Cellphone-Mate, Inc.

TEST REPORT FOR

Distributed Antenna System/ Booster
Model: Force3 PSB

Tested To The Following Standards:

FCC Part 90I

Report No.: 96794-7
Volume 1 of 2

Date of issue: May 14, 2015

ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

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

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

Testing the Future
CKC LABORATORIES, INC.

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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: CKC20150311

REPORT PREPARED BY:

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

Project Number: 95450

DATE OF EQUIPMENT RECEIPT: March 13, 2014
DATE(S) OF TESTING: March 13 - May 8, 2015

Report Authorization

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

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

Test Facility Information

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

TEST LOCATION(S):
CKC Laboratories, Inc.
1120 Fulton Place
Fremont, CA 94539

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Fremont	US0082	SL2-IN-E-1148R	3082B-1	958979	A-0149

SUMMARY OF RESULTS

Standard / Specification: FCC Part(s) 2 / 90I

Test Procedure/Method	Description	Modifications	Results
2.1049 / Part 90 § 219(a)	Occupied Bandwidth	NA	Pass
Part 90 § 219(b) / 90.531 (f) and (g)	Band Verification	NA	Pass
2.1047 / 2.1051 / Part 90 § 219(b) / 210 (c)(h)(g) and (j)	Emissions Mask	NA	Pass

NA = Not applicable

Volume 2 contains the following Sections:

2.1051 / Part 90 § 219(e)(3) / - Conducted Spurious Emissions
2.1049 / 2.1051 / Part 90 § 219(e) – Intermodulation
2.1046 / Part 90 § 219(e)(1)- Output Power
Part 90 § 219(e)(2) - Noise Figure
2.1053 / Part 90 § 219(e)(3) - Radiated Spurious Emissions
Emissions Designator

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 for or modifications made to the equipment during testing.

Summary of Conditions

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Distributed Antenna System/ Booster
Manuf: Cellphone-Mate, Inc.
Model: Force3 PSB
Serial: 201502PS000001

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART(S) 2 / 90I

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) requirements for licensed devices.

47 CFR Part 90: Private Land Mobile Radio Services

2.1049 / Part 90 § 219(a) Occupied Bandwidth

Test Conditions / Setup

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

Customer:	**Cellphone-Mate, Inc.**		
Specification:	**Occupied Bandwidth, Part 90 Section 219 (a)**		
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 and Inside 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 47CFR, Section 2.1049 and Appendix D3 of the FCC document: 935210 D02 Signal Booster Certification Requirements v02r01 Dated July 24, 2014

Software: SC_S1_Public_V3.0
Firmware: V1.0

Occupied Bandwidth - Summary of Results

Pass: as summarized in tables and plots below, the spectral shape of the output is similar to input for all modulations. Worst case results are reported for occupied bandwidth comparison test done with and without AGC circuitry activated.

900MHz Interleaved and Public Safety 700MHz/800MHz bands

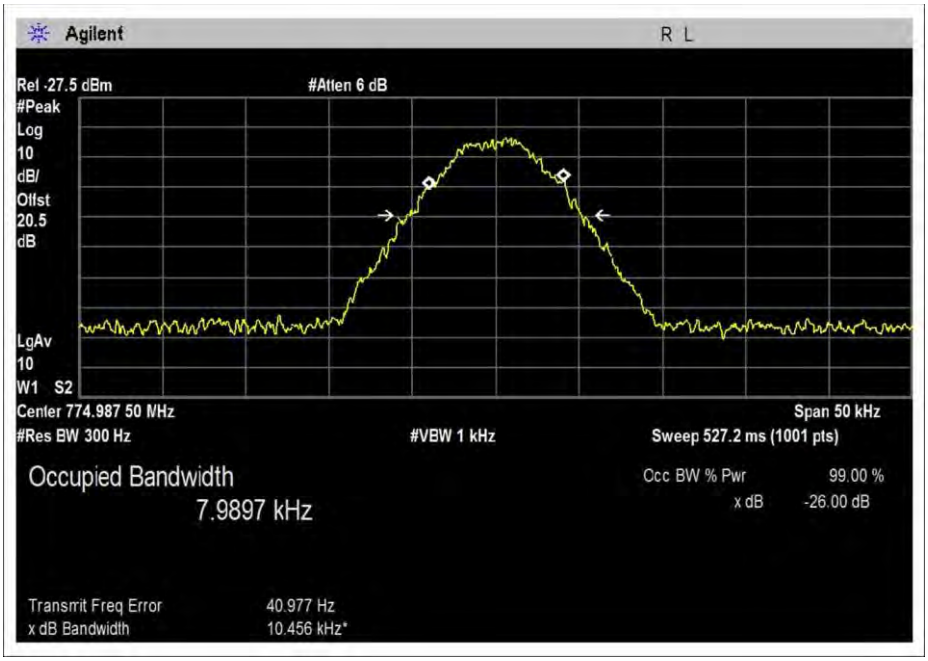
Band	Modulation	Link	Carrier Frequency (MHz)	OBW PreAGC (KHz)	OBW AGC (kHz)	OBW Input (kHz)	Max In&Out Difference (PreAGC)	Max In&Out Difference (AGC)
700M	P25-C4FM	Uplink	799.0125	7.9548	7.7936	8.0248	0.87%	2.88%
700M	P25-C4FM	Uplink	805.9875	8.0081	7.9390	7.9929	0.19%	0.67%
700M	P25-C4FM	Downlink	769.0125	7.9220	7.8697	7.9897	0.85%	1.50%
700M	P25-C4FM	Downlink	774.9875	7.8844	8.0608	7.9839	1.25%	0.96%
700M	SC-FDMA	Uplink	790.5	4446.1	4447.9	4464.4	0.41%	0.37%
700M	SC-FDMA	Uplink	795.5	4460.1	4452.5	4462.4	0.05%	0.22%
700M	OFDM	Downlink	760.5	4463.9	4473.4	4449.5	0.32%	0.54%
700M	OFDM	Downlink	765.5	4477.1	4456.6	4465.4	0.26%	0.20%
800M	P25-C4FM	Uplink	806.0125	7.9781	8.0305	7.8725	1.34%	2.01%
800M	P25-C4FM	Uplink	811.5	7.9791	8.1177	7.8244	1.98%	3.75%
800M	P25-C4FM	Uplink	816.975	7.8065	8.1105	7.8957	1.13%	2.72%
800M	P25-C4FM	Downlink	851.0125	8.0199	7.8425	7.9117	1.37%	0.87%
800M	P25-C4FM	Downlink	856.5	7.9927	8.0009	7.9517	0.52%	0.62%
800M	P25-C4FM	Downlink	861.975	7.9042	7.8098	7.9442	0.50%	1.69%
800M	FM	Uplink	806.0125	10.1215	10.1203	10.121	0.00%	0.01%

Band	Modulation	Link	Carrier Frequency (MHz)	OBW PreAGC (KHz)	OBW AGC (kHz)	OBW Input (kHz)	Max In&Out Difference (PreAGC)	Max In&Out Difference (AGC)
800M	FM	Uplink	811.5	10.121	10.1214	10.1207	0.00%	0.01%
800M	FM	Uplink	816.975	10.1211	10.1203	10.1204	0.01%	0.00%
800M	FM	Downlink	851.0125	10.1201	10.1198	10.1194	0.01%	0.00%
800M	FM	Downlink	856.5	10.1201	10.1207	10.1203	0.00%	0.00%
800M	FM	Downlink	861.975	10.1200	10.1206	10.1202	0.00%	0.00%
900M	FM	Uplink	896.0125	10.1222	10.1219	10.1211	0.01%	0.01%
900M	FM	Uplink	898.5	10.1216	10.1208	10.1216	0.00%	0.01%
900M	FM	Uplink	900.9875	10.1215	10.1213	10.1217	0.00%	0.00%
900M	FM	Downlink	935.0125	10.1208	10.1211	10.1204	0.00%	0.01%
900M	FM	Downlink	937.5	10.1209	10.1206	10.1203	0.01%	0.00%
900M	FM	Downlink	939.9875	10.1213	10.1197	10.1205	0.01%	0.01%

ESMR band

Band	Modulation	Link	Carrier Frequency (MHz)	OBW PreAGC (KHz)	OBW AGC (kHz)	OBW Input (kHz)	Max In&Out Difference (PreAGC)	Max In&Out Difference (AGC)
800M	CQPSK	Uplink	817.025	7.5135	7.5606	7.4945	0.25%	0.88%
800M	CQPSK	Uplink	820.5	7.567	7.5362	7.5887	0.29%	0.69%
800M	CQPSK	Uplink	823.975	7.5838	7.6606	7.5532	0.41%	1.42%
800M	CQPSK	Downlink	862.025	7.5012	7.4903	7.5038	0.03%	0.18%
800M	CQPSK	Downlink	865.5	7.5674	7.526	7.5719	0.06%	0.61%
800M	CQPSK	Downlink	868.975	7.6336	7.524	7.5845	0.65%	0.80%

700MHz – C4FM - DL



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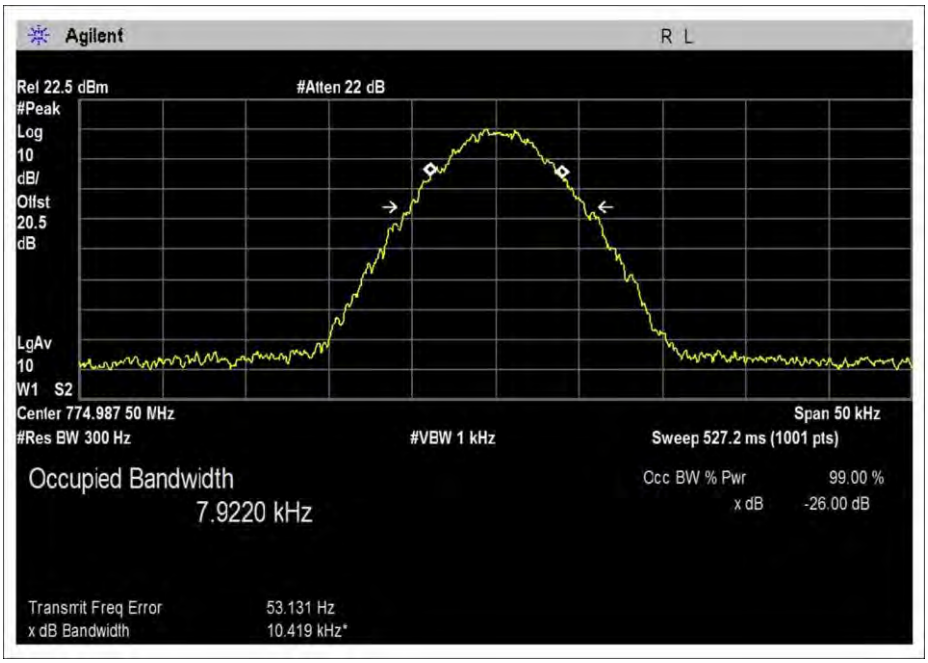

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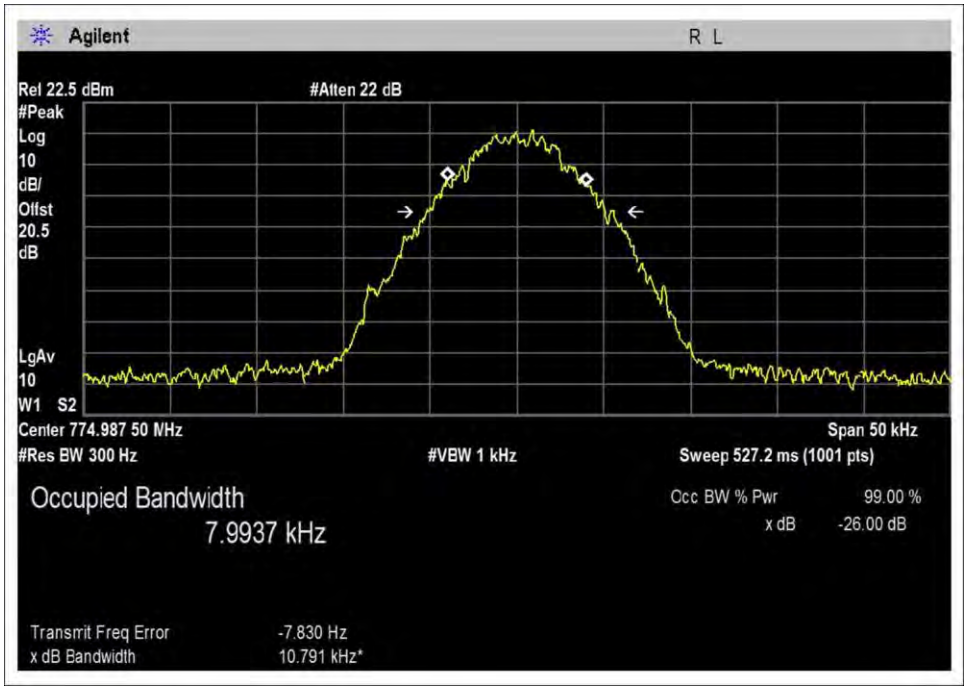

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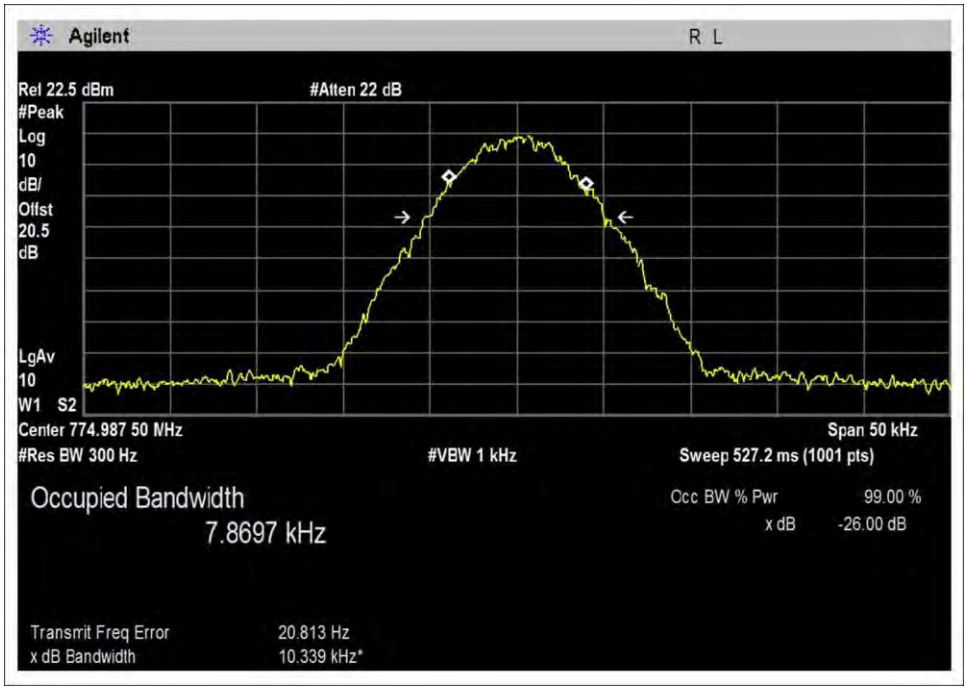

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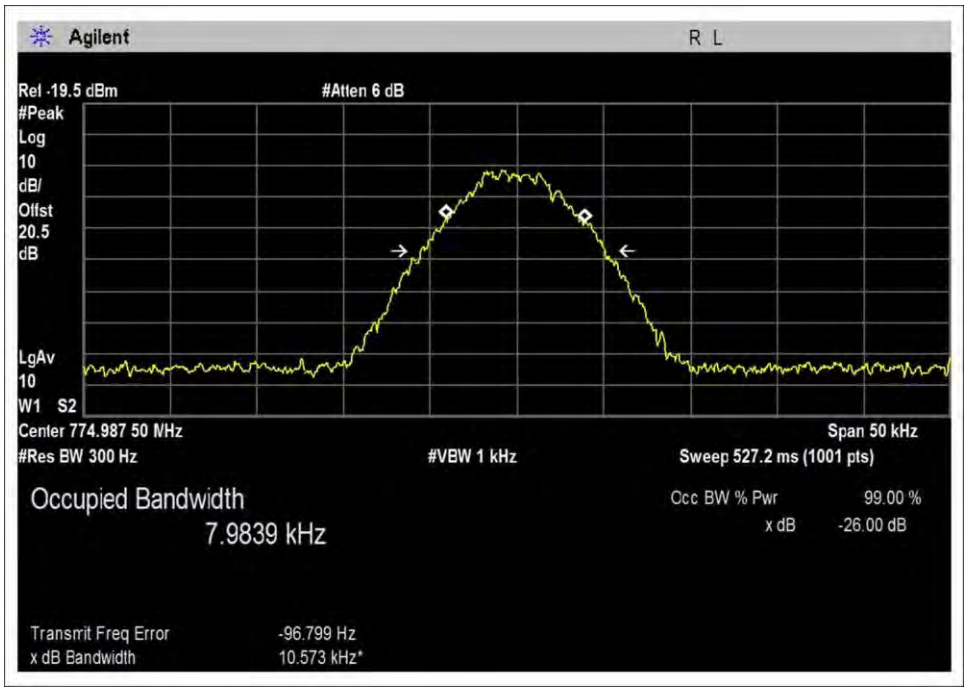

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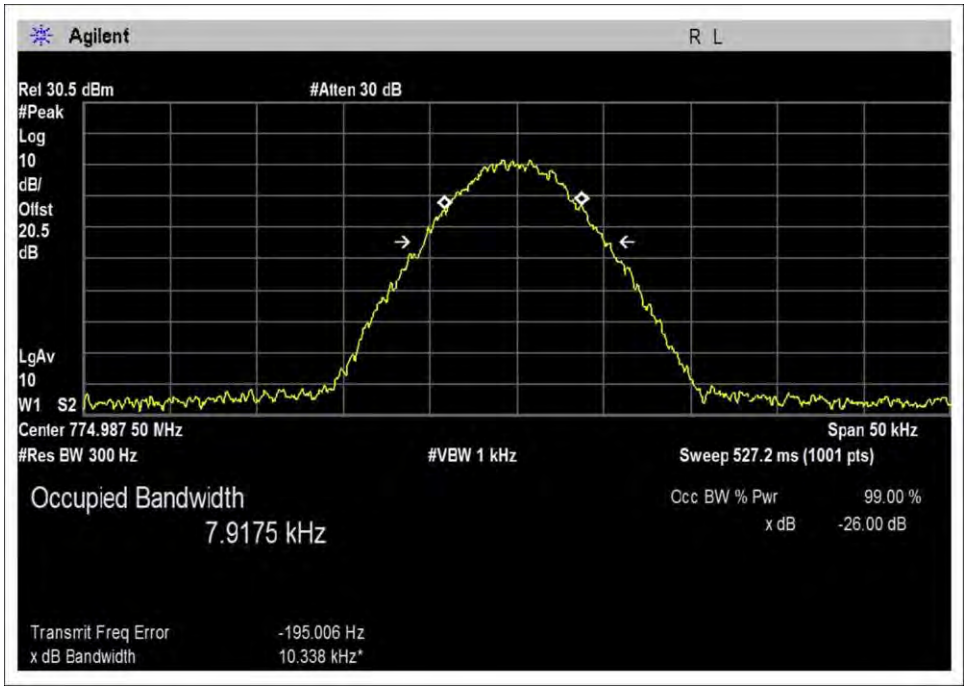

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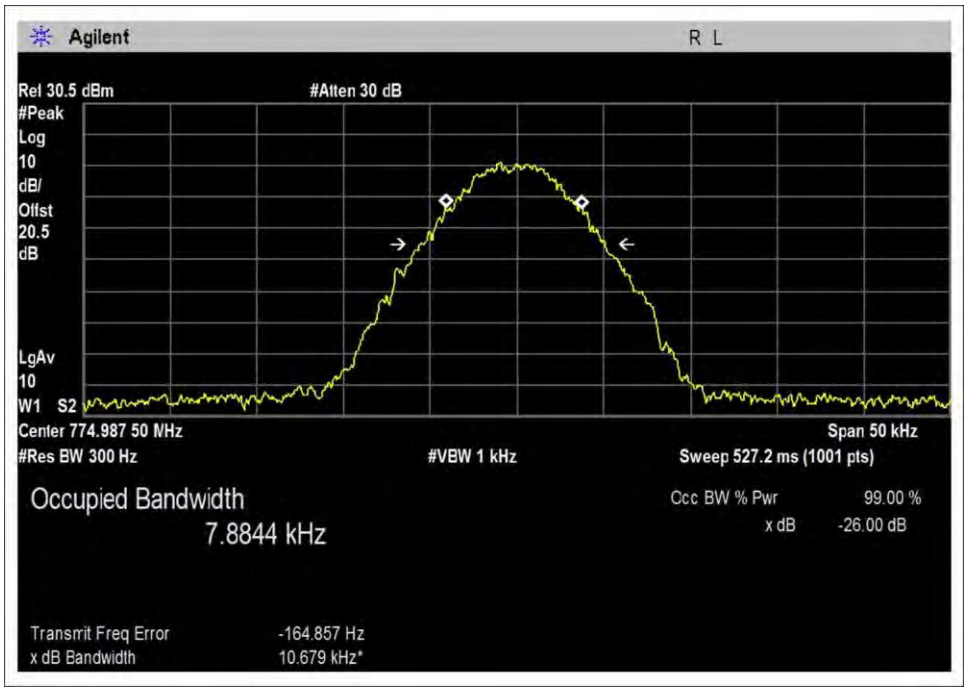

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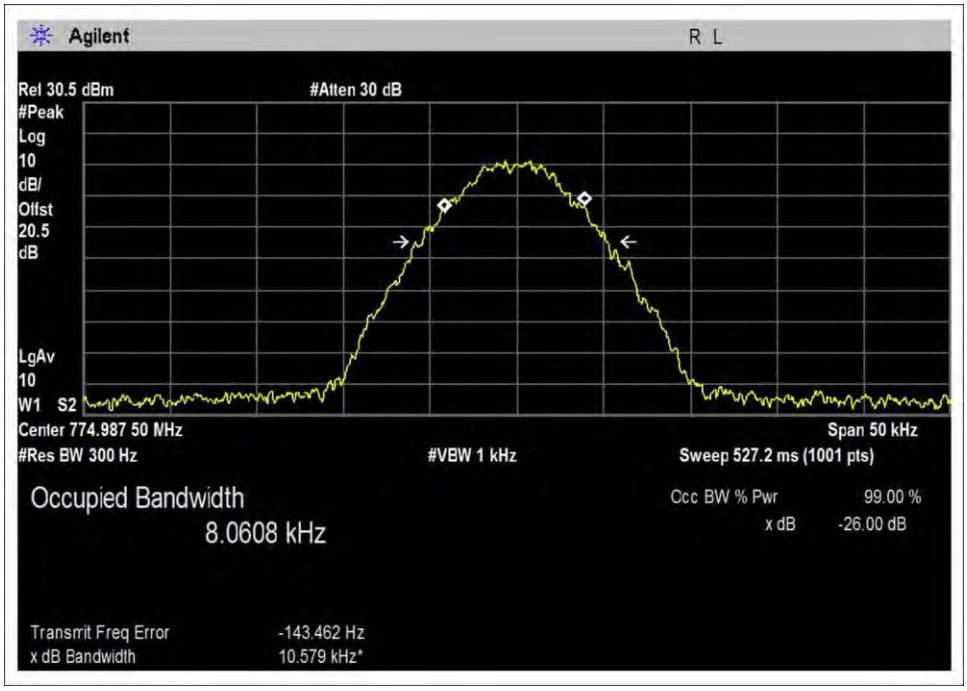
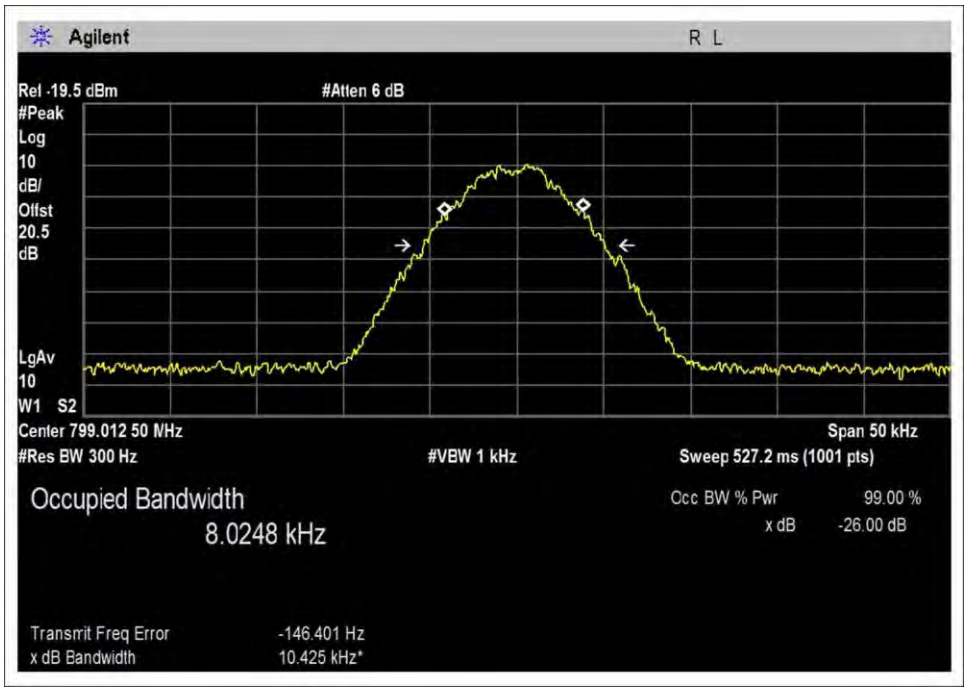


DL_775H-Out-AGC

700MHz – C4FM - UL



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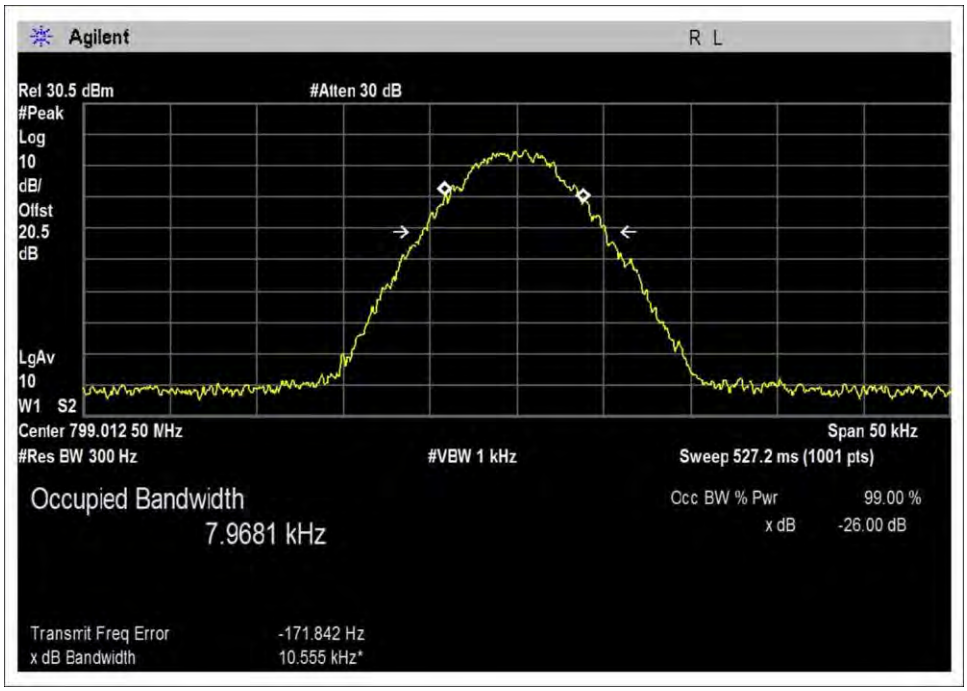

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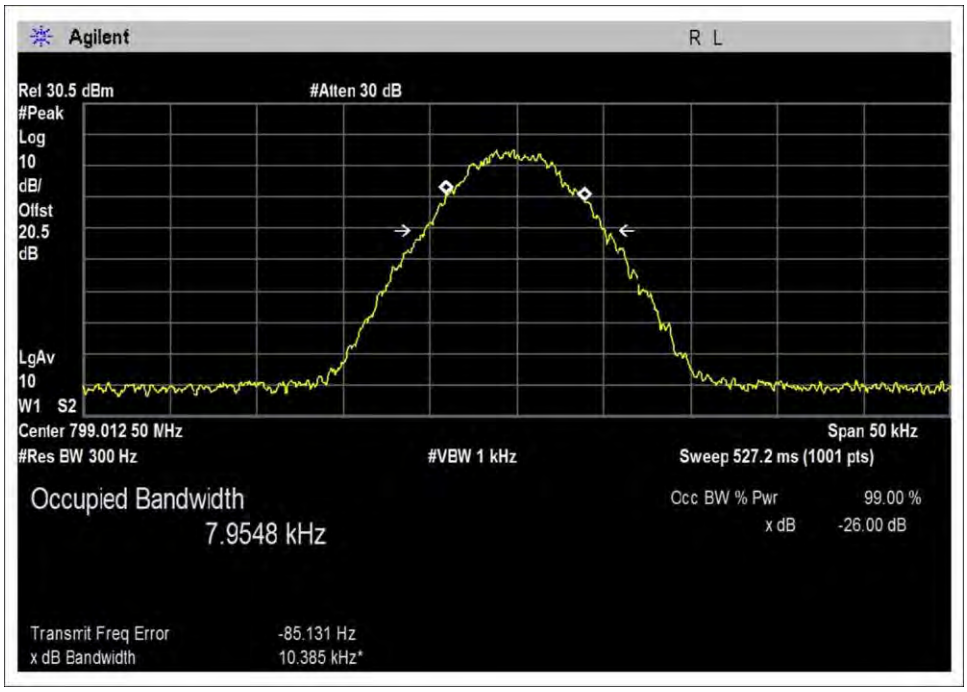

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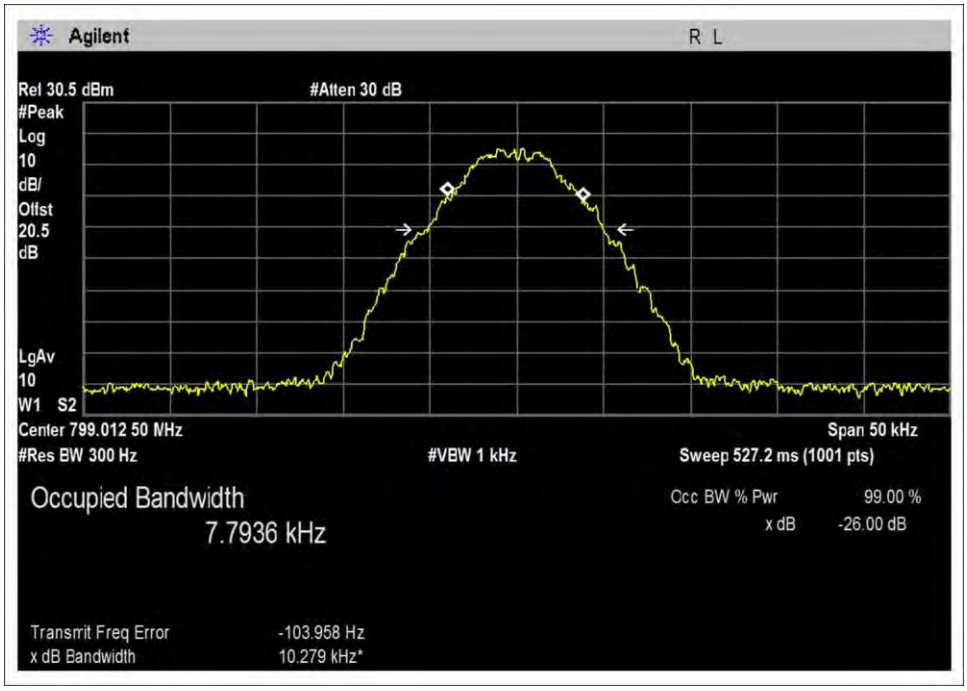

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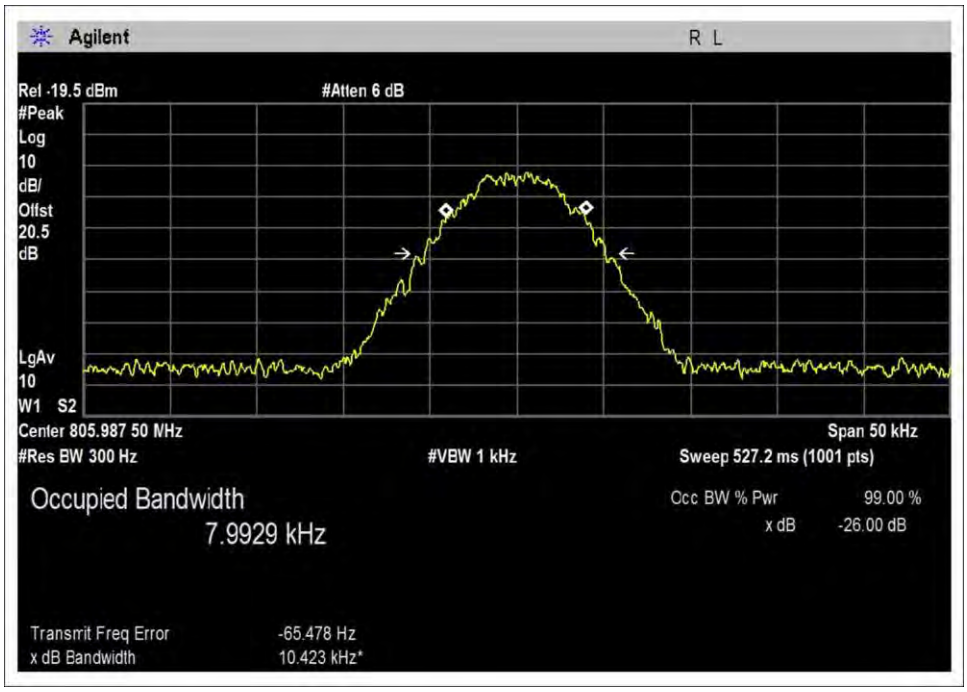

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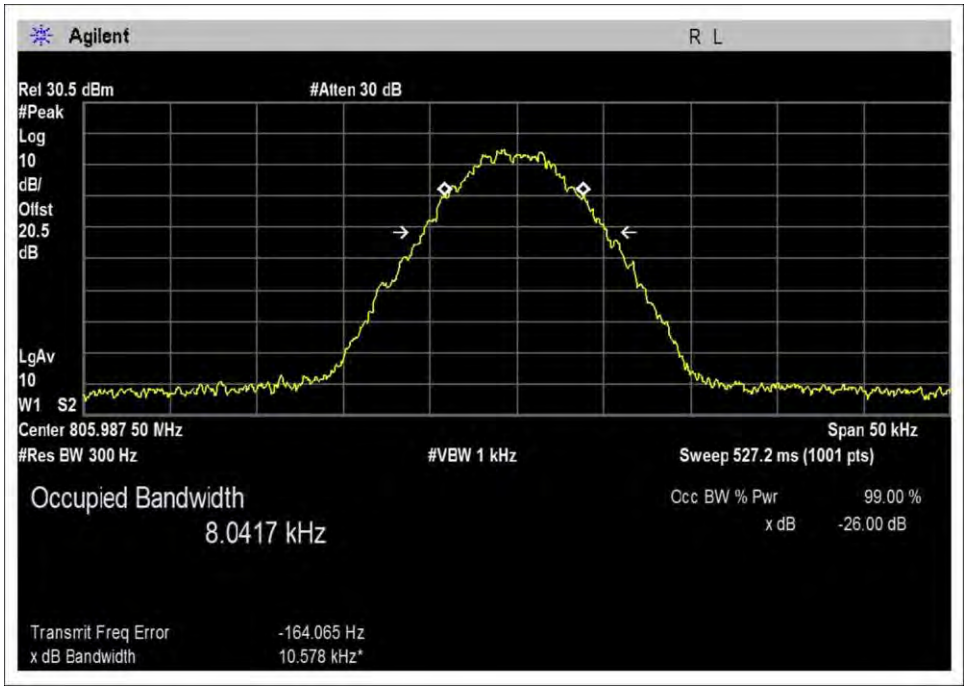

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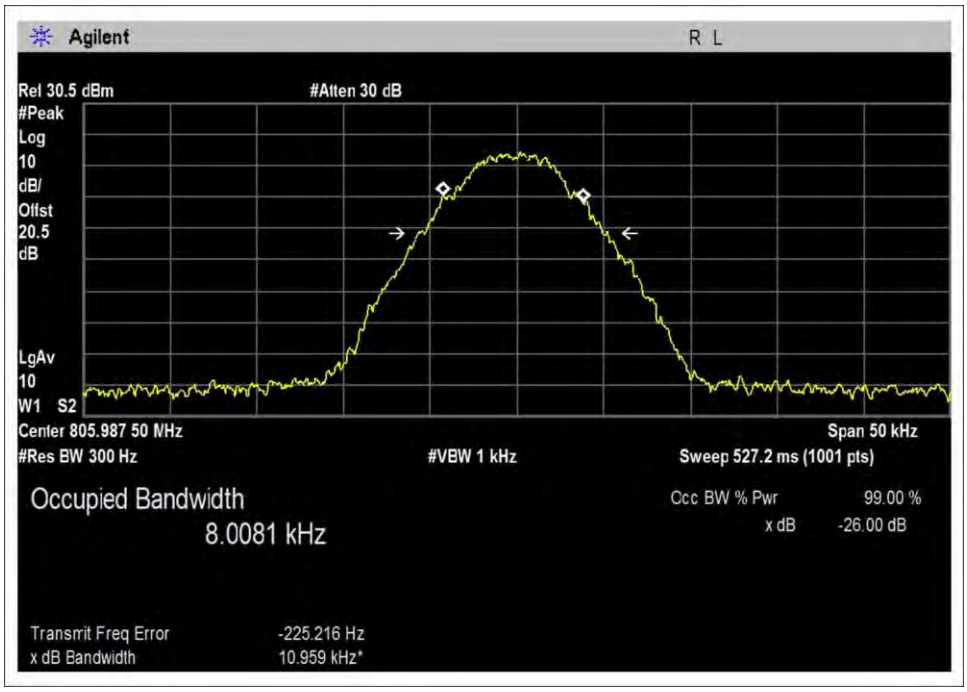

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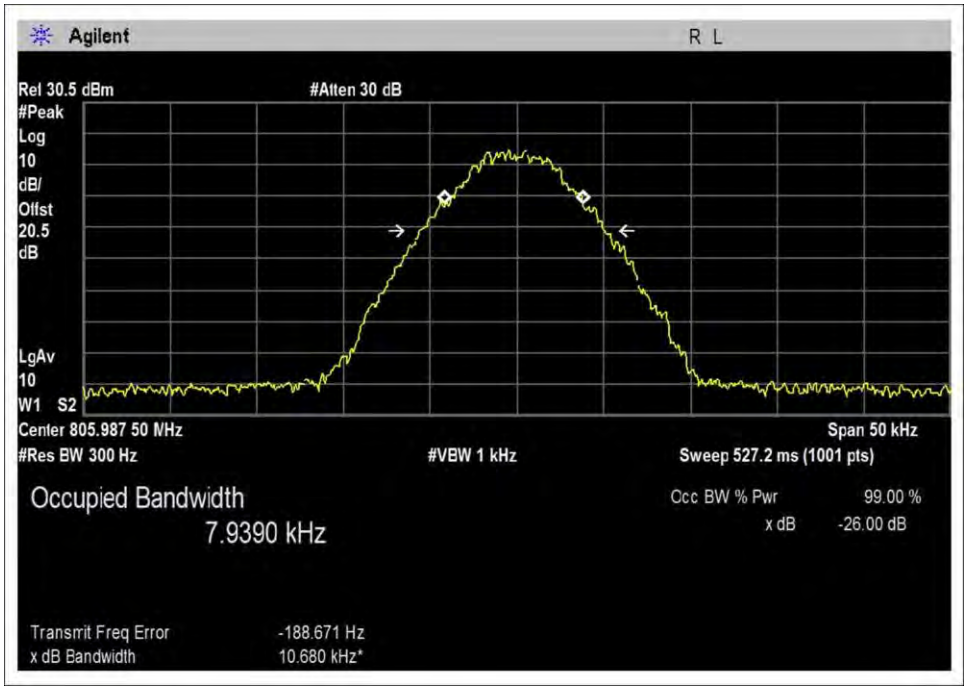
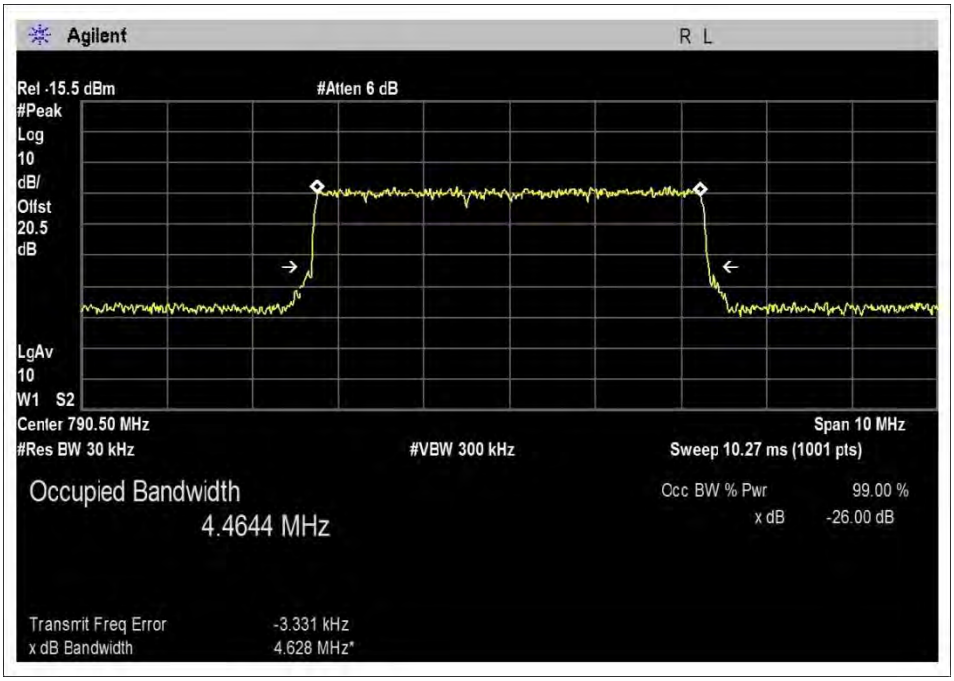


UL_805H-Out-AGC

700MHz – LTE - UL



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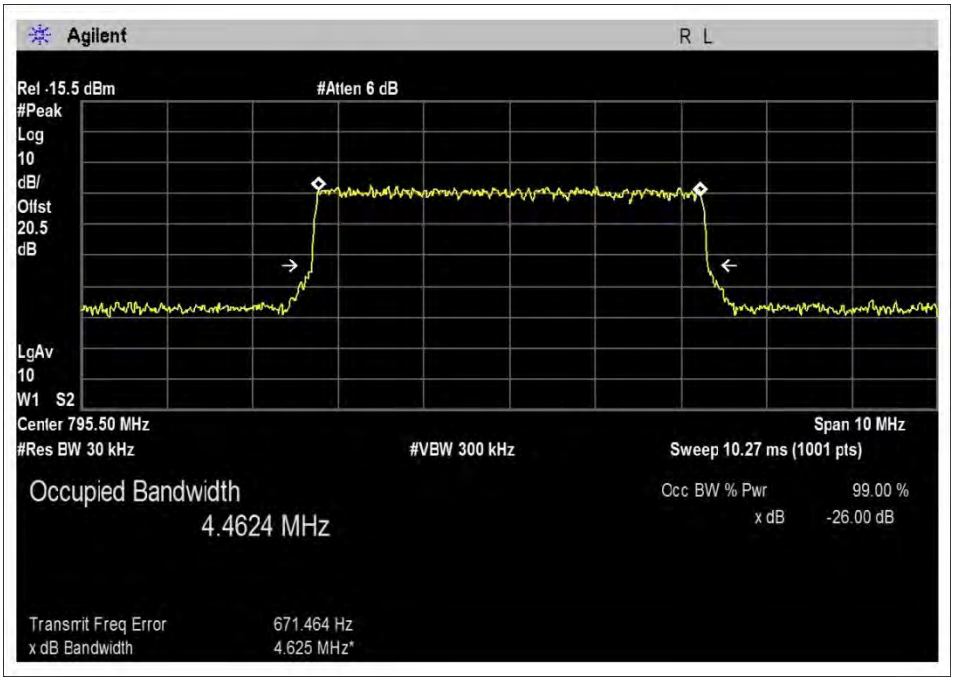

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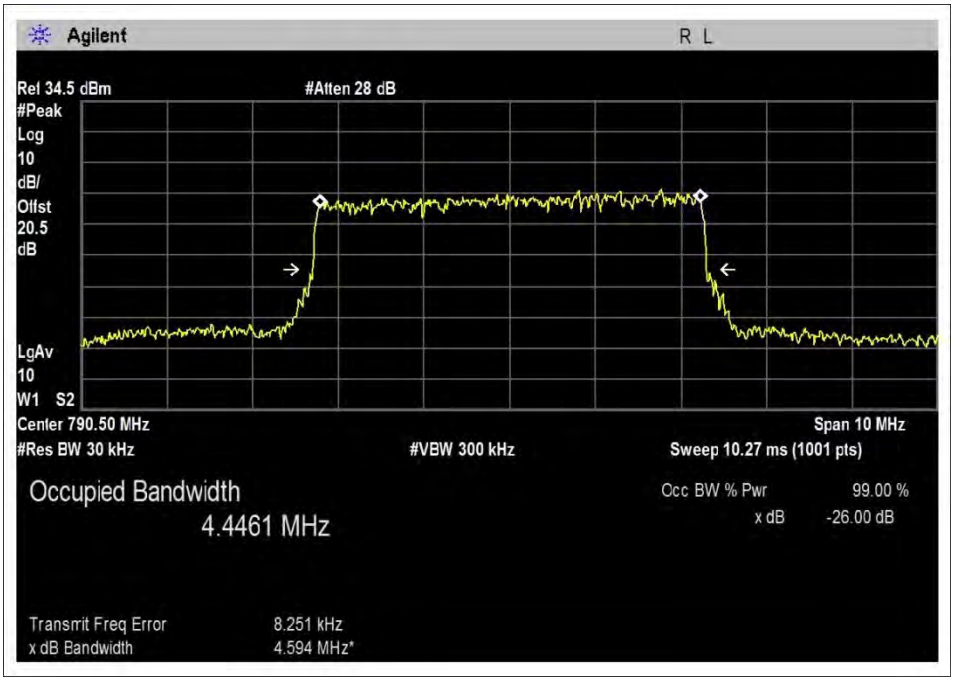

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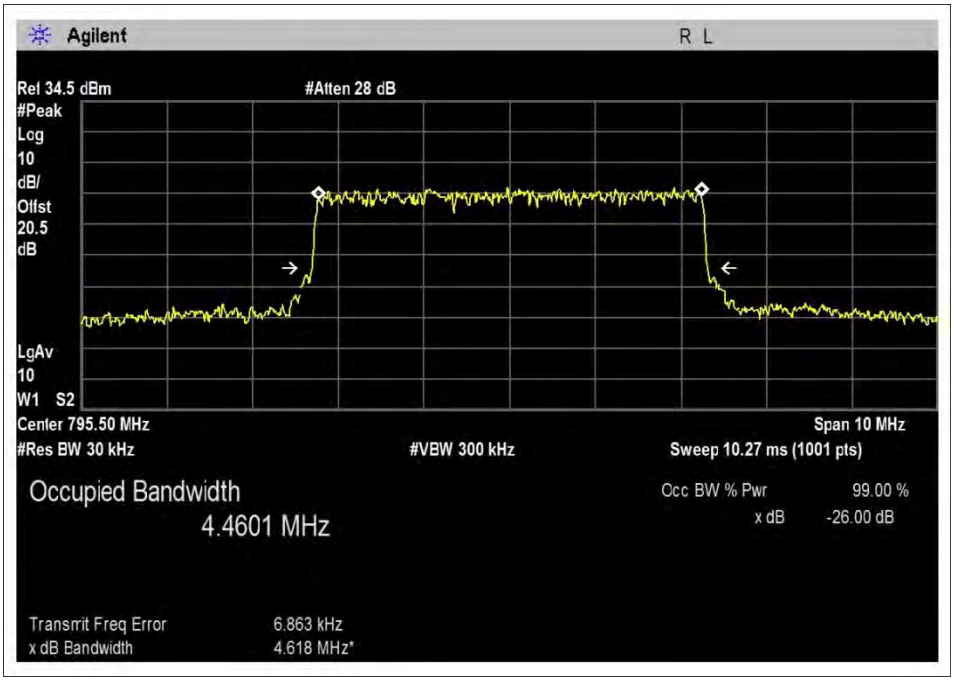

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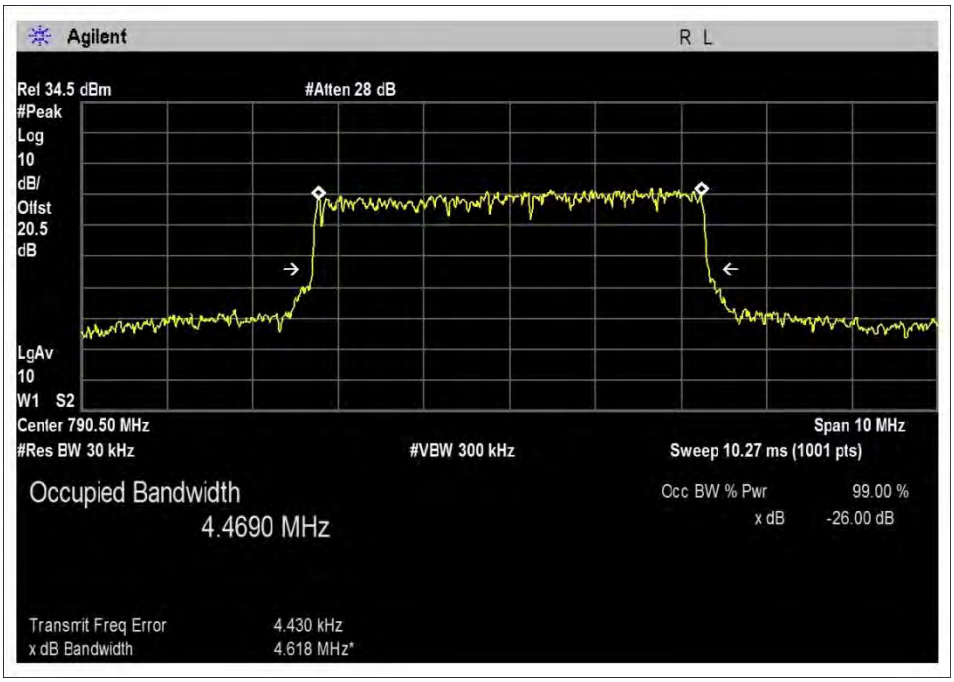

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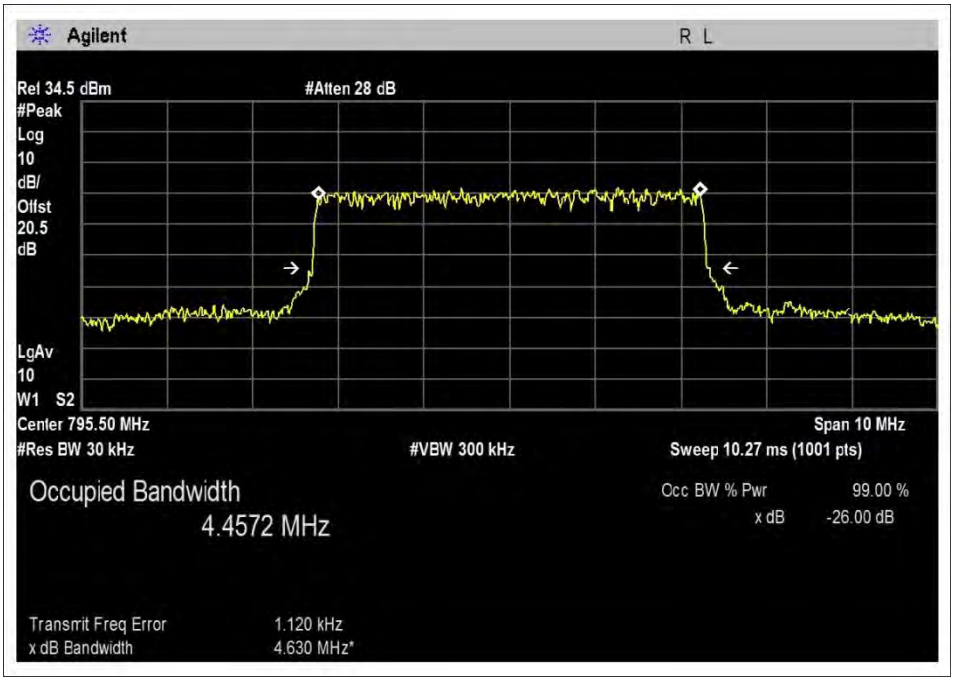

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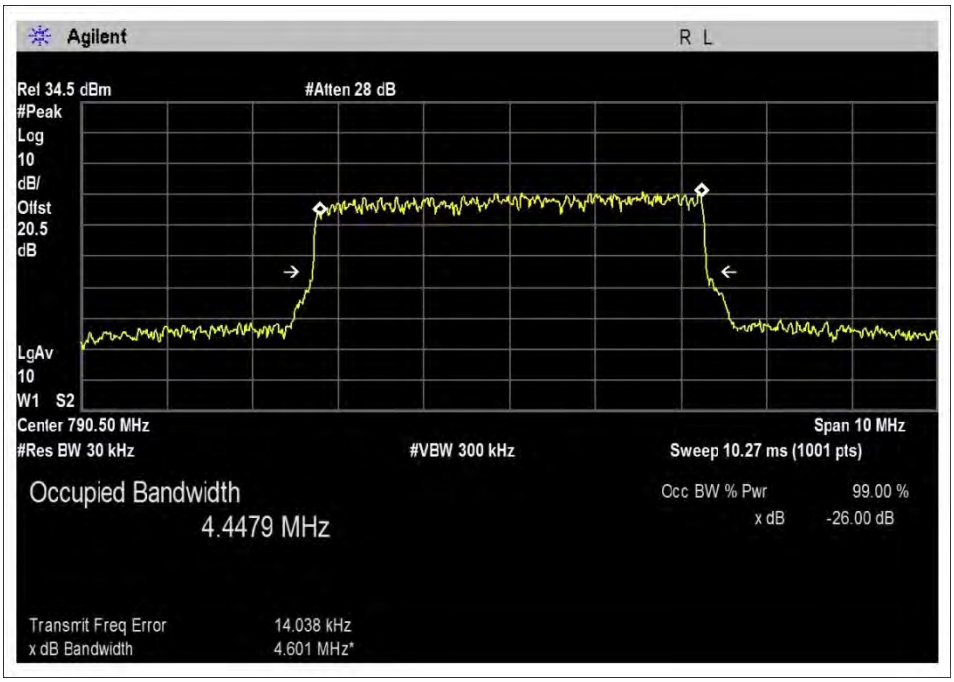

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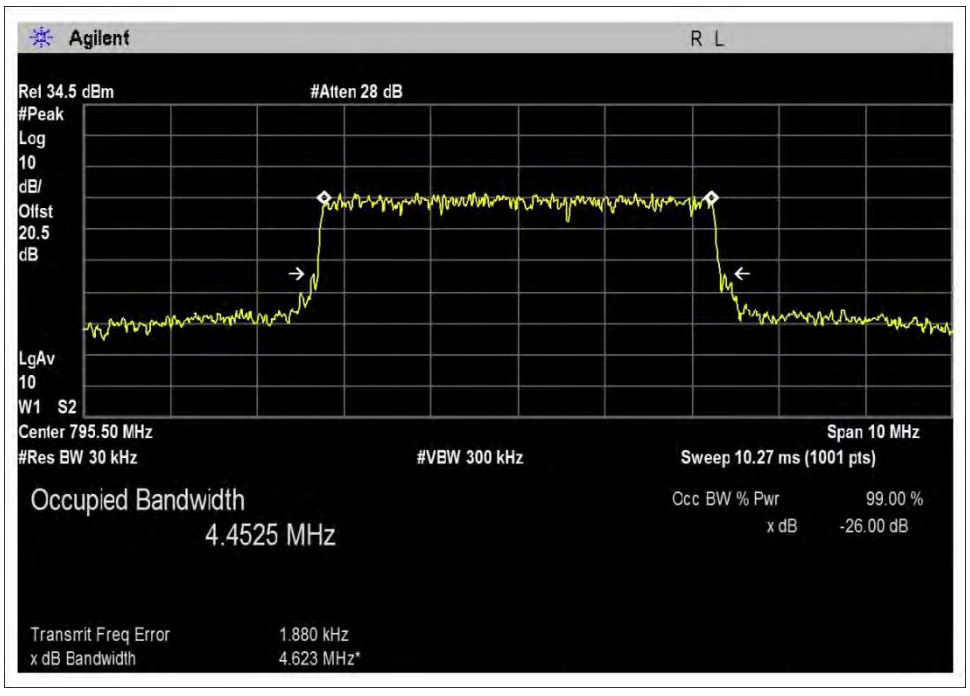
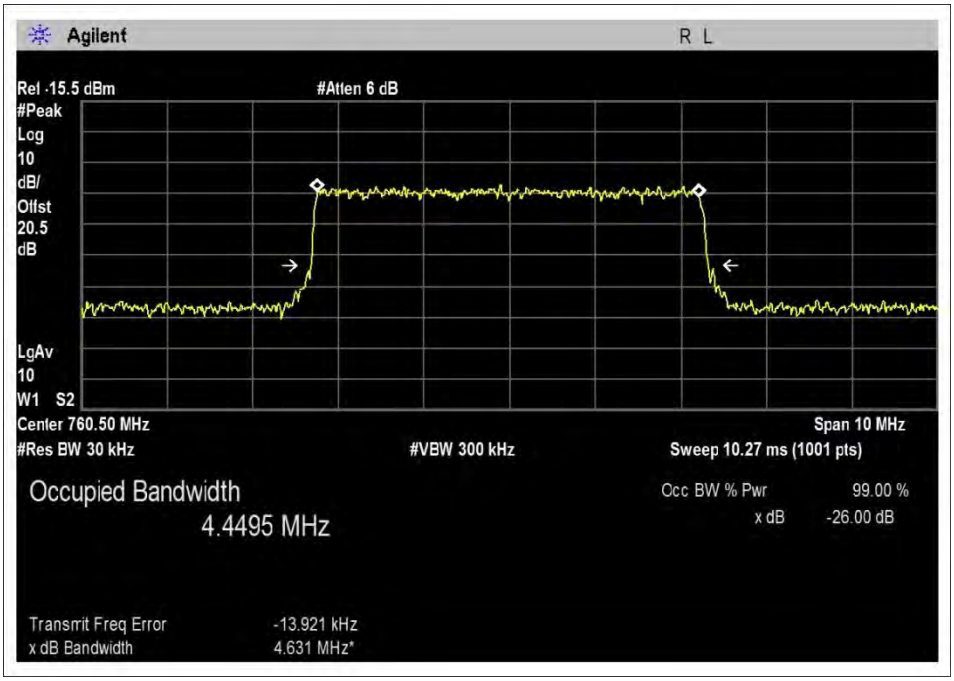
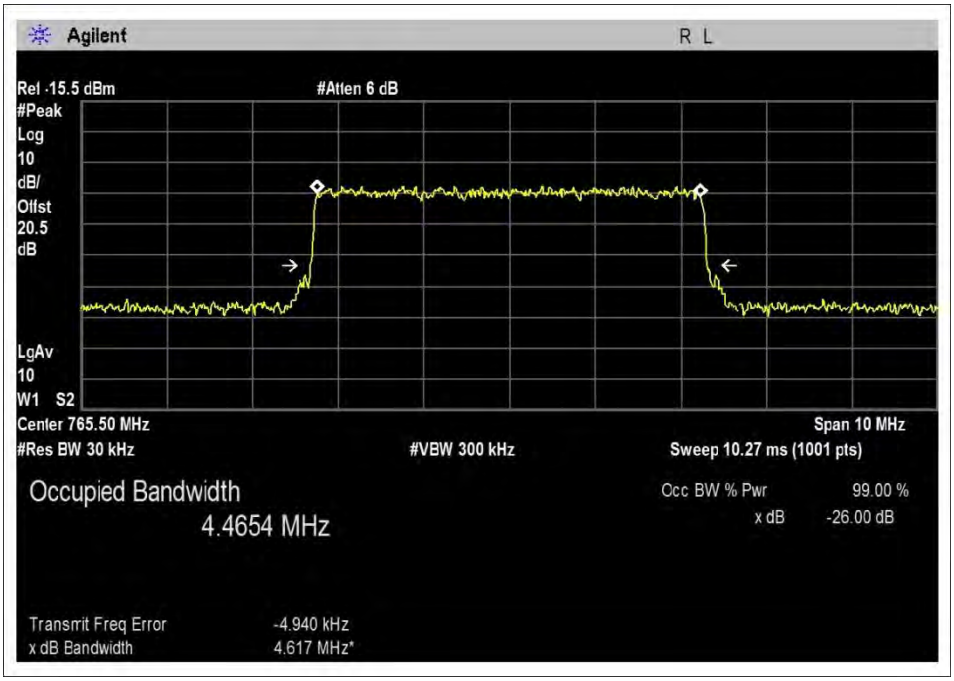


Output-UL-788-798H-AGC+10dB

700MHz – LTE – DL



In-DL-758-768L



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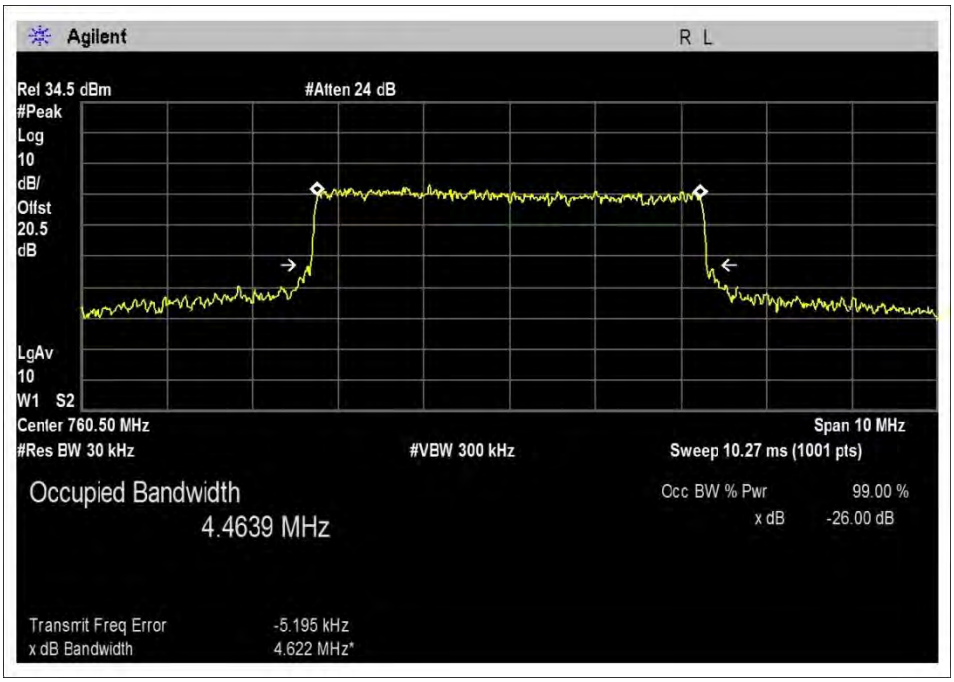

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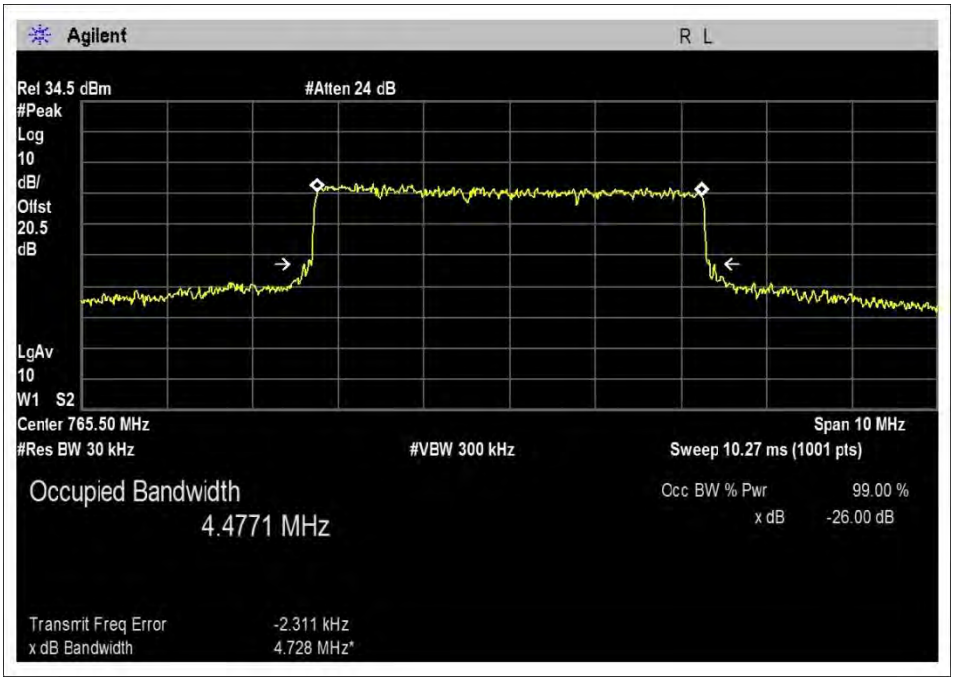

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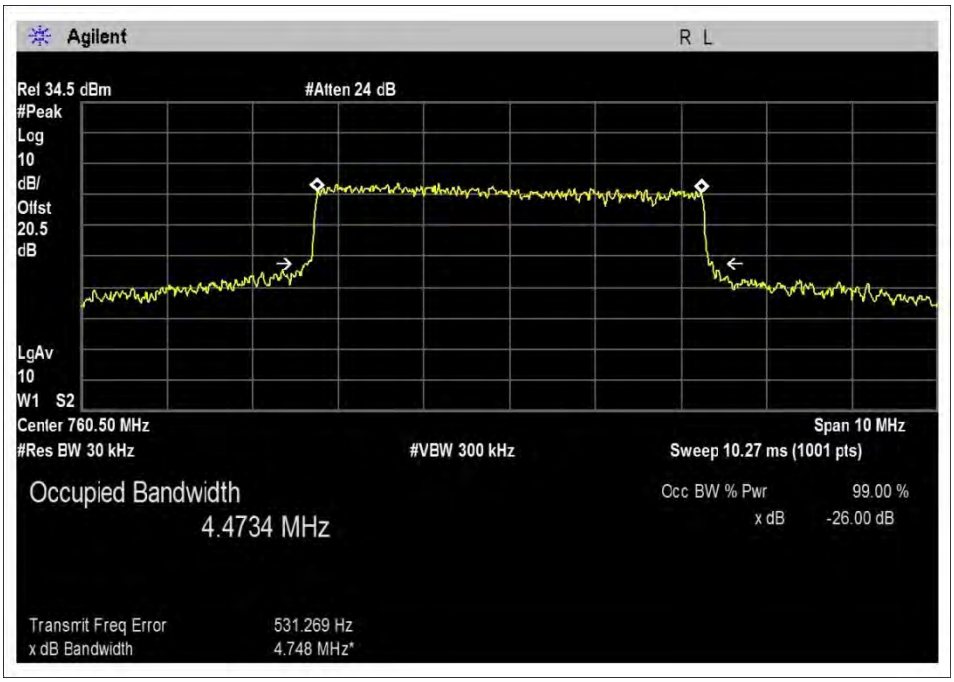

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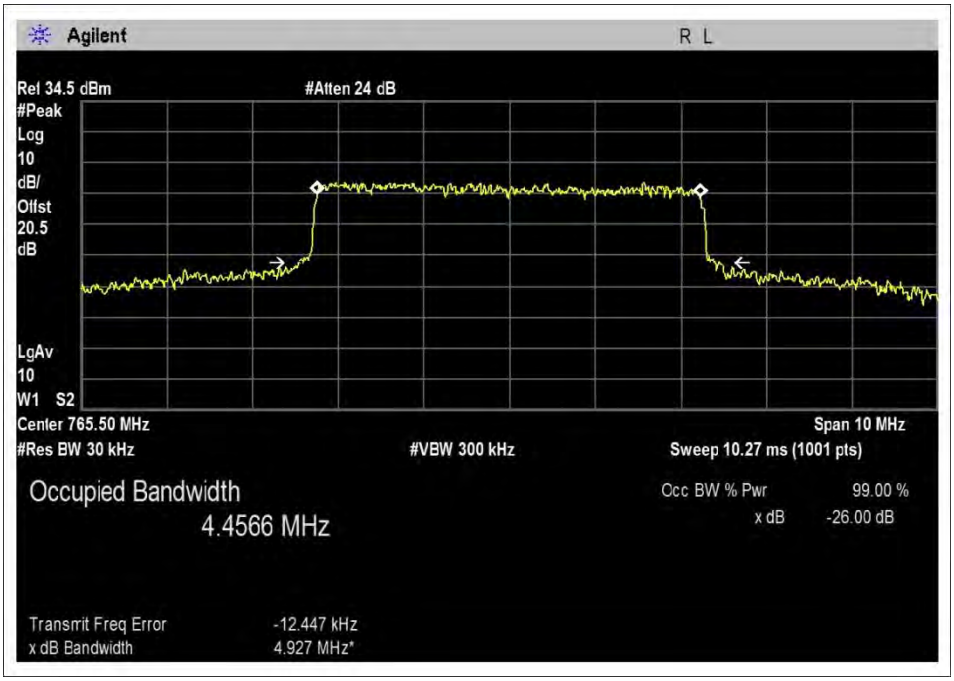

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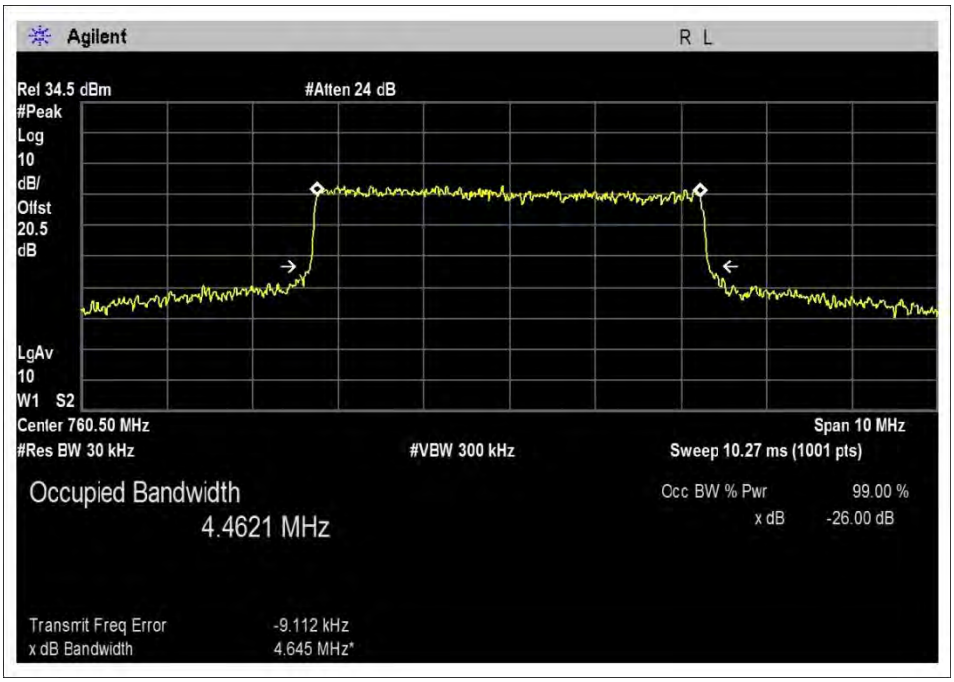
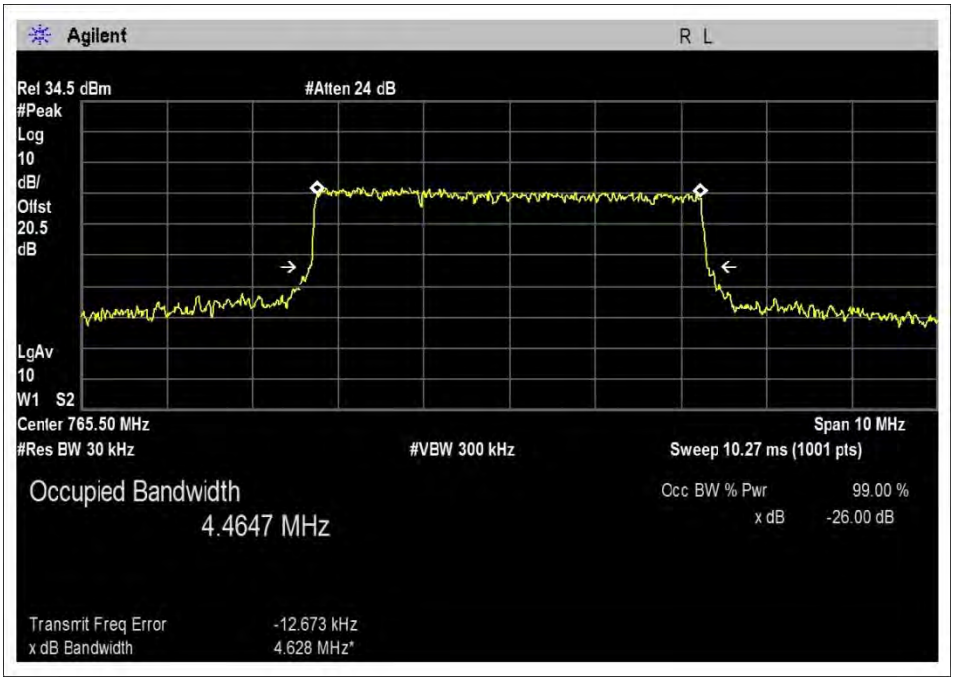
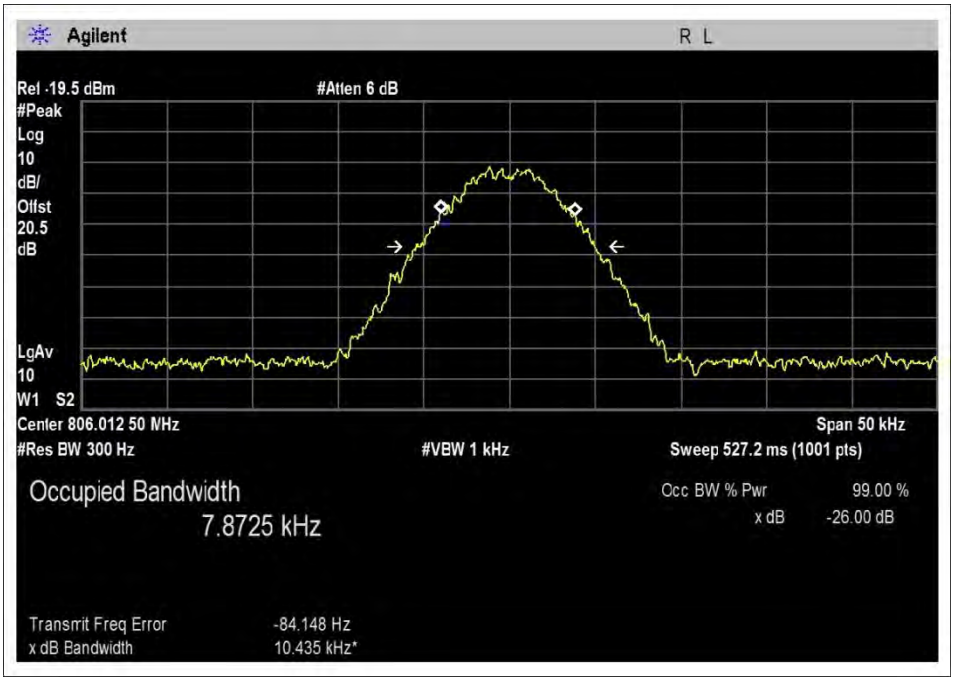


Output-DL-758-768L-AGC+10dB

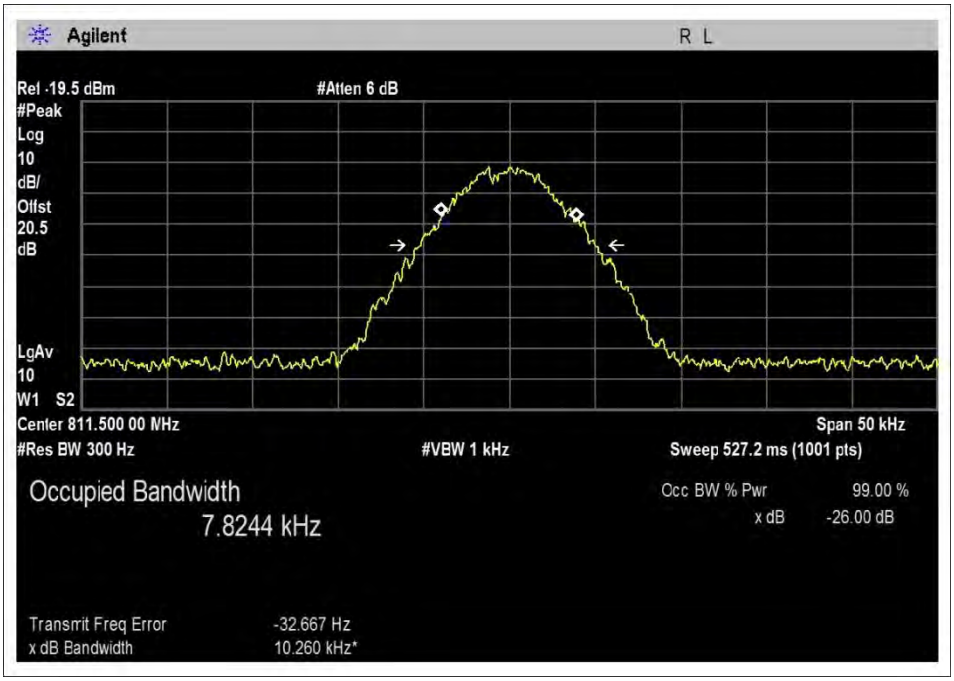


Output-DL-758-768H-AGC+10dB

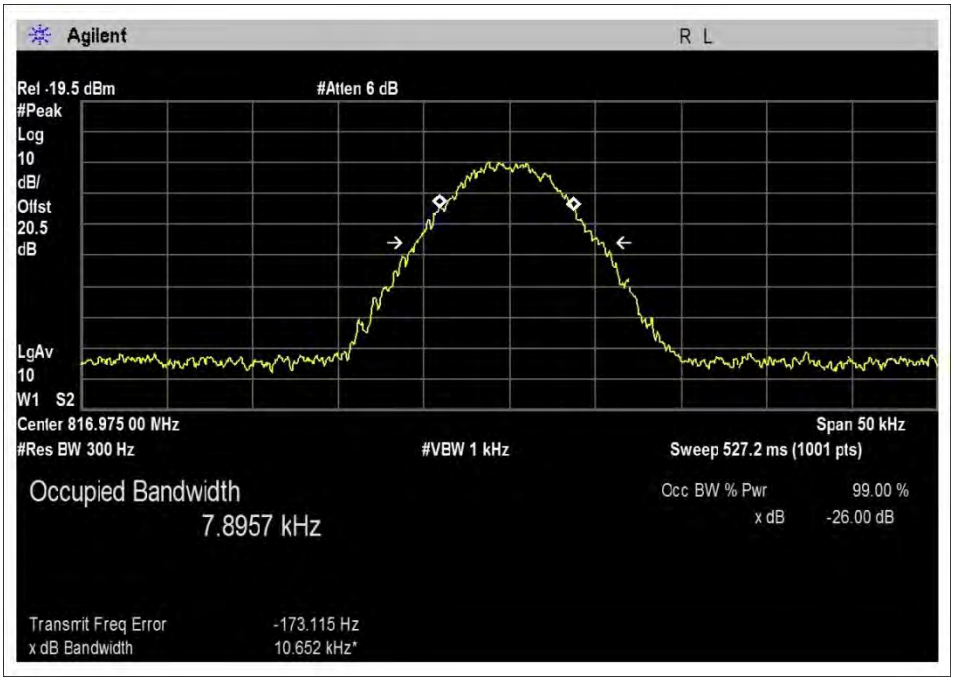
800MHz – C4FM – UL



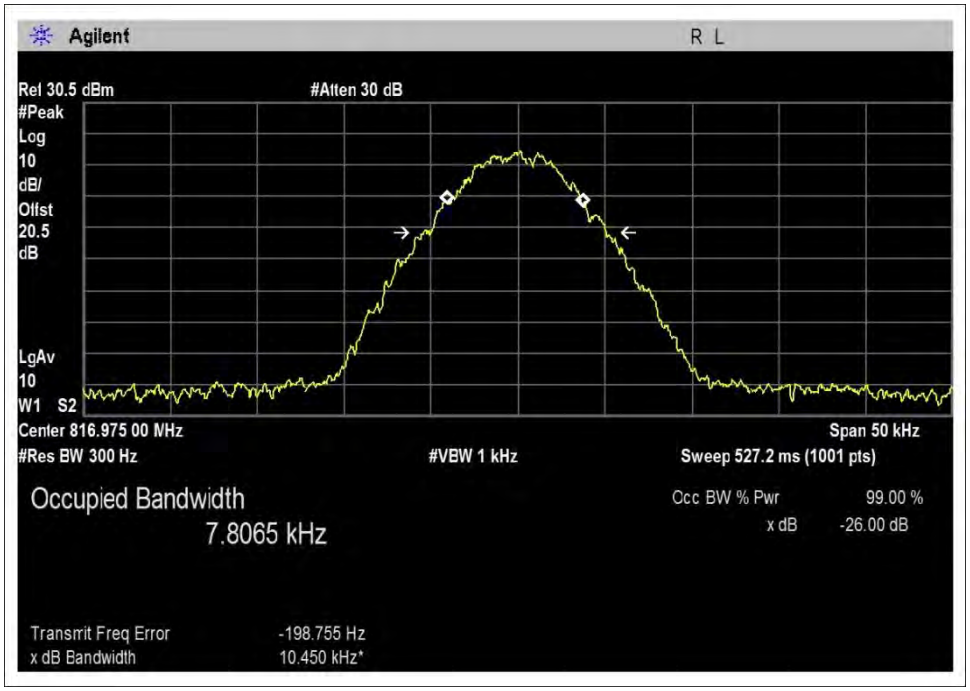
OBW-UL-806-817L-In



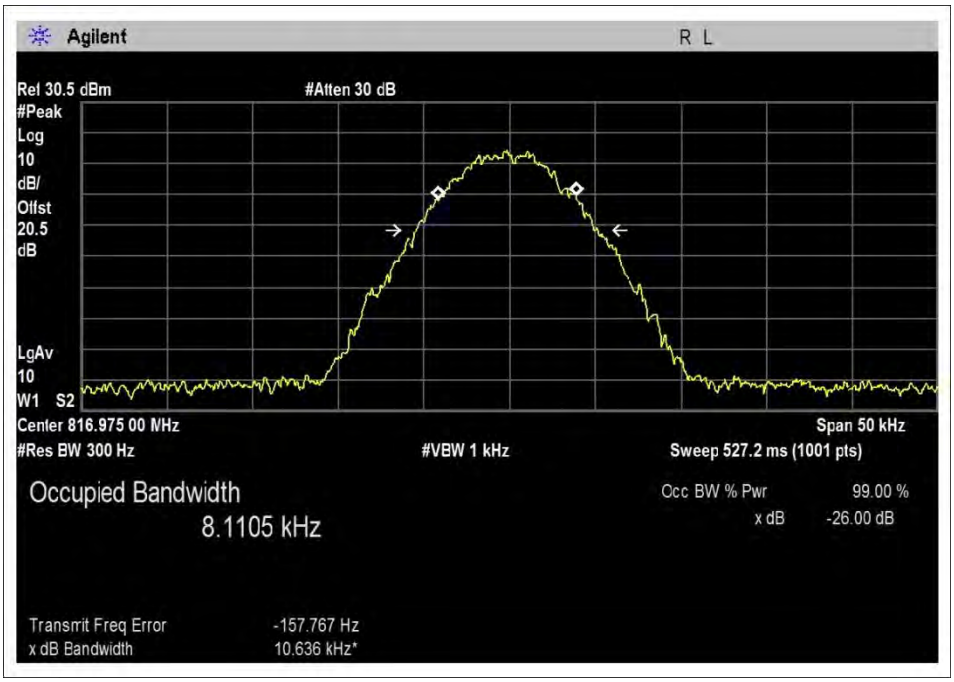
OBW-UL-806-817M-In



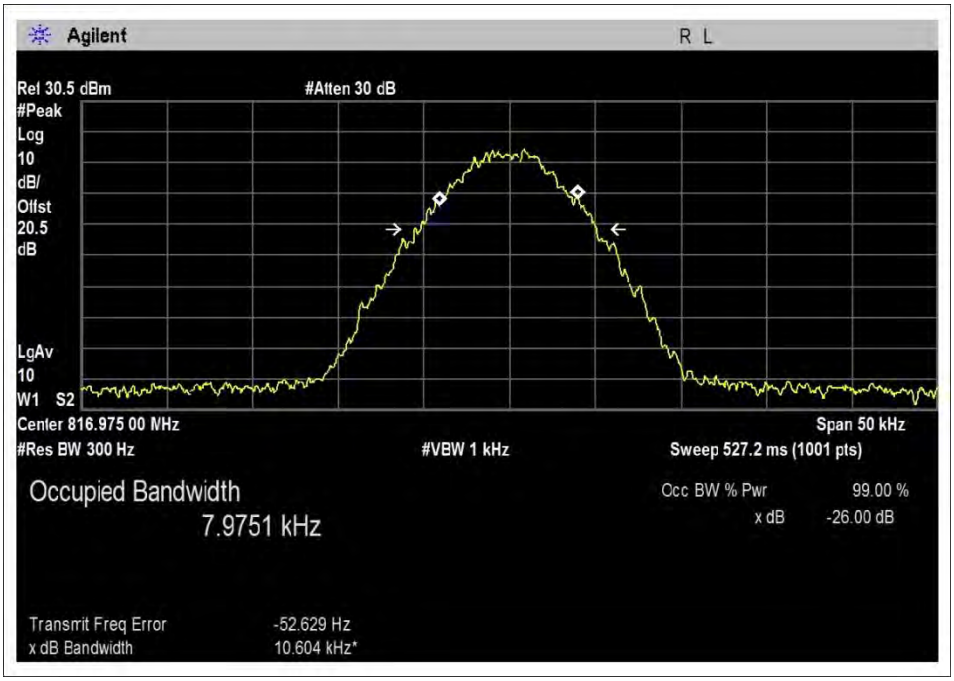
OBW-UL-806-817H-In



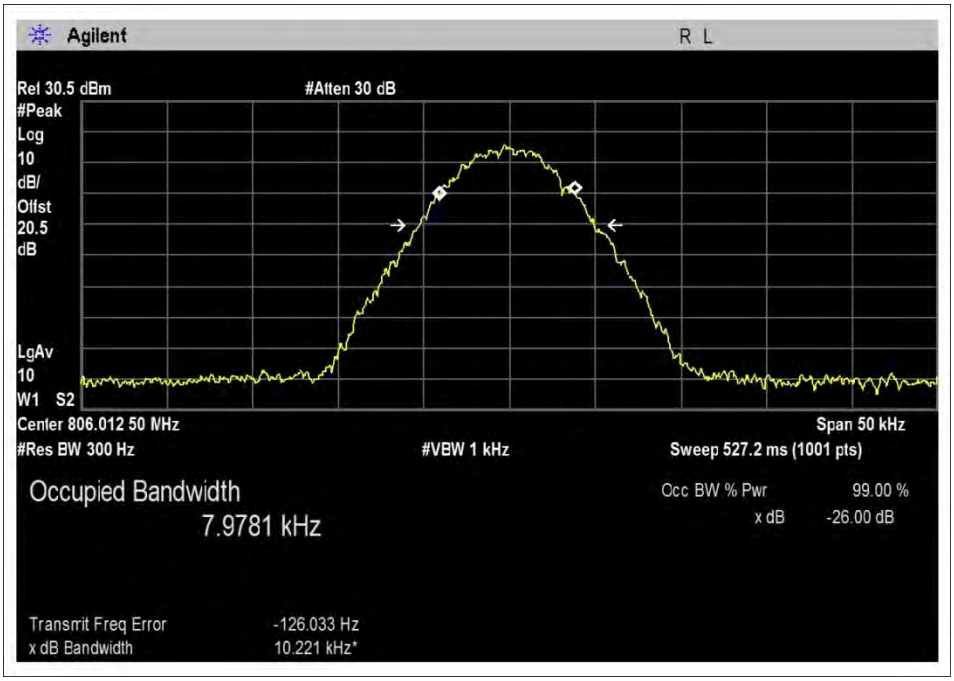
OBW-UL-806-817H-Out-28.9



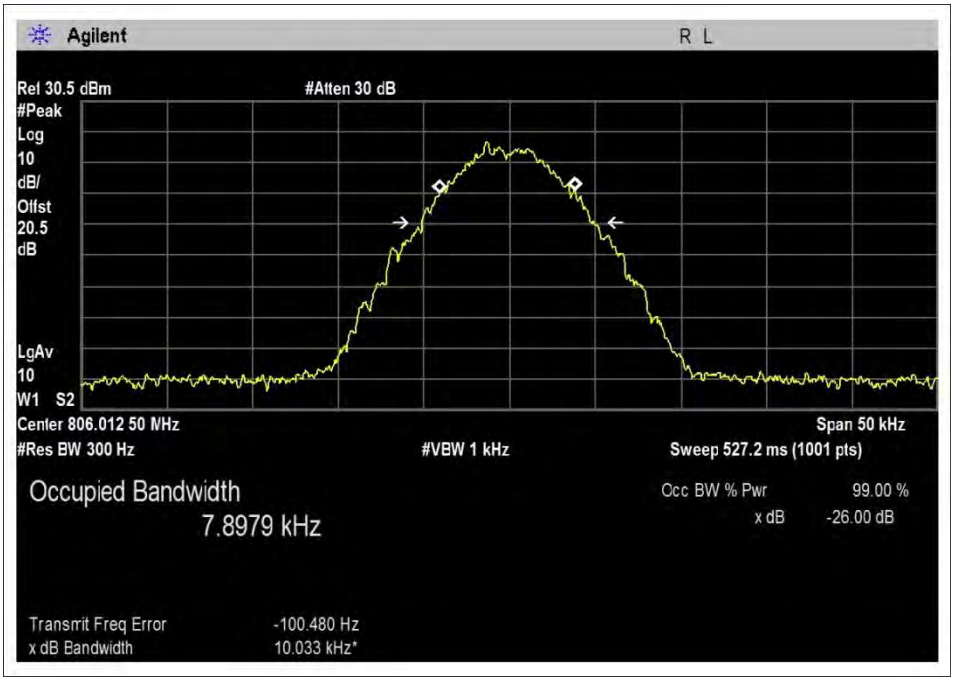
OBW-UL-806-817H-Out-AGC



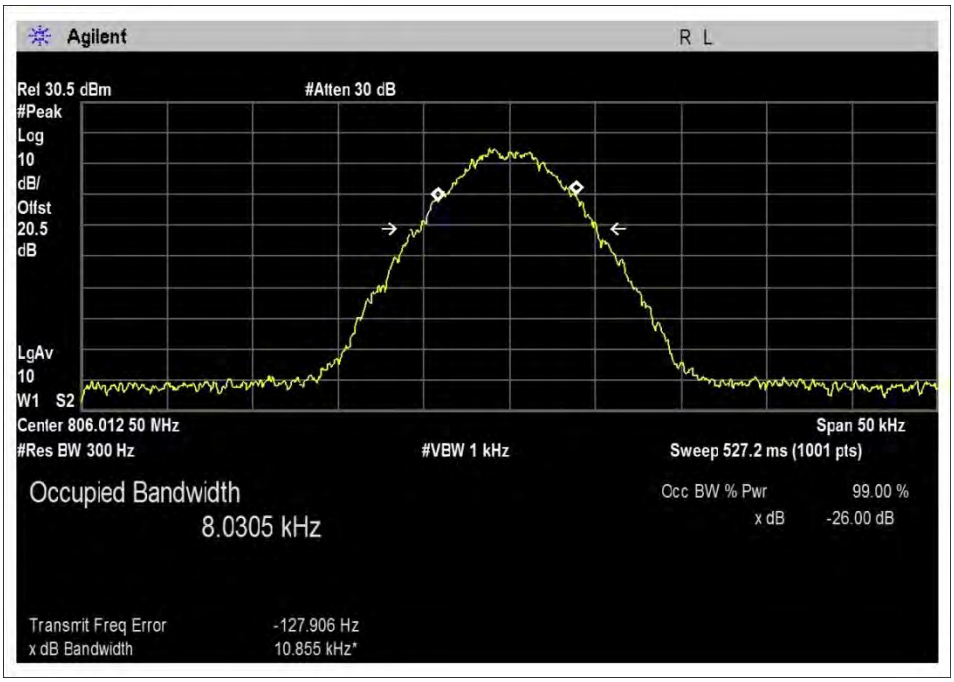
OBW-UL-806-817L-Out-AGC+10dB



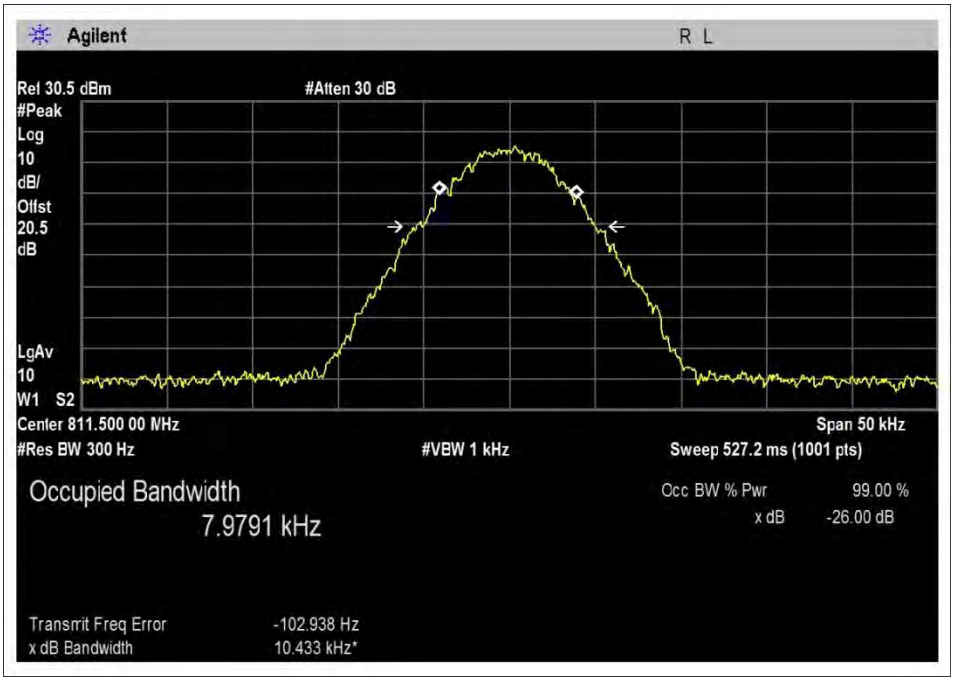
OBW-UL-806-817L-Out-31



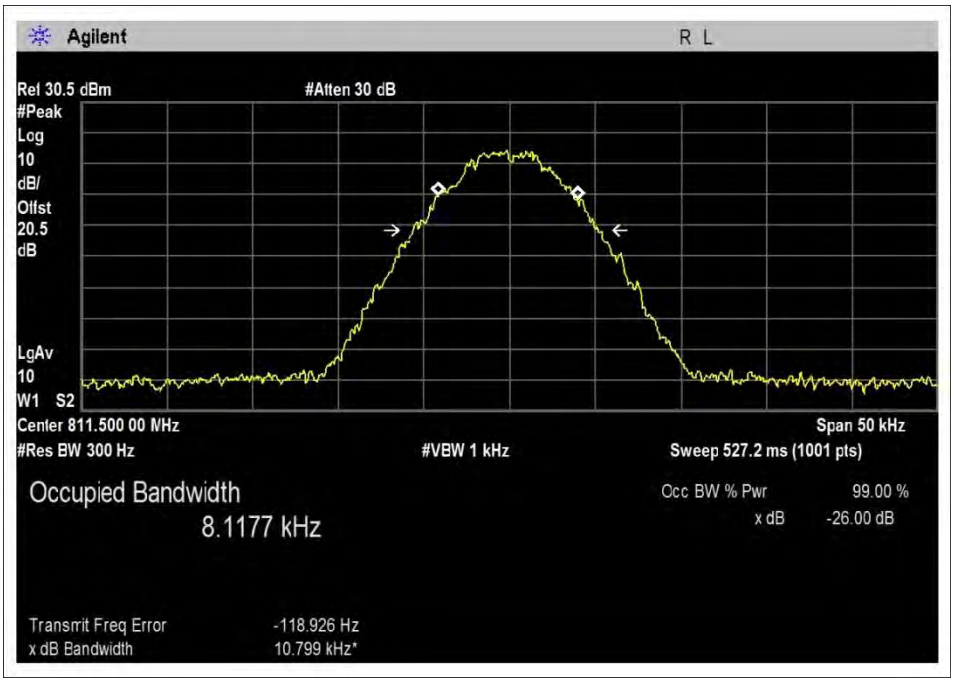
OBW-UL-806-817L-Out-AGC



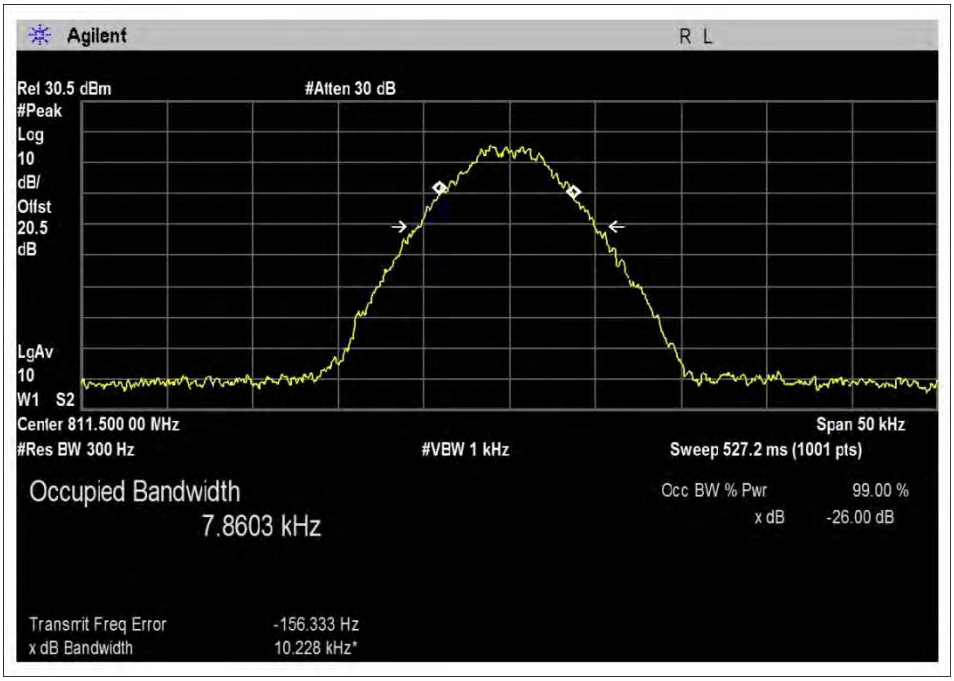
OBW-UL-806-817L-Out-AGC+10dB



OBW-UL-806-817M-Out-31.2

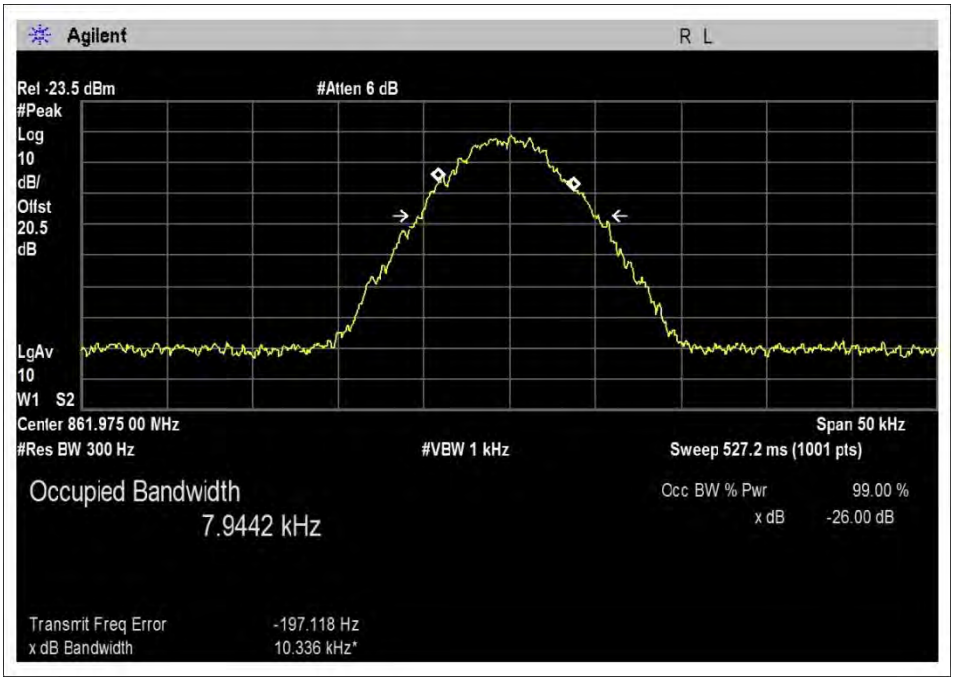


OBW-UL-806-817M-Out-AGC

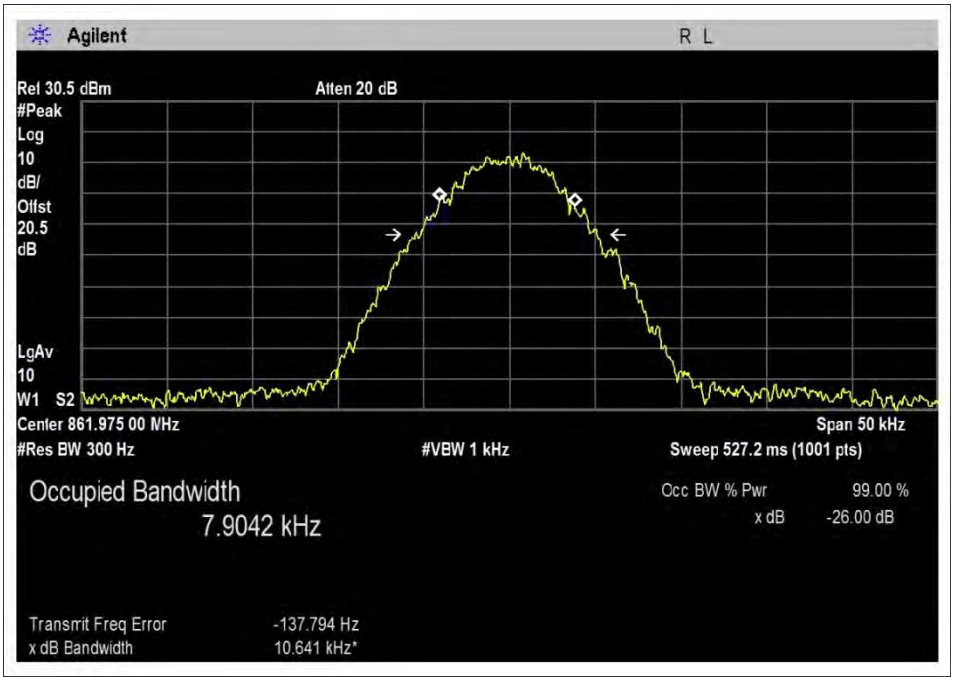


OBW-UL-806-817M-Out-AGC+10dB

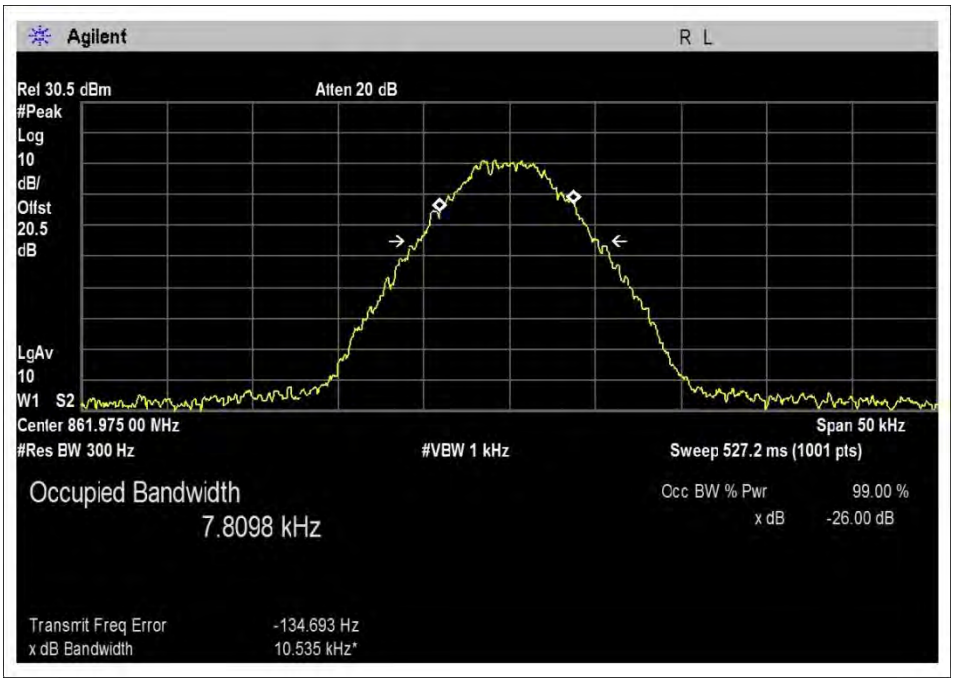
800MHz – C4FM – DL



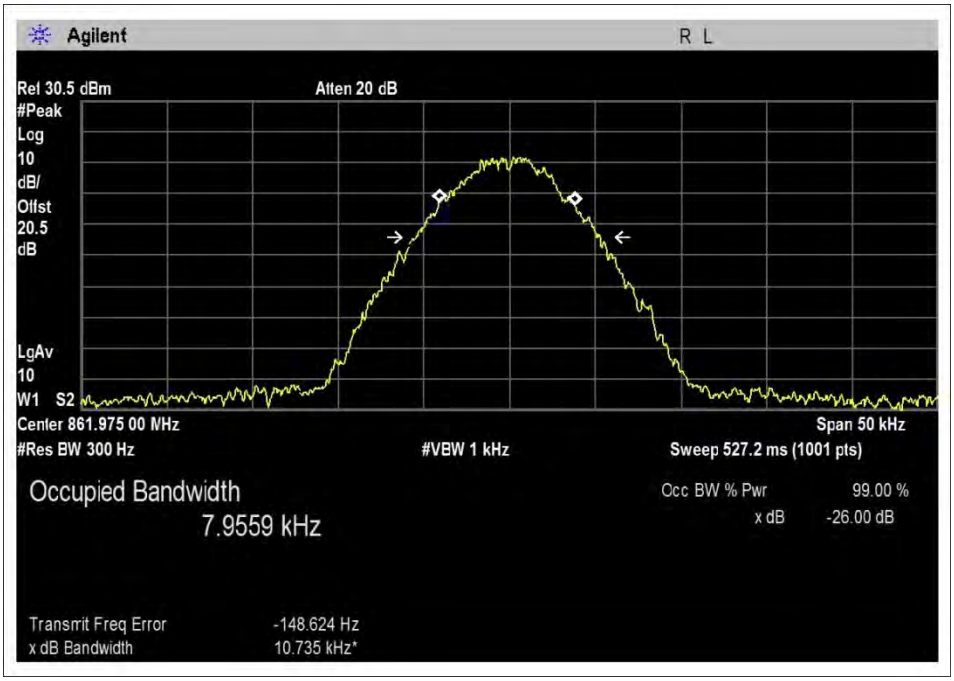
OBW-DL-851-862H-In



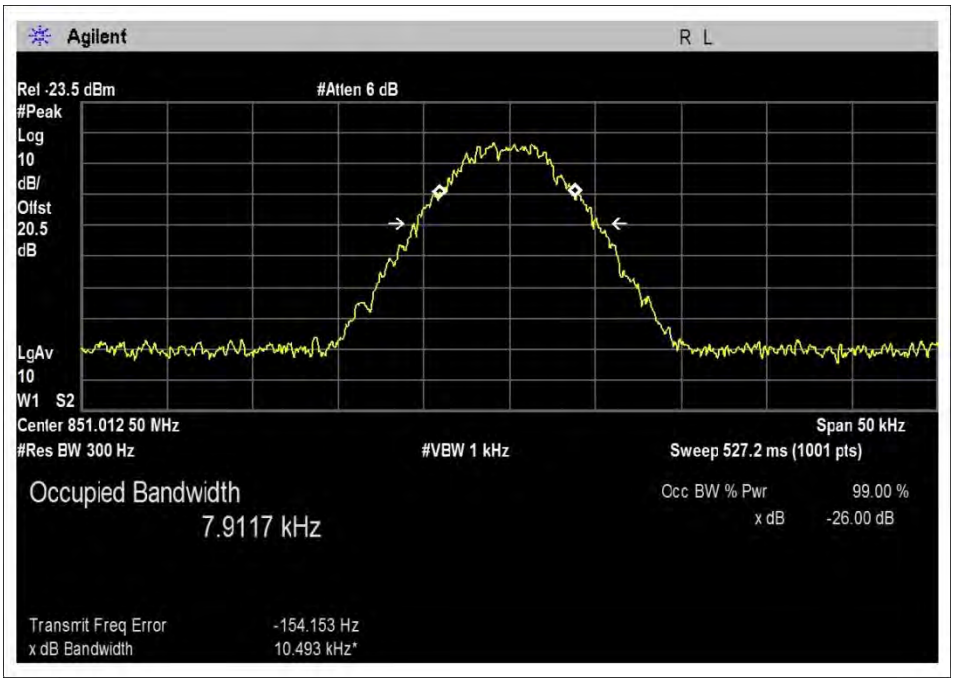
OBW-DL-851-862H-Out-25.2



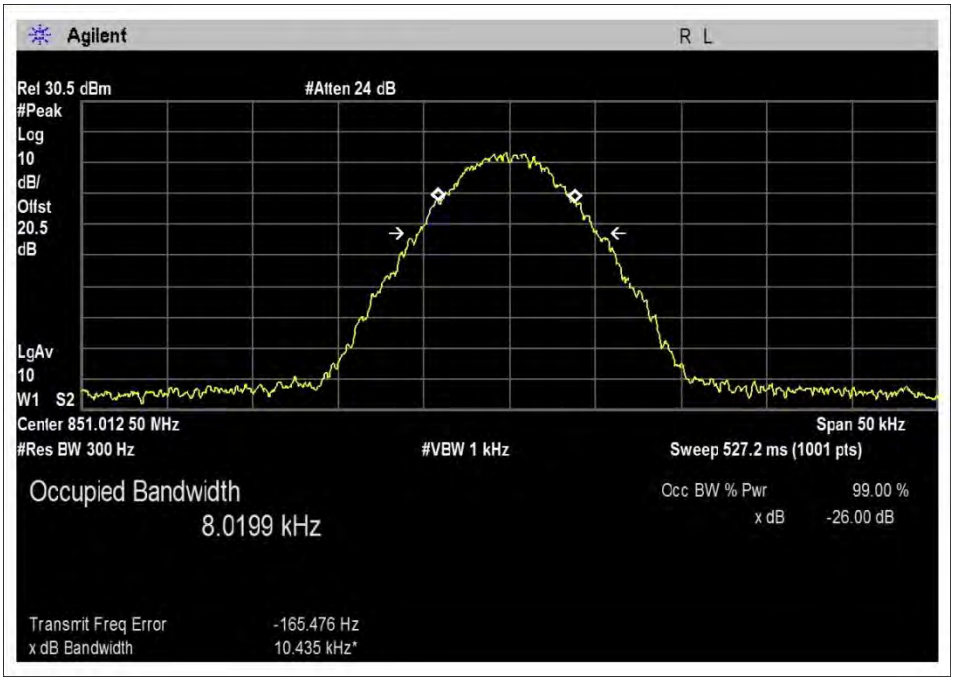
OBW-DL-851-862H-Out-AGC



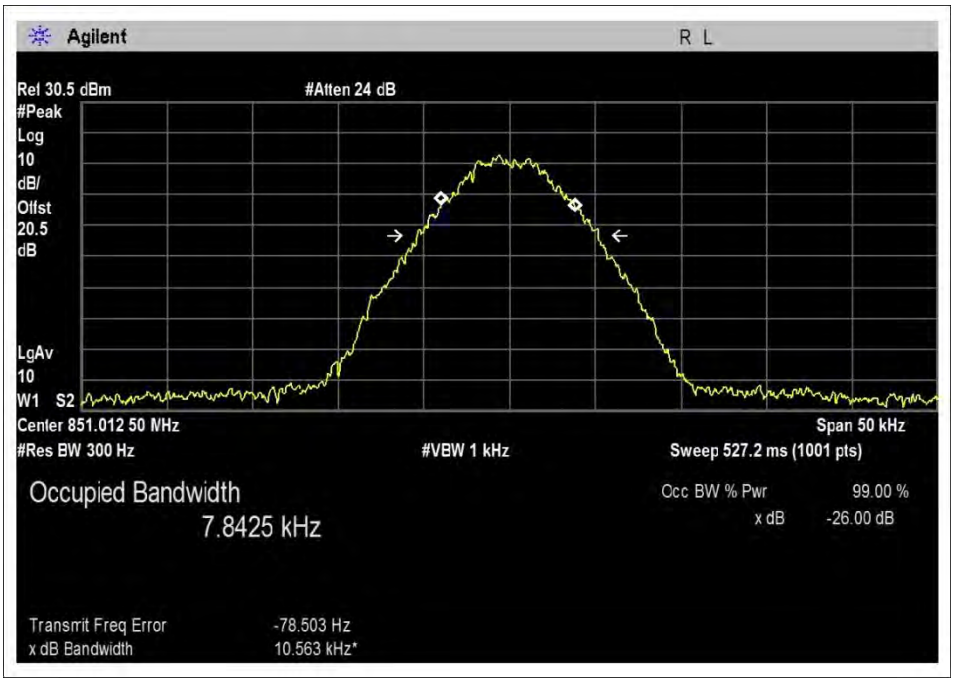
OBW-DL-851-862H-Out-AGC+10dB



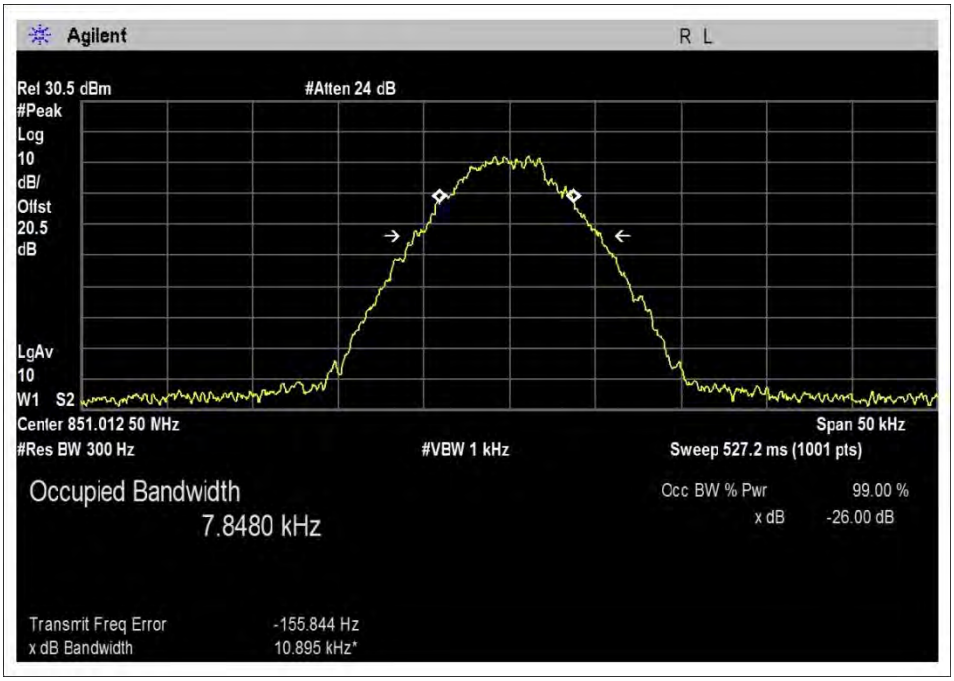
OBW-DL-851-862L-In



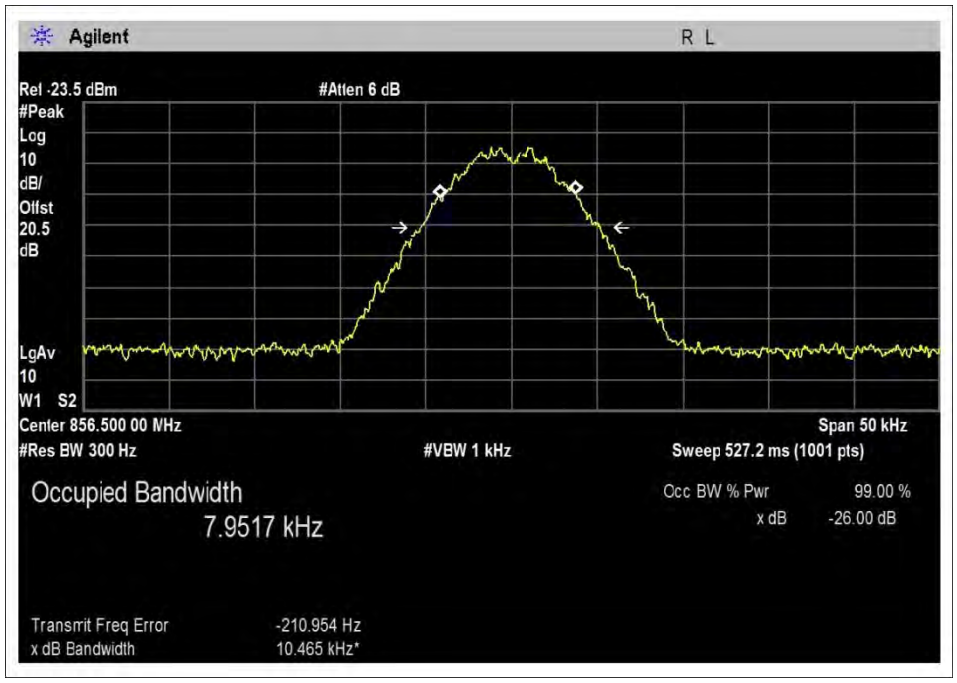
OBW-DL-851-862L-Out-27.2



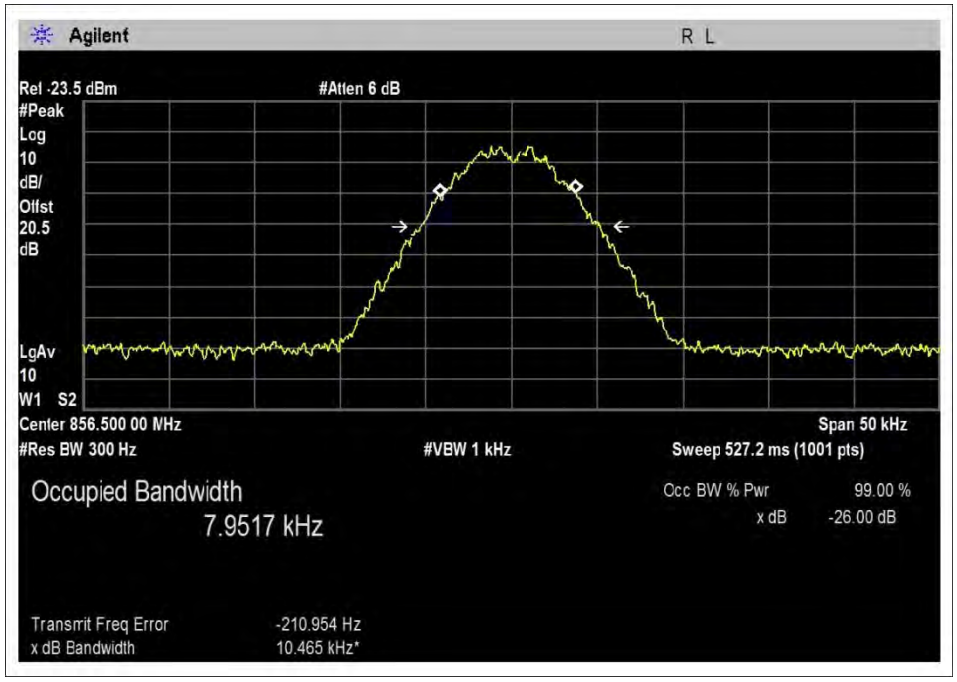
OBW-DL-851-862L-Out-AGC



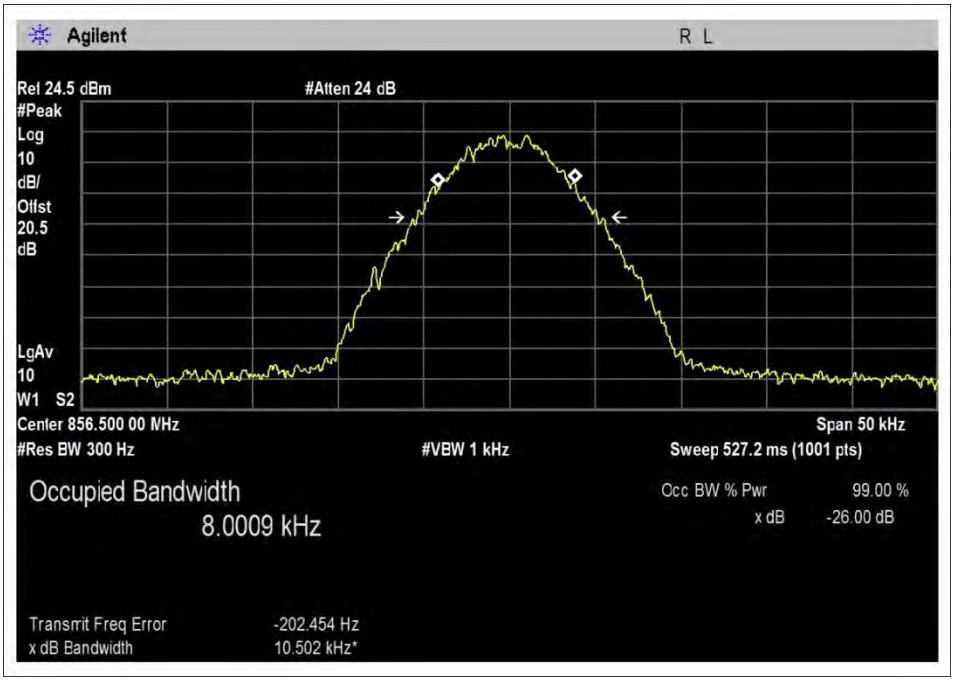
OBW-DL-851-862L-Out-AGC+10dB



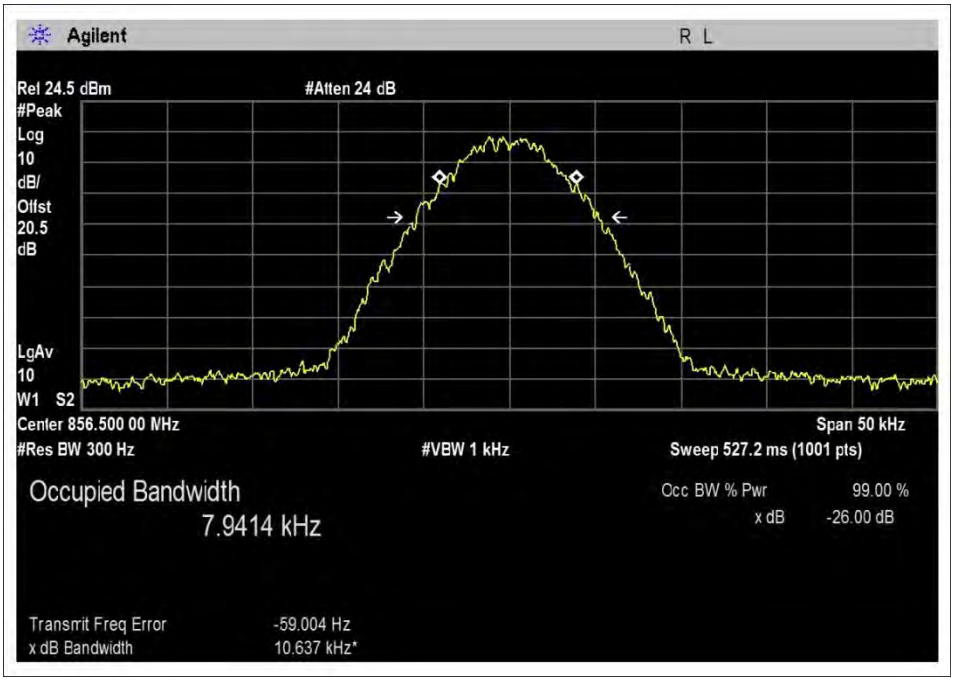
OBW-DL-851-862M-In



OBW-DL-851-862M-Out-28.2

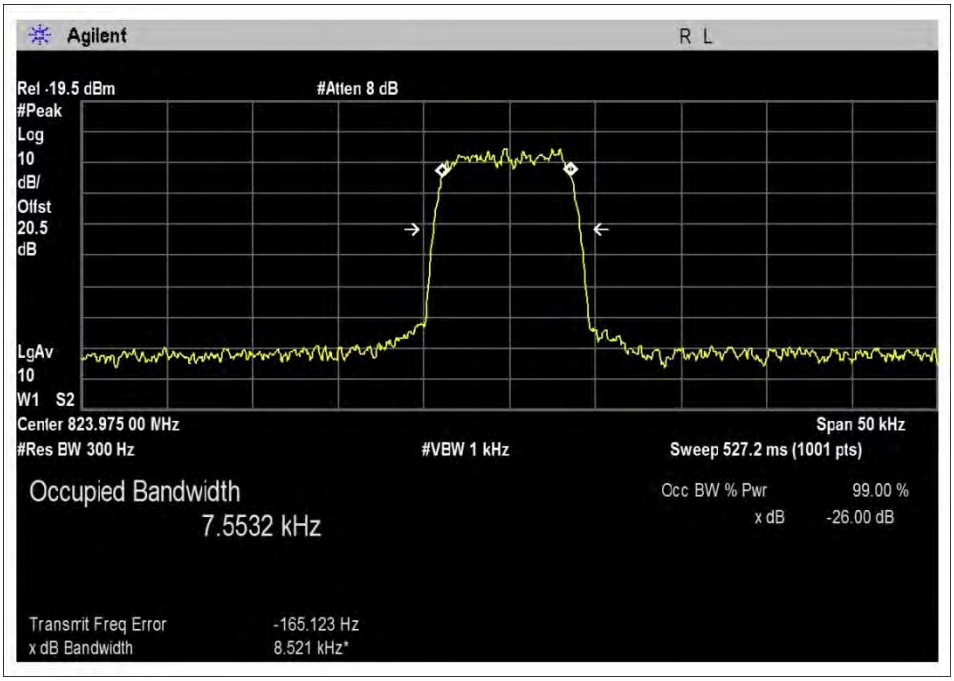


OBW-DL-851-862M-Out-AGC

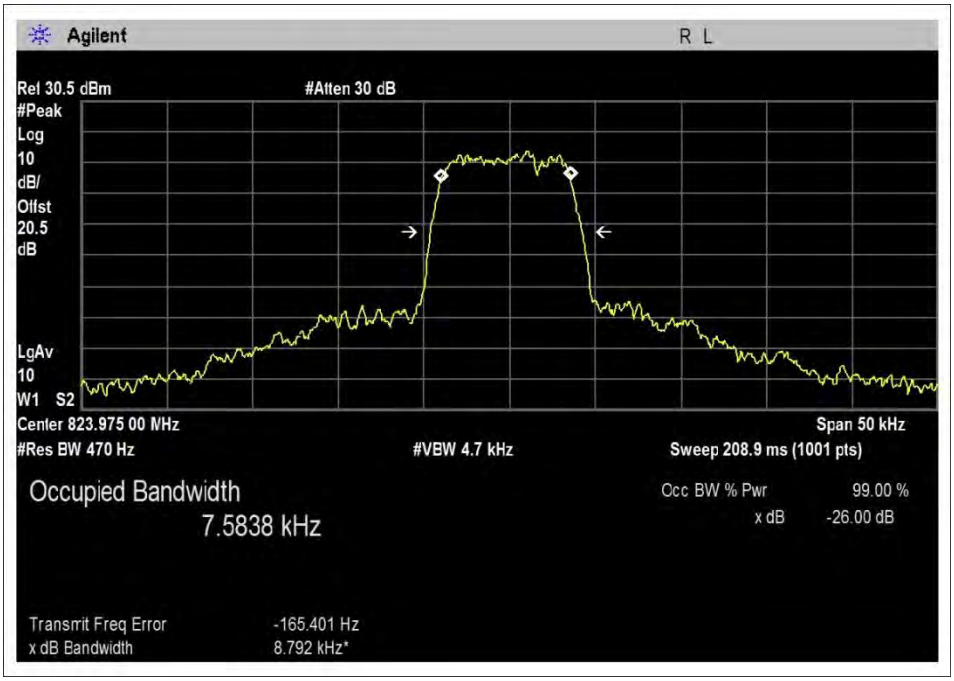


OBW-DL-851-862M-Out-AGC+10dB

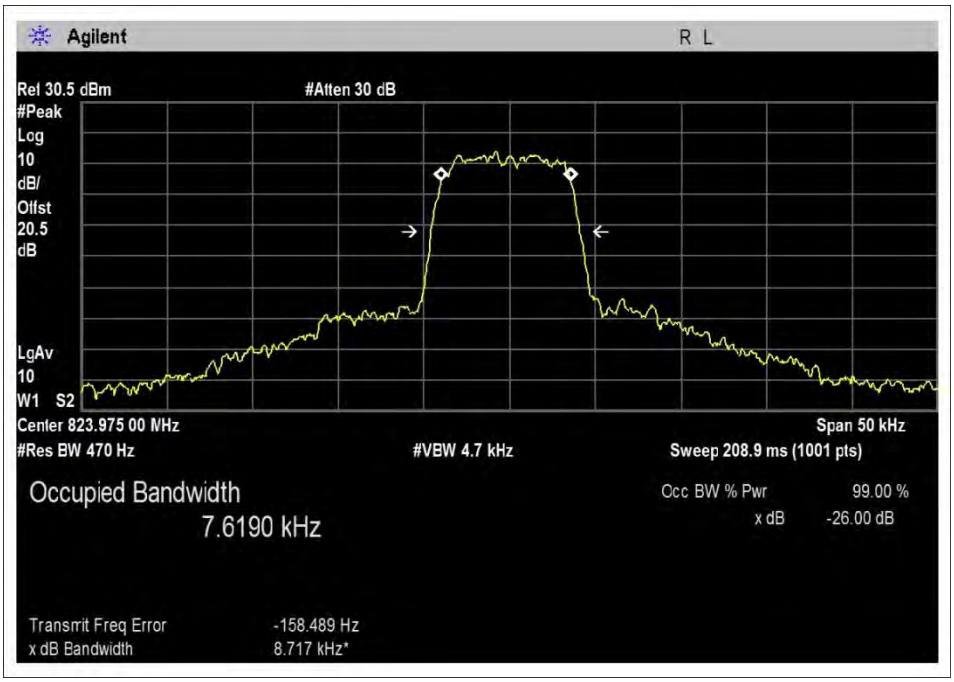
800MHz – CQPSK - UL



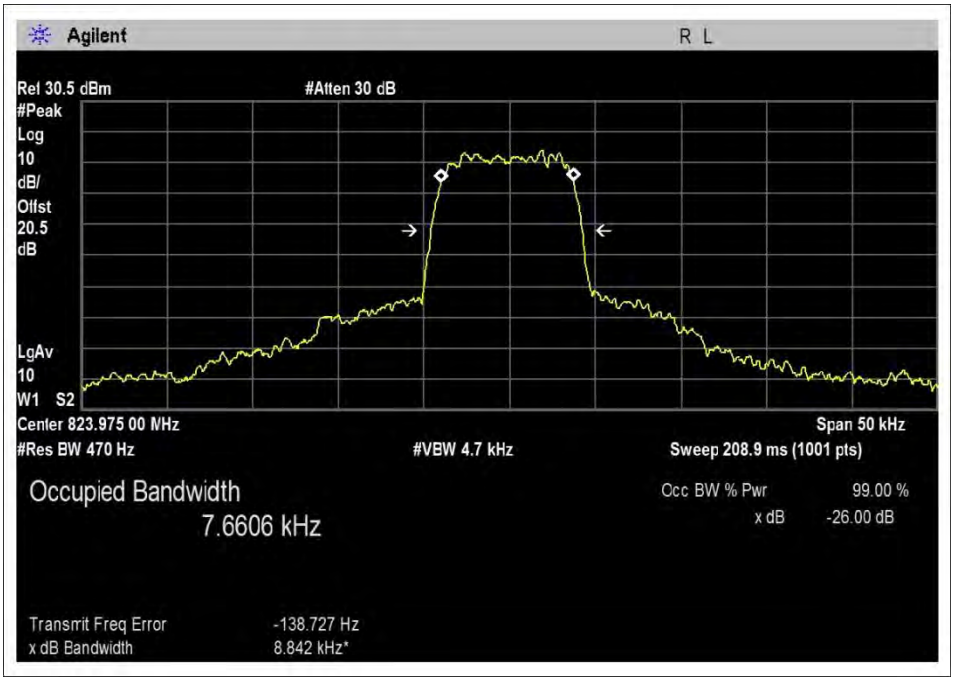
UL-817-824H-In



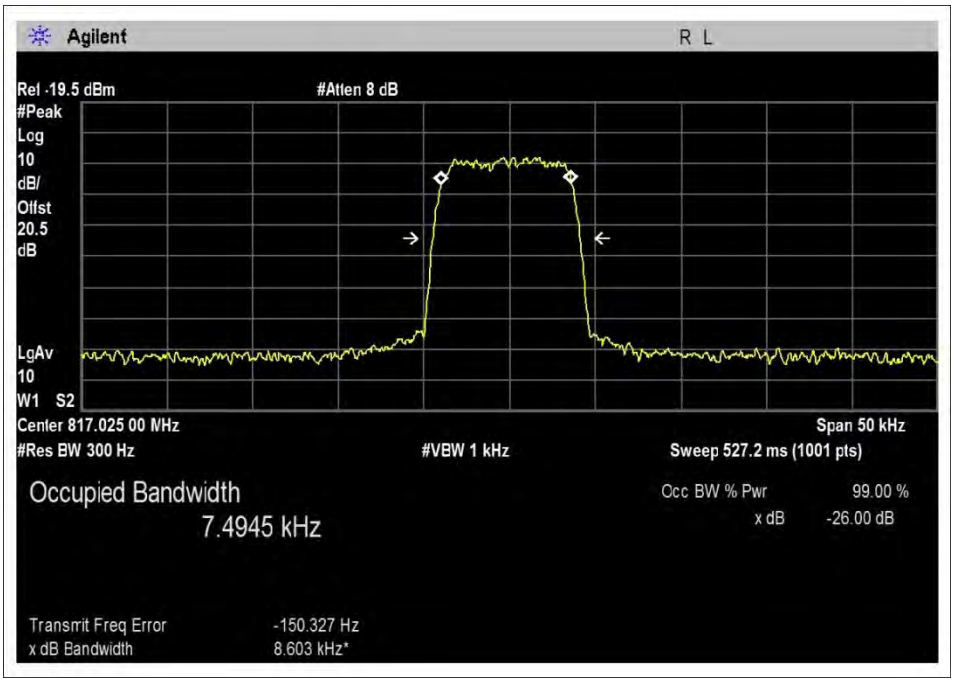
UL-817-824H-Out-23.9



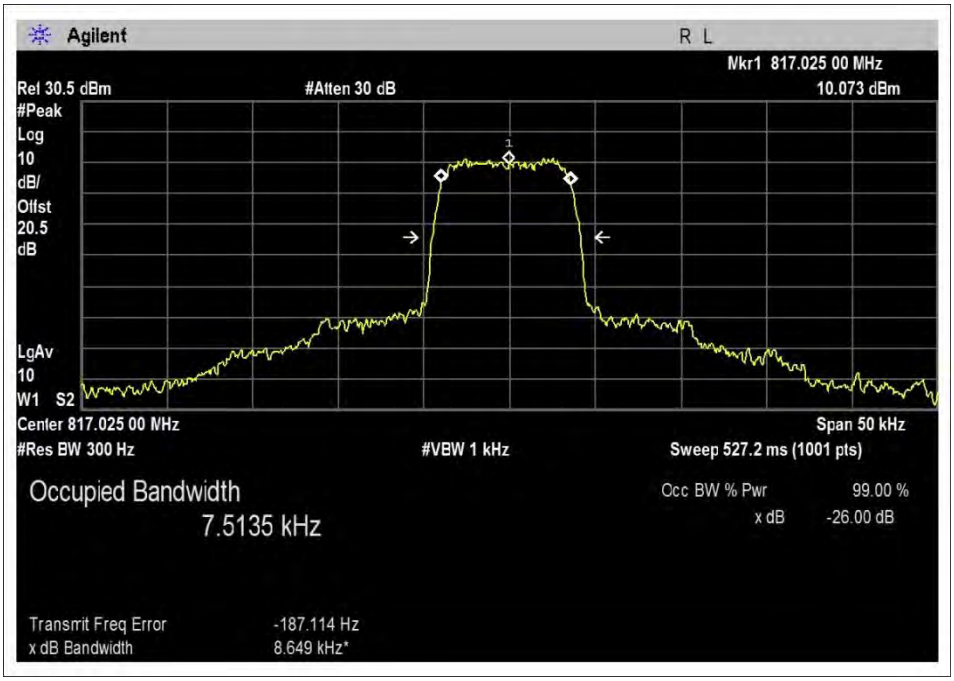
UL-817-824H-Out-AGC



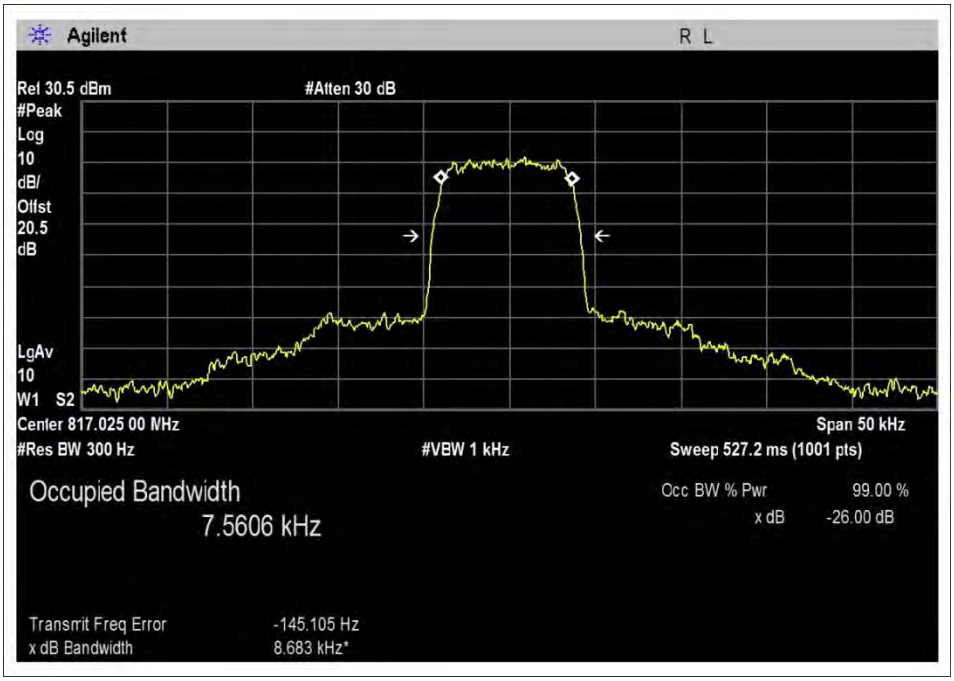
UL-817-824H-Out-AGC+10dB



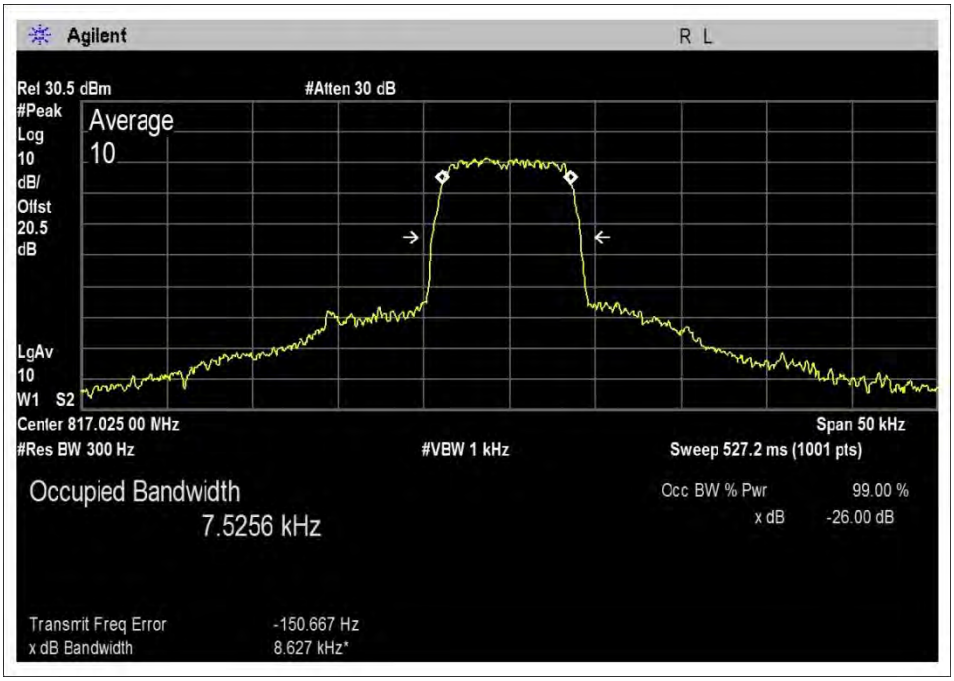
UL-817-824L-In



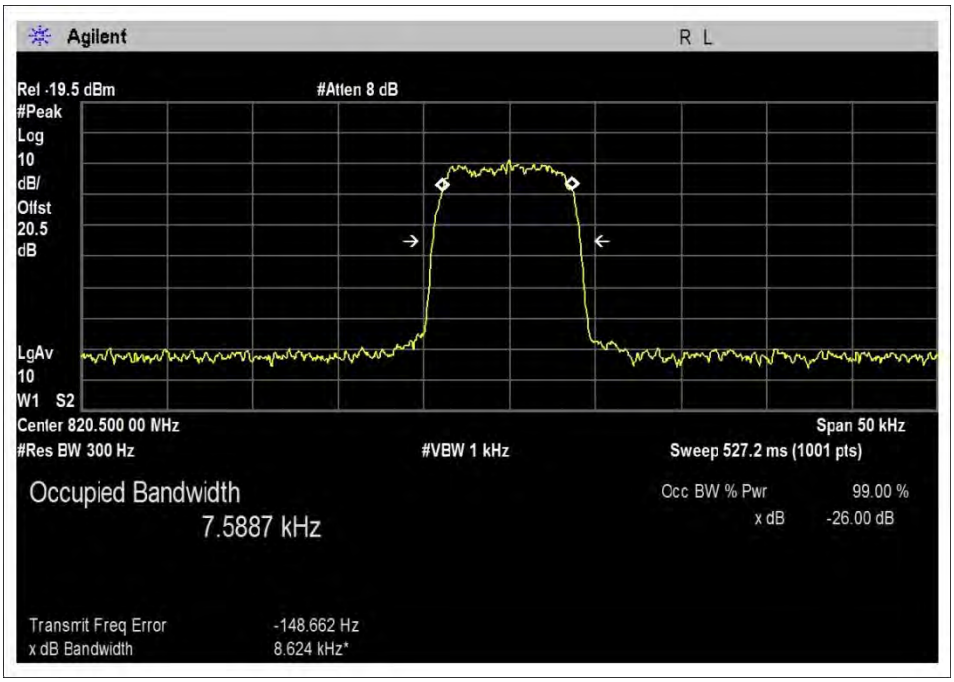
UL-817-824L-Out-25



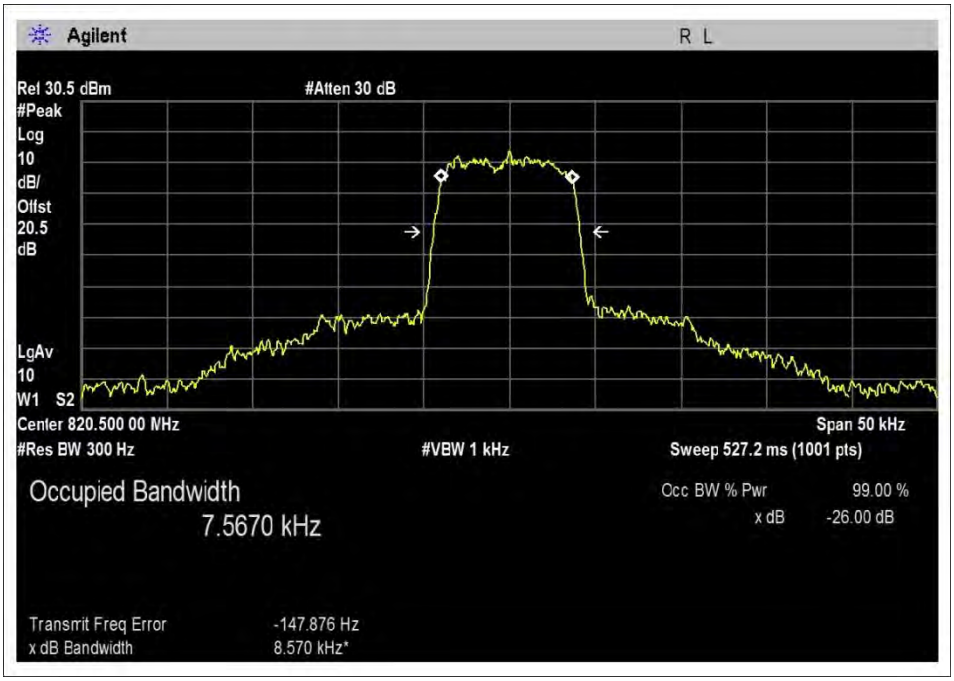
UL-817-824L-Out-AGC



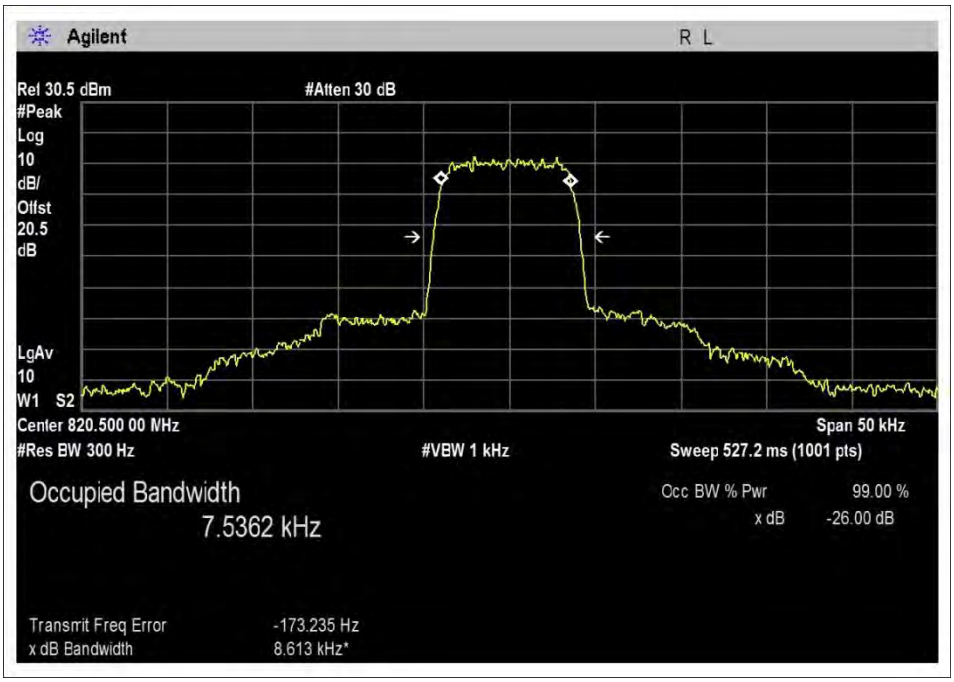
UL-817-824L-Out-AGC+10dB



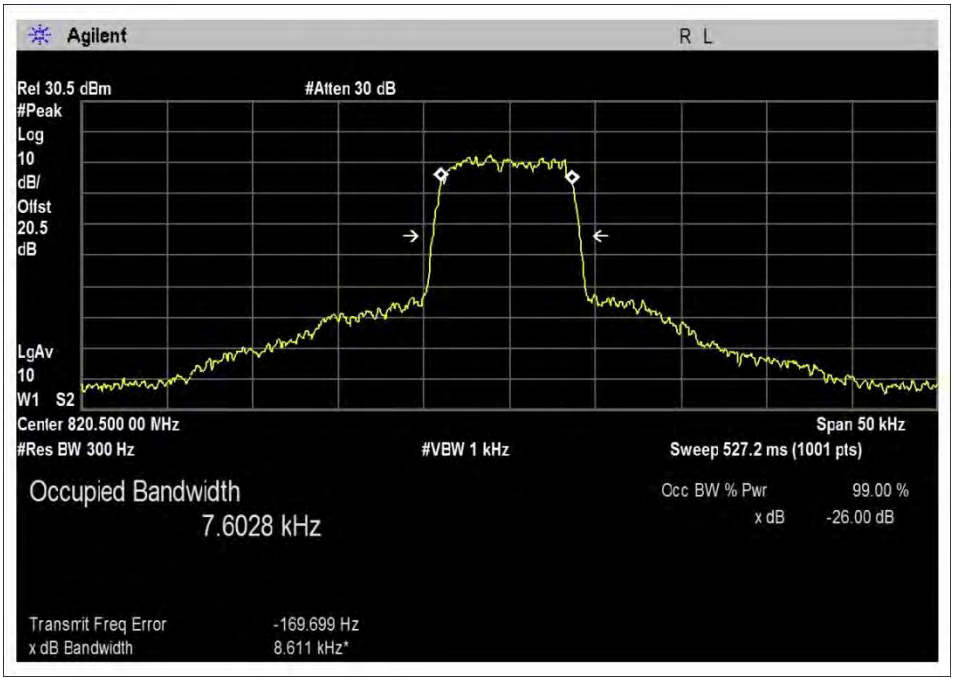
UL-817-824M-In



UL-817-824M-Out-27.4

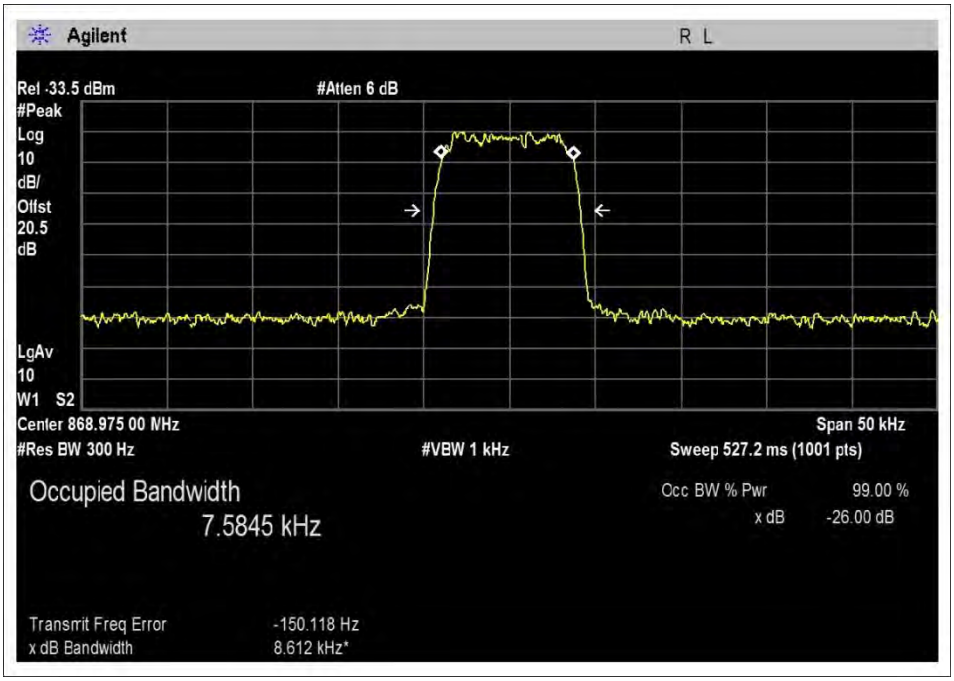


UL-817-824M-Out-AGC

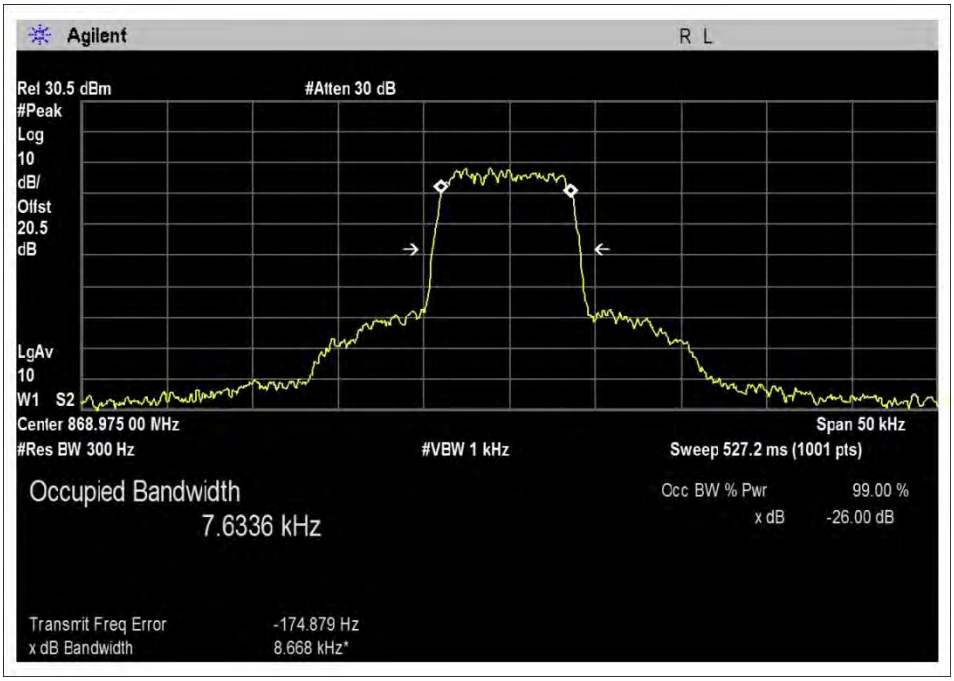


UL-817-824M-Out-AGC+10dB

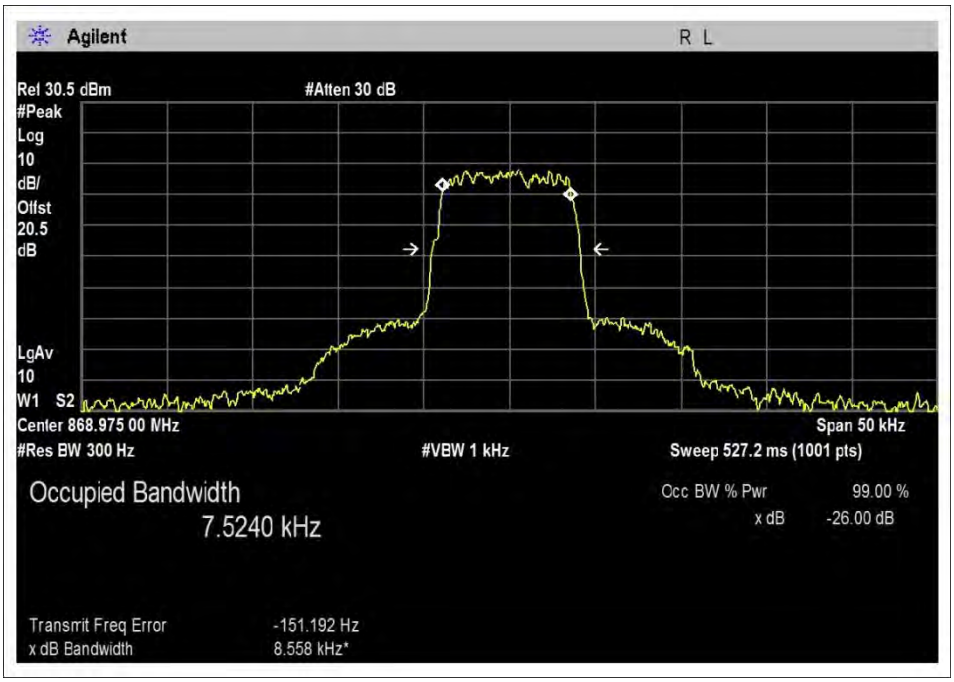
800MHz – CQPSK - DL



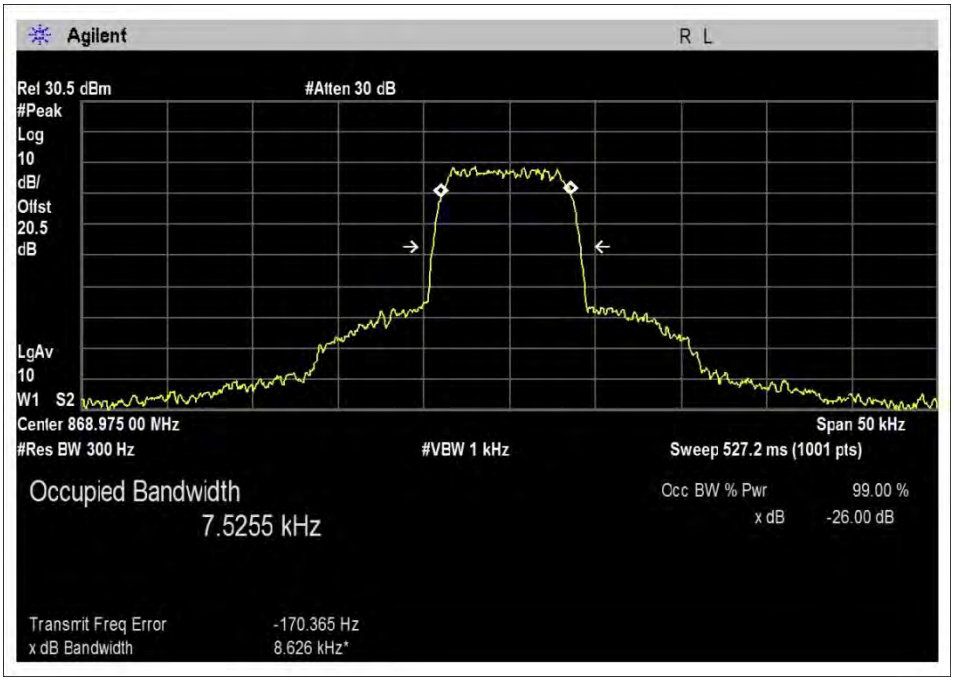
DL-862-869H-In



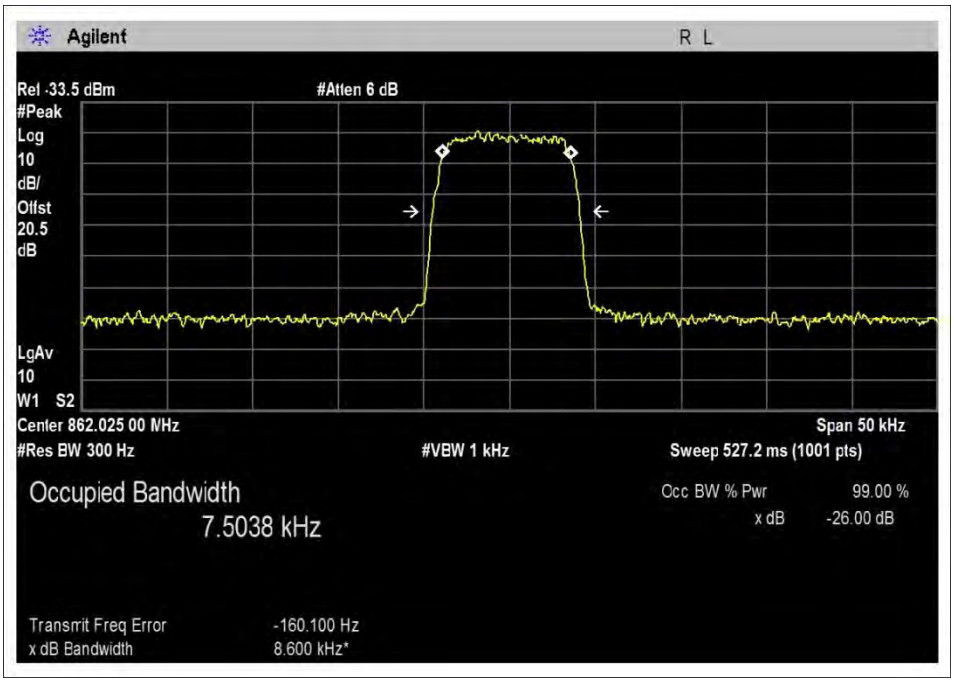
DL-862-869H-Out-31.7



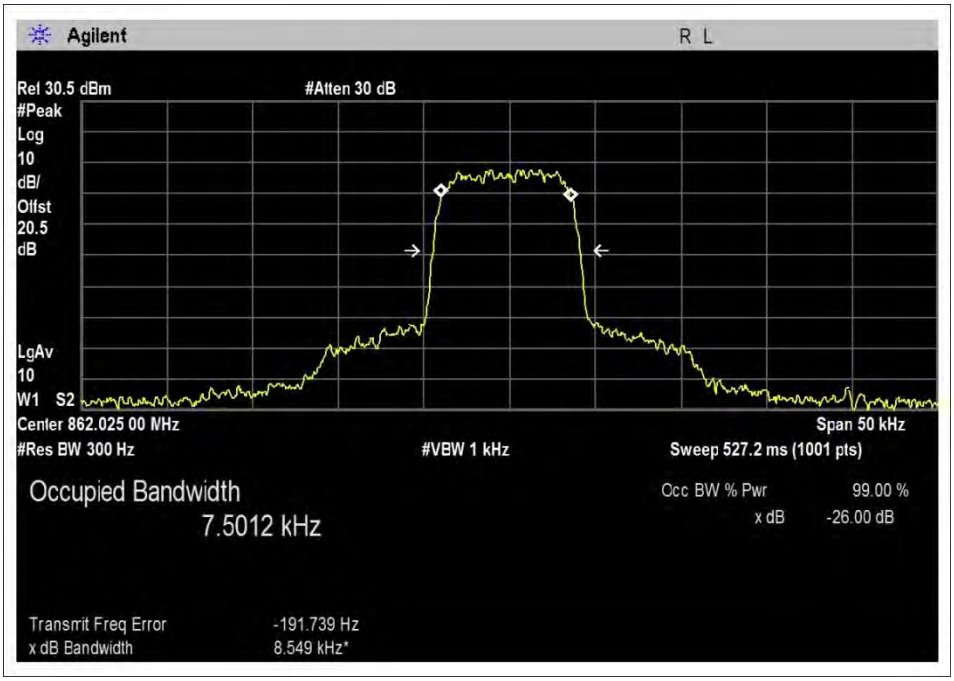
DL-862-869H-Out-AGC



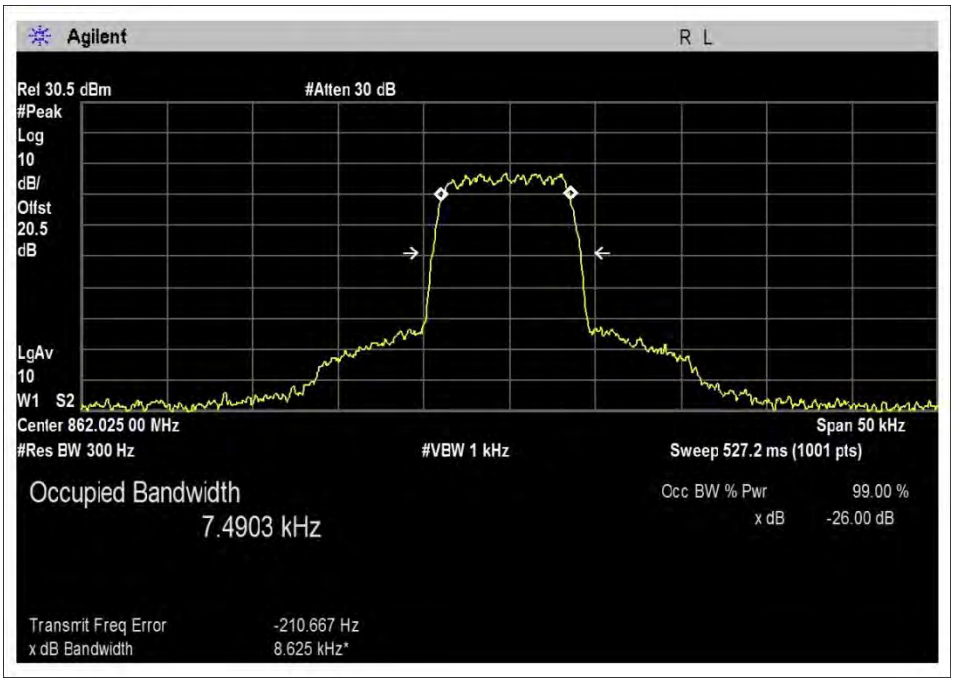
DL-862-869H-Out-AGC+10dB



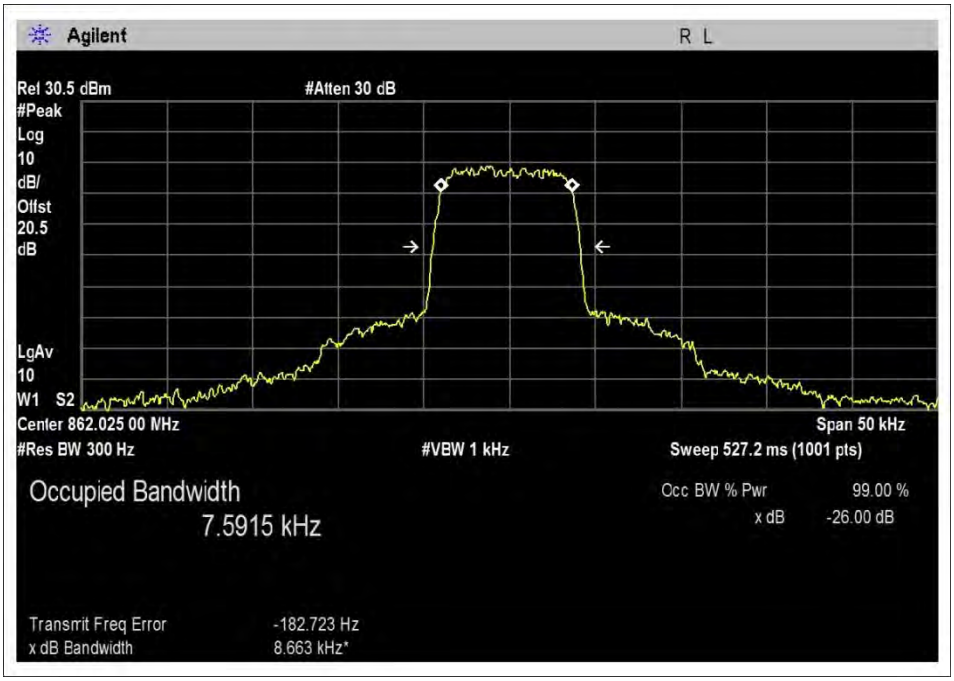
DL-862-869L-In



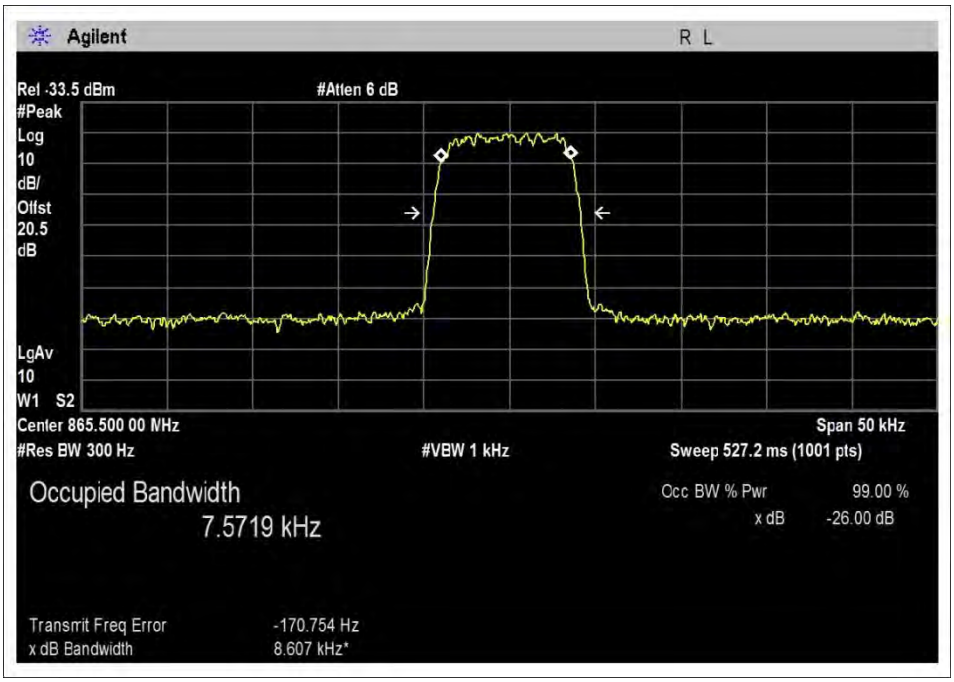
DL-862-869L-Out-31.5



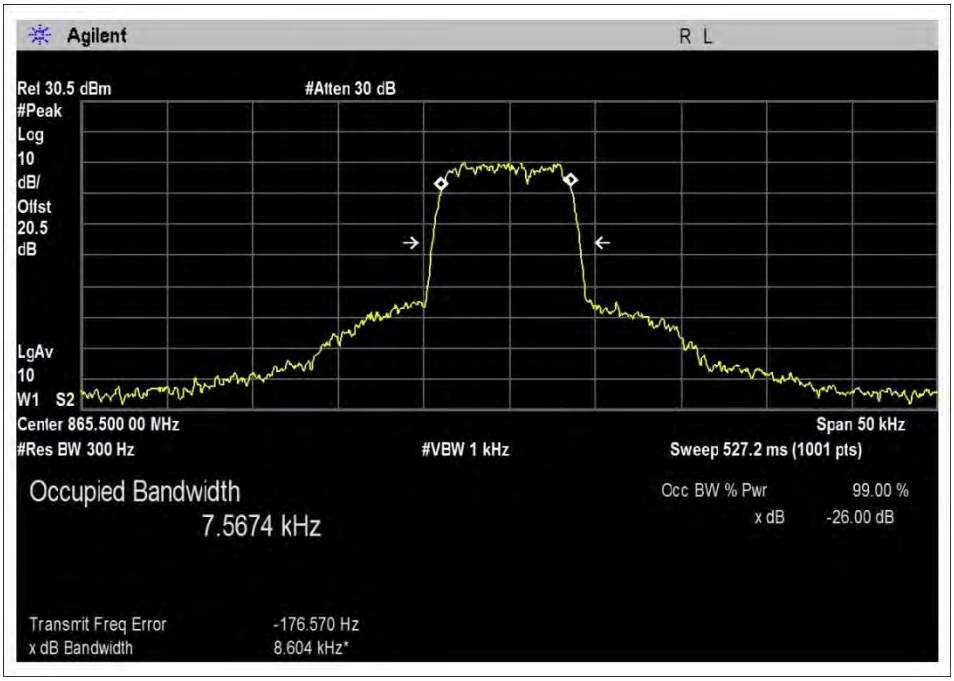
DL-862-869L-Out-AGC



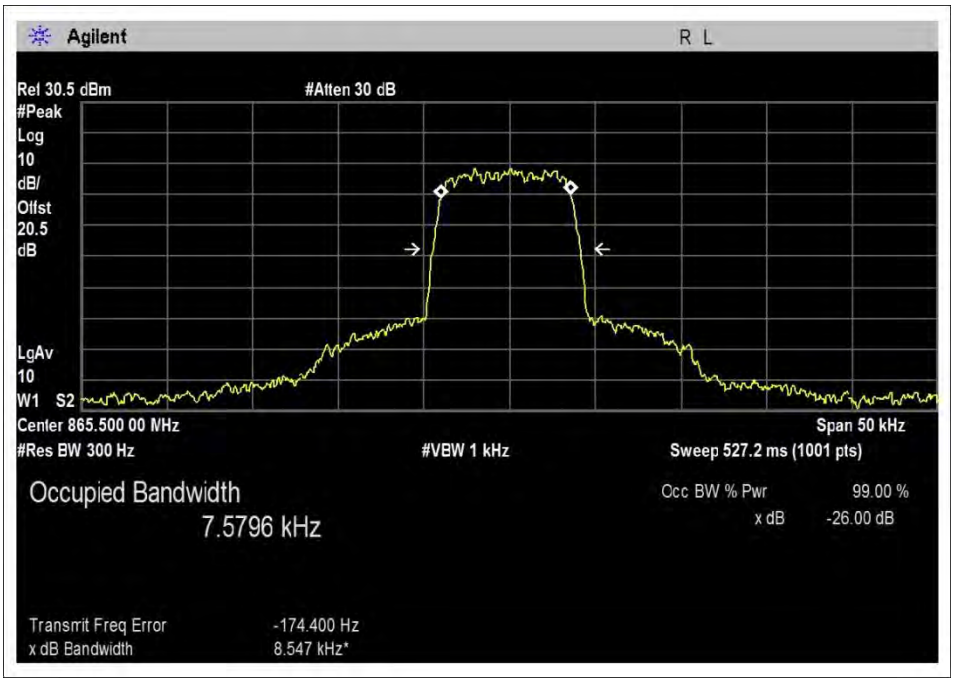
DL-862-869L-Out-AGC+10dB



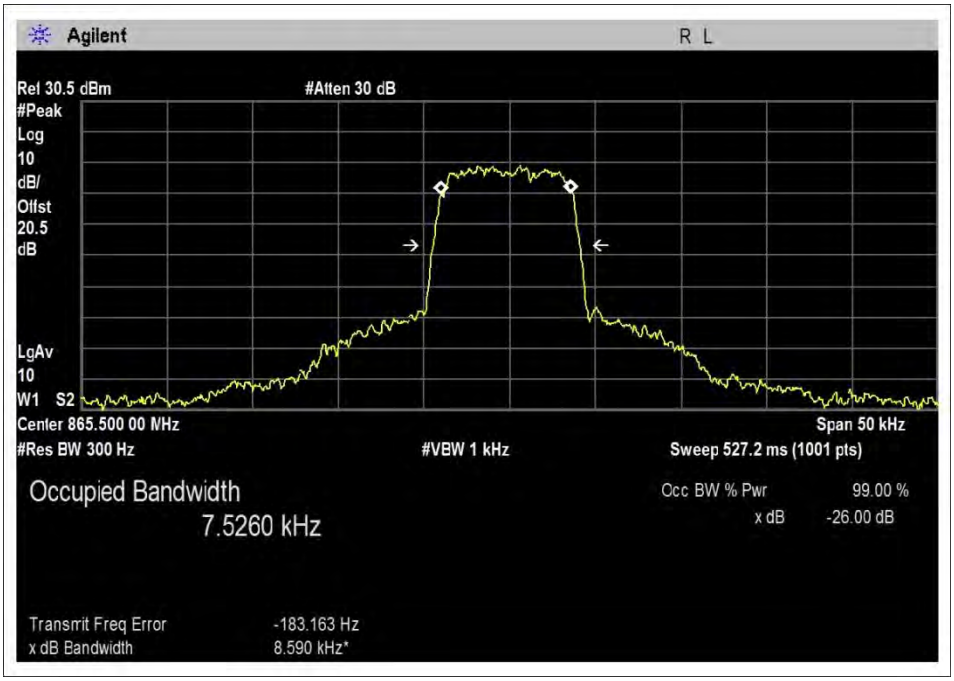
DL-862-869M-In



DL-862-869M-Out-31.4

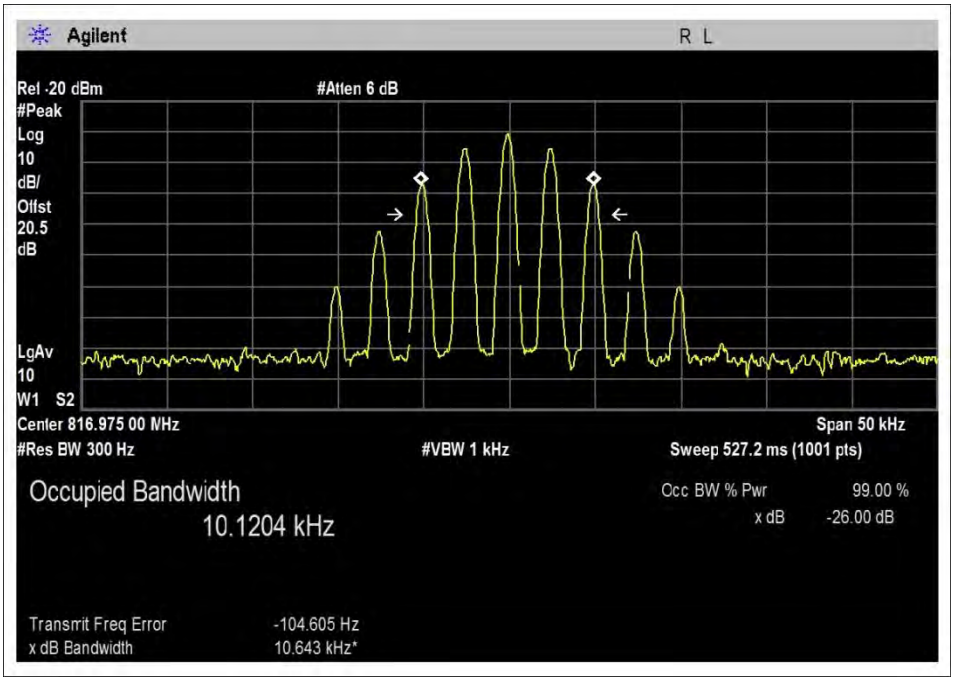


DL-862-869M-Out-AGC

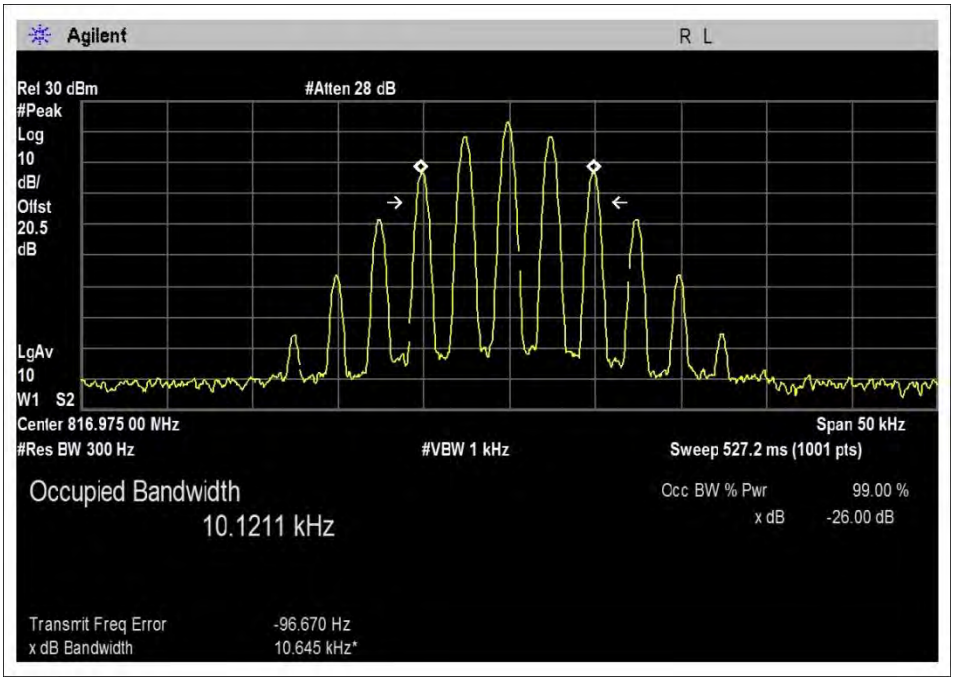


DL-862-869M-Out-AGC+10dB

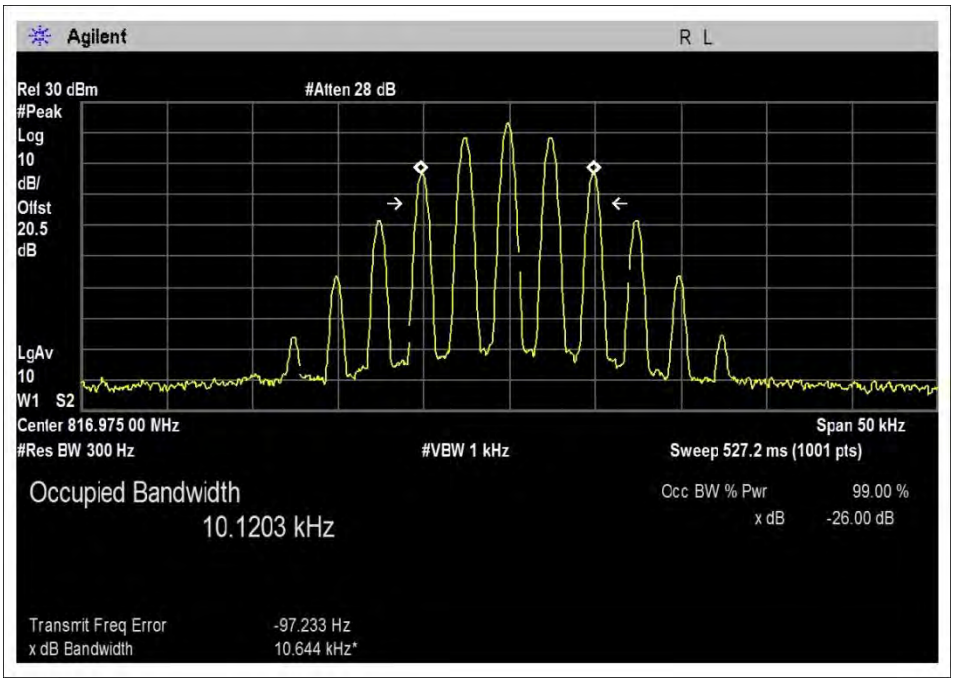
800MHz – FM - UL



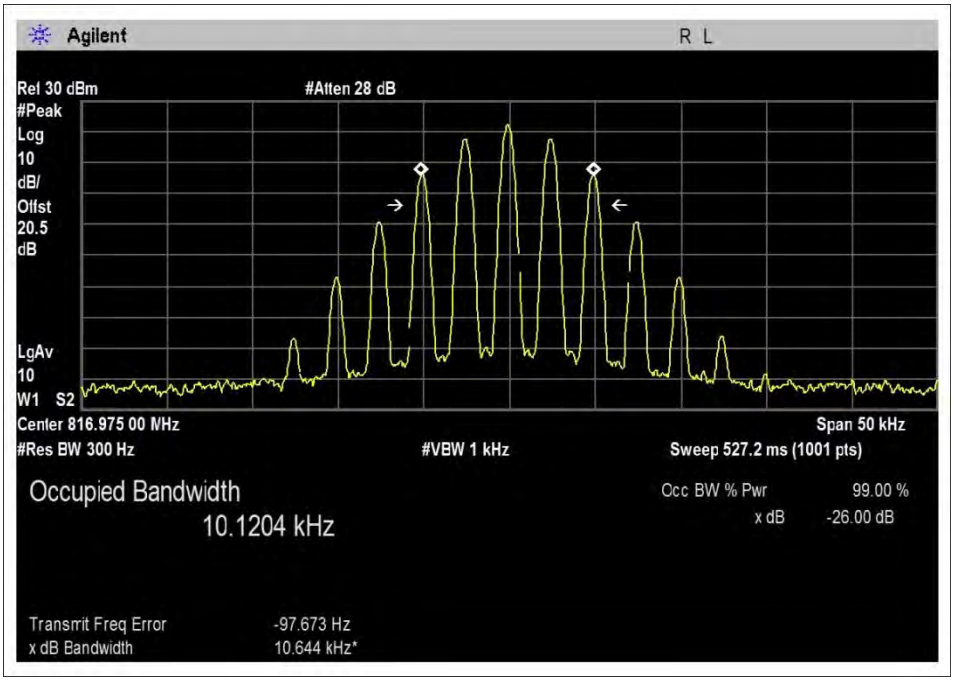
OBW-UL-806-817H-In



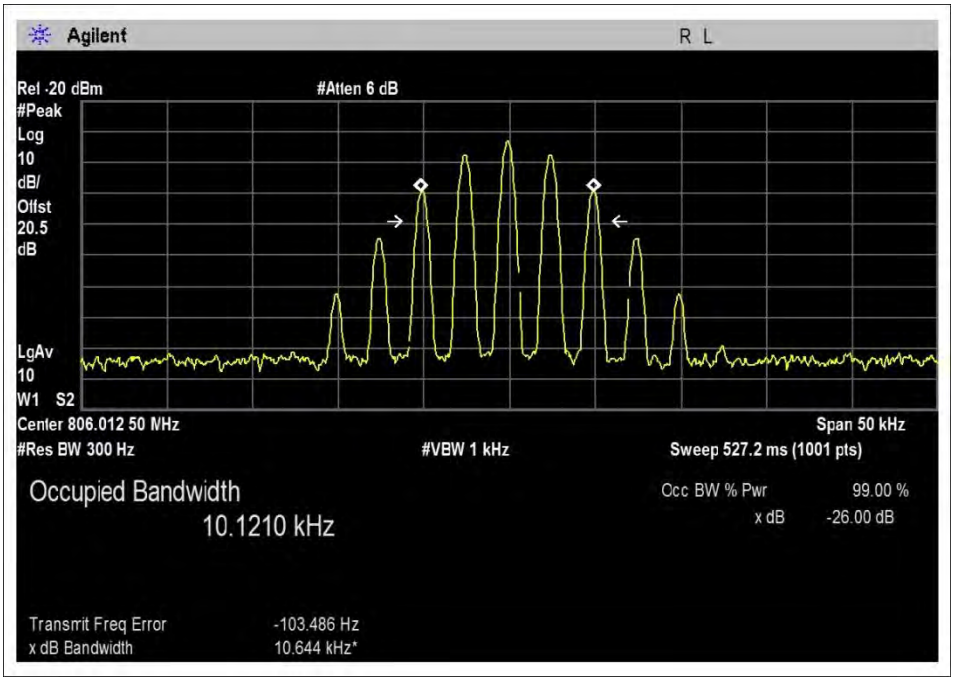
OBW-UL-806-817H-Out-29



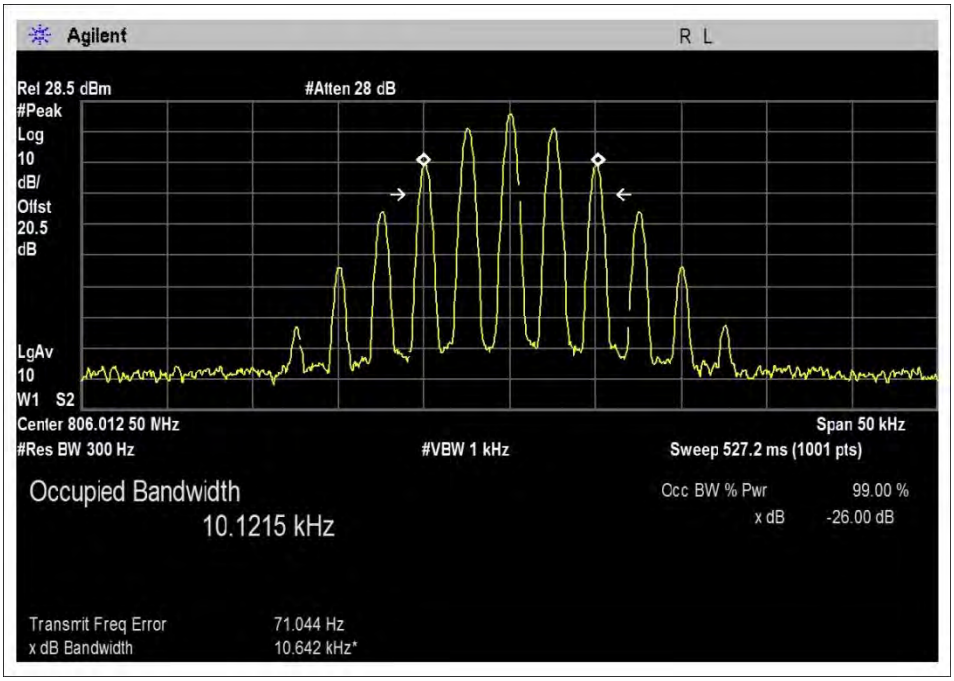
OBW-UL-806-817H-Out-AGC



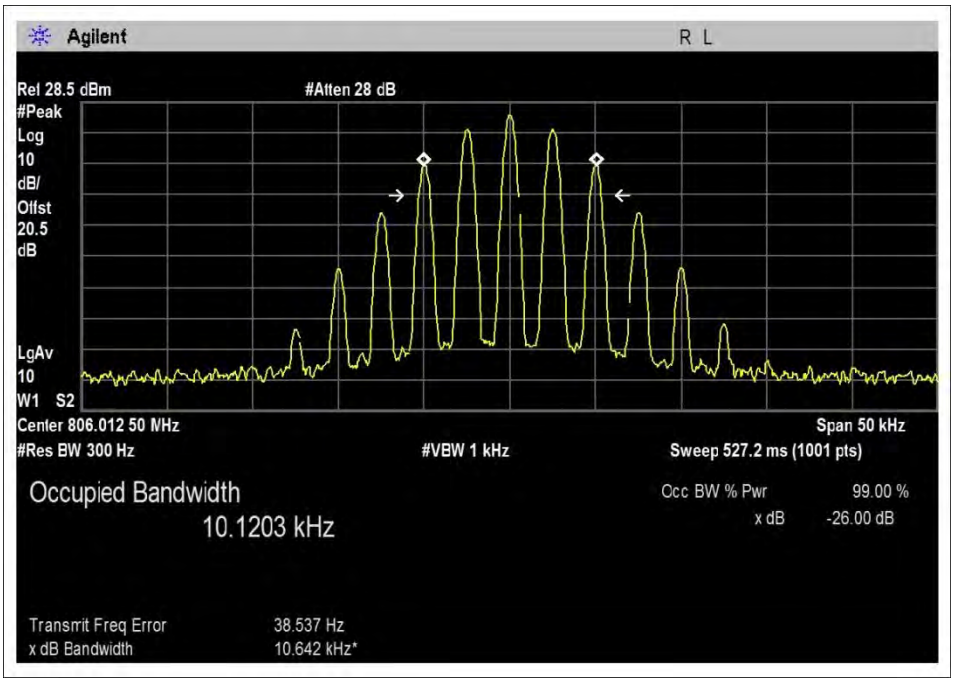
OBW-UL-806-817H-Out-AGC+10dB



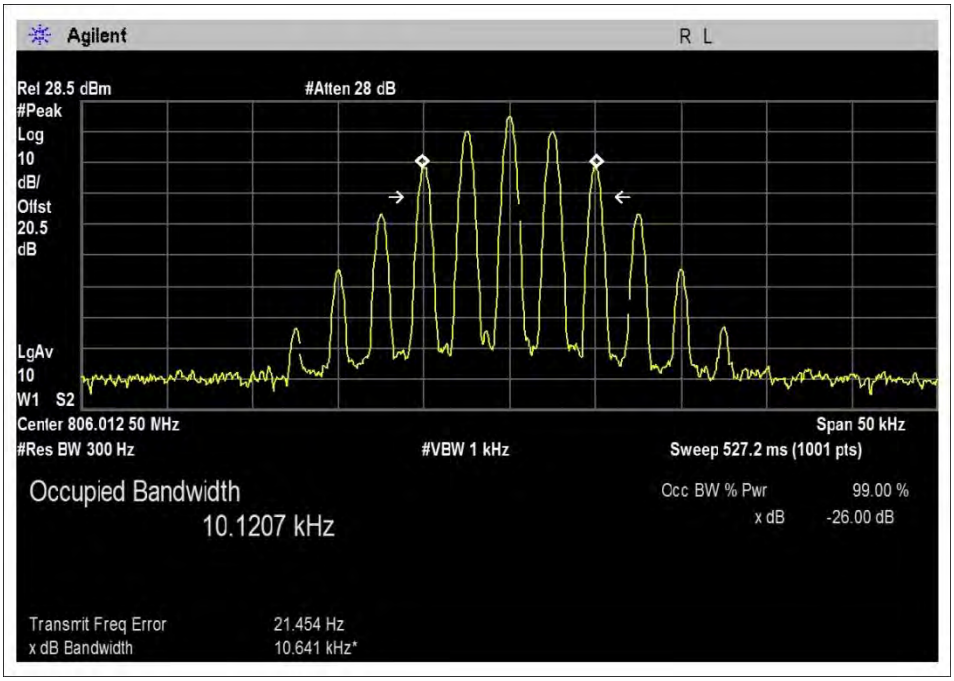
OBW-UL-806-817L-In



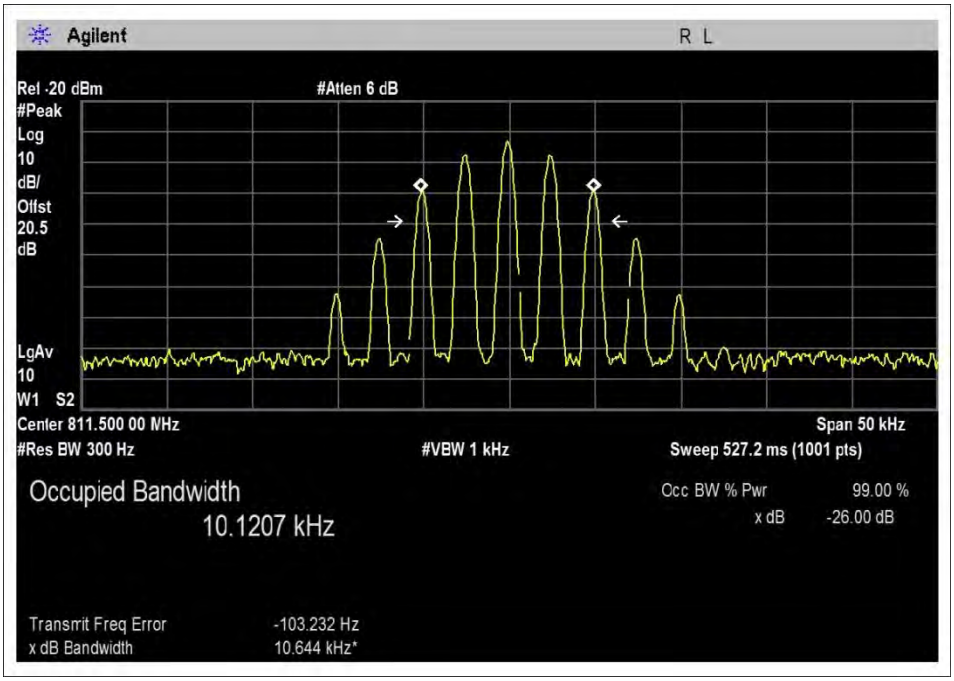
OBW-UL-806-817L-Out-31



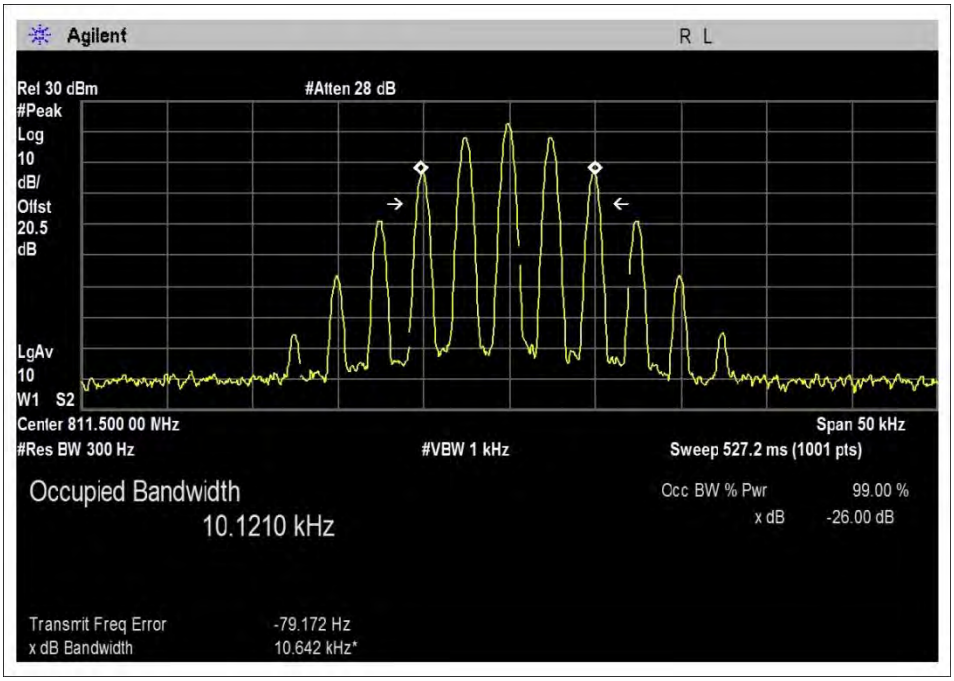
OBW-UL-806-817L-Out-AGC



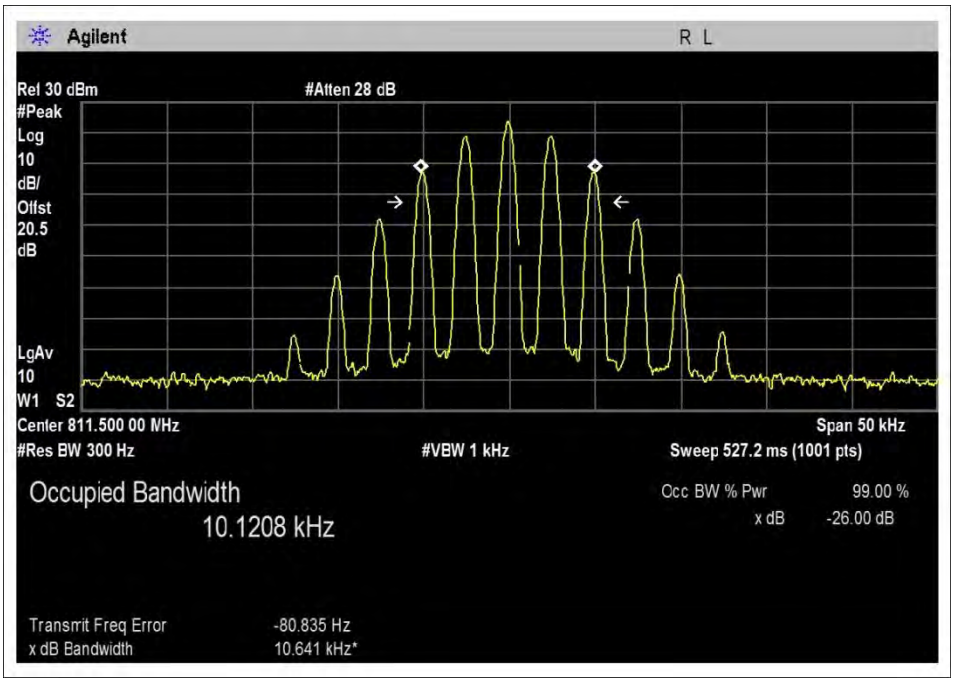
OBW-UL-806-817L-Out-AGC+10dB



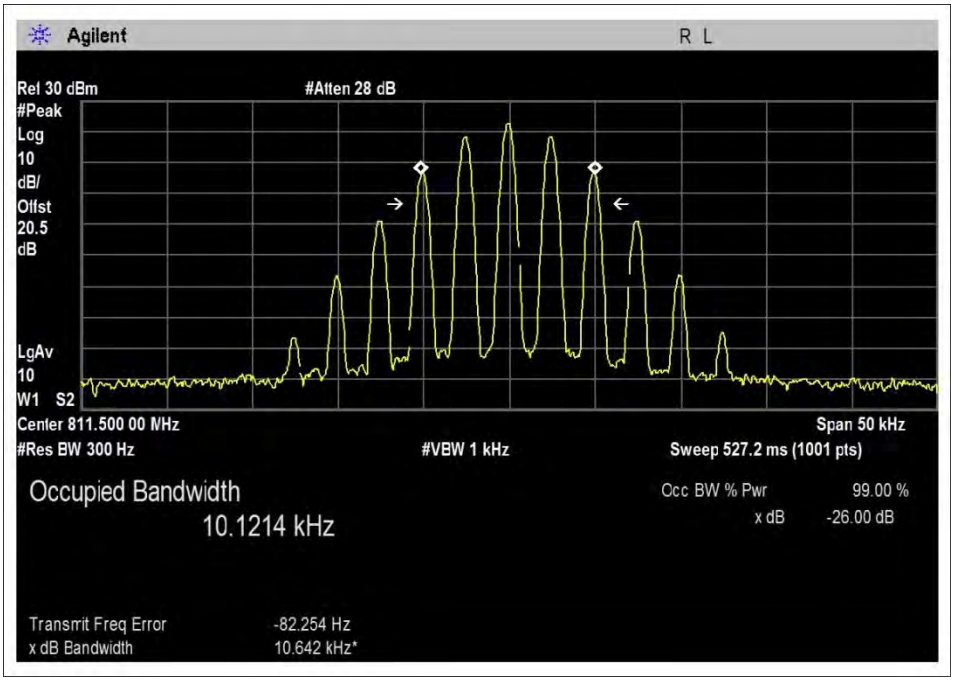
OBW-UL-806-817M-In



OBW-UL-806-817M-Out-31.2

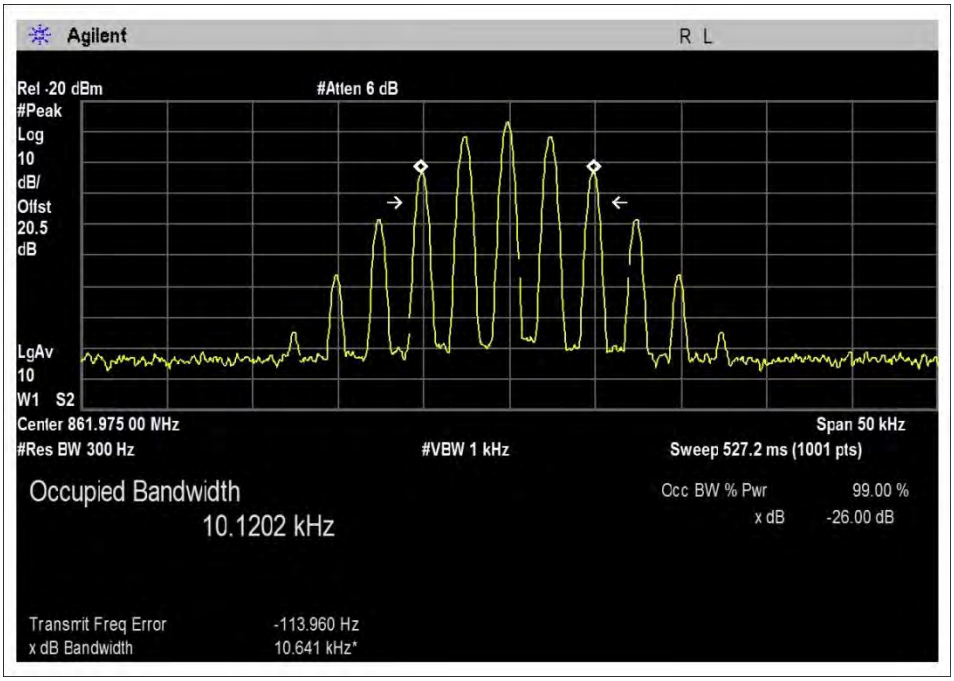


OBW-UL-806-817M-Out-AGC

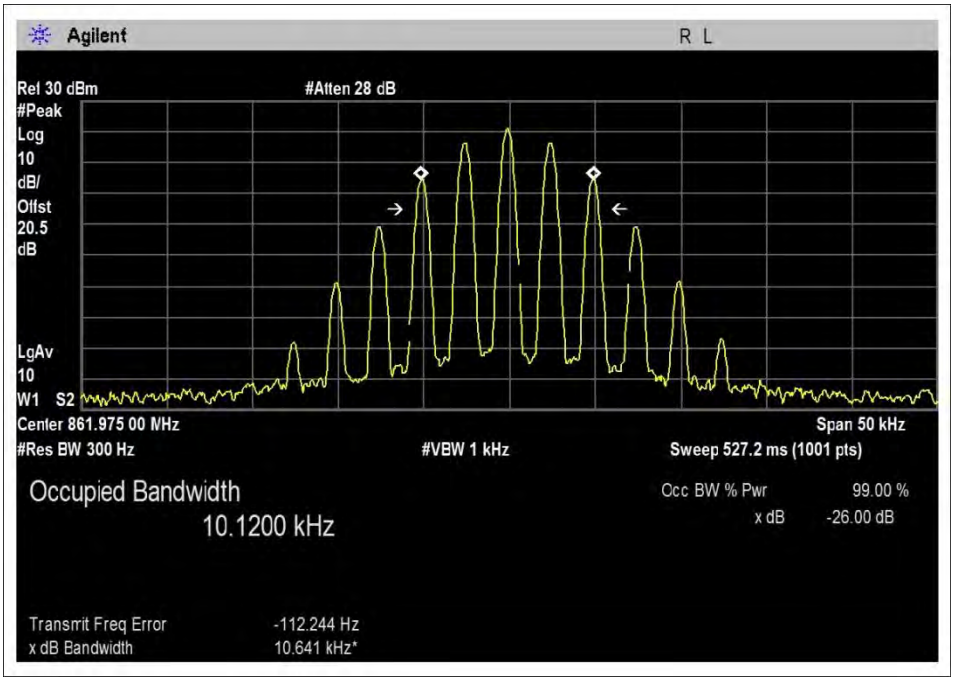


OBW-UL-806-817M-Out-AGC+10dB

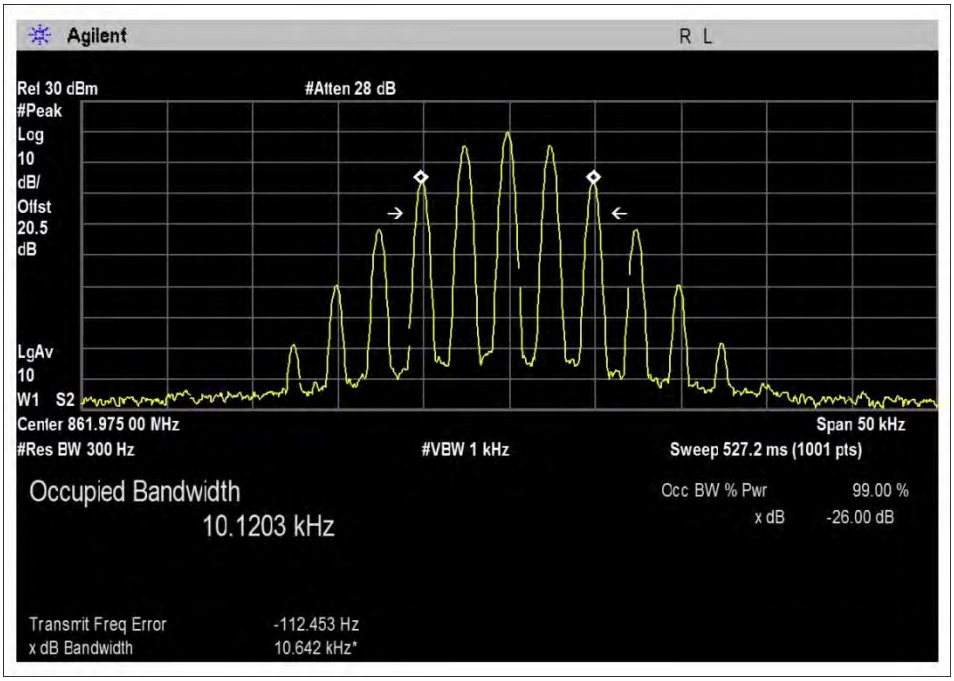
800MHz – FM - DL



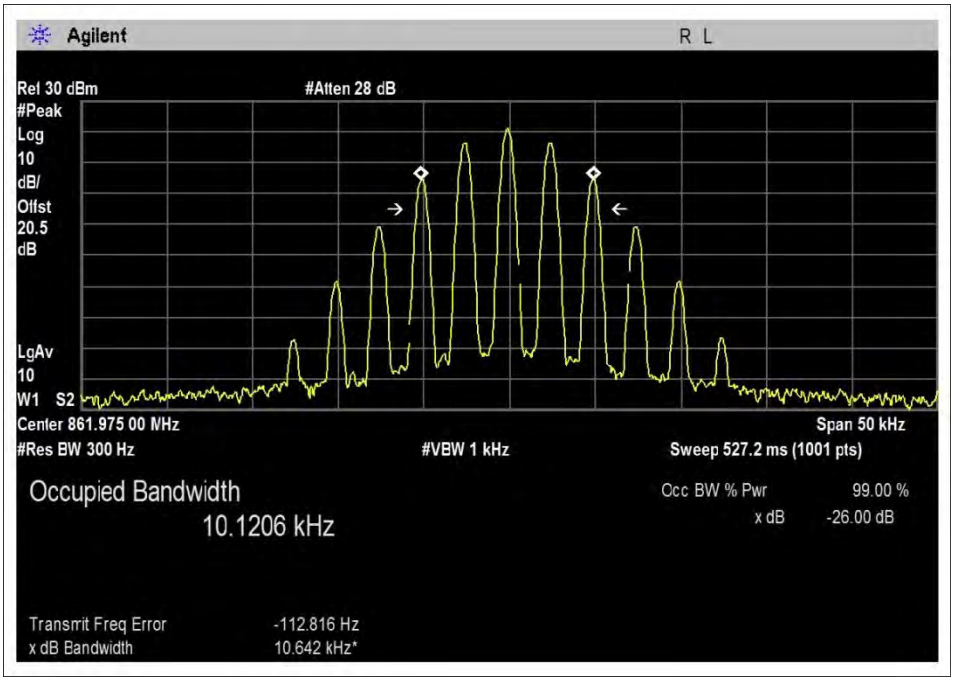
OBW-DL-851-862H-In



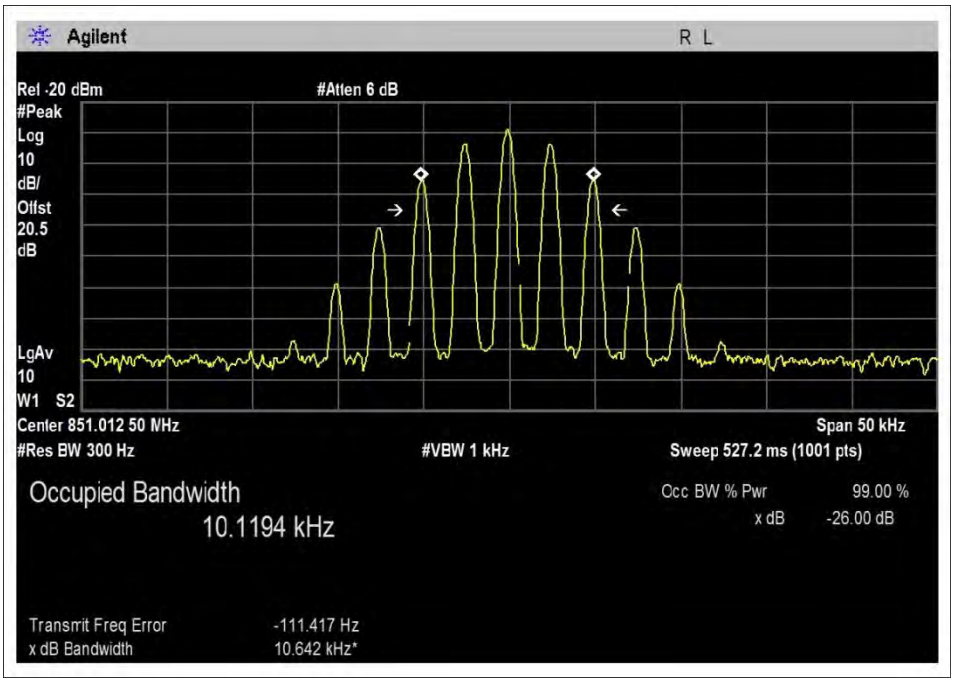
OBW-DL-851-862H-Out-25.3



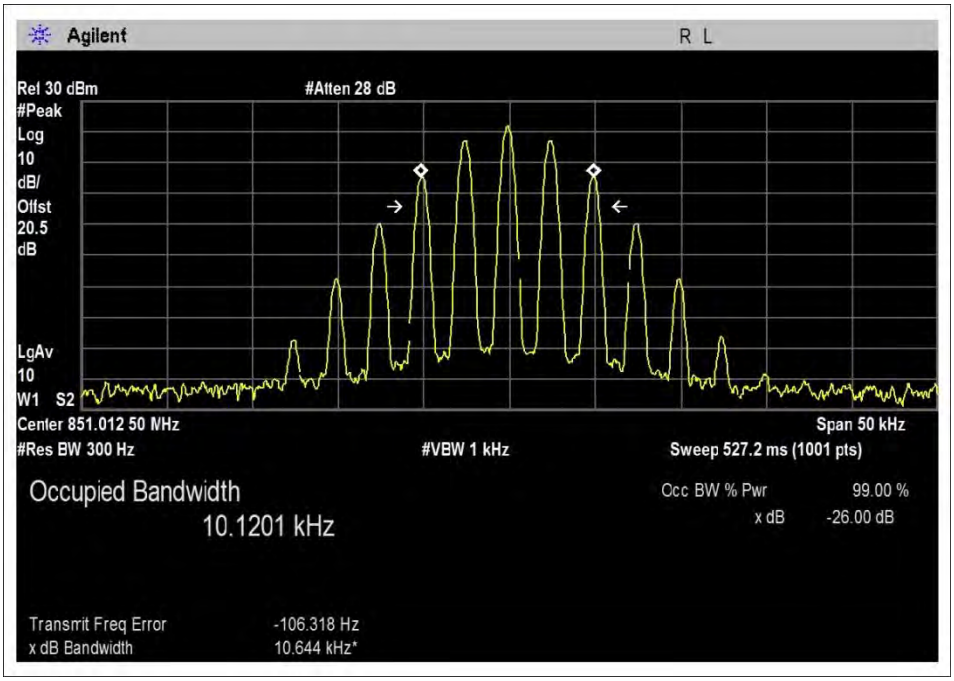
OBW-DL-851-862H-Out-AGC



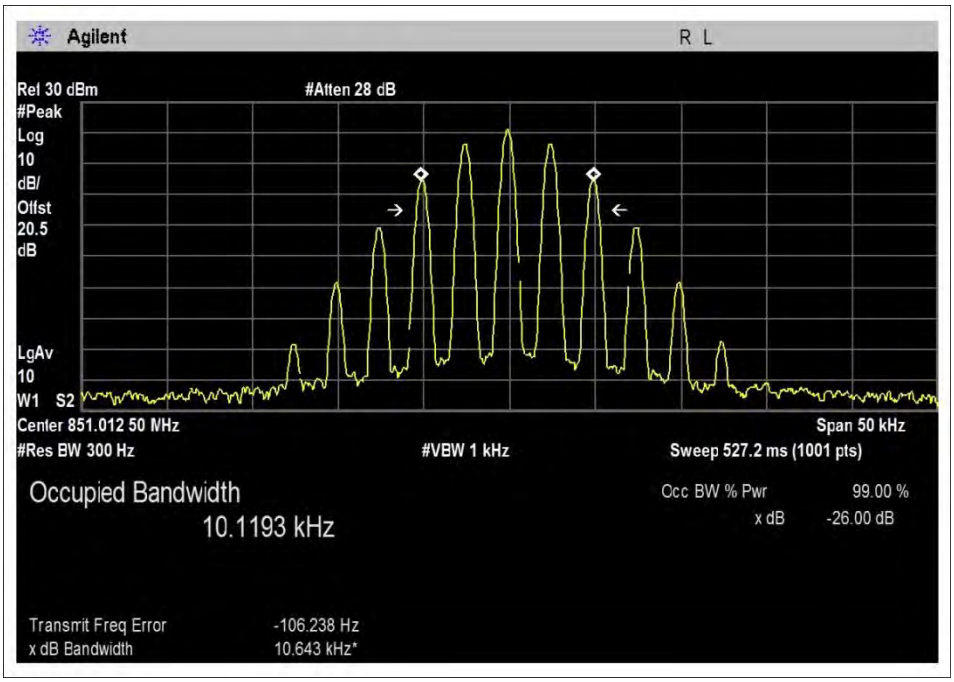
OBW-DL-851-862H-Out-AGC+10dB



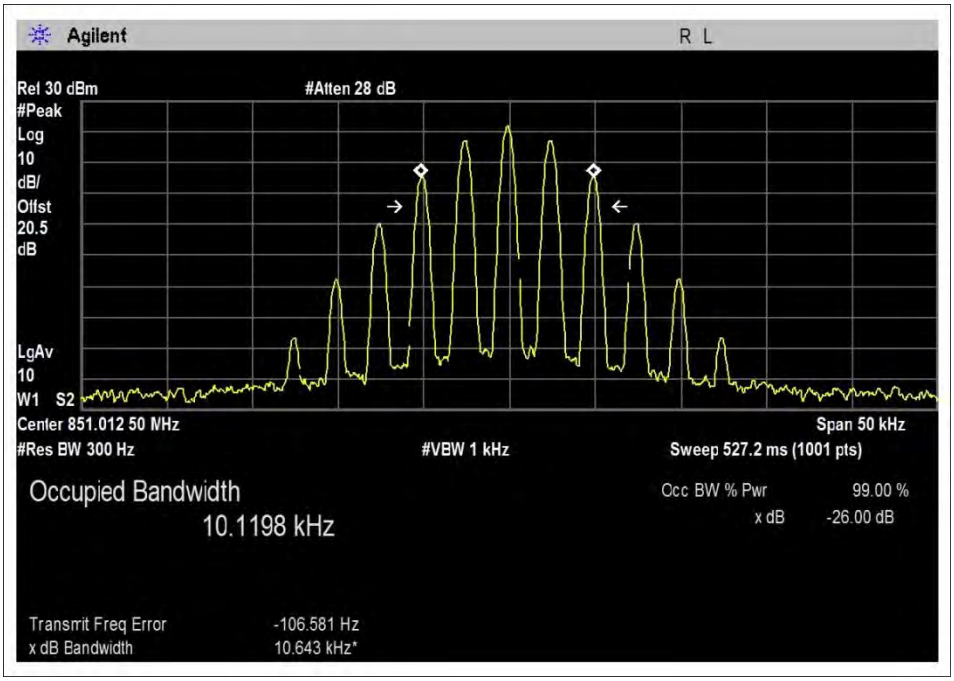
OBW-DL-851-862L-In



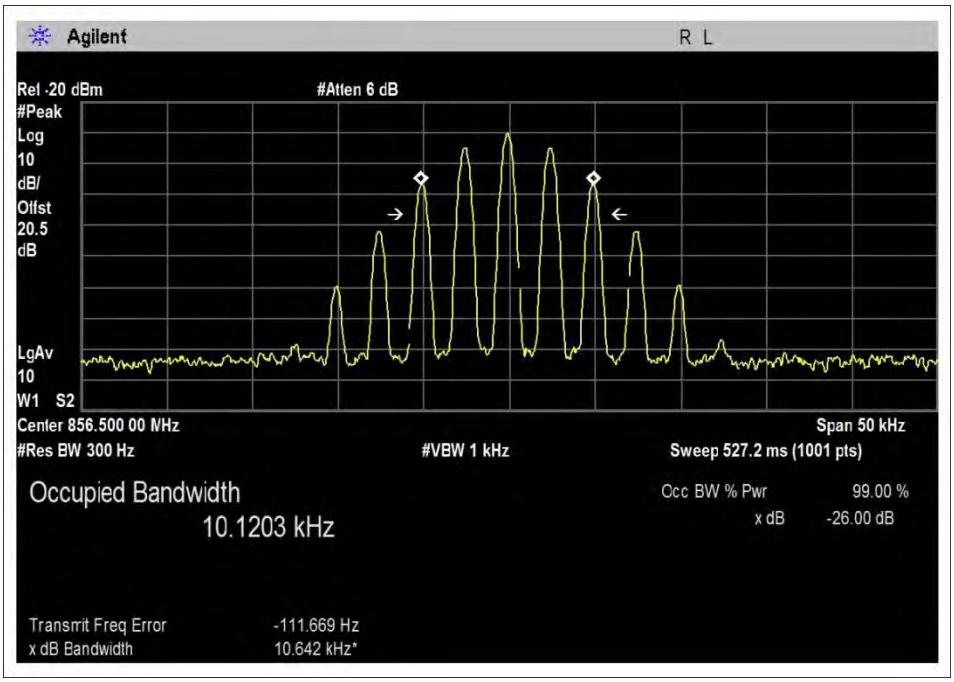
OBW-DL-851-862L-Out-27.2



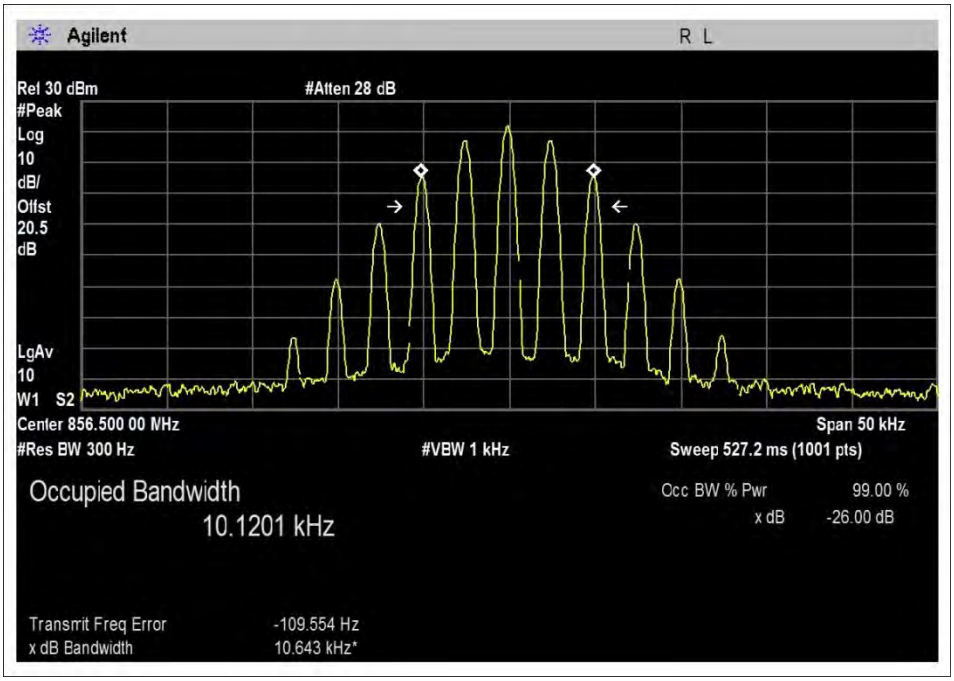
OBW-DL-851-862L-Out-AGC



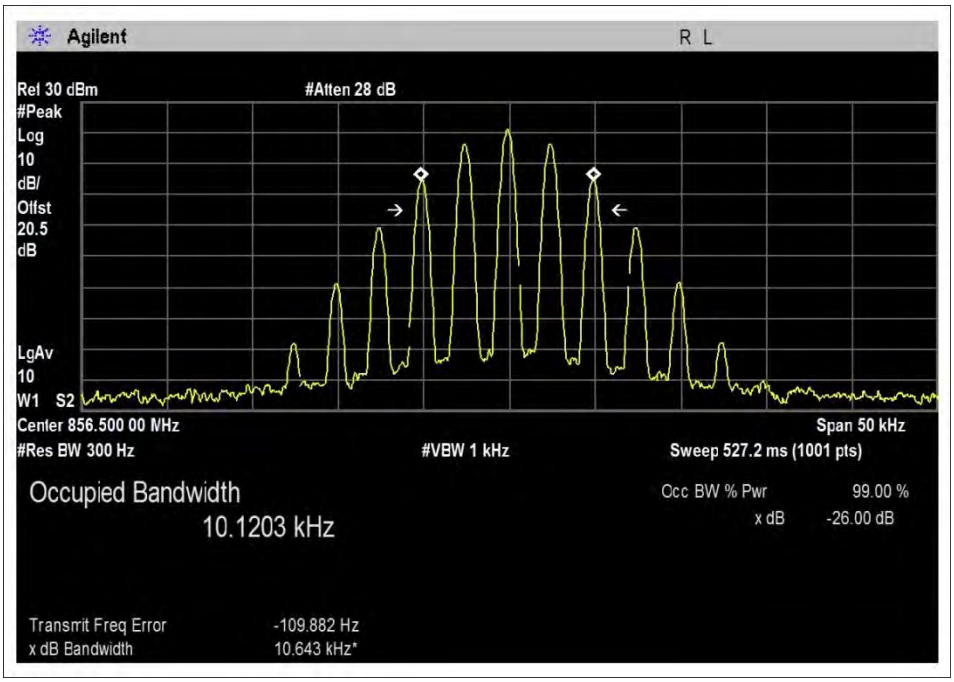
OBW-DL-851-862L-Out-AGC+10dB



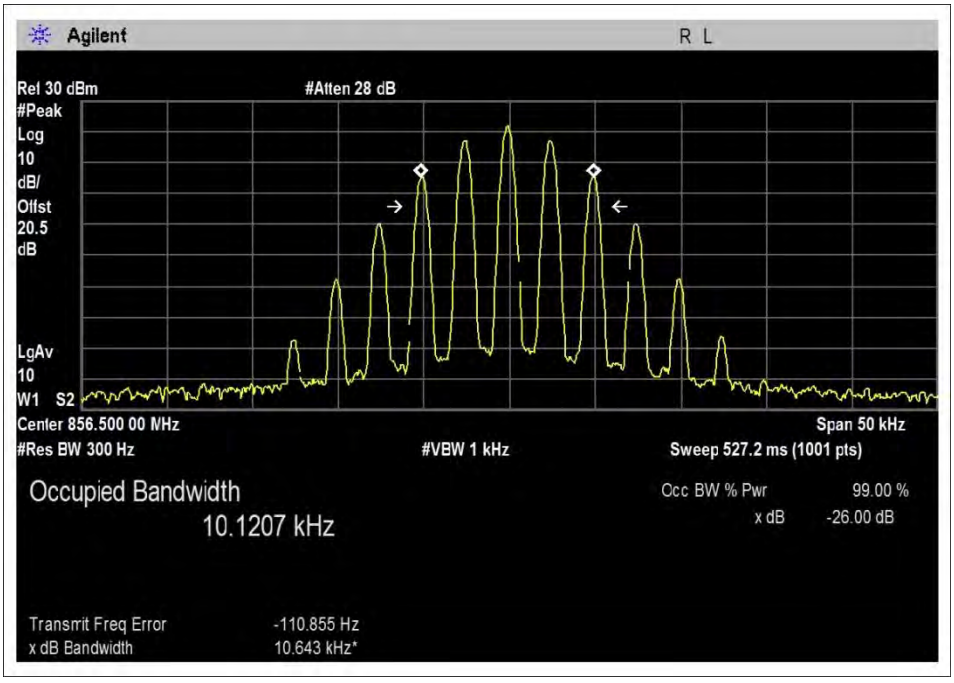
OBW-DL-851-862M-In



OBW-DL-851-862M-Out-28.2

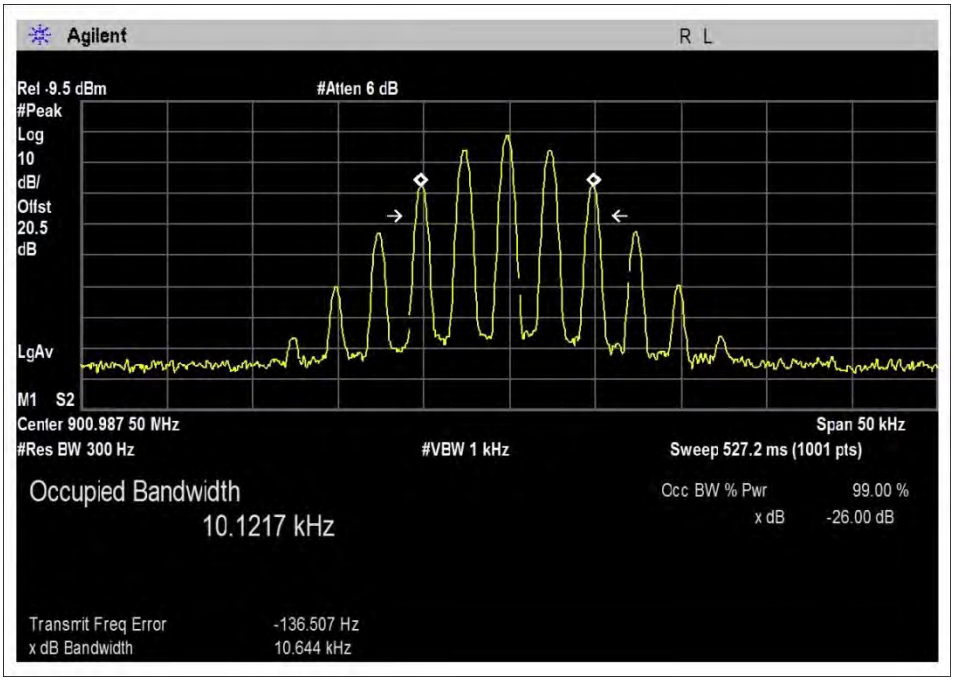


OBW-DL-851-862M-Out-AGC

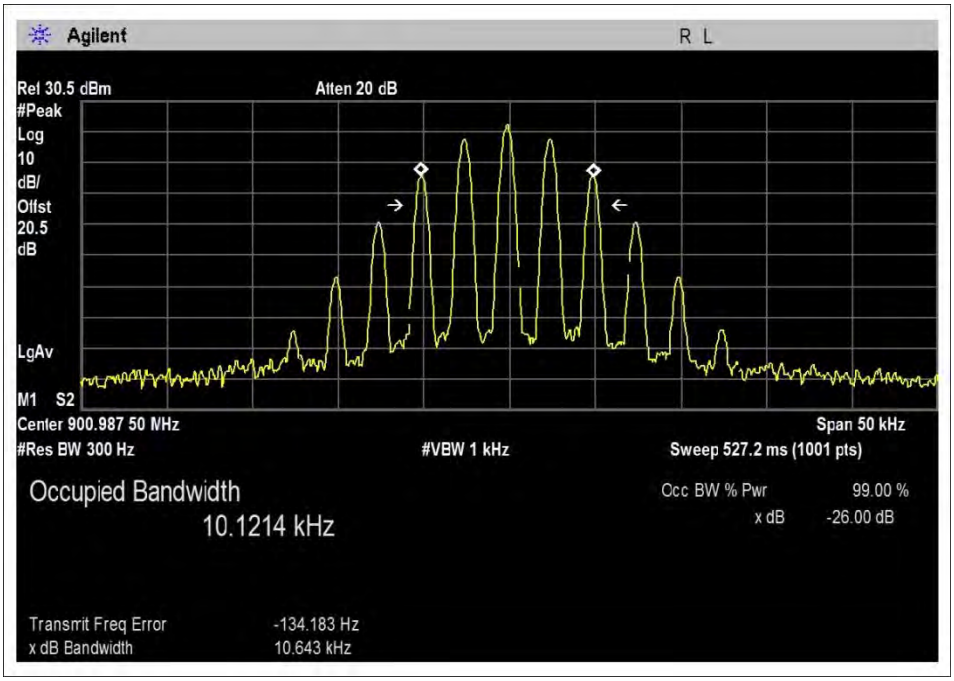


OBW-DL-851-862M-Out-AGC+10dB

900MHz – FM - UL



900M-UL-896-901H-In



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