

Cellphone-Mate, Inc.

ADDENDUM TO TEST REPORT 94297

Fixed Wideband Consumer Signal Boosters Model: Flex Pro

Tested To The Following Standards:

FCC Part 20, Section 20.21

Report No.: 94297-9A

Date of issue: December 16, 2013

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.

TABLE OF CONTENTS

Administrative Information	3
Test Report Information	3
Revision History	3
Report Authorization	3
Test Facility Information	4
Software Versions	4
Site Registration & Accreditation Information	4
Summary of Results	5
Conditions During Testing	5
Equipment Under Test	6
Peripheral Devices	6
FCC Part 20	7
FCC 20.21(e)(8)(i)(A) Noise Limit	7
FCC 20.21(e)(8)(i)(B) Bidirectional Capability Power Limit	14
FCC 20.21(e)(8)(i)(C) Booster Gain Limit	25
FCC 20.21(e)(8)(i)(E) Out of Band Emission Limits	28
FCC 20.21(e)(8)(i)(F) Intermodulation Limits	36
FCC 20.21(e)(8)(i)(I) Uplink Inactivity	40
FCC 20.21(e)(8)(ii)(A) Anti Oscillation	43

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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

Representative: Dennis Findley

REPORT PREPARED BY:

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

Project Number: 94297

DATE OF EQUIPMENT RECEIPT:

October 31, 2013

DATE(S) OF TESTING:

October 31- November 4, 2013

Revision History

Original: Testing of Fixed Wideband Consumer Signal Boosters, Flexpro to FCC Part 20, Section 20.21.

Addendum A: Additional testing clarification was added to test conditions throughout the report as well as adding comments for clarification under plots.

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

Description	Test Procedure/Method	Results
Noise Limit - Transmit off	FCC Part 20.21(e)(8)(i)(A) / 7.7	Pass
Bidirectional Capability D Power Limit	FCC Part 20.21(e)(8)(i)(B) / 7.2	Pass
Booster Gain Limits	FCC Part 20.21(e)(8)(i)(C) / 7.9	Pass
Out of Band Emission Limits	FCC Part 20.21(e)(8)(i)(E) / 7.5	Pass
Intermodulation Limits	FCC 20.21(e)(8)(i)(F) / 7.4	Pass
Uplink Inactivity	FCC 20.21(e)(8)(i)(I) / 7.8	Pass
Anti-Oscillation	FCC 20.21(e)(8)(ii)(A) / 7.11	Pass

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

Fixed Wideband Consumer Signal Boosters

Manuf: Cellphone-Mate, Inc.

Models: Flex Pro

Serial: 1

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART 20

This report contains EMC test results under United States Federal Communications Commission (FCC) Part 20 §20.21, requirements for Provider-Specific Consumer Signal Boosters.

FCC 20.21(e)(8)(i)(A) 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: **20.21(e)(8)(i)(A) Noise Limit, 20.12(e)(8)(i)(H) Transmit Power Off mode**
 Work Order #: **94297** Date: 10/31/2013
 Test Type: **Conducted Emissions** Time: 08:34:21
 Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Flex Pro 110V 60Hz
 S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster*	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

UL: 824-849, 1850-1910 MHz

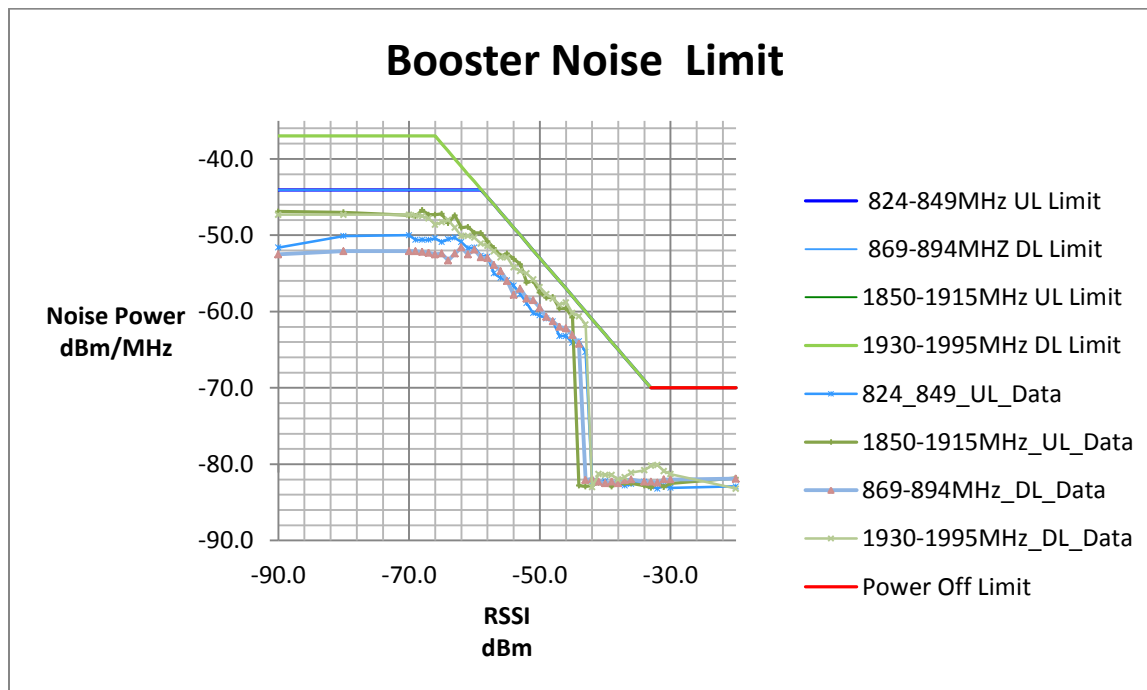
DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

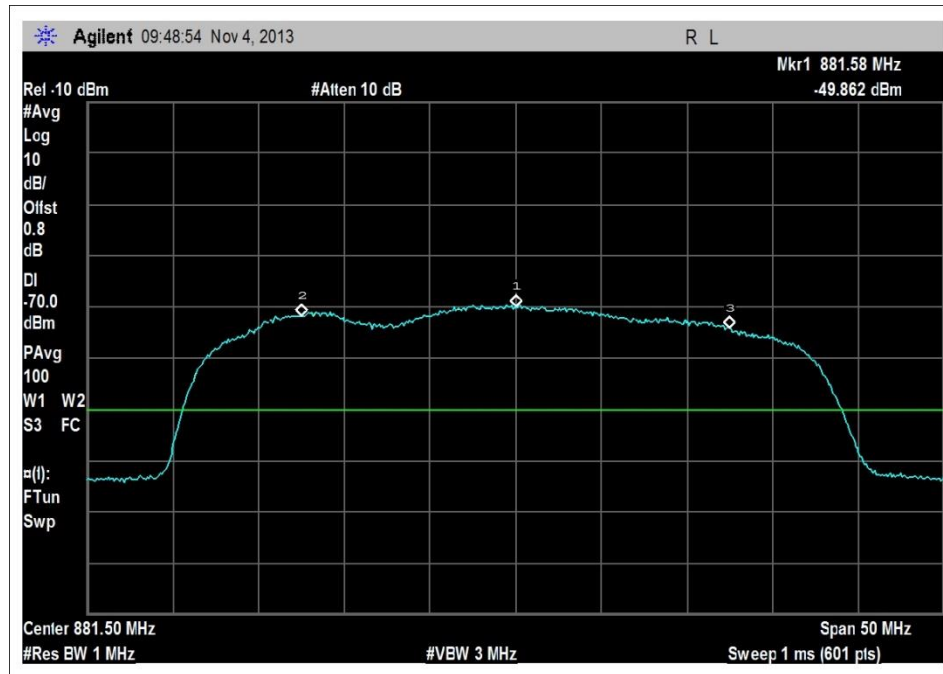
Test procedure:

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

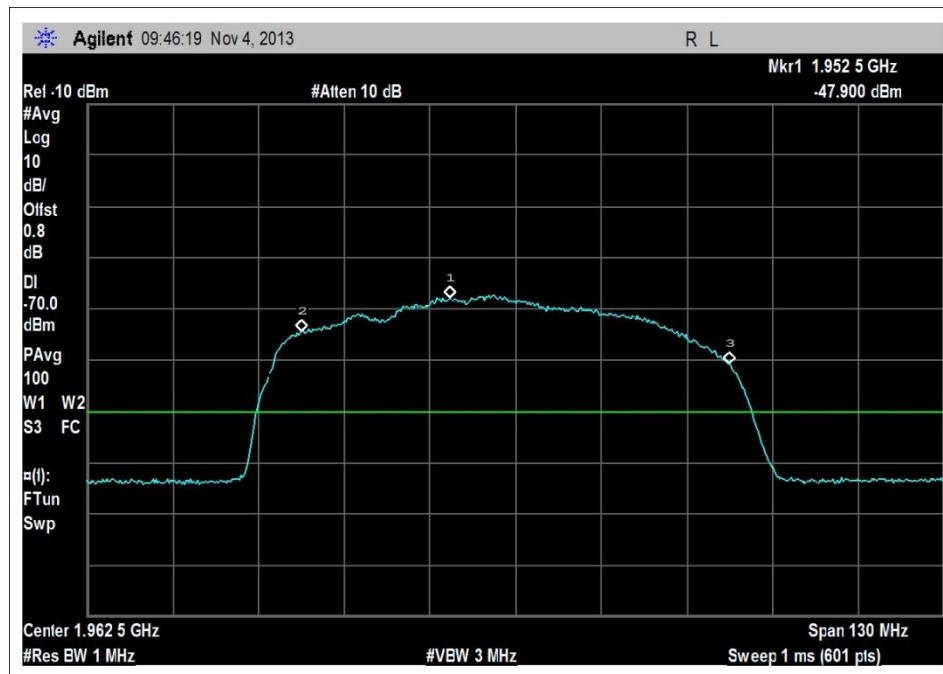
The booster entered Transmit Off mode when DL or 800MHz RSSI exceed -42dBm and 1900 MHz RSSI exceeds -44dBm.



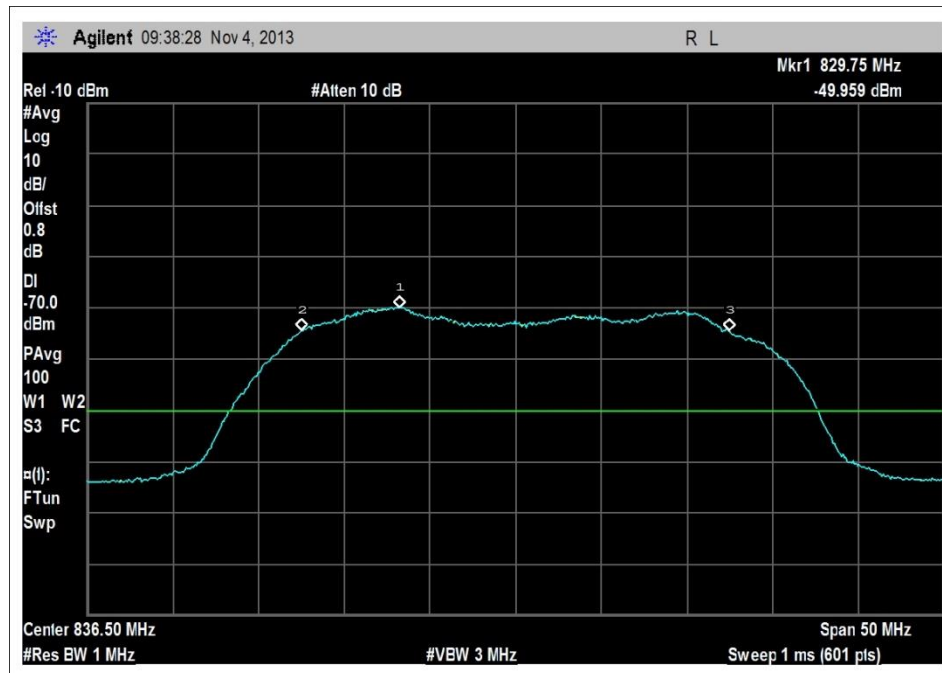
Test Data



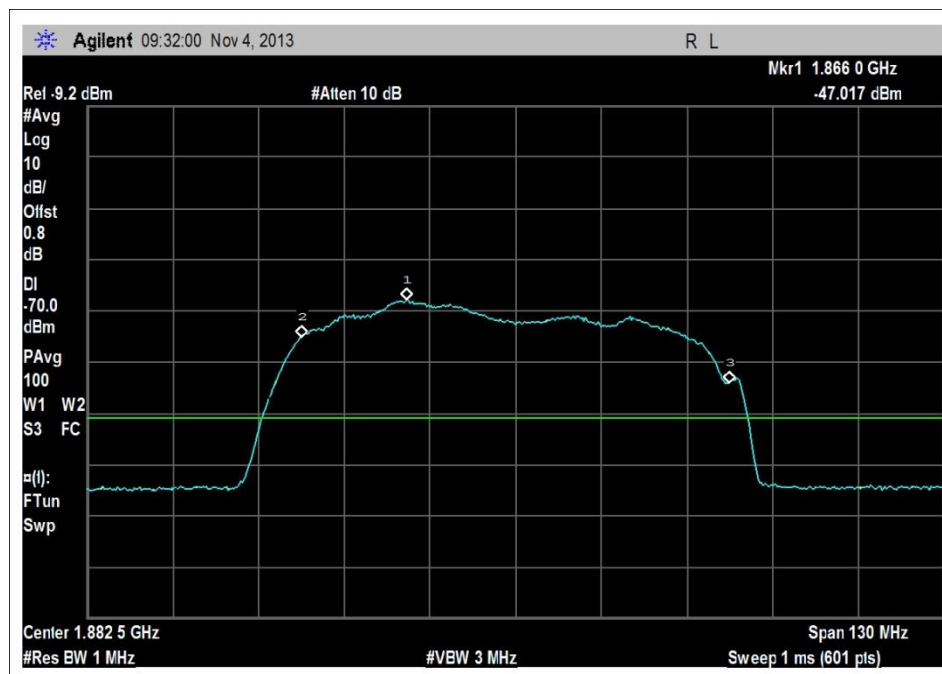
Noise 869-894MHz DL, in accordance with § 7.7.2



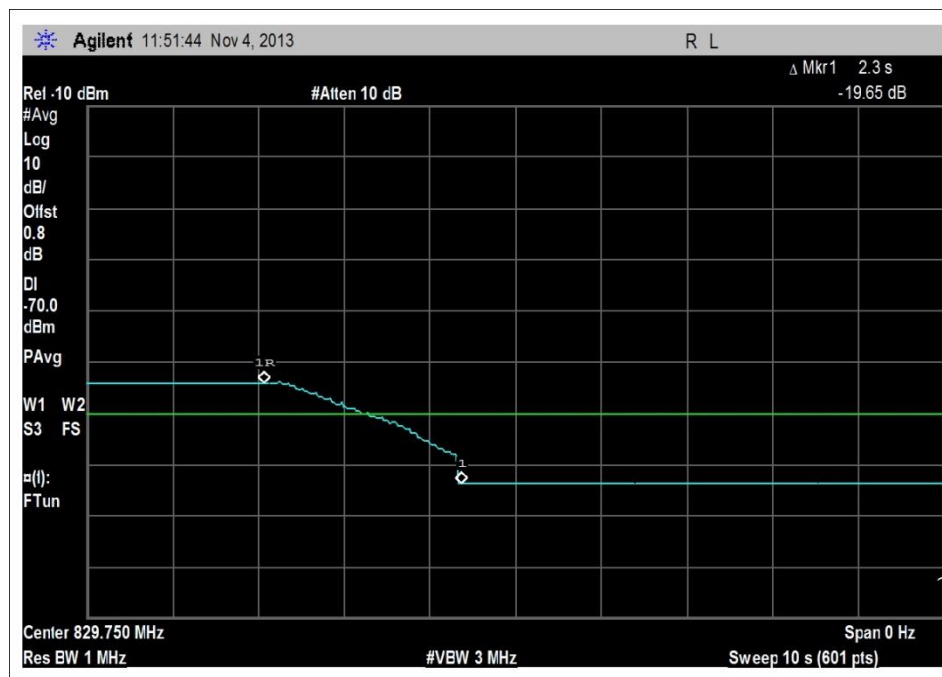
Noise 1930-1995MHz DL, in accordance with § 7.7.2



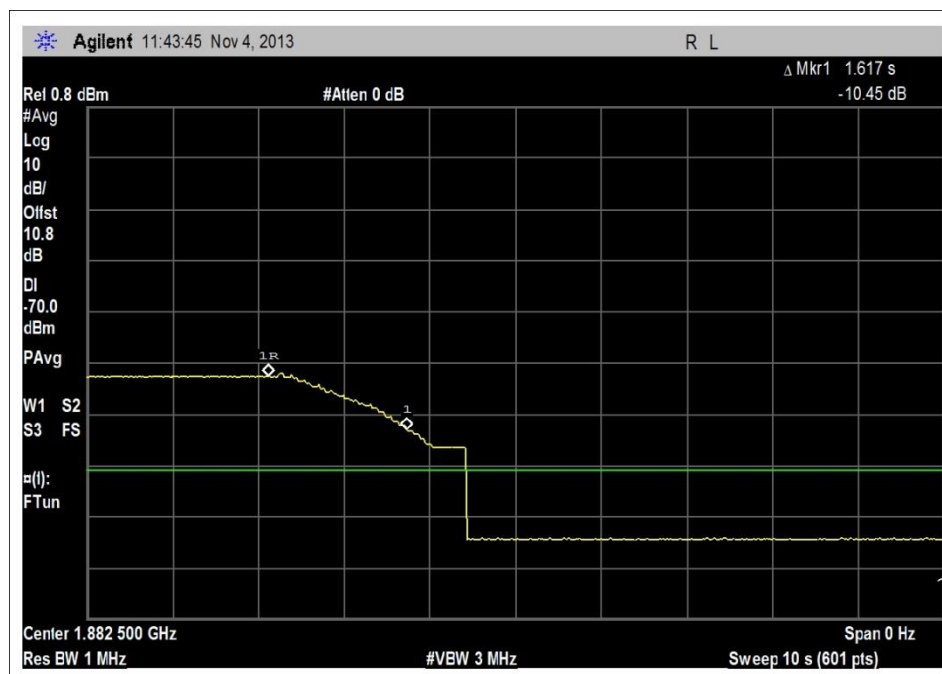
Noise 824-849MHz UL, in accordance with § 7.7.2



Noise 1850-1915MHz UL, in accordance with § 7.7.2



Noise Time 824-849MHz UL, in accordance with § 7.7.14

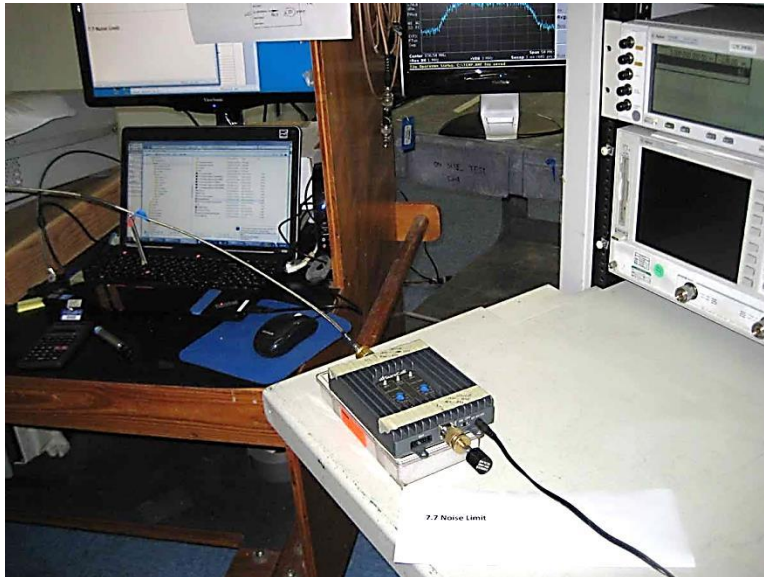


Noise Time 1850-1910MHz UL, in accordance with § 7.7.14

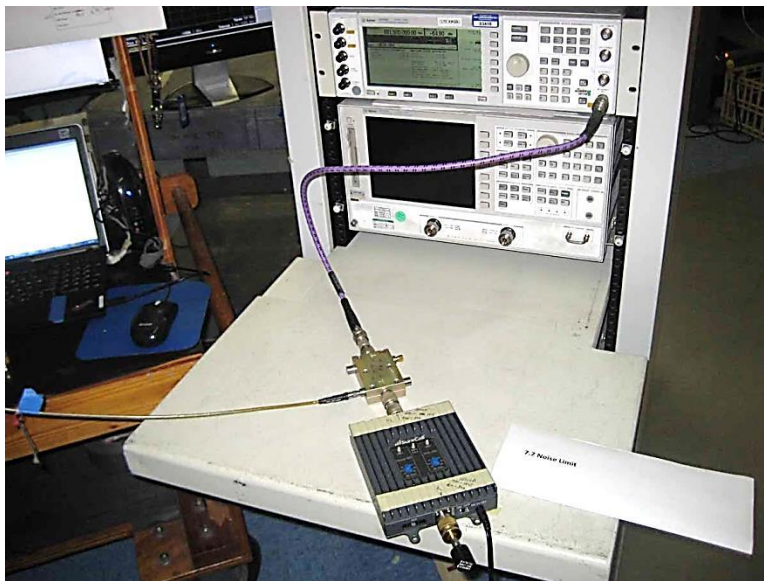
Test Setup Photos



Overall Test Setup



Overall Test Setup in accordance with 7.7.2



Overall Test Setup in accordance with 7.7.14

FCC 20.21(e)(8)(i)(B) Bidirectional Capability Power Limit

Test Conditions / Setup Band Verification

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

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

Specification: **Authorized Band Verification**

Work Order #: **94297** Date: 10/31/2013

Test Type: **Conducted Emissions** Time: 08:34:21

Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1

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

Model: Flex Pro 110V 60Hz

S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster*	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

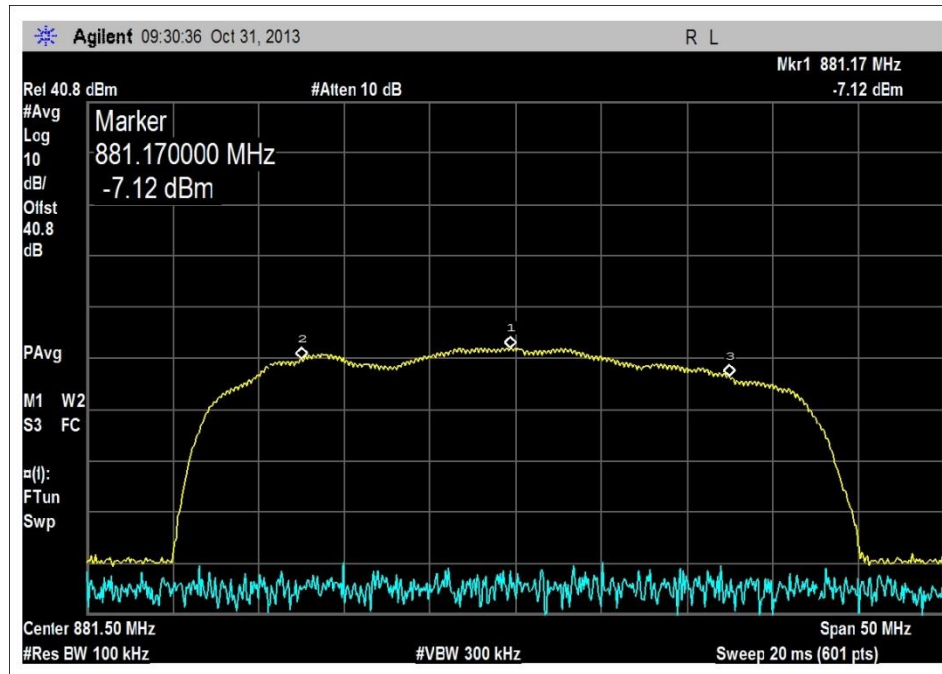
UL: 824-849, 1850-1910 MHz

DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

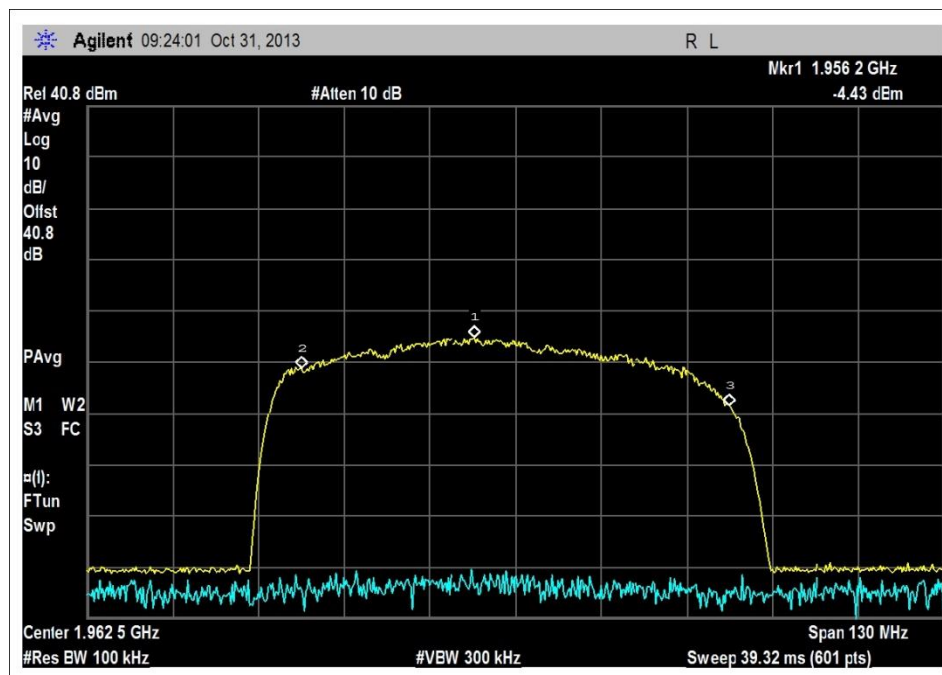
Test procedure: The test was performed in accordance with section 7.1 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516. LTE UL and LTE DL signal were used.

Test Data



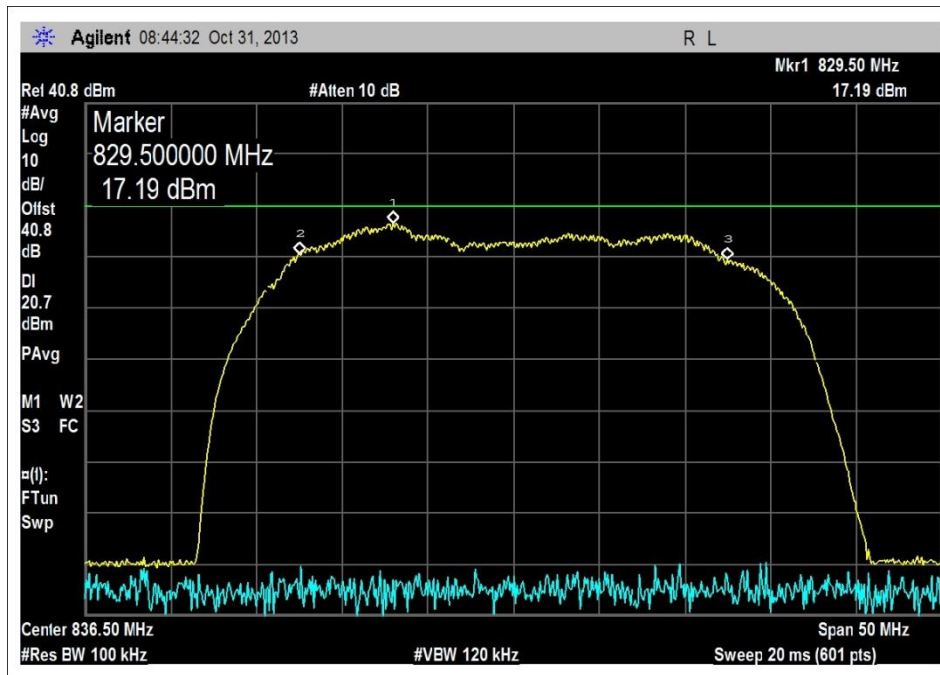
869-894MHz DL

Marker1= 881.17MHz, Marker 2 = 869MHz, Marker 3 =894MHz.



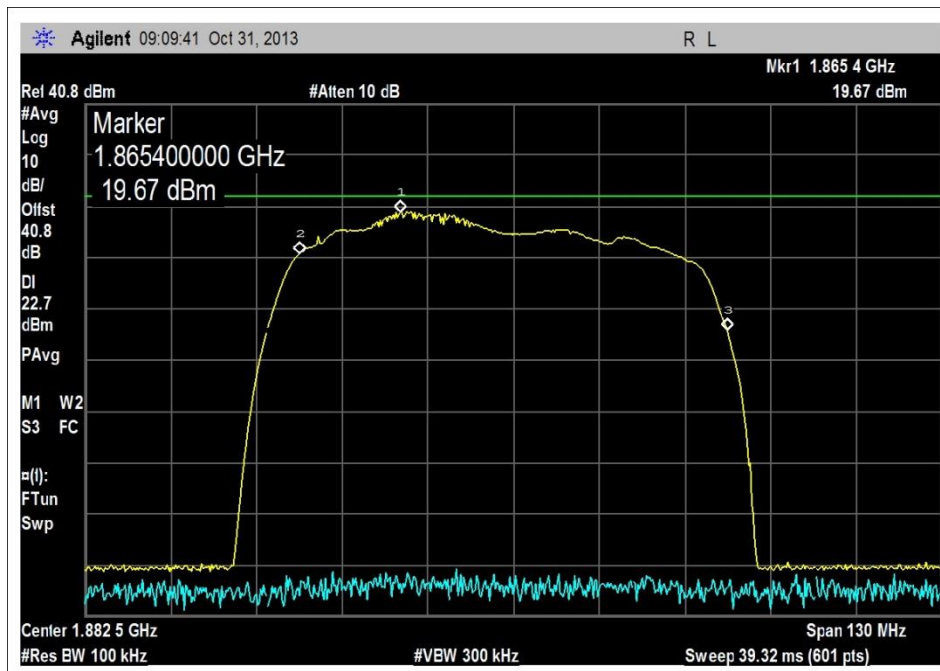
1930-1995MHz DL

Marker 1=1956.2MHz, Marker2=1930MHz, Marker3= 1995MHz



824-849MHz UL

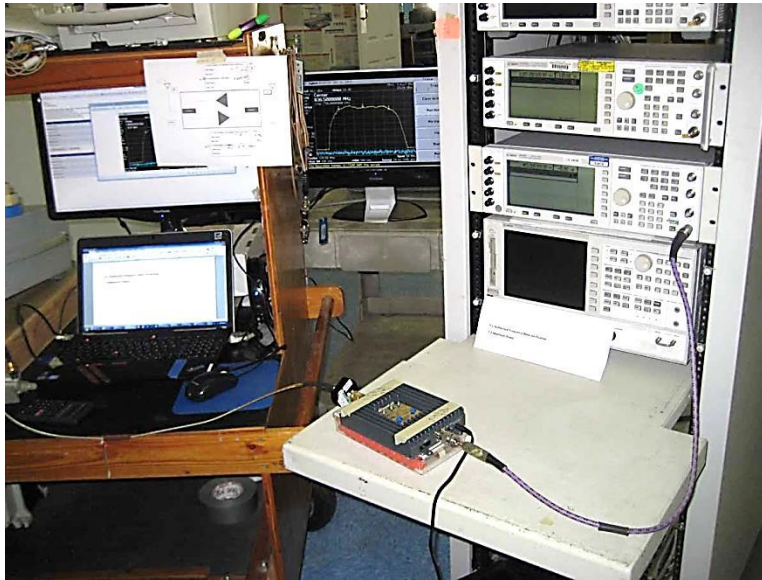
Marker 1 =829.5MHz, Marker2 = 824MHz, marker 3 =849MHz



1850-1915MHz UL

Marker 1 =1865.4MHz, Market2=1850MHz, Market3 = 1915MHz

Test Setup Photos



Test Conditions / Setup
Power & Gain

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), 20.12(e) (8)(i)(D)**
 Work Order #: **94297** Date: 10/31/2013
 Test Type: **Conducted Emissions** Time: 08:34:21
 Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Flex Pro 110V 60Hz
 S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster *	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

UL: 824-849, 1850-1910 MHz

DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

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.

Antenna

1. A 3 dBi antenna CM288W
2. A 5 dBi antenna CM100-S
3. A 9 dBi antenna CM100-L
4. A 10 dBi dual band Yagi antenna CM230W

For indoor antenna:

1. A 3 dBi antenna CM222W.
2. A 10 dBi antenna CM248W.

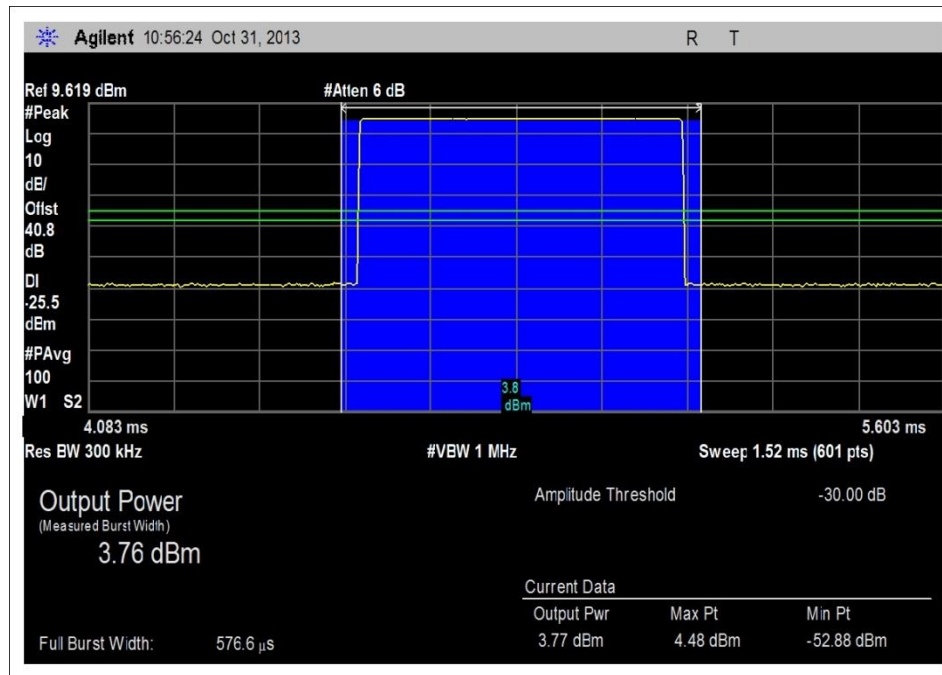
Test Data

Pulse GSM				4.1 MHz AWGN		
Frequency	Input(dBm)	Output (dBm)	Gain (dB)	Input(dBm)	Output (dBm)	Gain(dB)
UL 1850-1915	-41.7	22.4	64.1	-42.2	20.2	62.4
UL 824-849	-41.1	20.0	61.1	-42.7	17.4	60.1
DL 1930-1995	-61.0	-1.2	59.8	-59.0	-1.2	57.8
DL 869-894	-55.0	3.8	58.8	-60.5	-1.8	58.7
0						
UL gain vs DL gain 1850/1930		4.3dB			4.6dB	
UL gain vs DL gain 824/894		2.3dB			1.4dB	
Limit : IAW 7.3 of KDB 935210DO3 August 7,2013		9dB			9dB	

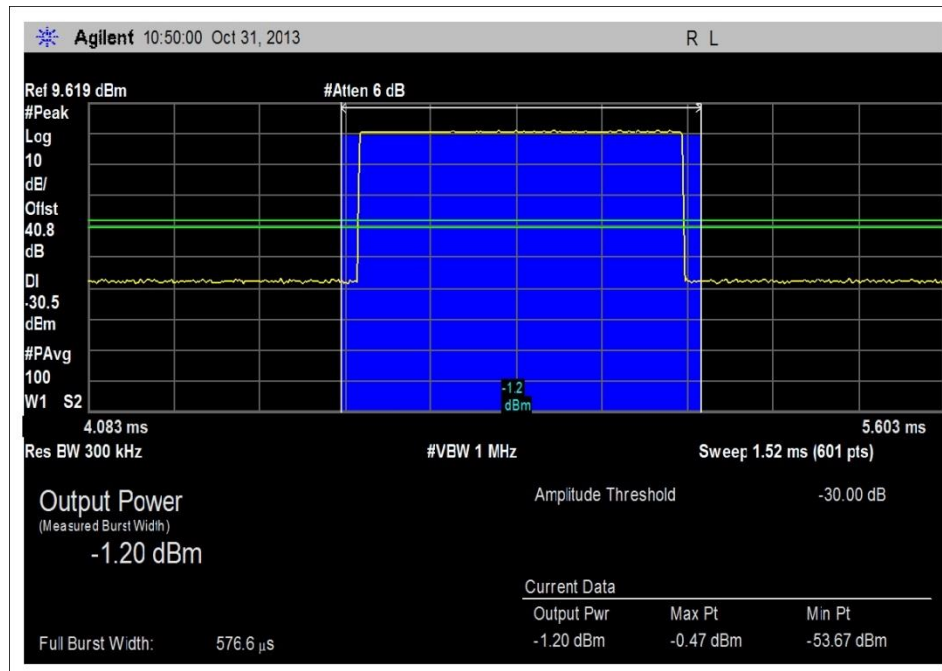
Pulse GSM					
Frequency	Output Power	Ant Gain	Cable Loss	EIRP(dBm)	Limit(dBm)
UL 1850-1915	22.4	10	5.0	27.4	Min 17 Max30
UL 824-849	20.0	10	3.0	27.0	Min 17 Max 30
DL 1930-1995	-1.2	10	2.1	6.7	17
DL 869-894	3.8	10	1.2	12.6	17
4.1MHz AWGN					
Frequency	Output Power	Ant Gain	Cable Loss	EIRP(dBm)	Limit(dBm)
UL 1850-1915	20.2	10	5.0	25.2	Min 17 Max 30
UL 824-849	17.4	10	3.0	24.4	Min 17 Max 30
DL 1930-1995	-1.2	10	2.1	6.7	17
DL 869-894	-1.8	10	1.2	7	17

Note: Cable is 75 feet between outside antenna and signal booster, and 30 feet between inside antenna and signal booster, both are CM400 cable. With 4 dB loss on 800MHz and 7 dB loss on 1900MHz, round to lowest loss.

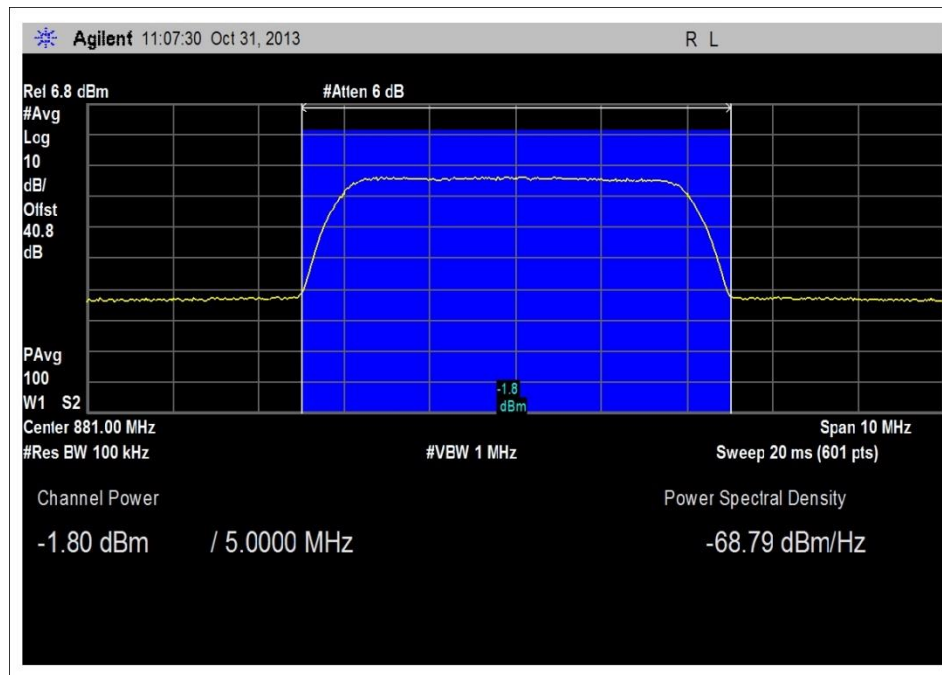
In the case of CM240 cable, it's 40 feet and 20 feet, however, the loss are higher on both so it's not worst case as far as EIRP is concern.



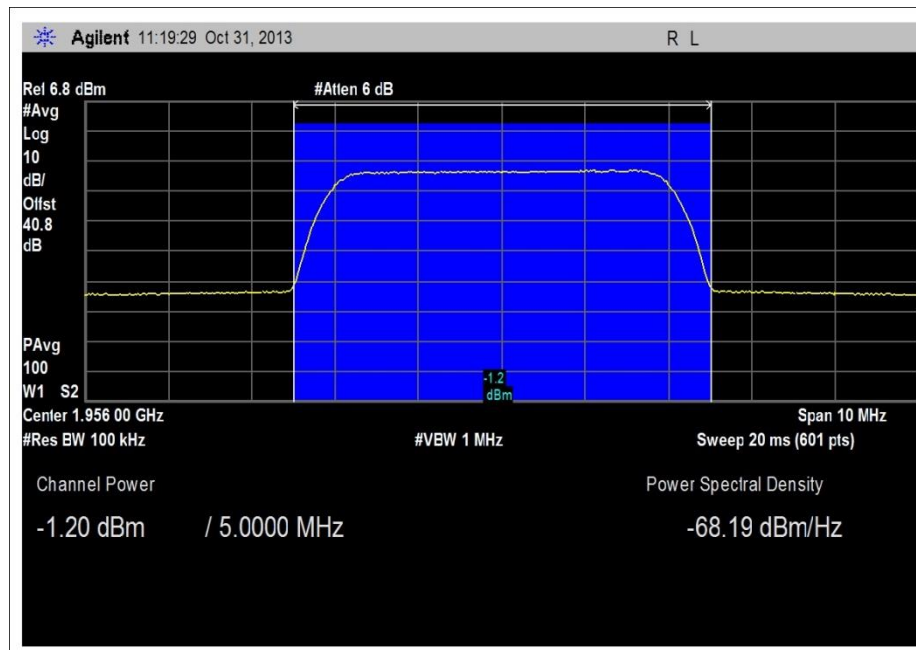
869-894MHz DL, GSM



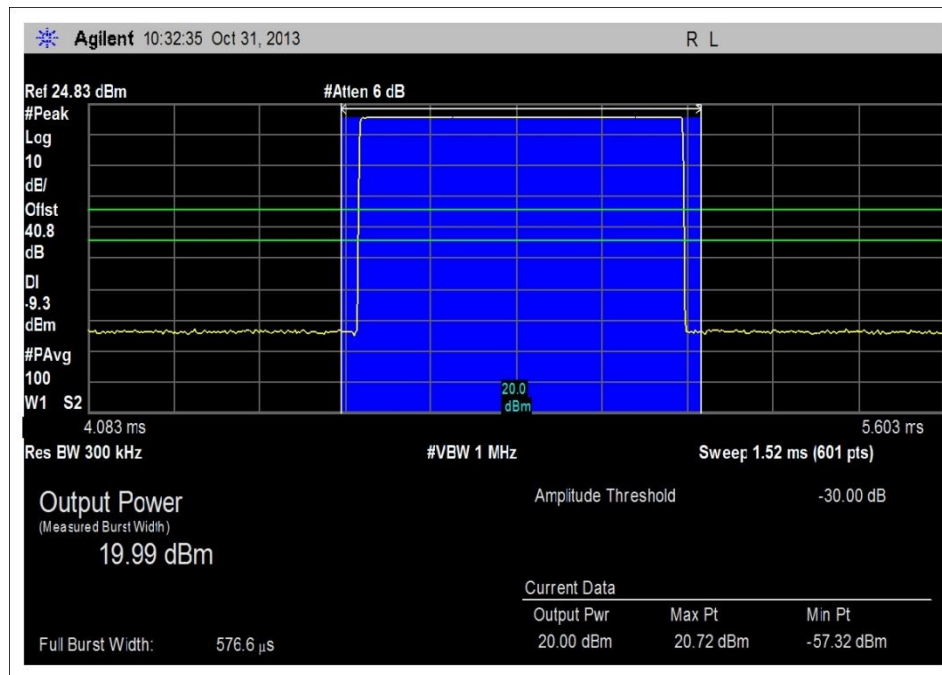
1930-1995MHz DL, GSM



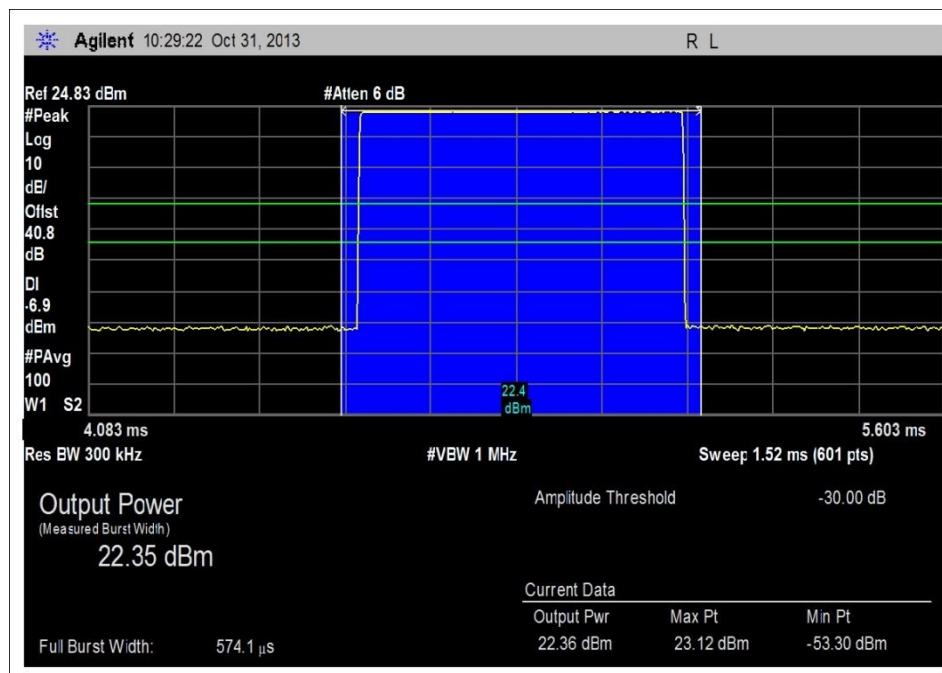
869-894MHz DL, AWGN



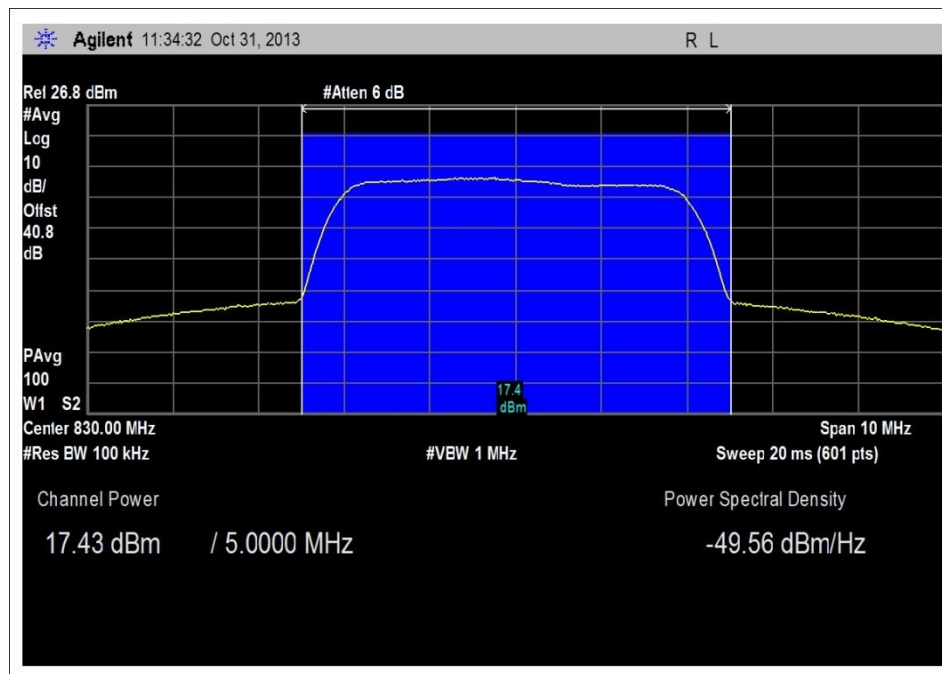
1930-1995MHz DL, AWGN



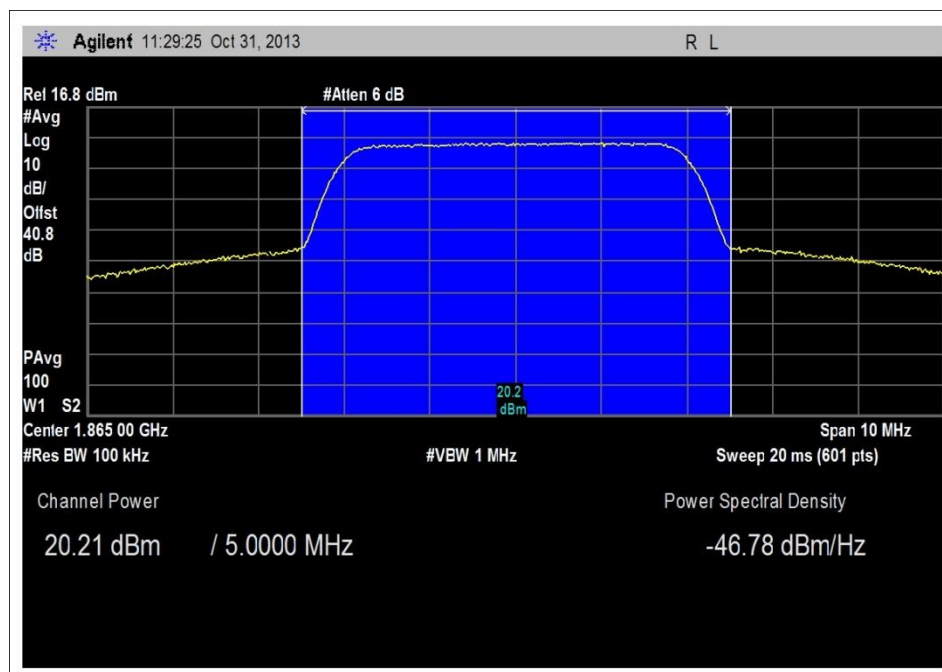
824-849MHz UL, GSM



1850-1915MHz UL, GSM

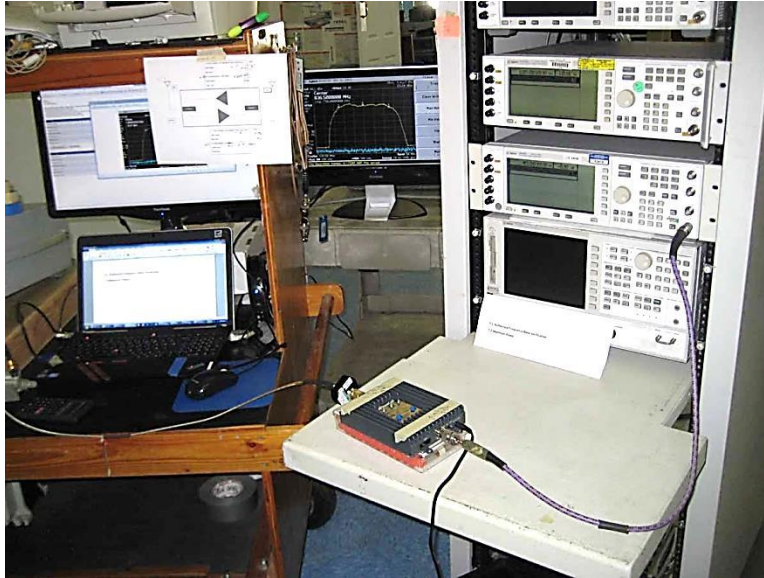


824-849MHz UL, AWGN



1850-1915MHz UL, AWGN

Test Setup Photos



FCC 20.21(e)(8)(i)(C) Booster Gain Limit

Test Conditions / Setup

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

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

Specification: **20.12(e)(8)(i)(C) Booster Gain Limit, 20.12(e)(8)(i)(H) Transmit Power Off mode**

Work Order #: **94297** Date: 10/31/2013

Test Type: **Conducted Emissions** Time: 08:34:21

Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1

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

Model: Flex Pro 110V 60Hz

S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Cellphone	Cellphone-Mate, Inc.	E-Flex Dual Band	1
Booster/amplifier*			

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular - 800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

UL: 824-849, 1850-1910 MHz
DL: 869-894, 1930-1990 MHz

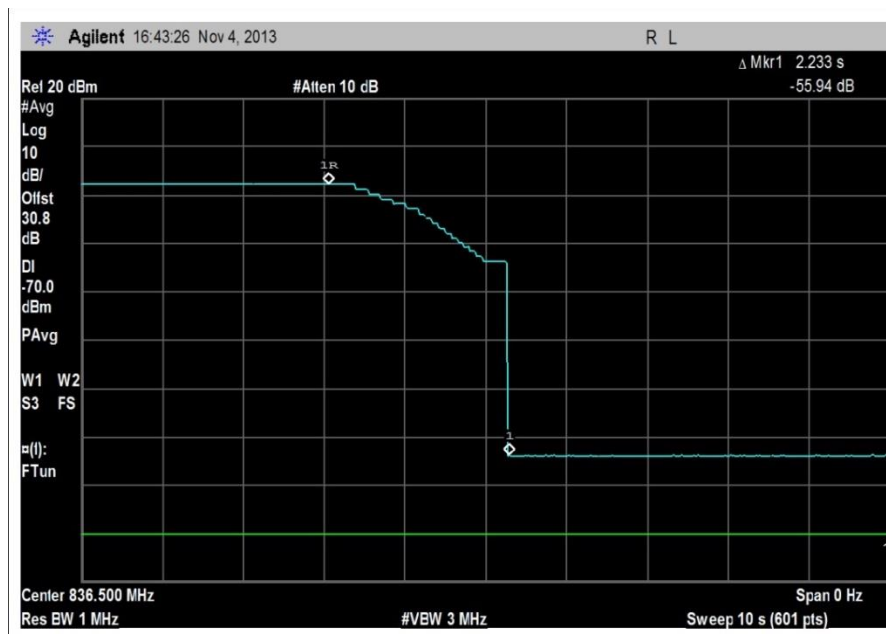
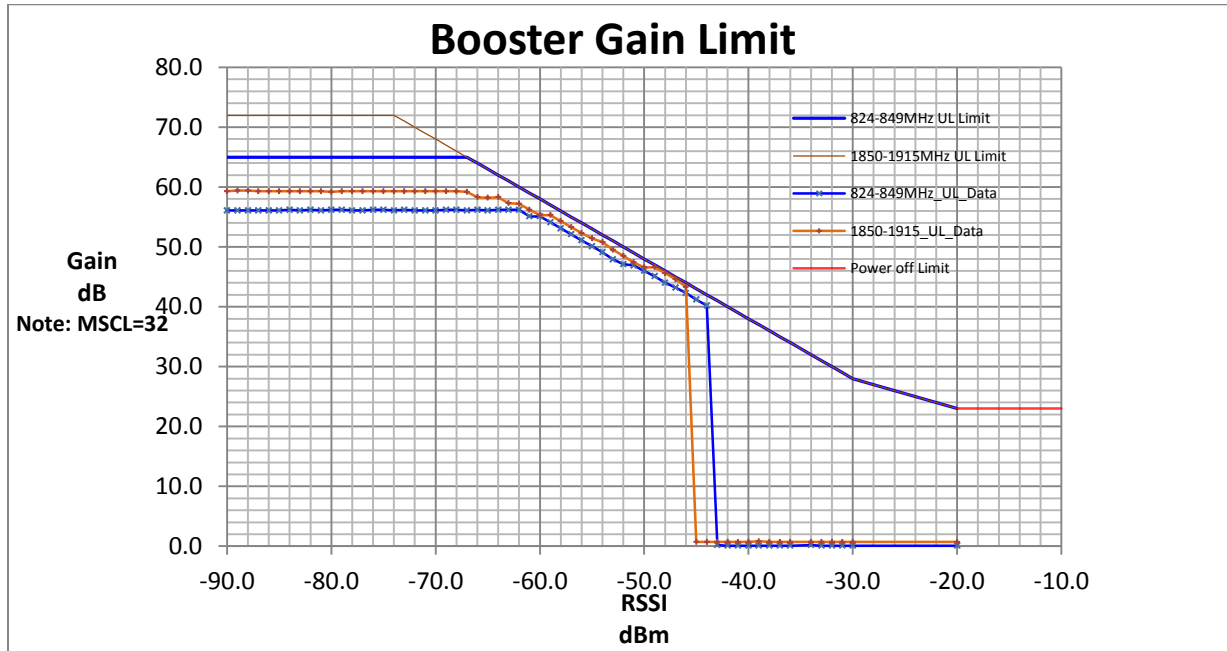
Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

Test procedure: The test was performed in accordance with section 7.9 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516.

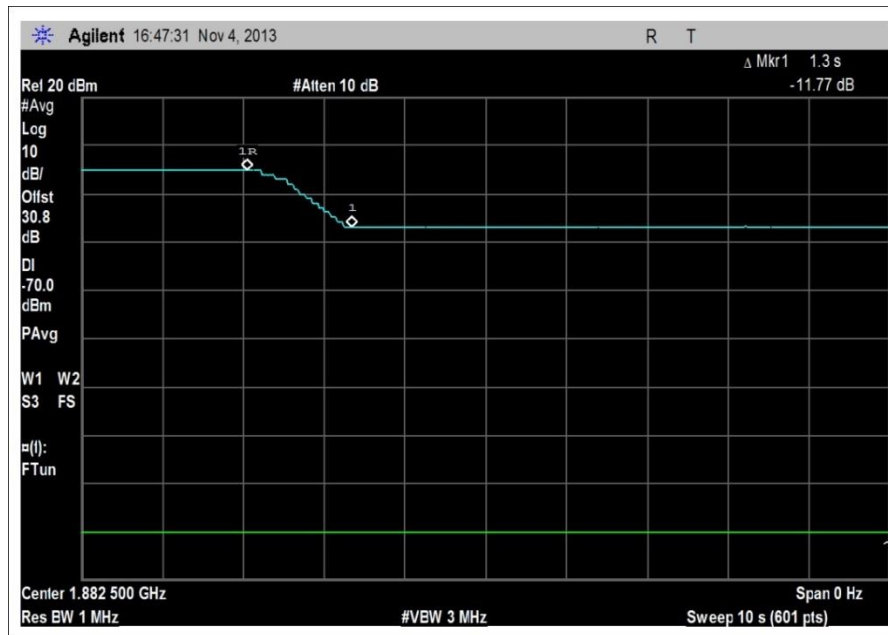
The booster entered Transmit Off mode when DL or 800MHz RSSI exceed -42dBm and 1900 MHz RSSI exceeds -44dBm.

MSCL = 32dB

Test Data

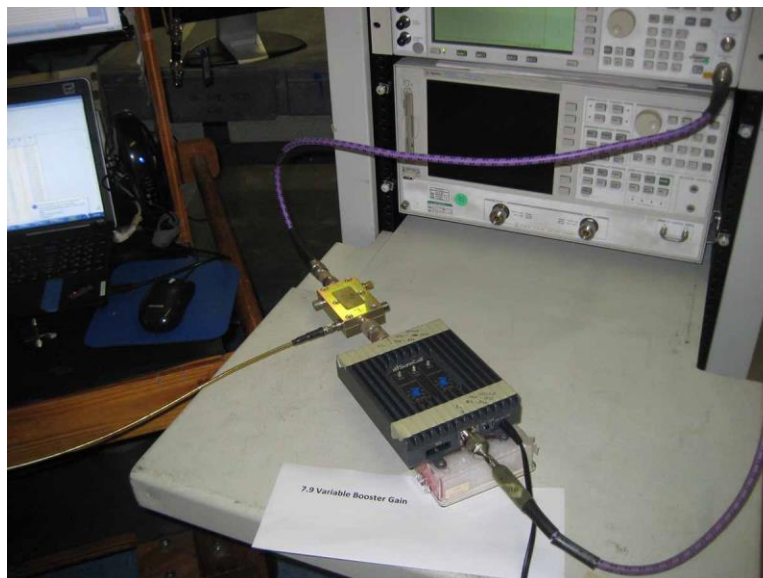


Variable gain timing. Measure time between marker 1R and marker1 is the time for system gain to drop with RCSSI change of 20dB. = 2.23 sec



Variable gain timing. Measure time between marker 1R and marker1 is the time for system gain to drop with RCSSI change of 20dB. = 1.3 sec

Test Setup Photos



FCC 20.21(e)(8)(i)(E) Out of Band Emission Limits

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)(E) Out of Band Emission limits**
 Work Order #: **94297** Date: 10/31/2013
 Test Type: **Conducted Emissions** Time: 08:34:21
 Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Flex Pro 110V 60Hz
 S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster *	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

UL: 824-849, 1850-1910 MHz

DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

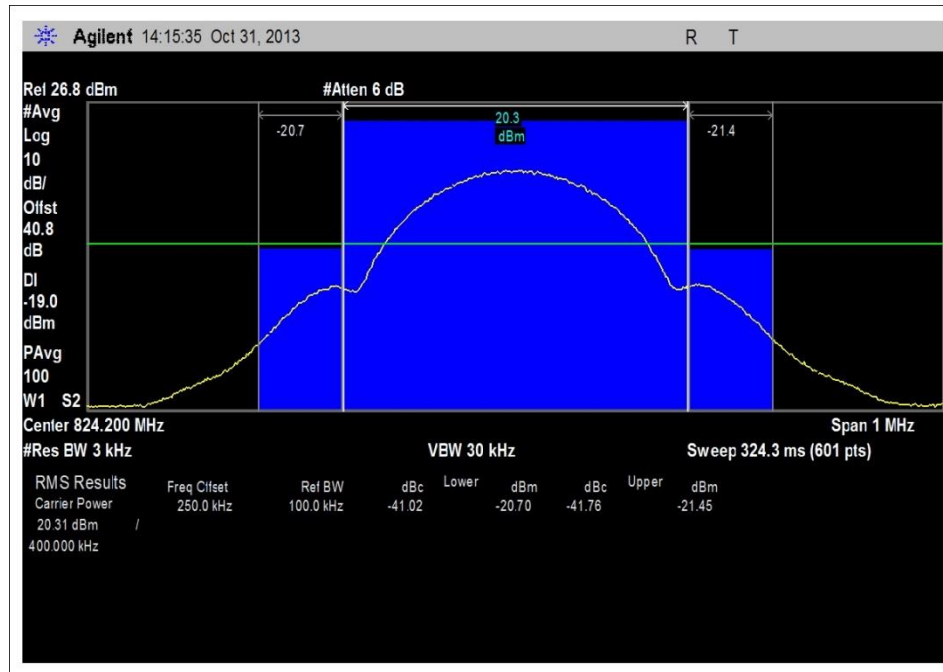
Adjacent channel power function of a spectrum analyzer was used to integrate OBE measurement made with smaller bandwidth into the RBW 100kHz/1MHz required by the part22/part 24 rule as a applicable.

The marker presented on the plot is the low /high edge of the band.

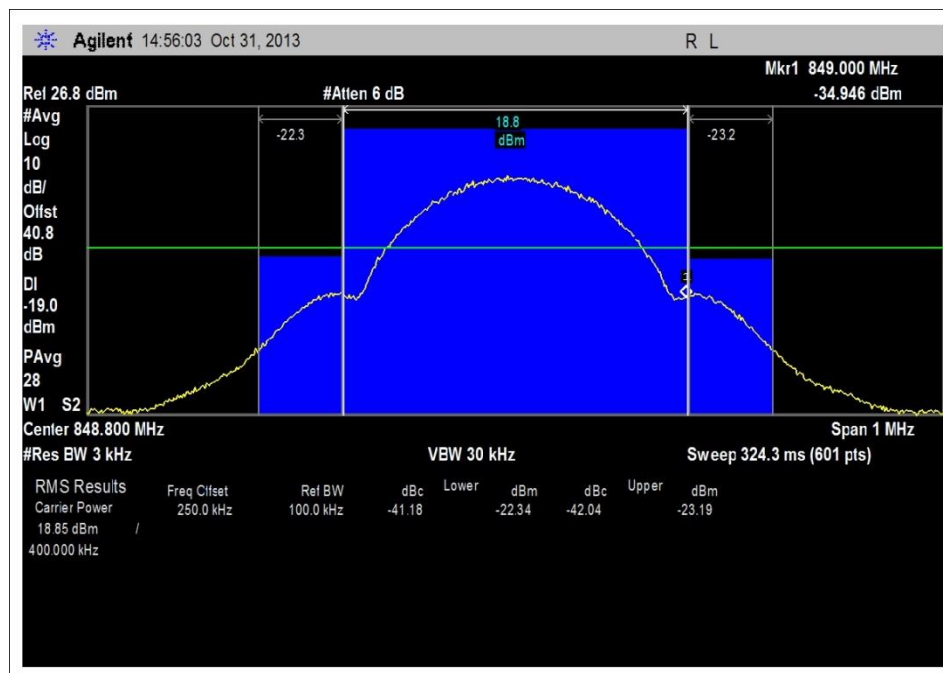
Test procedure:

The test was performed in accordance with section 7.5 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516. Channel Power function with power integration was used to improve measurement.

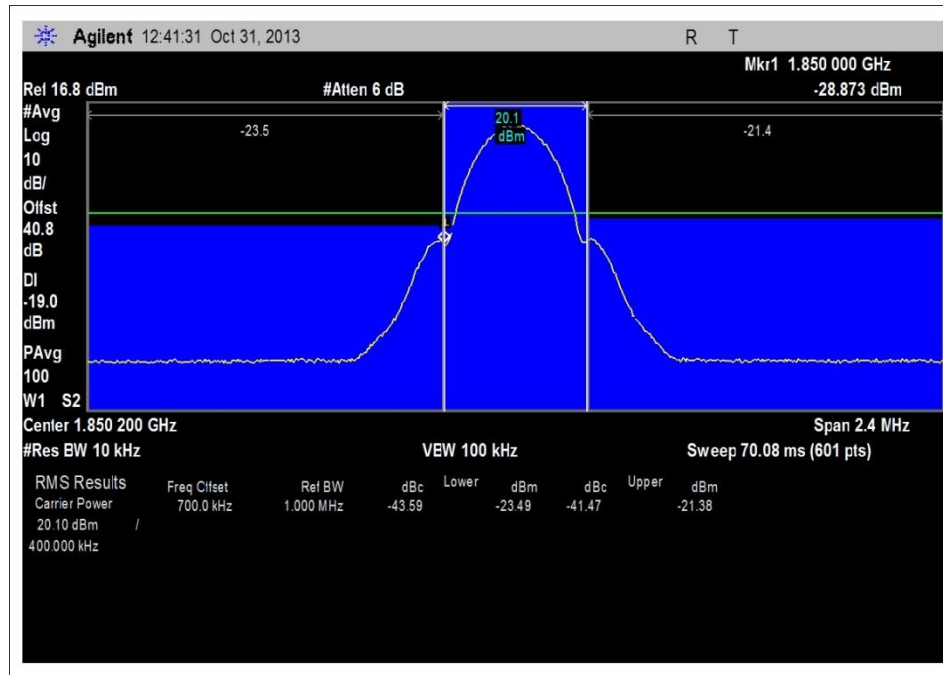
Test Data



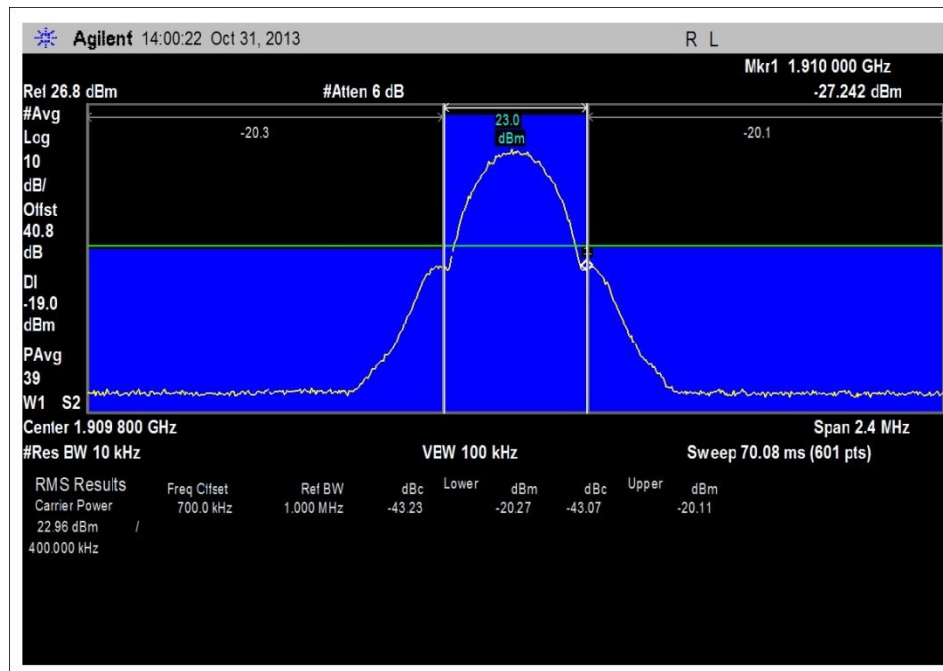
824-849MHz_L_UL GSM, input power= -35dBm. Low Bandedge emission = -20.7dBm



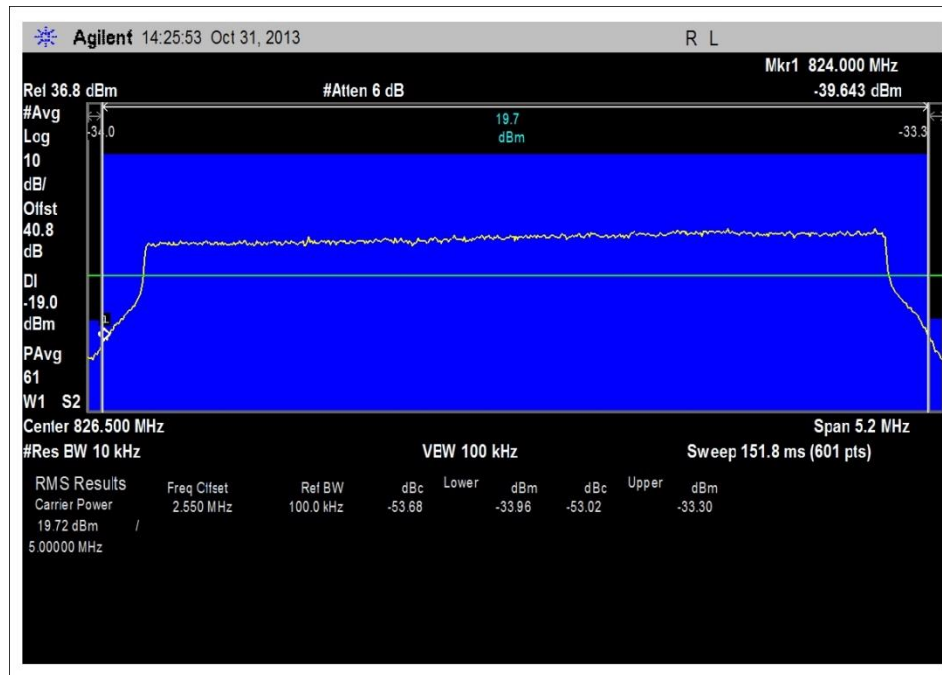
824-849MHz_H_UL GSM, input power= -33dBm, High bandedge emission = -23.2dBm



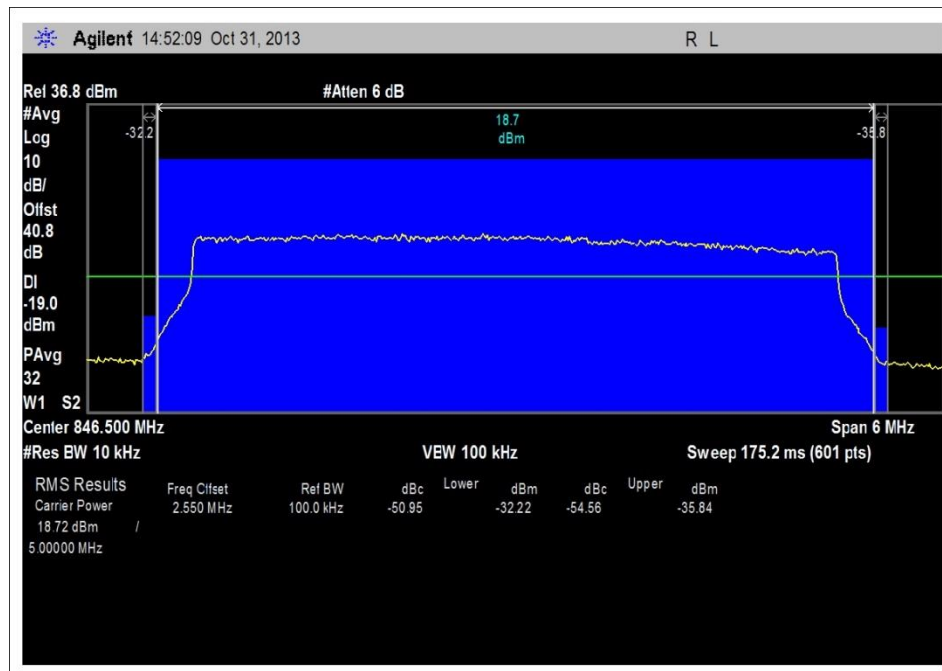
1850-1915MHz_L_ UL GSM, input power= -32dBm, low bandedge emission =-23.5dBm



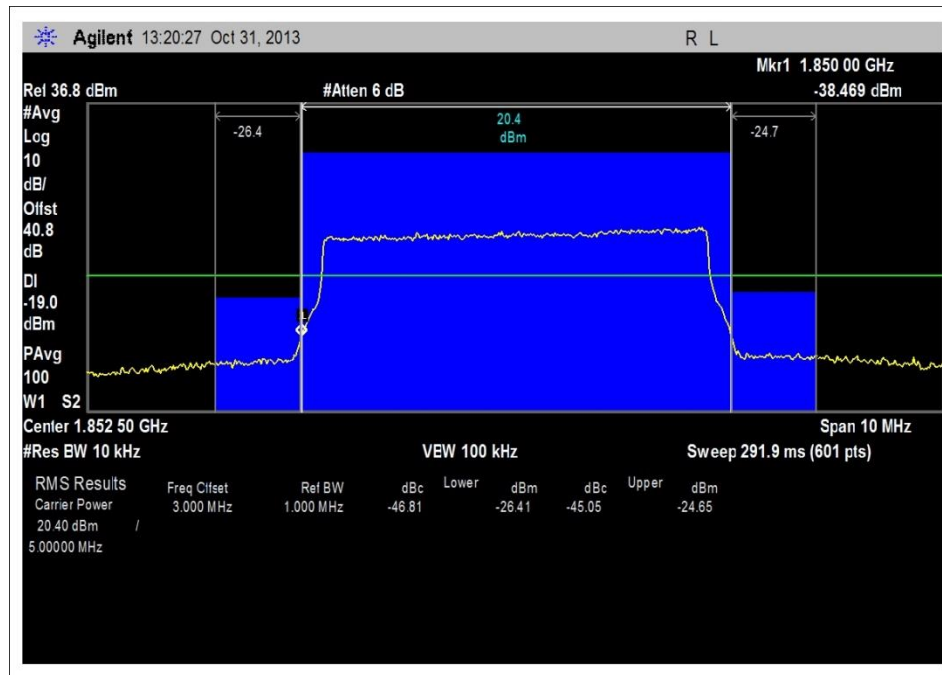
1850-1915MHz_H_ UL GSM, input power = -29.2dBm, high bandedge power= -20.11dBm



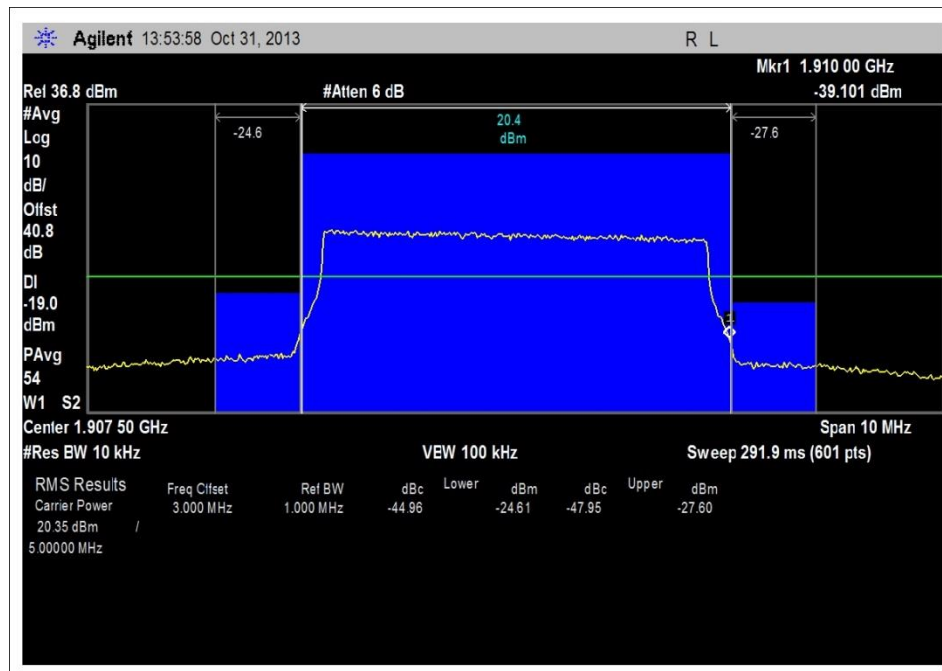
824-849MHz_L_ UL LTE, input power =-38dBm, low bandedge emission=-33.9dBm



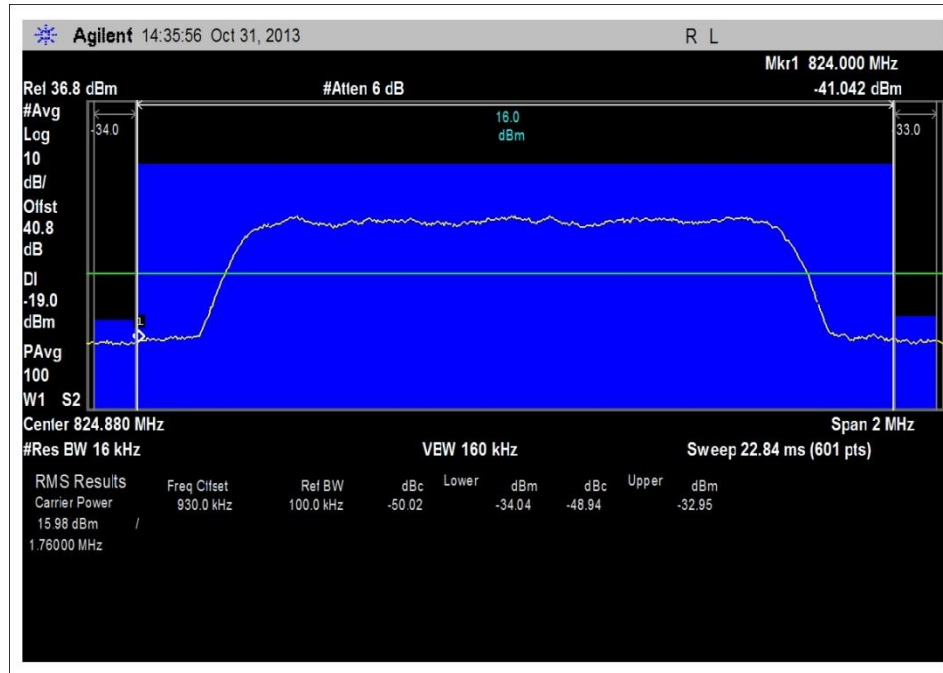
824-849MHz_H_ UL LTE, input power =-39dBm high bandedge emission = -35.84dBm



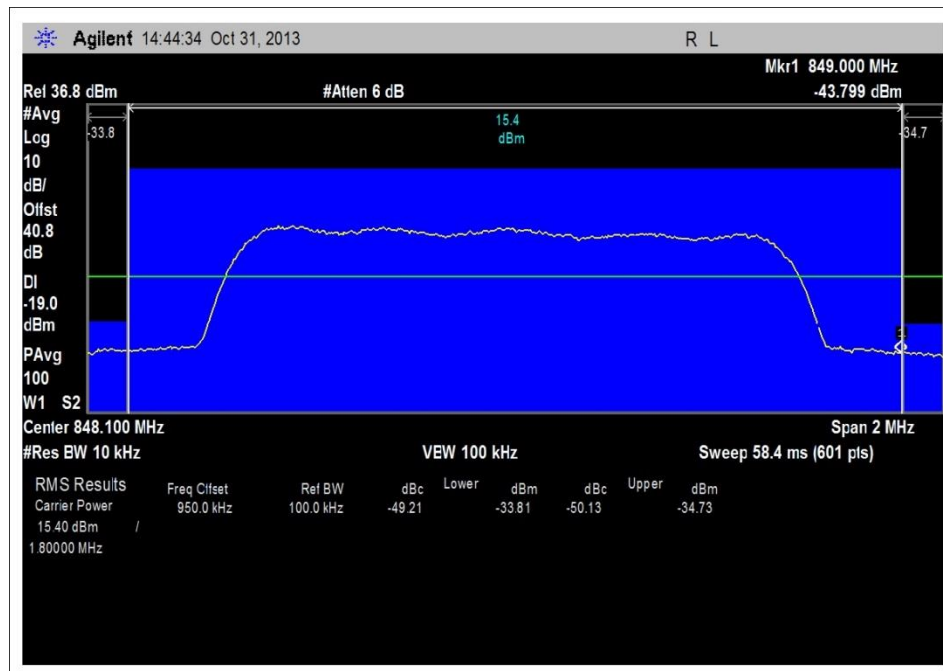
1850-1915MHz _L_ UL LTE, input power= -35.2dBm, low bandedge emission =-24.65dBm



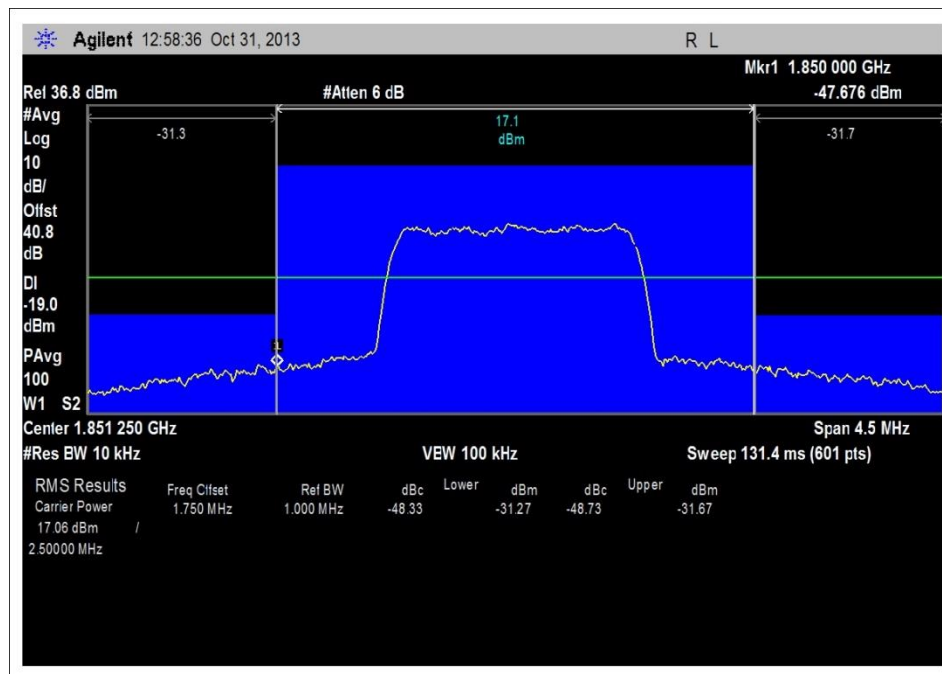
1850-1915MHz _H_ UL LTE, input power= -32.3dBm, high bandedge emission = -27.6dBm



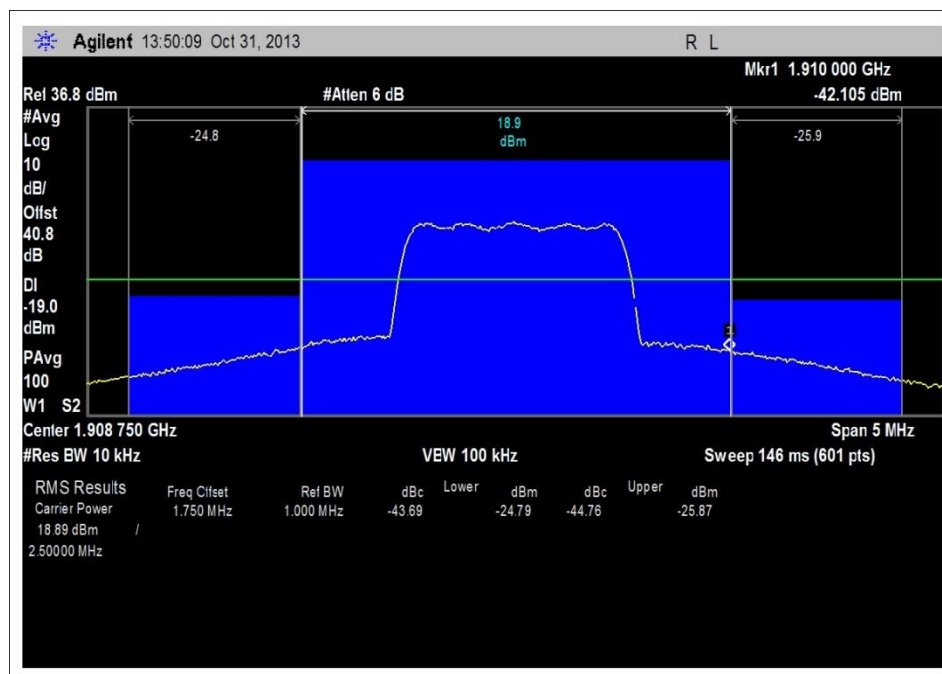
824-849MHz _L_ UL CDMA, input power = -39dBm, low bandedge emission = -34dBm



824-849MHz_H_ UL CDMA, input power= -39dBm, high bandedge emission = -34.7dBm



1850-1915MHz_L_UL CDMA, input power= -37dBm, low bandedge emission = -31.3dBm



1850-1915MHz_H_UL CDMA_input power = -33.2dBm, high bandedge power= -25.9dBm

Test Setup Photo



FCC 20.21(e)(8)(i)(F) Intermodulation Limits

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)(F) Intermodulation**
 Work Order #: **94297** Date: 10/31/2013
 Test Type: **Conducted Emissions** Time: 08:34:21
 Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Flex Pro 110V 60Hz
 S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster *	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

UL: 824-849, 1850-1910 MHz

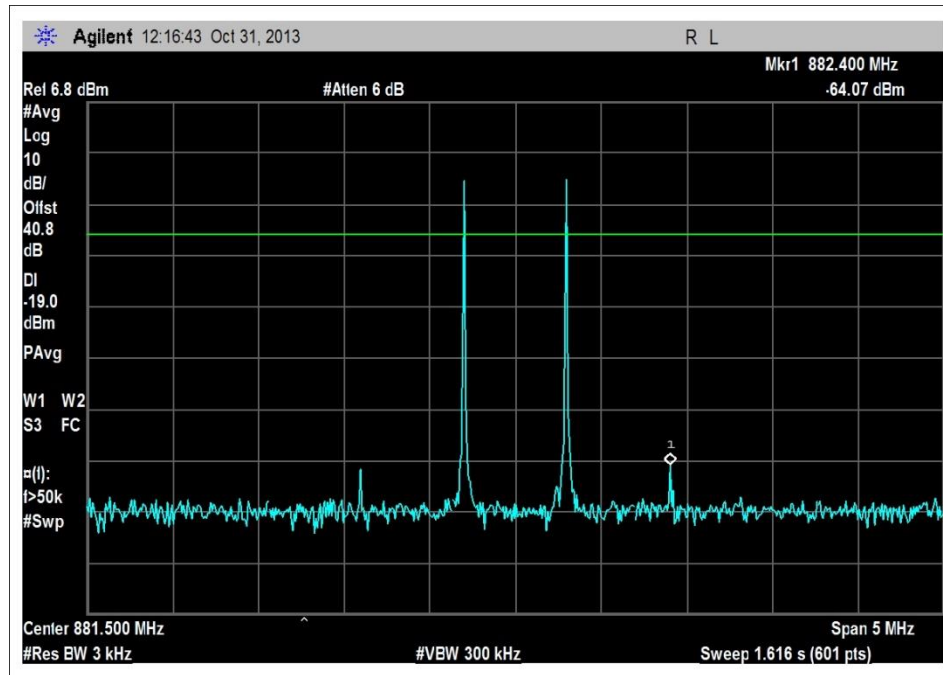
DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

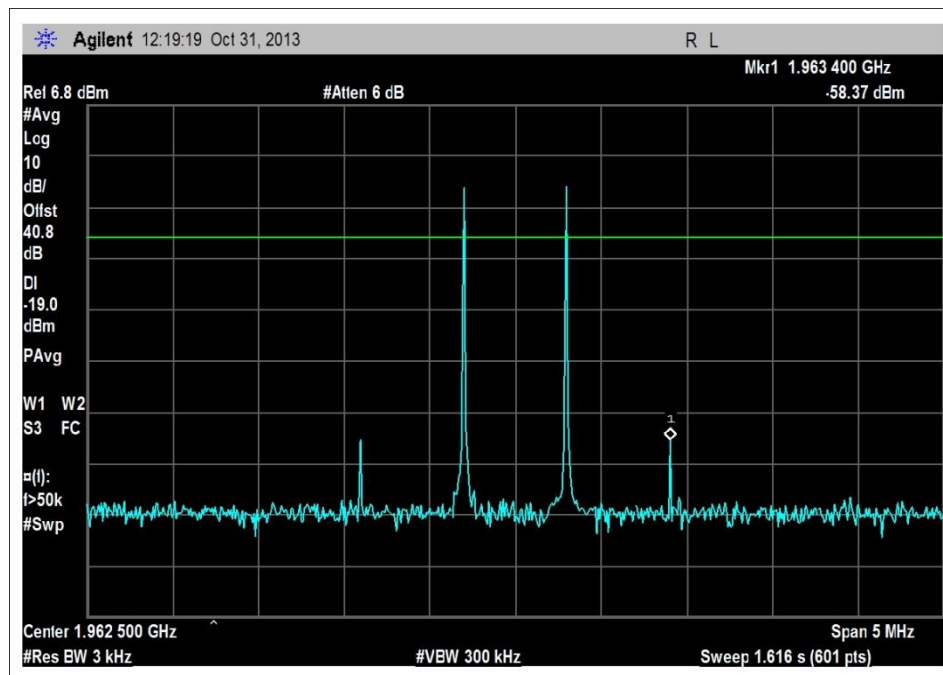
Test procedure: The test was performed in accordance with section 7.4 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516.

Note: The Booster shuts off at UL and DL power level of 10 dB above the AGC level.

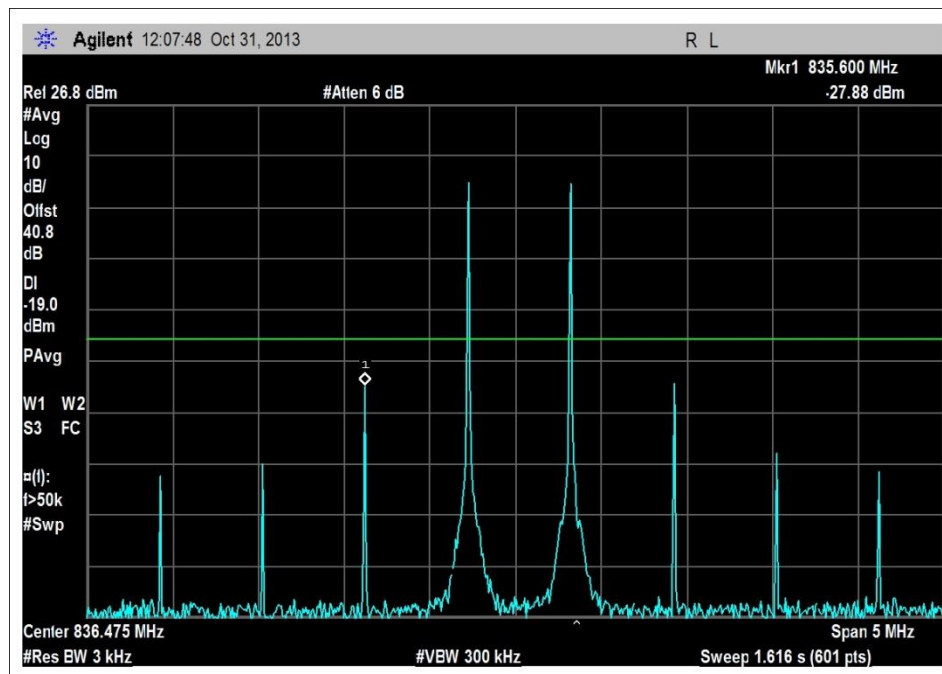
Test Data



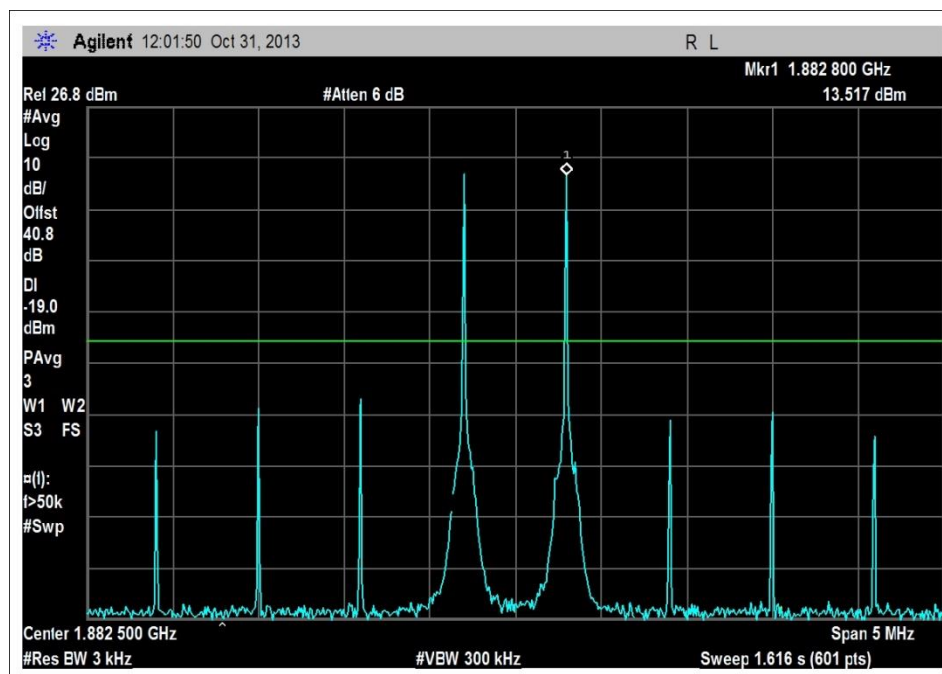
869-894MHz, DL



1930-1995MHz, DL

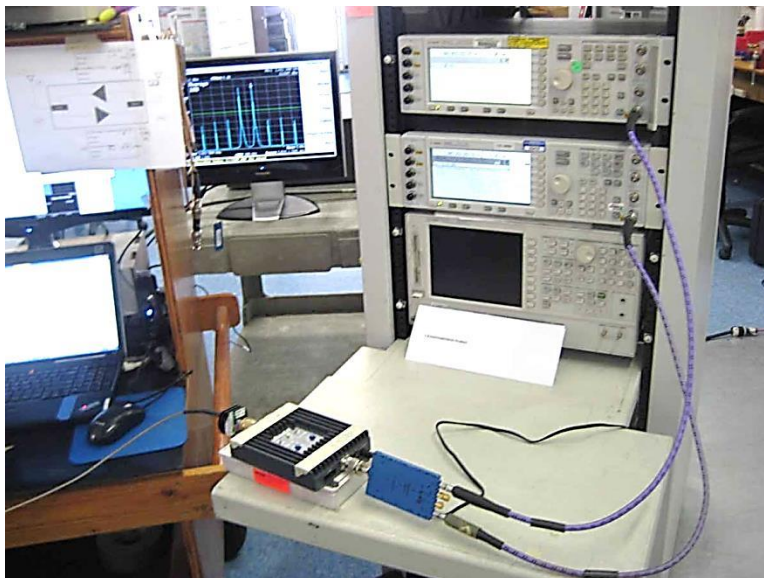


824-849MHz, UL



1850-1915MHz, UL

Test Setup Photos



FCC 20.21(e)(8)(i)(I) Uplink Inactivity

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)(I) Uplink In activity**

Work Order #: **94297** Date: 10/31/2013

Test Type: **Conducted Emissions** Time: 08:34:21

Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1

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

Model: Flex Pro 110V 60Hz

S/N: 1

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster *	Cellphone-Mate, Inc.	Flex Pro	1

Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285

Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.

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

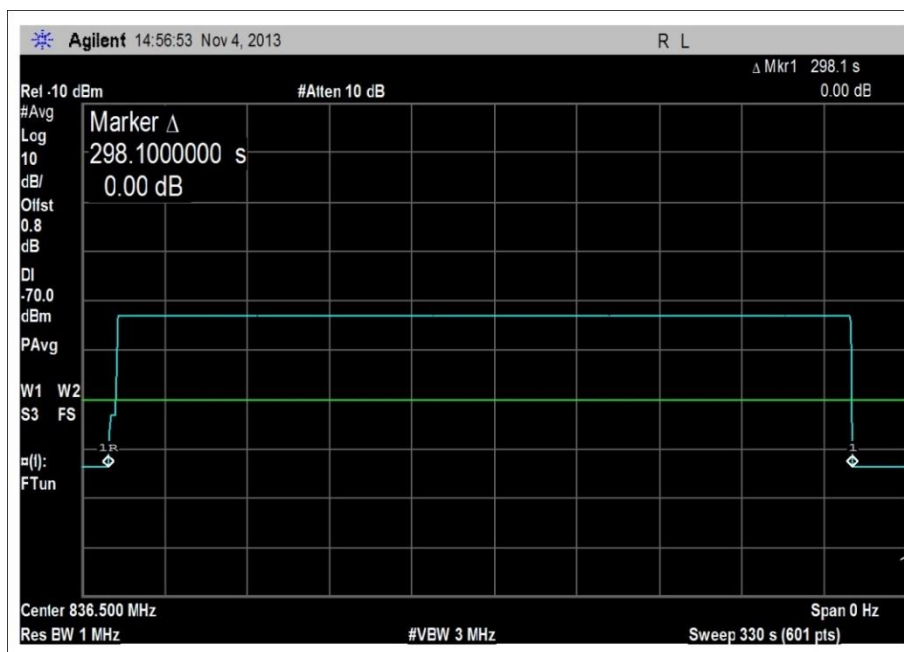
UL: 824-849, 1850-1910 MHz

DL: 869-894, 1930-1990 MHz

Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa

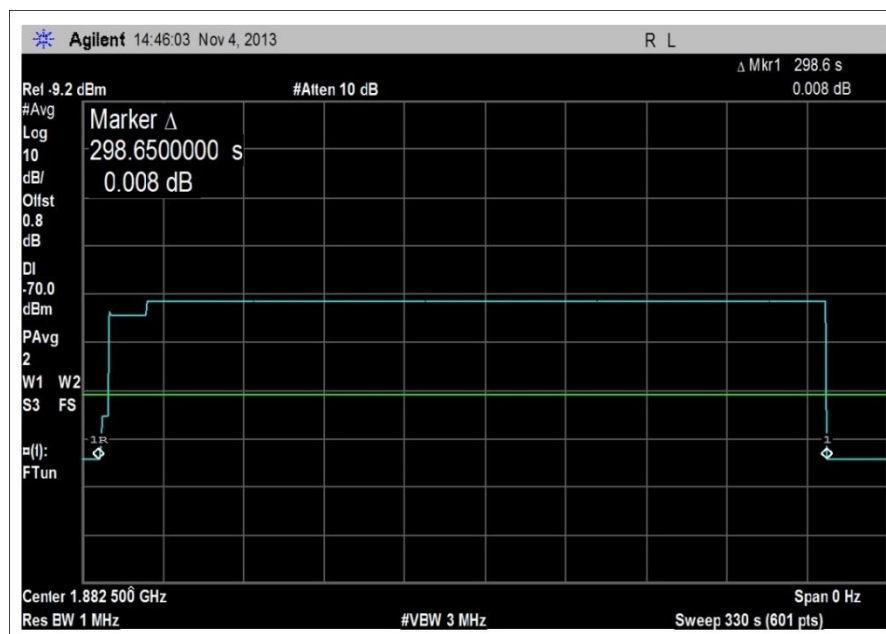
Test procedure: The test was performed in accordance with section 7.8 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516.

Test Data



824-849MHz

Marker 1R = EUT powered on, marker 1 = EUT TX off. Measured time between EUT detecting no Uplink signal at the server port and TX off =298.1s

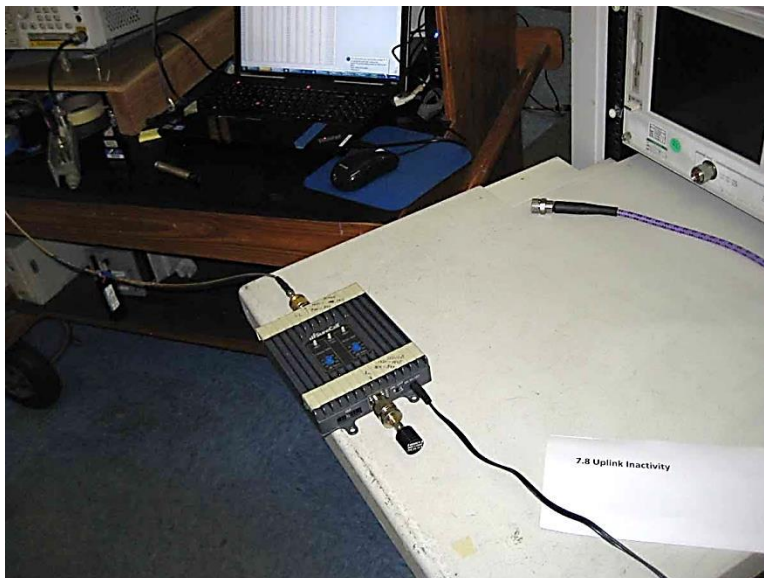


1850-1910MHz

Marker 1R = EUT powered on, marker 1 = EUT TX off.

Measured time between EUT detecting no Uplink signal at the server port and TX off =298.7s

Test Setup Photos



FCC 20.21(e)(8)(ii)(A) 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: **FCC20.21(e)(8)(ii)(A) Anti Oscillation detection.**
 Work Order #: **94297** Date: 10/31/2013
 Test Type: **Conducted Emissions** Time: 08:34:21
 Equipment: **Fixed Wideband Consumer Signal Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: E. Wong
 Model: Flex Pro 110V 60Hz
 S/N: 1

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
	AN03430	Attenuator	75A-10-12	9/5/2013	9/5/2015
	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015
	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
	AN03413	Band Pass Filter	PE8706	8/26/2013	8/26/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Fixed Wideband Consumer Signal Booster *	Cellphone-Mate, Inc.	Flex Pro	1

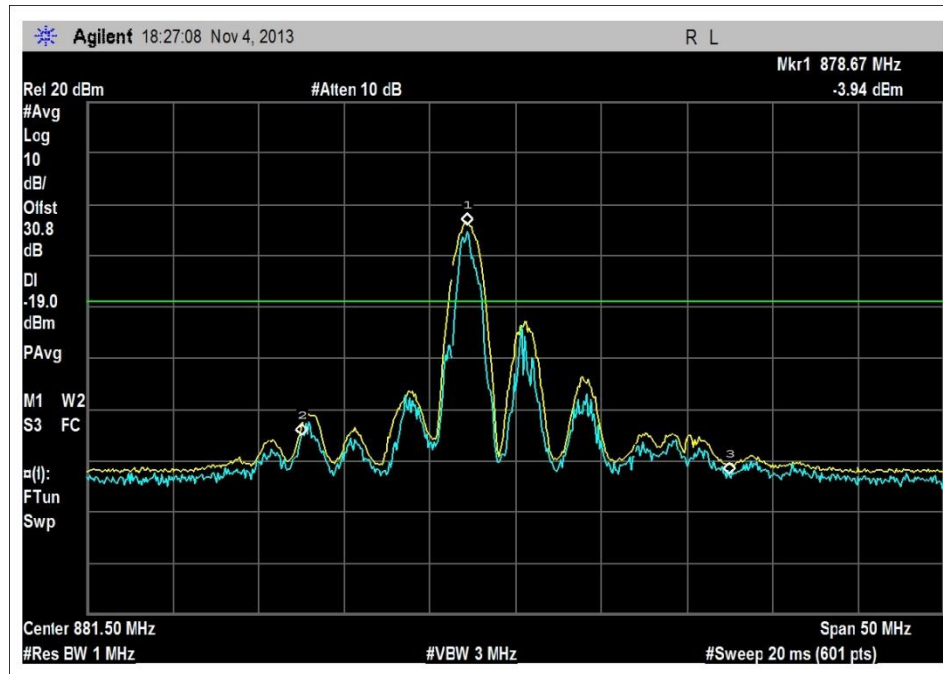
Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	SureCall	GFP181U-0628B-1	1209-0000285

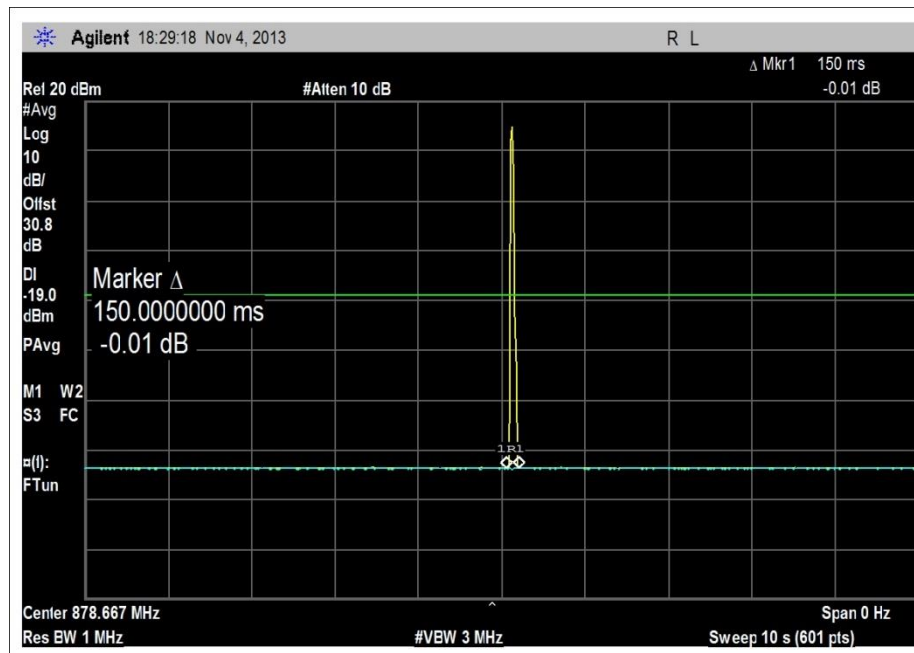
Test Conditions / Notes:

The EUT is placed on the test bench. Cellular -800 gain is set at Max gain of 60dB and PCS-1900 Gain is set at max gain of 65dB.
 Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
 UL: 824-849, 1850-1910 MHz
 DL: 869-894, 1930-1990 MHz
 Test environment conditions: 23.9°C, 40% Relative Humidity:100kPa
 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. Using spectrum analyzer. RMS detector was employed to show emission level presented in RMS value in the event that the level is to be compared to established limits. This test is a timing test hence Peak or RMS detector can be used for timing measurement. Three plots per CMRS band were captured. To demonstrate compliance.
 First plot demonstrates oscillation was detected with adjustable feedback path.
 Second plot with the center frequency set at highest detected oscillation, span 0 MHz, sweep time set at 10 sec The Detection and mitigation time was captured upon recycle of power.
 Third plot with sweep time set at 700 sec to capture detection and mitigation time between restart and demonstrates the booster ceased to restart after t Five restart following the initial detection.

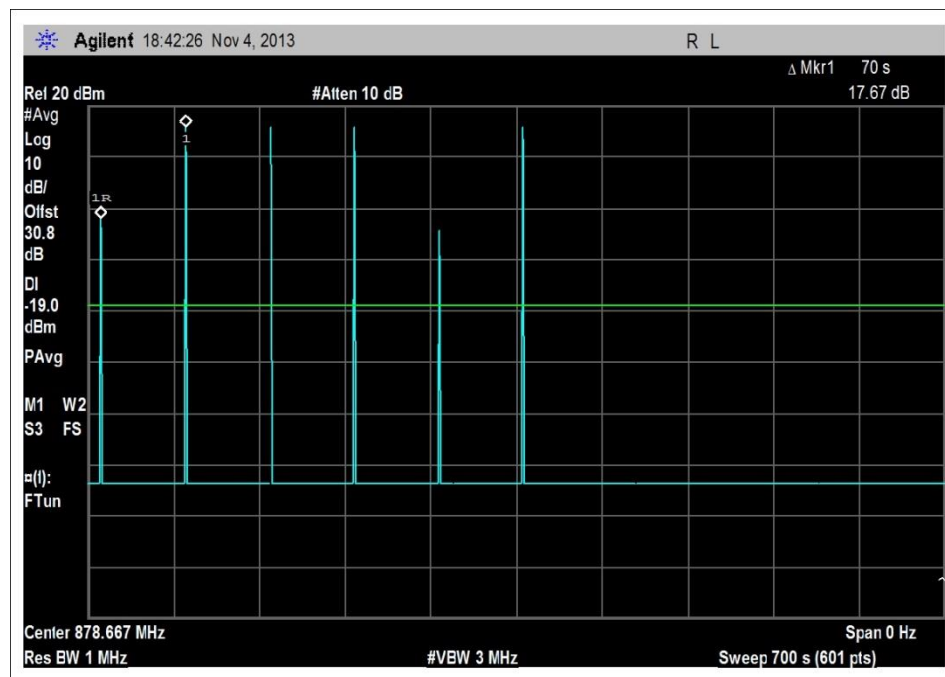
Test Data



869-894MHz, DL
Max Signal amplitude prior to Mitigation.

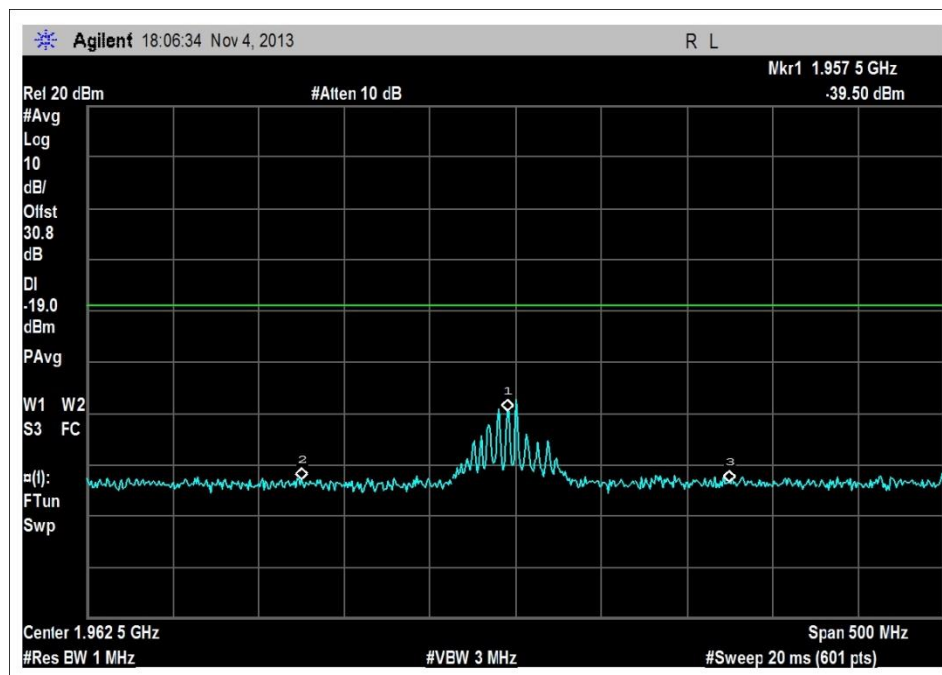


869-894MHz, DL sweep time @ 10 sec
Measured mitigation time =150ms

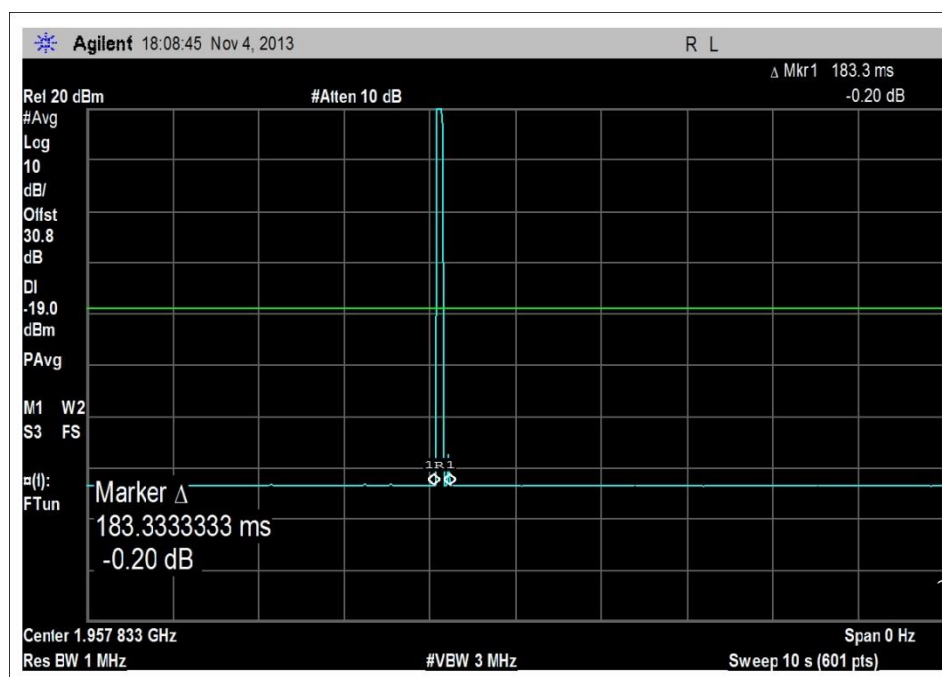


869-894MHz, DL sweep time @ 700 sec

Time between mitigation = 70 seconds (at least one minute) and ceased after the 5th restart, requiring manual reset.

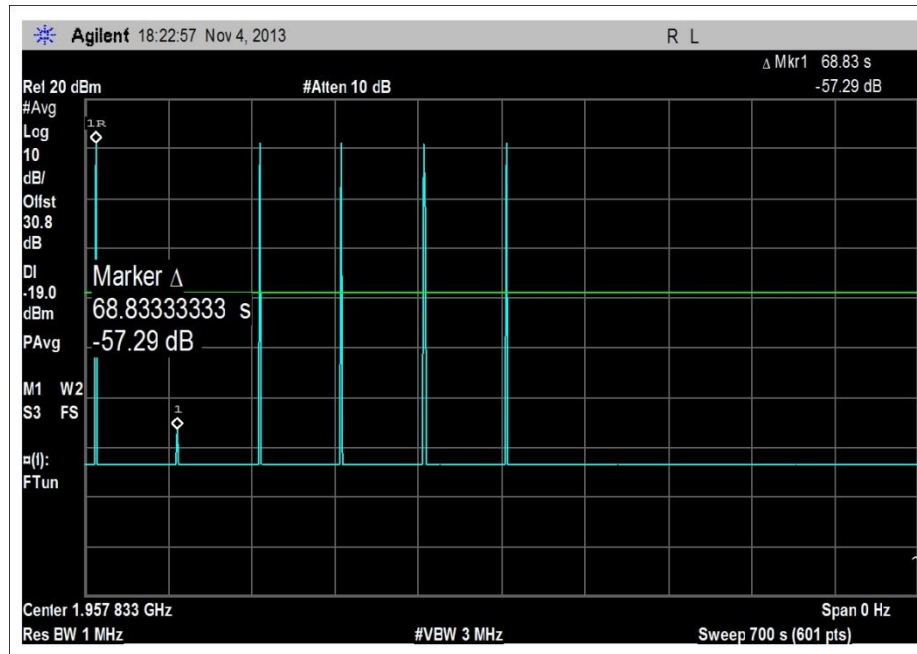


1930-1995MHz, DL
Max signal level prior to mitigation



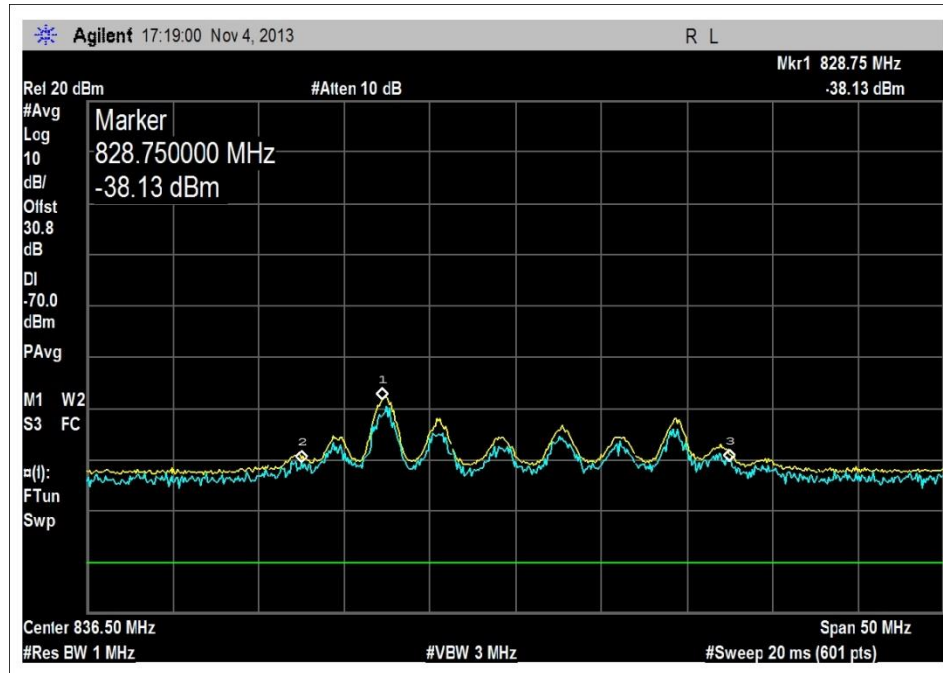
1930-1995MHz, DL sweep time @ 10 sec

Measured mitigation time =183.3 ms

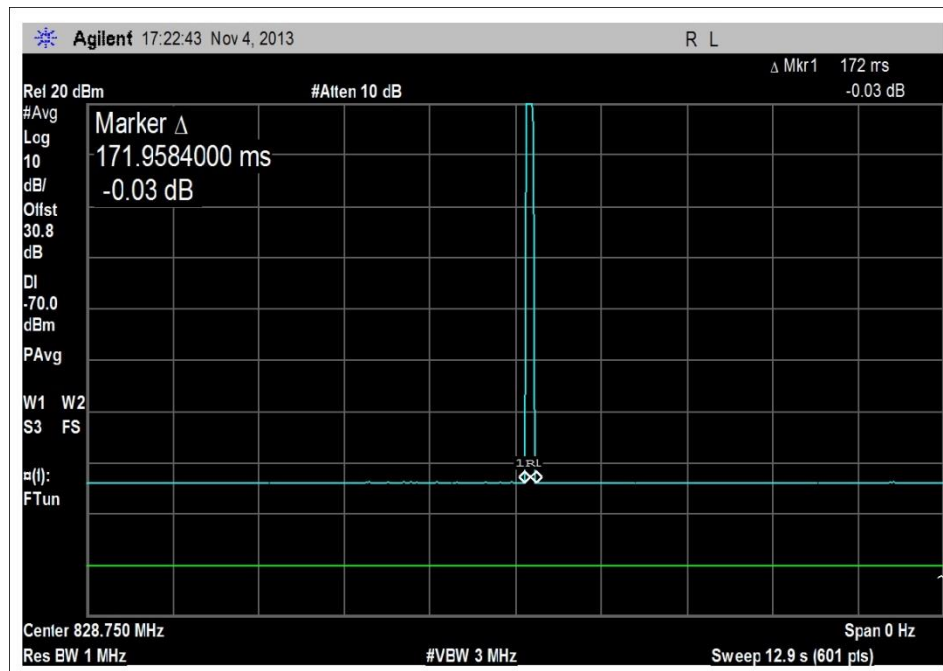


1930-1995MHz, DL sweep time @ 700 sec

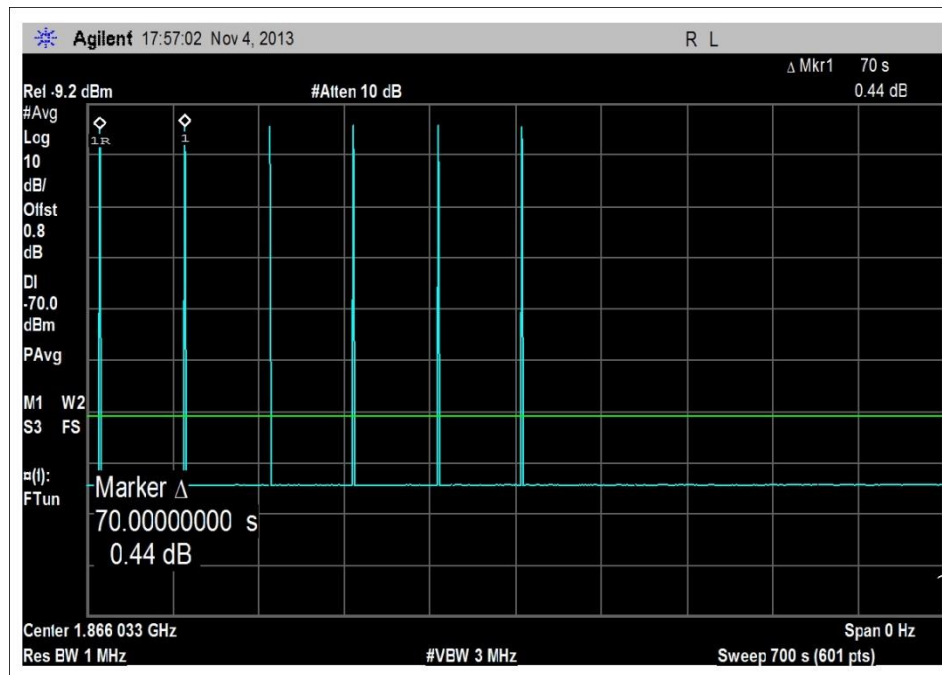
Time between mitigation = 68.8 seconds (at least one minute) and ceased after the 5th restart, requiring manual reset.



824-849MHz, ULMax signal amplitude prior to mitigation.

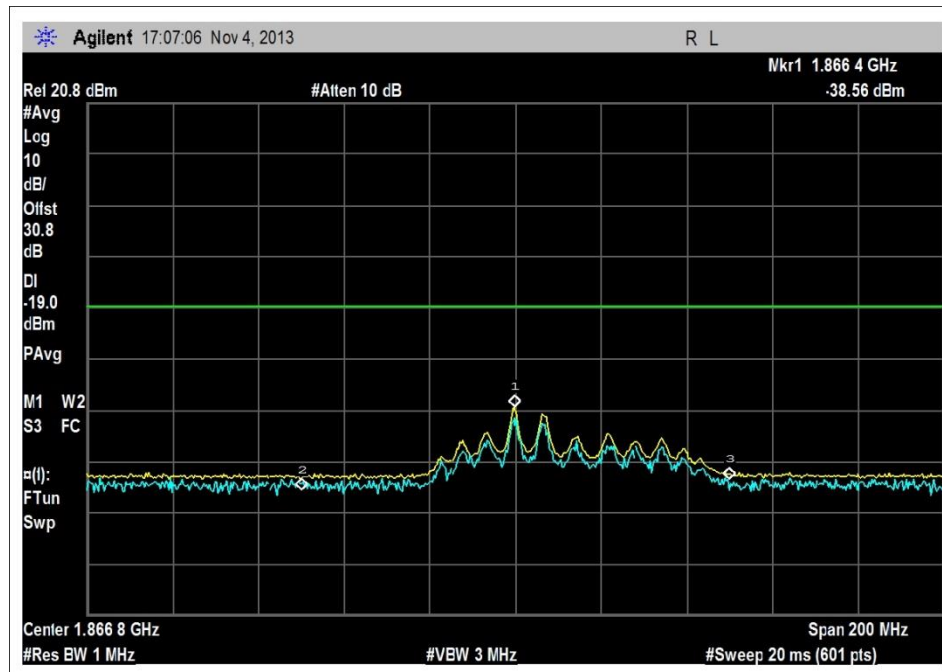


824-849MHz, UL sweep time @ 10 sec
Mitigation time = 171.9ms

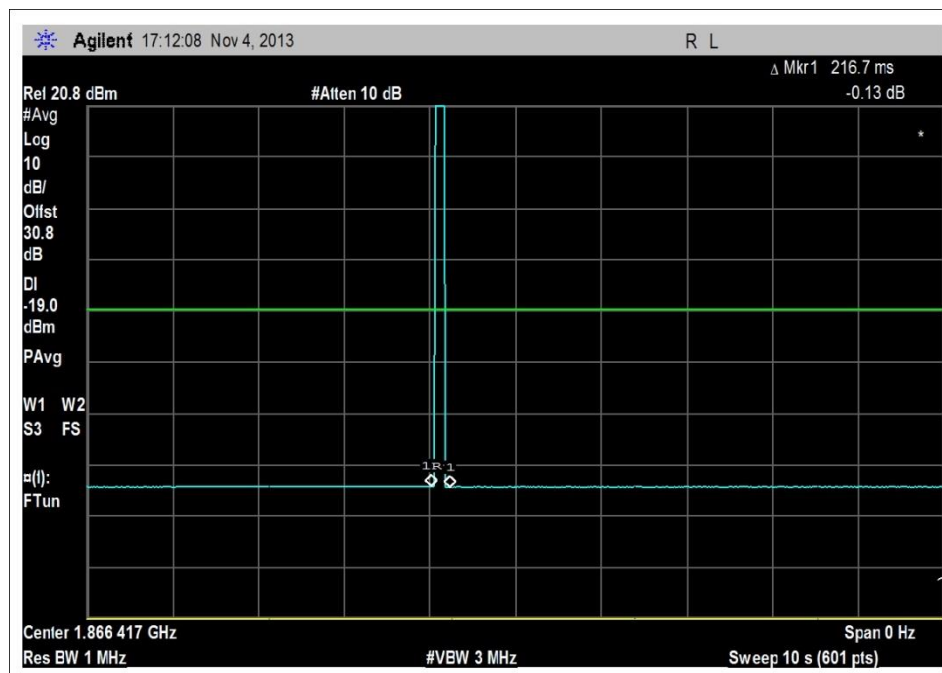


824-849MHz, UL sweep time @ 700 sec

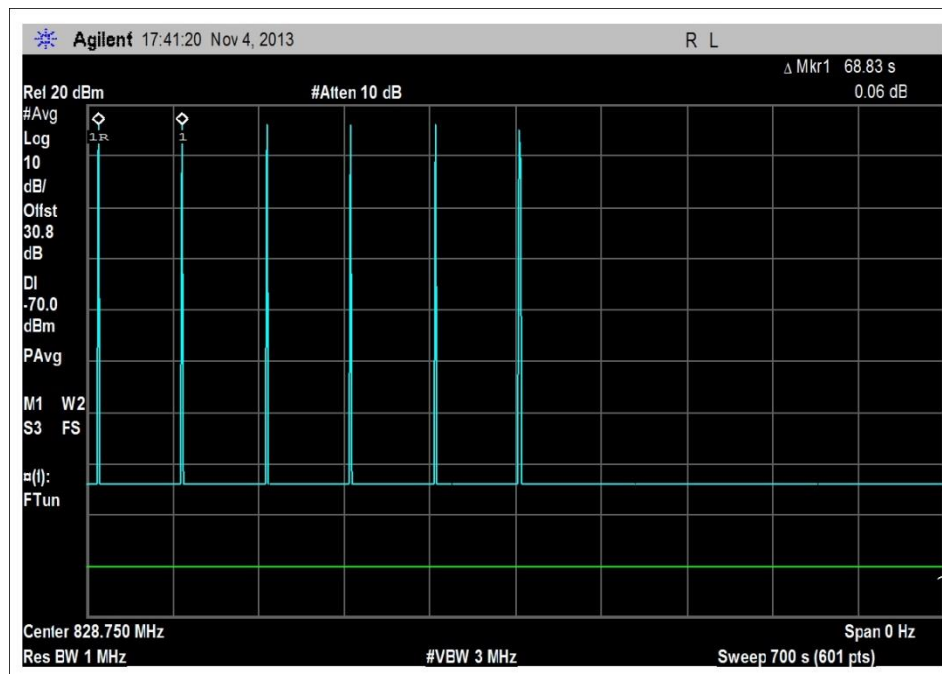
Time between mitigation =70 seconds (at least one minute) and ceased after the 5th restart, requiring manual reset.



1850-1915MHz, UL
Max signal amplitude prior to mitigation.



1850-1915MHz, UL sweep time @ 10 sec
Mitigation time = 216.7mS



1850-1915MHz, UL sweep time @ 700 sec

Time between mitigation = 68.8 seconds (at least one minute) and ceased after the 5th restart, requiring manual reset.

Test Setup Photos

