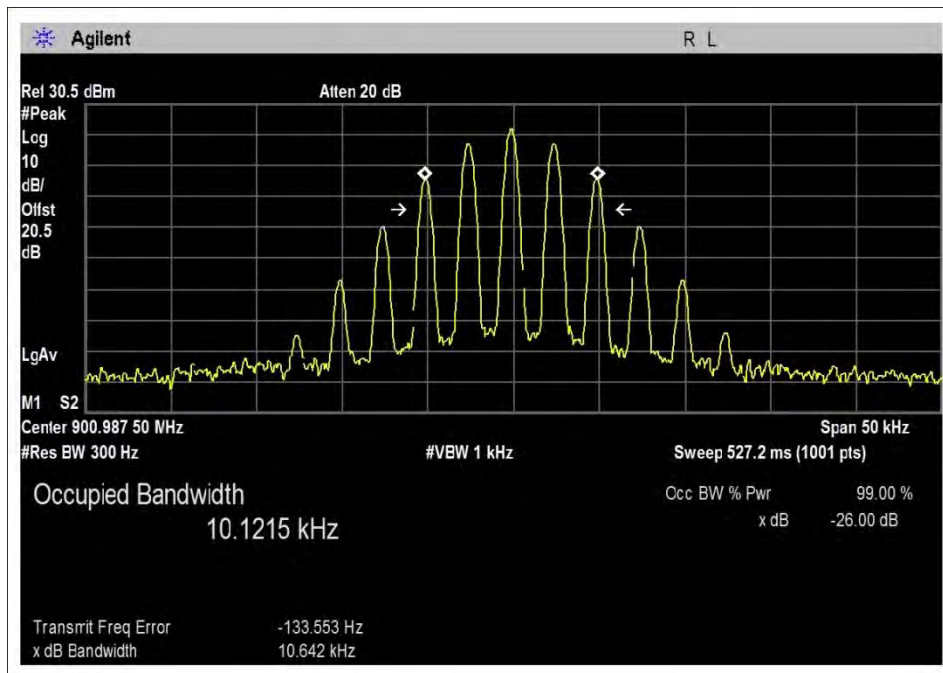
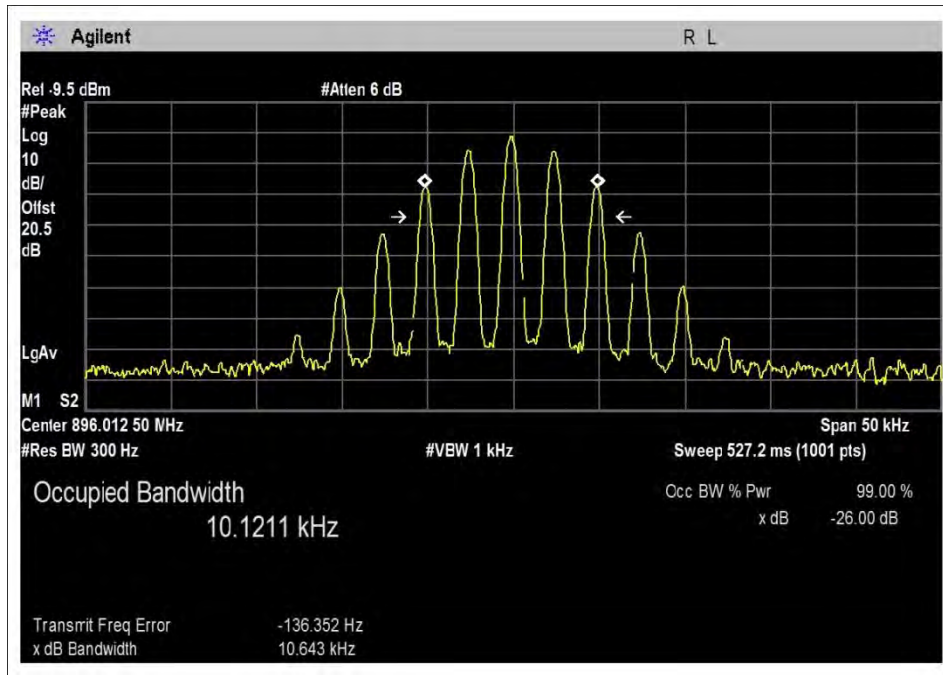


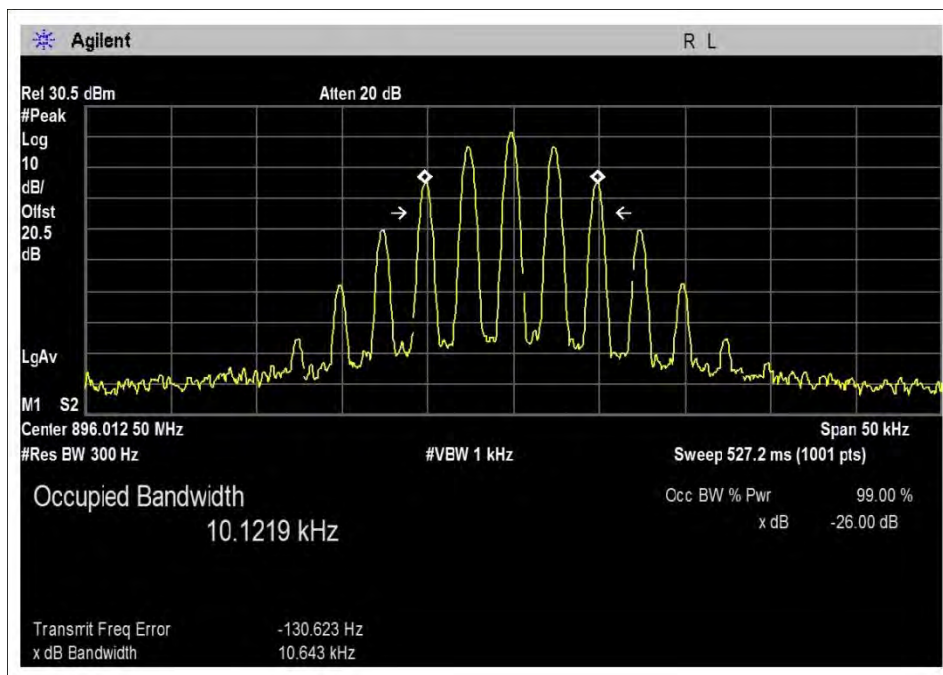
900M-UL-896-901H-Out-AGC



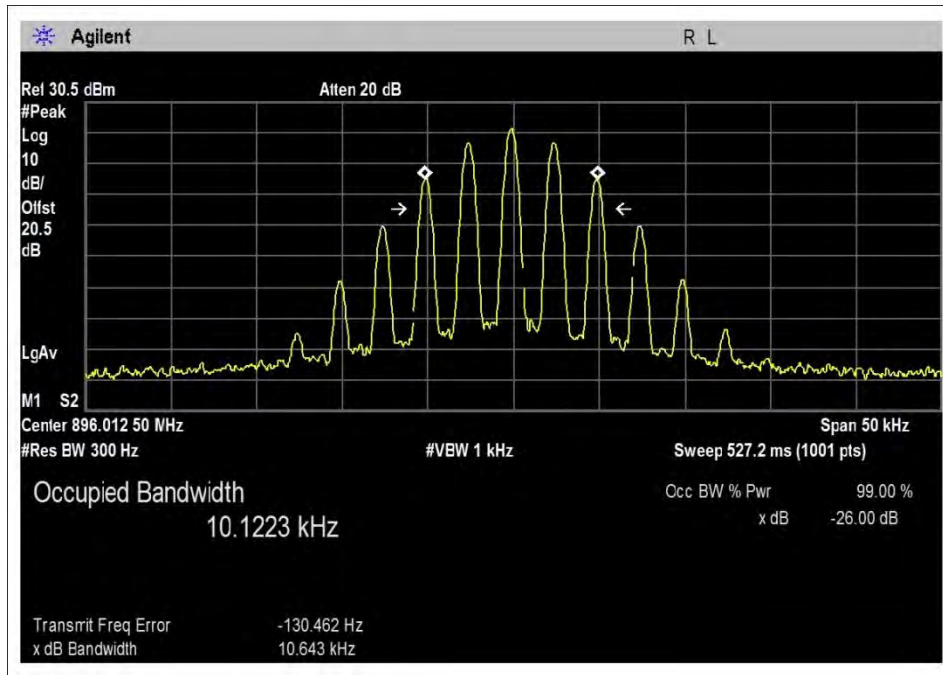
900M-UL-896-901H-Out-PreAGC



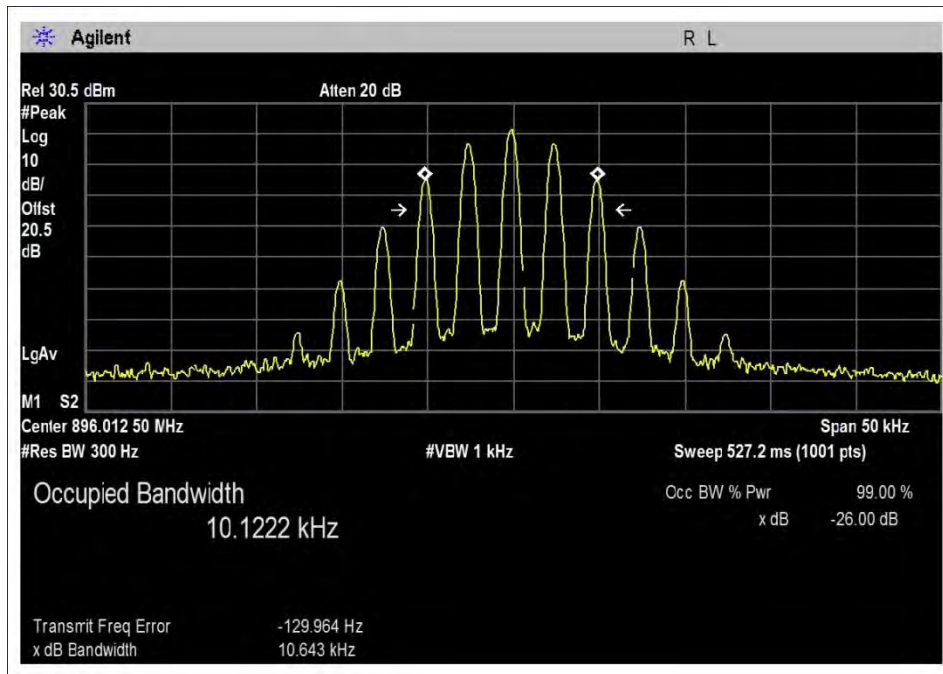
900M-UL-896-901L-In



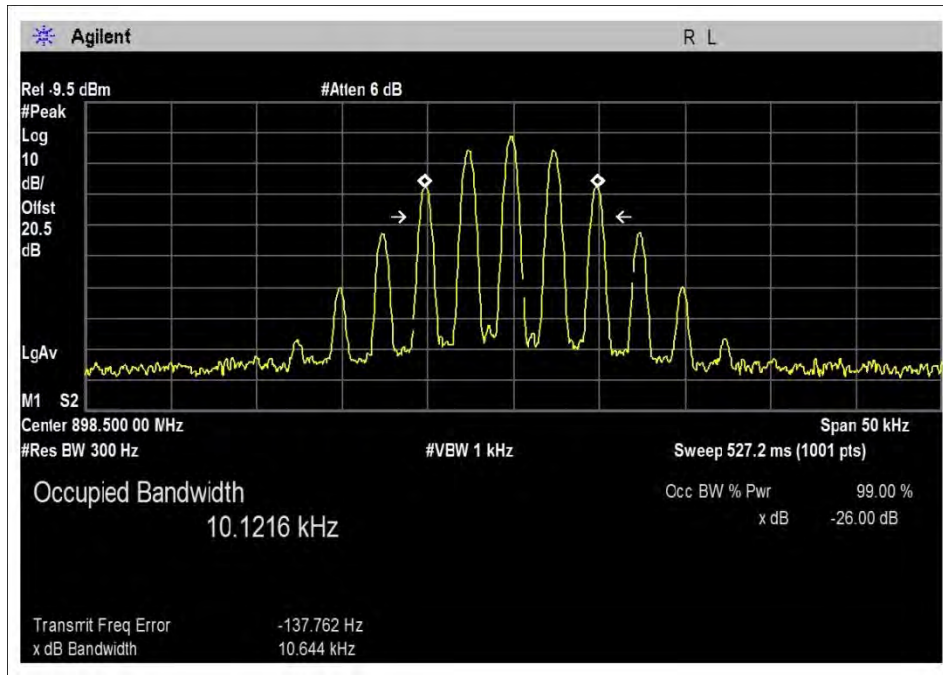
900M-UL-896-901L-Out+10dB



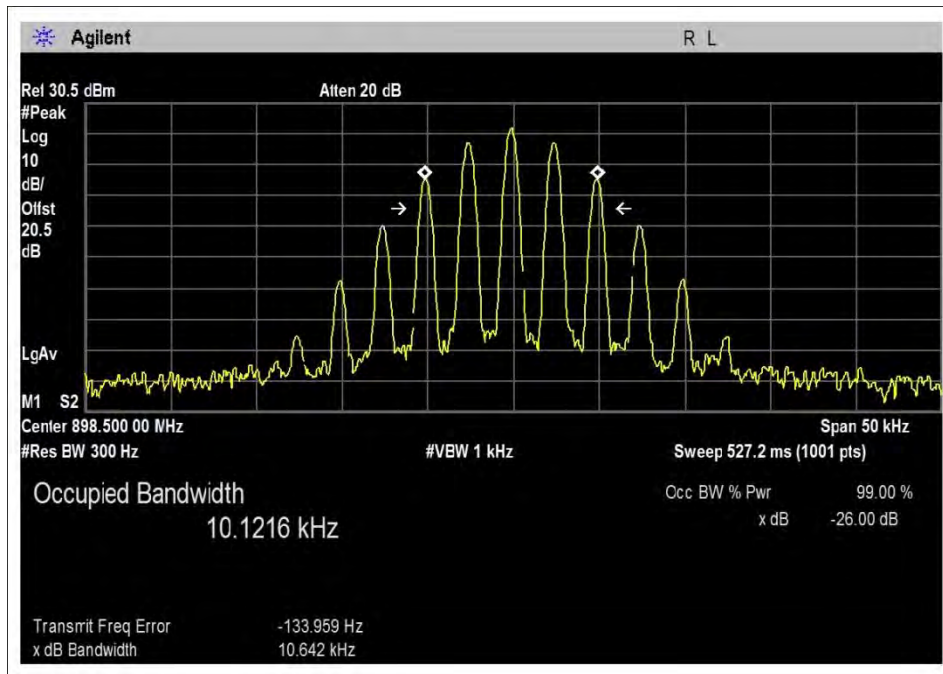
900M-UL-896-901L-Out-AGC



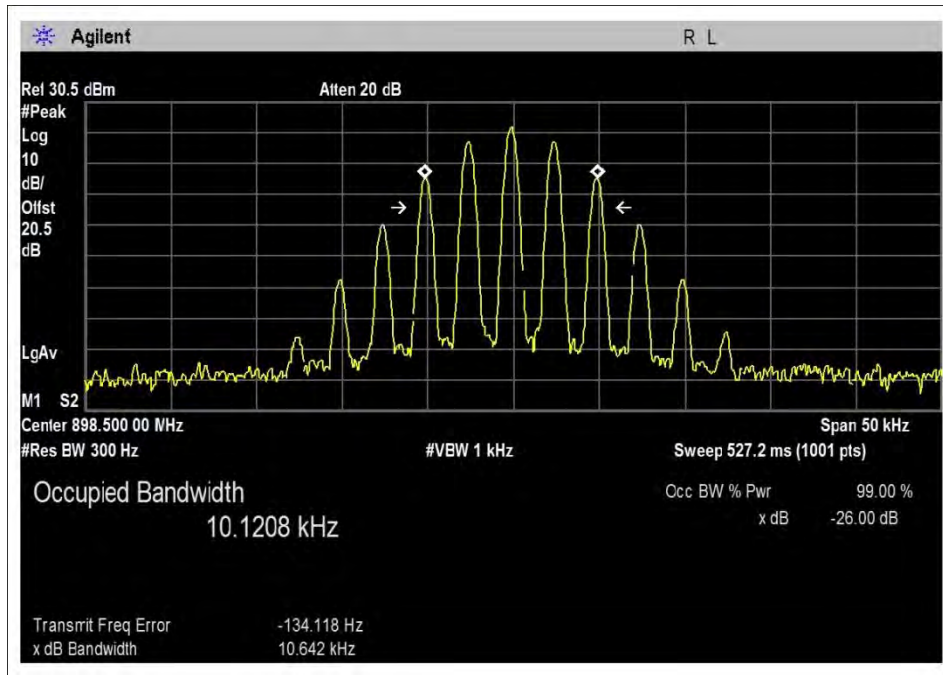
900M-UL-896-901L-Out-PreAGC



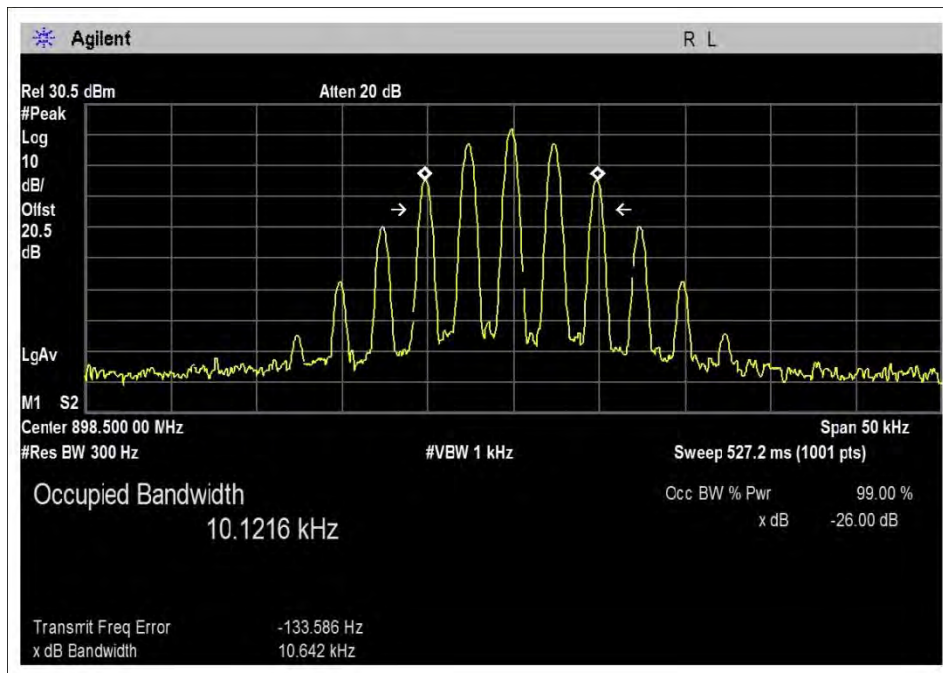
900M-UL-896-901M-In



900M-UL-896-901M-Out+10dB

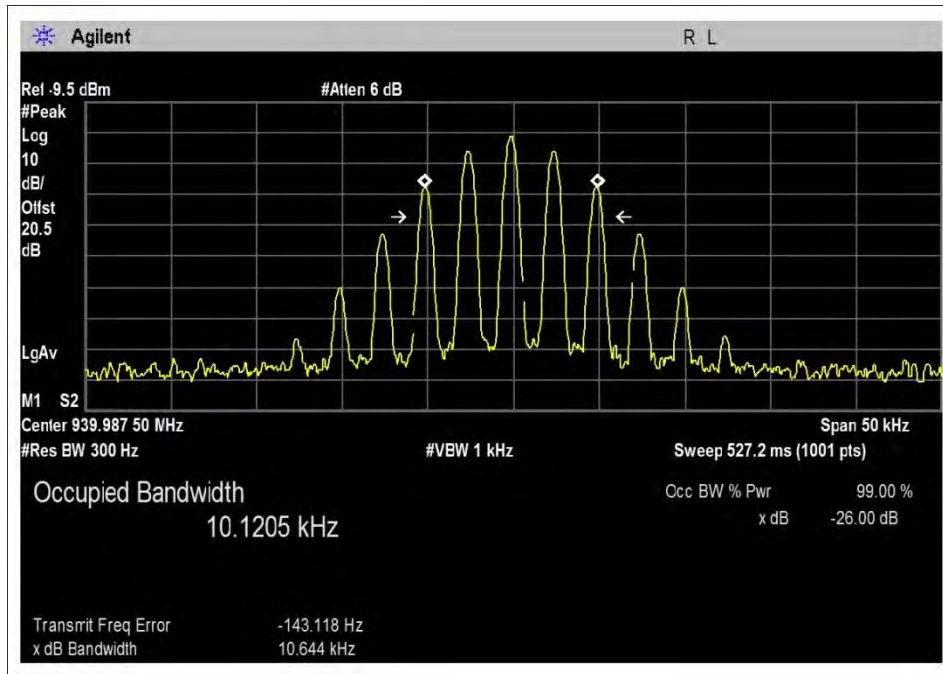


900M-UL-896-901M-Out-AGC

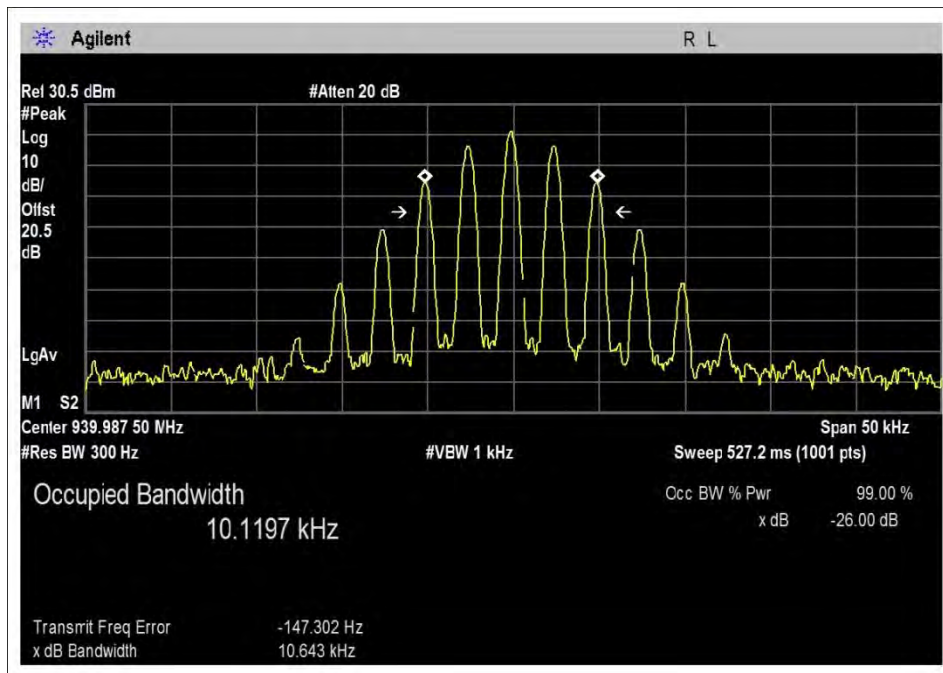


900M-UL-896-901M-Out-PreAGC

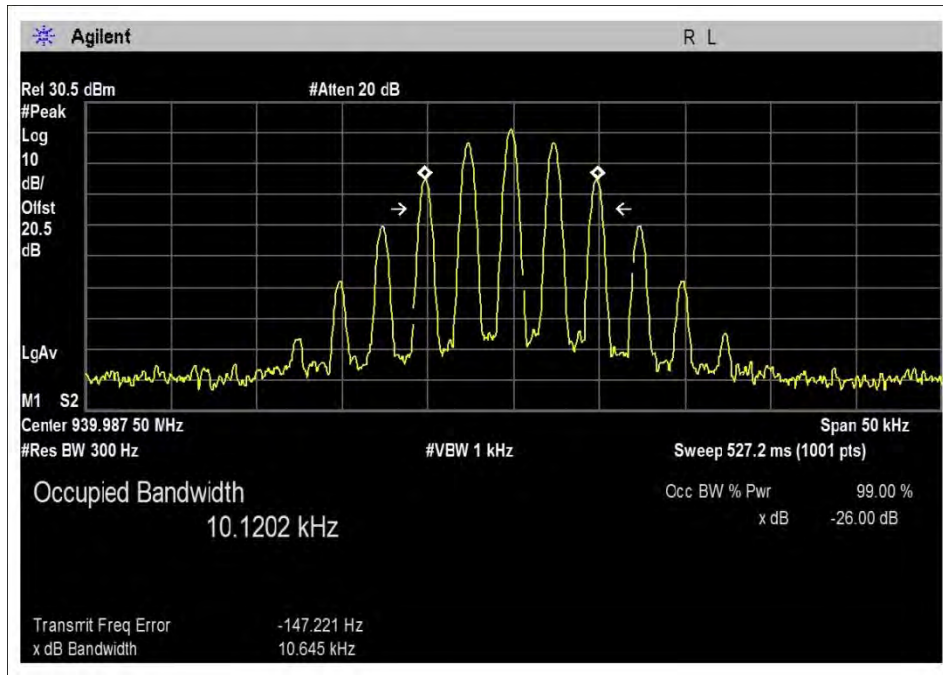
900MHz – FM - DL



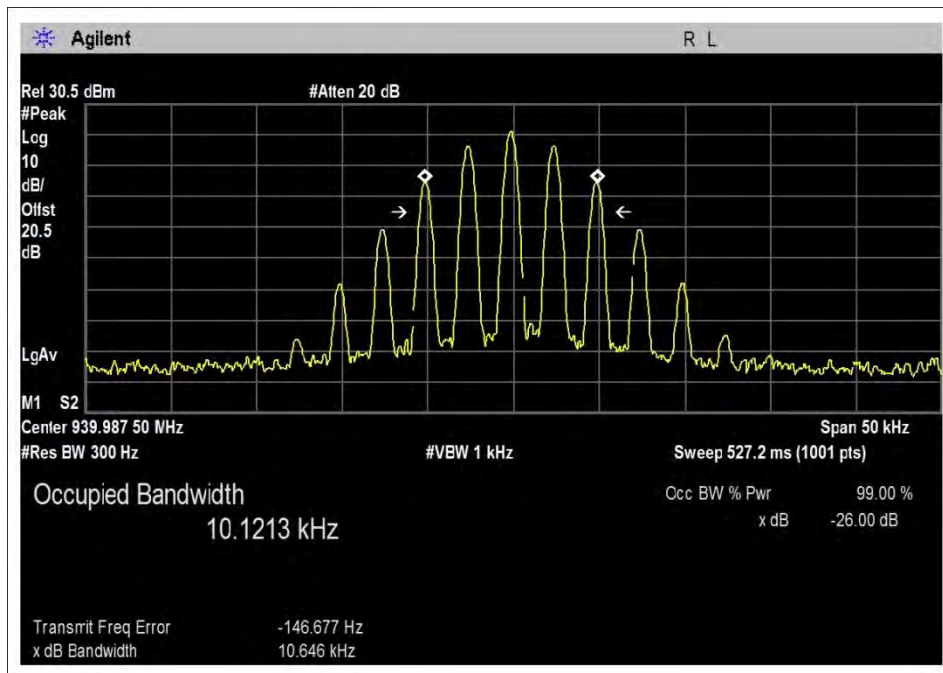
900M-DL-935-940H-In



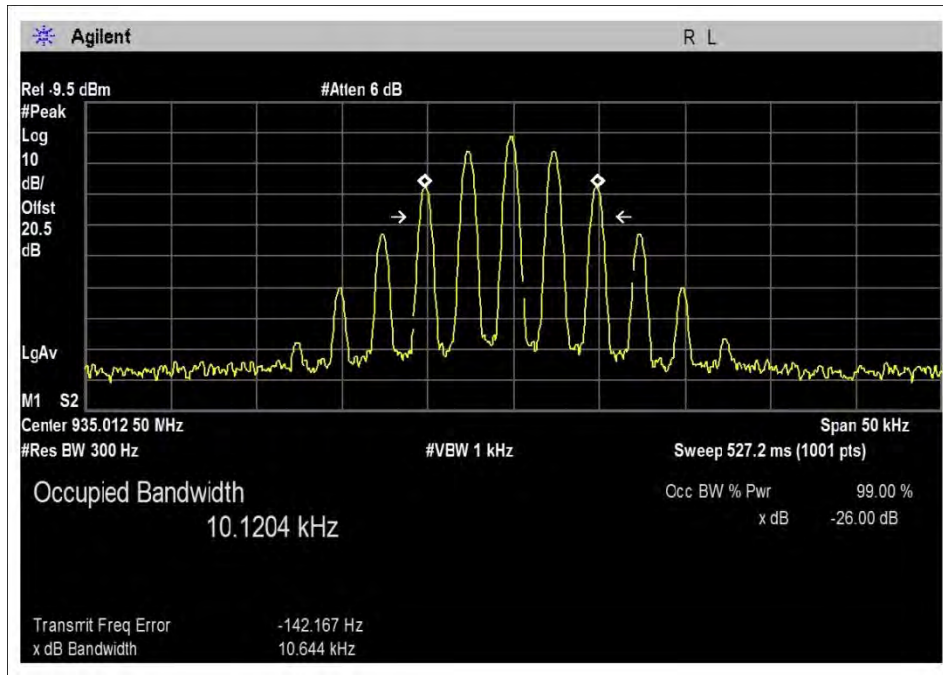
900M-DL-935-940H-Out-AGC



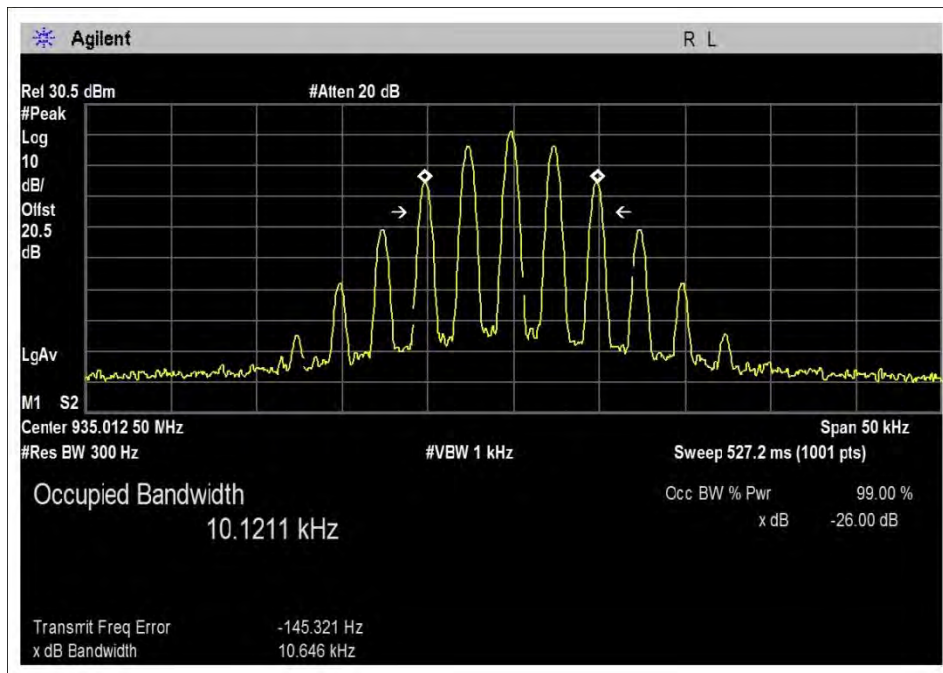
900M-DL-935-940H-Out-AGC+10dB



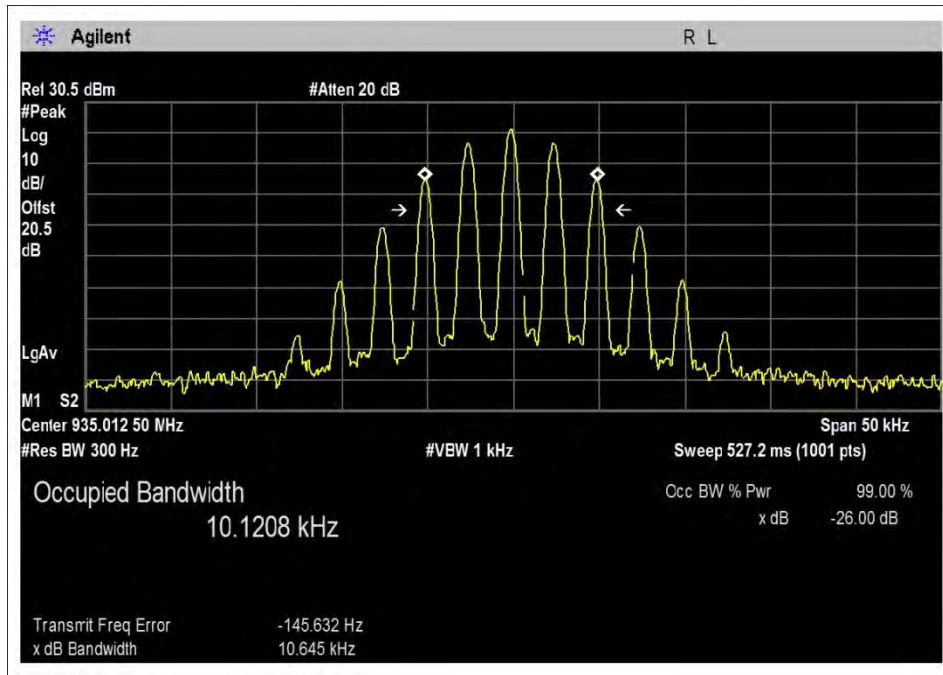
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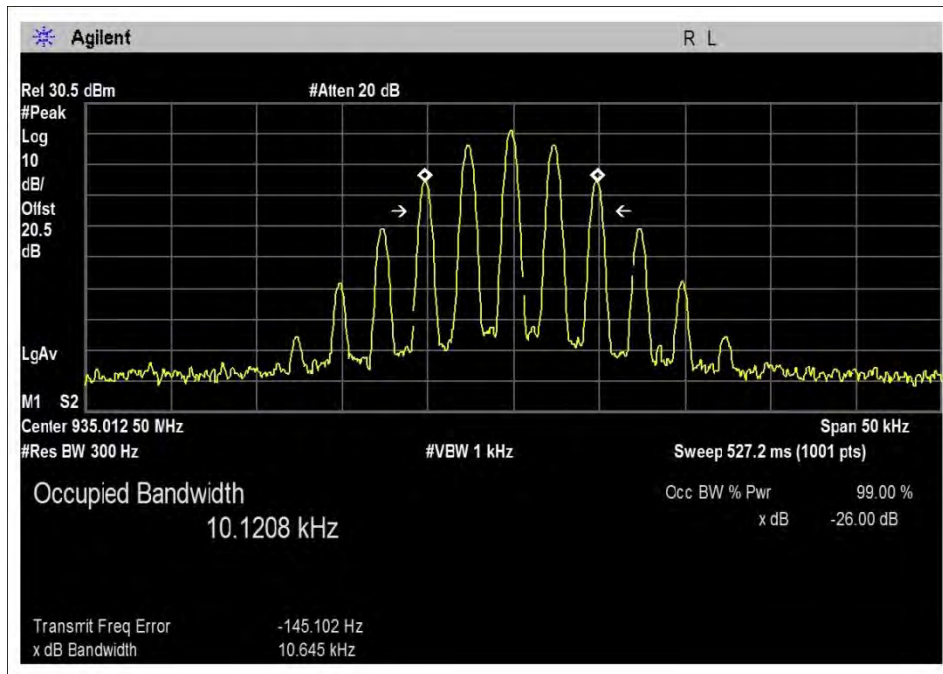
900M-DL-935-940L-In



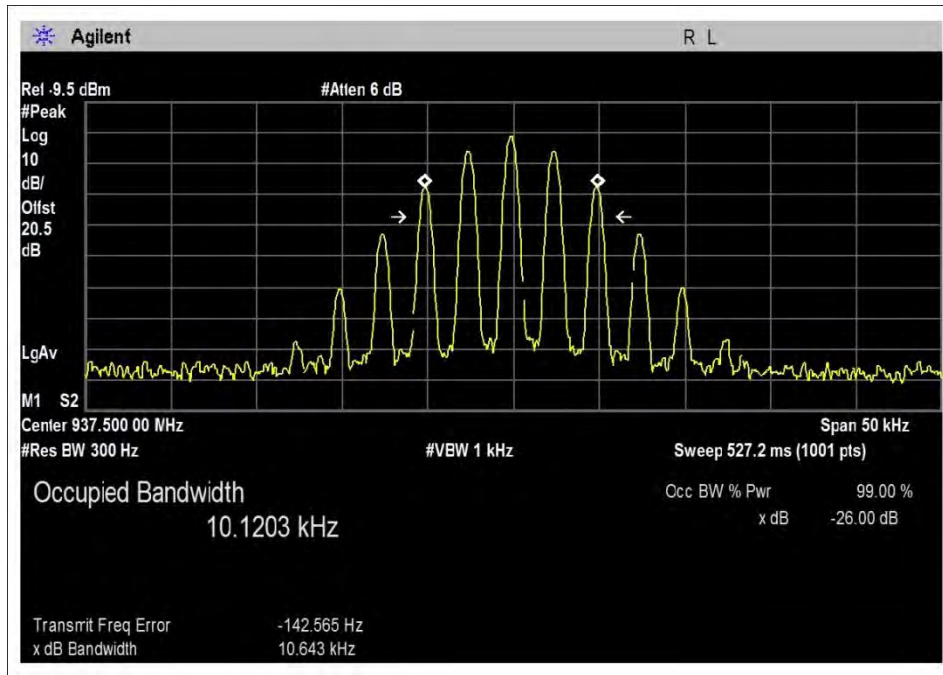
900M-DL-935-940L-Out-AGC



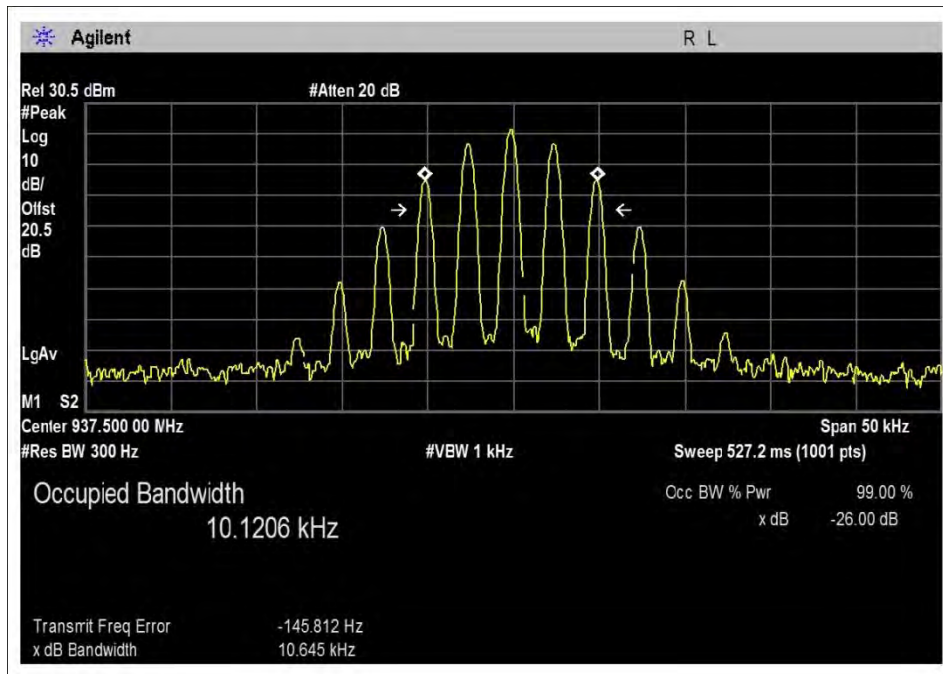
900M-DL-935-940L-Out-AGC+10dB



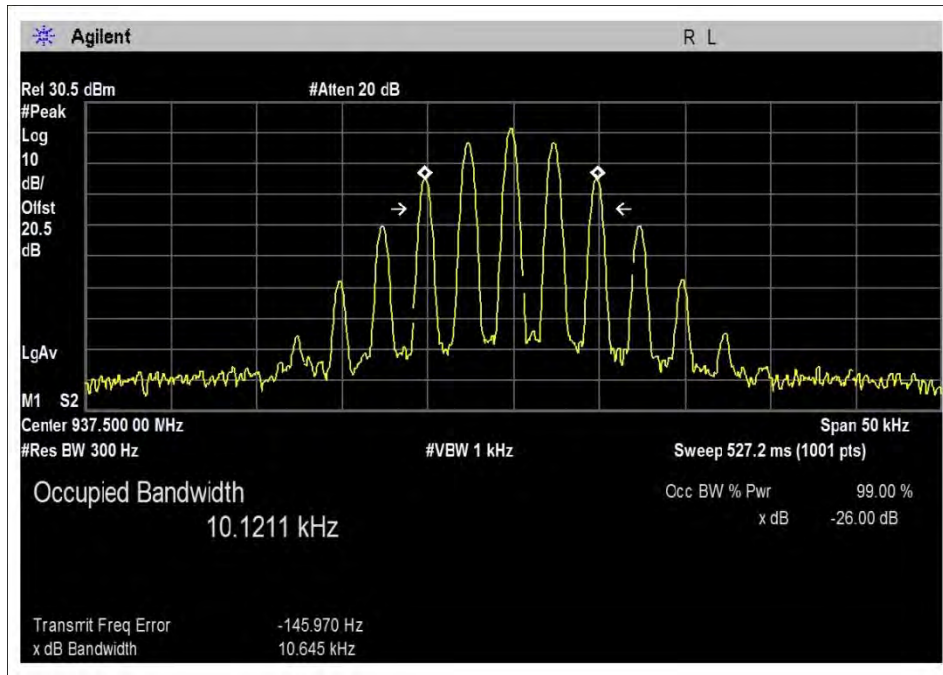
900M-DL-935-940L-Out-PreAGC



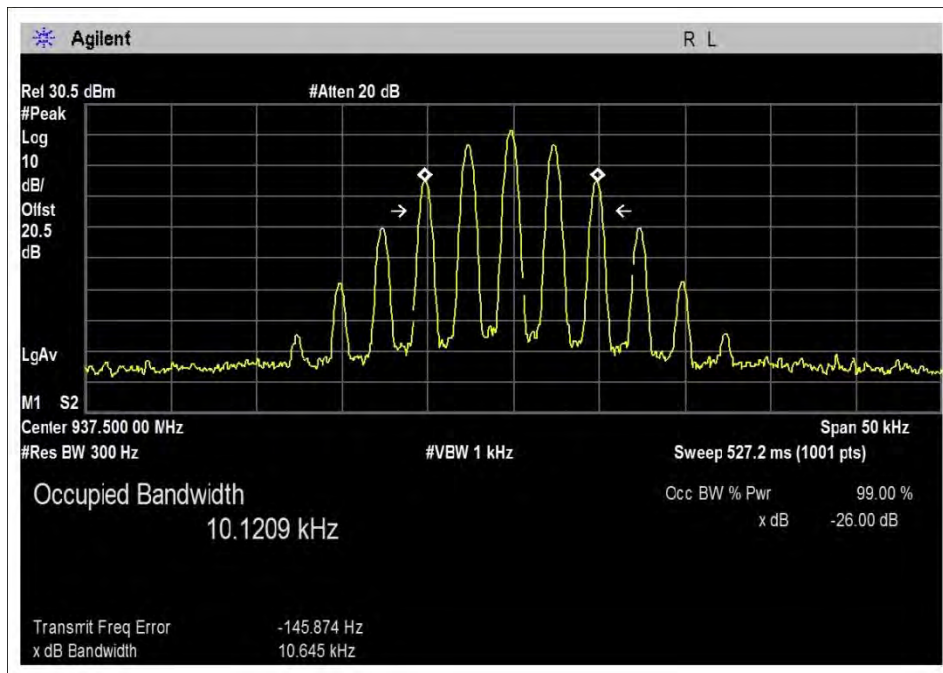
900M-DL-935-940M-In



900M-DL-935-940M-Out-AGC



900M-DL-935-940M-Out-AGC+10dB



900M-DL-935-940M-Out-PreAGC

Test Setup Photo(s)



Part 90 § 219(b) / 90.531 (f) and (g) Band Verification

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Cellphone-Mate, Inc.**
 Specification: **Band Verification, Part 90 Section 219 (b)**
 Work Order #: **96794** Date: 4/15/2015
 Test Type: **Conducted Emissions** Time: 10:40:12
 Equipment: **Distributed Antenna System/Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: Daniel Bertran
 Model: Force3 PSB 120V 60Hz
 S/N: 201502PS000001

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06131	Attenuator	18N20W-20	2/27/2014	2/27/2016
	ANP05713	Attenuator	PE7015-20	3/24/2015	3/24/2017
	ANP06709	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	ANP06710	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	AN03470	Spectrum Analyzer	E4440A	12/2/2013	12/2/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distributed Antenna System /Booster*	Cellphone-Mate, Inc.	Force3 PSB	201502PS000001

Support Devices:

Function	Manufacturer	Model #	S/N
AC Adapter	Adapter Tech.	STD-1805	NA
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

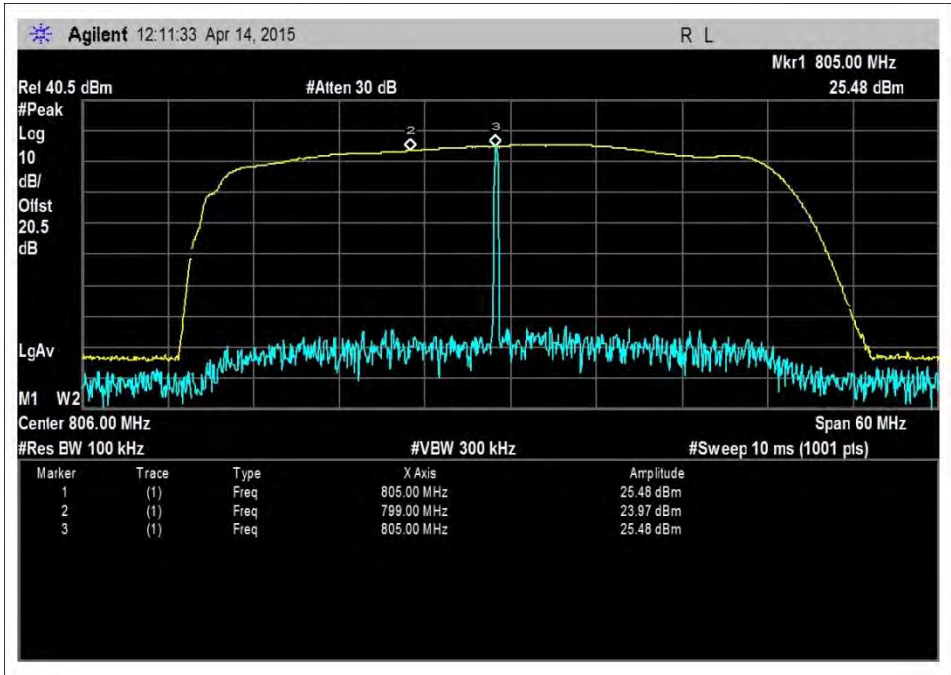
The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
 UL: 788-798, 799-805, 806-817, 817-824, 896-901 MHz
 DL: 758-768, 769-775, 851-862, 862-869, 935-940 MHz
 All adjustable settings on the test sample are set at max.
 Test environment conditions: 20°C, 40% Relative Humidity, 102.5kPa
 Test procedure: The test was performed in accordance with Appendix D3 of the FCC document: 935210 D02 Signal Booster Certification Requirements v02r01 Dated July 24, 2014 and in accordance with section 7.1 of the FCC document: 935210 D03 Consumer Signal Booster Measurement Guidance v02r01 Dated July 24, 2014
 Software: SC_S1_Public_V3.0.
 Firmware: V1.0
 Notes: It is noted that the guard band of 768-769 MHz exists but is not used, in accordance with specification 90.531 (f) and (g). It is noted that the guard band of 798-799 MHz exists but is not used in accordance with specification 90.531 (f) and (g).

Test Summary

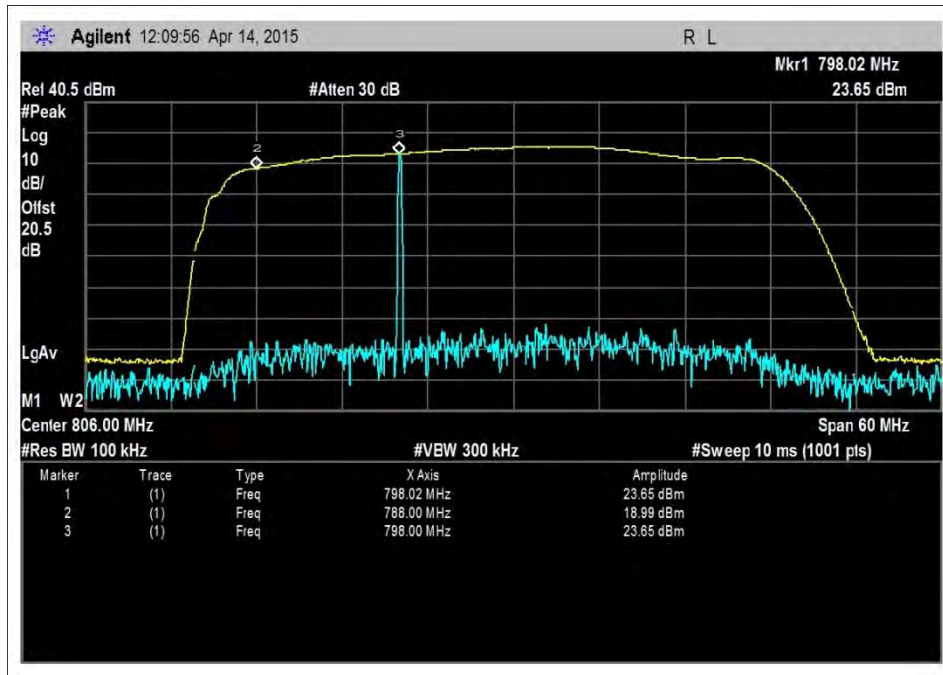
Pass: Plots show that gain out of band does not increase beyond that value which is present at the edge of each band.

Test Data

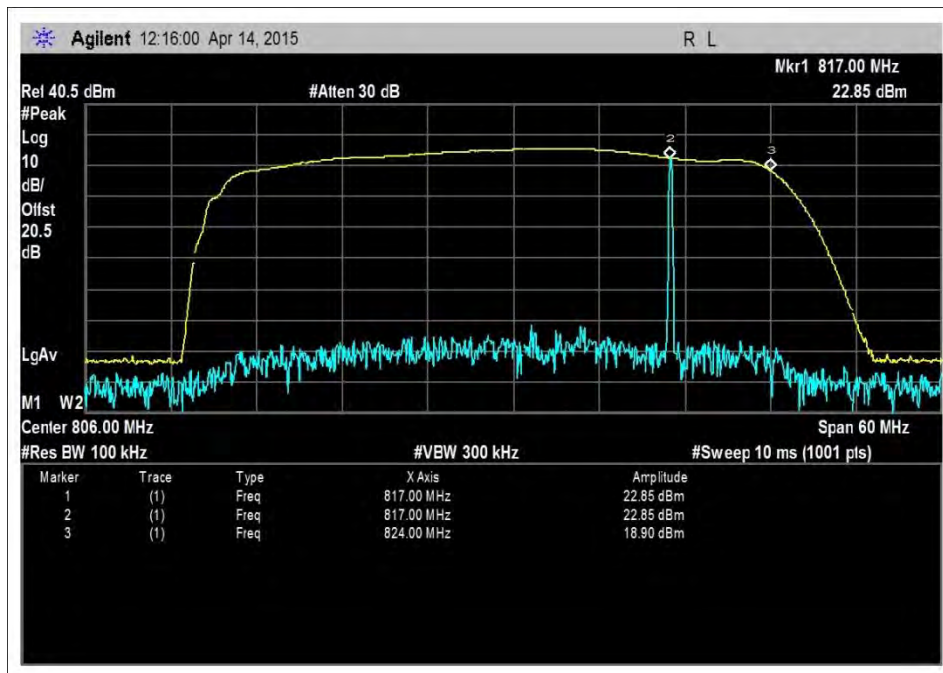
Band Verification - UL



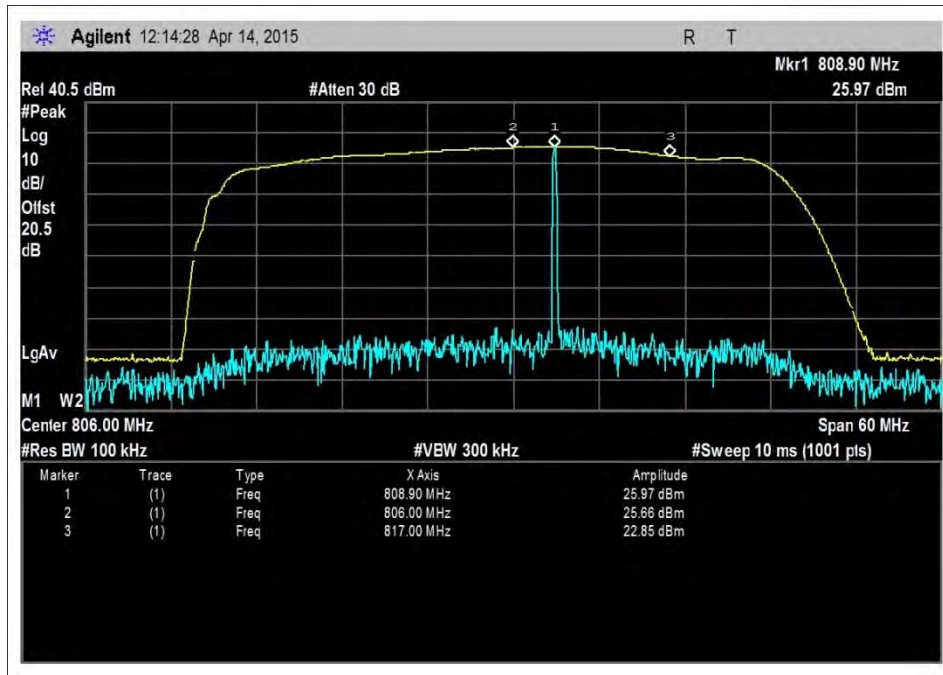
UL_700H



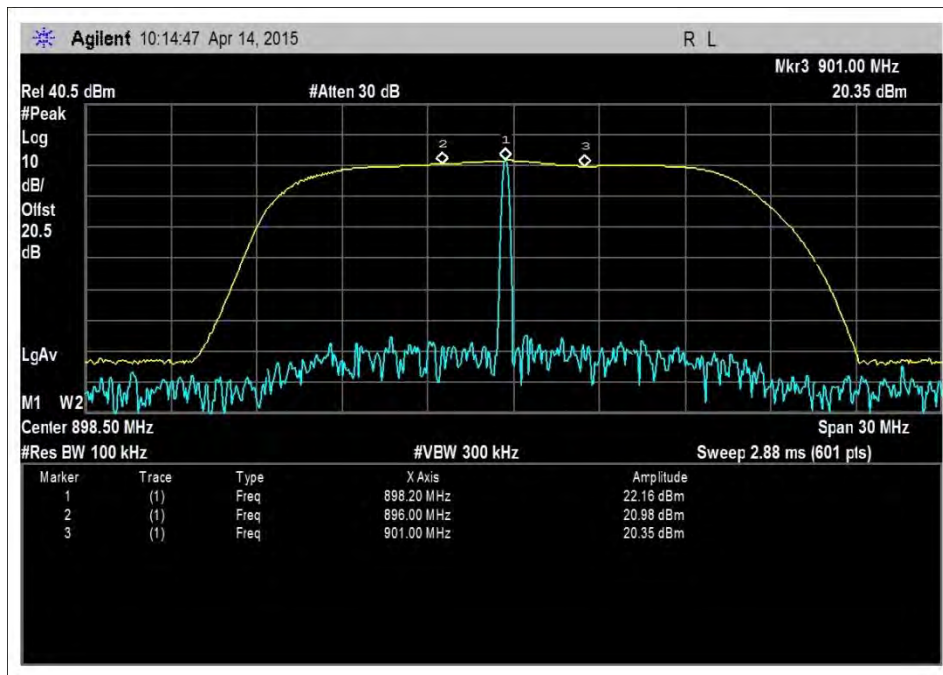
UL_700L



UL_800H

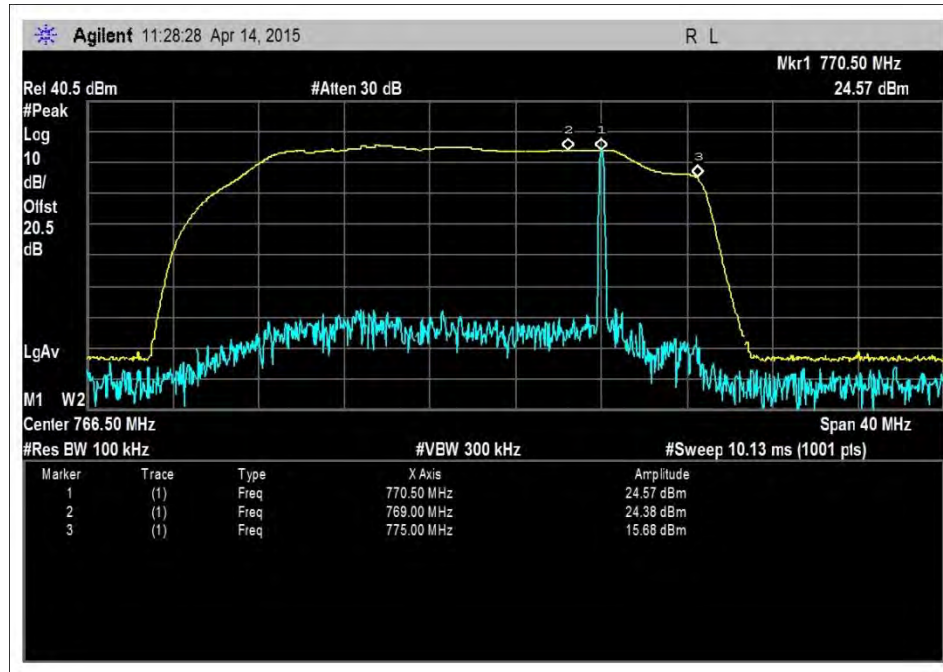


UL_800L

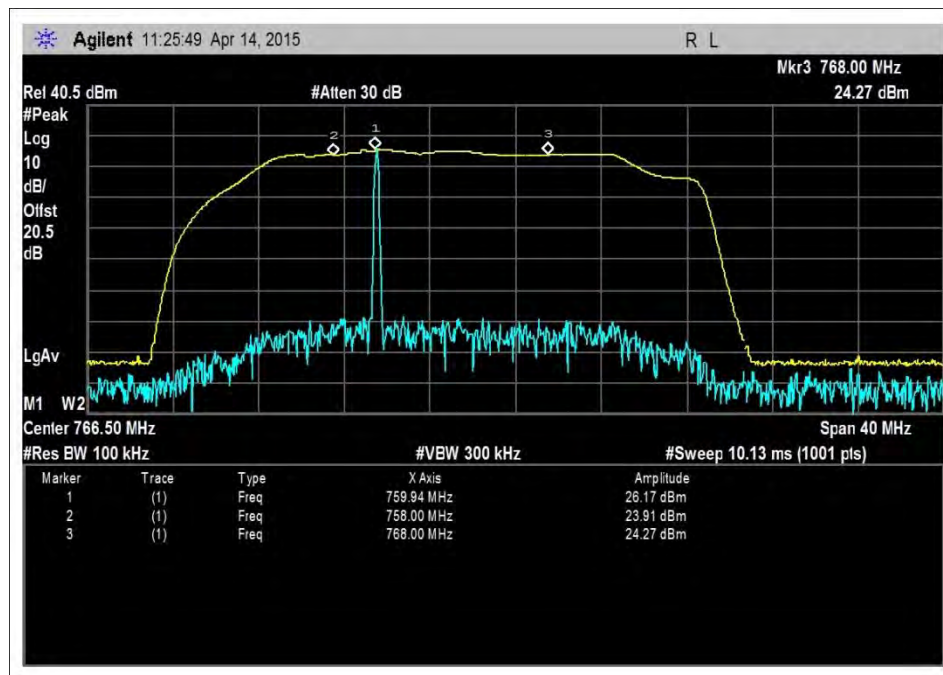


UL_900

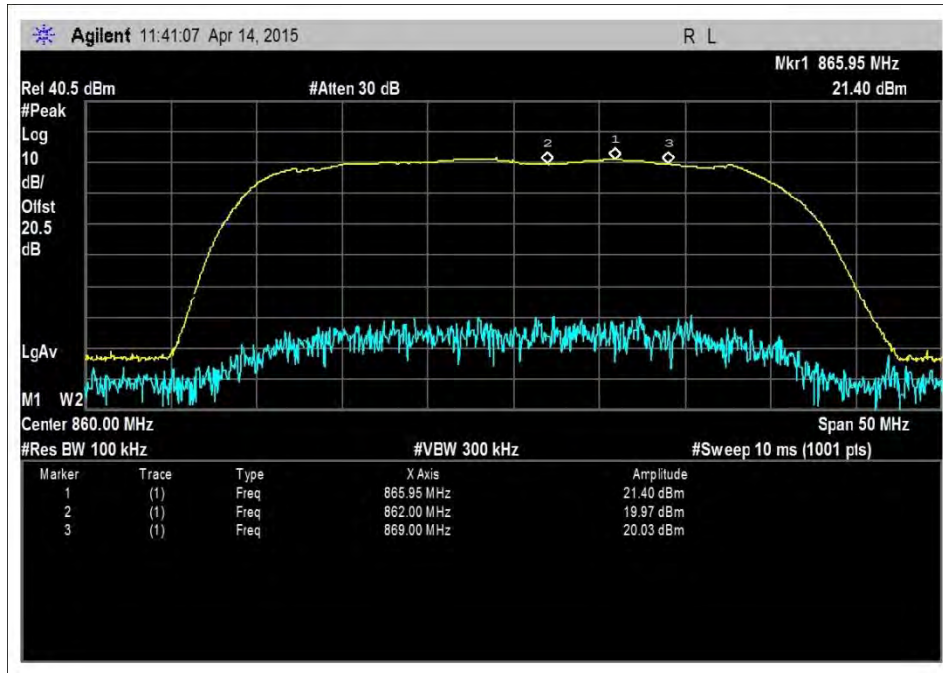
Band Verification - DL



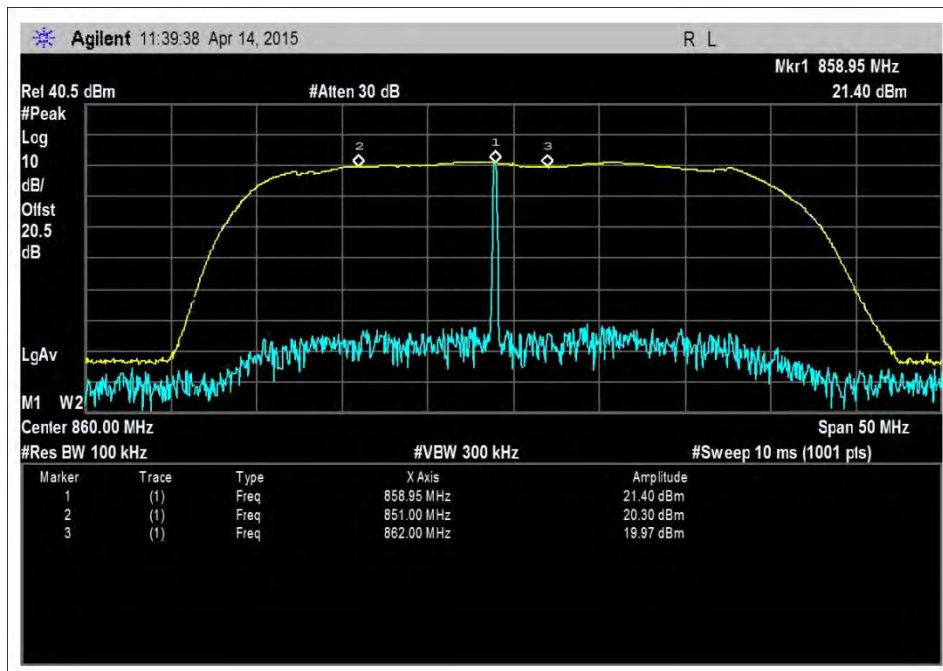
DL_700H



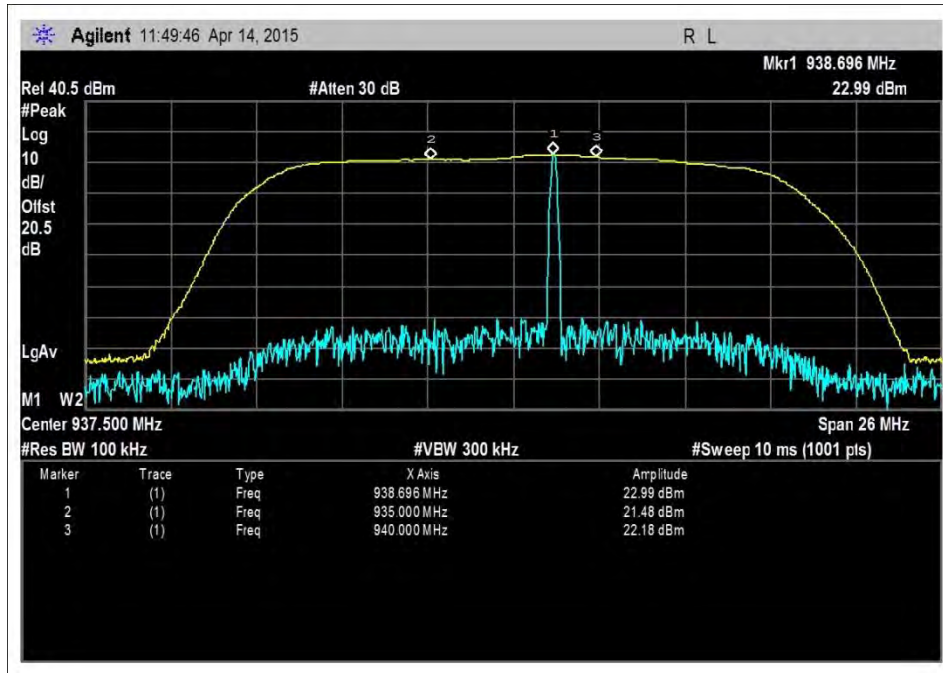
DL_700L



DL_800H



DL_800L



DL_900

Test Setup Photo



2.1047 / 2.1051 / Part 90 § 219(b) / 210 (c), (h), (g) and (j) Emissions Mask

90.543(e) 700MHz LTE 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: **Out of Band Emissions, Part 90 Section 543(e)**

Work Order #: **96794** Date: 4/15/2015

Test Type: **Conducted Emissions** Time: 10:40:12

Equipment: **Distributed Antenna System/Booster** Sequence#: 1

Manufacturer: Cellphone-Mate, Inc. Tested By: Daniel Bertran

Model: Force3 PSB 120V 60Hz

S/N: 201502PS000001

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06131	Attenuator	18N20W-20	2/27/2014	2/27/2016
	ANP05713	Attenuator	PE7015-20	3/24/2015	3/24/2017
	ANP06709	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	ANP06710	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	AN03470	Spectrum Analyzer	E4440A	12/2/2013	12/2/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distributed Antenna System/Booster *	Cellphone-Mate, Inc.	Force3 PSB	201502PS000001

Support Devices:

Function	Manufacturer	Model #	S/N
AC Adapter	Adapter Tech.	STD-1805	NA
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
 UL: 788-798, 799-805, 806-817, 817-824, 896-901 MHz
 DL: 758-768, 769-775, 851-862, 862-869, 935-940 MHz
 All adjustable settings on the test sample are set at max.

Test environment conditions: 20°C, 40% Relative Humidity, 102.5kPa

Test procedure: CFR, Sections 2.1047 and 2.1051

Software: SC_S1_Public_V3.0
 Firmware: V1.0

§90.543 Emission limitations.

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

90.543e Out of Band Emissions - Summary of Results

Pass: as indicated in plots below, all OBE are under the limit of -13dBm.

LTE

Low

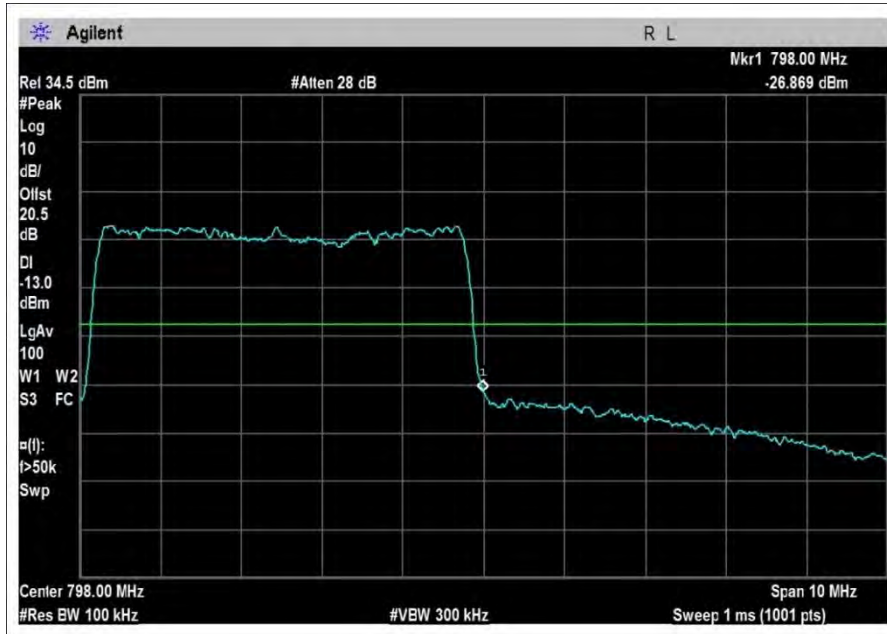
	Out of Band Emission			
Freq	Pre AGC	AGC	AGC + 10dB	Limit
MHz	dBm	dBm	dBm	dBm
UL 788-798	-34.110	-30.614	-33.685	-13.0
DL 758-768	-22.096	-19.953	-26.273	-13.0

High

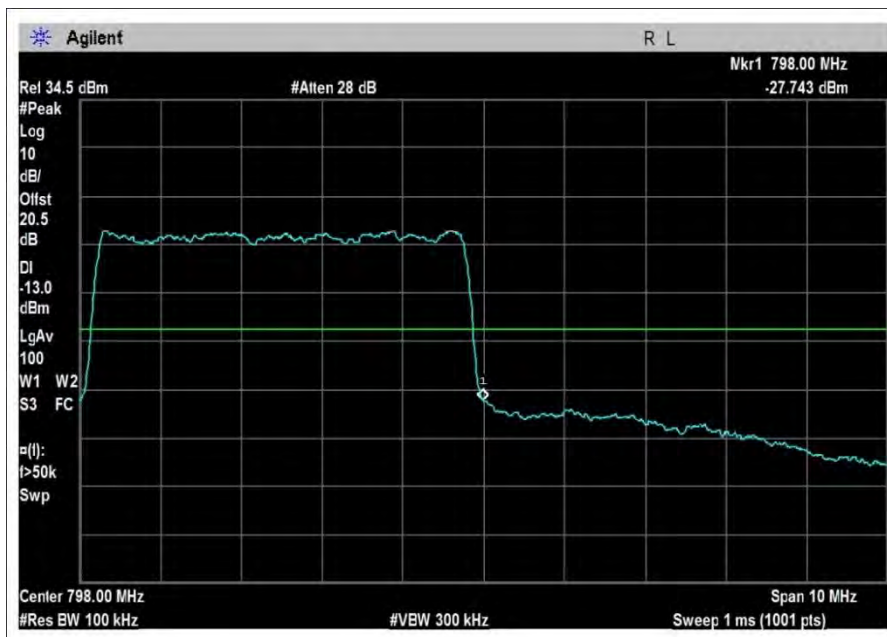
	Out of Band Emission			
Freq	Pre AGC	AGC	AGC + 10dB	Limit
MHz	dBm	dBm	dBm	dBm
UL 788-798	-26.869	-27.743	-27.192	-13.0
DL 758-768	-25.302	-20.898	-24.531	-13.0

Test Data

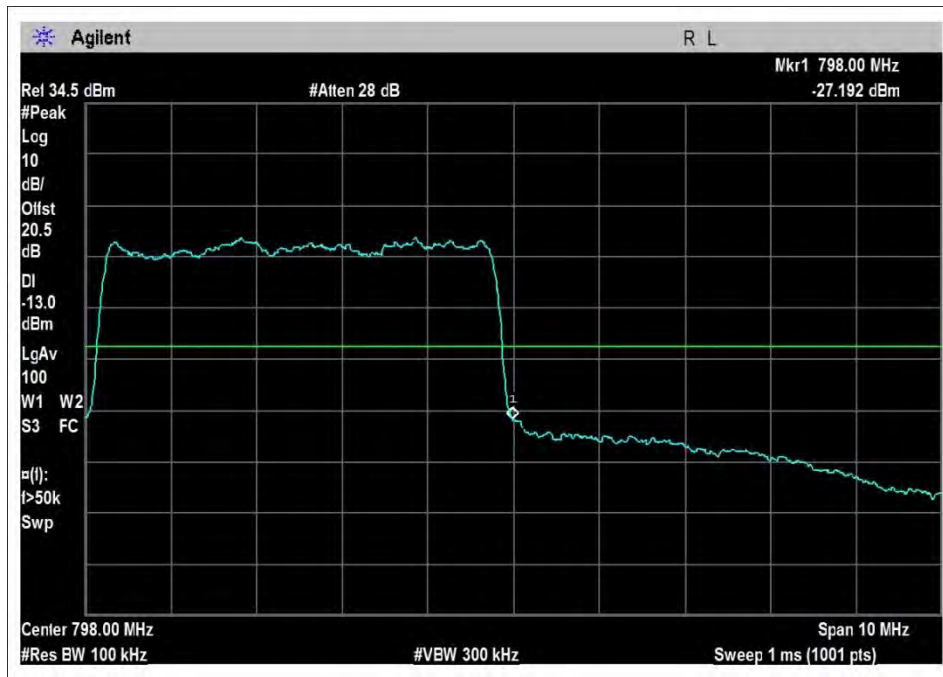
Out of Band Emissions - LTE UL



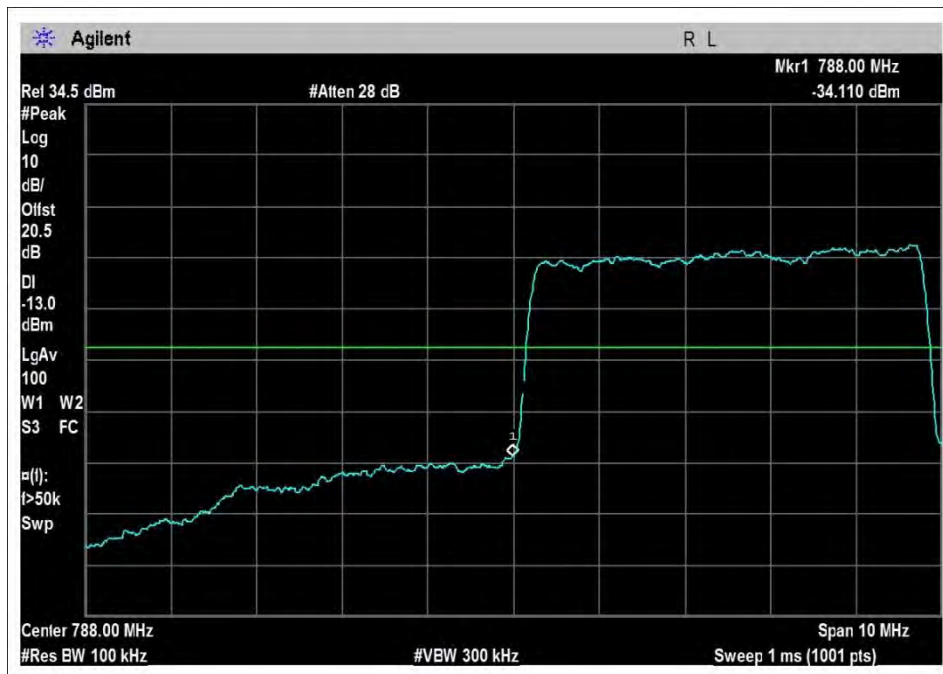
LTE-UL-788-798H-28



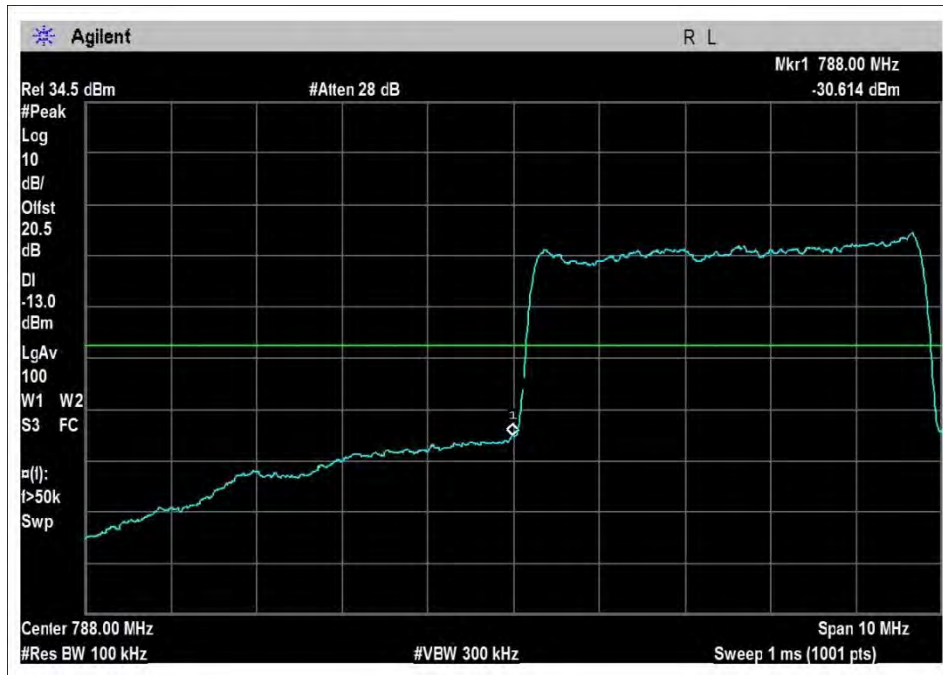
LTE-UL-788-798H-AGC



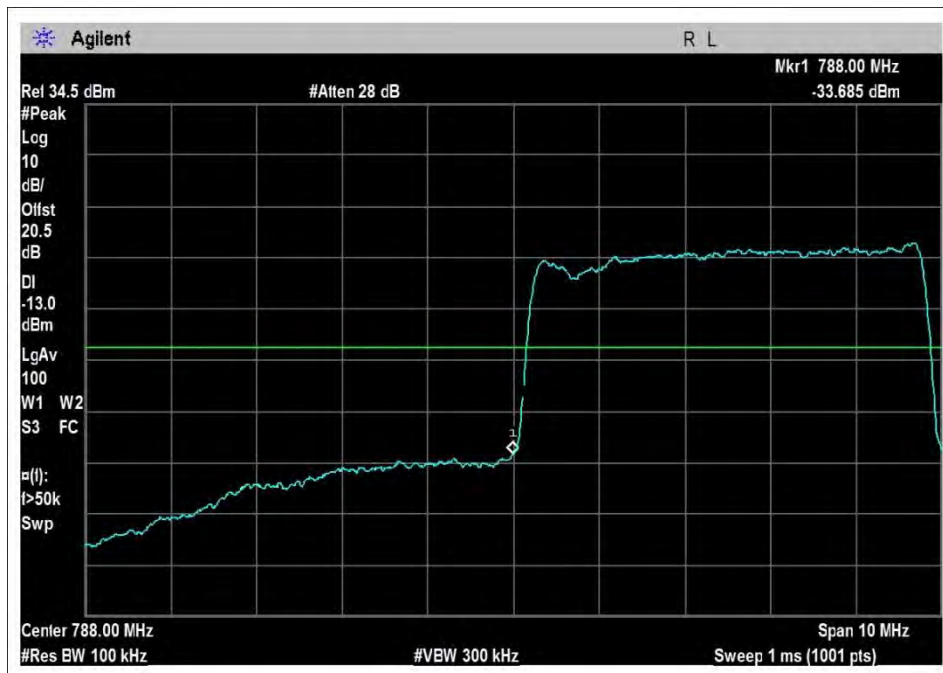
LTE-UL-788-798H-AGC+10dB



LTE-UL-788-798L-27

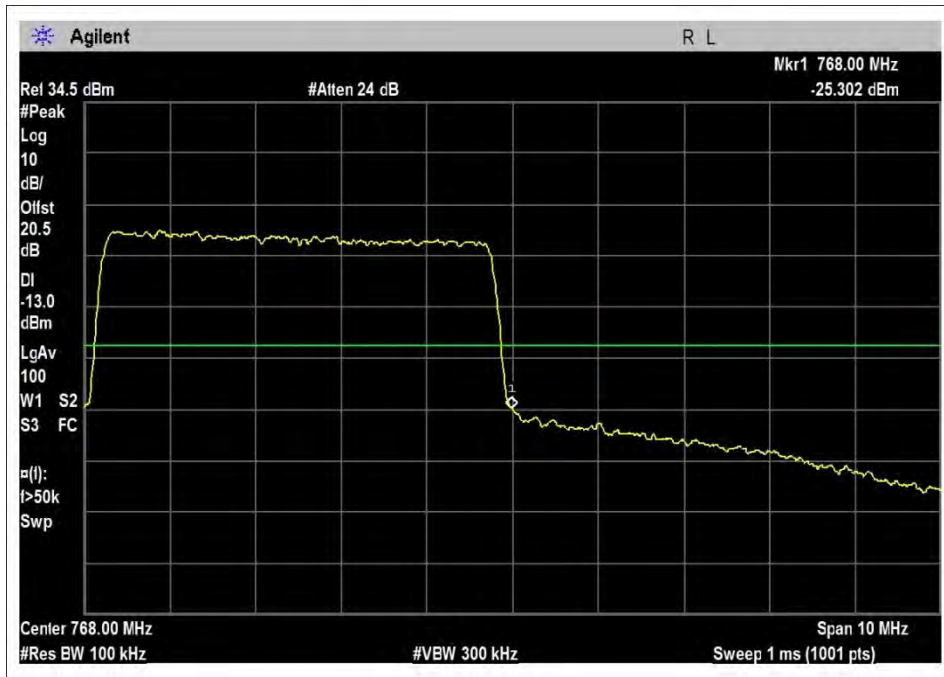


LTE-UL-788-798L-AGC

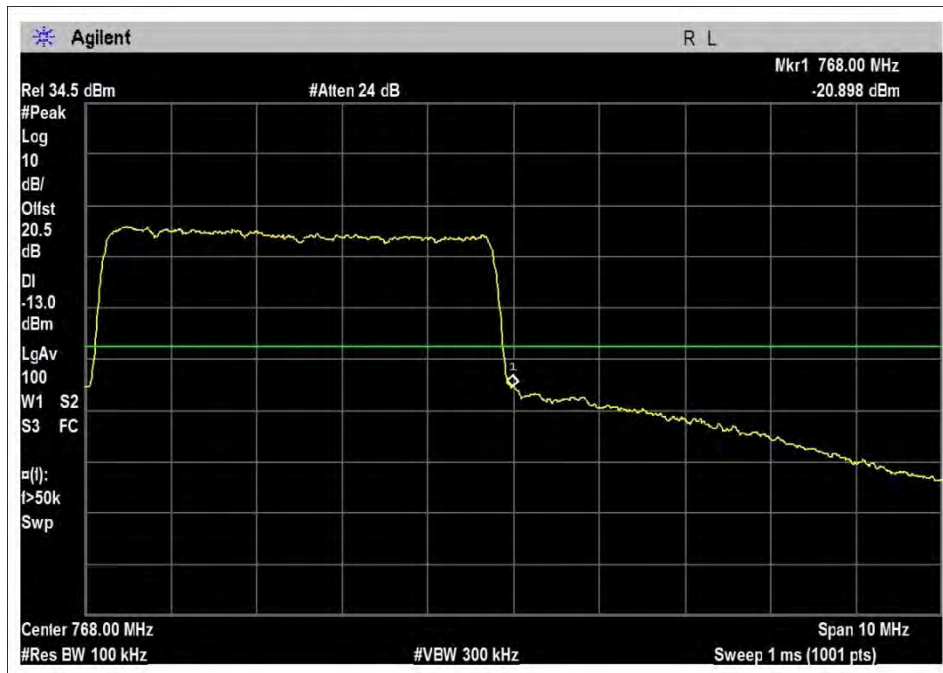


LTE-UL-788-798L-AGC+10dB

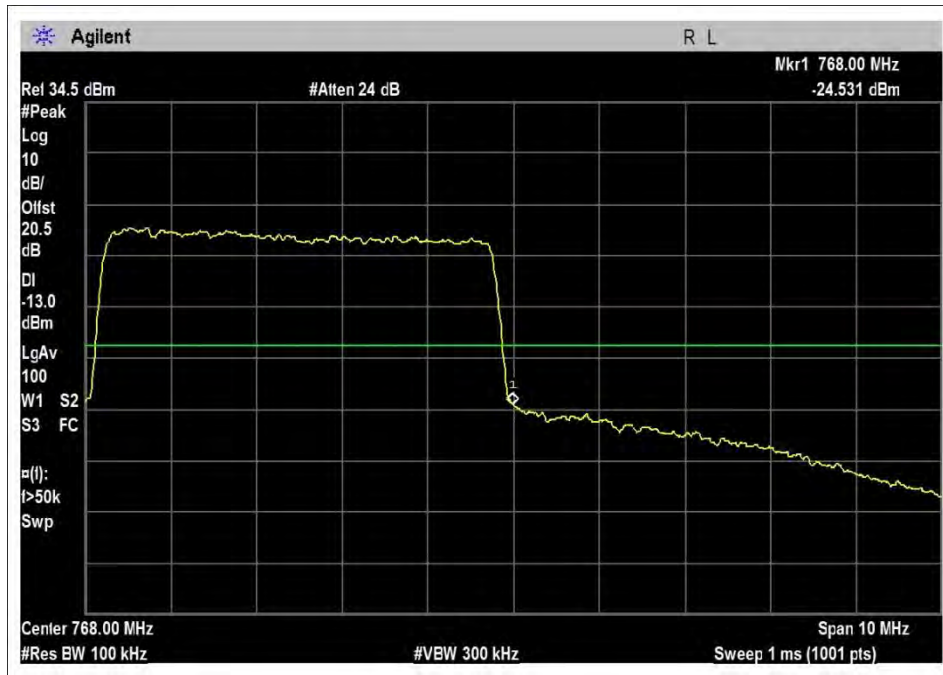
Out of Band Emissions - LTE DL



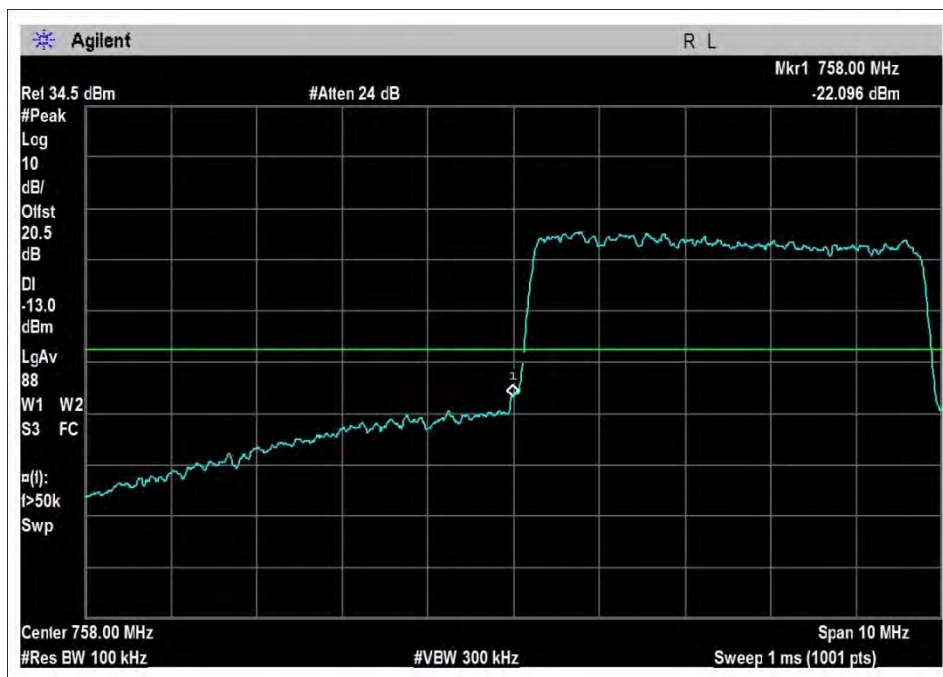
LTE-DL-758-768H-33



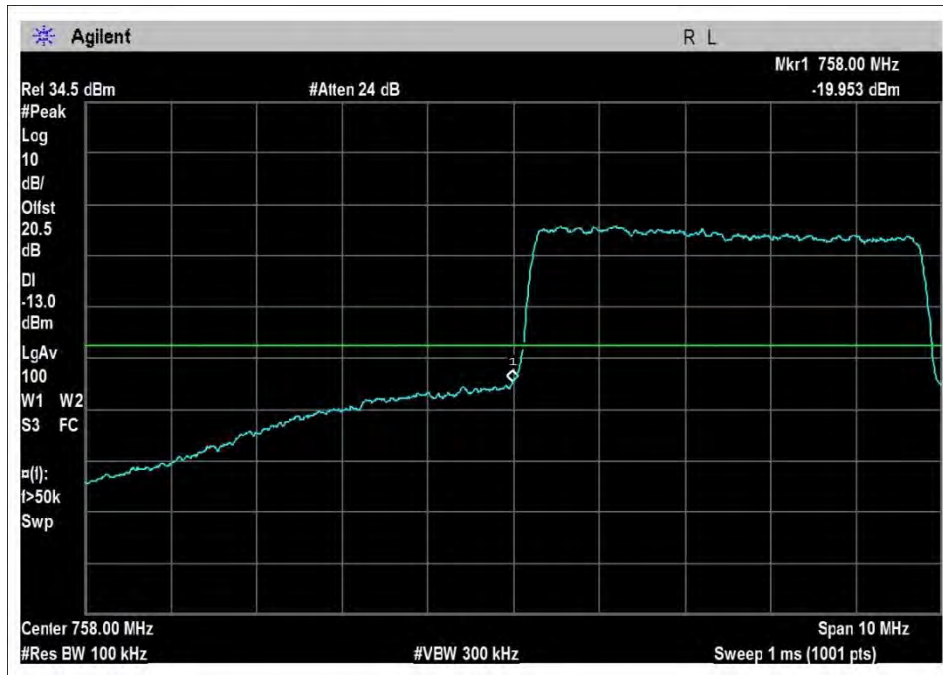
LTE-DL-758-768H-AGC



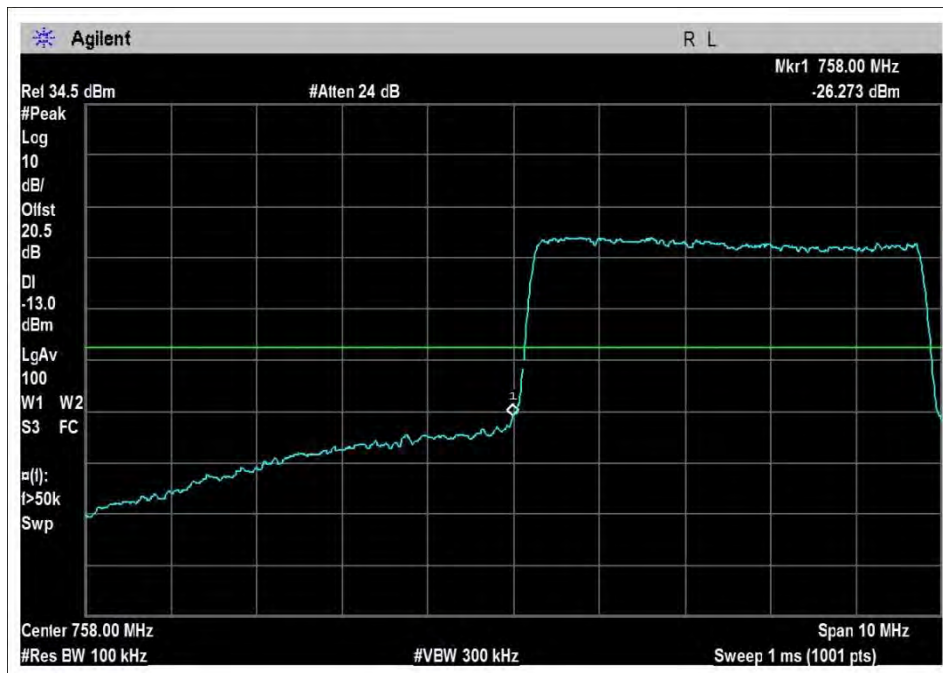
LTE-DL-758-768H-AGC+10dB



LTE-DL-758-768L-36



LTE-DL-758-768L-AGC



LTE-DL-758-768L-AGC+10dB

Test Setup Photo



Part 90 Section 210 (c)(h)(g) and (j) Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • (510) 249-1170

Customer: **Cellphone-Mate, Inc.**
 Specification: **Emission Masks, Part 90 Section 210 (c), (h), (g) and (j)**
 Work Order #: **96794** Date: 4/15/2015
 Test Type: **Conducted Emissions** Time: 10:40:12
 Equipment: **Distributed Antenna System/Booster** Sequence#: 1
 Manufacturer: Cellphone-Mate, Inc. Tested By: Daniel Bertran
 Model: Force3 PSB 120V 60Hz
 S/N: 201502PS000001

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	ANP06131	Attenuator	18N20W-20	2/27/2014	2/27/2016
	ANP05713	Attenuator	PE7015-20	3/24/2015	3/24/2017
	ANP06709	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	ANP06710	Cable	32026-29094K-29094K-72TC	9/18/2014	9/18/2016
	AN03470	Spectrum Analyzer	E4440A	12/2/2013	12/2/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distributed Antenna System/Booster *	Cellphone-Mate, Inc.	Force3 PSB	201502PS000001

Support Devices:

Function	Manufacturer	Model #	S/N
AC Adapter	Adapter Tech.	STD-1805	NA
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42082260

Test Conditions / Notes:

The EUT is placed on the test bench. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
 UL: 788-798, 799-805, 806-817, 817-824, 896-901 MHz
 DL: 758-768, 769-775, 851-862, 862-869, 935-940 MHz
 All adjustable settings on the test sample are set at max.
 Test environment conditions: 20°C, 40% Relative Humidity, 102.5kPa
 Test procedure: CFR, Sections 2.1047, 2.1051 and 90.210 (c), (h), (g) and (j) where applicable
 Software: SC_S1_Public_V3.0
 Firmware: V1.0

Notes: Manufacturer declares that EUT does not contain audio low pass filters.
 Power of any emission must be attenuated below the unmodulated carrier output power (P) depending on the applicable masks. Unmodulated carrier output power is measured with RBW=100kHz and is shown on the plots for power reference.

90.210 Emission masks.

APPLICABLE EMISSION MASKS

Frequency band (MHz)	Mask for equipment without audio low pass filter
806-809/851-854	H
809-824/854-869 ³	G
896-901/935-940	J
All other bands not specified on table 90.210	C

³Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of §90.691 of this chapter.

(c) Emission Mask C. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz, but not more than 10 kHz: At least $83 \log (f_d/5)$ dB;
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth: At least $29 \log (f_d^2/11)$ dB or 50 dB, whichever is the lesser attenuation;
- (3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

(g) Emission Mask G. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least $116 \log (f_d/6.1)$ dB, or $50 + 10 \log (P)$ dB, or 70 dB, whichever is the lesser attenuation;
- (2) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

(h) Emission Mask H. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least $107 \log(f_d/4)$ dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least $40.5 \log(f_d/1.16)$ dB;

(4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: At least $116 \log(f_d/6.1)$ dB;

(5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least $43 + \log(P)$ dB.

(i) **Emission Mask I.** For transmitters that are equipped with an audio low pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 6.8 kHz, but no more than 9.0 kHz: At least 25 dB;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 9.0 kHz, but no more than 15 kHz: At least 35 dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 15 kHz: At least $43 + 10 \log(P)$ dB, or 70 dB, whichever is the lesser attenuation.

(j) **Emission Mask J.** For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 2.5 kHz, but no more than 6.25 kHz: At least $53 \log(f_d/2.5)$ dB;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 6.25 kHz, but no more than 9.5 kHz: At least $103 \log(f_d/3.9)$ dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 9.5 kHz: At least $157 \log(f_d/5.3)$ dB, or $50 + 10 \log(P)$ dB or 70 dB, whichever is the lesser attenuation.

§90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

90.210 Emission Masks - Summary of Results

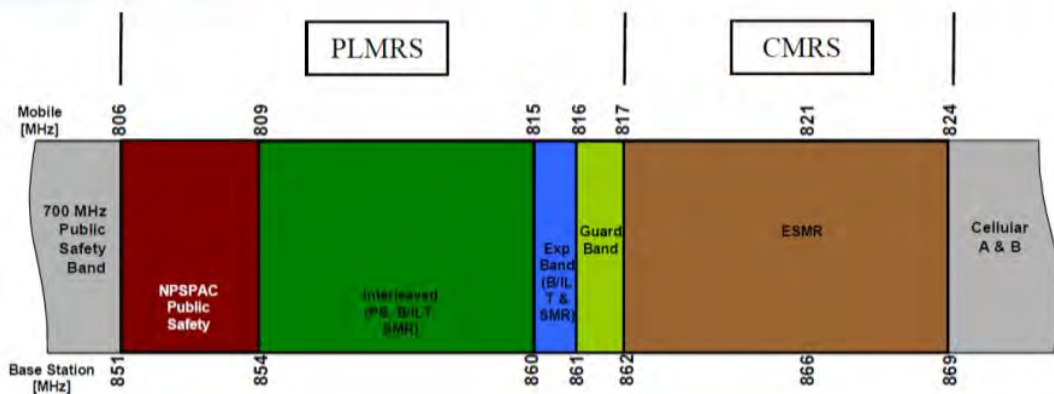
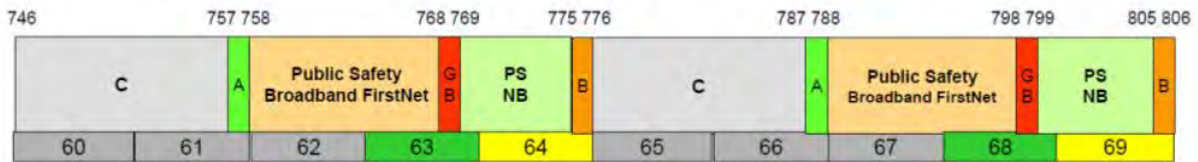
Pass: as indicated in plots below, all emissions are under the applicable masks.

Applicable Masks / OOB	Public safety				Public Safety	ESMR	Public Safety	ESMR	900 Interleaved	
	UL		DL		UL		DL		UL	DL
	788-805		758-775		806-824		851-869		896-901	935-940
	788-798	799-805	758-768	769-775	806-817	817-824	851-862	862-869		
OOB	LH		LH							
Mask C		LH		LH						
Mask H					L		L			
Mask G						MH		MH		
Mask J									LMH	LMH

LMH: Low, Middle and High channels

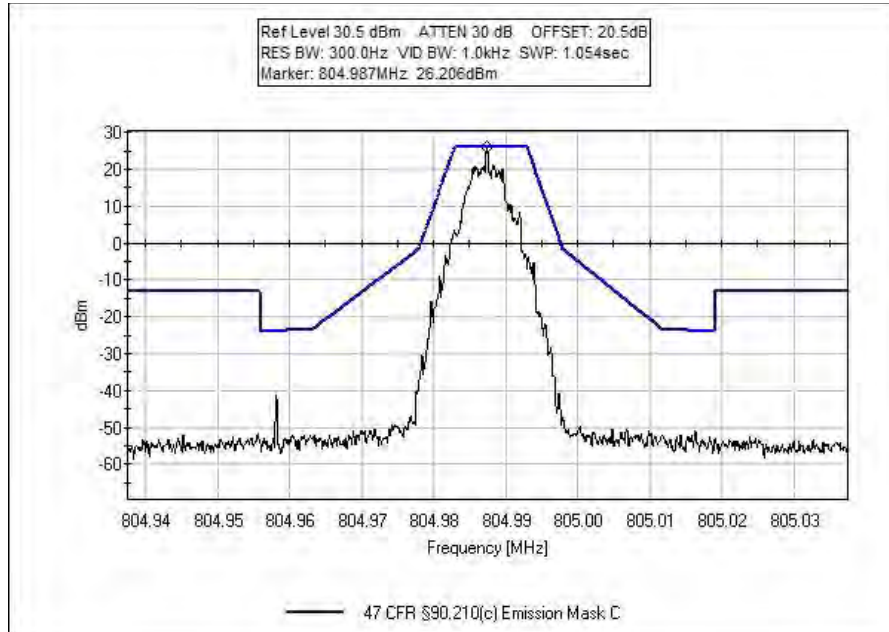
Reference

DA-12-1462 allocation; FCC-13-137 PS BB service rules

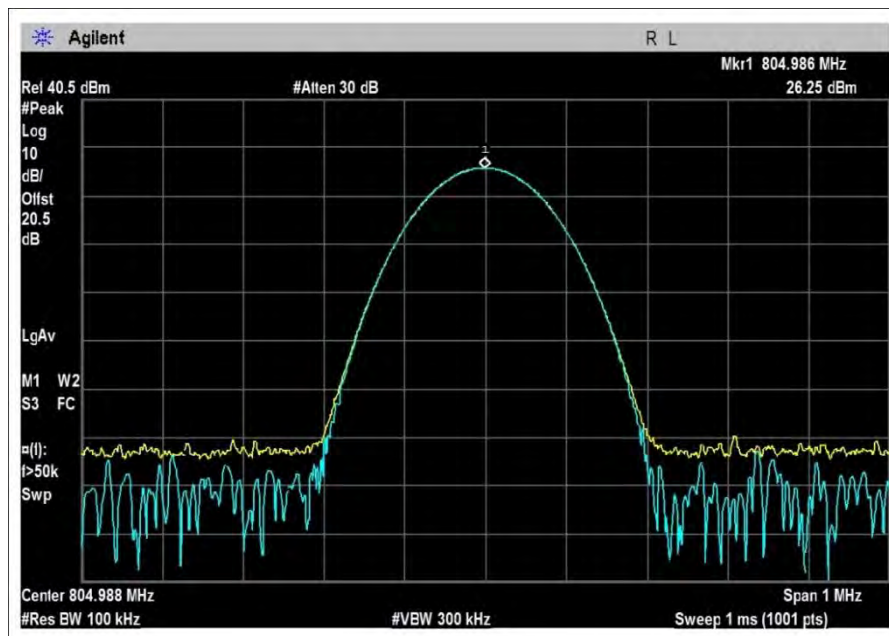


Test Data

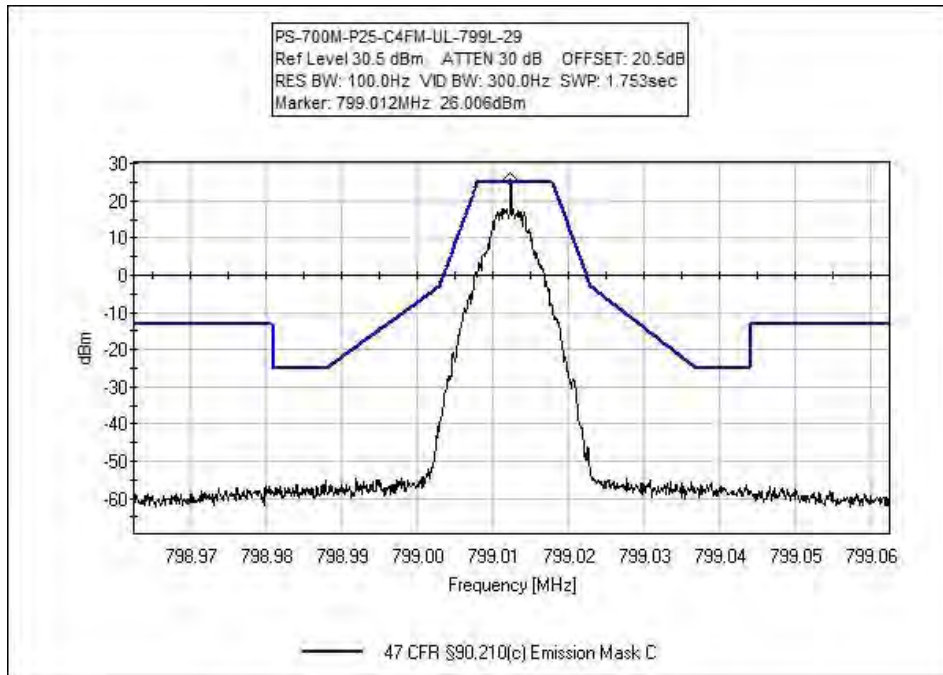
700MHz – C4FM - UL



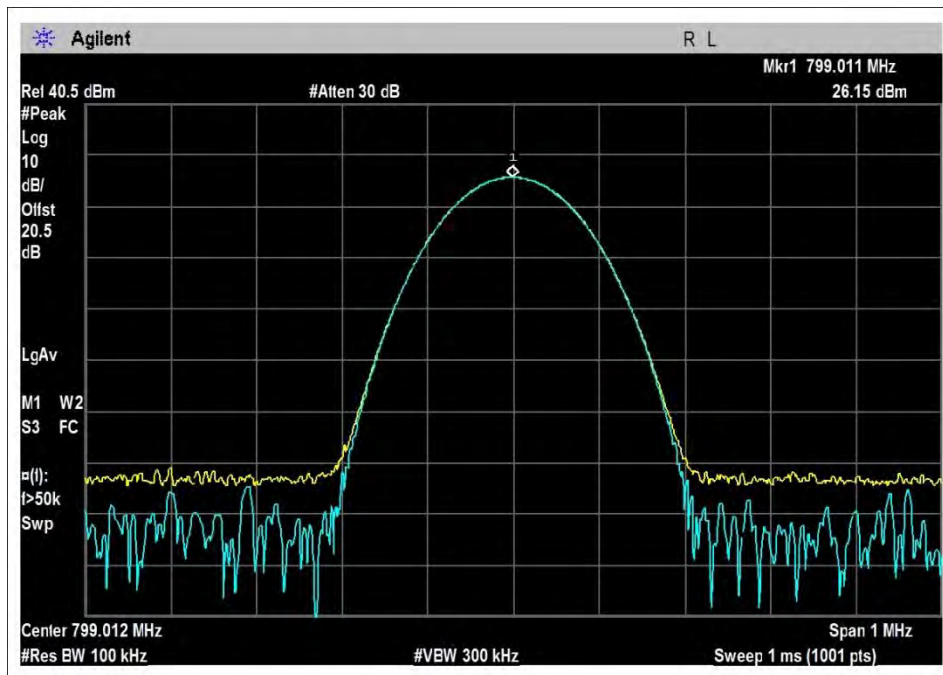
UL-799-805H-MaskC



UL-799-805H-Unmod-30.4

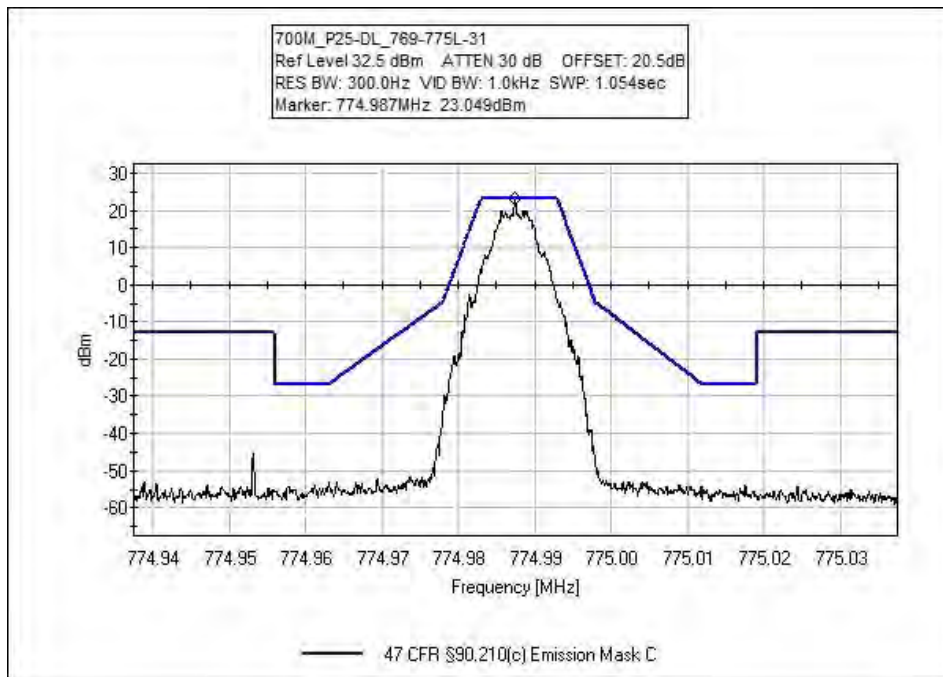


UL-799-805L-MaskC

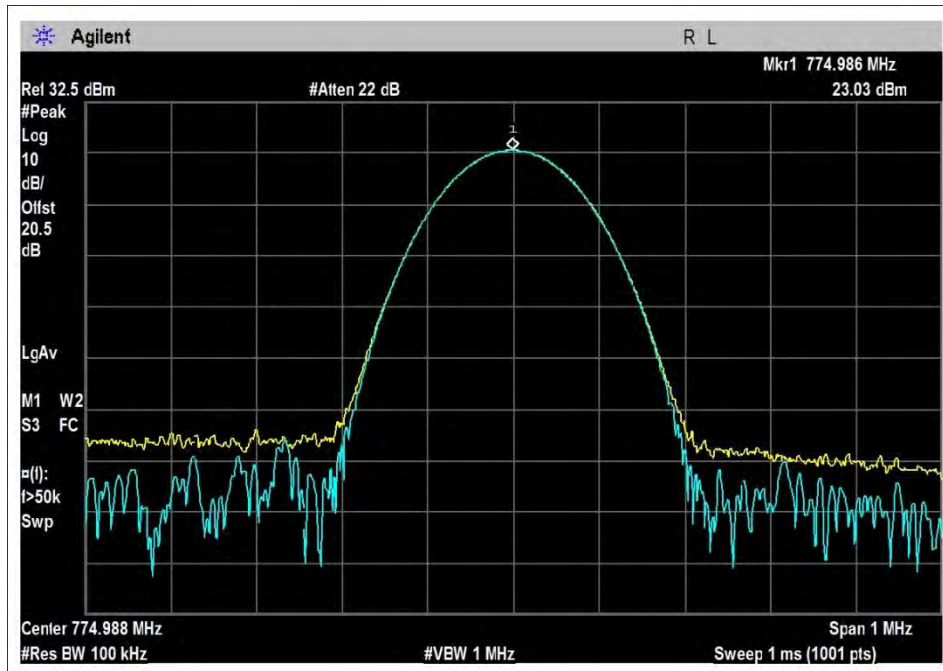


UL-799-805L-Unmod-29

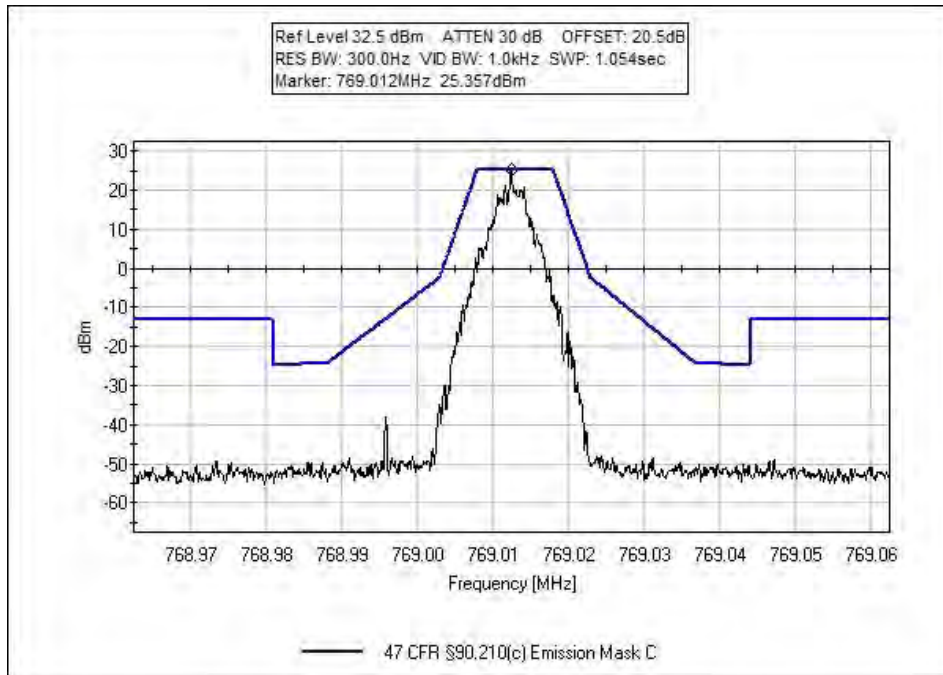
700MHz – C4FM – DL



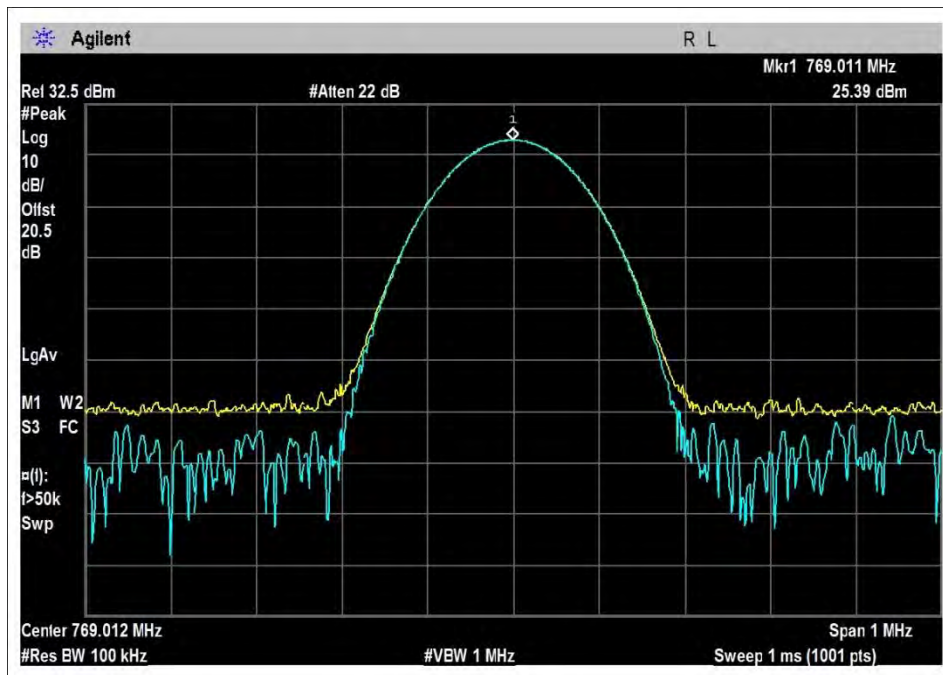
DL-769-775H-MaskC



DL_769-775H-Unmod-31

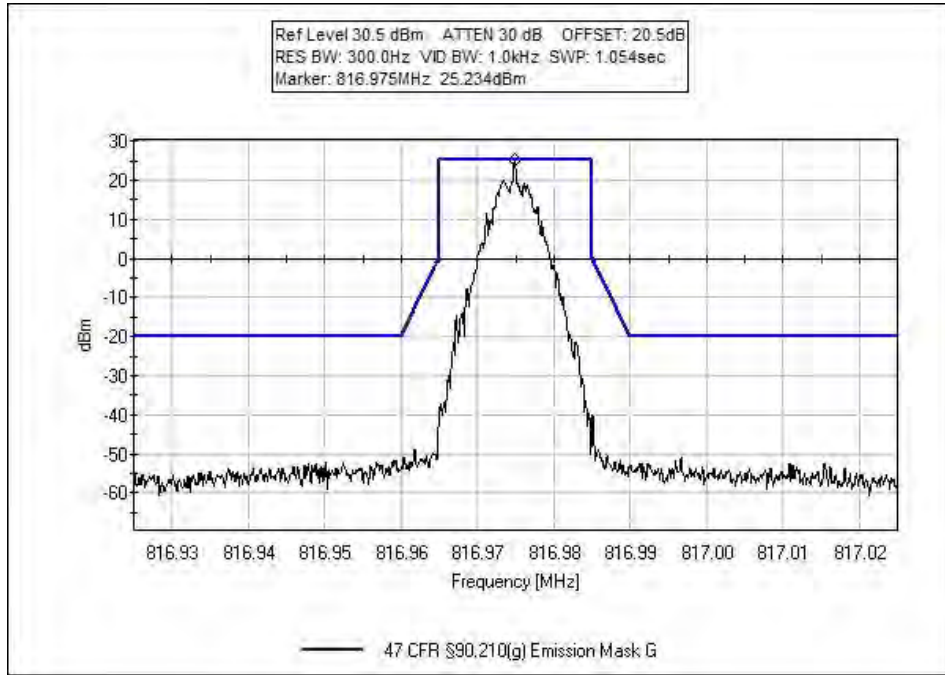


DL-769-775L-MaskC

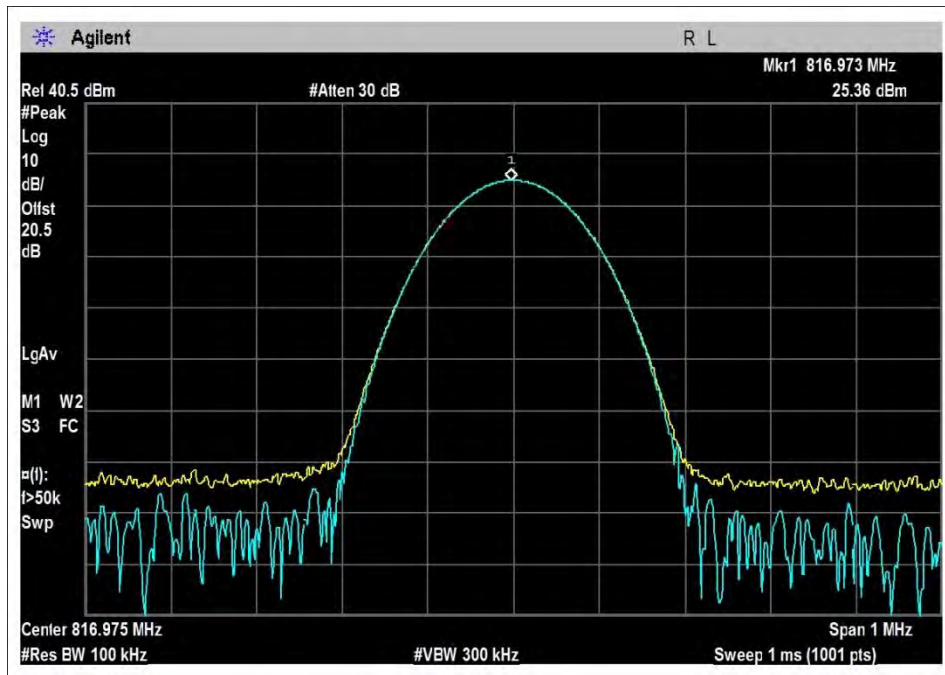


DL_769-775L-Unmod-36.6

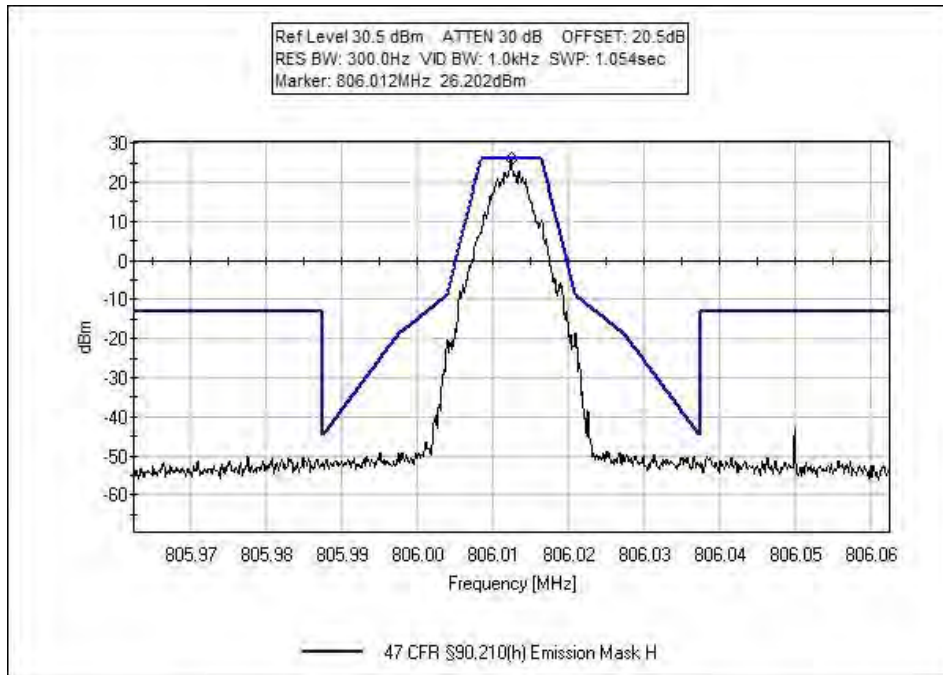
800MHz – C4FM – UL



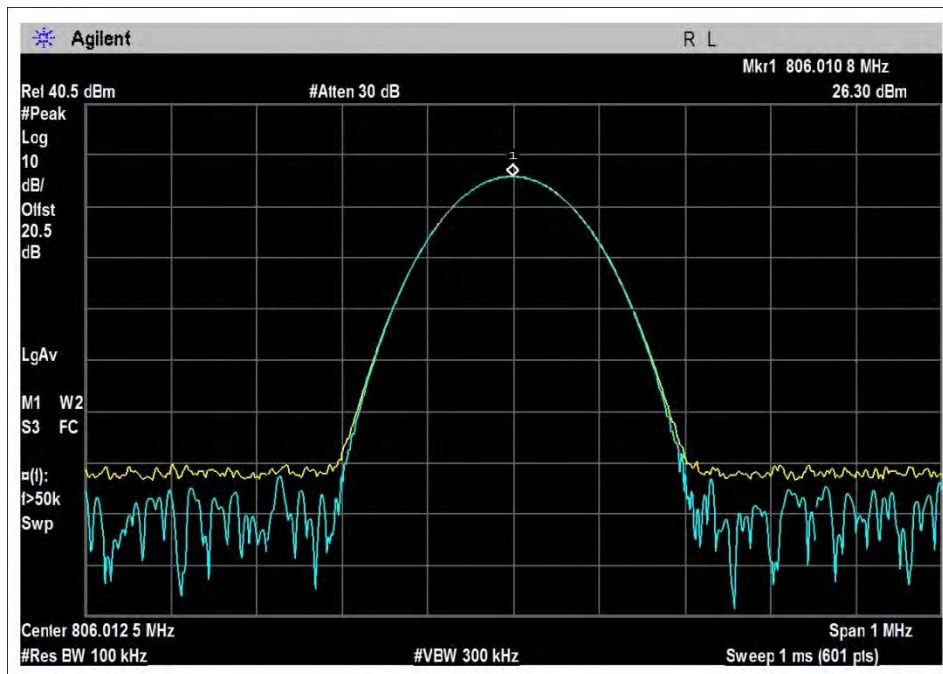
UL-806-817H-MaskG



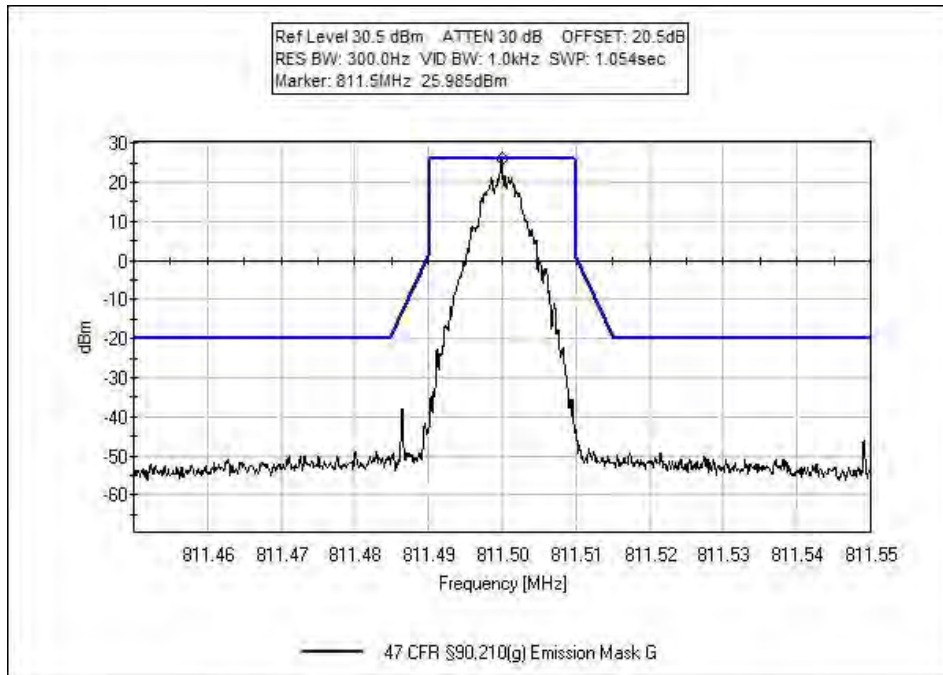
UL-806-817H-Unmod-28.9



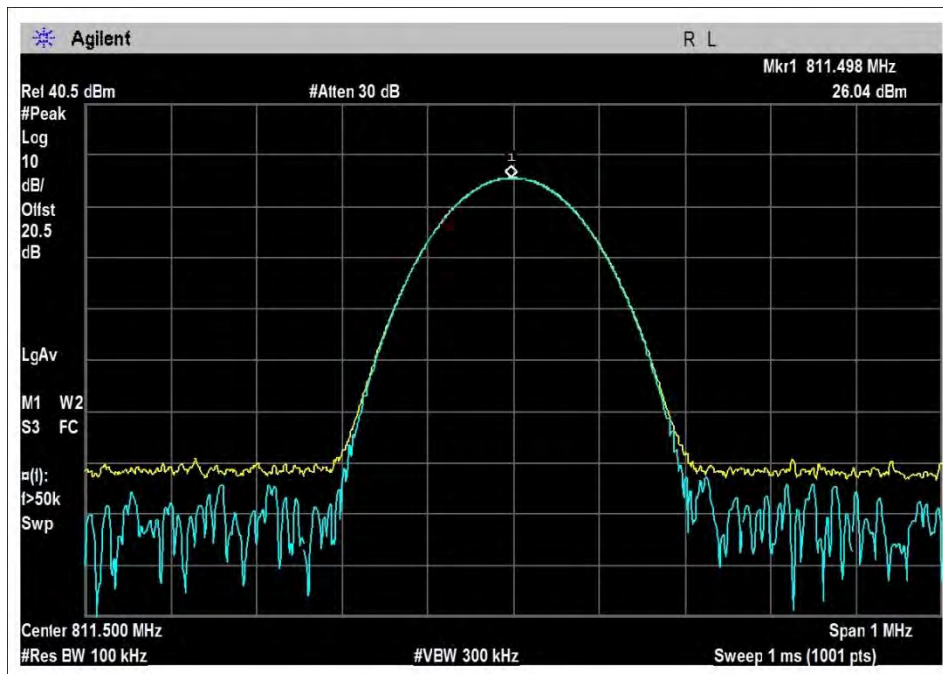
UL-806-817L-MaskH



UL-806-817L-Unmod-31.0

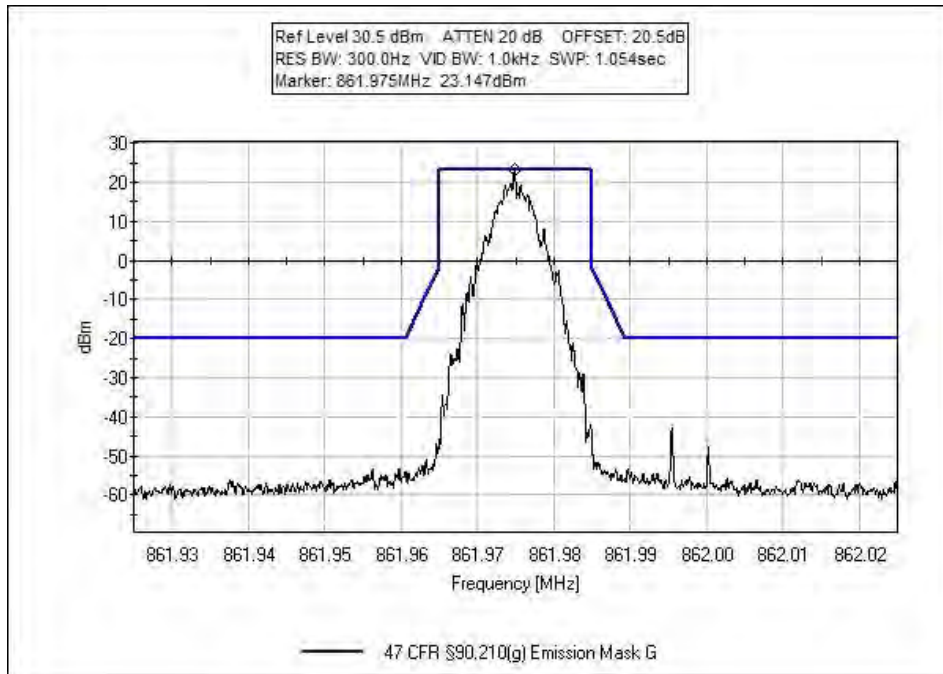


UL-806-817M-MaskG

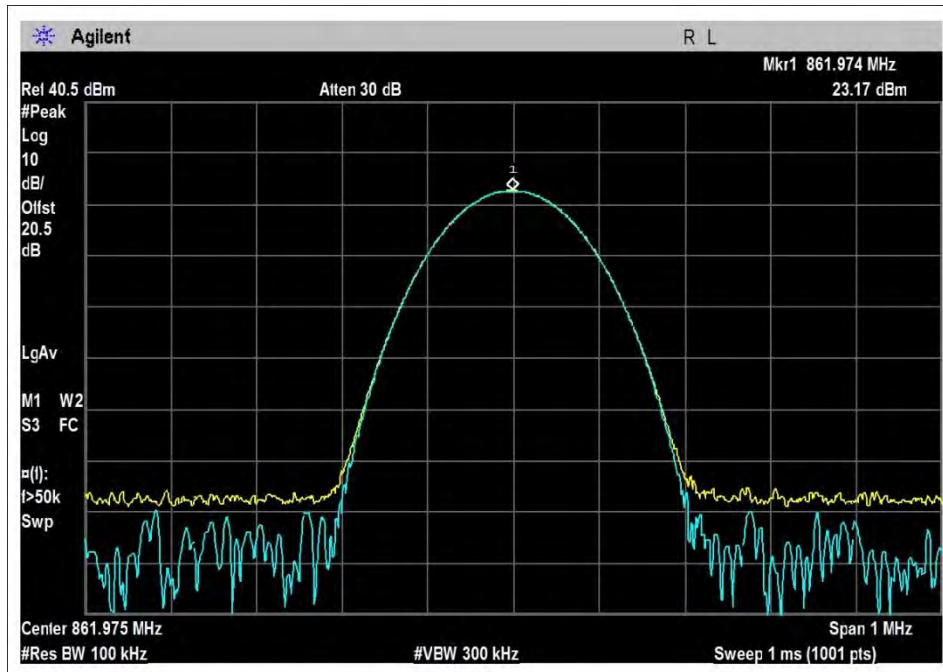


UL-806-817M-Unmod-31.2

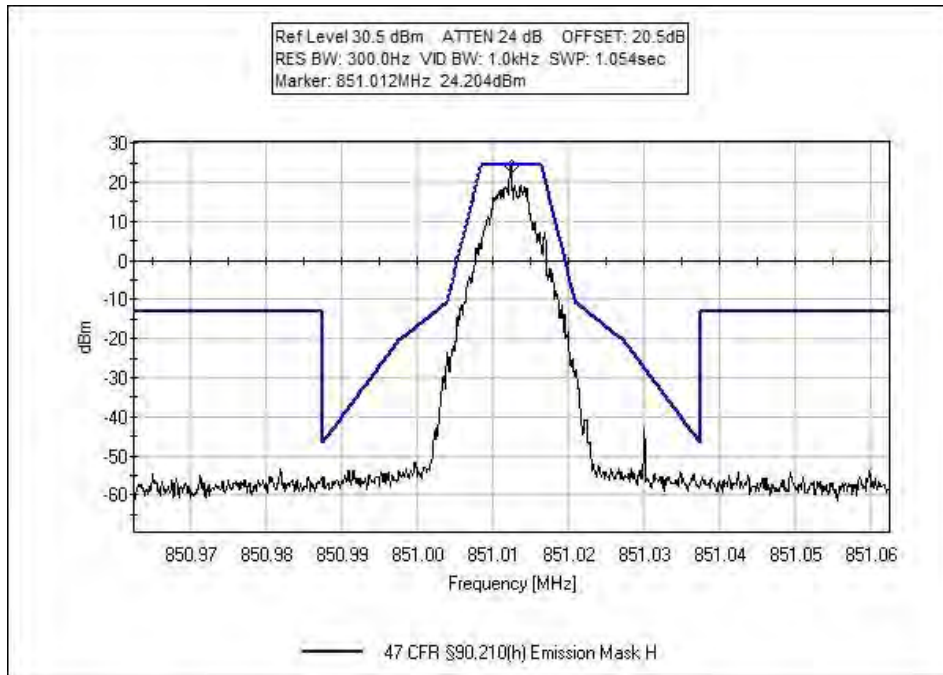
800MHz – C4FM – DL



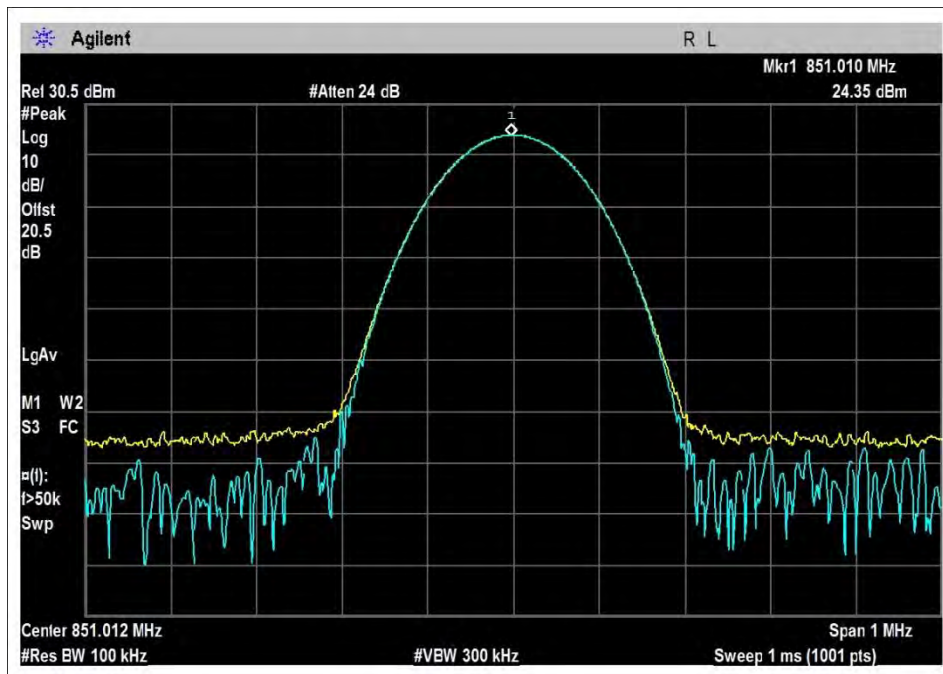
DL-851-862H-MaskG



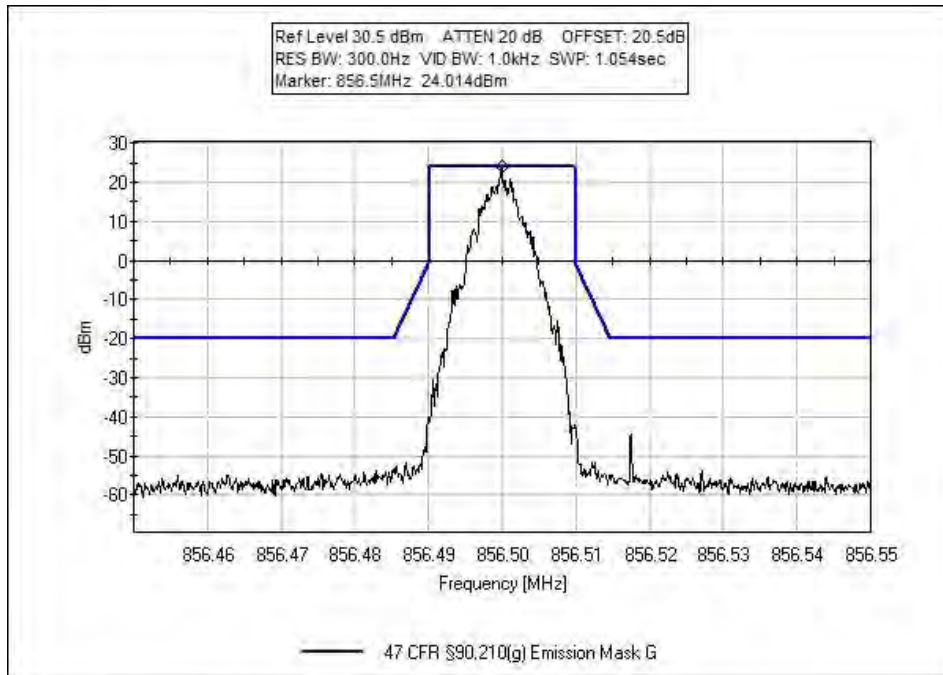
DL-851-862H-Unmod-25.2



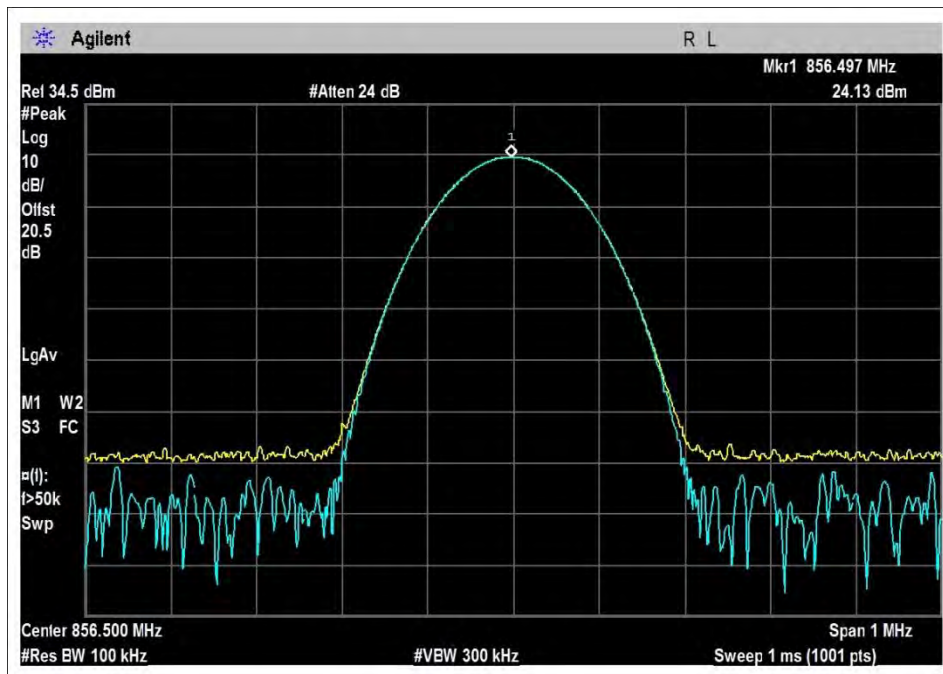
DL-851-862L-MaskH



DL-851-862L-Unmod-27.2

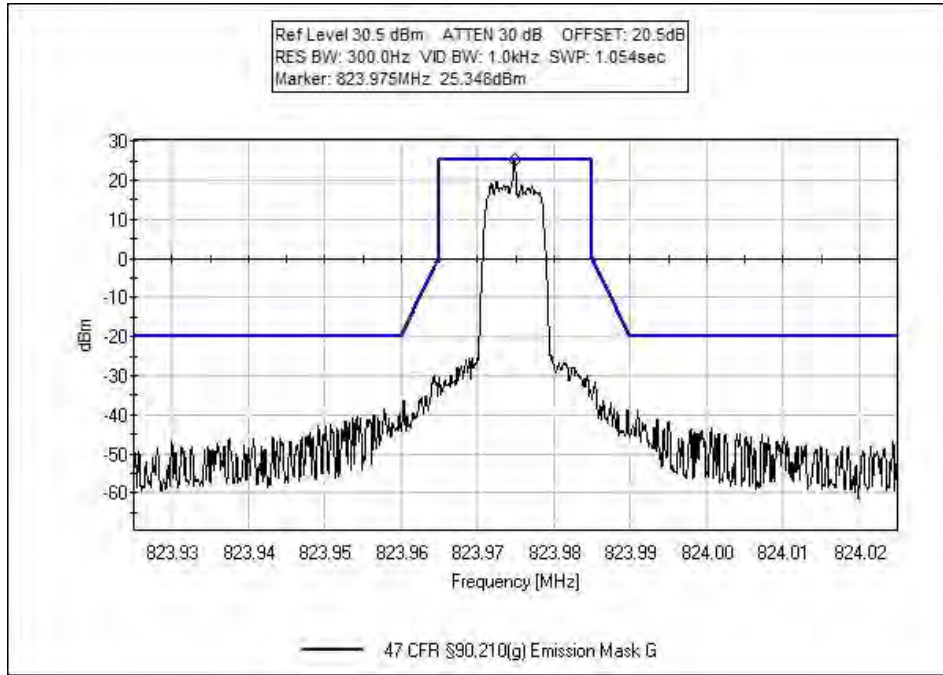


DL-851-862M-MaskG

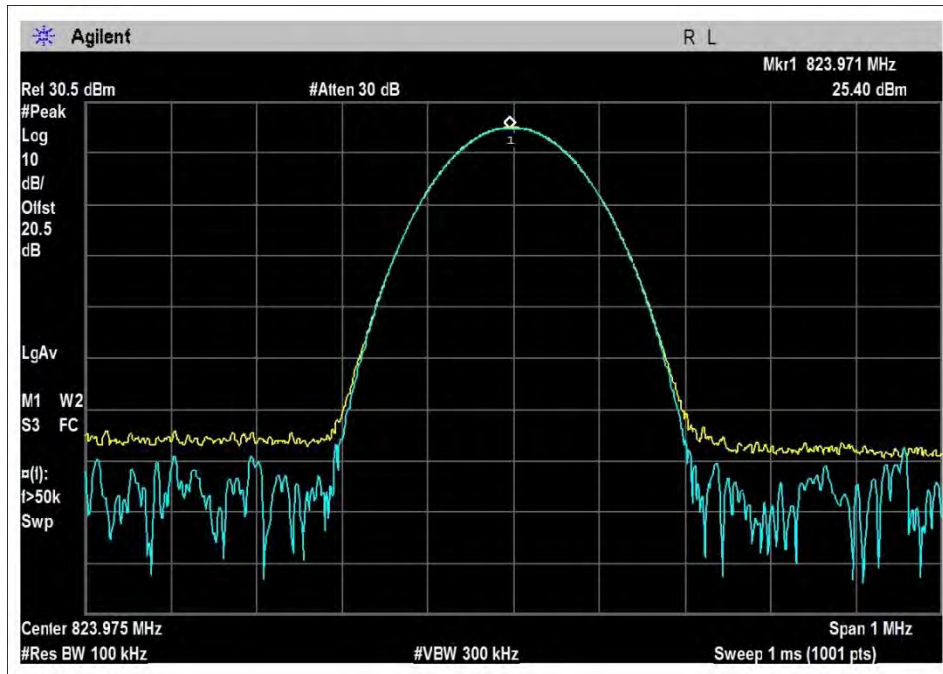


DL-851-862M-Unmod-28.2

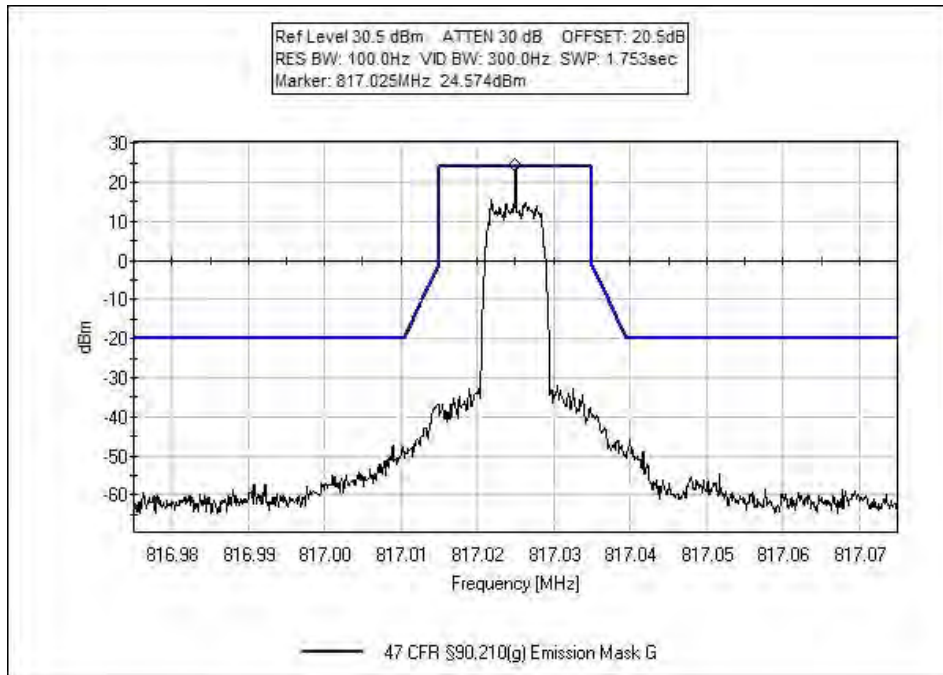
800MHz – CQPSK – UL



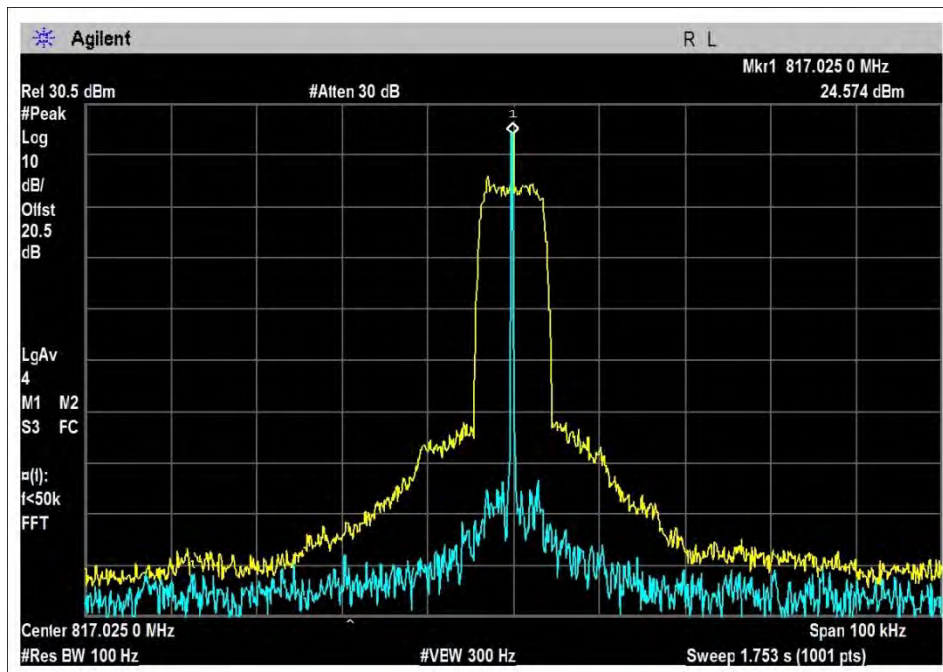
800M-F1W-UL-817-824H-MskG



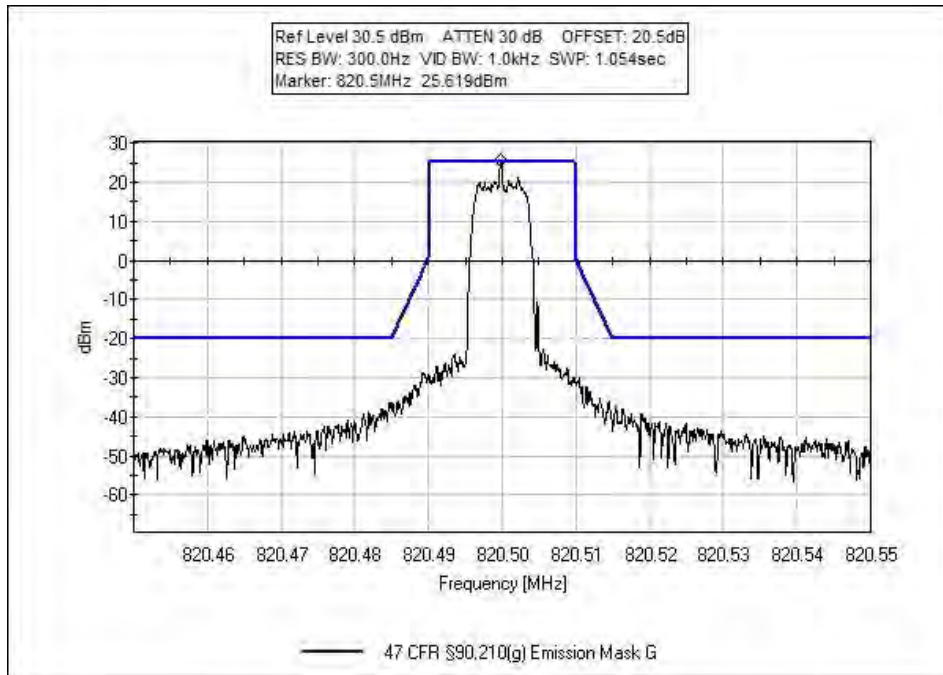
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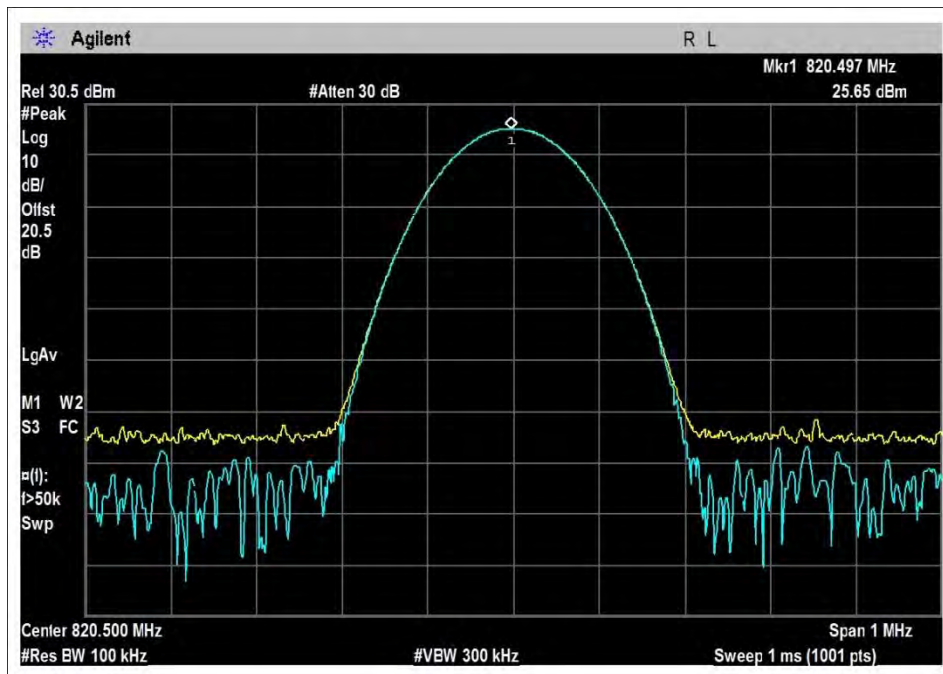
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800M-F1W-UL-817-824L-Unmod

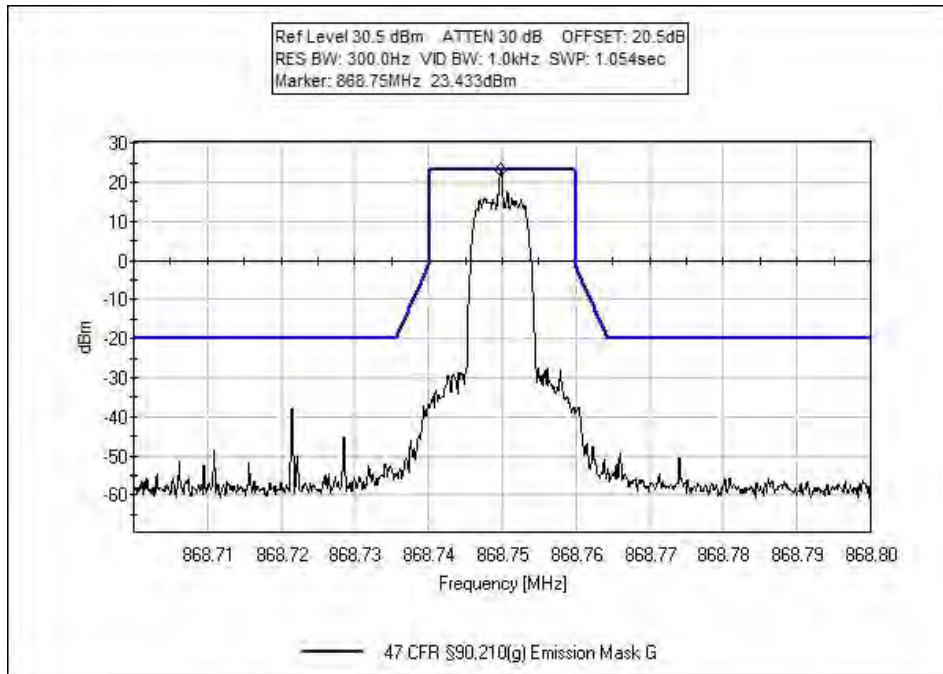


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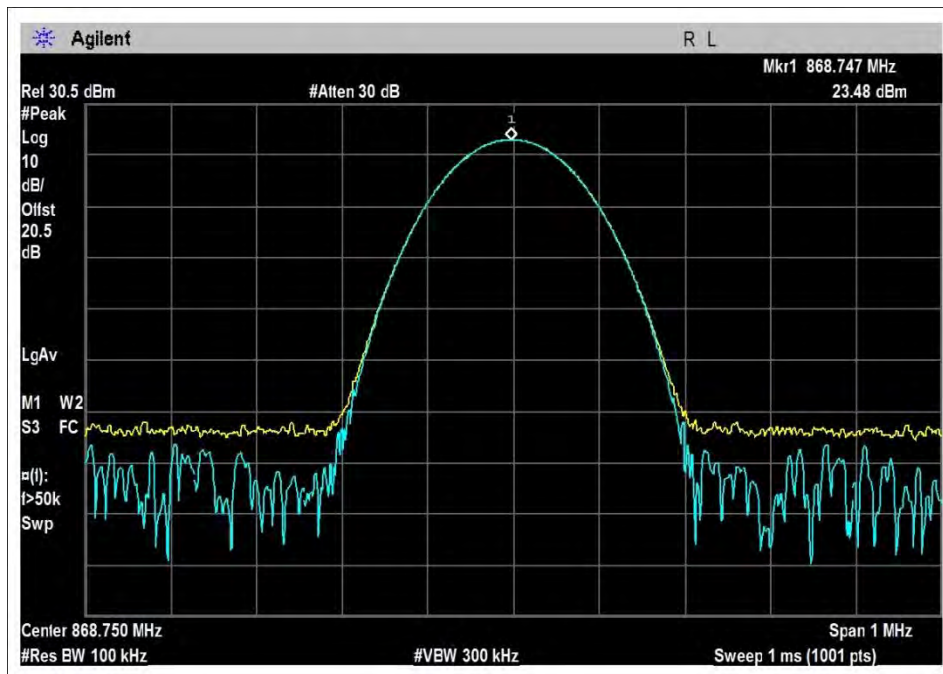


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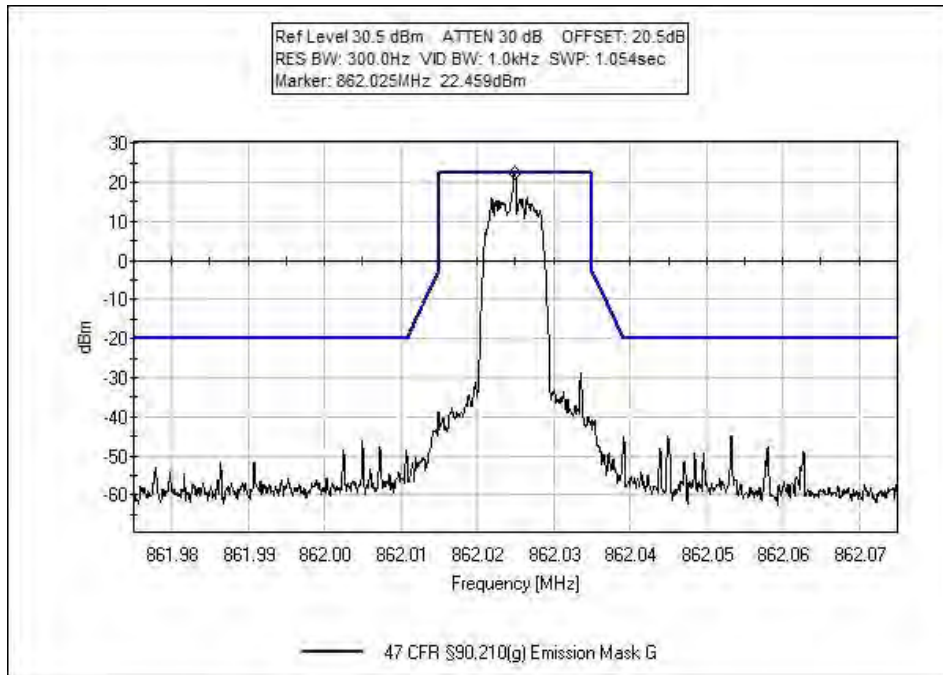
800MHz – CQPSK – DL



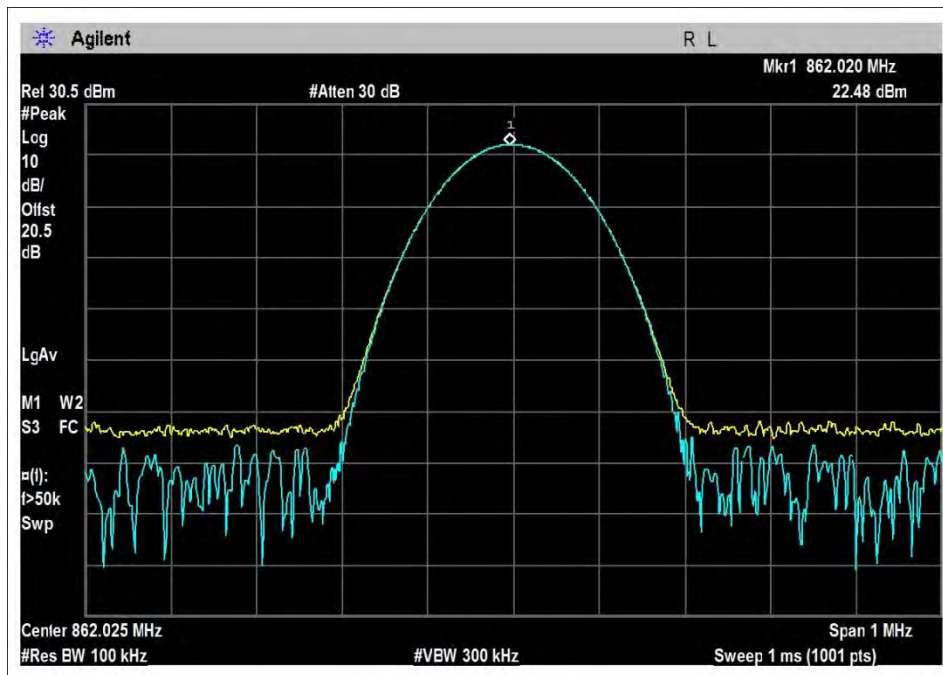
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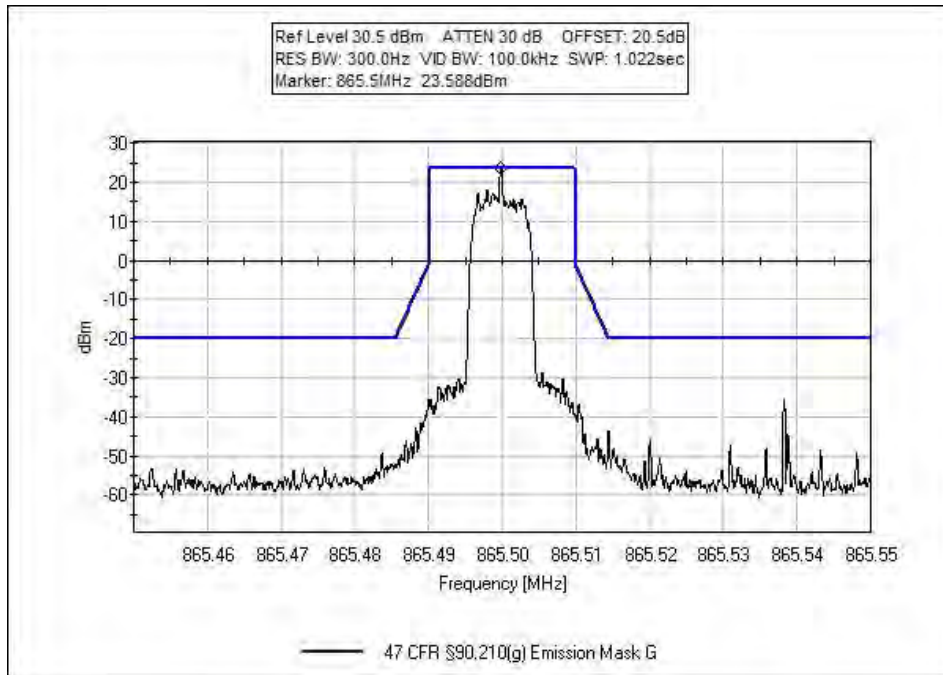
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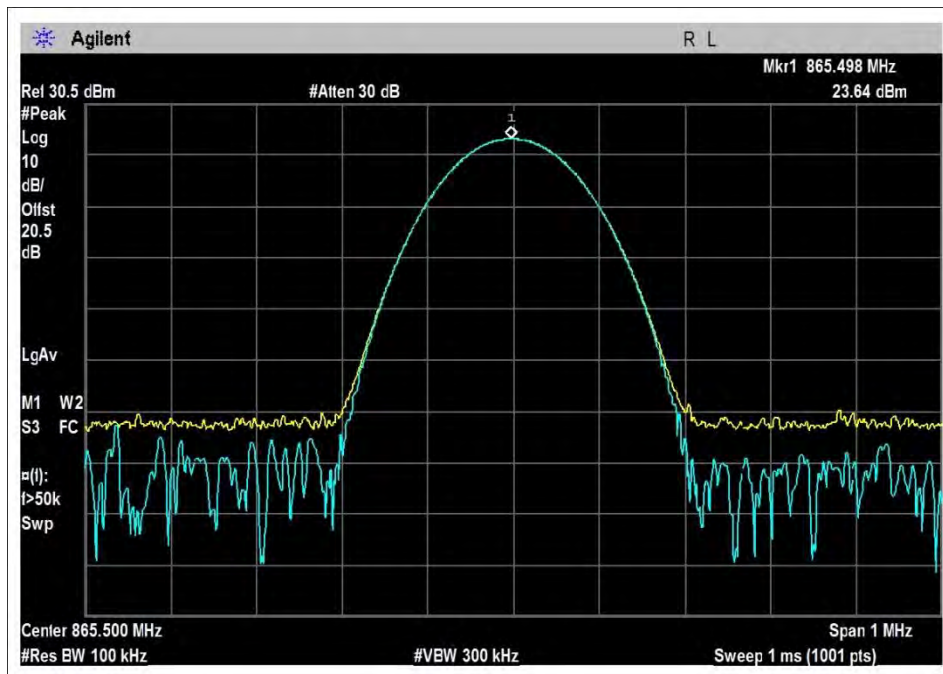
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800M-F1W-DL-862-869L-Unmod

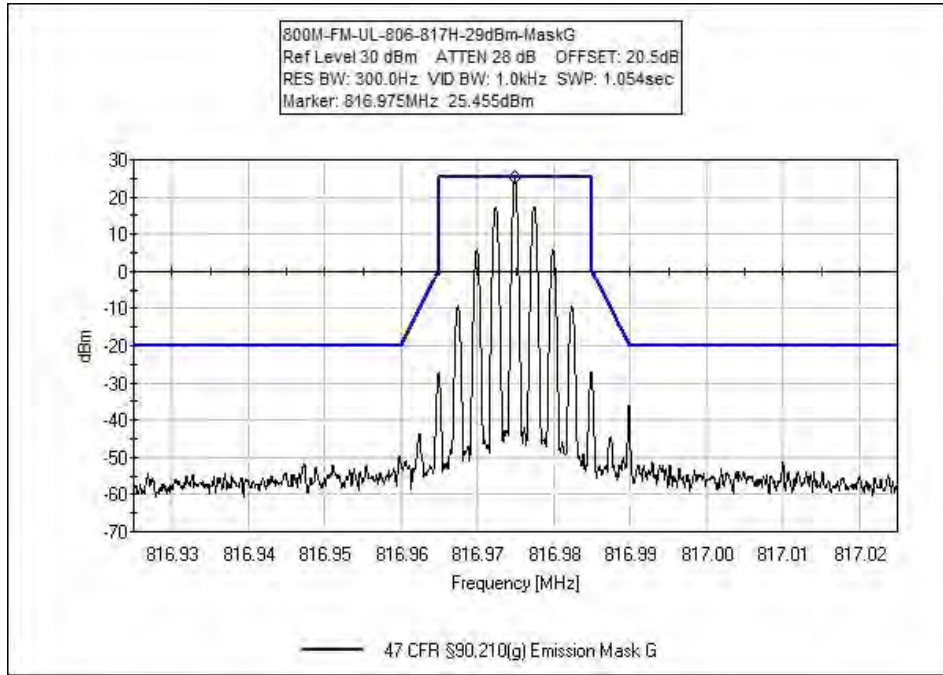


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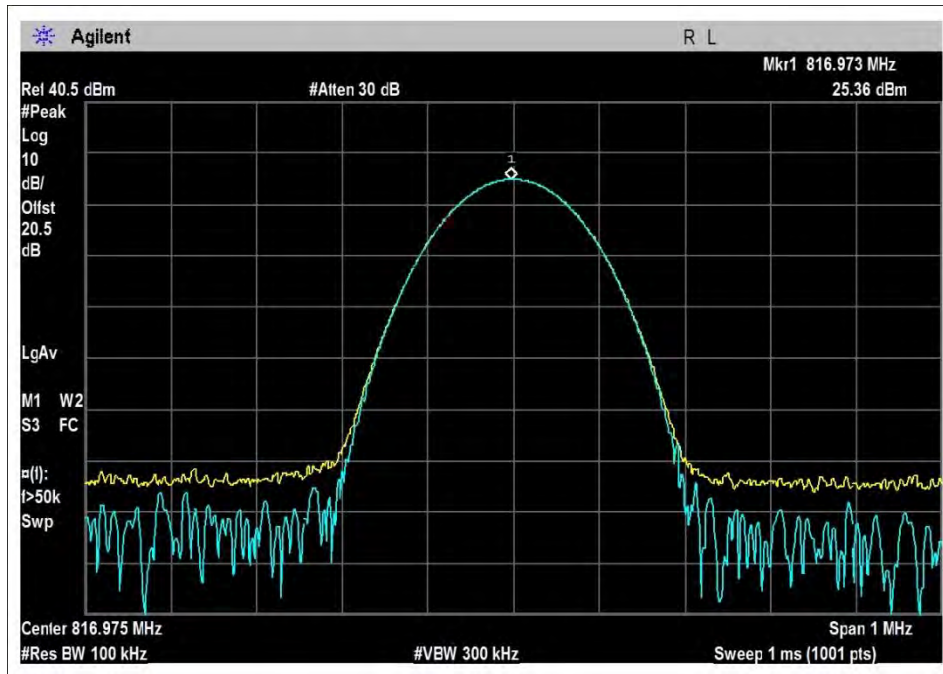


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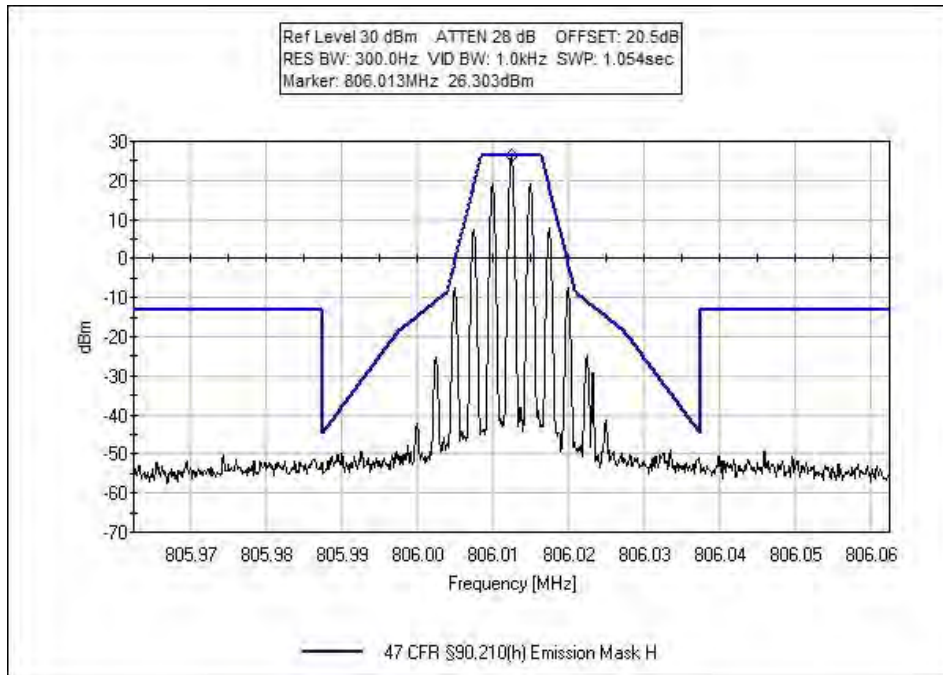
800MHz – FM – UL



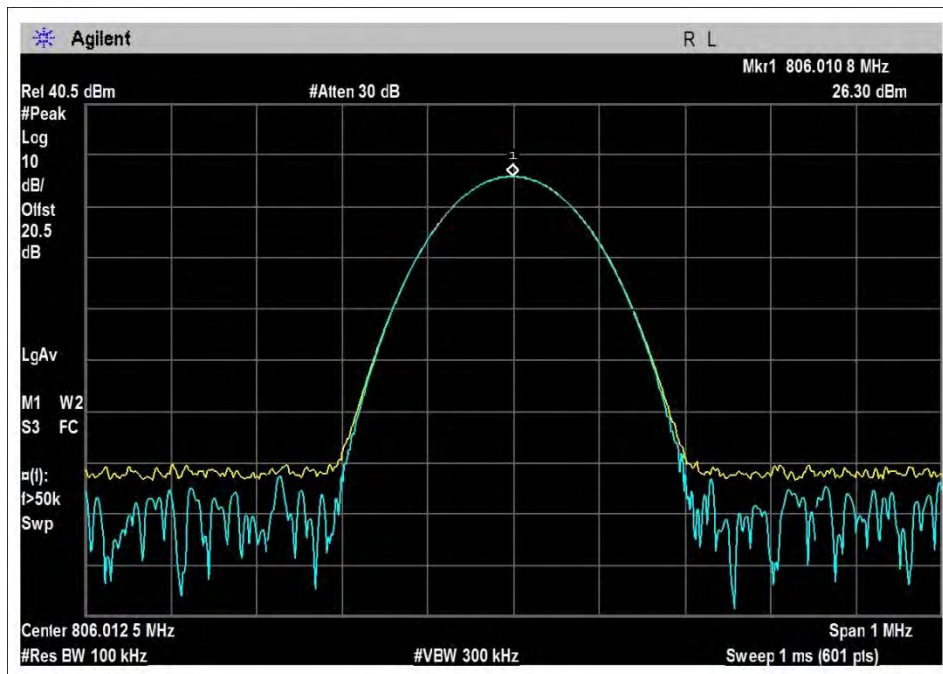
UL-806-817H-MaskG



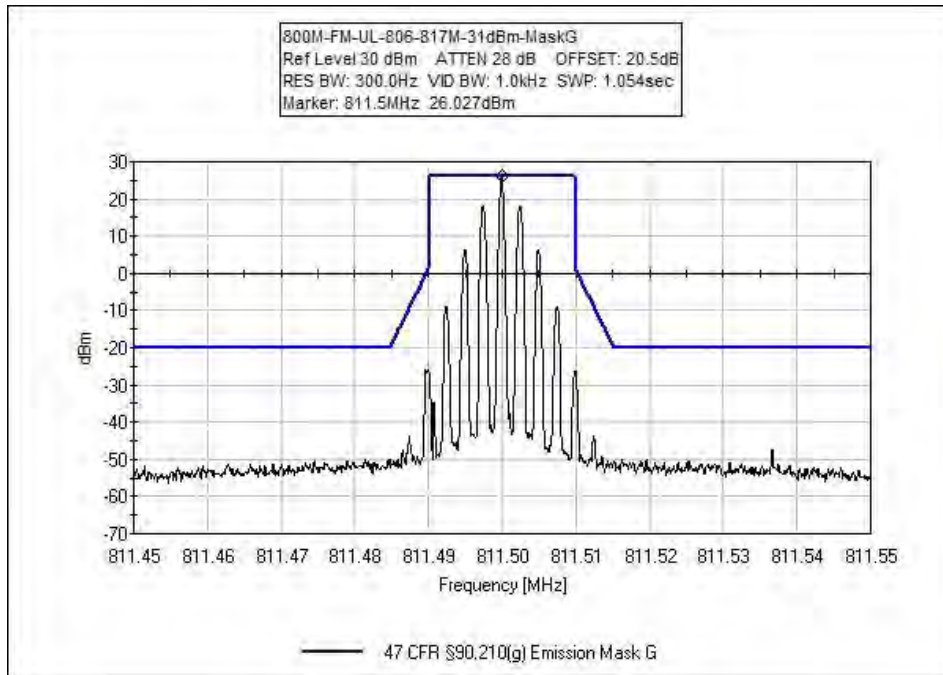
UL-806-817H-Unmod-28.9



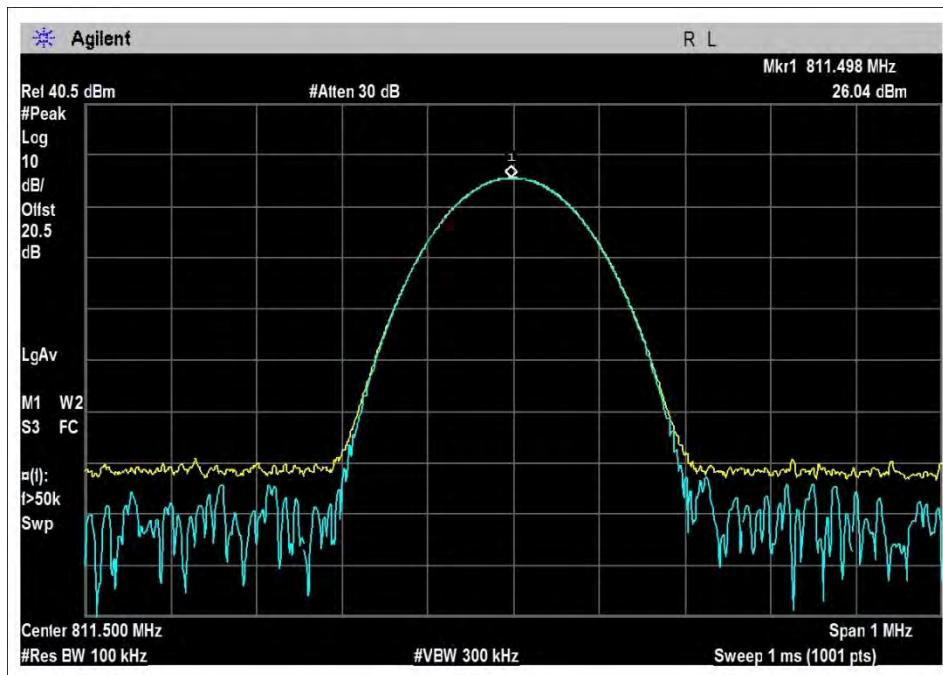
UL-806-817L-MaskH



UL-806-817L-Unmod-31.0

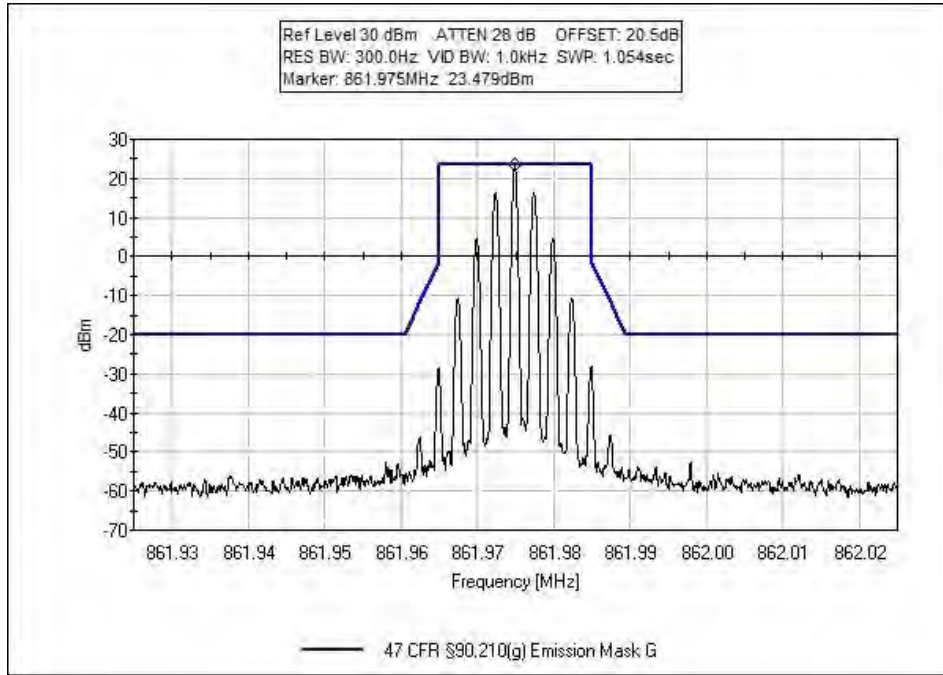


UL-806-817M-MaskG

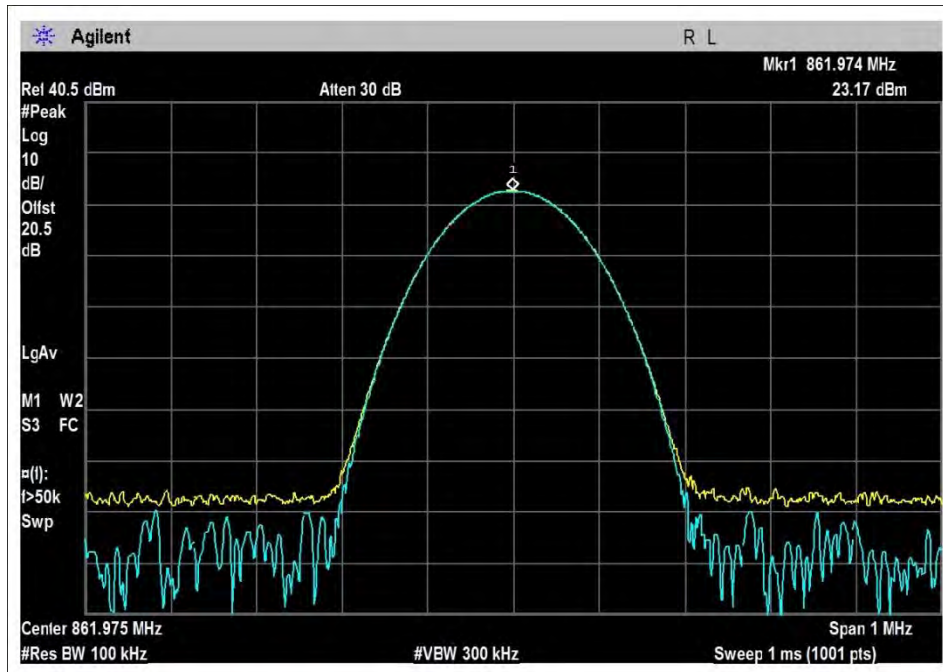


UL-806-817M-Unmod-31.2

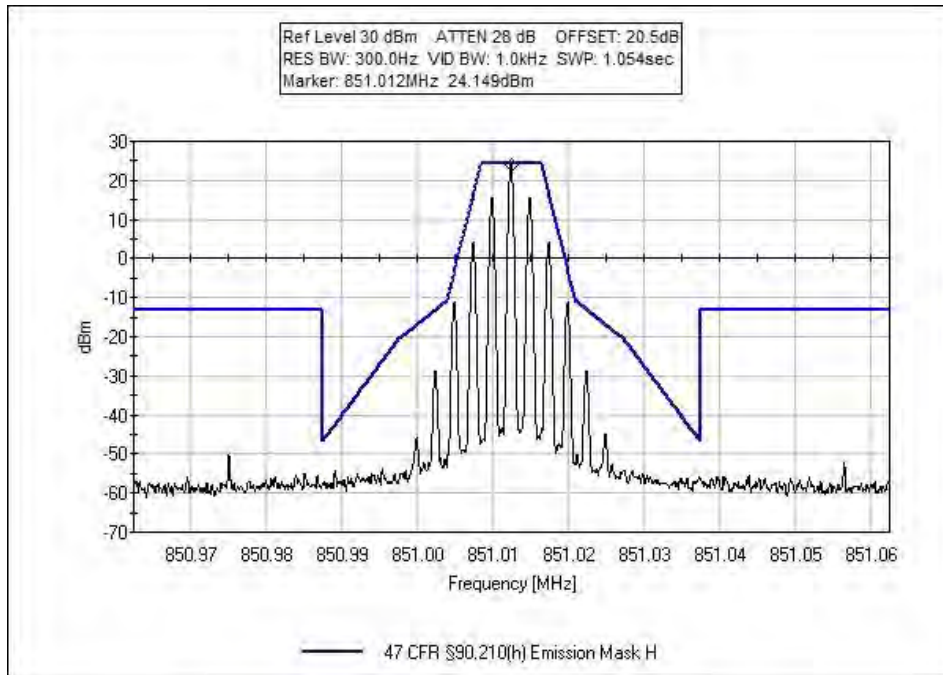
800MHz – FM – DL



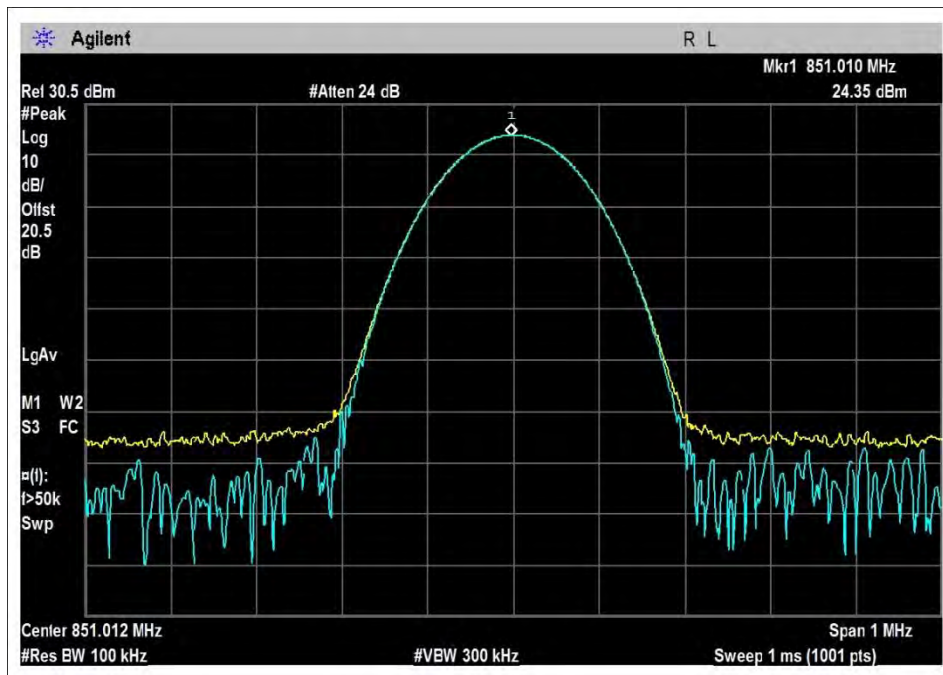
DL-851-862H-MaskG



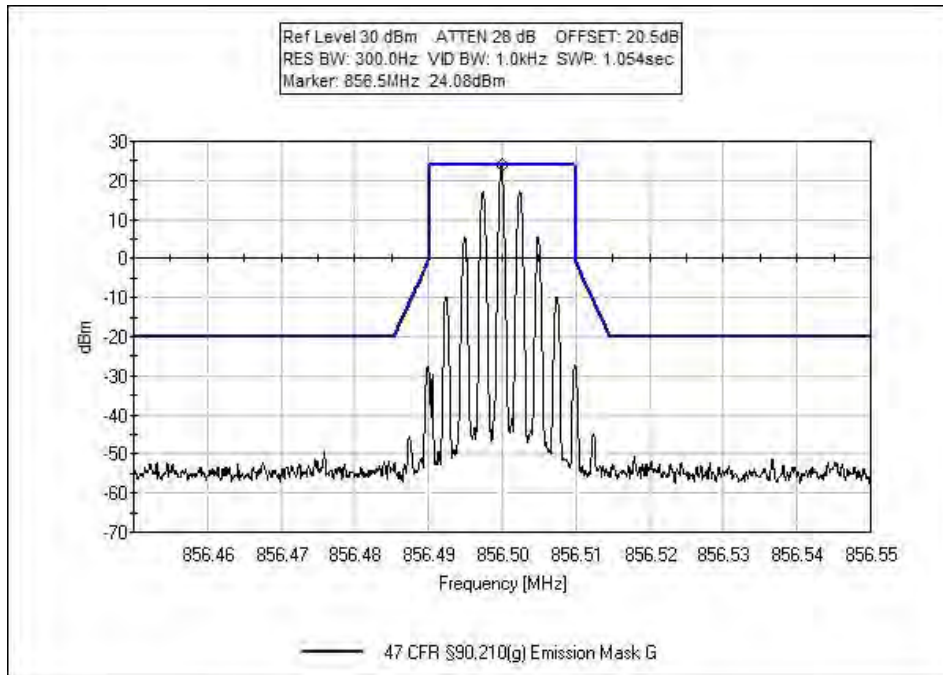
DL-851-862H-Unmod-25.2



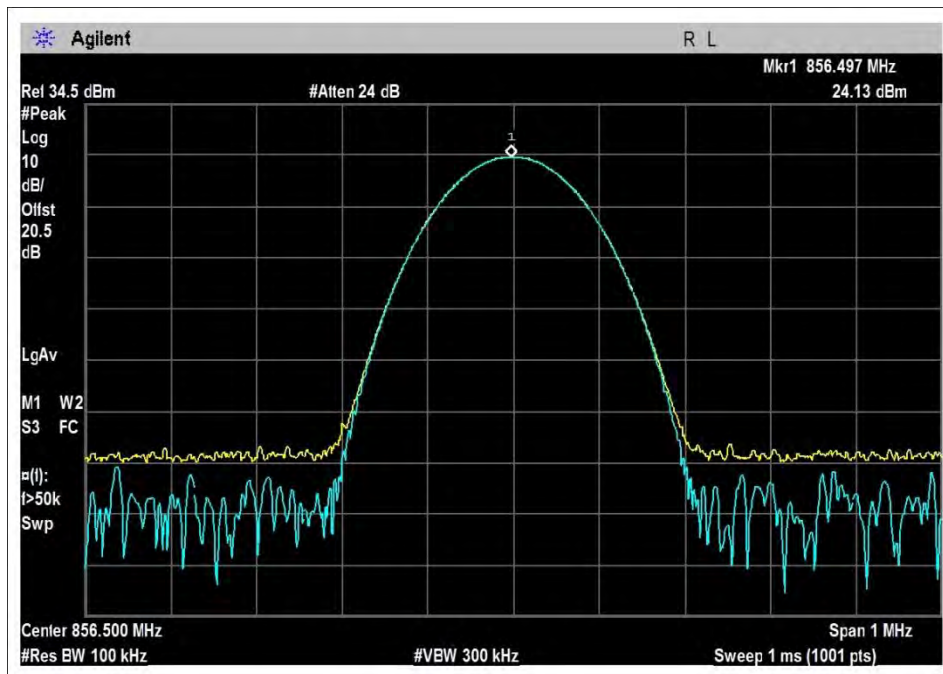
DL-851-862L-MaskH



DL-851-862L-Unmod-27.2

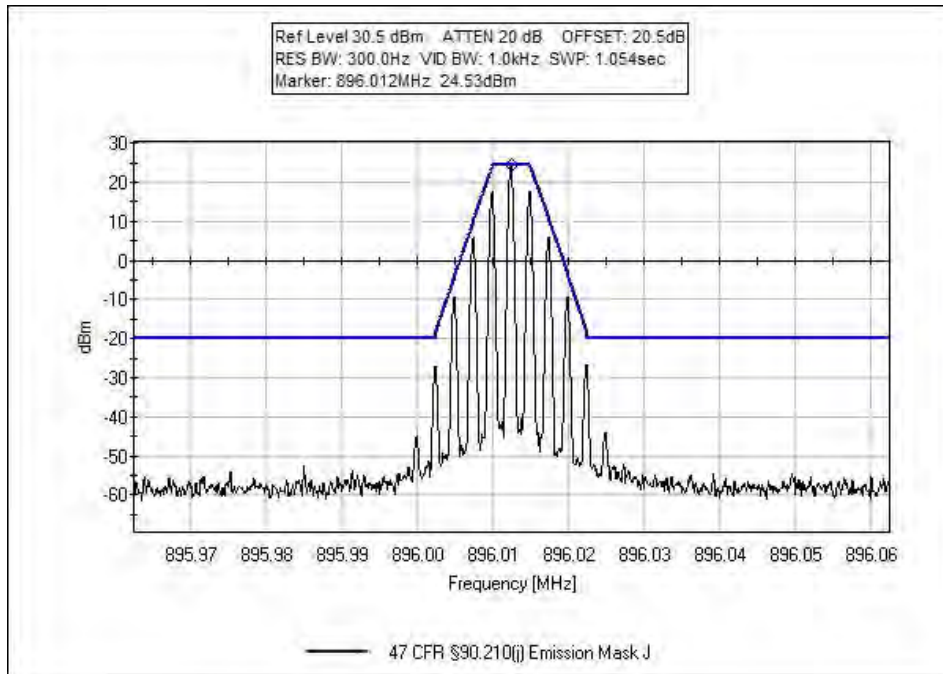


DL-851-862M-MaskG

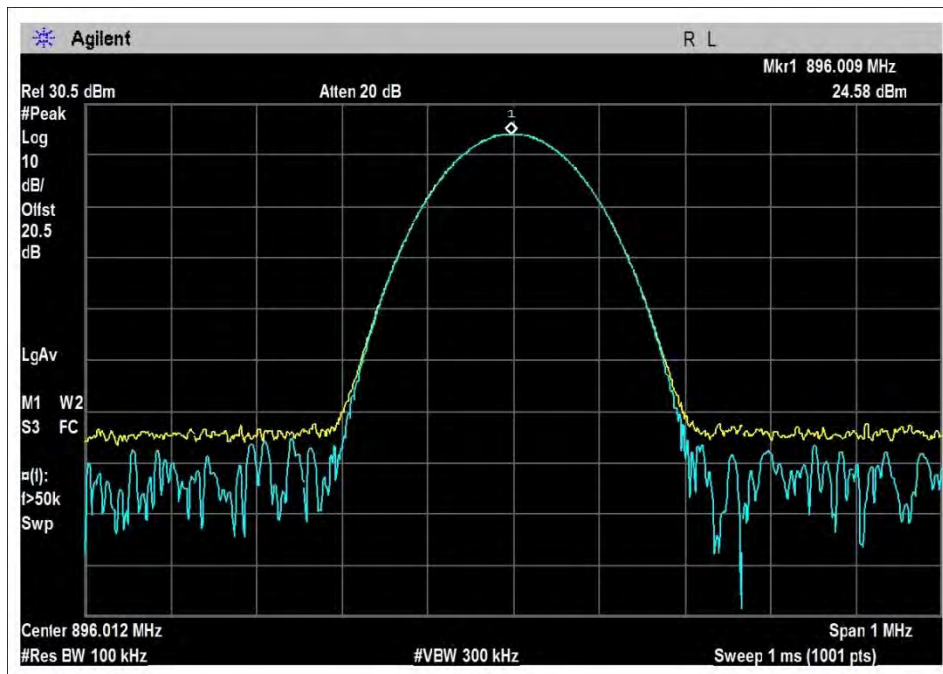


DL-851-862M-Unmod-28.2

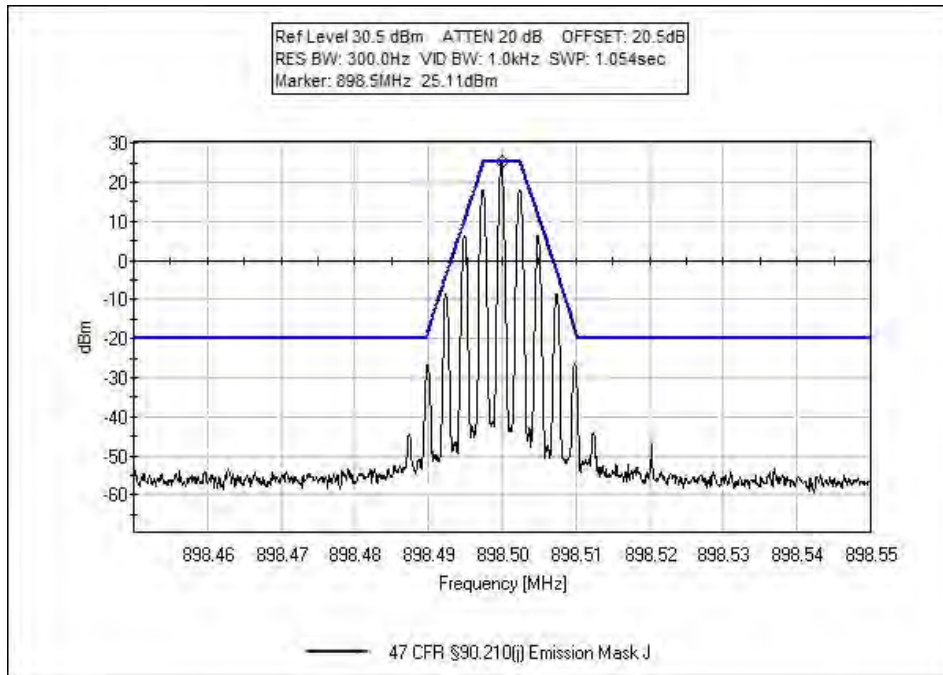
900MHz – FM – UL



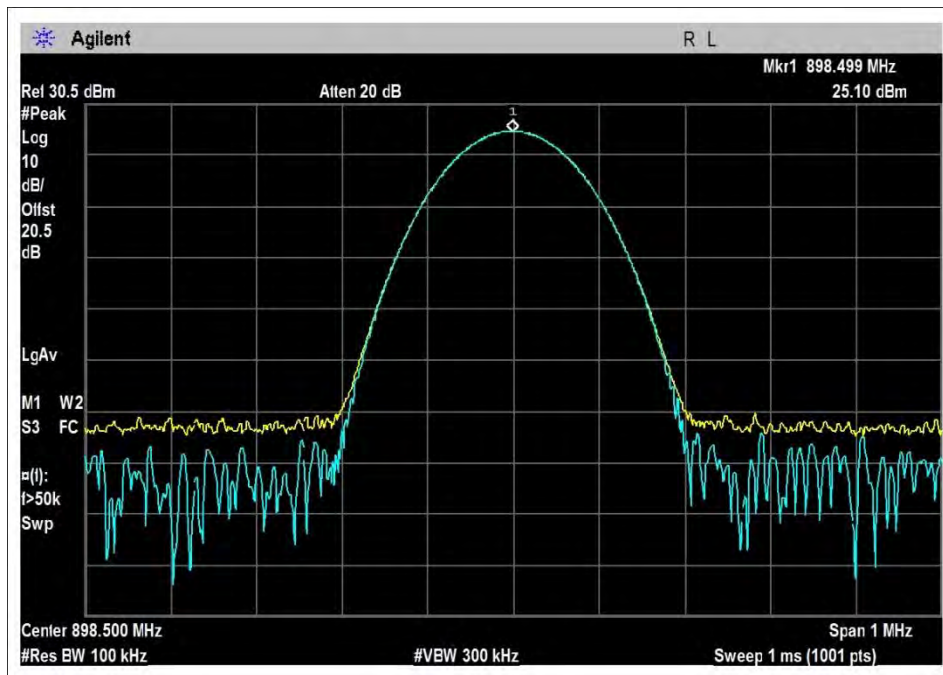
900M_FM_UL-896L-MaskJ



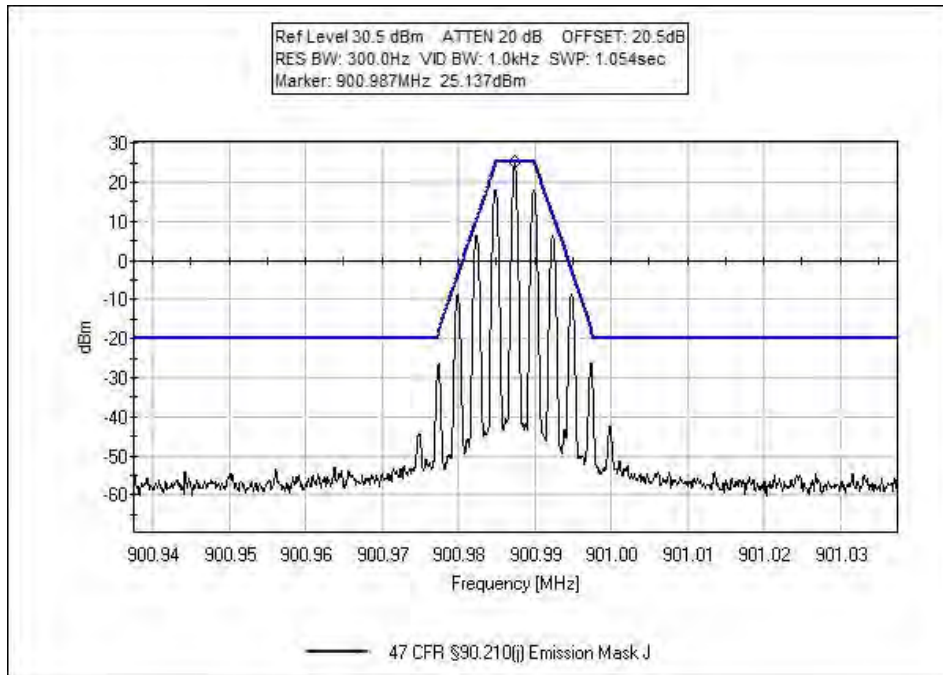
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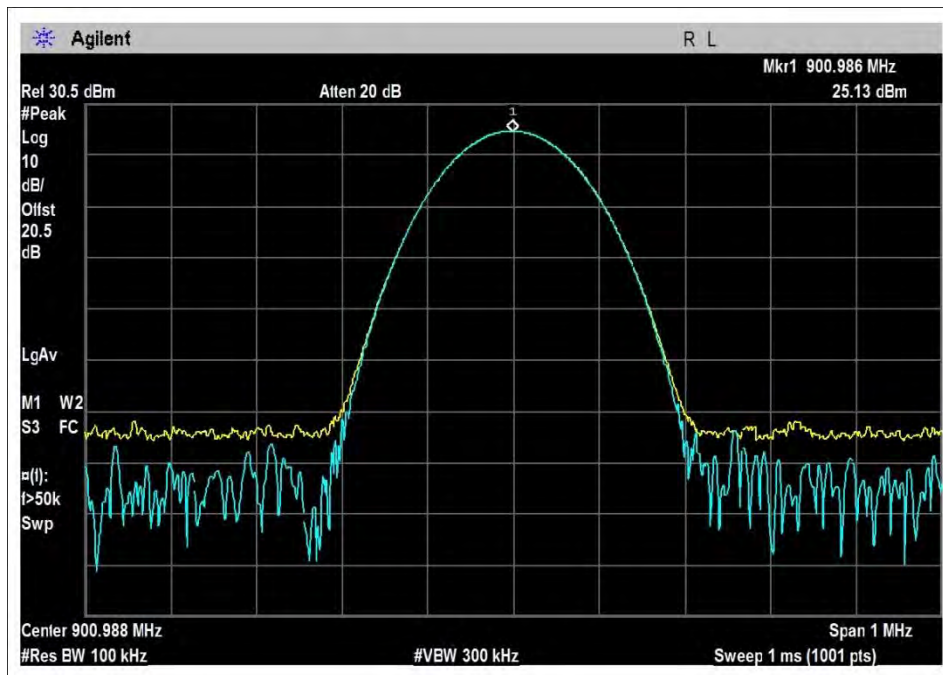
900M_FM_UL-898M-MaskJ



900M_FM_UL-898M-Unmod-30.2

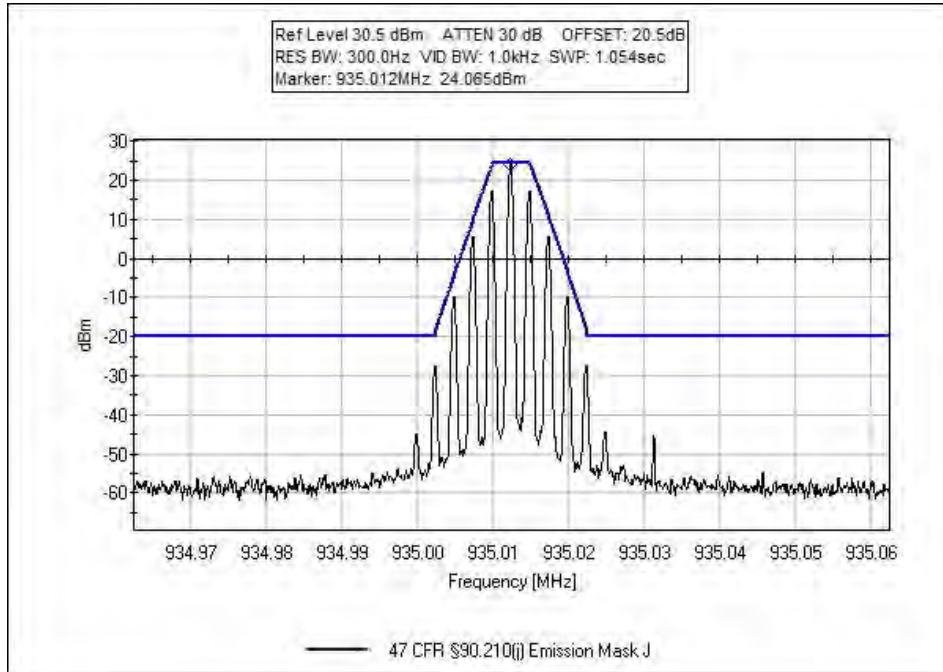


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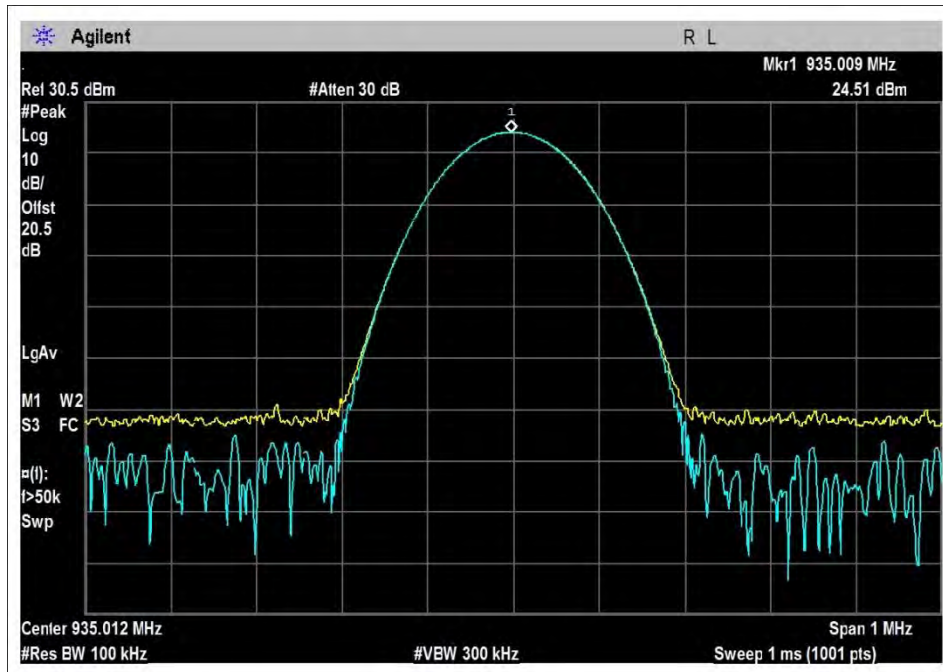


900M_FM_UL-901H-Unmod-28.3

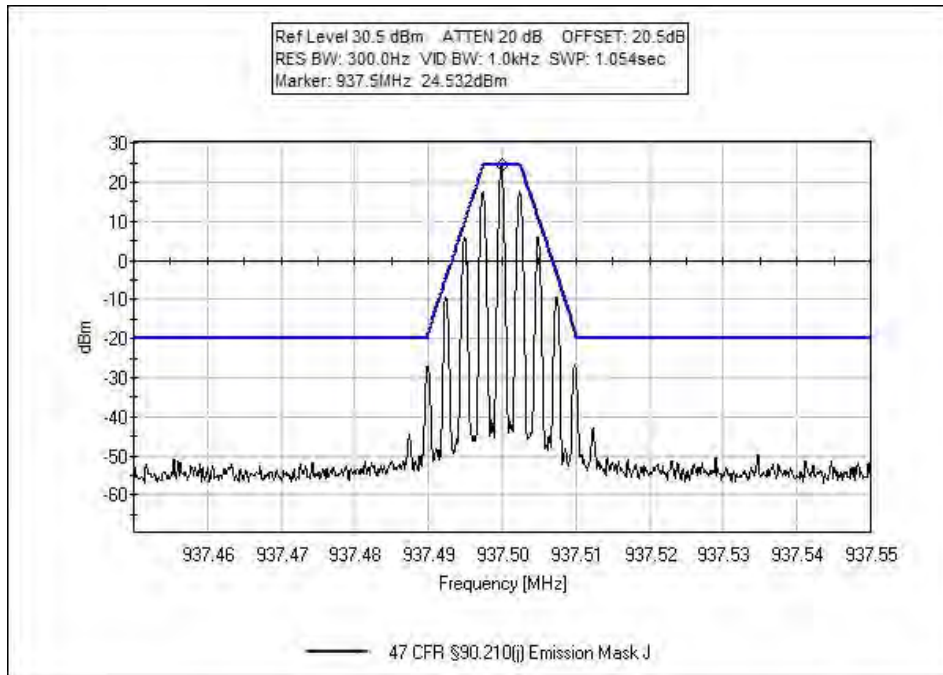
900MHz – FM – DL



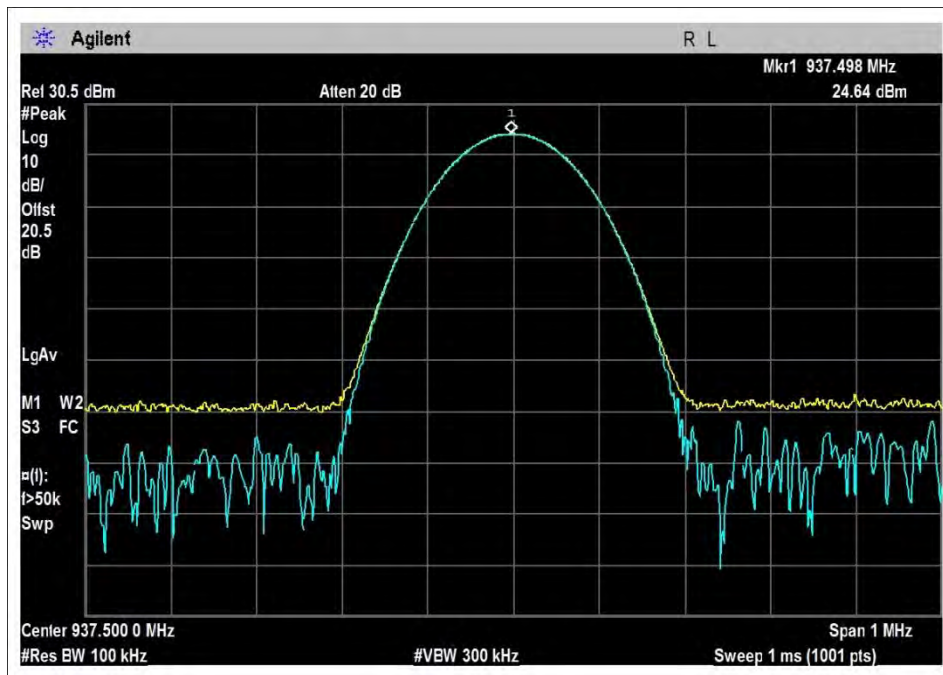
900M_FM_DL-935L-MskJ



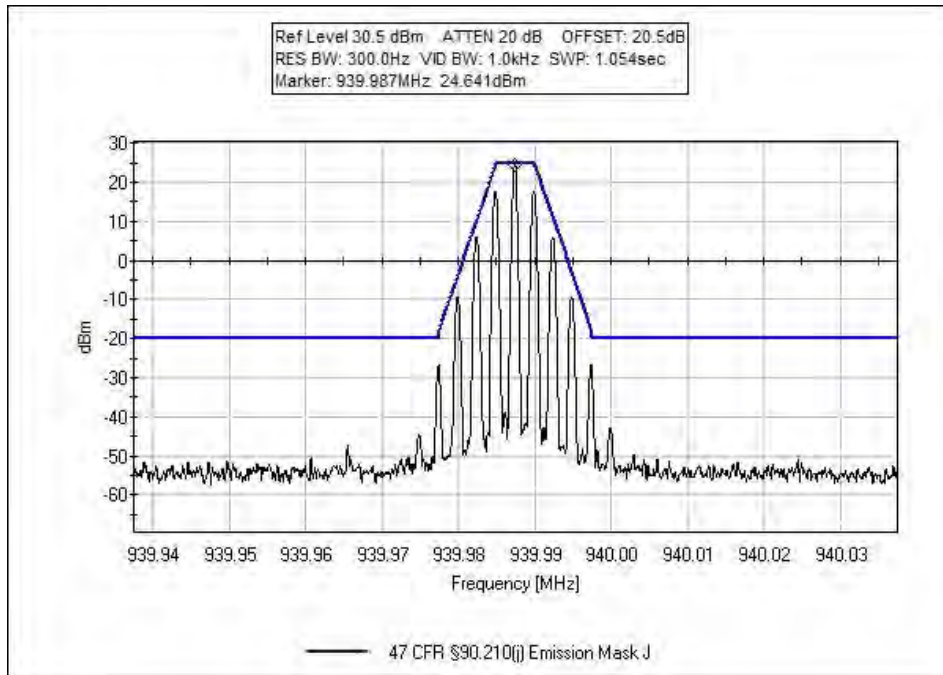
900M_FM_DL-935L-Unmod-31.5



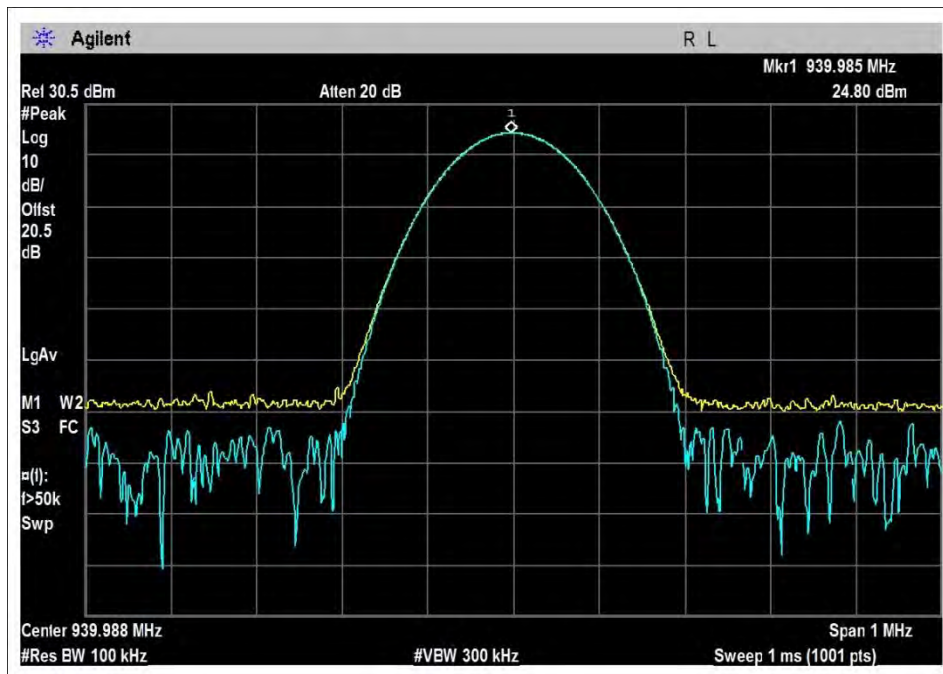
900M_FM_DL-937M-MskJ



900M_FM_DL-937M-Unmod-34.9



900M_FM_DL-940H-MaskJ



900M_FM_DL-940H-Unmod-35.1

Test Setup Photo

