Cellphone-Mate, Inc.

REVISED TEST REPORT TO 100654-13A

5 Band Cellular Booster
Fusion4Home 3.0

Tested To The Following Standard:

FCC Part 20.21 / 22H / 24E / 27

Report No.: 100654-13B

Date of issue: August 14, 2018

ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

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.

Testing the Future
CKC LABORATORIES, INC.

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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

Representative: Dennis Findley
Customer Reference Number: CKC1172017A

REPORT PREPARED BY:

Terri Rayle
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 100654

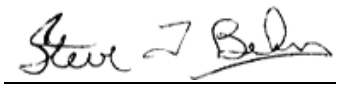
DATE OF EQUIPMENT RECEIPT: December 6, 2017
DATE(S) OF TESTING: December 6, 2017 – January 10, 2018
January 22, 2018, January 29, 2018
and September 4, 2018

Revision History

Original: Testing of the 5 Band Cellular Booster Model: Fusion4Home 3.0 to RSSS-131 Issue 3
Revision A: Replaced data in sections 7.2-7.3, DL2100-2155MHz pulse, updated Pre-AGC and Section 5.5 (Pulse GSM) tables changed input power and gain value.
Revision B: Original testing of section 7.4 was tested at the wrong frequency. Data is being replaced with new test results at the proper frequency. Removed the Supplemental Information from the end of the report, as it was not applicable. Updated the references to FCC Part 22H and 24E by adding the letter reference.

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 North Olinda Place
Brea, CA 92823

1120 Fulton Place
Fremont, CA 94539

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.03.11
EMITest Immunity	5.03.10

Site Registration & Accreditation Information

Location	NIST CB #	TAIWAN	CANADA	FCC	JAPAN
Brea D, CA	US0060	SL2-IN-E-1146R	3082D-2	US1025	A-0147
Fremont, CA	US0082	SL2-IN-E-1148R	3082B-1	US1023	A-0149

SUMMARY OF RESULTS

Standard / Specification: FCC Part 20.21/22H/24E/27
KDB 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v04r01, Oct 27, 2017

Correlation Matrix & Results					
Guidance Section	**Guidance Description**	**FCC Section**	**FCC Rule Description**	**Mods**	**Results**
7.1 a) - k)	Authorized Frequency Band Verification Test	20.21(e)(3)	Frequency Bands	NA	Pass
7.2.2 a) - k)	Maximum Power Measurement Procedure	2.1046/20.21(e)(8)(i)(D)	Power Limit	NA	Pass
7.3 a) - d)	Maximum Booster Gain Computation	20.21(e)(8)(i)(B)	Bidirectional Capabilities	NA	Pass
7.4 a) - n)	Intermodulation Product	20.21(e)(8)(i)(F)	Intermodulation Limit	NA	Pass
7.5 a) - n)	Out of Band Emissions	20.21(e)(8)(i)(E)	Out of Band Emission	NA	Pass
7.6 a) - e)	Conducted Spurious Emission	2.1051/22H/24E/27	Spurious emission	NA	Pass
7.7.1 a) - g) 7.7.1 h) - n) 7.7.2 a) - g)	Noise Limit Procedure Variable Noise Variable Noise Timing	20.21(e)(8)(i)(A)(2)(i) 20.21(e)(8)(i)(A)(1) 20.21(e)(8)(i)(H)	Noise Limits Transmit Power Off Mode	NA	Pass
7.8 a) - l)	Uplink inactivity	20.21(e)(8)(i)(I)	Uplink Inactivity	NA	Pass

NA = Not applicable.

Standard / Specification: FCC Part 20.21/22H/24E/27 - continued

Correlation Matrix & Results					
Guidance Section	**Guidance Description**	**FCC Section**	**FCC Rule Description**	**Mods**	**Results**
7.9.1 a) - l) 7.9.2 a) - f)	Variable Booster Gain Variable Uplink Gain Timing	20.21(e)(8)(i)(C) (1), (2)(i) 20.21(e)(8)(i)(H)	Booster Gain Transmit Power Off Mode	NA	Pass
7.10.a) - j)	Occupied Band Width	2.1049/22H/24E/27	Occupied Band Width	NA	Pass
7.11.2 a) - r) 7.11.3 a) - h) 7.11.4 a) - h) (alternate to 7.11.3)	Anti-Oscillation	20.21(e)(8)(ii)(A)	Anti-Oscillation	NA	Pass
7.12a) - f)	Radiated Spurious Emission	2.1053/ 22H/24E/27	Spurious Emission	NA	Pass
7.13 a) - c)	Spectrum Block Filter	NA	NA	NA	NA[1]

NA = Not applicable.

NA[1] = Not applicable. This device does not employ spectrum block filter.

Modifications During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions
No modifications were made during testing.

Modifications listed above must be incorporated into all production units.

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

During testing, numerous configurations may have been utilized. The configurations listed below support compliance to the standard(s) listed in the Summary of Results section.

Equipment Tested:

Device	Manufacturer	Model #	S/N
5 Band Cellular Booster	Cellphone-Mate, Inc.	Fusion4Home 3.0	20171103003
Power Supply	Cellphone-Mate, Inc.	GFP451DA-1238-1	1404-0000347

Support Equipment:

Device	Manufacturer	Model #	S/N
None			

General Product Information:

Product Information	Manufacturer-Provided Details
Equipment Type:	Stand-Alone Equipment
Type of Equipment	Zone Enhancer
Operating Frequency Range:	UL: 824-849MHz DL: 869-894MHz UL: 1850-1915MHz DL: 1930-1995MHz UL: 1710-1755MHz, 698-716MHz, 776-787MHz DL: 2110-2155MHz, 728-746MHz, 746-757MHz
OBW and Emissions Type(s):	GXW (GSM) G7W (EDGE) F9W(CDMA) F9W(WCDMA) W7D (LTE) G7D (LTE) See table below for OBW
Modulation Type(s):	0.3 GMSK (GSM) 3p/8 8-PSK (EDGE) QPSK (CDMA) BPSK/QPSK (WCDMA) OFDM (LTE)
Number of TX Chains:	1
Antenna Type(s) and Gain:	Dedicated, See antenna kitting information
Beamforming Type:	NA
Antenna Connection Type:	UL: 75 Ohm/ F type DL: 50 Ohm/ N type
Nominal Input Voltage:	5.9VDC
Firmware / Software used for Test:	V3.0

FCC PART 20.21/22H/24E/27

7.1 Authorized Frequency Band Verification

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Pl, Brea, CA 92823 • 714 993-6112		
Customer:	Cellphone-Mate, Inc.		
Specification:	**7.1 Authorized Frequency Band Verification**		
Work Order #:	**100654**	Date:	12/06/17
Test Type:	**Conducted Emissions**		
Tested By:	**Don Nguyen**		
Software:	EMITest 5.03.11		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The equipment under test (EUT) is a Fixed Wideband Consumer Booster.
The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
The EUT Server port is a type N connector and 50-ohm impedance.
The EUT Donor port is type F connector and 75-ohm impedance.

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

Test procedure:
The test was performed in accordance with section 7.1 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v04r01 Dated October 27, 2017

Test environment conditions:
Temperature: 22°C, 31% relative humidity, 101.5 kPa

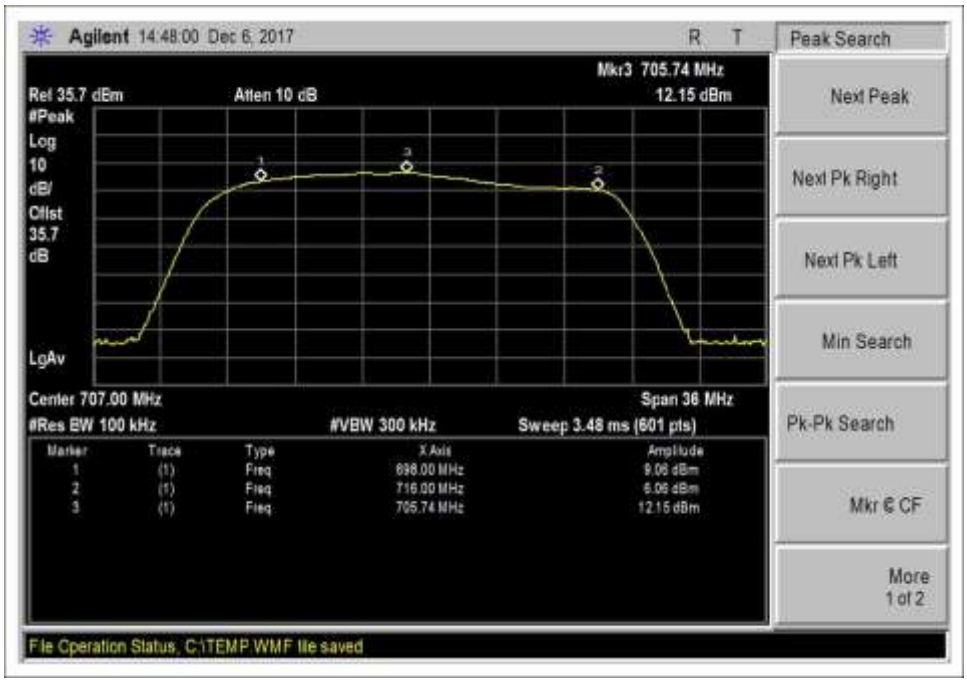
Test Equipment:

Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
P07037	Signal Generator	Agilent	E4432B	10/6/2016	10/6/2018
P06958	Attenuator	Pasternack	PE7083	2/5/2016	2/5/2018
P06554	Cable	Astrolab	32022-29094K-29094K-24TC	12/30/2015	12/30/2017
P06662	Cable	Gore	PHASEFLEX EJR01N01024.0	4/5/2016	4/5/2018
03432	Attenuator	Aeroflex/Weinschel	90-30-34	10/27/2017	10/27/2019
02869	Spectrum Analyzer	Agilent	E4440A	8/1/2017	8/1/2018

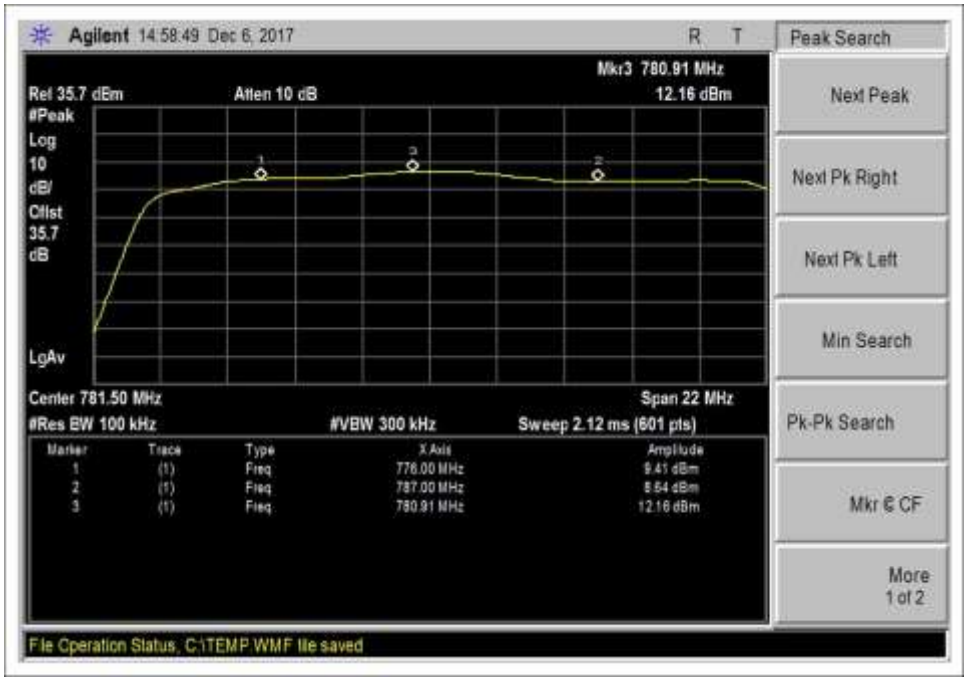
Summary of Results

Pass: The plots below show the device only operates on the CMRS frequency bands authorized for use by the NPS.

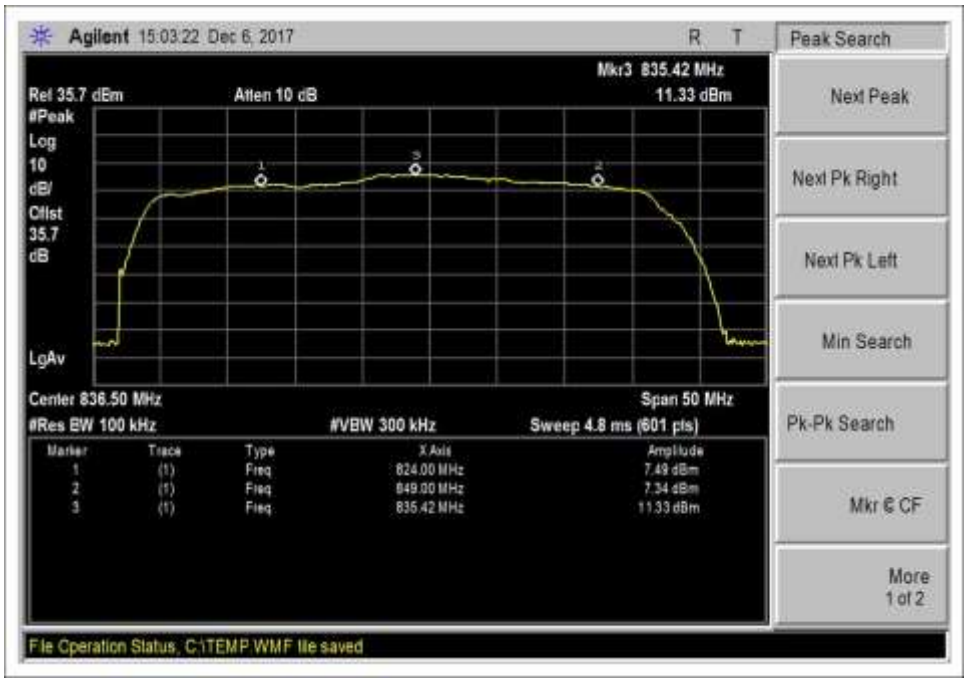
Plots



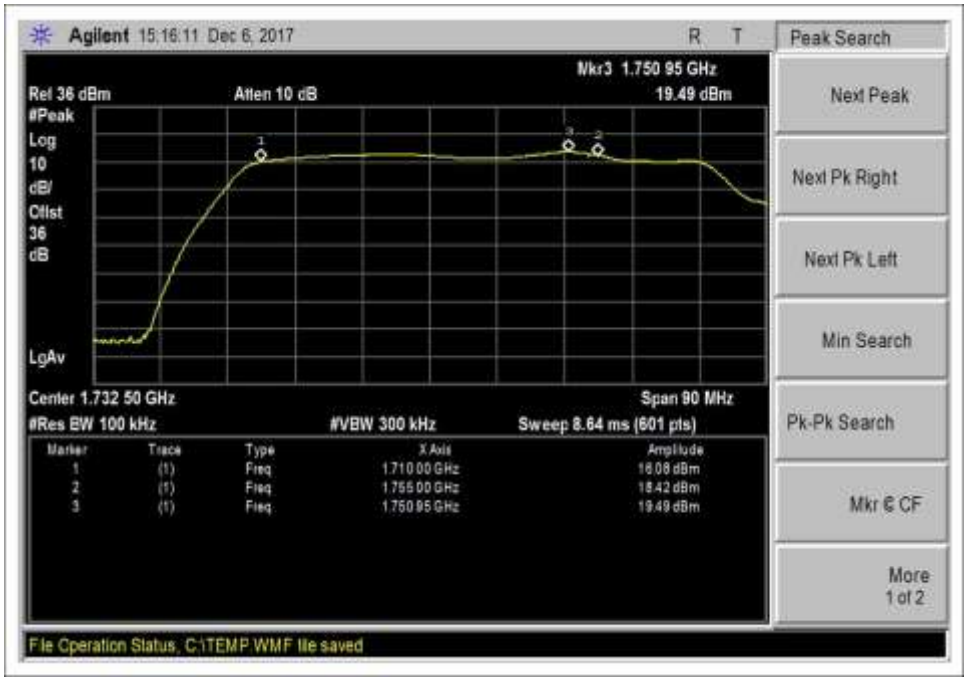
7.1 UL 698-716M



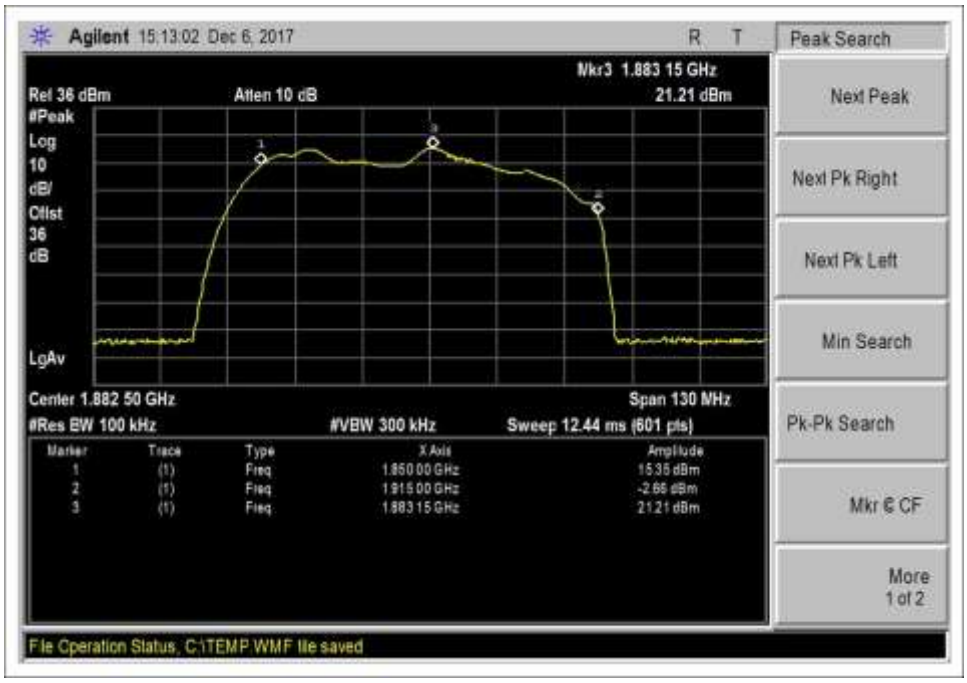
7.1 UL 776-787M



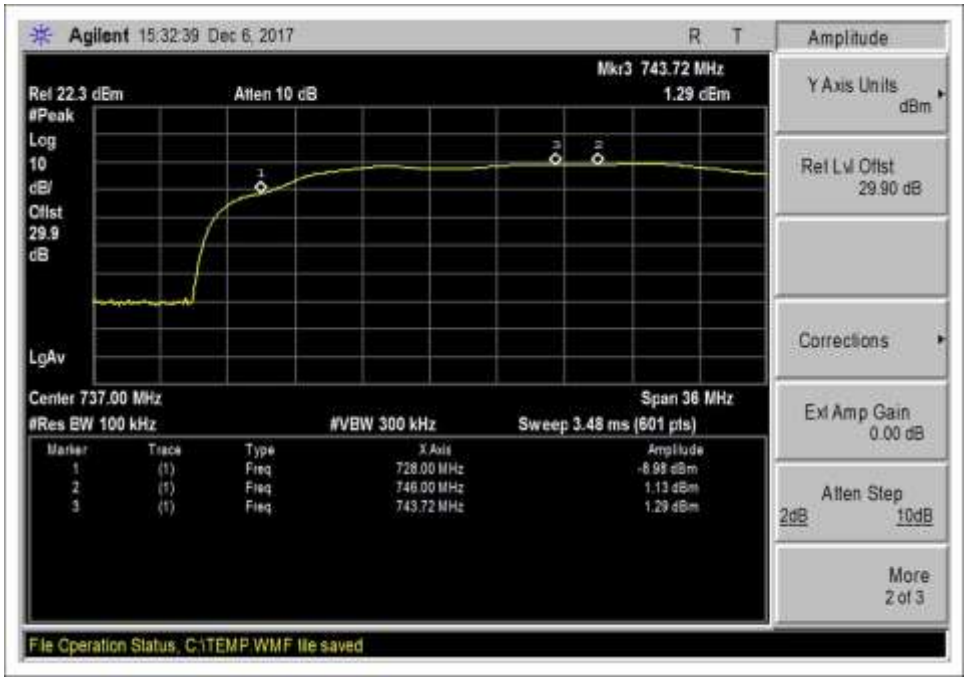
7.1 UL 824-849M



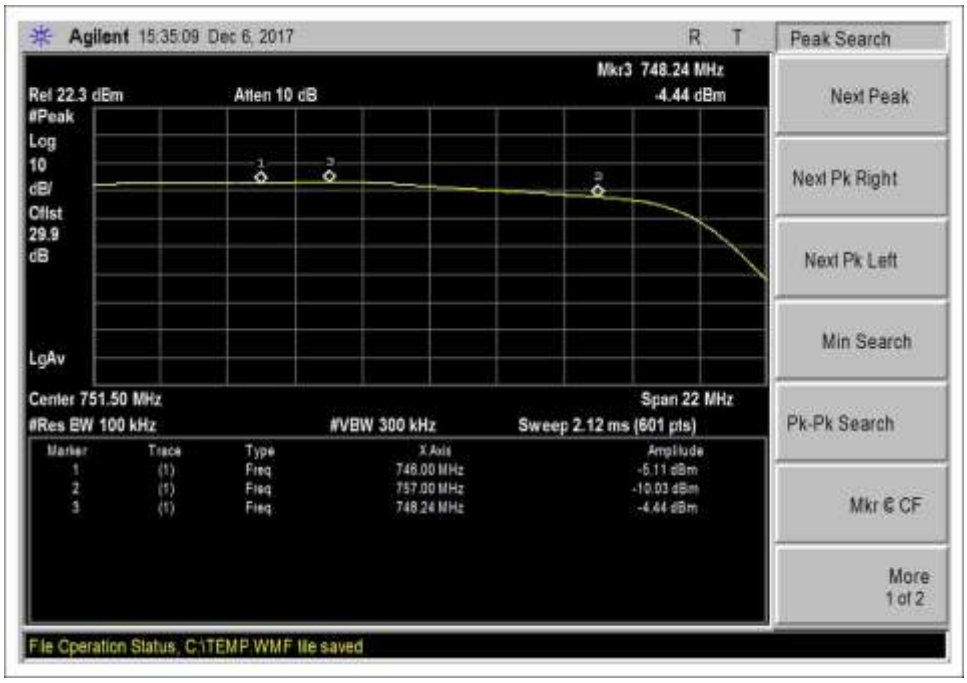
7.1 UL 1710-1755M



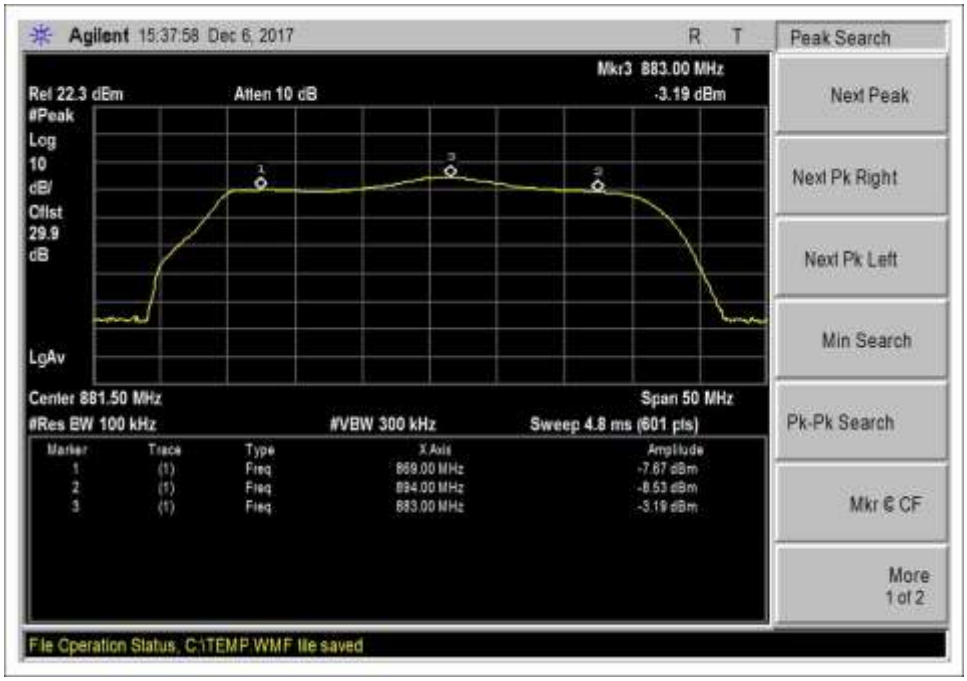
7.1 UL 1850-1915M



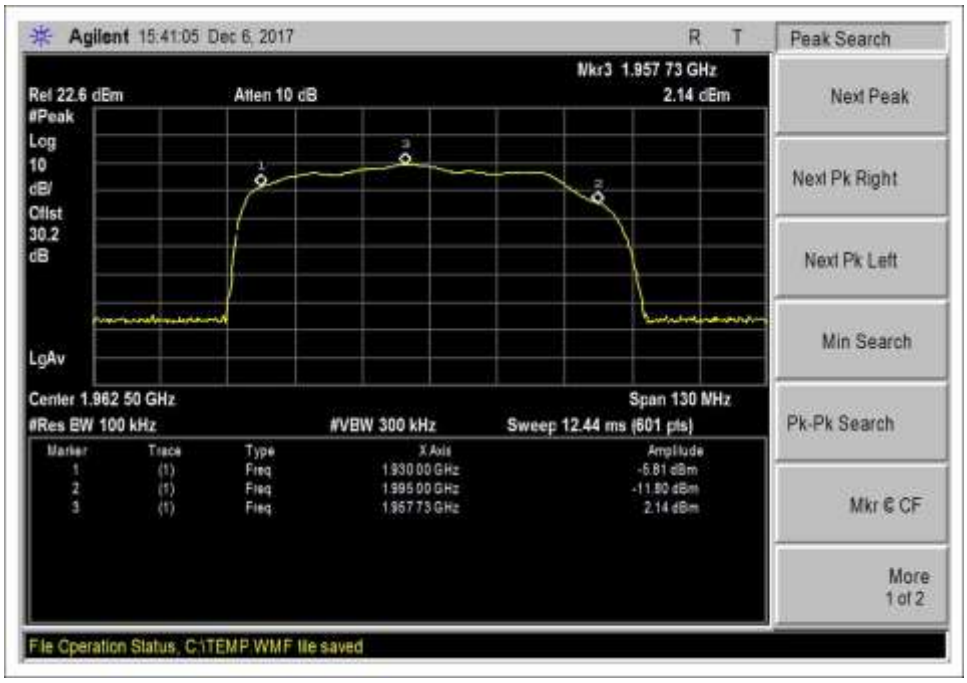
7.1 DL 728-746M



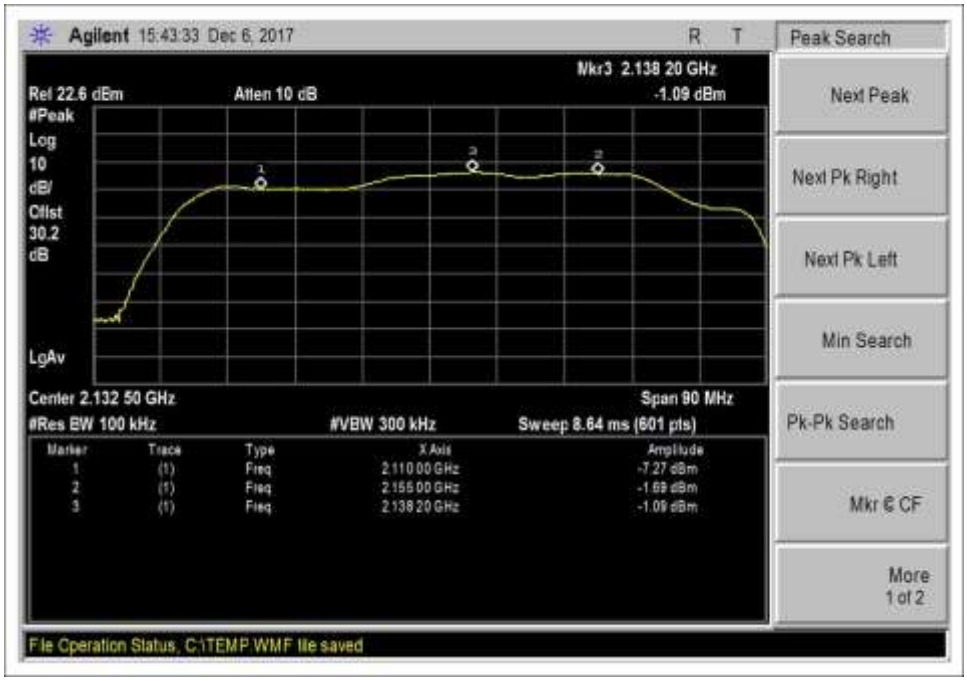
7.1 DL 746-757M



7.1 DL 869-894M



7.1 DL 1930-1995M



7.1 DL 2110-2155M

7.2 Maximum Power Measurement and 7.3 Maximum Booster Gain

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Pl, Brea, CA 92823 • 714 993-6112		
Customer:	Cellphone-Mate, Inc.		
Specification:	**7.2 Maximum Power Measurement** **7.3 Maximum Booster Gain**		
Work Order #:	**100654**	Date:	12/19/17, 1/22/18 and 1/29/18
Test Type:	**Conducted Emissions**		
Tested By:	**Eddie Wong**		
Software:	EMITest 5.03.11		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The equipment under test (EUT) is a Fixed Wideband Consumer Booster.
The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
The EUT Server port is a type N connector and 50-ohm impedance.
The EUT Donor port is type F connector and 75-ohm impedance.

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

Test procedure:
The test was performed in accordance with section 7.2 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v04r01 Dated October 27, 2017

Test environment conditions:
Temperature: 21°C, 28.3% relative humidity, 102.0 kPa
For testing 1/29/2018: Temperature: 21°C, 41% relative humidity, Pressure: 100 kPa

Test Equipment:

Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
03418	Signal Generator	Agilent	E4438C	6/19/2017	6/19/2019
P07191	Cable	Astro	32022-29094K-29094K-48TC	10/30/2017	10/30/2019
P07192	Cable	Astro	32022-29094K-29094K-48TC	10/9/2017	10/9/2019
05411	Attenuator	Weinschel	54A-10	1/18/2016	1/18/2018
05411*	Attenuator	Weinschel	54A-10	1/19/2018	1/19/2020
03471	Spectrum Analyzer	Agilent	E4440A	1/4/2016	1/4/2018
03470*	Spectrum Analyzer	Agilent	E4440A	1/3/2018	1/3/2020
C00126	Attenuator	Fairview Microwave	IS1595	12/19/2017	12/19/2019
C00128*	Attenuator	Fairview Microwave	IS1595	1/22/2018	1/22/2019

*This piece of equipment was used on the test date of 1/22/2018 and 1/29/2018.

Summary of Results

Pass: As summarized in table below, measured EIRP, Gain and UL/DL gain ratio are within limits.

Pre AGC							
	Pulse CW			4.1 MHz AWGN			Limit
Frequency (MHz)	Input (dBm)	Output (dBm)	Gain (dB)	Input (dBm)	Output (dBm)	Gain (dB)	Gain (dB)
UL 1710-1755	-48.9	20.8	69.7	-48.2	21.6	69.8	71.3
UL 1850-1915	-50.3	20.4	70.7	-47.6	20.6	68.2	72.0
UL 824-849	-34.9	25.1	60.0	-35.5	24.1	59.6	64.9
UL 698-716	-33.6	25.7	59.3	-36.2	24.4	60.6	63.5
UL 776-787	-31.8	26.0	57.8	-35.8	25.4	61.2	64.4
DL 2110-2155	-61.4	9.2	70.6	-60.6	9.1	69.7	NA
DL 1930-1995	-59.2	7.9	67.1	-58.0	8.5	66.5	NA
DL 869-894	-56.0	8.2	64.2	-56.5	6.4	62.9	NA
DL 728-746	-54.8	6.2	61.0	-57.3	3.7	61.0	NA
DL 746-757	-53.8	8.0	61.8	-54.7	6.4	61.1	NA

Pulsed GSM						
Frequency (MHz)	**Conducted Output Power (dBm)**	**Ant Gain (dBi)**	**Cable Loss (dB)**	**EIRP (dBm)**	**Conducted Limit Min (dBm)**	**Conducted and EIRP Limit Max (dBm)**
UL 1710-1755	20.8	10	6.22	**24.6**	17	30
UL 1850-1915	20.4	10	6.42	**24.0**	17	30
UL 824-894	25.1	8	3.75	**29.4**	17	30
UL 698-716	25.7	7	3.32	**29.4**	17	30
UL 776-787	26.0	7	3.32	**29.7**	17	30
DL 2110-2155	9.2	10	3.76	**15.4**	NA	17
DL 1930-1995	7.9	10	3.56	**14.3**	NA	17
DL 869-894	8.2	7	2.29	**12.9**	NA	17
DL 728-746	6.2	7	2.06	**11.1**	NA	17
DL 746-757	8.0	7	2.06	**12.9**	NA	17

AWGN						
Frequency (MHz)	**Conducted Output Power (dBm)**	**Ant Gain (dBi)**	**Cable Loss (dB)**	**EIRP (dBm)**	**Conducted Limit Min (dBm)**	**Conducted and EIRP Limit Max (dBm)**
UL 1710-1755	21.6	10	6.22	25.4	17	30
UL 1850-1915	20.6	10	6.42	24.2	17	30
UL 824-894	24.1	8	3.75	28.4	17	30
UL 698-716	24.4	7	3.32	28.1	17	30
UL 776-787	25.4	7	3.32	29.1	17	30
DL 2110-2155	9.1	10	3.76	15.3	NA	17
DL 1930-1995	8.5	10	3.56	14.9	NA	17
DL 869-894	6.4	7	2.29	11.1	NA	17
DL 728-746	3.7	7	2.06	8.6	NA	17
DL 746-757	6.4	7	2.06	11.3	NA	17

Note: Max Antenna gain and cable losses values are based on the antenna kitting (SC231W-75Ω, SC-RG6 -50, SC248W, SC240-20NN)

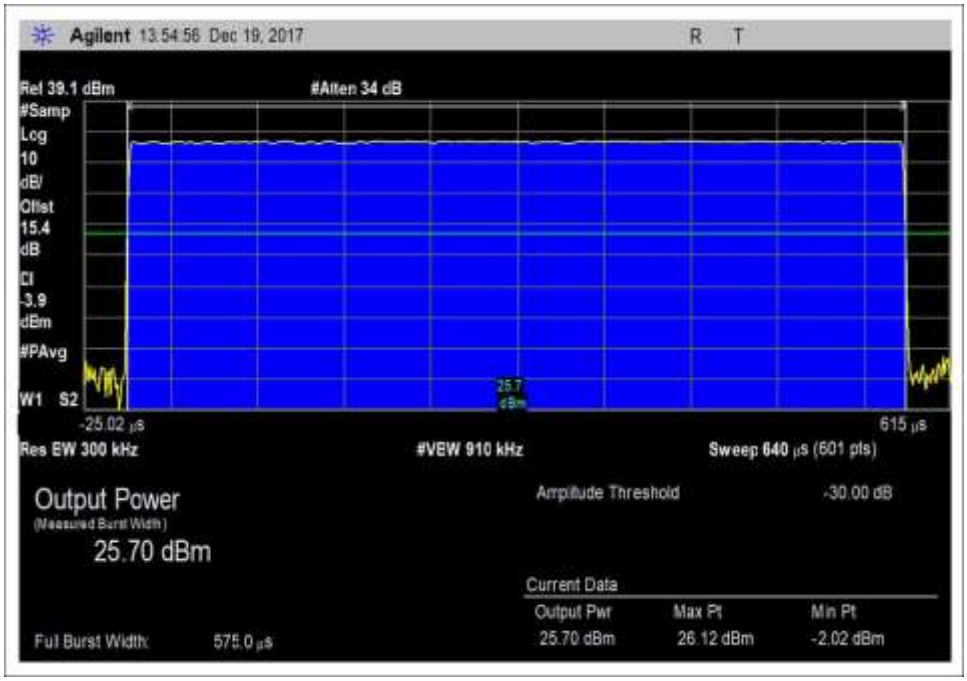
Section 5.5 power							
	Pulse GSM			4.1 MHz AWGN			Limit
Frequency (MHz)	Input (dBm)	Output (dBm)	Gain (dB)	Input (dBm)	Output (dBm)	Gain (dB)	Gain (dB)
UL 1710-1755	-40.9	20.6	61.5	-39.0	20.7	59.7	71.3
UL 1850-1915	-40.3	20.1	60.4	-39.4	20.5	59.9	72.0
UL 824-849	-25.9	25.0	50.9	-26.5	23.9	50.4	64.9
UL 698-716	-27.3	25.1	52.4	-27.9	23.2	51.1	63.5
UL 776-787	-27.6	25.3	52.9	-28.8	24.4	53.2	64.4
DL 2110-2155	-42.0	7.3	49.3	-37.7	7.6	45.3	NA
DL 1930-1995	-38.4	7.2	45.6	-37.8	8.2	46.0	NA
DL 869-894	-41.9	8.0	49.9	-43.9	6.3	50.2	NA
DL 728-746	-42.0	5.5	47.5	-44.5	3.9	48.4	NA
DL 746-757	-38.9	8.7	47.6	-39.8	6.6	46.4	NA

Note: The booster went into Transmitter off mode at Max input power in accordance with section 5.5. Results presented on the above table are at 1 dB below the Transmit off RF input level.

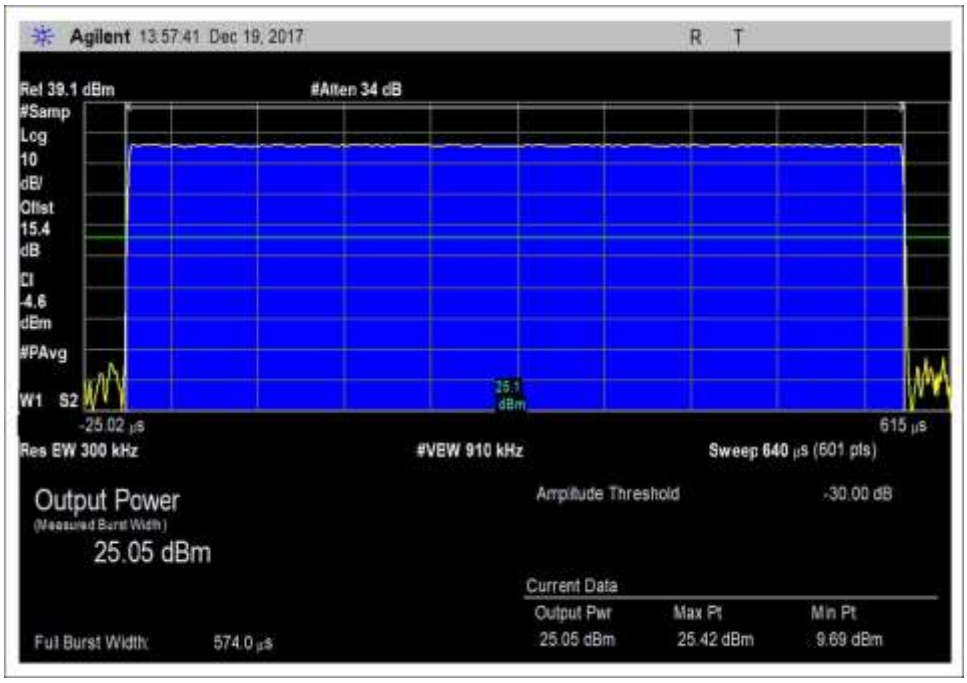
UL gain vs DL gain	Pulse GSM (dB)	4.1MHz AWGN (dB)	Limit (dB)
UL gain vs DL gain 1710/2110	7.0	0.1	9.0
UL gain vs DL gain 1850/1930	3.6	1.7	9.0
UL gain vs DL gain 824/869	-4.2	-3.3	9.0
UL gain vs DL gain 776/728	-1.7	-0.4	9.0
UL gain vs DL gain 776/746	-4.0	0.1	9.0

Plots

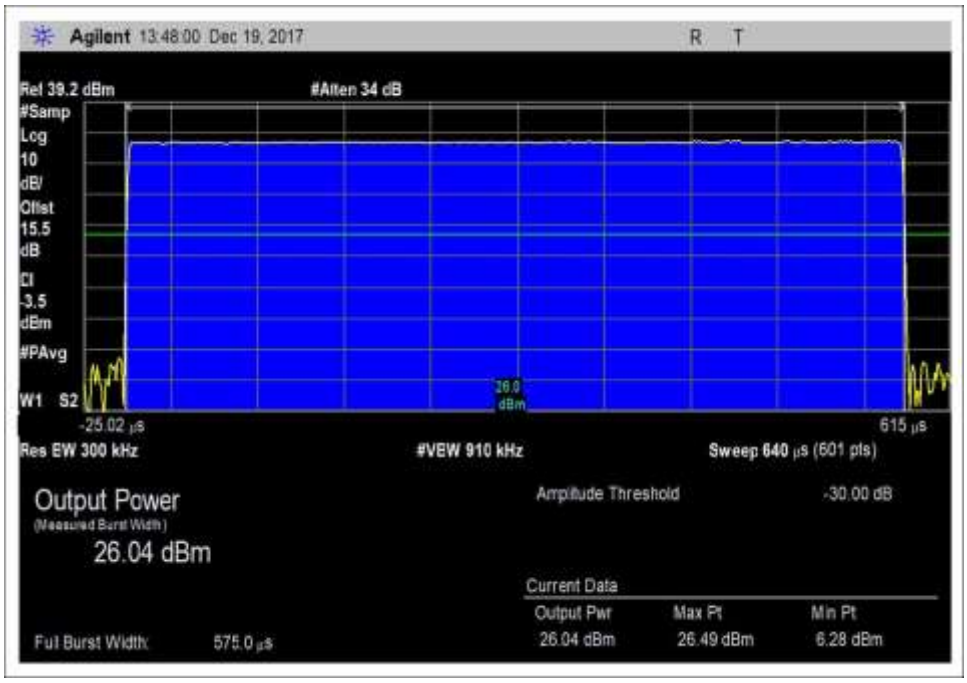
PULSE



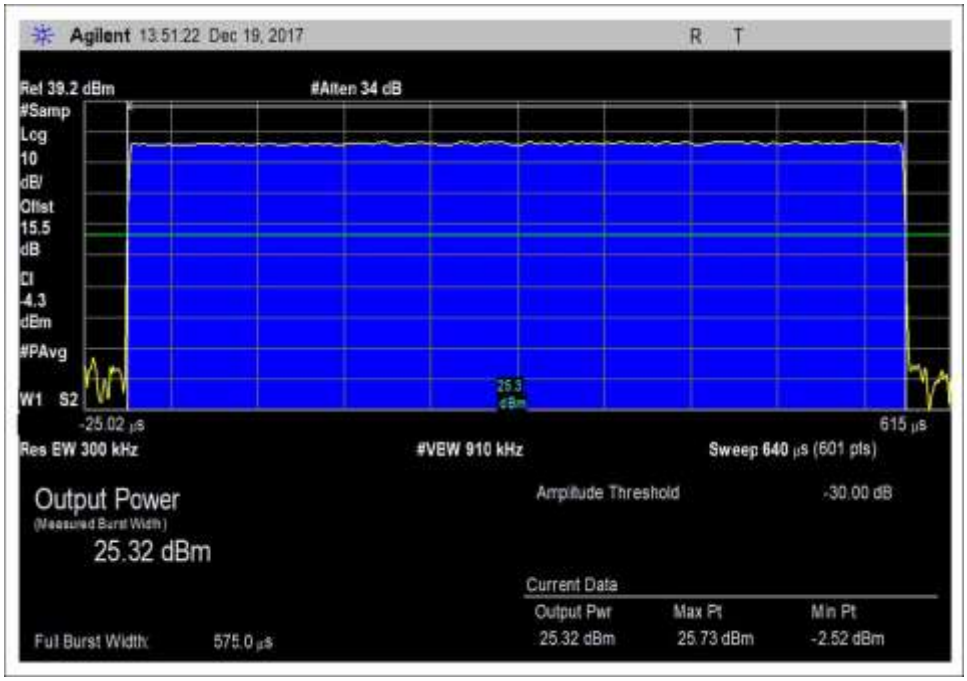
7.2 UL698-716 pulse



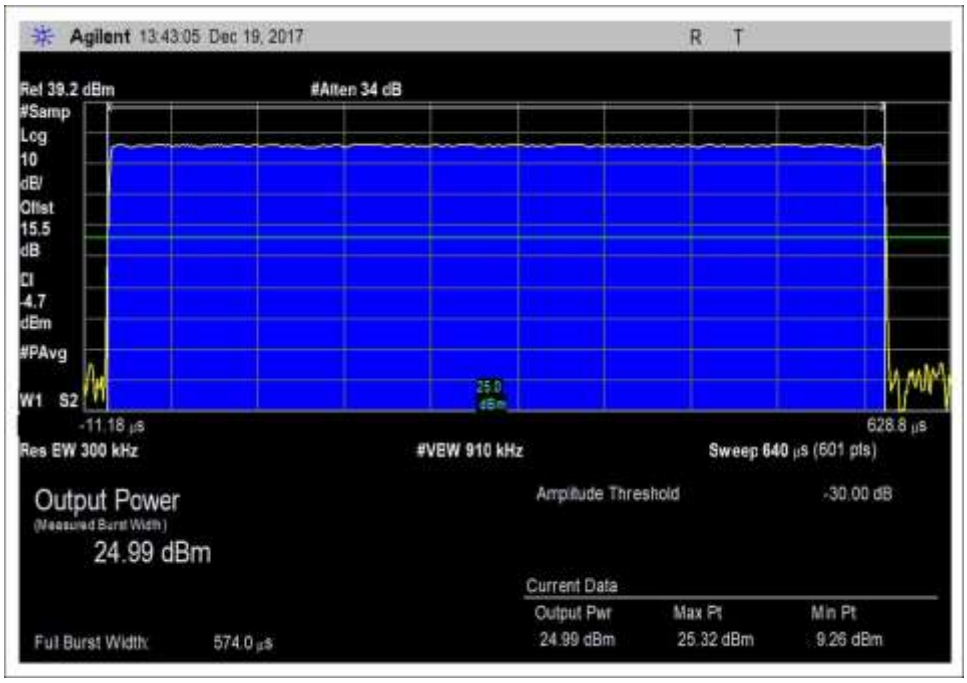
7.2 UL698-716 pulse_max



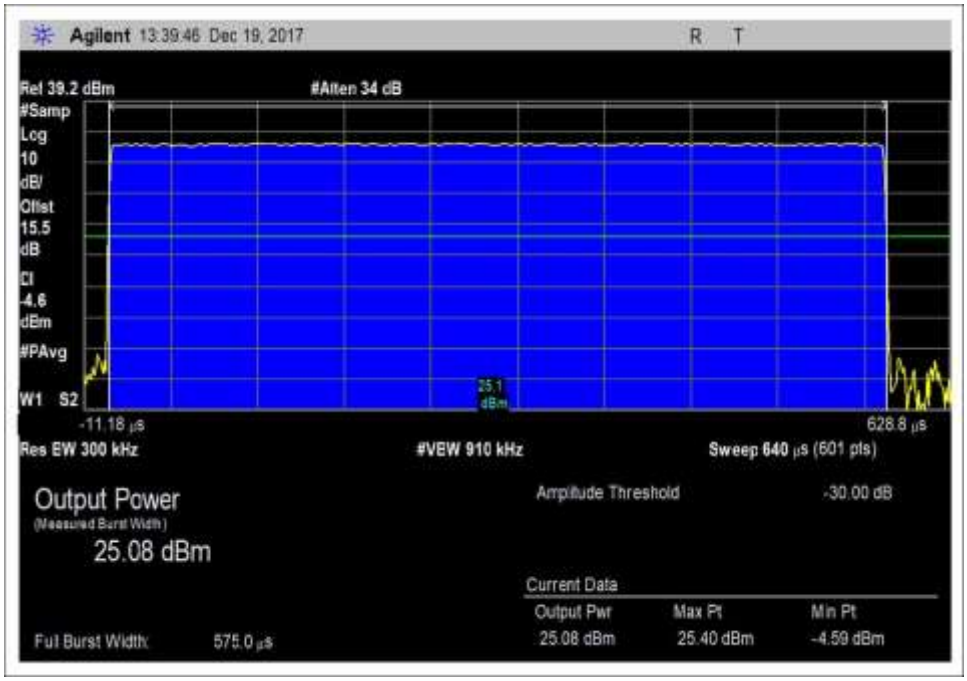
7.2 UL 776-787 pulse



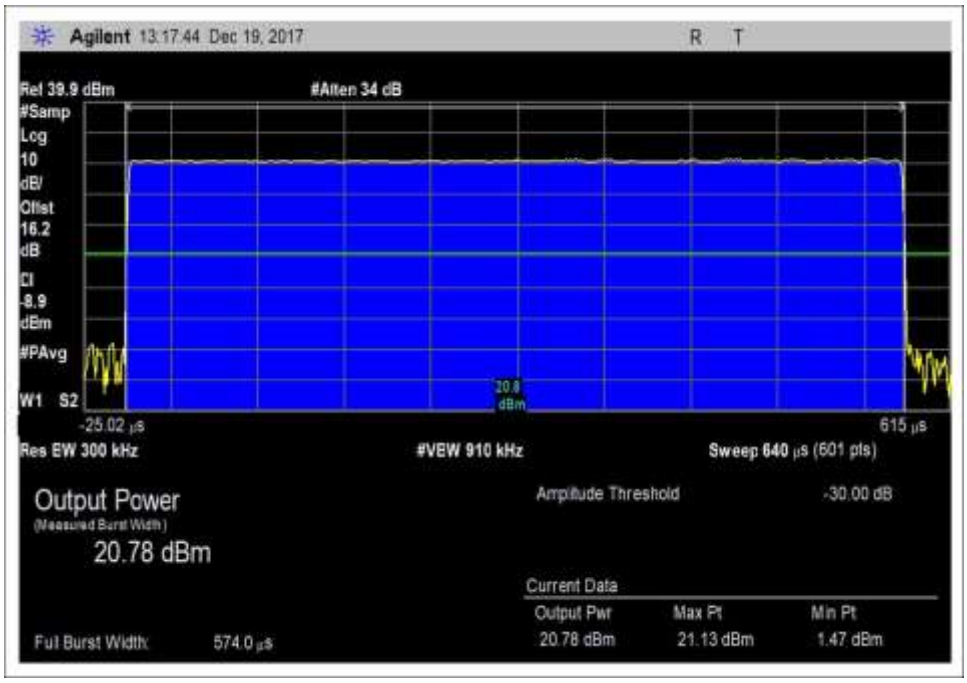
7.2 UL 776-787 pulse_max



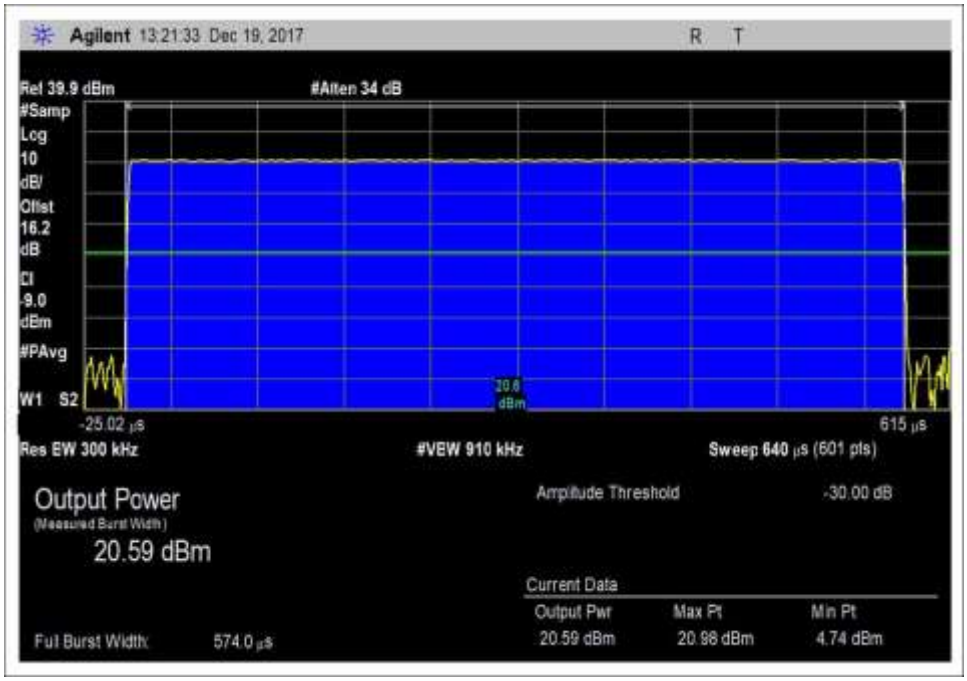
7.2 UL 824-849 pulse



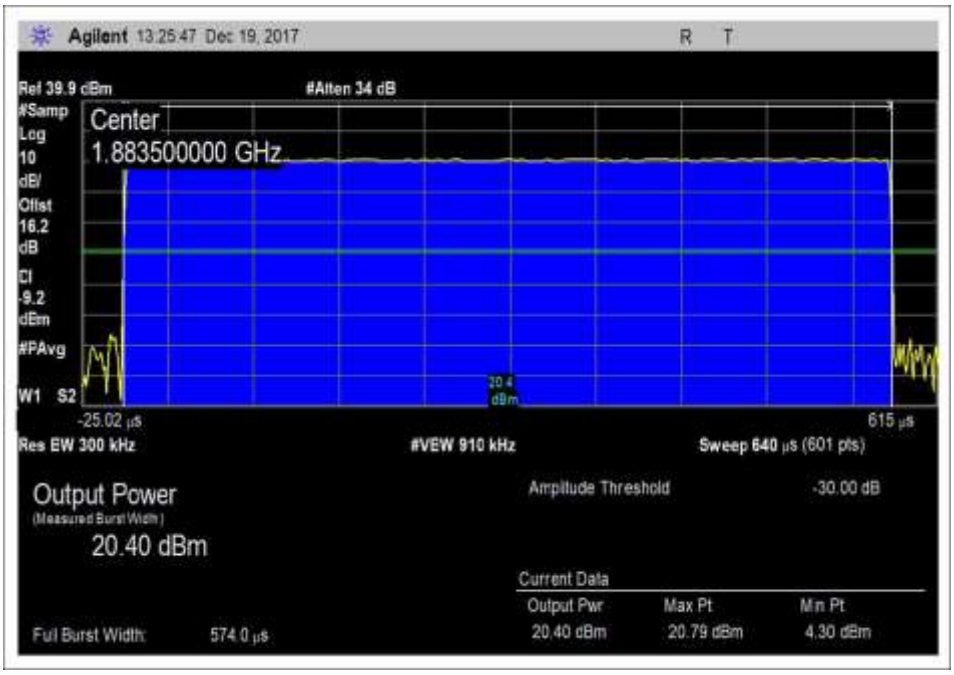
7.2 UL 824-849 pulse max



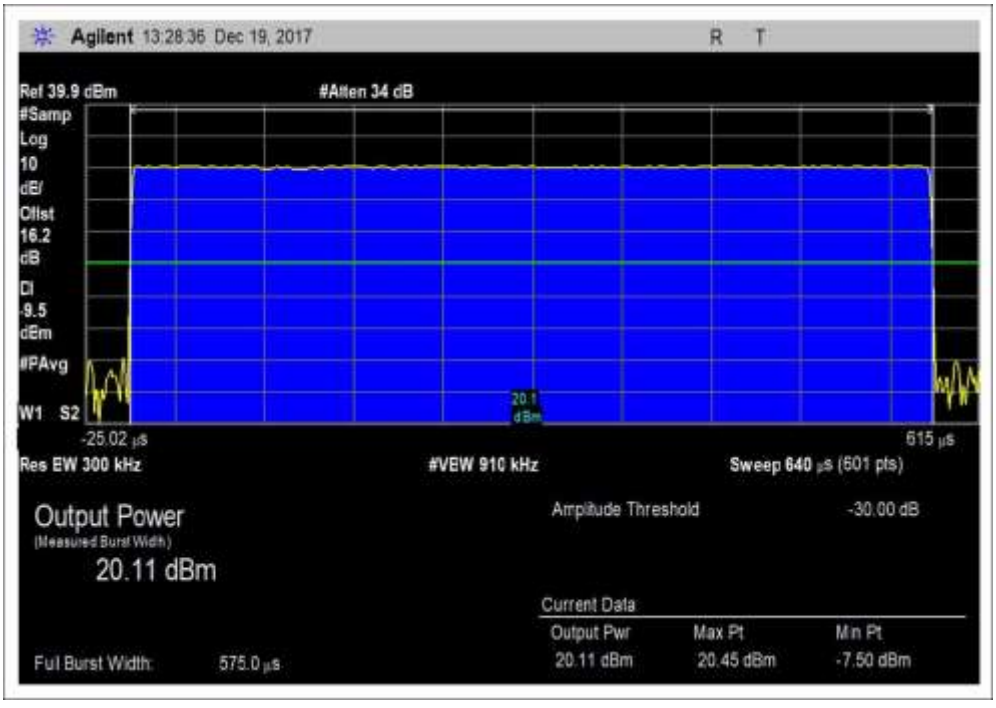
7.2 UL 1710-1755 pulse



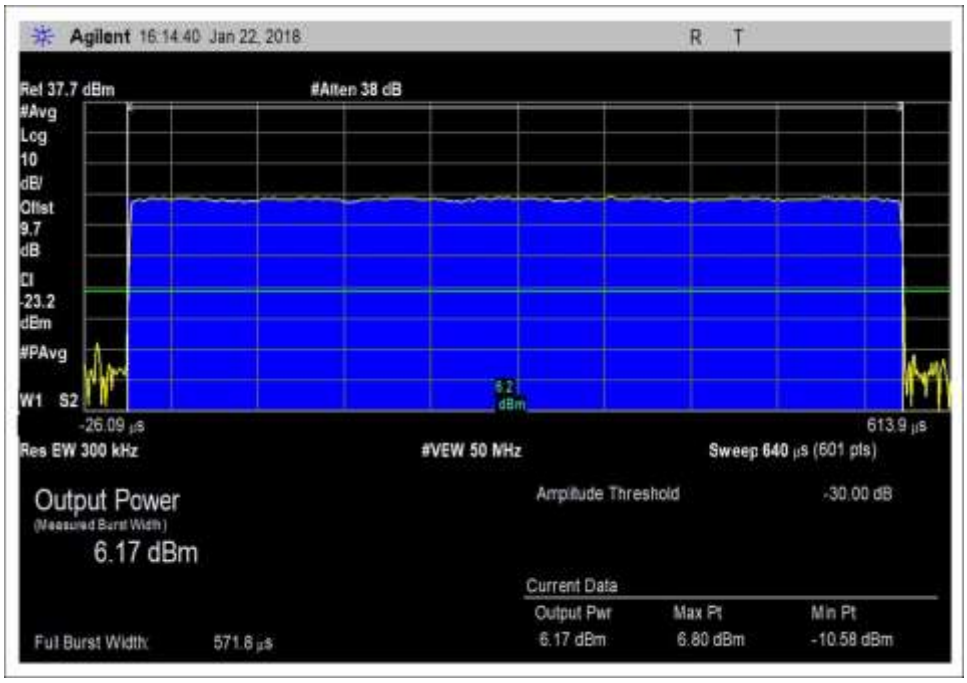
7.2 UL 1710-1755 pulse_max



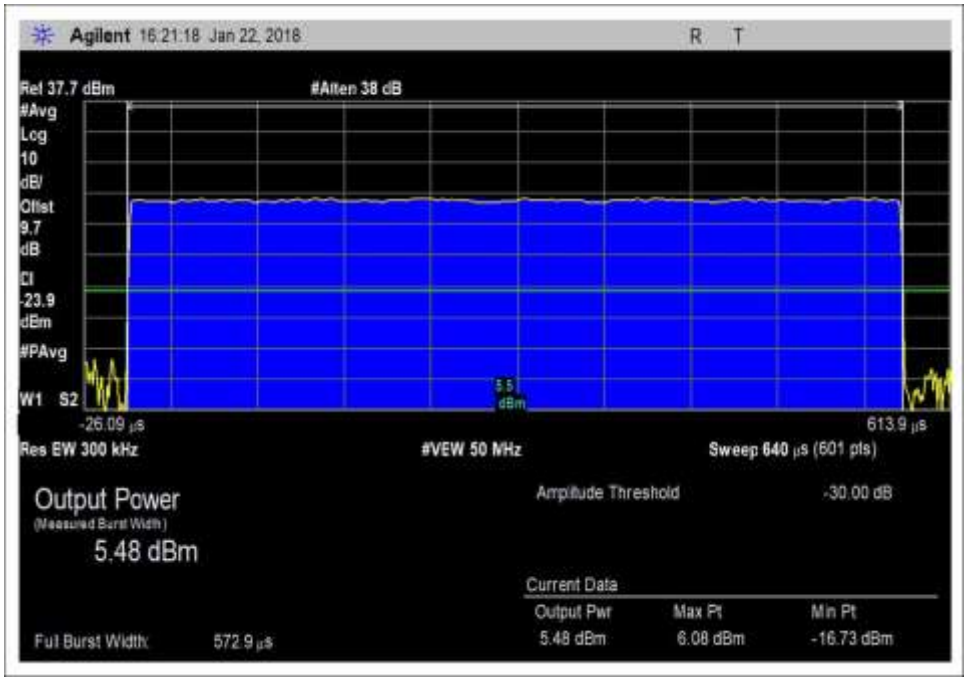
7.2 UL 1850-1915 pulse



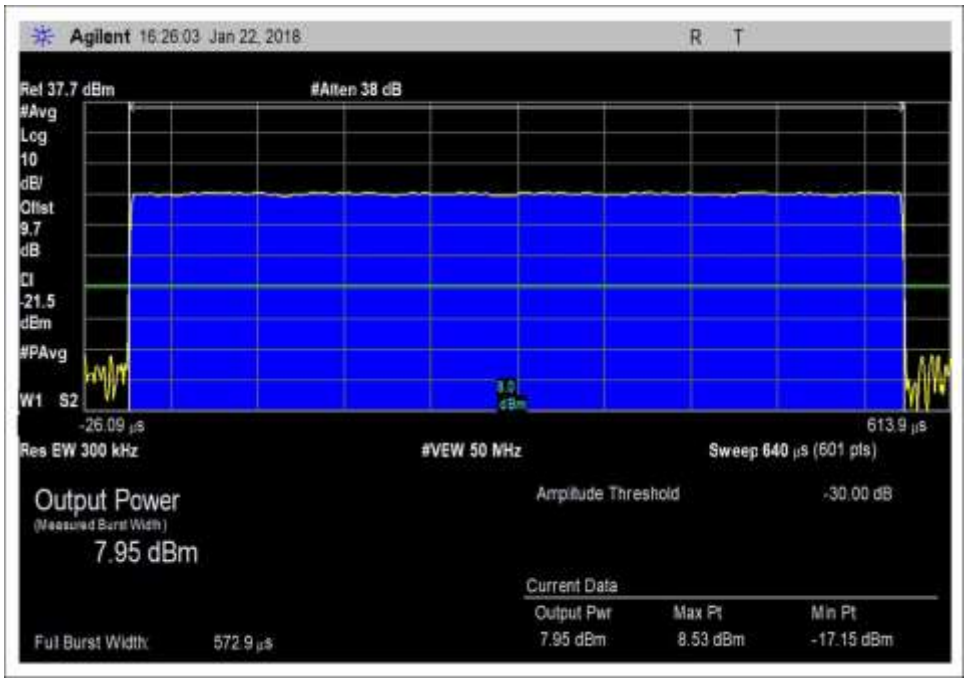
7.2 UL 1850-1915 pulse_max



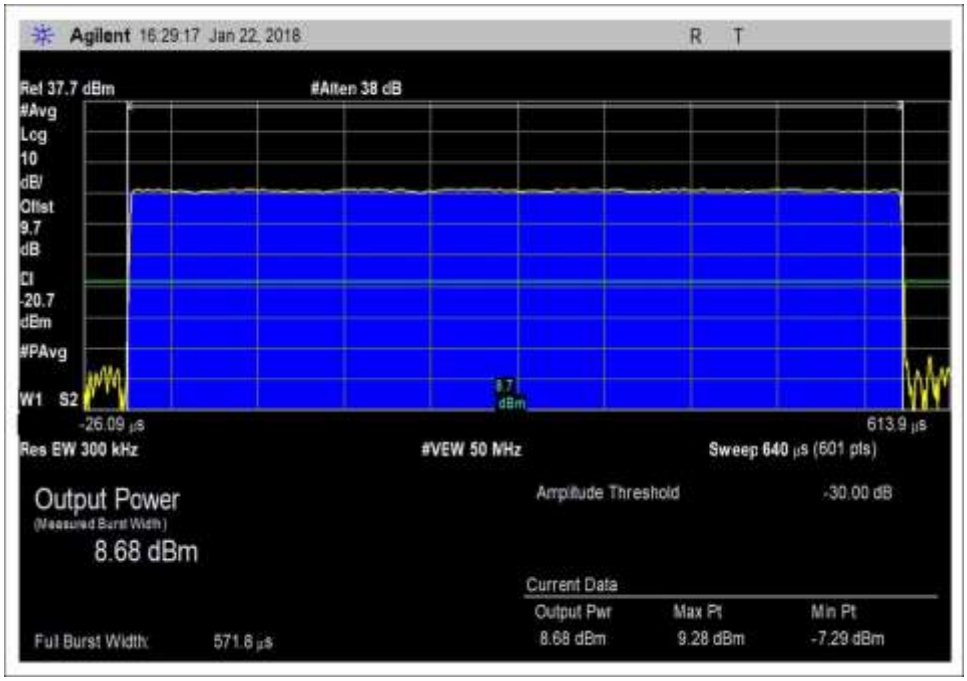
7.2 DL 728-746 pulse



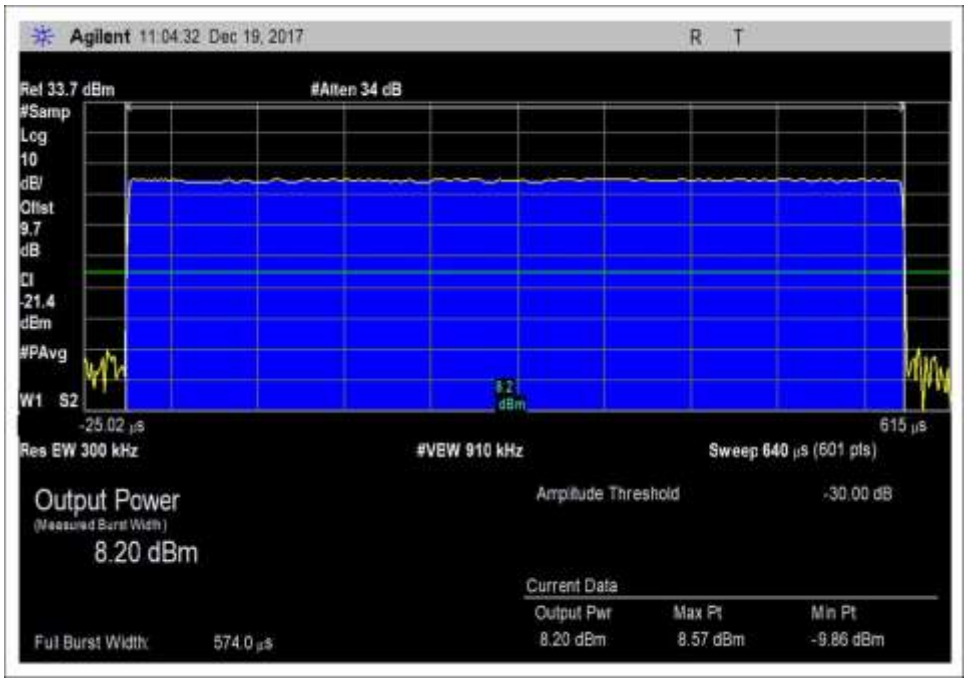
7.2 DL 728-746 pulse_max



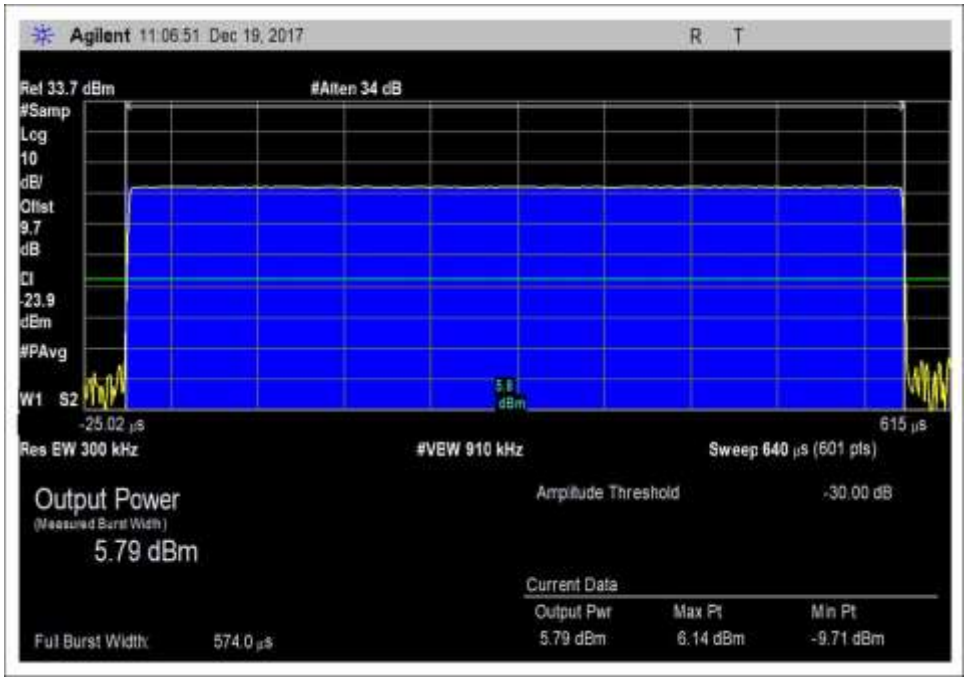
7.2 DL 746-757 pulse



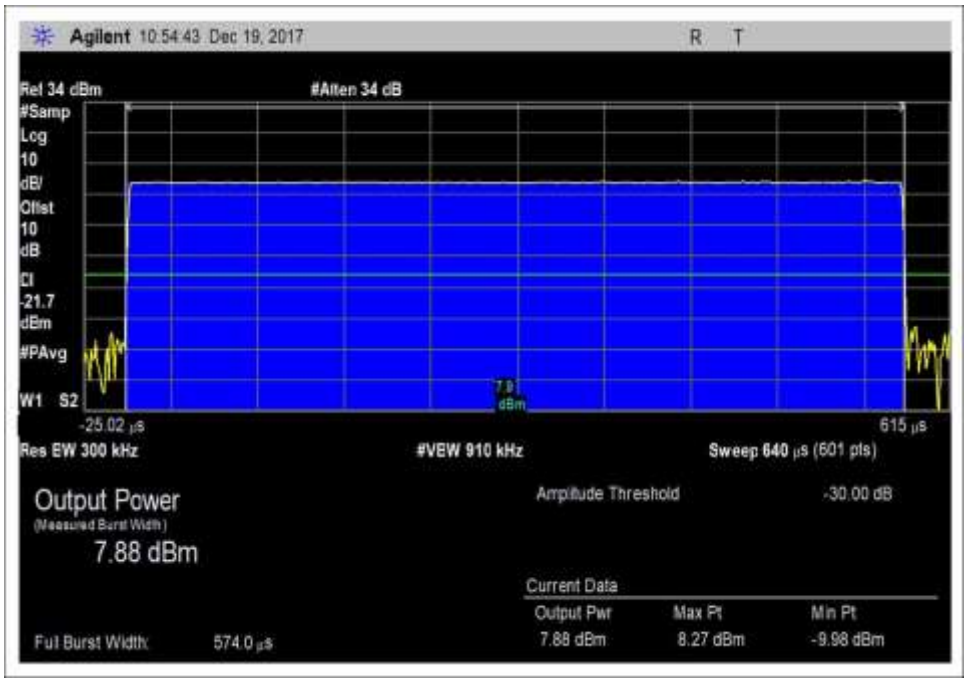
7.2 DL 746-757 pulse_max



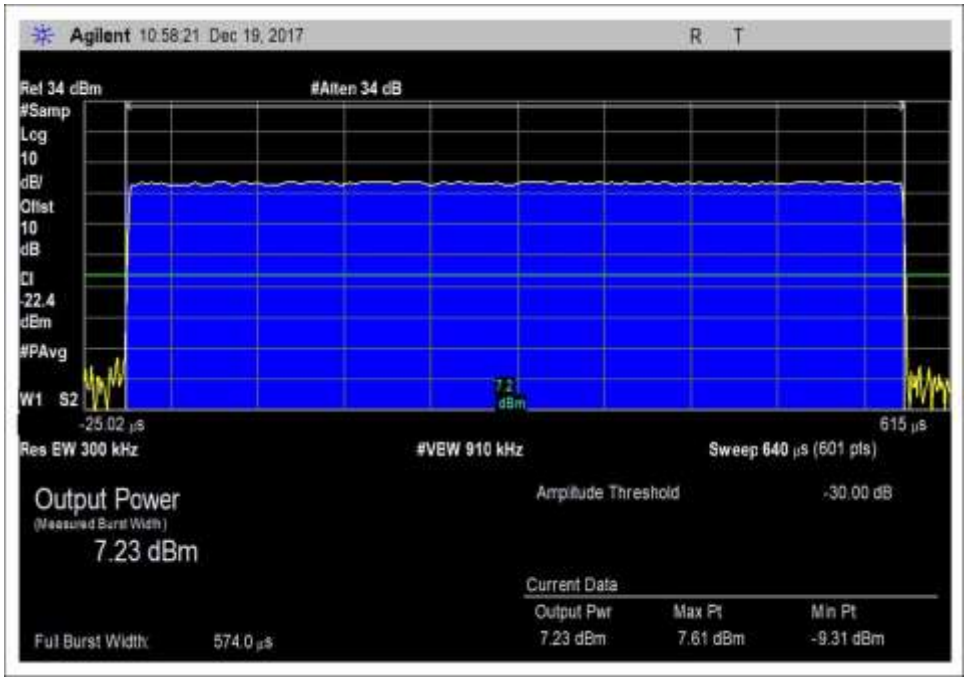
7.2 DL 869-864 pulse



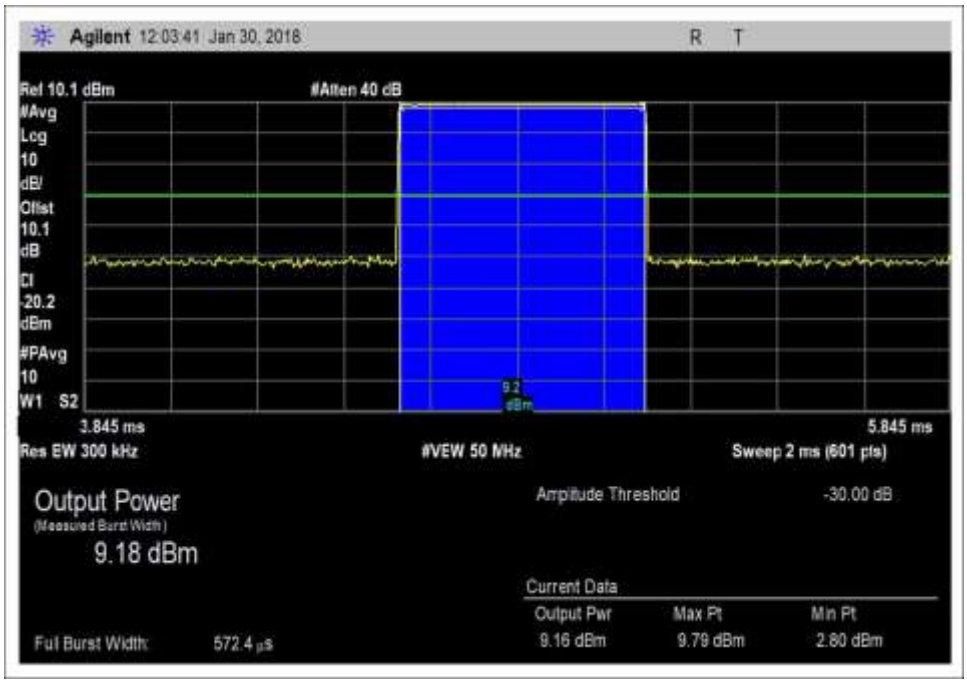
7.2 DL 869-864 pulse_max



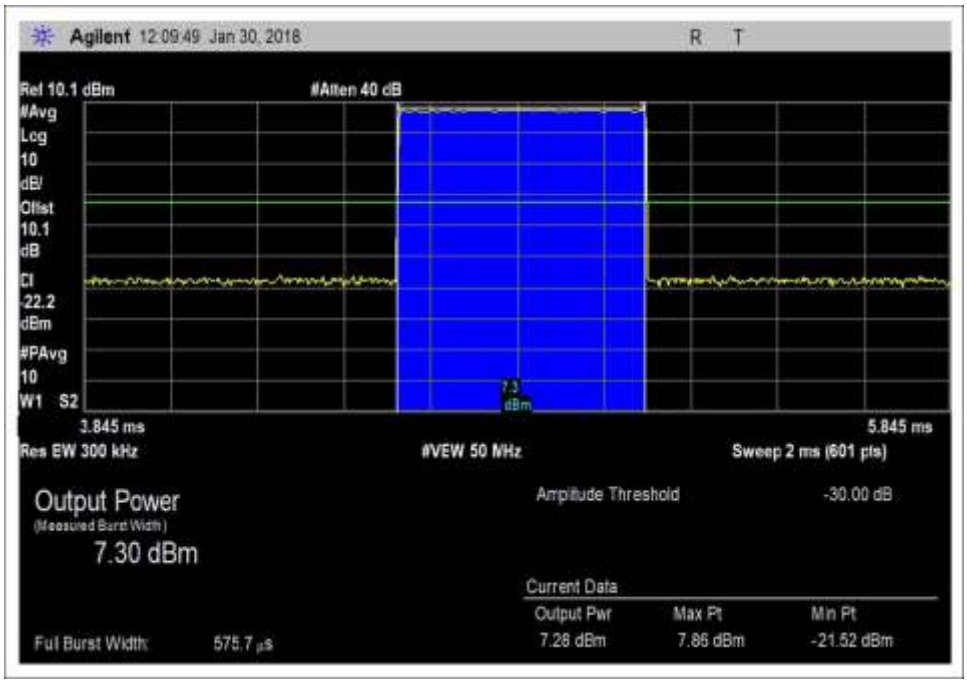
7.2 DL 1930-1995 pulse



7.2 DL 1930-1995 pulse_max

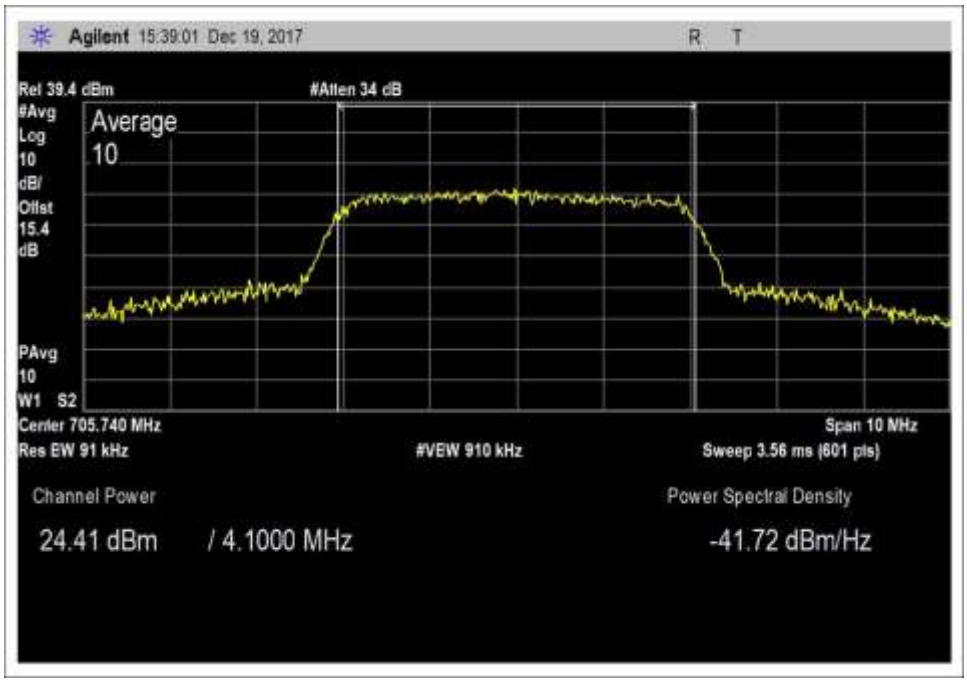


7.2 DL 2110-2155 pulse

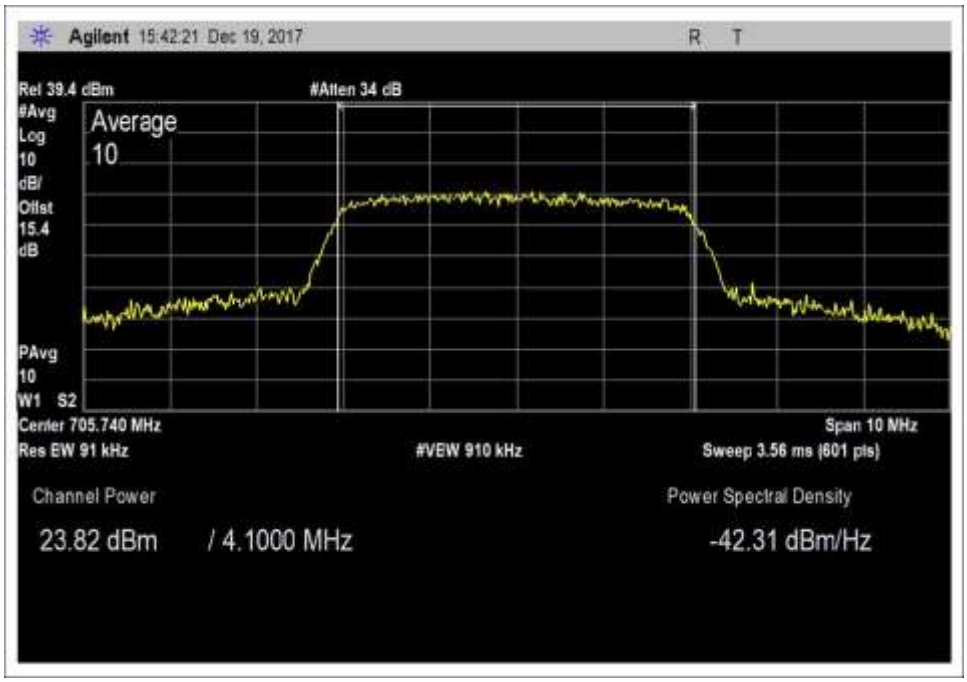


7.2 DL 2110-2155 pulse_max

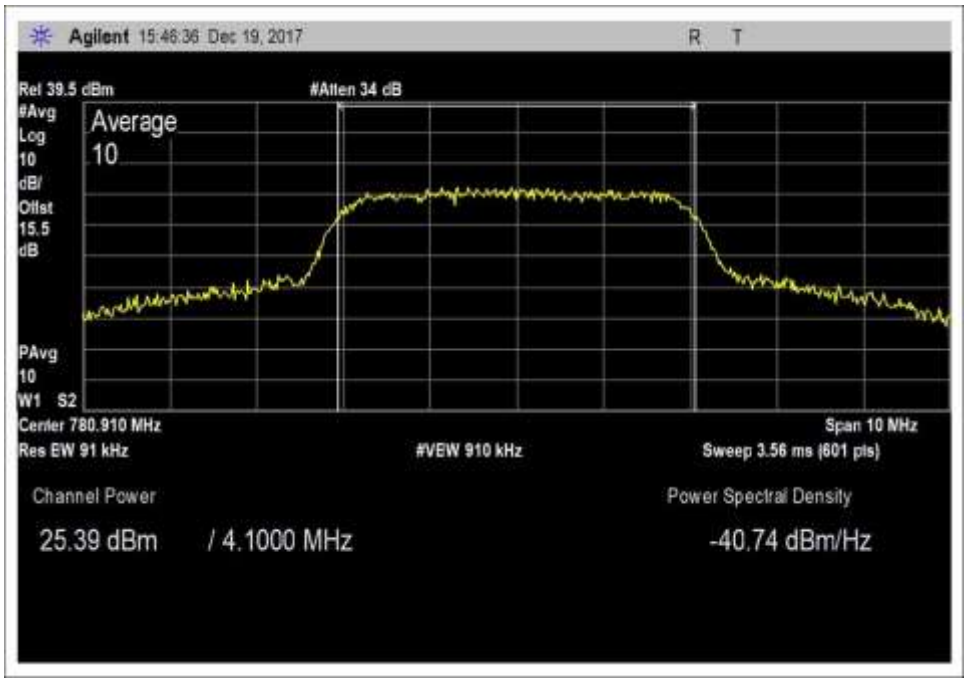
AWGN



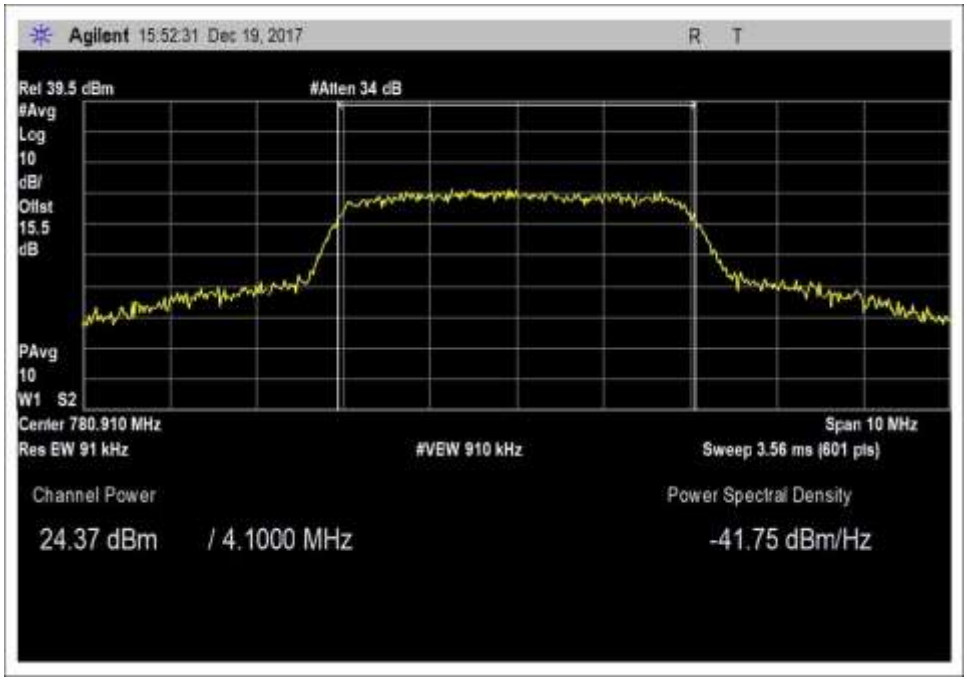
7.2 UL698-716 AWGN



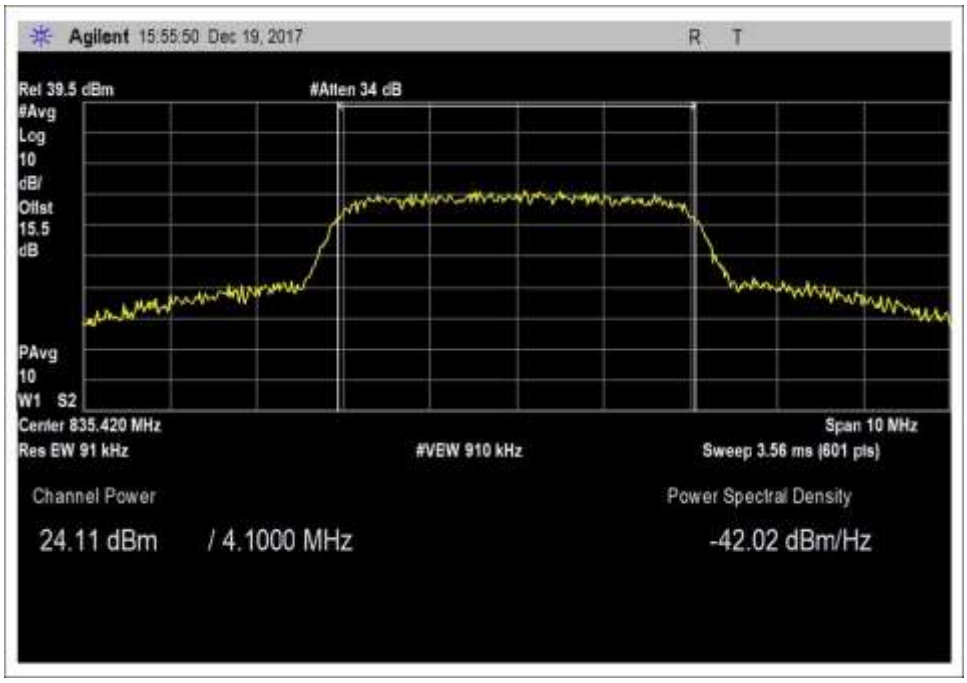
7.2 UL698-716 AWGN_max



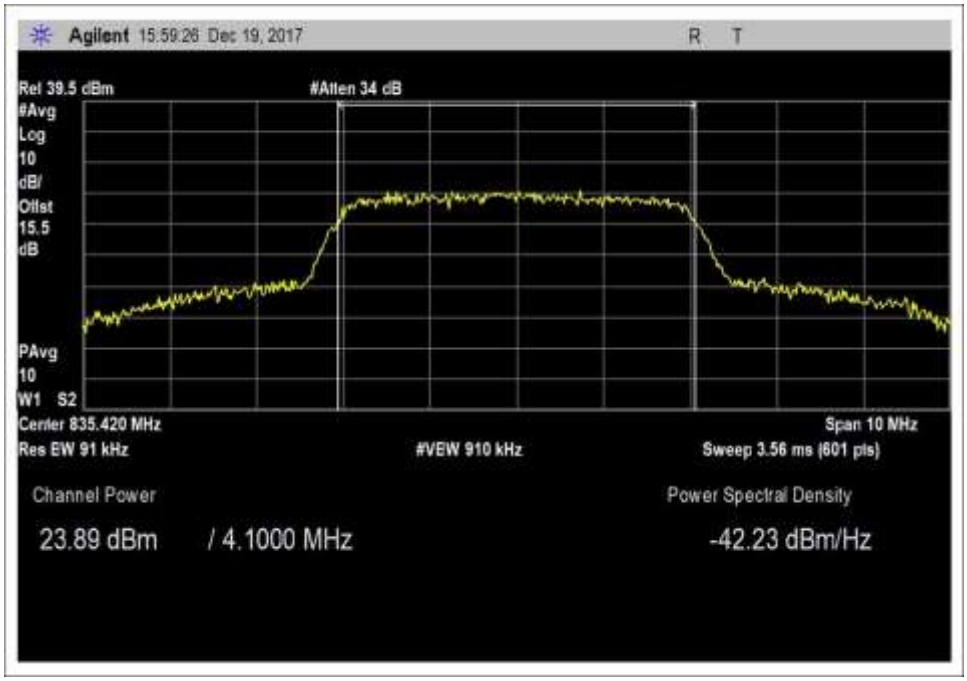
7.2 UL 776-787 AWGN



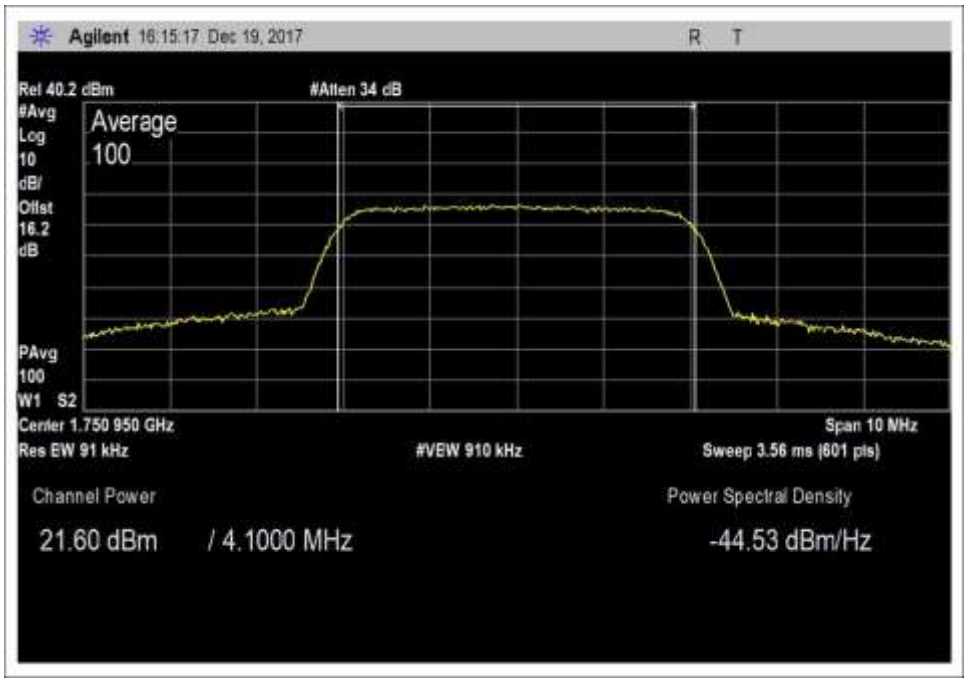
7.2 UL 776-787 AWGN_max



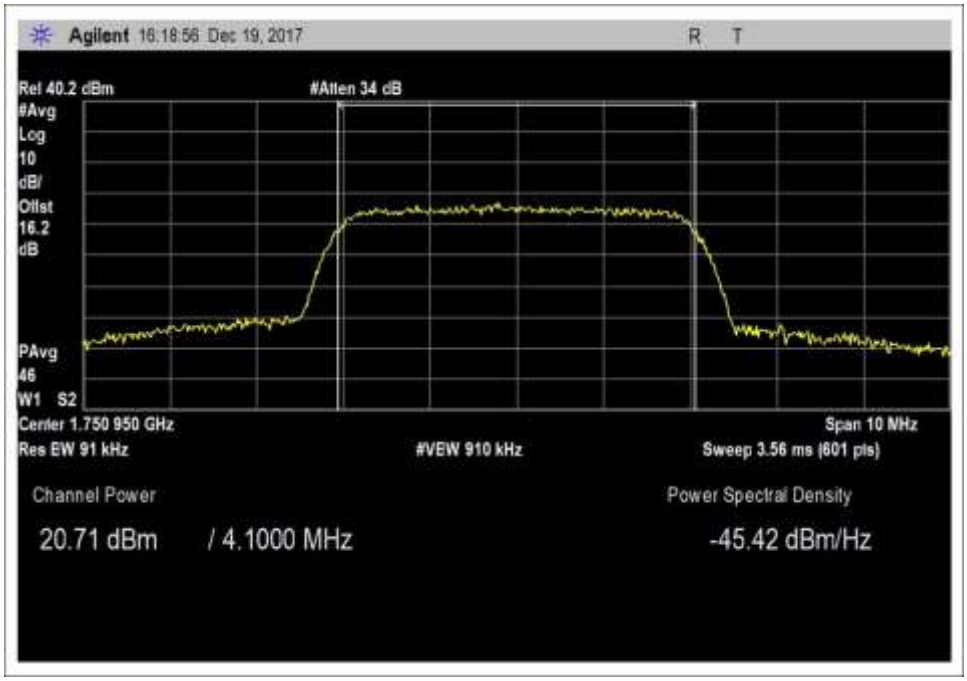
7.2 UL 824-849 AWGN



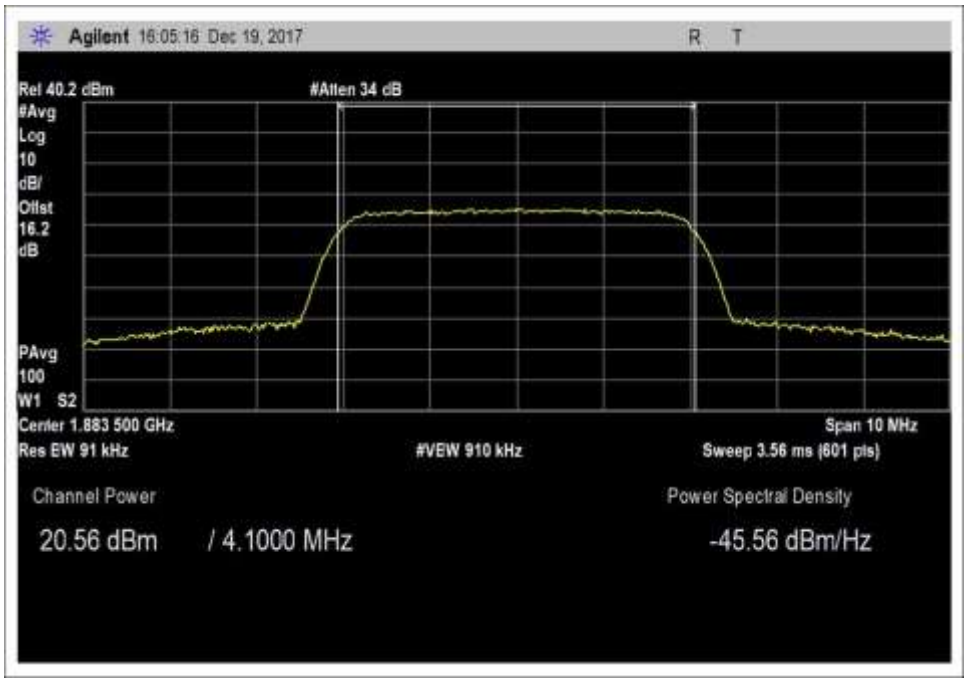
7.2 UL 824-849 AWGN_max



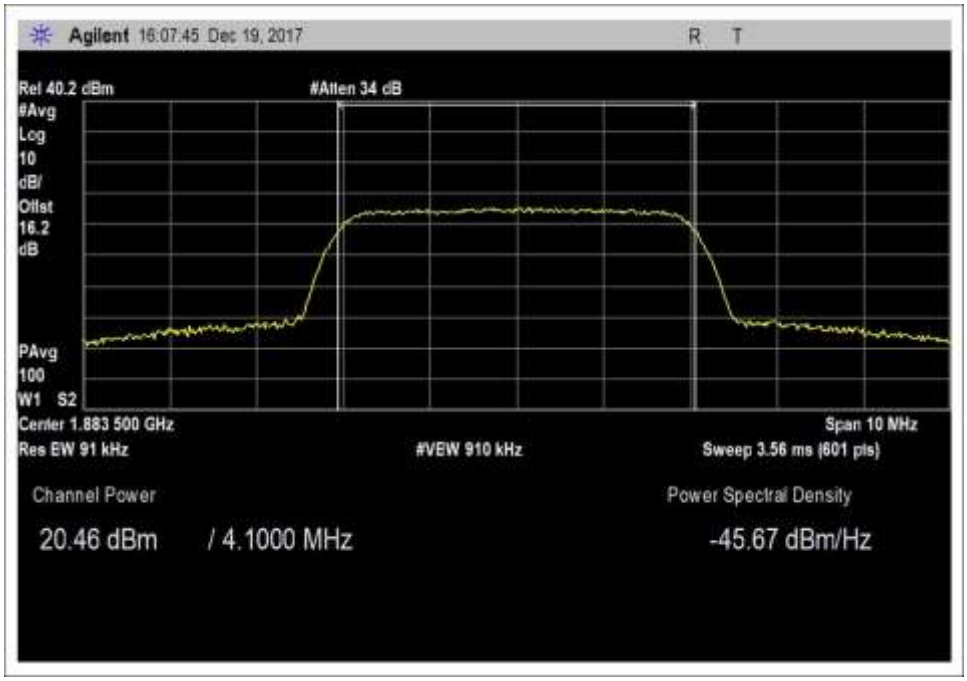
7.2 UL 1710-1755 AWGN



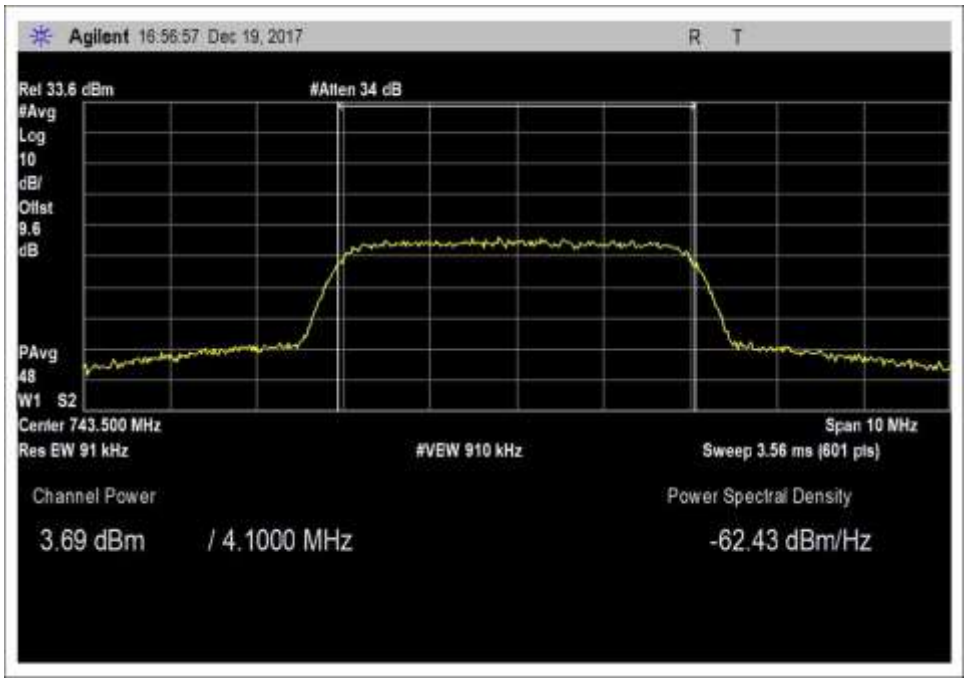
7.2 UL 1710-1755 AWGN_max



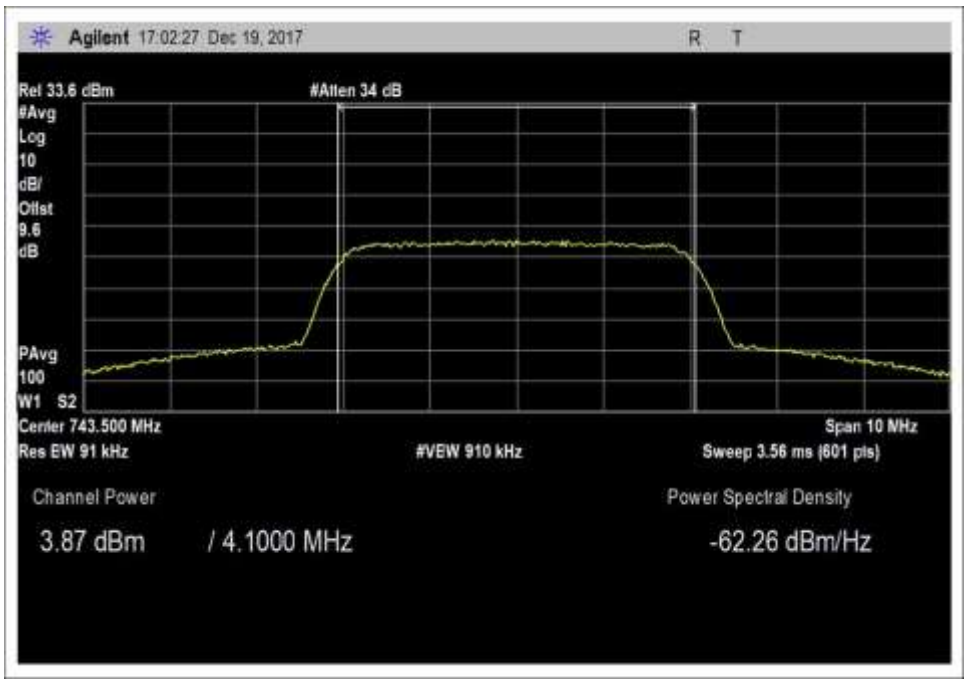
7.2 UL 1850-1915 AWGN



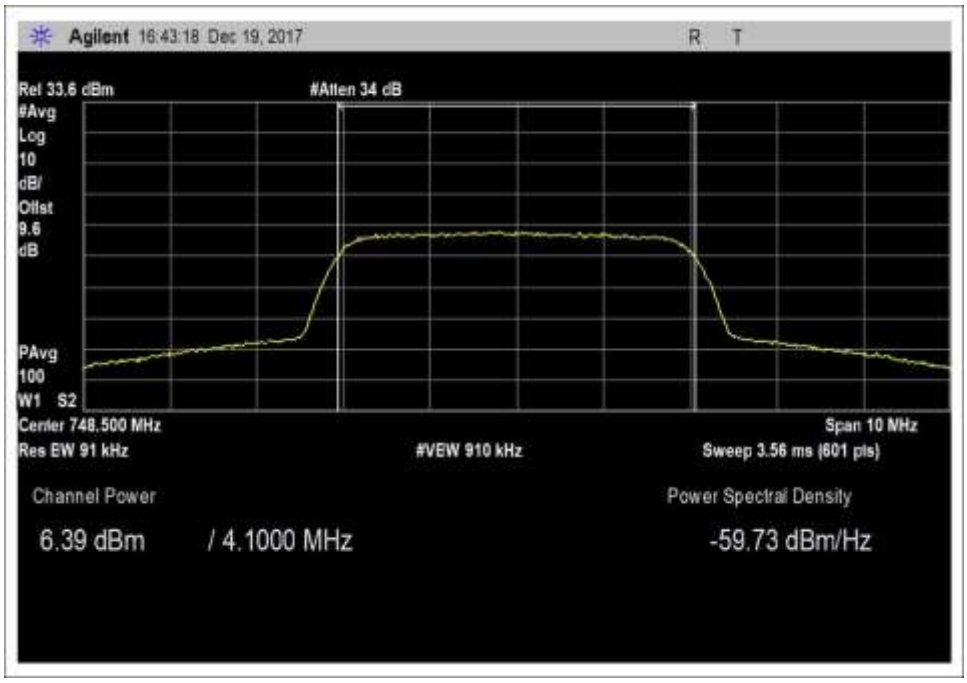
7.2 UL 1850-1915 AWGN_max



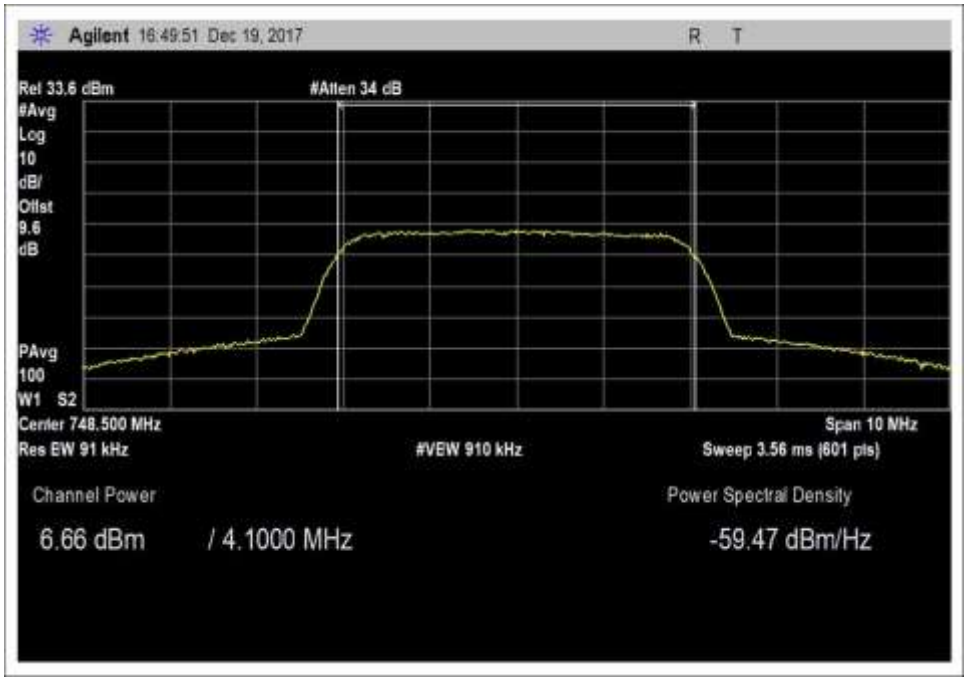
7.2 DL 728-746 AWGN



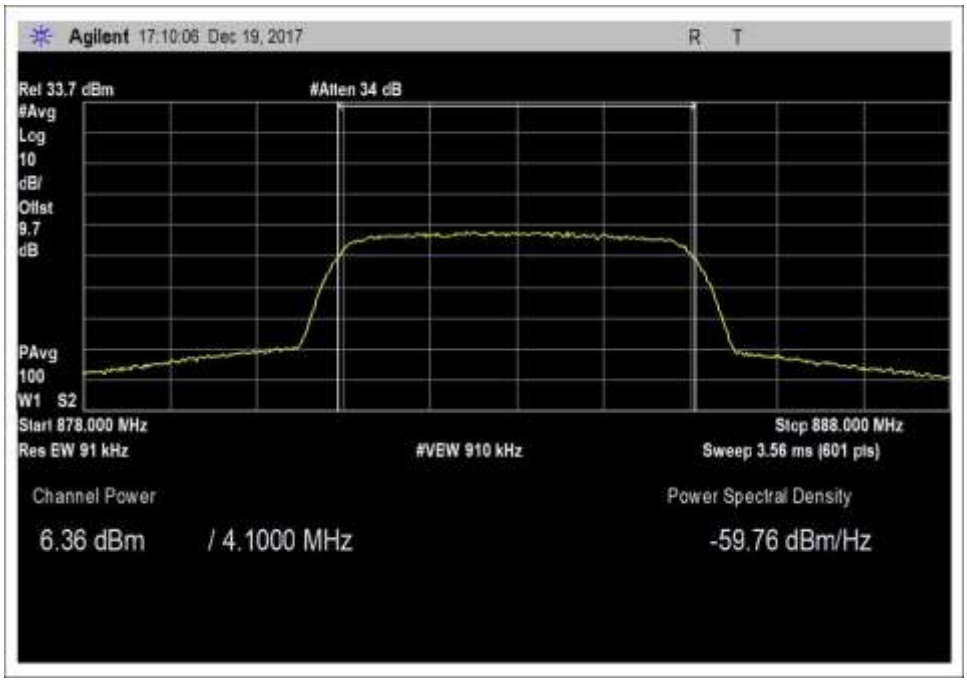
7.2 DL 728-746 AWGN_max



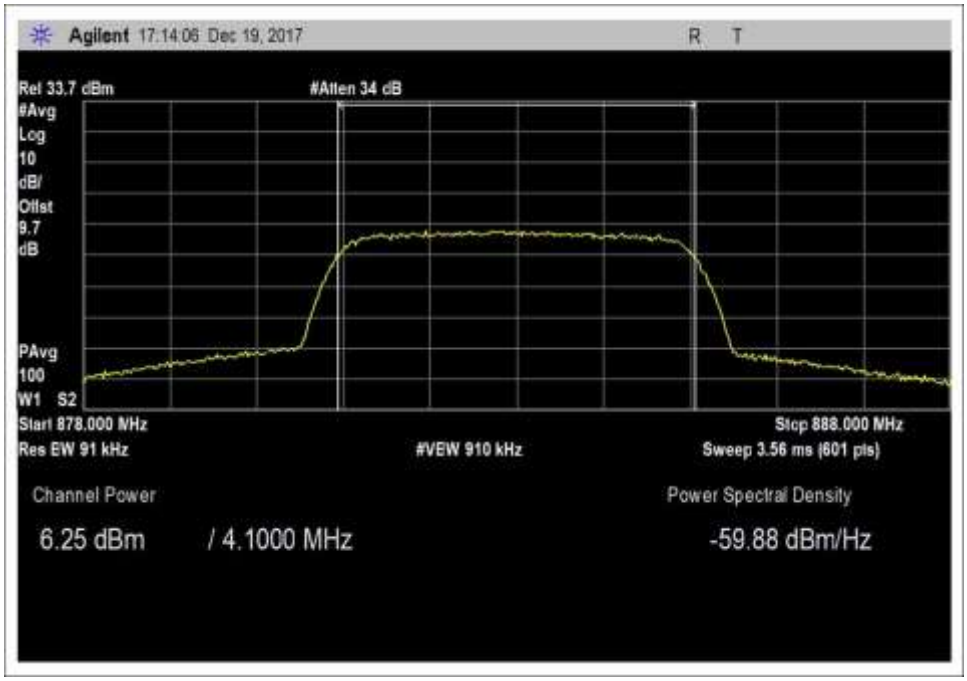
7.2 DL 746-757 AWGN



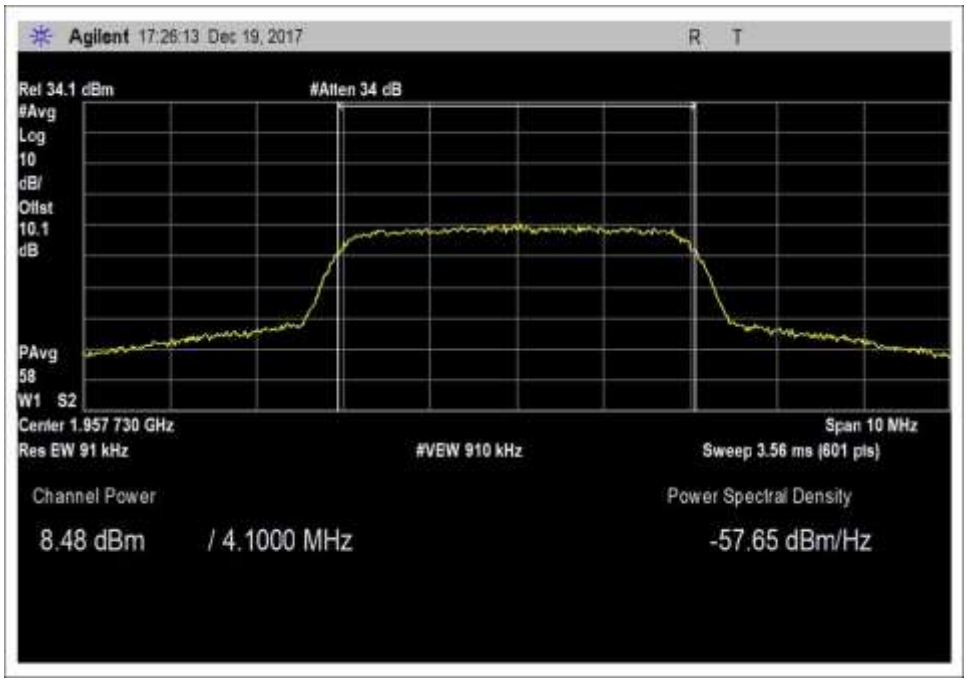
7.2 DL 746-757 AWGN_max



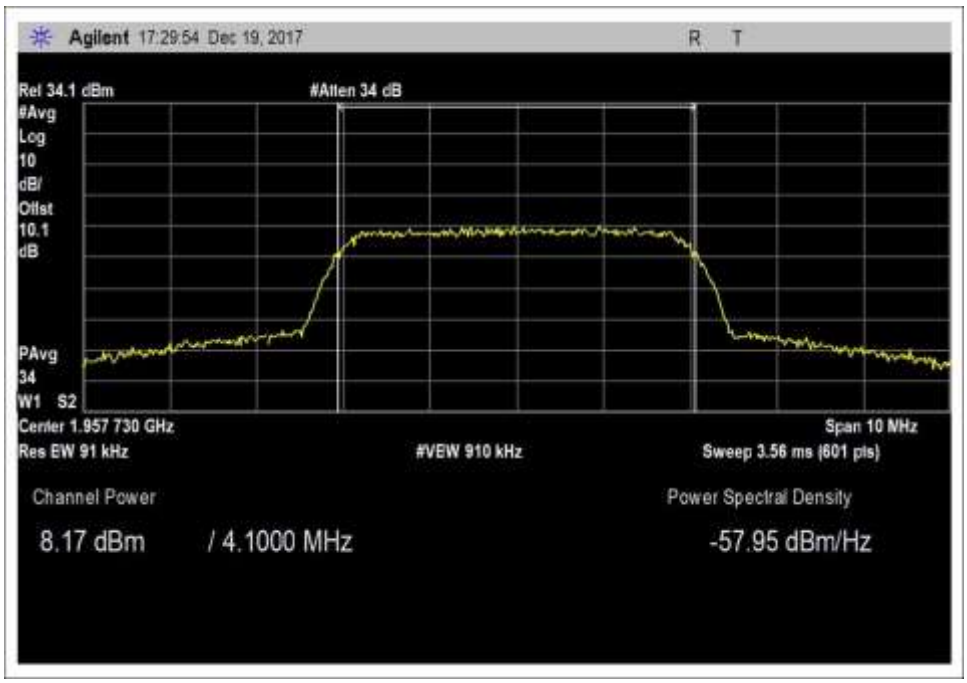
7.2 DL 869-864 AWGN



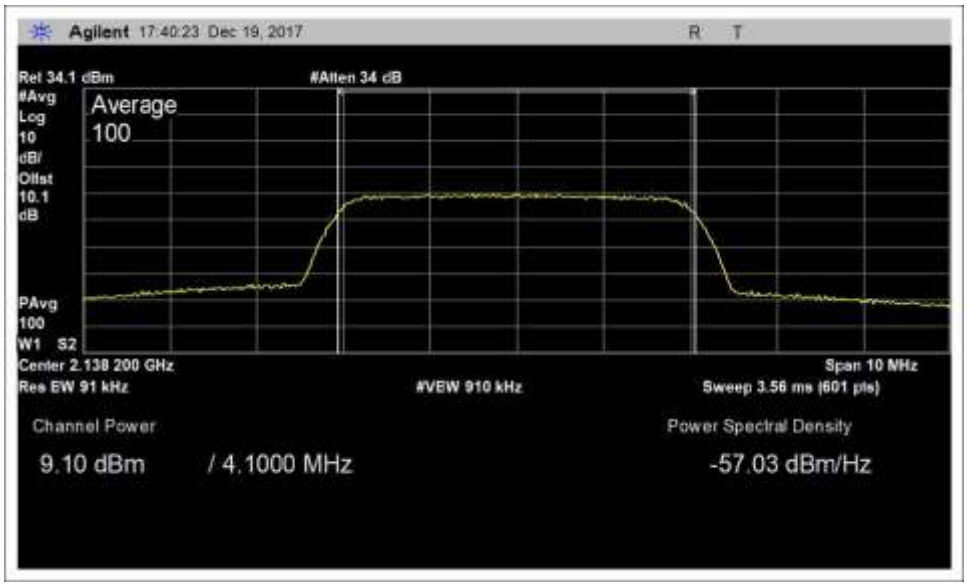
7.2 DL 869-864 AWGN_max



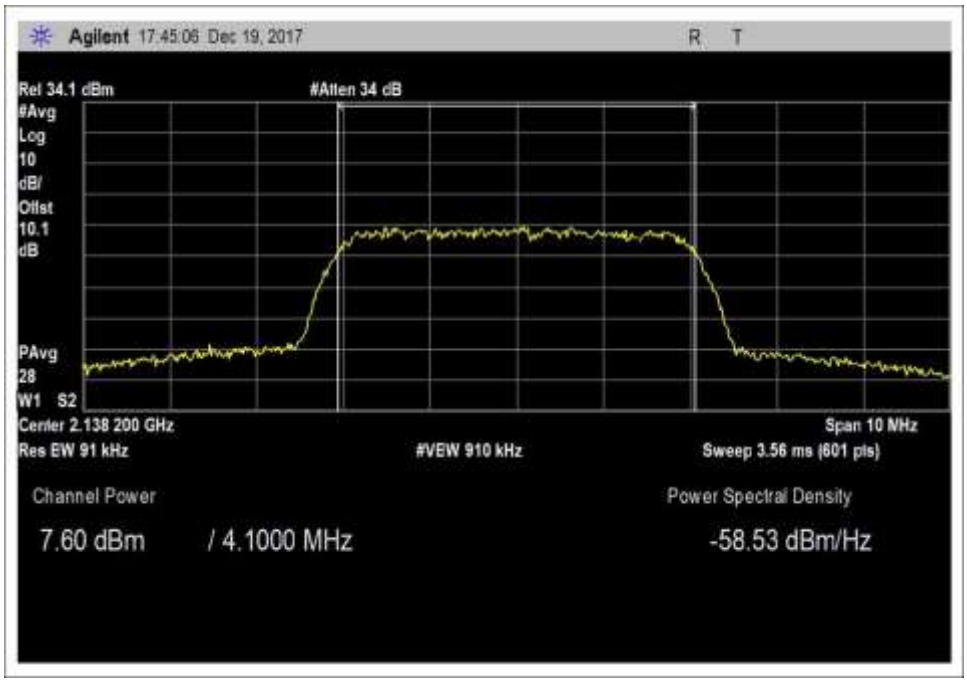
7.2 DL 1930-1995 AWGN



7.2 DL 1930-1995 AWGN_max



7.2 DL 2110-2155 AWGN



7.2 DL 2110-2155 AWGN_max

7.4 Intermodulation Product

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Pl, Brea, CA 92823 • 714 993-6112
Customer:	Cellphone-Mate, Inc.
Specification:	**7.4 Intermodulation Product**
Work Order #:	**100654** Date: 9/4/2018
Test Type:	**Conducted Emissions**
Tested By:	**Hieu S. Nguyenpham**
Software:	EMITest 5.03.11

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

Test environment conditions:
Temperature: 21.0°C
Relative Humidity: 57.8%
Pressure: 102.5kPa

Test Equipment:

Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
P05411	Attenuator	Weinschel	54A-10	1/19/2018	1/19/2020
P07192	Cable	Astro	32022-29094K-29094K-48TC	10/9/2017	10/9/2019
P07191	Cable	Astro	32022-29094K-29094K-48TC	10/30/2017	10/30/2019
03418	Signal Generator	Agilent	E4438C	6/19/2017	6/19/2019
03470	Spectrum Analyzer	Agilent	E4440A	1/3/2018	1/3/2020
P06909	Attenuator	Pasternack	PE7083	12/20/2017	12/20/2019

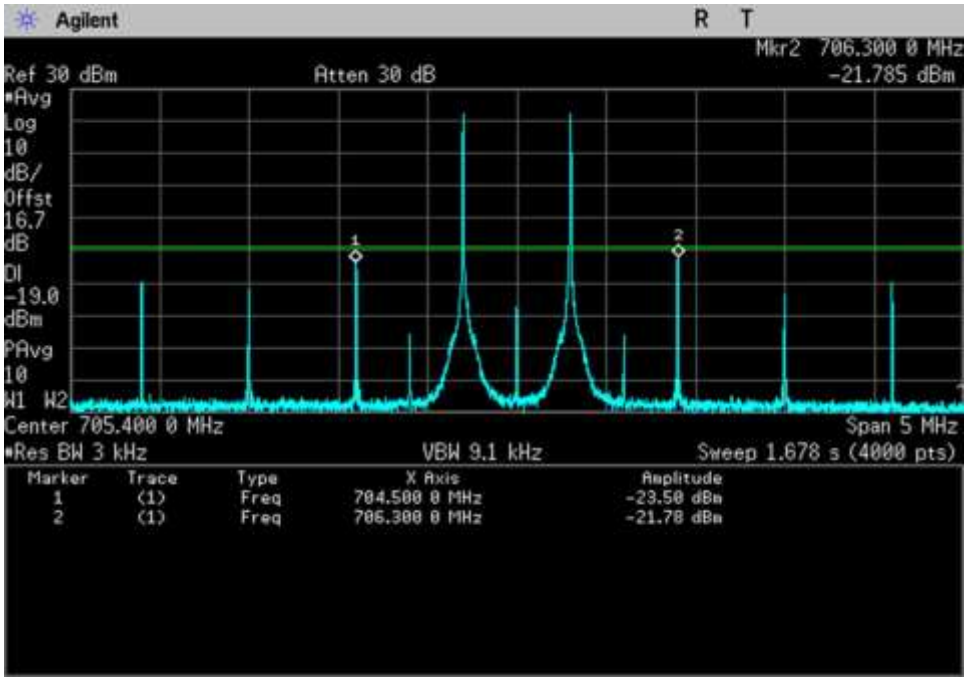
Summary of Results

Pass: As shown on the plots, all intermodulation products are measured below -19dbm limit.

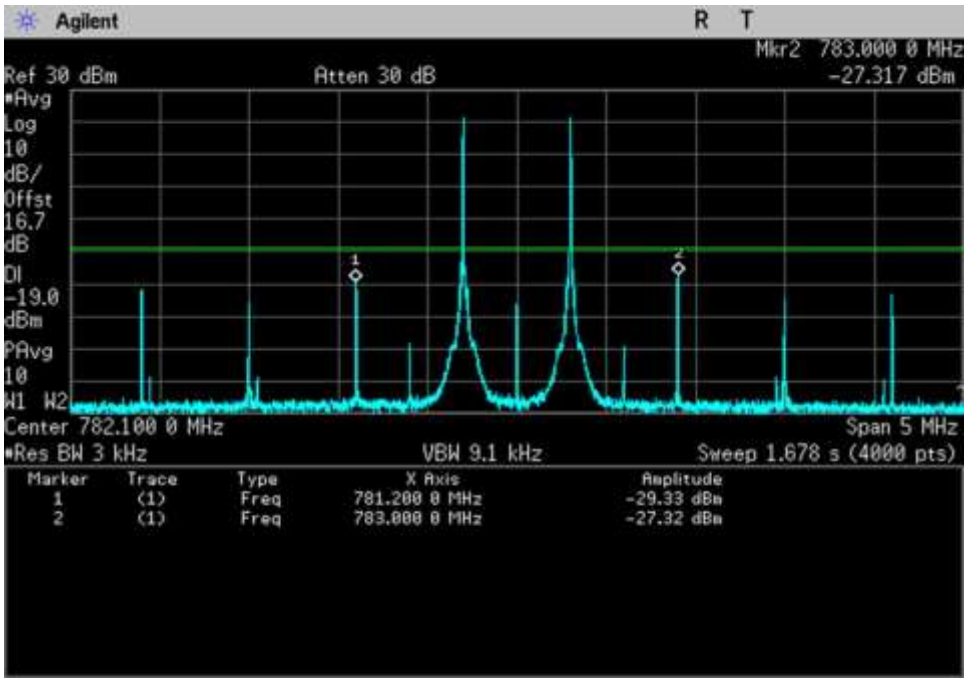
Inter Modulation Product			
Frequency (MHz)	**Pre AGC (dBm)**	**Limit (dBm)**	**Results**
UL 1710-1755	-27.9	-19	Pass
UL 1850-1915	-24.3	-19	Pass
UL 824-894	-22.9	-19	Pass
UL 698-716	-21.8	-19	Pass
UL 776-787	-27.3	-19	Pass
DL 2110-2155	-28.6	-19	Pass
DL 1930-1995	-29.7	-19	Pass
DL 869-894	-29.2	-19	Pass
DL 728-746	-24.8	-19	Pass
DL 746-757	-26.6	-19	Pass

Note: The EUT maintains compliance with the intermodulation limit at input power of AGC+10dB

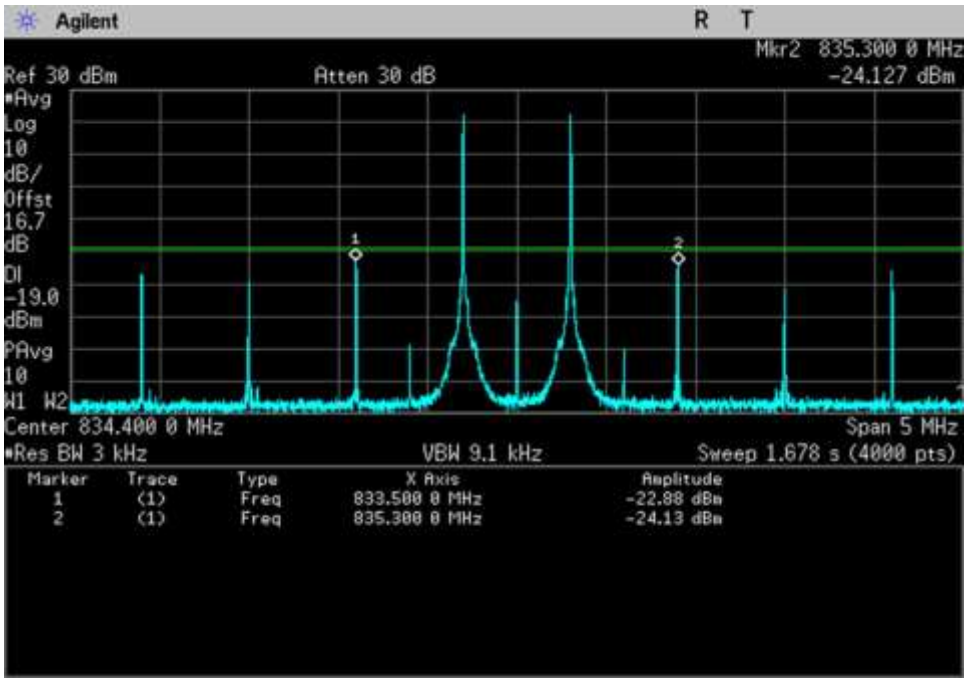
Plots



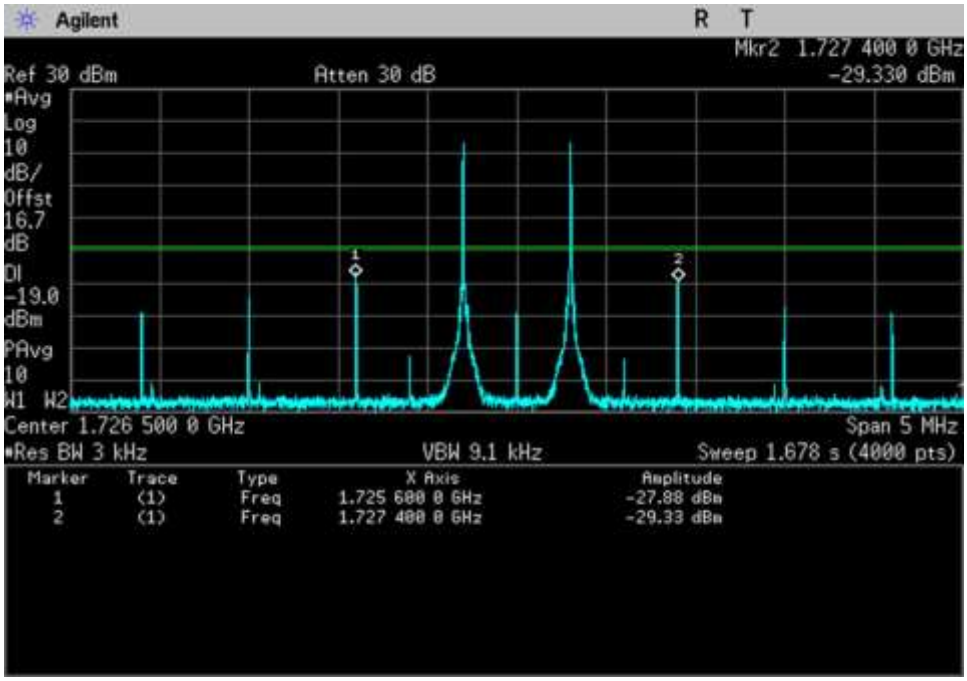
7.4 UL 698-716, 705.4MHz



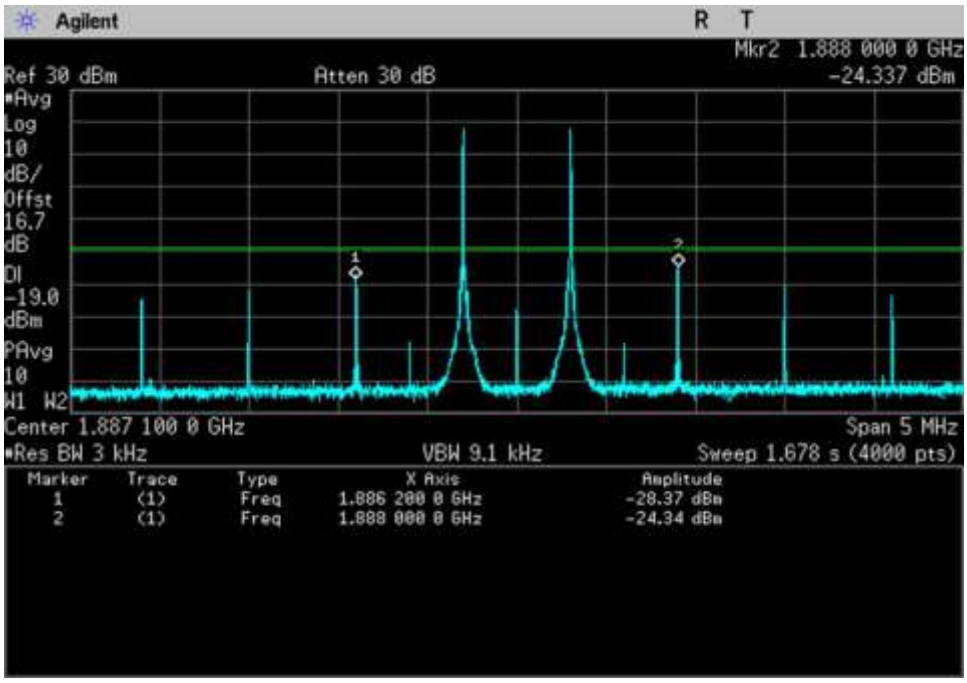
7.4 UL 776-787, 782.1MHz



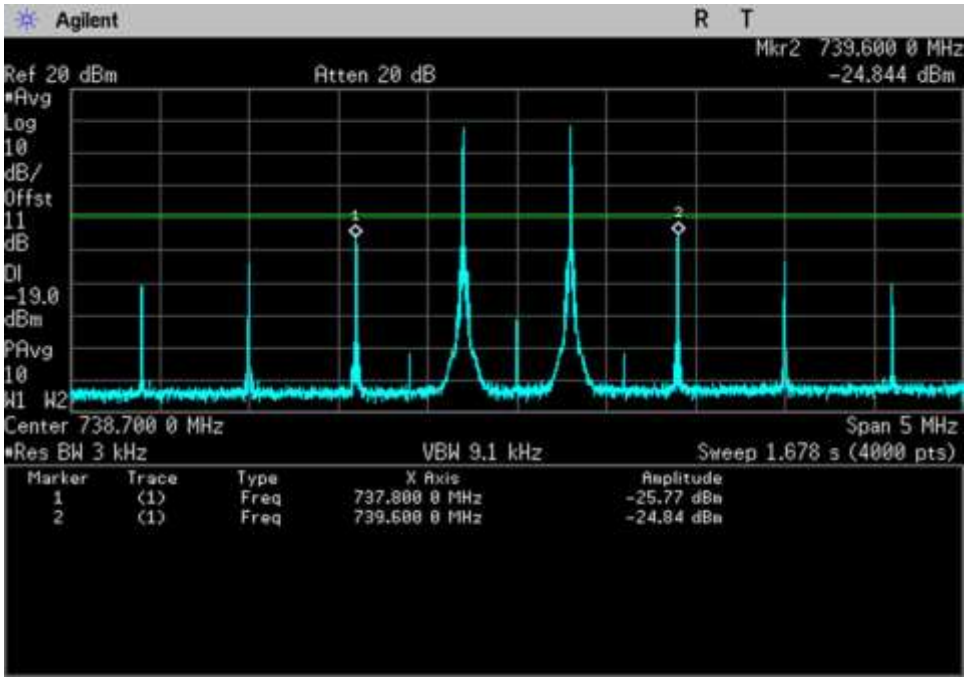
7.4 UL 824-849, 834.4MHz



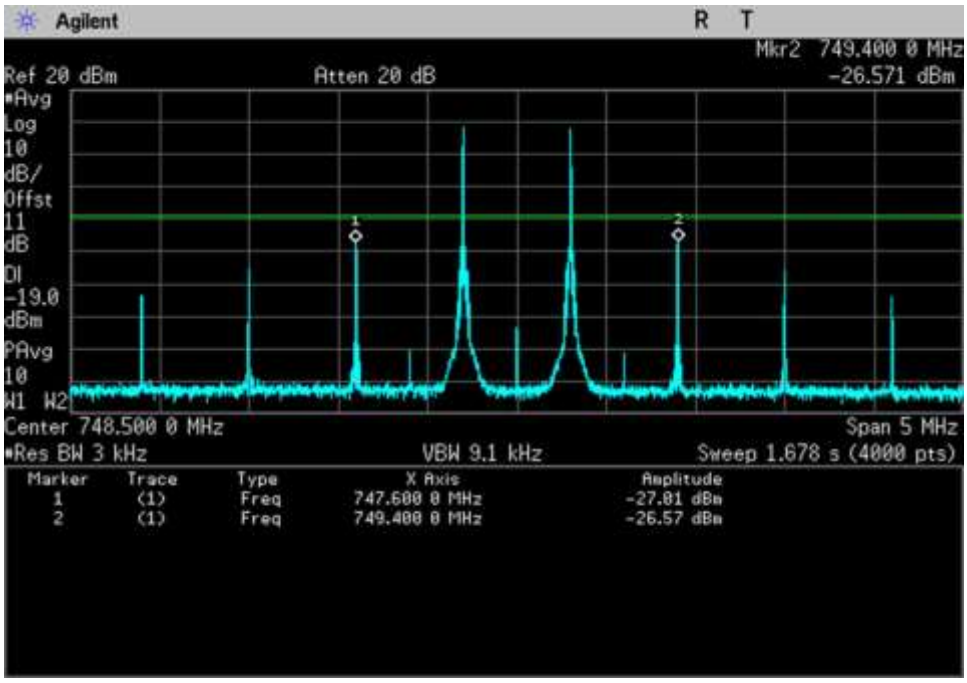
7.4 UL 1710-1755, 1726.5MHz



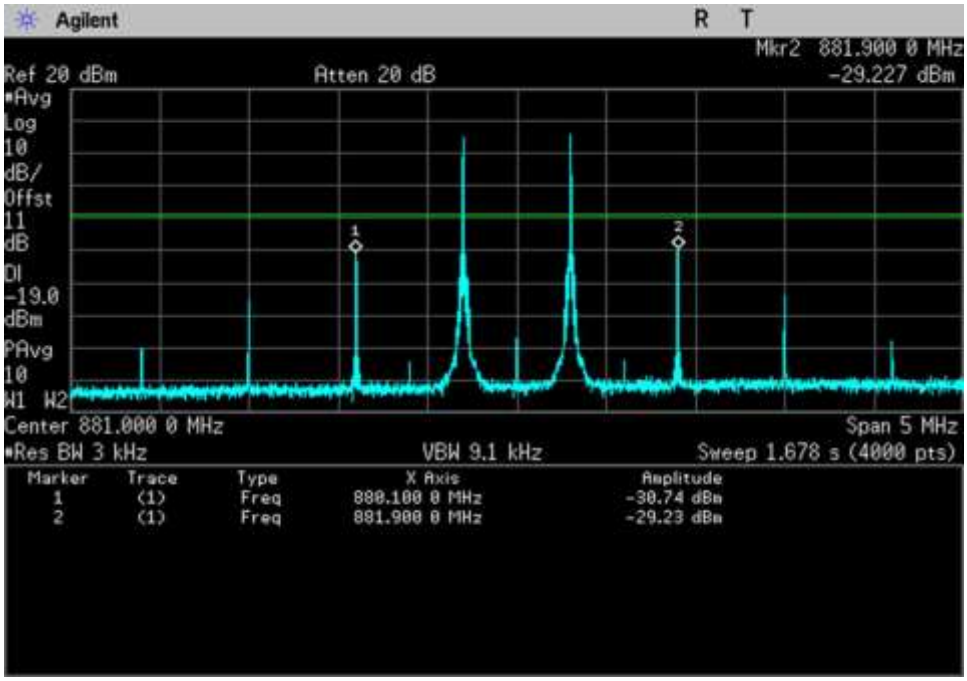
7.4 UL 1850-1915, 1887.1MHz



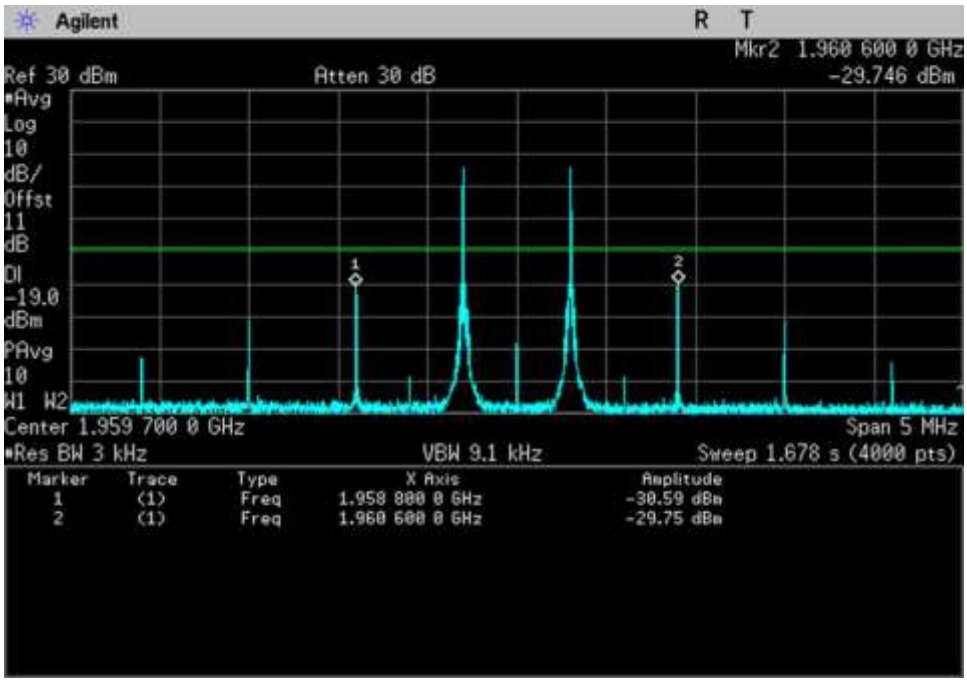
7.4 DL 728-746, 738.7MHz



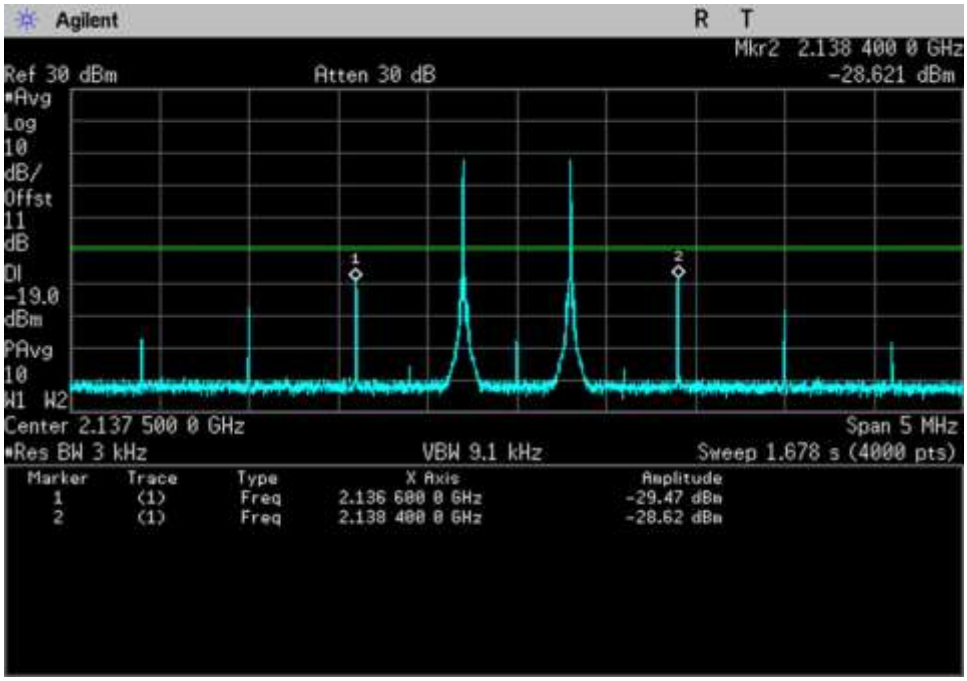
7.4 DL 746-757, 748.5MHz



7.4 DL 869-894, 881MHz



7.4 DL 1930-1995, 1959.7MHz



7.4 DL 2110-2155, 2137.5MHz

7.5 Out of Band Emissions

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Pl, Brea, CA 92823 • 714 993-6112		
Customer:	Cellphone-Mate, Inc.		
Specification:	**7.5 Out-of-band Emissions**		
Work Order #:	**100654**	Date:	12/08/17 and 1/10/18
Test Type:	**Conducted Emissions**		
Tested By:	**Don Nguyen**		
Software:	EMITest 5.03.11		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 1			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

Test Conditions / Notes:

The equipment under test (EUT) is a Fixed Wideband Consumer Booster.
The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
The EUT Server port is a type N connector and 50-ohm impedance.
The EUT Donor port is type F connector and 75-ohm impedance.

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

Test procedure:
The test was performed in accordance with section 7.5 of the FCC document: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance v04r01 Dated October 27, 2017

Test environment conditions:
Temperature: 22°C, 31% relative humidity, 101.5 kPa

Note: Lower RBW was used as applicable per rule part, in addition, integration power function of the Spectrum Analyzers' Adjacent Channel Power tool was used to show compliance in instances where accuracy can be improved by integrating power measured in smaller RBW and linearly summed into standard bandwidth.

Test Equipment: Testing on 12/8/17

Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
P07037	Signal Generator	Agilent	E4432B	10/6/2016	10/6/2018
P06958	Attenuator	Pasternack	PE7083	2/5/2016	2/5/2018
P06554	Cable	Astrolab	32022-29094K-29094K-24TC	12/30/2015	12/30/2017
P06662	Cable	Gore	PHASEFLEX EJR01N01024.0	4/5/2016	4/5/2018
03432	Attenuator	Aeroflex/Weinschel	90-30-34	10/27/2017	10/27/2019
02869	Spectrum Analyzer	Agilent	E4440A	8/1/2017	8/1/2018

Test Equipment: Testing on 1/10/18

Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
03418	Signal Generator	Agilent	E4438C	6/19/2017	6/19/2019
P07191	Cable	Astro	32022-29094K-29094K-48TC	10/30/2017	10/30/2019
05411	Attenuator	Weinschel	54A-10	1/18/2016	1/18/2018
03470	Spectrum Analyzer	Agilent	E4440A	1/3/2018	1/3/2020
C00126	Attenuator	Fairview Microwave	IS1595	12/19/2017	12/19/2019

Summary of Results

Pass: as indicated in plots above, all OBE are under the limit of -19dBm.

GSM

Low					High			
Out of Band Emission					Out of Band Emission			
Frequency (MHz)	Pre AGC	Limit (dBm)	Results		Frequency (MHz)	Pre AGC	Limit (dBm)	Results
UL 1710-1755	-25.3	-19	Pass		UL 1710-1755	-22.6	-19	Pass
UL 1850-1915	-22.7	-19	Pass		UL 1850-1915	-35.0	-19	Pass
UL 824-849	-21.8	-19	Pass		UL 824-849	-23.3	-19	Pass
UL 698-716	-22.0	-19	Pass		UL 698-716	-24.4	-19	Pass
UL 776-787	-25.5	-19	Pass		UL 776-787	-28.2	-19	Pass
DL 2110-2155	-32.6	-19	Pass		DL 2110-2155	-32.8	-19	Pass
DL 1930-1995	-36.0	-19	Pass		DL 1930-1995	-39.1	-19	Pass
DL 869-894	-35.3	-19	Pass		DL 869-894	-38.0	-19	Pass
DL 728-746	-43.6	-19	Pass		DL 728-746	-39.7	-19	Pass
DL 746-757	-40.0	-19	Pass		DL 746-757	-44.1	-19	Pass

CDMA

Low					High			
Out of Band Emission					Out of Band Emission			
Frequency (MHz)	**Pre AGC**	**Limit (dBm)**	**Results**		**Frequency (MHz)**	**Pre AGC**	**Limit (dBm)**	**Results**
UL 1710-1755	-32.6	-19	Pass		UL 1710-1755	-30.3	-19	Pass
UL 1850-1915	-23.3	-19	Pass		UL 1850-1915	-42.6	-19	Pass
UL 824-849	-25.8	-19	Pass		UL 824-849	-32.9	-19	Pass
UL 698-716	-39.1	-19	Pass		UL 698-716	-42.5	-19	Pass
UL 776-787	-45.3	-19	Pass		UL 776-787	-48.0	-19	Pass
DL 2110-2155	-41.5	-19	Pass		DL 2110-2155	-35.9	-19	Pass
DL 1930-1995	-42.3	-19	Pass		DL 1930-1995	-46.7	-19	Pass
DL 869-894	-47.4	-19	Pass		DL 869-894	-48.2	-19	Pass
DL 728-746	-57.2	-19	Pass		DL 728-746	-54.5	-19	Pass
DL 746-757	-52.9	-19	Pass		DL 746-757	-58.6	-19	Pass

4.1MHz AWGN

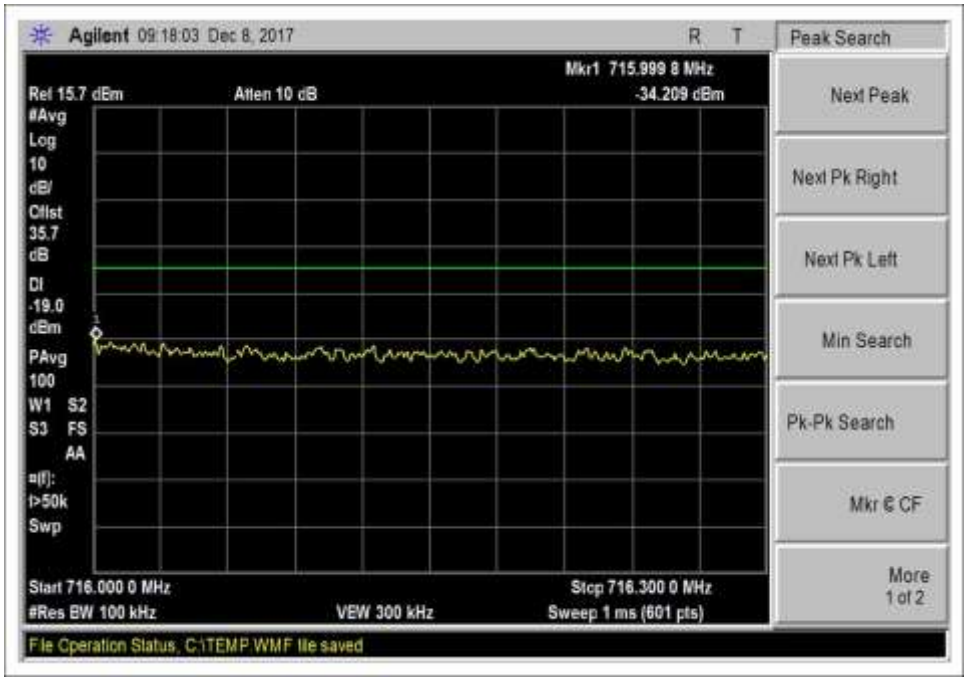
Low					High			
Out of Band Emission					Out of Band Emission			
Frequency (MHz)	**Pre AGC**	**Limit (dBm)**	**Results**		**Frequency (MHz)**	**Pre AGC**	**Limit (dBm)**	**Results**
UL 1710-1755	-19.5	-19	Pass		UL 1710-1755	-19.6	-19	Pass
UL 1850-1915	-26.5*	-19	Pass		UL 1850-1915	-34.6	-19	Pass
UL 824-849	-23.1	-19	Pass		UL 824-849	-29.3	-19	Pass
UL 698-716	-21.9	-19	Pass		UL 698-716	-32.2	-19	Pass
UL 776-787	-35.0	-19	Pass		UL 776-787	-24.2	-19	Pass
DL 2110-2155	-35.6	-19	Pass		DL 2110-2155	-26.5	-19	Pass
DL 1930-1995	-34.3	-19	Pass		DL 1930-1995	-38.1	-19	Pass
DL 869-894	-49.7	-19	Pass		DL 869-894	-48.4	-19	Pass
DL 728-746	-47.2	-19	Pass		DL 728-746	-43.6	-19	Pass
DL 746-757	-42.3	-19	Pass		DL 746-757	-47.9	-19	Pass

Note: The EUT also maintains compliance with the out-of-band emissions limit at input power indicated in section 5.5.

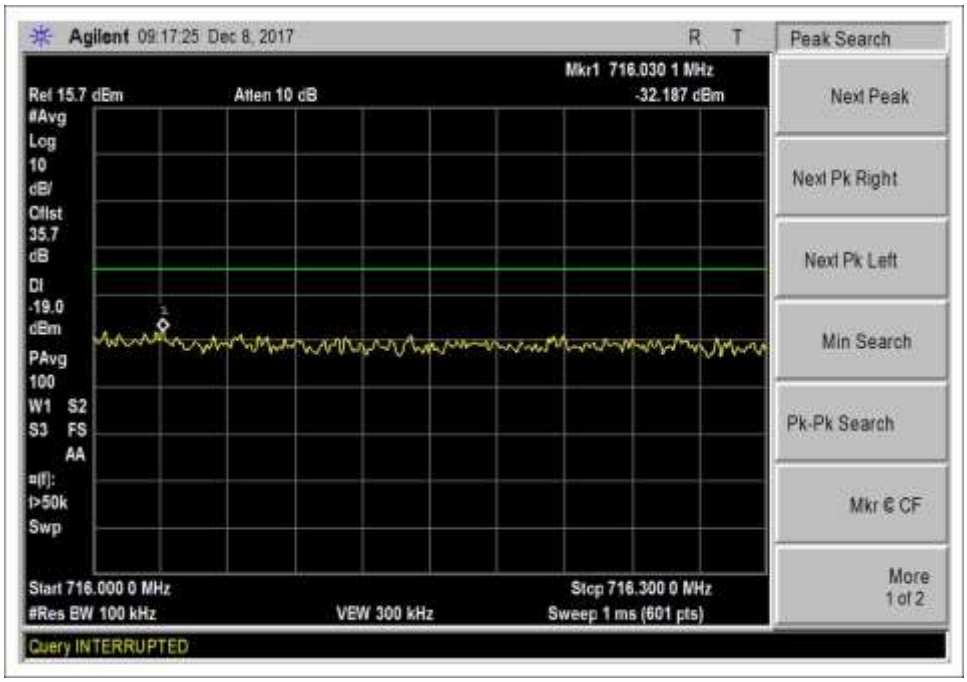
*rbw=51kHz

Plots

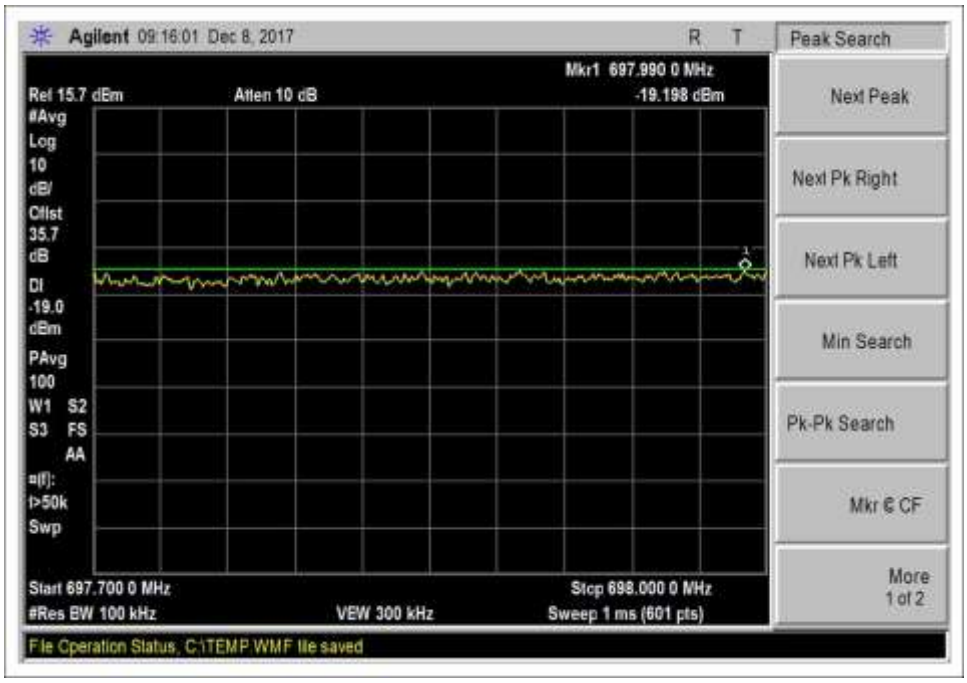
AWGN/ LTE



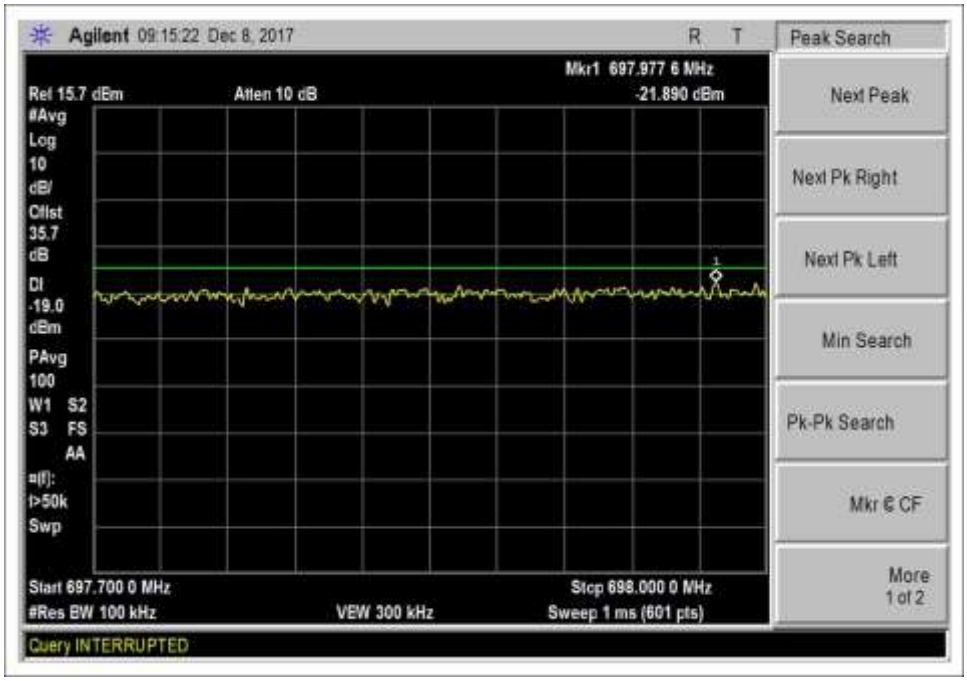
7.5 UL 698-716 AWGN high max



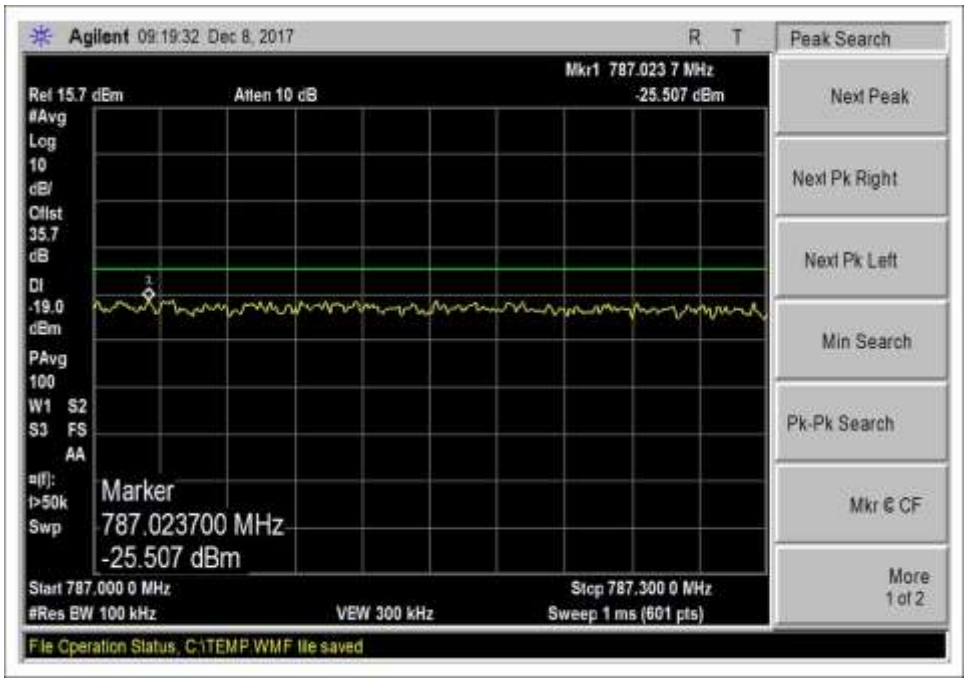
7.5 UL 698-716 AWGN high



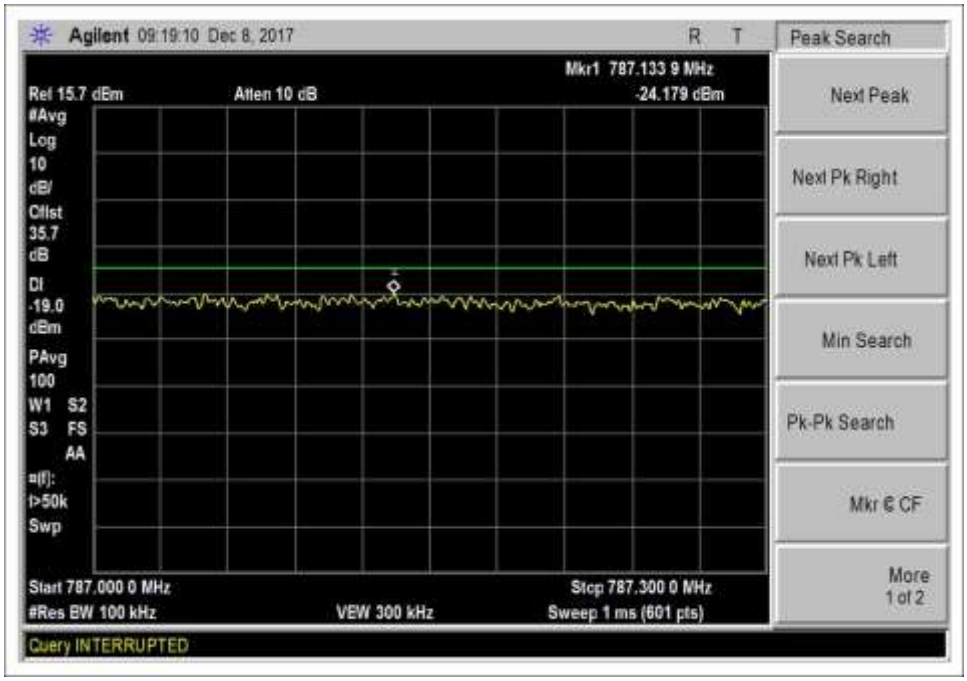
7.5 UL 698-716 AWGN low max



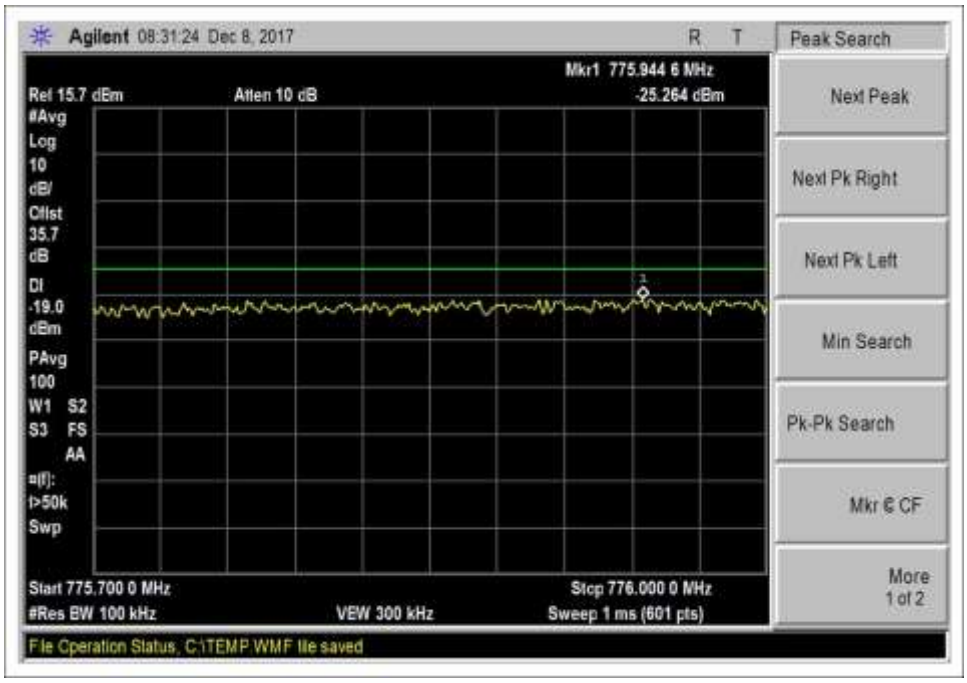
7.5 UL 698-716 AWGN low



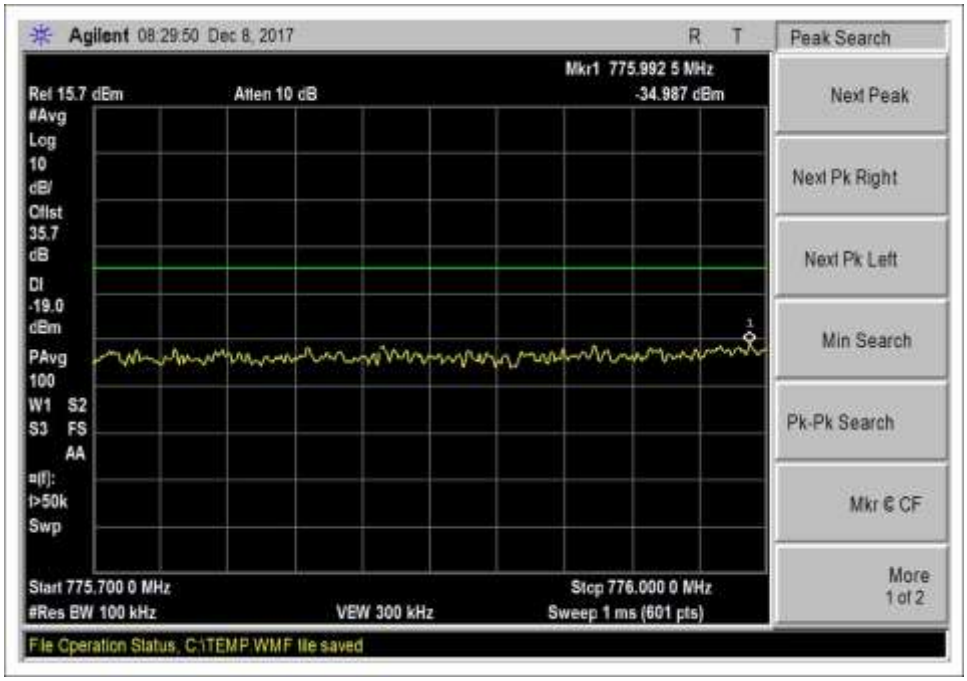
7.5 UL 776-787 AWGN high max



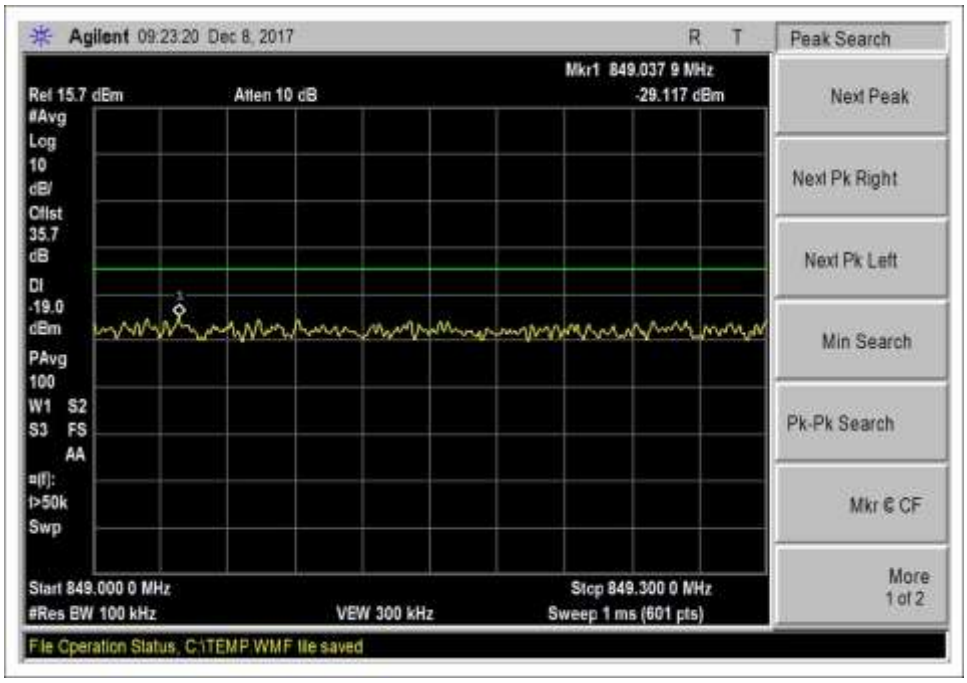
7.5 UL 776-787 AWGN high



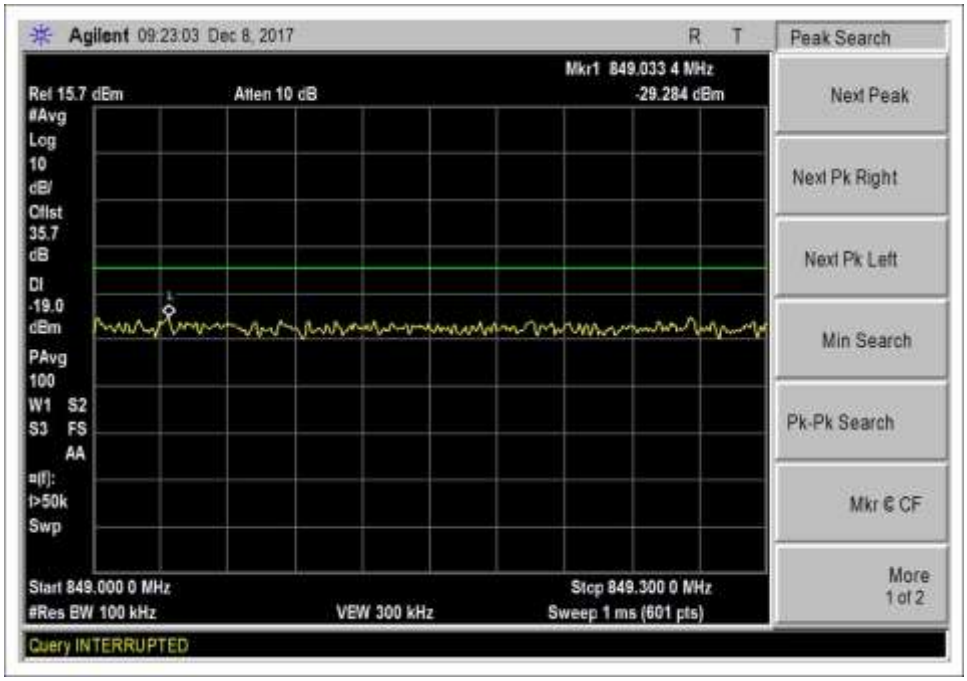
7.5 UL 776-787 AWGN low max



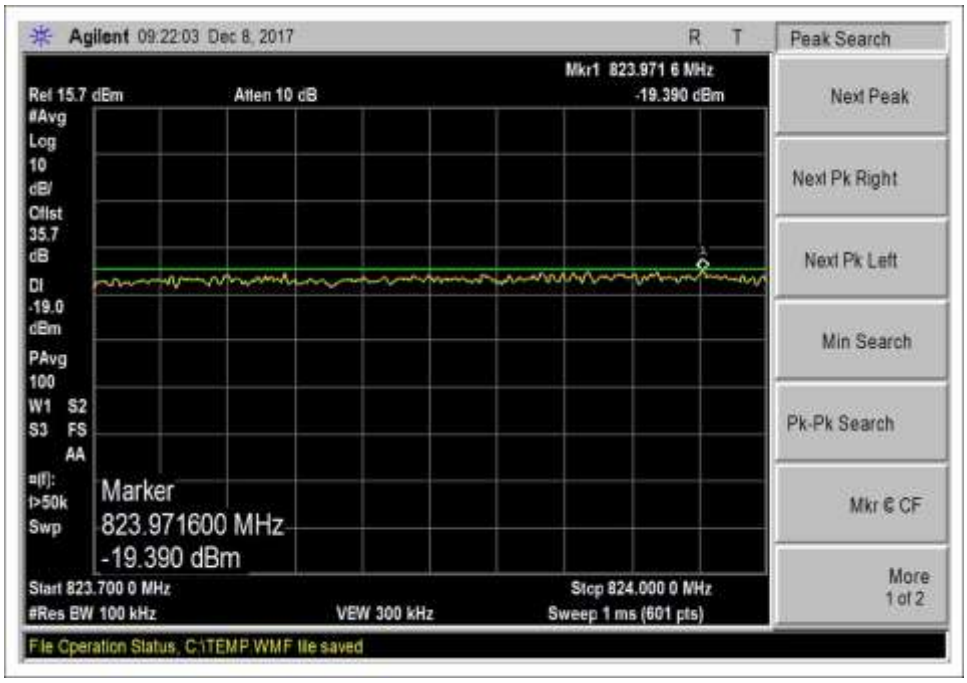
7.5 UL 776-787 AWGN low



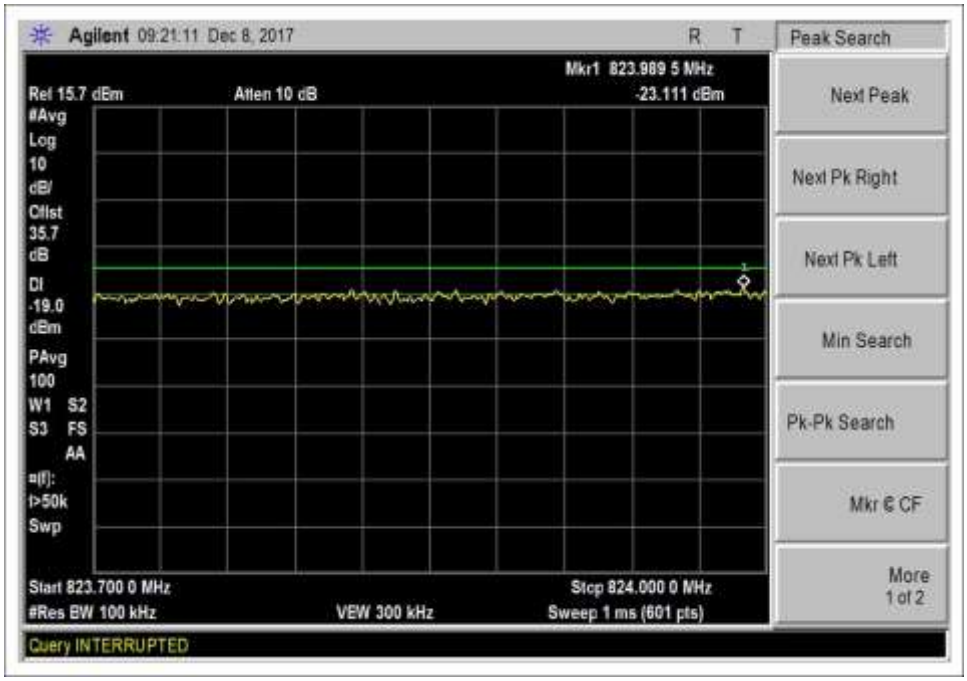
7.5 UL 824-849 AWGN high max



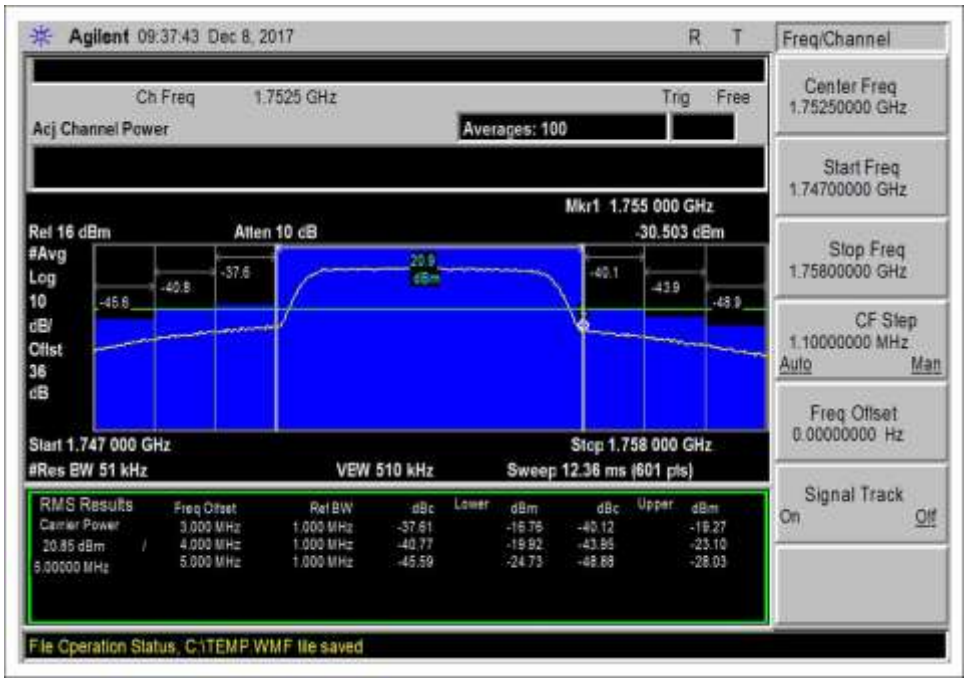
7.5 UL 824-849 AWGN high



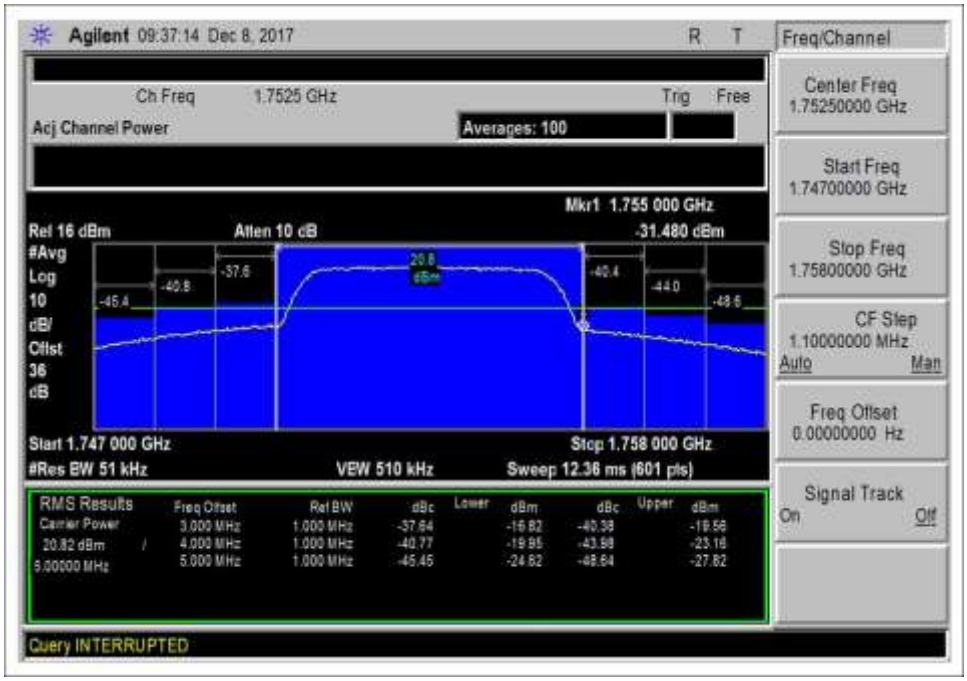
7.5 UL 824-849 AWGN low max



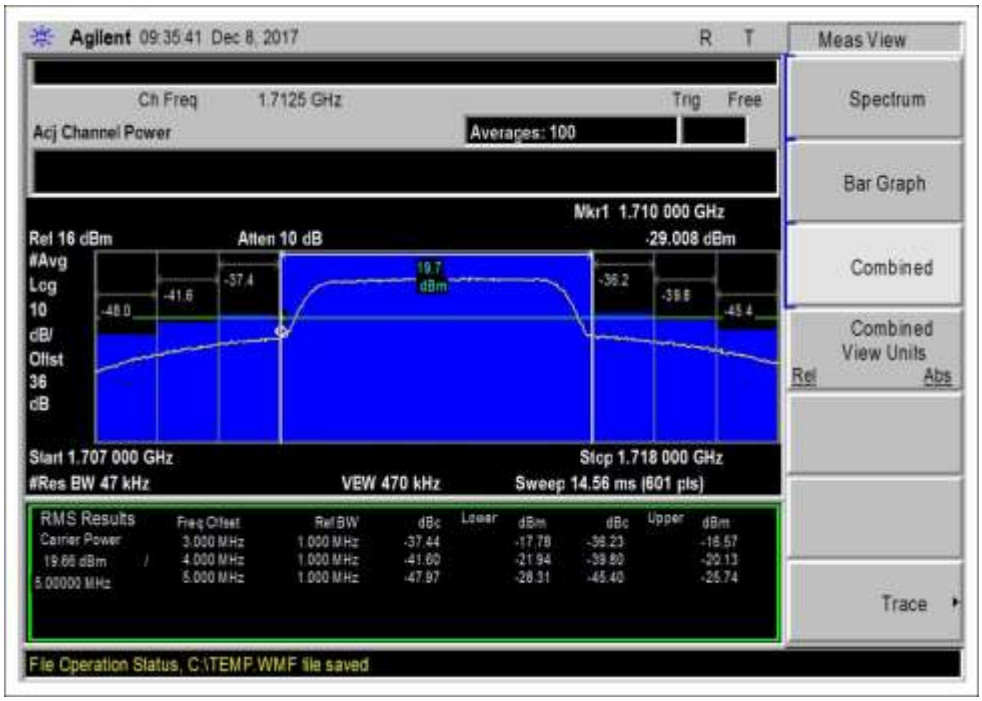
7.5 UL 824-849 AWGN low



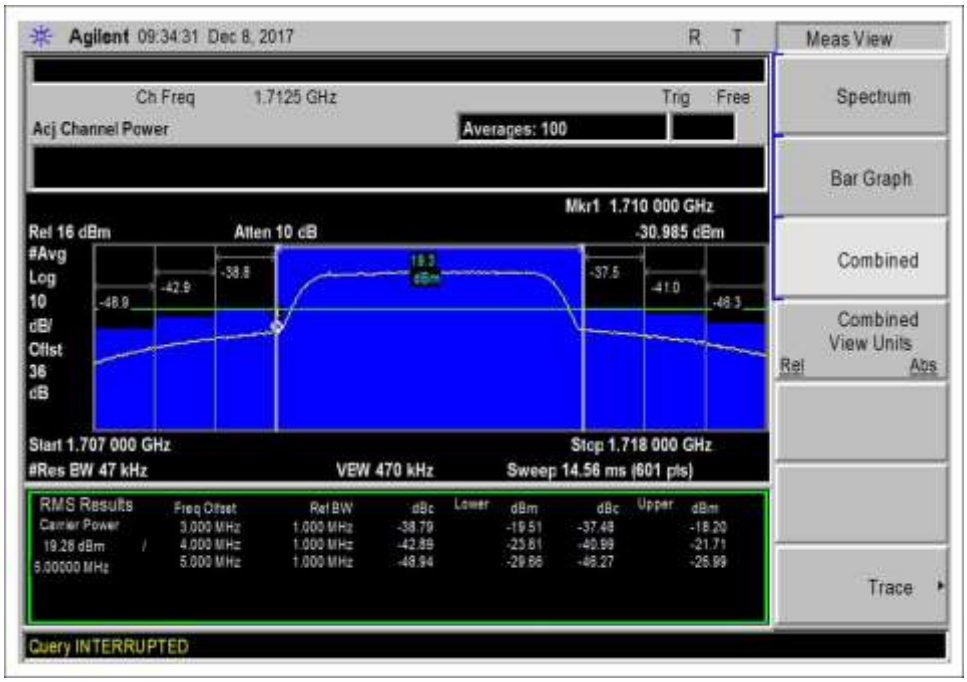
7.5 UL 1710-1755 AWGN high max



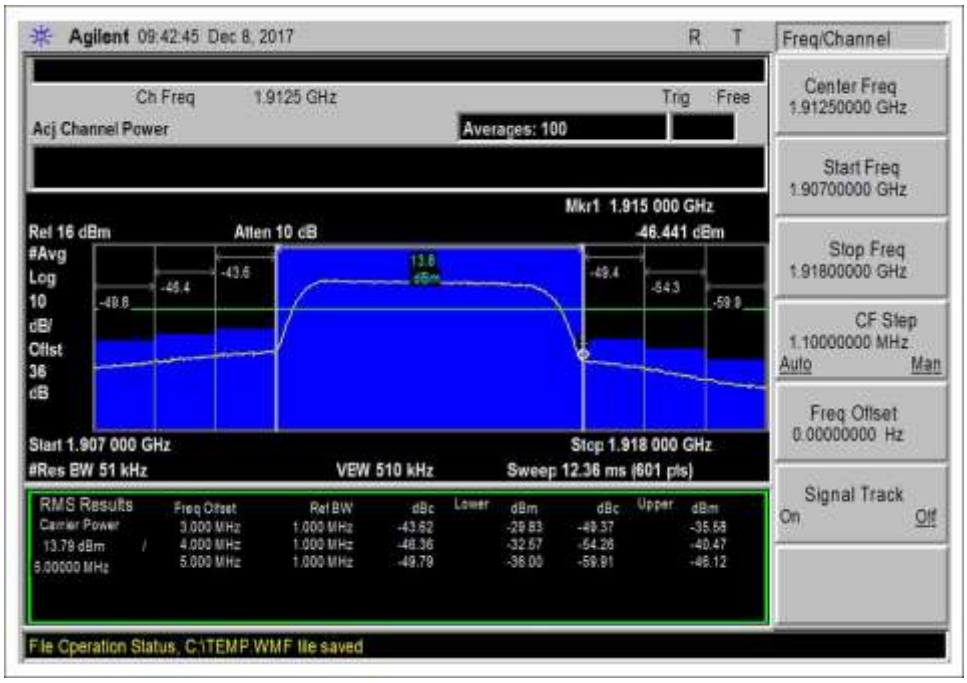
7.5 UL 1710-1755 AWGN high



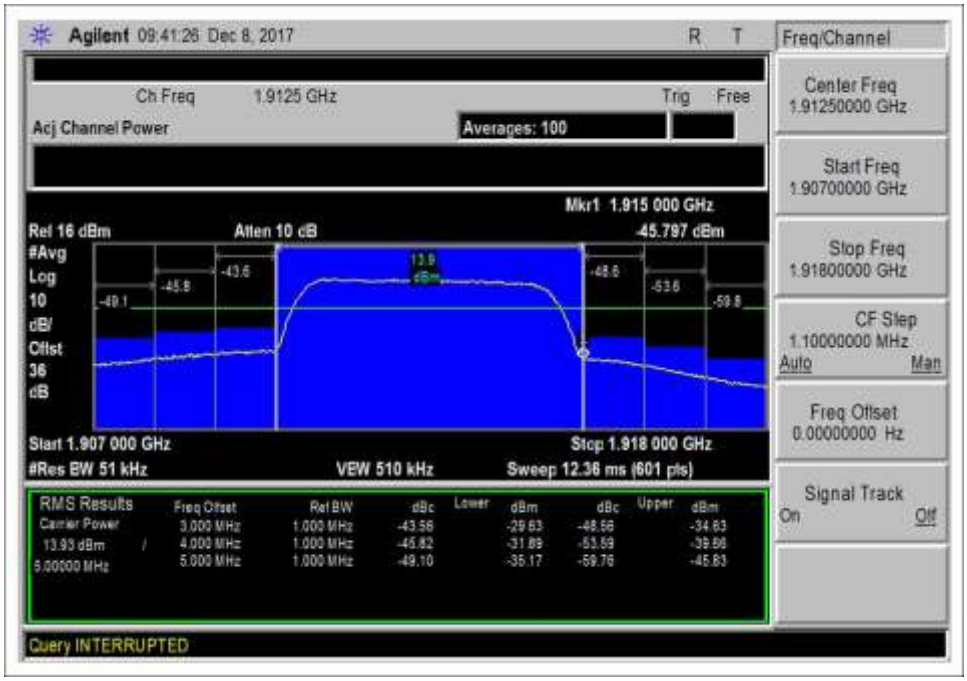
7.5 UL 1710-1755 AWGN low max



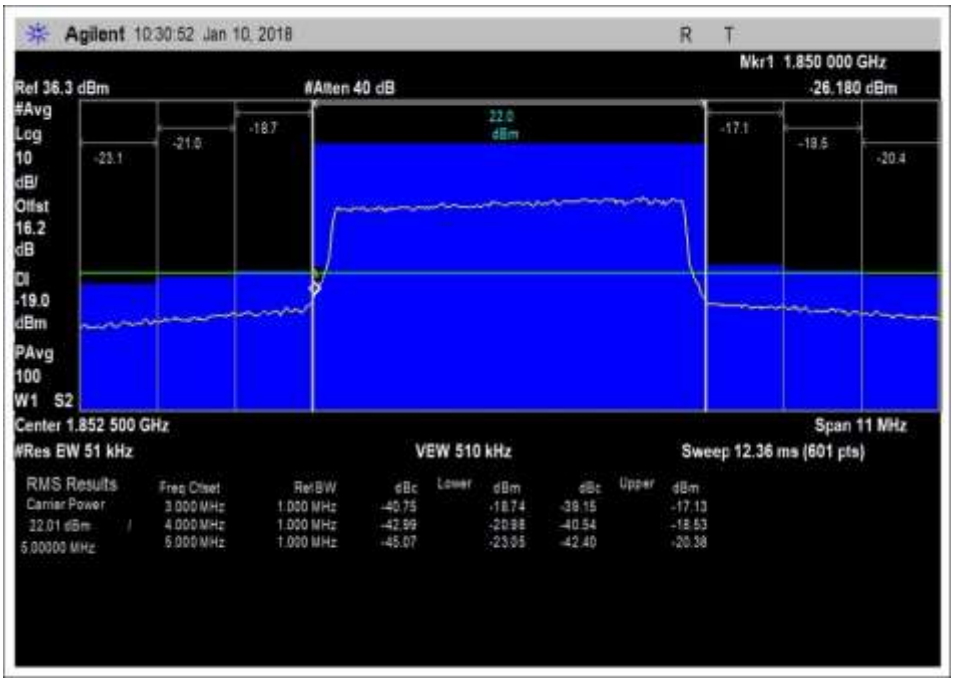
7.5 UL 1710-1755 AWGN low



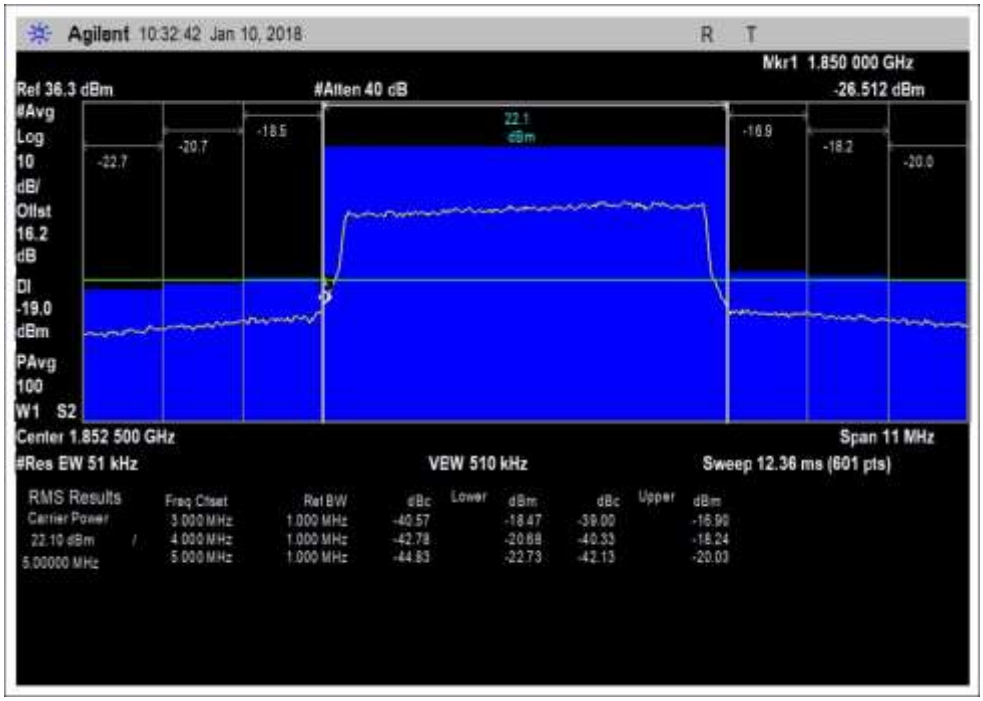
7.5 UL 1850-1915 AWGN high max



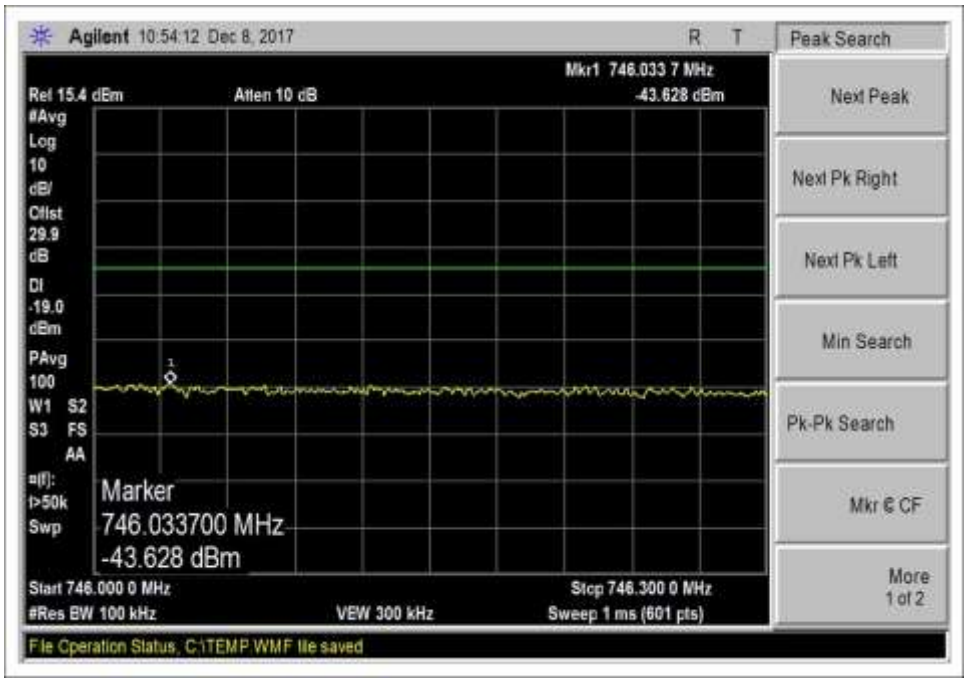
7.5 UL 1850-1915 AWGN high



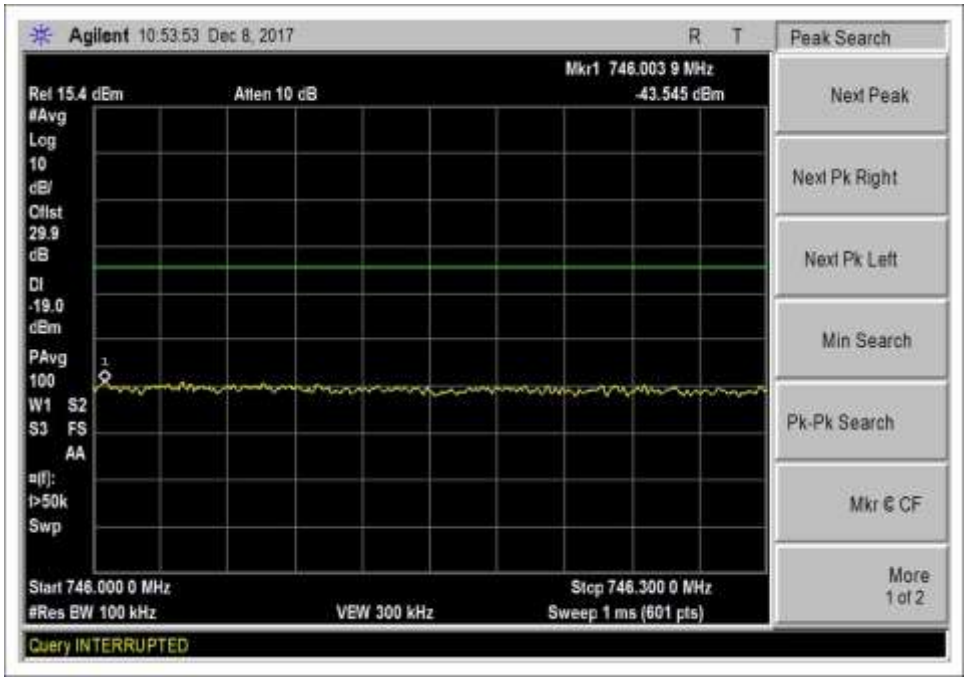
7.5 UL 1850-1915 LTE low max



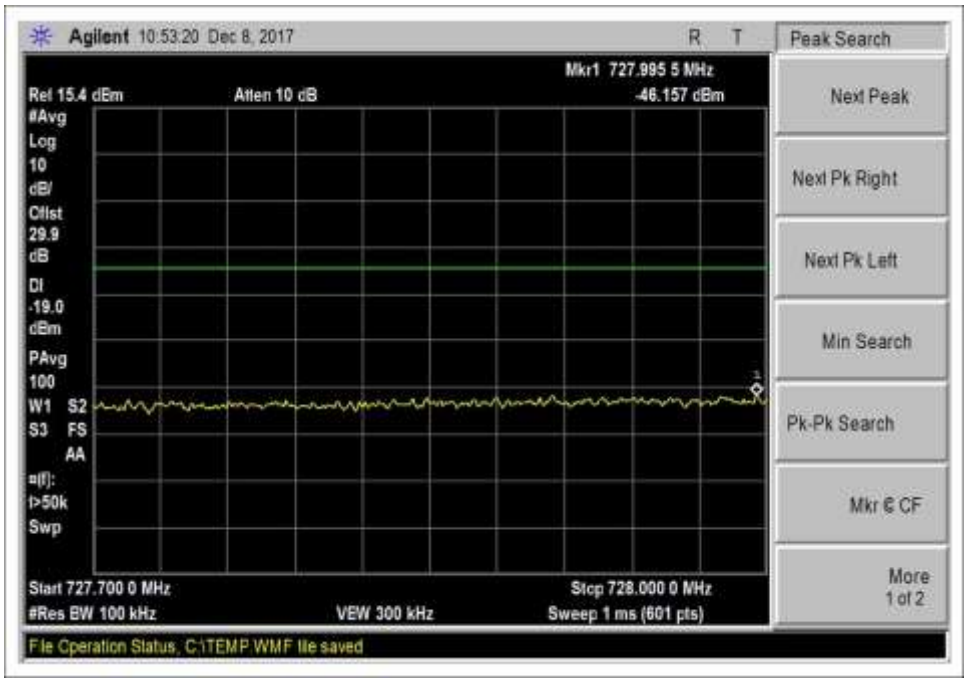
7.5 UL 1850-1915 LTE low



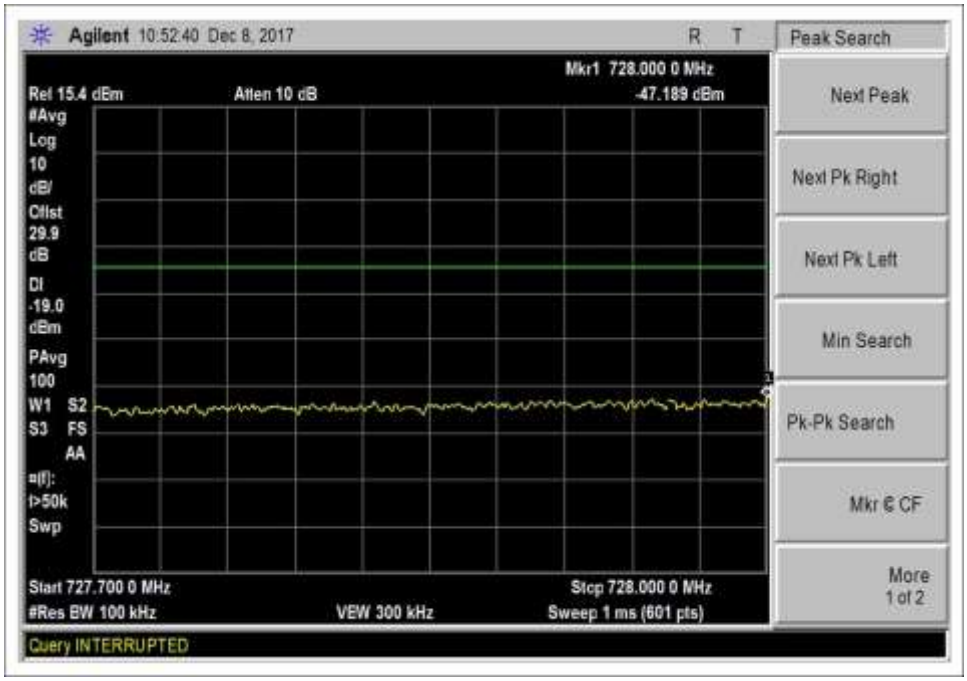
7.5 DL 728-746 AWGN high max



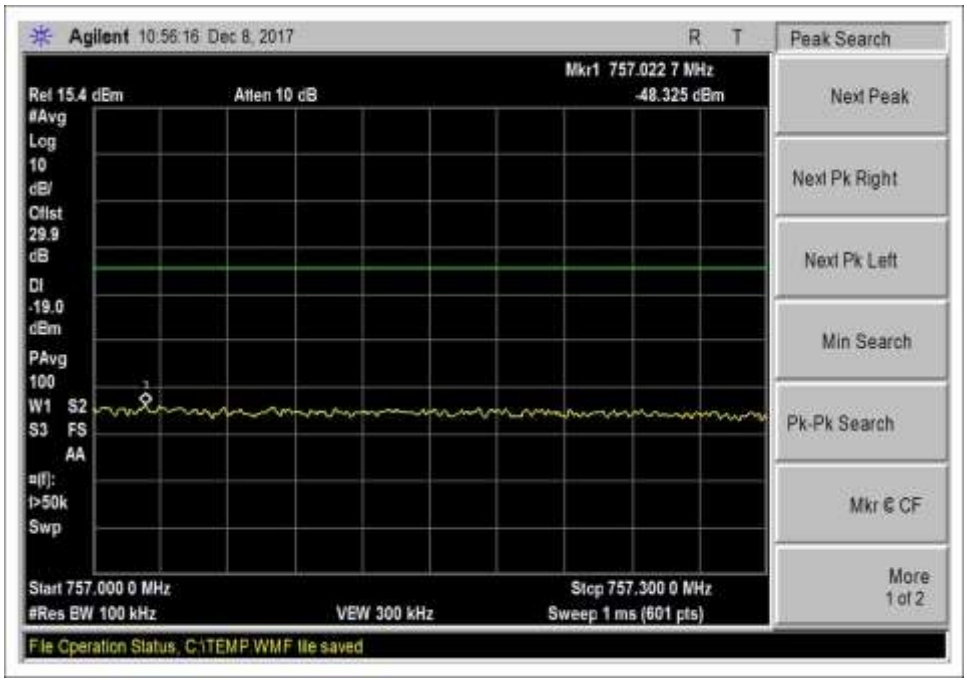
7.5 DL 728-746 AWGN high



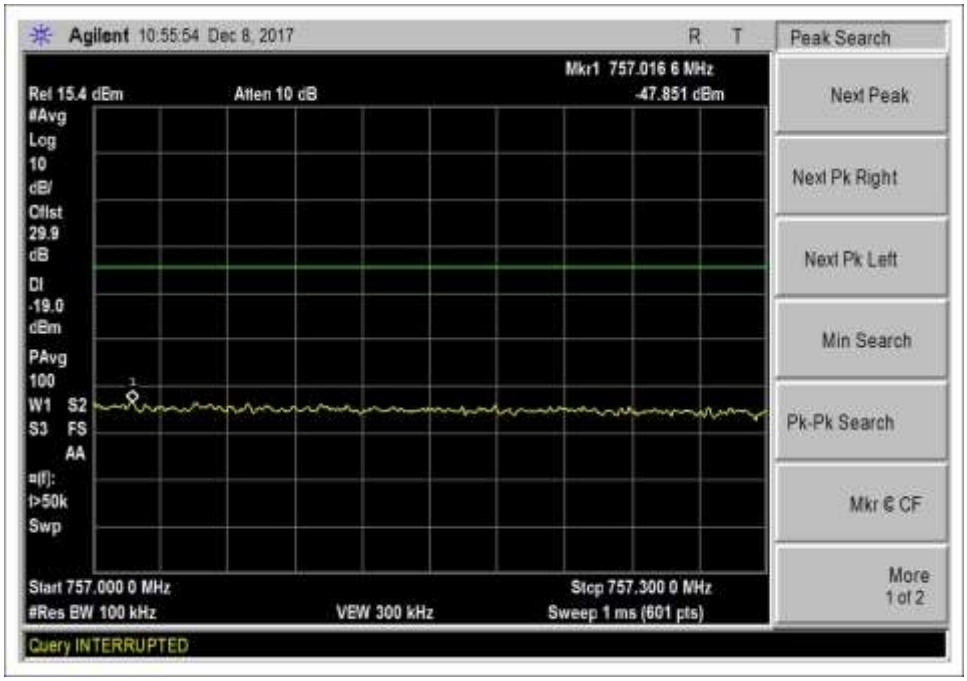
7.5 DL 728-746 AWGN low max



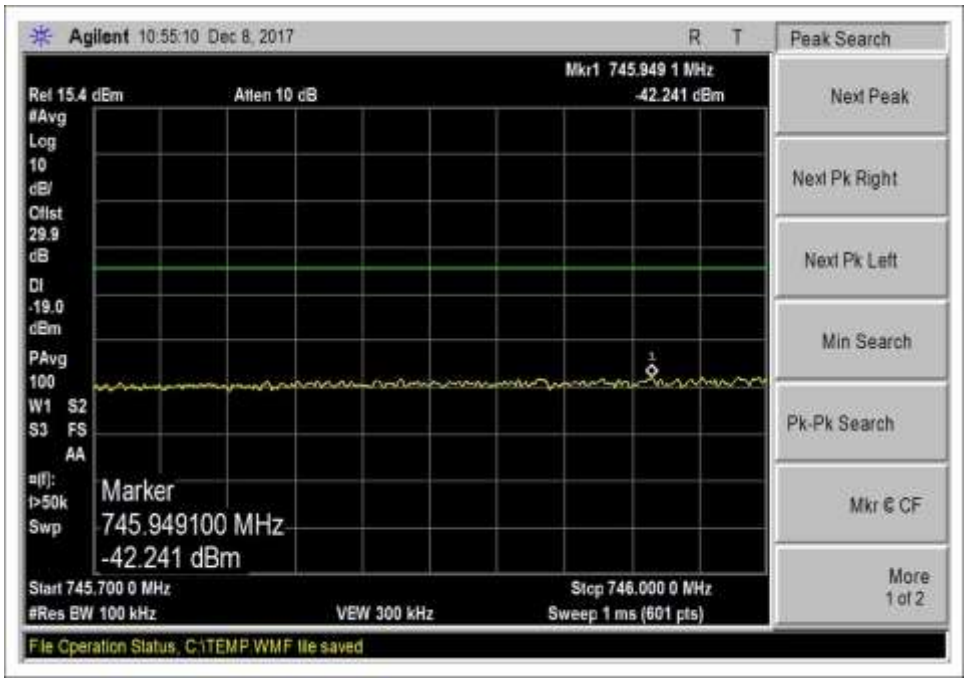
7.5 DL 728-746 AWGN low



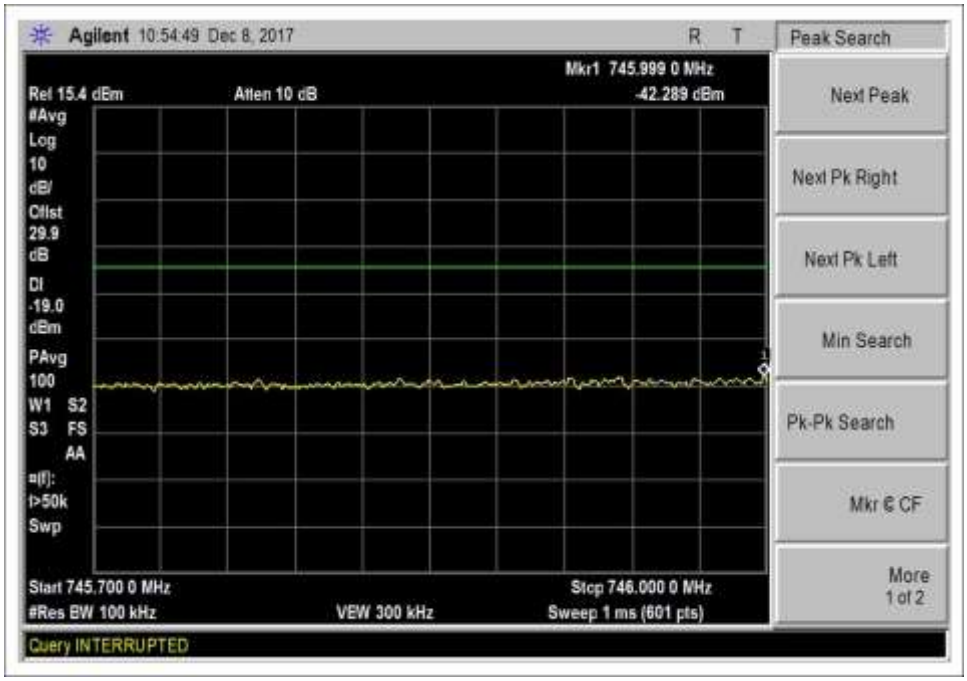
7.5 DL 746-757 AWGN high max



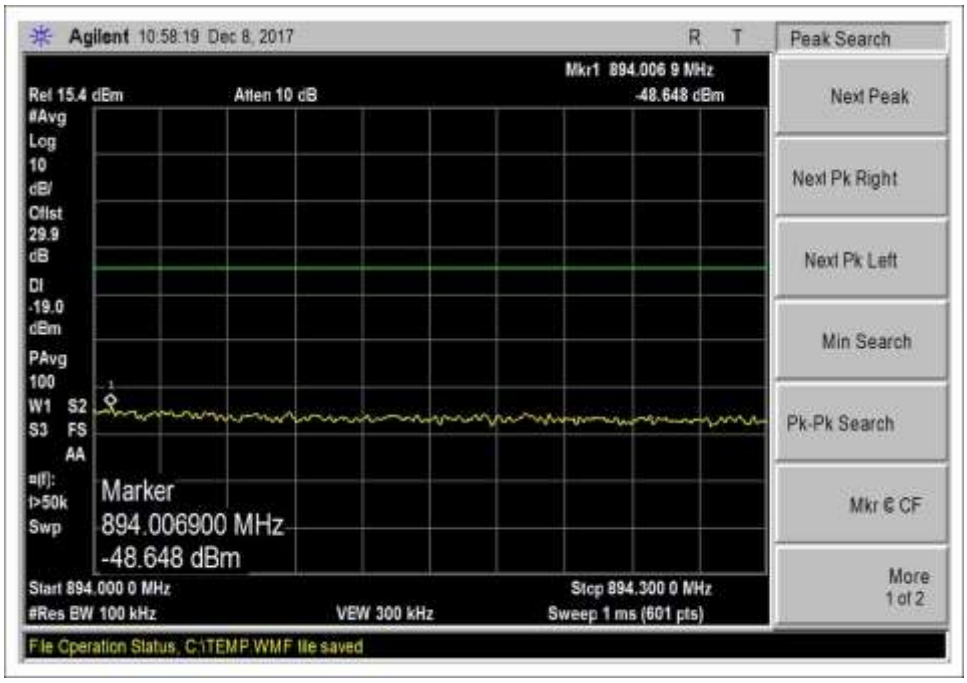
7.5 DL 746-757 AWGN high



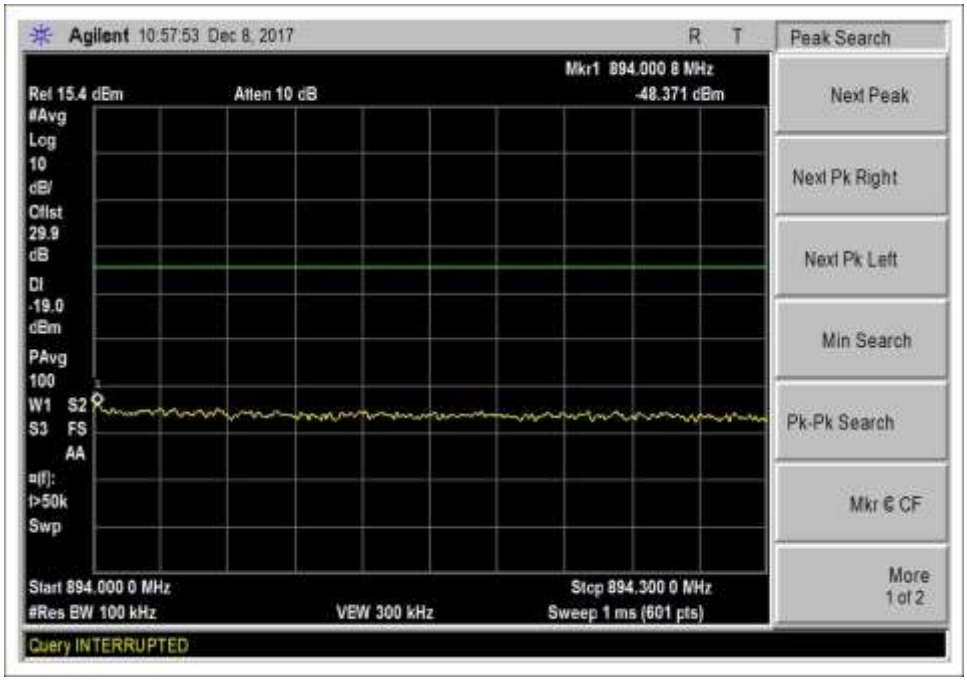
7.5 DL 746-757 AWGN low max



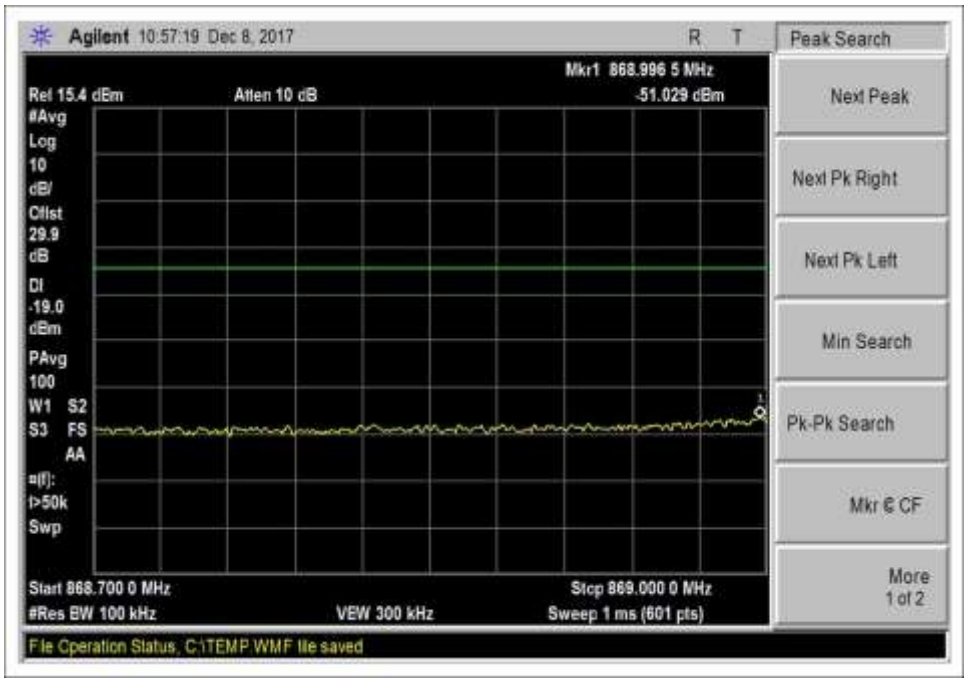
7.5 DL 746-757 AWGN low



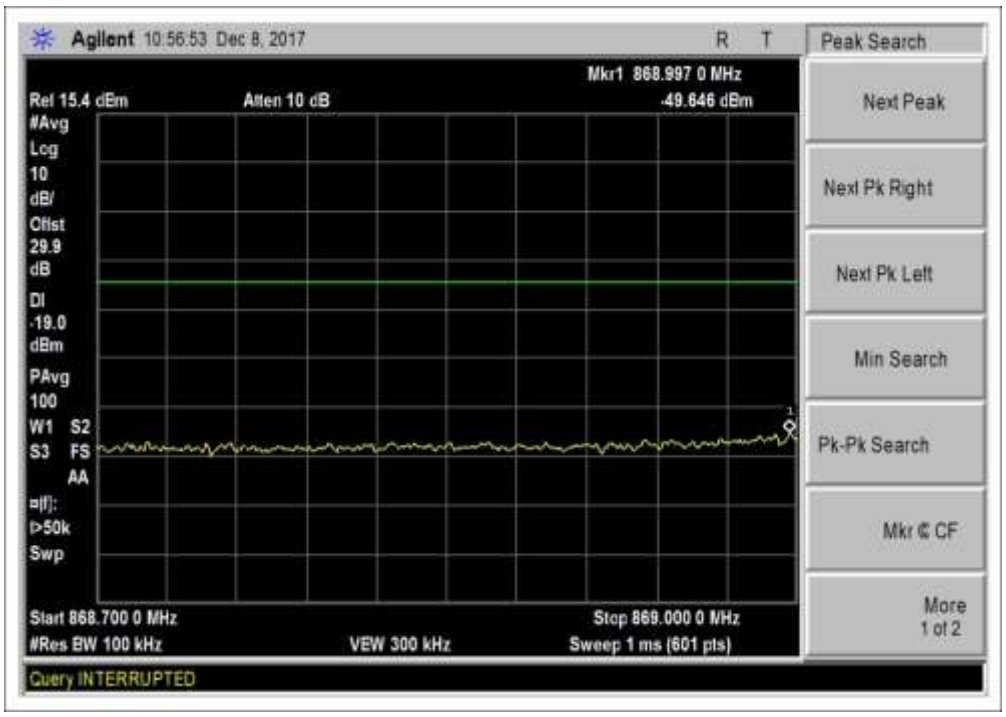
7.5 DL 869-894 AWGN high max



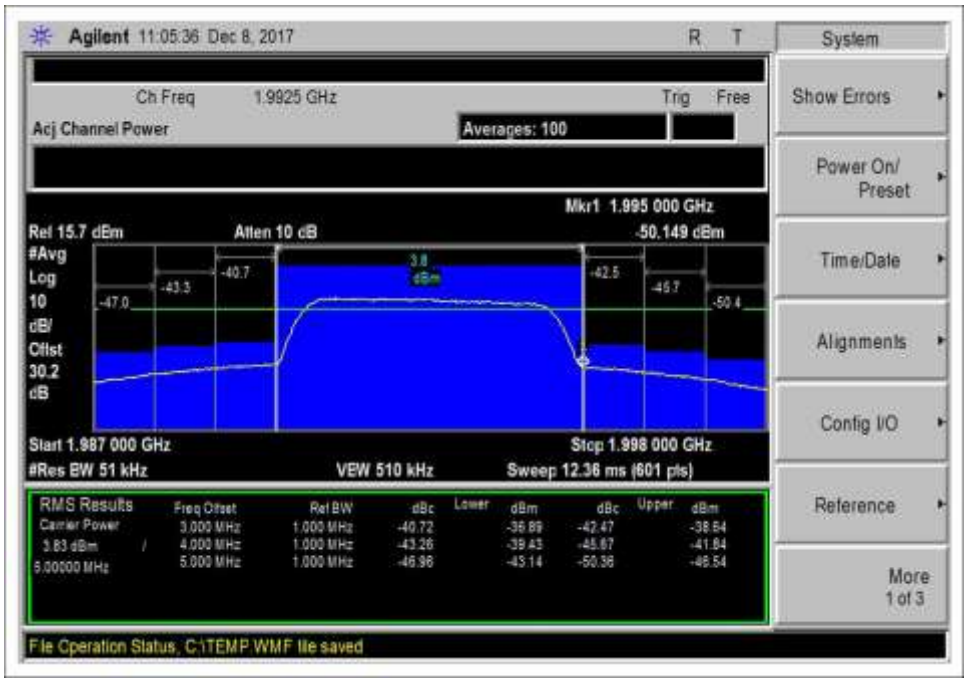
7.5 DL 869-894 AWGN high



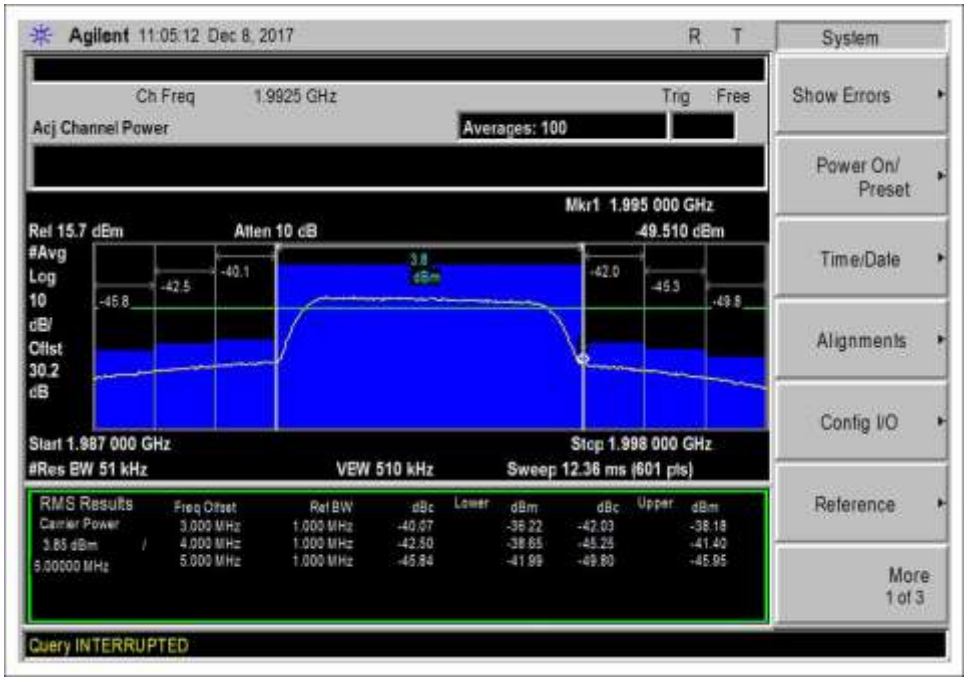
7.5 DL 869-894 AWGN low max



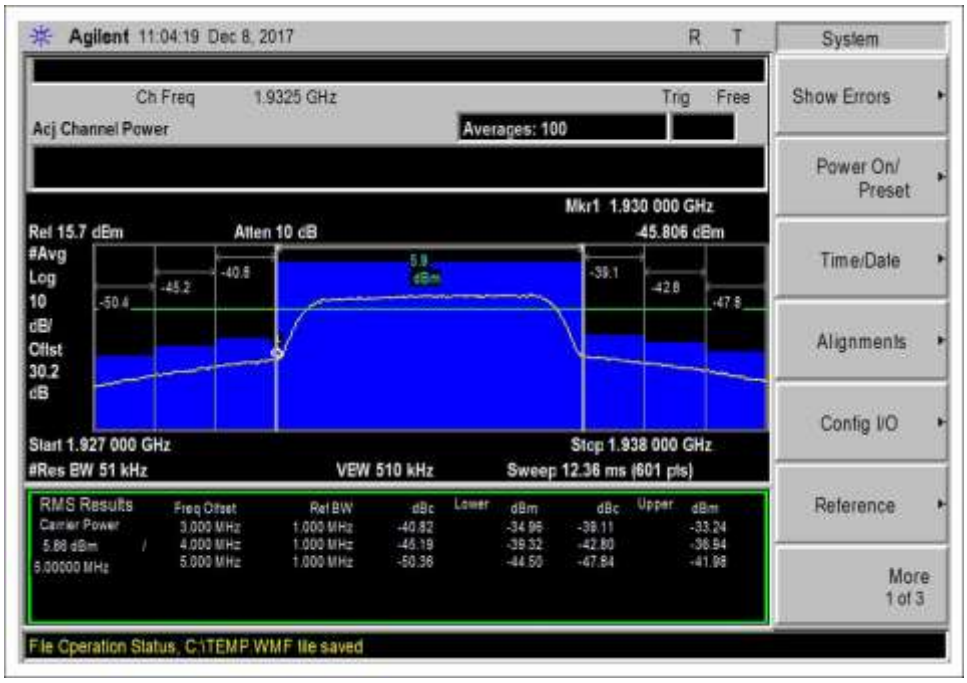
7.5 DL 869-894 AWGN low



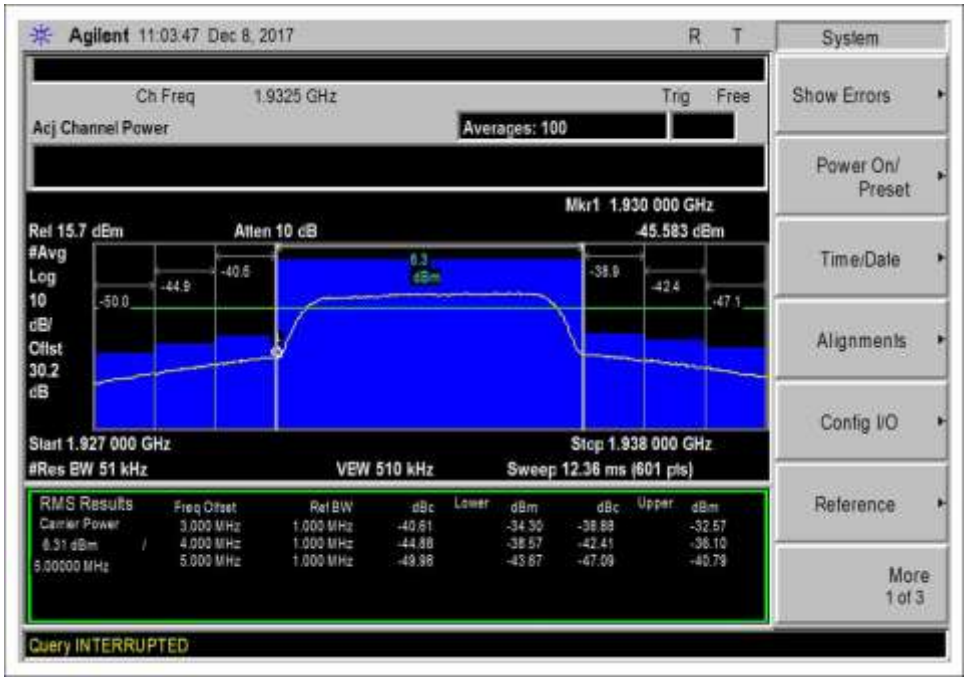
7.5 DL 1930-1995 AWGN high max



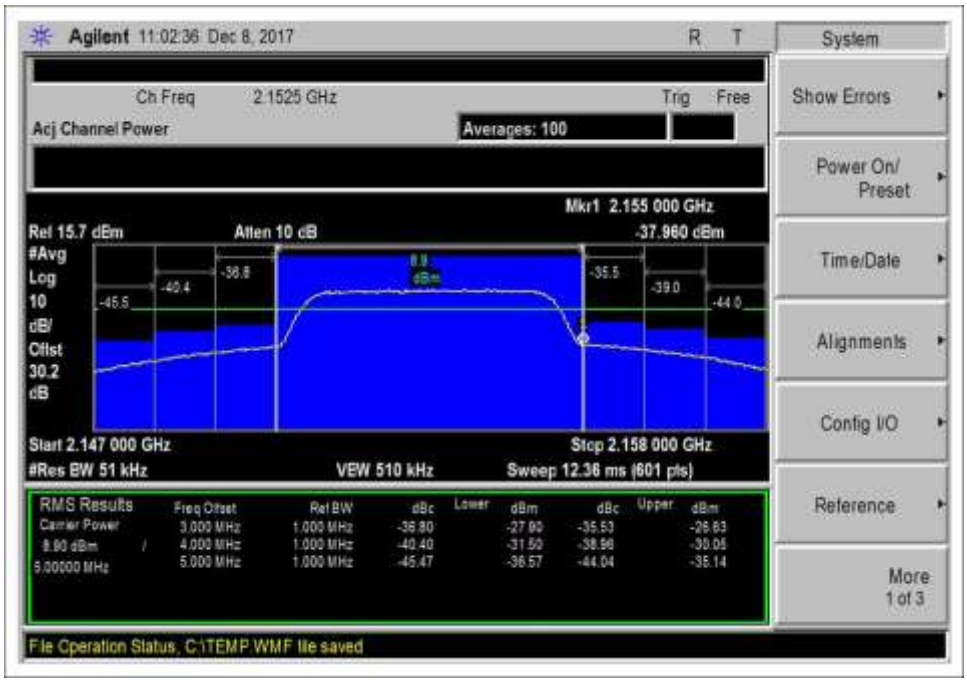
7.5 DL 1930-1995 AWGN high



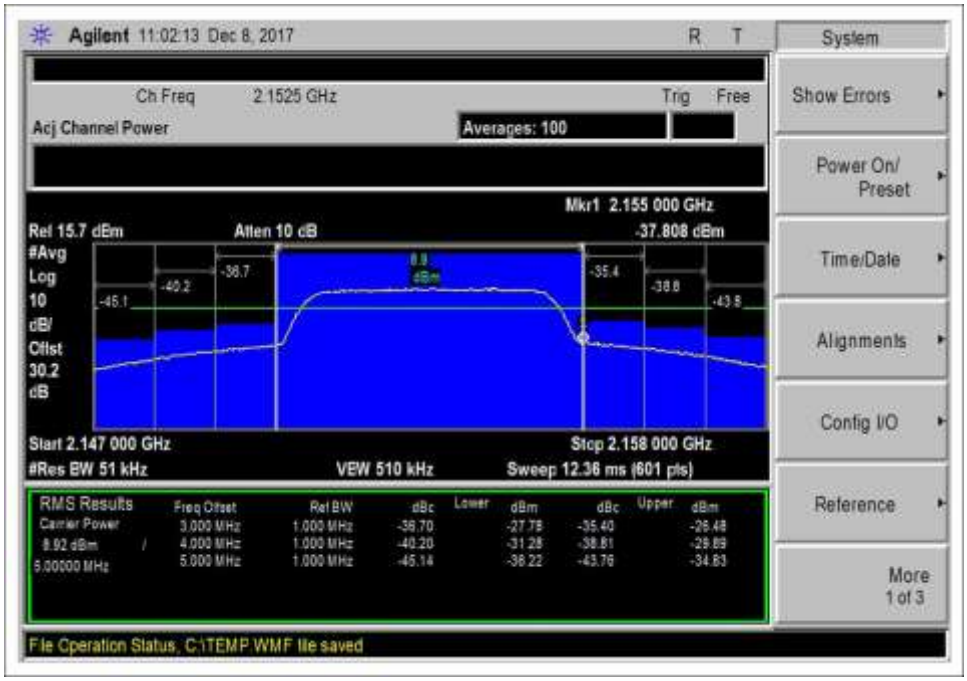
7.5 DL 1930-1995 AWGN low max



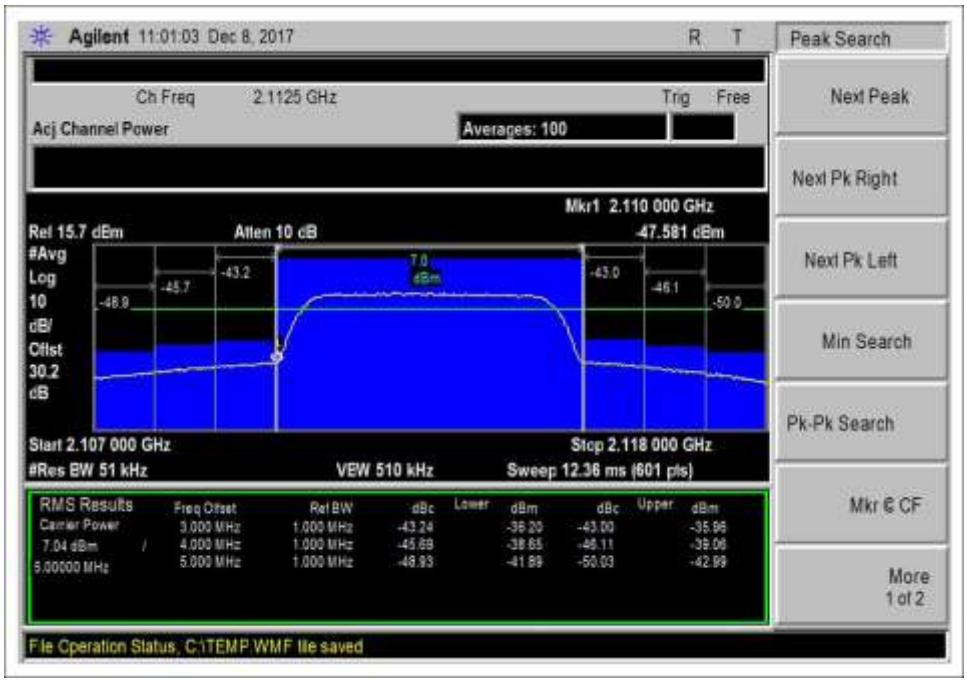
7.5 DL 1930-1995 AWGN low



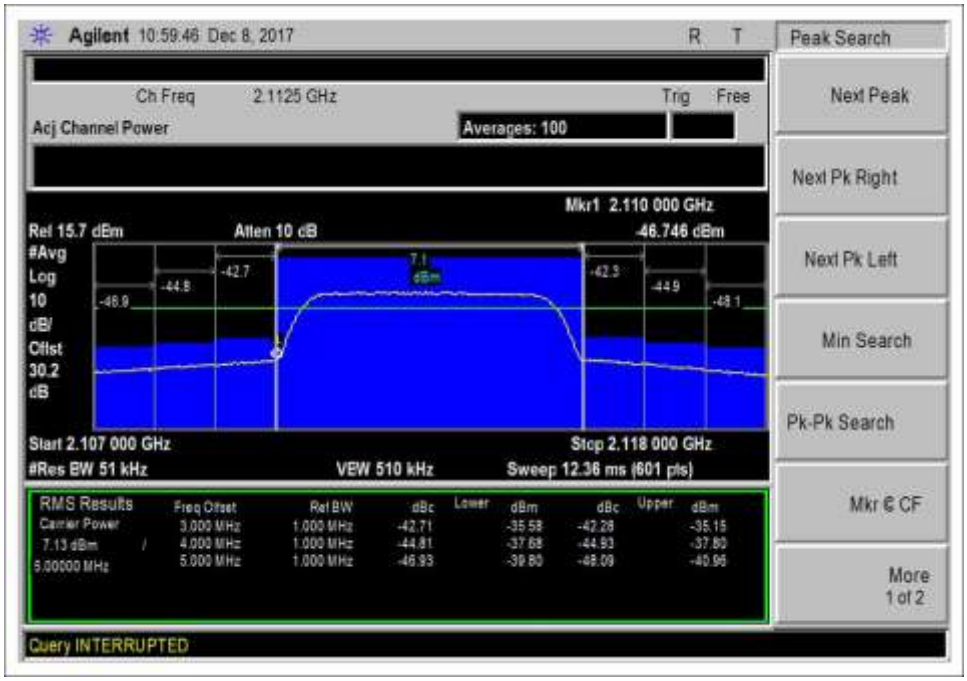
7.5 DL 2110-2155 AWGN high max



7.5 DL 2110-2155 AWGN high

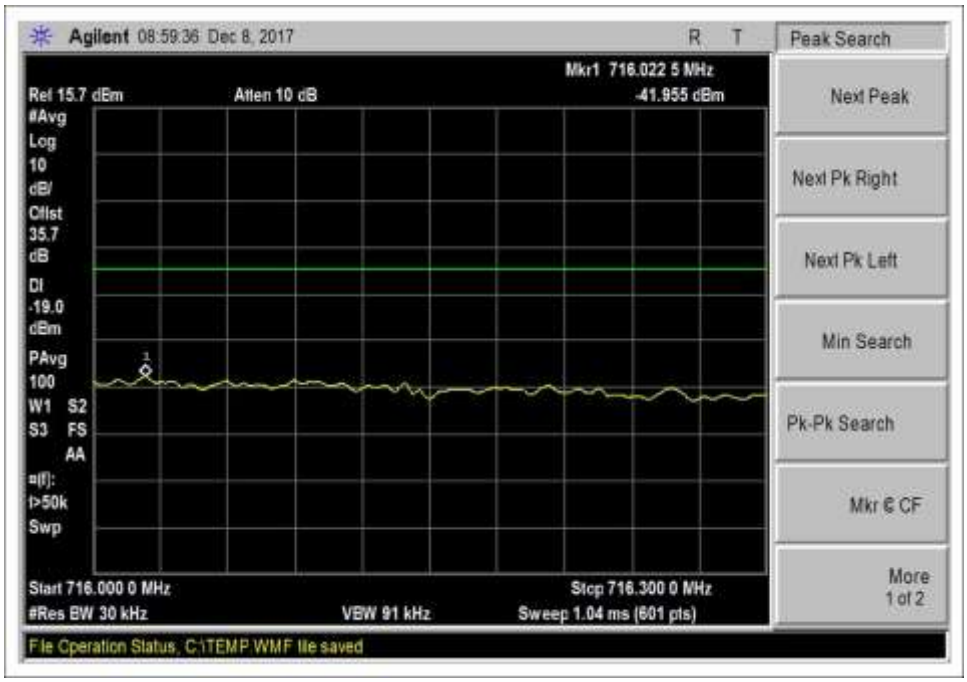


7.5 DL 2110-2155 AWGN low max

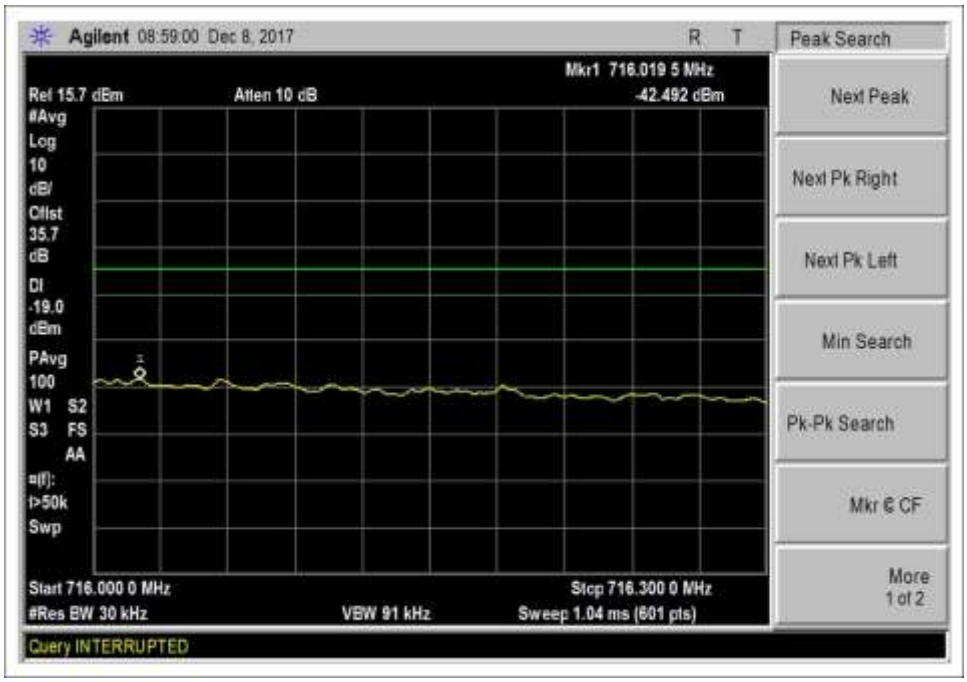


7.5 DL 2110-2155 AWGN low

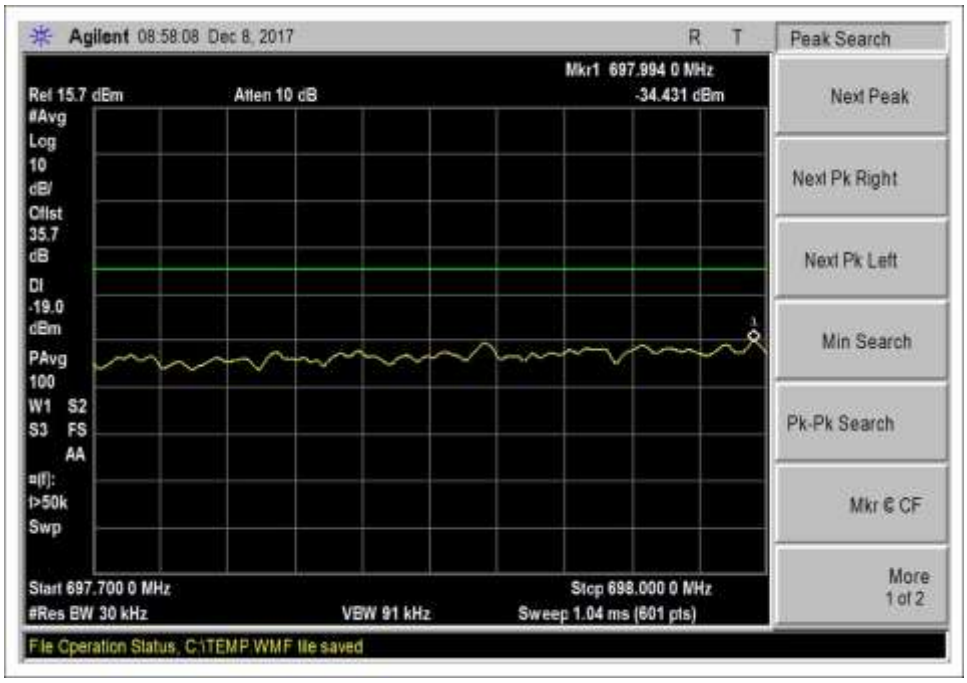
CDMA



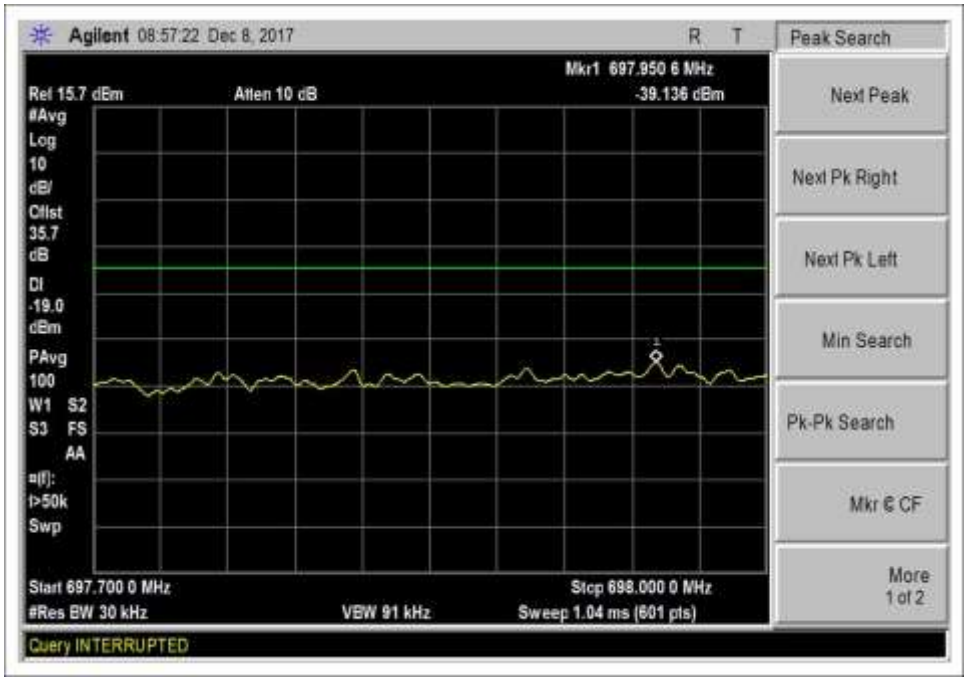
7.5 UL 698-716 CDMA high max



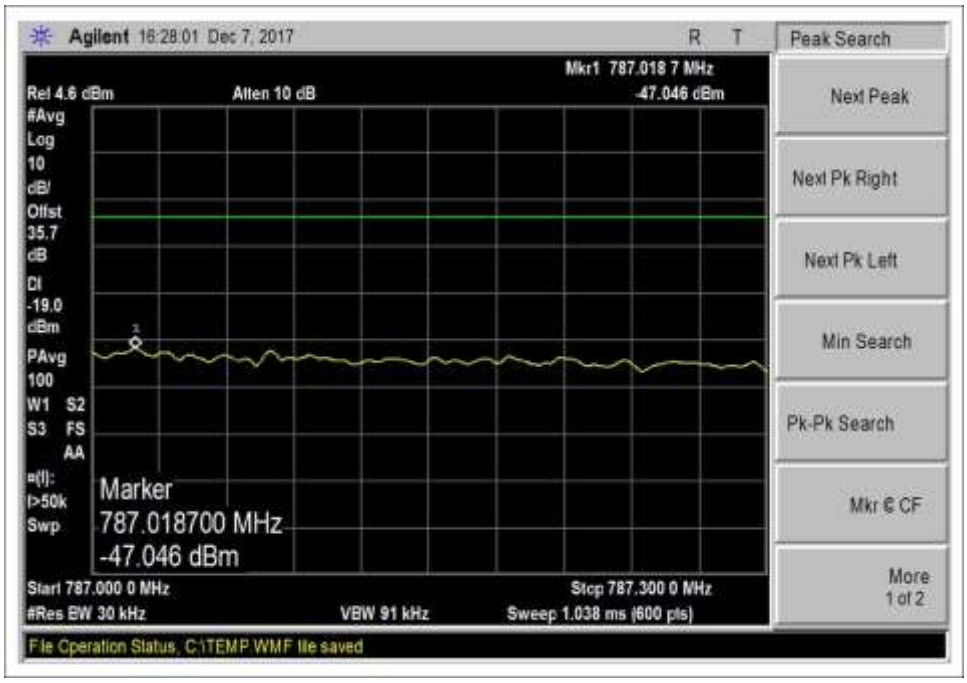
7.5 UL 698-716 CDMA high



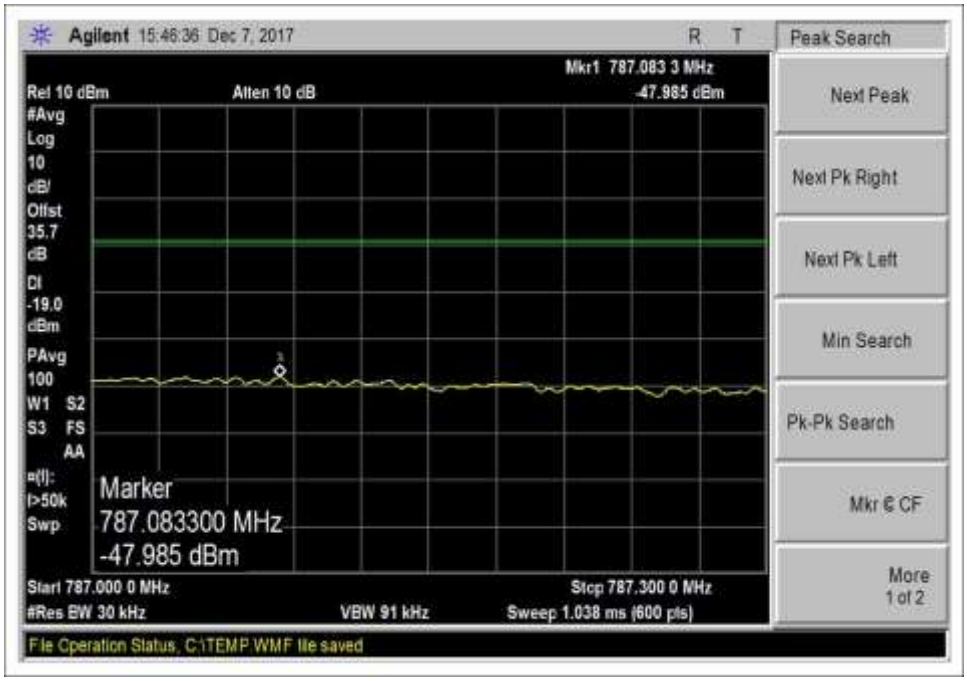
7.5 UL 698-716 CDMA low max



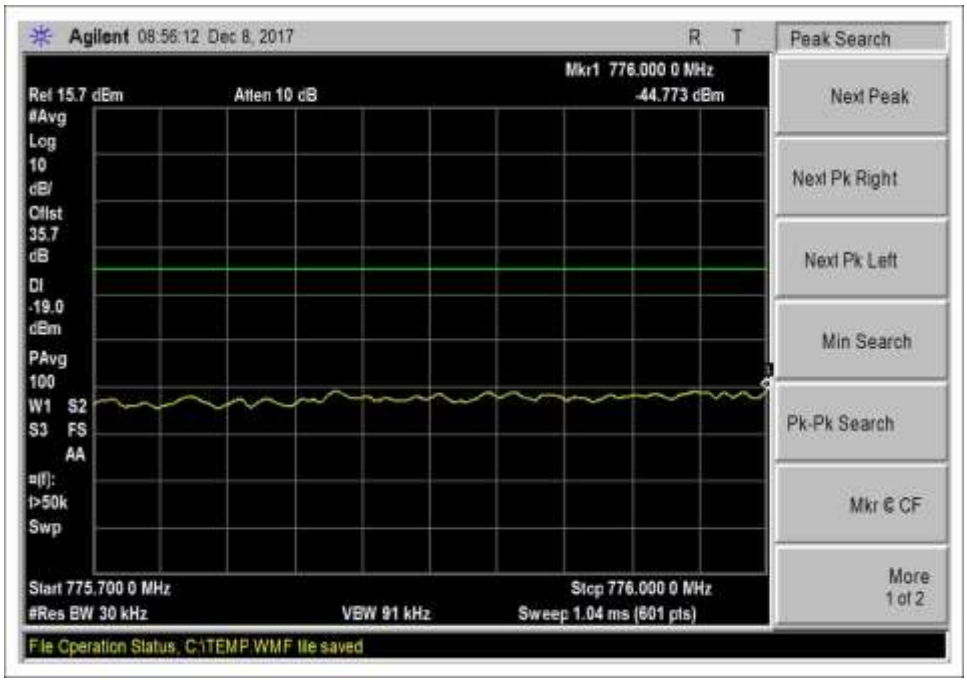
7.5 UL 698-716 CDMA low



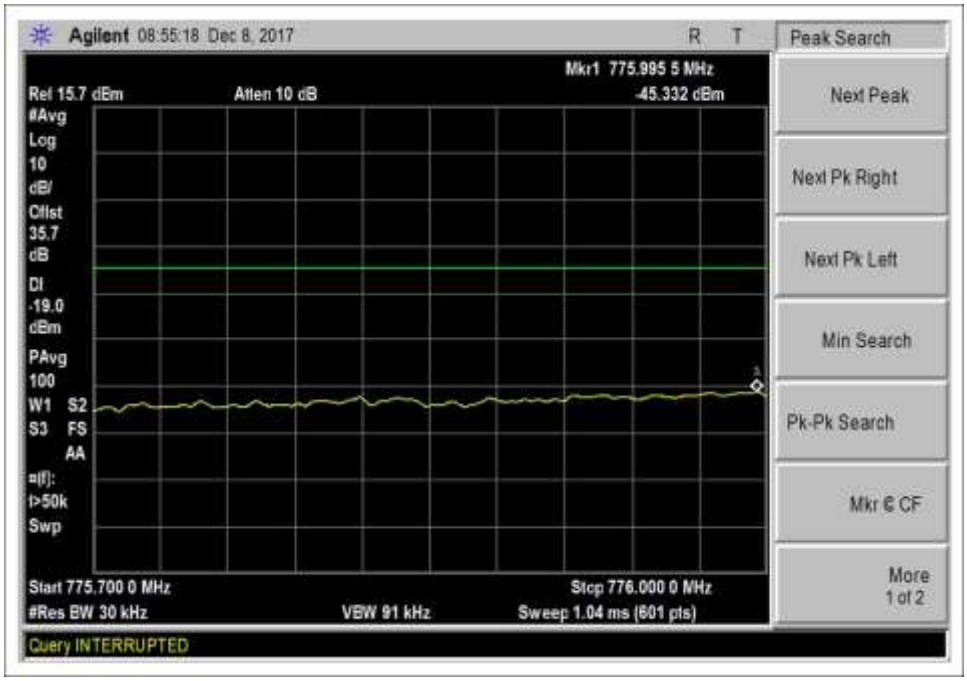
7.5 UL 776-787 CDMA high max



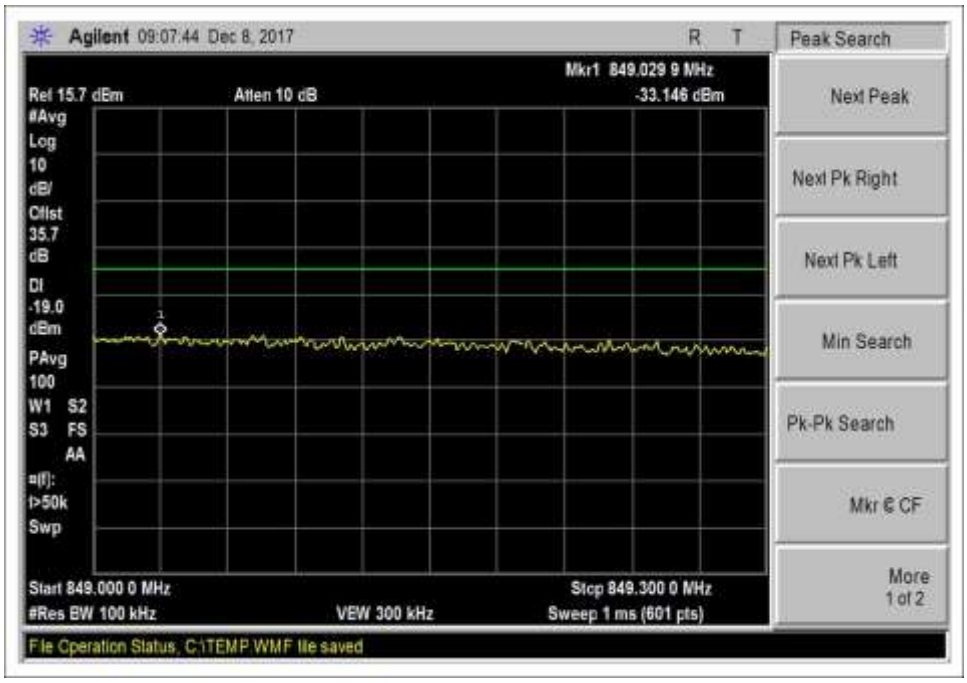
7.5 UL 776-787 CDMA high



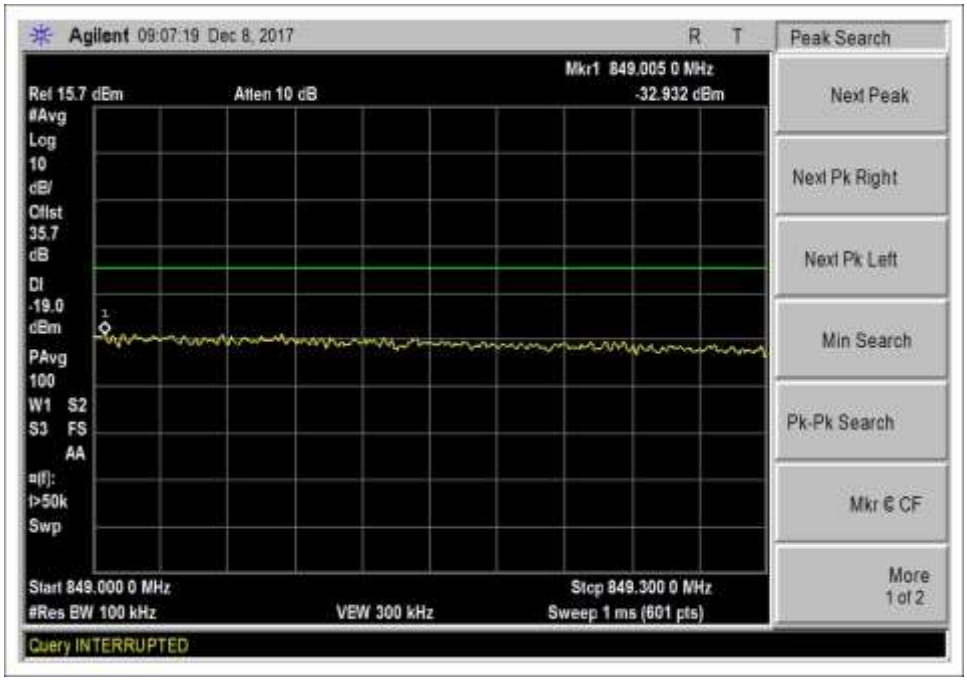
7.5 UL 776-787 CDMA low max



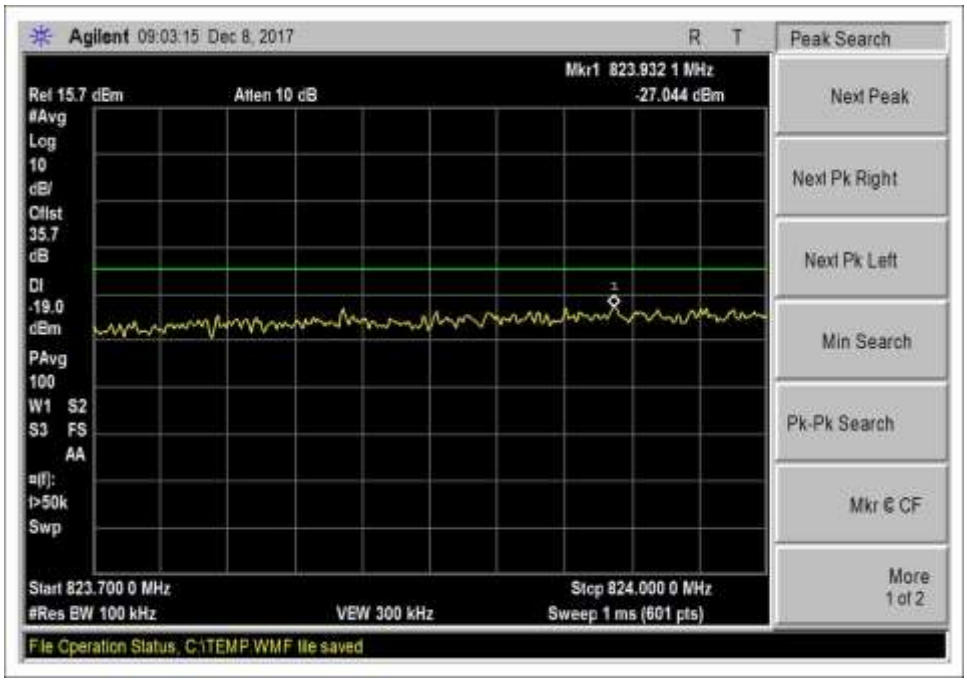
7.5 UL 776-787 CDMA low



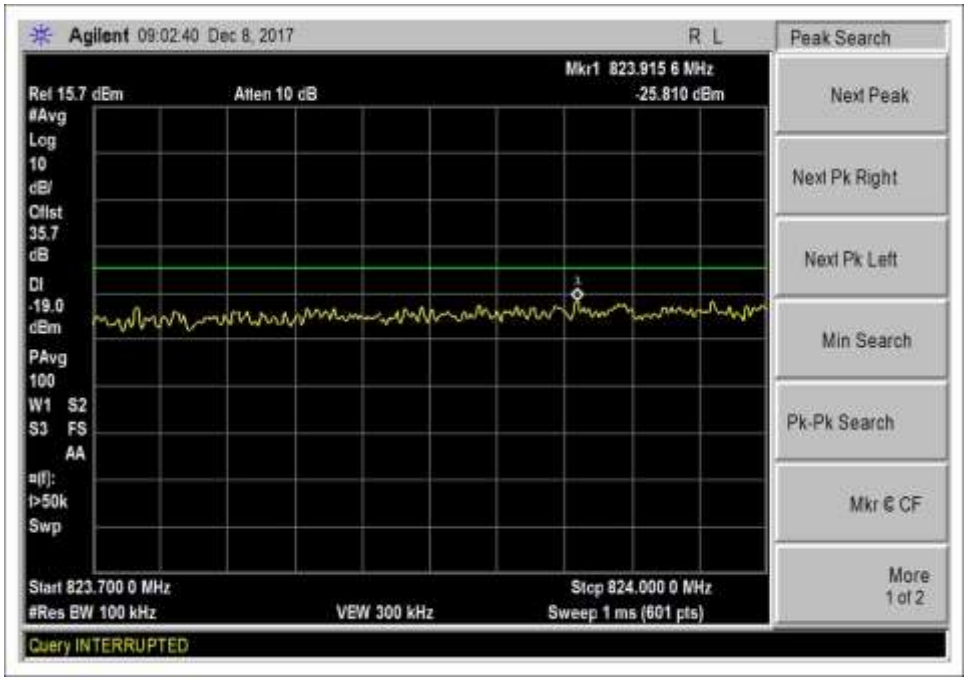
7.5 UL 824-849 CDMA high max



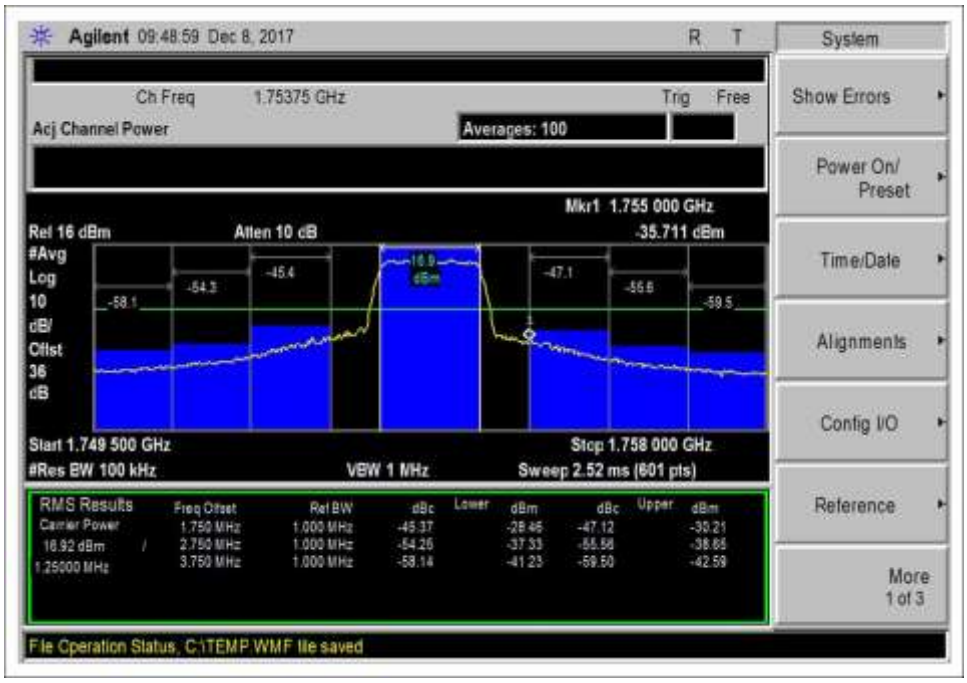
7.5 UL 824-849 CDMA high



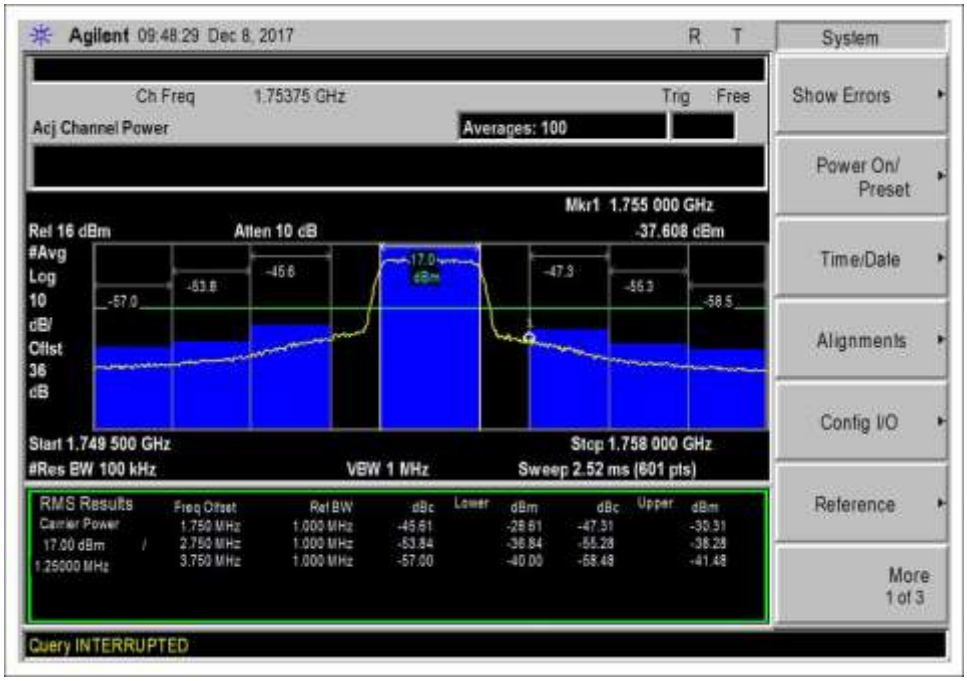
7.5 UL 824-849 CDMA low max



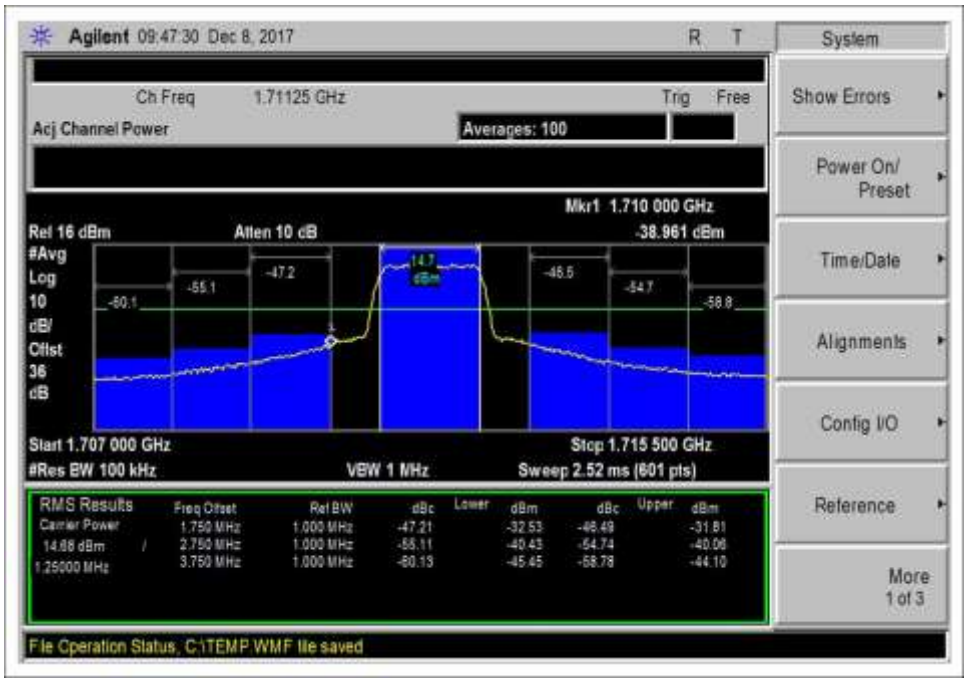
7.5 UL 824-849 CDMA low



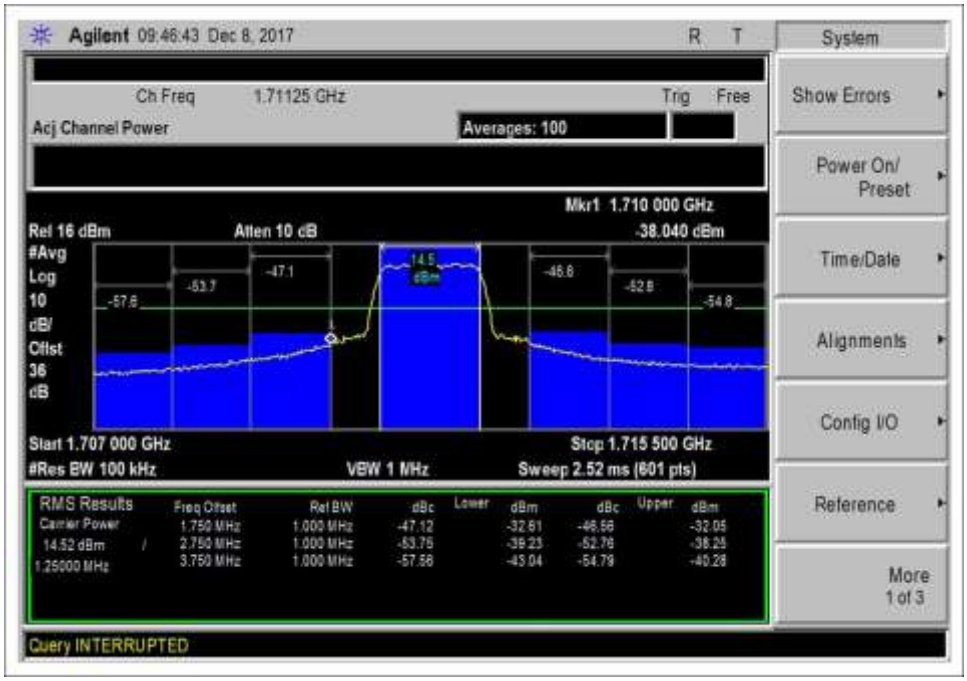
7.5 UL 1710-1755 CDMA high max



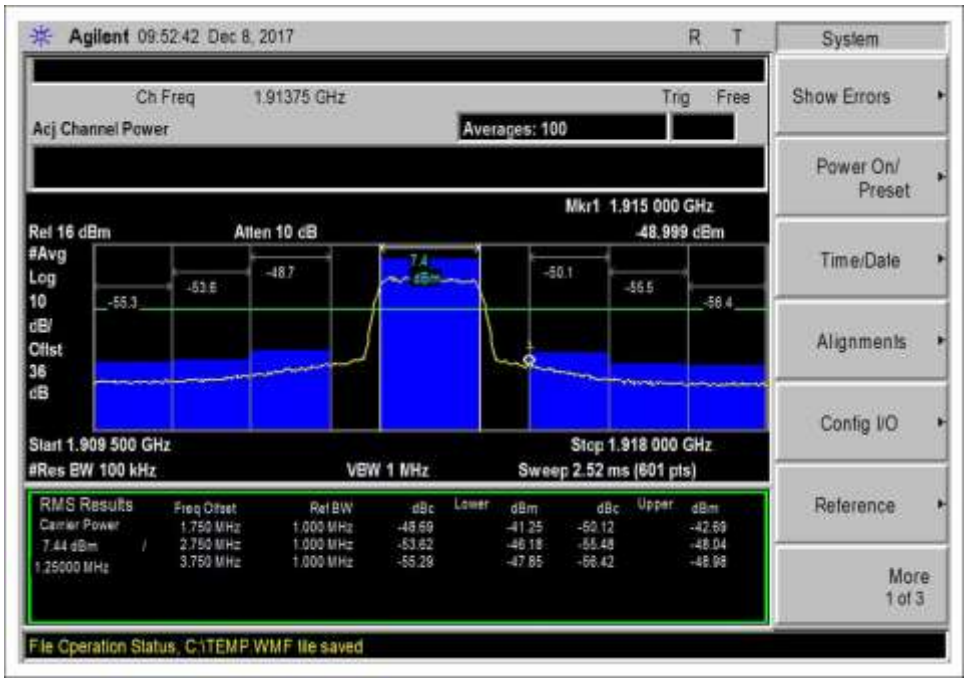
7.5 UL 1710-1755 CDMA high



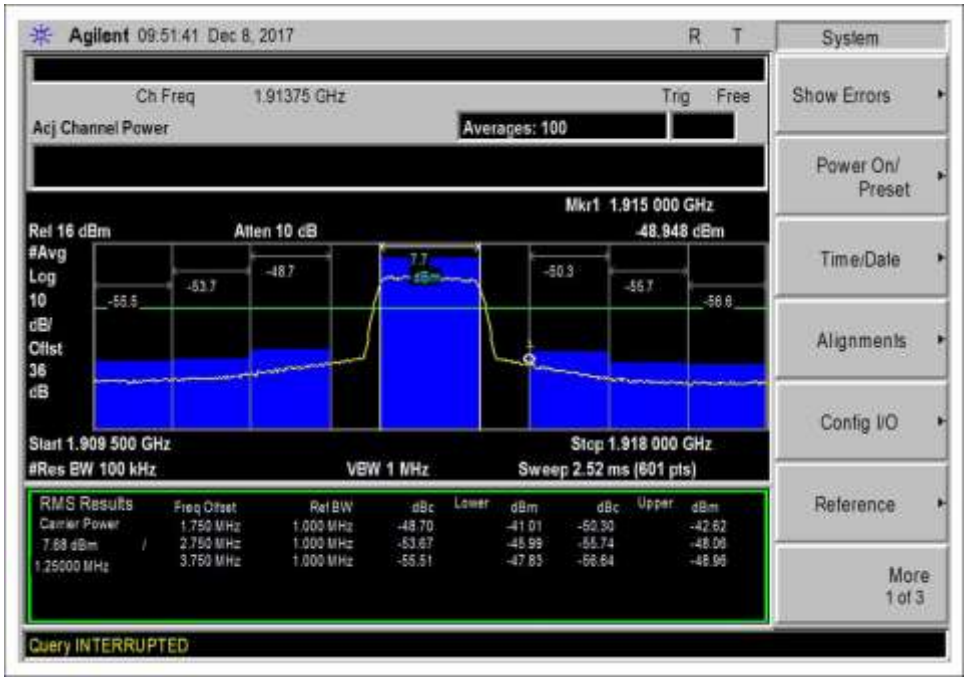
7.5 UL 1710-1755 CDMA low max



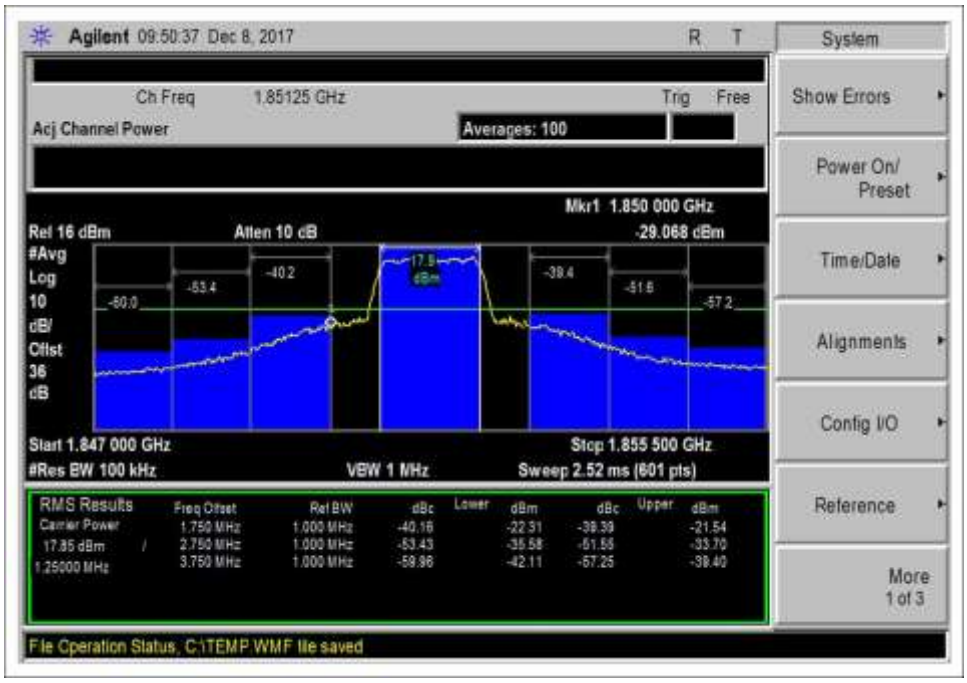
7.5 UL 1710-1755 CDMA low



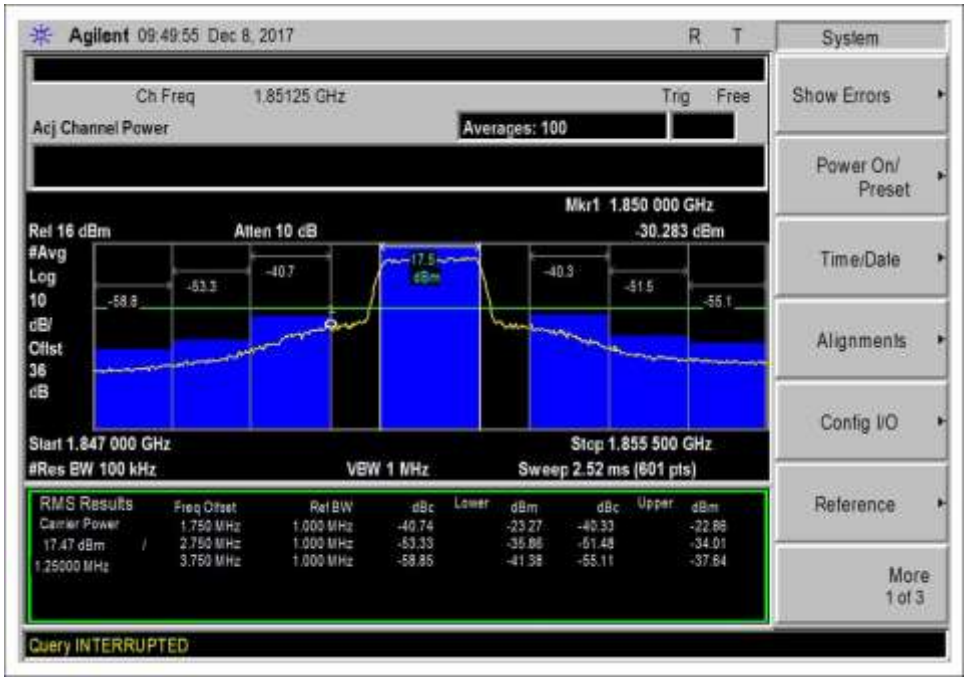
7.5 UL 1850-1915 CDMA high max



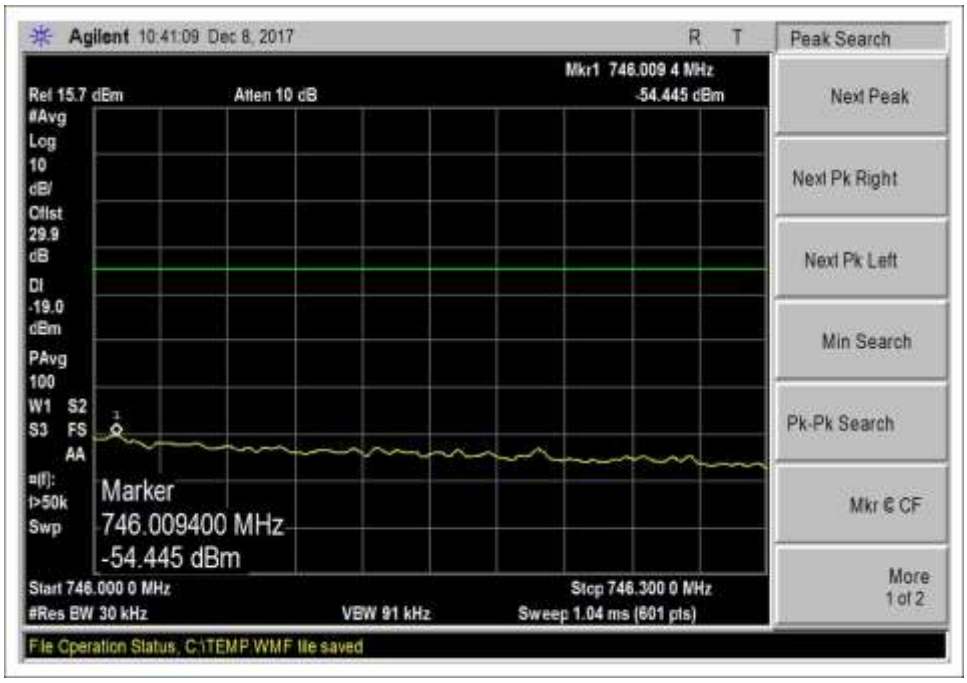
7.5 UL 1850-1915 CDMA high



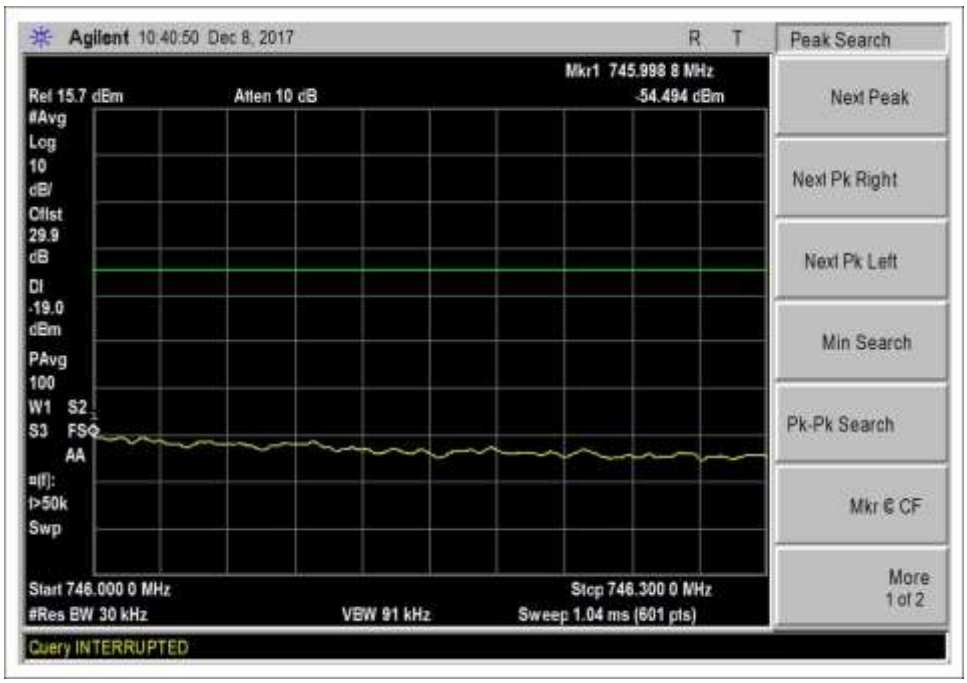
7.5 UL 1850-1915 CDMA low max



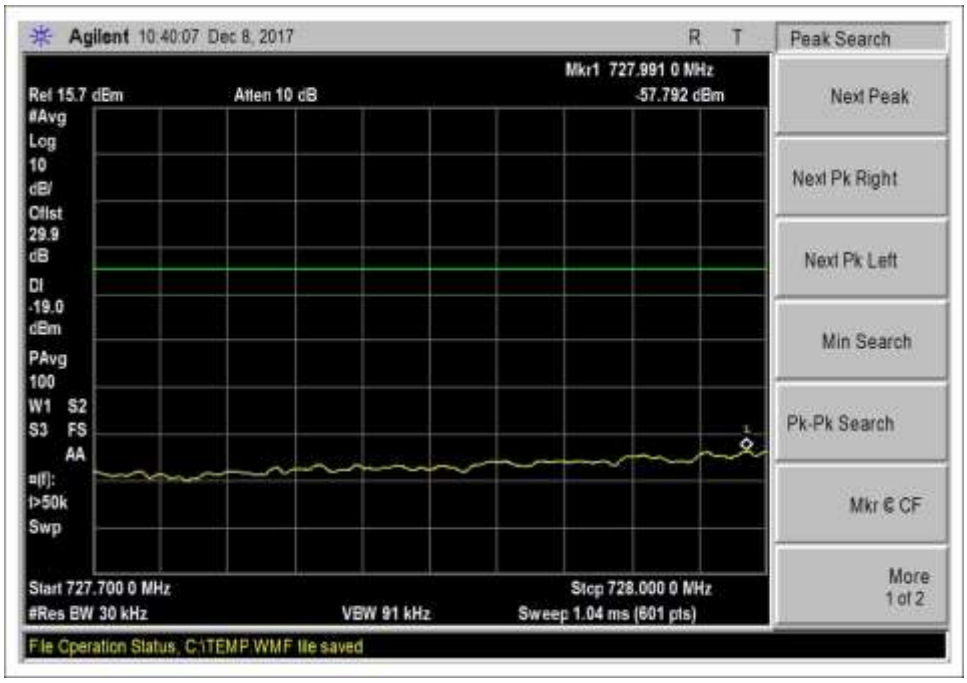
7.5 UL 1850-1915 CDMA low



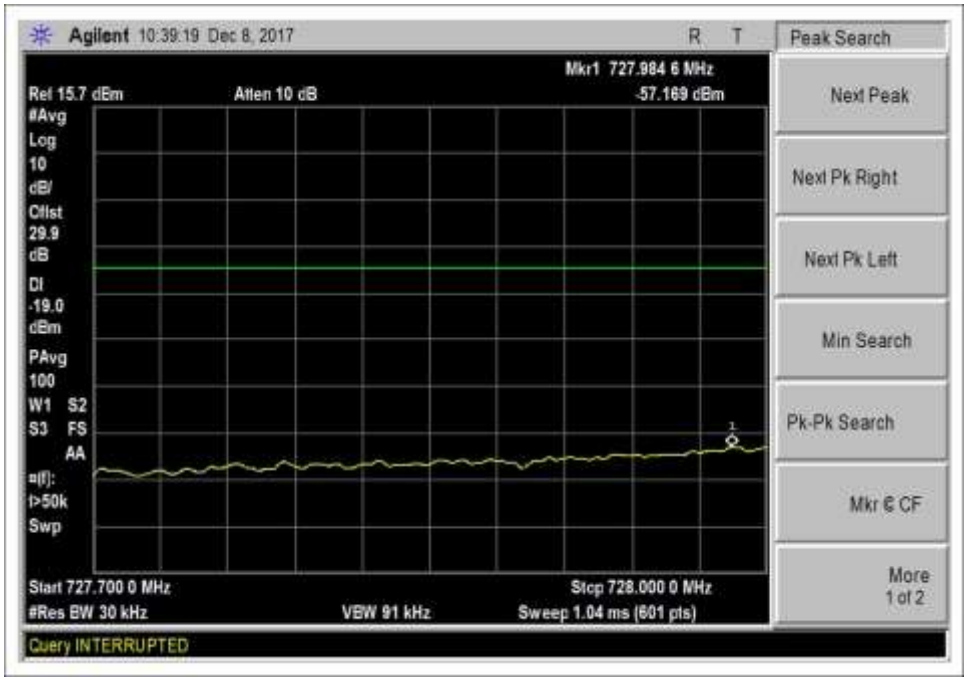
7.5 DL 728-746 CDMA high max



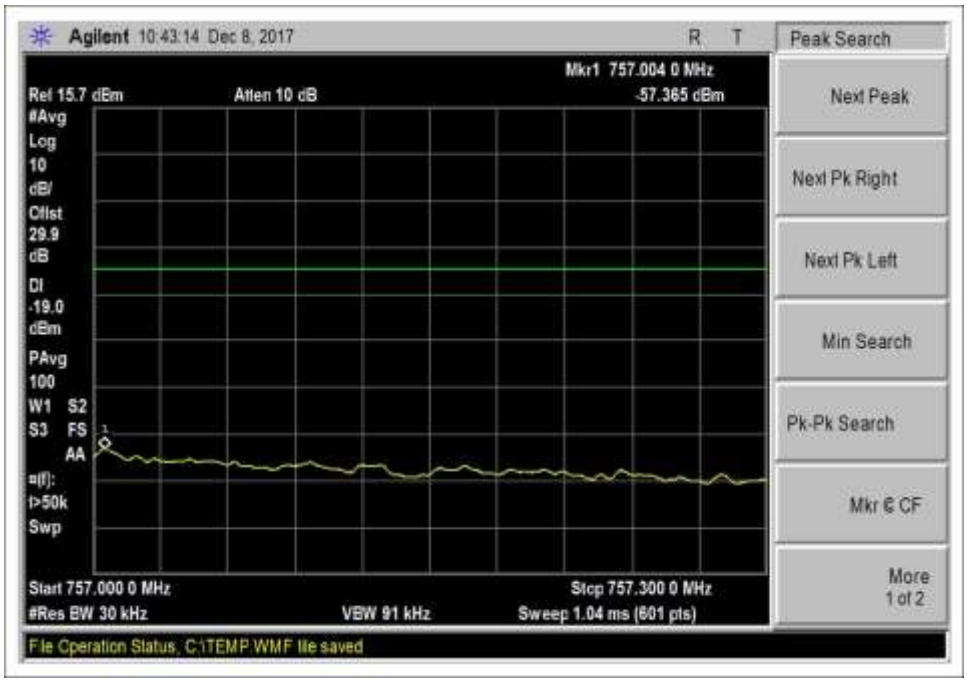
7.5 DL 728-746 CDMA high



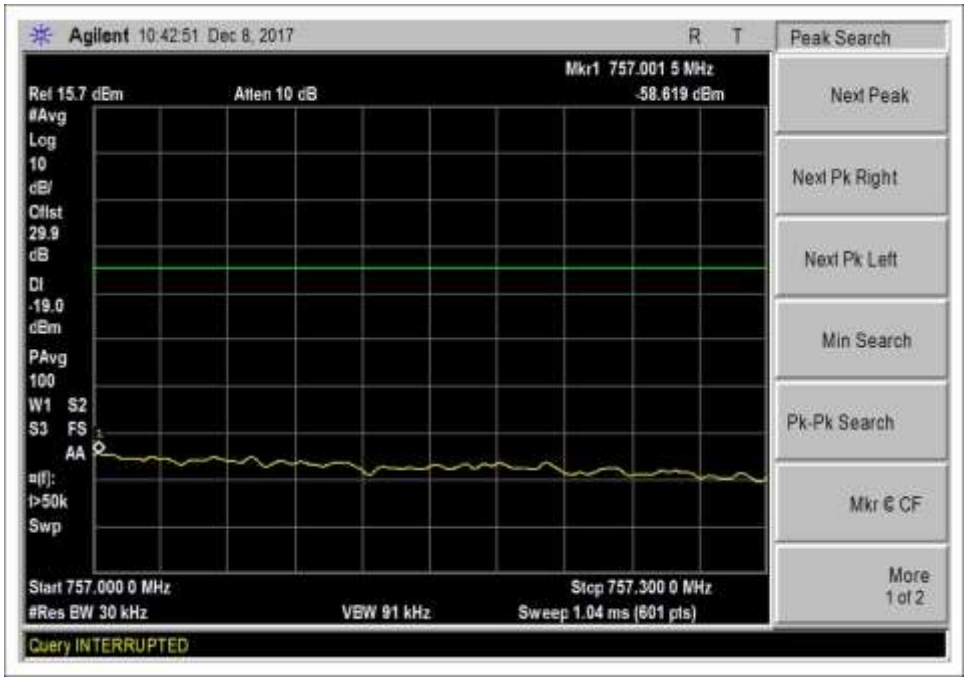
7.5 DL 728-746 CDMA low max



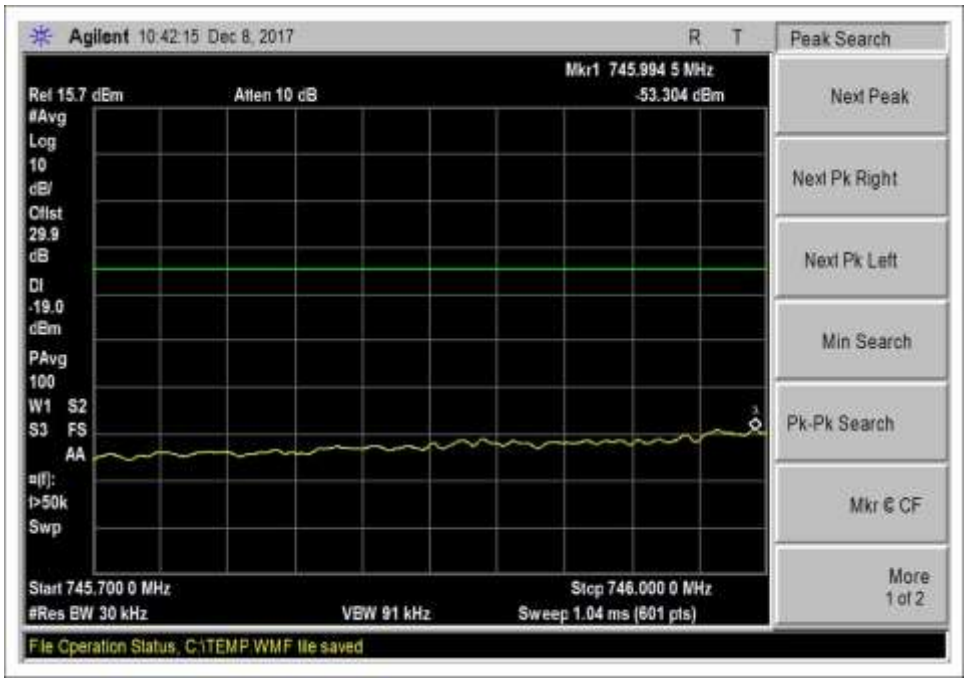
7.5 DL 728-746 CDMA low



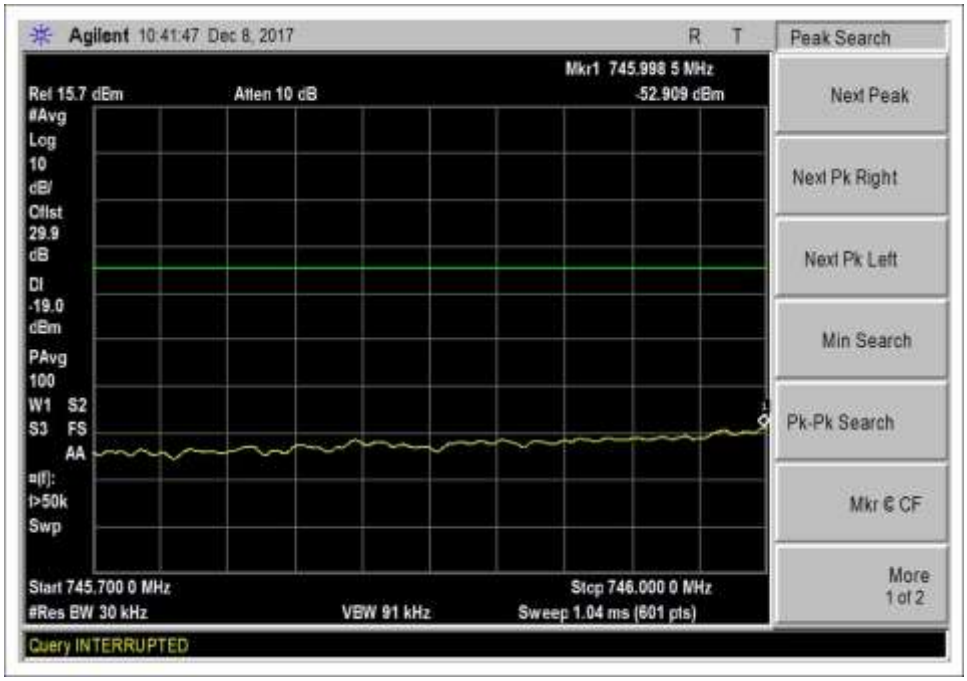
7.5 DL 746-757 CDMA high max



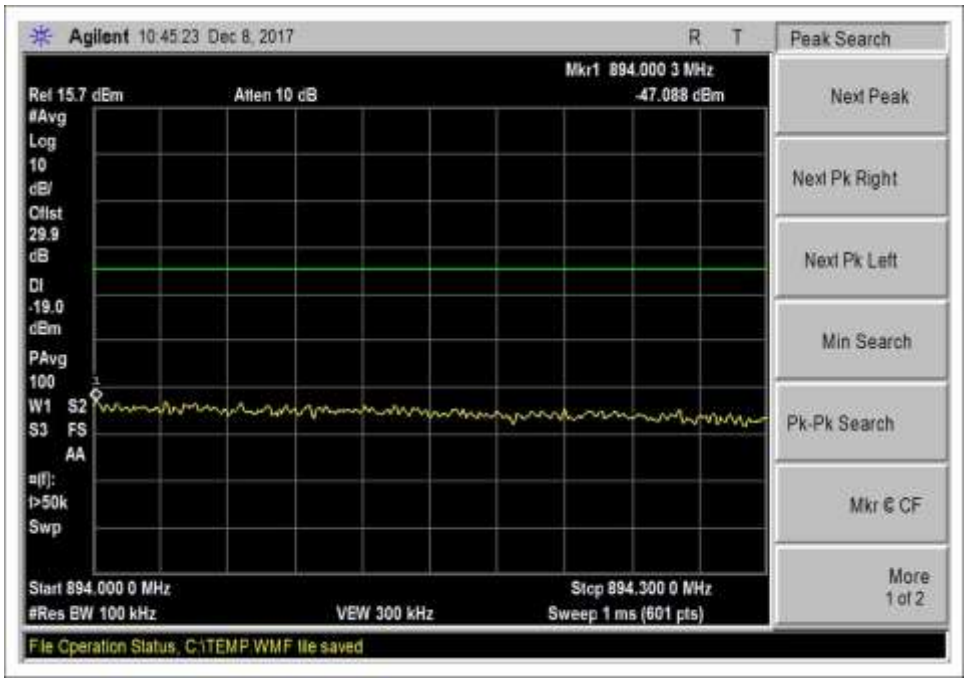
7.5 DL 746-757 CDMA high



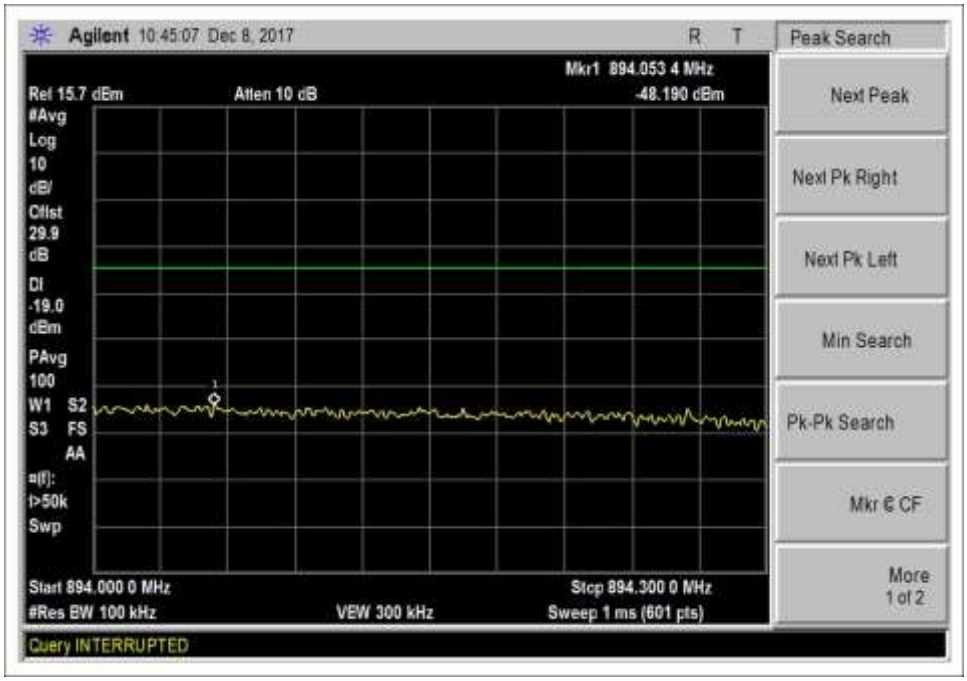
7.5 DL 746-757 CDMA low max



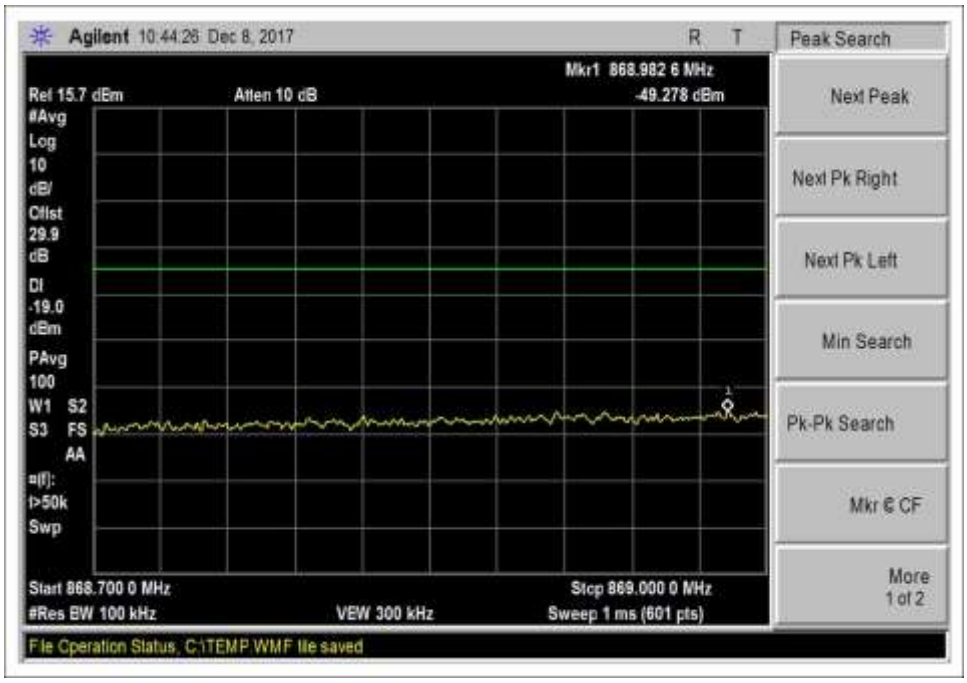
7.5 DL 746-757 CDMA low



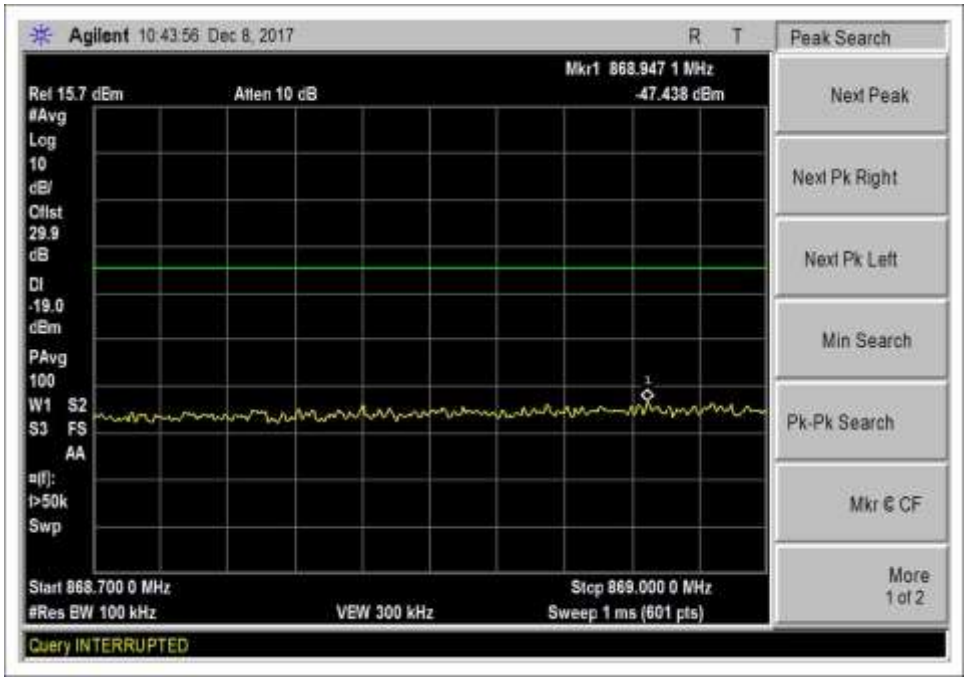
7.5 DL 869-894 CDMA high max



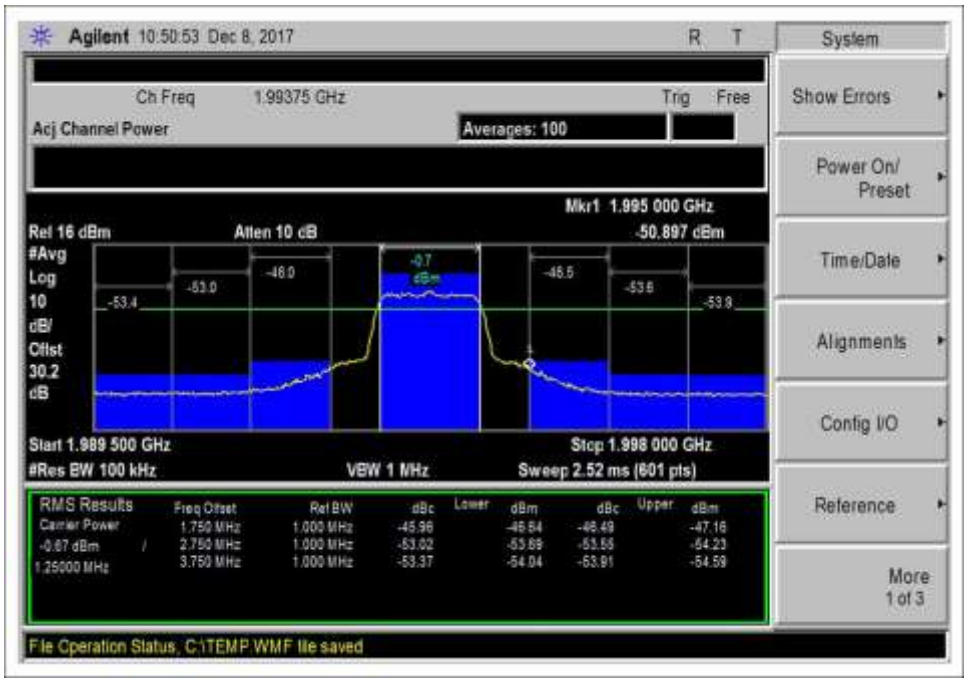
7.5 DL 869-894 CDMA high



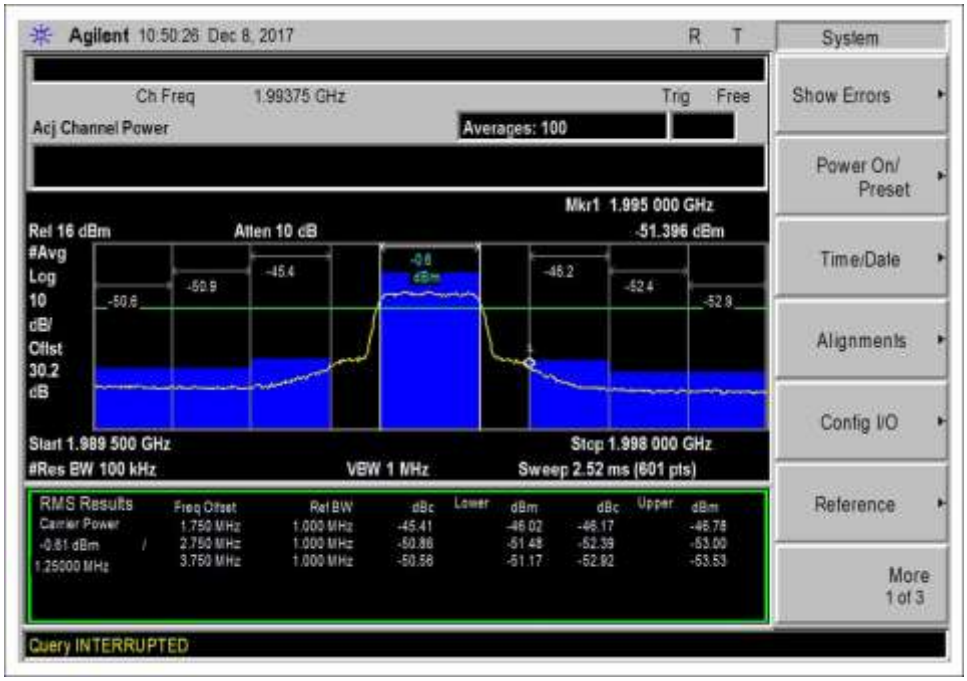
7.5 DL 869-894 CDMA low max



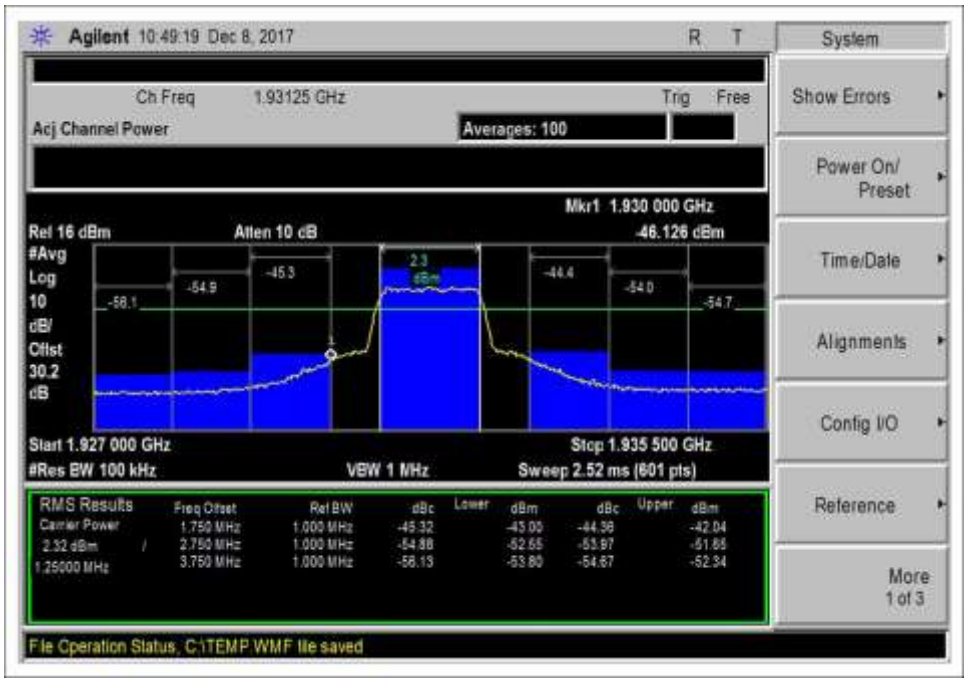
7.5 DL 869-894 CDMA low



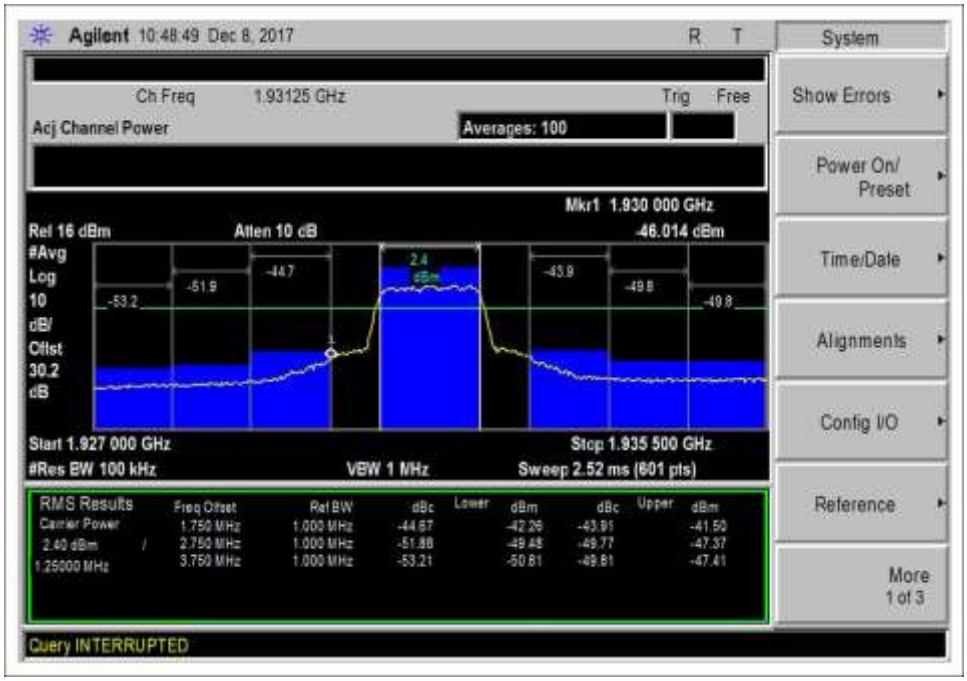
7.5 DL 1930-1995 CDMA high max



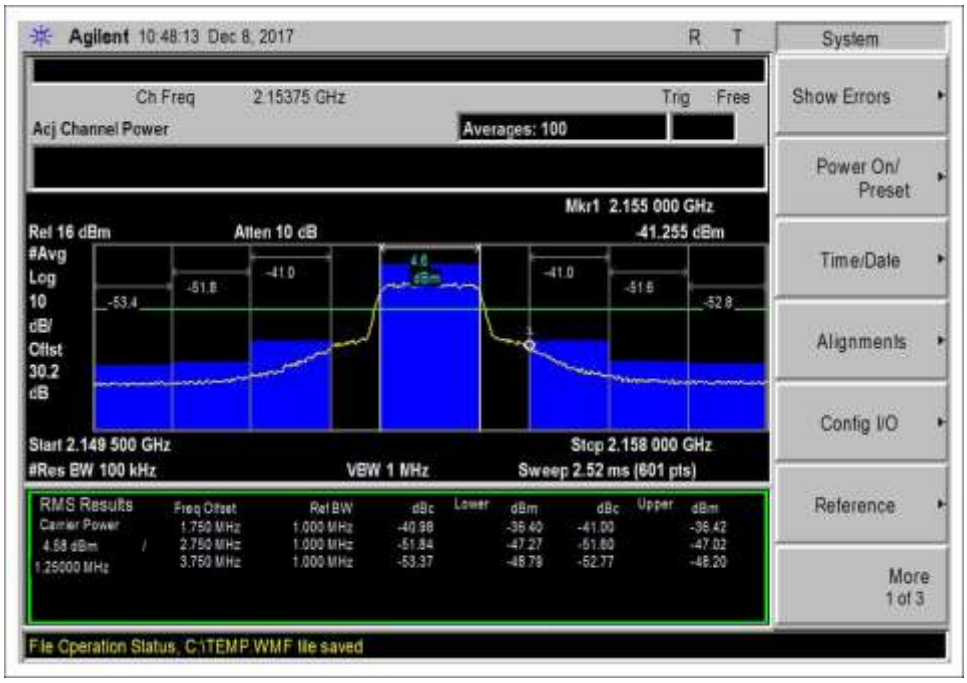
7.5 DL 1930-1995 CDMA high



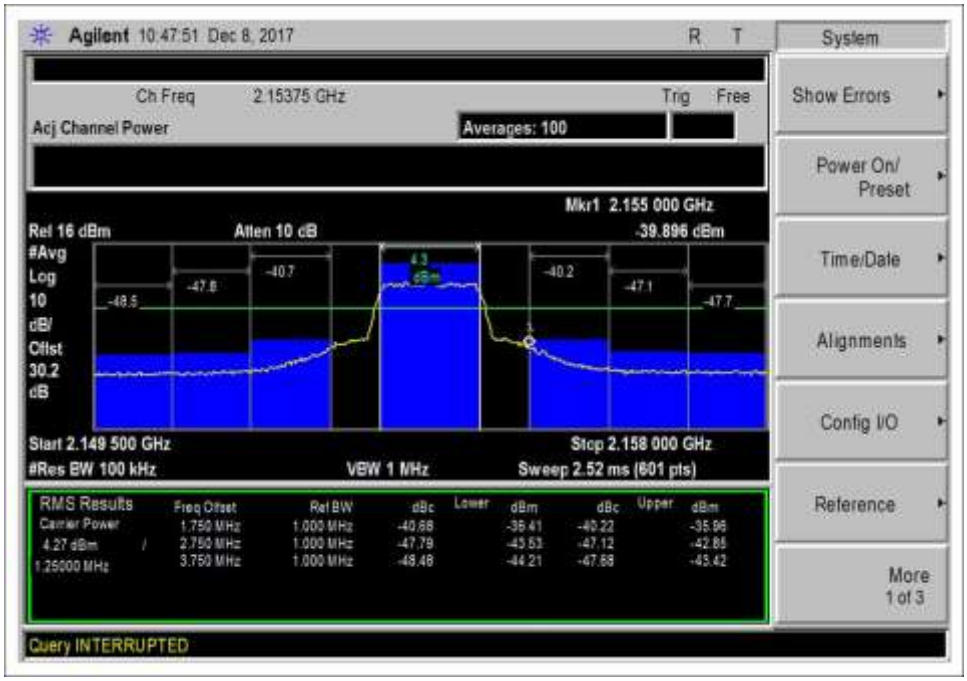
7.5 DL 1930-1995 CDMA low max



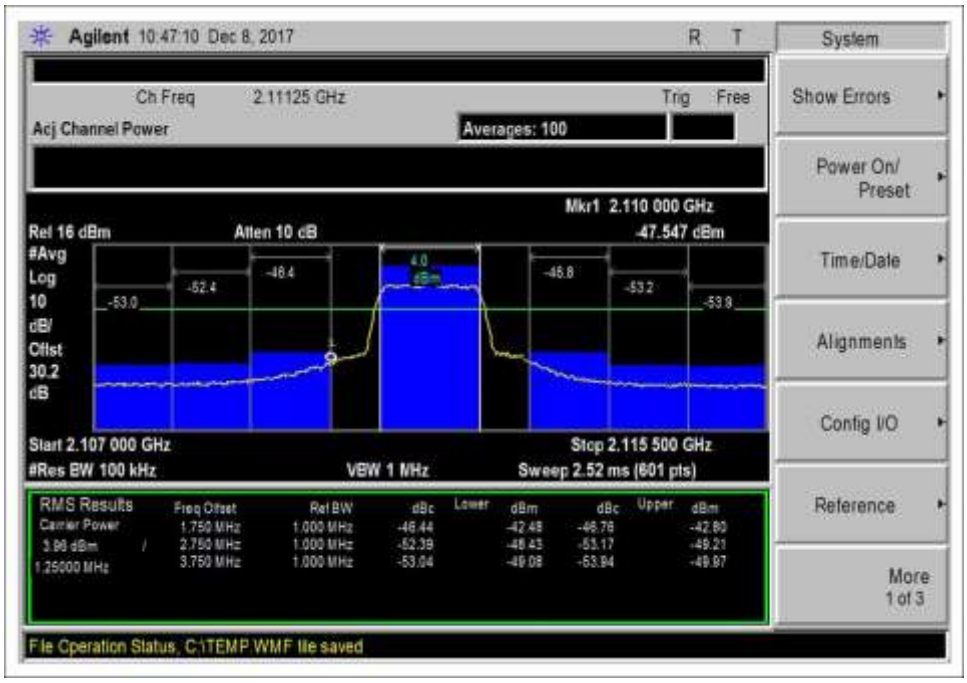
7.5 DL 1930-1995 CDMA low



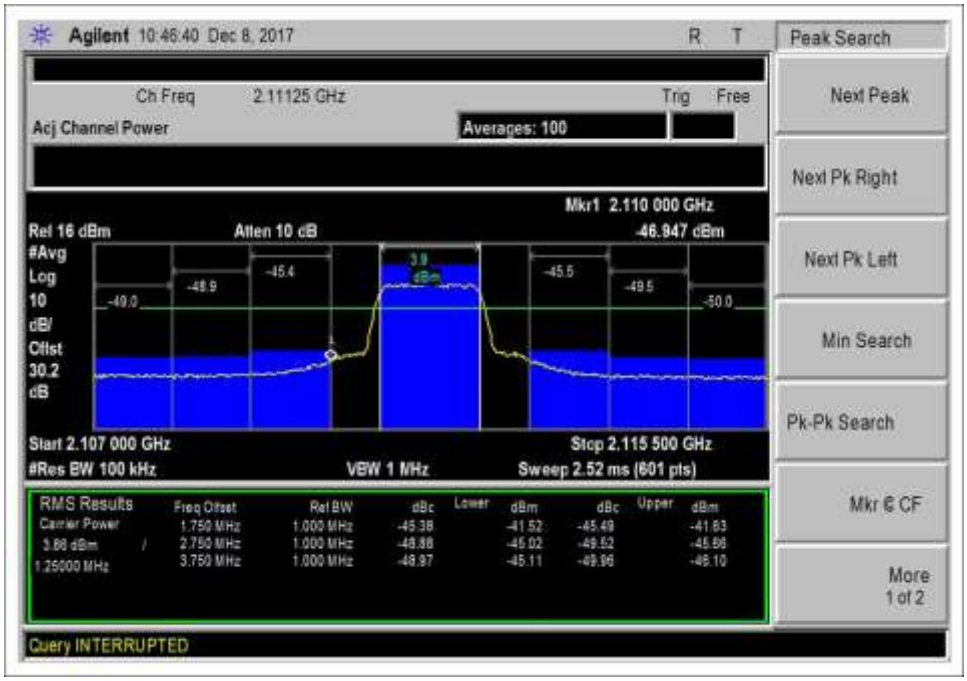
7.5 DL 2110-2155 CDMA high max



7.5 DL 2110-2155 CDMA high



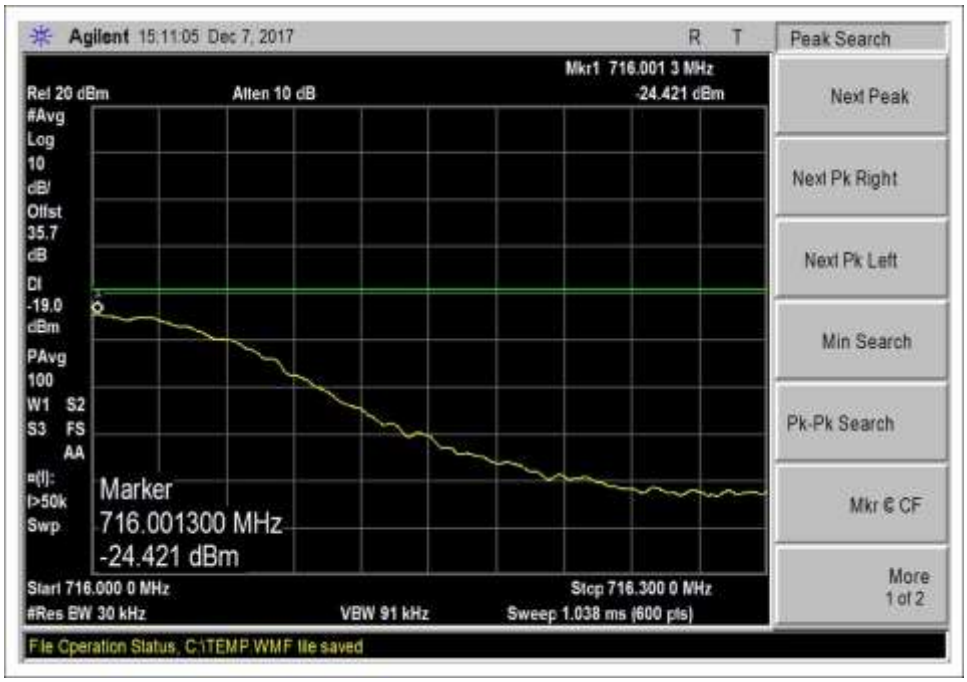
7.5 DL 2110-2155 CDMA low max



7.5 DL 2110-2155 CDMA low

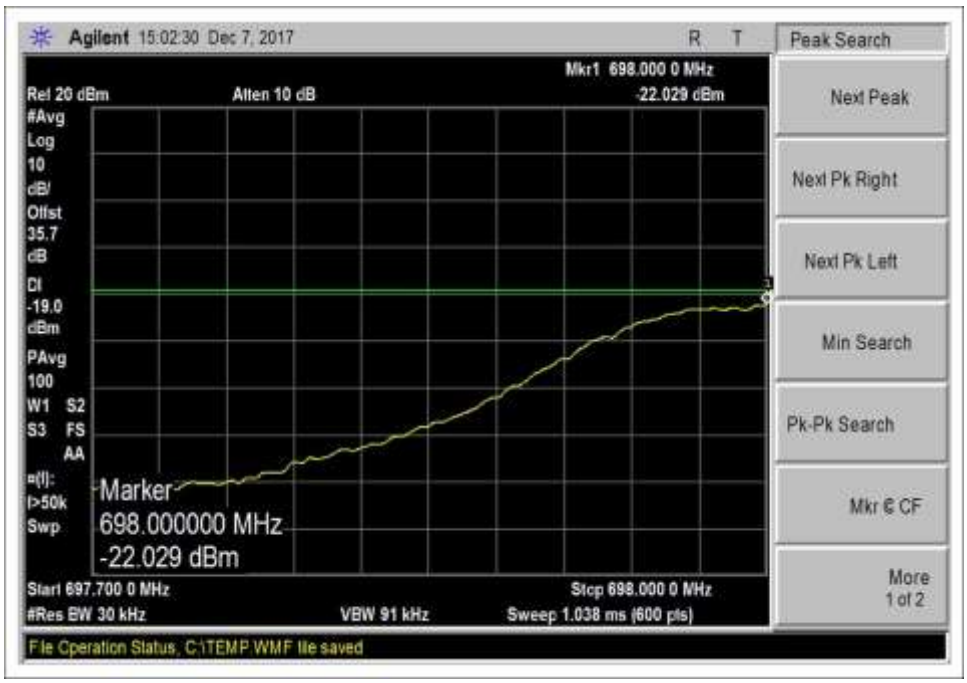
GSM

7.5 UL 698-716 GSM high max



7.5 UL 698-716 GSM high

7.5 UL 698-716 GSM low max



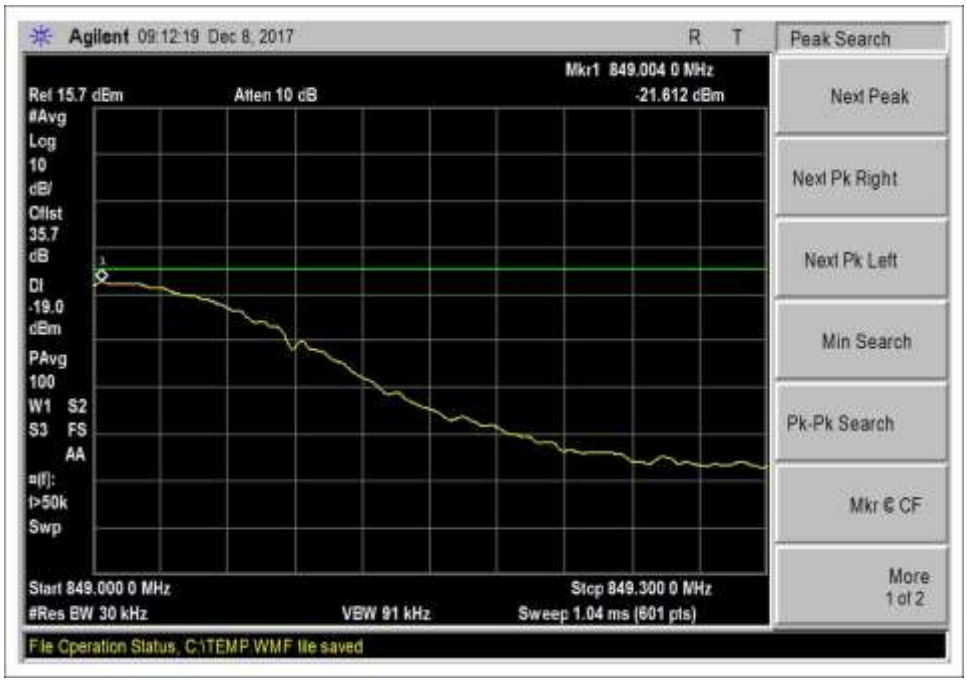
7.5 UL 698-716 GSM low

7.5 UL 776-787 GSM high max

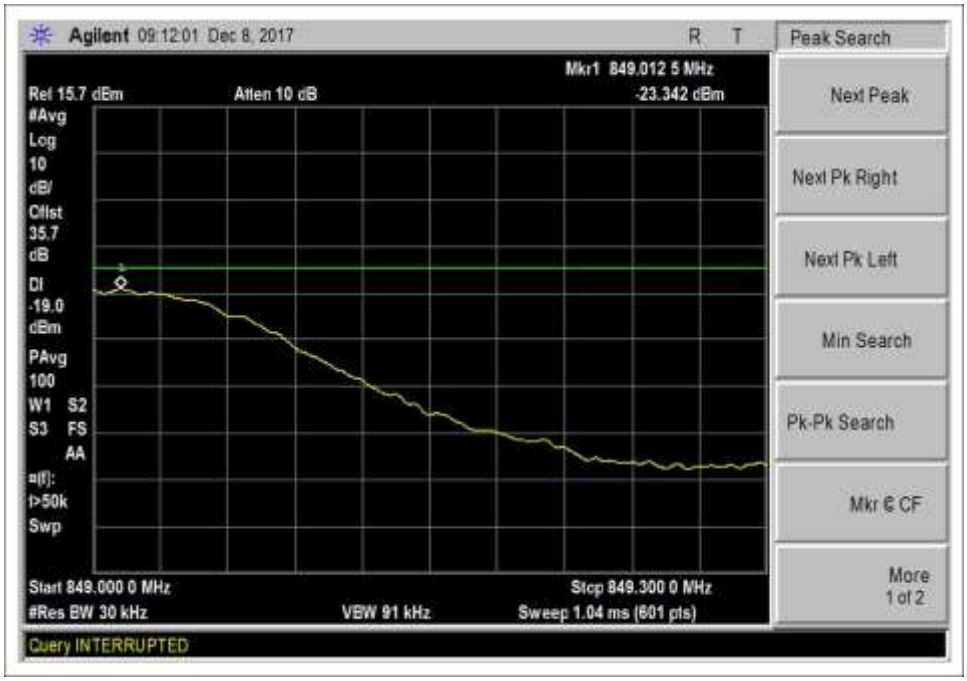
7.5 UL 776-787 GSM high

7.5 UL 776-787 GSM low max

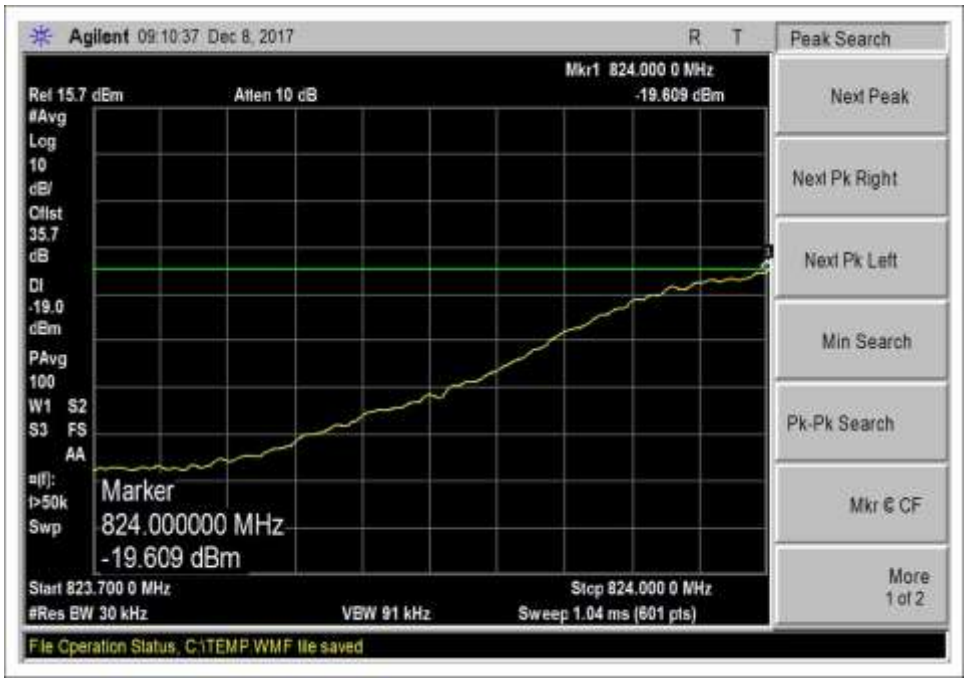
7.5 UL 776-787 GSM low



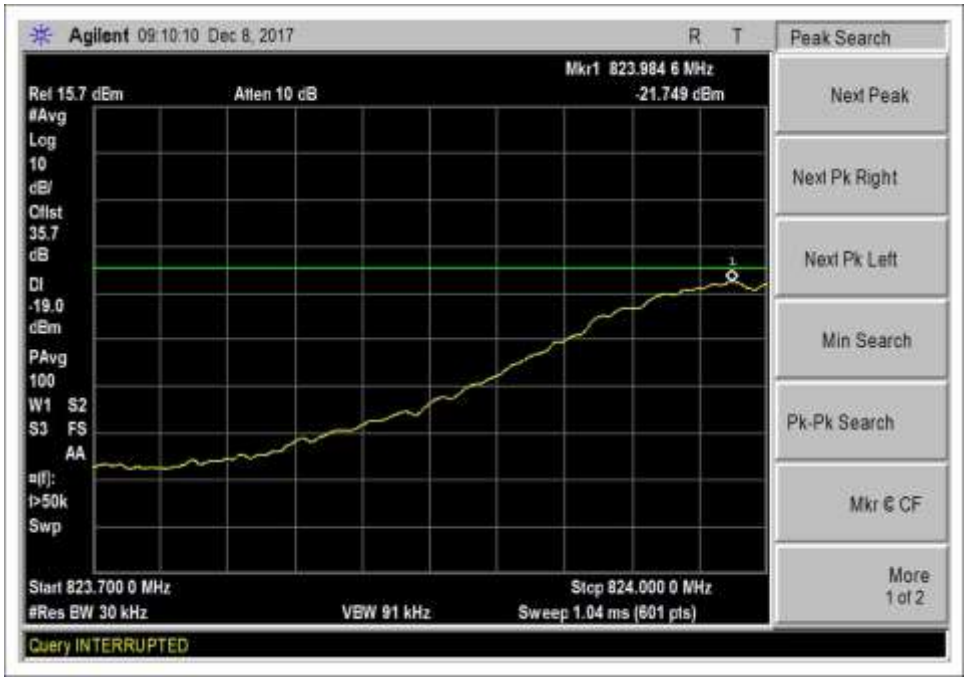
7.5 UL 824-849 GSM high max



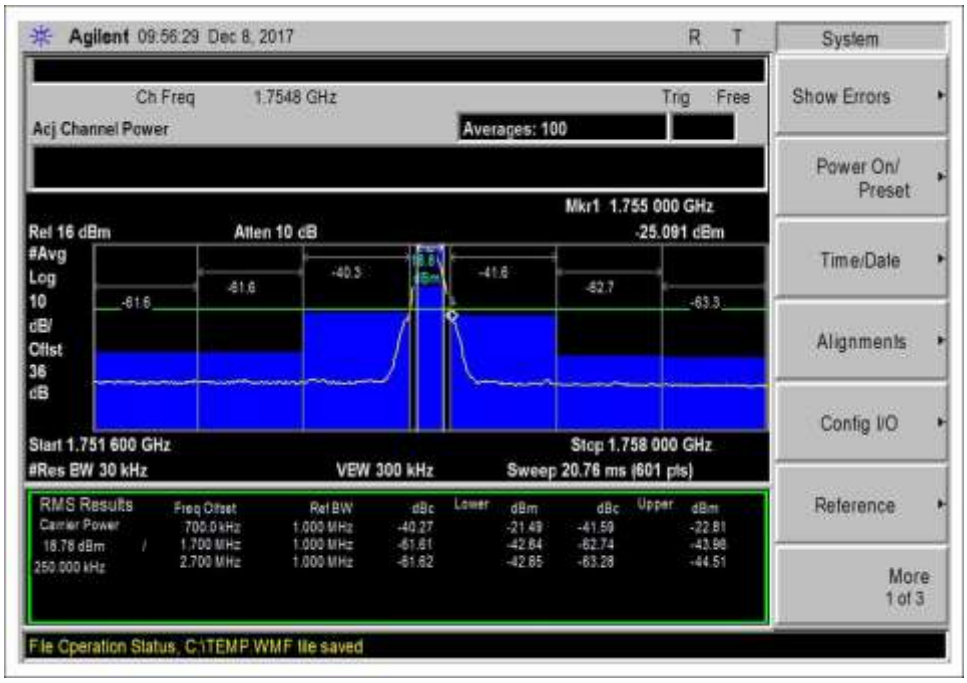
7.5 UL 824-849 GSM high



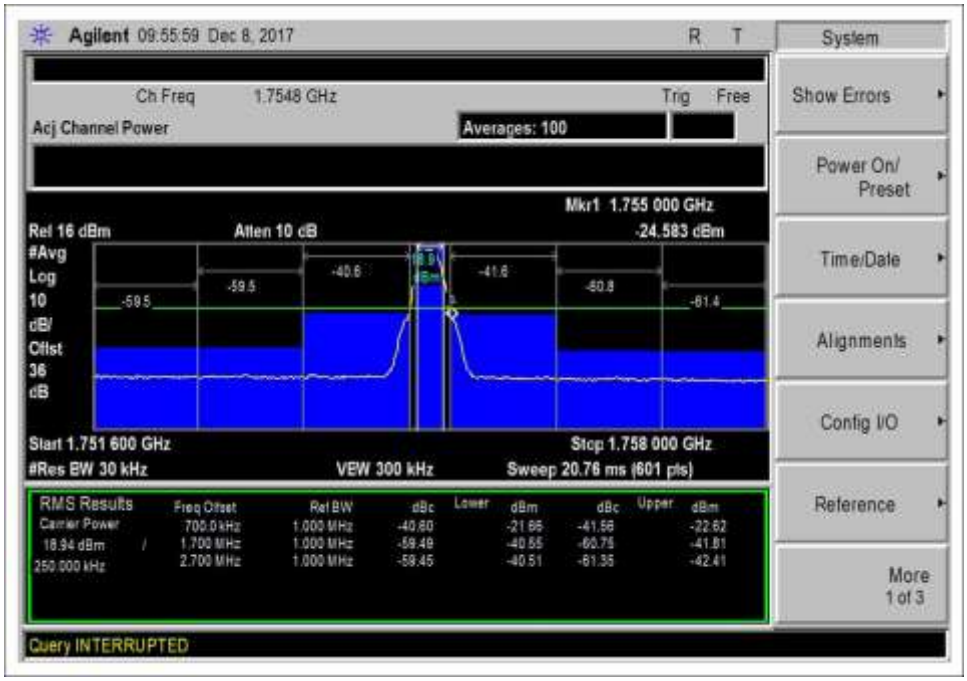
7.5 UL 824-849 GSM low max



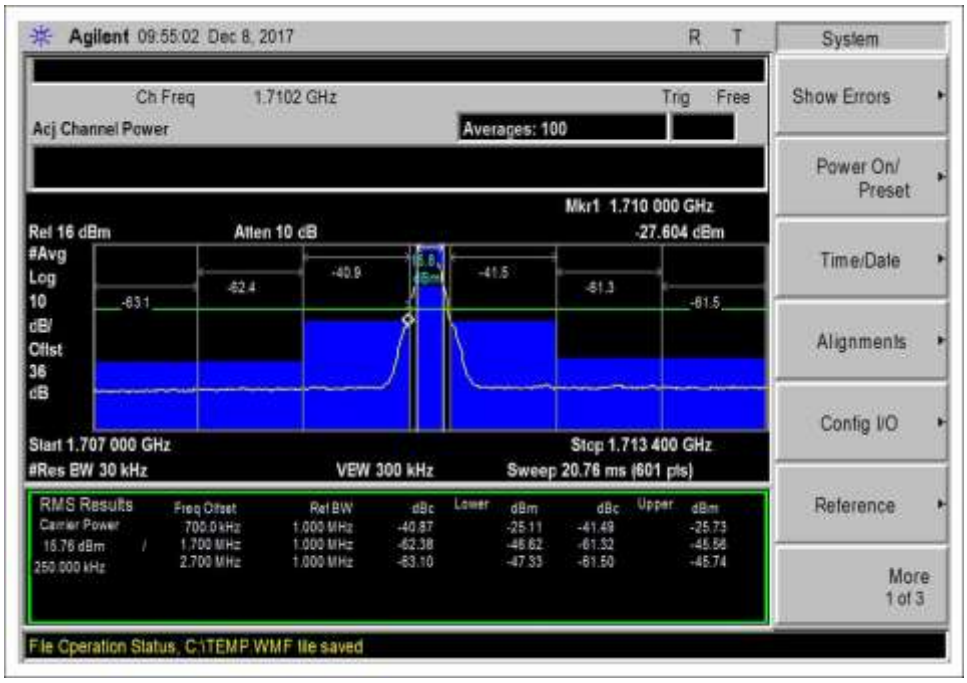
7.5 UL 824-849 GSM low



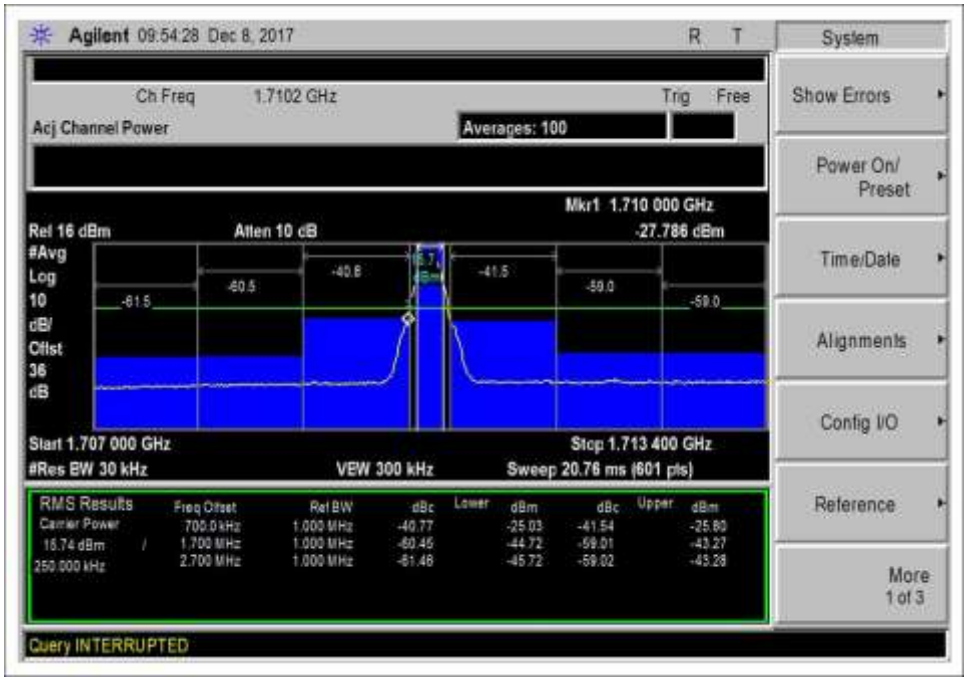
7.5 UL 1710-1755 GSM high max



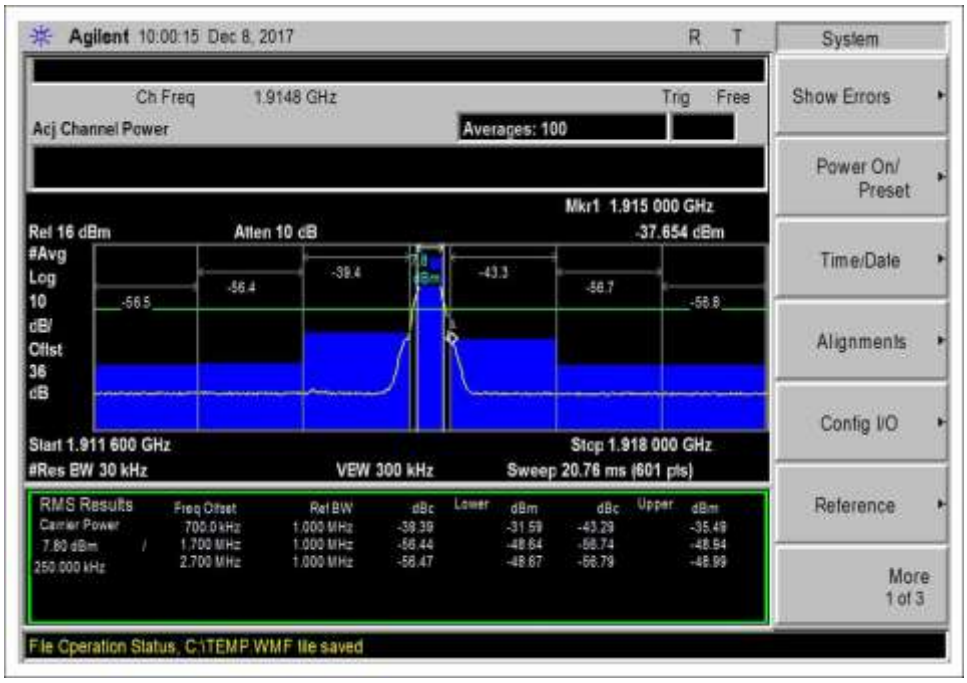
7.5 UL 1710-1755 GSM high



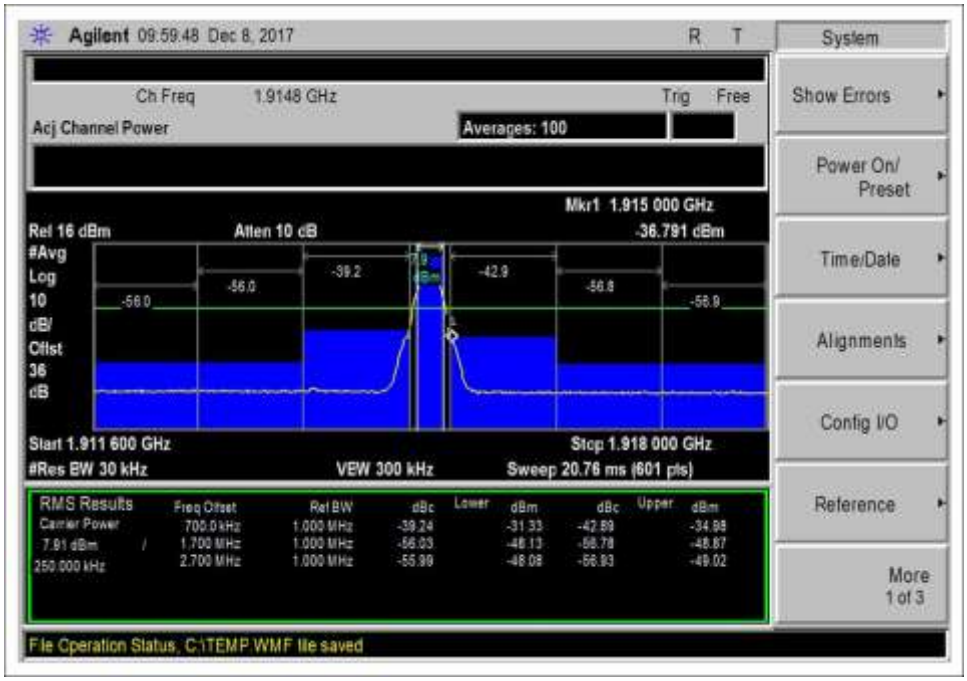
7.5 UL 1710-1755 GSM low max



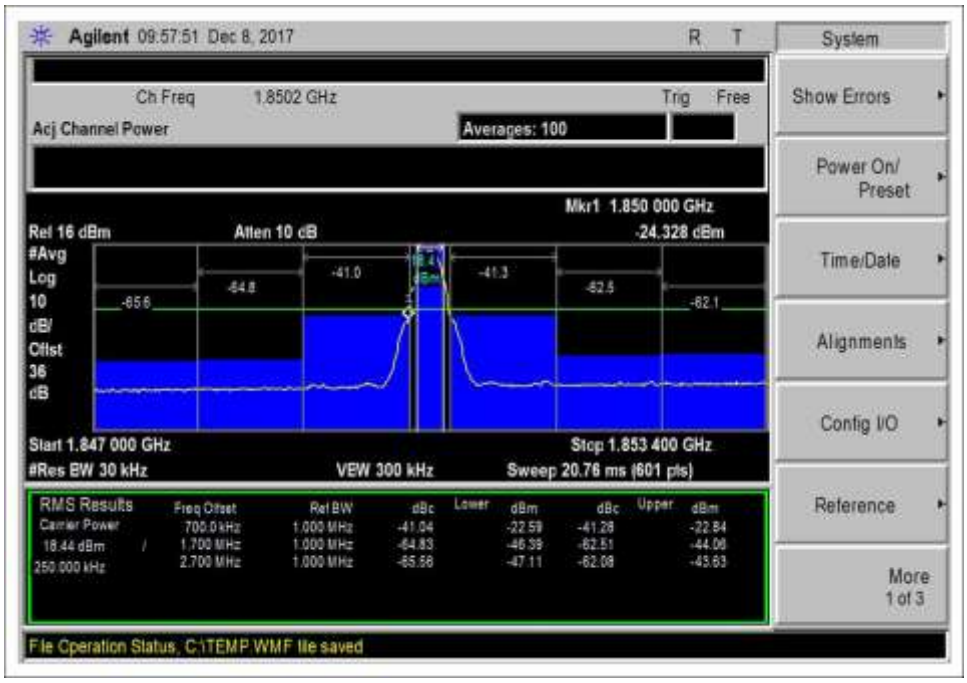
7.5 UL 1710-1755 GSM low



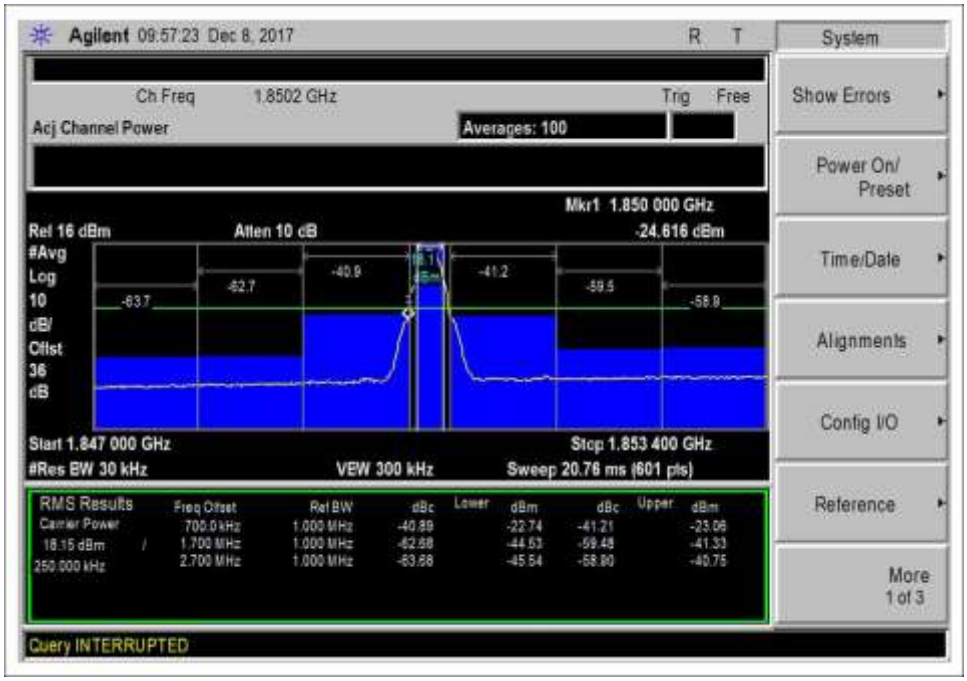
7.5 UL 1850-1915 GSM high max



7.5 UL 1850-1915 GSM high



7.5 UL 1850-1915 GSM low max



7.5 UL 1850-1915 GSM low