Cellphone-Mate, Inc.

REVISED TEST REPORT TO 100827-13A

5 Band Consumer Booster, Model: Fusion5s 2.0
and
DC Power Supply, Model: GME36A-12300FDS

Tested to The Following Standard:

FCC Part 20.21 / 22H / 24E / 27

Report No.: 100827-13B

Date of issue: September 4, 2018

ACCREDITED
Test Certificate # 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.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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

REPRESENTATIVE: Dennis Findley
Customer Reference Number: CKC02052018

REPORT PREPARED BY:

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

Project Number: 100827

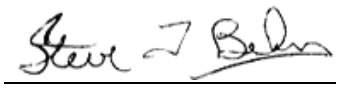
DATE OF EQUIPMENT RECEIPT: February 11, 2018
DATE(S) OF TESTING: February 11-26, 2018 and September 4, 2018

Revision History

Original: Testing of the 5 Band Consumer Booster Model: Fusion5s 2.0 and DC Power Supply Model: GME36A-12300FDS to FCC 20.21 / 22 / 24 / 27
Revision A: Sections 7.2-7.3 and 7.9 have been updated due to the change of antenna kitting and MSCL numbers provided by the manufacturer.
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 equipment provided by the client, 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.
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
Fremont, CA	US0082	SL2-IN-E-1148R	3082B-1	US1023	A-0149

SUMMARY OF RESULTS

Standard / Specification: FCC Part 20.21/22H/24E/27
Wideband Consumer Signal Booster Measurement Guidance: KDB #935210 DO3 v04r01, October 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	NA1

NA = Not applicable
NA1 = Not applicable because the EUT does not have spectrum blocking.

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.

Configuration 1

Equipment Tested:

Device	Manufacturer	Model #	S/N
DC Power Supply	SureCall	GME36A-12300FDS	None
5 Band Consumer Booster	Cellphone-Mate, Inc.	Fusion5s 2.0	01

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)
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: 50 Ohm/ N Type DL: 50 Ohm/ N Type
Nominal Input Voltage:	120VAC,60Hz
Firmware / Software used for Test:	SC_S1_Fusion5s_V3_4.hex version 3.4

FCC PART 20.21/22H/24E/27

General Test Setup

Summary of Conditions
General setup 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 N connector and 50-ohm impedance. All switches are in the on position 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 Firmware: SC_S1_Fusion5s_V3_4.hex version 3.4 Test environment conditions: As noted in individual section Test Procedure: 935210 D03 Signal Booster Measurements v04r01, October 27, 2017

7.1 Authorized Frequency Band Verification

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
Customer:	Cellphone-Mate, Inc.
Specification:	**7.1 Authorized Frequency Band Verification**
Work Order #:	**100827** Date 02/11/18
Test Type:	**Conducted Emissions**
Tested By:	**Hieu Song 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: 20.3°C
Relative Humidity: 46%
Pressure: 101.9 kPa

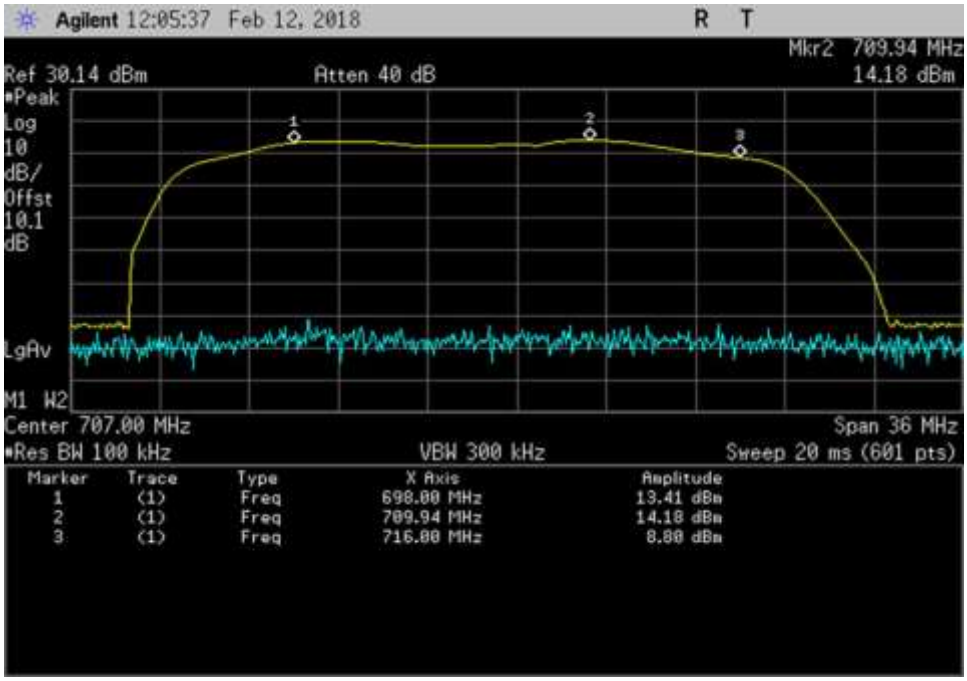
Test Equipment:

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

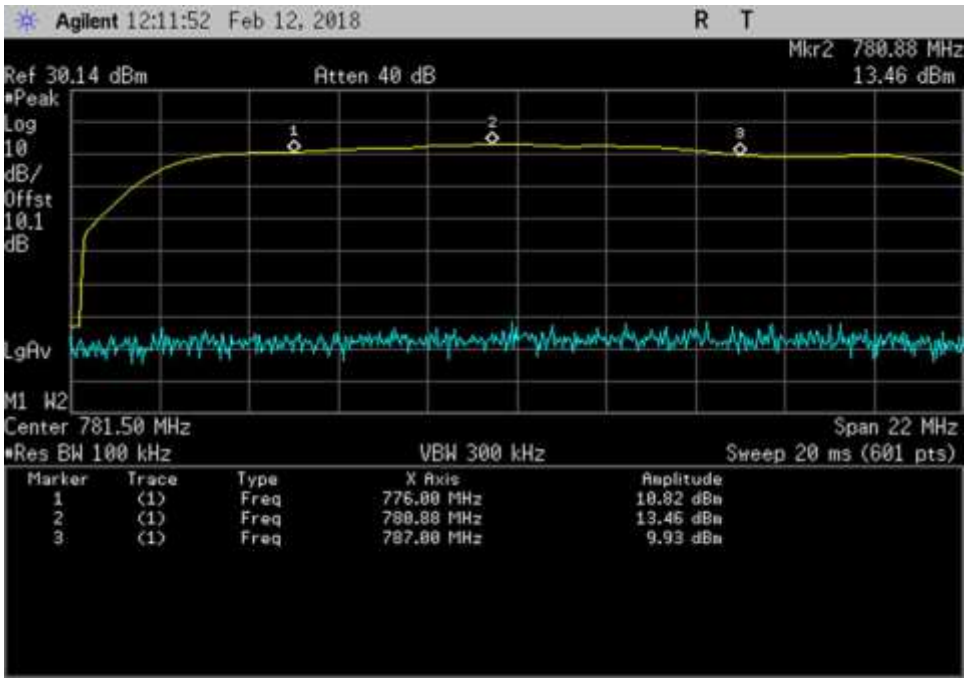
Summary of Results

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

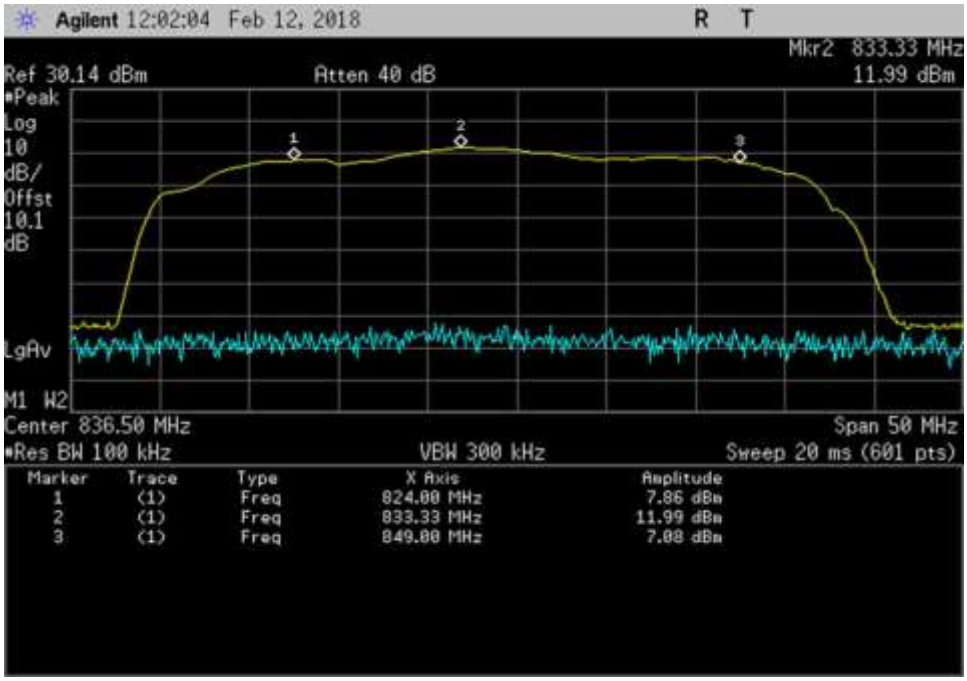
Plots



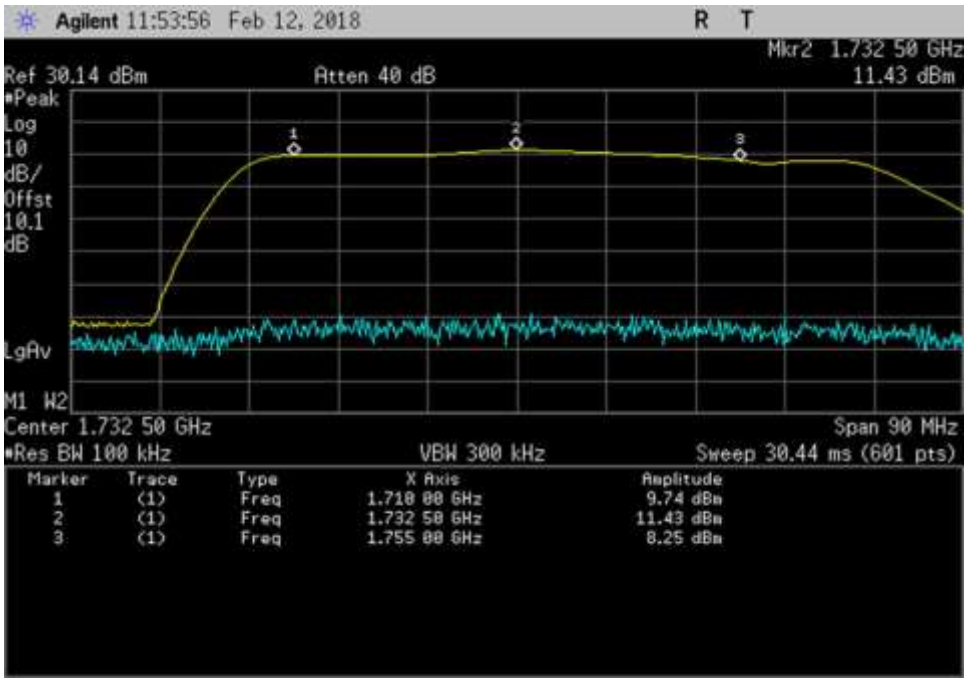
UL_698-716_ 698- 709.94MHz



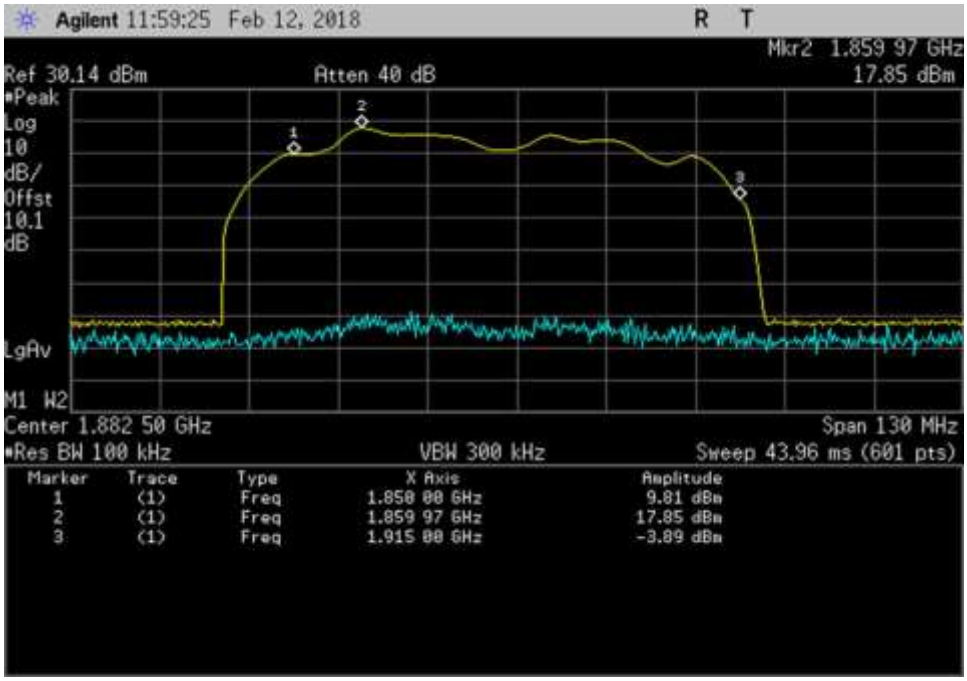
UL_776-787_ 776- 780.88MHz



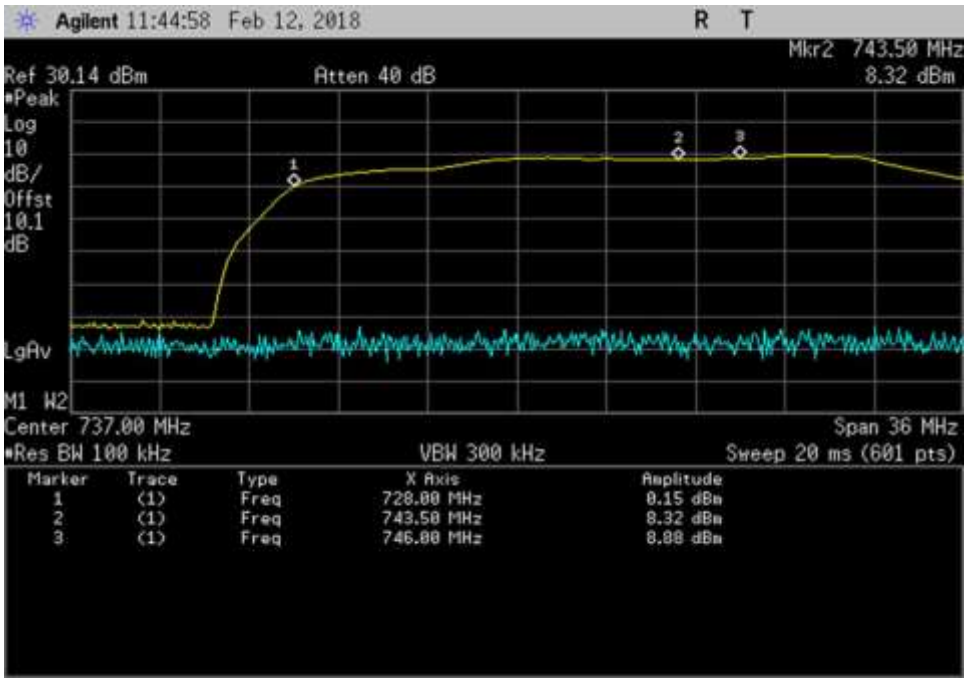
UL_824-849_ 824- 833.33MHz



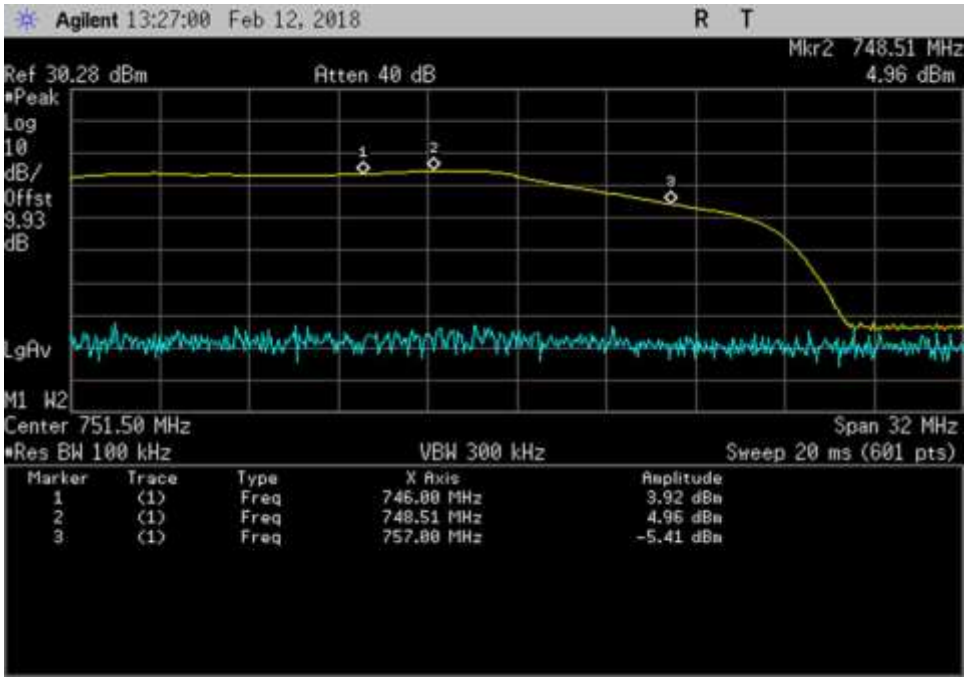
UL_1710-1755_ 1710- 1732.5MHz



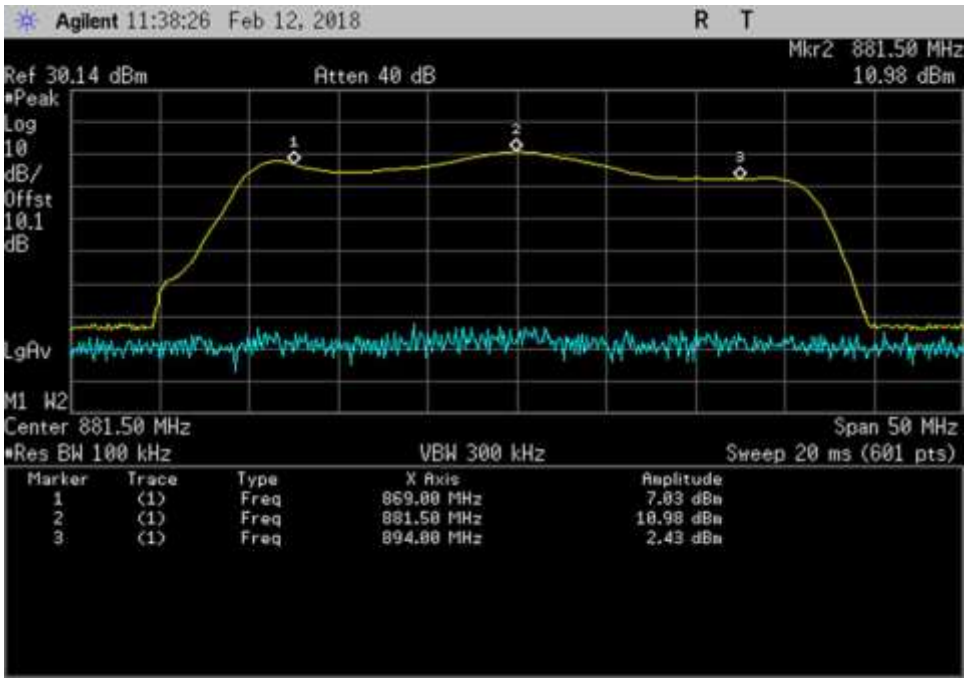
UL_1850-1915_ 1850- 1859.97MHz



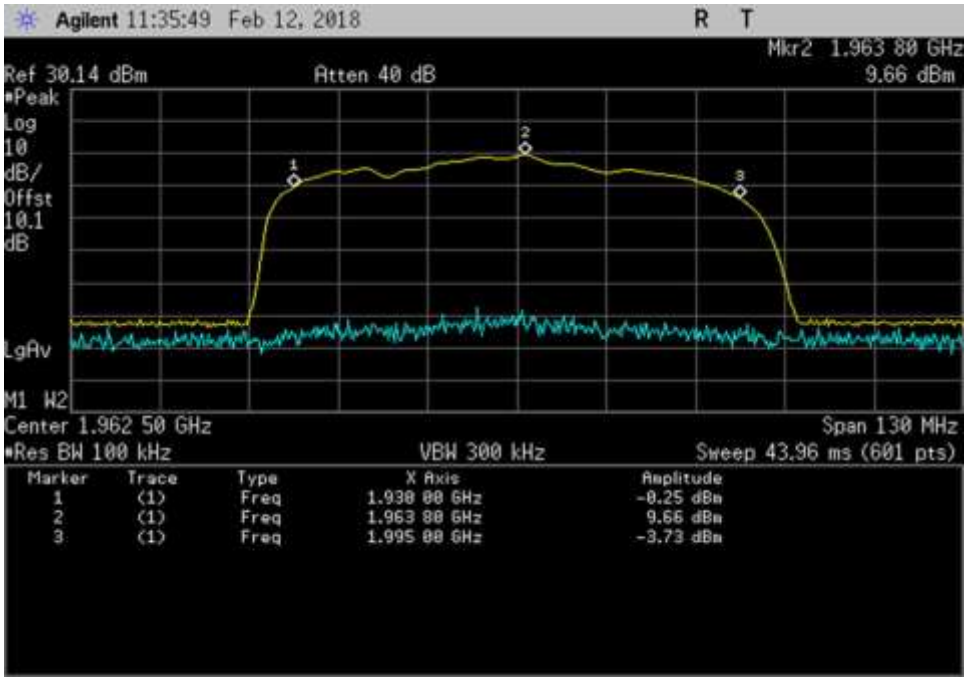
DL_728-746_ 728- 743.5MHz



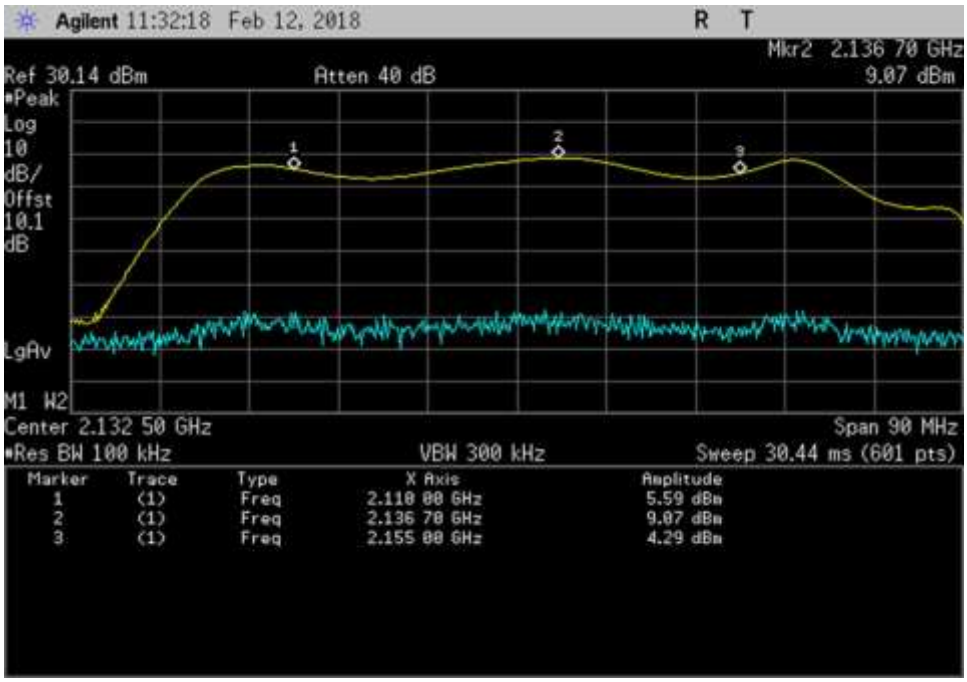
DL_746-757_ 746- 748.51MHz



DL_869-894_ 869- 881.5MHz



DL_1930-1995_ 1930- 1963.8MHz



DL_2110-2155_ 2110- 2136.7MHz

7.2 Maximum Power / 7.3 Maximum Gain

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170		
Customer:	Cellphone-Mate, Inc.		
Specification:	**7.2 Maximum Power Measurement** **7.3 Maximum Booster Gain**		
Work Order #:	**100827**	Date	02/16/18 and 02/19/18
Test Type:	**Conducted Emissions**		
Tested By:	**Hieu Song 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:

02/16/18: Test environment conditions:
Temperature: 23.5°C
Relative Humidity: 46%
Pressure: 102.5 kPa

02/19/18: Test environment conditions:
Temperature: 19.8°C
Relative Humidity: 50%
Pressure: 101.5kPa

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

Pre AGC				Pre AGC		
	Pulse GSM			4.1 MHz AWGN		
Frequency (MHz)	Input (dBm)	Output (dBm)	Gain (dB)	Input (dBm)	Output (dBm)	Gain (dB)
UL1710-1755	-45.9	23.1	69.0	-48.5	20.3	68.8
UL1850-1915	-45.9	23.2	69.1	-46.9	21.7	68.6
UL824-894	-39.6	20.5	60.1	-40.3	19.4	59.7
UL 698-716	-37.7	23.3	61.0	-38.7	21.7	60.5
UL776-787	-41.1	20.5	61.6	-40.7	20.9	61.6
DL2110-2155	-54.0	14.4	68.4	-54.3	15.4	69.7
DL1930-1995	-54.1	15.0	69.1	-54.7	16.4	71.1
DL869-894	-44.8	15.7	60.5	-45.2	16.4	61.6
DL728-746	-43.2	14.6	57.8	-42.6	15.8	58.4
DL746-757	-43.2	14.8	58.0	-42.3	16.1	58.4

Pulse GSM					Conducted	Conducted and EIRP
Frequency (MHz)	Output Power (dBm)	*Ant Gain (dBi)	Cable/Four Splitter loss (dB)	EIRP (dBm)	Limit Min (dBm)	Limit Max (dBm)
UL1710-1755	23.1	10.0	6.1	27.0	17	30
UL1850-1915	23.2	10.0	6.5	26.7	17	30
UL824-894	20.5	10.0	4.4	26.1	17	30
UL 698-716	23.3	10.0	4.2	29.1	17	30
UL776-787	20.5	10.0	4.2	26.3	17	30
DL2110-2155	14.4	10.0	10.2	14.2	NA	17
DL1930-1995	15.0	10.0	9.9	15.1	NA	17
DL869-894	15.7	7.0	8.3	14.4	NA	17
DL728-746	14.6	7.0	8.1	13.5	NA	17
DL746-757	14.8	7.0	8.1	13.7	NA	17

4.1MHz AWGN					Conducted	Conducted and EIRP
Frequency (MHz)	Output Power (dBm)	*Ant Gain (dBi)	Cable/Four Splitter loss (dB)	EIRP (dBm)	Limit Min (dBm)	Limit Max (dBm)
UL1710-1755	20.3	10.0	6.1	24.2	17	30
UL1850-1915	21.7	10.0	6.5	25.2	17	30
UL824-894	19.4	10.0	4.4	25.0	17	30
UL 698-716	21.7	10.0	4.2	27.5	17	30
UL776-787	20.9	10.0	4.2	26.7	17	30
DL2110-2155	15.4	10.0	10.2	15.2	NA	17
DL1930-1995	16.4	10.0	9.9	16.5	NA	17
DL869-894	16.4	7.0	8.3	15.1	NA	17
DL728-746	15.8	7.0	8.1	14.7	NA	17
DL746-756	16.1	7.0	8.1	15.0	NA	17

* Antenna gain and cable losses indicated from the antenna kitting Fusion5s 2.1 kit

UL SC230W, SC240-40FN

DL SC248W, SC400-50NN, SC-WS-2 and SC400-20NN

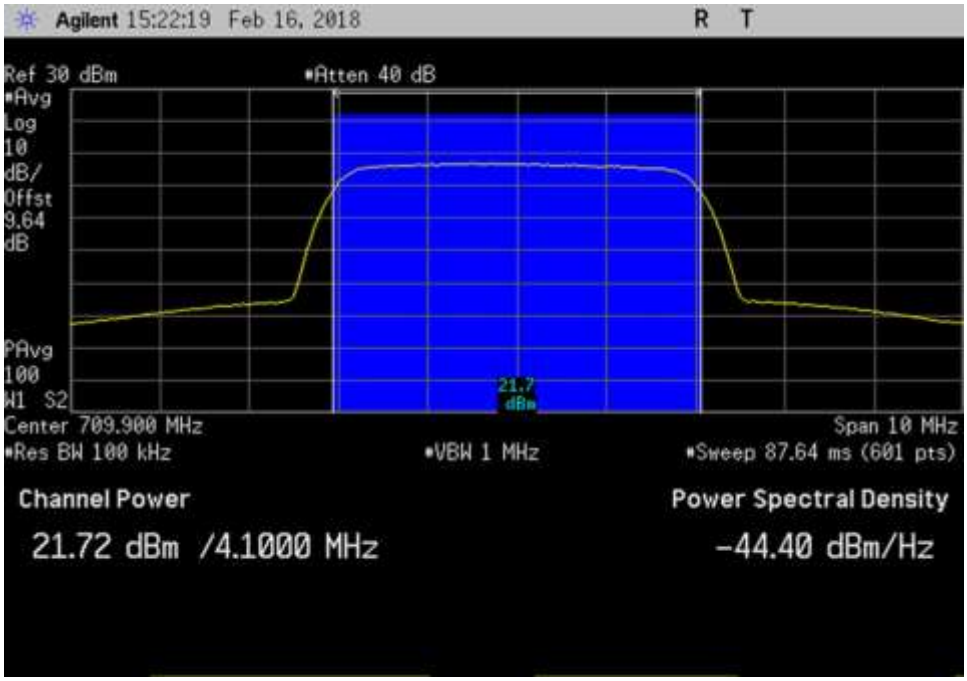
Section 5.5 power						
	Pulse GSM			4.1 MHz AWGN		
Frequency (MHz)	Input (dBm)	Output (dBm)	Gain (dB)	Input (dBm)	Output (dBm)	Gain (dB)
UL1710-1755	-0.7	22.6	23.3	-0.7	20.4	21.0
UL1850-1915	-0.7	23.0	23.7	-0.7	21.4	22.1
UL824-894	-0.3	20.0	20.3	-0.3	19.0	19.3
UL 698-716	-0.3	22.5	22.8	-0.3	21.0	21.4
UL776-787	-0.3	20.5	20.8	-0.3	20.3	20.6
DL2110-2155	-20.7	14.5	35.2	-20.7	15.0	35.7
DL1930-1995	-20.7	14.3	35.0	-20.7	16.0	36.7
DL869-894	-20.4	15.1	35.5	-20.4	16.0	36.4
DL728-746	-20.4	14.3	34.7	-20.4	15.1	35.5
DL746-756	-20.4	14.2	34.6	-20.4	15.7	36.1

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.

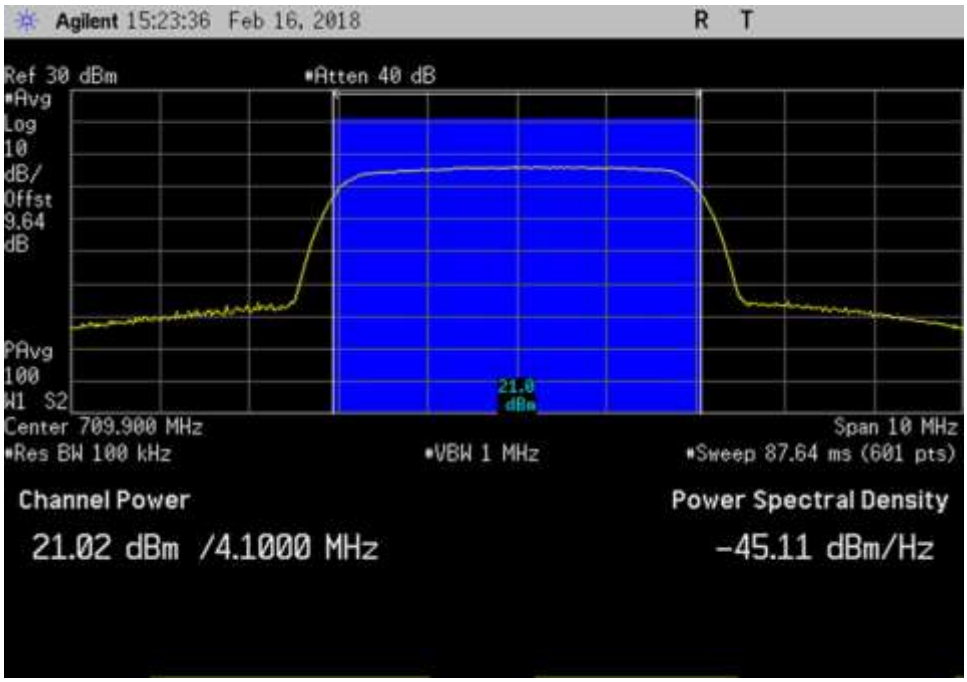
UL gain vs DL gain	Pulse GSM (dB)	4.1MHz AWGN (dB)	Limit (dB)
UL gain vs DL gain 1710/2110	0.6	-0.9	9.0
UL gain vs DL gain 1850/1930	0.0	-2.5	9.0
UL gain vs DL gain 824/869	-0.4	-1.9	9.0
UL gain vs DL gain 776/728	3.2	2.0	9.0
UL gain vs DL gain 776/746	3.6	3.2	9.0

Plots

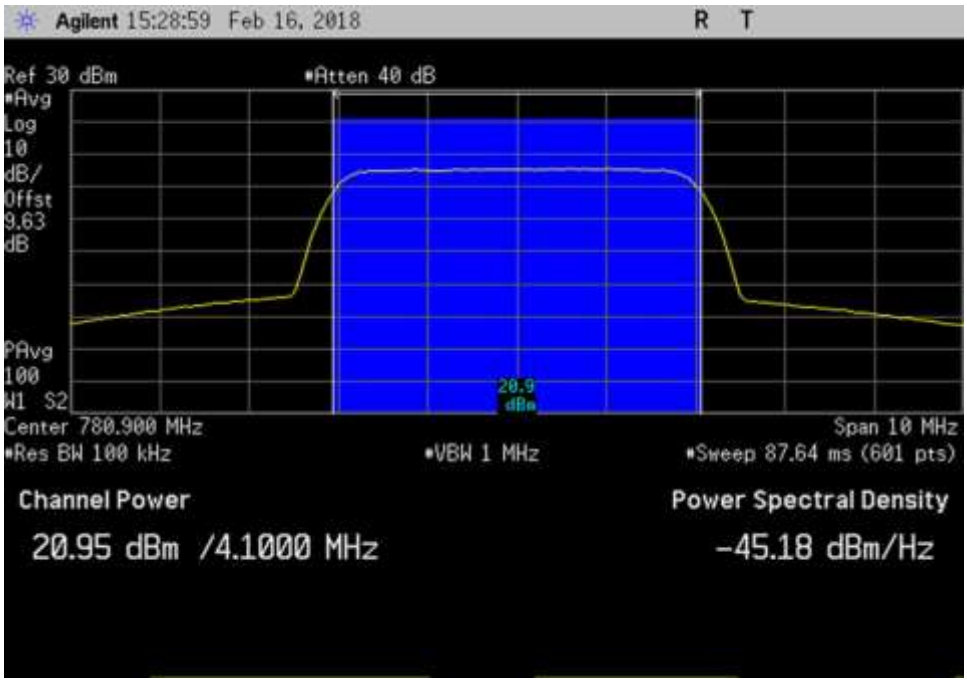
AWGN



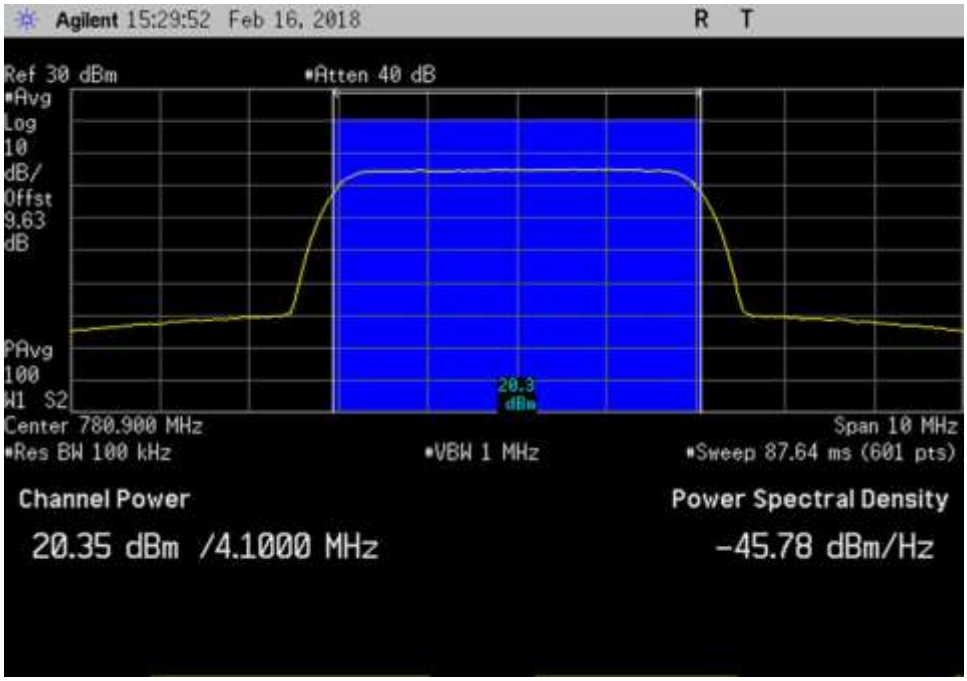
UL_698-716_AWGN_ 709.9MHz



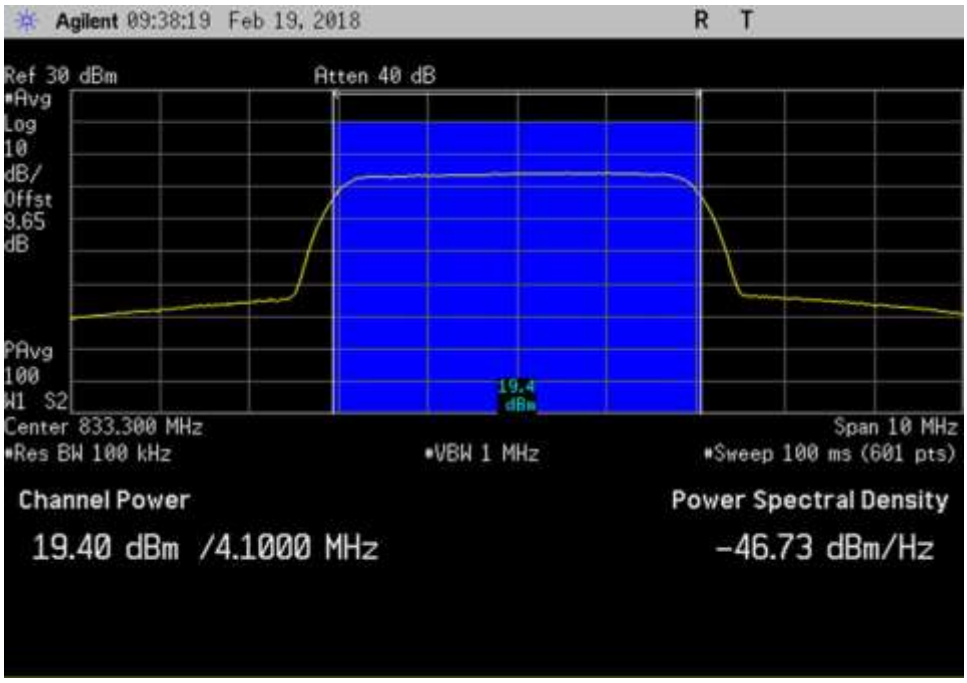
UL_698-716_AWGN_Max_ 709.9MHz



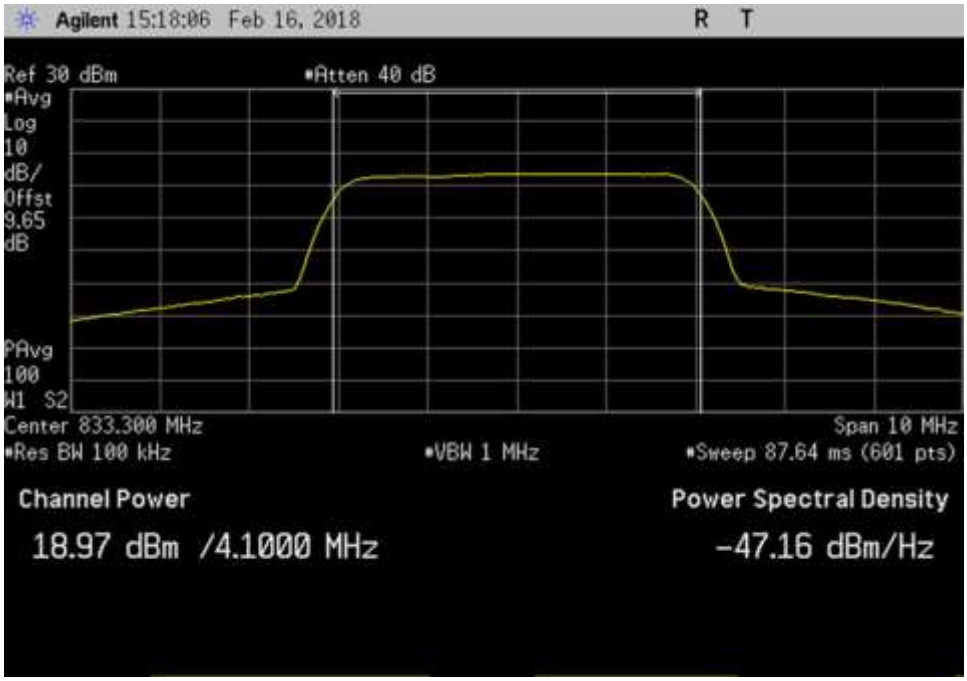
UL_776-787_AWGN_ 780.9MHz



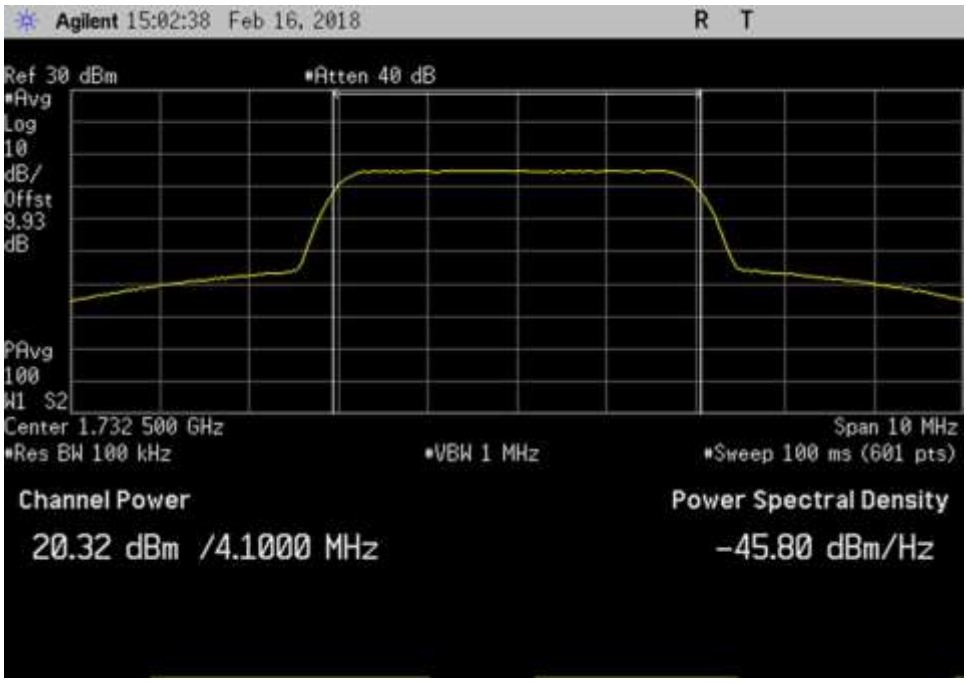
UL_776-787_AWGN_Max_ 780.9MHz



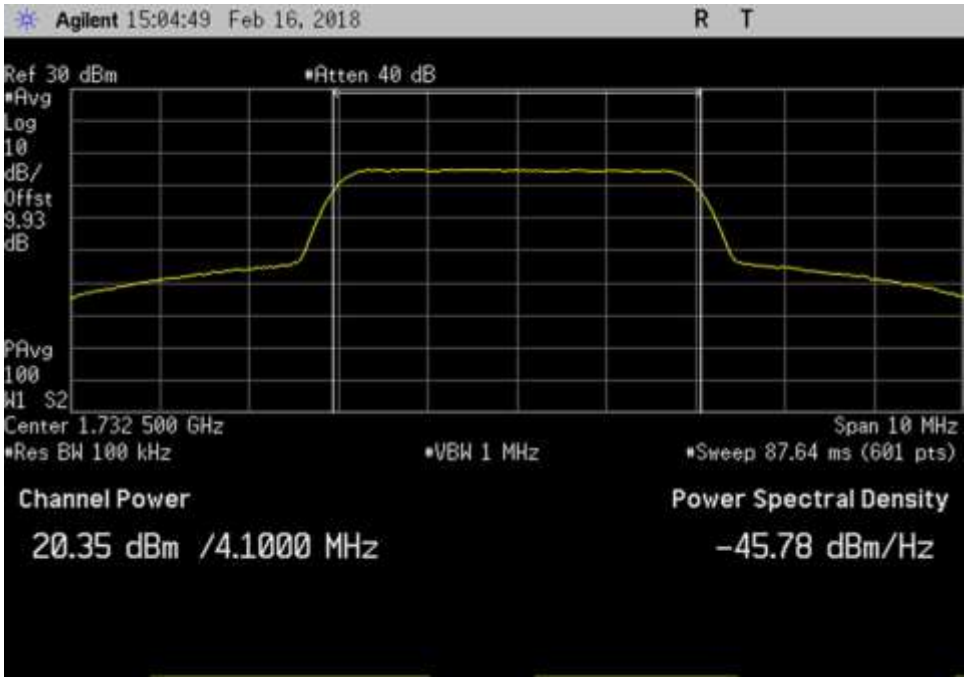
UL_824-849_AWGN_ 833.3MHz



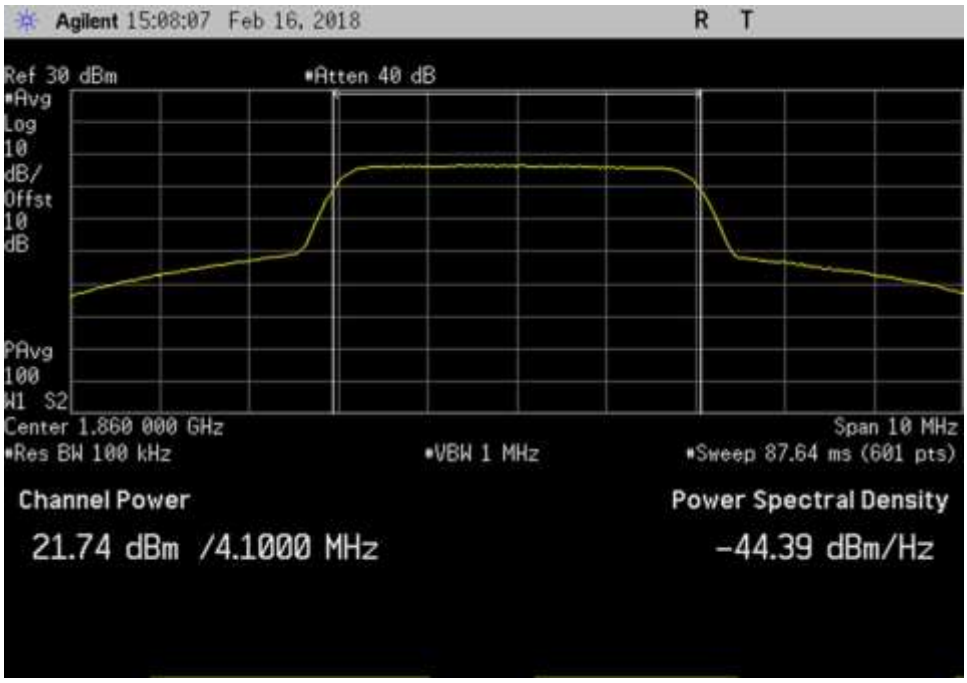
UL_824-849_AWGN_Max_ 833.3MHz



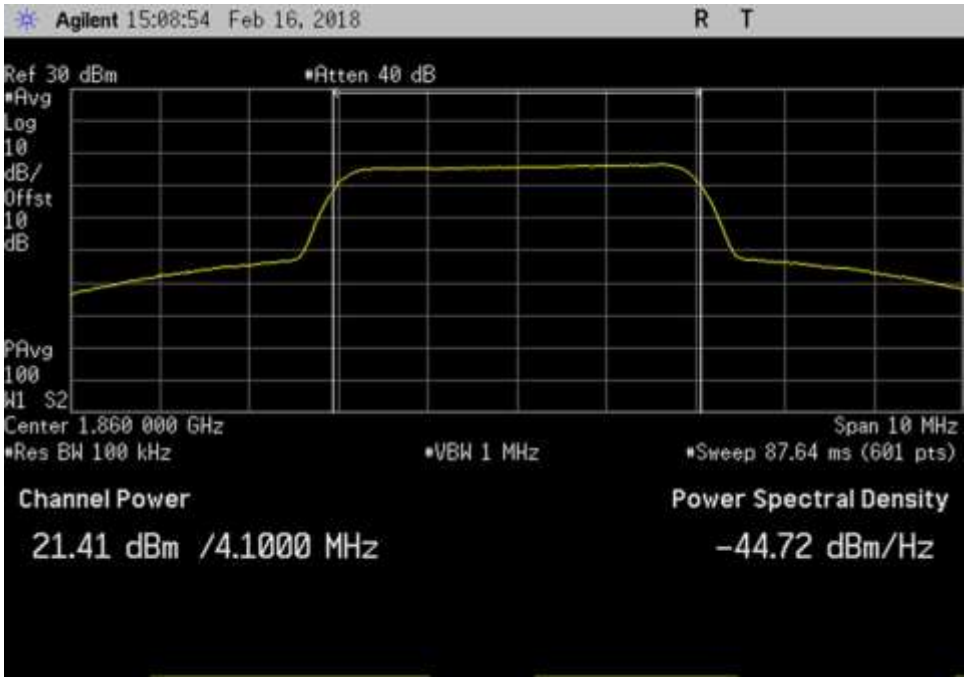
UL_1710-1755_AWGN_ 1732.5MHz



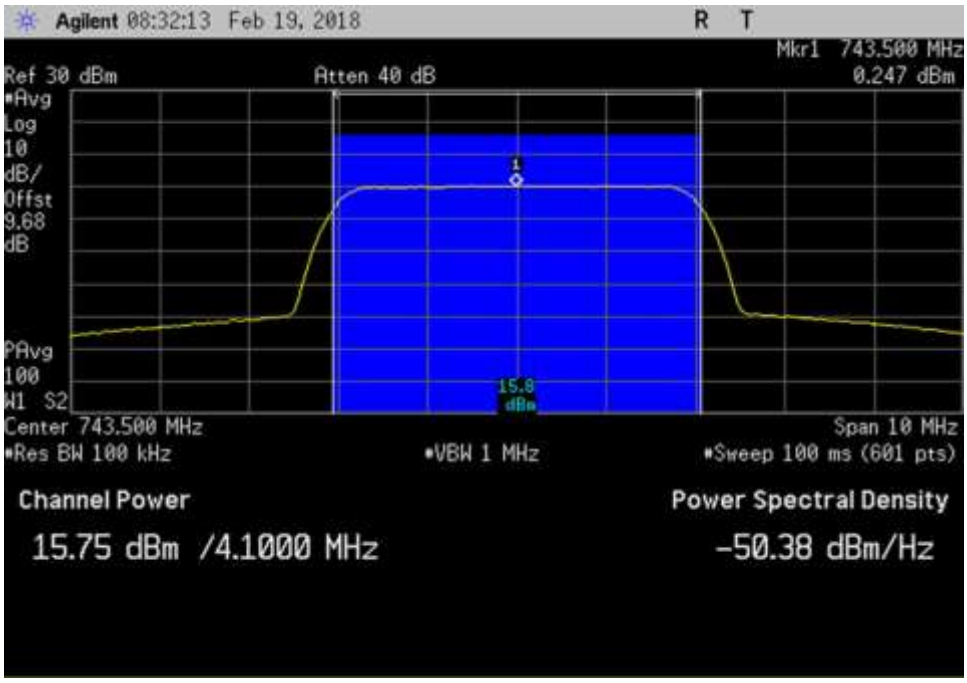
UL_1710-1755_AWGN_Max_ 1732.5MHz



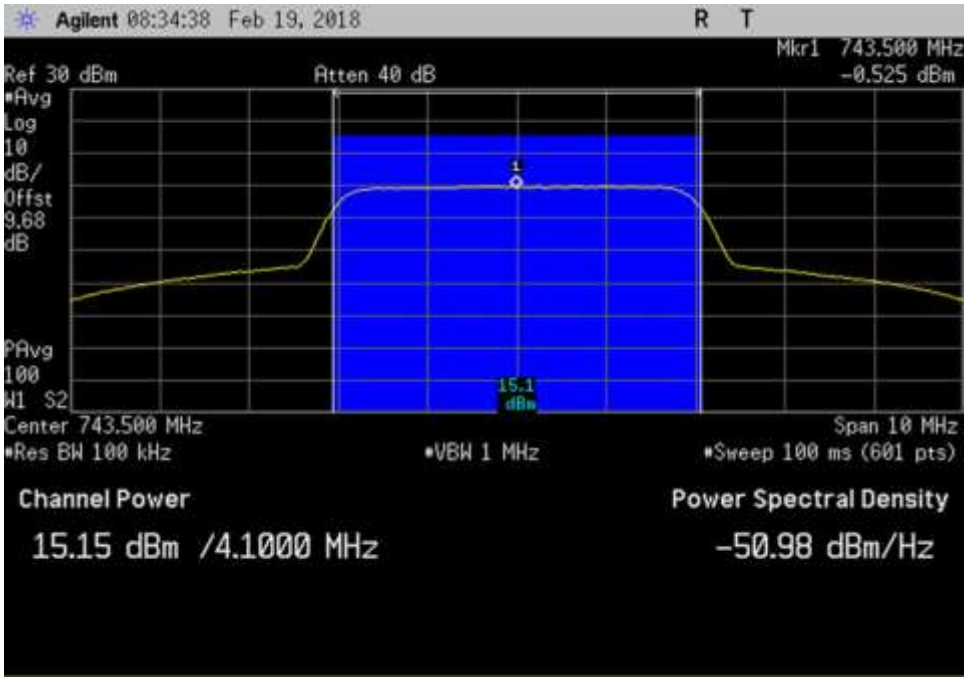
UL_1850-1915_AWGN_ 1860MHz



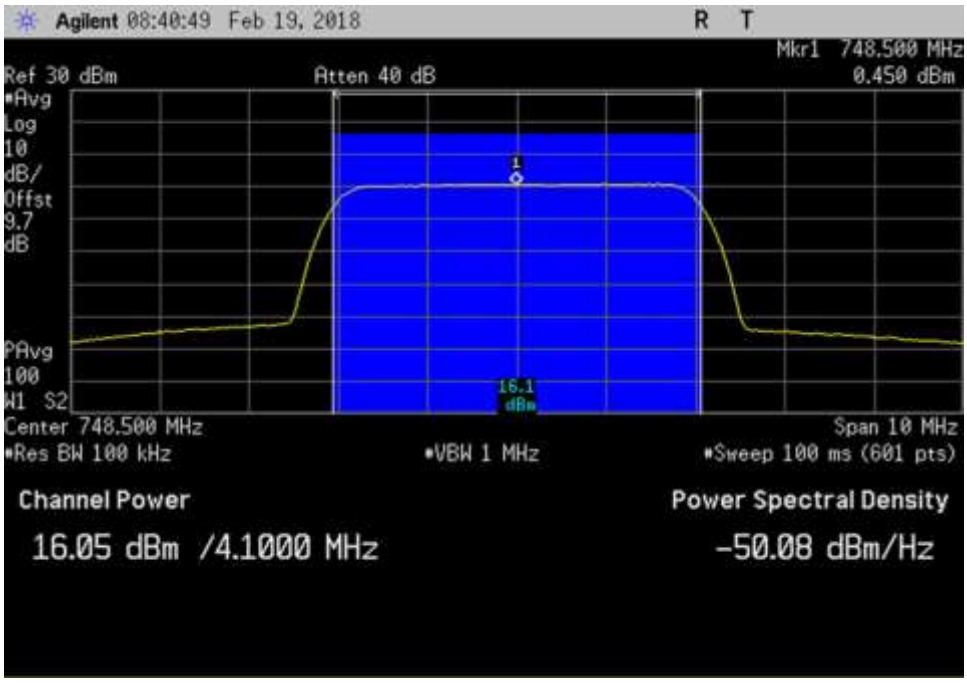
UL_1850-1915_AWGN_Max_ 1860MHz



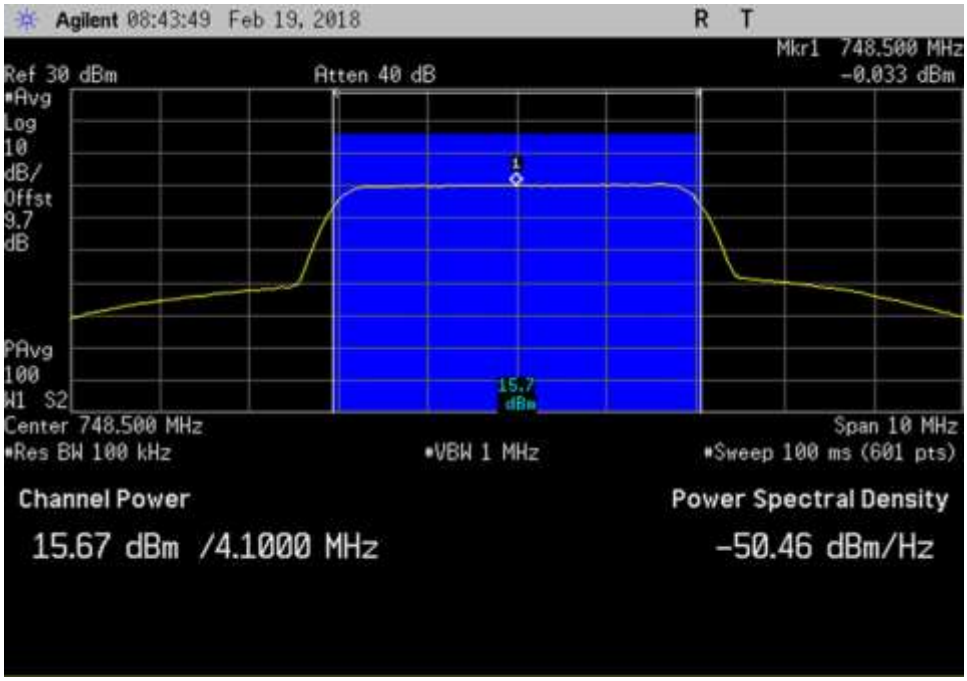
DL_728-746_AWGN_ 743.5MHz



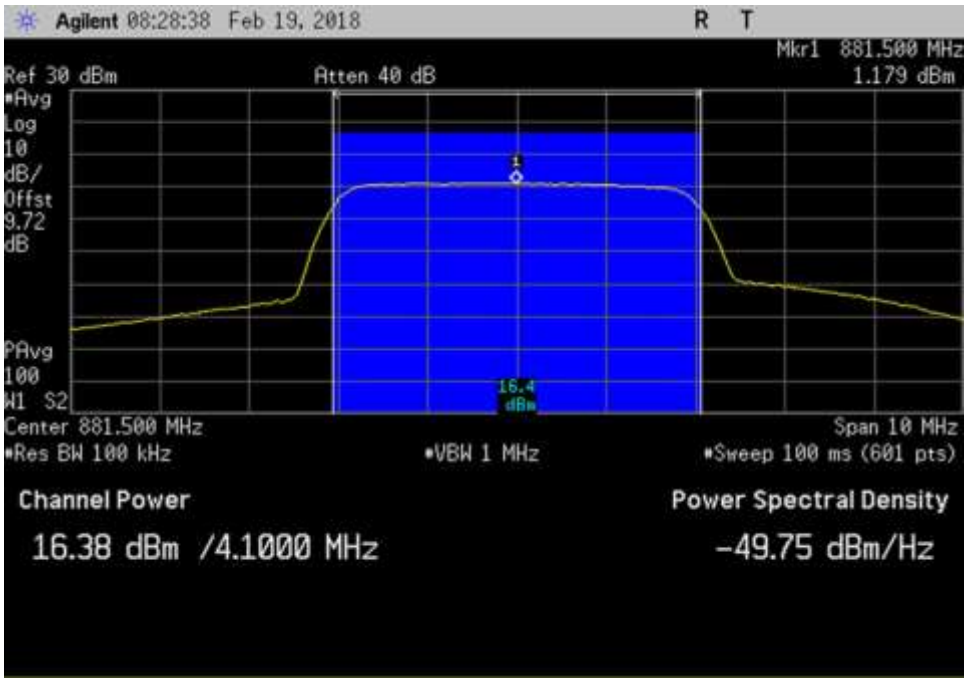
DL_728-746_AWGN_Max_ 743.5MHz



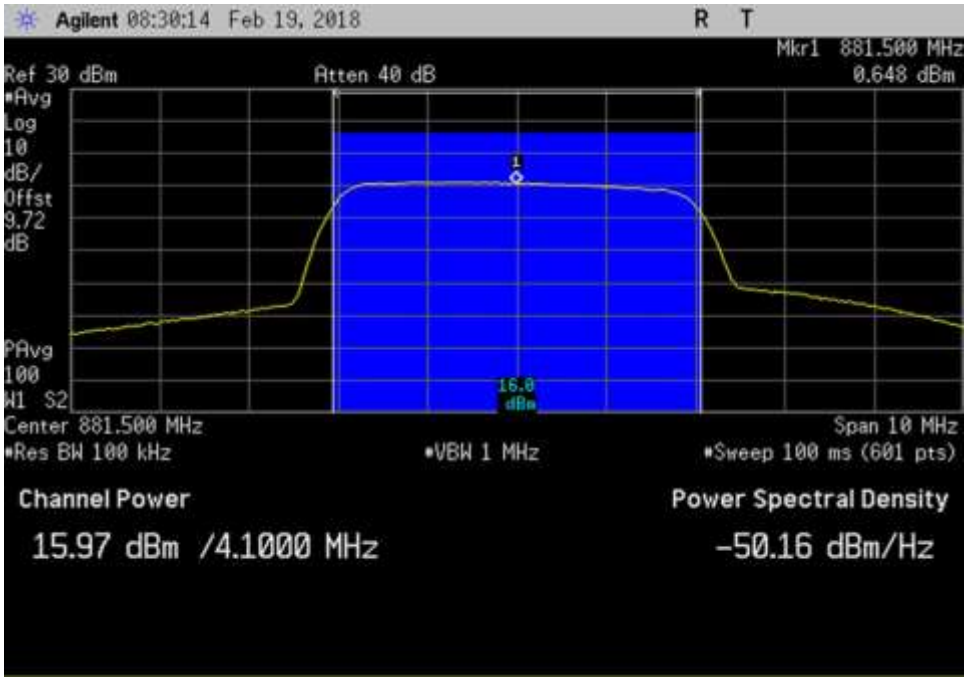
DL_746-757_AWGN_ 748.5MHz



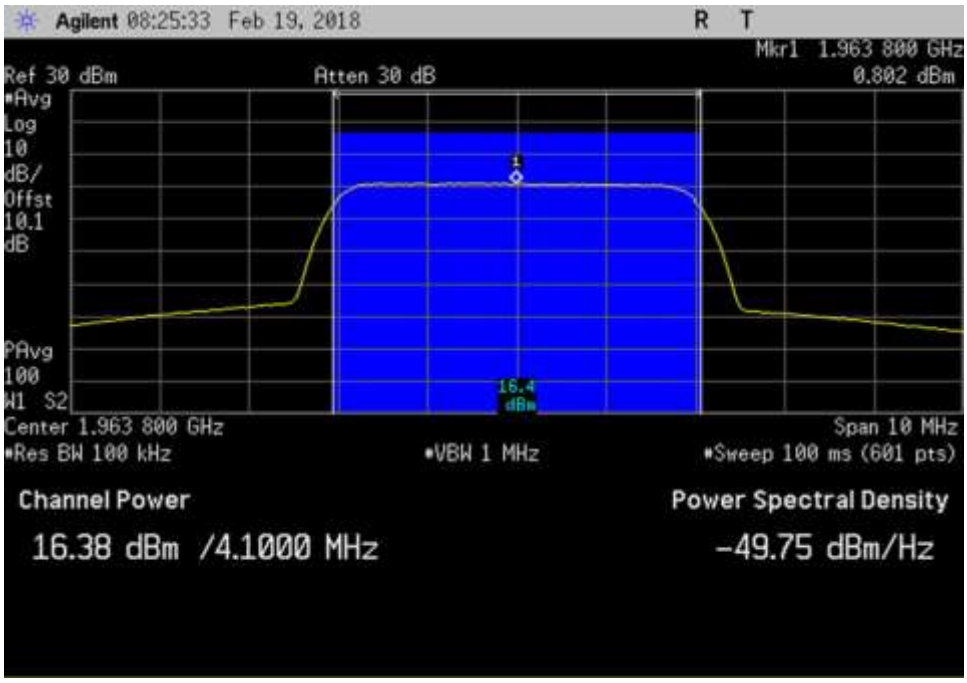
DL_746-757_AWGN_Max_ 748.5MHz



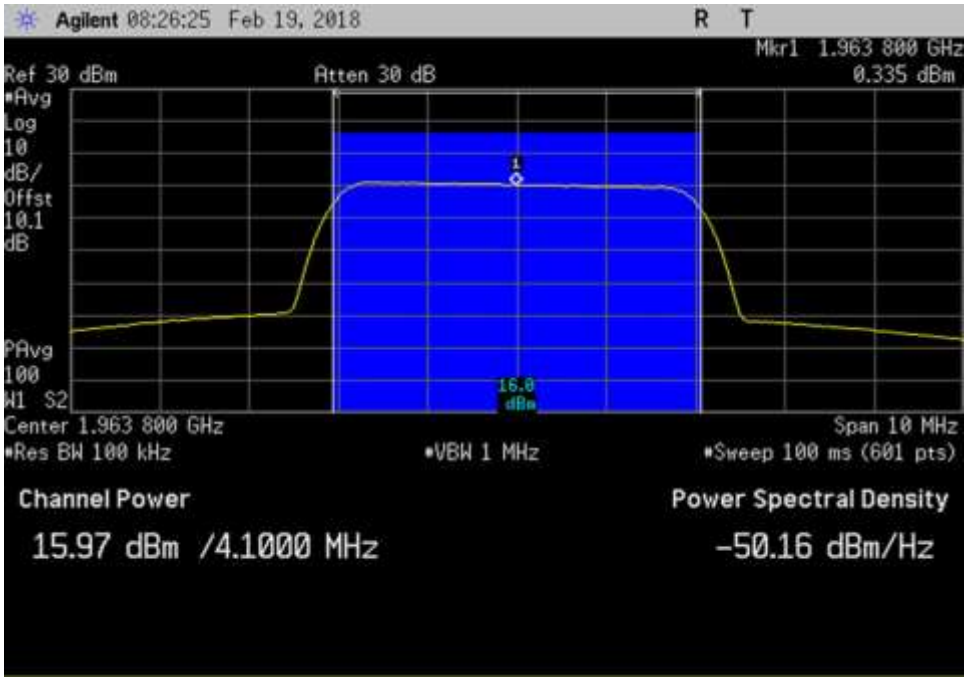
DL_869-894_AWGN_ 881.5MHz



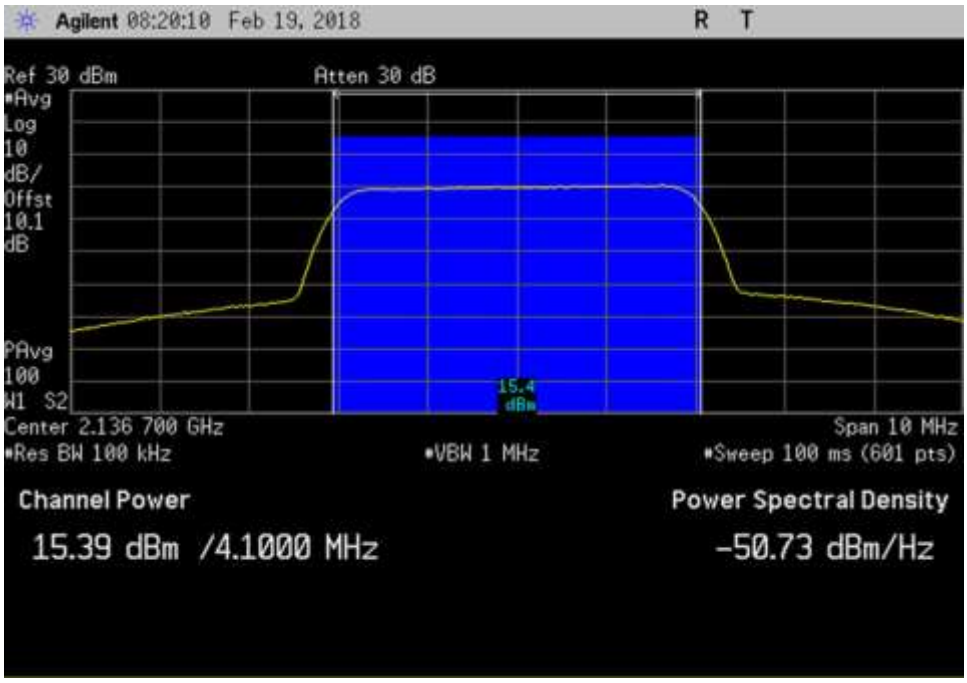
DL_869-894_AWGN_Max_ 881.5MHz



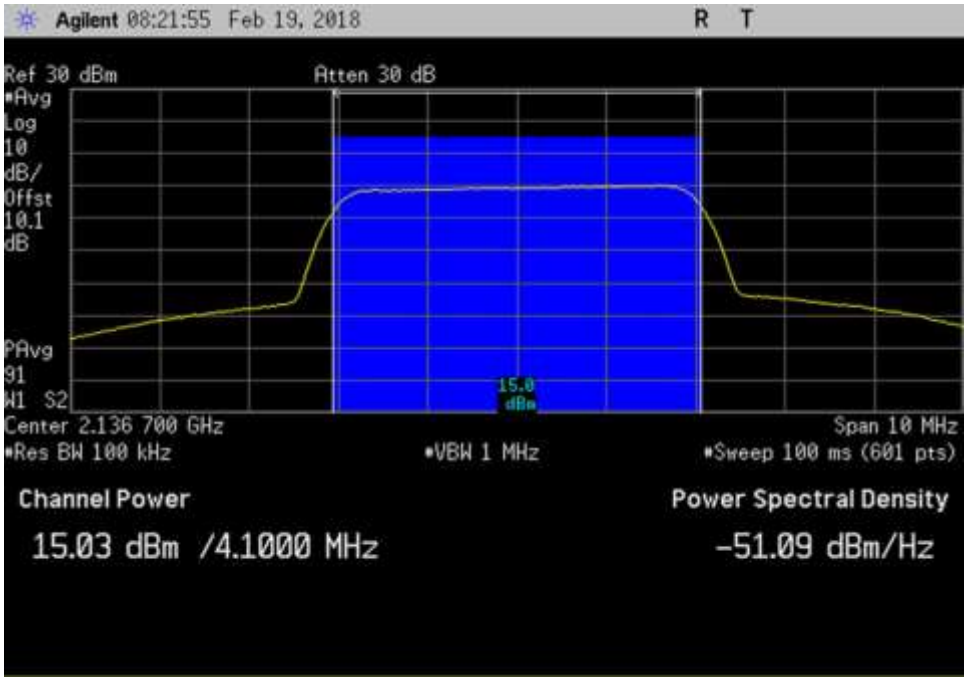
DL_1930-1995_AWGN_ 1963.8MHz



DL_1930-1995_AWGN_Max_ 1963.8MHz

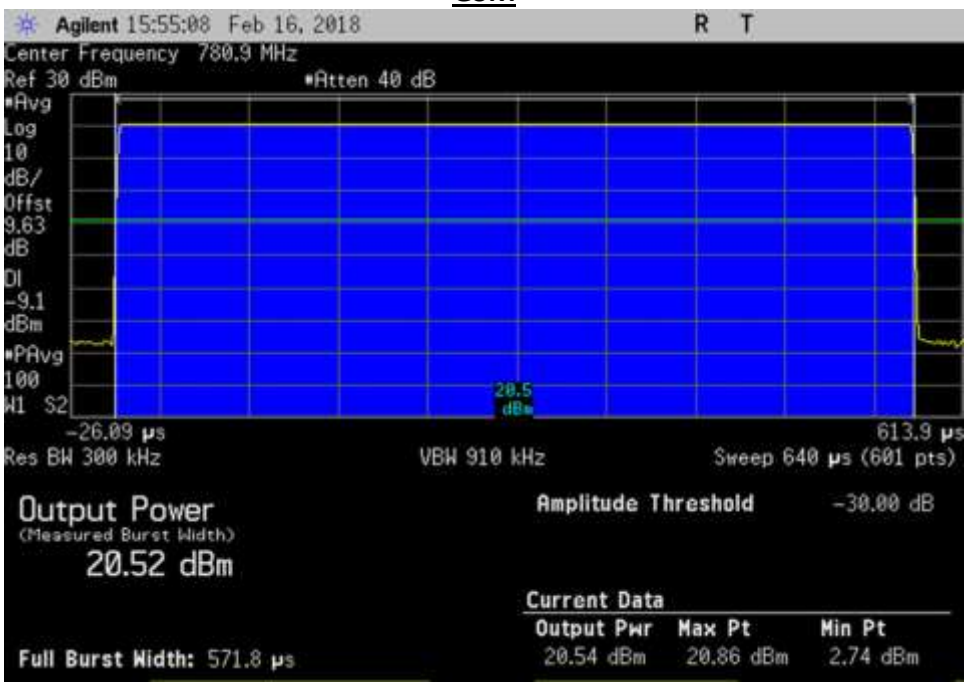


DL_2110-2155_AWGN_ 2136.7MHz

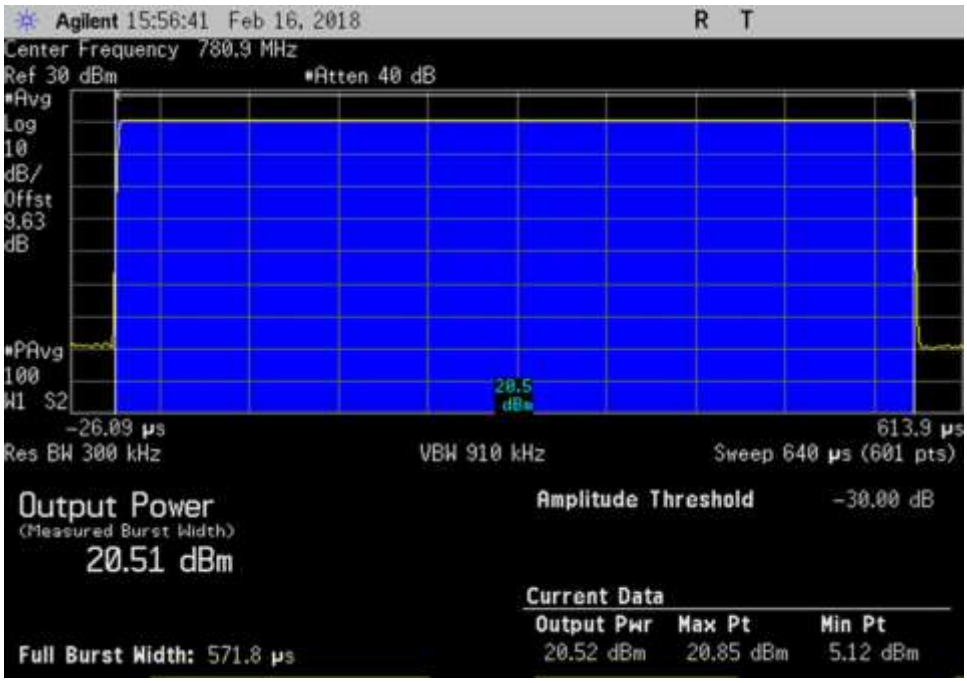


DL_2110-2155_AWGN_Max_ 2136.7MHz

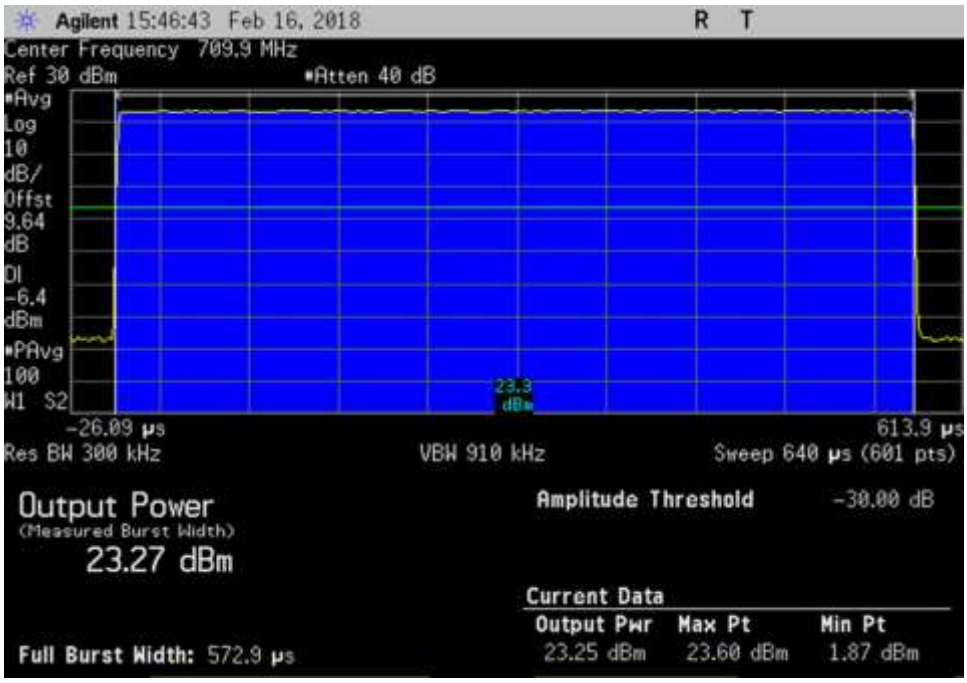
GSM



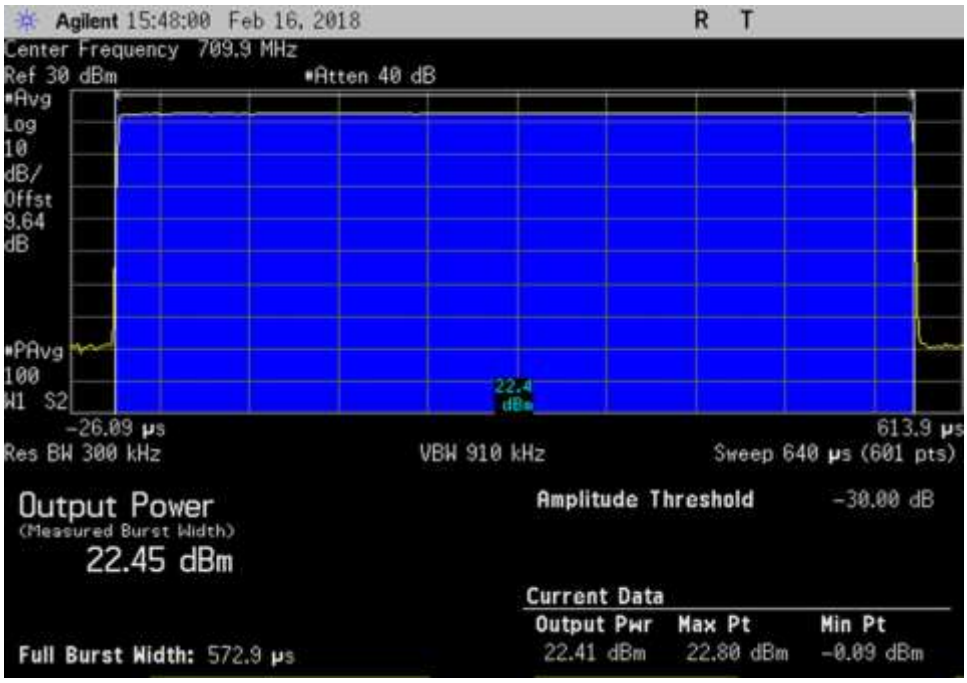
UL_698-716_GSM_ 709.9MHz



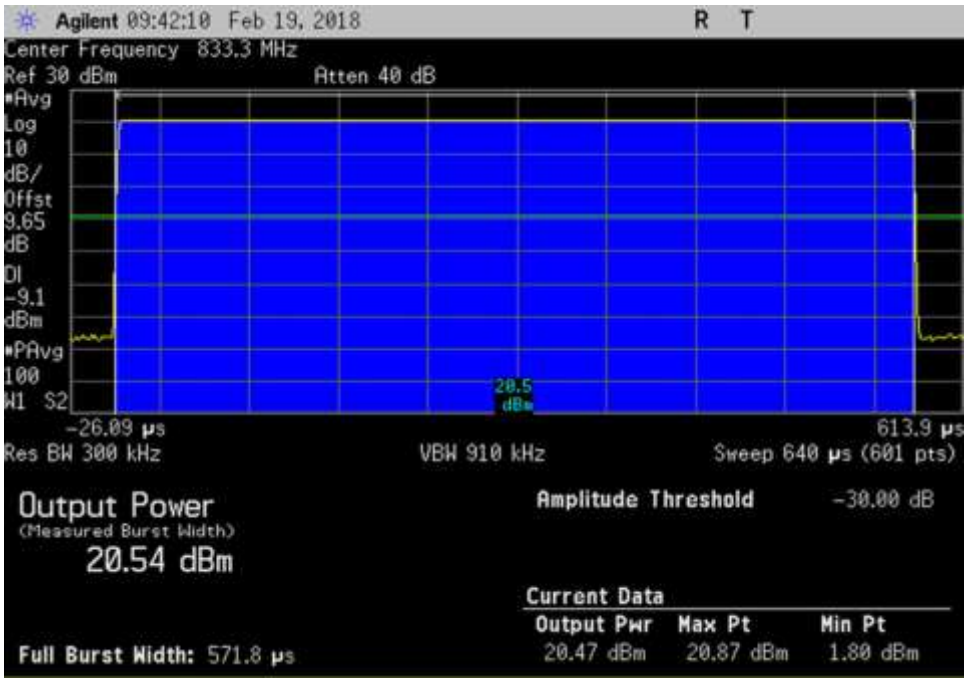
UL_698-716_GSM_Max_ 709.9MHz



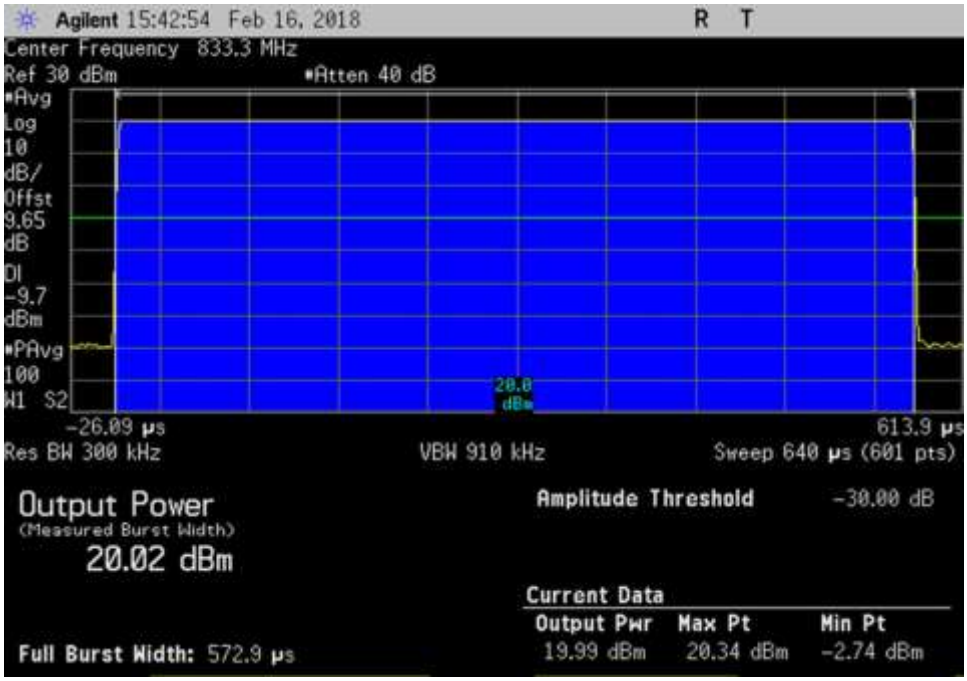
UL_776-787_GSM_ 780.9MHz



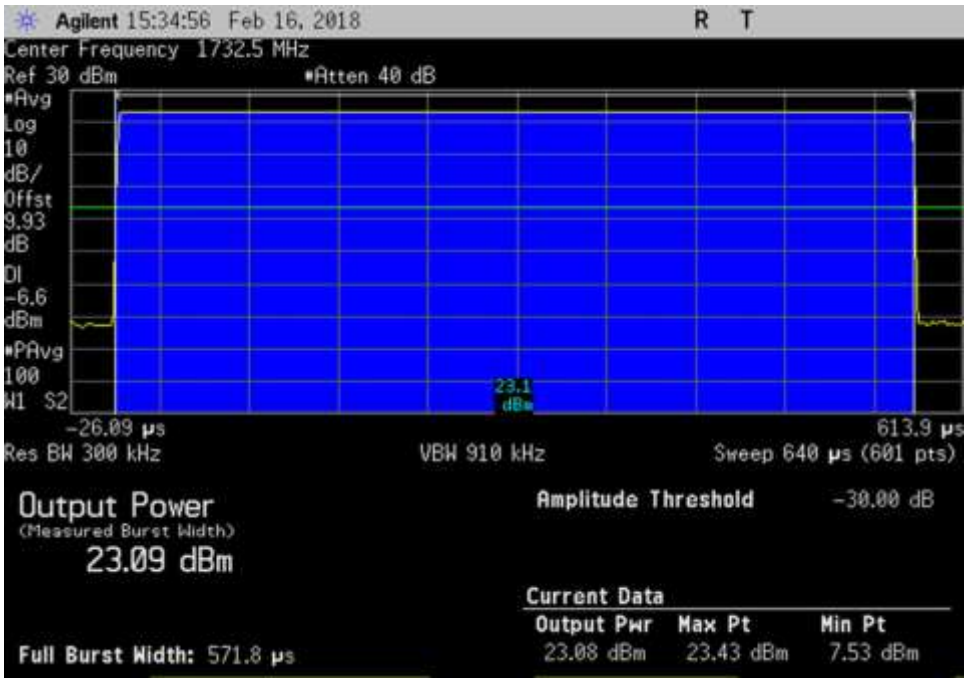
UL_776-787_GSM_Max_ 780.9MHz



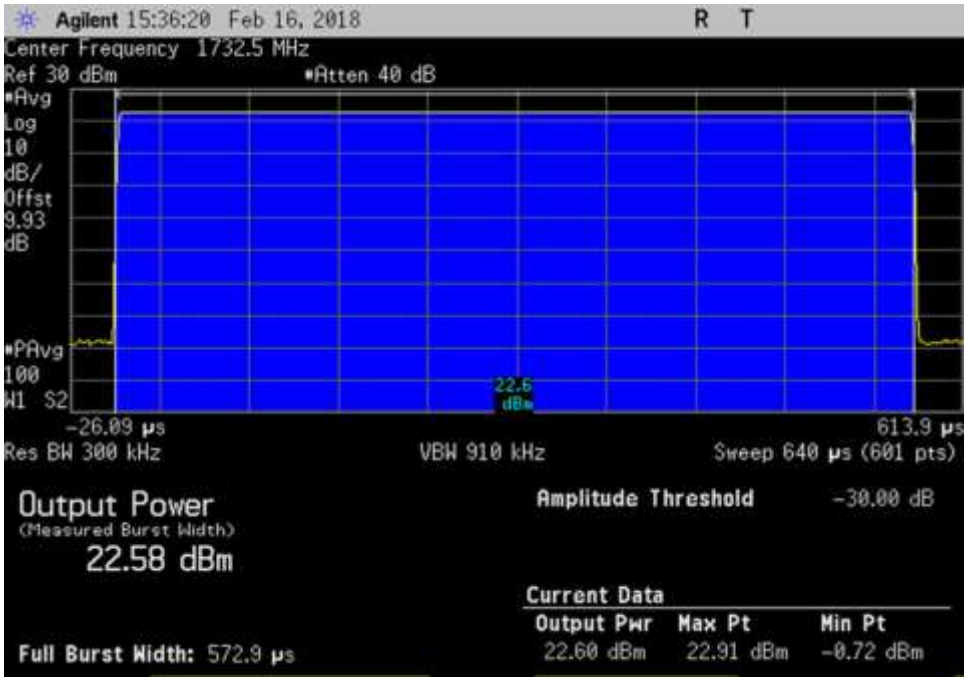
UL_824-849_GSM_ 833.3MHz



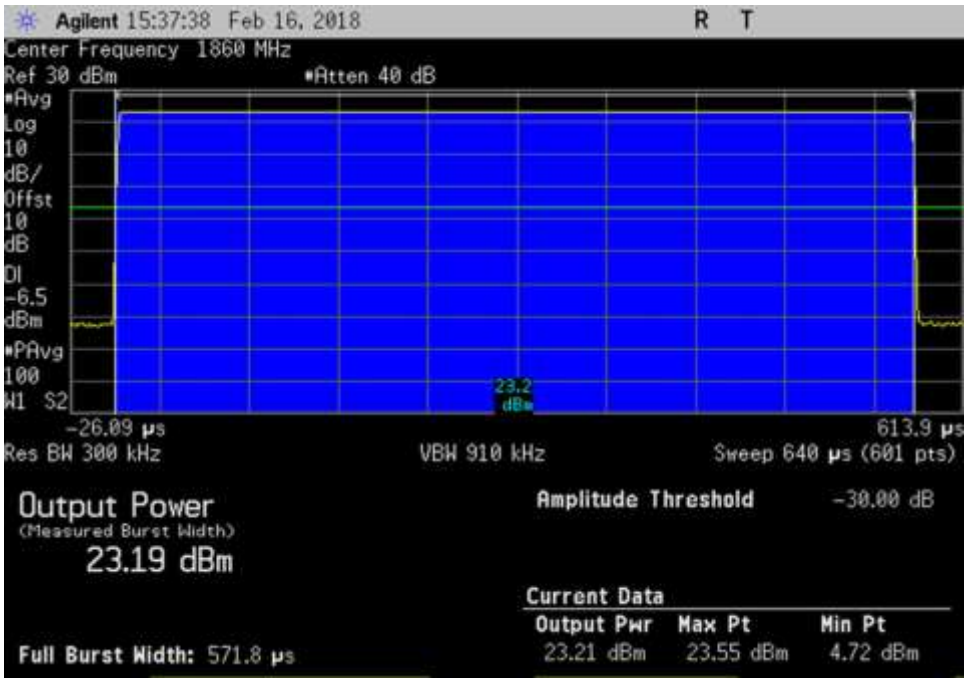
UL_824-849_GSM_Max_ 833.3MHz



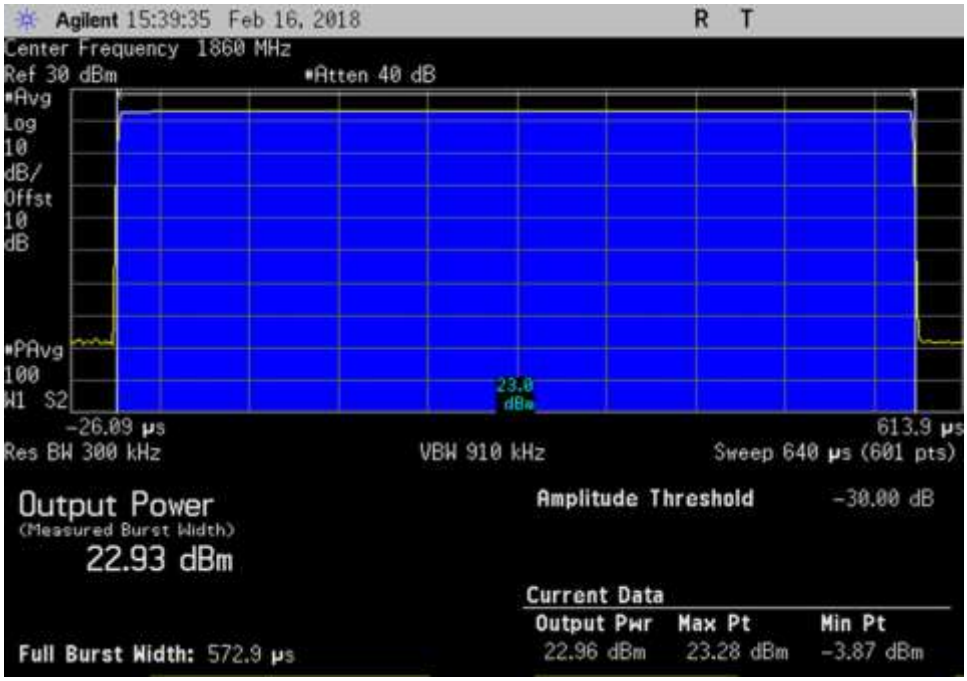
UL_1710-1755_GSM_ 1732.5MHz



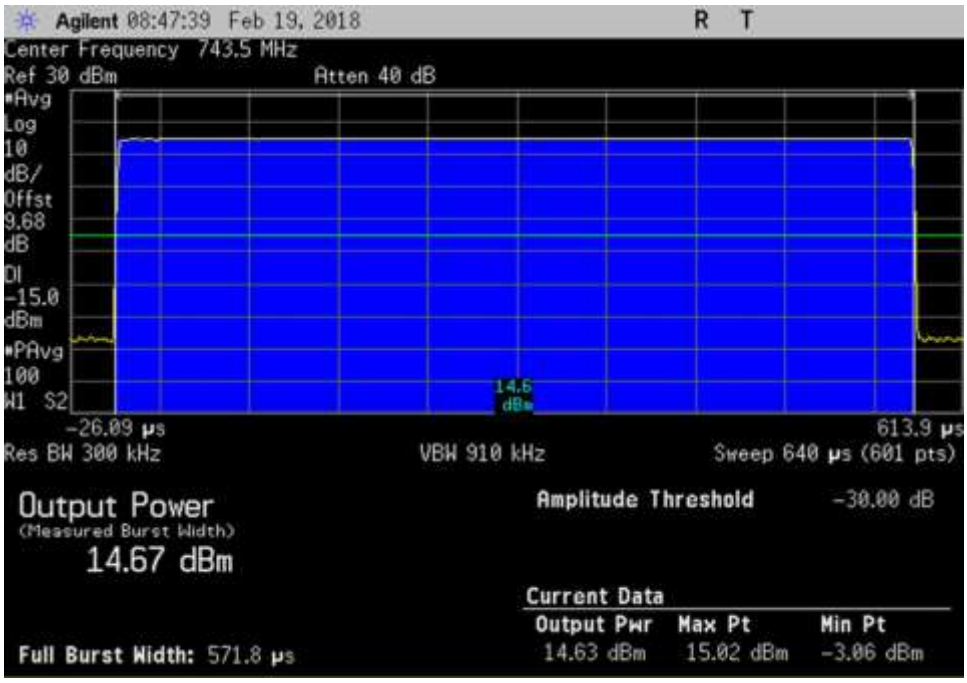
UL_1710-1755_GSM_Max_ 1732.5MHz



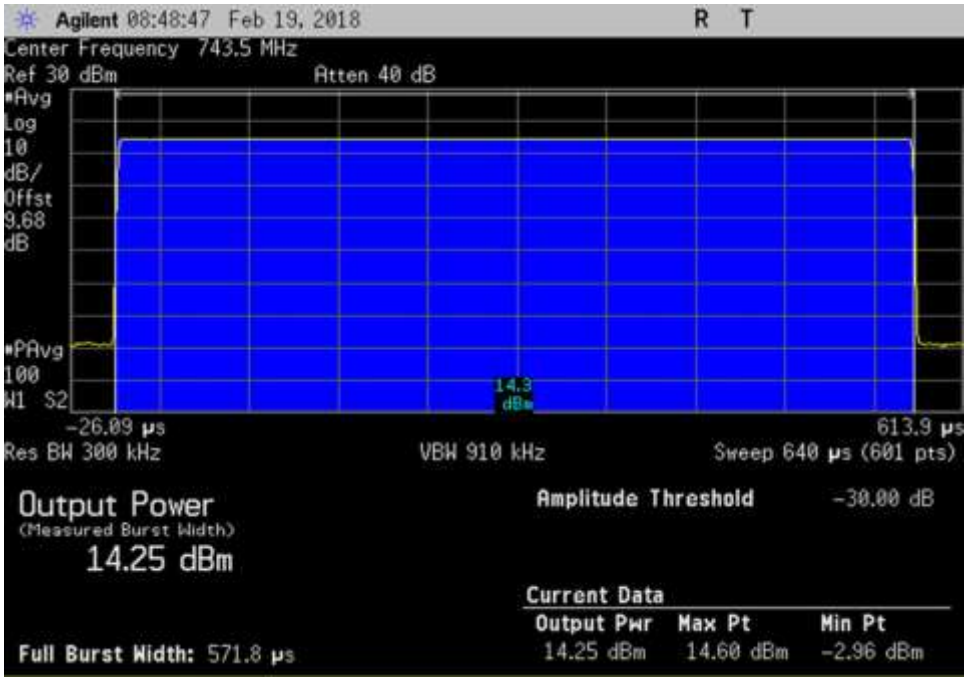
UL_1850-1915_GSM_ 1860MHz



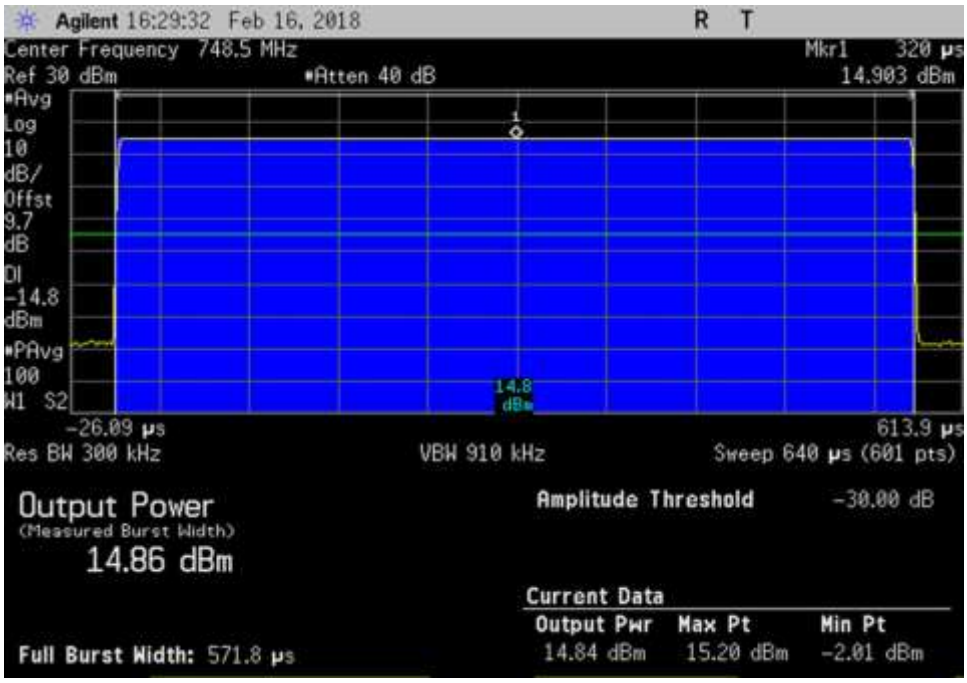
UL_1850-1915_GSM_Max_ 1860MHz



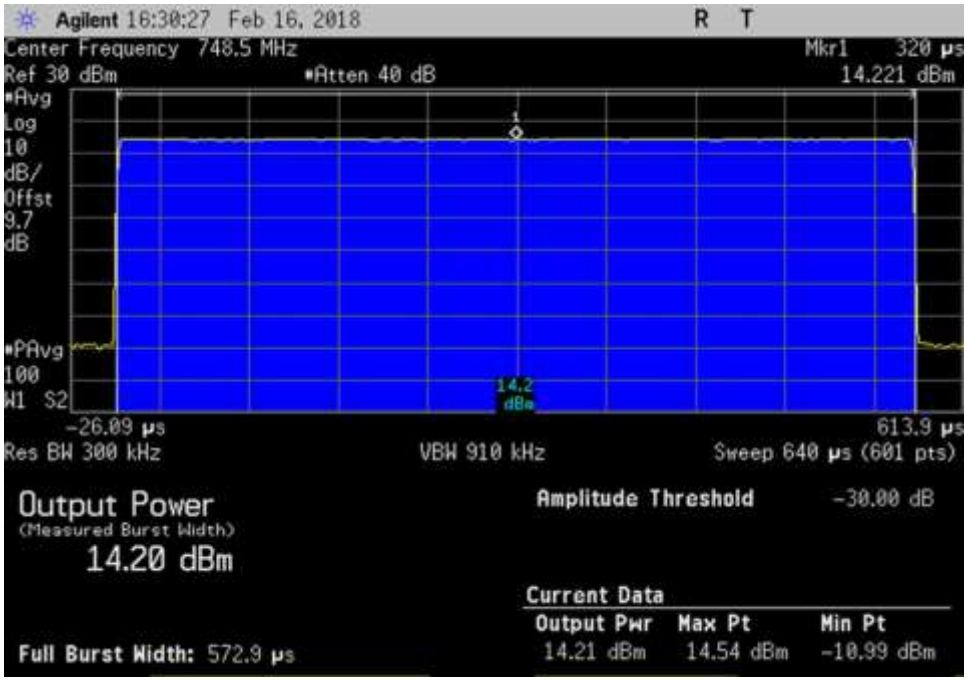
DL_728-746_GSM_ 743.5MHz



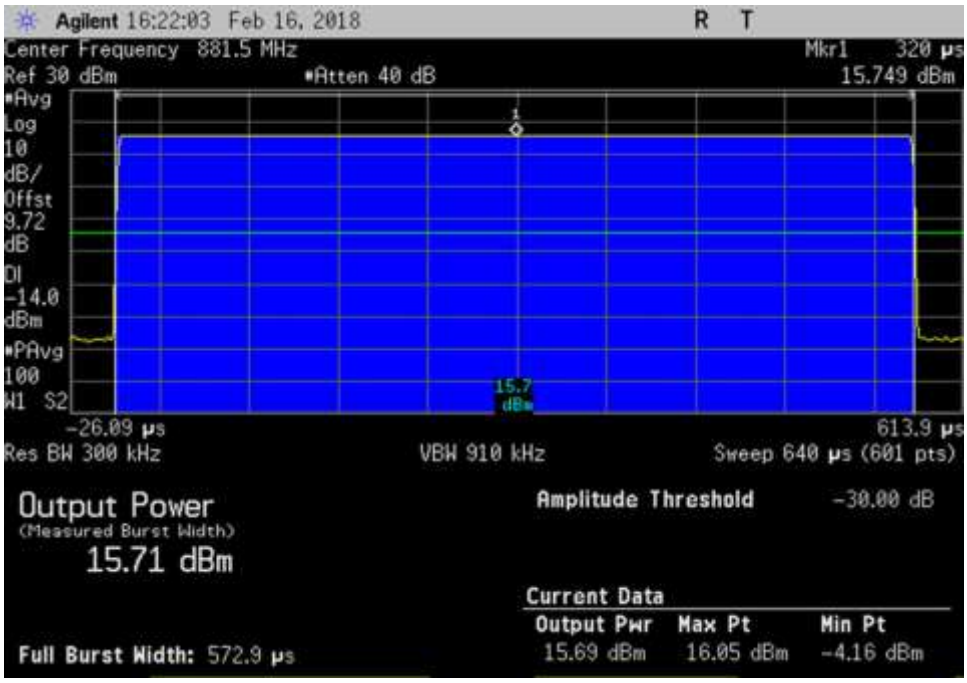
DL_728-746_GSM_Max_ 743.5MHz



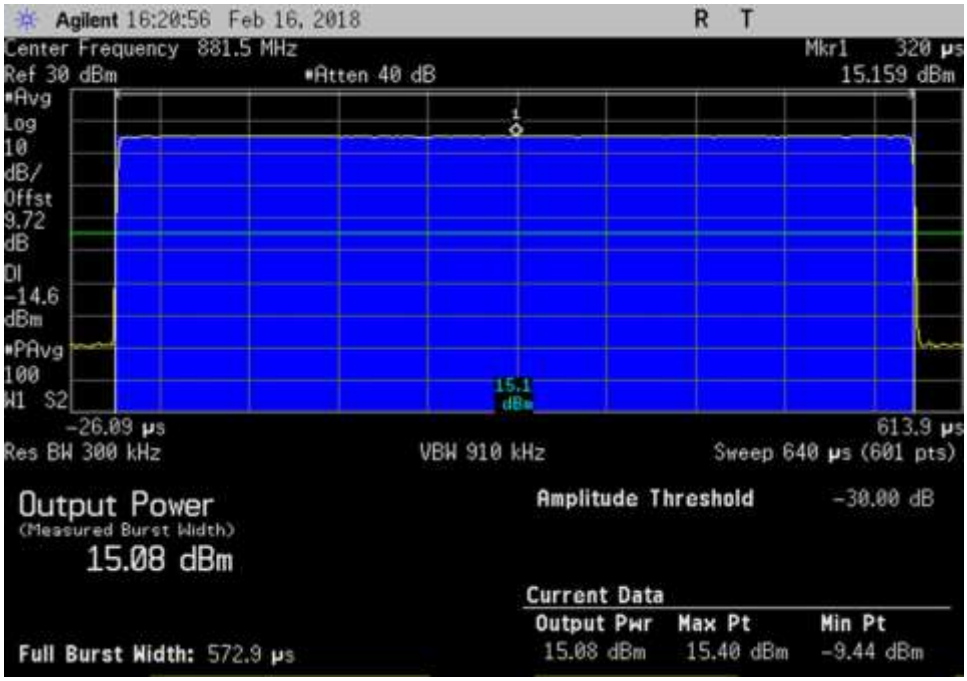
DL_746-757_GSM_ 748.5MHz



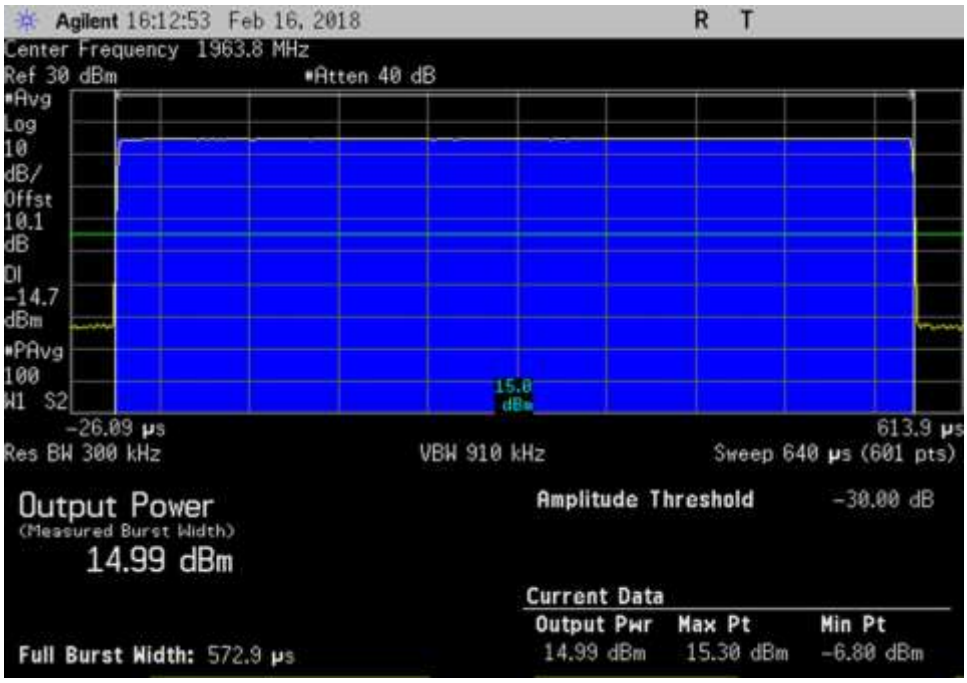
DL_746-757_GSM_Max_ 748.5MHz



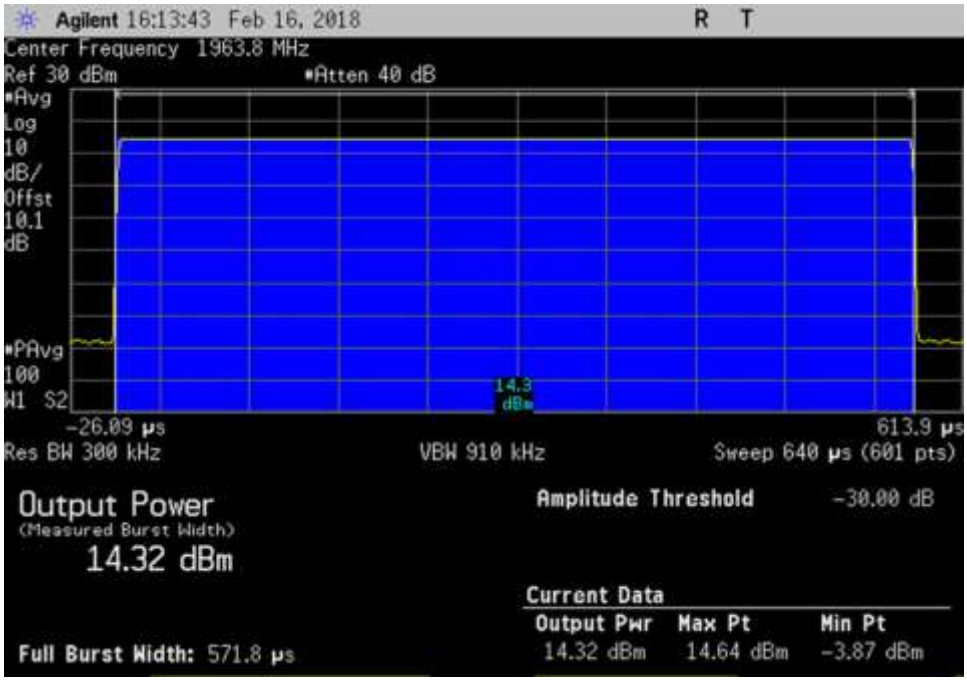
DL_869-894_GSM_ 881.5MHz



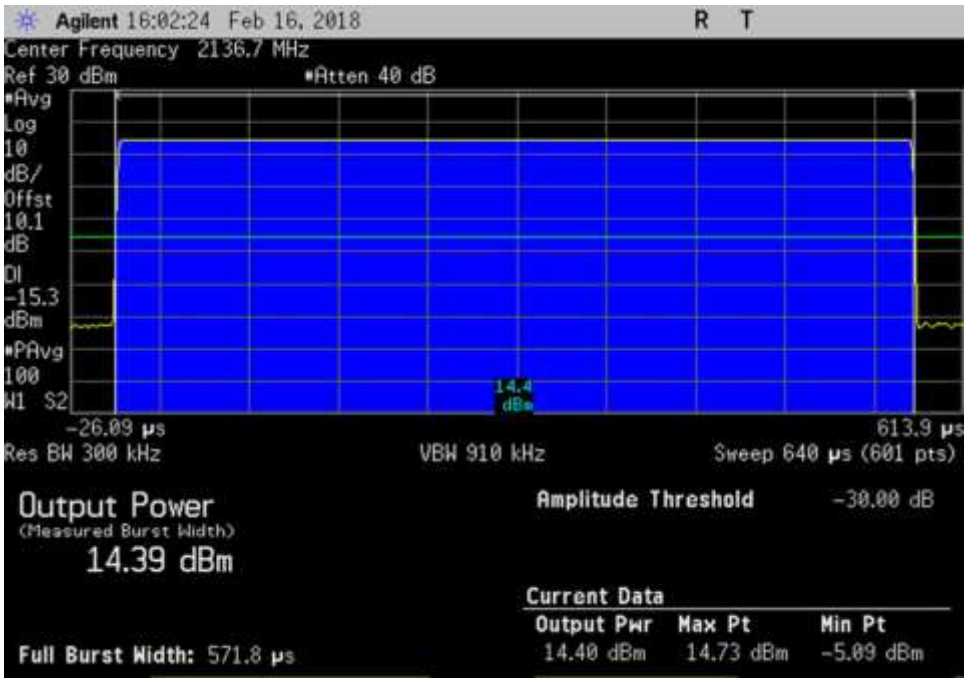
DL_869-894_GSM_Max_ 881.5MHz



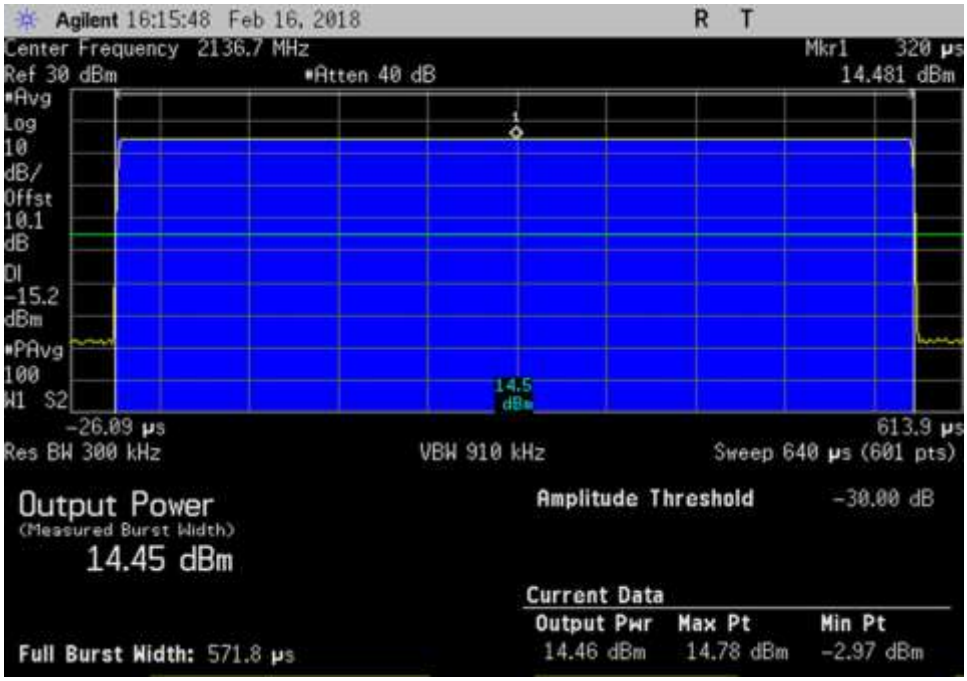
DL_1930-1995_GSM_ 1963.8MHz



DL_1930-1995_GSM_Max_ 1963.8MHz



DL_2110-2155_GSM_ 2136.7MHz



DL_2110-2155_GSM_Max_ 2136.7MHz

7.4 Intermodulation Product

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
Customer:	Cellphone-Mate, Inc.
Specification:	**7.4 Intermodulation Product**
Work Order #:	**100827** Date 9/4/18
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: 102.5 kPa

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

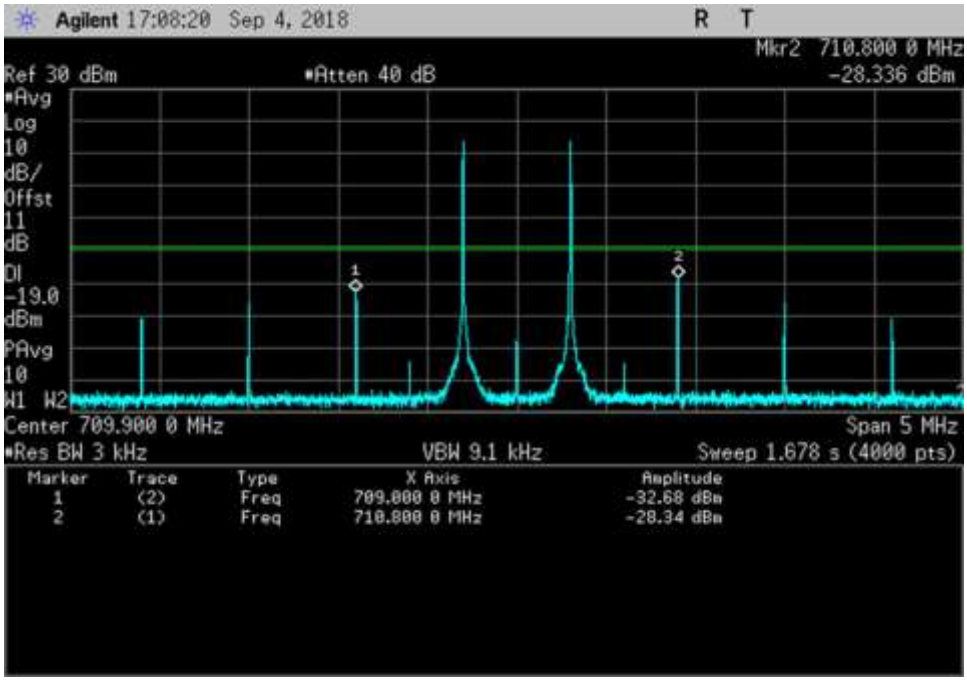
Summary of Results

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

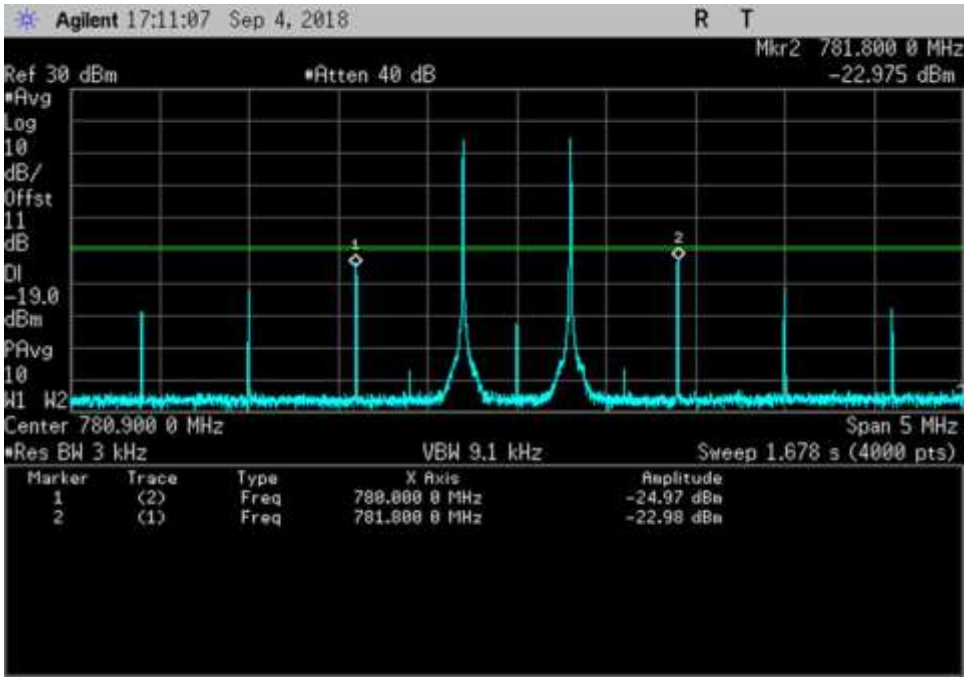
Inter Modulation Product			
Frequency (MHz)	**Pre AGC (dBm)**	**Limit (dBm)**	**Results**
UL 1710-1755	-27.2	-19	Pass
UL 1850-1915	-25.1	-19	Pass
UL 824-894	-23.3	-19	Pass
UL 698-716	-28.3	-19	Pass
UL 776-787	-23.0	-19	Pass
DL 2110-2155	-24.8	-19	Pass
DL 1930-1995	-32.5	-19	Pass
DL 869-894	-20.6	-19	Pass
DL 728-746	-33.2	-19	Pass
DL 746-757	-37.7	-19	Pass

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

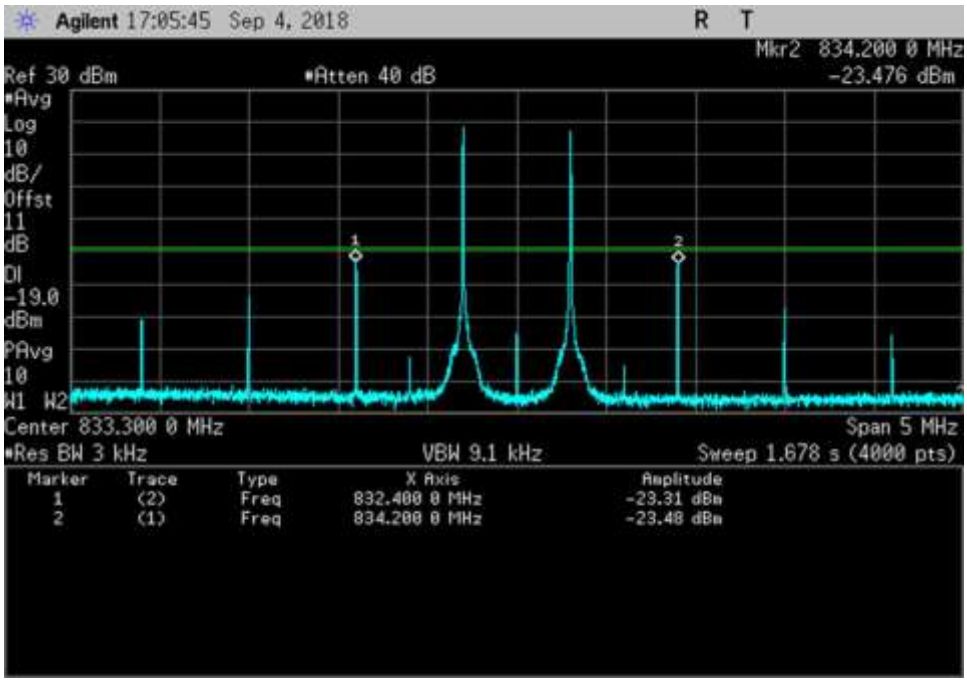
Plots



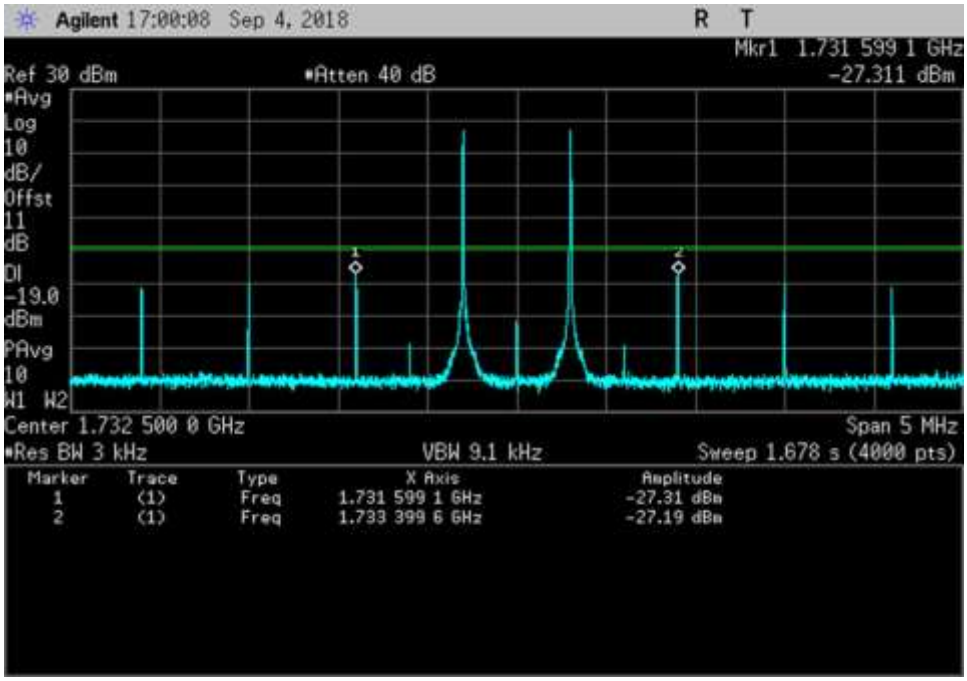
UL_698-716_ 709.9MHz



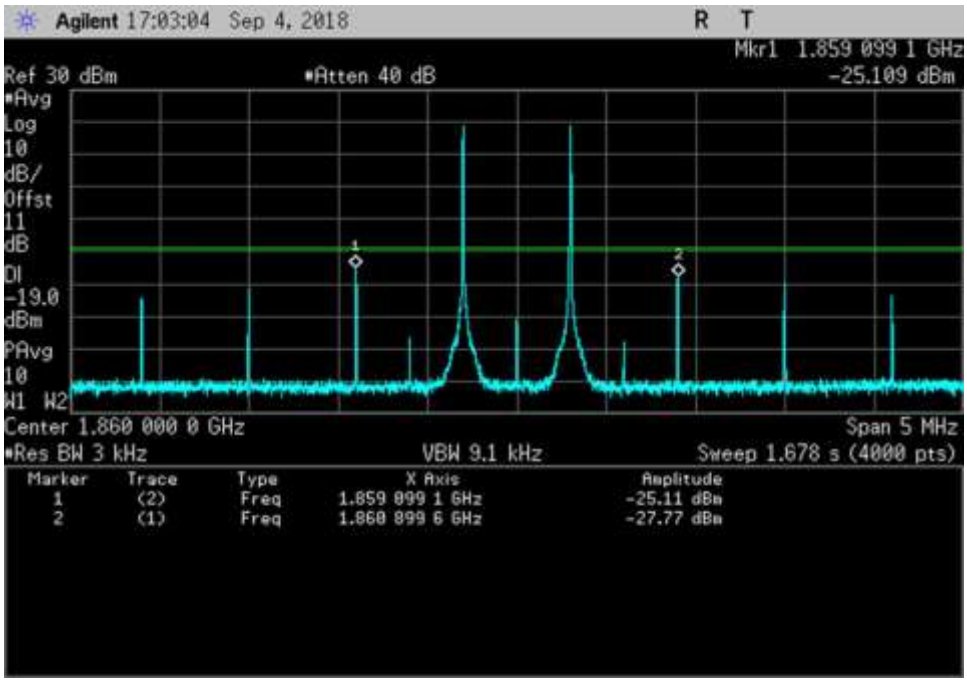
UL_776-787_ 780.9MHz



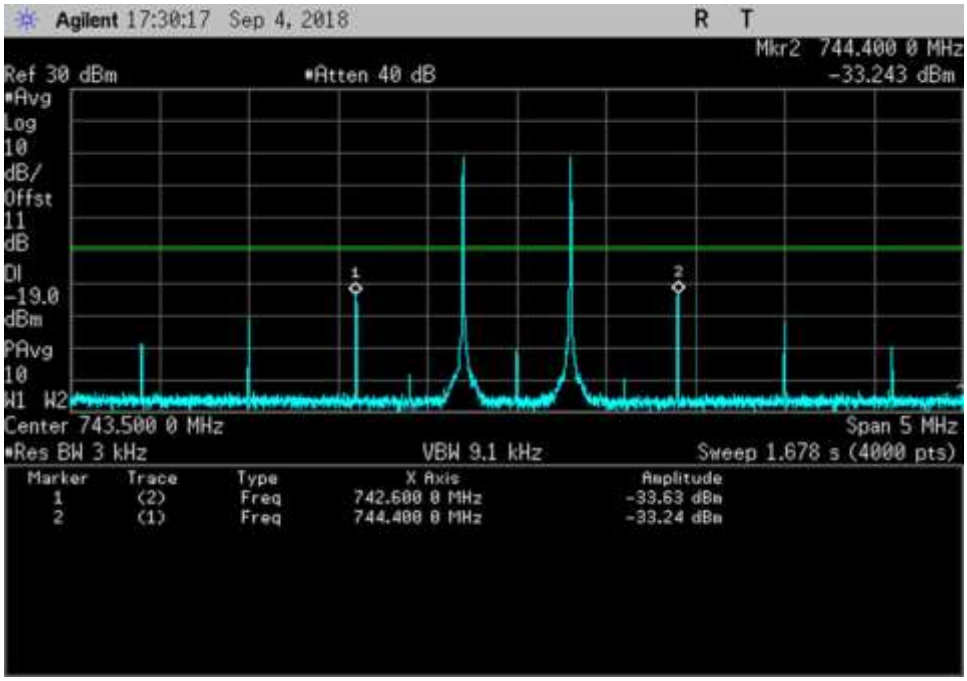
UL_824-849_ 833.3MHz



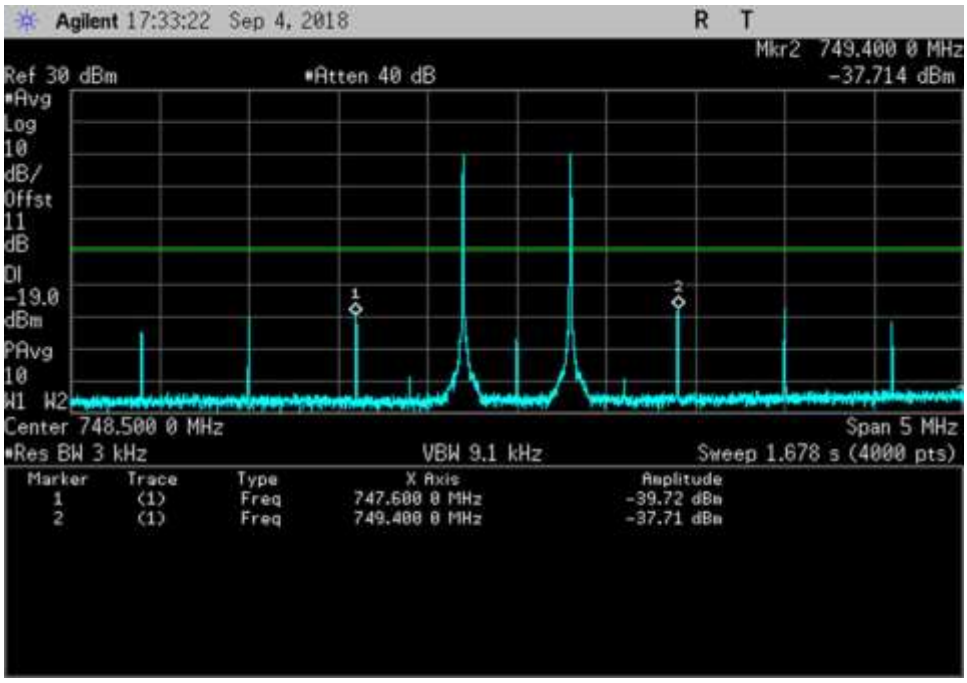
UL_1710-1755_ 1732.5MHz



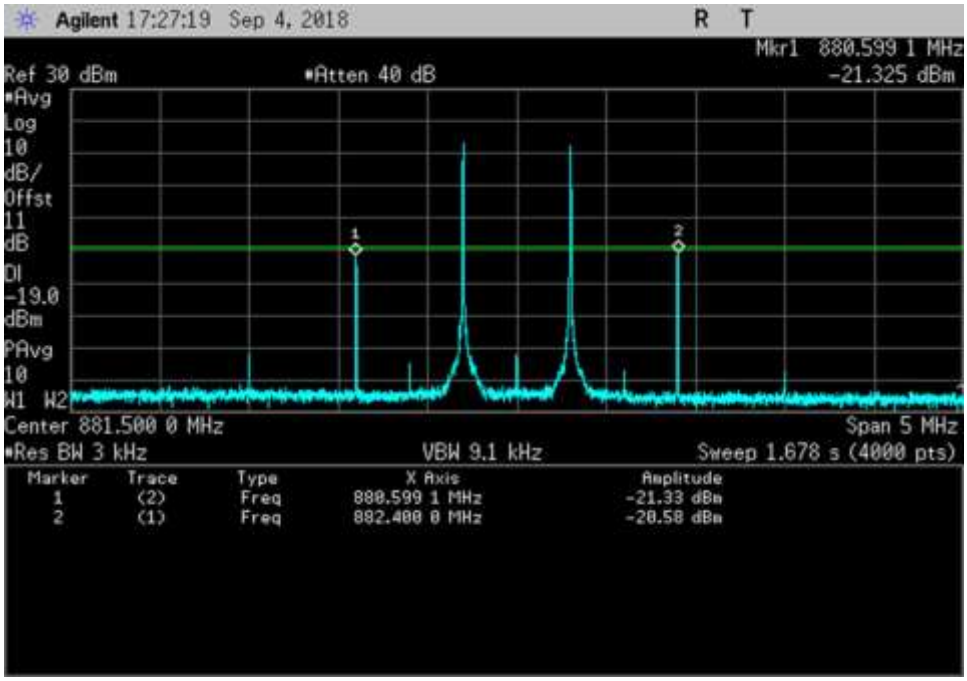
UL_1850-1915_ 1860MHz



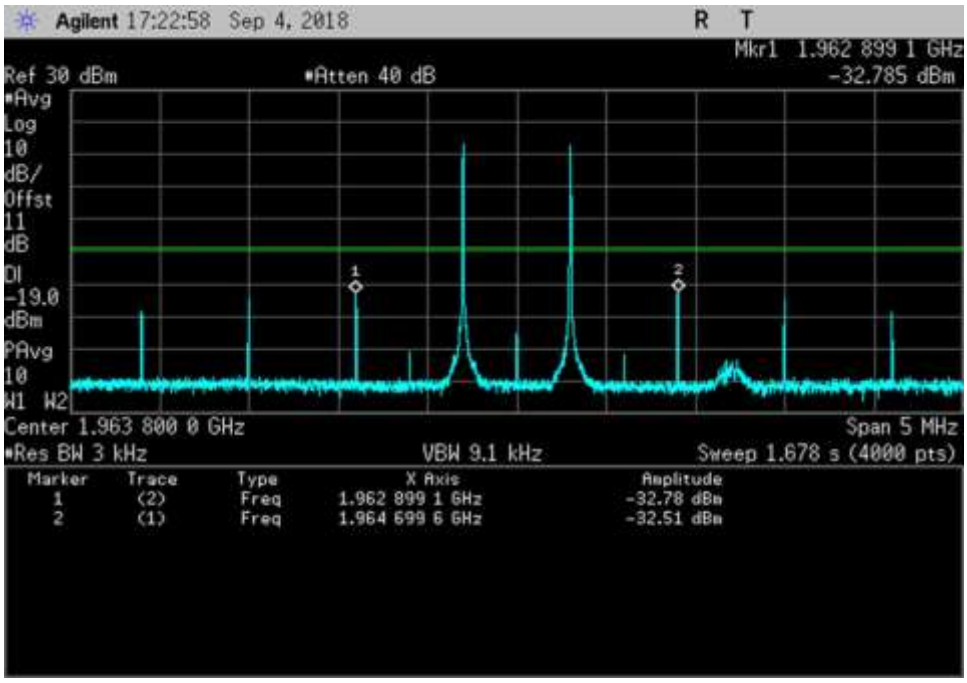
DL_728-746_ 743.5MHz



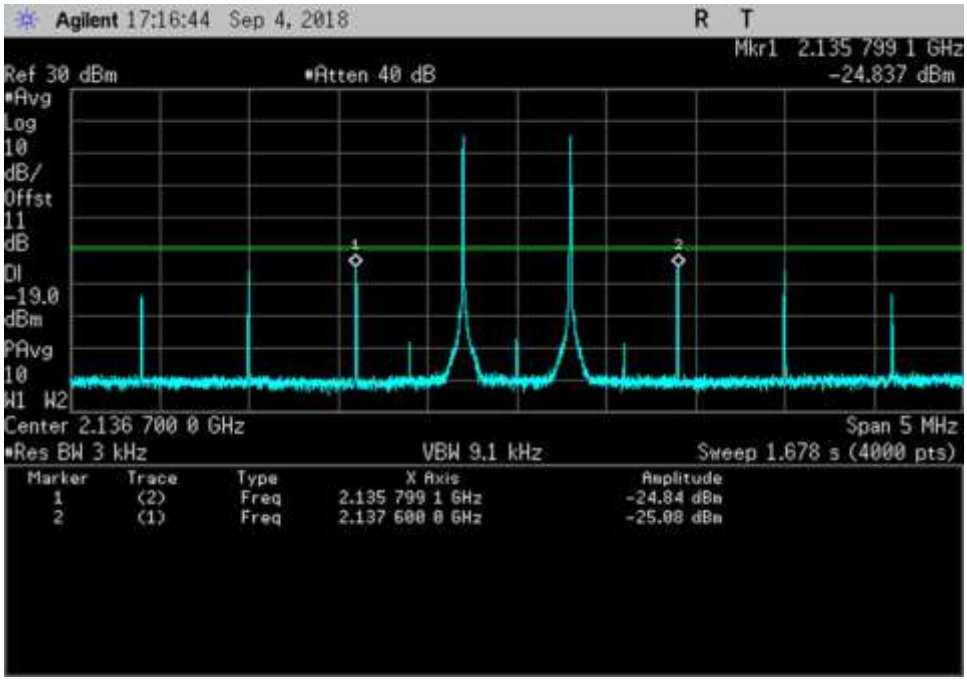
DL_746-757_ 748.5MHz



DL_869-894_ 881.5MHz



DL_1930-1995_ 1963.8MHz



DL_2110-2155_ 2136.7MHz

7.5 Out of Band Emissions

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170		
Customer:	Cellphone-Mate, Inc.		
Specification:	**7.5 Out-of-band Emissions**		
Work Order #:	**100827**	Date	02/14/18 and 02/15/18
Test Type:	**Conducted Emissions**		
Tested By:	**Hieu Song 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:

02/14/18: Test environment conditions:
Temperature: 19.3°C
Relative Humidity: 44%
Pressure: 101.5 kPa

02/15/18: Test environment conditions:
Temperature: 19.6°C
Relative Humidity: 43%
Pressure: 101.6 kPa

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

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
UL1710-1755	-21.8	-19	Pass		UL1710-1755	-24.5	-19	Pass
UL1850-1915	-21.5	-19	Pass		UL1850-1915	-26.3	-19	Pass
UL824-849	-24.3	-19	Pass		UL824-849	-22.9	-19	Pass
UL 698-716	-25.9	-19	Pass		UL 698-716	-23.9	-19	Pass
UL776-787	-22.6	-19	Pass		UL776-787	-22.1	-19	Pass
DL2110-2155	-26.5	-19	Pass		DL2110-2155	-29.3	-19	Pass
DL1930-1995	-30.0	-19	Pass		DL1930-1995	-33.6	-19	Pass
DL869-894	-28.9	-19	Pass		DL869-894	-31.0	-19	Pass
DL:728-746	-31.9	-19	Pass		DL:728-746	-30.2	-19	Pass
DL 746-757	-30.7	-19	Pass		DL 746-757	-32.4	-19	Pass

CDMA (alternative 1.25 MHz 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
UL1710-1755	-22.1	-19	Pass		UL1710-1755	-29.3	-19	Pass
UL1850-1915	-23.1	-19	Pass		UL1850-1915	-32.3	-19	Pass
UL824-849	-30.7	-19	Pass		UL824-849	-32.0	-19	Pass
UL 698-716	-27.9	-19	Pass		UL 698-716	-31.7	-19	Pass
UL776-787	-33.3	-19	Pass		UL776-787	-34.8	-19	Pass
DL2110-2155	-37.1	-19	Pass		DL2110-2155	-38.2	-19	Pass
DL1930-1995	-37.0	-19	Pass		DL1930-1995	-37.0	-19	Pass
DL869-894	-27.9	-19	Pass		DL869-894	-40.1	-19	Pass
DL:728-746	-52.1	-19	Pass		DL:728-746	-49.5	-19	Pass
DL 746-757	-50.8	-19	Pass		DL 746-757	-39.6	-19	Pass

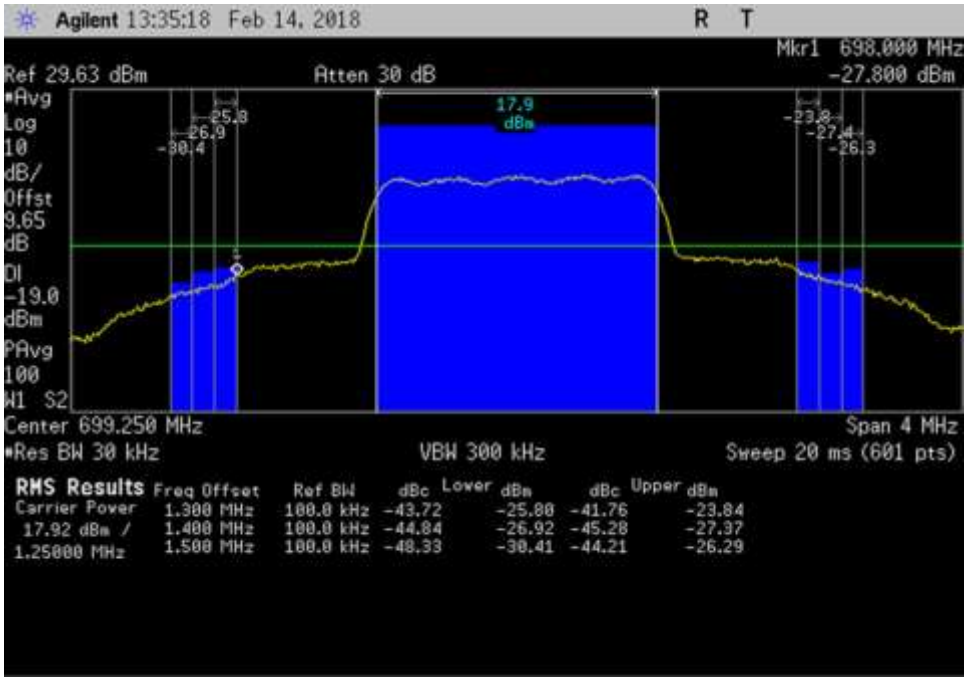
LTE (alternative 4.1MHz AWGN)

Low					High			
Out of Band Emission					Out of Band Emission			
Frequency (MHz)	Pre AGC	Limit (dBm)	Results		Frequency (MHz)	Pre AGC	Limit (dBm)	Results
UL1710-1755	-26.0	-19	Pass		UL1710-1755	-31.3	-19	Pass
UL1850-1915	-26.6	-19	Pass		UL1850-1915	-37.8	-19	Pass
UL824-849	-30.4	-19	Pass		UL824-849	-32.0	-19	Pass
UL 698-716	-27.6	-19	Pass		UL 698-716	-30.6	-19	Pass
UL776-787	-31.1	-19	Pass		UL776-787	-33.5	-19	Pass
DL2110-2155	-33.2	-19	Pass		DL2110-2155	-35.2	-19	Pass
DL1930-1995	-36.5	-19	Pass		DL1930-1995	-37.8	-19	Pass
DL869-894	-32.8	-19	Pass		DL869-894	-35.2	-19	Pass
DL:728-746	-41.9	-19	Pass		DL:728-746	-37.7	-19	Pass
DL 746-757	-38.0	-19	Pass		DL 746-757	-41.8	-19	Pass

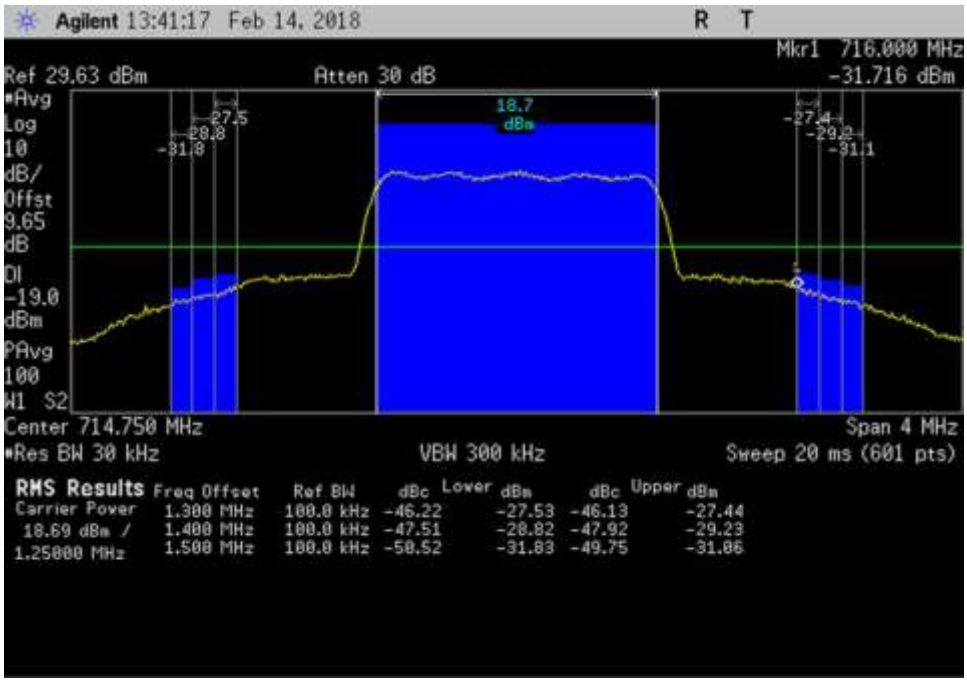
Note: The EUT also maintains compliance with the out-of-band emissions limit at input power indicated in section 5.5.

Plots

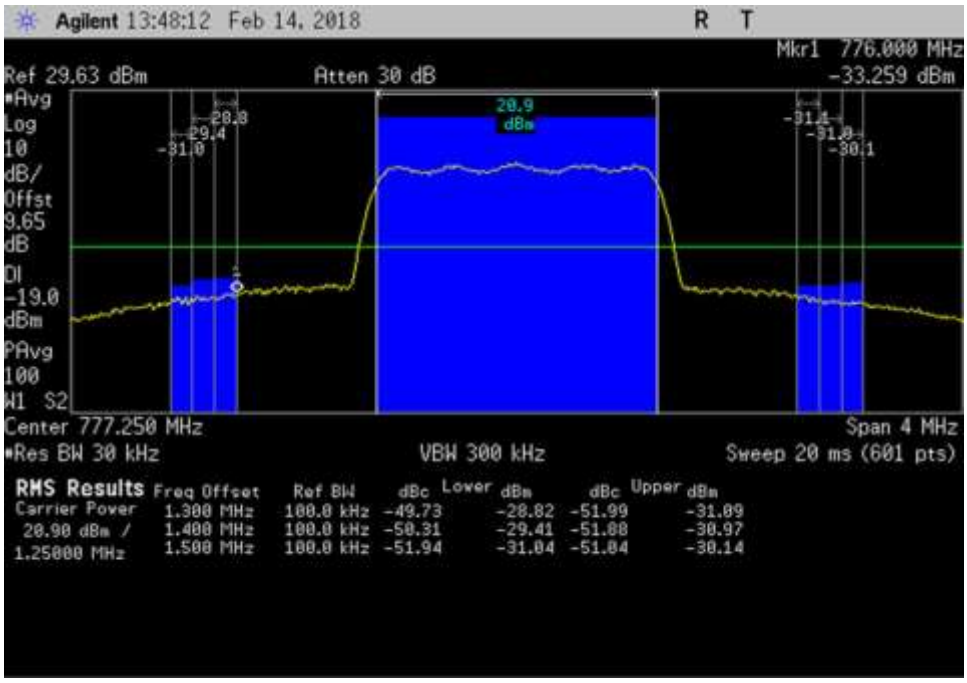
CDMA



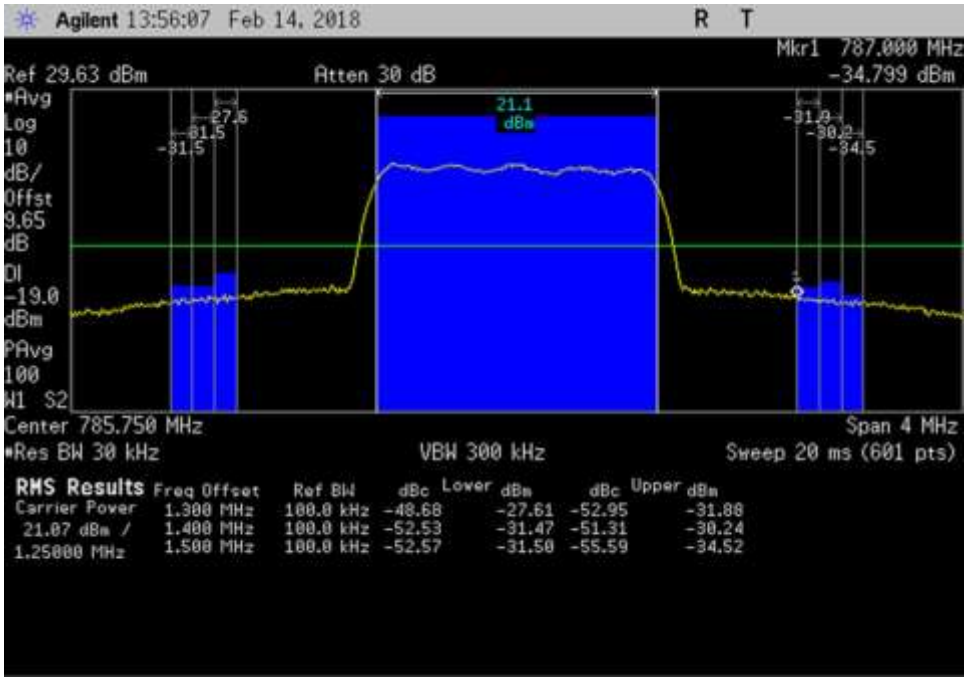
UL_698-716_CDMA_ 697.25- 701.25MHz



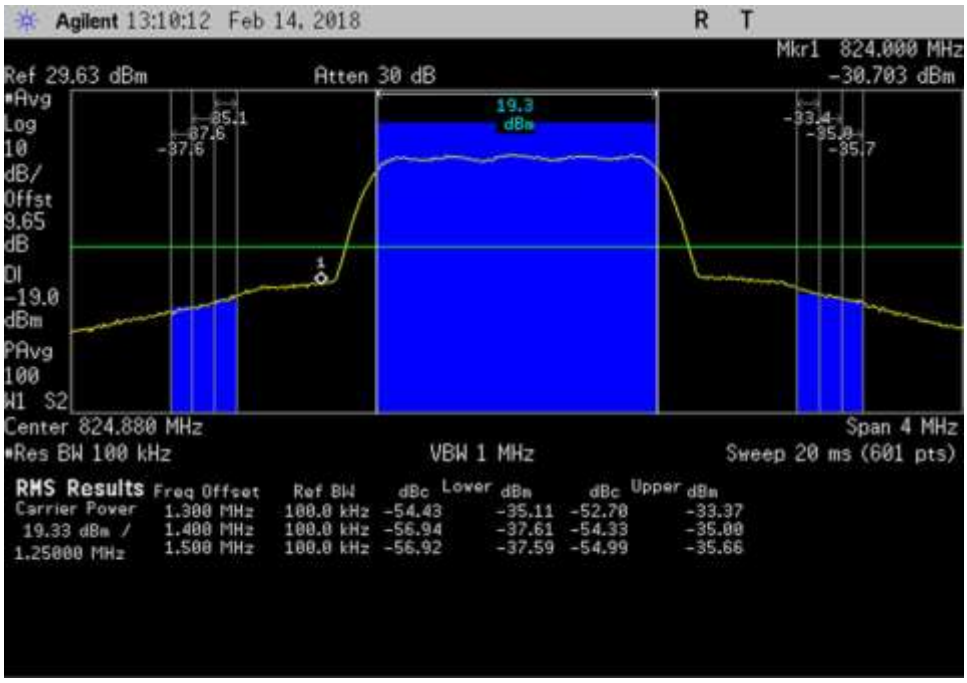
UL_698-716_CDMA_ 712.75- 716.75MHz



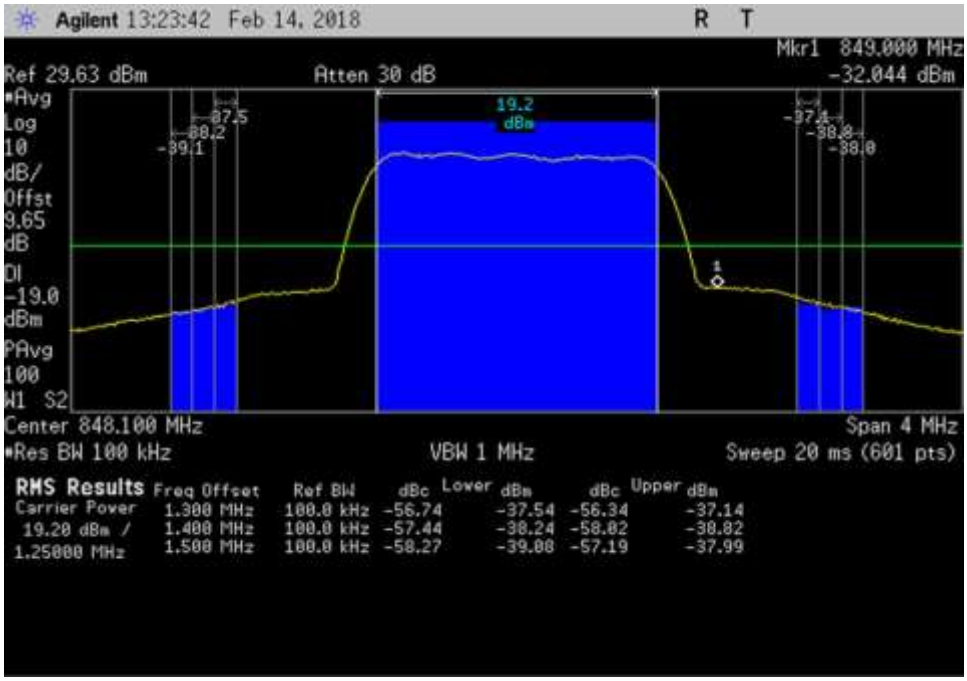
UL_776-787_CDMA_ 775.25- 779.25MHz



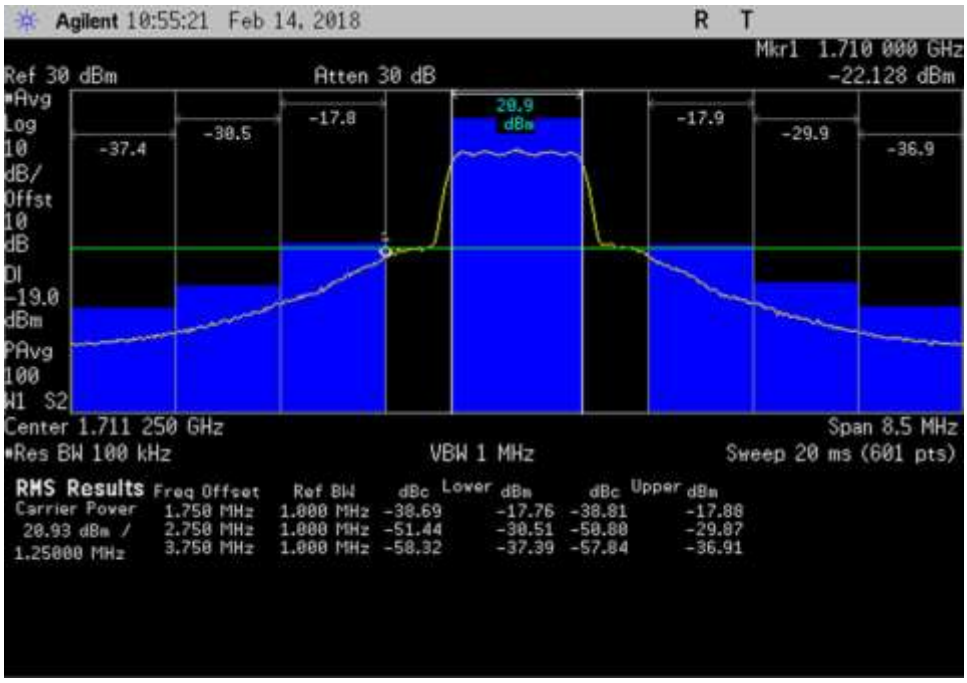
UL_776-787_CDMA_ 783.75- 787.75MHz



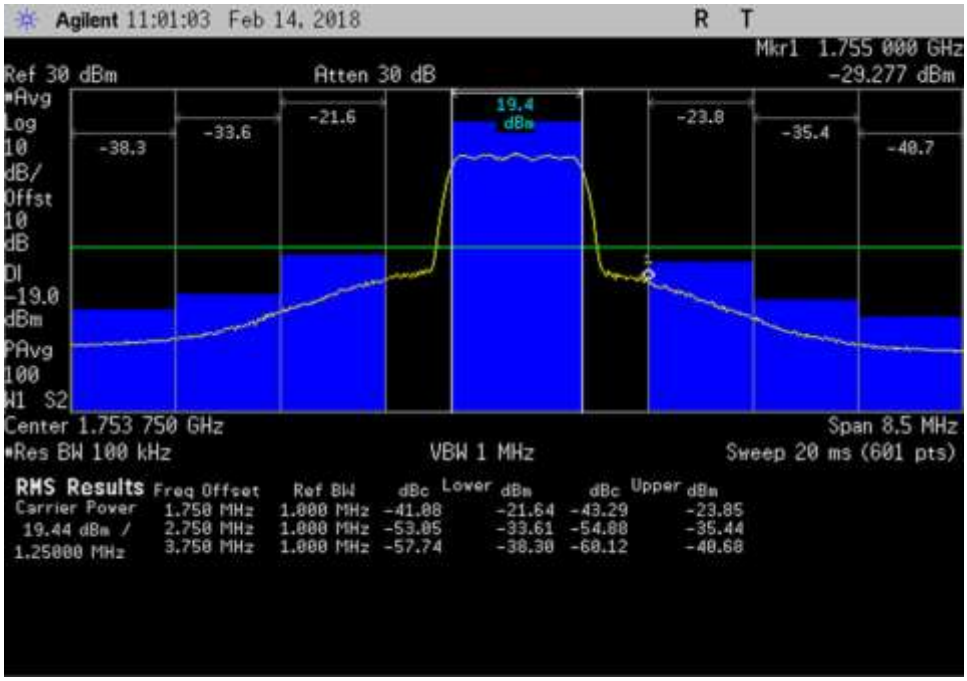
UL_824-849_CDMA_ 822.88- 826.88MHz



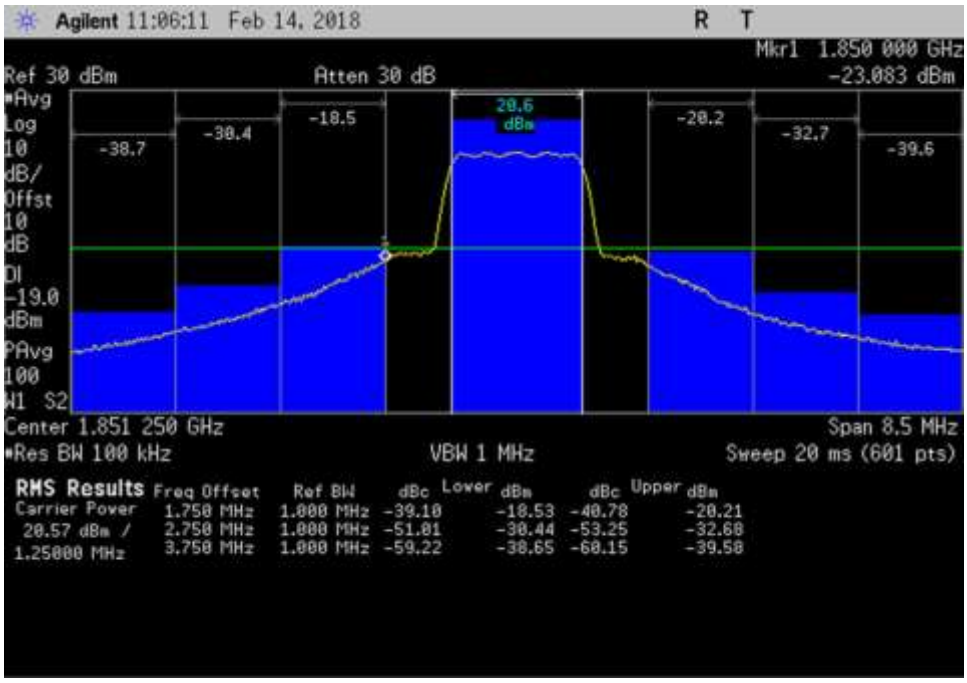
UL_824-849_CDMA_ 846.1- 850.1MHz



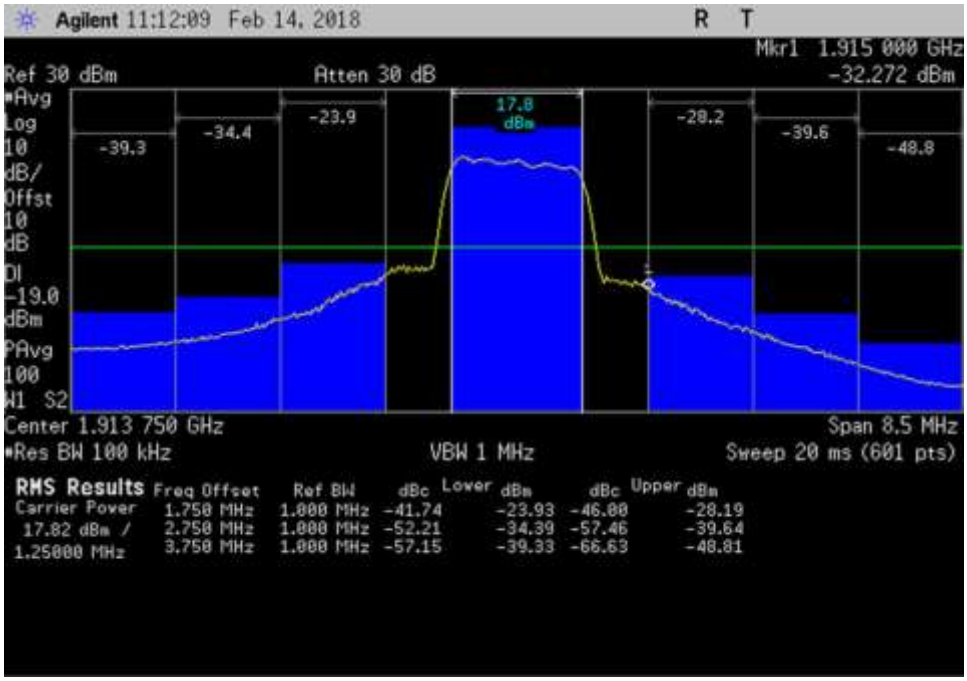
UL_1710-1755_CDMA_ 1707- 1715.5MHz



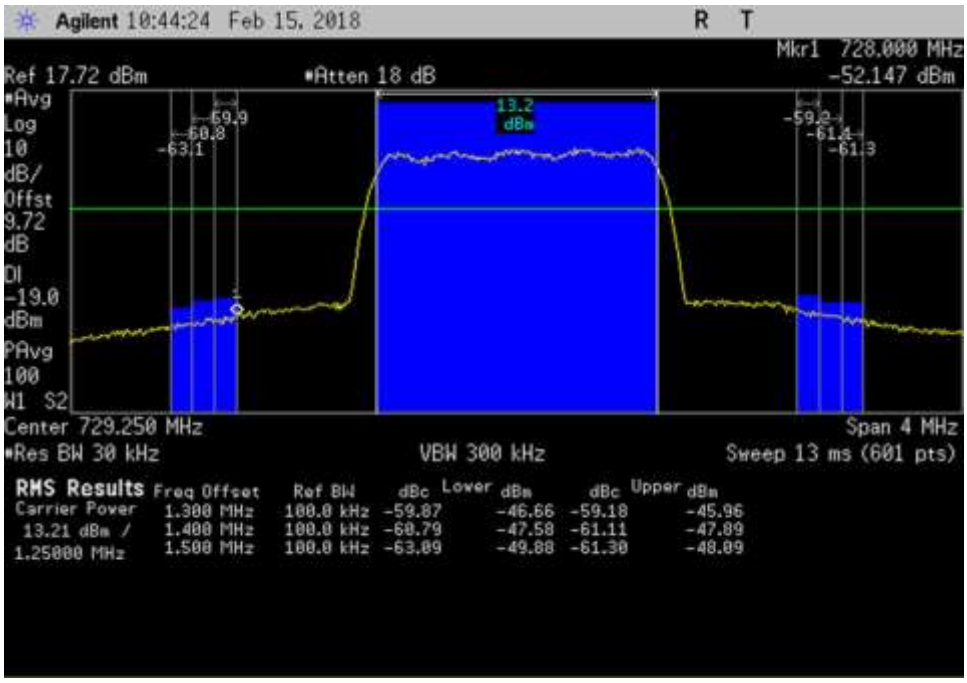
UL_1710-1755_CDMA_ 1749.5- 1758MHz



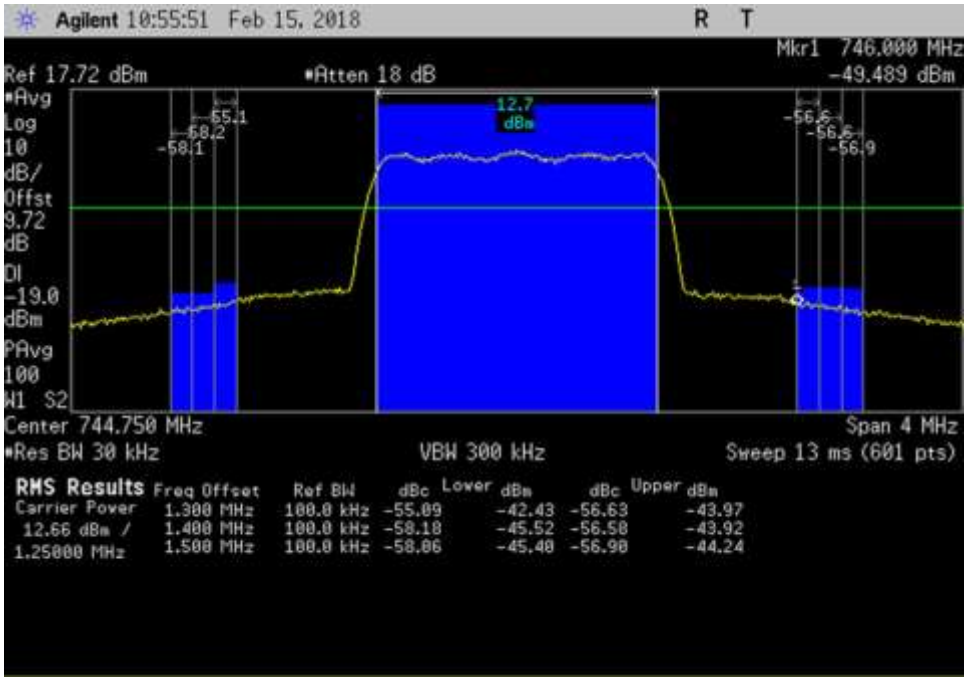
UL_1850-1915_CDMA_ 1847- 1855.5MHz



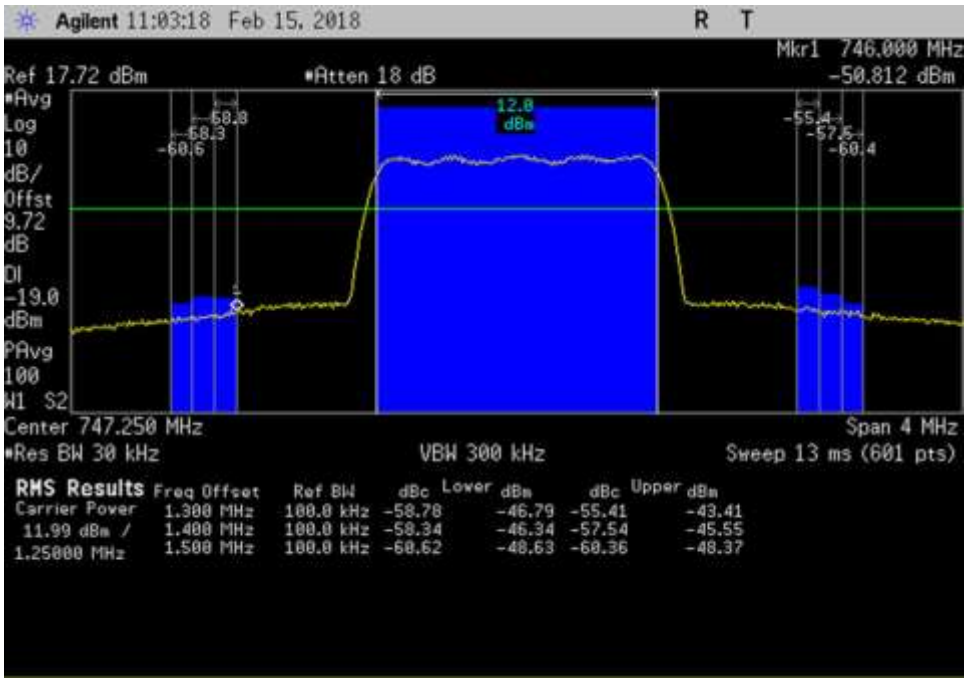
UL_1850-1915_CDMA_ 1909.5- 1918MHz



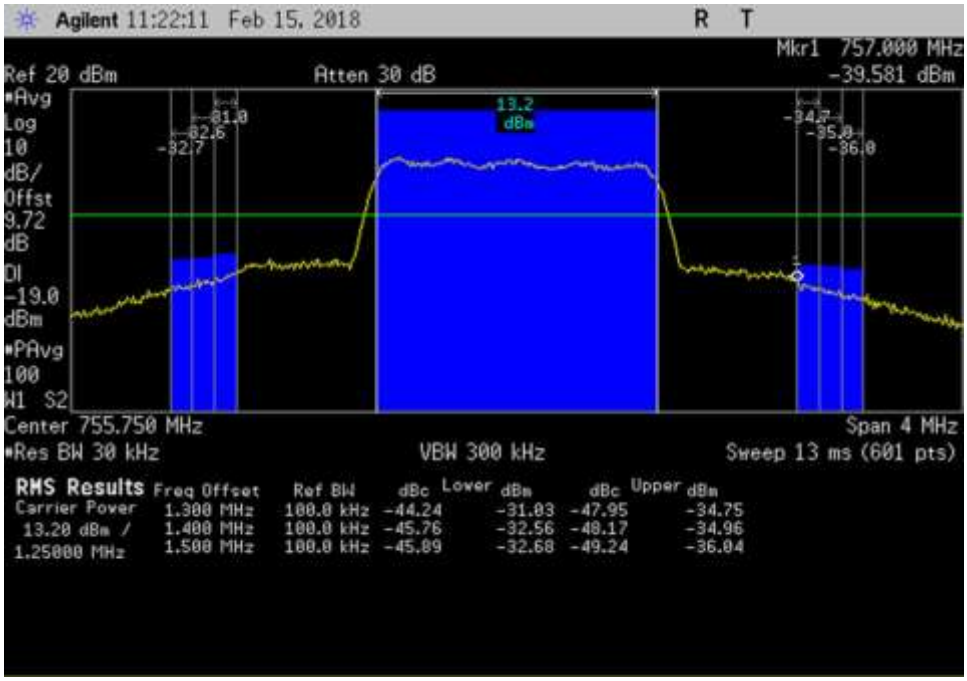
DL_728-746_CDMA_ 727.25- 731.25MHz



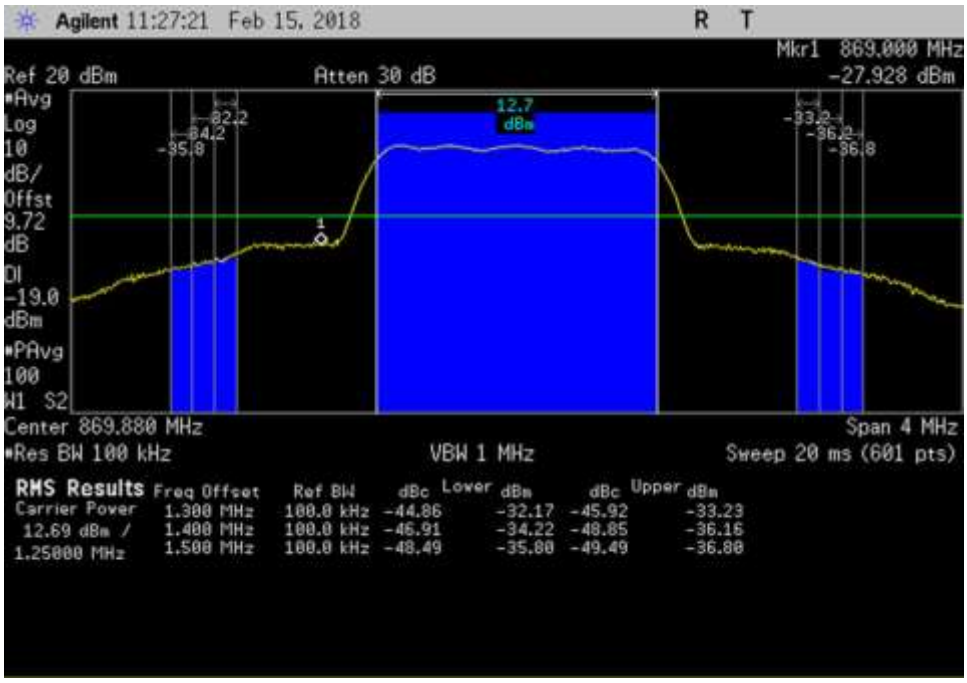
DL_728-746_CDMA_ 742.75- 746.75MHz



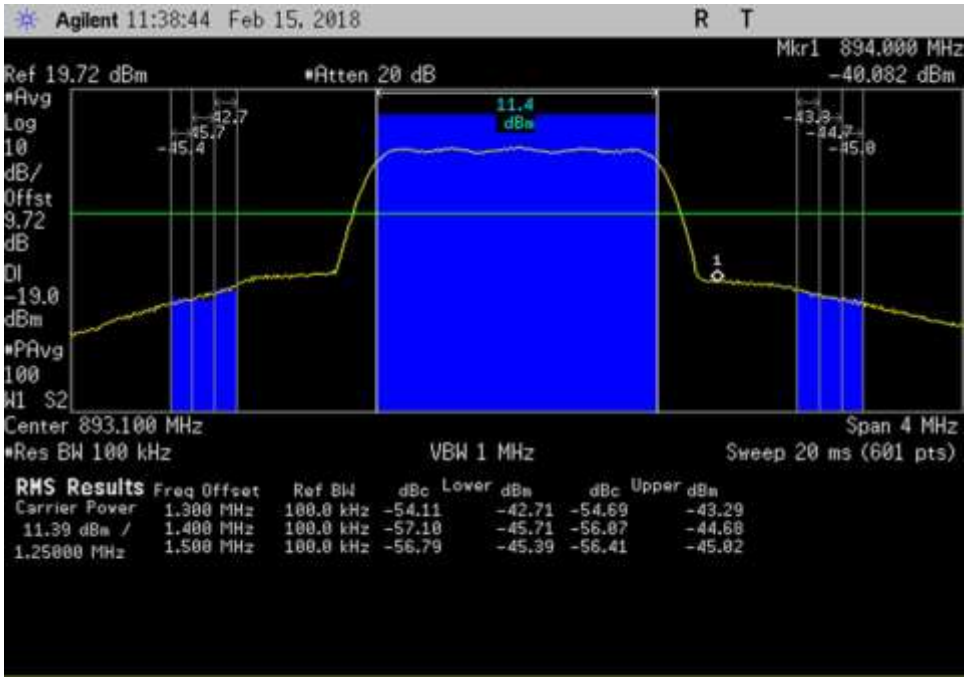
DL_746-757_CDMA_ 745.25- 749.25MHz



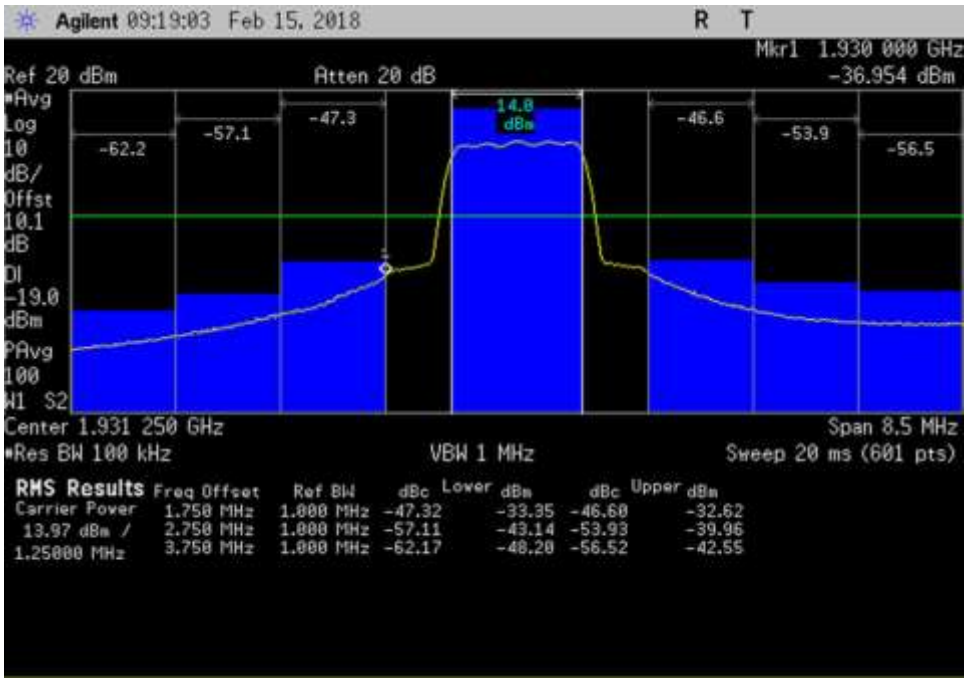
DL_746-757_CDMA_ 753.75- 757.75MHz



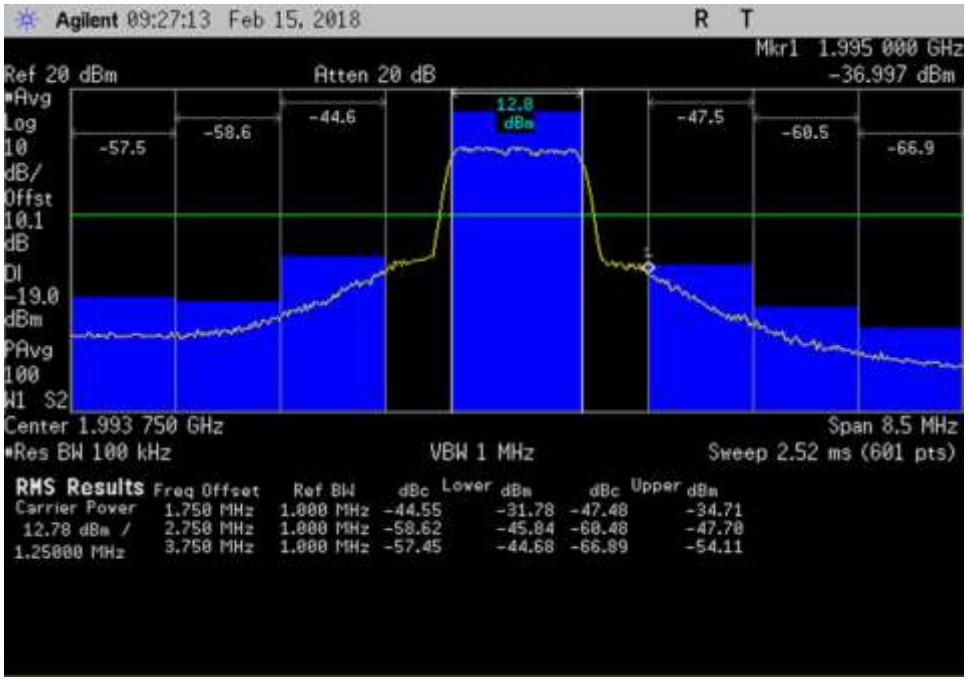
DL_869-894_CDMA_ 867.88- 871.88MHz



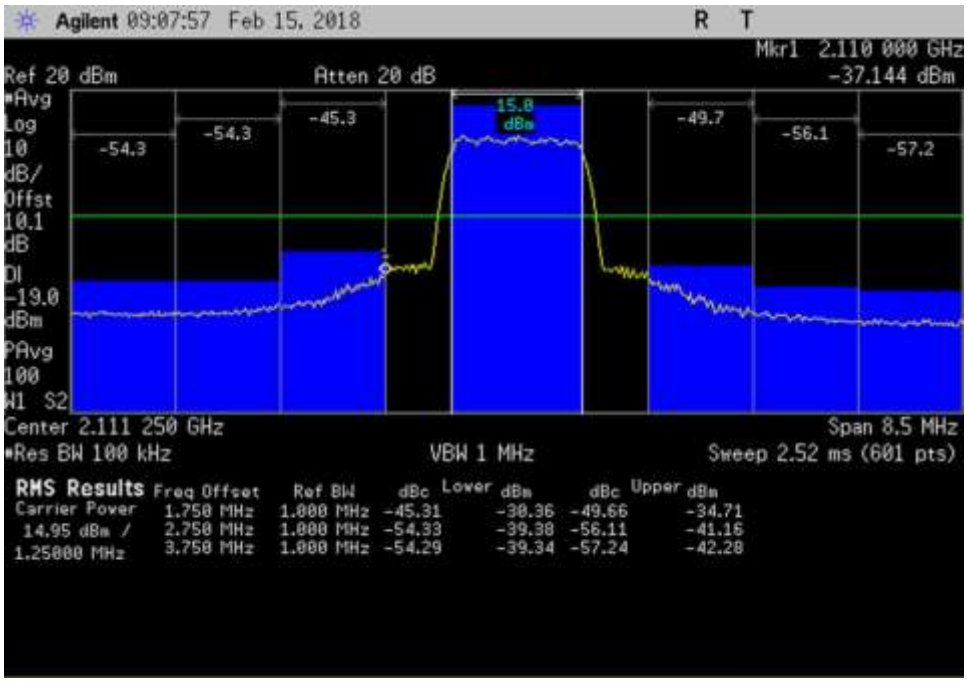
DL_869-894_CDMA_ 891.1- 895.1MHz



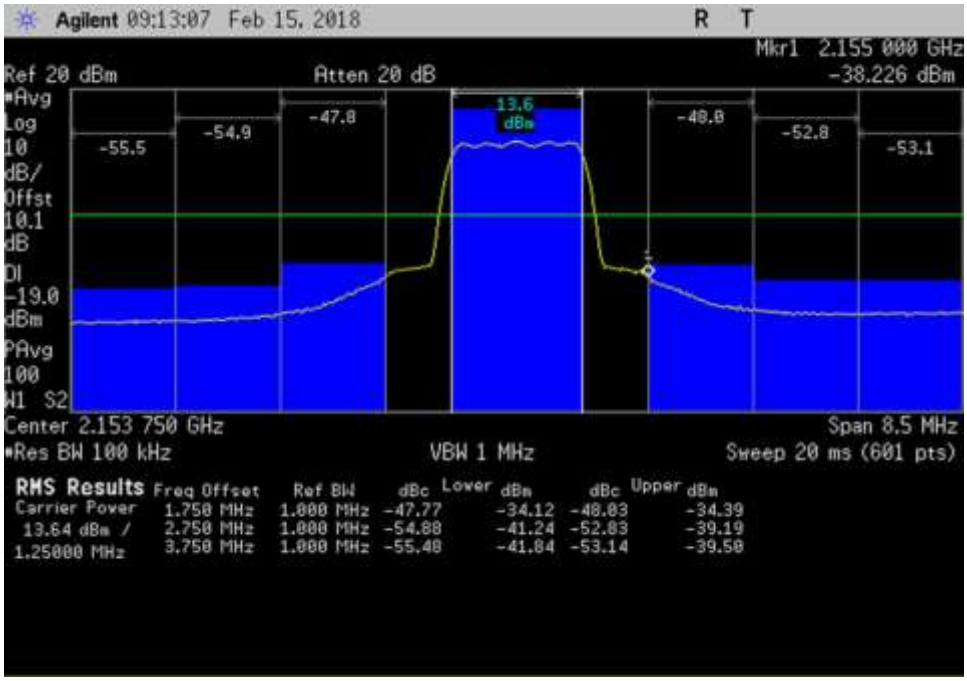
DL_1930-1995_CDMA_ 1927- 1935.5MHz



DL_1930-1995_CDMA_ 1989.5- 1998MHz

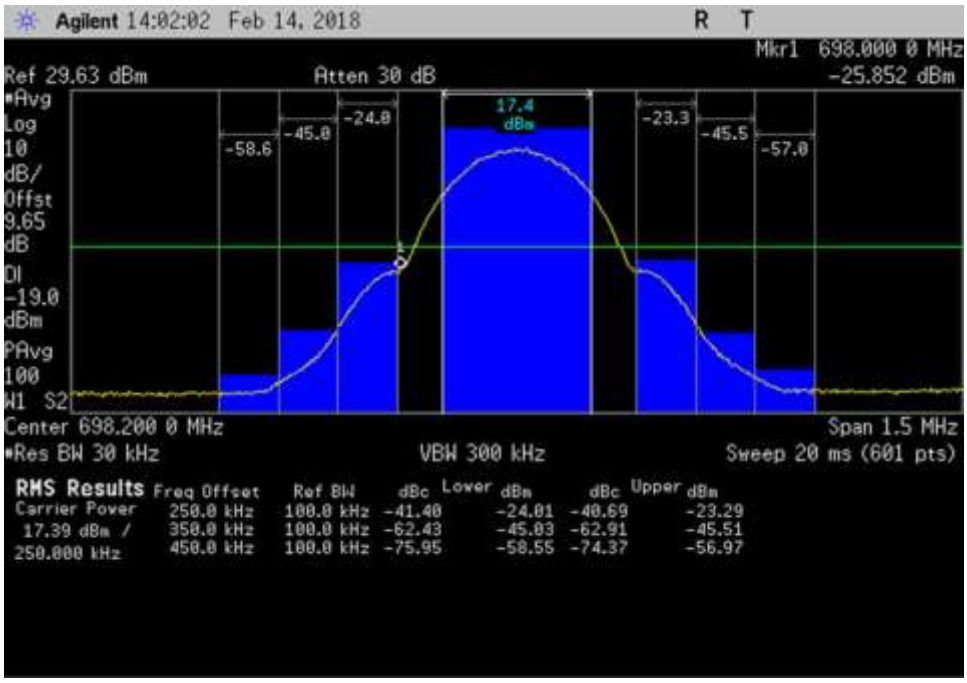


DL_2110-2155_CDMA_ 2107- 2115.5MHz

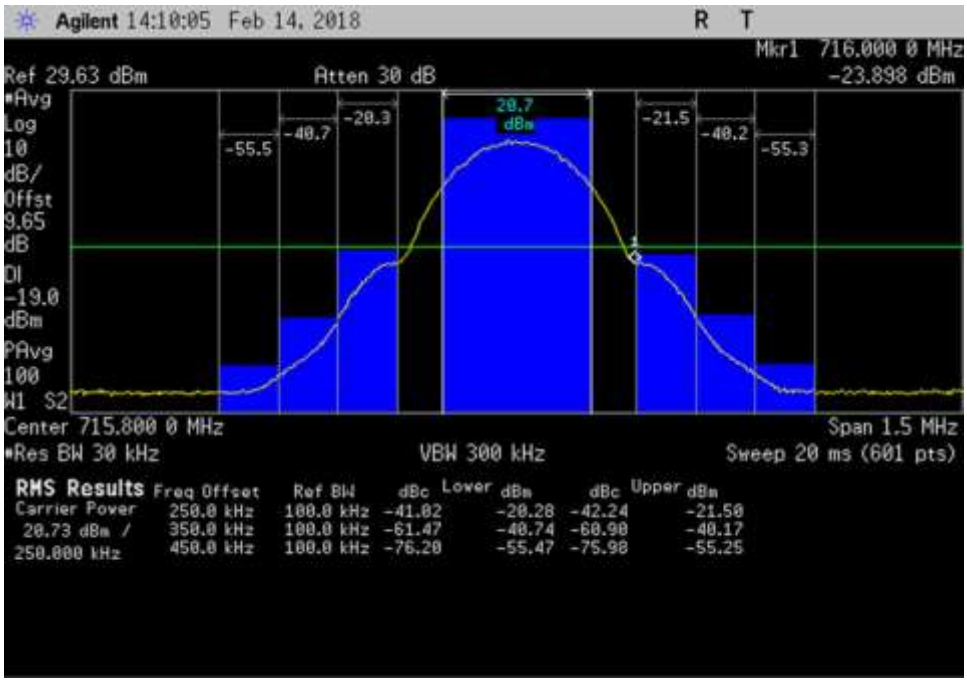


DL_2110-2155_CDMA_ 2149.5- 2158MHz

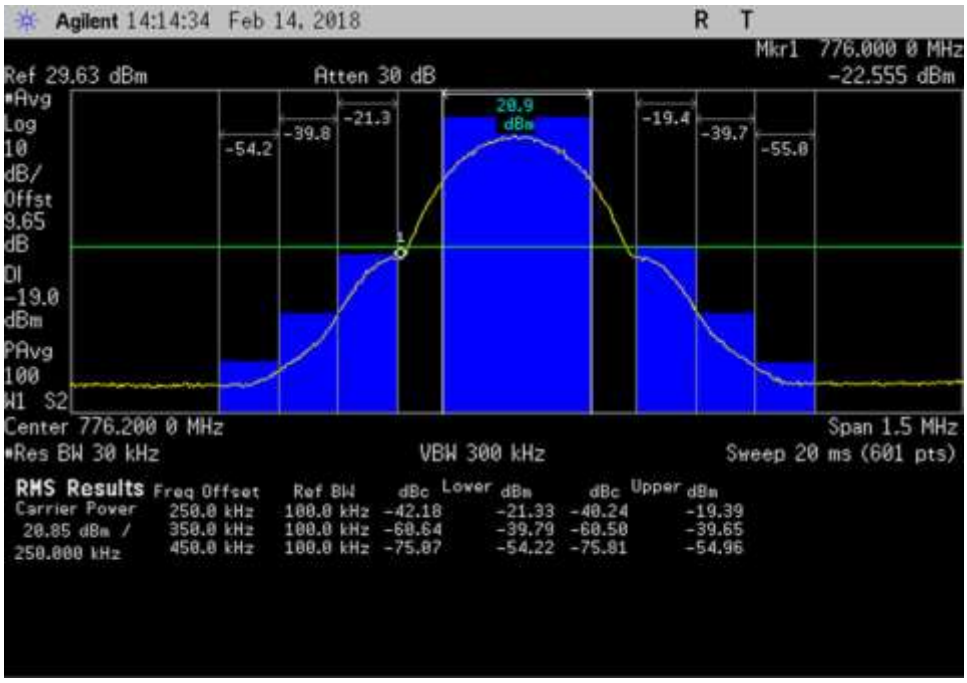
GSM



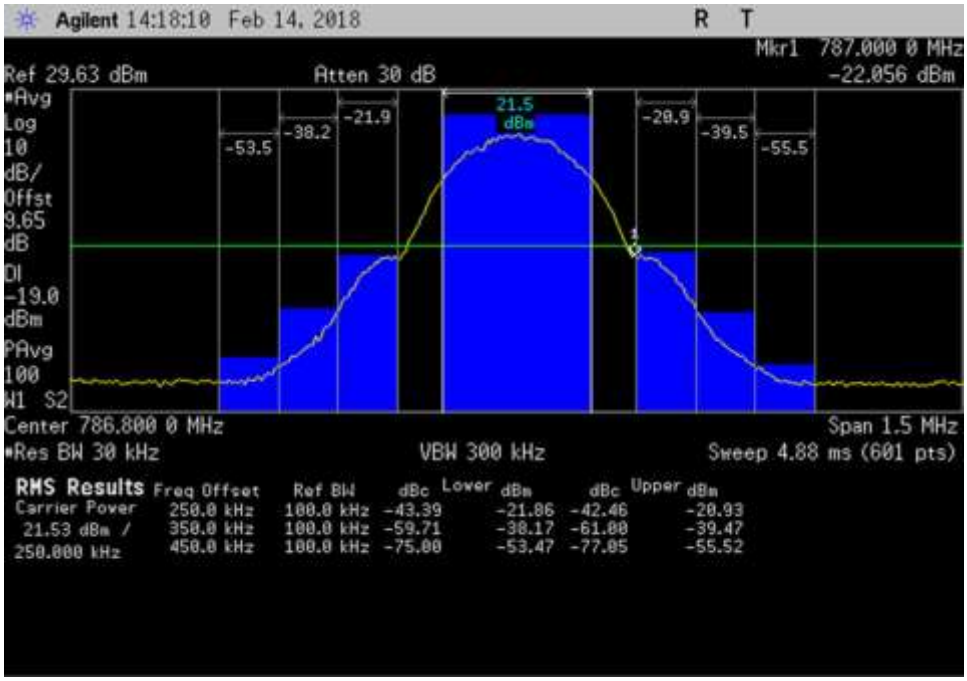
UL_698-716_GSM_ 697.45- 698.95MHz



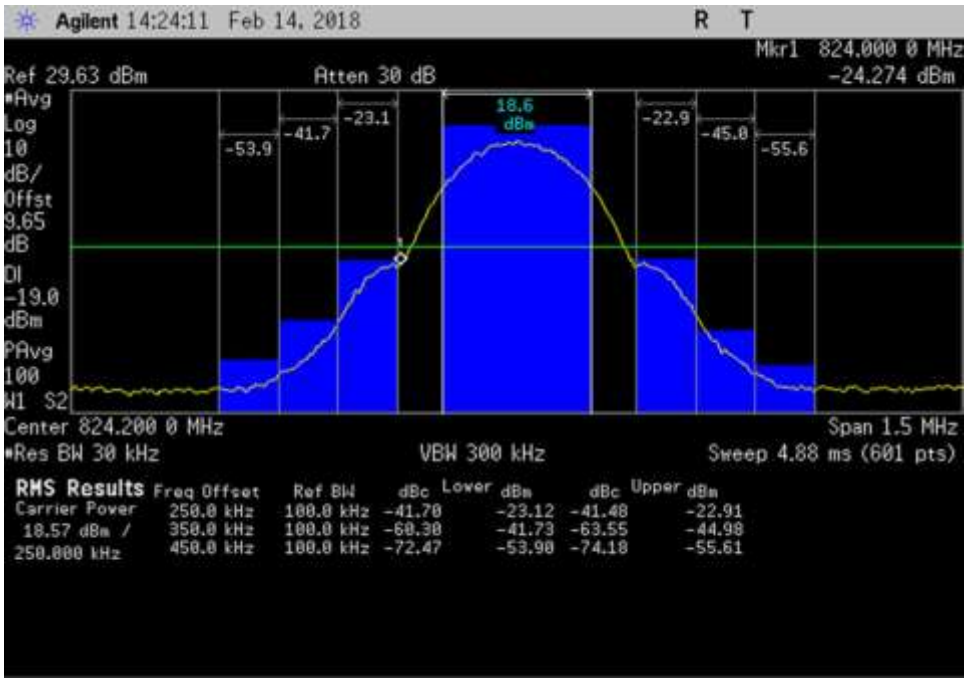
UL_698-716_GSM_ 715.05- 716.55MHz



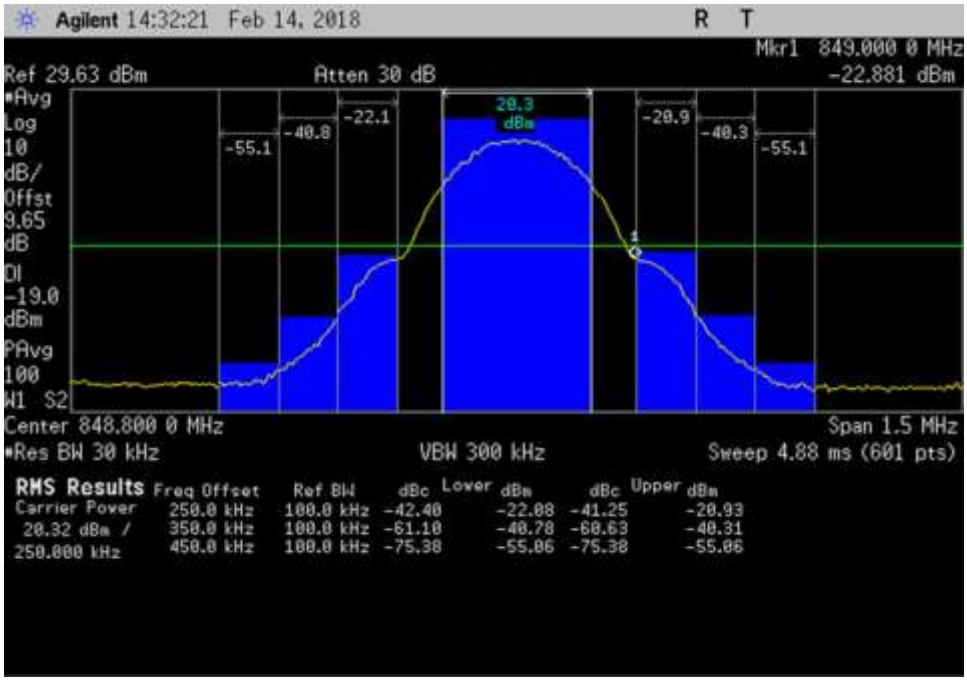
UL_776-787_GSM_ 775.45- 776.95MHz



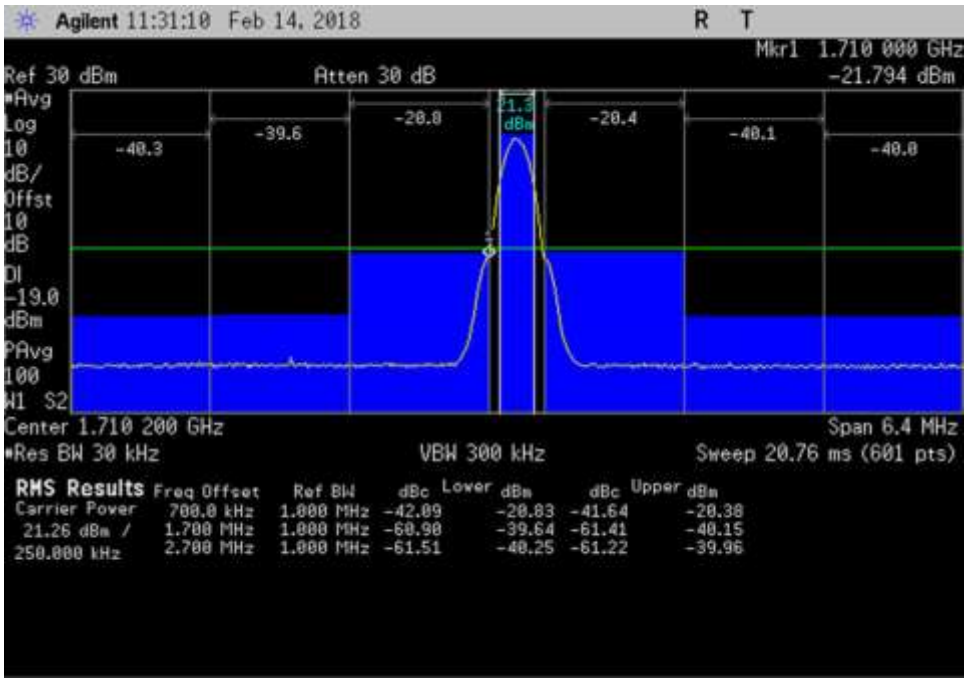
UL_776-787_GSM_ 786.05- 787.55MHz



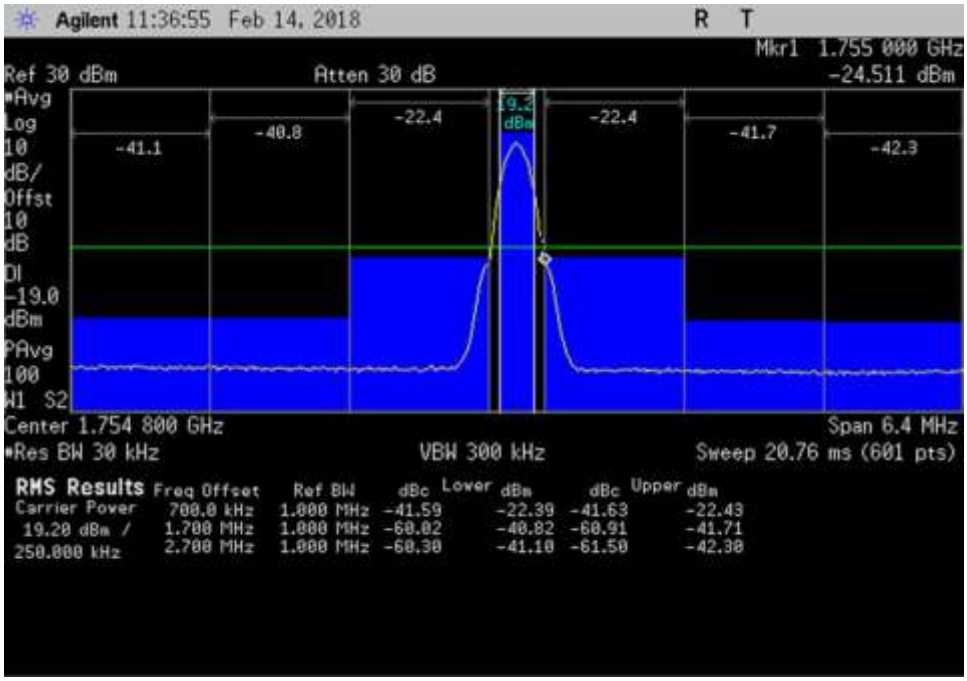
UL_824-849_GSM_ 823.45- 824.95MHz



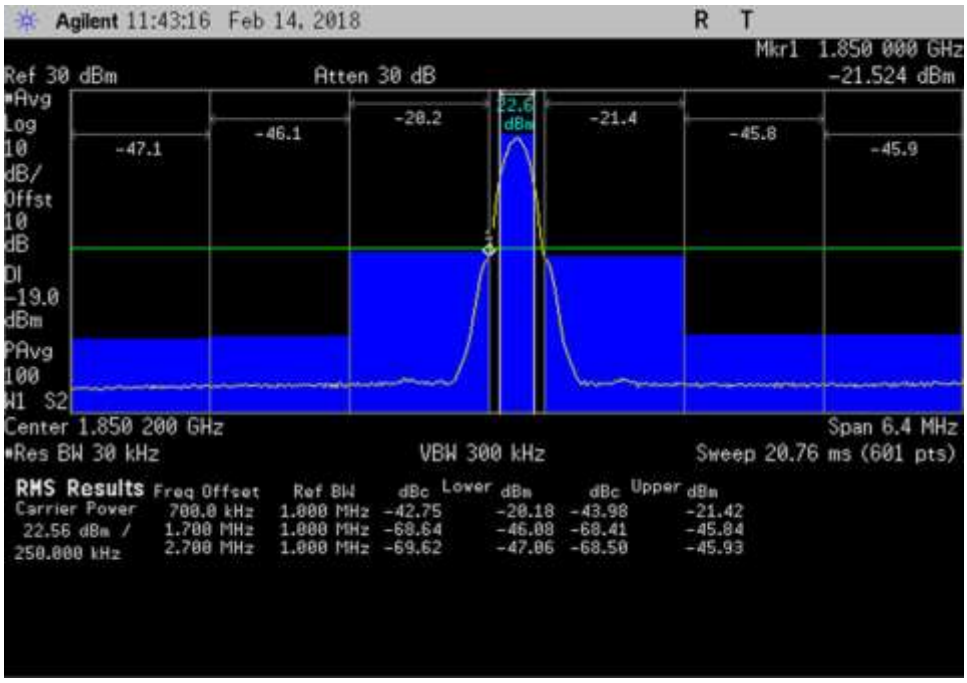
UL_824-849_GSM_ 848.05- 849.55MHz



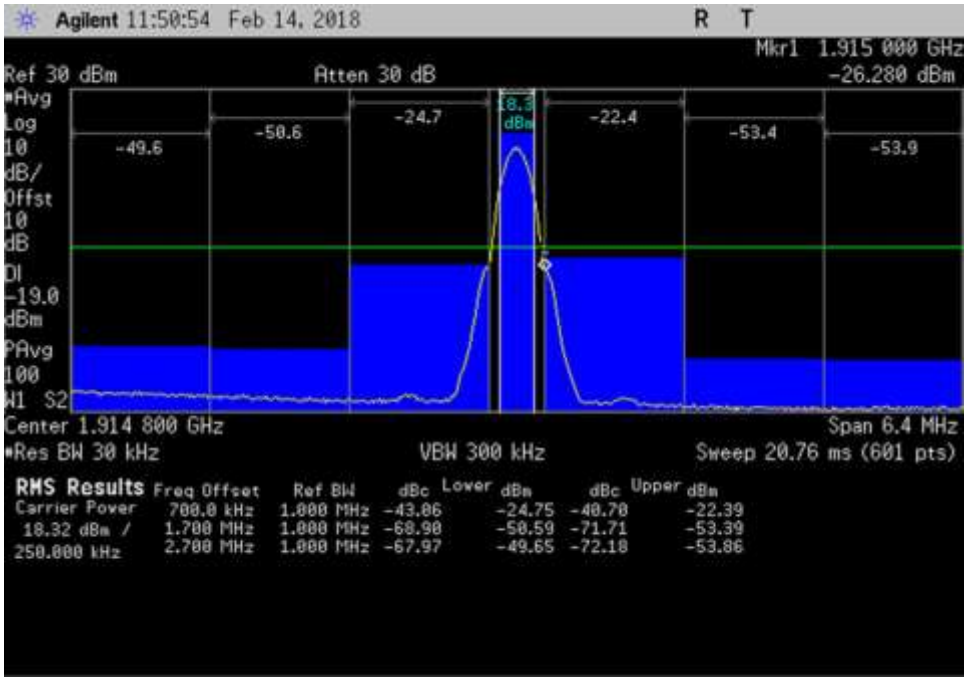
UL_1710-1755_GSM_ 1707- 1713.4MHz



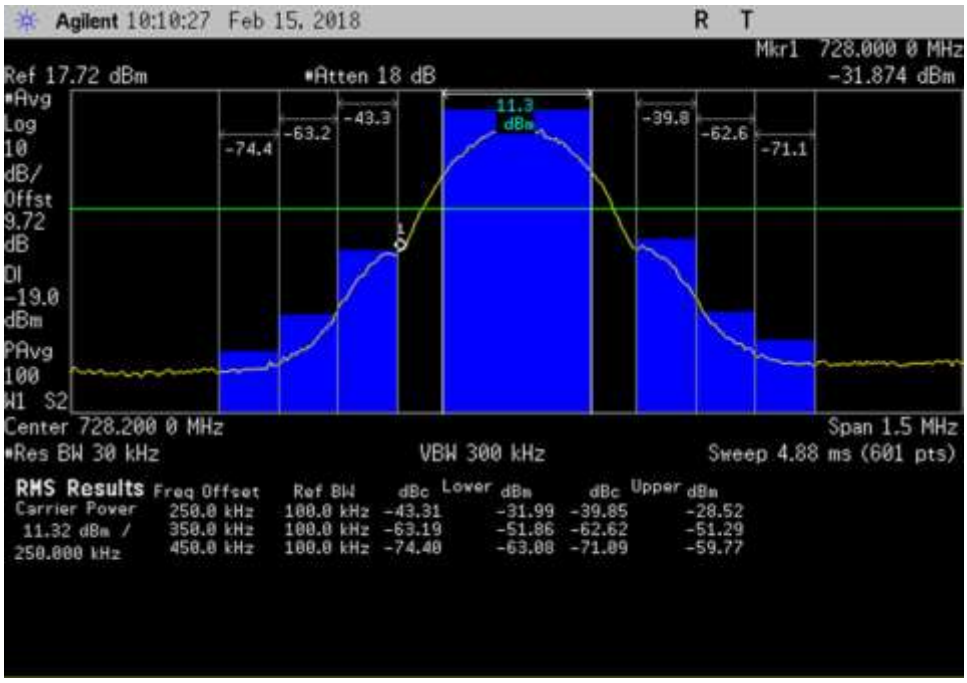
UL_1710-1755_GSM_ 1751.6- 1758MHz



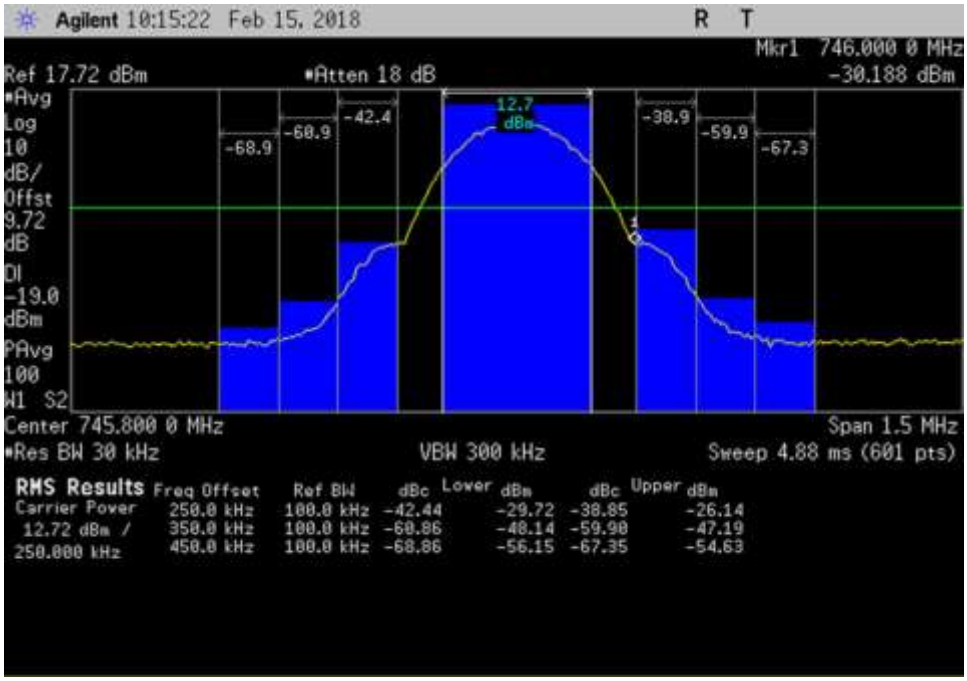
UL_1850-1915_GSM_ 1847- 1853.4MHz



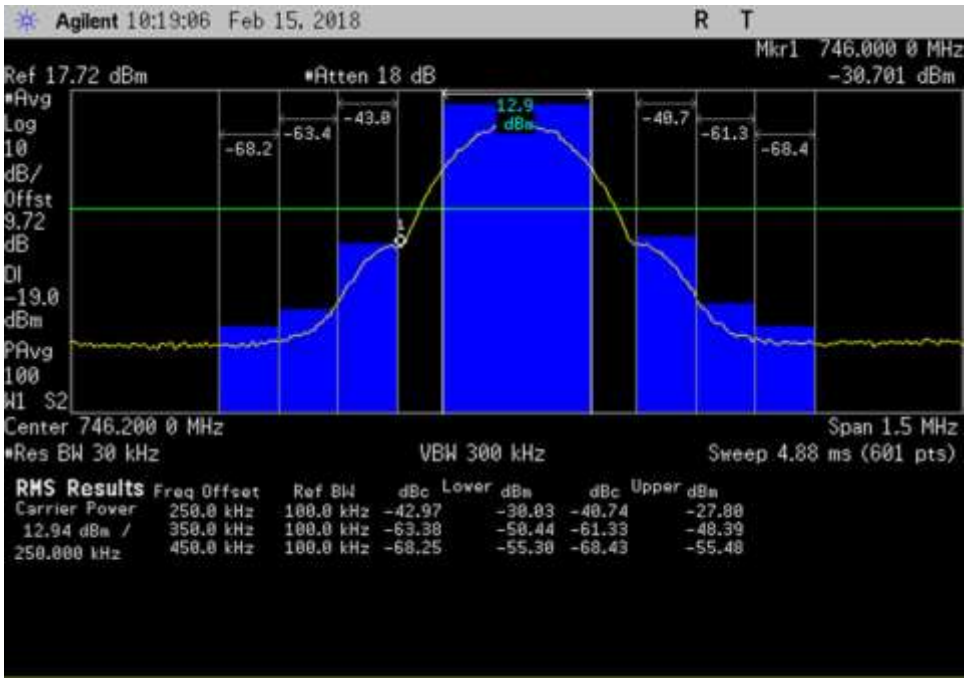
UL_1850-1915_GSM_ 1911.6- 1918MHz



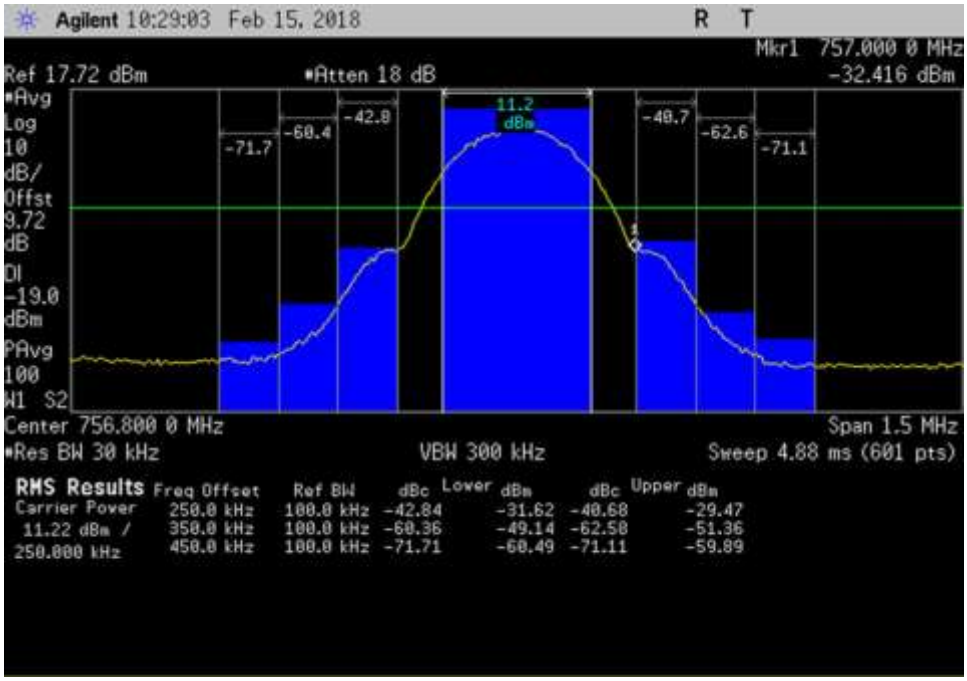
DL_728-746_GSM_ 727.45- 728.95MHz



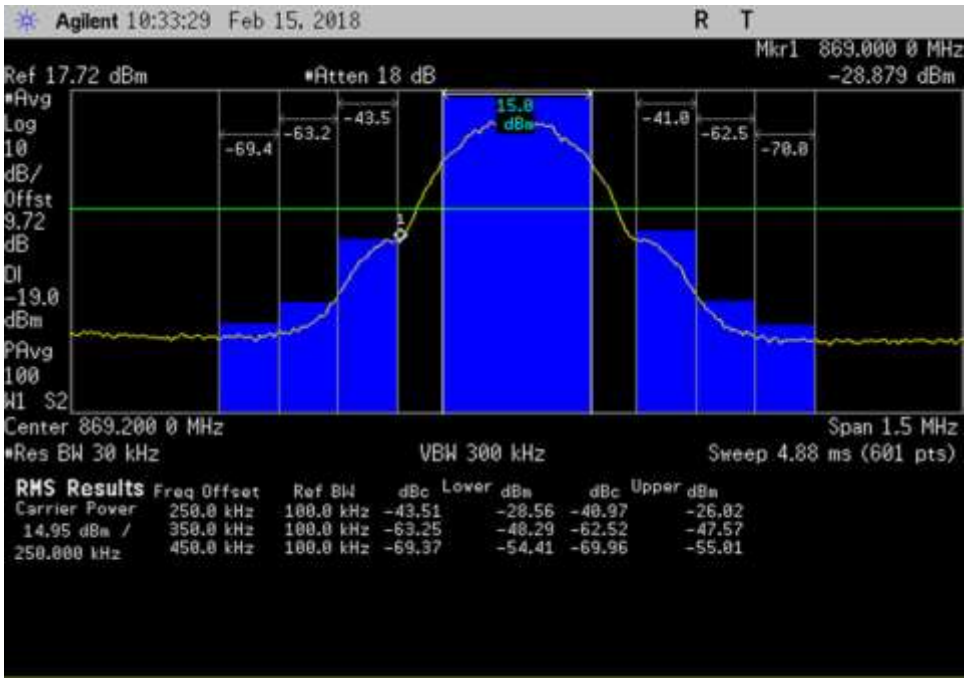
DL_728-746_GSM_ 745.05- 746.55MHz



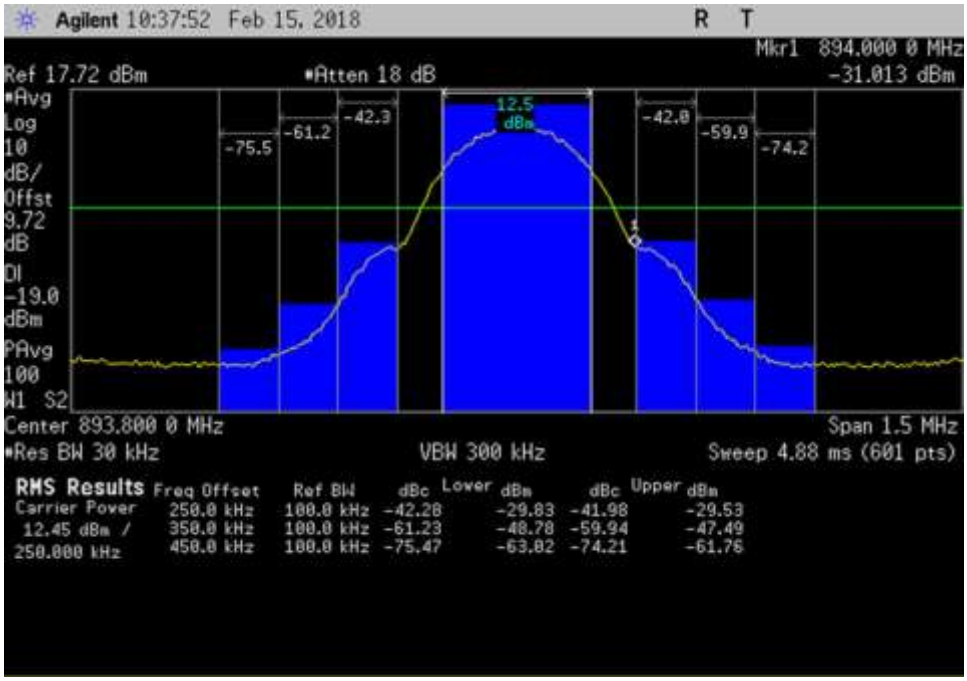
DL_746-757_GSM_ 745.45- 746.95MHz



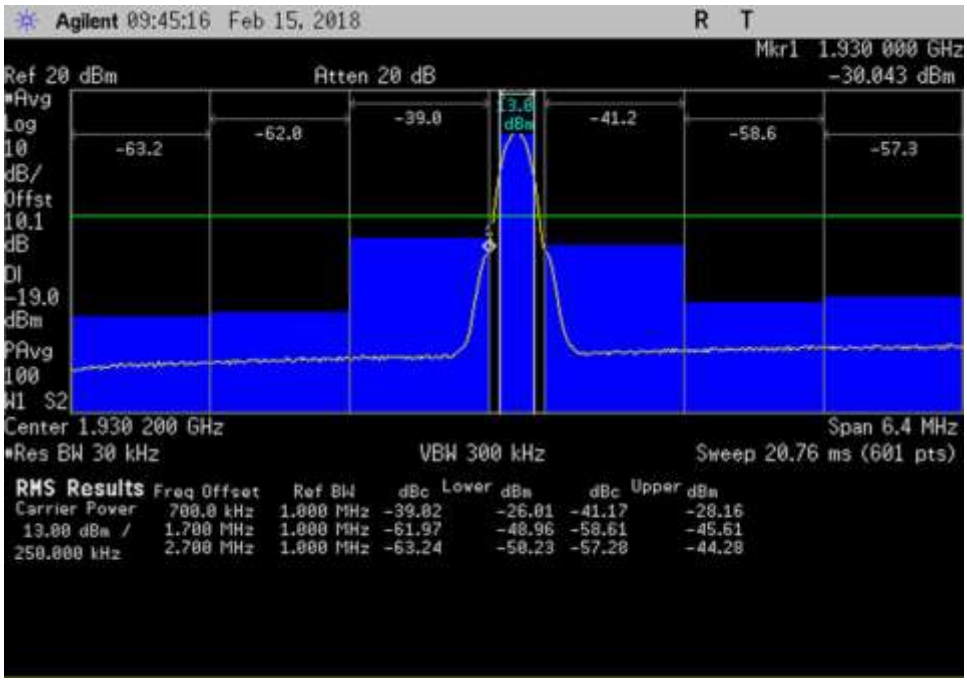
DL_746-757_GSM_ 756.05- 757.55MHz



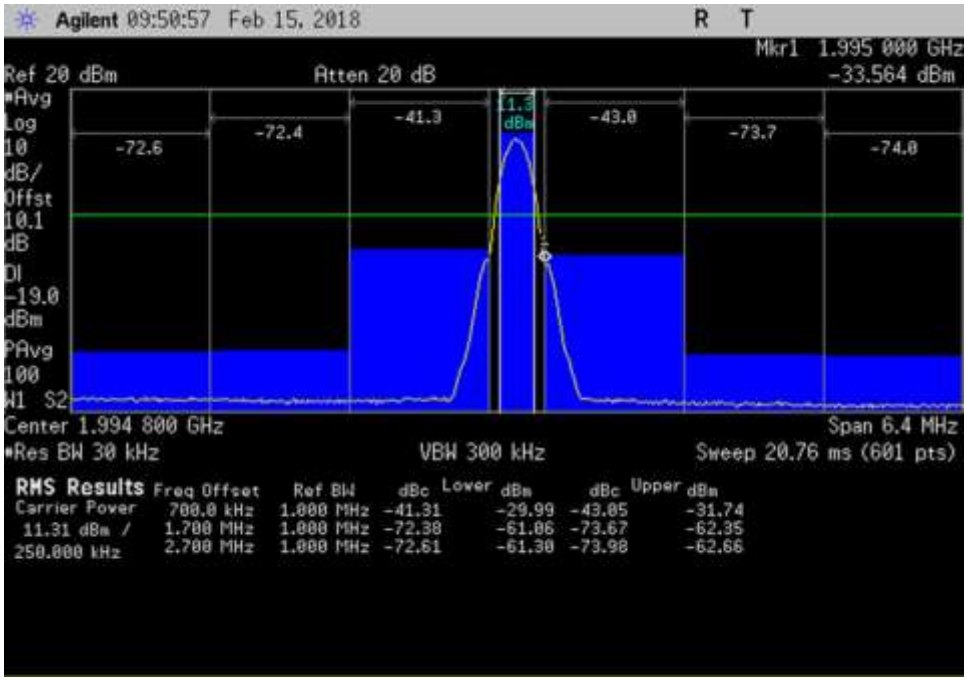
DL_869-894_GSM_ 868.45- 869.95MHz



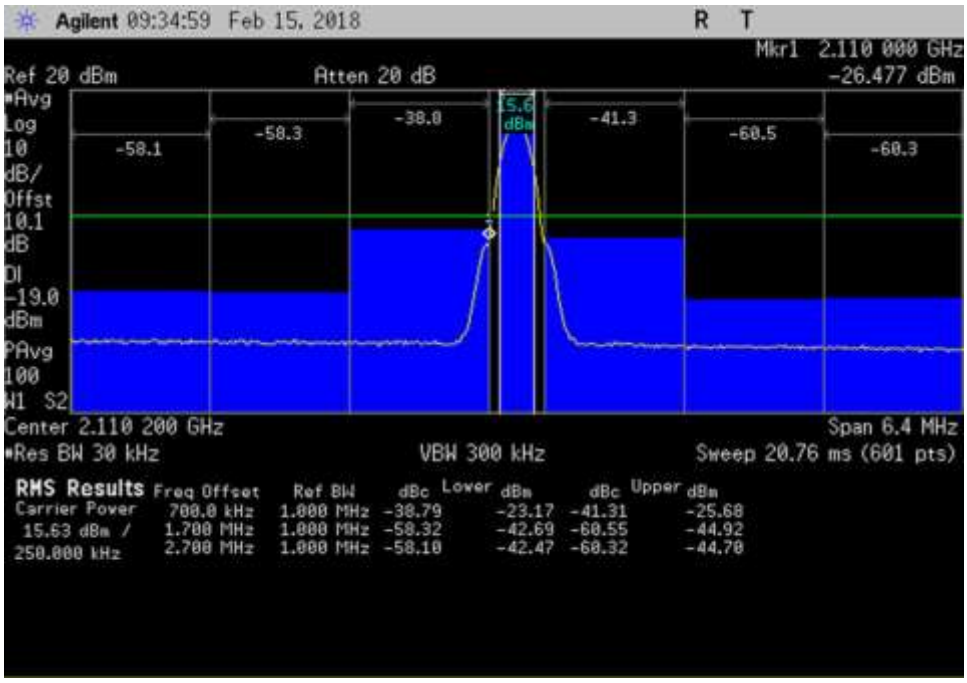
DL_869-894_GSM_ 893.05- 894.55MHz



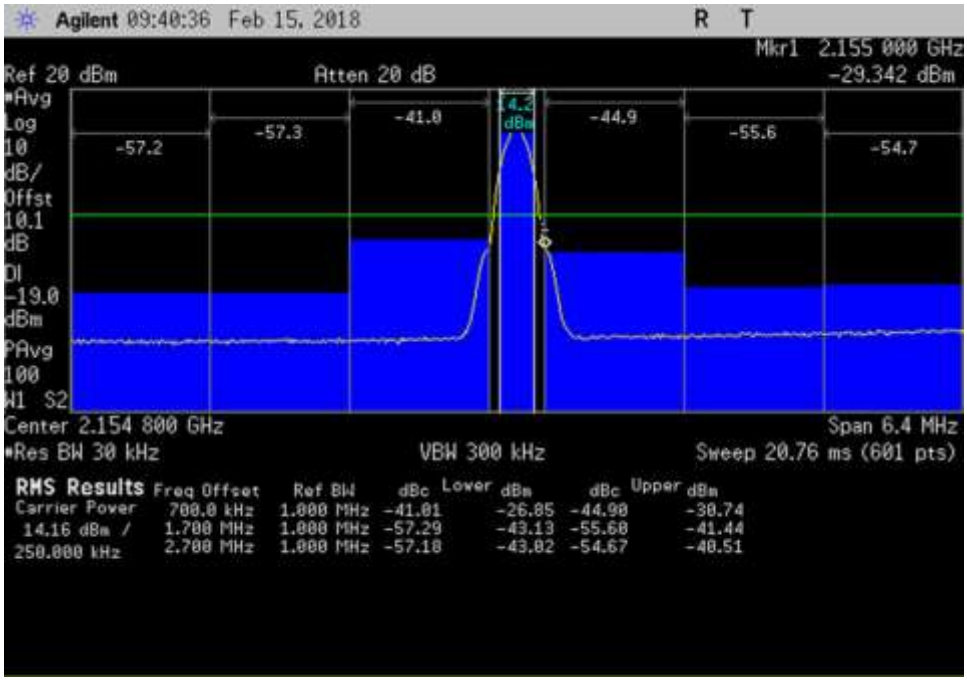
DL_1930-1995_GSM_ 1927- 1933.4MHz



DL_1930-1995_GSM_ 1991.6- 1998MHz

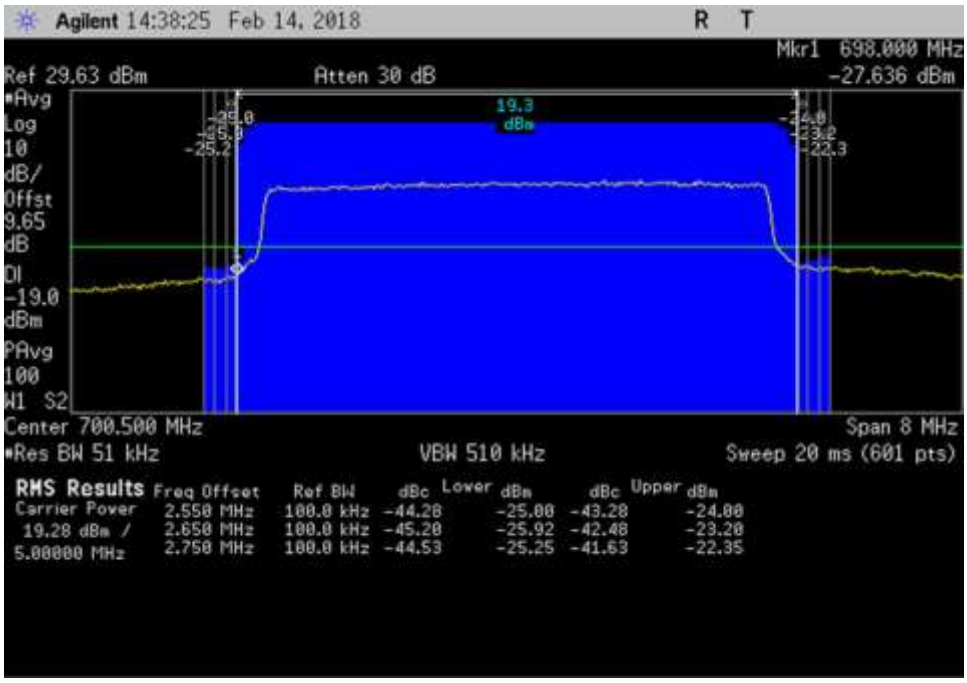


DL_2110-2155_GSM_ 2107- 2113.4MHz

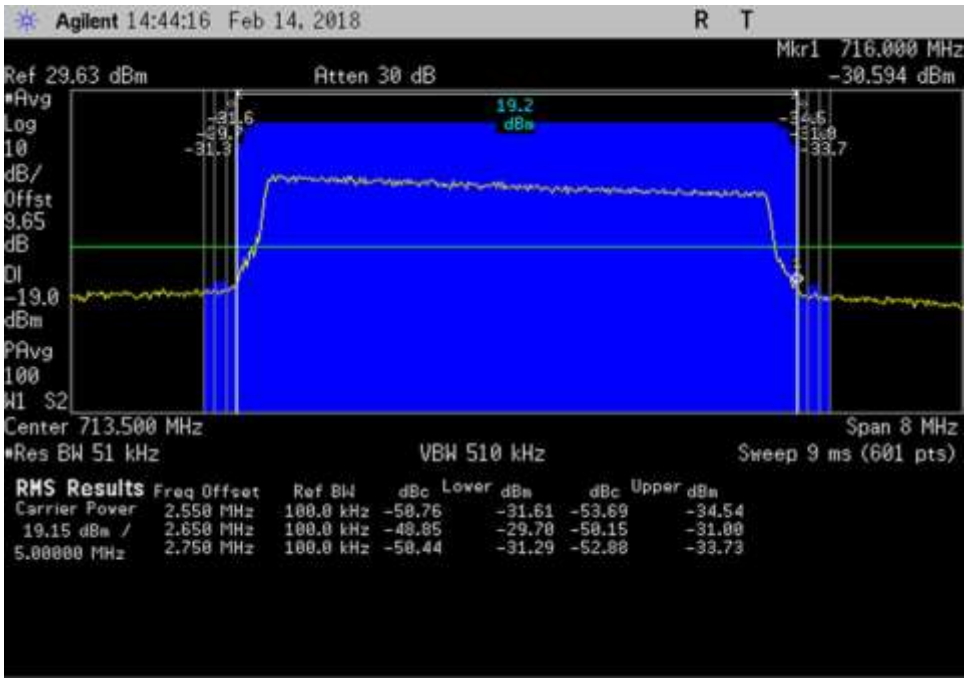


DL_2110-2155_GSM_ 2151.6- 2158MHz

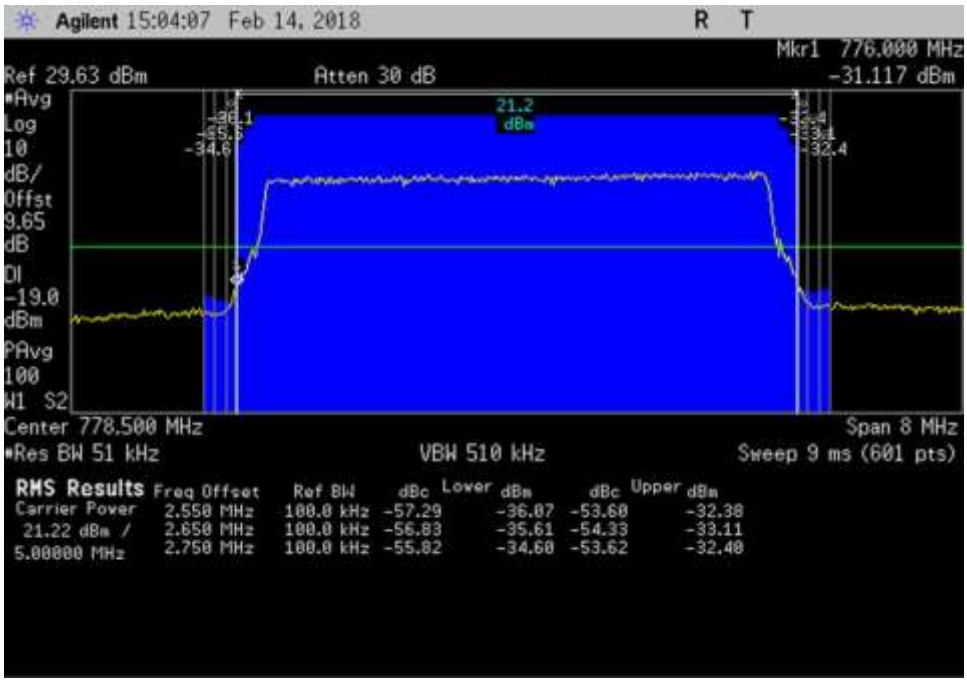
LTE



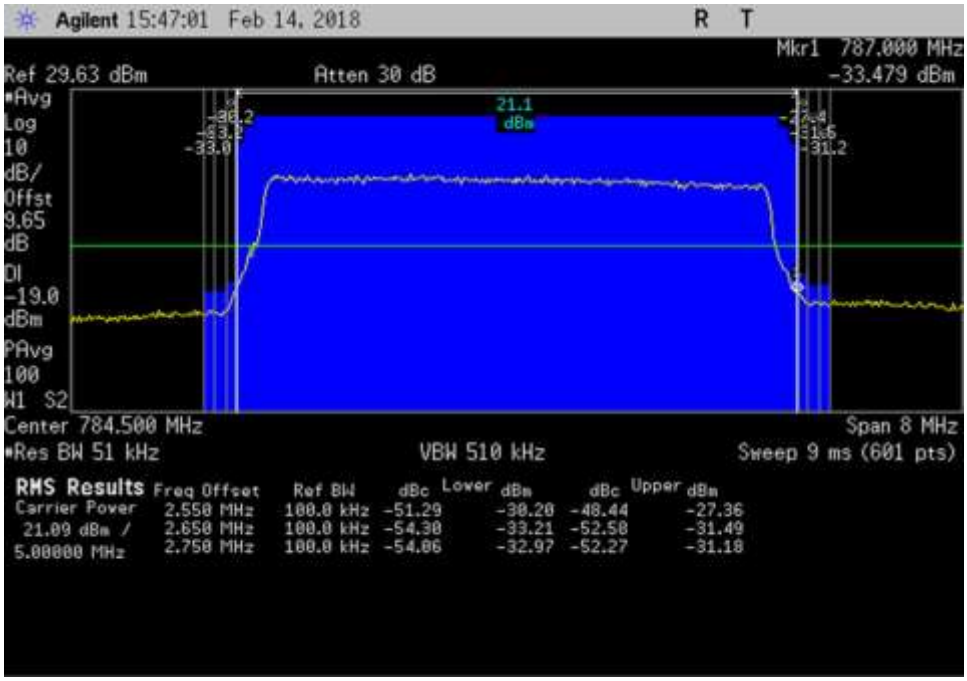
UL_698-716_LTE_ 696.5- 704.5MHz



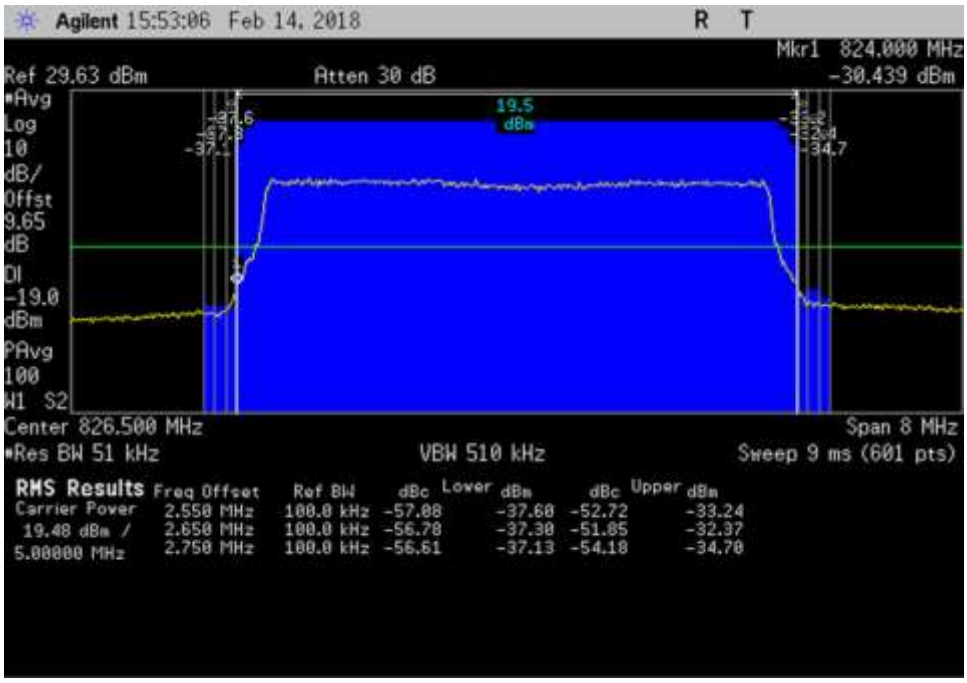
UL_698-716_LTE_ 709.5- 717.5MHz



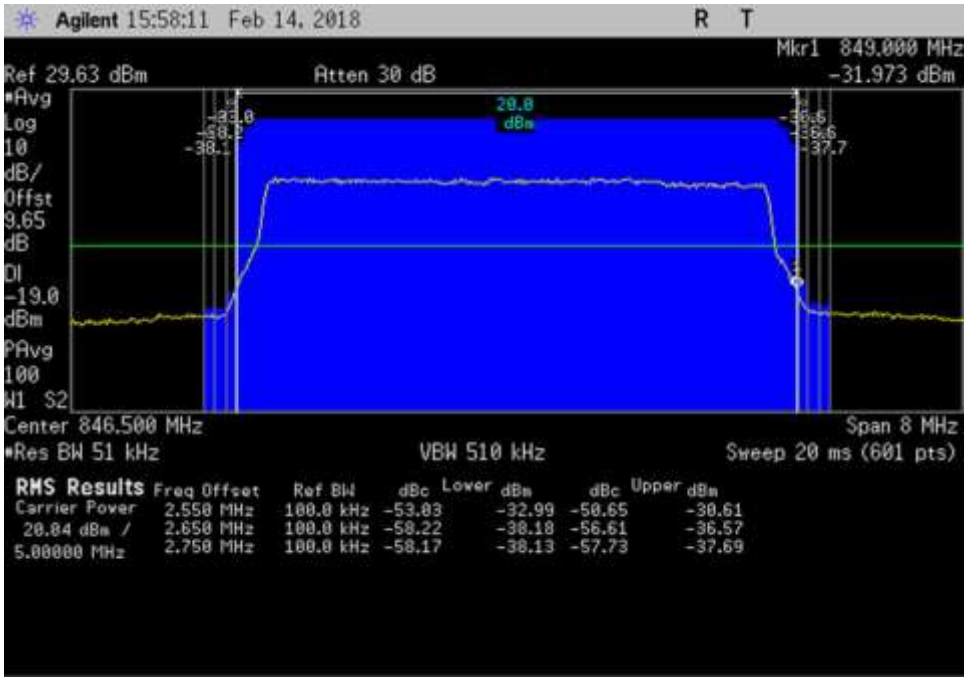
UL_776-787_LTE_ 774.5- 782.5MHz



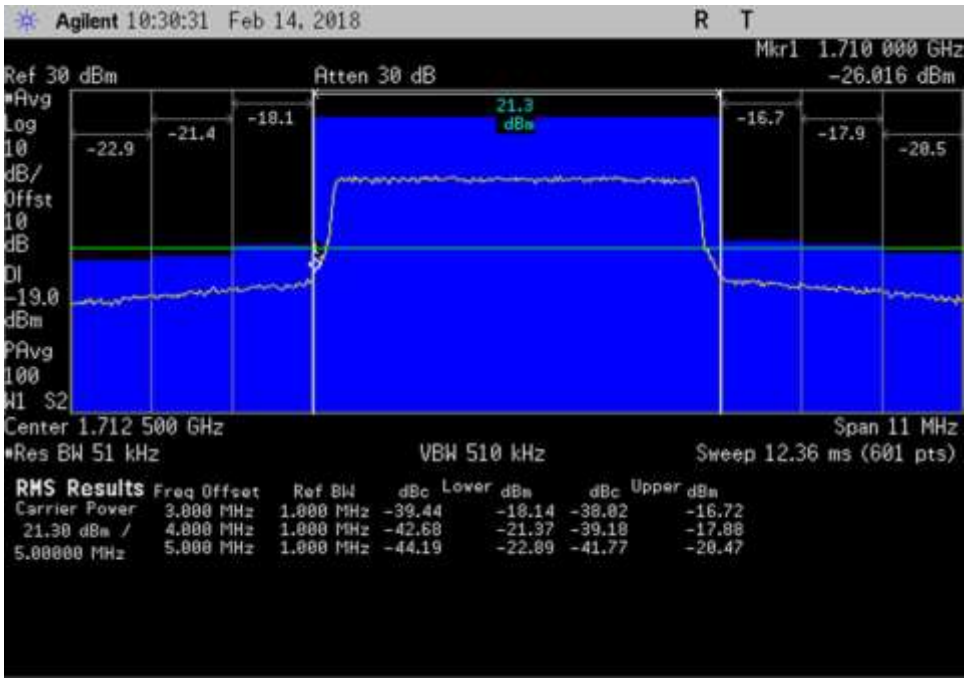
UL_776-787_LTE_ 780.5- 788.5MHz



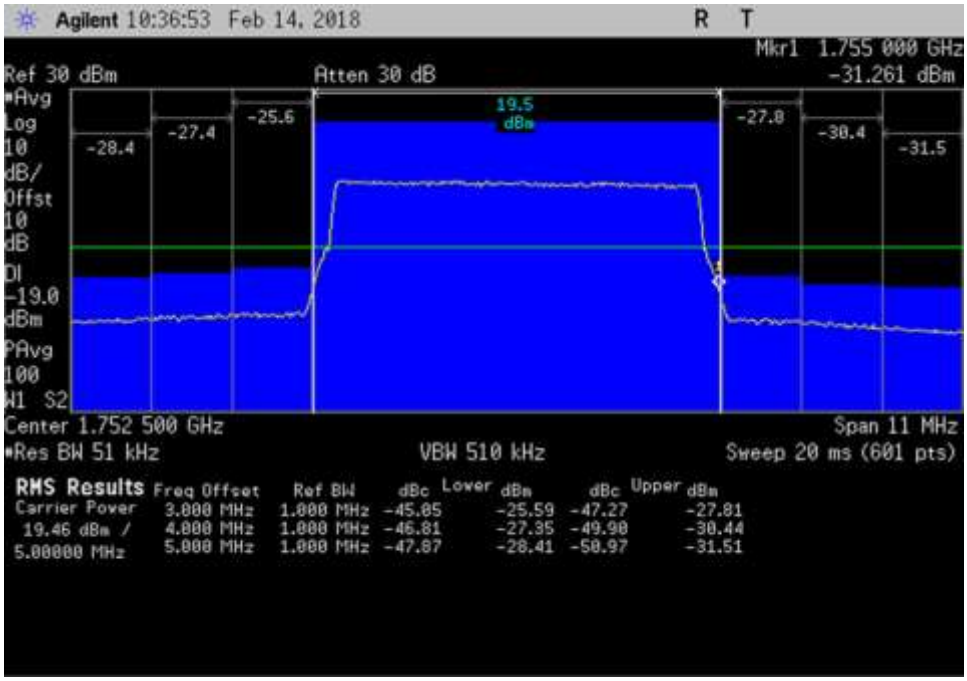
UL_824-849_LTE_ 822.5- 830.5MHz



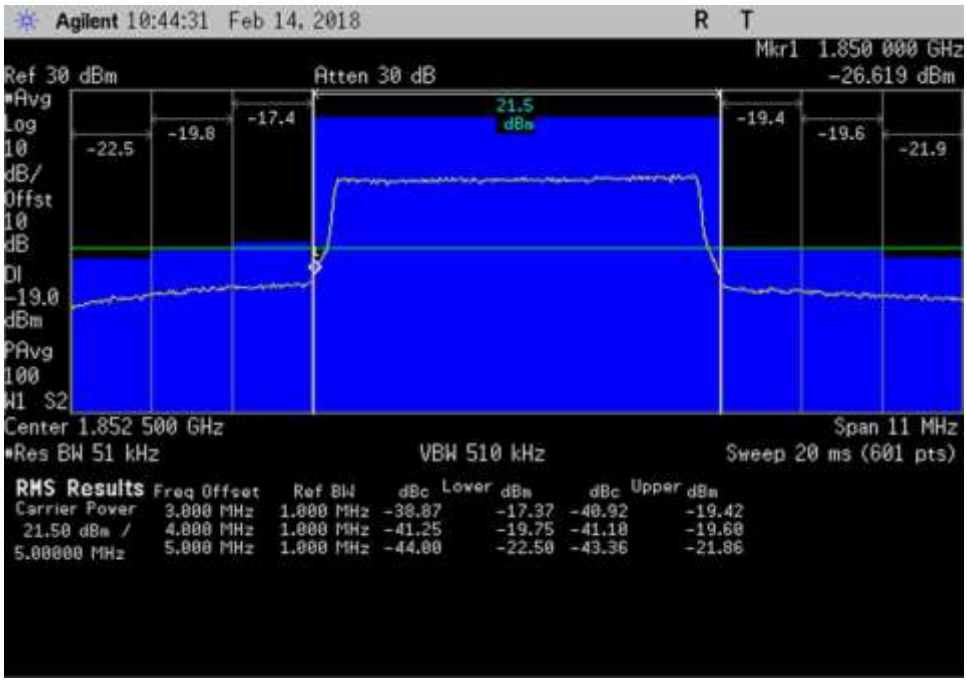
UL_824-849_LTE_ 842.5- 850.5MHz



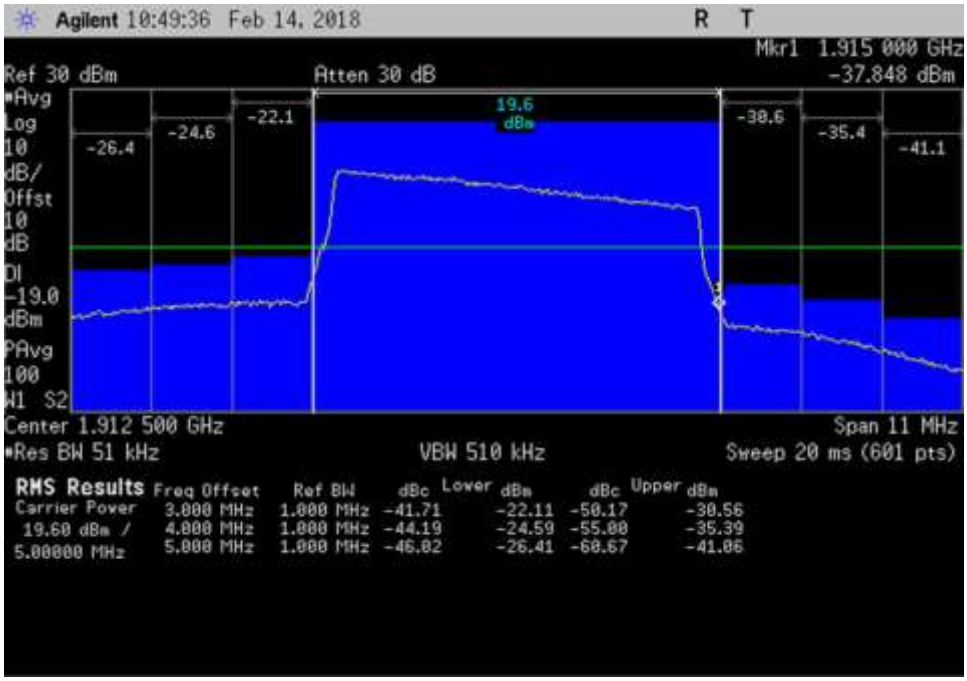
UL_1710-1755_LTE_ 1707- 1718MHz



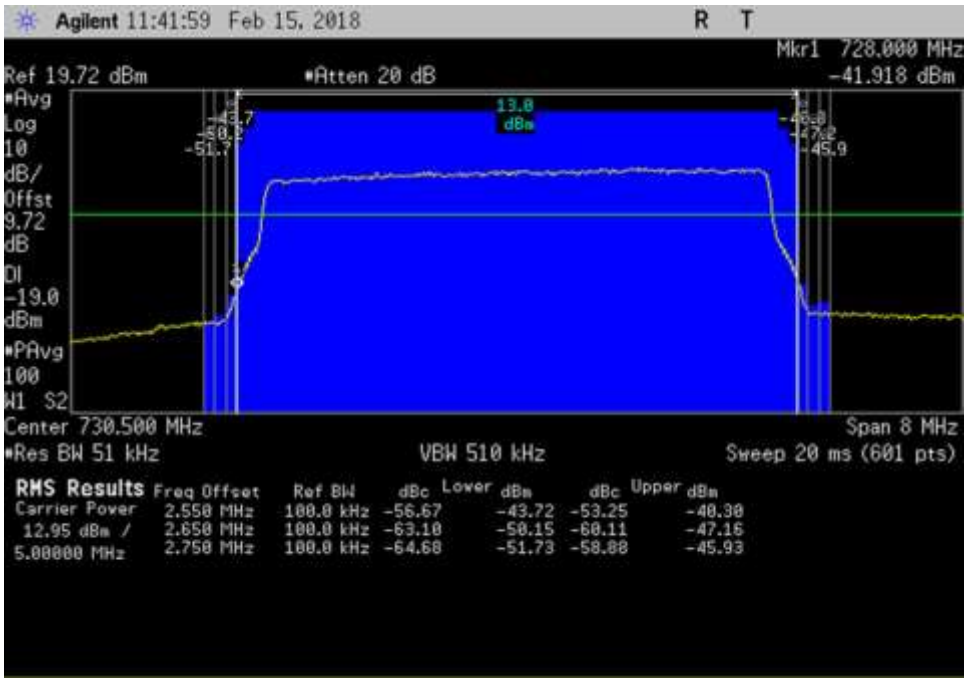
UL_1710-1755_LTE_ 1747- 1758MHz



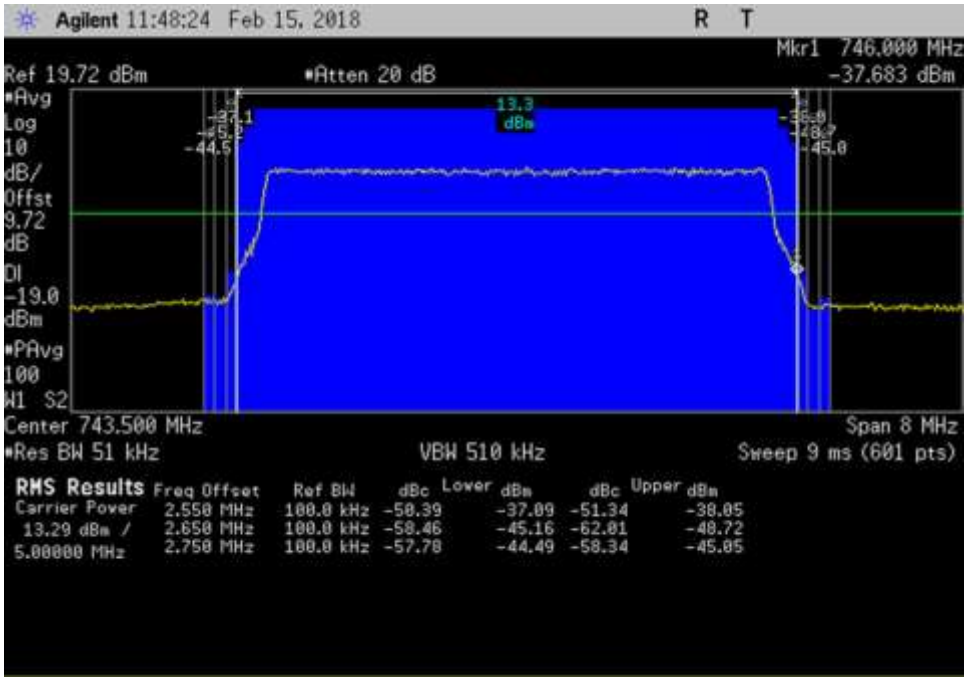
UL_1850-1915_LTE_ 1847- 1858MHz



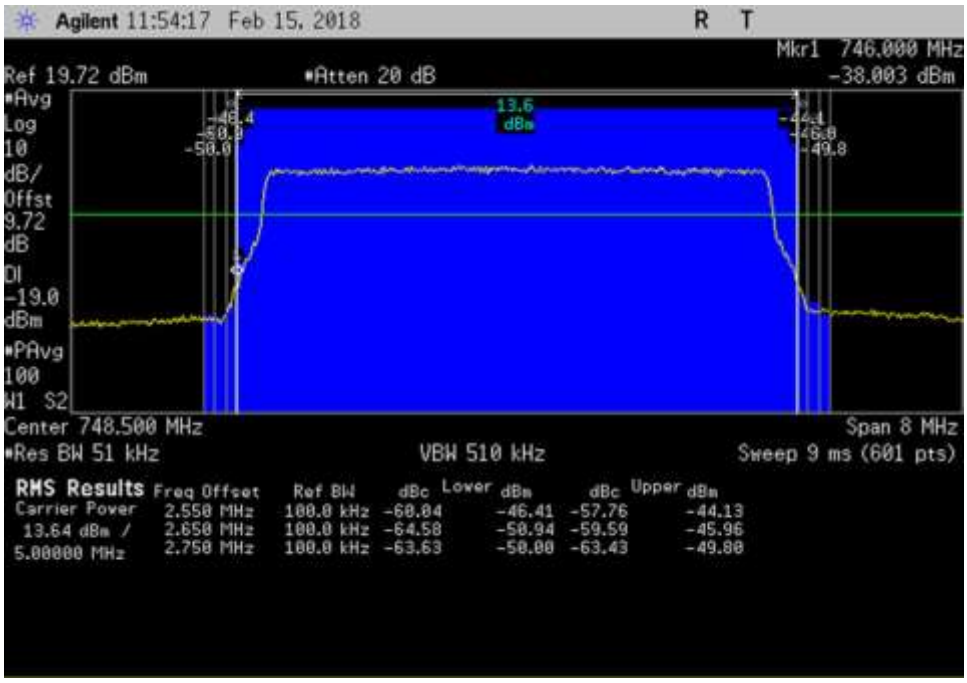
UL_1850-1915_LTE_ 1907- 1918MHz



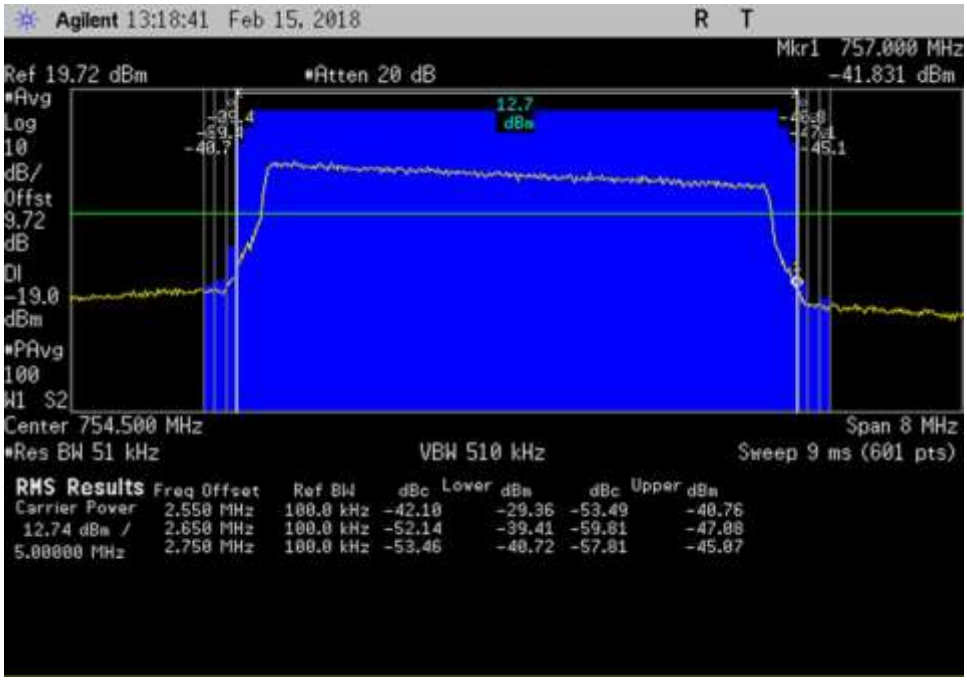
DL_728-746_LTE_ 726.5- 734.5MHz



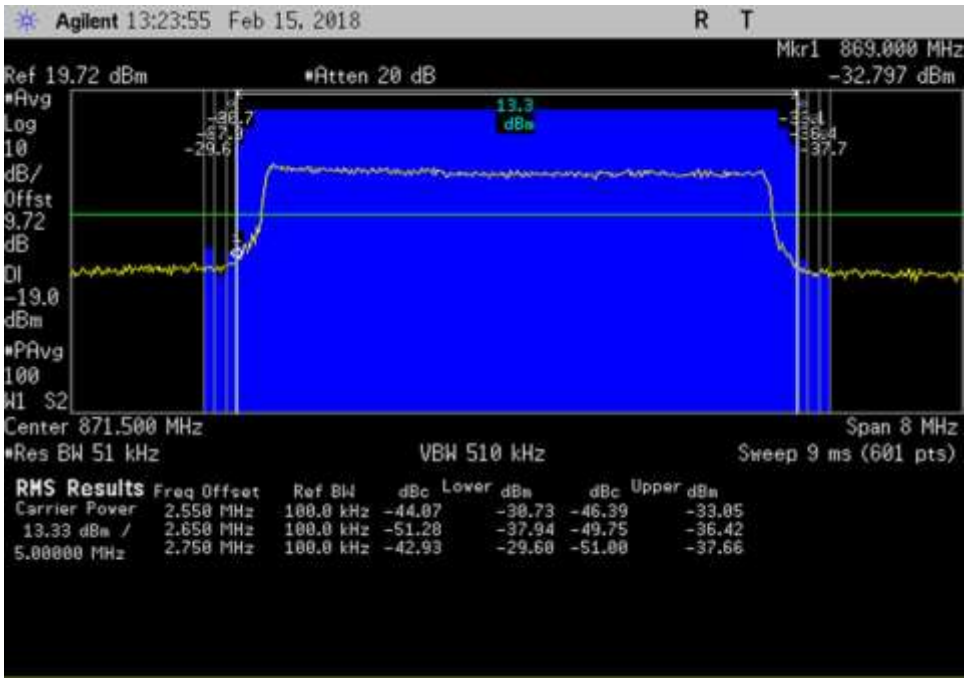
DL_728-746_LTE_ 739.5- 747.5MHz



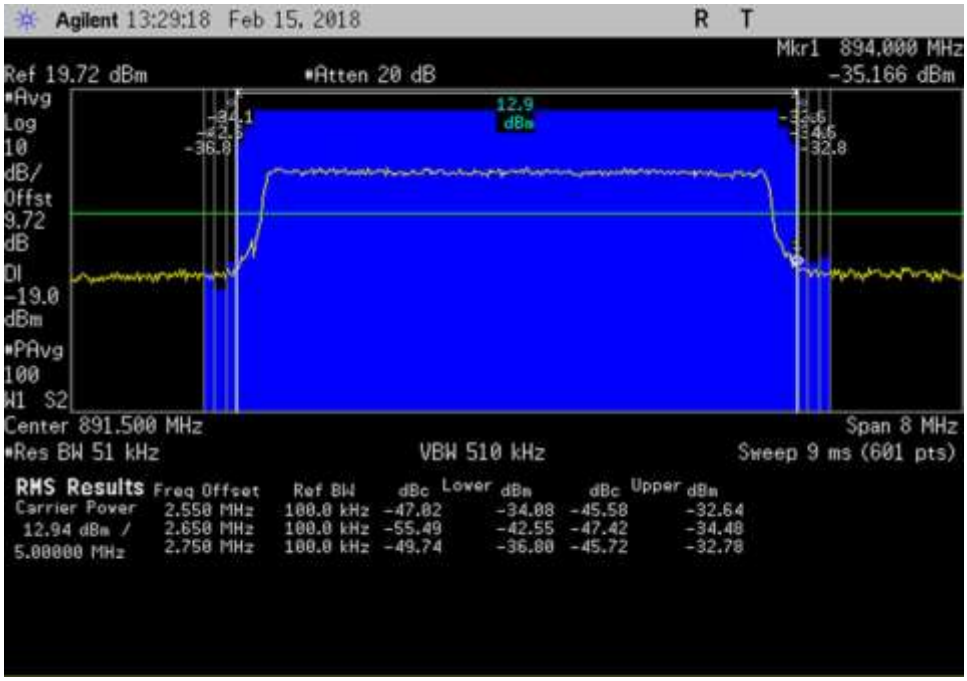
DL_746-757_LTE_ 744.5- 752.5MHz



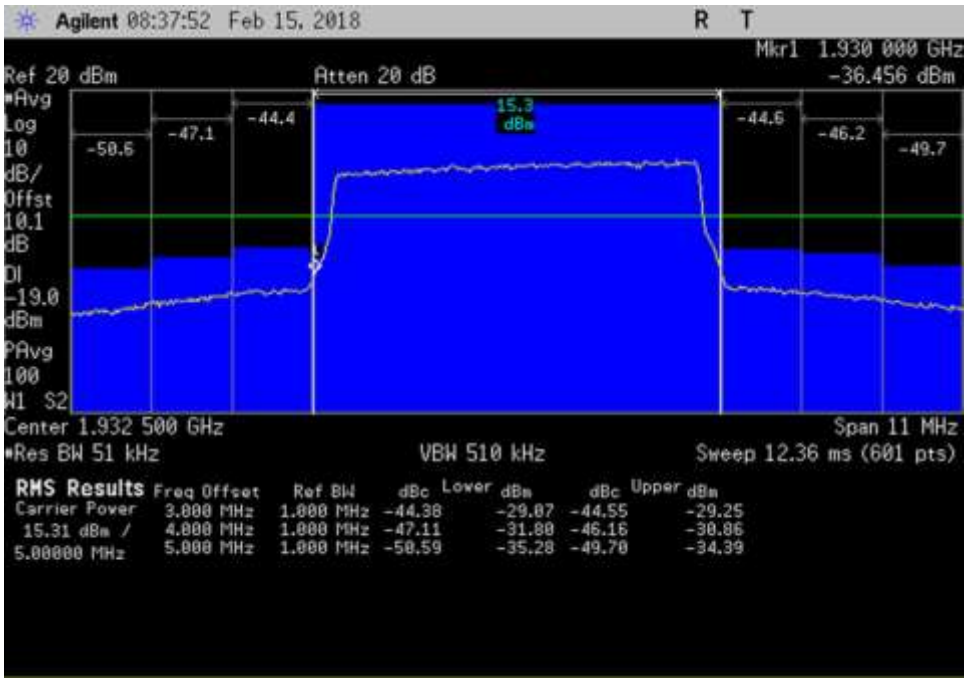
DL_746-757_LTE_ 750.5- 758.5MHz



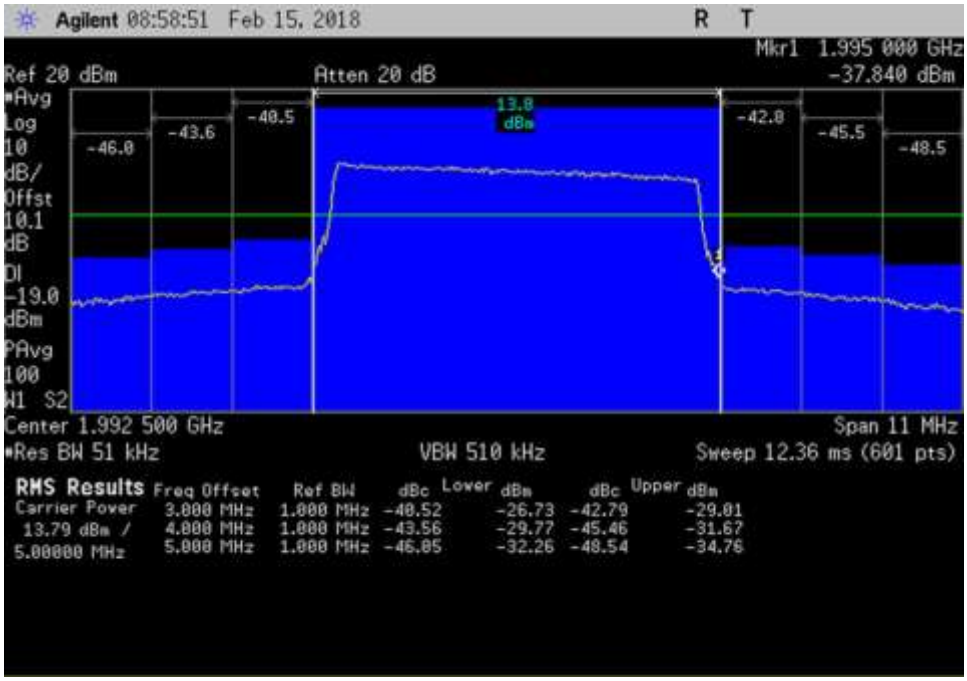
DL_869-894_LTE_ 867.5- 875.5MHz



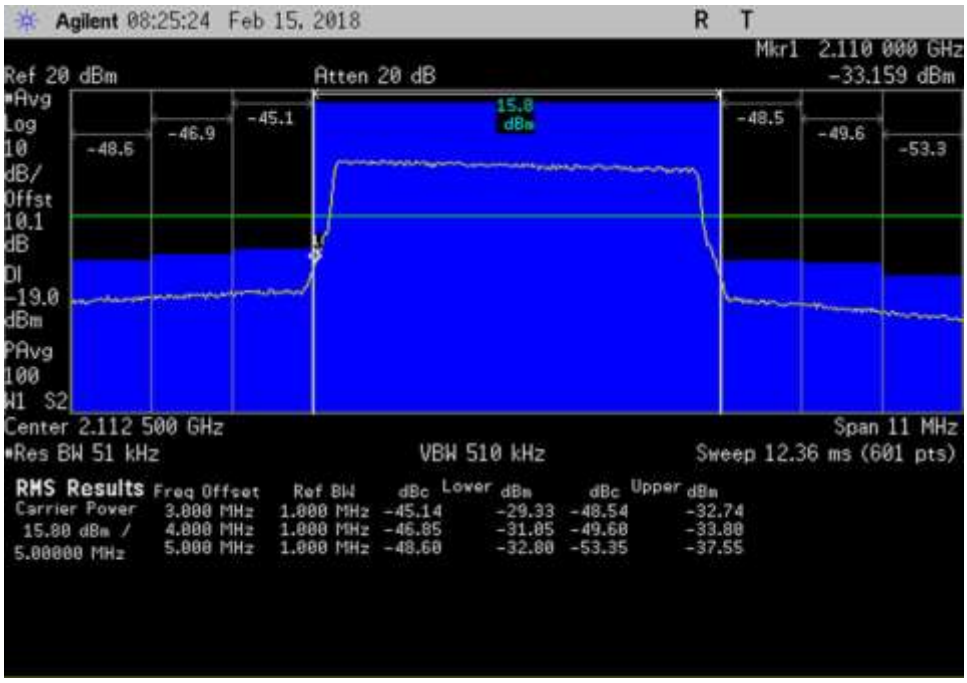
DL_869-894_LTE_ 887.5- 895.5MHz



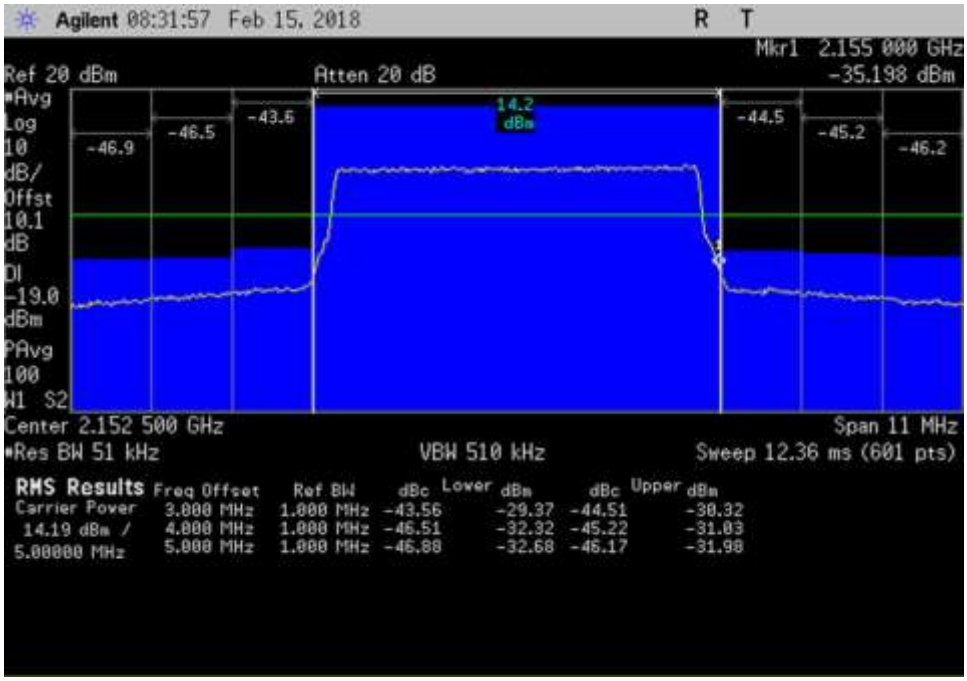
DL_1930-1995_LTE_ 1927- 1938MHz



DL_1930-1995_LTE_ 1987- 1998MHz



DL_2110-2155_LTE_ 2107- 2118MHz



DL_2110-2155_LTE_ 2147- 2158MHz

7.6 Conducted Spurious Emissions

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
Customer:	Cellphone-Mate, Inc.
Specification:	**7.6 Conducted Spurious Emissions / 47 CFR §2.1051 Spurious Emissions at Antenna Terminals**
Work Order #:	**100827** Date 02/15/18
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: 19.6°C
Relative Humidity: 43%
Pressure: 101.6 kPa

Frequency range of measurement = 30MHz- 22GHz.
30 MHz - 1000MHz -> RBW*= 1MHz VBW= 3MHz
1000 MHz - 22000MHz ->RBW= 1MHz VBW= 3MHz

*Note: As specified on 7.6 Conducted spurious emissions test procedure of 935210 D03 Signal Booster Measurements v04r01, for frequencies below 1 GHz, an RBW of 1 MHz may be used in a preliminary measurement. If non-compliant emissions are detected, a final measurement shall be made with a 100 kHz RBW. Additionally, a peak detector may also be used for the preliminary measurement. If non-compliant emissions are detected, then a final measurement of these emissions shall be made with the power averaging (RMS) detector.

27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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

Summary of Results

Pass: As summarized in plots below, the conducted spurious emissions are within limits.

9 KHz-30 MHz

No Conducted Spurious Emissions were found within 20dB of the limit.

Per section 27.53 (f), the 1559-1610 band was also investigated and found emission within limits using applied correction (see calculation below).

Limit Line Calculation					
Frequency	**Antenna Gain- cable loss**		**Limit line EIRP**	**Limit line EIRP**	**Limit line EIRP corrected**
(MHz)	**(dBi)**		**(dBW/MHz)**	**(dBm)**	**(dBm)**
UL 776-787	-0.52		-70.0	-40	-40.52

LIMIT LINE FOR SPURIOUS CONDUCTED EMISSION

REQUIRED ATTENUATION = 43+10 LOG P DB

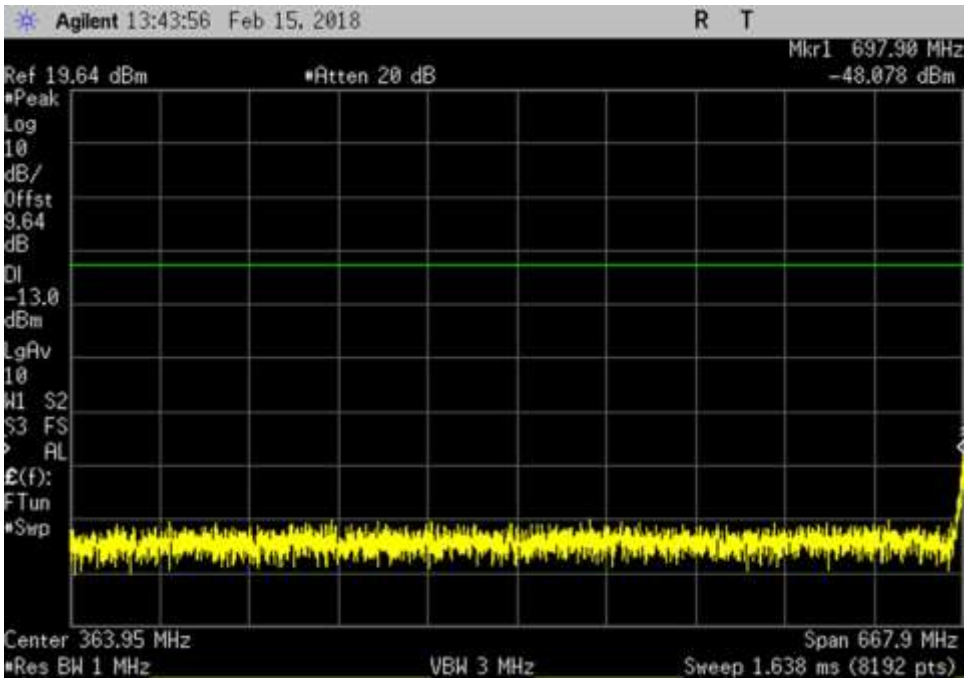
Limit line (dBuV) = V_{dBuv} - Attenuation

$$V_{dBuV} = 20 \text{Log} \frac{V}{1 \text{x} 10^{-6}}$$
$$= 20\left(\text{Log V} - \text{Log} 1 \text{x} 10^{-6}\right)$$
$$= 20 \text{Log V} - 20 \text{Log} 1 \text{x} 10^{-6}$$
$$= 20 \text{Log V} - 20(-6)$$
$$= 20 \text{Log V} + 120$$

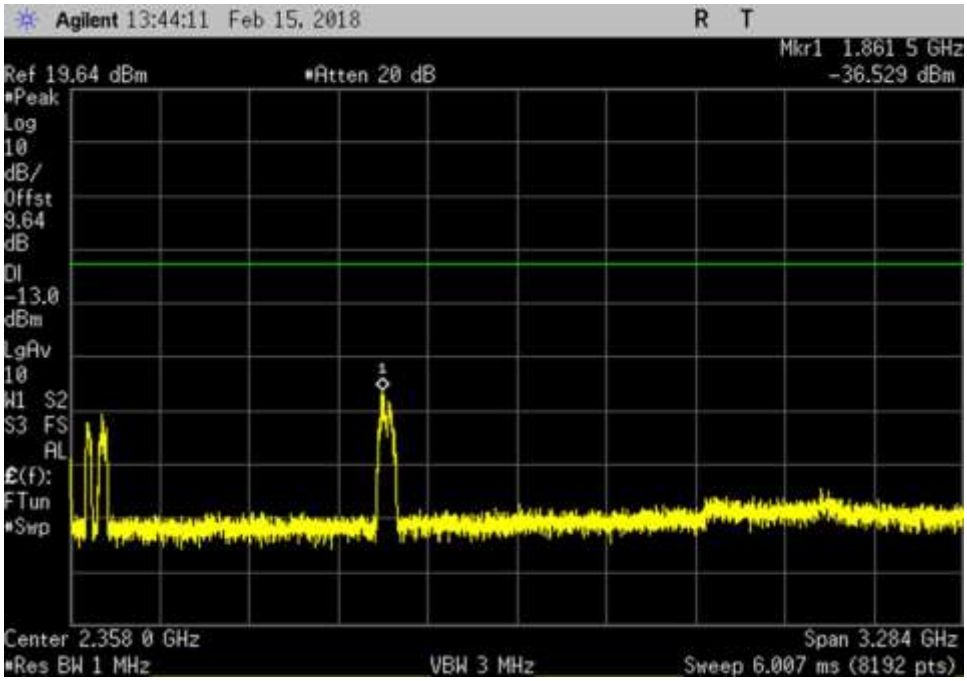
$$\text{Attenuation} = 43 + 10 \text{Log P}$$
$$= 43 + 10 \text{Log} \frac{V^2}{R}$$
$$= 43 + 10\left(\text{Log V}^2 - \text{Log R}\right)$$
$$= 43 + 10\left(2 \text{Log V} - \text{Log R}\right)$$
$$= 43 + 20 \text{Log V} - 10 \text{Log R}$$

Limit line = V_{dBuv} - Attenuation
= 20 Log V + 120 – (43 + 20 Log V – 10Log R)
= 20 Log V + 120 – 43 – 20 Log V + 10Log R
= 20 Log V + 120 – 43 – 20 Log V + 10Log R
= 120 – 43 + 10 Log 50 Note : R = 50 Ω
= 120 –43 + 16.897
= 94 dBuV at any power level

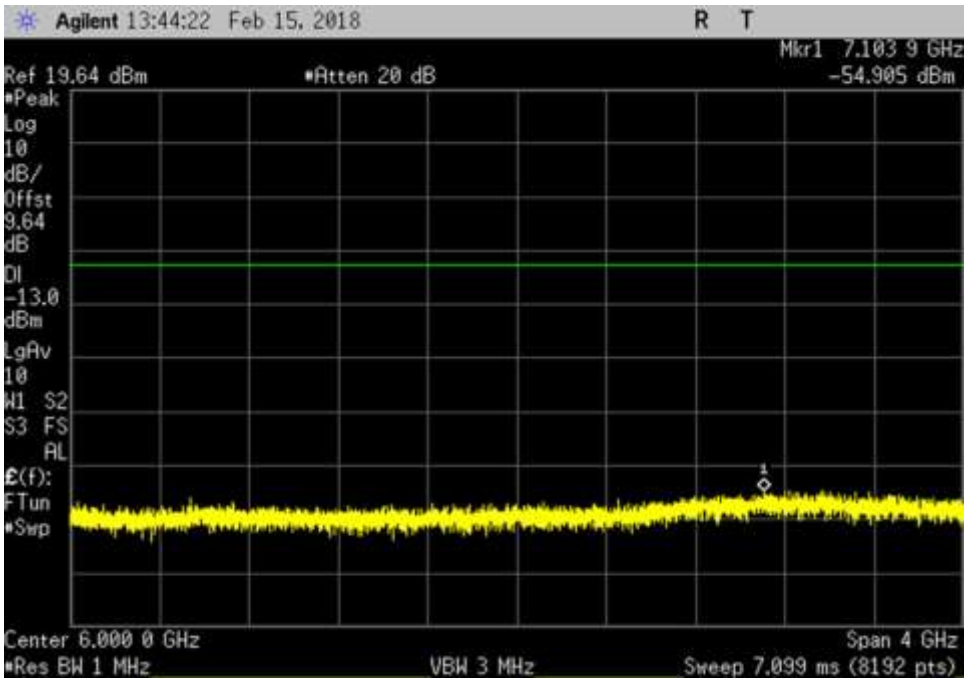
Plots



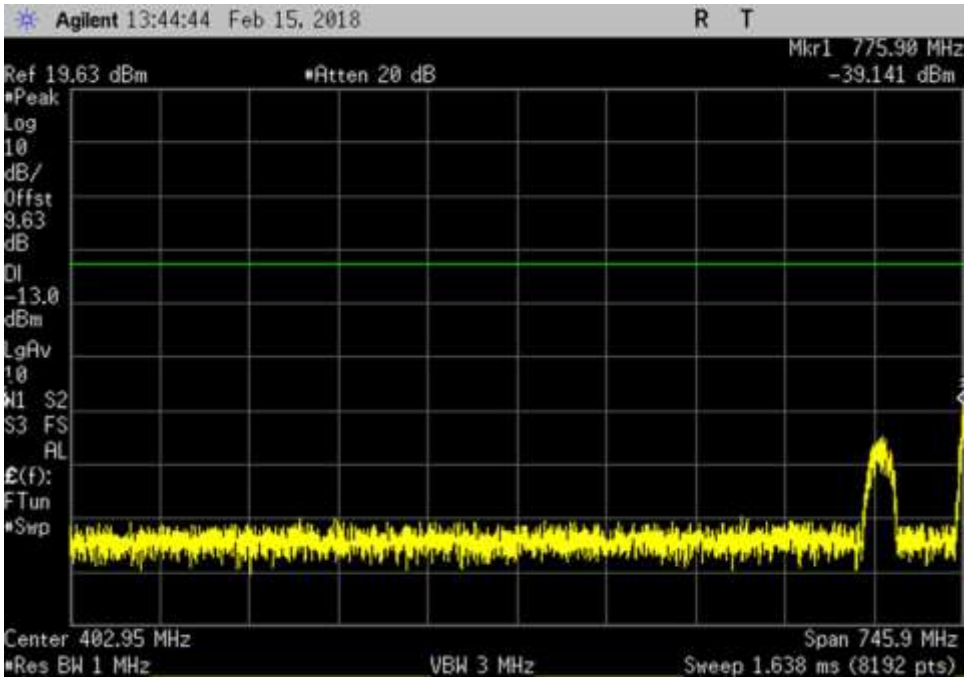
UL_698-716_ 30- 697.9MHz



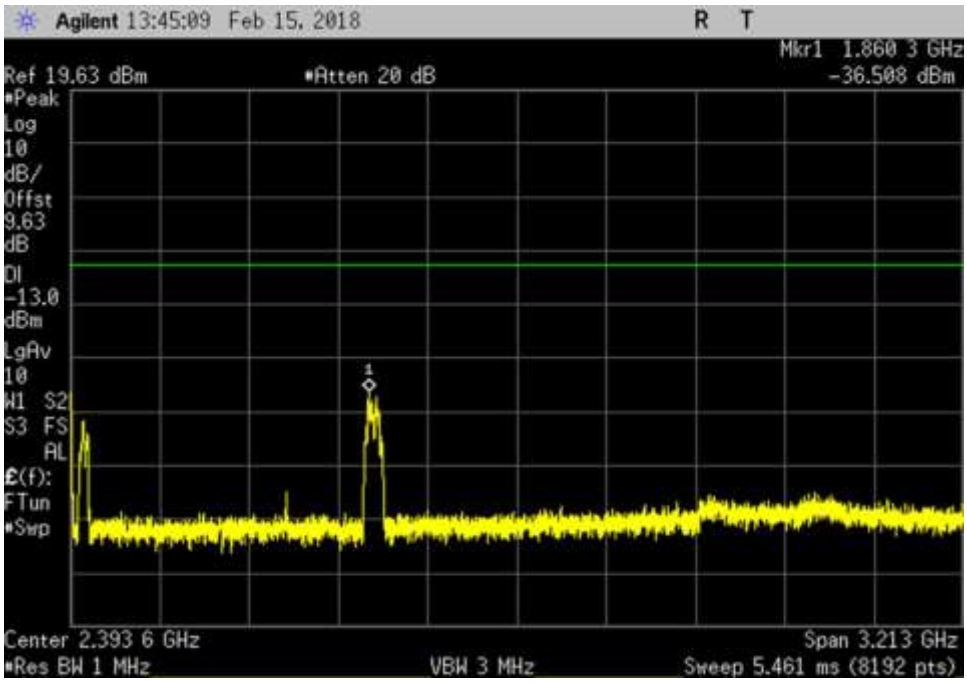
UL_698-716_ 716.1- 4000MHz



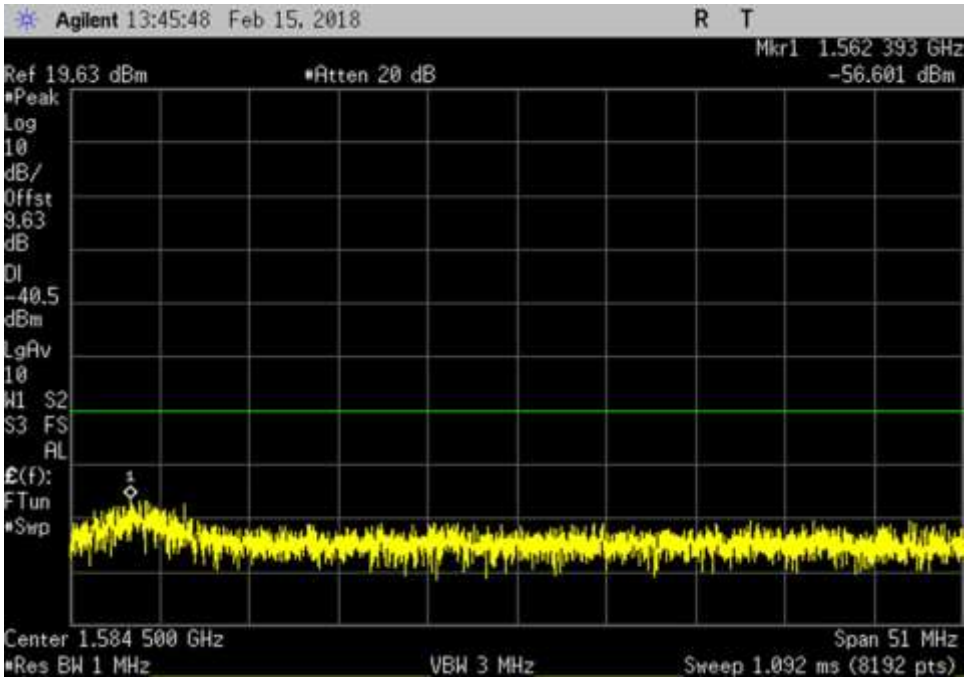
UL_698-716_ 4000- 8000MHz



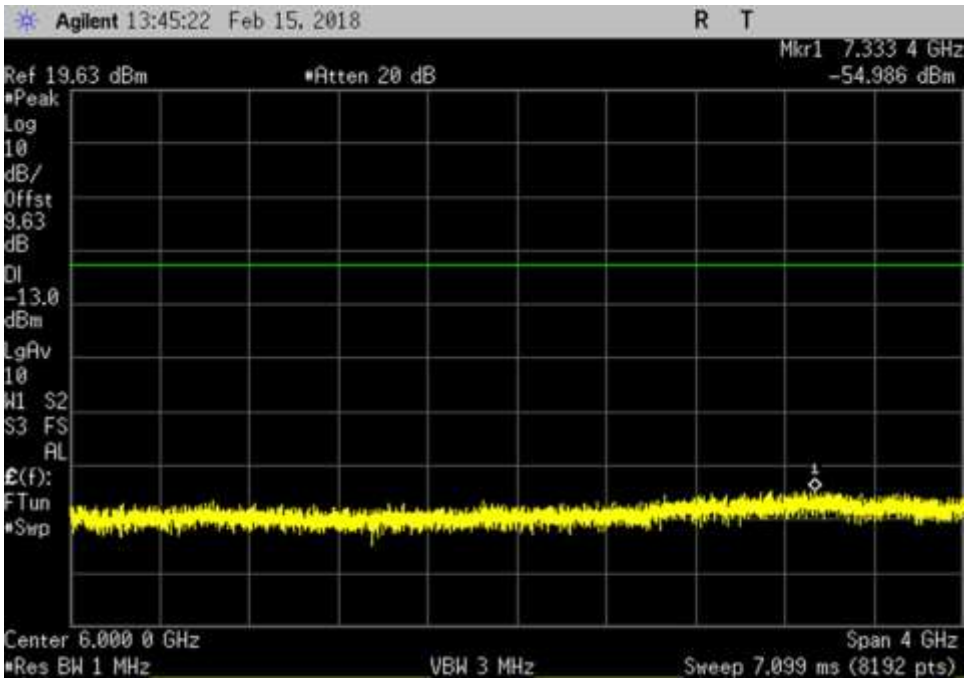
UL_776-787_ 30- 775.9MHz



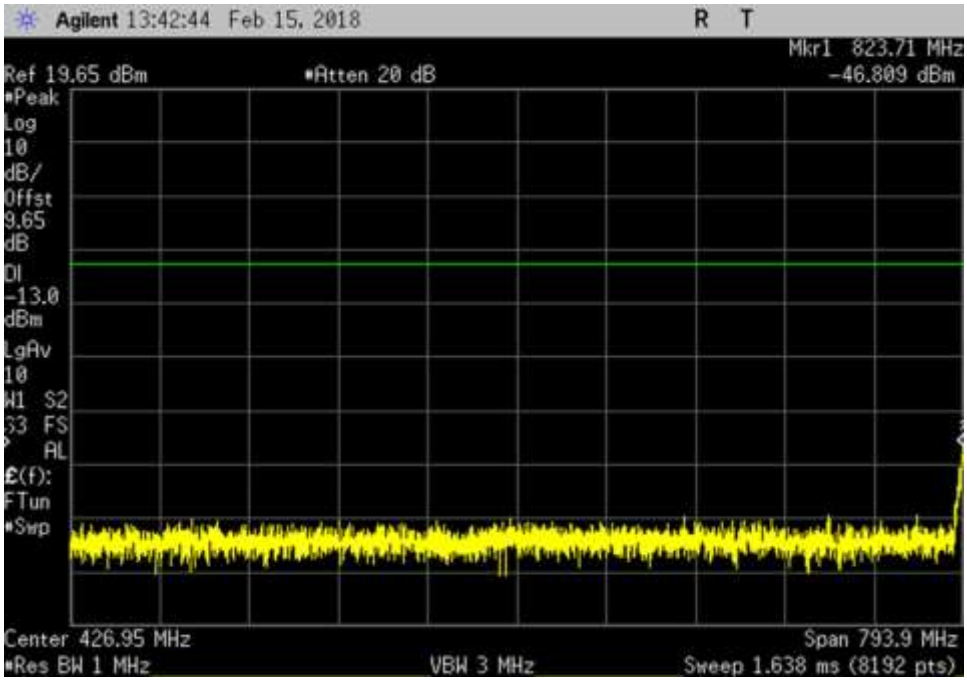
UL_776-787_ 787.1- 4000MHz



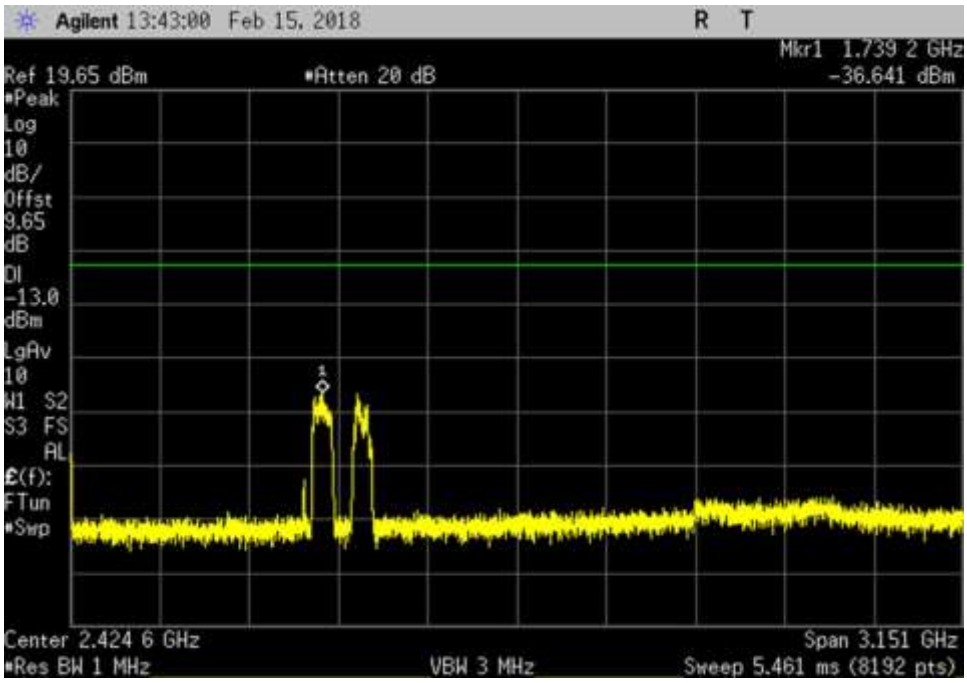
UL_776-787_ 1559- 1610MHz



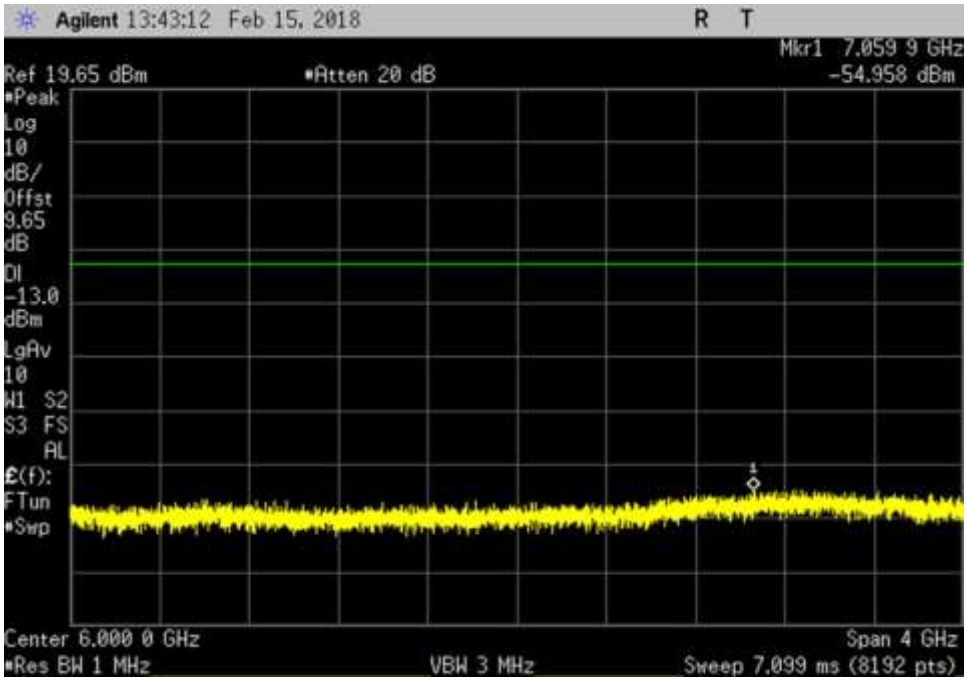
UL_776-787_ 4000- 8000MHz



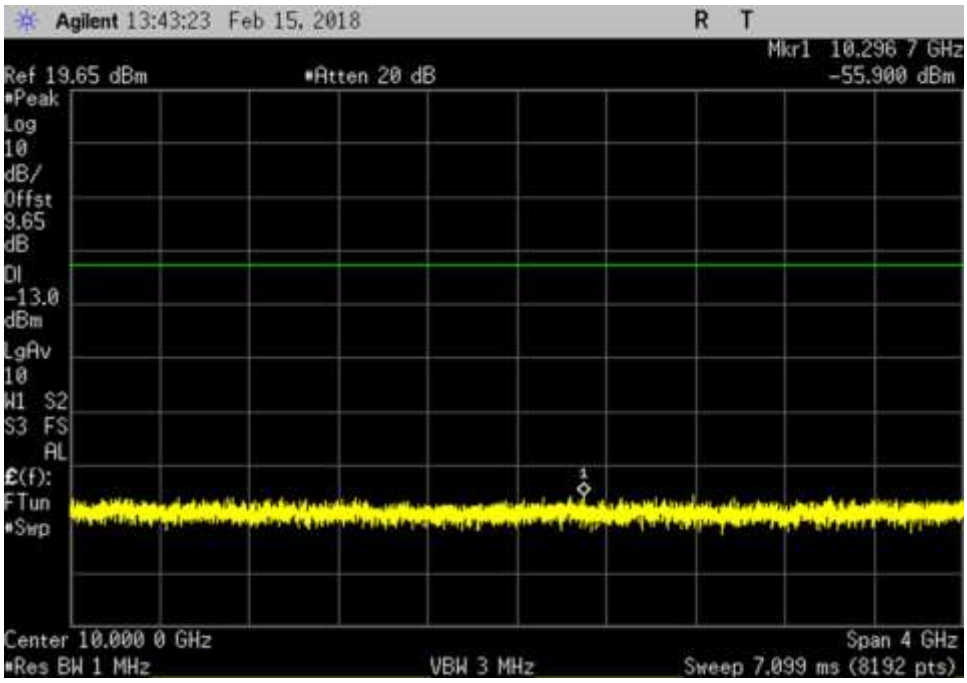
UL_824-849_ 30- 823.9MHz



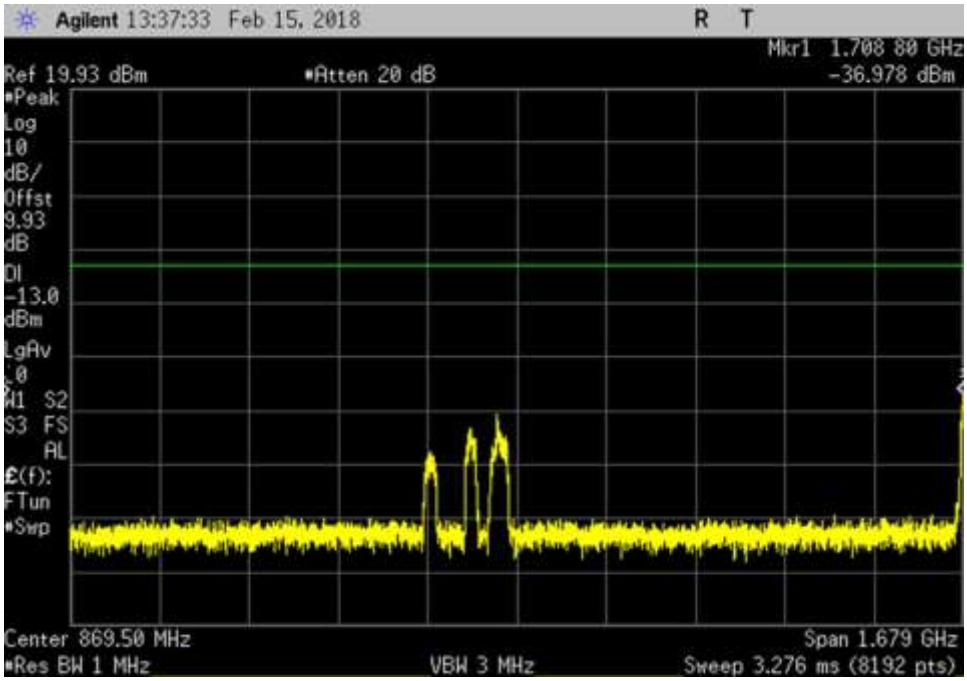
UL_824-849_ 849.1- 4000MHz



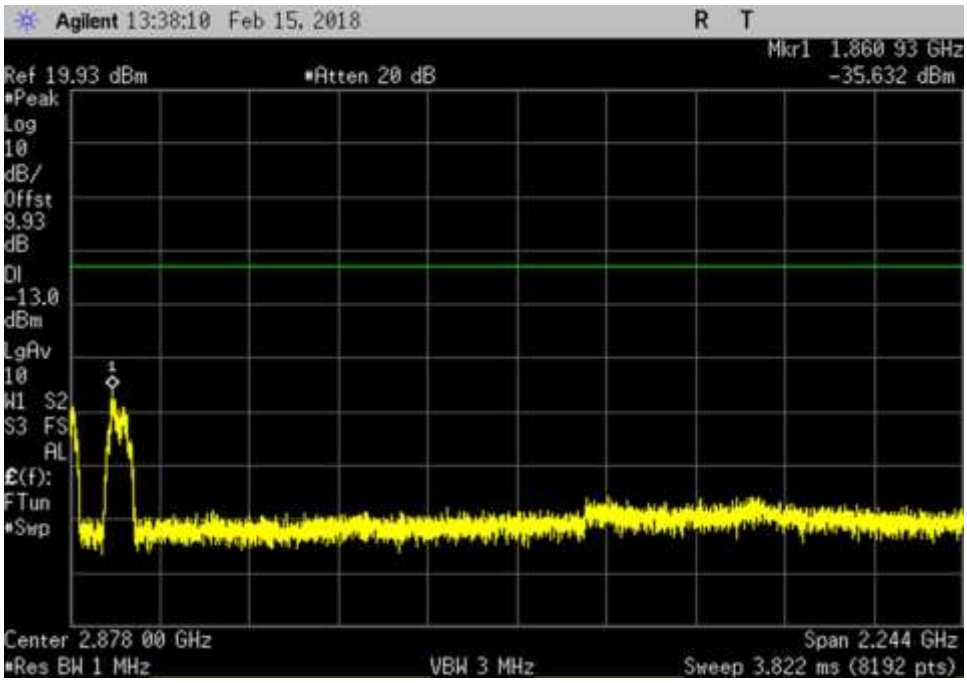
UL_824-849_ 4000- 8000MHz



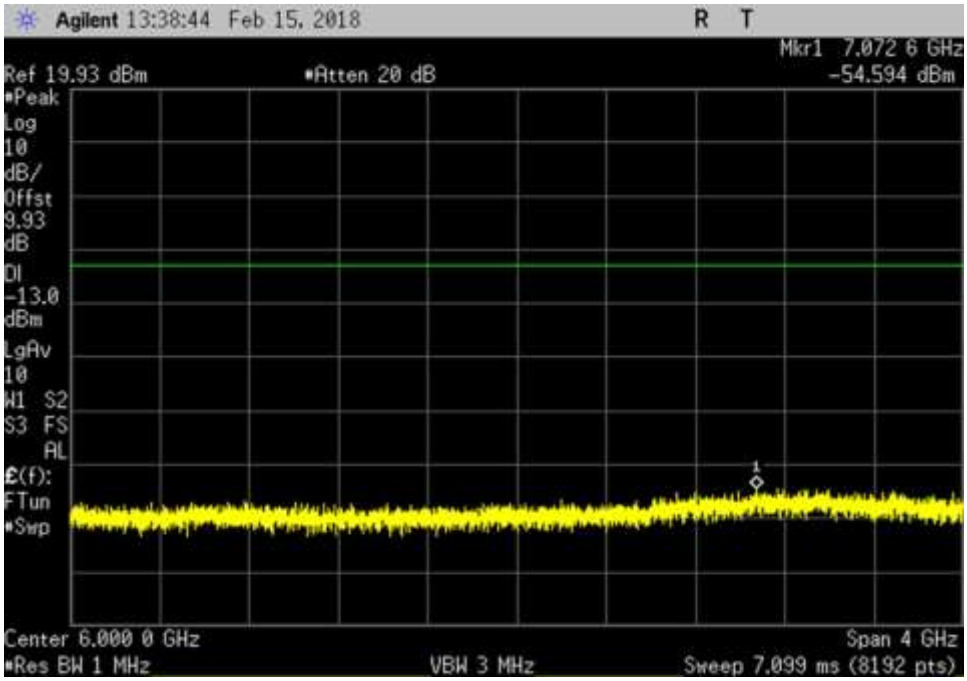
UL_824-849_ 8000- 12000MHz



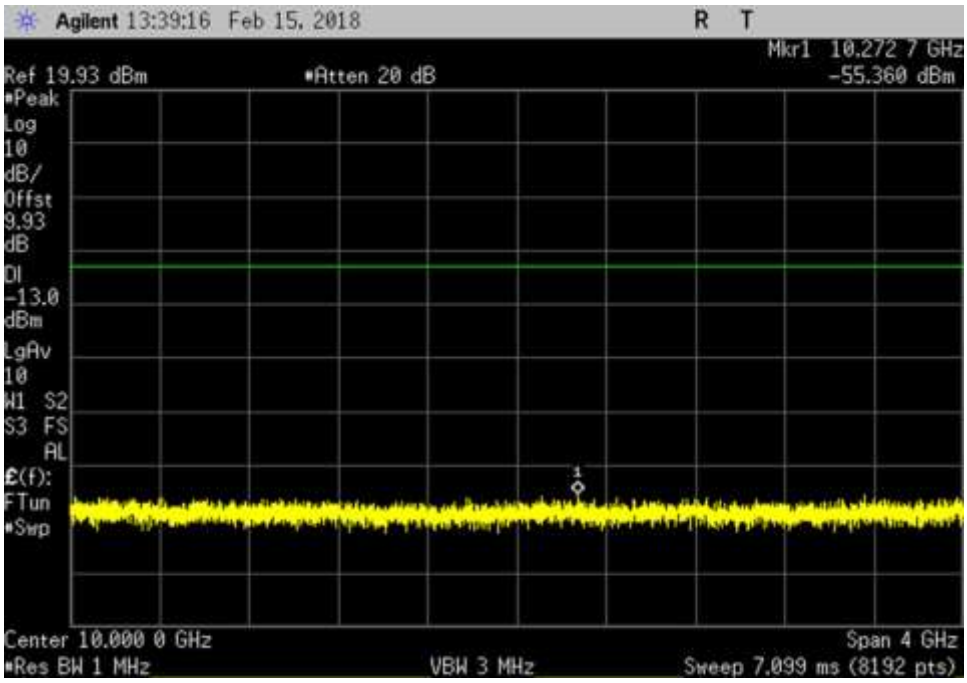
UL_1710-1755_ 30- 1709MHz



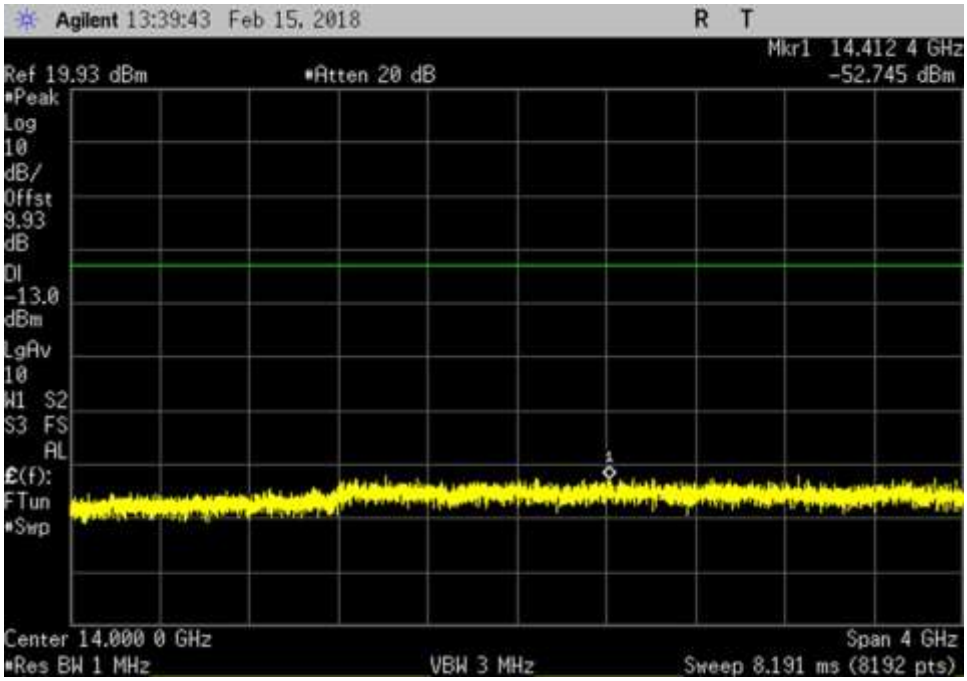
UL_1710-1755_ 1756- 4000MHz



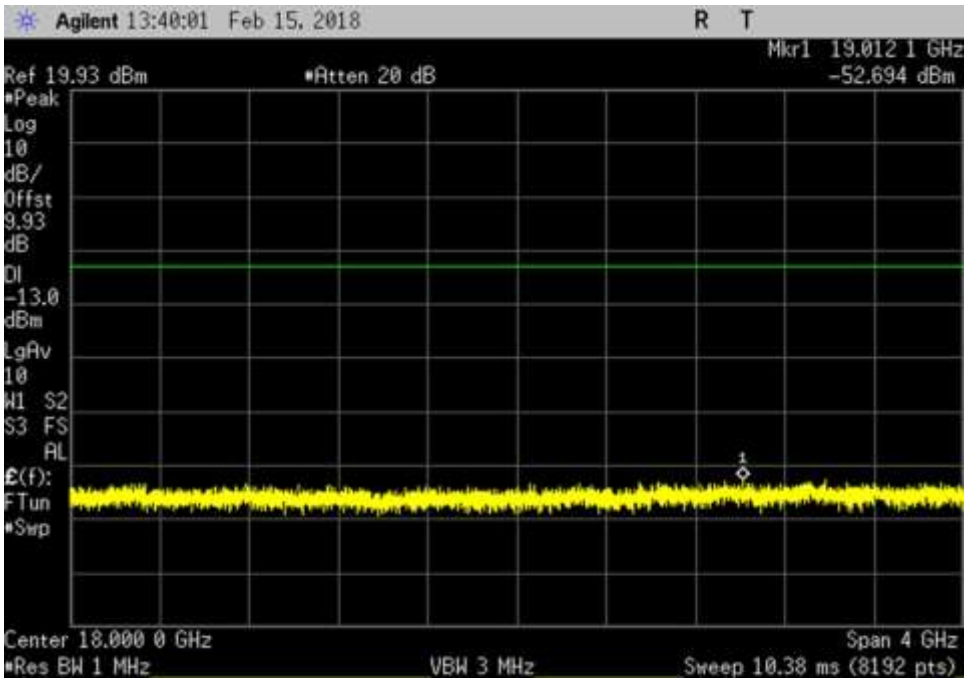
UL_1710-1755_ 4000- 8000MHz



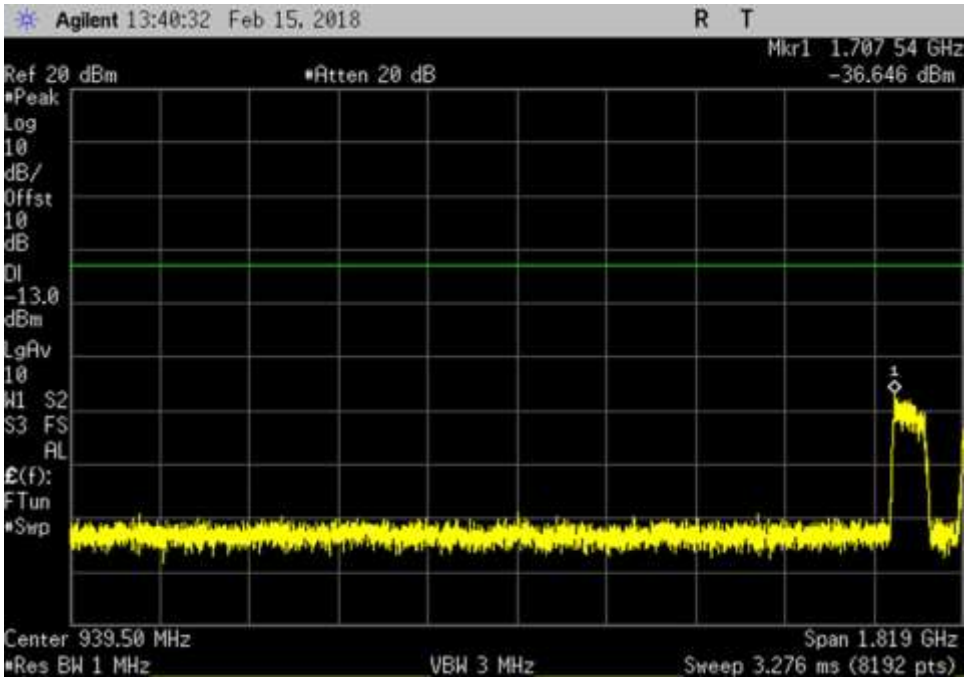
UL_1710-1755_ 8000- 12000MHz



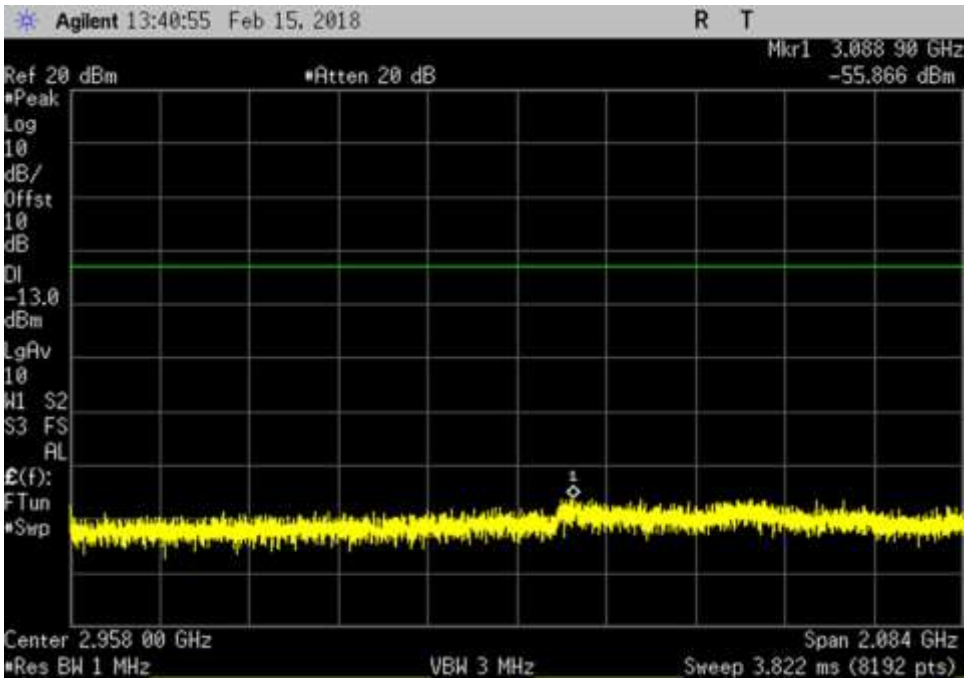
UL_1710-1755_ 12000- 16000MHz



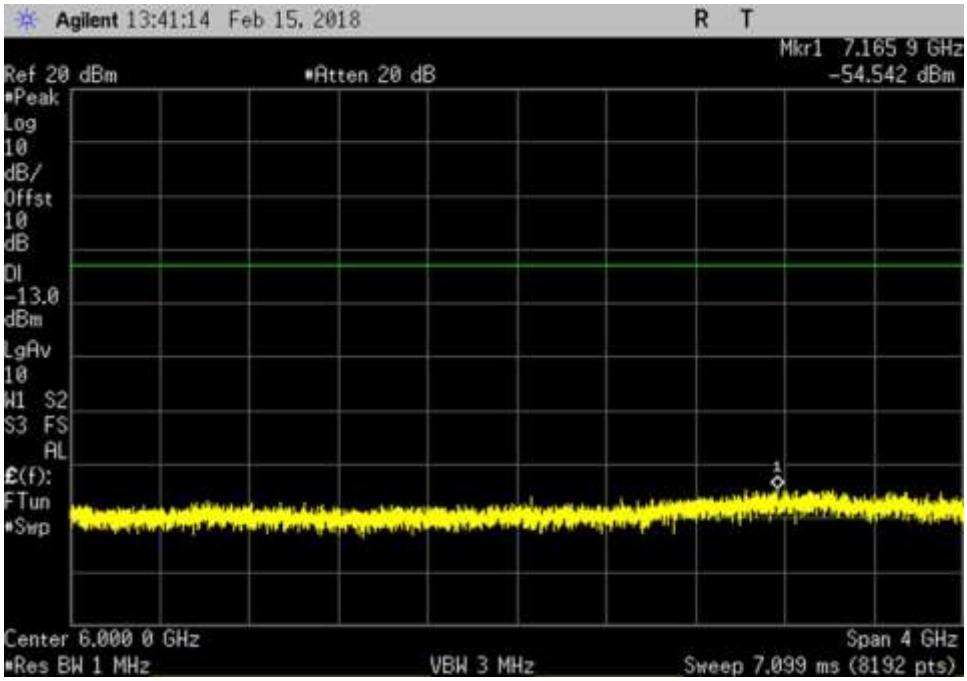
UL_1710-1755_ 16000- 20000MHz



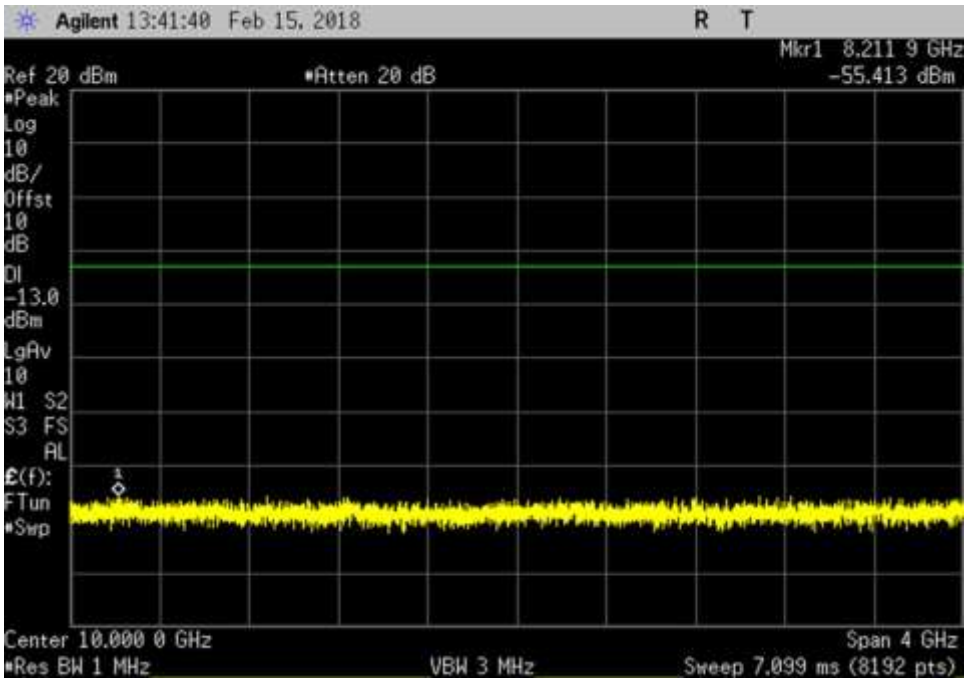
UL_1850-1915_ 30- 1849MHz



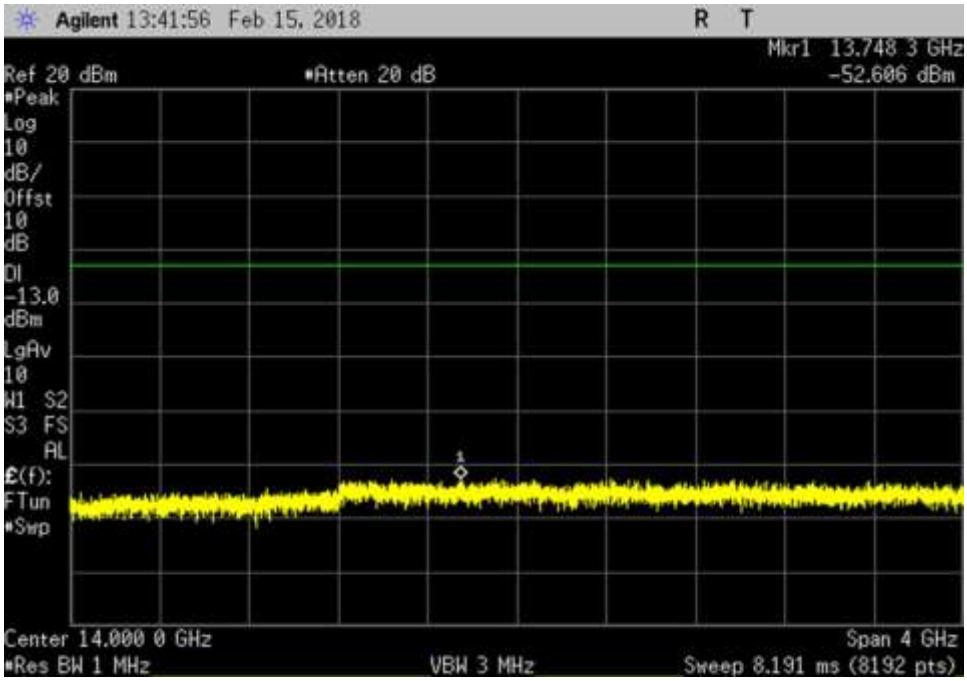
UL_1850-1915_ 1916- 4000MHz



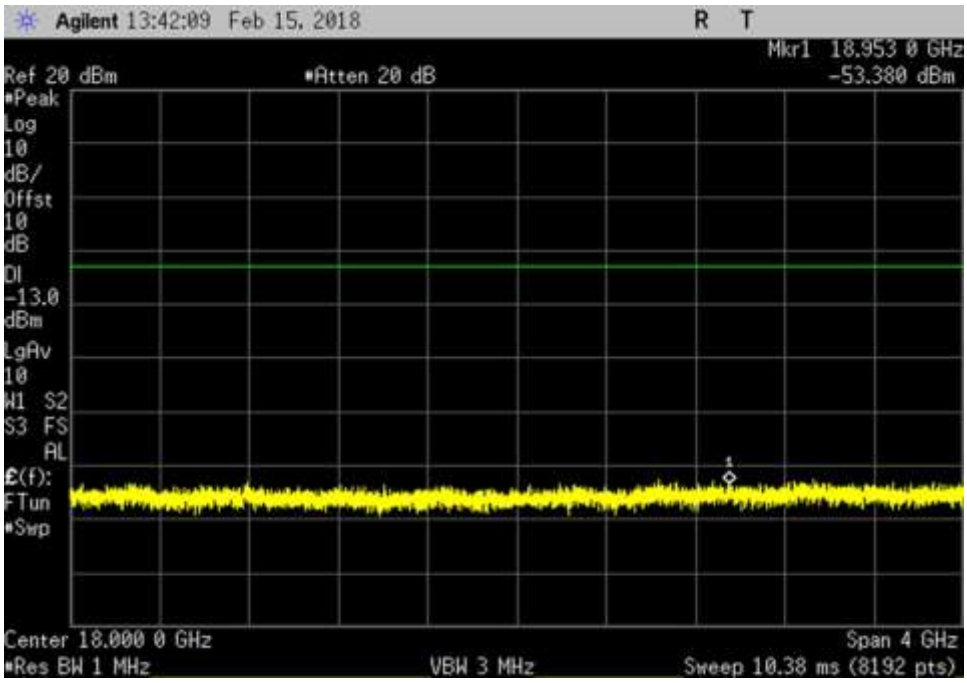
UL_1850-1915_ 4000- 8000MHz



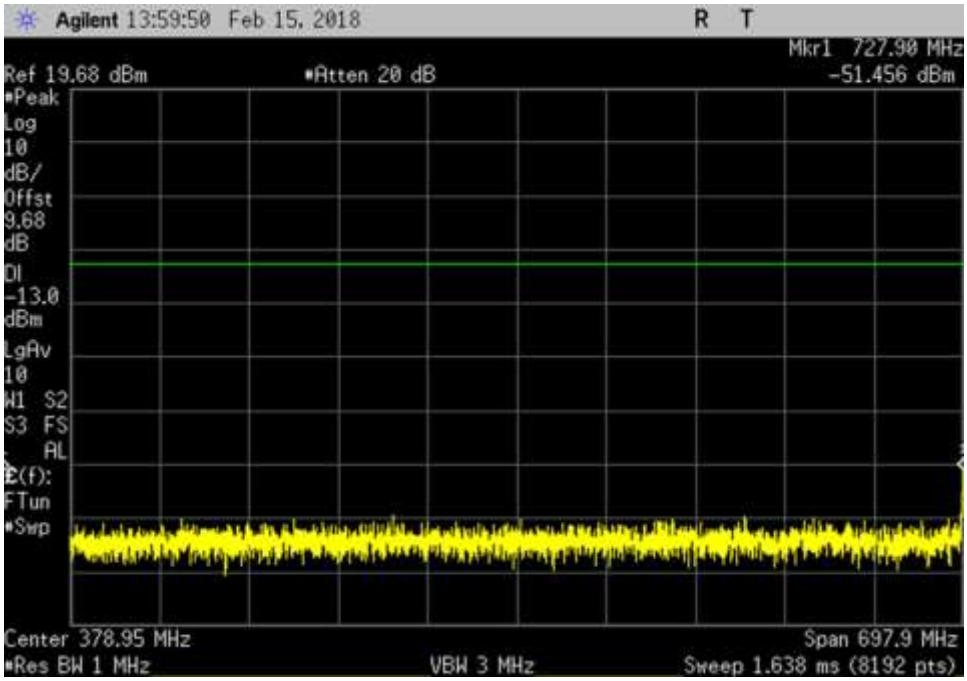
UL_1850-1915_ 8000- 12000MHz



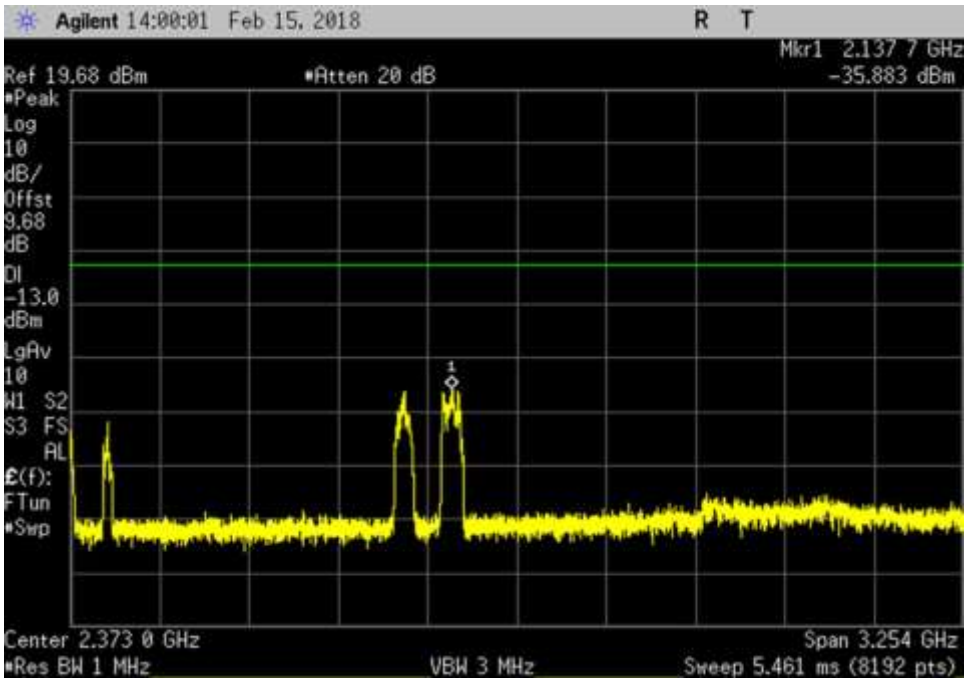
UL_1850-1915_ 12000- 16000MHz



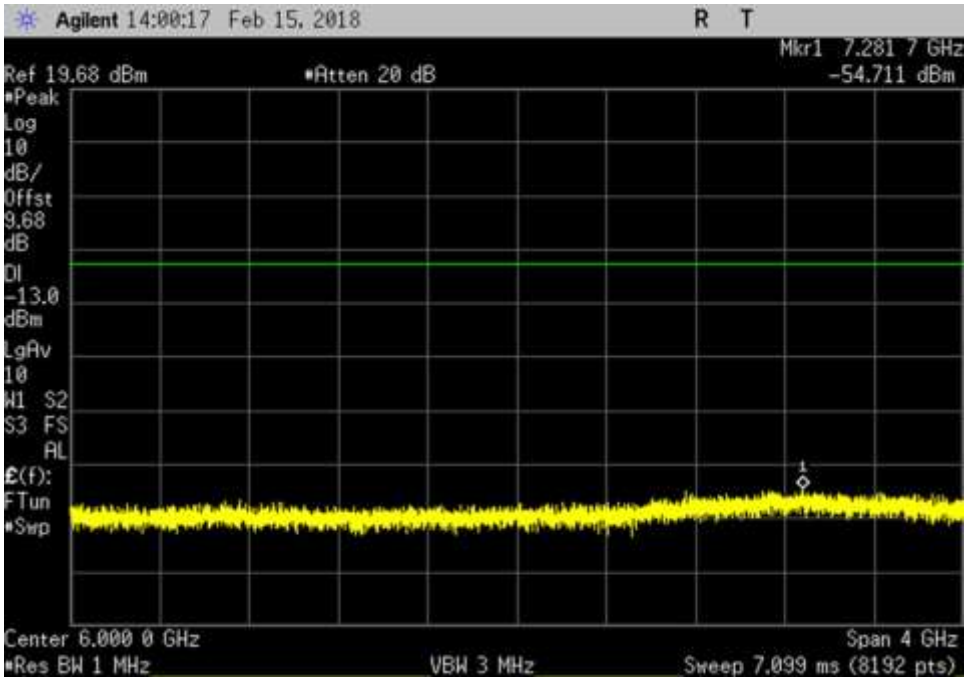
UL_1850-1915_ 16000- 20000MHz



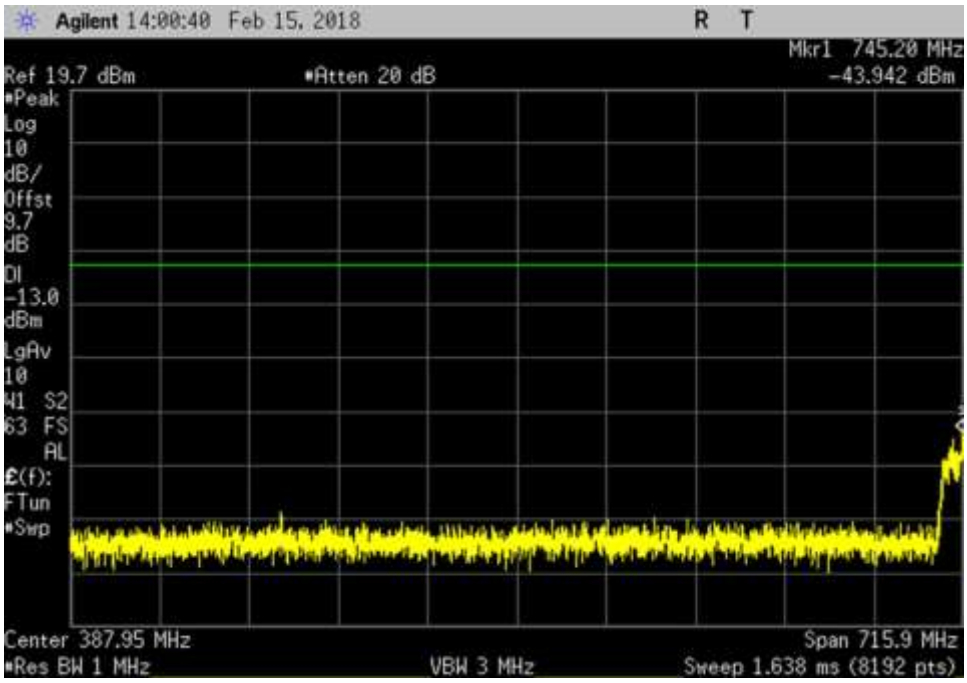
DL_728-746_ 30- 727.9MHz



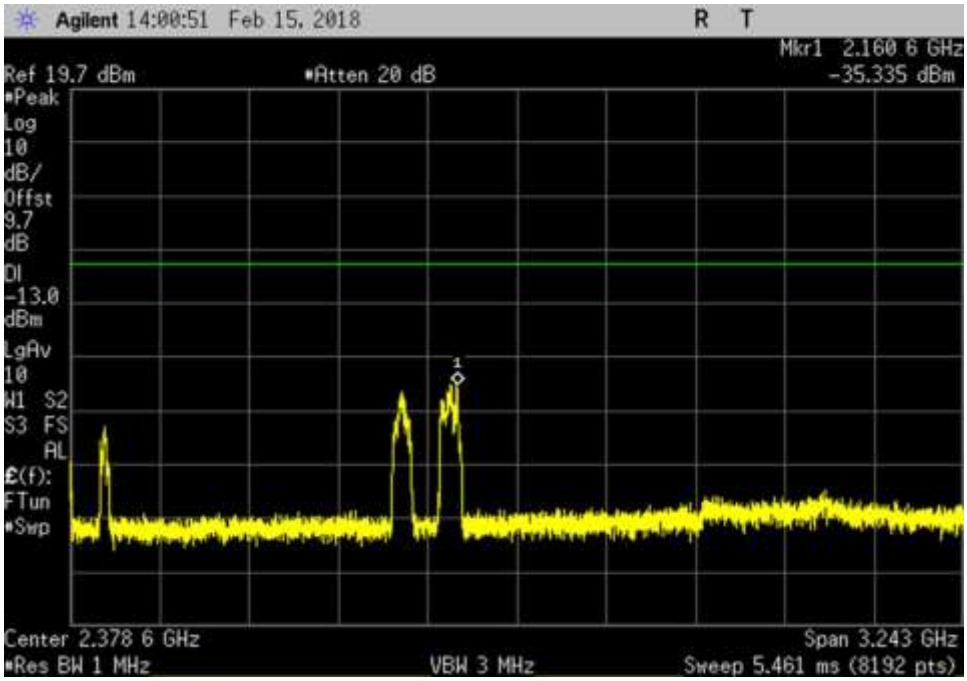
DL_728-746_ 746.1- 4000MHz



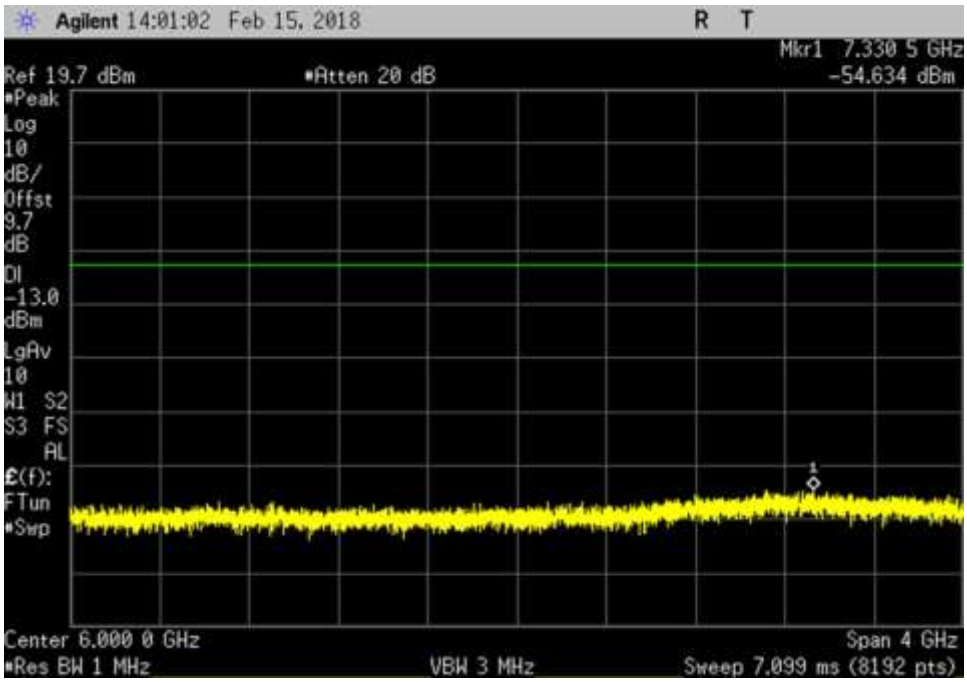
DL_728-746_ 4000- 8000MHz



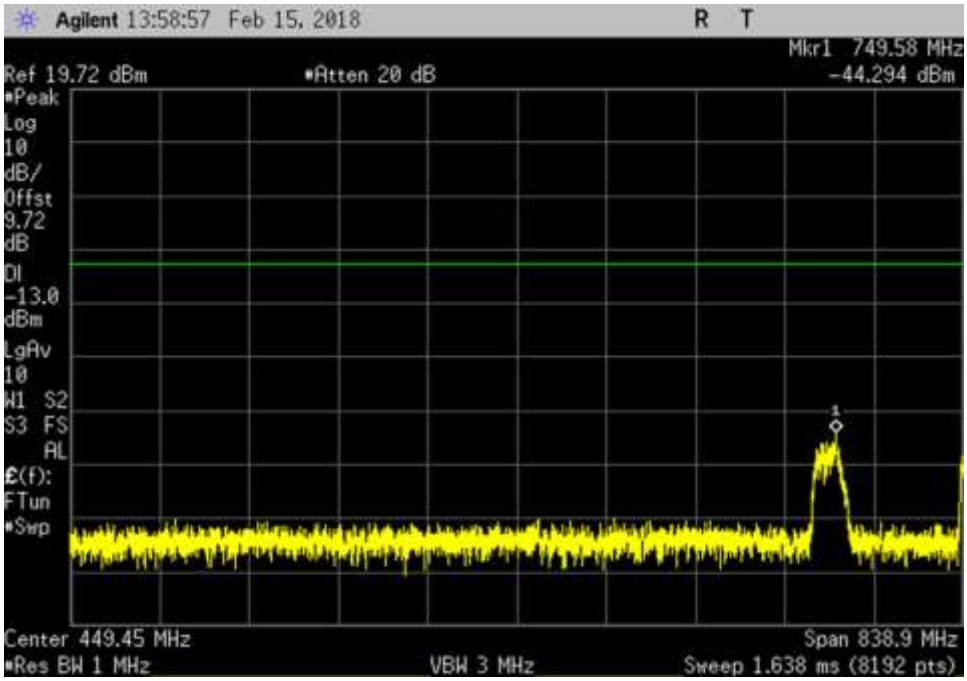
DL_746-757_ 30- 745.9MHz



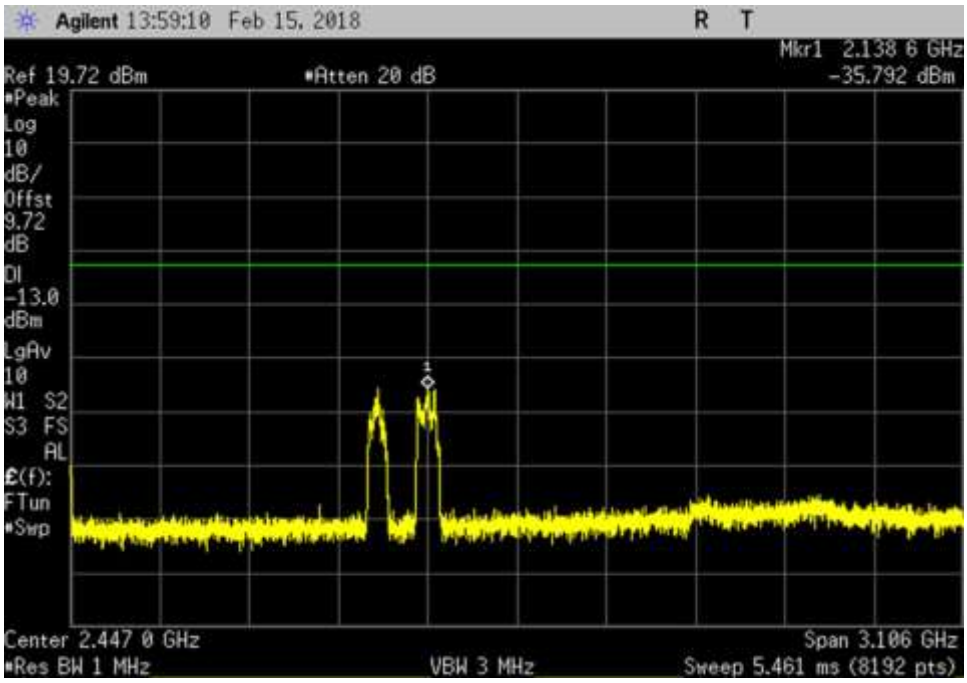
DL_746-757_ 757.1- 4000MHz



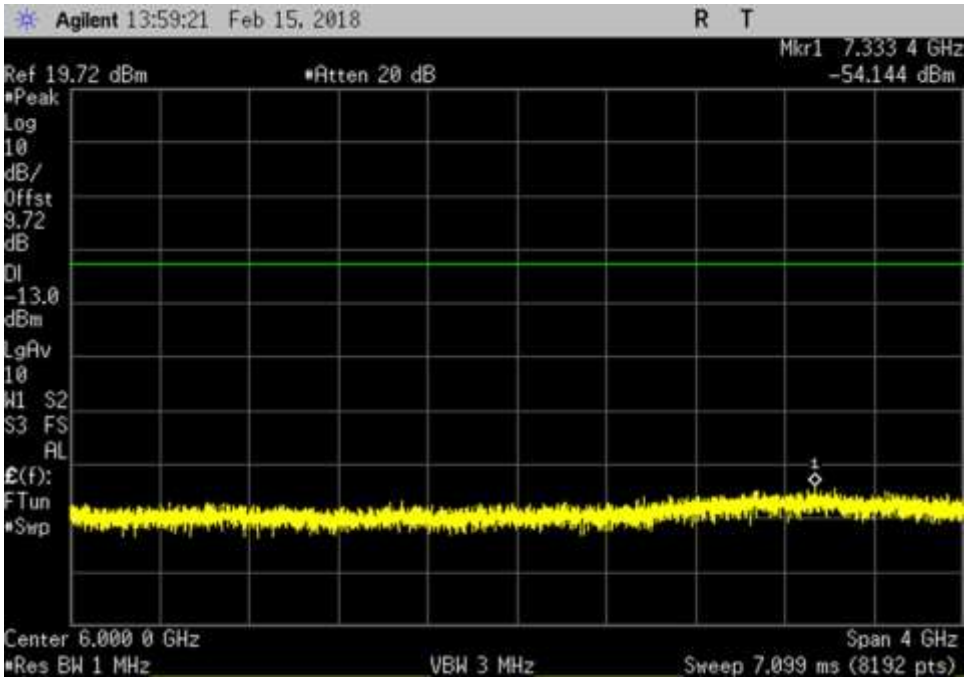
DL_746-757_ 4000- 8000MHz



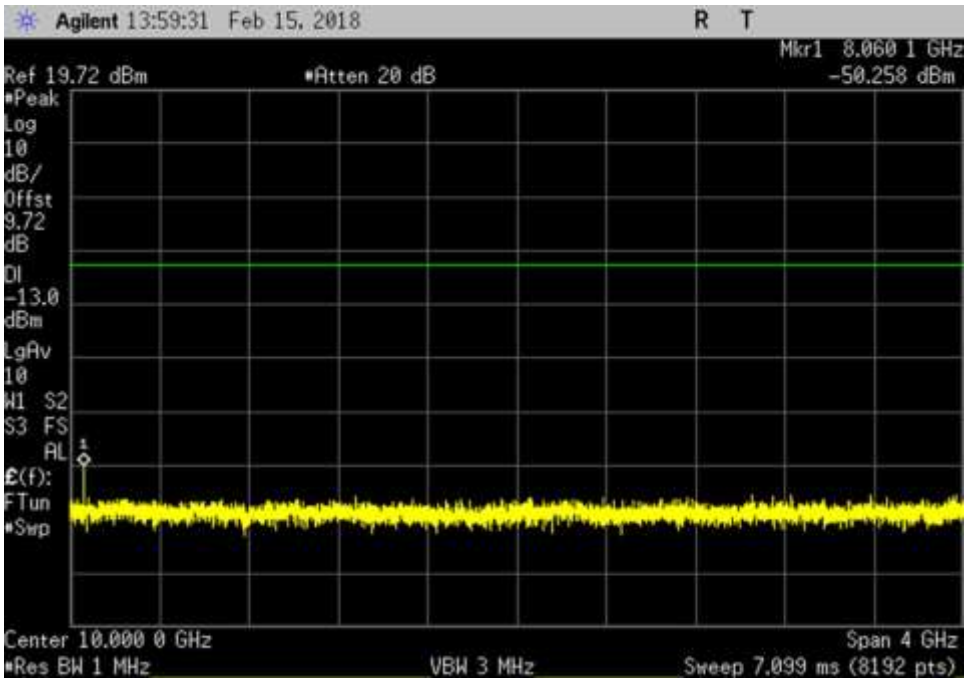
DL_869-894_ 30- 868.9MHz



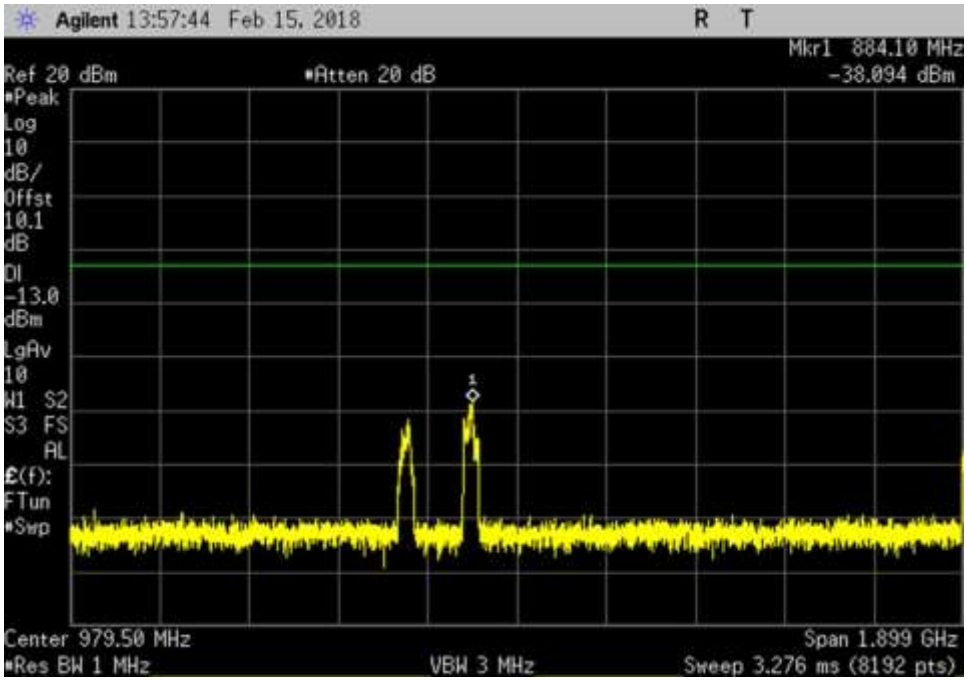
DL_869-894_ 894.1- 4000MHz



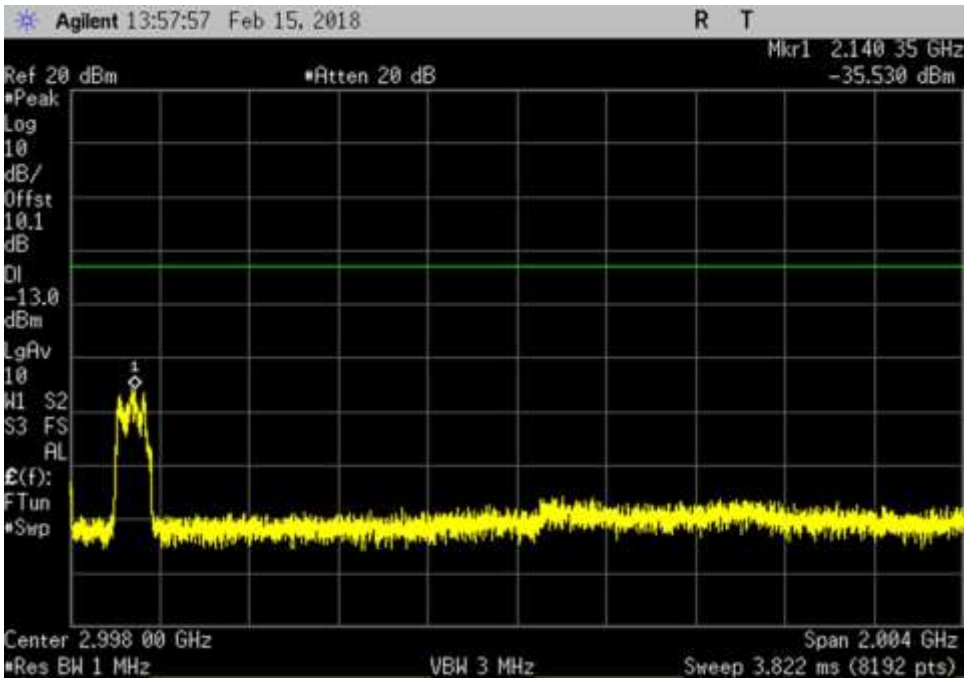
DL_869-894_ 4000- 8000MHz



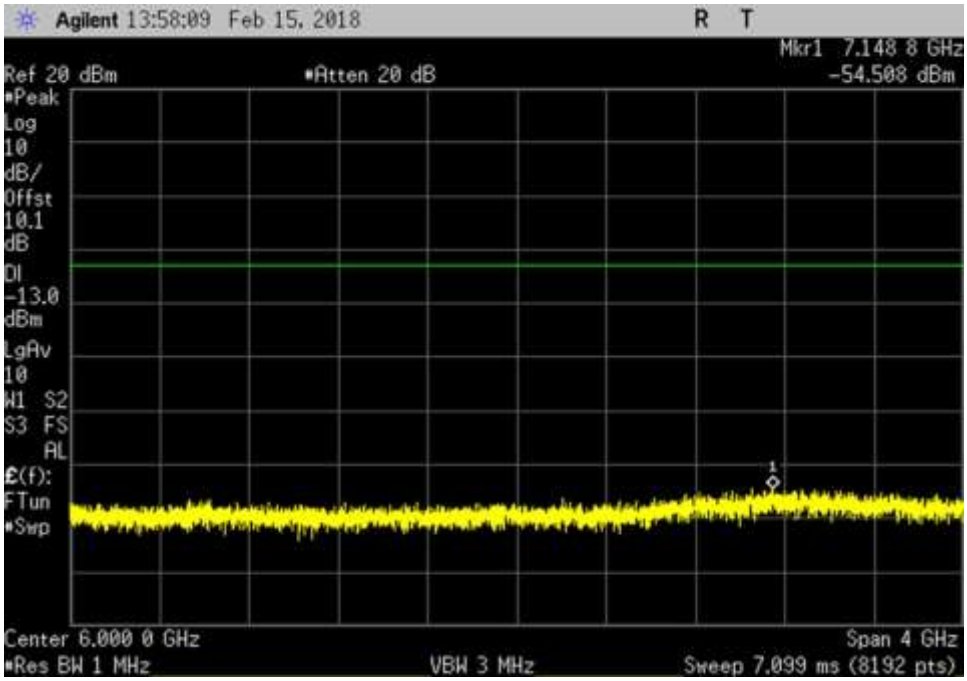
DL_869-894_ 8000- 12000MHz



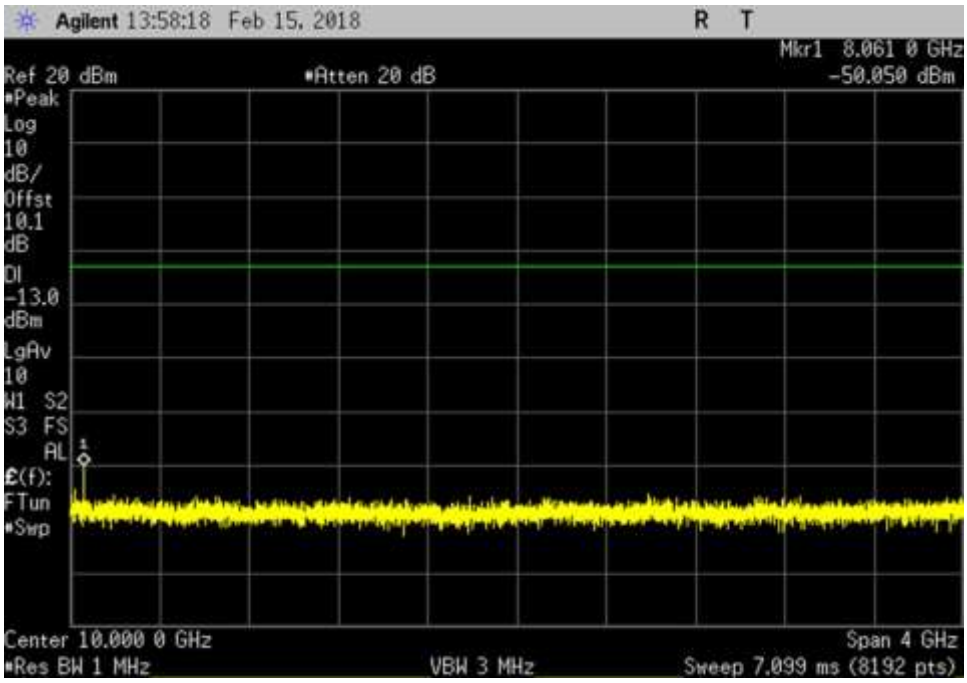
DL_1930-1995_ 30- 1929MHz



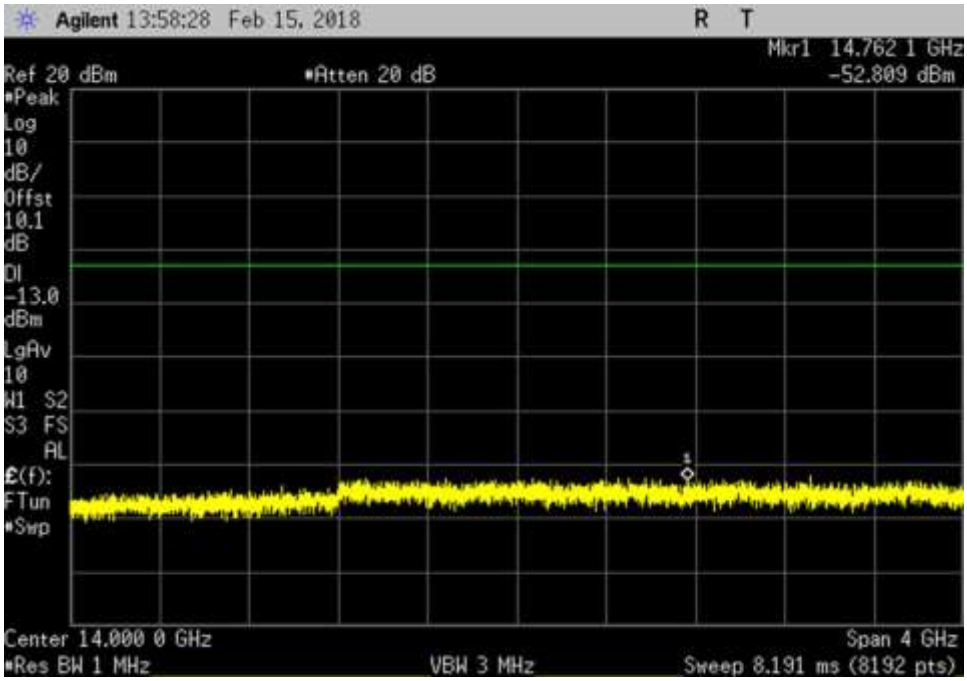
DL_1930-1995_ 1996- 4000MHz



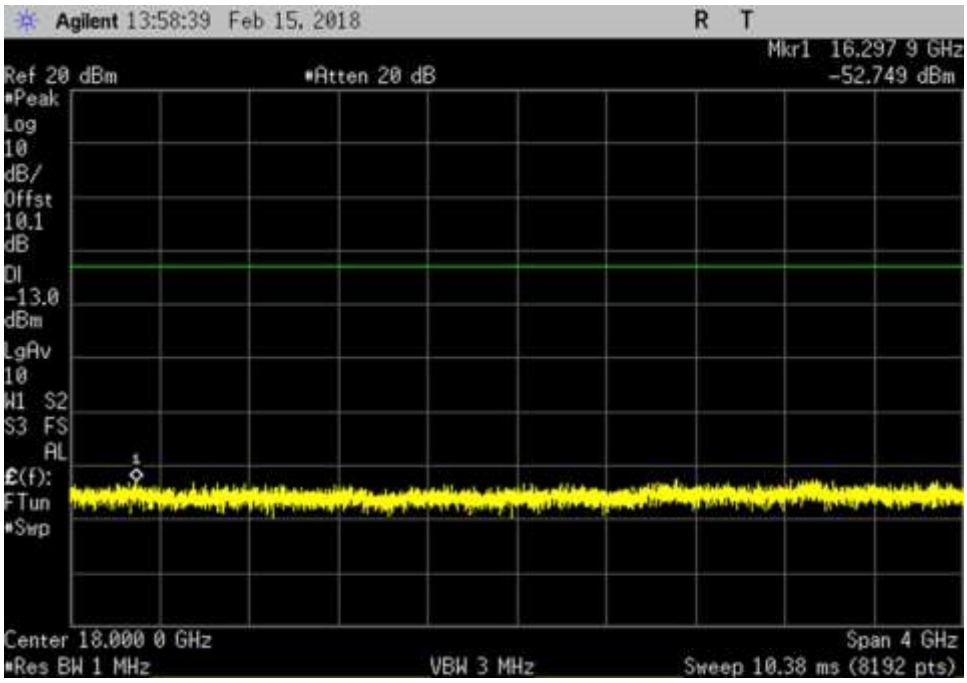
DL_1930-1995_ 4000- 8000MHz



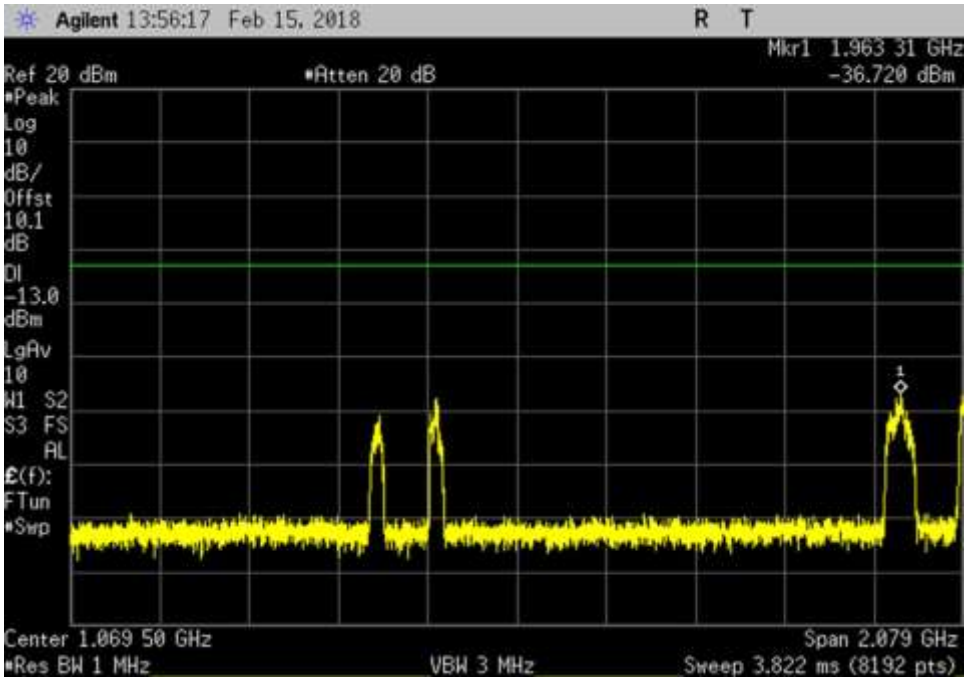
DL_1930-1995_ 8000- 12000MHz



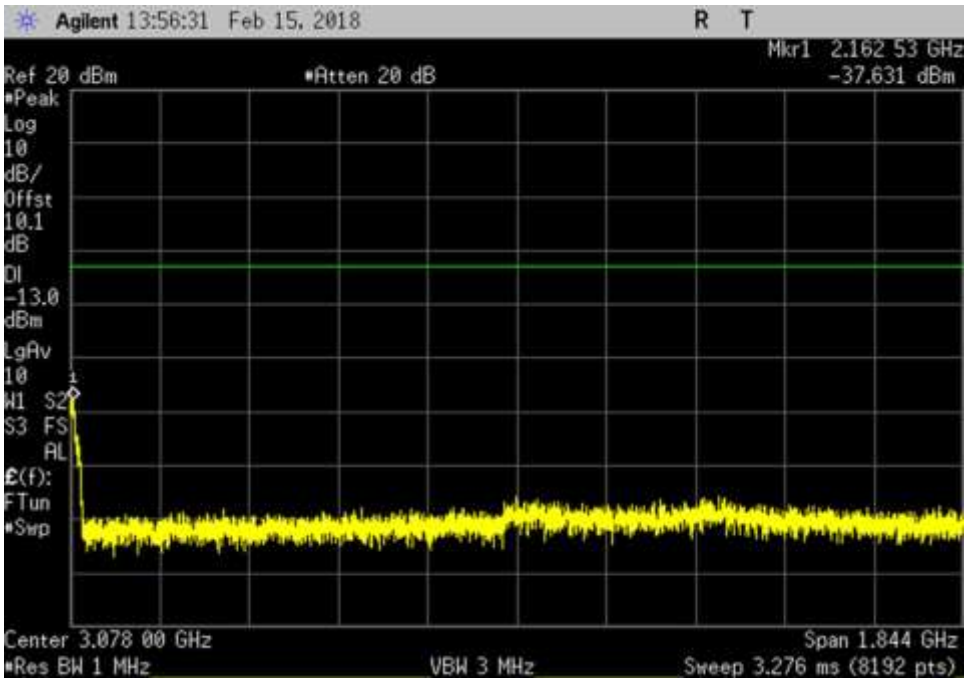
DL_1930-1995_ 12000- 16000MHz



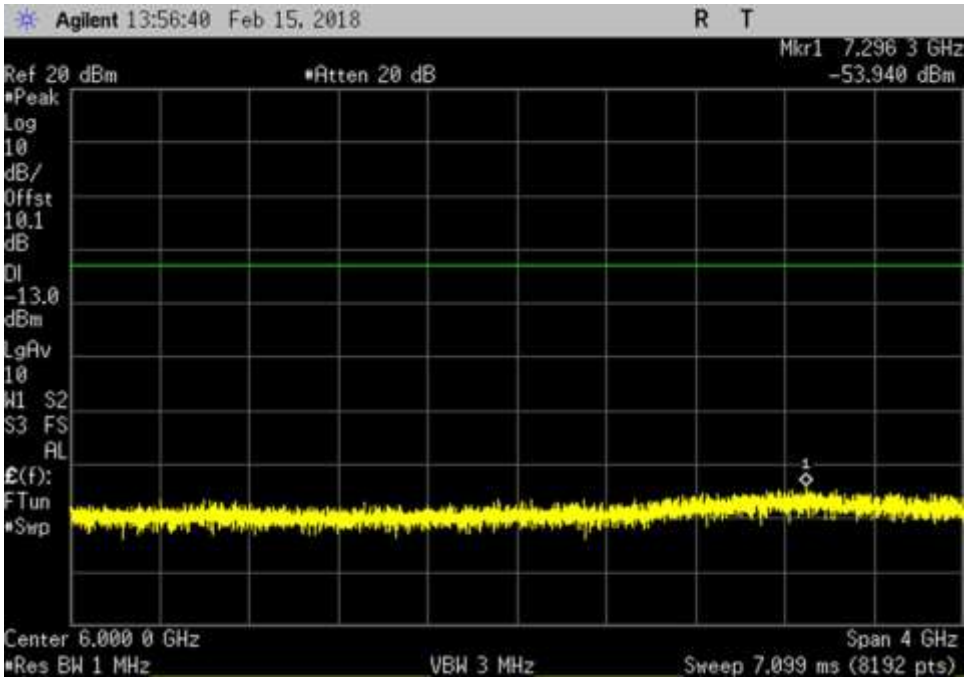
DL_1930-1995_ 16000- 20000MHz



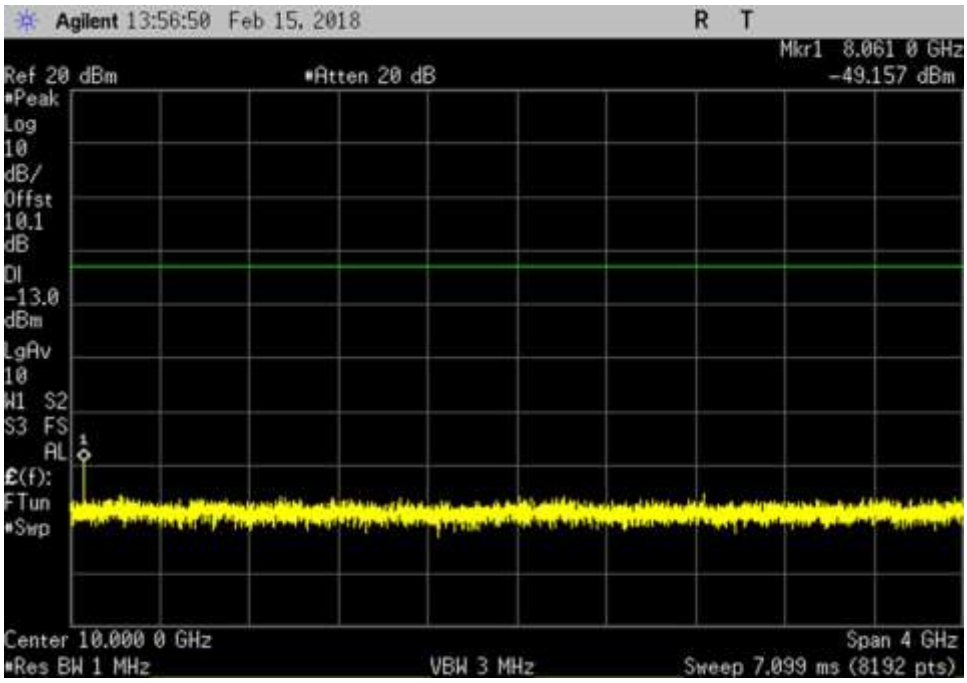
DL_2110-2155_ 30- 2109MHz



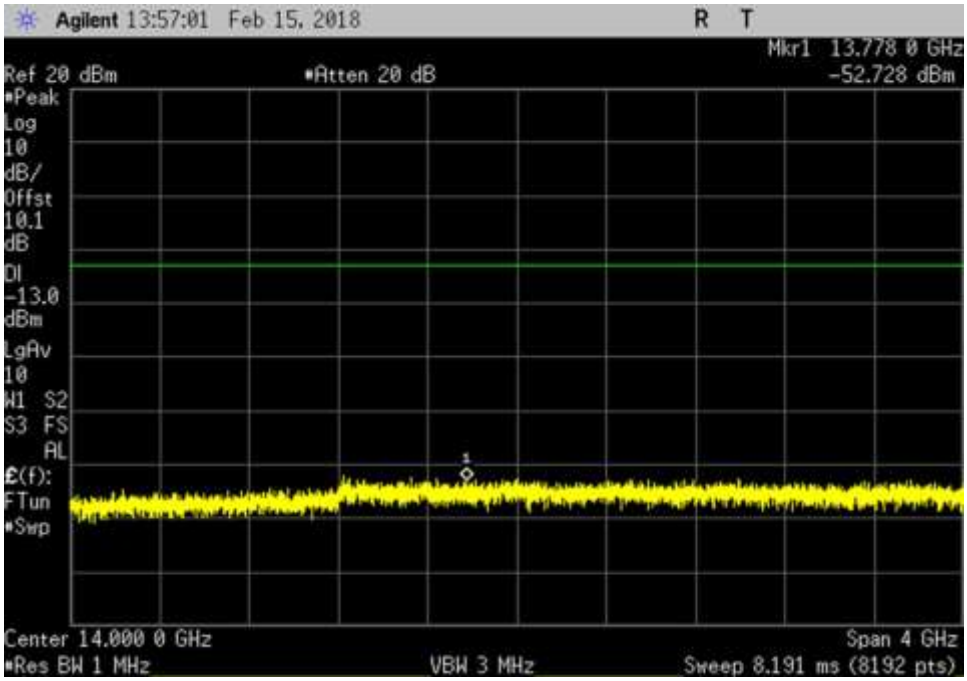
DL_2110-2155_ 2156- 4000MHz



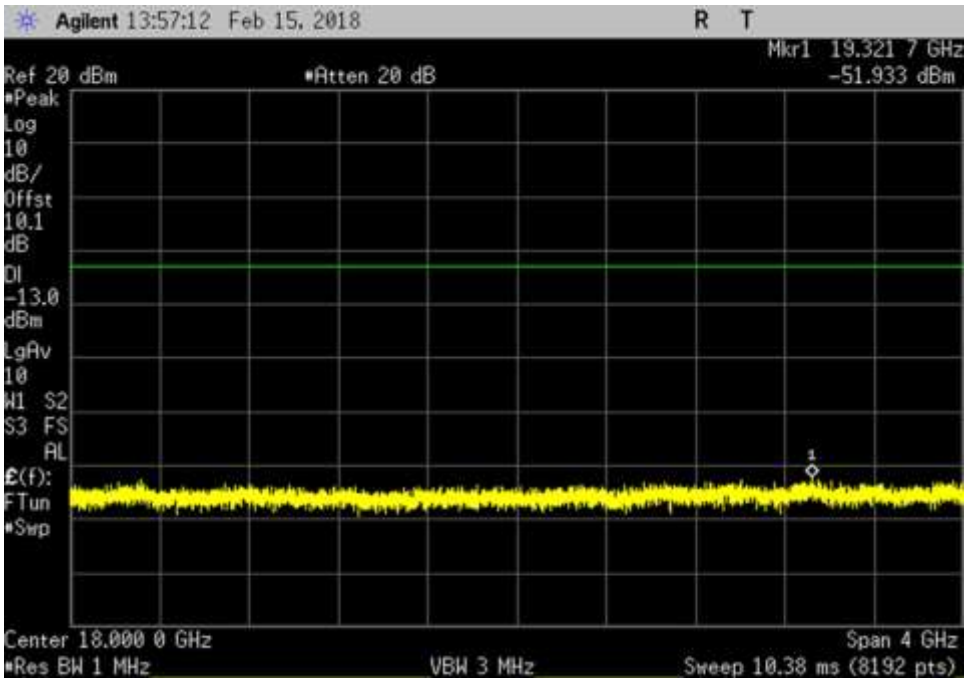
DL_2110-2155_ 4000- 8000MHz



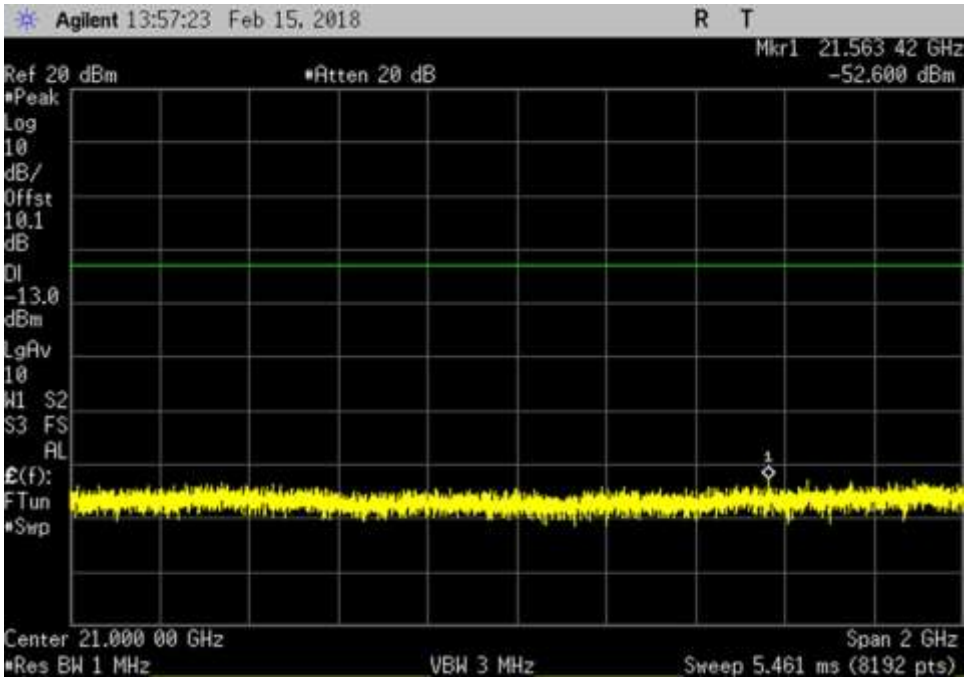
DL_2110-2155_ 8000- 12000MHz



DL_2110-2155_ 12000- 16000MHz



DL_2110-2155_ 16000- 20000MHz



DL_2110-2155_ 20000- 22000MHz

7.7 Noise limit

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
Customer:	Cellphone-Mate, Inc.
Specification:	**7.7 Noise Limit (Maximum Transmitter Noise Power Level / Variable UL Noise Timing)**
Work Order #:	**100827** Date: 02/16/18 and 02/19/18
Test Type:	**Conducted Emissions**
Tested By:	**Hieu Song 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:

02/16/18 Test environment conditions:
Temperature: 23.1°C
Relative Humidity: 61%
Pressure: 100.2kPa

02/19/18 Test environment conditions:
Temperature: 19.8°C
Relative Humidity: 50%
Pressure: 101.5kPa

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
C00082	Directional Coupler	MECA Electronics, Inc.	722-10-1.500V	9/18/2017	9/18/2019

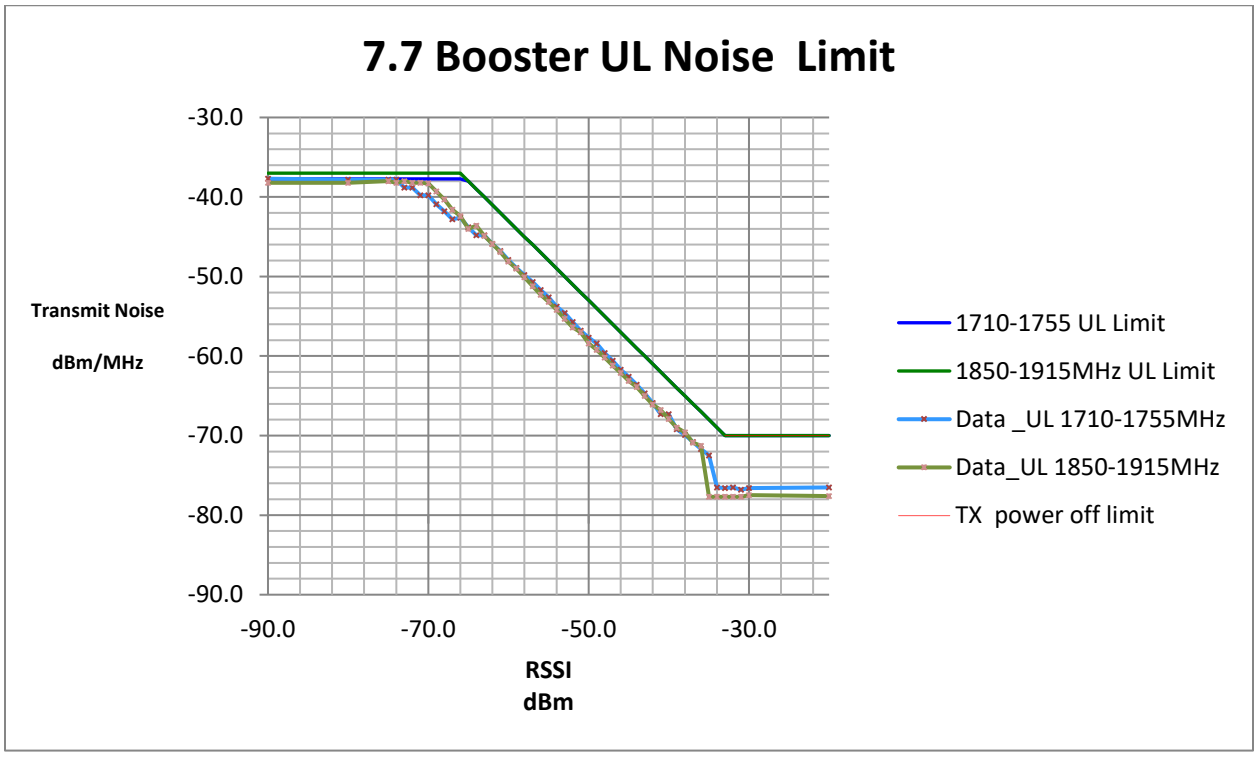
Summary of Results

7.7.1 Maximum transmitter noise power level

- 7.7.1 a-g: Maximum transmitter noise with 50-ohm shielded load

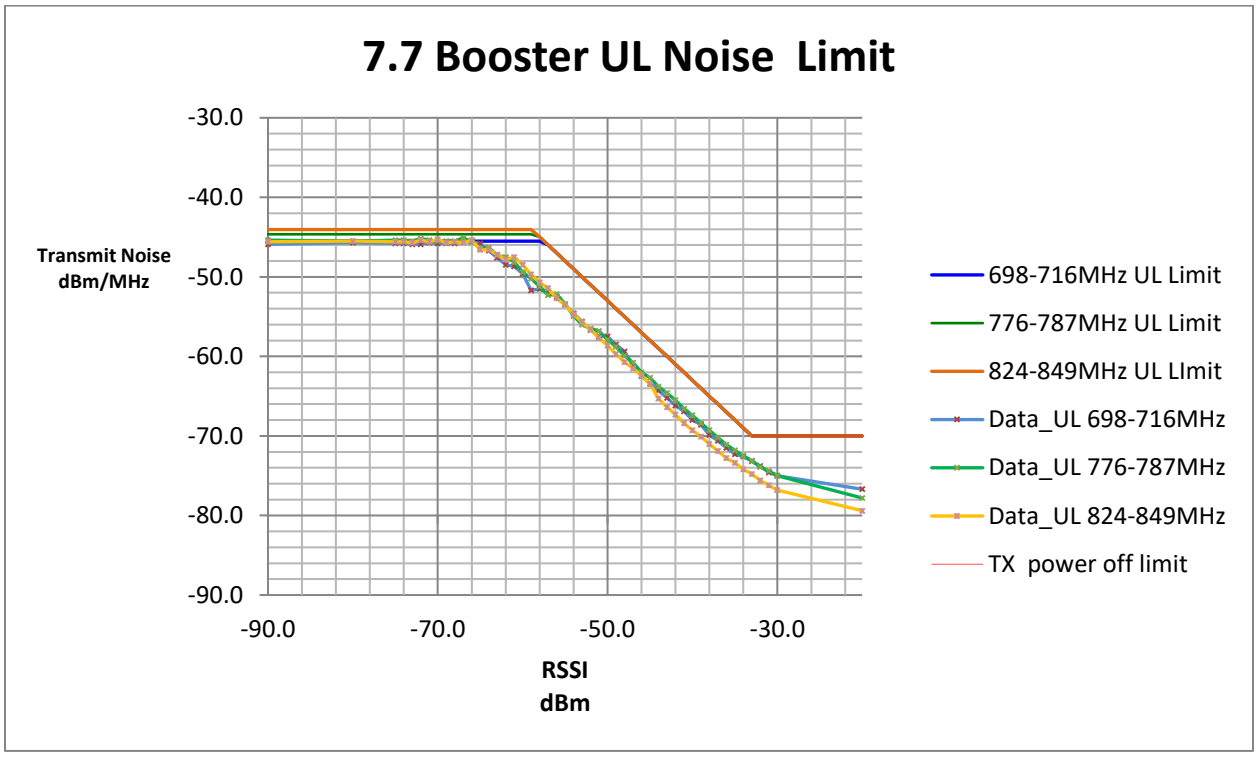
Maximum Noise Power			
Frequency	**Measured**	**Limit**	**Margin**
MHz	**dBm./MHz**	**dBm/MHz**	
UL 1710-1755	-38.3	-37.7	-0.6
UL 1850-1915	-37.6	-37.0	-0.6
UL 824-849	-45.1	-44.1	-1.0
UL 698-716	-45.5	-45.5	0.0
UL 776-787	-45.2	-44.6	-0.6
DL 2110-2155	-38.58	-37.70	-0.88
DL 1930-1995	-38.82	-37.00	-1.82
DL 869-894	-44.17	-44.10	-0.07
DL 728-746	**-46.12**	-45.50	**-0.62**
DL 746-757	-48.25	-44.60	-3.65

- 7.7.1 h-n: Maximum transmitter noise when varying the DL signal generator output level with a 4.1MHz AWGN signal



1710.0 - 1755.0 MHz					
		Limit			Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Fixed Booster	TX off	
-90.0	-37.7	-	-37.7	-	0.0
-80.0	-37.8	-	-37.7	-	-0.1
-49.0	-58.4	-54.0	-	-	-4.4
-40.0	-67.3	-63.0	-	-	-4.3
-30.0	-76.6	-	-	-70	-6.6
-20.0	-76.5	-	-	-70	-6.5

1850.0 - 1915.0MHz					
		Limit			Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Fixed Booster	TX off	
-90.0	-38.2	-	-37.0	-	-1.2
-73.0	-38.0	-	-37.0	-	-1.0
-38.0	-69.6	-65.0	-	-	-4.6
-36.0	-71.3	-67.0	-	-	-4.3
-30.0	-77.5	-	-	-70	-7.5
-20.0	-77.6	-	-	-70	-7.6



824.0 - 849.0MHz					
		Limit			Margin
RSSI (dBm)	Measured Noise (dBm/MHz)	RSSI Dependent	Fixed Booster	TX off	
-72.0	-45.4	-	-44.1	-	-1.3
-70.0	-45.3	-	-44.1	-	-1.2
-34.0	-74.2	-69.0	-	-	-5.2
-33.0	-74.8	-70.0	-	-	-4.8
-32.0	-75.6	-	-	-70	-5.6
-31.0	-76.2	-	-	-70	-6.2

698.0 - 716.0MHz					
		Limit			Margin
RSSI	Measured	RSSI Dependent	Fixed Booster	TX off	
(dBm)	Noise (dBm/MHz)				
-67.0	-45.6	-	-45.5	-	-0.1
-66.0	-45.6	-	-45.5	-	-0.1
-34.0	-72.6	-69.0	-	-	-3.6
-33.0	-73.2	-70.0	-	-	-3.2
-32.0	-73.8	-	-	-70	-3.8
-31.0	-74.6	-	-	-70	-4.6

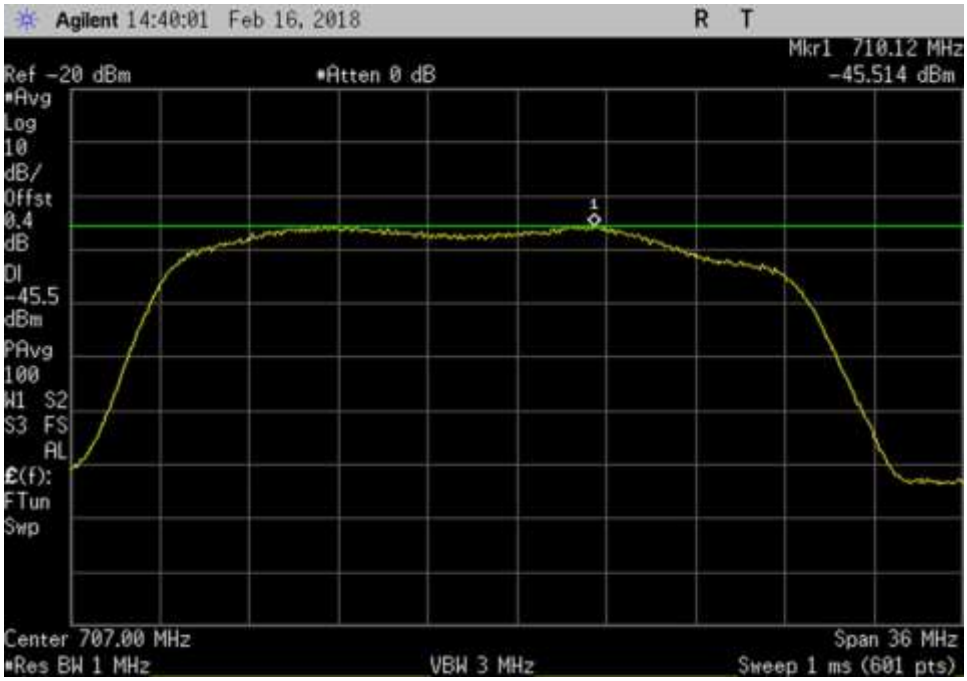
776.0 - 787.0MHz					
		Limit			Margin
RSSI	Measured	RSSI Dependent	Fixed Booster	TX off	
(dBm)	Noise (dBm/MHz)				
-90.0	-45.4	-	-44.6	-	-0.8
-67.0	-45.1	-	-44.6	-	-0.5
-34.0	-72.5	-69.0	-	-	-3.5
-33.0	-73.1	-70.0	-	-	-3.1
-32.0	-73.9	-	-	-70	-3.9
-31.0	-74.4	-	-	-70	-4.4

7.7.2 Variable uplink noise timing

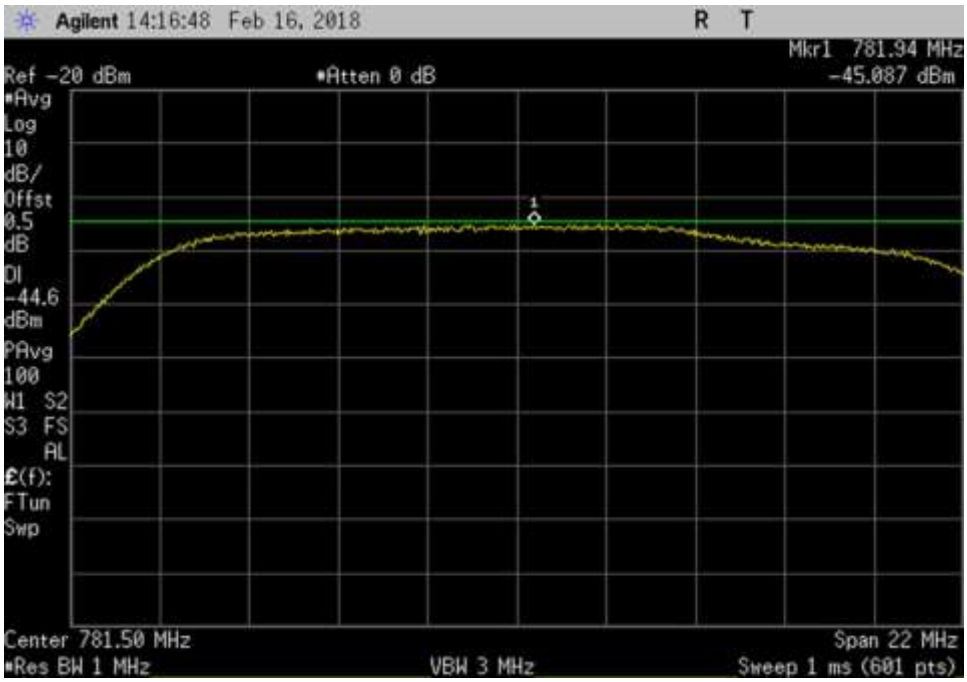
Uplink Noise timing		
Frequency	Measured	Limit
MHz	Sec	sec
UL1710-1755	0.40	3.00
UL1850-1915	0.30	3.00
UL824-849	0.07	3.00
UL 698-716	0.10	3.00
UL776-787	0.07	3.00

7.7.1 Maximum Transmitter Noise Power Level

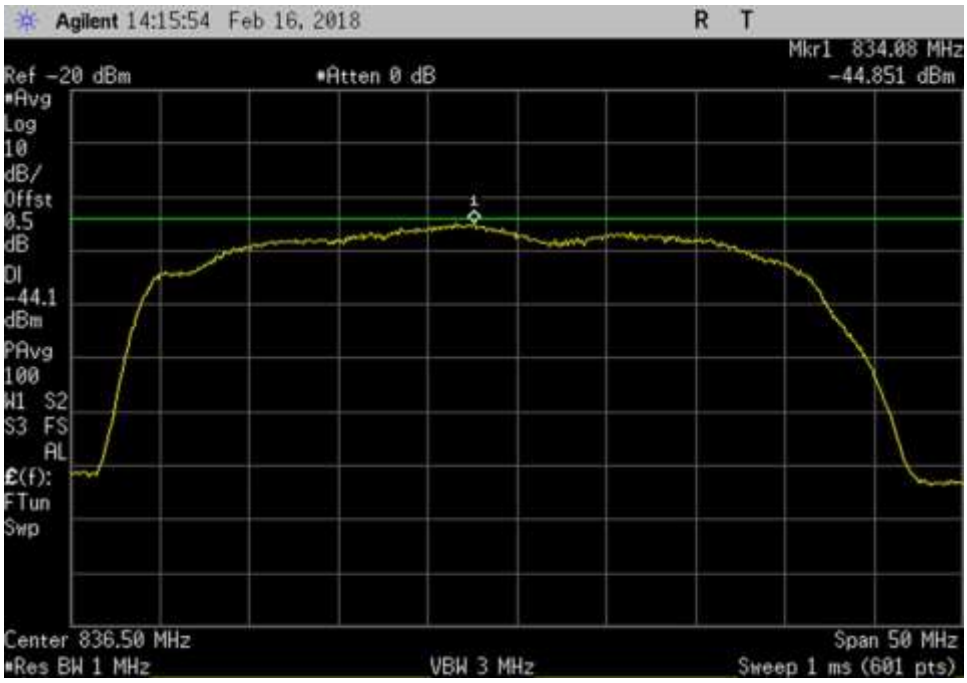
Plots



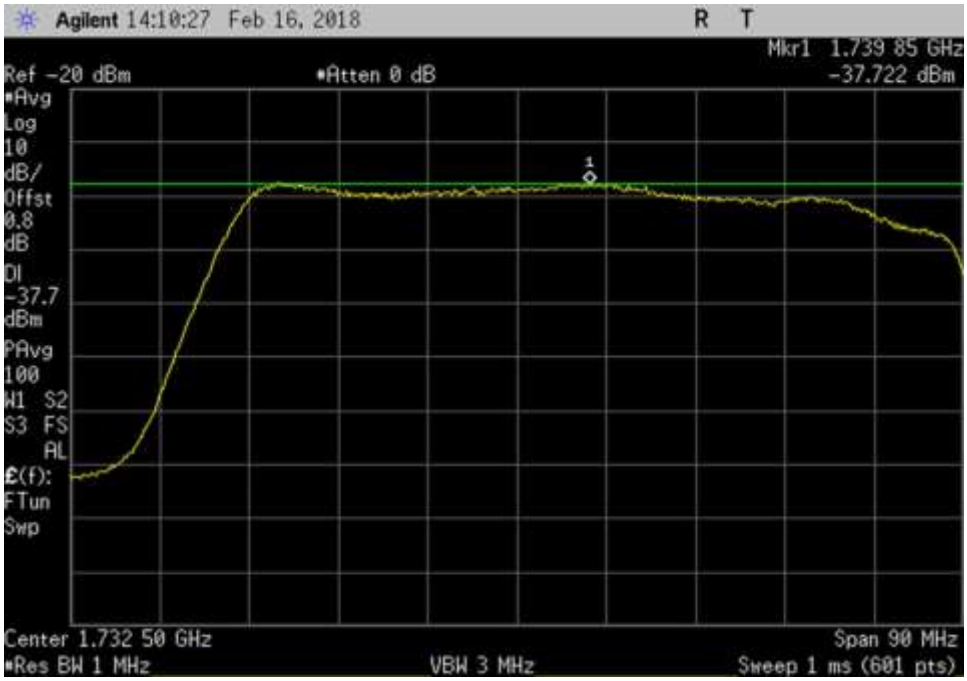
UL_698-716_ 707MHz



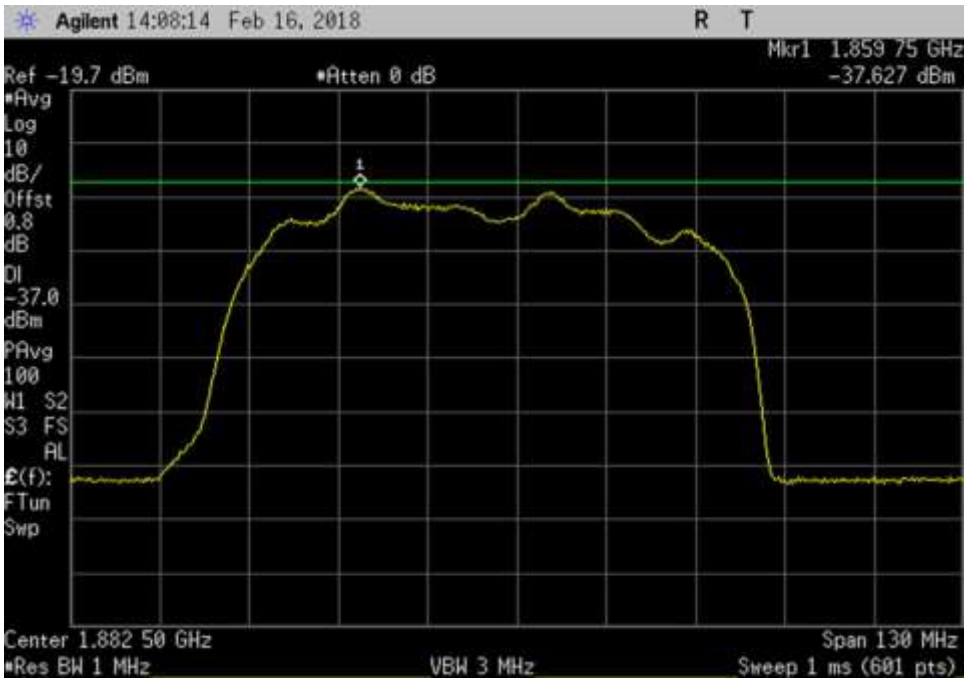
UL_776-787_ 781.5MHz



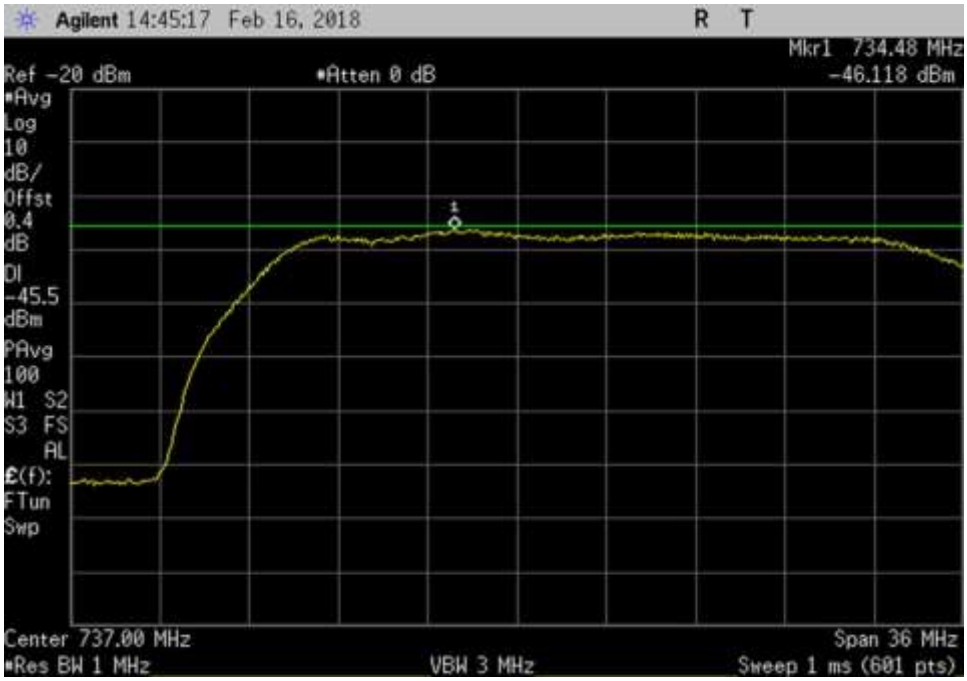
UL_824-849_ 836.5MHz



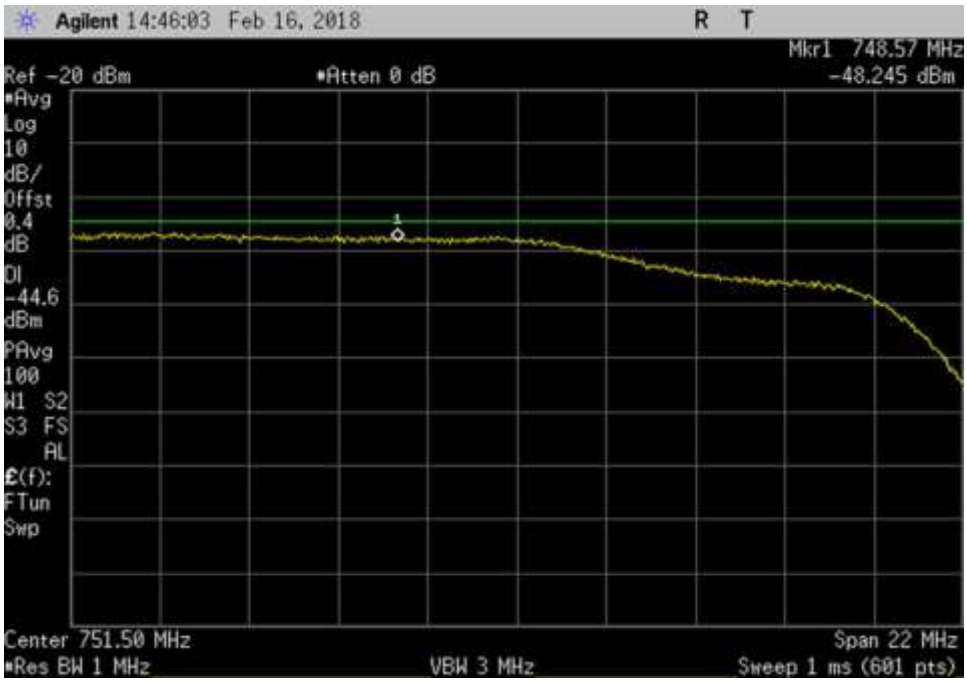
UL_1710-1755_ 1732.5MHz



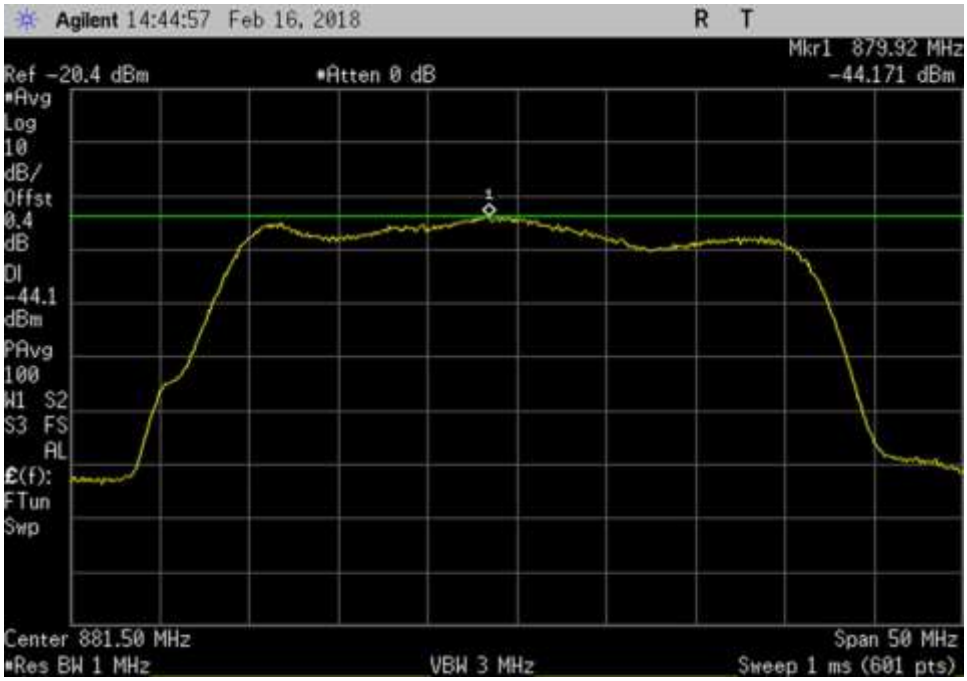
UL_1850-1915_ 1882.5MHz



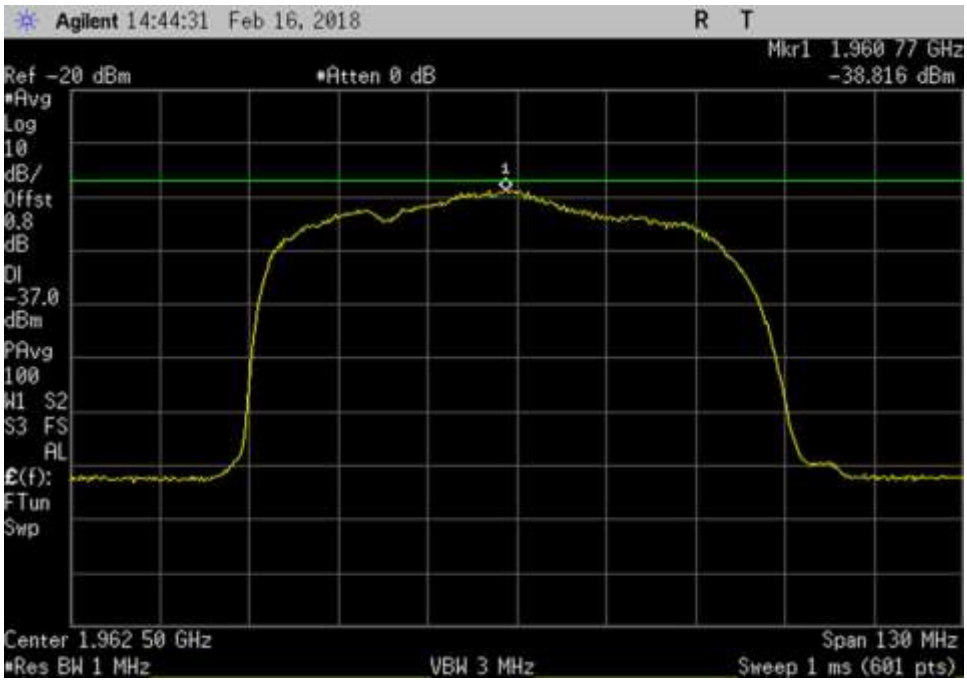
DL_728-746_ 737MHz



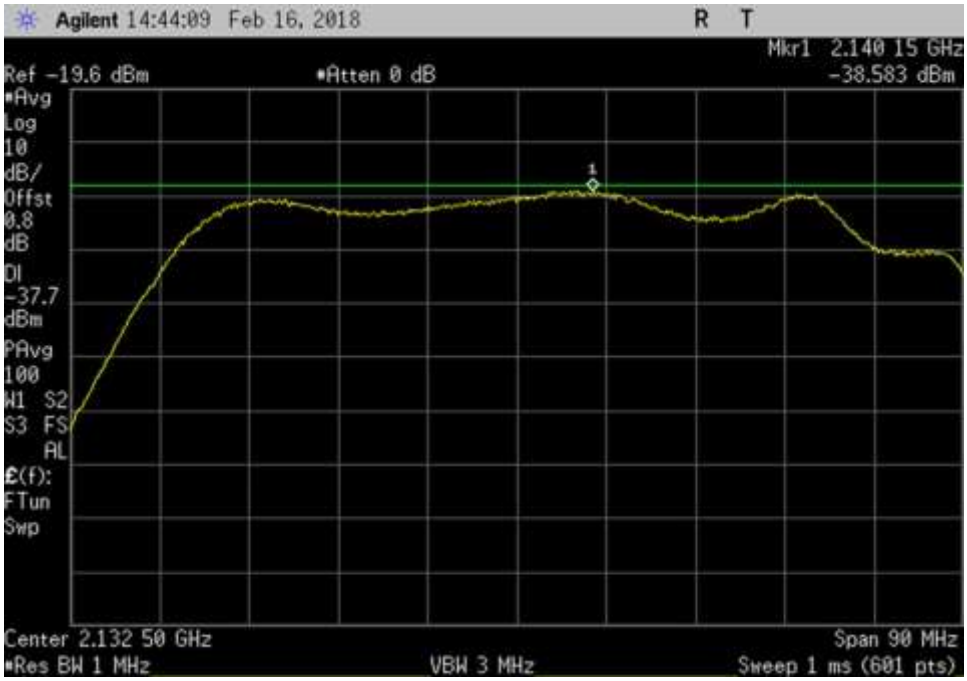
DL_746-757_ 751.5MHz



DL_869-894_ 881.5MHz



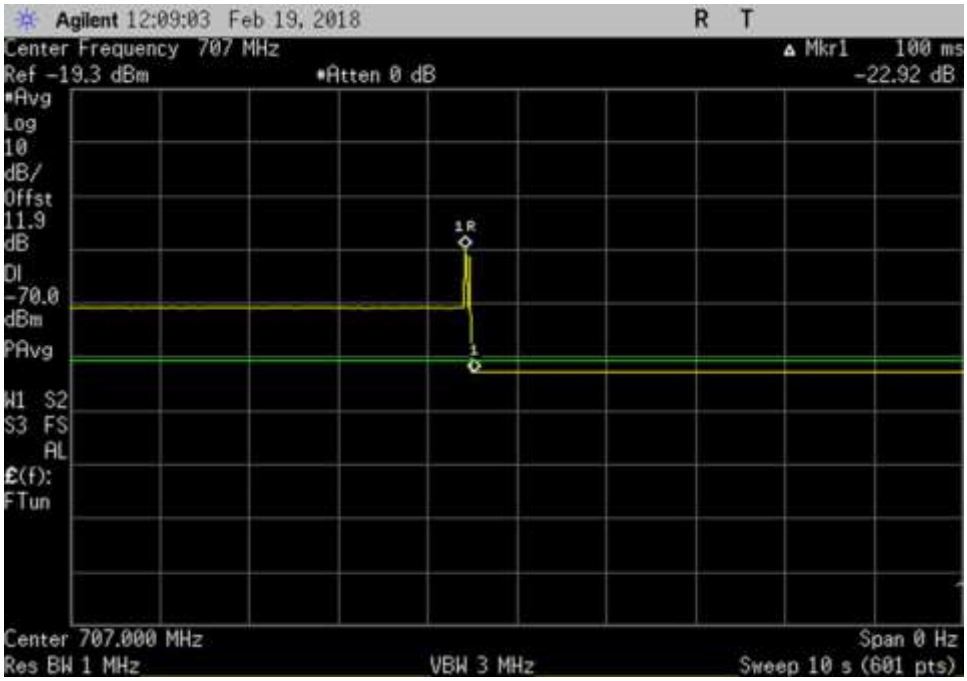
DL_1930-1995_ 1962.5MHz



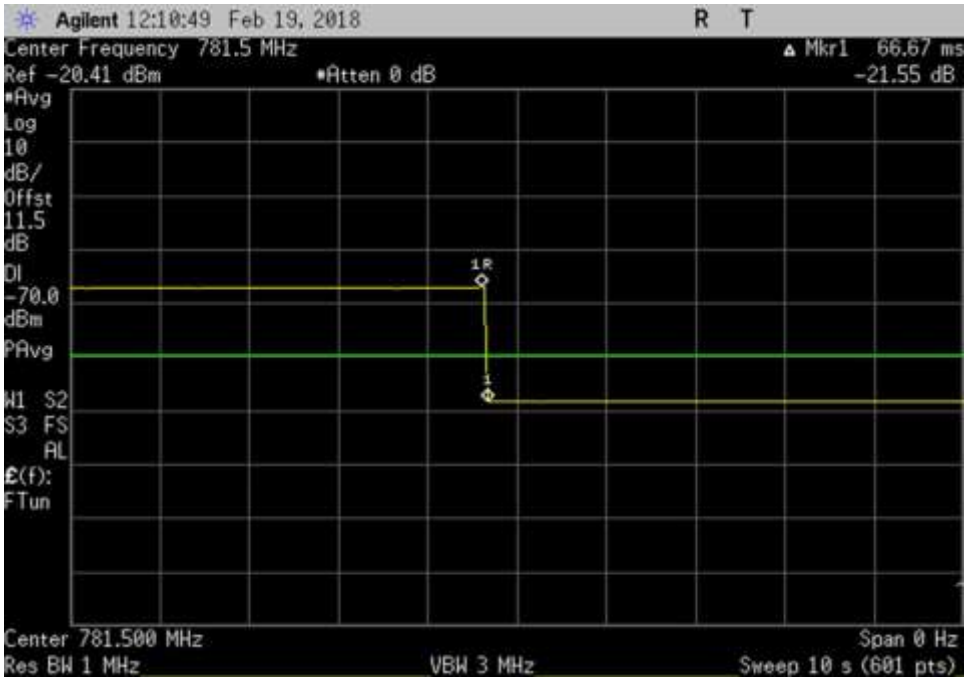
DL_2110-2155_ 2132.5MHz

7.7.2 Variable UL Noise Timing

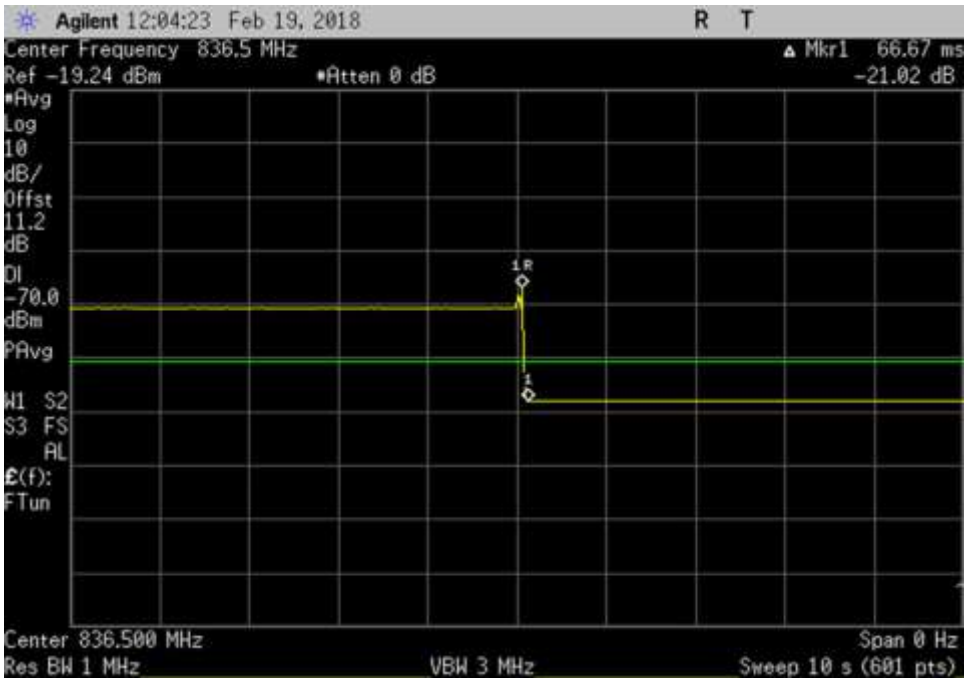
Plots



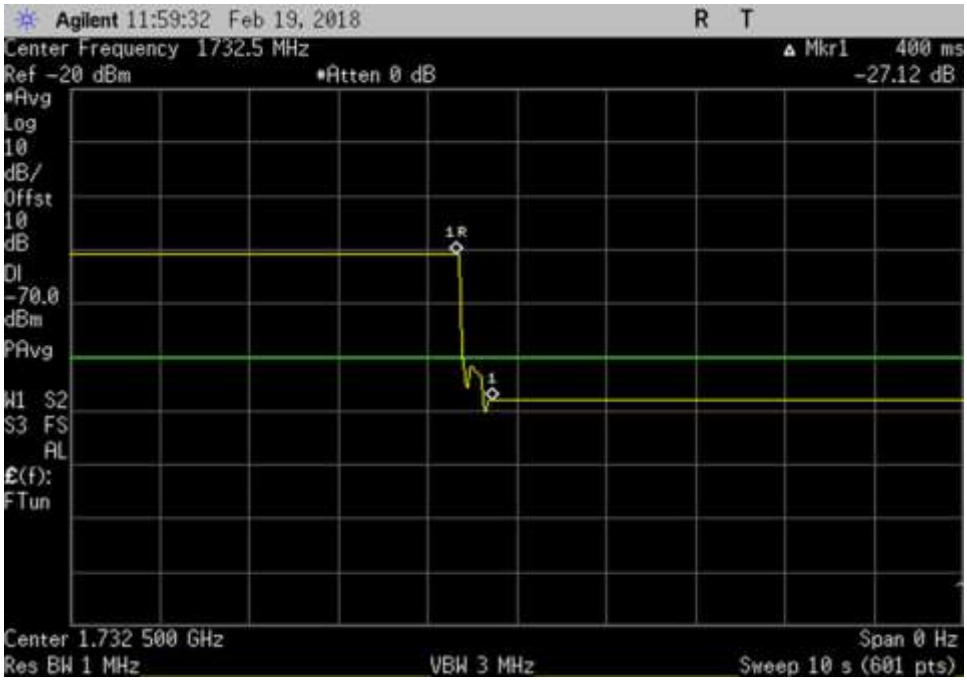
UL_698-716_ 707MHz_Var



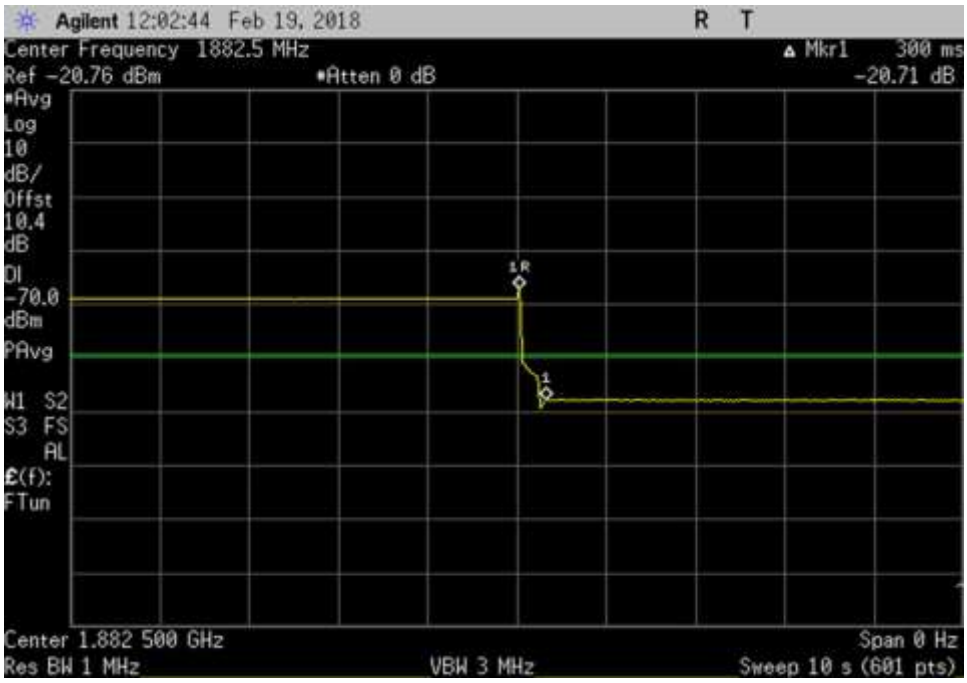
UL_776-787_ 781.5MHz_Var



UL_824-849_ 836.5MHz_Var



UL_1710-1755_ 1732.5MHz_Var



UL_1850-1915_ 1882.5MHz_Var

7.8 Uplink Inactivity

Test Conditions / Setup

Test Location:	CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170
Customer:	Cellphone-Mate, Inc.
Specification:	**7.8 Uplink Inactivity**
Work Order #:	**100827** Date: 02/15/18
Test Type:	**Conducted Emissions**
Tested By:	**Hieu Song 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: 19.6°C
Relative Humidity: 43%
Pressure: 101.6 kPa

Test Equipment:

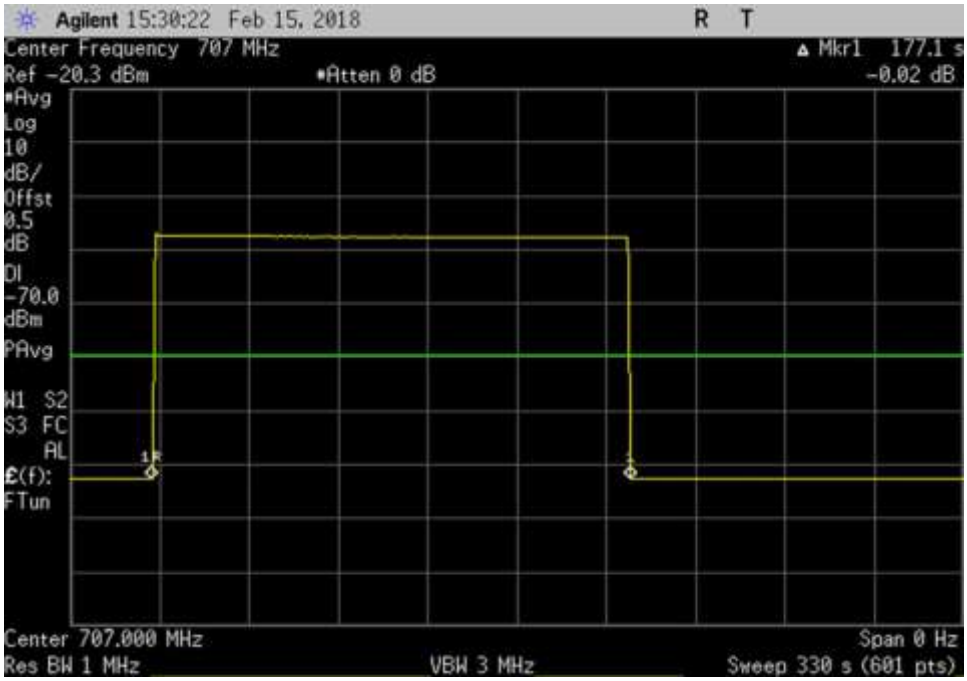
Asset #	Description	Manufacturer	Model	Calibration Date	Cal Due Date
P05411	Attenuator	Weinschel	54A-10	1/19/2018	1/19/2020
P07192	Cable	Astro	32022-29094K-29094K-48TC	10/9/2017	10/9/2019
P07191	Cable	Astro	32022-29094K-29094K-48TC	10/30/2017	10/30/2019
03418	Signal Generator	Agilent	E4438C	6/19/2017	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 demonstrated, when the booster is not serving an active device connection after 5 minutes the uplink noise power does not exceed -70dBm/MHz

Uplink Inactivity		
Frequency	**Measured**	**Limit**
MHz	**Min**	**Min**
UL1710-1755	3.0	5.0
UL1850-1915	3.0	5.0
UL824-849	2.9	5.0
UL 698-716	3.0	5.0
UL776-787	2.9	5.0

Plots



UL_698-716_ 707MHz