HCT CO., LTD.
CERTIFICATION DIVISION
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea
TEL : +82 31 645 6300 FAX : +82 31 645 6401

CERTIFICATE OF COMPLIANCE (ERM EVALUATION)

Manufacture;

10, 9th Floor, SOLiD Space, Pangyoyeok-ro 220, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-400

SOLiD, Inc

Date of Issue : August 26, 2014

Test Site/Location:
HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea

Report No.: HCT-R-1408-F020

FCC ID:	**W6UNH850C**
APPLICANT:	**SOLiD, Inc**
FCC Model Name	**TR-HRDU-850C**
EUT Type:	**HPRD (High Power Remote Drive Unit)**
Frequency Ranges:	**869 MHz – 894 MHz**
Conducted Output Power:	**25 W (44 dBm)**
Date of Test :	**August 05, 2014 – August 21, 2014**
FCC Rules Part(s):	**CFR 47, Part 22**

Engineering Statement:
The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 22, 24, 27 of the FCC Rules under normal use and maintenance.

Report prepared by : Jae Chul Shin
Engineer of RF Team

Report approved by : Yong Hyun Lee
Manager of RF Team

Report Revision

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1408-F020	August 26, 2014	- First Approval Report

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1. CLIENT INFORMATION

The EUT has been tested by request of

Company	SOLiD, Inc 10, 9th Floor, SOLiD Space, Pangyoyeok-ro 220, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-400

■ **FCC ID:**	**W6UNH850C**
■ **APPLICANT:**	**SOLiD, Inc**
■ **EUT Type:**	**HPRD (High Power Remote Drive Unit)**
■ **Model:**	**TR-HRDU-850C**
■**Frequency Ranges:**	**869 MHz – 894 MHz**
■ **Conducted Output Power:**	**25 W (44 dBm)**
■ **Antenna Gain(s):**	**Manufacturer does not provide an antenna.**
FCC Rules Part(s):	**CFR Title 47 Part 22**
■ **Measurement standard(s):**	**ANSI/TIA-603-C-2004, KDB 971168 D01 v02, KDB 935210 D03 v02r01**
■ **Place of Tests:**	**74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea. (IC Recognition No. : 5944A-3)**

2. FACILITIES AND ACCREDITATIONS

2.1. FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2003) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated February 28, 2014 (Registration Number: 90661)

2.2. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

3. TEST SUMMARY

3.1. STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part22.

Description	Reference	Results
Conducted RF Output Power	§2.1046; §22.913	Compliant
Occupied Bandwidth	§2.1049	Compliant
Spurious Emissions at Antenna Terminals	§2.1051, §22.917	Compliant
Out of Band Rejection	KDB 935210 D03 v02r01	Compliant
Radiated Spurious Emissions	§2.1053, §22.917	Compliant
Frequency Stability	§2.1055, §22.355	Compliant

3.2. MODE OF OPERATION DURING THE TEST

The EUT was operated in a manner representative of the typical usage of the equipment.
During all testing, system components were manipulated within the confines of typical usage to maximize each emission.
The device does not supply antenna(s) with the system, so the dummy loads were connected to the RF output ports for radiated spurious emission testing.

4. STANDARDS ENVIRONMENTAL TEST CONDITIONS

Temperature :	**+ 15 ℃ to + 35 ℃**
Relative humidity:	**30 % to 60 %**
Air pressure	**860 mbar to 1 060 mbar**

5. TEST EQUIPMENT

Manufacturer	Model / Equipment	Cal Interval	Calibration Date	Serial No.
Agilent	E4438C /Signal Generator	Annual	09/05/2013	MY42082646
Agilent	N5182A /Signal Generator	Annual	09/30/2013	MY50141649
Agilent	E4416A /Power Meter	Annual	10/16/2013	GB41291412
Agilent	E9327A/ Power Sensor	Annual	03/31/2014	MY4442009
NANGYEUL CO., LTD.	NY-THR18750/ Temperature and Humidity Chamber	Annual	10/30/2013	NY-2009012201A
Agilent	N9020A /Signal Analyzer	Annual	04/16/2014	US46220219
WEINSCHEL	67-30-33 / Fixed Attenuator	Annual	11/05/2013	BU5347
MCE / Weinschel	2-10 / Fixed Attenuator	Annual	10/28/2013	BR0554
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
MITEQ	AMF-6D-001180-35-20P/AMP	Annual	09/12/2013	1081666
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2013	1151
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2013	1151
Schwarzbeck	VULB 9160/TRILOG Antenna	Biennial	12/17/2012	3150

6. RF OUTPUT POWER

Test Requirements:

§ 2.1046 Measurements required: RF power output:

§ 2.1046 (a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c)(8).The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

§ 2.1046 (b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters, the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and as applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

§ 2.1046 (c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§ 22.913 Effective radiated power limits. The effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

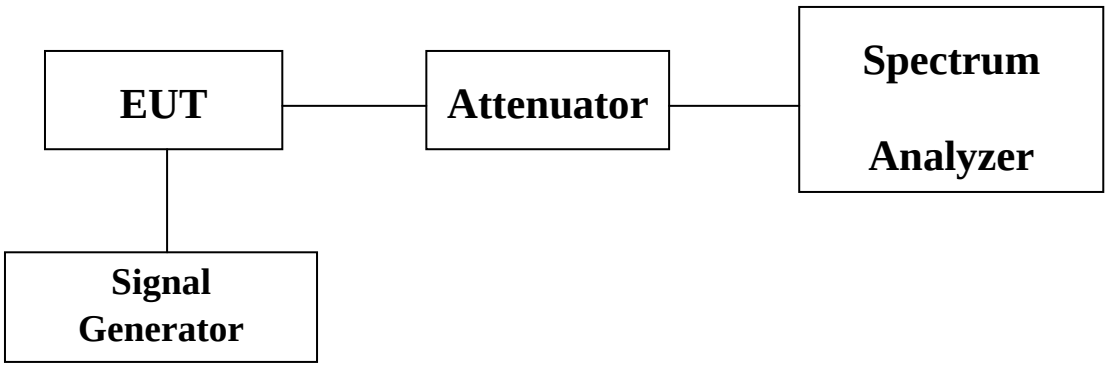
(a) Maximum ERP. In general, the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. However, for those systems operating in areas more than 72 km (45 miles) from international borders that:

(1) Are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or,

(2) Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in § 22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

Test Procedures:

As required by 47 CFR 2.1046, RF power output measurements were made at the RF output terminals using an attenuator and spectrum analyzer or power meter. This test was performed in all applicable modulations.



Block Diagram 1. RF Power Output Test Setup

Test Results:

Input Signal	Input Level (dBm)	Maximum Amp Gain
CDMA	DL : -15 dBm	DL : 59 dB
WCDMA		
GSM		
LTE 5 MHz		

[Downlink]

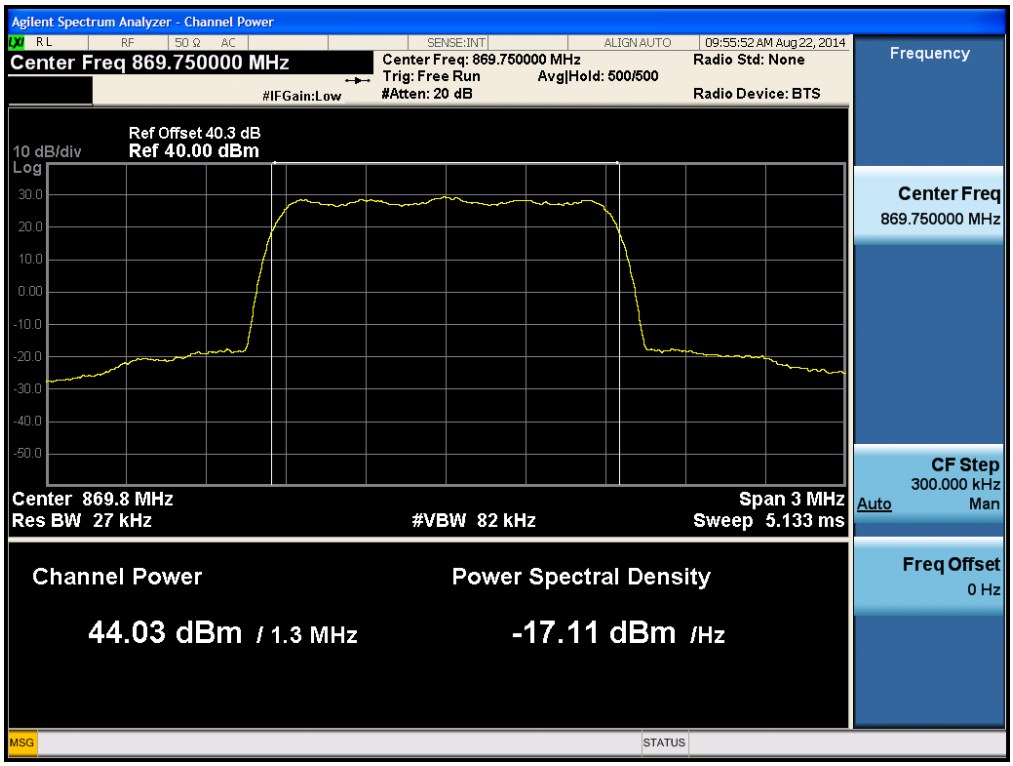
	Channel	Frequency (MHz)	Output Power	
			(dBm)	(W)
CDMA	Low	869.75	44.03	25.287
	Middle	881.50	43.93	24.689
	High	893.25	43.98	25.009
EVDO	Low	869.75	44.03	25.316
	Middle	881.50	43.91	24.609
	High	893.25	43.98	25.003
WCDMA	Low	871.40	44.02	25.235
	Middle	881.40	44.01	25.200
	High	891.60	43.99	25.032

[Downlink]

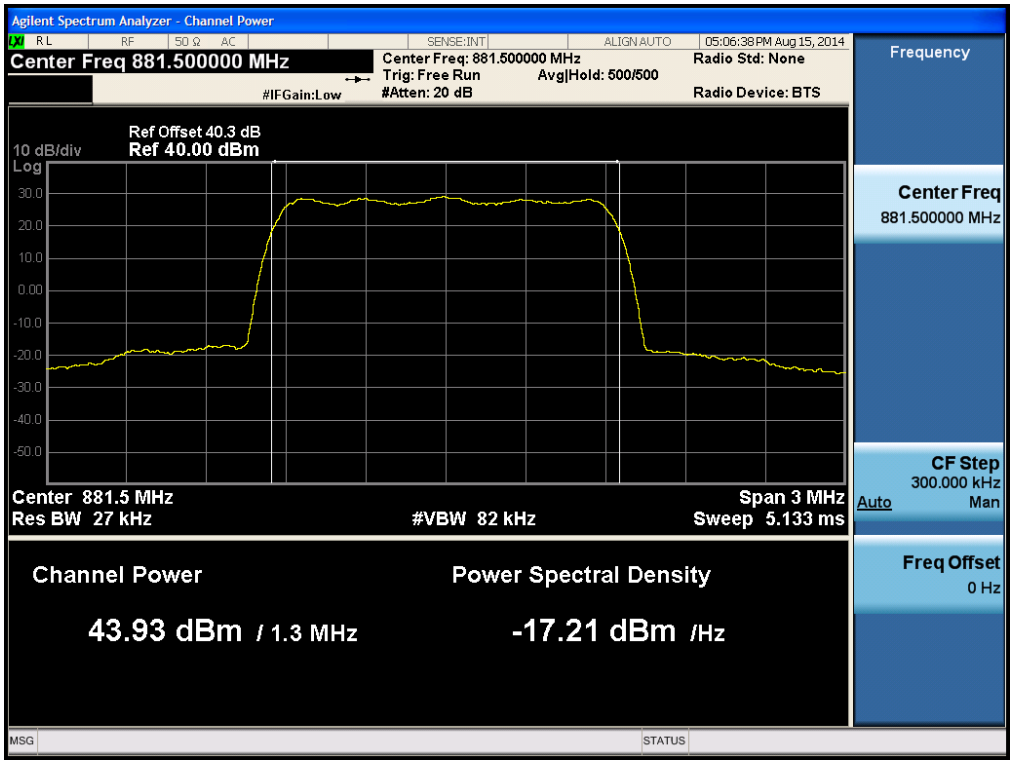
	Channel	Frequency (MHz)	Output Power	
			(dBm)	(W)
GSM	Low	869.40	44.03	25.287
	Middle	881.40	44.02	25.241
	High	893.60	43.99	25.061
EDGE	Low	869.40	43.91	24.592
	Middle	881.40	44.09	25.645
	High	893.60	43.85	24.288
LTE 5 MHz	Low	871.50	44.00	25.113
	Middle	881.50	43.92	24.666
	High	891.50	43.73	23.621

Plots of RF Output Power

[CDMA Downlink Low]



[CDMA Downlink Middle]



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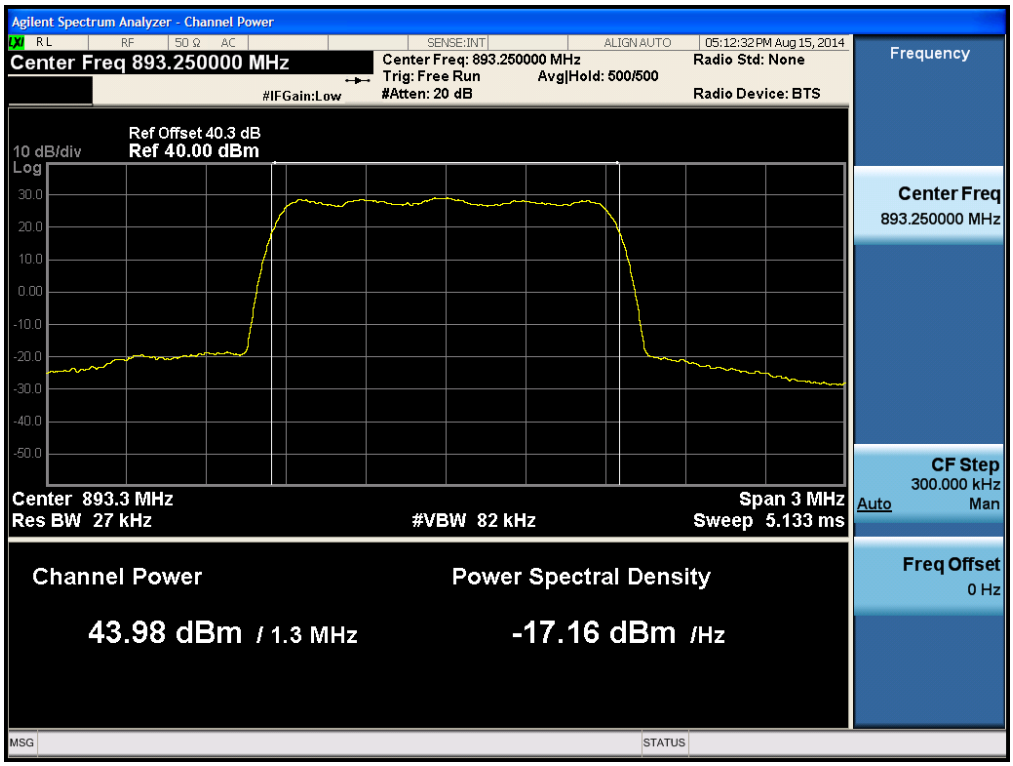
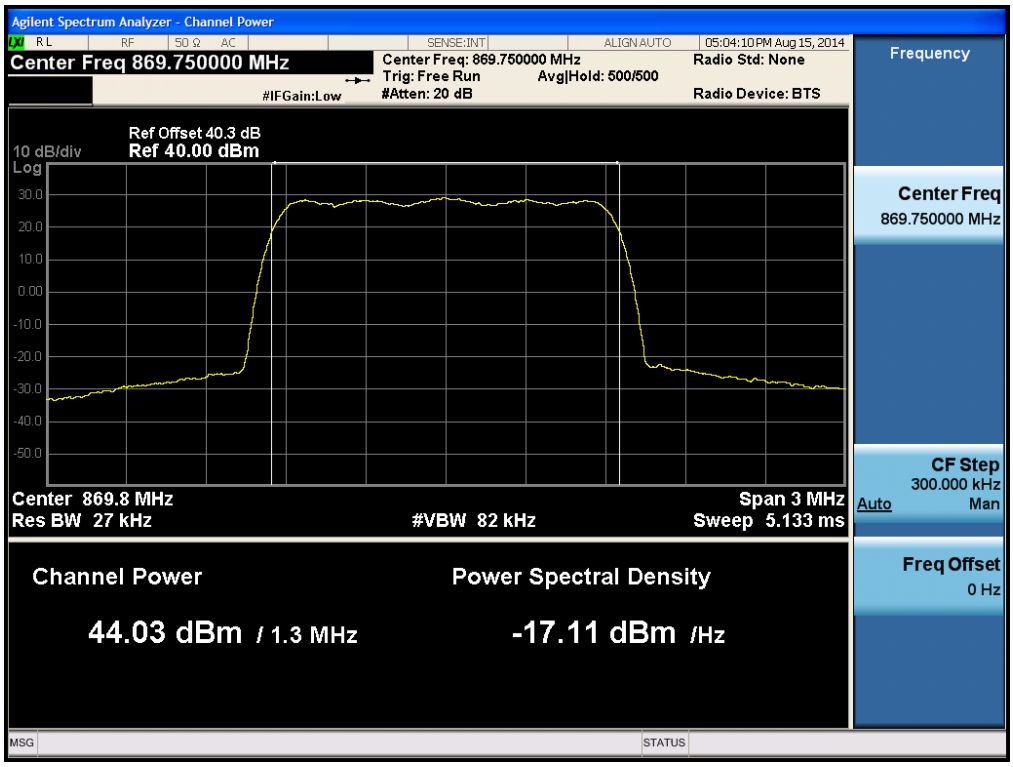


[EVDO Downlink Low]



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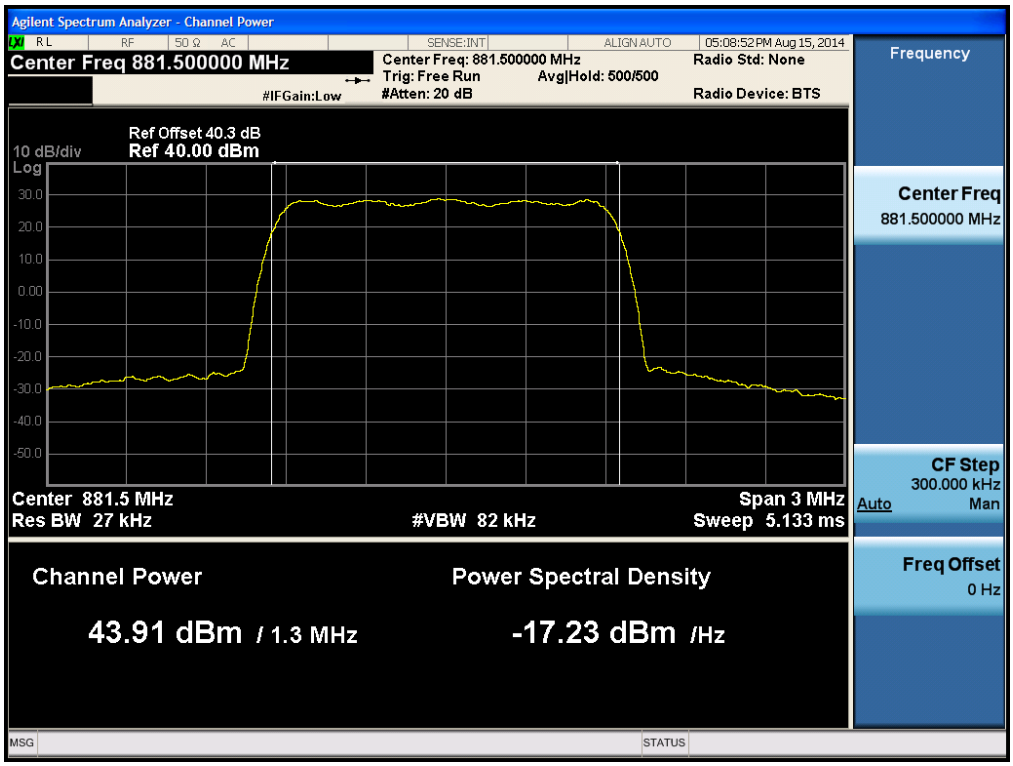

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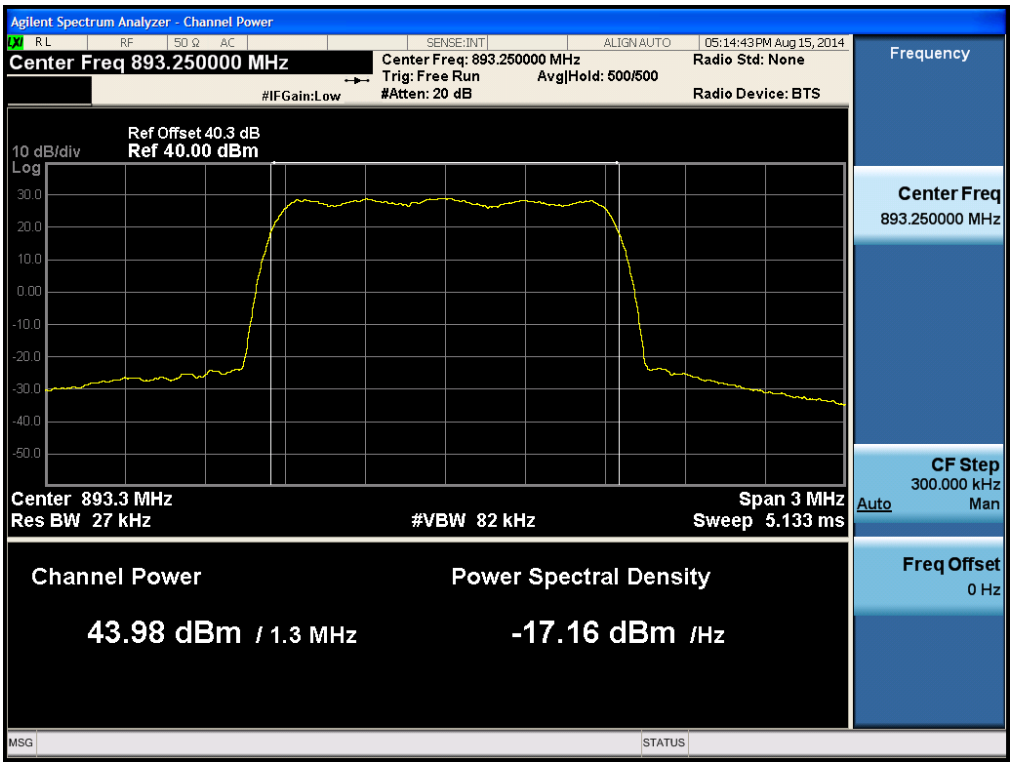
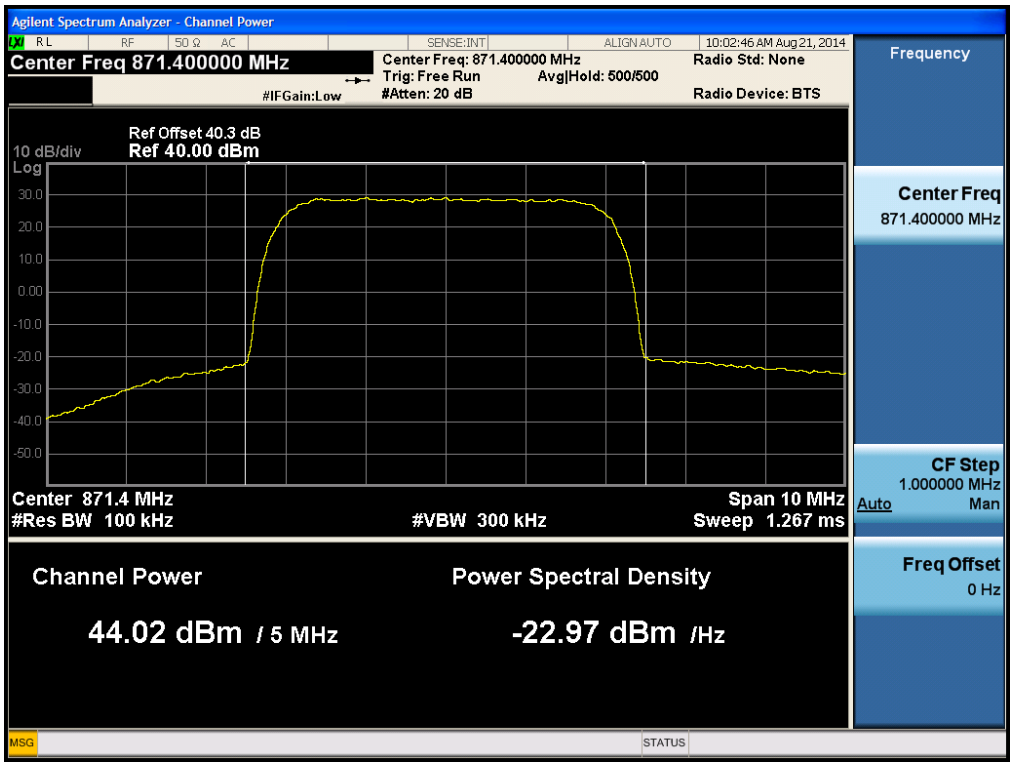


[WCDMA Downlink Low]



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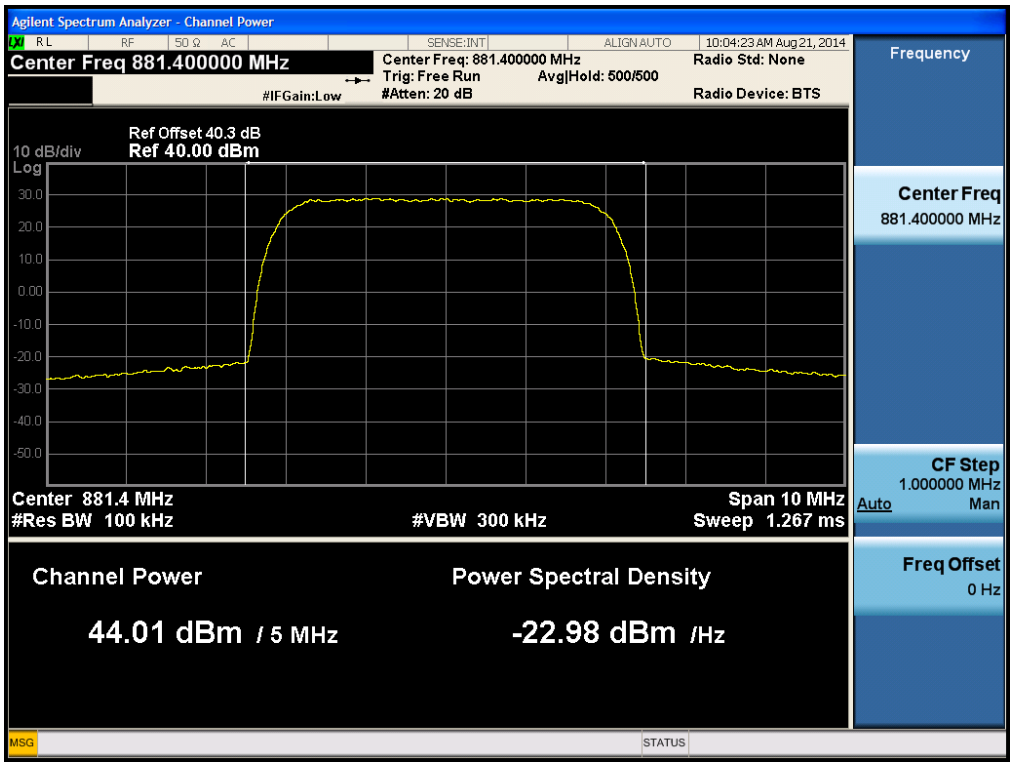

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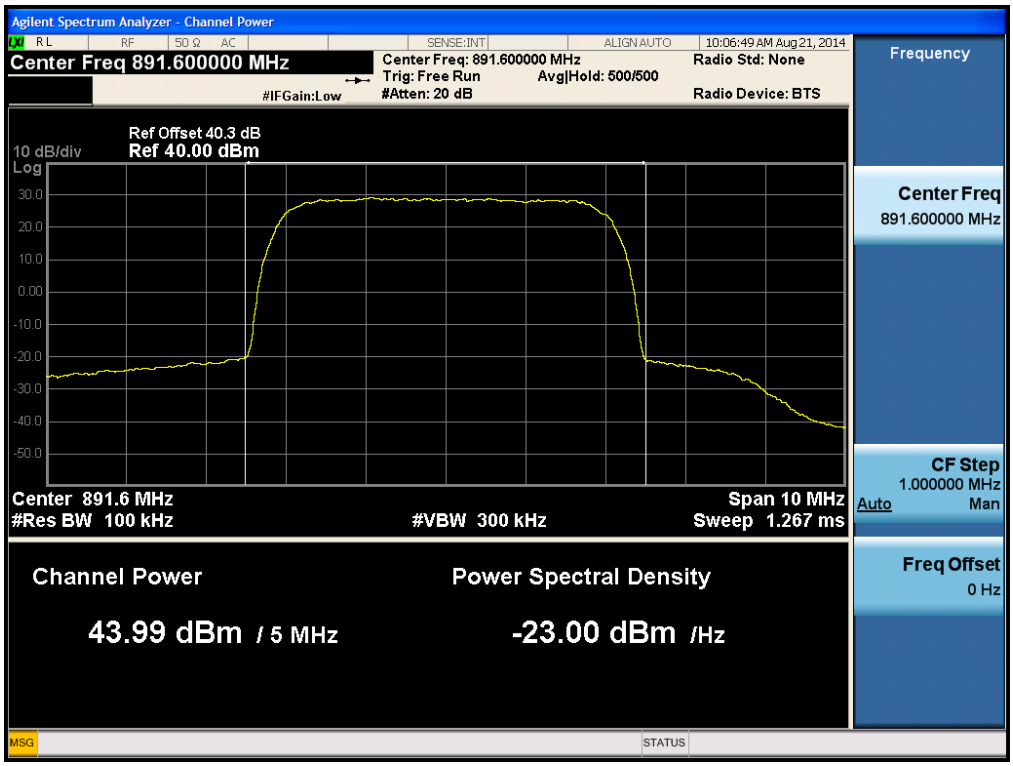
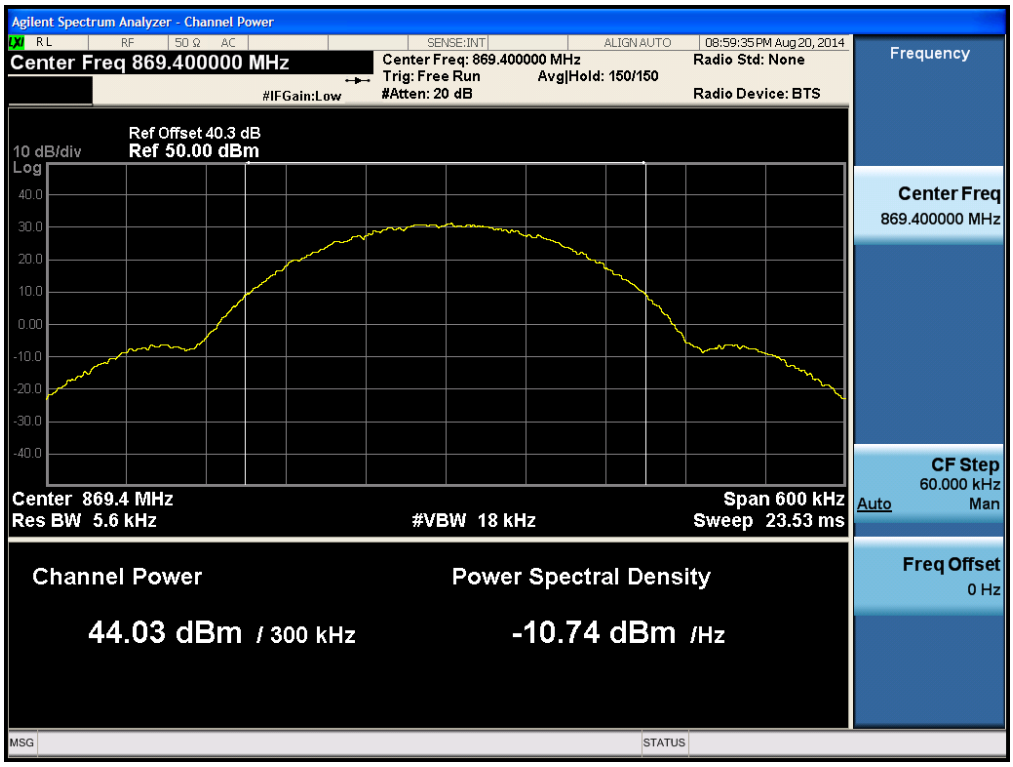


[GSM Downlink Low]



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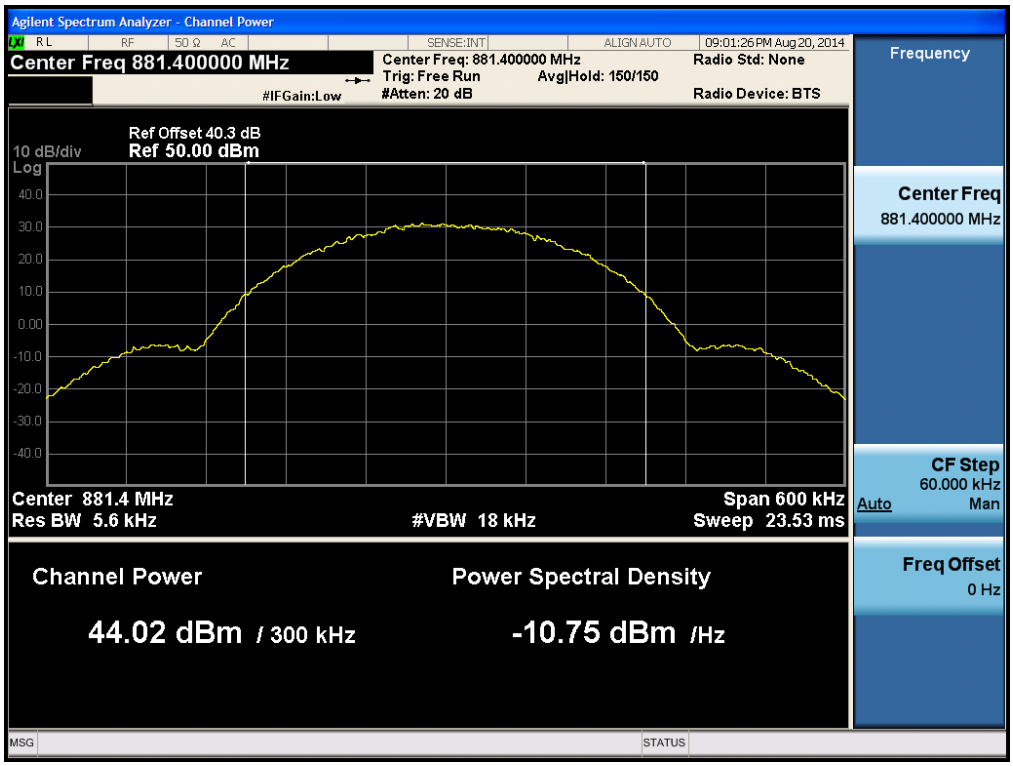

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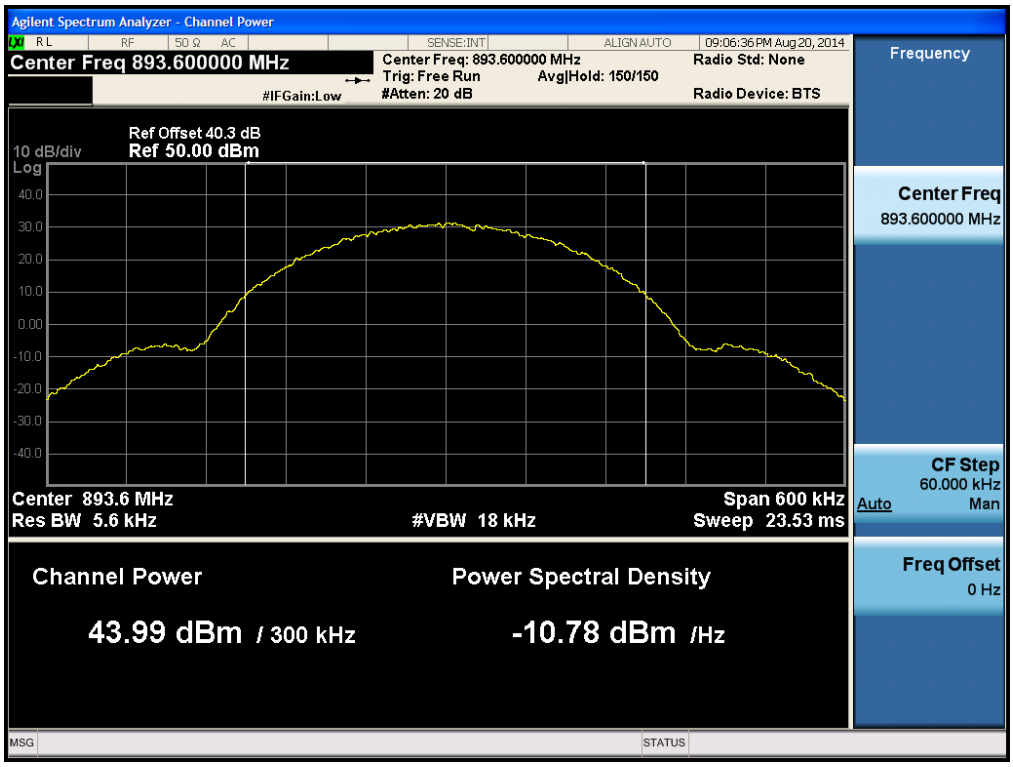
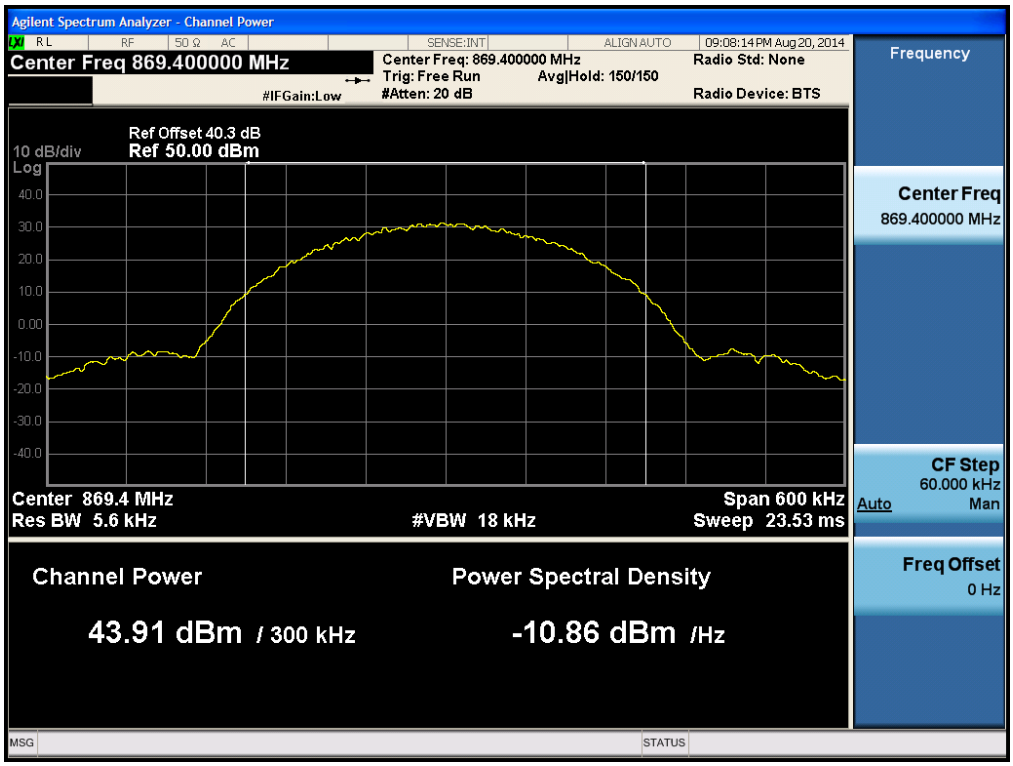


[EDGE Downlink Low]



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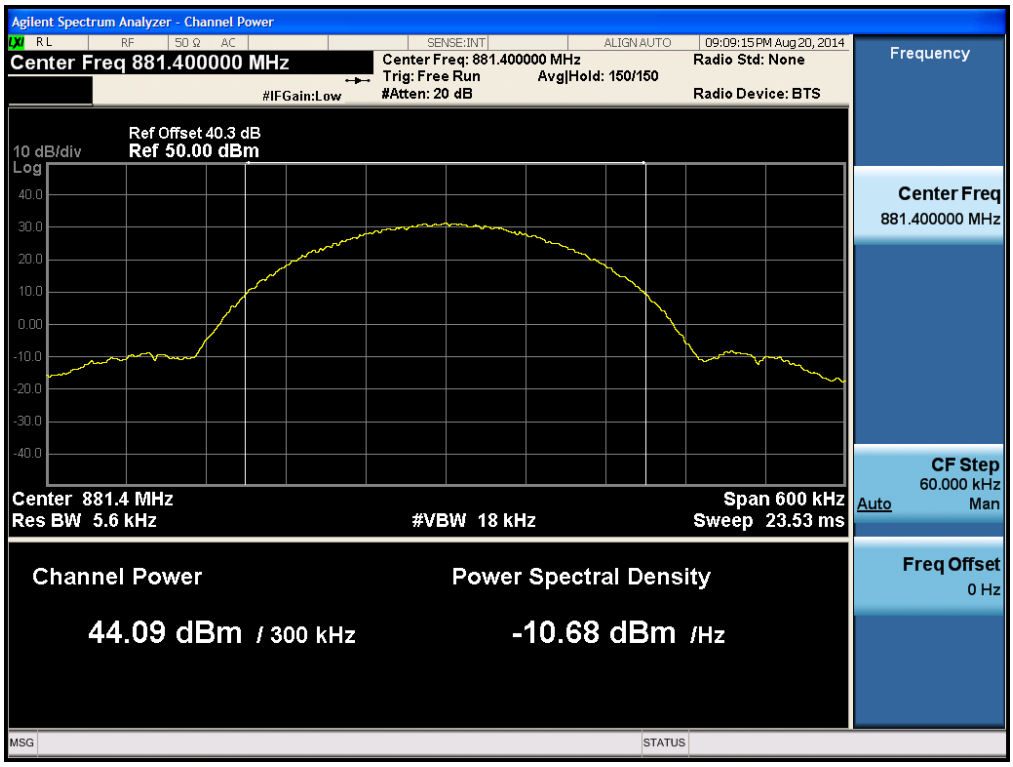

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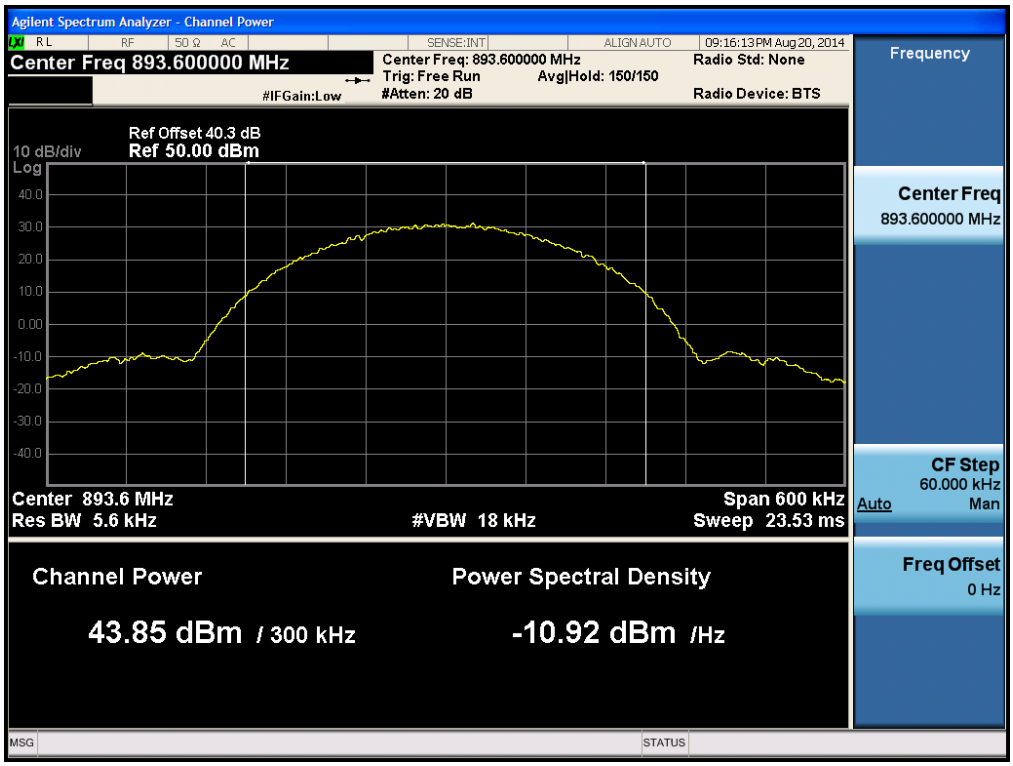
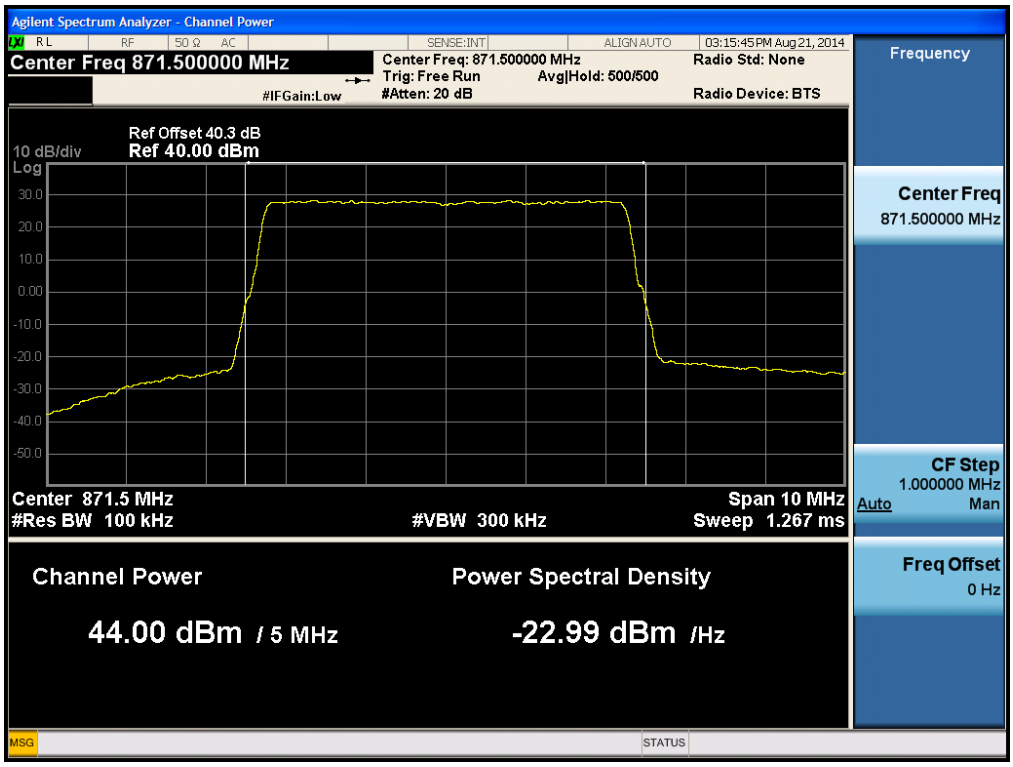


[LTE Downlink 5 MHz Low]



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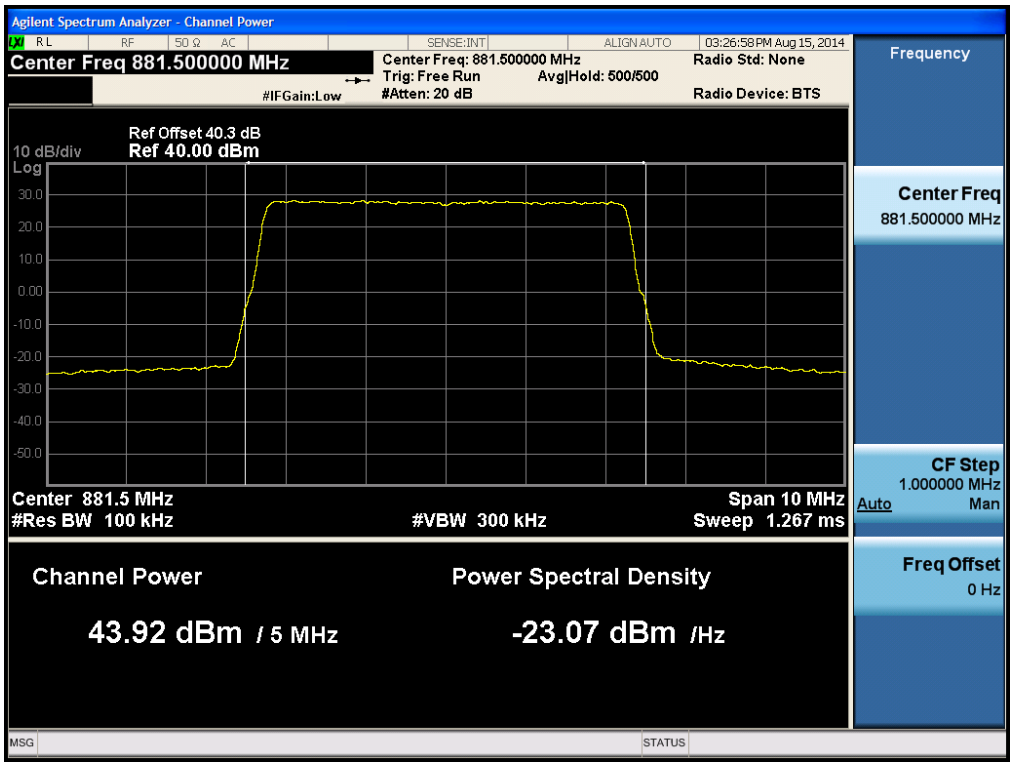
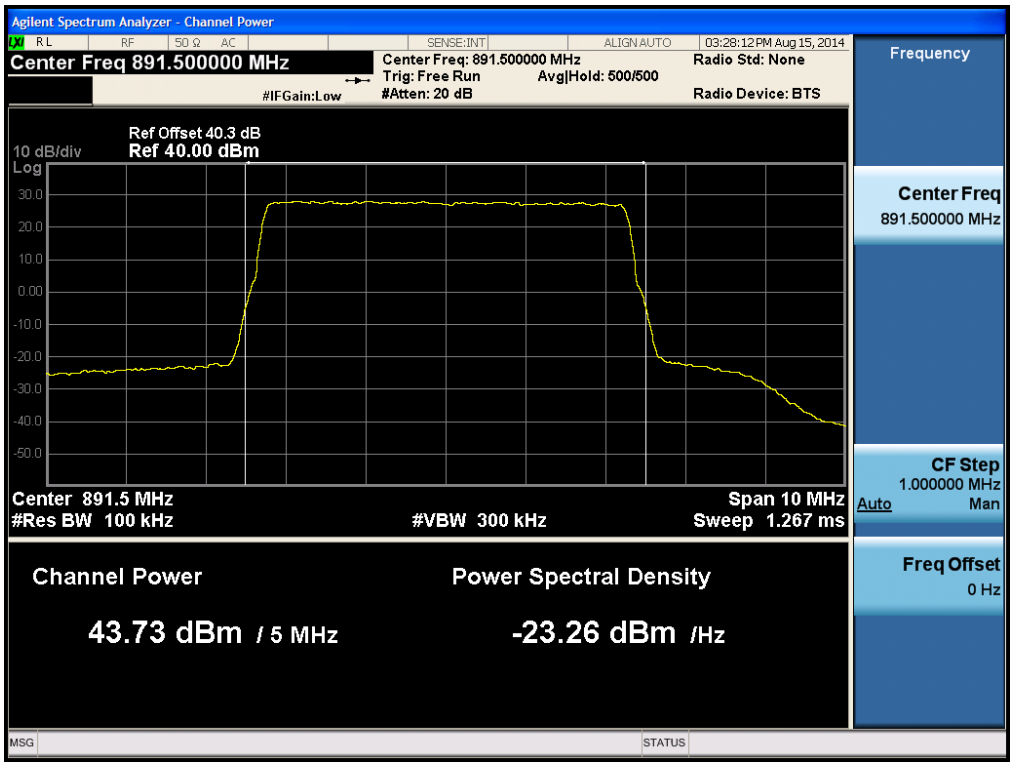


[LTE Downlink 5 MHz High]



7. OCCUPIED BANDWIDTH

Test Requirement(s): § 2.1049 Measurements required: Occupied bandwidth:

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable.

Test Procedures: As required by 47 CFR 2.1049, *occupied bandwidth measurements* were made with a Spectrum Analyzer connected to the RF ports for both Uplink and Downlink The modulation characteristics of signal generator's carrier was measured first at a maximum RF level prescribed by the OEM. The signal generator was then connected to either the Uplink or Downlink input at the appropriate RF level. The resulting modulated signal through the EUT was measured and compared against the original signal.

Test Results: The EUT complies with the requirements of this section.

Input Signal	Input Level (dBm)	Maximum Amp Gain
CDMA	DL : -15 dBm	DL : 59 dB
WCDMA		
GSM		
LTE 5 MHz		

[Downlink Output]

	Channel	Frequency (MHz)	OBW (MHz)
CDMA	Low	869.75	1.262
	Middle	881.50	1.263
	High	893.25	1.264
EVDO	Low	869.75	1.259
	Middle	881.50	1.259
	High	893.25	1.259
WCDMA	Low	871.40	4.161
	Middle	881.40	4.141
	High	891.60	4.118

[Downlink Input]

	Channel	Frequency (MHz)	OBW (MHz)
CDMA	Low	869.75	1.266
	Middle	881.50	1.265
	High	893.25	1.261
EVDO	Low	869.75	1.262
	Middle	881.50	1.260
	High	893.25	1.264
WCDMA	Low	871.40	4.123
	Middle	881.40	4.125
	High	891.60	4.130

[Downlink Output]

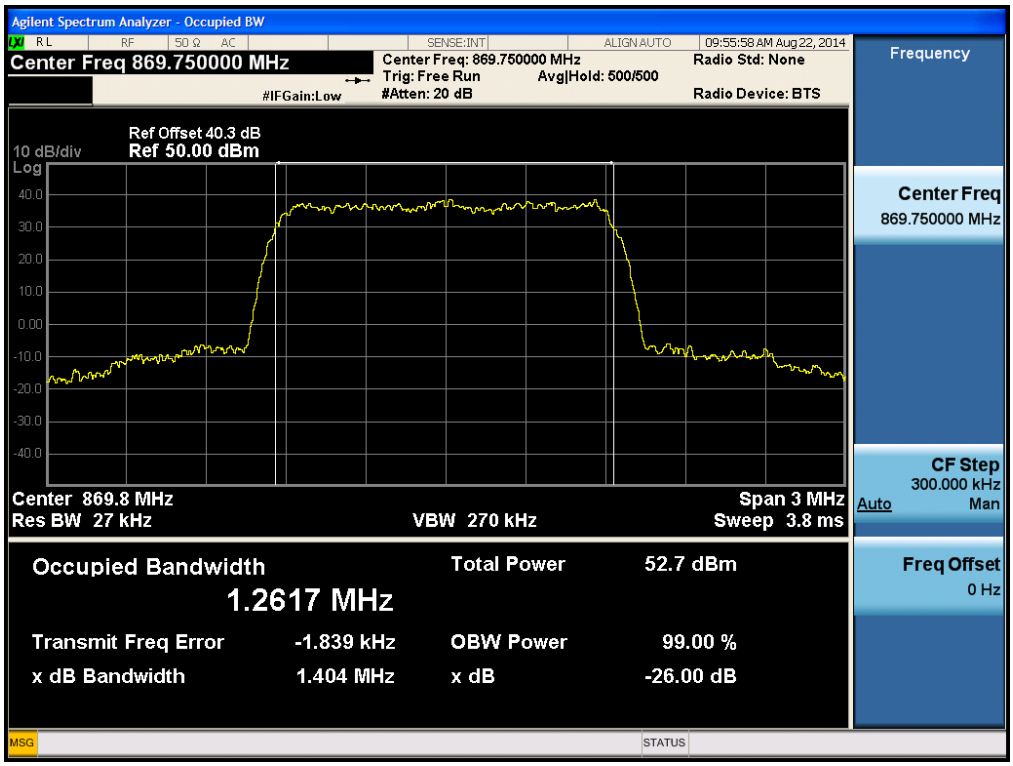
	Channel	Frequency (MHz)	OBW (MHz)
GSM	Low	869.40	0.247
	Middle	881.40	0.245
	High	893.60	0.245
EDGE	Low	869.40	0.250
	Middle	881.40	0.249
	High	893.60	0.250
LTE 5 MHz	Low	871.50	4.511
	Middle	881.50	4.525
	High	891.50	4.505

[Downlink Input]

	Channel	Frequency (MHz)	OBW (MHz)
GSM	Low	869.40	0.246
	Middle	881.40	0.245
	High	893.60	0.246
EDGE	Low	869.40	0.244
	Middle	881.40	0.244
	High	893.60	0.244
LTE 5 MHz	Low	871.50	4.525
	Middle	881.50	4.514
	High	891.50	4.524

Plots of Occupied Bandwidth

[Output CDMA Downlink Low]



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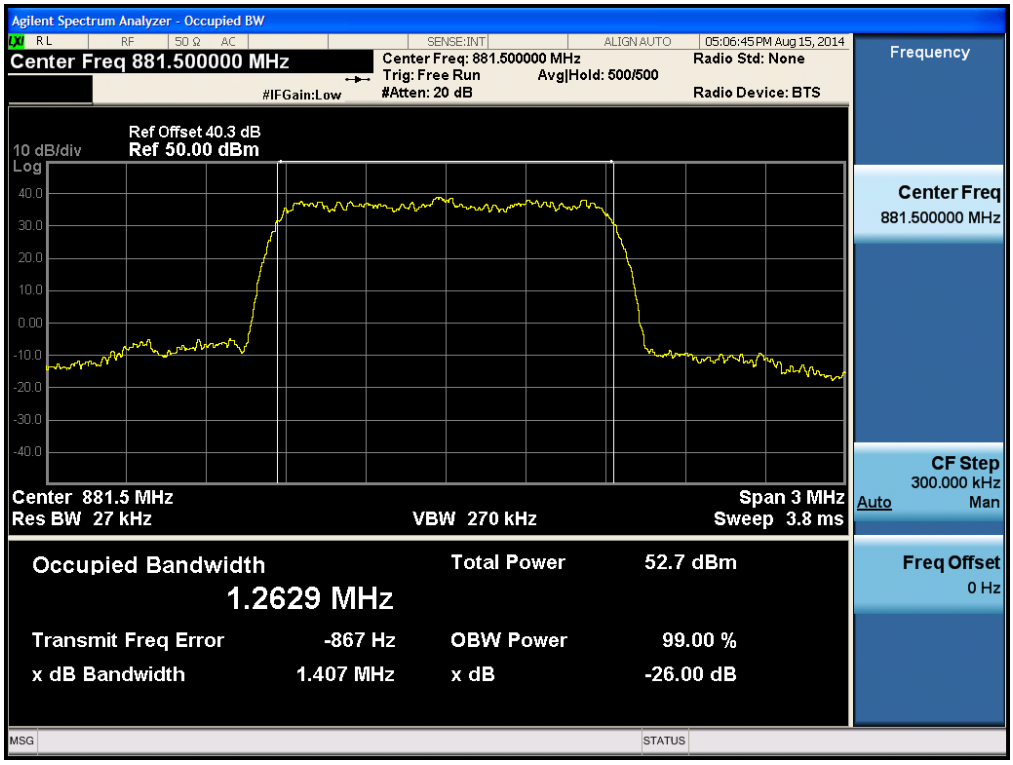

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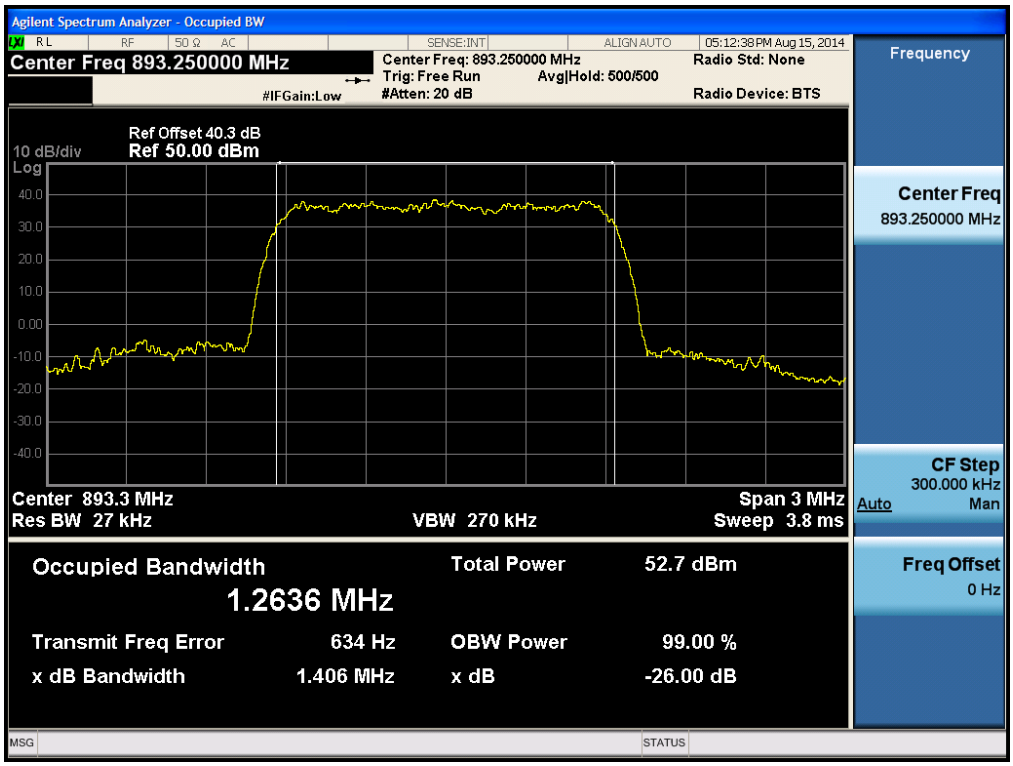
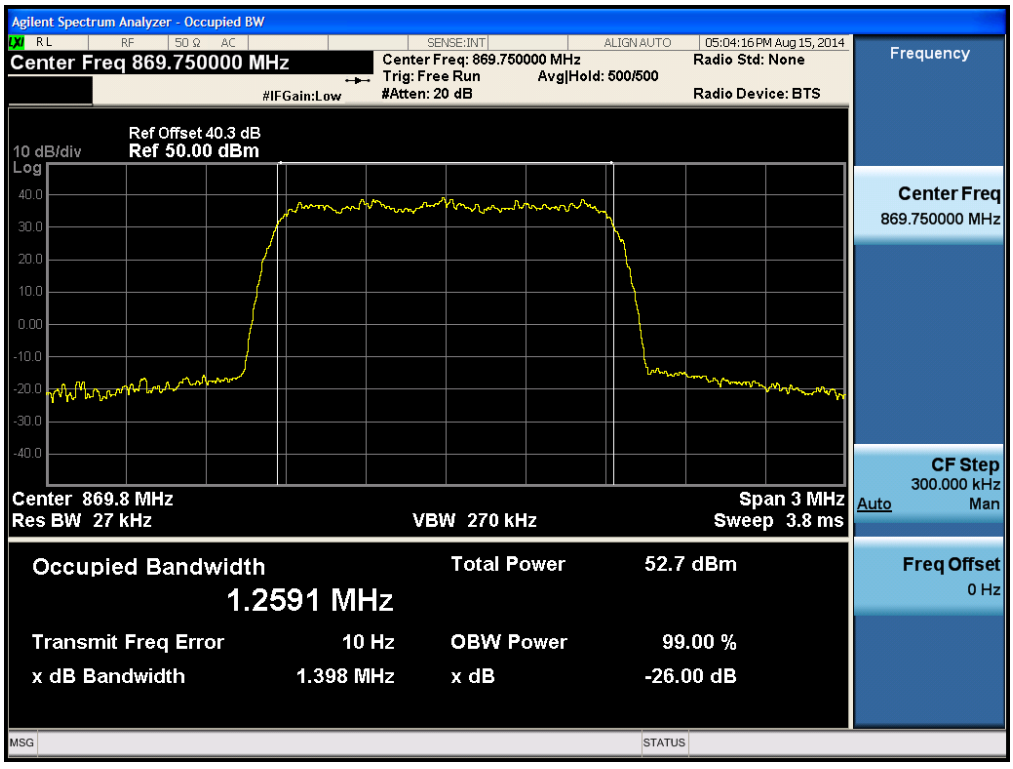


[Output EVDO Downlink Low]



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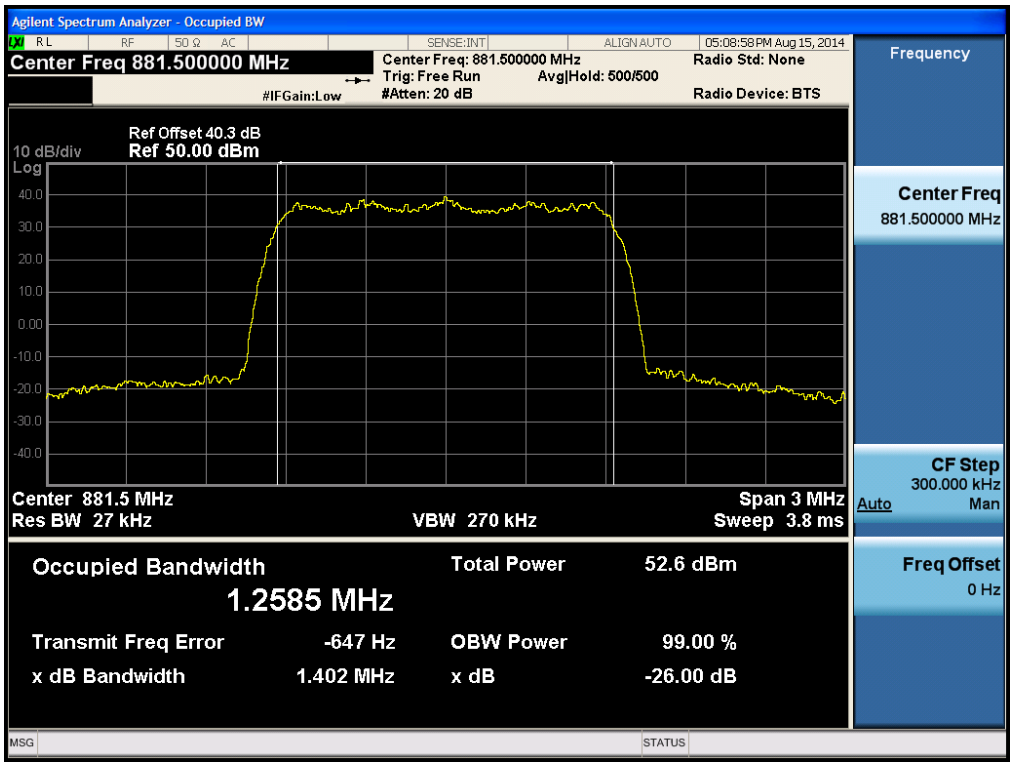

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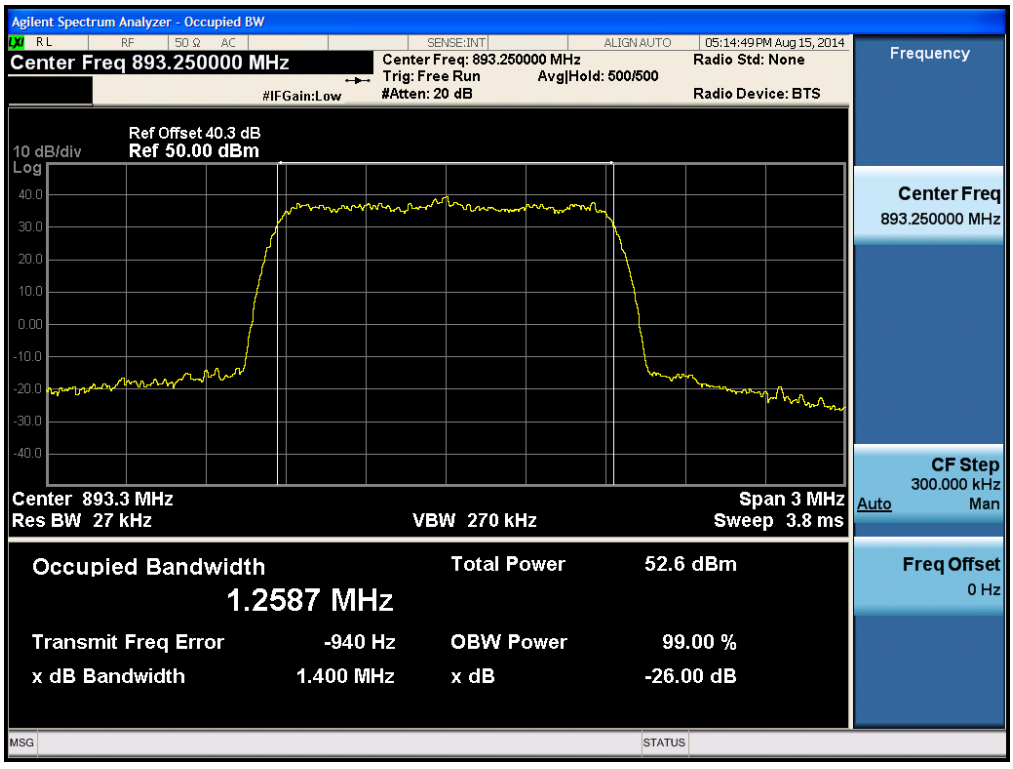

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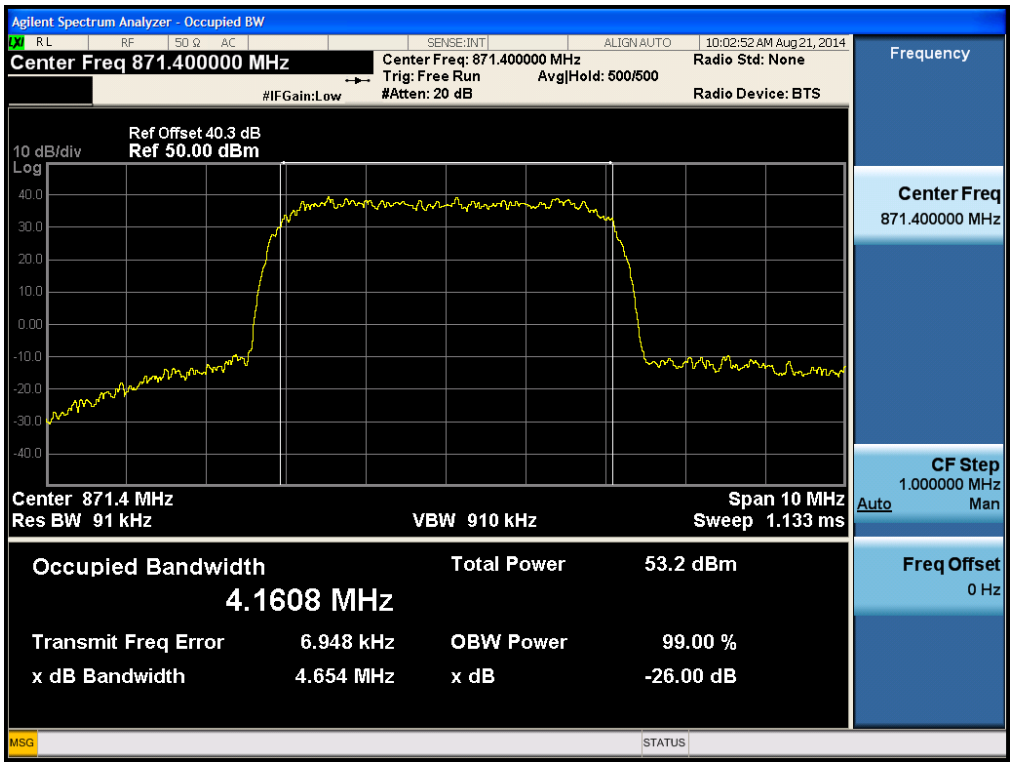

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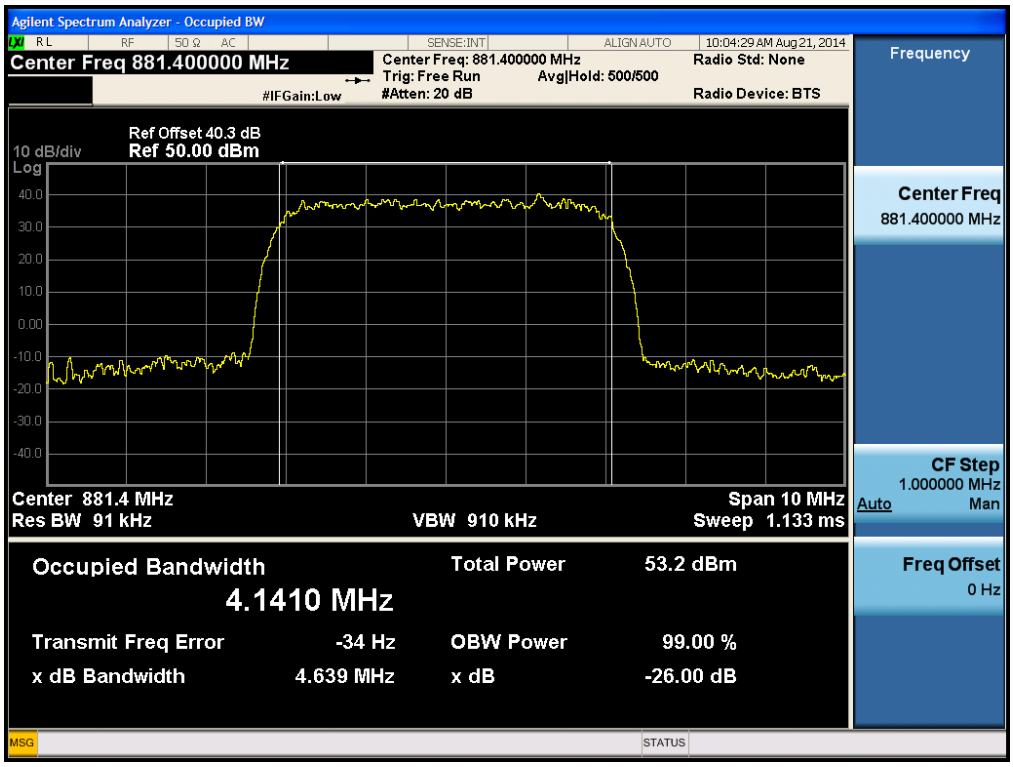

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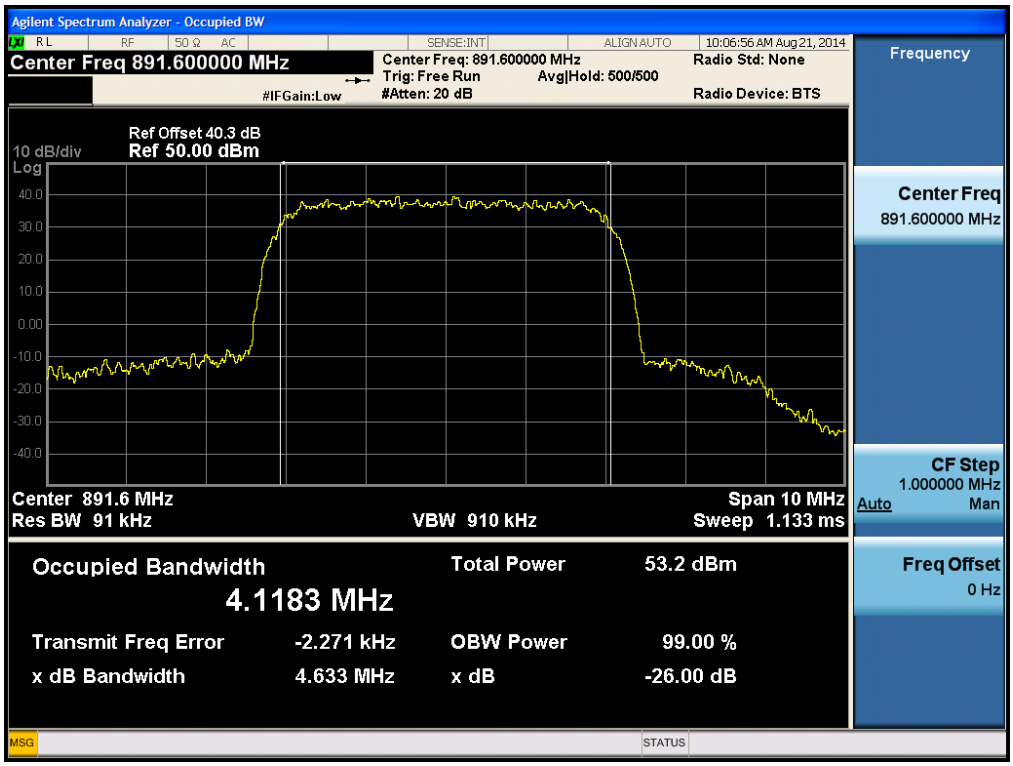

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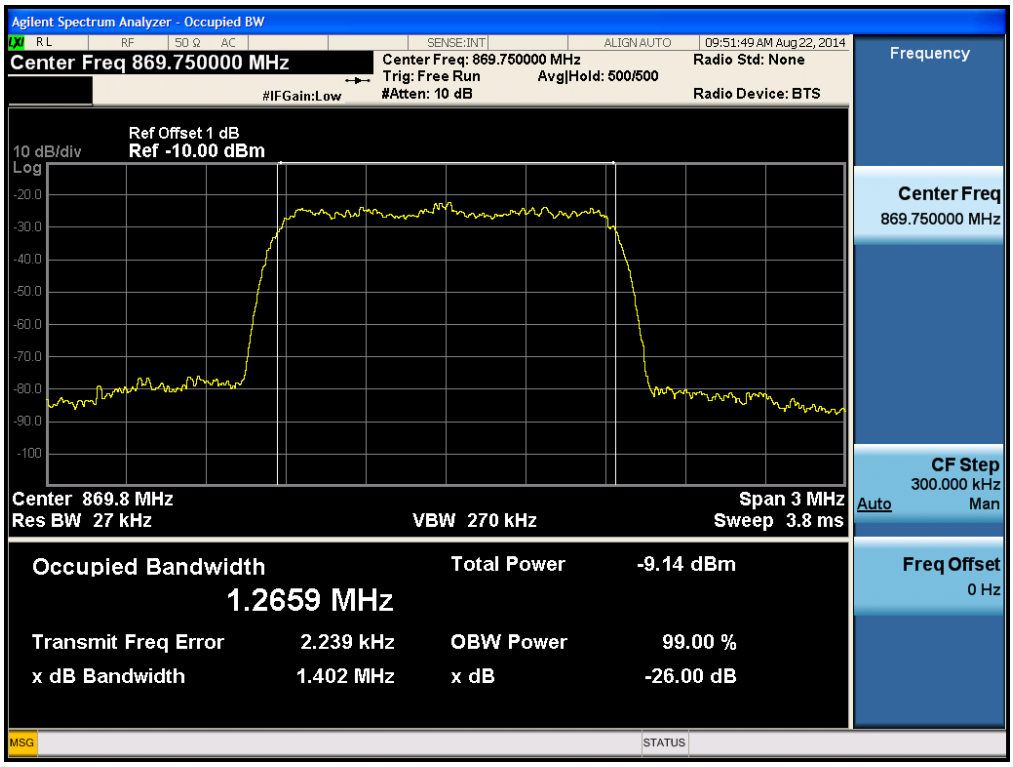

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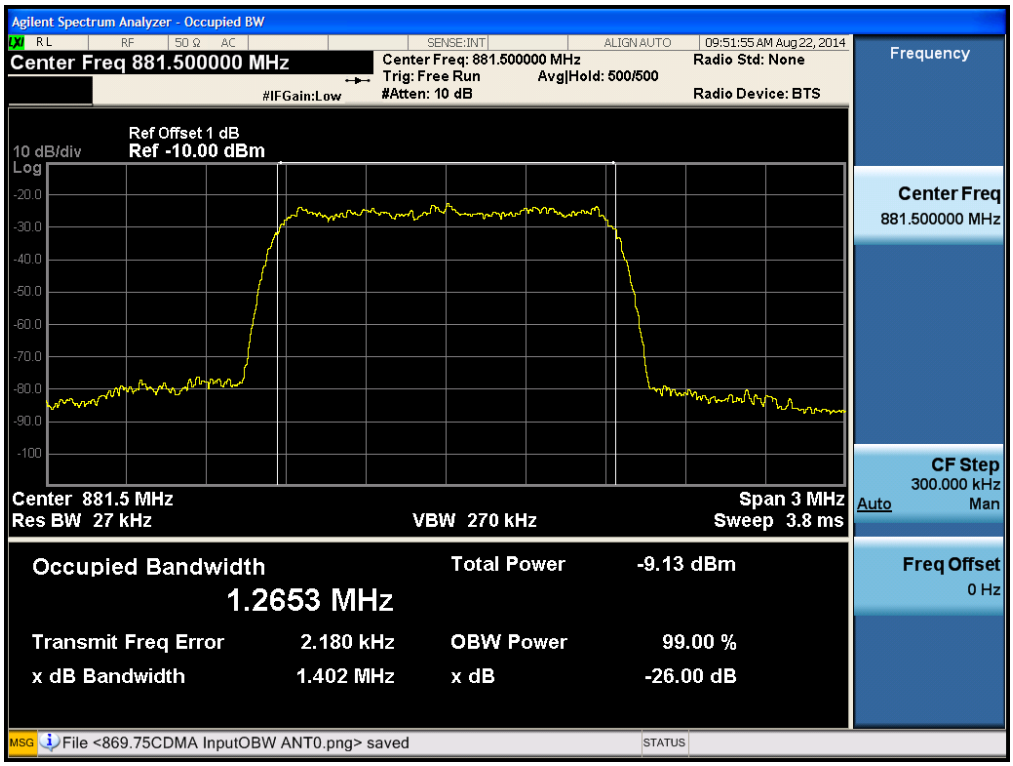
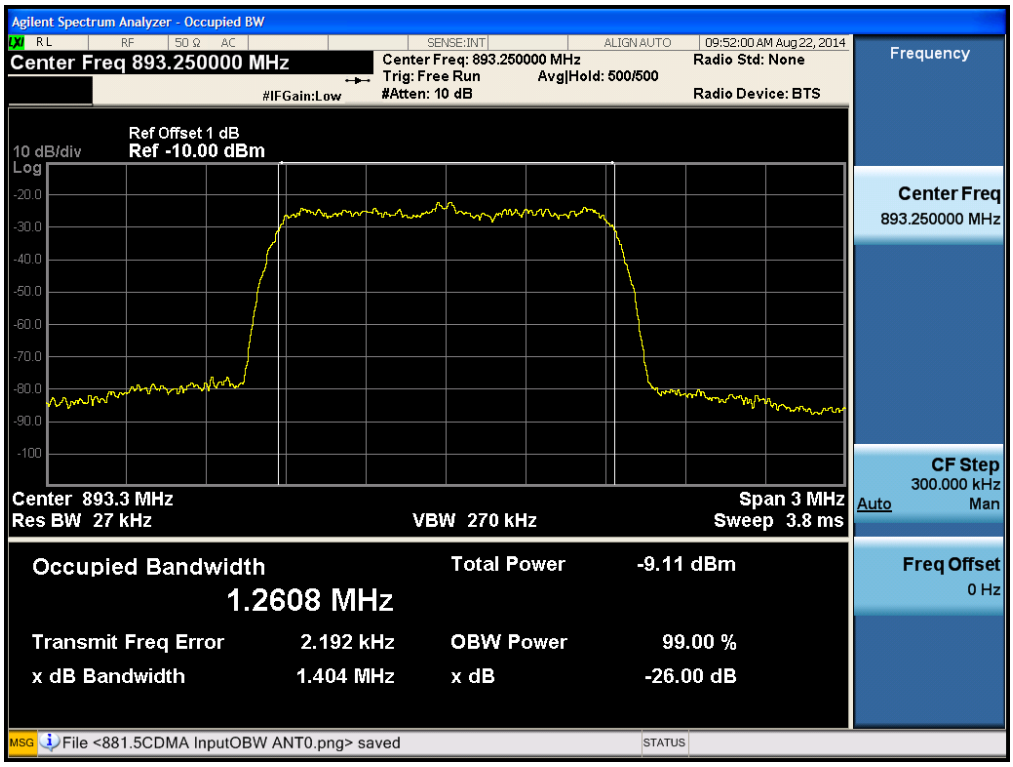


[Input CDMA Downlink High]



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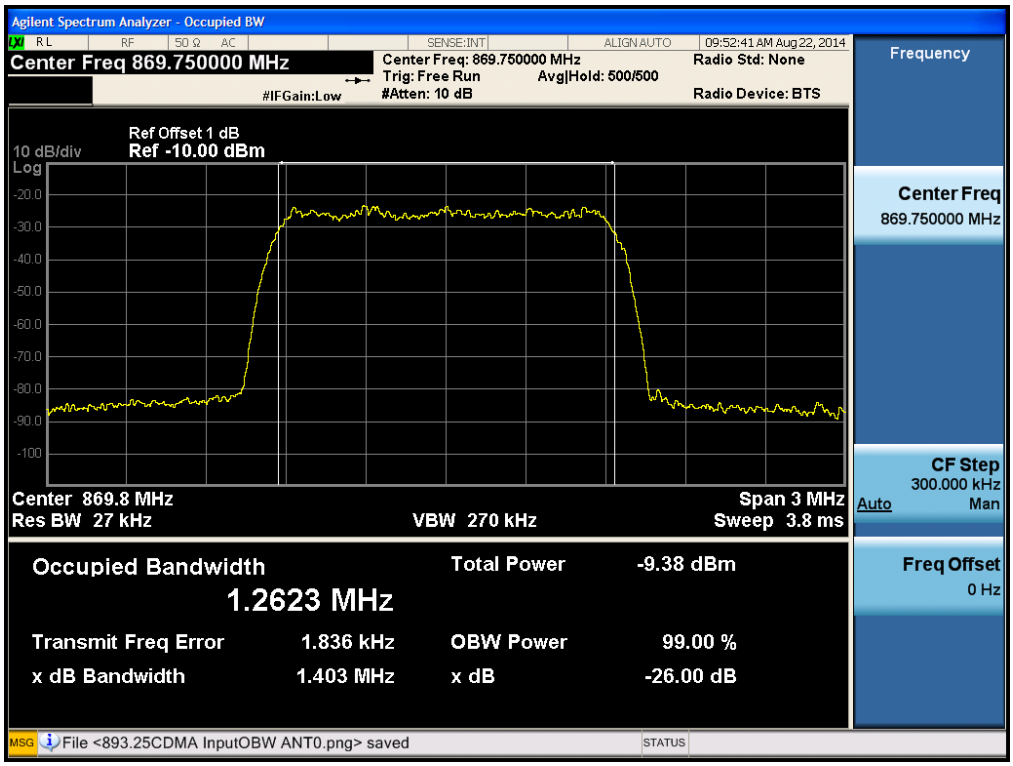

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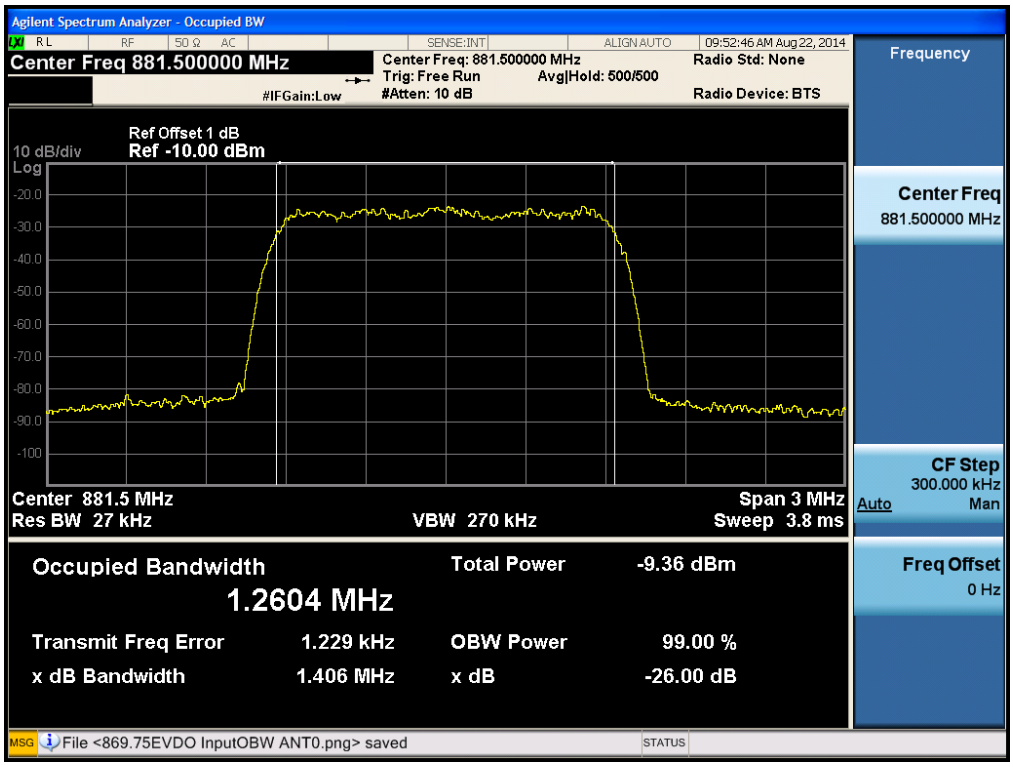

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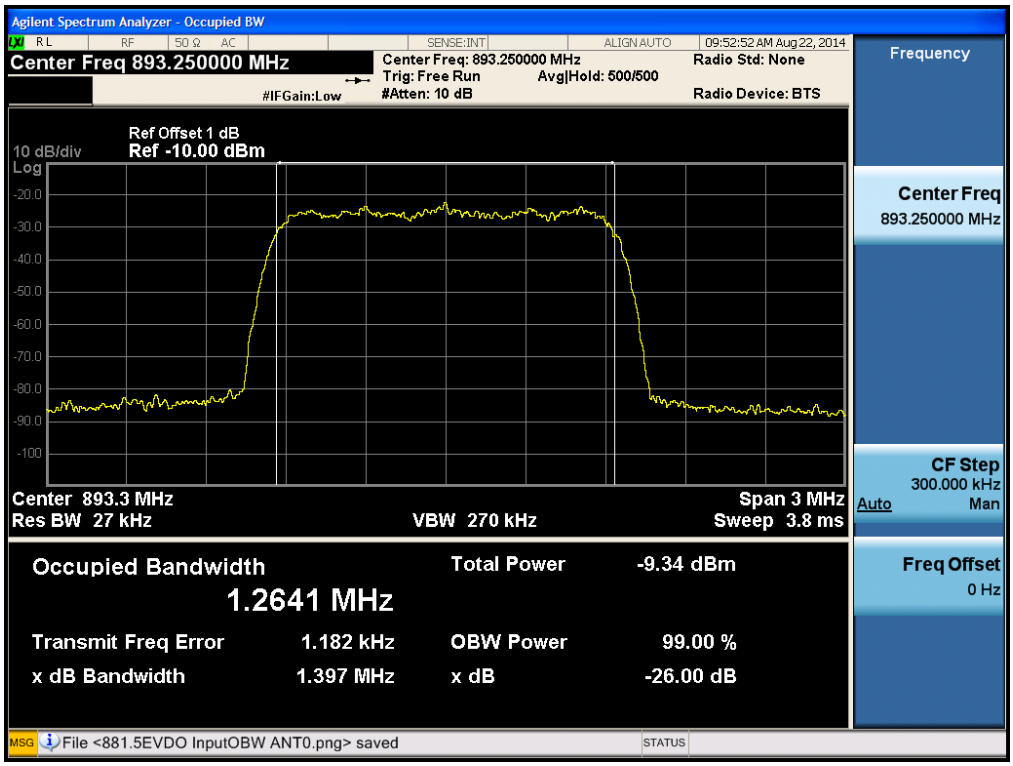

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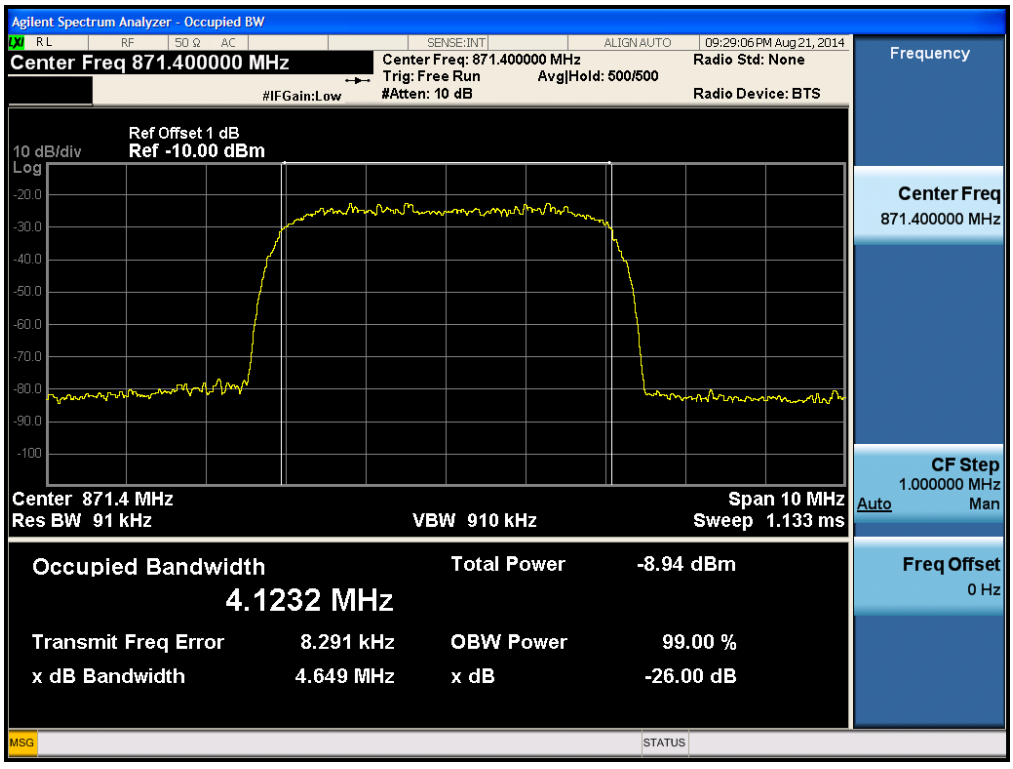

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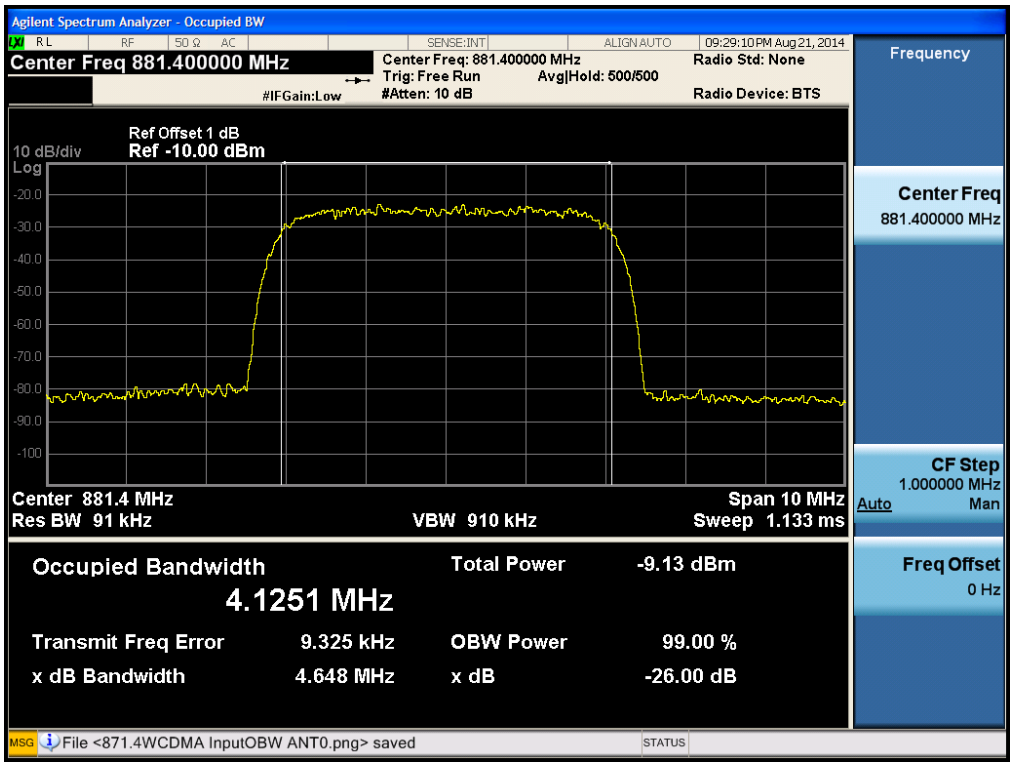

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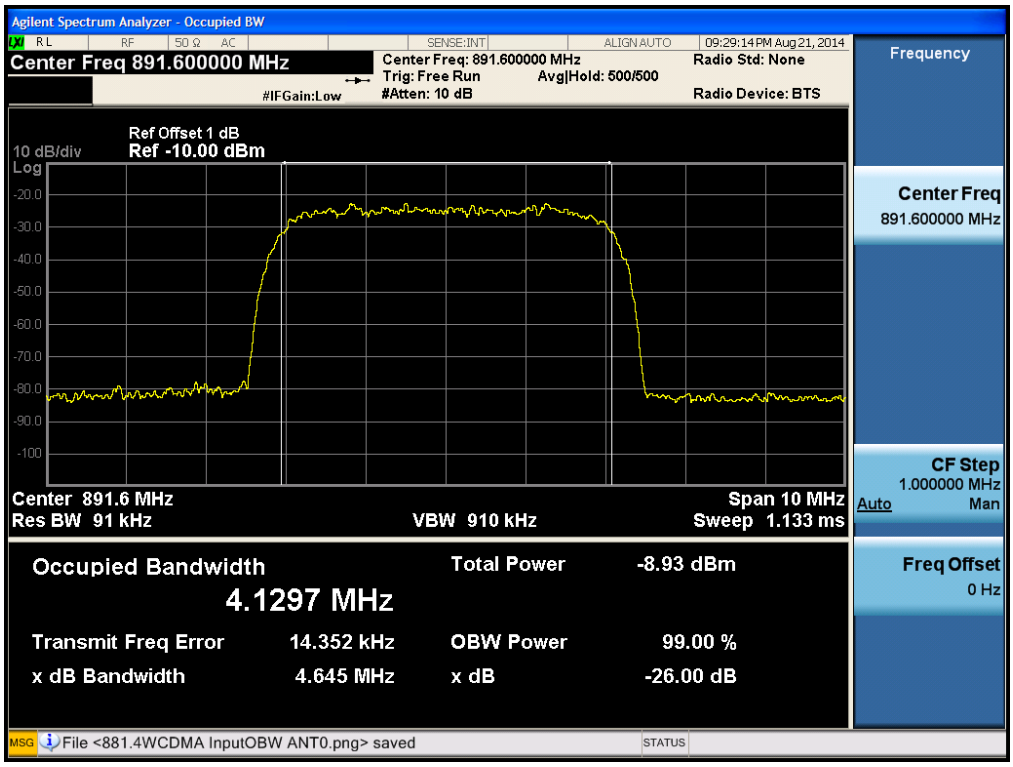
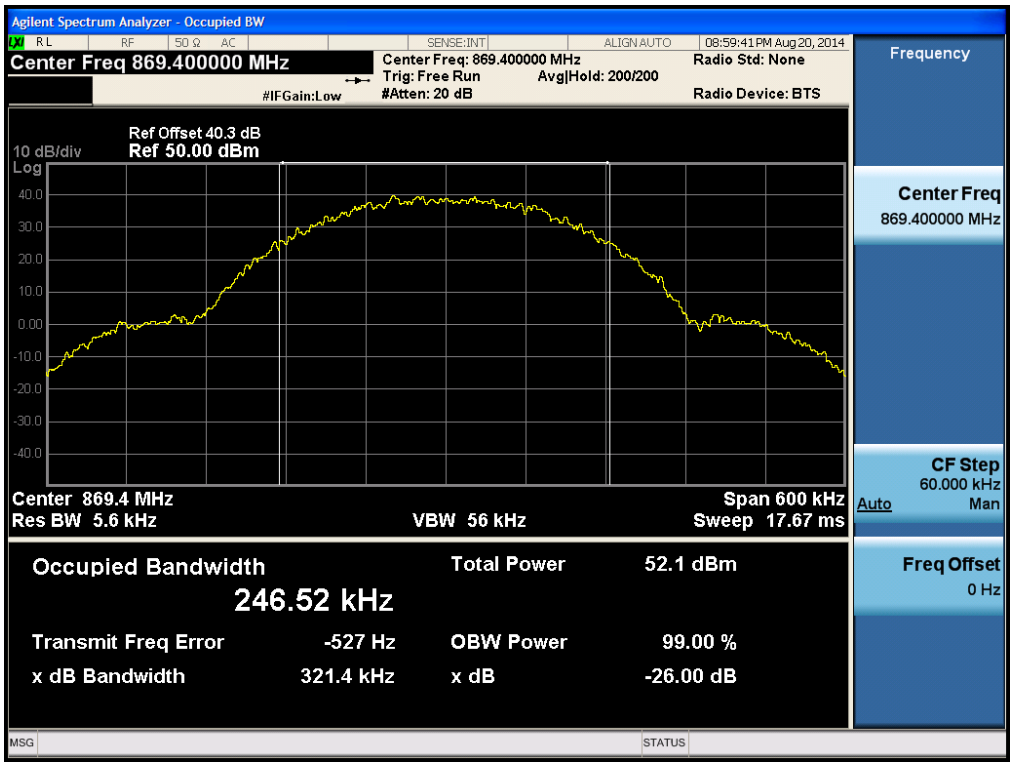


[Output GSM Downlink Low]



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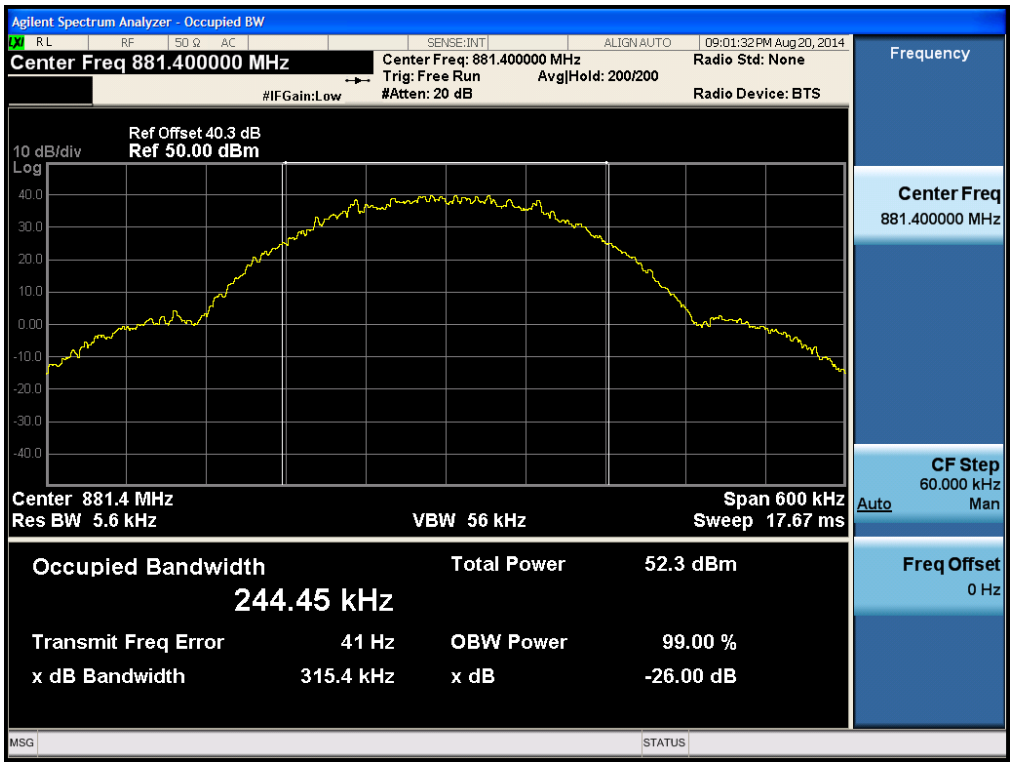

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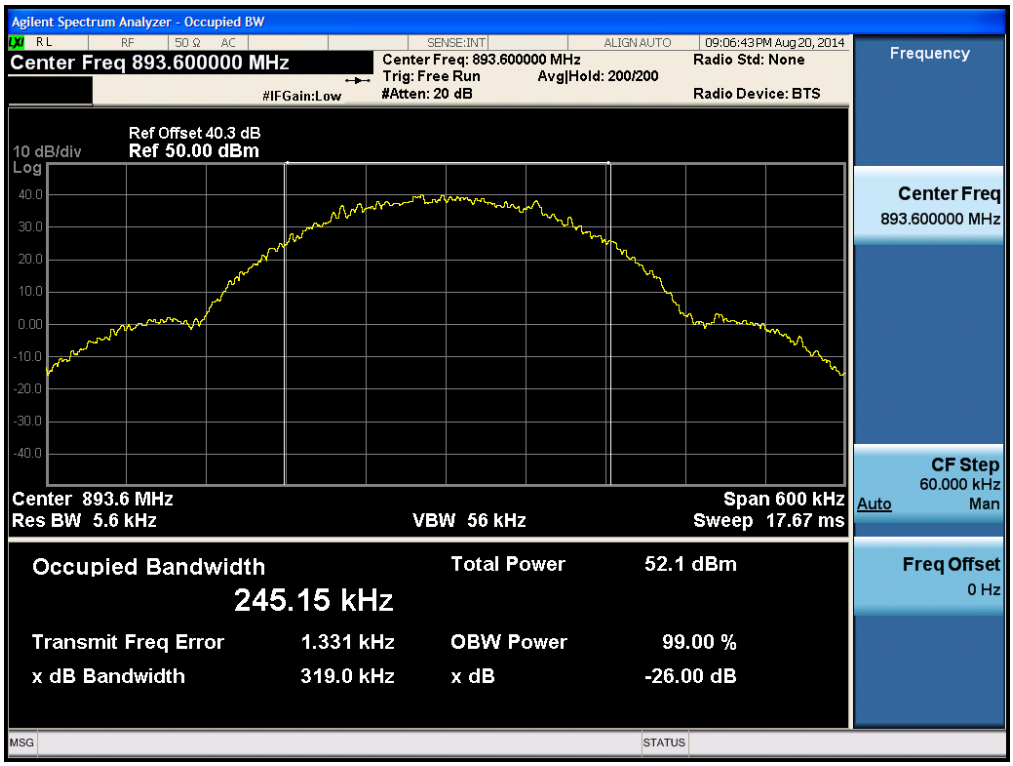

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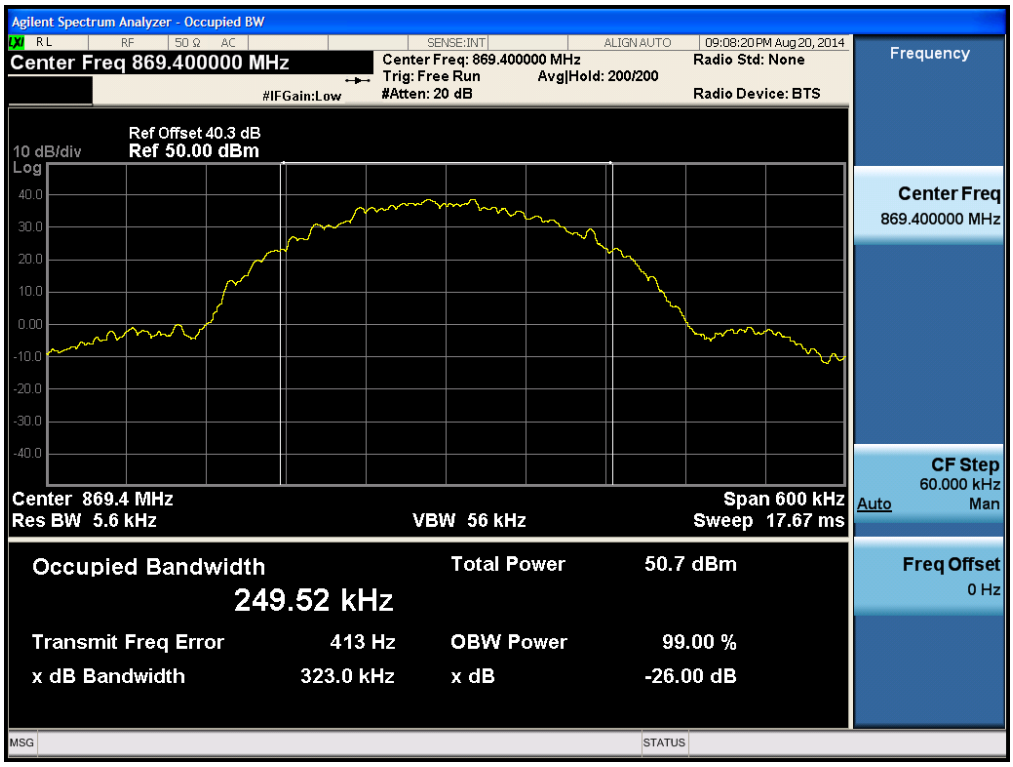

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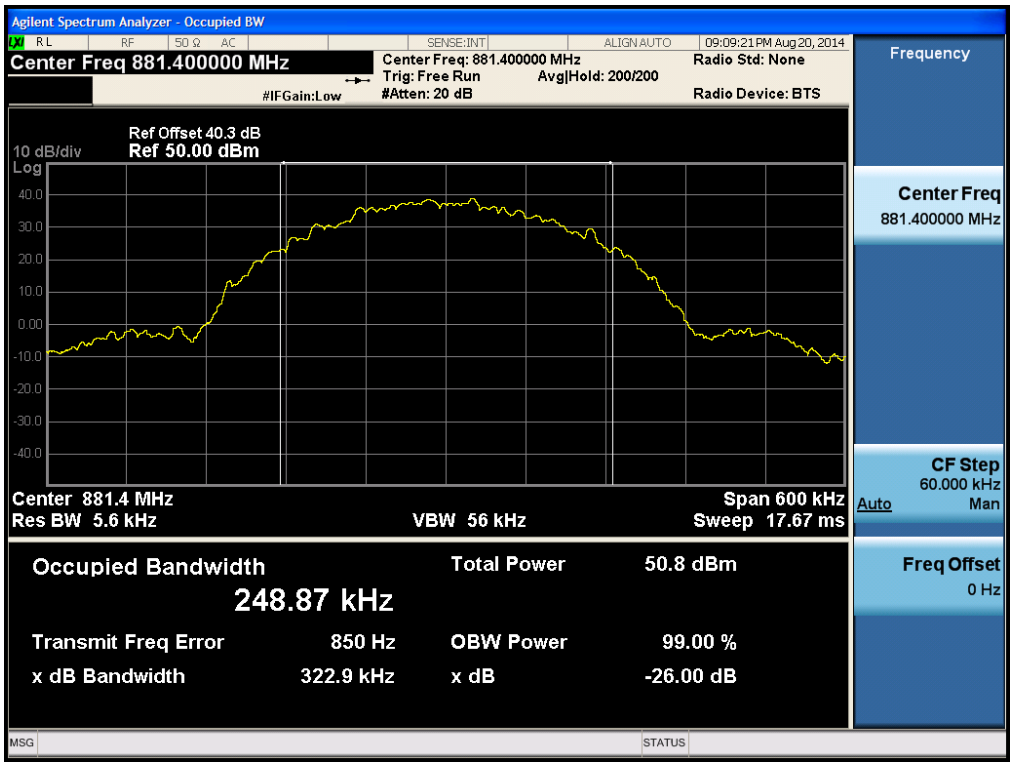

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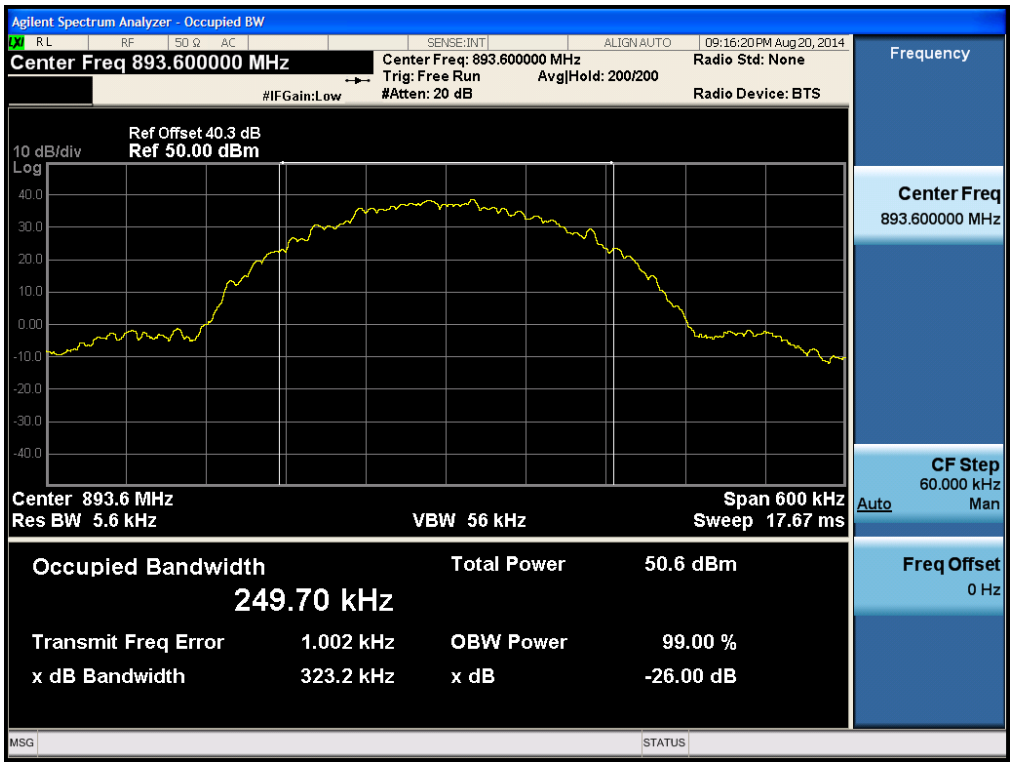
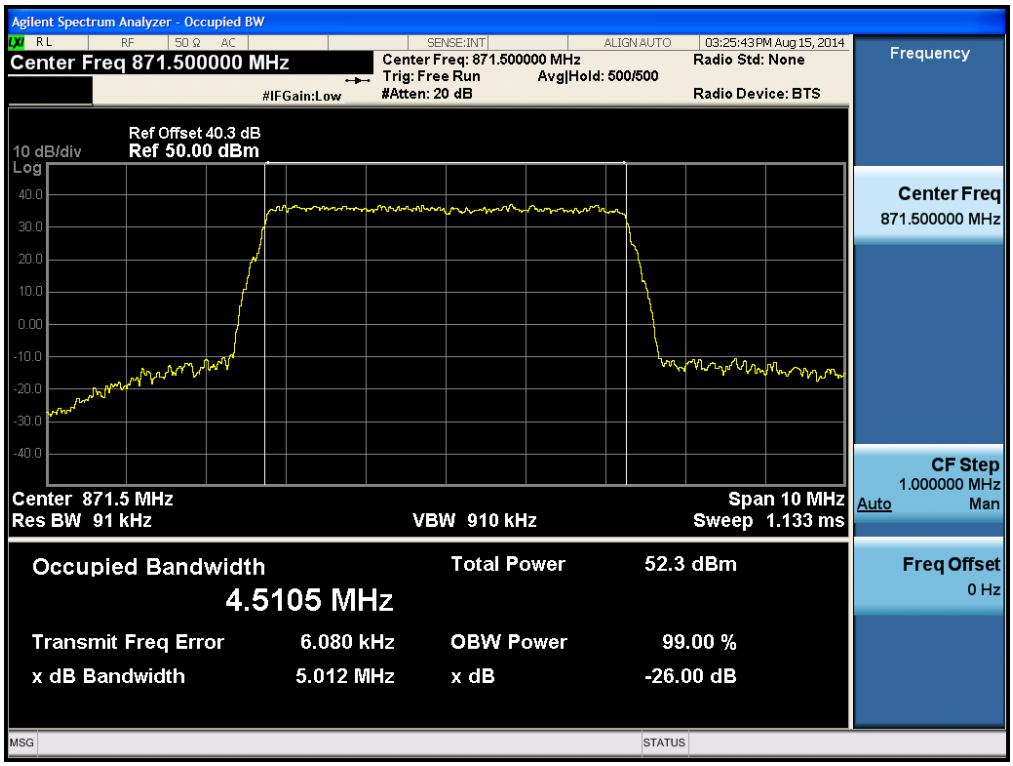
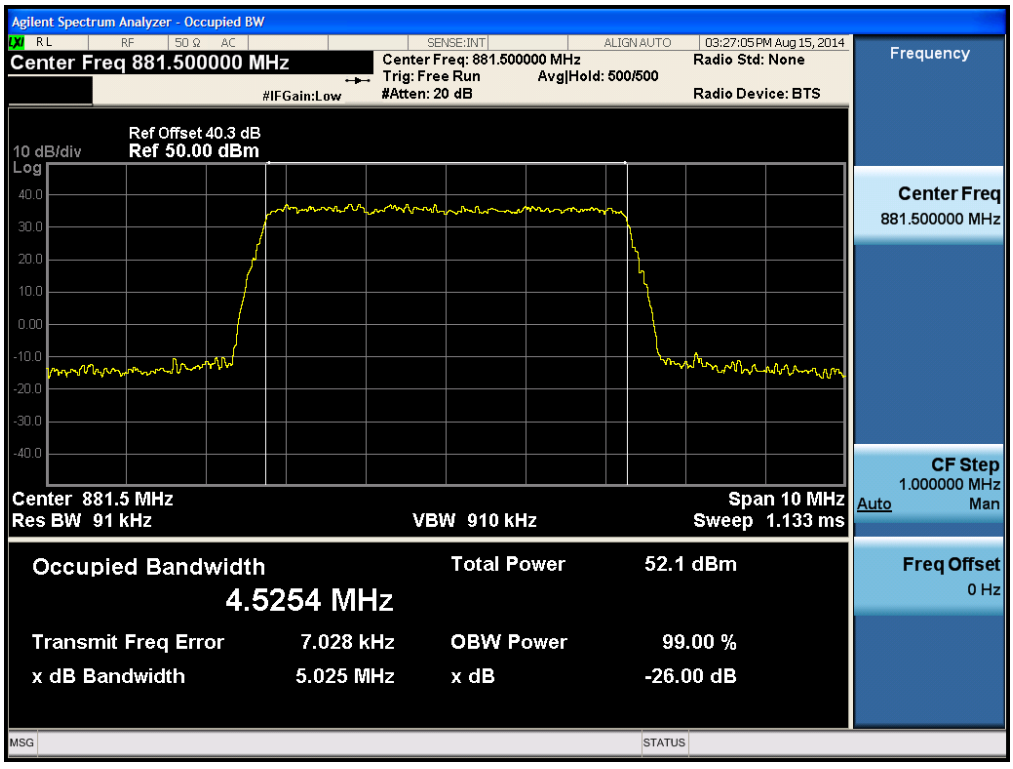


[Output LTE Downlink 5 MHz Low]



[Output LTE Downlink 5 MHz Middle]



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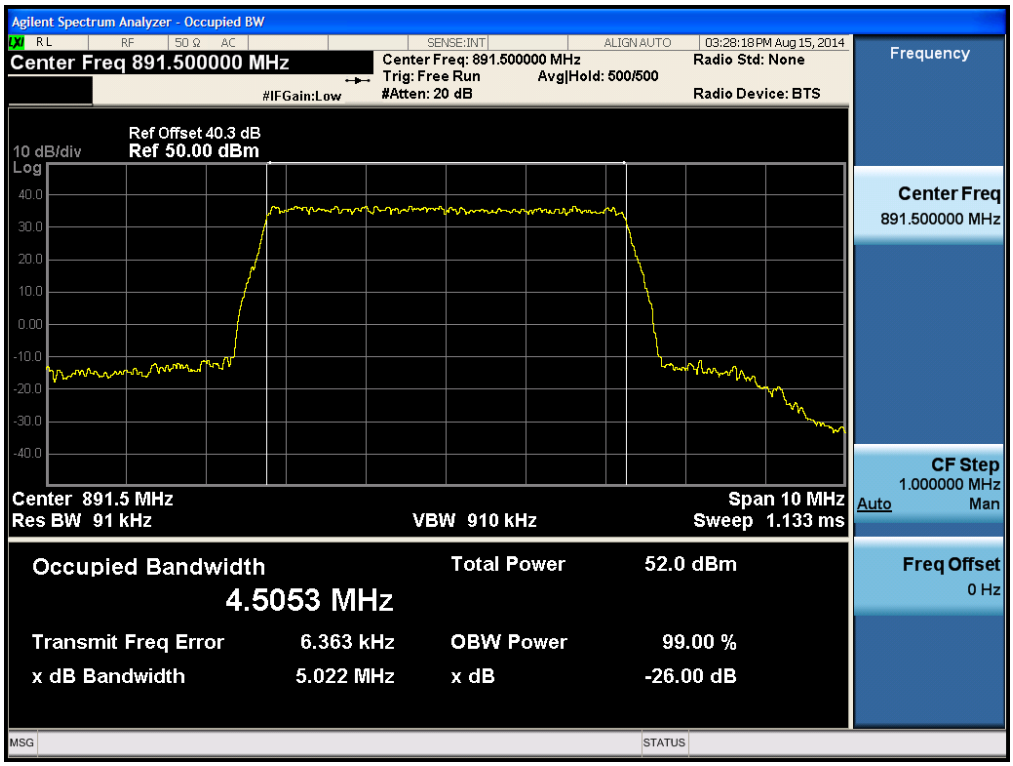

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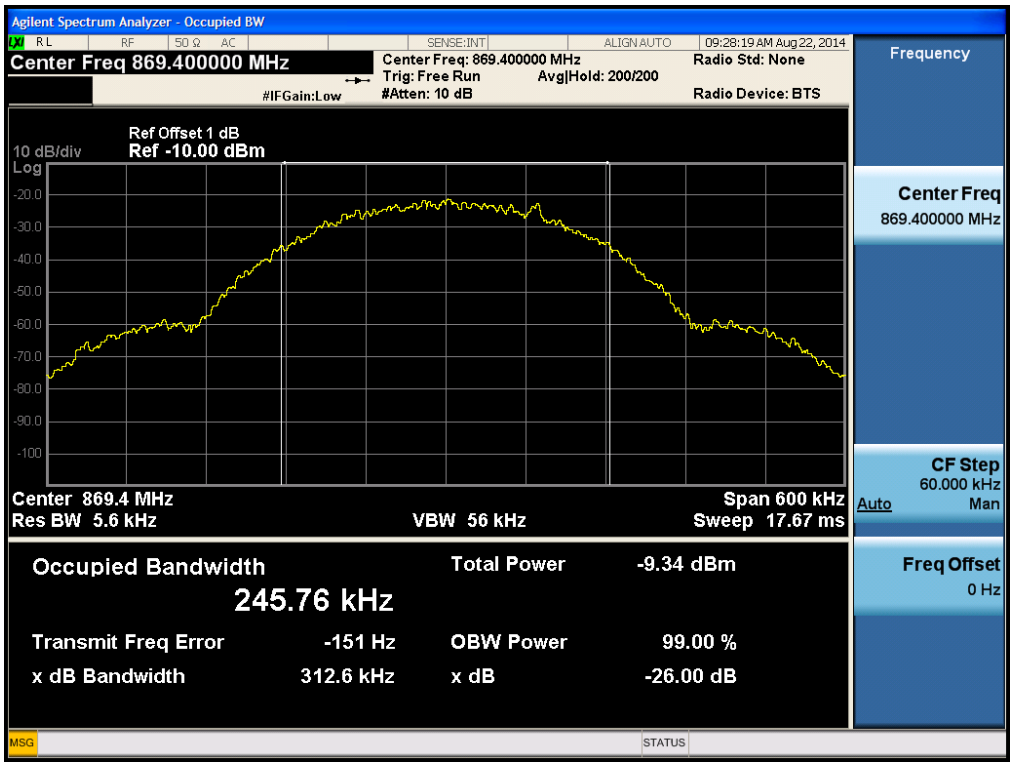

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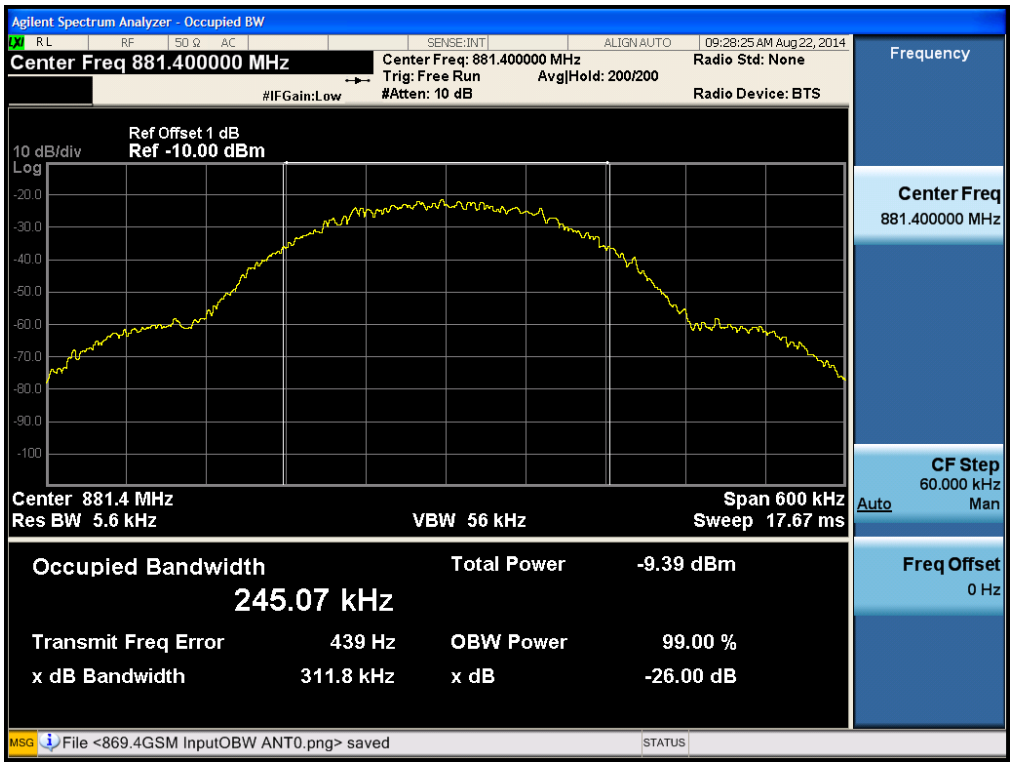

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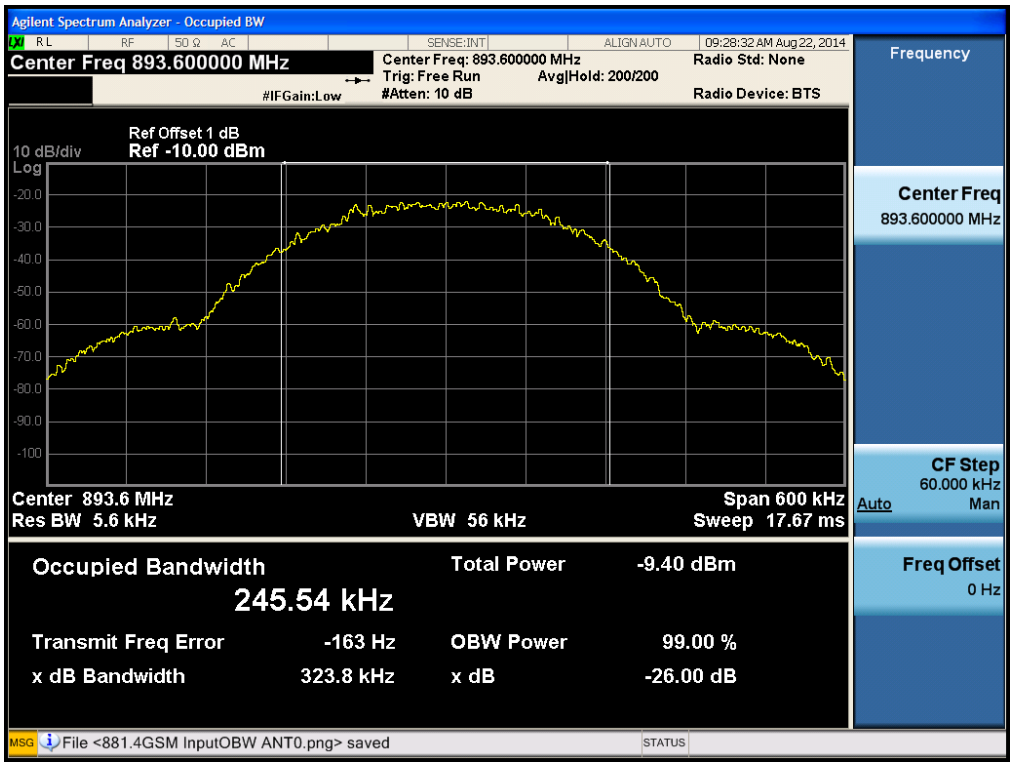

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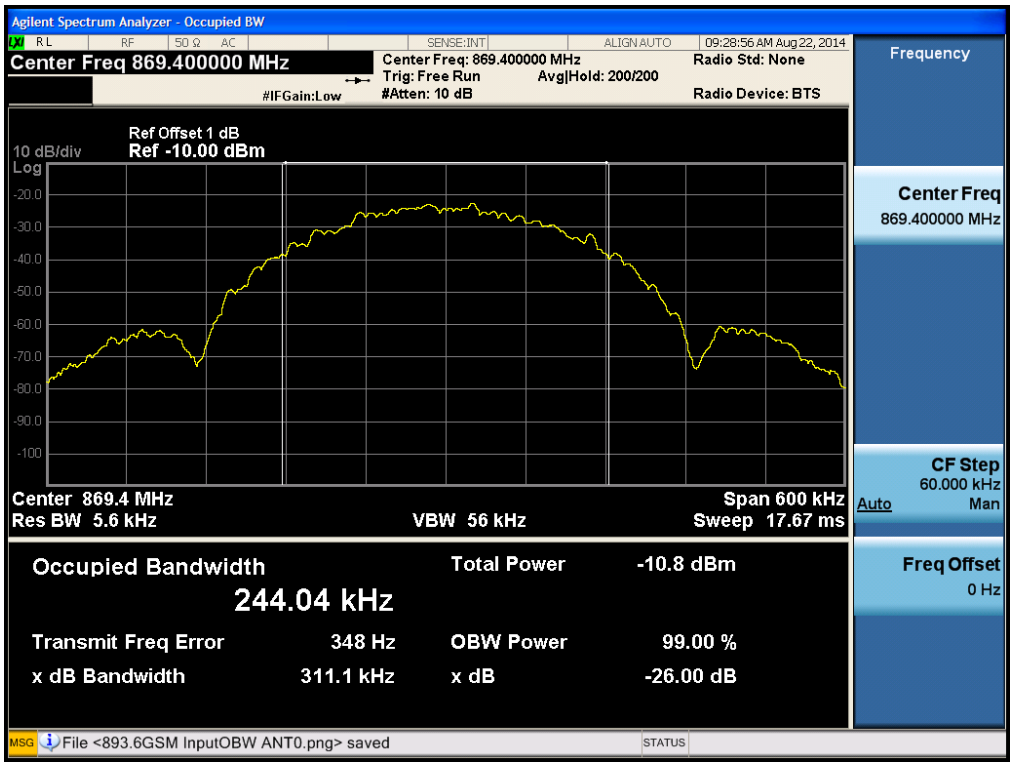

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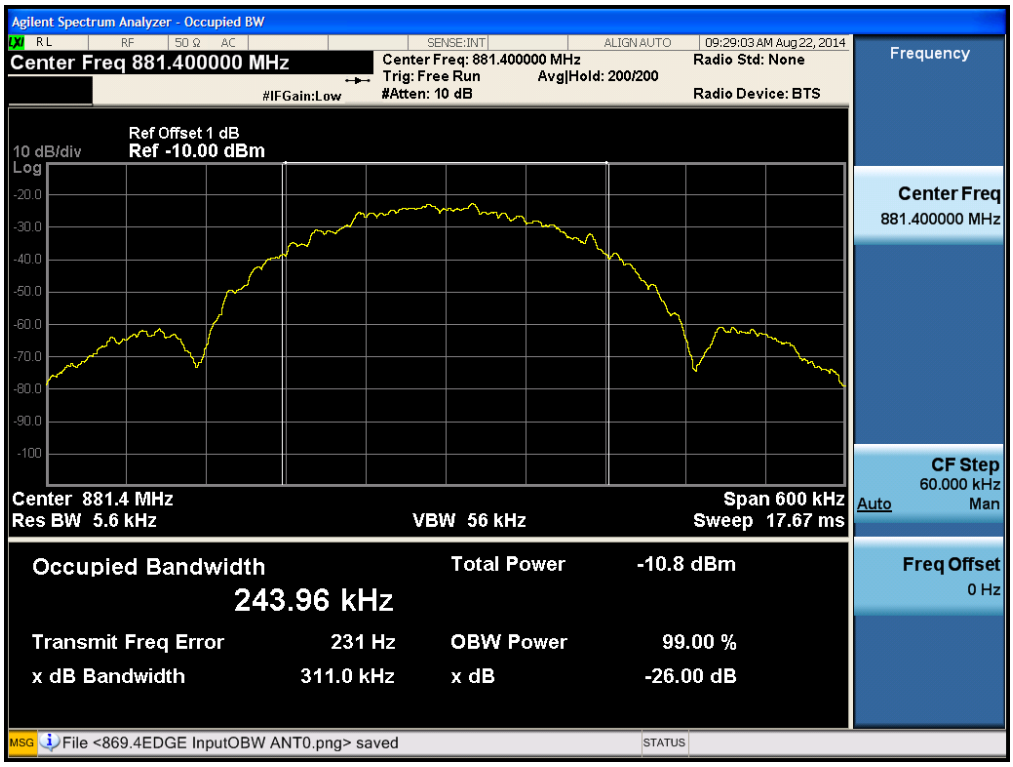

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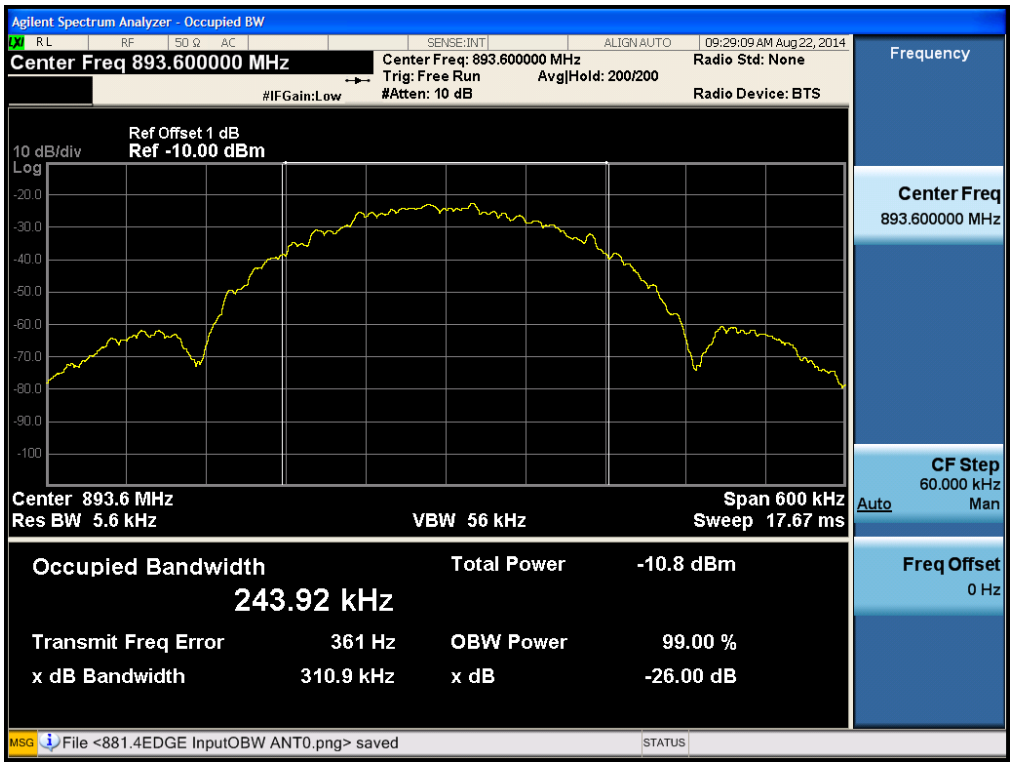
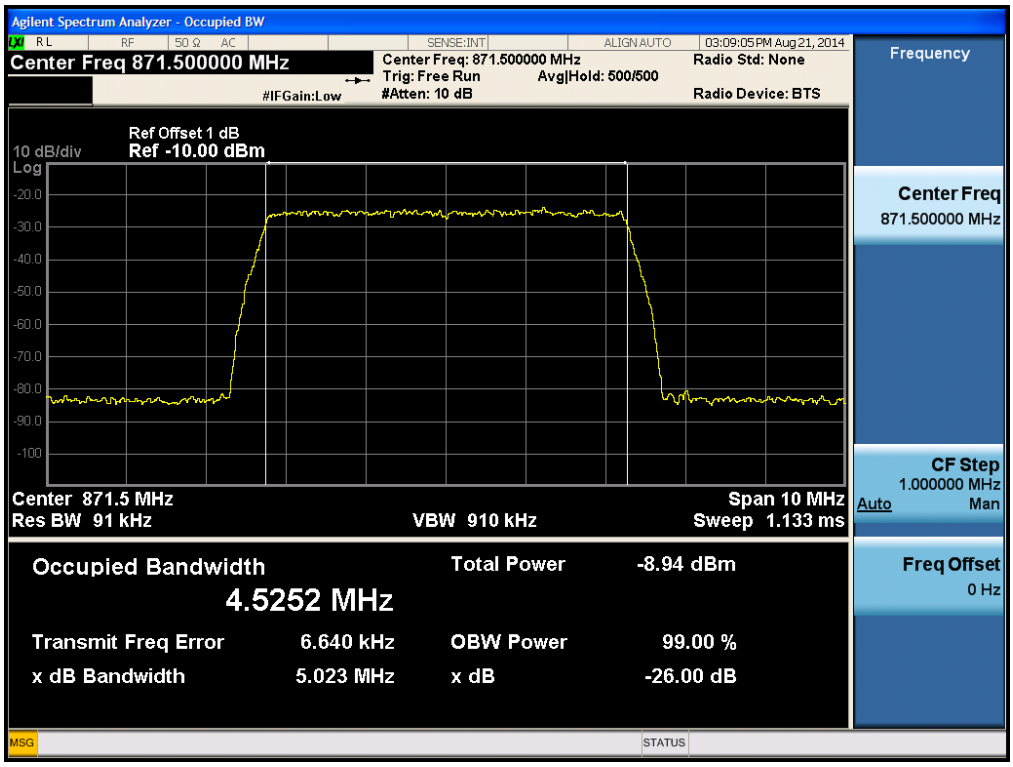


[Input LTE Downlink 5 MHz Low]



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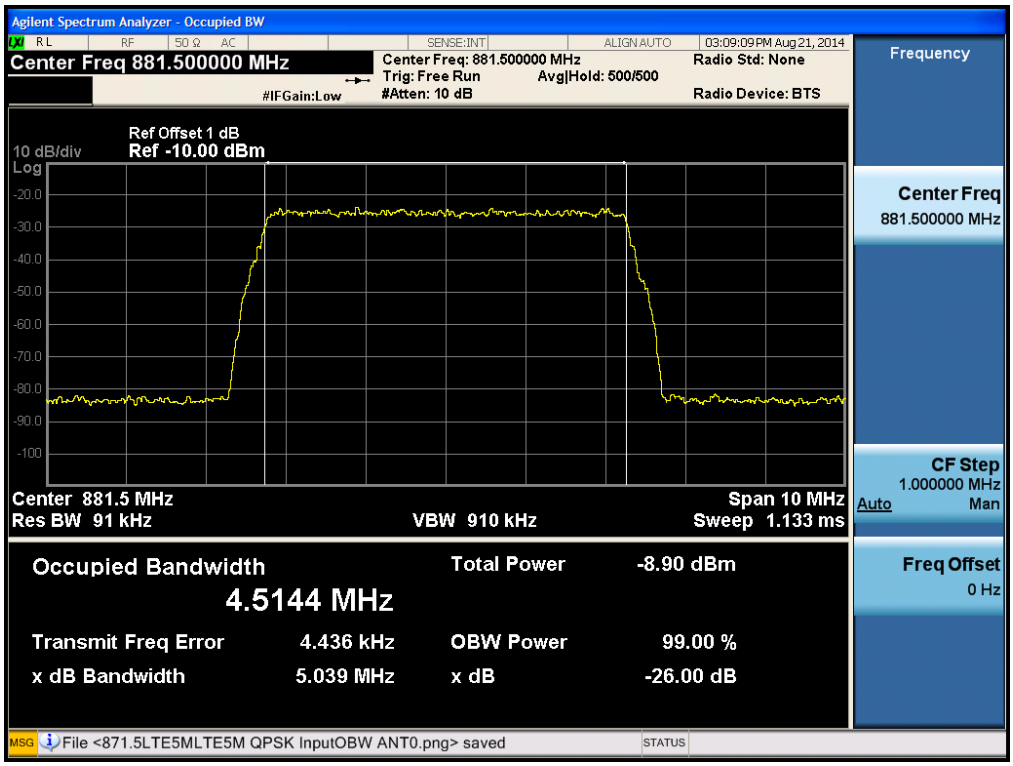

[Input LTE Downlink 5 MHz High]