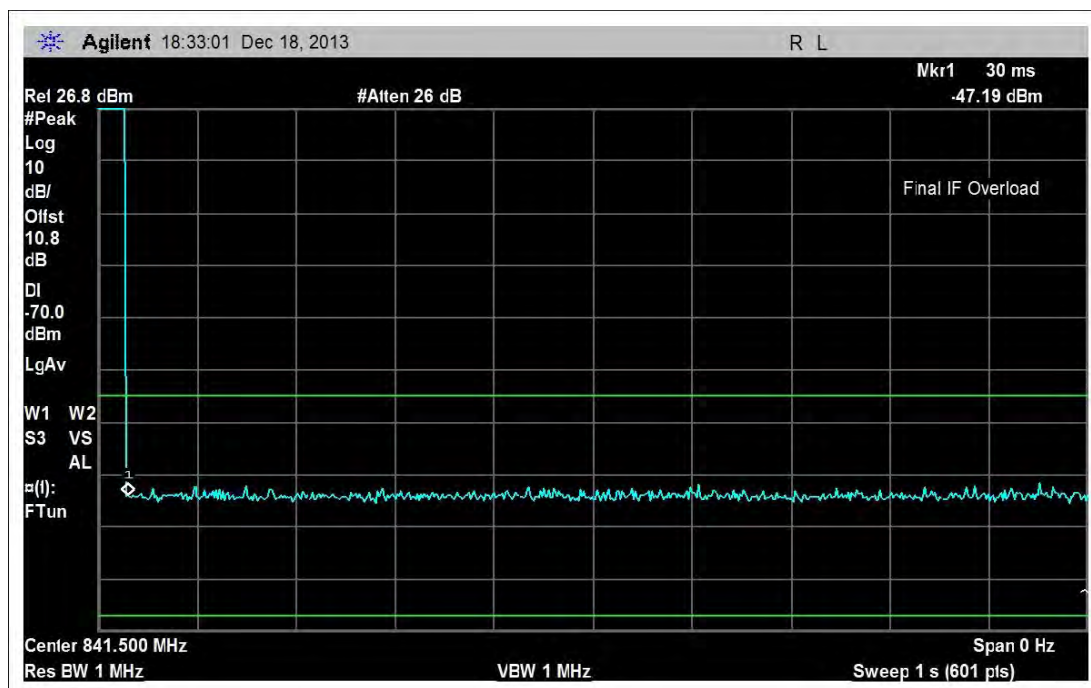
DL: 869-894, 1930-1995 MHz

Test procedure: The test was performed in accordance with section 7.11 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 August 7, 2013.

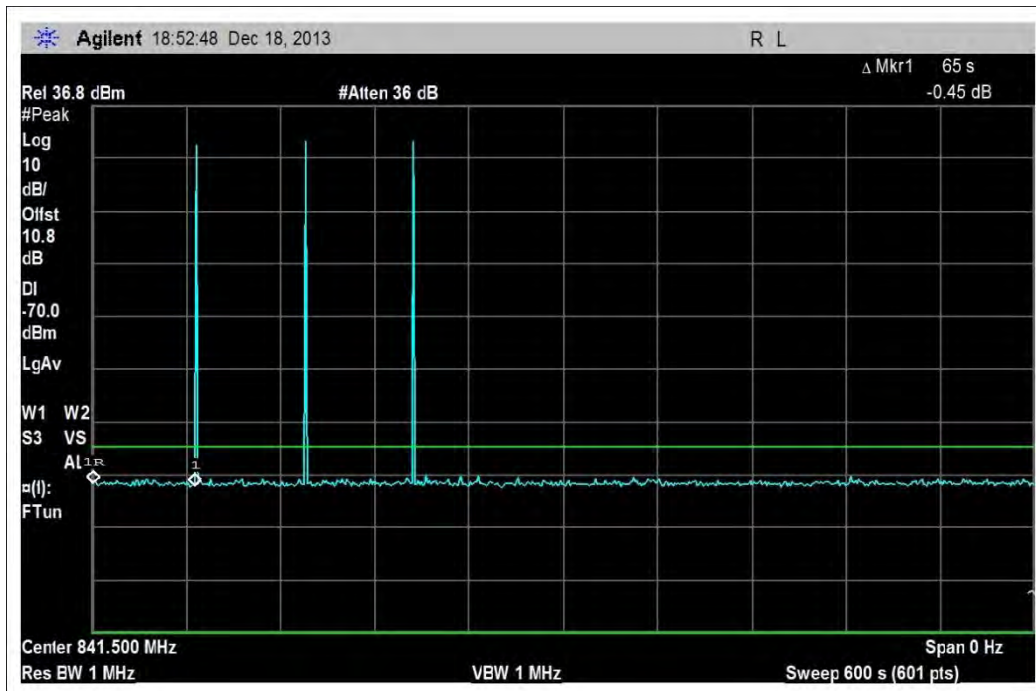
Test environment conditions: 23.9°C, 37% Relative Humidity, 100kPa

Appendix A includes maximum recorded oscillation level prior to mitigation. UL 824-849 MHz did not have a pre-mitigation level, the oscillation was mitigated immediately. Appendix B includes screen captures of measurements taken after mitigation and shutdown. Note: All data taken with firmware version 2.0 except for the data in Appendix B which is version 2.1.

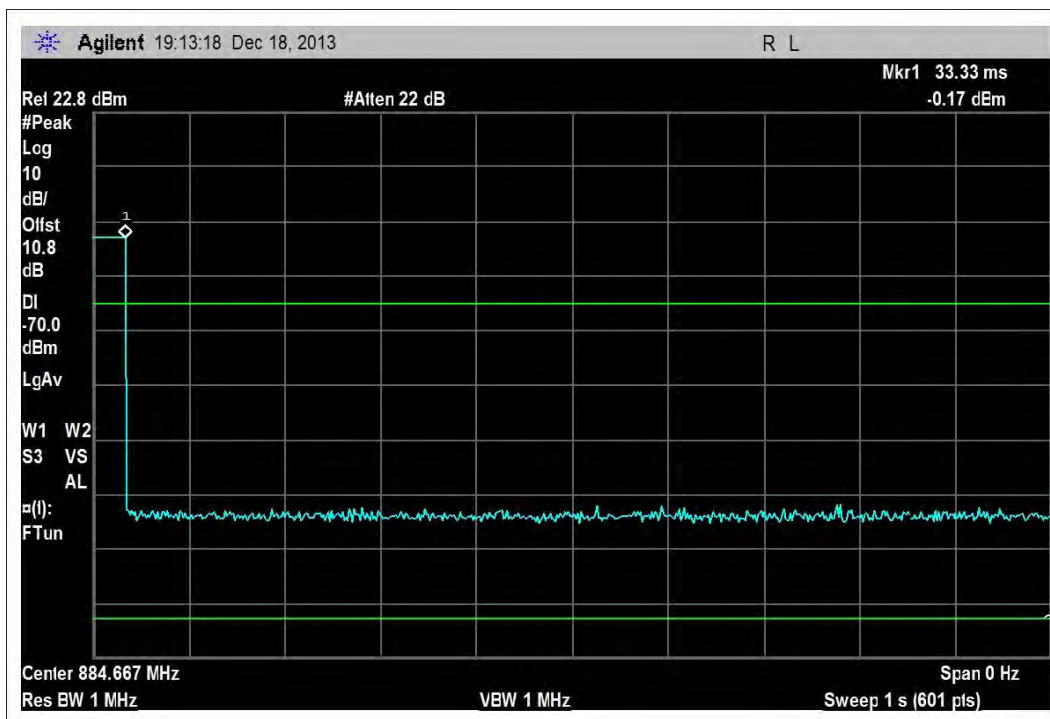
Test Data



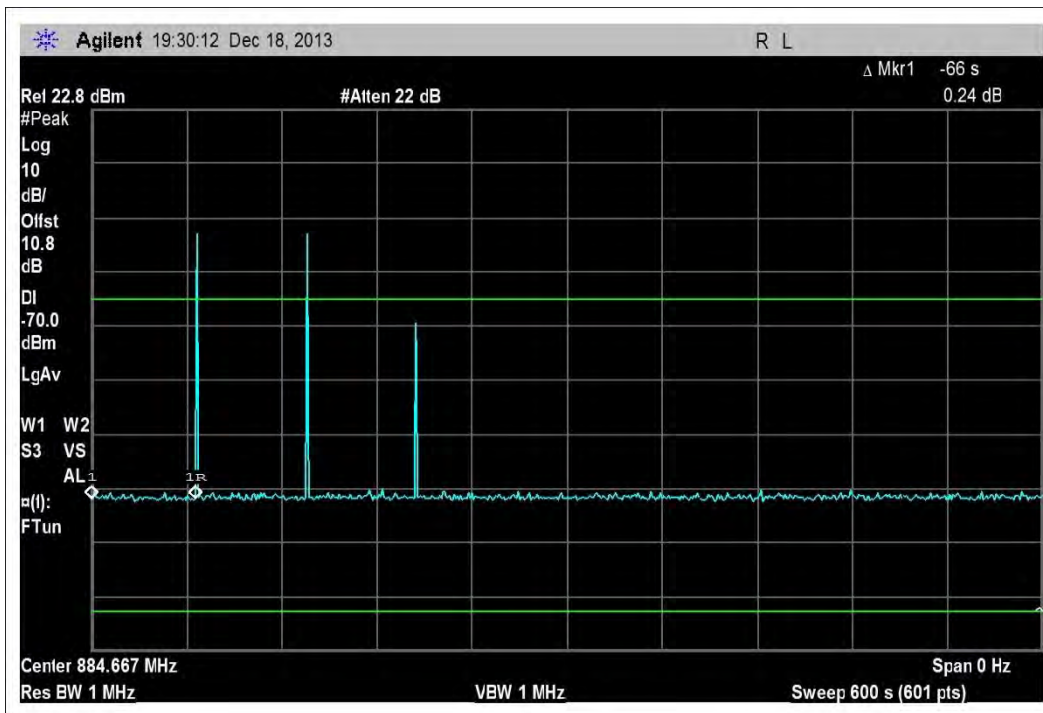
824-849MHz



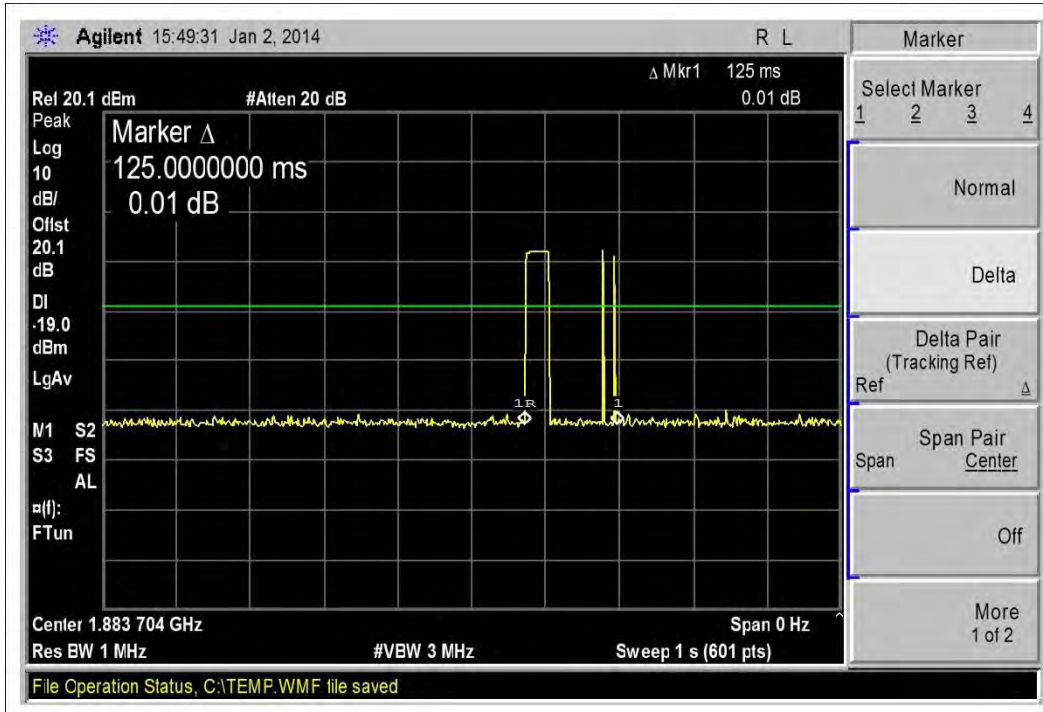
824-849MHz



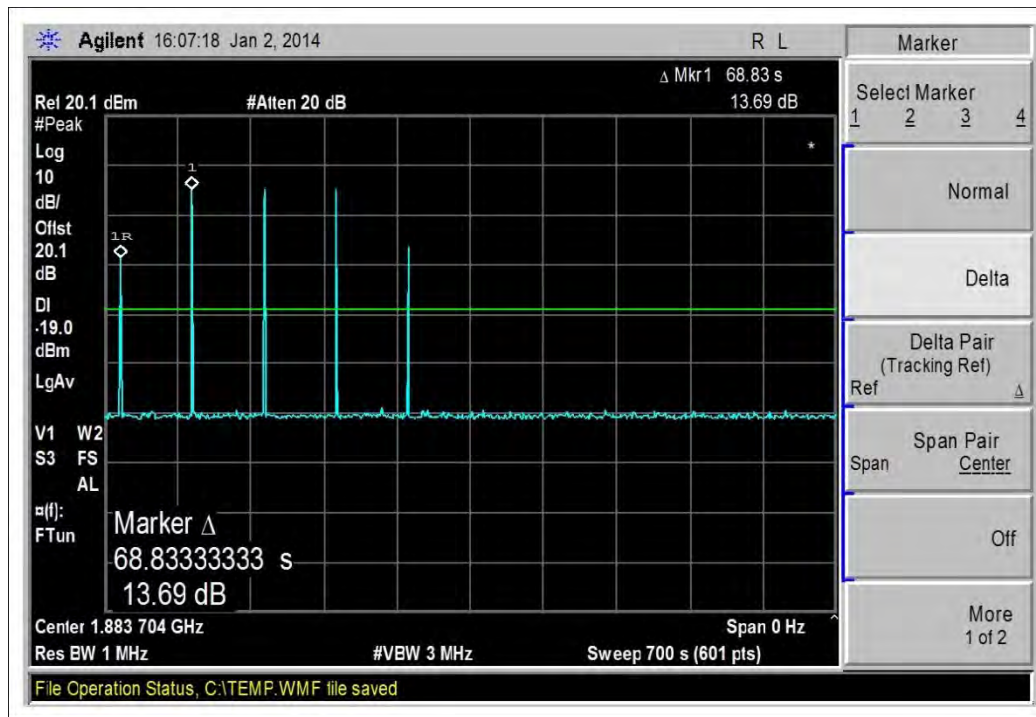
869-894MHz



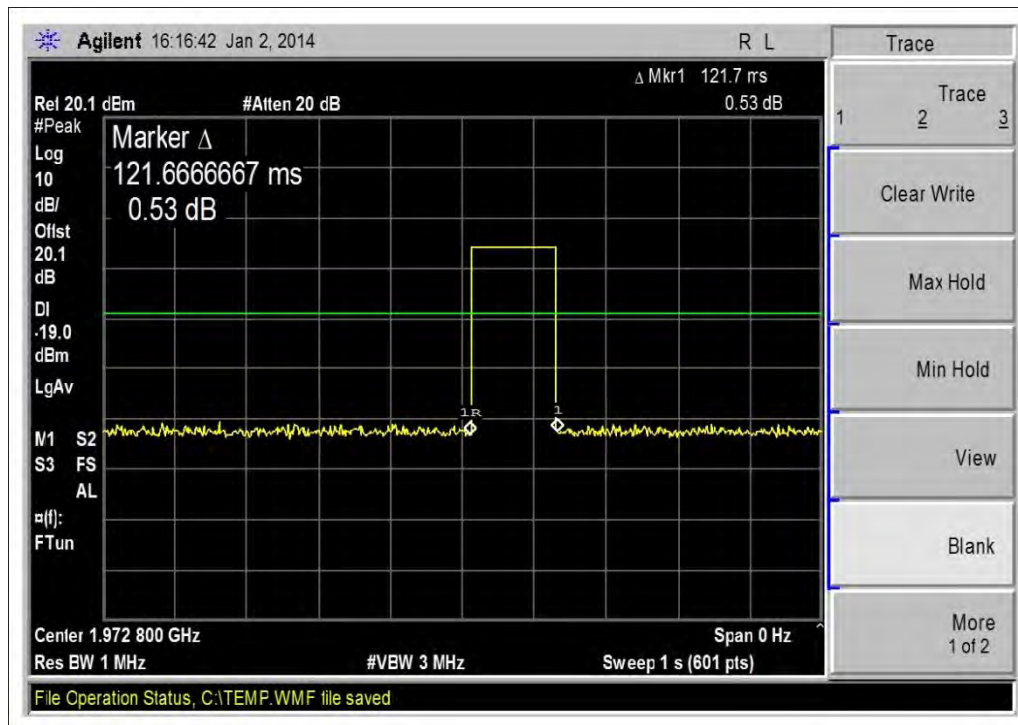
869-894MHz



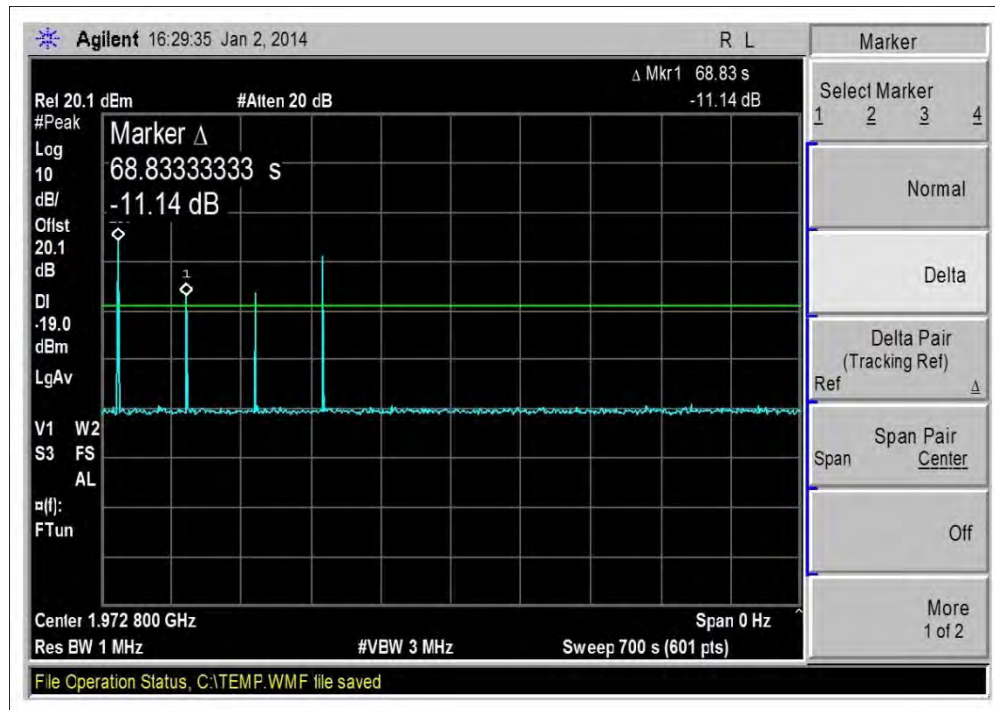
1850-1915MHz



1850-1915MHz

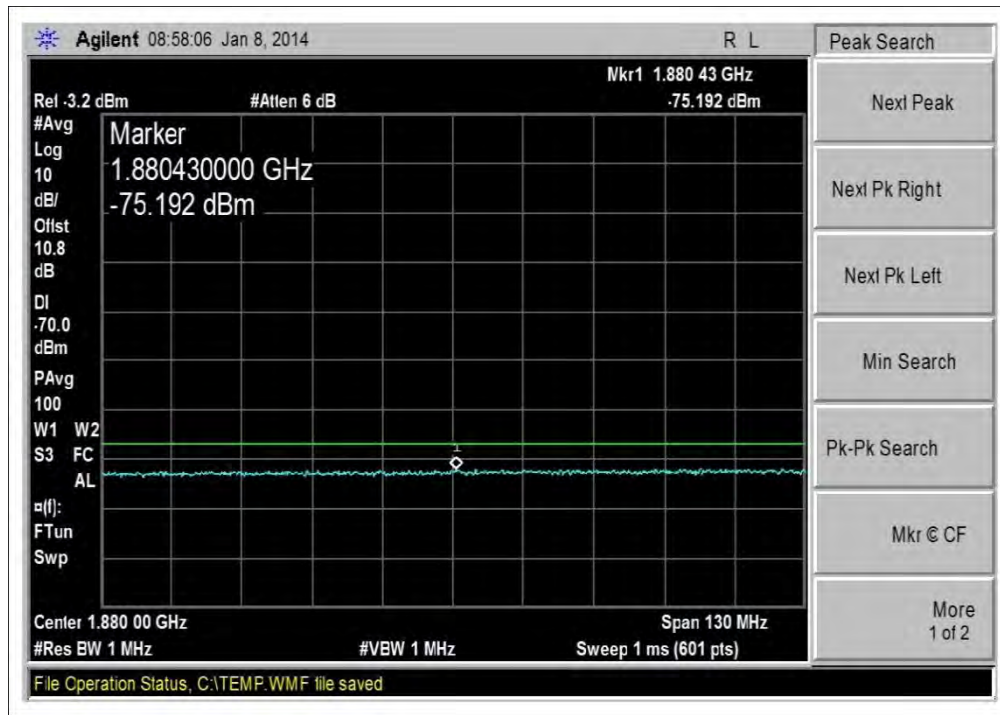


1930-1995MHz

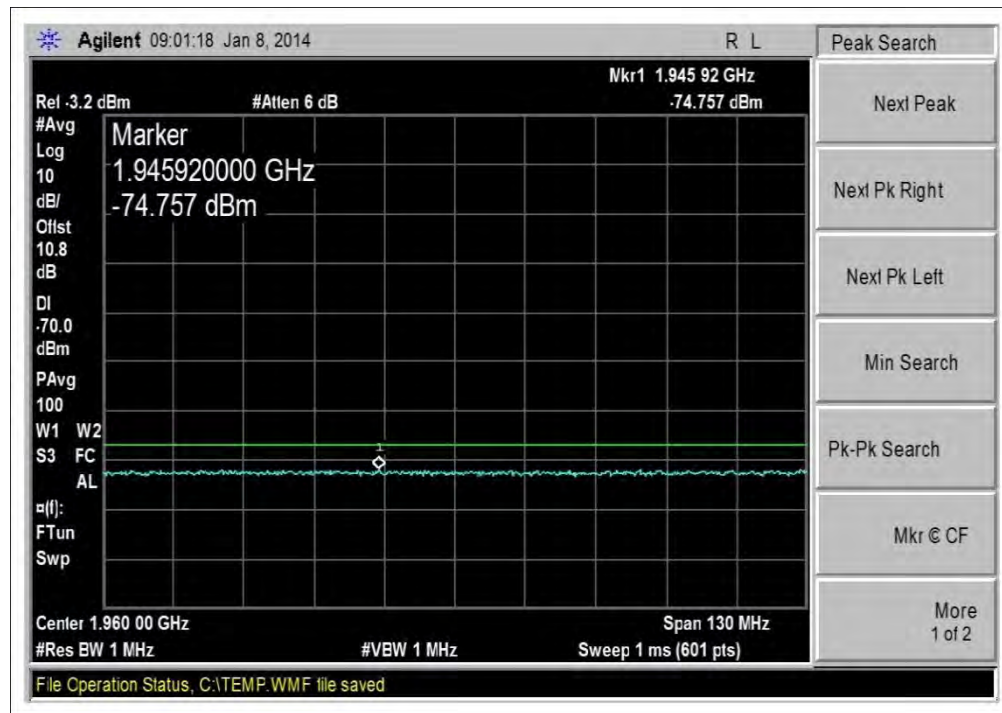


1930-1995MHz

Appendix A



Post mitigation level after shutdown
UL 1850-1915MHz, Feedback=50dB



DL 1930-1995MHz, Feedback=50dB

Test Setup Photo

