HCT CO.,LTD

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
TEL: +82-31-645-6300 FAX: +82-31-645-6401

REPORT

FCC Certification

Applicant Name:
KMW U.S.A.,INC.

Address:
1818 E. Orangethorpe Ave. Fullerton,
CA 92831

Date of Issue:
November 1, 2016
Test Site/Location:
HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
Report No.: HCT-R-1609-F004-2
HCT FRN: 0005866421
IC Recognition No.: 5944A-5

FCC ID:	**ZUQ-H-FEM-L-A**
APPLICANT:	**KMW U.S.A., INC.**

Model(s):	POD-H-FEM-L-A
EUT Type:	DAS 7-Band Remote Unit
Frequency Range :	UL : 1710 MHz ~1755 MHz (AWS 2100)
Conducted Output Power:	UL : 0.316 mW (-5 dBm)
Date of Test:	December 7, 2015 ~ November 1, 2016
FCC Rule Part(s):	CFR 47 Part 2, Part 27

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 the FCC Rules under normal use and maintenance.

Report prepared by
:Kyung Soo Kang
Test engineer of RF Team

Approved by
:Jong Seok Lee
Manager of RF Team

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1609-F004	September 07, 2016	- First Approval Report
HCT-R-1609-F004-1	October 14, 2016	- Remove test results about 1755 MHz ~ 1780 MHz - Revise the frequency range.
HCT-R-1609-F004-2	October 14, 2016	- Add the middle and upper frequencies test datas.

Table of Contents

1. CLIENT INFORMATION

The EUT has been tested by request of

Company	KMW U.S.A.,INC. 1818 E. Orangethorpe Ave. Fullerton, CA 92831

FCC ID:	ZUQ-H-FEM-L-A
EUT Type:	DAS 7-Band Remote Unit
FCC Model(s):	POD-H-FEM-L-A
Frequency Ranges :	UL : 1710 MHz ~1755 MHz (AWS 2100)
Conducted Output Power:	UL : 0.316 mW (-5 dBm)
Antenna Gain(s):	Manufacturer does not provide an antenna.
Measurement standard(s):	ANSI/TIA-603-C-2004, KDB 971168 D01 v02r02, KDB 935210 D02 v03r02, KDB 935210 D05 v01r01, KDB 662911 D01 v02r01
FCC Rule Part(s):	CFR 47 Part 2, Part 27
Place of Tests:	HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA (IC Recognition No. : 5944A-5)

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, 17383, Rep. of 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 July 07, 2015 (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 SPECIFICATIONS

3.1. STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 27.

Description	Reference (FCC)	Results
Conducted RF Output Power	§2.1046; §27.50	Compliant
Occupied Bandwidth	§2.1049	Compliant
Passband Gain and Bandwidth & Out of Band Rejection	KDB 935210 D05 v01r01	Compliant
Spurious Emissions at Antenna Terminals	§2.1051, §27.53	Compliant
Radiated Spurious Emissions	§2.1053, §27.53	Compliant
Frequency Stability	§2.1055, §27.54	N/A The EUT does not perform frequency translation

NOTE. DAS 7-Band Remote Unit supports SISO and MIMO system.
Support frequency Band
SISO system : 700M, SMR800, 850M, PCS, AWS, WCS, BRS
MIMO system : 700M, PCS, AWS, BRS

Calculation methods.
RF Output Power : KDB 662911 D01 v02r01, section E)2)c)
Out-of-Band and Spurious Emission : KDB 662911 D01, section E)3)a)iii)

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.

Band Info	Modulation
AWS 2100	LTE(5 MHz), LTE(10 MHz) LTE(15 MHz), LTE(20 MHz) UMTS

3.3. MAXIMUM MEASUREMENT UNCERTAINTY

The value of the measurement uncertainty for the measurement of each parameter.

Coverage factor *k* = 2, Confidence levels of 95 %

Description	Condition	Uncertainty
Conducted RF Output Power	-	± 0.72 dB
Occupied Bandwidth	OBW ≤ 20 MHz	± 52 kHz
Passband Gain and Bandwidth & Out of Band Rejection	Gain 20 dB bandwidth	± 0.89 dB ± 0.58 MHz
Spurious Emissions at Antenna Terminals	-	± 1.08 dB
Radiated Spurious Emissions	f ≤ 1 GHz f > 1 GHz	± 4.80 dB ± 6.07 dB

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	09/02/2016	MY42082646
Agilent	N5182A /Signal Generator	Annual	03/29/2016	MY50141649
Agilent	N5182A /Signal Generator	Annual	05/13/2016	MY47070230
Rohde & Schwarz	SMBV100A /Signal Generator	Annual	10/24/2016	255727
Rohde & Schwarz	SMB100A /Signal Generator	Annual	07/18/2016	177633
NANGYEUL CO., LTD.	NY-THR18750 / Temperature and Humidity Chamber	Annual	10/21/2016	NY-2009012201A
Agilent	N9020A /Signal Analyzer	Annual	02/29/2016	MY46471587
WEINSCHEL	67-30-33 / Fixed Attenuator	Annual	02/16/2016	BU5347
DEAYOUNG ENT	DFSS60 / AC Power Supply	Annual	04/07/2016	1003030-1
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	09/10/2016	100688
CERNEX, Inc	CBLU1183540/AMP	Annual	07/15/2016	22964
WEINSCHEL	1506A/Power Divider	Annual	02/15/2016	MD793
Schwarzbeck	BBHA 9120D / Horn Antenna	Biennial	07/31/2015	1151
Schwarzbeck	VULB 9168 / Hybrid Antennqa	Biennial	04/15/2015	9160-3368
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

6. RF OUTPUT POWER

FCC Rules

Test Requirements:

§ 2.1046 Measurements required: RF power output:

(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.

(b) For single sideband, independent sideband, and single channel, controlled carrier radio telephone 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.

(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.

§ 27.50 Power limits and duty cycle.

(d) The following power and antenna height requirements apply to stations transmitting in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz and 2180-2200 MHz bands

(2) The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to: (ii) An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz. licensees authorized to operate on adjacent frequency blocks in the 2110-2180 MHz band.

(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(5) Equipment employed must be authorized in accordance with the provisions of §24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

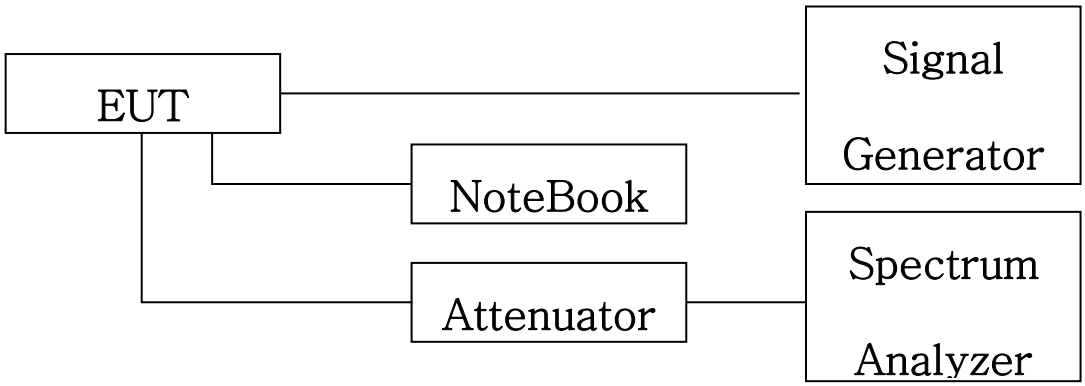
Test Procedures:

Measurements were in accordance with the test methods section 3.5.2 of KDB 935210 D05 v01r01.

a) Connect a signal generator to the input of the EUT.
b) Configure to generate the AWGN (broadband) test signal.
c) The frequency of the signal generator shall be set to the frequency f0 as determined from 3.3.
d) Connect a spectrum analyzer or power meter to the output of the EUT using appropriate attenuation as necessary.
e) Set the signal generator output power to a level that produces an EUT output level that is just below the AGC threshold (see 3.2), but not more than 0.5 dB below.
f) Measure and record the output power of the EUT; use 3.5.3 or 3.5.4 for power measurement.
g) Remove the EUT from the measurement setup. Using the same signal generator settings, repeat the power measurement at the signal generator port, which was used as the input signal to the EUT, and record as the input power. EUT gain may be calculated as described in 3.5.5.
h) Repeat steps f) and g) with input signal amplitude set to 3 dB above the AGC threshold level.
i) Repeat steps e) to h) with the narrowband test signal.
j) Repeat steps e) to i) for all frequency bands authorized for use by the EUT.

Power measurement Method :

Guidance for performing input/output power measurements using a spectrum or signal analyzer is provided in 5.2 of KDB Publication 971168 D01 v02r02.



Block Diagram 1. RF Power Output Test Setup

Test Results:

Input Signal	Input Level (dBm)	Maximum Amp Gain
AWS 2100	DL : -15 dBm UL : -45 dBm	DL : 45 dB UL : 40 dB

Single channel Enhancer

* Due to EUT's ALC function (Auto Level Control), even if input signal is increased,

The same output power is transmit.

[Uplink]

	Channel	Frequency (MHz)	Output Power	
			(dBm)	(mW)
AWS 2100 Band_ LTE 5 MHz AGC threshold	Low	1712.50	-4.92	0.322
	Middle	1732.50	-4.97	0.318
	High	1752.50	-4.94	0.320
AWS 2100 Band_ LTE 5 MHz +3dBm above the AGC threshold	Low	1712.50	-4.93	0.321
	Middle	1732.50	-4.96	0.319
	High	1752.50	-4.98	0.318
AWS 2100 Band_ LTE 10 MHz AGC threshold	Low	1715.00	-4.96	0.319
	Middle	1732.50	-4.94	0.321
	High	1750.00	-4.93	0.322
AWS 2100 Band_ LTE 10 MHz +3dBm above the AGC threshold	Low	1715.00	-4.95	0.320
	Middle	1732.50	-4.93	0.321
	High	1750.00	-4.93	0.321

	Channel	Frequency (MHz)	Output Power	
			(dBm)	(mW)
AWS 2100 Band_ LTE 15 MHz AGC threshold	Low	1717.50	-4.99	0.317
	Middle	1732.50	-4.92	0.322
	High	1747.50	-4.94	0.321
AWS 2100 Band_ LTE 15 MHz +3dBm above the AGC threshold	Low	1717.50	-5.00	0.316
	Middle	1732.50	-4.90	0.324
	High	1747.50	-4.89	0.324
AWS 2100 Band_ LTE 20 MHz AGC threshold	Low	1720.00	-4.95	0.320
	Middle	1732.50	-4.92	0.322
	High	1745.00	-4.96	0.319
AWS 2100 Band_ LTE 20 MHz +3dBm above the AGC threshold	Low	1720.00	-4.96	0.319
	Middle	1732.50	-4.96	0.319
	High	1745.00	-4.92	0.322
AWS 2100 Band_ UMTS AGC threshold	Low	1712.50	-4.93	0.322
	Middle	1732.50	-4.97	0.318
	High	1752.50	-4.97	0.319
AWS 2100 Band_ UMTS +3dBm above the AGC threshold	Low	1712.50	-4.97	0.319
	Middle	1732.50	-4.92	0.322
	High	1752.50	-4.95	0.320

	Channel	Frequency (MHz)	Calculated MIMO Output Power	
			(dBm)	(mW)
AWS 2100 Band_ LTE 5 MHz AGC threshold	Low	1712.50	-1.91	0.644
	Middle	1732.50	-1.96	0.637
	High	1752.50	-1.93	0.641
AWS 2100 Band_ LTE 5 MHz +3dBm above the AGC threshold	Low	1712.50	-1.92	0.643
	Middle	1732.50	-1.95	0.638
	High	1752.50	-1.97	0.635
AWS 2100 Band_ LTE 10 MHz AGC threshold	Low	1715.00	-1.95	0.638
	Middle	1732.50	-1.93	0.641
	High	1750.00	-1.92	0.643
AWS 2100 Band_ LTE 10 MHz +3dBm above the AGC threshold	Low	1715.00	-1.94	0.640
	Middle	1732.50	-1.92	0.643
	High	1750.00	-1.92	0.643
AWS 2100 Band_ LTE 15 MHz AGC threshold	Low	1717.50	-2.63	0.546
	Middle	1732.50	-1.91	0.644
	High	1747.50	-1.93	0.641
AWS 2100 Band_ LTE 15 MHz +3dBm above the AGC threshold	Low	1717.50	-1.99	0.632
	Middle	1732.50	-1.89	0.647
	High	1747.50	-1.88	0.649

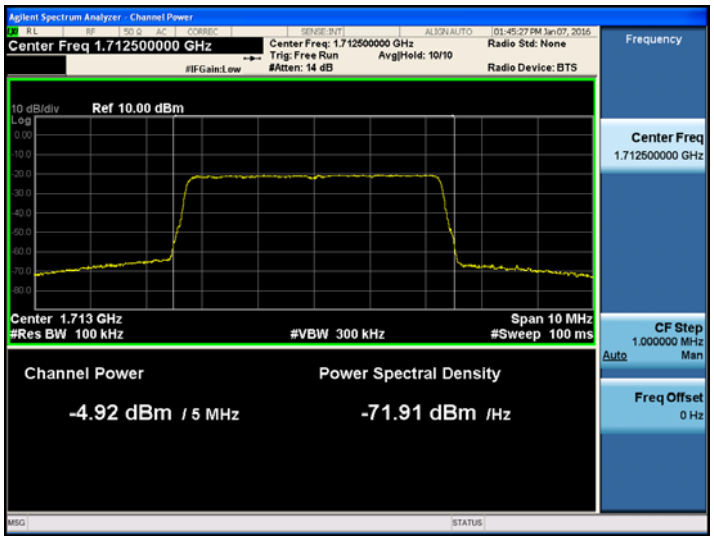
	Channel	Frequency (MHz)	Calculated MIMO Output Power	
			(dBm)	(mW)
AWS 2100 Band_ LTE 20 MHz AGC threshold	Low	1720.00	-1.94	0.640
	Middle	1732.50	-1.91	0.644
	High	1745.00	-1.95	0.638
AWS 2100 Band_ LTE 20 MHz +3dBm above the AGC threshold	Low	1720.00	-1.95	0.638
	Middle	1732.50	-1.95	0.638
	High	1745.00	-1.91	0.644
AWS 2100 Band_ UMTS AGC threshold	Low	1712.50	-1.92	0.643
	Middle	1732.50	-1.96	0.637
	High	1752.50	-1.96	0.637
AWS 2100 Band_ UMTS +3dBm above the AGC threshold	Low	1712.50	-1.96	0.637
	Middle	1732.50	-1.91	0.644
	High	1752.50	-1.94	0.640

Note. The MIMO output power were calculated, as described in FCC KDB 662911 D01 v02r01 section E)2)c)

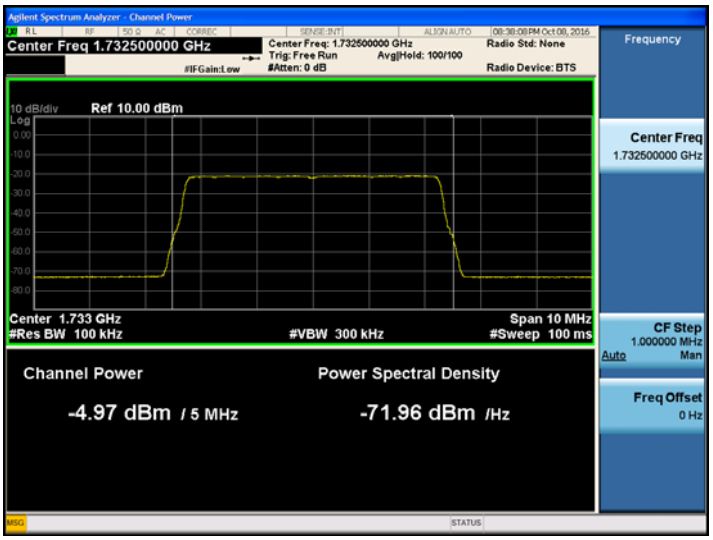
Single channel Enhancer Plots of RF Output Power

AWS 2100 LTE 5 MHz Band UL

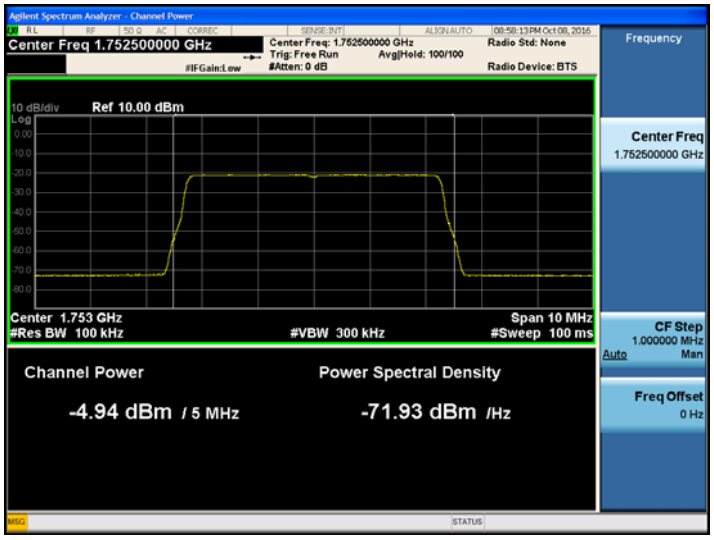
[AWS 2100 AGC threshold UPlink LTE 5 MHz Low]



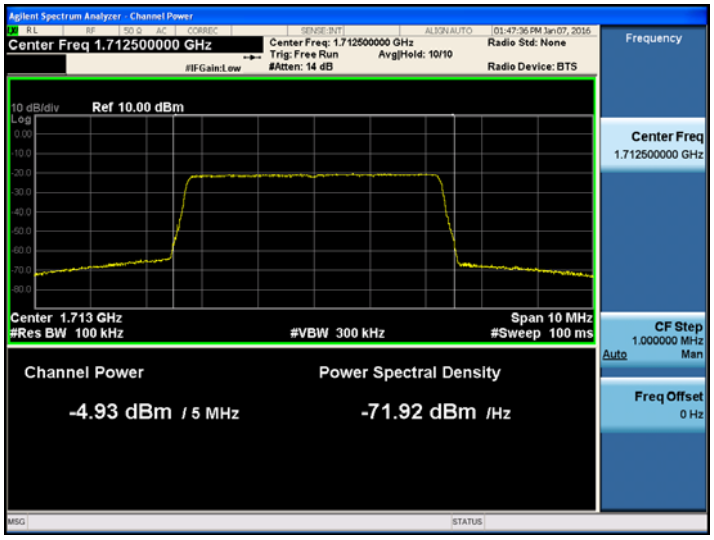
[AWS 2100 AGC threshold Uplink LTE 5 MHz Mid]



[AWS 2100 AGC threshold Uplink LTE 5 MHz High]



[AWS2100 +3dB above the threshold Uplink LTE 5 MHz Low]



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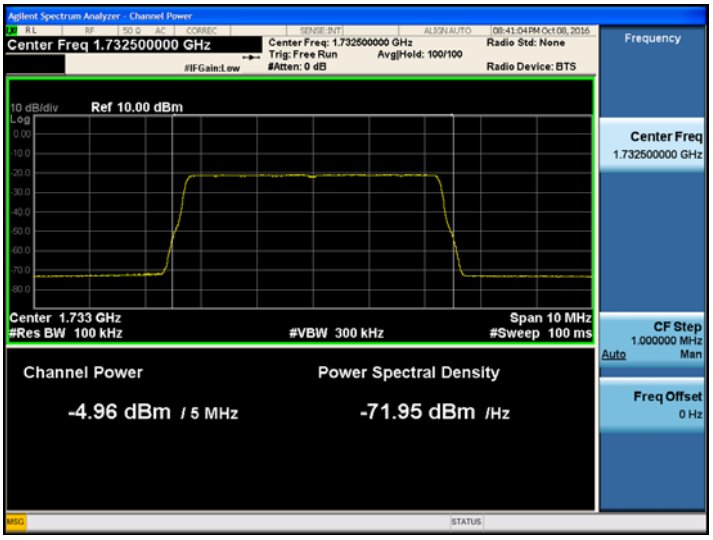

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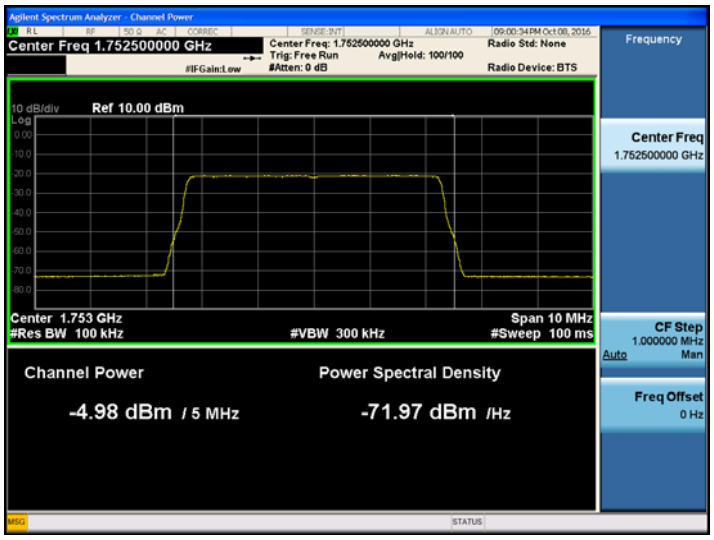
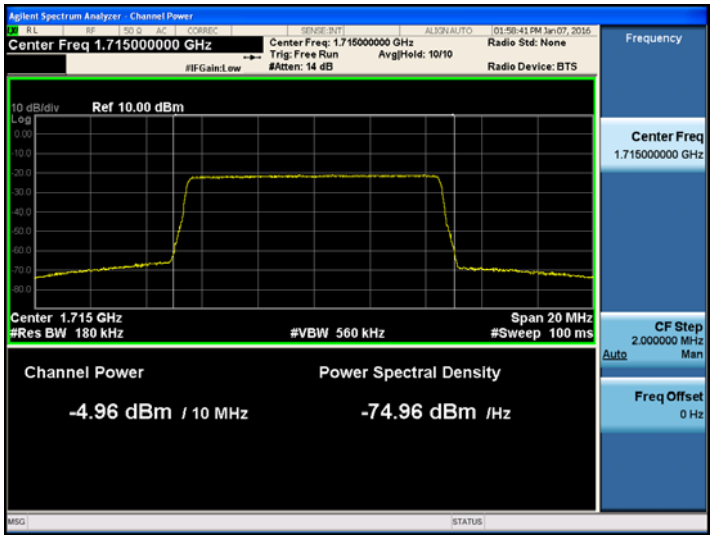


AWS 2100 LTE 10 MHz Band UL

[AWS 2100 AGC threshold Uplink LTE 10 MHz Low]



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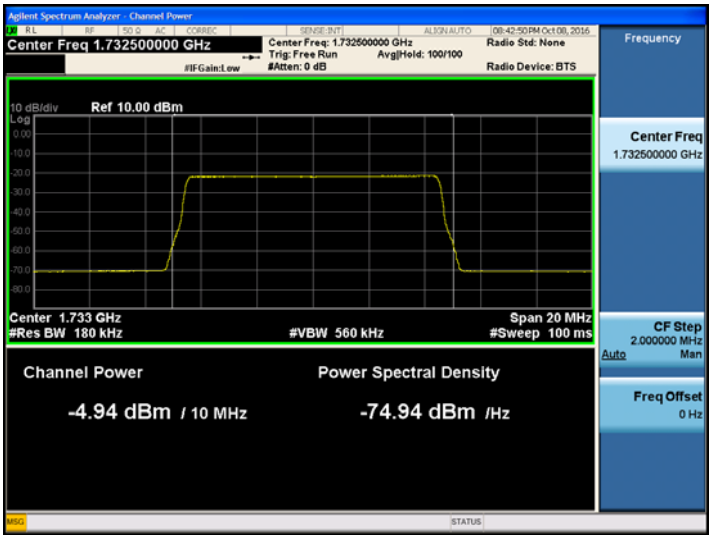

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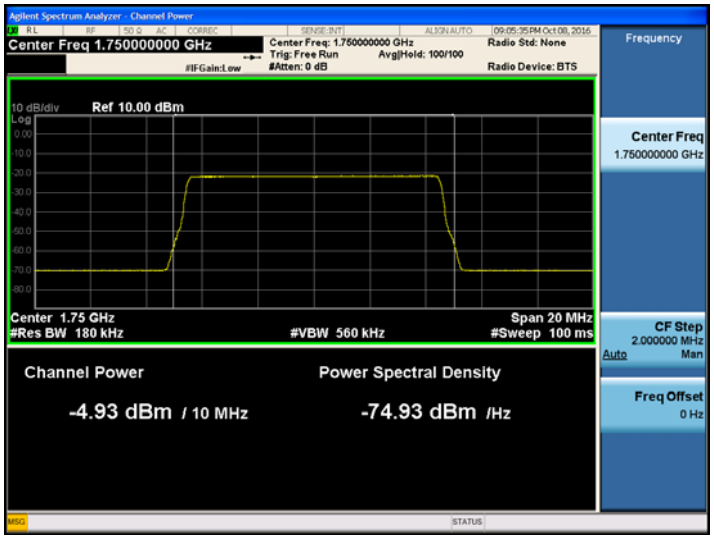
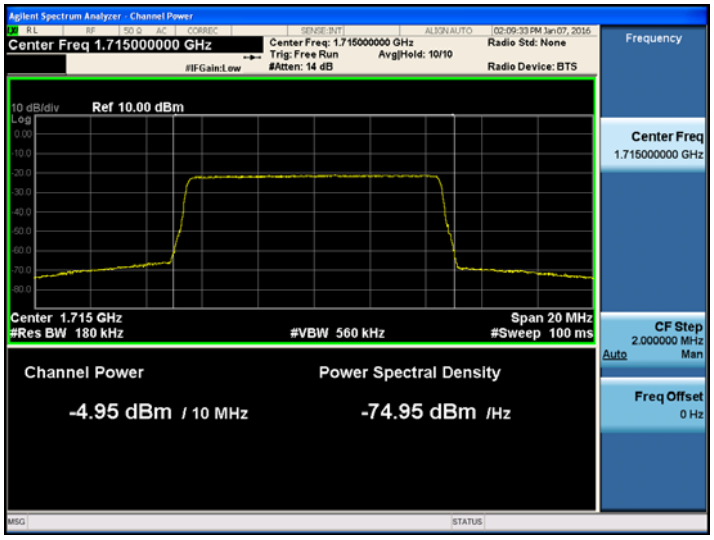
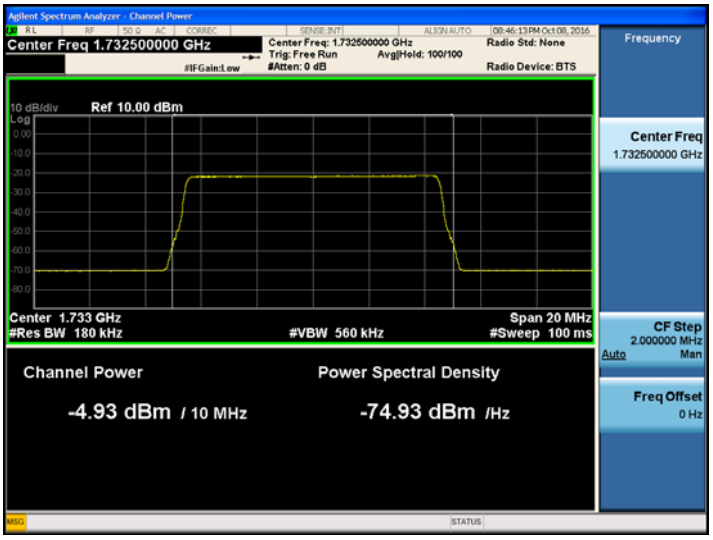


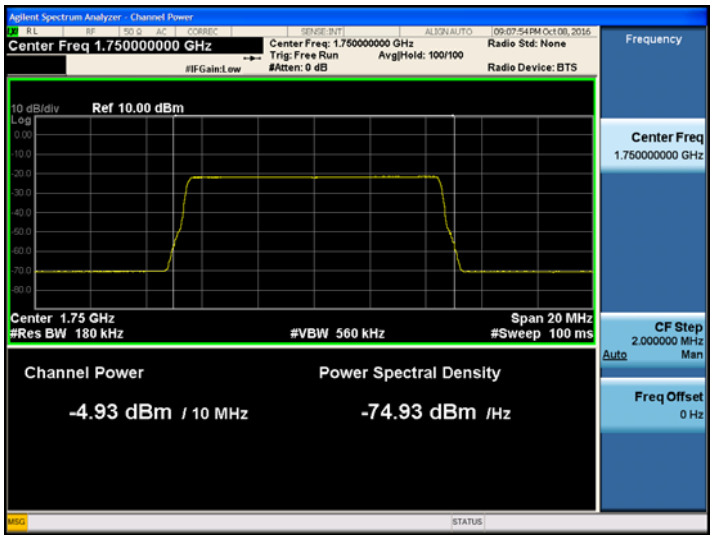
[AWS2100 +3dB above the threshold Uplink LTE 10 MHz Low]



[AWS2100 +3dB above the threshold Uplink LTE 10 MHz Mid]

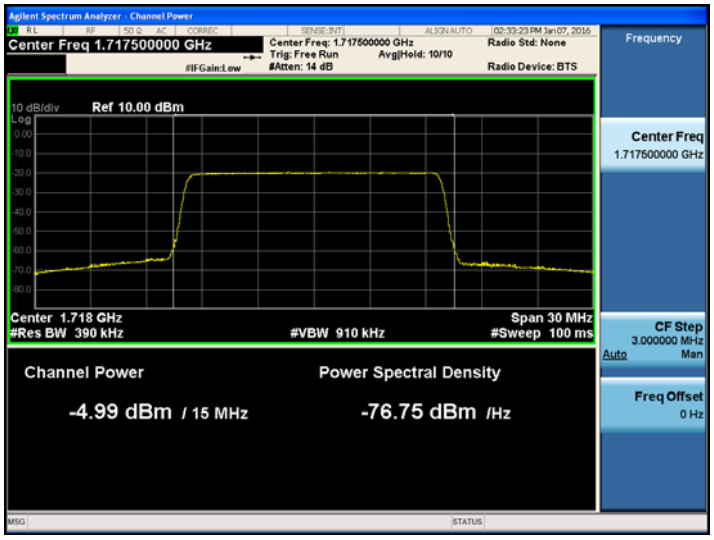


[AWS2100+3dB above the threshold Uplink LTE 10 MHz High]

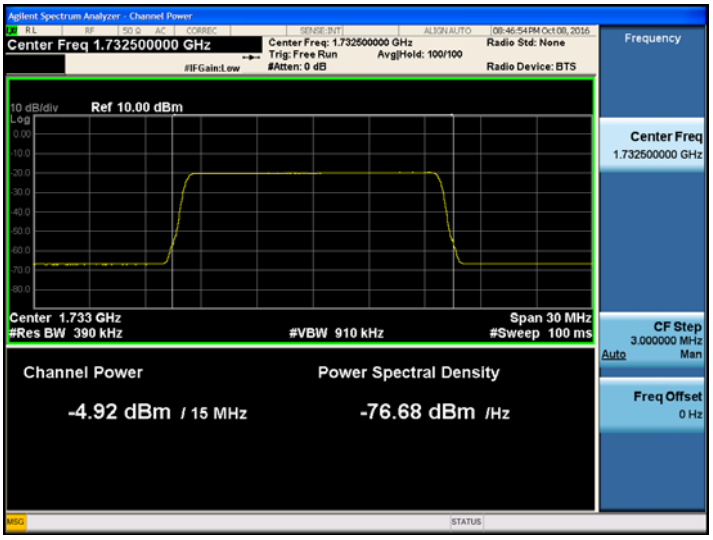


AWS 2100 LTE 15 MHz Band UL

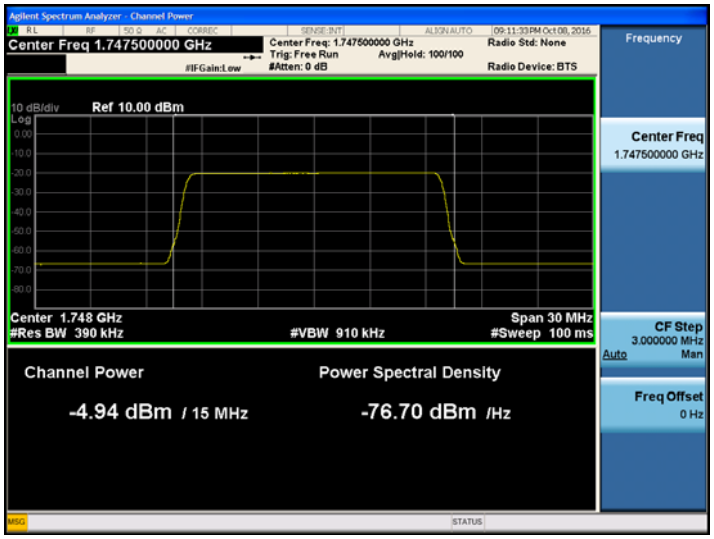
[AWS 2100 AGC threshold Uplink LTE 15 MHz Low]



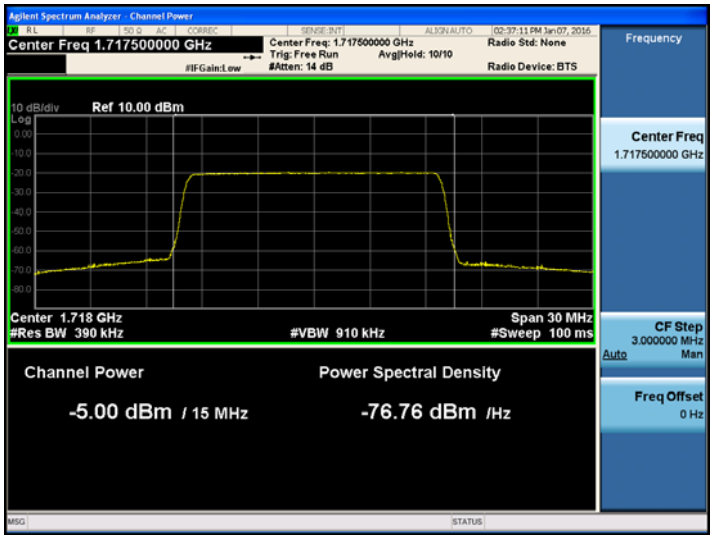
[AWS 2100 AGC threshold Uplink LTE 15 MHz Mid]



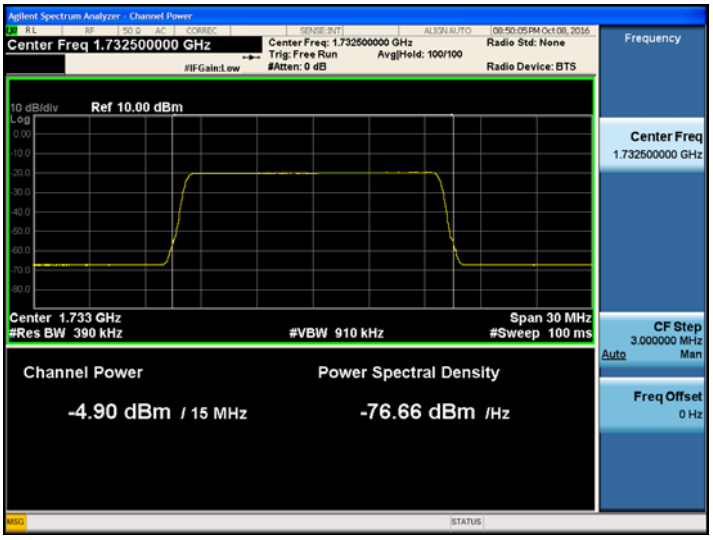
[AWS 2100 AGC threshold Uplink LTE 15 MHz High]



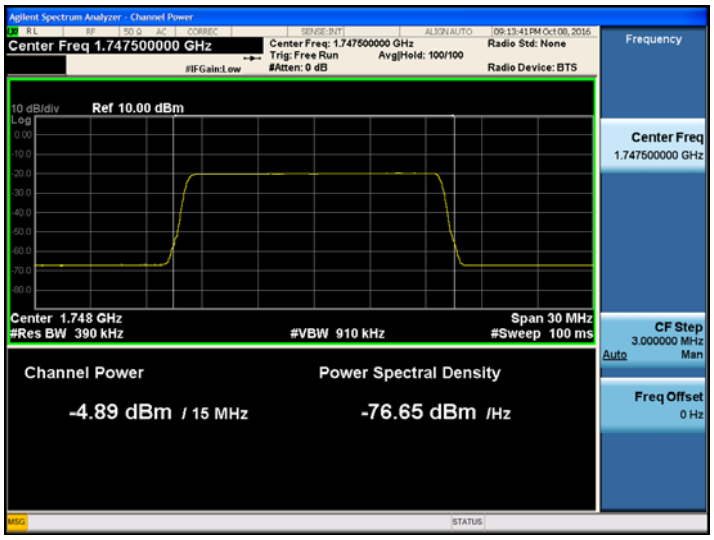
[AWS2100 +3dB above the threshold Uplink LTE 15 MHz Low]



[AWS2100 +3dB above the threshold Uplink LTE 15 MHz Mid]

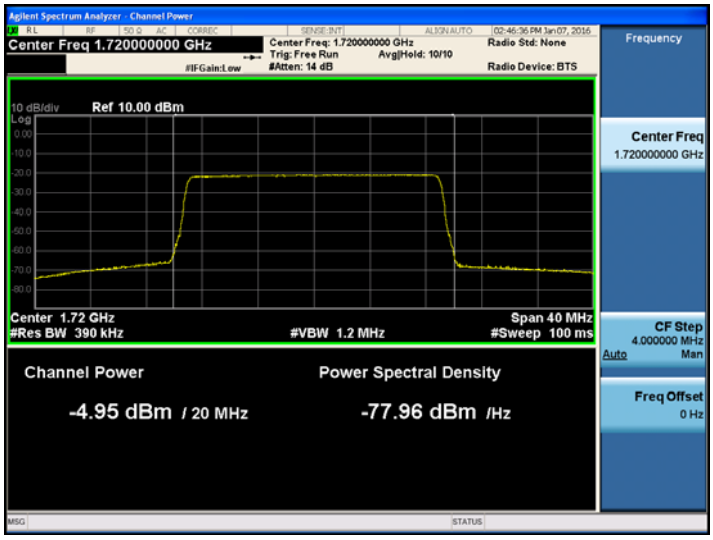


[AWS2100+3dB above the threshold Uplink LTE 15 MHz High]

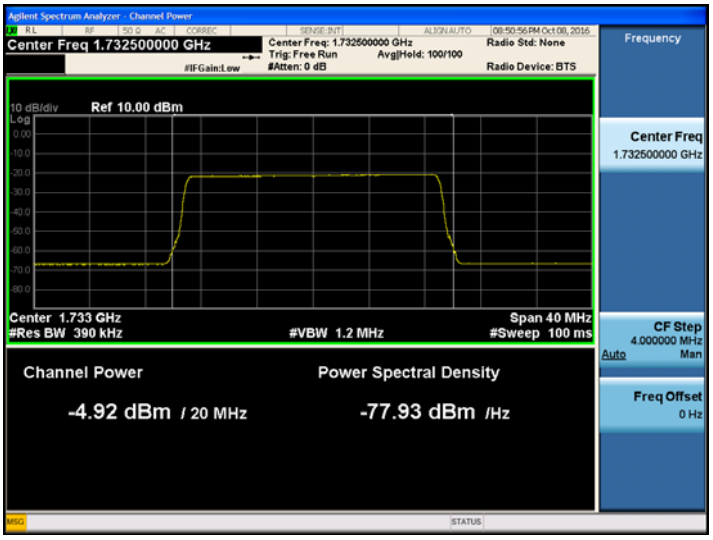


AWS 2100 LTE 20 MHz Band UL

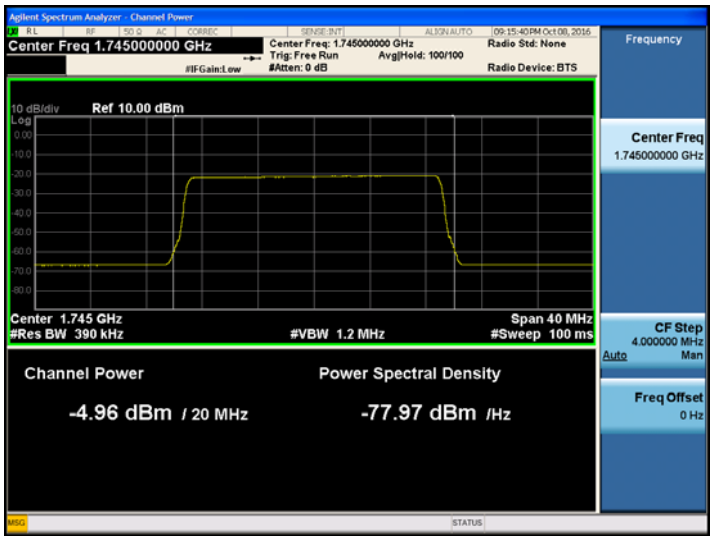
[AWS 2100 AGC threshold Uplink LTE 20 MHz Low]

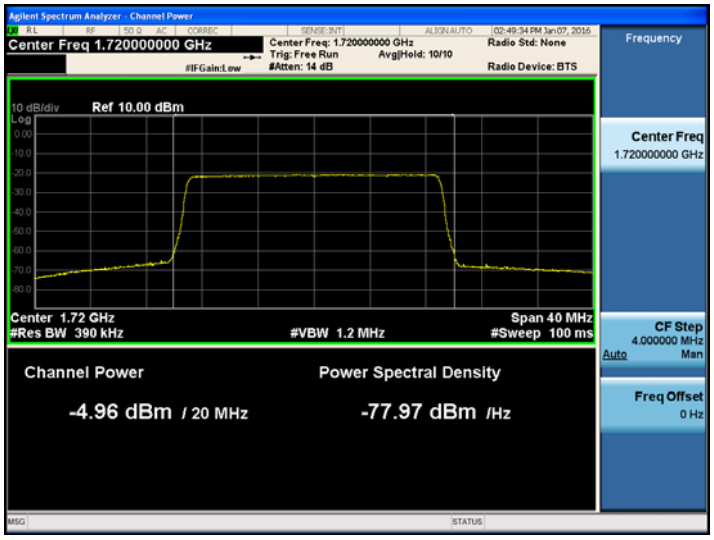
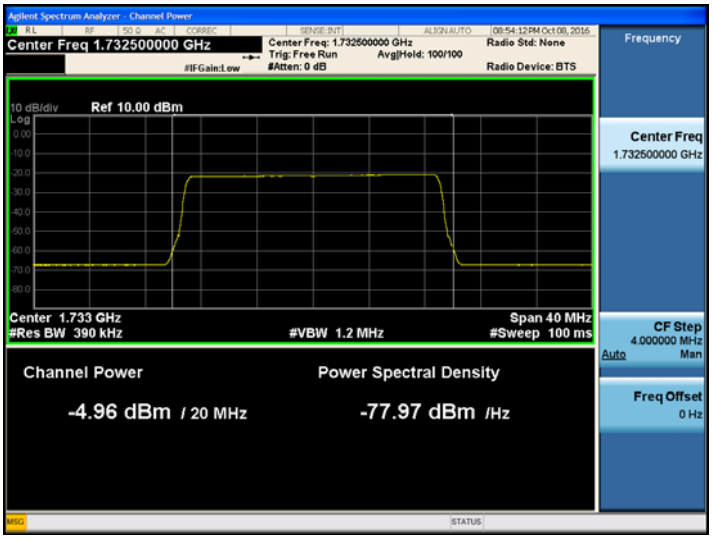
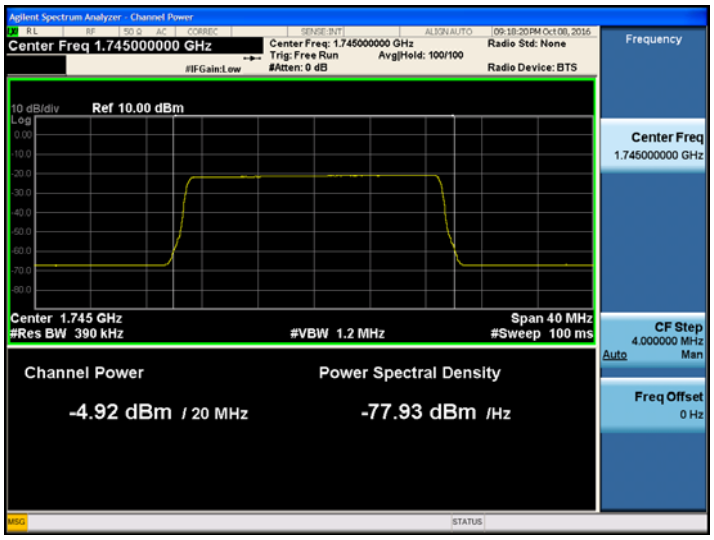


[AWS 2100 AGC threshold Uplink LTE 20 MHz Mid]



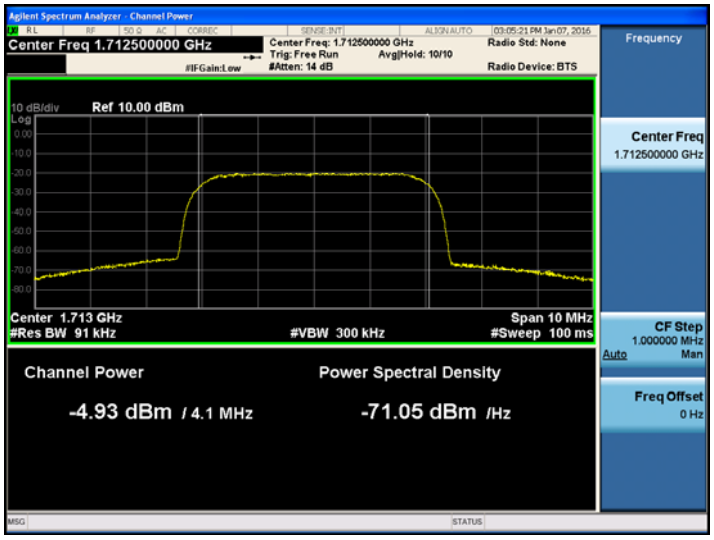
[AWS 2100 AGC threshold Uplink LTE 20 MHz High]



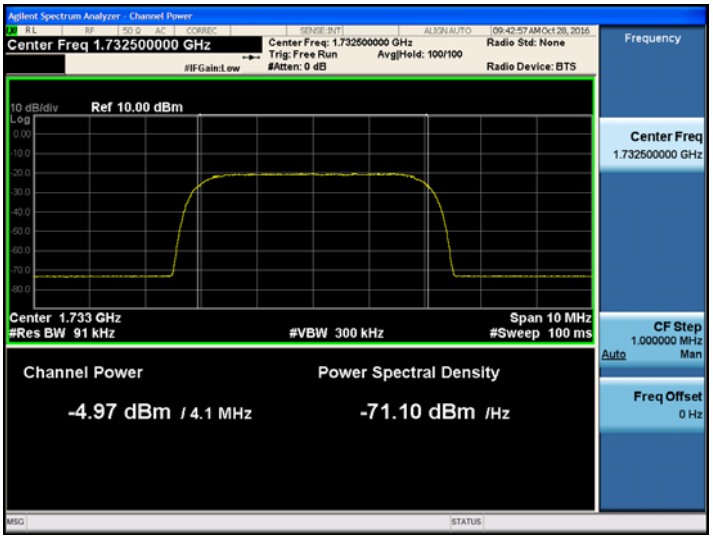
[AWS2100 +3dB above the threshold Uplink LTE 20 MHz Low]	[AWS2100 +3dB above the threshold Uplink LTE 20 MHz Mid]
	
[AWS2100+3dB above the threshold Uplink LTE 20 MHz High]	
	

AWS 2100 UMTS Band UL

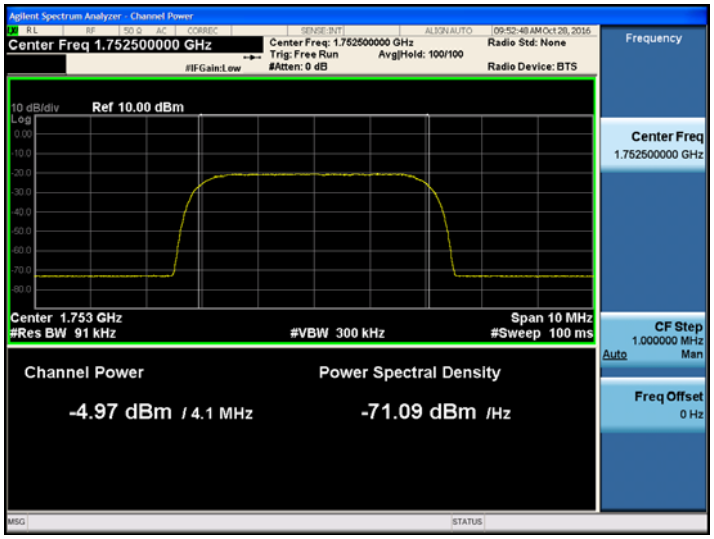
[AWS 2100 AGC threshold Uplink UMTS Low]

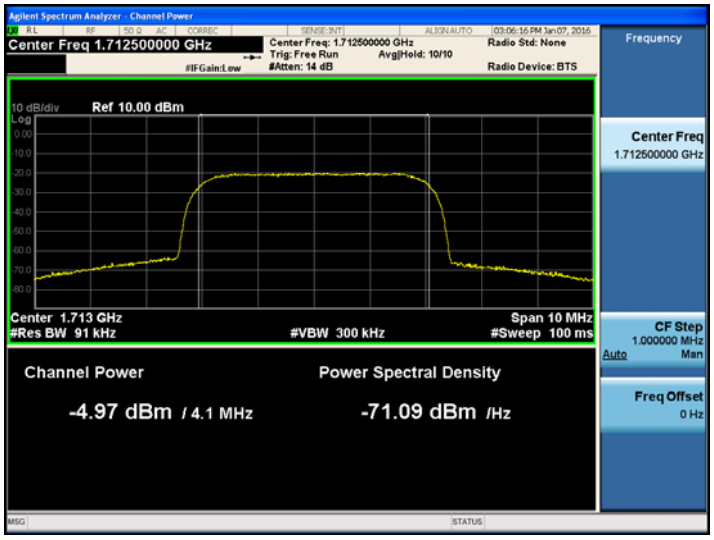
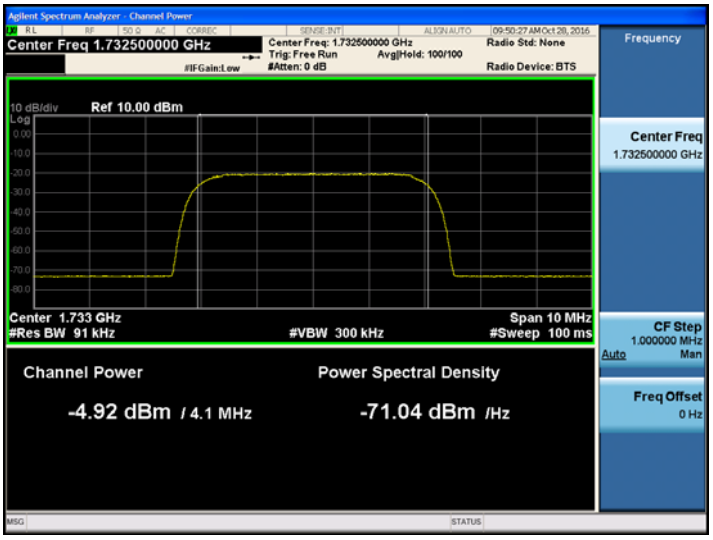
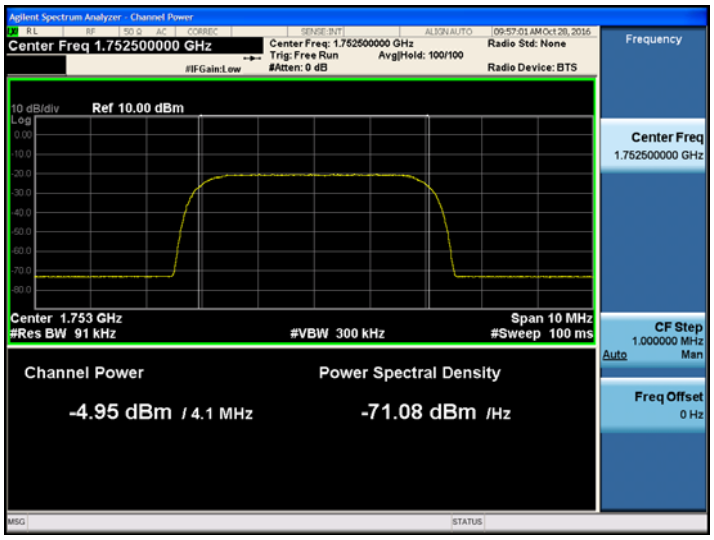


[AWS 2100 AGC threshold Uplink UMTS Mid]



[AWS 2100 AGC threshold Uplink UMTS High]



[AWS2100 +3dB above the threshold Uplink UMTS Low]	[AWS2100 +3dB above the threshold Uplink UMTS Mid]
	
[AWS2100+3dB above the threshold Uplink UMTS High]	
	

7. OCCUPIED BANDWIDTH

FCC Rules

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:

Measurements were in accordance with the test methods section 3.4 of KDB 935210 D05 v01r01 and section 4.2 of KDB 971168 D01 v02r02.

Test is 99% OBW measured and used.

a) Connect a signal generator to the input of the EUT.

b) Configure the signal generator to transmit the AWGN signal.

c) Configure the signal amplitude to be just below the AGC threshold level (see 3.2), but not more than 0.5 dB below.

d) Connect a spectrum analyzer to the output of the EUT using appropriate attenuation.

e) Set the spectrum analyzer center frequency to the center frequency of the operational band under test. The span range of the spectrum analyzer shall be between 2 times to 5 times the emission bandwidth (EBW) or alternatively, the OBW.

f) The nominal RBW shall be in the range of 1 % to 5 % of the anticipated OBW, and the VBW shall be ≥ 3 × RBW.

g) Set the reference level of the instrument as required to preclude the signal from exceeding the maximum spectrum analyzer input mixer level for linear operation. In general, the peak of the spectral envelope must be more than [10 log (OBW / RBW)] below the reference level.

Steps f) and g) may require iteration to enable adjustments within the specified tolerances.

h) The noise floor of the spectrum analyzer at the selected RBW shall be at least 36 dB below the reference level.

i) Set spectrum analyzer detection function to positive peak.

j) Set the trace mode to max hold.

k) Determine the reference value: Allow the trace to stabilize. Set the spectrum analyzer marker to the highest amplitude level of the displayed trace (this is the reference value) and record the associated frequency as f_0.

l) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the −26 dB down amplitude. The 26 dB EBW (alternatively OBW) is the positive frequency difference between the two

markers. If the spectral envelope crosses the −26 dB down amplitude at multiple points, the lowest or highest frequency shall be selected as the frequencies that are the furthest removed from the center frequency at which the spectral envelope crosses the −26 dB down amplitude point.

m) Repeat steps e) to l) with the input signal connected directly to the spectrum analyzer (i.e., input signal measurement).

n) Compare the spectral plot of the input signal (determined from step m) to the output signal (determined from step l) to affirm that they are similar (in passband and rolloff characteristic features and relative spectral locations), and include plot(s) and descriptions in test report.

o) Repeat the procedure [steps e) to n)] with the input signal amplitude set to 3 dB above the AGC threshold.

p) Repeat steps e) to o) with the signal generator set to the narrowband signal.

q) Repeat steps e) to p) for all frequency bands authorized for use by the EUT.

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

Input Signal	Input Level (dBm)	Maximum Amp Gain
AWS 2100	DL : -15 dBm UL : -45 dBm	DL : 45 dB UL : 40 dB

[Uplink Output]

	Channel	**Frequency (MHz)**	**OBW (MHz)**
AWS 2100 Band_ LTE 5 MHz AGC threshold	Low	1712.50	4.5306
	Middle	1732.50	4.5129
	High	1752.50	4.5122
AWS 2100 Band_ LTE 5 MHz +3dBm above the AGC threshold	Low	1712.50	4.5293
	Middle	1732.50	4.5140
	High	1752.50	4.5148

	Channel	Frequency (MHz)	OBW (MHz)
AWS 2100 Band_ LTE 10 MHz AGC threshold	Low	1715.00	9.0084
	Middle	1732.50	8.9917
	High	1750.00	8.9958
AWS 2100 Band_ LTE 10 MHz +3dBm above the AGC threshold	Low	1715.00	9.0103
	Middle	1732.50	9.0004
	High	1750.00	8.9998
AWS 2100 Band_ LTE 15 MHz AGC threshold	Low	1717.50	13.526
	Middle	1732.50	13.527
	High	1747.50	13.521
AWS 2100 Band_ LTE 15 MHz +3dBm above the AGC threshold	Low	1717.50	13.542
	Middle	1732.50	13.531
	High	1747.50	13.529

	Channel	Frequency (MHz)	OBW (MHz)
AWS 2100 Band_ LTE 20 MHz AGC threshold	Low	1720.00	17.963
	Middle	1732.50	18.015
	High	1745.00	18.006
AWS 2100 Band_ LTE 20 MHz +3dBm above the AGC threshold	Low	1720.00	17.970
	Middle	1732.50	18.035
	High	1745.00	18.003
AWS 2100 Band_ UMTS AGC threshold	Low	1712.50	4.1649
	Middle	1732.50	4.1787
	High	1752.50	4.1838
AWS 2100 Band_ UMTS +3dBm above the AGC threshold	Low	1712.50	4.1666
	Middle	1732.50	4.1763
	High	1752.50	4.1748

[Uplink Input]

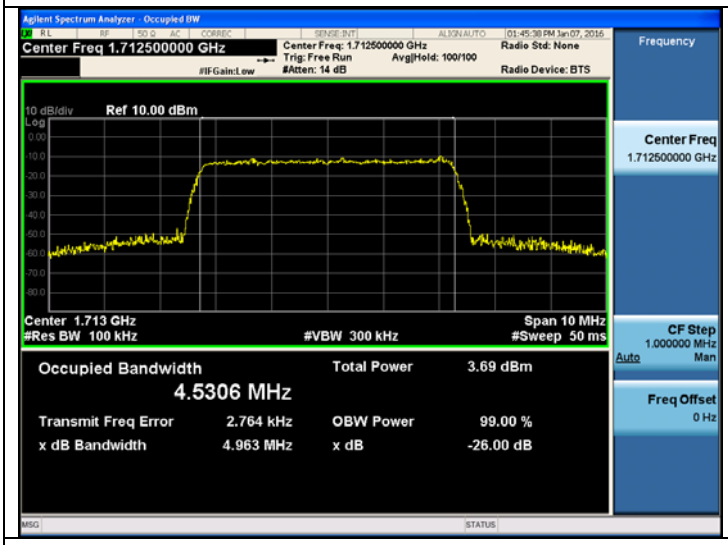
	Channel	Frequency (MHz)	OBW (MHz)
AWS 2100 Band_ LTE 5 MHz AGC threshold	Low	1712.50	4.5471
	Middle	1732.50	4.5131
	High	1752.50	4.5132
AWS 2100 Band_ LTE 10 MHz AGC threshold	Low	1715.00	9.0209
	Middle	1732.50	8.9997
	High	1750.00	9.0015
AWS 2100 Band_ LTE 15 MHz AGC threshold	Low	1717.50	13.525
	Middle	1732.50	13.535
	High	1747.50	13.520
AWS 2100 Band_ LTE 20 MHz AGC threshold	Low	1720.00	17.991
	Middle	1732.50	18.002
	High	1745.00	18.006

	Channel	Frequency (MHz)	OBW (MHz)
AWS 2100 Band_ UMTS AGC threshold	Low	1712.50	4.1791
	Middle	1732.50	4.1774
	High	1752.50	4.1822

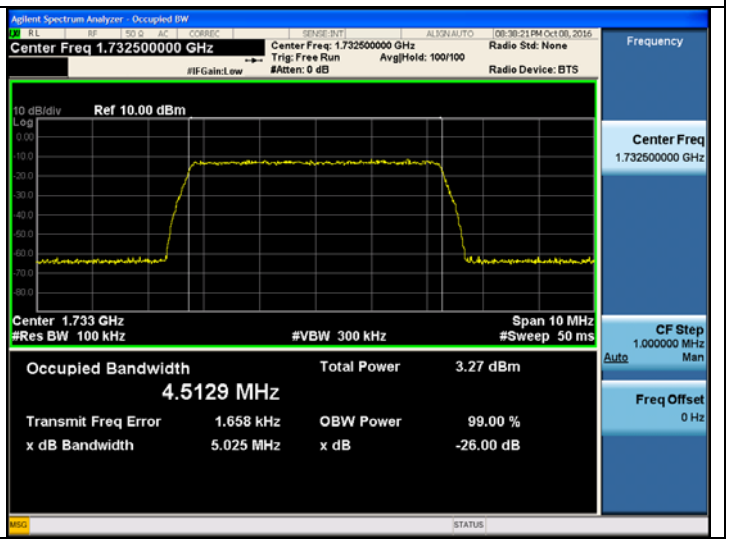
Plots of Occupied Bandwidth

AWS 2100_LTE 5MHz UL_Output

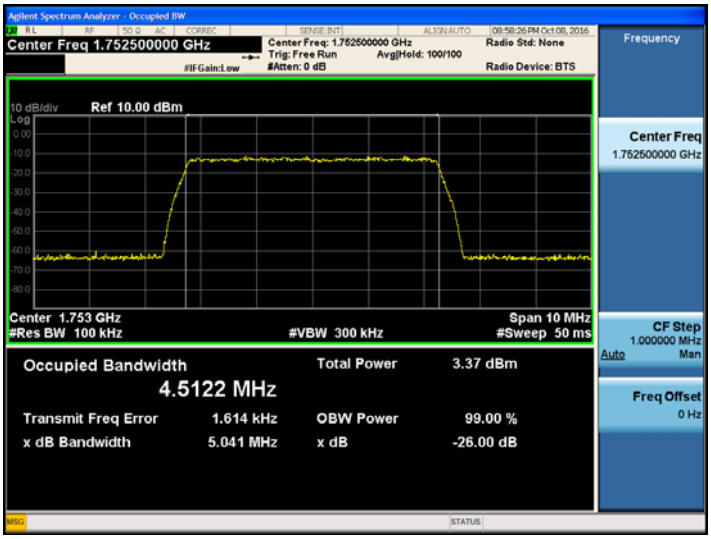
[AWS2100 AGC threshold Uplink Output LTE 5MHz Low]



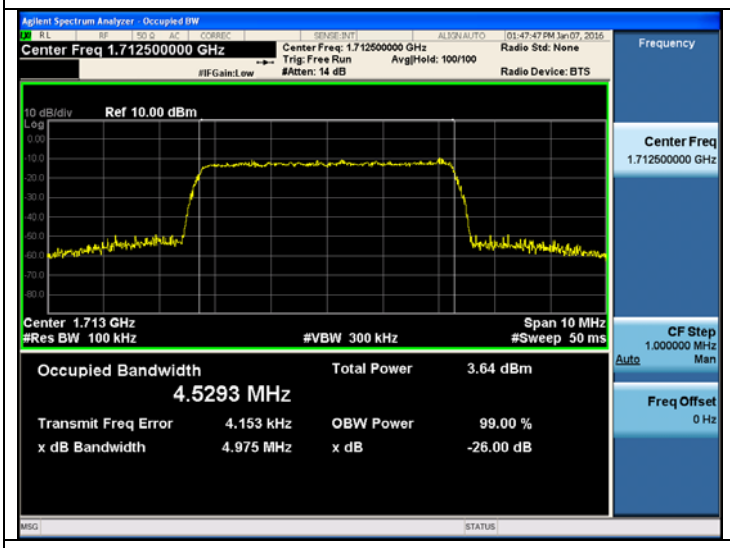
[AWS2100 AGC threshold Uplink Output LTE 5MHz Mid]



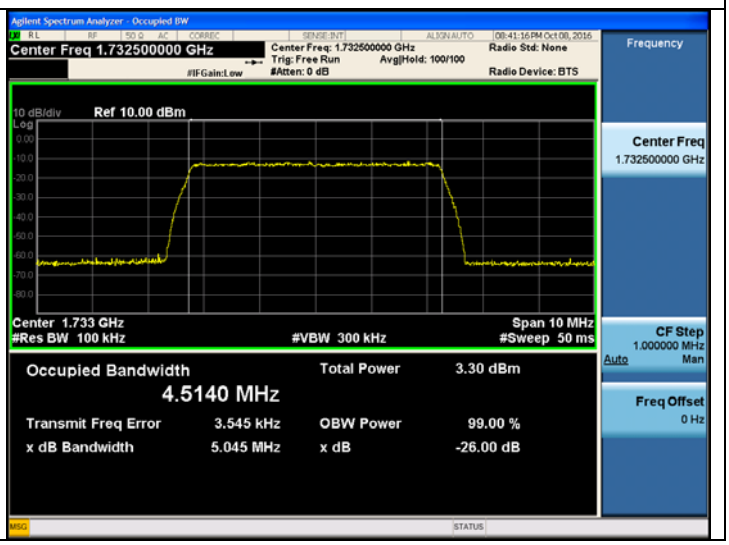
[AWS2100 AGC threshold Uplink Output LTE 5MHz High]



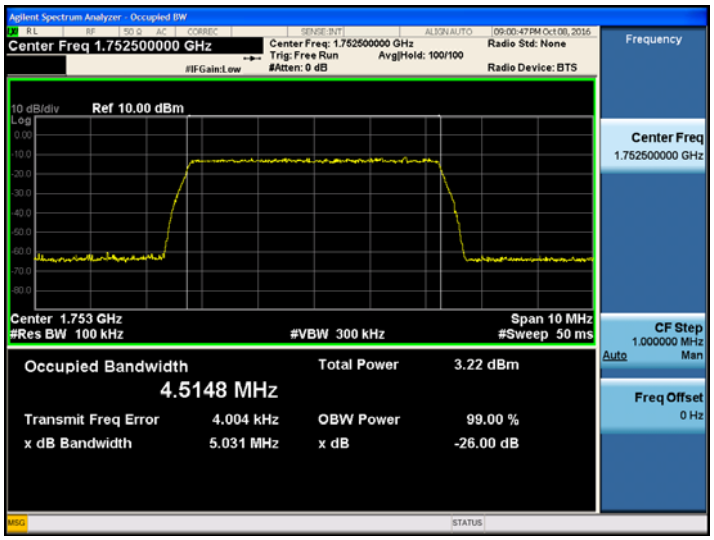
[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 5MHz Low]



[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 5MHz Mid]

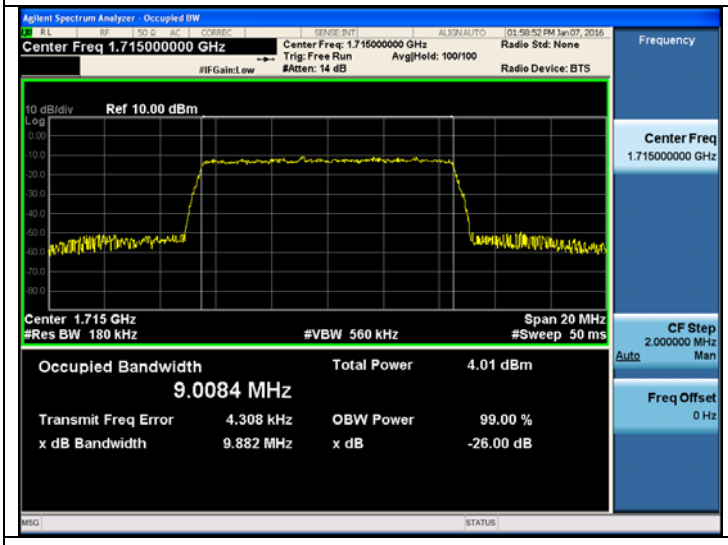


[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 5MHz High]

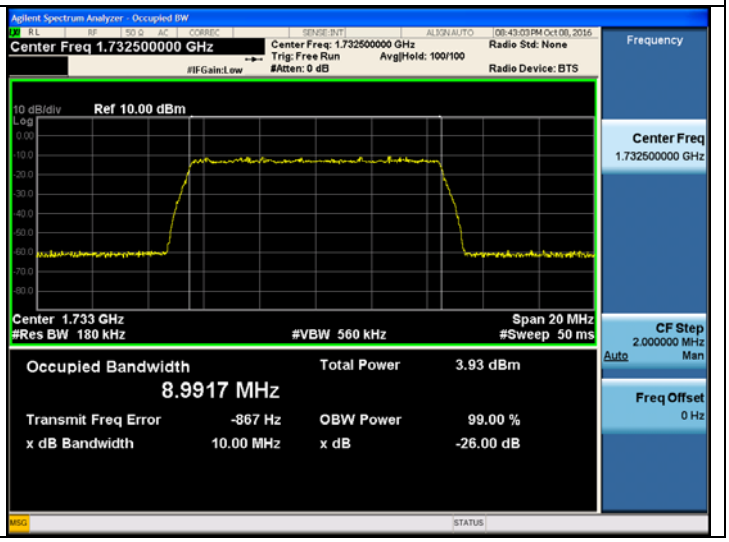


AWS 2100_LTE 10MHz UL_Output

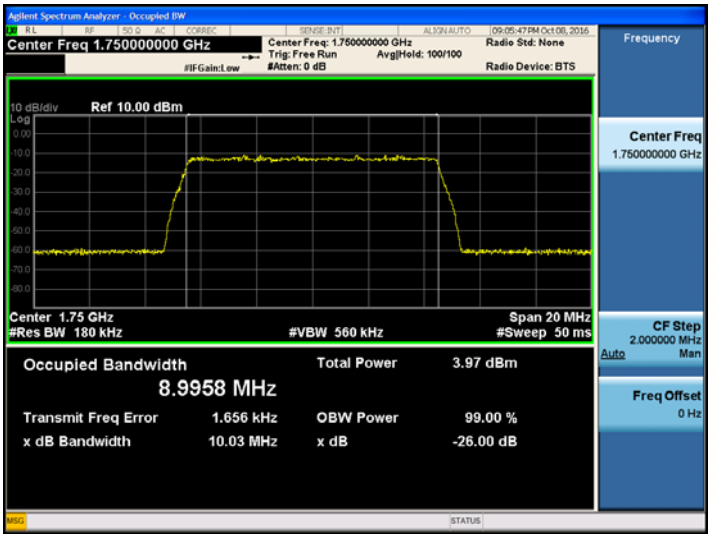
[AWS2100 AGC threshold Uplink Output LTE 10MHz Low]



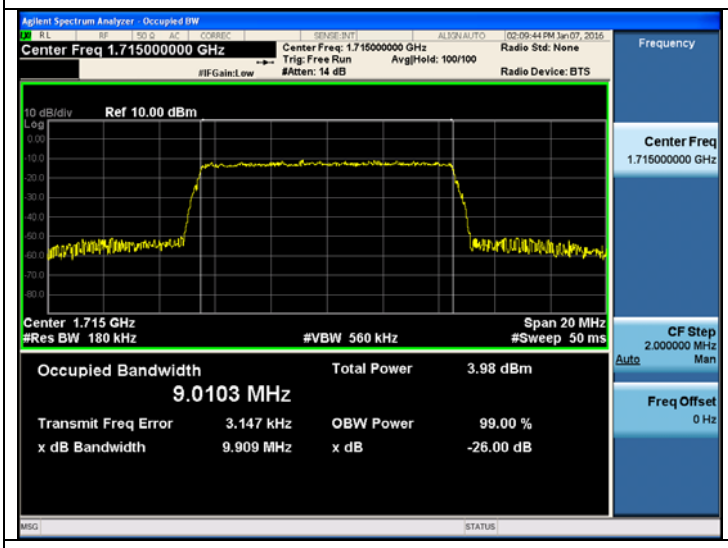
[AWS2100 AGC threshold Uplink Output LTE 10MHz Mid]



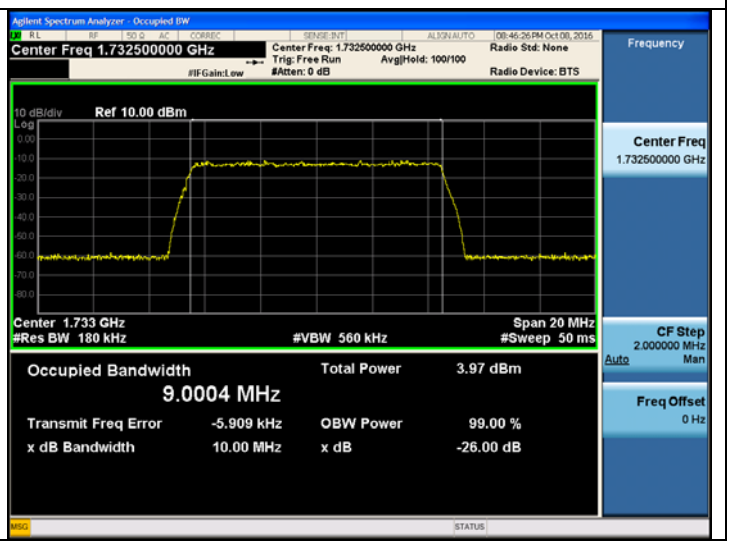
[AWS2100 AGC threshold Uplink Output LTE 10MHz High]



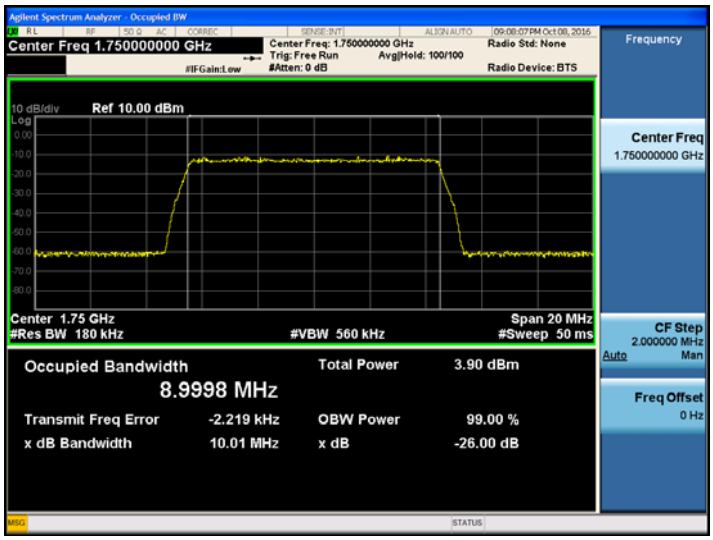
[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 10MHz Low]



[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 10MHz Mid]

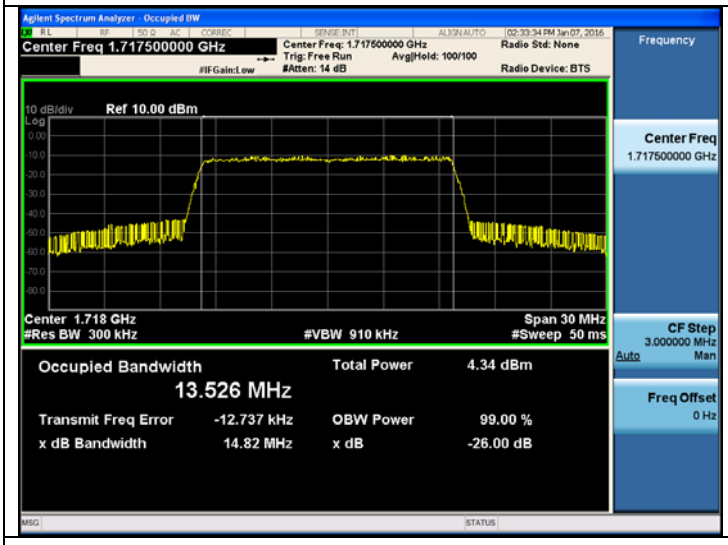


[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 10MHz High]

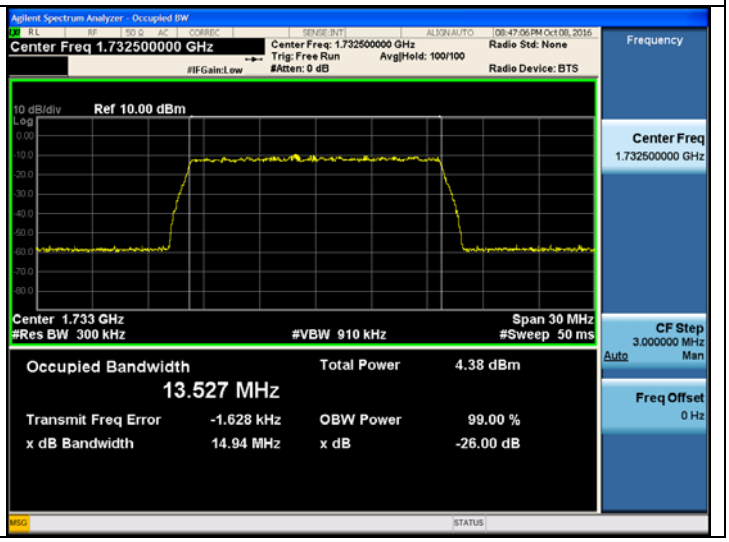


AWS 2100_LTE 15 MHz UL_Output

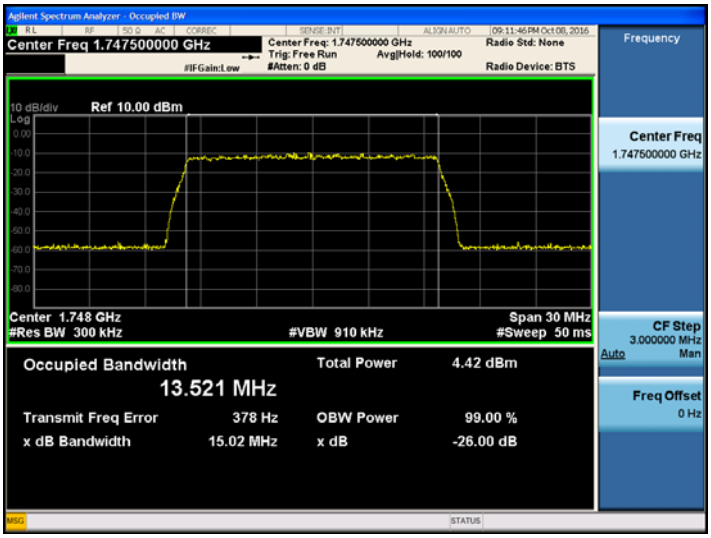
[AWS2100 AGC threshold Uplink Output LTE 15MHz Low]



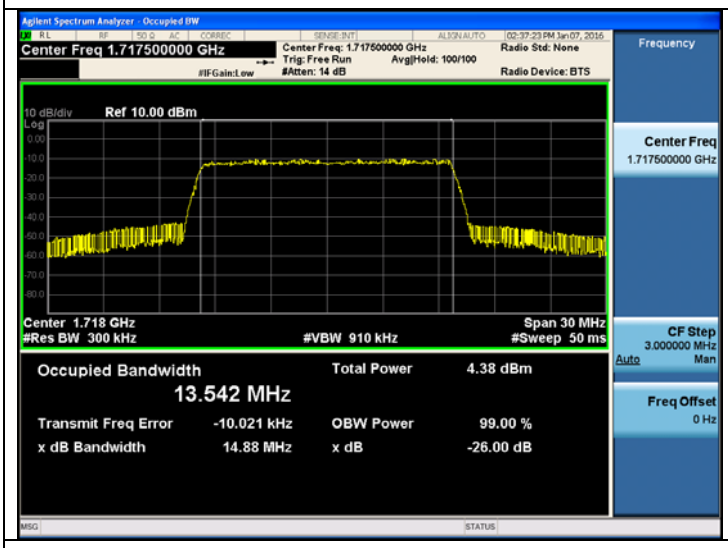
[AWS2100 AGC threshold Uplink Output LTE 15MHz Mid]



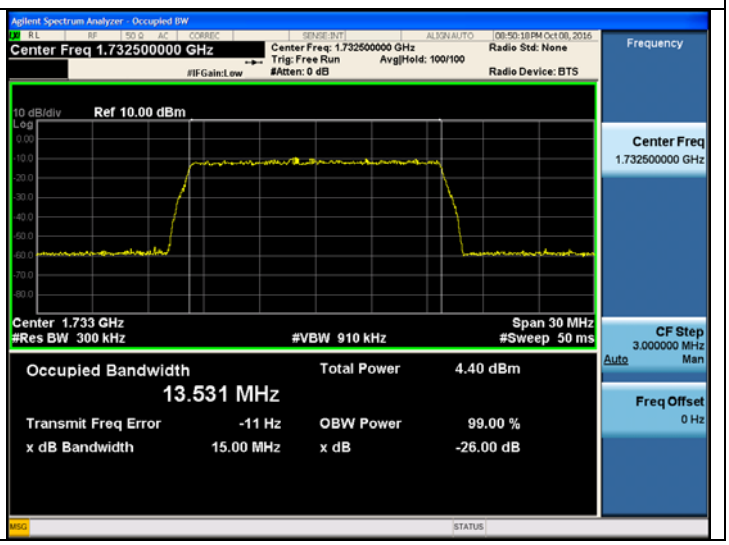
[AWS2100 AGC threshold Uplink Output LTE 15MHz High]



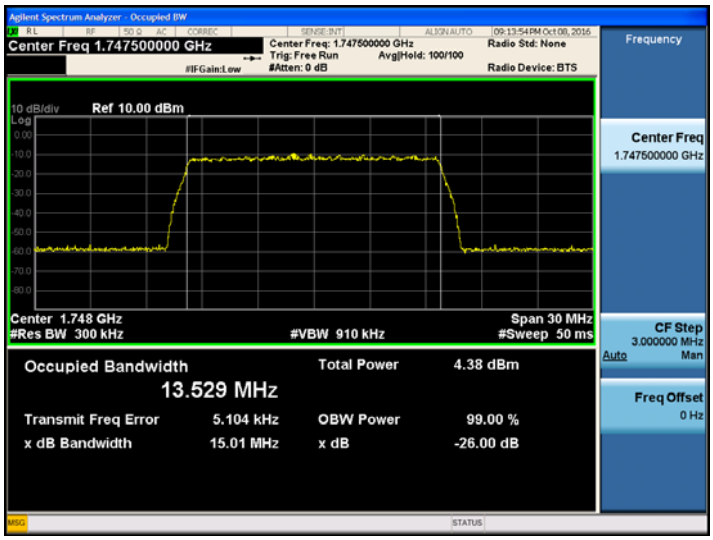
[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 15MHz Low]



[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 15MHz Mid]

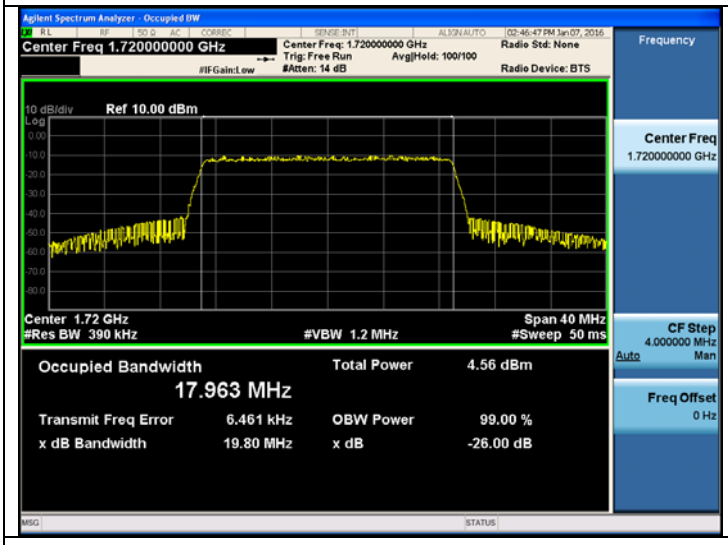


[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 15MHz High]

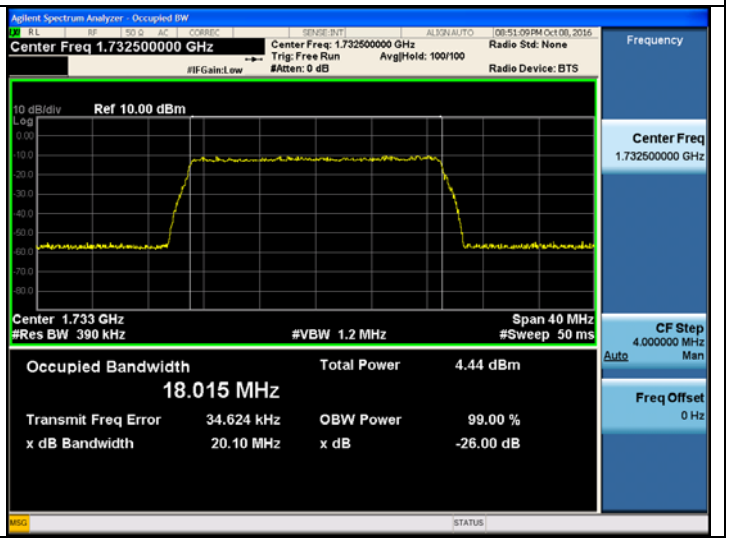


AWS 2100_LTE 20 MHz UL_Output

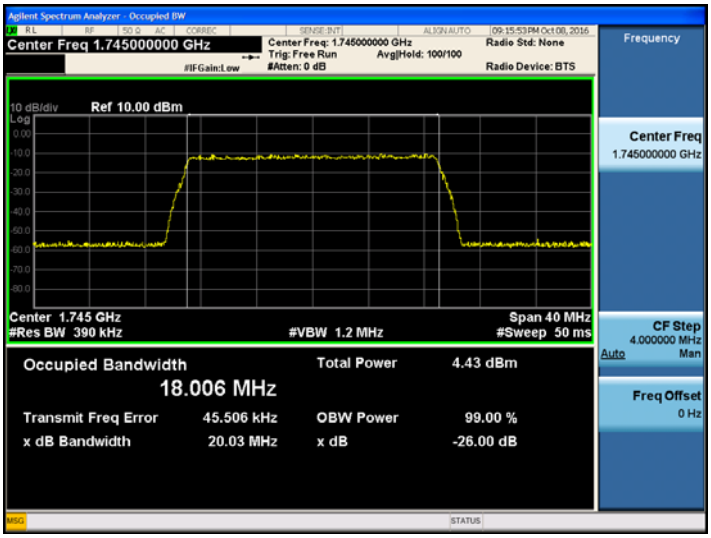
[AWS2100 AGC threshold Uplink Output LTE 20MHz Low]



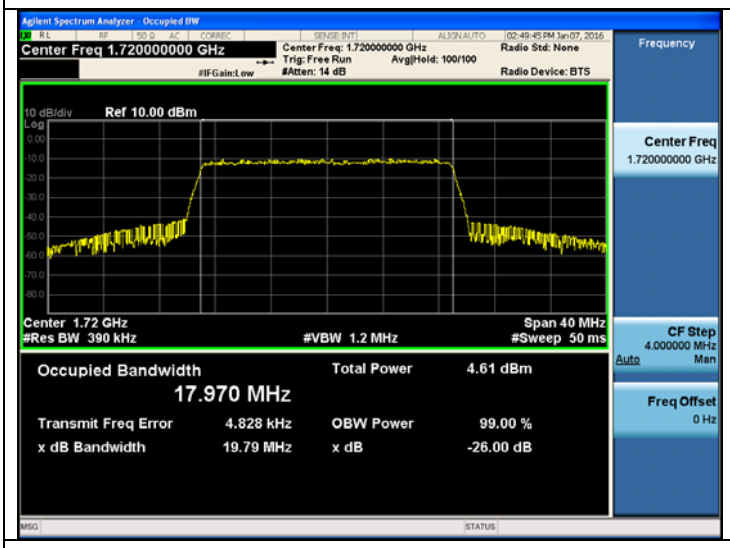
[AWS2100 AGC threshold Uplink Output LTE 20MHz Mid]



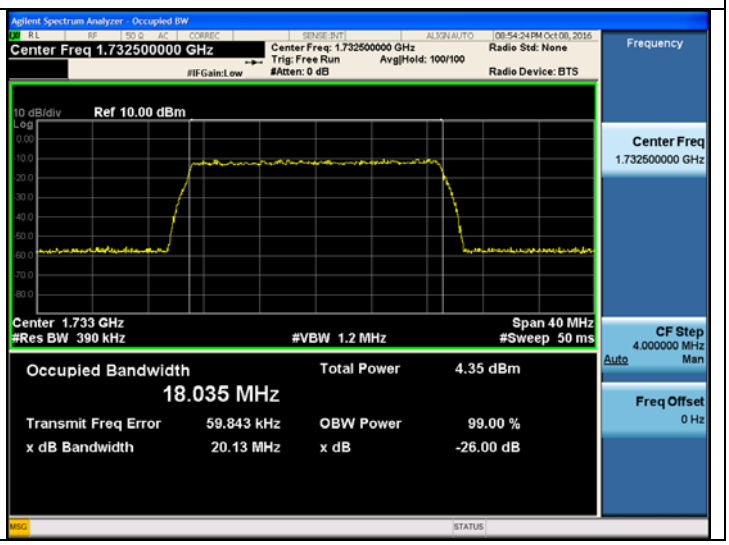
[AWS2100 AGC threshold Uplink Output LTE 20MHz High]



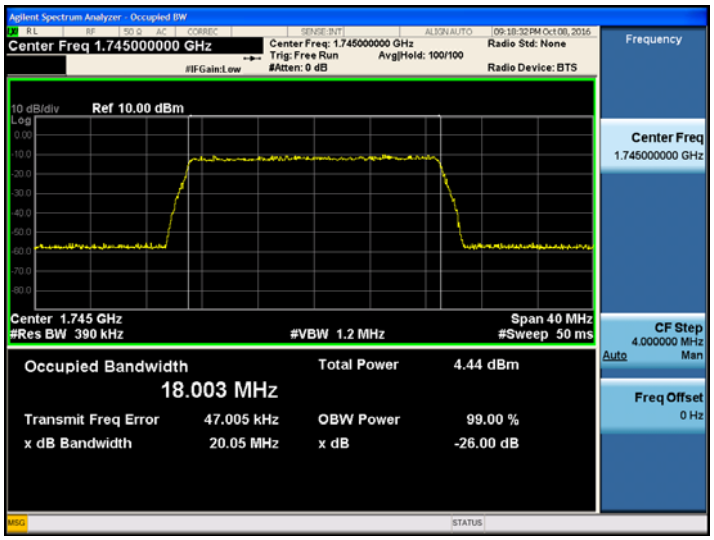
[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 20MHz Low]



[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 20MHz Mid]

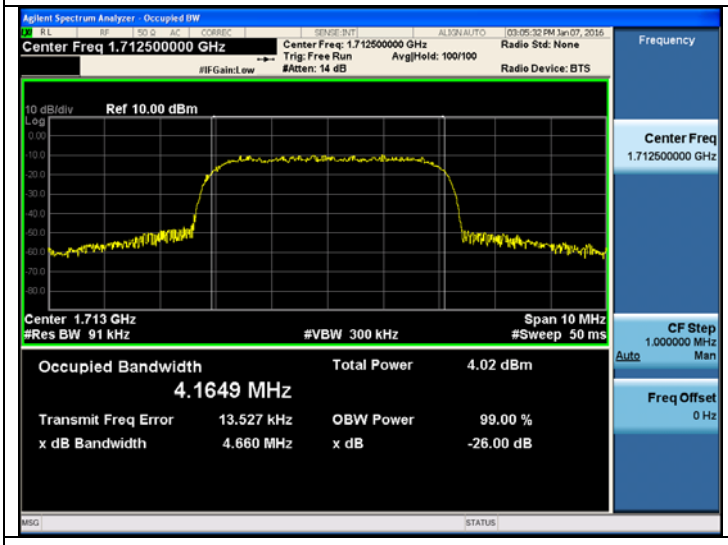


[AWS2100 +3dBm above the AGC threshold Uplink Output LTE 20MHz High]

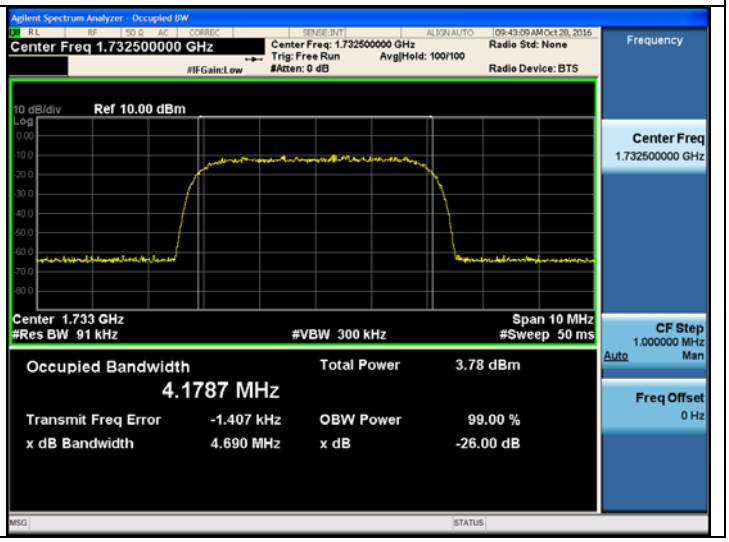


AWS 2100_UMTS UL_Output

[AWS2100 AGC threshold Uplink Output UMTS Low]



[AWS2100 AGC threshold Uplink Output UMTS Mid]



[AWS2100 AGC threshold Uplink Output UMTS High]