

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**  
**INTENTIONAL RADIATOR CERTIFICATION TO**  
**FCC PART 24 SUBPART E and PART 27 SUBPART C & SUBPART L**  
**REQUIREMENT**

OF

**Product Name:** AL9S  
**Marketing Name:** Klic K4 Smartphone  
**Brand Name:** Kalley  
**Model No.:** K4-02 4G  
**Model Difference:** N/A  
**FCC ID:** HFS-K4-024G  
**Report No.:** E2/2015/70011A-01  
**Issue Date:** Aug. 20, 2015  
**FCC Rule Part:** 2 , 24E & 27C & L  
**Prepared for:** Quanta Computer Inc.  
 188, Wen Hwa 2nd Rd., Guishan Dist., Tao Yuan City  
 33377, Taiwan  
**Prepared by:** SGS Taiwan Ltd.  
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 No.2, Keji 1st Rd., Guishan Township, Taoyuan  
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## VERIFICATION OF COMPLIANCE

**Applicant:** Quanta Computer Inc.  
 188, Wen Hwa 2nd Rd., Guishan Dist., Tao Yuan City 33377,  
 Taiwan

**Product Name:** AL9S

**Marketing Name** Klic K4 Smartphone

**Brand Name:** Kalley

**Model No.:** K4-02 4G

**Model Difference:** N/A

**FCC ID:** HFS-K4-024G

**File Number:** E2/2015/70011A-01

**Date of test:** Jul. 14, 2015 ~ Aug. 04, 2015

**Date of EUT Received:** Jul. 14, 2015

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

**Test By:** Jazz Huang **Date:** Aug. 20, 2015

*Jazz Huang / Asst. Supervisor*

**Prepared By:** Allen Tsai **Date:** Aug. 20, 2015

*Allen Tsai / Engineer*

**Approved By:** Jim Chang **Date:** Aug. 20, 2015

*Jim Chang / Asst. Manager*

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## Revision History

Report Number	Revision	Description	Issue Date
E2/2015/70011A-01	Rev.00	Initial creation of document	Aug. 20, 2015

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# 1. GENERAL PRODUCT INFORMATION

## 1.1. Product Description

General:

Product Name:	AL9S	
Marketing Name:	Klic K4 Smartphone	
Brand Name:	Kalley	
Model No.:	K4-02 4G	
Model Difference:	N/A	
Software version:	SA52A.W1527	
Hardware version:	R1.0	
USB Cable	Model No.: K074-0028 Supplier: WELL SHIN ELECTRONIC PRODUCTS CO.,	
Headset	Model No.: KJAG4028AEPCB Supplier: Kingstate Electronics Corp.	
Power Supply:	3.8Vdc from Li-ion rechargeable battery	
	Battery:	Partl No.: E1GU111K2003, Supplier: KALLEY
	Adapter:	Model No.: DSA-5PJM-05 FUS 050100 Supplier: DVE
IMEI:	357264049401632	

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GSM / WCDMA / LTE:

Cellular Phone Standards Frequency Range and Power	Operating Frequency		Rated Power
	WCDMA/HSUPA/HSDPA /HSPA+ Band II	1852.4MHz – 1907.6MHz	24dBm
	LTE-Band 2 (Bandwidth 1.4MHz)	1850.7MHz– 1909.3MHz	23dBm
	LTE-Band 4 (Bandwidth 1.4MHz)	1710.7MHz– 1754.3MHz	23dBm
	LTE-Band 4 (Bandwidth 3MHz)	1711.5MHz – 1753.5MHz	23dBm
	LTE-Band 4 (Bandwidth 5MHz)	1712.5MHz – 1752.5MHz	23dBm
	LTE-Band 4 (Bandwidth 10MHz)	1715MHz – 1750MHz	23dBm
	LTE-Band 4 (Bandwidth 15MHz)	1717.5MHz – 1747.5MHz	23dBm
	LTE-Band 4 (Bandwidth 20MHz)	1720MHz – 1745MHz	23dBm
	LTE-Band 7 (Bandwidth 5MHz)	2502.5MHz – 2567.5MHz	23dBm
	LTE-Band 7 (Bandwidth 10MHz)	2505.0MHz – 2565.0MHz	23dBm
	LTE-Band 7 (Bandwidth 15MHz)	2507.5MHz – 2562.5MHz	23dBm
	LTE-Band 7 (Bandwidth 20MHz)	2510.0MHz – 2560MHz	23dBm

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Type of Emission:	WCDMA Band II	4M16F9W
	HSDPA Band II	4M17F9W
	HSUPA Band II	4M15F9W
	LTE-Band 4 (Bandwidth 1.4MHz) QPSK	1M10G7D
	LTE-Band 4 (Bandwidth 1.4MHz) 16QAM	1M10D7W
	LTE-Band 4 (Bandwidth 3MHz) QPSK	2M72G7D
	LTE-Band 4 (Bandwidth 3MHz) 16QAM	2M71D7W
	LTE-Band 4 (Bandwidth 5MHz) QPSK	4M51G7D
	LTE-Band 4 (Bandwidth 5MHz) 16QAM	4M51D7W
	LTE-Band 4 (Bandwidth 10MHz) QPSK	8M95G7D
	LTE-Band 4 (Bandwidth 10MHz) 16QAM	8M98D7W
	LTE-Band 4 (Bandwidth 15MHz) QPSK	13M5G7D
	LTE-Band 4 (Bandwidth 15MHz) 16QAM	13M4D7W
	LTE-Band 4 (Bandwidth 20MHz) QPSK	17M9G7D
	LTE-Band 4 (Bandwidth 20MHz) 16QAM	17M9D7W
	LTE-Band 7 (Bandwidth 5MHz) QPSK	4M52G7D
	LTE-Band 7 (Bandwidth 5MHz) 16QAM	4M51D7W
	LTE-Band 7 (Bandwidth 10MHz) QPSK	9M00G7D
	LTE-Band 7 (Bandwidth 10MHz) 16QAM	8M97D7W
	LTE-Band 7 (Bandwidth 15MHz) QPSK	13M5G7D
	LTE-Band 7 (Bandwidth 15MHz) 16QAM	13M5D7W
	LTE-Band 7 (Bandwidth 20MHz) QPSK	17M9G7D
LTE-Band 7 (Bandwidth 20MHz) 16QAM	17M9D7W	

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**Max ERP/EIRP Power Measurement Result:**

	<b>dBm</b>		<b>W</b>
WCDMA Band II	<b>26.62</b>	EIRP	0.46
HSDPA Band II	<b>26.44</b>	EIRP	0.44
HSUPA Band II	<b>26.83</b>	EIRP	0.48
LTE-Band 4 (Bandwidth 1.4MHz) QPSK	<b>25.20</b>	EIRP	0.33
LTE-Band 4 (Bandwidth 1.4MHz) 16QAM	<b>25.29</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 3MHz) QPSK	<b>25.11</b>	EIRP	0.32
LTE-Band 4 (Bandwidth 3MHz) 16QAM	<b>25.29</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 5MHz) QPSK	<b>25.35</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 5MHz) 16QAM	<b>25.36</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 10MHz) QPSK	<b>25.26</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 10MHz) 16QAM	<b>25.52</b>	EIRP	0.36
LTE-Band 4 (Bandwidth 15MHz) QPSK	<b>25.05</b>	EIRP	0.32
LTE-Band 4 (Bandwidth 15MHz) 16QAM	<b>25.29</b>	EIRP	0.34
LTE-Band 4 (Bandwidth 20MHz) QPSK	<b>26.12</b>	EIRP	0.41
LTE-Band 4 (Bandwidth 20MHz) 16QAM	<b>25.37</b>	EIRP	0.34
LTE-Band 7 (Bandwidth 5MHz) QPSK	<b>22.71</b>	EIRP	0.19
LTE-Band 7 (Bandwidth 5MHz) 16QAM	<b>22.68</b>	EIRP	0.19
LTE-Band 7 (Bandwidth 10MHz) QPSK	<b>23.36</b>	EIRP	0.22
LTE-Band 7 (Bandwidth 10MHz) 16QAM	<b>23.10</b>	EIRP	0.20
LTE-Band 7 (Bandwidth 15MHz) QPSK	<b>23.19</b>	EIRP	0.21
LTE-Band 7 (Bandwidth 15MHz) 16QAM	<b>23.39</b>	EIRP	0.22
LTE-Band 7 (Bandwidth 20MHz) QPSK	<b>23.42</b>	EIRP	0.22
LTE-Band 7 (Bandwidth 20MHz) 16QAM	<b>23.51</b>	EIRP	0.22

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**1.2. Product Feature of Equipment Under Test**

The equipment under Test (Hereafter Called: EUT) is mobile phone supporting, WCDMA / LTE features, and below is details of information.

Product Feature	
Product Name:	AL9S
Marketing Name:	Klic K4 Smartphone
Brand Name:	Kalley
Model No.:	K4-02 4G
Model Difference:	N/A
FCC ID:	HFS-K4-024G
WCDMA Operating Band(s)	FDD Band II
WCDMA Rel. Version	Release 8
LTE Operating Band(s)	FCC Band 4 / 7
LTE Rel. Version	Release 9 / Category 4

**Note: The above EUT information was declared by manufacturer. Please refer to the specifications or user’s manual for more detailed description.**

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### 1.3. Test Methodology of Applied Standards

FCC 47 CFR Part 2, 24, 27

ANSI / TIA / EIA 603C-C-2004

KDB971168 D01 Power Meas license Digital System v02r01

KDB941225 of the Output power Procedure of (SAR Measurement Procedures for 3G Devices, WCDMA / HSPA) was used for EUT and Base station setting.

TS 151 010-1 is used to set, and measure the output power.

Note:

1. All test items have been performed and record as per the above standards.
2. The composite system is compliance with FCC Subpart B is authorized under the certification procedure.

### 1.4. Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan. (TAF code 0513)

FCC Registration Numbers are: 628985

Canada Registration Number: 4620A-5.

### 1.5. Special Accessories

No special accessories were used during testing.

### 1.6. Equipment Modifications

There were no modifications incorporated into the EUT.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

### 2.3. Test Procedure

#### 2.3.1 Conducted Measurement at Antenna Port

According to measurement procured TIA/EIA 603C, the EUT is placed on a turn table which is 0.8 m above ground plan. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

#### 2.3.2 Radiated Emissions (ERP/EIRP)

According to measurement procured TIA/EIA 603C, The EUT is a placed on as turn table which is 0.8 m above ground plan. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13.

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**2.4. Measurement Results Explanation Example**

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

**Note:**

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Following shows an offset computation example with cable loss 0.5 dB for low band and 0.5 for high band with 10 dB attenuator and splitter attenuation of 3.8 for low band and 3.5 for high band..

Low Band: Offset = RF cable loss (dB)+ attenuation factor(dB) =0.5+10+3.8=14.3(dB)

High Band: Offset = RF cable loss (dB)+ attenuation factor(dB) =0.5+10+3.5=14 (dB)

**2.5. Final Amplifier Voltage and Current Information:**

Test Mode	DC voltage (V)	DC current (mA)
WCDMA B2	3.8	1210
HSUPA B2	3.8	1220
HSDPA B2	3.8	1220

Test Mode	DC voltage (V)	DC current (mA)
LTE Band 4_1.4M QPSK	3.8	940
LTE Band 4_1.4M 16QAM	3.8	950
LTE Band 4_3M QPSK	3.8	930
LTE Band 4_3M 16QAM	3.8	940
LTE Band 4_5M QPSK	3.8	950
LTE Band 4_5M 16QAM	3.8	950
LTE Band 4_10M QPSK	3.8	930
LTE Band 4_10M 16QAM	3.8	940
LTE Band 4_15M QPSK	3.8	950
LTE Band 4_15M 16QAM	3.8	950
LTE Band 4_20M QPSK	3.8	960
LTE Band 4_20M 16QAM	3.8	940

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Test Mode	DC voltage (V)	DC current (mA)
LTE Band 7_5M QPSK	3.8	1070
LTE Band 7_5M 16QAM	3.8	1080
LTE Band 7_10M QPSK	3.8	1070
LTE Band 7_10M 16QAM	3.8	1070
LTE Band 7_15M QPSK	3.8	1090
LTE Band 7_15M 16QAM	3.8	1060
LTE Band 7_20M QPSK	3.8	1070
LTE Band 7_20M 16QAM	3.8	1070

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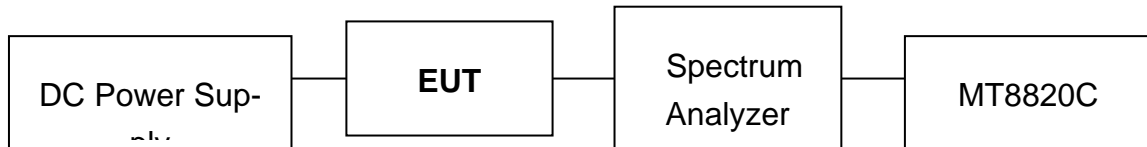
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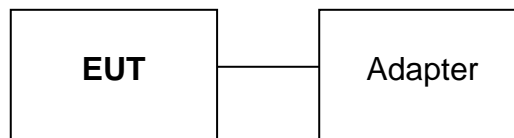
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## 2.6. Configuration of Tested System

**Fig. 2-1 Configuration of Tested System (Fixed Channel-Conducted)**



**Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)**



Remote Side



**Table 2-1 Equipment Used in**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	Anritsu	MT8820C	6200307563	shielded	Un-shielded
2.	DC Power Supply	HP	E3640A	MY40005907	shielded	Un-shielded

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### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§2.1046(a) §24.232(c) §27.50(d)(4) §27.50(h)(2)	EIRP measurement	Compliant
§2.1049(h)	99% & 26dB Occupied Bandwidth	Compliant
§2.1051 §24.238(a) §27.53(h) §27.53(m)(4)(6)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
§2.1053 §24.238(a) §27.53(h) §27.53(m)(4)	Field Strength of Spurious Radiation	Compliant
§24.232(d) §27.50(d)(5)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §24.235 §27.54	Frequency Stability	Compliant

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## 4. DESCRIPTION OF TEST MODES

### 4.1. The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X(E1)Y(E2)Z(H) axis and antenna ports. The worst case was found as listed below. Following channel(s) was (were) selected for the final test as listed below:

BAND	EIRP	RADIATED EMISSION
WCDMA/HSPA Band II	H-plan	H-plan
LTE Band 4	E1-plan	E1-plan
LTE Band 7	H-plan	H-plan

#### WCDMA/HSPA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	9262 to 9538	9262, 9400, 9583	WCDMA/HSPA Band II
FREQUENCY STABILITY	4132 to 4233	4183	WCDMA Band II
OCCUPIED BANDWIDTH	4132 to 4233	4183	WCDMA/HSPA Band II
PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4183, 4233	WCDMA/HSPA Band II
BAND EDGE	4132 to 4233	4132, 4183, 4233	WCDMA Band II
CONDUCTED EMISSION	4132 to 4233	4132, 4183, 4233	WCDMA Band II
RADIATED EMISSION	4132 to 4233	4132, 4183, 4233	HSUPA Band II

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LTE Band 4 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	20000 to 20350	20175	10MHz	QPSK,	Full RB
OCCUPIED BANDWIDTH	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	Full RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	Full RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	Full RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	Full RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	Full RB
PEAK TO AVERAGE RATIO	19957 to 19393	19957, 20175, 19393	1.4MHz	16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	16QAM	Full RB
	19975 to 20375	19975, 20175, 20375	5MHz	16QAM	Full RB
	20000 to 20350	20000, 20175, 20350	10MHz	16QAM	Full RB
	20025 to 20325	20025, 20175, 20325	15MHz	16QAM	Full RB
	20050 to 20300	20050, 20175, 20300	20MHz	16QAM	Full RB

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BAND EDGE	19957 to 19393	19957, 19393	1.4MHz	QPSK,	1 RB/ 0,5 RB Offes Full RB
	19965 to 22385	19965, 22385	3MHz	QPSK,	1 RB/ 0,14 RB Offest Full RB
	19975 to 20375	19975, 20375	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
	20000 to 20350	20000, 20350	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
	20025 to 20325	20025, 20325	15MHz	QPSK,	1 RB/ 0,74 RB Offest Full RB
	20050 to 20300	20050, 20300	20MHz	QPSK,	1 RB/ 0,99 RB Offest Full RB
CONDCUDED EMISSION	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK,	1 RB, 0 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK,	1 RB, 0 RB Offest
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK,	1 RB, 0 RB Offest
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK,	1 RB, 0 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK,	1 RB, 0 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK,	1 RB, 0 RB Offest
RADIATED EMISSION	20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB, 0 RB Offest

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LTE Band 7 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	20850 to 21375	20850, 21100, 21375	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	20800 to 21400	21100	10MHz	QPSK,	Full RB
OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	Full RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	Full RB
	20850 to 21375	20850, 21100, 21375	15MHz	QPSK, 16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	Full RB
PEAK TO AVERAGE RATIO	20775 to 21425	20775, 21100, 21425	5MHz	16QAM	Full RB
	20800 to 21400	20800, 21100, 21400	10MHz	16QAM	Full RB
	20850 to 21375	20850, 21100, 21375	15MHz	16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	16QAM	Full RB
BAND EDGE	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
	20850 to 21375	20850, 21100, 21375	15MHz	QPSK,	1 RB/ 0,74 RB Offest Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK,	1 RB/ 0,99 RB Offest Full RB
CONDCUDED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,	1 RB, 0 RB Offest
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK,	1 RB, 0 RB Offest
	20850 to 21375	20850, 21100, 21375	15MHz	QPSK,	1 RB, 0 RB Offest
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK,	1 RB, 0 RB Offest
RADIATED EMISSION	20850 to 21350	20850, 21100, 21350	20MHz	16QAM,	1 RB, 99 RB Offest

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## 5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.10 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization = +/- 4.62dB
99% Occupied Bandwidth	+/- 5.19 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 0.70 dB
Peak to Average Ratio	+/- 0.70 dB
Frequency Stability vs. Temperature	+/- 5.19 Hz
Frequency Stability vs. Voltage	+/- 5.19 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

### Radiated Spurious Emission:

Measurement uncertainty (Polarization : <b>Vertical</b> )	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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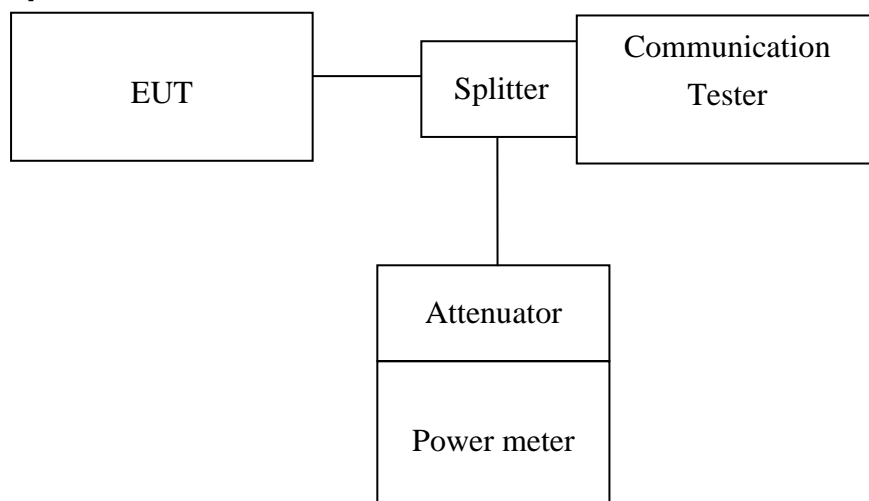
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## 6. RF CONDUCTED OUTPUT POWER MEASUREMENT

### 6.1. Standard Applicable

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

### 6.2. Test Set-up



**Note:** Measurement setup for testing on Antenna connector

### 6.3. Measurement Procedure

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading. TS 151 010-1 is reference to conduct the test measurement of output power.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCDMA/HSPA) was used for EUT and Base station setting. RMC 12.2kps is used for this testing, and KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results

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#### 6.4. Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015
Communication Tester	Anritsu	MT8820C	6201107337	05/27/2015	05/26/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A 195C	RF01	12/19/2014	12/18/2015
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/18/2015	06/17/2016
DC Block	PASTERNAK	PE8210	RF29	12/19/2014	12/18/2015
Splitter	RF-LAMBAD	RFLT2W1G1 8G	RF35	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2015	05/03/2016

#### 6.5. Measurement Result

##### RF Conducted Output Power

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**WCDMA MODE:**

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V8.4.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7). RMC 12.2kps is used for this testing.

**Results:**

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
WCDMA Band II	1852.4	9262	26.71	23.36
	1880.0	9400	26.63	23.22
	1907.6	9538	26.52	23.18
HSDPA Band II	1852.4	9262	25.83	22.18
	1880.0	9400	25.90	22.06
	1907.6	9538	25.75	21.99
HSUPA Band II	1852.4	9262	25.25	21.48
	1880.0	9400	25.23	21.42
	1907.6	9538	25.33	21.37

Note: The results above reflect max power with all up bits.  
 Cable loss offset Low Band: 0.5dB  
 Cable loss offset High Band: 0.5dB

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LTE Result:

LTE Band 4

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 19957	Channel (Mid) 20175	Channel (High) 20393	Channel (Low) 19957	Channel (Mid) 20175	Channel (High) 20393
1.4	1	0	22.36	<b>22.47</b>	22.47	21.11	21.15	21.34
	1	5	22.25	22.39	22.44	21.09	21.34	<b>21.60</b>
	3	2	21.27	21.52	21.46	20.27	20.18	20.40
	6	0	21.36	21.38	21.49	20.35	20.32	20.41

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 19965	Channel (Mid) 20175	Channel (High) 20385	Channel (Low) 19965	Channel (Mid) 20175	Channel (High) 20385
3	1	0	22.47	22.49	<b>22.60</b>	21.68	21.60	<b>21.81</b>
	1	14	22.38	22.59	22.56	21.19	21.59	21.53
	8	4	21.30	21.40	21.49	20.36	20.74	20.66
	15	0	21.46	21.35	21.56	20.25	20.51	20.61

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 19975	Channel (Mid) 20175	Channel (High) 20375	Channel (Low) 19975	Channel (Mid) 20175	Channel (High) 20375
5	1	0	22.48	22.50	22.55	20.95	21.27	21.18
	1	24	22.29	22.52	<b>22.62</b>	21.26	21.33	<b>21.57</b>
	12	6	21.38	21.55	21.60	20.41	20.44	20.62
	25	0	21.34	21.56	21.53	20.51	20.56	20.55

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LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20000	Channel (Mid) 20175	Channel (High) 20350	Channel (Low) 20000	Channel (Mid) 20175	Channel (High) 20350
10	1	0	22.56	22.66	22.56	21.20	<b>21.82</b>	21.78
	1	49	22.53	22.48	<b>22.69</b>	21.41	21.41	21.36
	25	12	21.57	21.62	21.67	20.60	20.78	20.85
	50	0	21.57	21.70	21.74	20.66	20.69	20.87

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20025	Channel (Mid) 20175	Channel (High) 20325	Channel (Low) 20025	Channel (Mid) 20175	Channel (High) 20325
15	1	0	22.62	22.65	22.66	21.33	<b>21.63</b>	21.57
	1	74	22.65	22.53	<b>22.69</b>	21.35	21.55	21.50
	36	19	21.56	21.74	21.68	20.63	20.84	20.72
	75	0	21.66	21.71	21.82	20.68	20.75	20.88

LTE Band 4_Uplink frequency band : 1710 to 1755 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20050	Channel (Mid) 20175	Channel (High) 20300	Channel (Low) 20050	Channel (Mid) 20175	Channel (High) 20300
20	1	0	22.68	22.69	<b>22.71</b>	21.43	21.28	21.53
	1	99	22.54	22.61	22.58	21.48	21.80	<b>21.90</b>
	50	25	21.67	21.78	21.79	20.77	20.72	20.85
	100	0	21.69	21.73	21.81	20.85	20.77	20.89

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**LTE Band 7**

LTE Band 7_Uplink frequency band : 2500 to 2570 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20775	Channel (Mid) 21100	Channel (High) 21425	Channel (Low) 20775	Channel (Mid) 21100	Channel (High) 21425
5	1	0	22.02	22.81	22.35	20.67	21.88	21.01
	1	24	22.45	<b>22.88</b>	22.66	21.02	<b>21.99</b>	21.20
	12	6	20.96	21.97	21.42	19.99	20.96	20.38
	25	0	20.89	21.97	21.40	20.04	20.95	20.44

LTE Band 7_Uplink frequency band : 2500 to 2570 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20800	Channel (Mid) 21100	Channel (High) 21400	Channel (Low) 20800	Channel (Mid) 21100	Channel (High) 21400
10	1	0	21.82	22.85	22.38	20.73	21.84	21.26
	1	49	22.03	<b>22.87</b>	22.34	20.97	<b>21.96</b>	21.18
	25	12	20.96	21.94	21.41	20.12	20.99	20.52
	50	0	20.87	21.91	21.29	20.08	20.97	20.42

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LTE Band 7_Uplink frequency band : 2500 to 2570 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20825	Channel (Mid) 21100	Channel (High) 21375	Channel (Low) 20825	Channel (Mid) 21100	Channel (High) 21375
15	1	0	22.04	22.73	22.31	21.00	<b>21.97</b>	21.67
	1	74	22.24	<b>22.85</b>	22.76	21.82	21.97	21.31
	36	19	21.14	21.96	21.47	20.11	21.00	20.46
	75	0	21.14	21.92	21.52	20.19	20.91	20.52

LTE Band 7_Uplink frequency band : 2500 to 2570 MHz								
BW (MHz)	RB Size	RB Offset	Conducted power (dBm)					
			QPSK			16QAM		
			Channel (Low) 20850	Channel (Mid) 21100	Channel (High) 21350	Channel (Low) 20850	Channel (Mid) 21100	Channel (High) 21350
20	1	0	21.88	22.83	22.44	20.27	21.96	21.22
	1	99	22.42	<b>22.90</b>	22.41	21.08	<b>21.97</b>	21.45
	50	25	21.12	21.97	21.45	20.14	20.92	20.49
	100	0	21.11	21.98	21.44	20.08	20.94	20.55

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**HSDPA Release 6 MODE:**

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing.

**HSDPA SUB-TEST Setting**

Table C.10.1.4:  $\beta$  values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{HS}$ (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

**Note: The recommended HSDPA MPRs are implemented as per following sub-tests.**

**Results:**

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Lim- itation (dBm)	Comments
		9262	9400	9538		
HSDPA (B2)	1	23.53	23.11	23.04	20.3dBm – 25.7dBm	Pass
	2	23.24	23.08	23.03	20.3dBm – 25.7dBm	Pass
	3	23.05	22.66	22.51	19.8dBm – 25.7dBm	Pass
	4	23.12	22.67	22.63	19.8dBm – 25.7dBm	Pass

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**DC-HSDPA Release 8 MODE:**

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

**Table E.5.0: Levels for HSDPA connection setup**

Parameter During Connection setup	Unit	Value
P-CPICH $E_c/I_{or}$	dB	-10
P-CCPCH and SCH $E_c/I_{or}$	dB	-12
PICH $E_c/I_{or}$	dB	-15
HS-PDSCH	dB	off
HS-SCCH 1	dB	off
DPCH $E_c/I_{or}$	dB	-5
OCNS $E_c/I_{or}$	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

**Table C.8.1.12: Fixed Reference Channel H-Set 12**

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload ( $N_{INF}$ )	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
<p>Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.</p> <p>Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.</p>		

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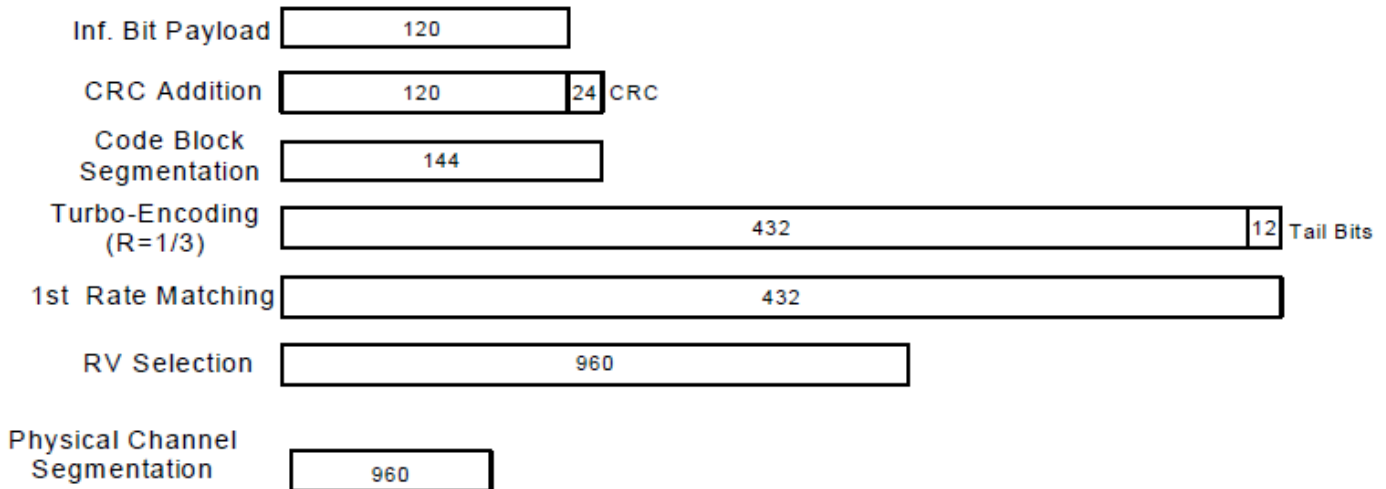


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	$\beta_c$	2/15	12/15	15/15	15/15
	$\beta_d$	15/15	15/15	8/15	4/15
	$\beta_d$ (SF)	64			
	$\beta_c/\beta_d$	2/15	12/15	15/8	15/4
	$\beta_{hs}$	4/15	24/15	30/15	30/15
MPR	0	0	0.5	0.5	
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	$A_{hs} = \beta_{hs} / \beta_c$	30/15			

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**Results:**

**DC-HSDPA\_ conducted power table:**

Band	CH	Max. Rated Avg. Power + Max. Tolerance (dBm)	Rel99 AV(dBm)	DC-HSDPA mode AV(dBm)			
				SUB-1	SUB-2	SUB-3	SUB-4
WCDMA Band II	9262	23.5	23.36	23.26	21.27	21.21	21.24
	9400	23.5	23.22	23.09	21.22	21.07	21.19
	9538	23.5	23.18	23.00	21.10	21.02	21.11

**Note:**

The conducted power tables reveal HSDPA higher than DC-HSDPA, hence HSDPA mode was selected for emission test.

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**HSPA (HSDPA & HSUPA) Release 6 MODE**

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing

**HSPA SUB-TEST Setting**

Table C.11.1.3:  $\beta$  values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{HS}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$ (SF)	$\beta_{ed}$ (Code s)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

**Note: The recommended HSUPA MPRs are implemented as per following sub-tests.**

**Results:**

Mode	Sub-test	Avg. Power (dBm)			Power Class 3 Limitation (dBm)	Comments
		9262	9400	9538		
HSUPA(B2)	1	23.28	23.20	23.12	18.8dBm – 25.7dBm	Pass
	2	21.33	21.27	21.16	16.8dBm – 25.7dBm	Pass
	3	22.34	22.22	22.20	17.8dBm – 25.7dBm	Pass
	4	21.46	21.32	21.20	16.8dBm – 25.7dBm	Pass
	5	23.17	23.06	23.03	18.8dBm – 25.7dBm	Pass

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## WCDMA/HSDPA/HSUPA band II, V

The EUT output power was controlled by simulator. Set Communication Tester CMU200 function key "UE Power Control" and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm. Then record the read (see page 15 for measurement data) . The min. power was measures by a function key "minimum power" then record the read. It is -52.3dBm. The power variation can be 0.1dB step by setting.

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## 7. EFFECTIVE RADIATED POWER AND EQUIVALENT ISOTROPIC RADIATED POWER MEASUREMENT

### 7.1. Standard Applicable

According to FCC §2.1046

FCC 24.232(b) Mobile and portable stations are limited to 2 W EIRP.

FCC 27.50(d)(4) Fixed, mobile, and portable (hand-held) stations are limited to 1W EIRP.

FCC 27, 50(h)(2) Mobile and other user stations. Mobile stations are limited to 2 W EIRP

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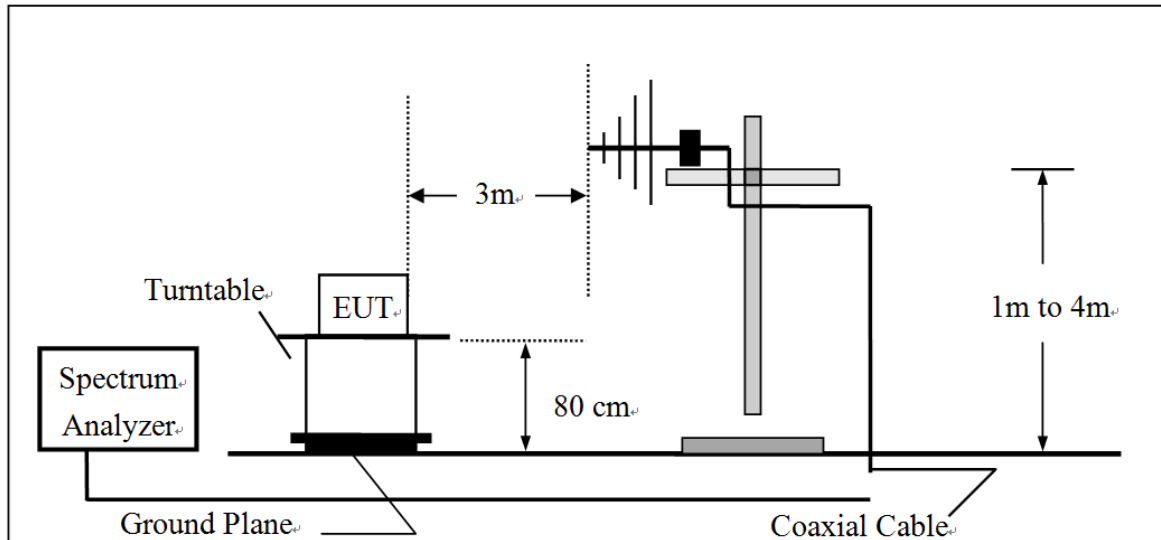
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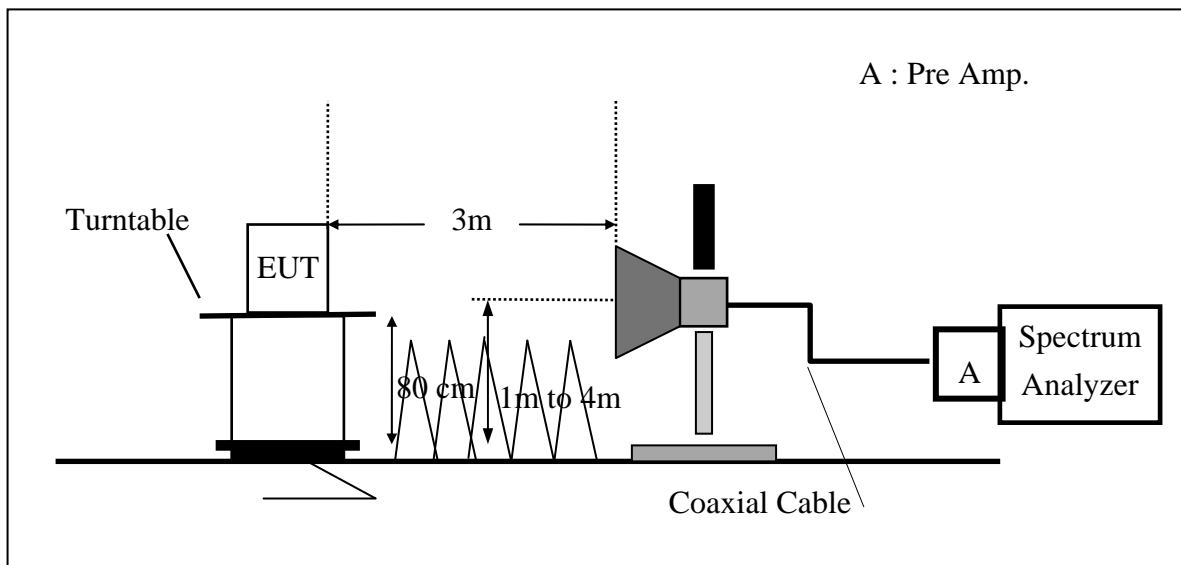
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## 7.2. Test SET-UP

### (A) Radiated Power Test Set-Up, Frequency Below 1000MHz



### (B) Radiated Power Test Set-UP Frequency Over 1 GHz

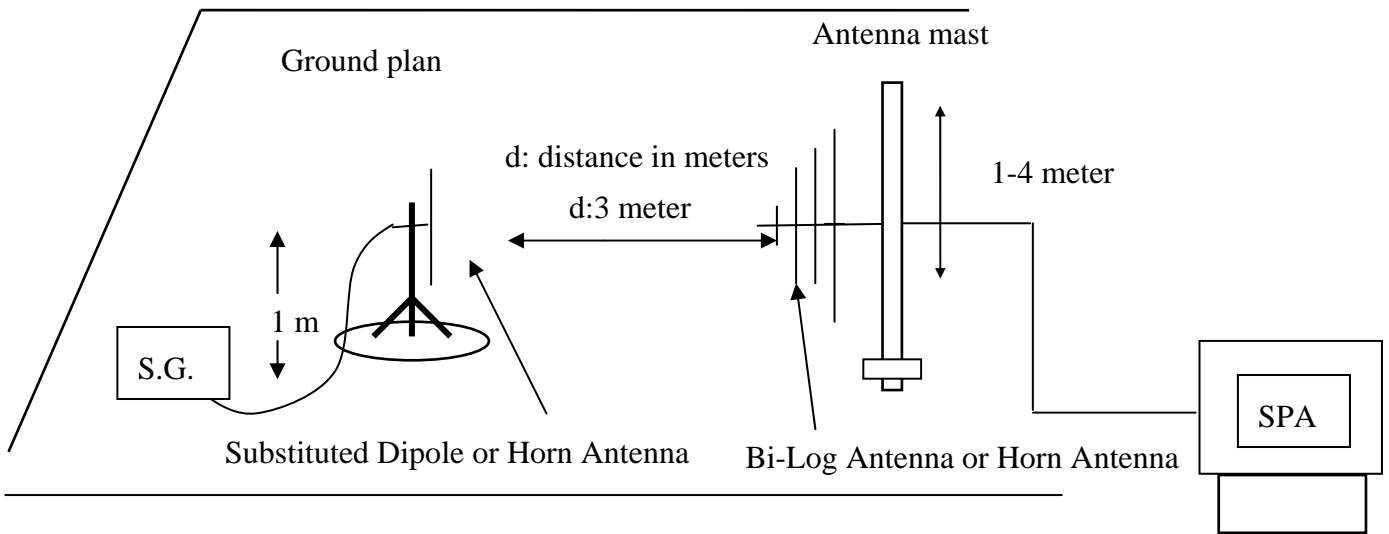


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(C) Substituted Method Test Set-UP



7.3. Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 971168 D01
2. The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.
3. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated
4. The testing follows the Measurement Procedure of FCC KDB 971168 D01
5. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G.
6.  $ERP = S.G. \text{ output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$
7.  $ERP = S.G. \text{ output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$
8. Spectrum setting:
  - (1) Detector = Peak, marker the highest value of the detector by maximum hold, set RBW wide enough to capture the entire signal of emission, and  $VBW \geq 3 \times RBW$ .
  - (2) KDB 971168 D01 is adopted, and the procedure as lists under item 4, Measurement of the Average Power over the Fundamental Signal Bandwidth, is followed to set correspondingly for the acquisition of proper measurement data.

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Set frequency = nominal signal center frequency;  
Set span = 2 X occupied BW;  
Set RBW  $\approx$  1~5% of the span, not to exceed 1 MHz  
Set VBW = 3 x RBW;  
Select average power (RMS) detector  
Set sweep time and number of measurement points to achieve a minimum of 1 millisecond/pt  
integration time (ex. Point = 601points, then sweep time =  $601 \times 10^{-3} = 6s$ ).

Activate trace averaging routine over a minimum of 10 sweeps;  
Activate marker/span pair and set span = signal or channel bandwidth;  
Activate the band/interval power marker function;  
Record the band power level;

Record adjusted value as the average signal power level. Then activate the occupied bandwidth measurement function.

The proper adjustment due to limitation of spectrum capability is given compensated to spectrum with conversion factor of  $10 \times \log(TBW/RBW)$ , where TBW is the transmission of UE exceeding the maximum BW UE can extend, and RBW is the resolution BW in spectrum .

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**7.4. Measurement Equipment Used**

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESU 40	100363	04/09/2015	04/08/2016
Broadband Antenna	TESEQ	CBL 6112D	35240	12/05/2014	12/04/2015
Broadband Antenna	TESEQ	CBL 6112D	35243	11/14/2014	11/13/2015
Horn Antenna	ETS-Lindgren	3117	00143272	12/08/2014	12/07/2015
Horn Antenna	ETS-Lindgren	3117	00143280	09/23/2014	09/22/2015
Horn Antenna	ETS-Lindgren	3160-09	00117911	11/13/2014	11/12/2015
Horn Antenna	ETS-Lindgren	3160-09	00117910	11/13/2014	11/12/2015
Pre Amplifier	EMC Instruments	EMC330	980096	12/19/2014	12/18/2015
Pre Amplifier	EMC Instruments	EMC0011830	980199	12/19/2014	12/18/2015
Pre Amplifier	R&S	SCU-18	10204	12/19/2014	12/18/2015
Pre Amplifier	R&S	SCU-26	100780	12/19/2014	12/18/2015
Pre Amplifier	EMC Instruments	EMC184045B	980135	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/19/2014	12/18/2015
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF27	12/19/2014	12/18/2015
Communication Tester	Anritsu	MT8820C	6201107337	05/27/2015	05/26/2016
Site NSA	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016
Site VSWR	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016
DC Power Supply	HOLA	DP-3003	D7070035	05/04/2015	05/03/2016
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.

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**7.5. Measurement Result: (Peak) –using option of peak measurement**

EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
WCDMA B2	1852.4	9262	V	25.96	5.35	-5.35	25.96	33.01
			H	22.27	5.35	-5.35	22.27	33.01
	1880.0	9400	V	26.73	5.29	-5.4	<b>26.62</b>	33.01
			H	23.2	5.29	-5.4	23.09	33.01
	1907.6	9538	V	26.52	5.22	-5.39	26.35	33.01
			H	22.65	5.22	-5.39	22.48	33.01

EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
HSDPA B2	1852.4	9262	V	25.34	5.35	-5.35	25.34	33.01
			H	21.16	5.35	-5.35	21.16	33.01
	1880.0	9400	V	26.55	5.29	-5.4	<b>26.44</b>	33.01
			H	21.71	5.29	-5.4	21.6	33.01
	1907.6	9538	V	25.35	5.22	-5.39	25.18	33.01
			H	21.68	5.22	-5.39	21.51	33.01

EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
HSUPA B2	1852.4	9262	V	26.36	5.35	-5.35	26.36	33.01
			H	22.51	5.35	-5.35	22.51	33.01
	1880.0	9400	V	26.94	5.29	-5.4	<b>26.83</b>	33.01
			H	23.23	5.29	-5.4	23.12	33.01
	1907.6	9538	V	26.5	5.22	-5.39	26.33	33.01
			H	22.73	5.22	-5.39	22.56	33.01

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 5MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 1.4M/ QPSK RB: 1,0</b>	1710.7	19957	V	24.11	5.69	-5.17	24.63	30.00
			H	20.24	5.69	-5.17	20.76	30.00
	1732.5	20175	V	23.59	5.64	-5.24	23.99	30.00
			H	21.50	5.64	-5.24	21.90	30.00
	1754.3	20393	V	24.86	5.58	-5.29	<b>25.15</b>	30.00
			H	23.22	5.58	-5.29	23.51	30.00
<b>BAND 4 BW: 1.4M QPSK RB: 1,5</b>	1710.7	19957	V	24.31	5.69	-5.17	24.83	30.00
			H	20.31	5.69	-5.17	20.83	30.00
	1732.5	20175	V	23.49	5.64	-5.25	23.88	30.00
			H	21.38	5.64	-5.25	21.77	30.00
	1754.3	20393	V	24.91	5.58	-5.29	<b>25.20</b>	30.00
			H	23.27	5.58	-5.29	23.56	30.00
<b>BAND 4 BW: 1.4M 16QAM RB: 1,0</b>	1710.7	19957	V	24.16	5.69	-5.17	24.68	30.00
			H	20.31	5.69	-5.17	20.83	30.00
	1732.5	20175	V	23.67	5.64	-5.24	24.07	30.00
			H	21.47	5.64	-5.24	21.87	30.00
	1754.3	20393	V	24.90	5.58	-5.29	<b>25.19</b>	30.00
			H	23.40	5.58	-5.29	23.69	30.00
<b>BAND 4 BW: 1.4M 16QAM RB: 1,5</b>	1710.7	19957	V	24.38	5.68	-5.17	24.89	30.00
			H	20.39	5.69	-5.17	20.91	30.00
	1732.5	20175	V	23.60	5.63	-5.24	23.99	30.00
			H	21.76	5.63	-5.24	22.15	30.00
	1754.3	20393	V	25.00	5.58	-5.29	<b>25.29</b>	30.00
			H	23.43	5.58	-5.29	23.72	30.00

Remark :

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 3M QPSK RB: 1,0</b>	1711.5	19965	V	23.93	5.69	-5.17	24.45	30.00
			H	20.18	5.69	-5.17	20.70	30.00
	1732.5	20175	V	23.70	5.64	-5.24	24.10	30.00
			H	21.50	5.64	-5.24	21.90	30.00
	1753.5	20385	V	24.53	5.59	-5.30	<b>24.82</b>	30.00
			H	23.14	5.59	-5.30	23.43	30.00
<b>BAND 4 BW: 3M QPSK RB: 1,14</b>	1711.5	19965	V	24.46	5.68	-5.17	24.97	30.00
			H	20.38	5.68	-5.17	20.89	30.00
	1732.5	20175	V	23.49	5.63	-5.25	23.87	30.00
			H	21.64	5.63	-5.25	22.02	30.00
	1753.5	20385	V	24.81	5.58	-5.28	<b>25.11</b>	30.00
			H	23.25	5.58	-5.28	23.55	30.00
<b>BAND 4 BW: 3M 16QAM RB: 1,0</b>	1711.5	19965	V	24.20	5.69	-5.17	24.72	30.00
			H	20.14	5.69	-5.17	20.66	30.00
	1732.5	20175	V	23.80	5.64	-5.24	24.20	30.00
			H	21.60	5.64	-5.24	22.00	30.00
	1753.5	20385	V	24.62	5.59	-5.30	<b>24.91</b>	30.00
			H	23.22	5.59	-5.30	23.51	30.00
<b>BAND 4 BW: 3M 16QAM RB: 1,14</b>	1711.5	19965	V	24.15	5.69	-5.17	24.67	30.00
			H	20.47	5.68	-5.17	20.98	30.00
	1732.5	20175	V	23.58	5.63	-5.25	23.96	30.00
			H	21.72	5.63	-5.25	22.10	30.00
	1753.5	20385	V	25.00	5.58	-5.29	<b>25.29</b>	30.00
			H	23.47	5.58	-5.28	23.77	30.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 5M QPSK RB: 1,0</b>	1712.5	19975	V	23.93	5.69	-5.17	24.45	30.00
			H	20.21	5.69	-5.17	20.73	30.00
	1732.5	20175	V	23.80	5.64	-5.23	24.21	30.00
			H	21.41	5.64	-5.23	21.82	30.00
	1752.5	20375	V	24.28	5.59	-5.30	<b>24.57</b>	30.00
			H	22.88	5.59	-5.30	23.17	30.00
<b>BAND 4 BW: 5M QPSK RB: 1,24</b>	1712.5	19975	V	24.84	5.68	-5.17	<b>25.35</b>	30.00
			H	20.28	5.69	-5.17	20.80	30.00
	1732.5	20175	V	23.43	5.63	-5.25	23.81	30.00
			H	21.68	5.63	-5.25	22.06	30.00
	1752.5	20375	V	24.89	5.58	-5.29	25.18	30.00
			H	23.23	5.58	-5.29	23.52	30.00
<b>BAND 4 BW: 5M 16QAM RB: 1,0</b>	1712.5	19975	V	23.98	5.69	-5.17	24.50	30.00
			H	20.29	5.69	-5.17	20.81	30.00
	1732.5	20175	V	23.90	5.64	-5.23	24.31	30.00
			H	21.55	5.64	-5.23	21.96	30.00
	1752.5	20375	V	24.46	5.59	-5.30	<b>24.75</b>	30.00
			H	23.06	5.59	-5.30	23.35	30.00
<b>BAND 4 BW: 5M 16QAM RB: 1,24</b>	1712.5	19975	V	24.86	5.68	-5.18	<b>25.36</b>	30.00
			H	20.30	5.69	-5.18	20.81	30.00
	1732.5	20175	V	23.54	5.63	-5.25	23.92	30.00
			H	21.74	5.63	-5.25	22.12	30.00
	1752.5	20375	V	24.98	5.58	-5.28	25.28	30.00
			H	23.39	5.58	-5.28	23.69	30.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 10M QPSK RB: 1,0</b>	1715.0	20000	V	23.96	5.69	-5.17	<b>24.48</b>	30.00
			H	20.25	5.69	-5.17	20.77	30.00
	1732.5	20175	V	24.04	5.65	-5.23	24.46	30.00
			H	21.36	5.65	-5.23	21.78	30.00
	1750.0	20350	V	23.86	5.61	-5.31	24.16	30.00
			H	22.44	5.61	-5.31	22.74	30.00
<b>BAND 4 BW: 10M QPSK RB: 1,49</b>	1715.0	20000	V	24.79	5.67	-5.20	<b>25.26</b>	30.00
			H	21.15	5.67	-5.20	21.62	30.00
	1732.5	20175	V	23.34	5.63	-5.26	23.71	30.00
			H	21.90	5.63	-5.26	22.27	30.00
	1750.0	20350	V	24.77	5.58	-5.29	25.06	30.00
			H	23.24	5.58	-5.29	23.53	30.00
<b>BAND 4 BW: 10M 16QAM RB: 1,0</b>	1715.0	20000	V	24.03	5.69	-5.17	24.55	30.00
			H	20.30	5.69	-5.17	20.82	30.00
	1732.5	20175	V	24.15	5.65	-5.23	<b>24.57</b>	30.00
			H	21.50	5.65	-5.23	21.92	30.00
	1750.0	20350	V	23.90	5.61	-5.30	24.21	30.00
			H	22.56	5.61	-5.30	22.87	30.00
<b>BAND 4 BW: 10M 16QAM RB: 1,49</b>	1715.0	20000	V	25.05	5.67	-5.20	<b>25.52</b>	30.00
			H	21.38	5.67	-5.20	21.85	30.00
	1732.5	20175	V	23.37	5.63	-5.26	23.74	30.00
			H	21.95	5.63	-5.26	22.32	30.00
	1750.0	20350	V	24.99	5.58	-5.29	25.28	30.00
			H	23.45	5.58	-5.29	23.74	30.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 15M QPSK RB: 1,0</b>	1717.5	20025	V	24.01	5.69	-5.17	24.53	30.00
			H	20.30	5.69	-5.17	20.82	30.00
	1732.5	20175	V	24.33	5.65	-5.22	<b>24.76</b>	30.00
			H	21.33	5.65	-5.22	21.76	30.00
	1747.5	20325	V	23.47	5.62	-5.28	23.81	30.00
			H	23.14	5.62	-5.28	23.48	30.00
<b>BAND 4 BW: 15M QPSK RB: 1,74</b>	1717.5	20025	V	24.32	5.66	-5.21	24.77	30.00
			H	21.52	5.66	-5.21	21.97	30.00
	1732.5	20175	V	23.43	5.62	-5.27	23.78	30.00
			H	22.09	5.62	-5.27	22.44	30.00
	1747.5	20325	V	24.75	5.59	-5.29	<b>25.05</b>	30.00
			H	23.14	5.59	-5.29	23.44	30.00
<b>BAND 4 BW: 15M 16QAM RB: 1,0</b>	1717.5	20025	V	24.07	5.69	-5.17	24.59	30.00
			H	20.31	5.69	-5.17	20.83	30.00
	1732.5	20175	V	24.52	5.65	-5.22	<b>24.95</b>	30.00
			H	21.48	5.65	-5.22	21.91	30.00
	1747.5	20325	V	23.54	5.62	-5.28	23.88	30.00
			H	22.44	5.62	-5.28	22.78	30.00
<b>BAND 4 BW: 15M 16QAM RB: 1,74</b>	1717.5	20025	V	24.55	5.66	-5.21	25.00	30.00
			H	21.68	5.66	-5.21	22.13	30.00
	1732.5	20175	V	23.51	5.62	-5.27	23.86	30.00
			H	22.15	5.62	-5.27	22.50	30.00
	1747.5	20325	V	25.00	5.58	-5.29	<b>25.29</b>	30.00
			H	23.42	5.58	-5.29	23.71	30.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 4 BW: 20M QPSK RB: 1,0</b>	1720.0	20050	V	24.04	5.69	-5.17	24.56	30.00
			H	20.31	5.69	-5.17	20.83	30.00
	1732.5	20175	V	25.67	5.66	-5.21	<b>26.12</b>	30.00
			H	21.27	5.66	-5.21	21.72	30.00
	1745.0	20300	V	23.44	5.63	-5.26	23.81	30.00
			H	22.03	5.63	-5.26	22.40	30.00
<b>BAND 4 BW: 20M QPSK RB: 1,99</b>	1720.0	20050	V	23.84	5.64	-5.23	24.25	30.00
			H	21.59	5.64	-5.23	22.00	30.00
	1732.5	20175	V	23.65	5.66	-5.21	24.10	30.00
			H	21.27	5.66	-5.21	21.72	30.00
	1745.0	20300	V	24.76	5.59	-5.29	<b>25.06</b>	30.00
			H	22.37	5.59	-5.29	22.67	30.00
<b>BAND 4 BW: 20M 16QAM RB: 1,0</b>	1720.0	20050	V	24.17	5.69	-5.17	24.69	30.00
			H	20.40	5.69	-5.17	20.92	30.00
	1732.5	20175	V	24.92	5.66	-5.21	<b>25.37</b>	30.00
			H	21.45	5.66	-5.21	21.90	30.00
	1745.0	20300	V	23.54	5.63	-5.26	23.91	30.00
			H	22.10	5.63	-5.26	22.47	30.00
<b>BAND 4 BW: 20M 16QAM RB: 1,99</b>	1720.0	20050	V	24.04	5.65	-5.23	24.46	30.00
			H	21.77	5.65	-5.23	22.19	30.00
	1732.5	20175	V	23.72	5.61	-5.29	24.04	30.00
			H	22.23	5.61	-5.29	22.55	30.00
	1745.0	20300	V	25.00	5.59	-5.29	<b>25.30</b>	30.00
			H	23.42	5.59	-5.29	23.72	30.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 7 BW: 5M QPSK RB: 1,0</b>	2502.5	20775	V	21.29	5.80	-5.85	21.24	33.01
			H	17.69	5.80	-5.85	17.64	33.01
	2535.0	21100	V	22.21	5.87	-5.85	22.24	33.01
			H	18.03	5.87	-5.85	18.06	33.01
	2567.5	21425	V	22.67	5.95	-5.91	<b>22.71</b>	33.01
			H	17.94	5.95	-5.91	17.98	33.01
<b>BAND 7 BW: 5M QPSK RB: 1,24</b>	2502.5	20775	V	21.64	5.81	-5.84	21.61	33.01
			H	18.04	5.81	-5.84	18.01	33.01
	2535.0	21100	V	21.88	5.88	-5.85	<b>21.91</b>	33.01
			H	17.78	5.88	-5.85	17.81	33.01
	2567.5	21425	V	21.20	5.96	-5.91	21.25	33.01
			H	16.50	5.96	-5.91	16.55	33.01
<b>BAND 7 BW: 5M 16QAM RB: 1,0</b>	2502.5	20775	V	21.59	5.80	-5.85	21.54	33.01
			H	17.90	5.80	-5.85	17.85	33.01
	2535.0	21100	V	22.37	5.88	-5.85	22.40	33.01
			H	18.26	5.87	-5.85	18.28	33.01
	2567.5	21425	V	22.64	5.95	-5.91	<b>22.68</b>	33.01
			H	17.91	5.95	-5.91	17.95	33.01
<b>BAND 7 BW: 5M 16QAM RB: 1,24</b>	2502.5	20775	V	21.94	5.81	-5.84	21.91	33.01
			H	18.31	5.81	-5.84	18.28	33.01
	2535.0	21100	V	22.02	5.88	-5.85	<b>22.05</b>	33.01
			H	17.94	5.88	-5.85	17.97	33.01
	2567.5	21425	V	21.85	5.96	-5.91	21.90	33.01
			H	17.05	5.96	-5.91	17.10	33.01

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 7 BW: 10M QPSK RB: 1,0</b>	2505.0	20800	V	21.64	5.80	-5.85	21.59	33.01
			H	17.65	5.80	-5.85	17.60	33.01
	2535.0	21100	V	22.36	5.87	-5.85	22.38	33.01
			H	17.93	5.87	-5.85	17.95	33.01
	2565.0	21400	V	23.32	5.94	-5.90	<b>23.36</b>	33.01
			H	18.69	5.94	-5.90	18.73	33.01
<b>BAND 7 BW: 10M QPSK RB: 1,49</b>	2505.0	20800	V	21.67	5.82	-5.83	21.66	33.01
			H	18.14	5.82	-5.83	18.13	33.01
	2535.0	21100	V	21.83	5.89	-5.85	<b>21.87</b>	33.01
			H	17.62	5.89	-5.85	17.66	33.01
	2565.0	21400	V	20.71	5.96	-5.91	20.76	33.01
			H	15.93	5.96	-5.91	15.98	33.01
<b>BAND 7 BW: 10M 16QAM RB: 1,0</b>	2505.0	20800	V	21.62	5.80	-5.85	21.57	33.01
			H	18.10	5.80	-5.85	18.05	33.01
	2535.0	21100	V	22.50	5.87	-5.85	22.52	33.01
			H	18.14	5.57	-5.85	17.86	33.01
	2565.0	21400	V	23.06	5.94	-5.90	<b>23.10</b>	33.01
			H	18.59	5.94	-5.90	18.63	33.01
<b>BAND 7 BW: 10M 16QAM RB: 1,49</b>	2505.0	20800	V	22.27	5.81	-5.84	<b>22.24</b>	33.01
			H	18.63	5.81	-5.84	18.60	33.01
	2535.0	21100	V	21.89	5.89	-5.85	21.93	33.01
			H	17.75	5.89	-5.85	17.79	33.01
	2565.0	21400	V	21.30	5.96	-5.91	21.35	33.01
			H	16.34	5.96	-5.91	16.39	33.01

**Remark :**

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	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 7 BW: 15M QPSK RB: 1,0</b>	2507.5	20825	V	21.58	5.80	-5.85	21.53	33.01
			H	17.74	5.80	-5.85	17.69	33.01
	2535.0	21100	V	22.64	5.86	-5.84	22.66	33.01
			H	17.70	5.86	-5.84	17.72	33.01
	2562.5	21375	V	23.14	5.93	-5.88	<b>23.19</b>	33.01
			H	18.64	5.93	-5.88	18.69	33.01
<b>BAND 7 BW: 15M QPSK RB: 1,74</b>	2507.5	20825	V	21.73	5.83	-5.83	<b>21.73</b>	33.01
			H	18.10	5.83	-5.83	18.10	33.01
	2535.0	21100	V	21.46	5.90	-5.85	21.51	33.01
			H	16.94	5.90	-5.85	16.99	33.01
	2562.5	21375	V	20.31	5.96	-5.91	20.36	33.01
			H	16.04	5.96	-5.91	16.09	33.01
<b>BAND 7 BW: 15M 16QAM RB: 1,0</b>	2507.5	20825	V	21.74	5.80	-5.85	21.69	33.01
			H	17.87	5.80	-5.85	17.82	33.01
	2535.0	21100	V	22.71	5.86	-5.84	22.73	33.01
			H	17.78	5.86	-5.84	17.80	33.01
	2562.5	21375	V	23.34	5.93	-5.88	<b>23.39</b>	33.01
			H	18.41	5.93	-5.88	18.46	33.01
<b>BAND 7 BW: 15M 16QAM RB: 1,74</b>	2507.5	20825	V	21.77	5.83	-5.83	21.77	33.01
			H	18.26	5.83	-5.83	18.26	33.01
	2535.0	21100	V	22.07	5.89	-5.85	<b>22.11</b>	33.01
			H	17.16	5.90	-5.85	17.21	33.01
	2562.5	21375	V	20.81	5.96	-5.91	20.86	33.01
			H	16.37	5.96	-5.91	16.42	33.01

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	MHz		V/H	dBm	dBi	dB	dBm	dBm
<b>BAND 7 BW: 20M QPSK RB: 1,0</b>	2510.0	20850	V	22.04	5.80	-5.85	21.99	33.01
			H	17.69	5.80	-5.85	17.64	33.01
	2535.0	21100	V	22.84	5.86	-5.84	<b>22.86</b>	33.01
			H	18.09	5.86	-5.84	18.11	33.01
	2560.0	21350	V	22.16	5.92	-5.86	22.22	33.01
			H	18.29	5.92	-5.86	18.35	33.01
<b>BAND 7 BW: 20M QPSK RB: 1,99</b>	2510.0	20850	V	23.41	5.84	-5.83	<b>23.42</b>	33.01
			H	17.62	5.84	-5.83	17.63	33.01
	2535.0	21100	V	21.53	5.90	-5.85	21.58	33.01
			H	17.08	5.90	-5.85	17.13	33.01
	2560.0	21350	V	21.03	5.96	-5.91	21.08	33.01
			H	15.35	5.96	-5.91	15.40	33.01
<b>BAND 7 BW: 20M 16QAM RB: 1,0</b>	2510.0	20850	V	22.28	5.80	-5.85	22.23	33.01
			H	17.94	5.80	-5.85	17.89	33.01
	2535.0	21100	V	22.92	5.86	-5.84	<b>22.94</b>	33.01
			H	18.27	5.86	-5.84	18.29	33.01
	2560.0	21350	V	22.12	5.92	-5.86	22.18	33.01
			H	18.52	5.92	-5.86	18.58	33.01
<b>BAND 7 BW: 20M 16QAM RB: 1,99</b>	2510.0	20850	V	23.50	5.84	-5.83	<b>23.51</b>	33.01
			H	17.85	5.84	-5.83	17.86	33.01
	2535.0	21100	V	21.68	5.90	-5.85	21.73	33.01
			H	17.35	5.90	-5.85	17.40	33.01
	2560.0	21350	V	21.42	5.96	-5.91	21.47	33.01
			H	15.80	5.96	-5.91	15.85	33.01

**Remark :**

- (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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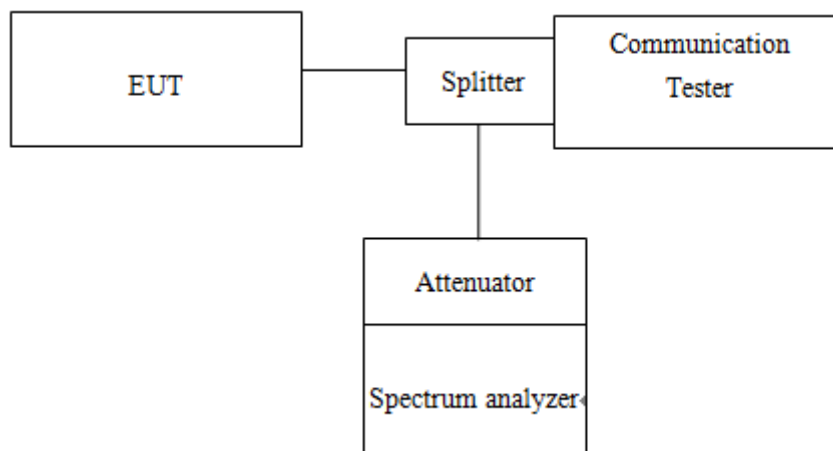
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## 8. OCCUPIED BANDWIDTH MEASUREMENT

### 8.1. Standard Applicable

The occupied bandwidth 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.

### 8.2. Test Set-up



### 8.3. Measurement Procedure

#### 99% & 26dB Bandwidth

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -26dBc display line was placed on the screen (or 26dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1%, VBW= 3 RBW, with span > 2 \* Signal BW, set % Power = 99%.

**NOTE: For the plot of bandwidth measurement, the marker of the 99% bandwidth is diamond-shape while the marker of the 20dB BW is arrow-mark**

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### 8.4. Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015
Communication Tester	Anritsu	MT8820C	6201107337	05/27/2015	05/26/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A 195C	RF01	12/19/2014	12/18/2015
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/18/2015	06/17/2016
DC Block	PASTERNAK	PE8210	RF29	12/19/2014	12/18/2015
Splitter	RF-LAMBAD	RFLT2W1G1 8G	RF35	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2015	05/03/2016

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**8.5. Measurement Result**  
**99% Bandwidth**

Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		WCDMA II	HSDPA II	HSUPA II
1850.20	9262	4.1483	4.1635	4.1353
1880.00	9400	4.1362	4.1613	4.1415
1909.80	9538	<b>4.1606</b>	<b>4.1651</b>	<b>4.1548</b>

LTE BAND 4							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1710.7	19957	1.0957	1.0979	1711.5	19965	2.7060	2.6970
1732.5	20175	1.1005	1.1015	1732.5	20175	<b>2.7191</b>	<b>2.7101</b>
1754.3	20393	<b>1.0962</b>	<b>1.1034</b>	1753.5	20385	2.7025	2.6914

LTE BAND 4							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1712.5	19957	<b>4.5099</b>	4.5005	1715.0	20000	8.9403	<b>8.9752</b>
1732.5	20175	4.4913	<b>4.5089</b>	1732.5	20175	<b>8.9525</b>	8.9617
1752.5	20375	4.4957	4.4999	1750.0	20350	8.9458	8.9643

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LTE BAND 4							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1717.5	20025	13.434	13.434	1720.0	20050	17.833	17.915
1732.5	20175	13.455	<b>13.436</b>	1732.5	20175	<b>17.939</b>	<b>17.923</b>
1747.5	20325	<b>13.476</b>	13.421	1745.0	20300	17.832	17.869

LTE BAND 7							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
2502.5	20775	<b>4.5176</b>	4.5007	2505.0	20800	<b>8.9973</b>	8.9481
2535.0	21100	4.4943	<b>4.5064</b>	2535.0	21100	8.9588	<b>8.9650</b>
2567.5	21425	4.5024	4.5031	2565.0	21400	8.9895	8.9634

LTE BAND 7							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency (MHz)	CH	99% Bandwidth (MHz)	99% Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
2507.5	20825	13.448	13.447	2510.0	20850	<b>17.924</b>	17.861
2535.0	21100	13.396	<b>13.473</b>	2535.0	21100	17.878	<b>17.902</b>
2562.5	21375	<b>13.468</b>	13.414	2560.0	21350	17.902	17.866

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## 26dB Bandwidth

Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		WCDMA II	HSDPA II	HSUPA II
1850.20	9262	<b>4.630</b>	<b>4.641</b>	<b>4.602</b>
1880.00	9400	4.614	4.603	4.600
1909.80	9538	4.619	4.613	4.585

LTE BAND 4							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1710.7	19957	<b>1.308</b>	1.283	1711.5	19965	2.983	2.970
1732.5	20175	1.274	1.286	1732.5	20175	<b>2.998</b>	2.982
1754.3	20393	1.269	<b>1.288</b>	1753.5	20385	2.983	<b>2.983</b>

LTE BAND 4							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1712.5	19957	4.932	4.950	1715.0	20000	<b>9.946</b>	9.704
1732.5	20175	<b>4.993</b>	4.906	1732.5	20175	9.803	9.846
1752.5	20375	4.887	<b>5.004</b>	1750.0	20350	9.831	<b>9.865</b>

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LTE BAND 4							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
1717.5	20025	<b>14.79</b>	14.47	1720.0	20050	<b>19.39</b>	19.01
1732.5	20175	14.39	<b>14.63</b>	1732.5	20175	19.18	19.02
1747.5	20325	14.29	14.53	1745.0	20300	19.18	<b>19.16</b>

LTE BAND 7							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
2502.5	20775	<b>5.554</b>	4.972	2505.0	20800	9.775	<b>9.834</b>
2535.0	21100	4.887	<b>4.994</b>	2535.0	21100	<b>9.843</b>	9.754
2567.5	21425	4.984	4.932	2565.0	21400	9.826	9.651

LTE BAND 7							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	CH	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		QPSK	16QAM			QPSK	16QAM
2507.5	20825	<b>14.59</b>	<b>14.57</b>	2510.0	20850	19.05	19.26
2535.0	21100	14.43	14.45	2535.0	21100	<b>19.18</b>	<b>19.33</b>
2562.5	21375	14.56	14.49	2560.0	21350	19.06	19.17

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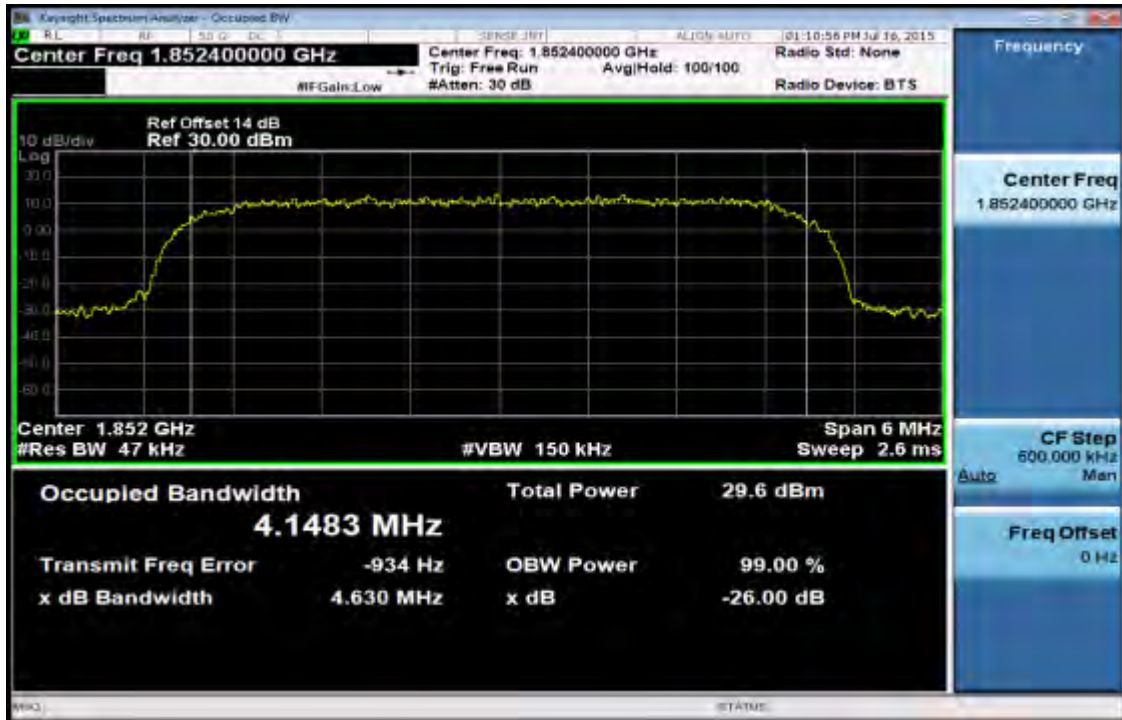
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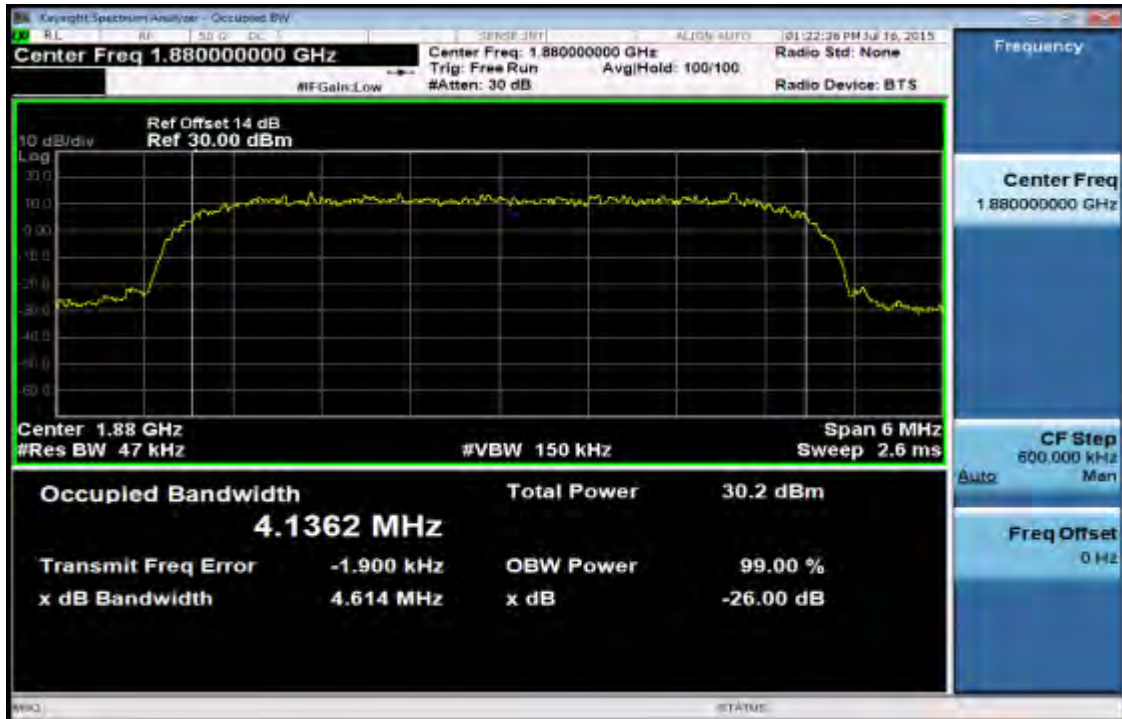


**99% & 26dB Bandwidth Test Data**

**WCDMA II Channel Low**



**WCDMA II Channel Mid**



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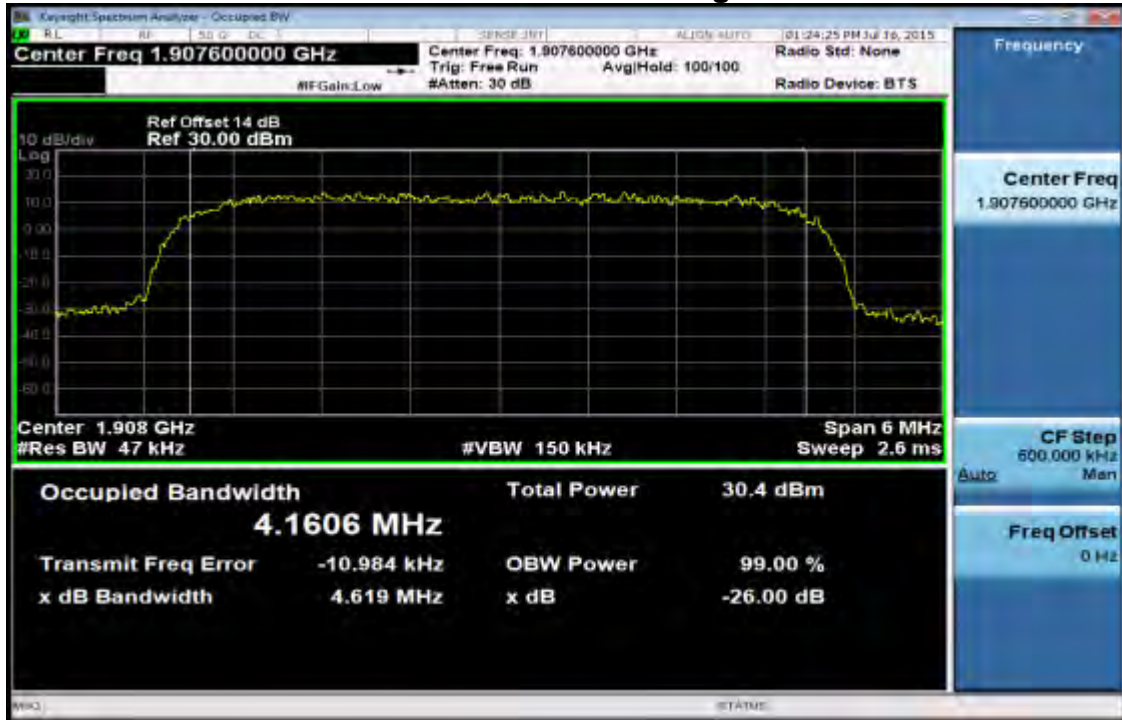
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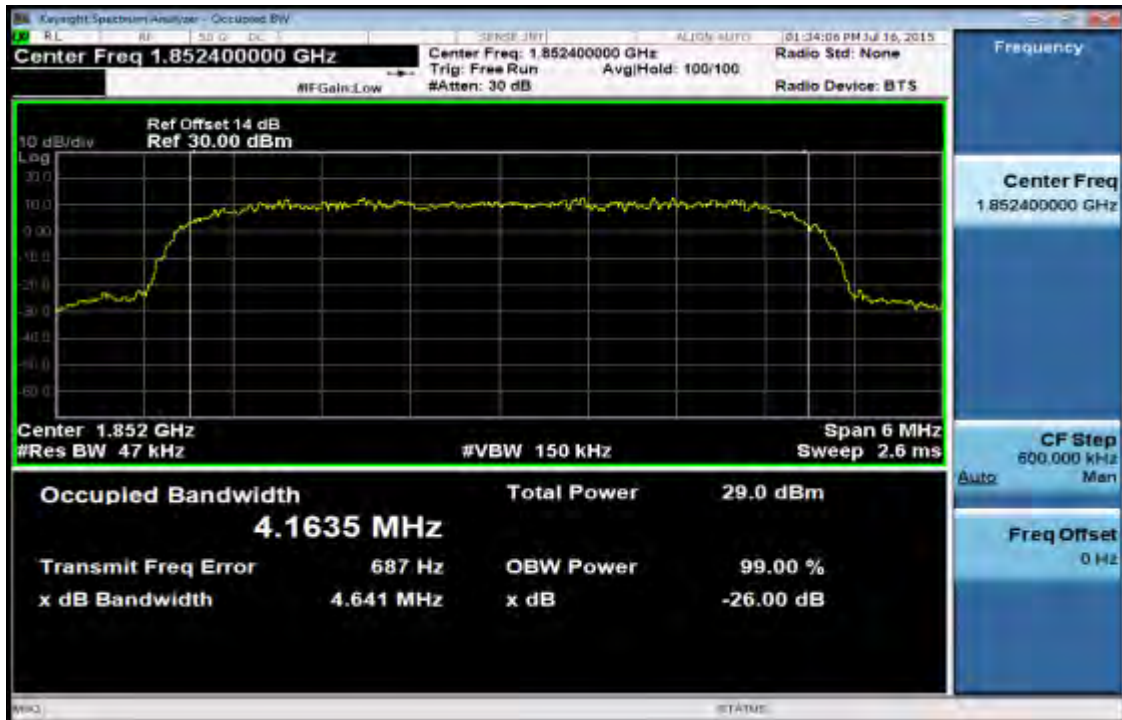
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### WCDMA II Channel High



### HSDPA II Channel Low



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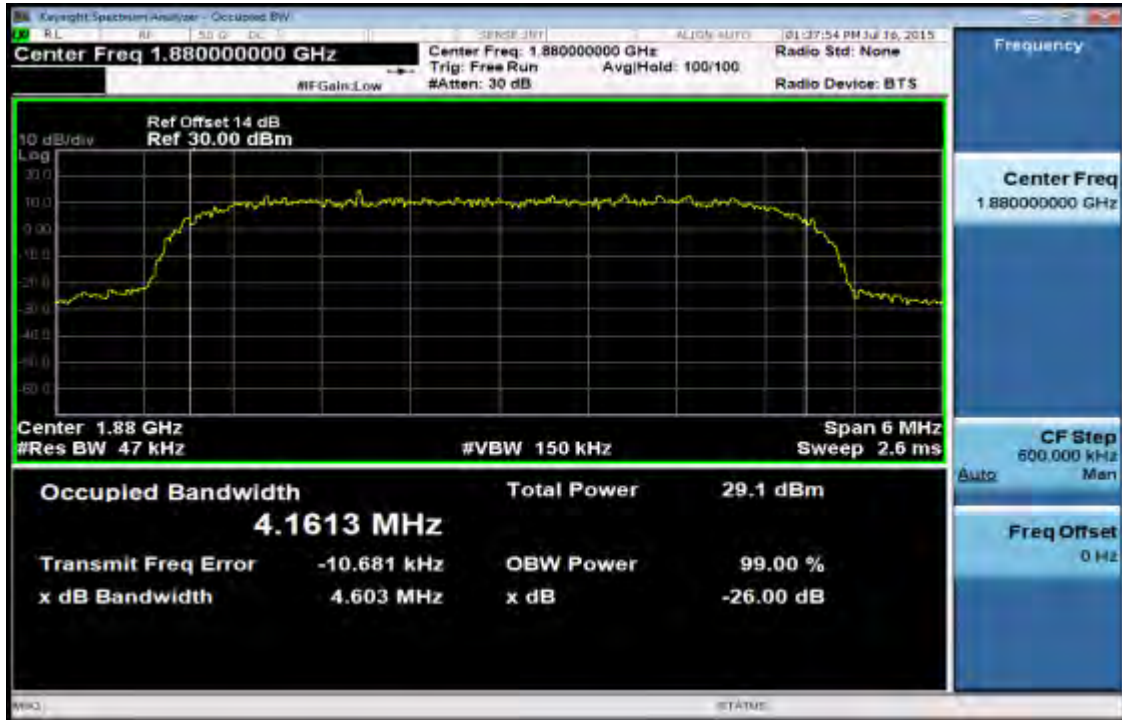
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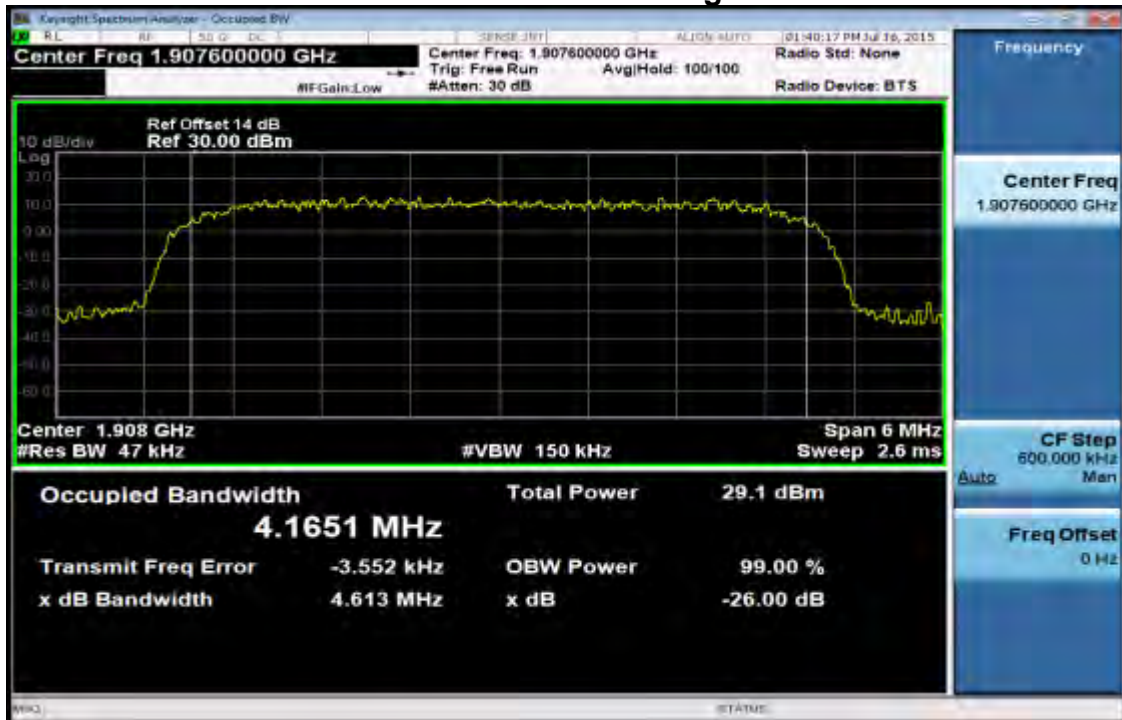
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### HSDPA II Channel Mid



### HSDPA II Channel High



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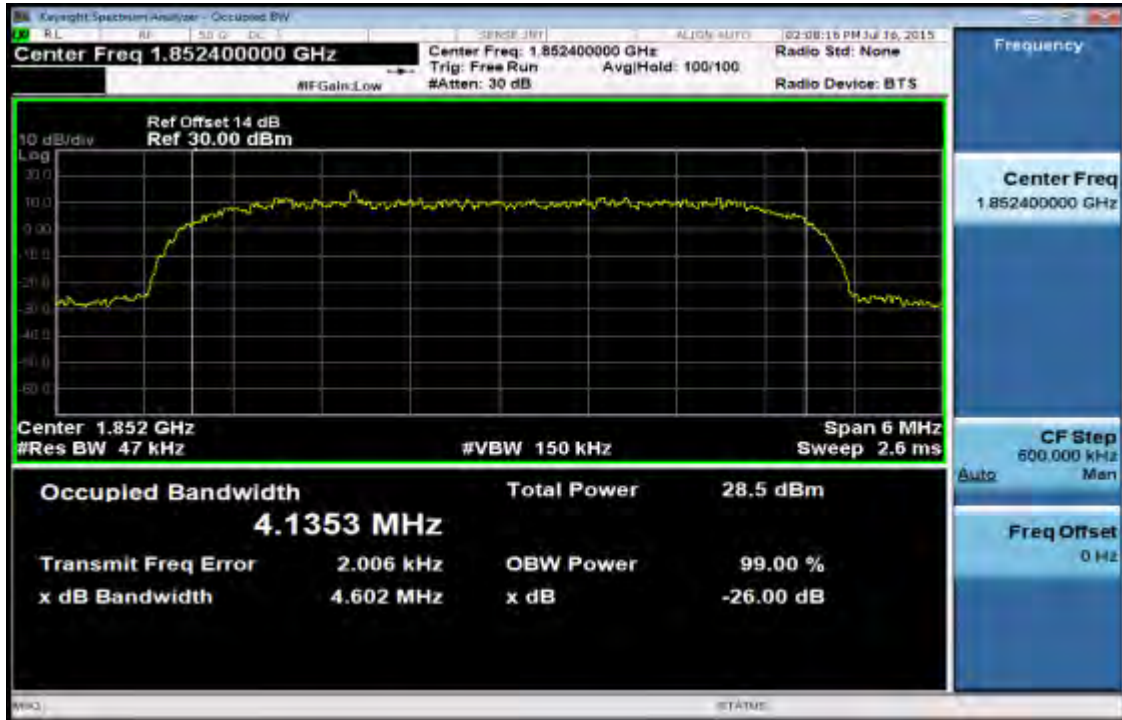
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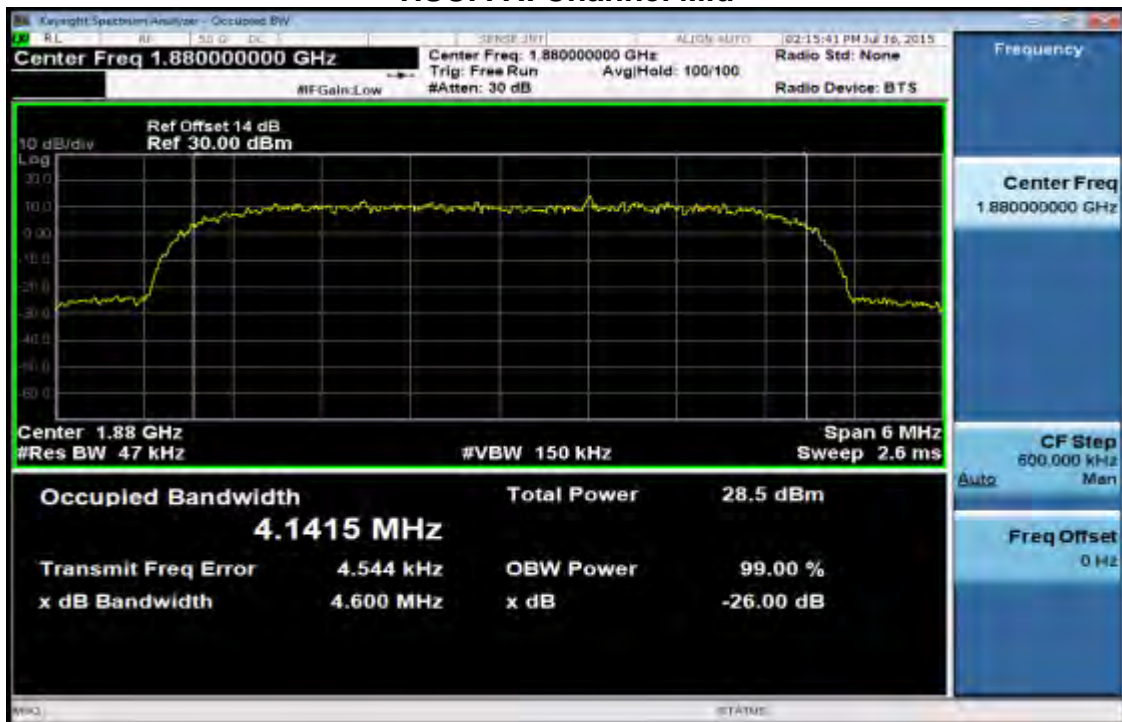
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### HSUPA II Channel Low



### HSUPA II Channel Mid



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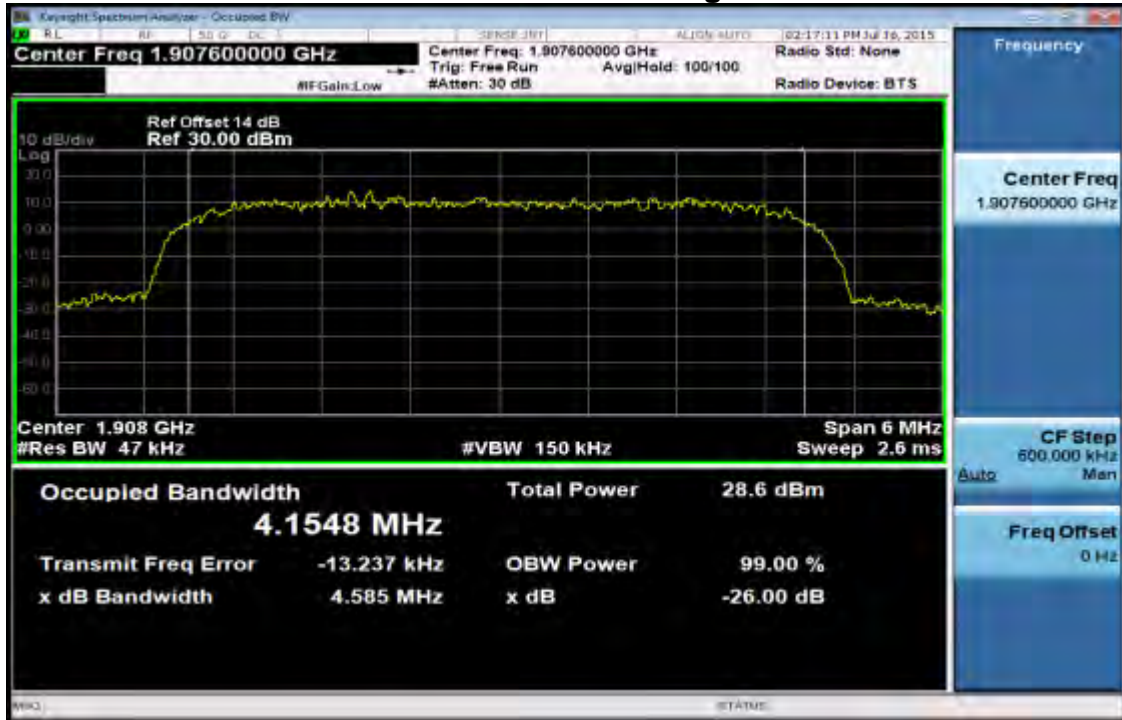
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### HSUPA II Channel High



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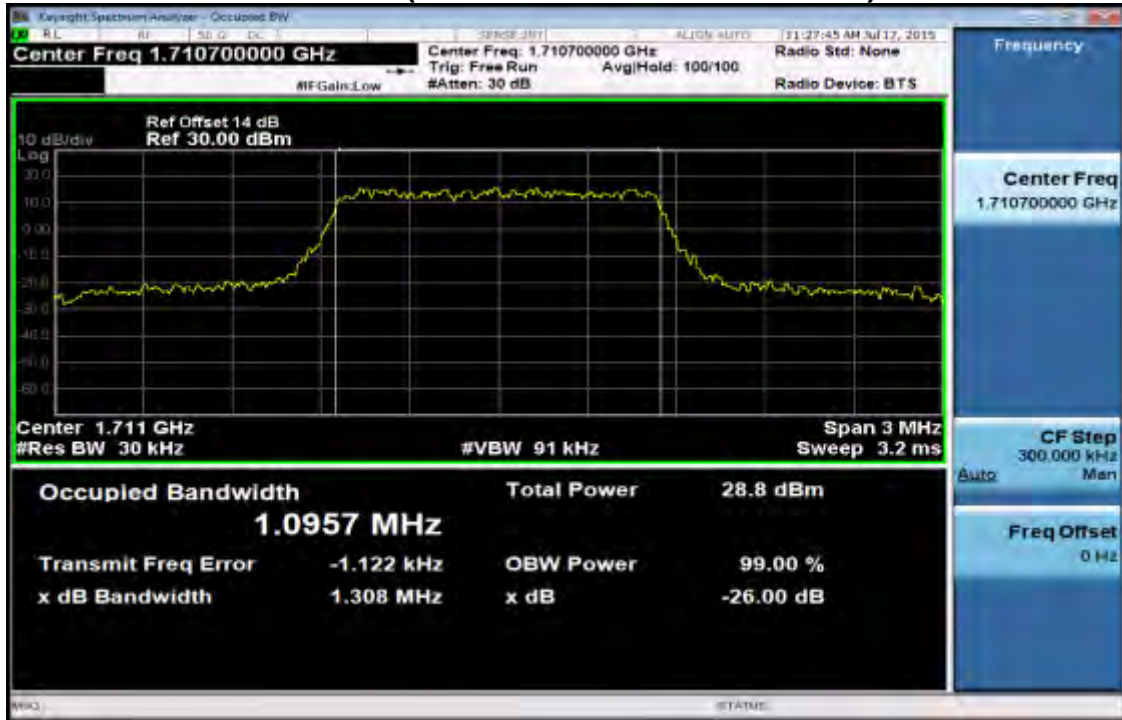
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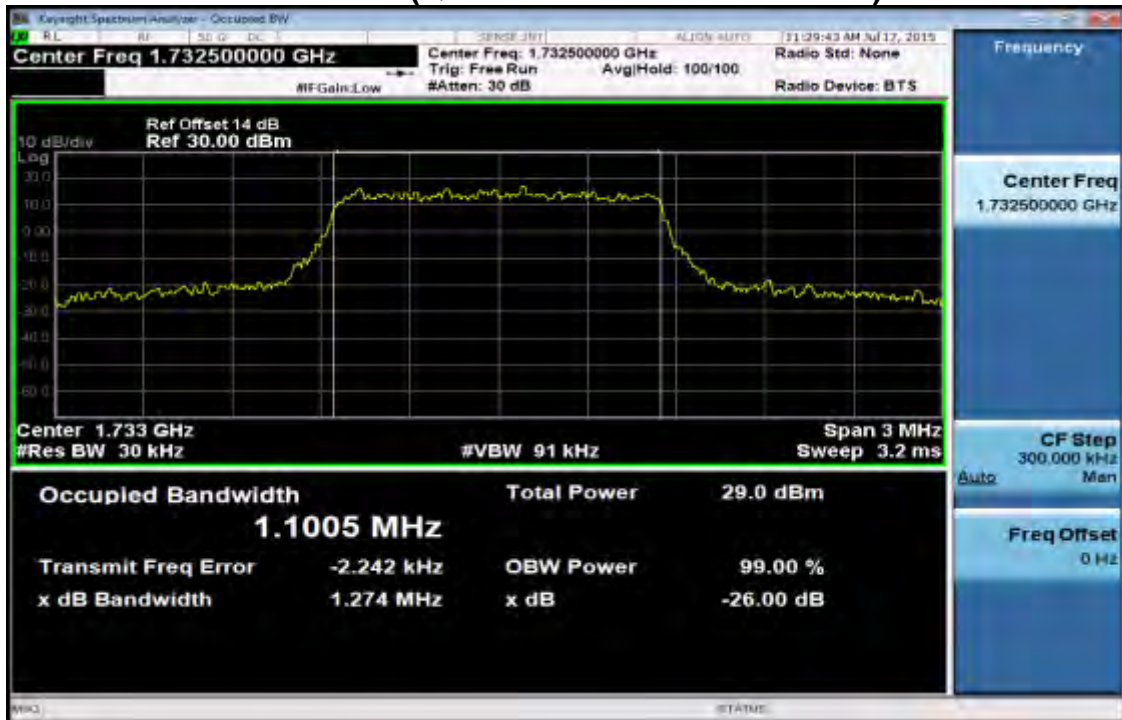
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**1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel Low**



**1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel Mid**



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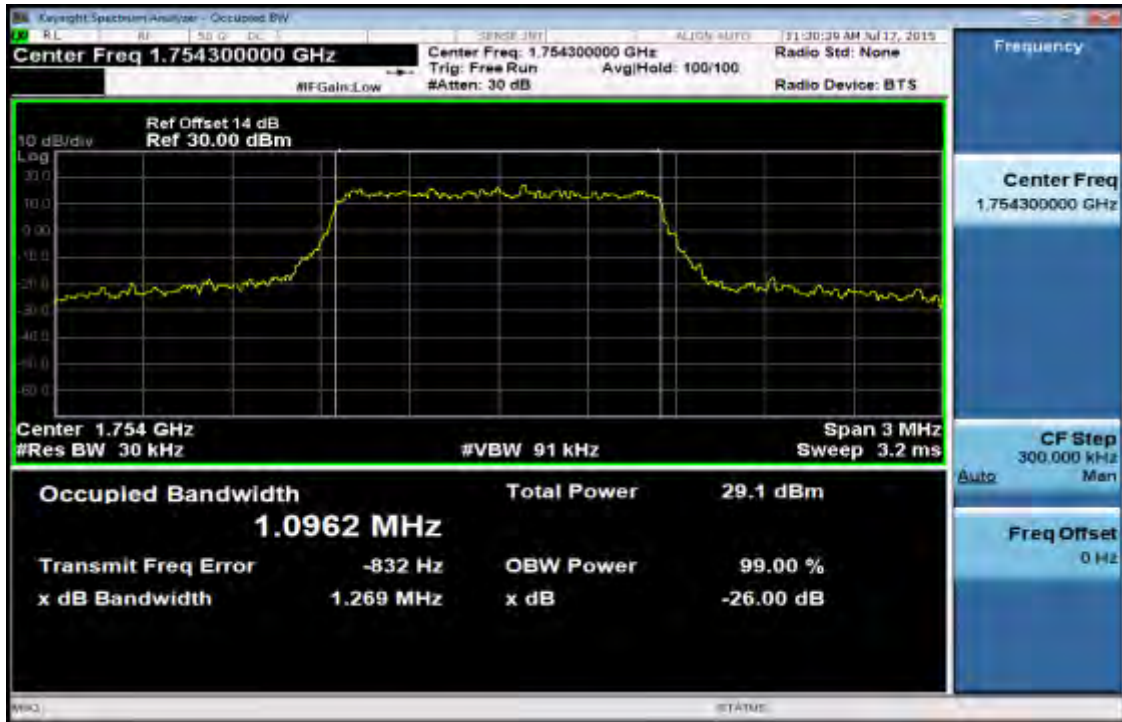
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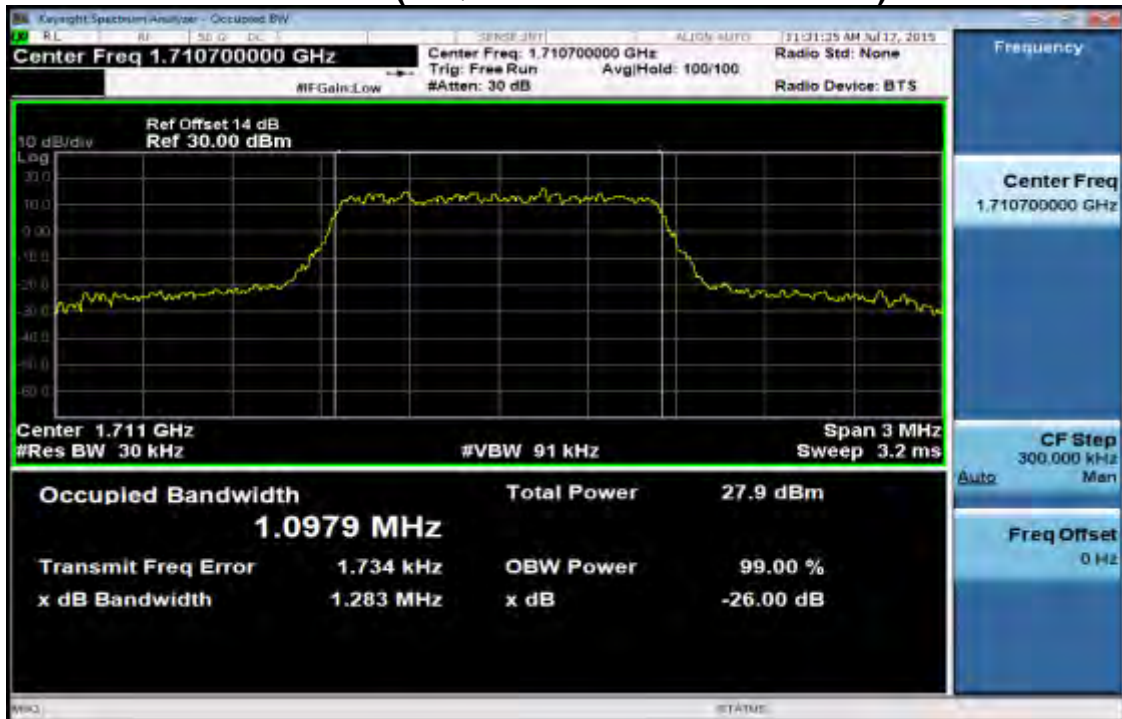
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**1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel High**



**1.4MHz BW LTE-Band 4(16QAM RB Number: 6 Offset: 0) Channel Low**

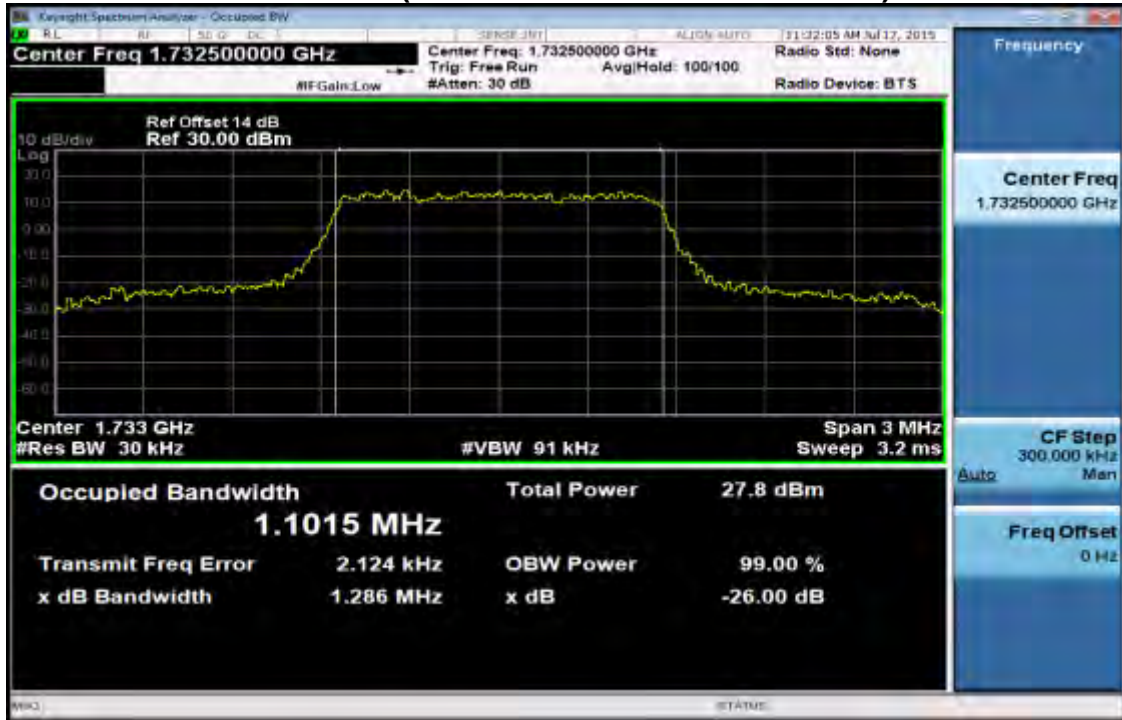


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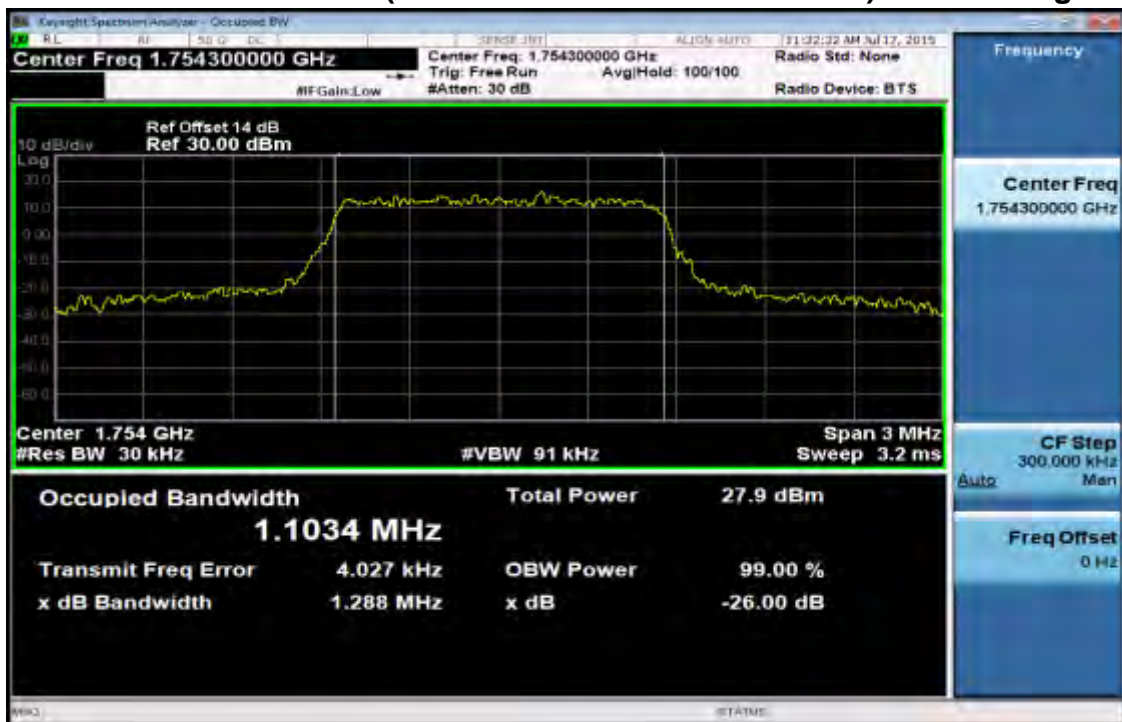
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**1.4MHz BW LTE-Band 4(16QAM RB Number: 6 Offset: 0) Channel Mid**



**1.4MHz BW LTE-Band 4(16QAM RB Number: 6 Offset: 0) Channel High**



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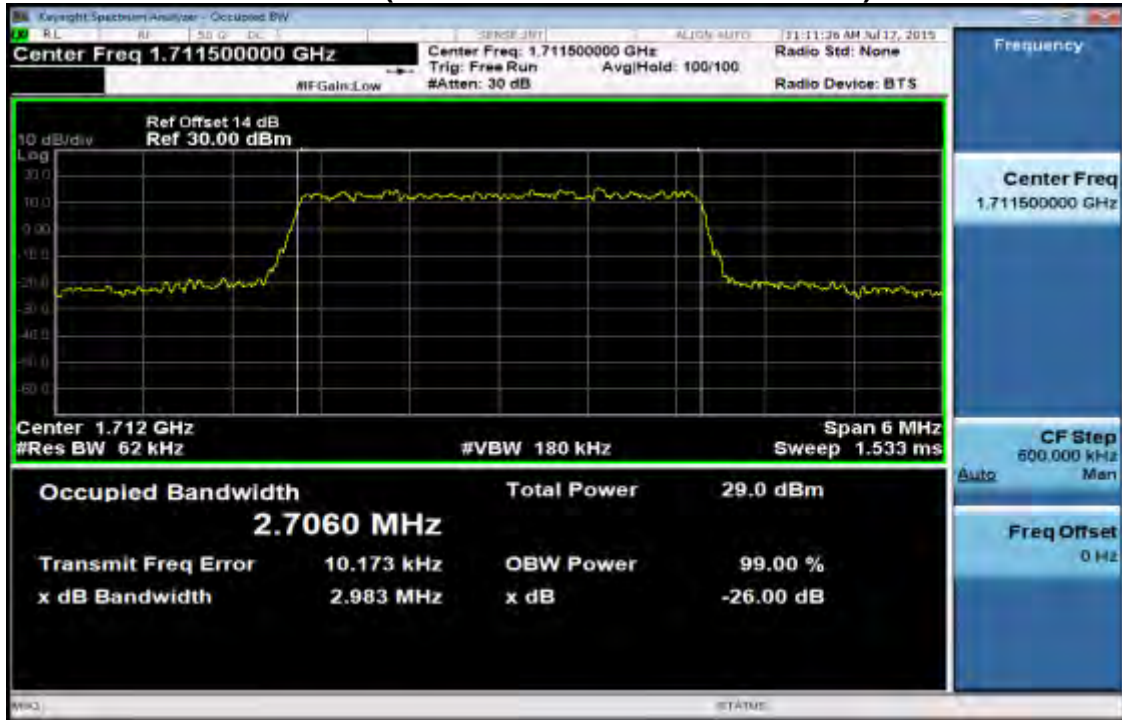
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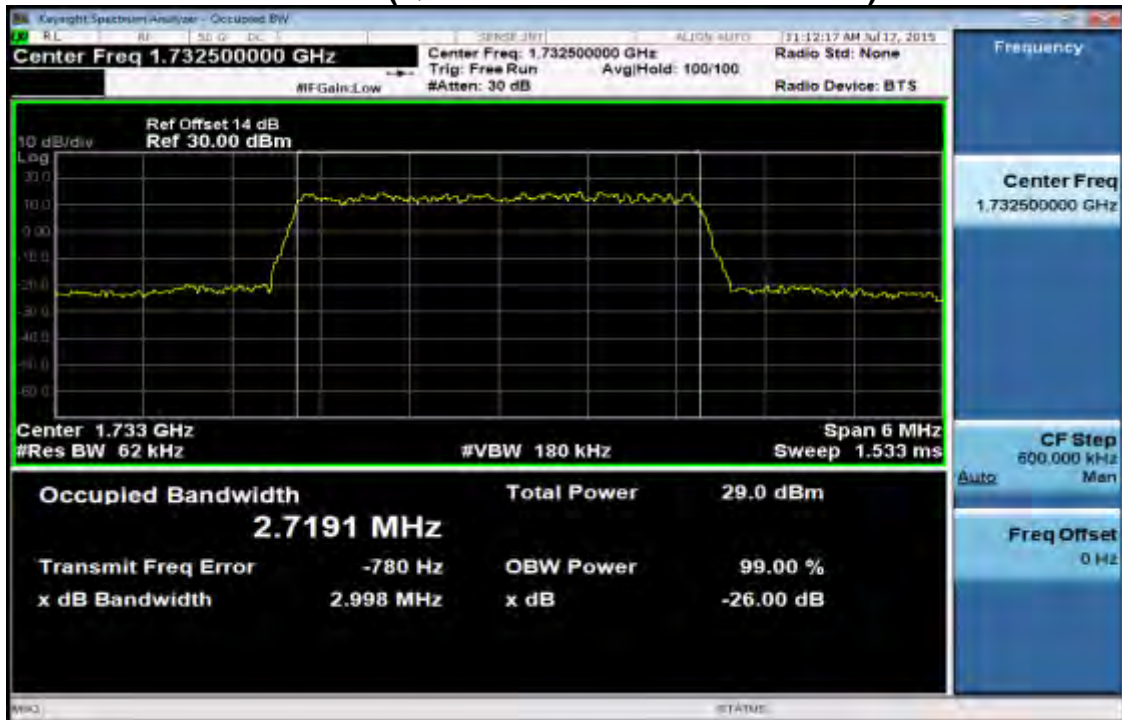
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**3MHz BW LTE-Band 4(QPSK RB Number: 15 Offset: 0) Channel Low**



**3MHz BW LTE-Band 4(QPSK RB Number: 15 Offset: 0) Channel Mid**



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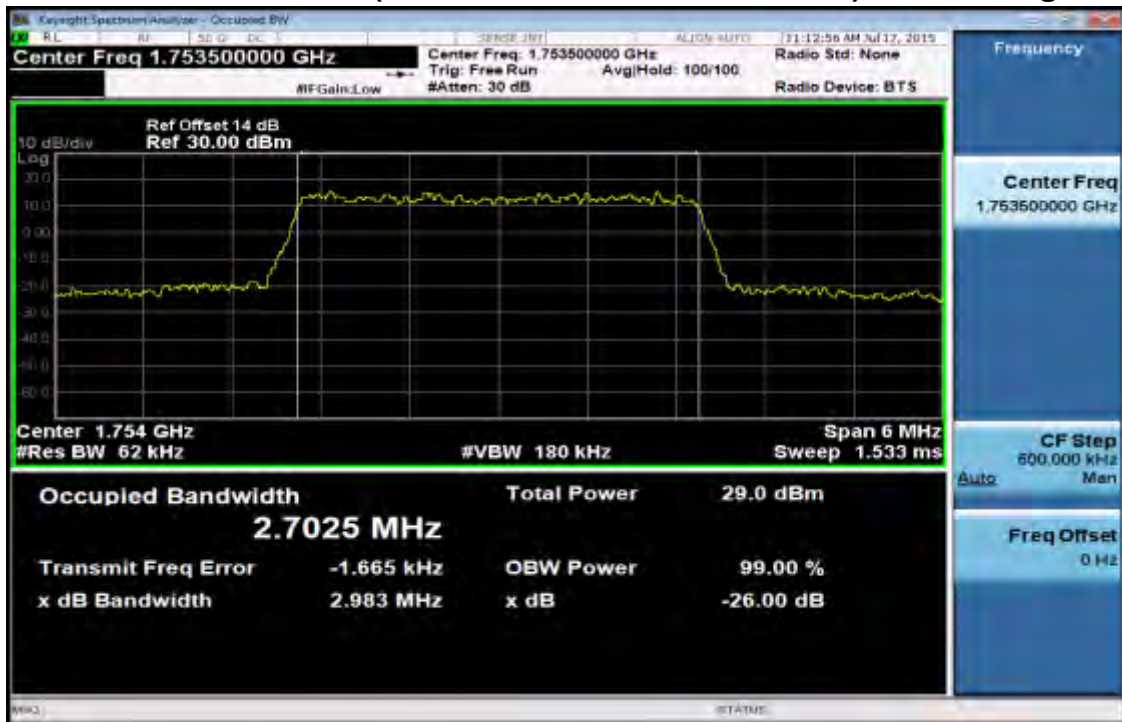
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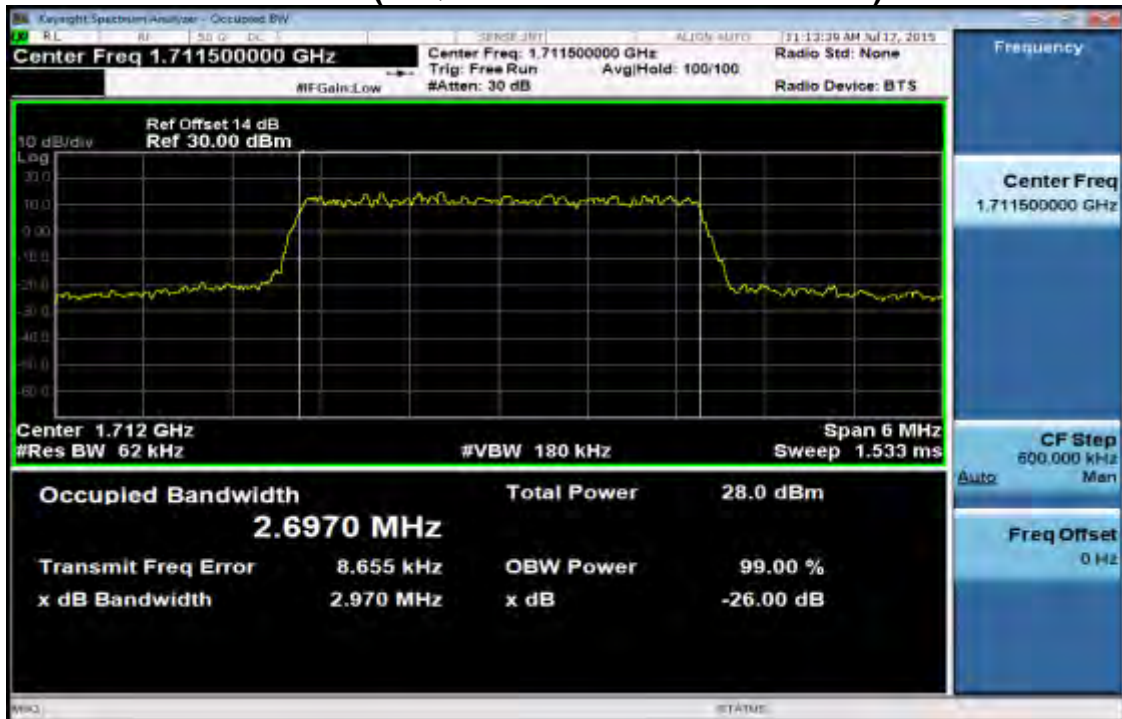
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**3MHz BW LTE-Band 4(QPSK RB Number: 15 Offset: 0) Channel High**



**3MHz BW LTE-Band 4(16QAM RB Number: 15 Offset: 0) Channel Low**



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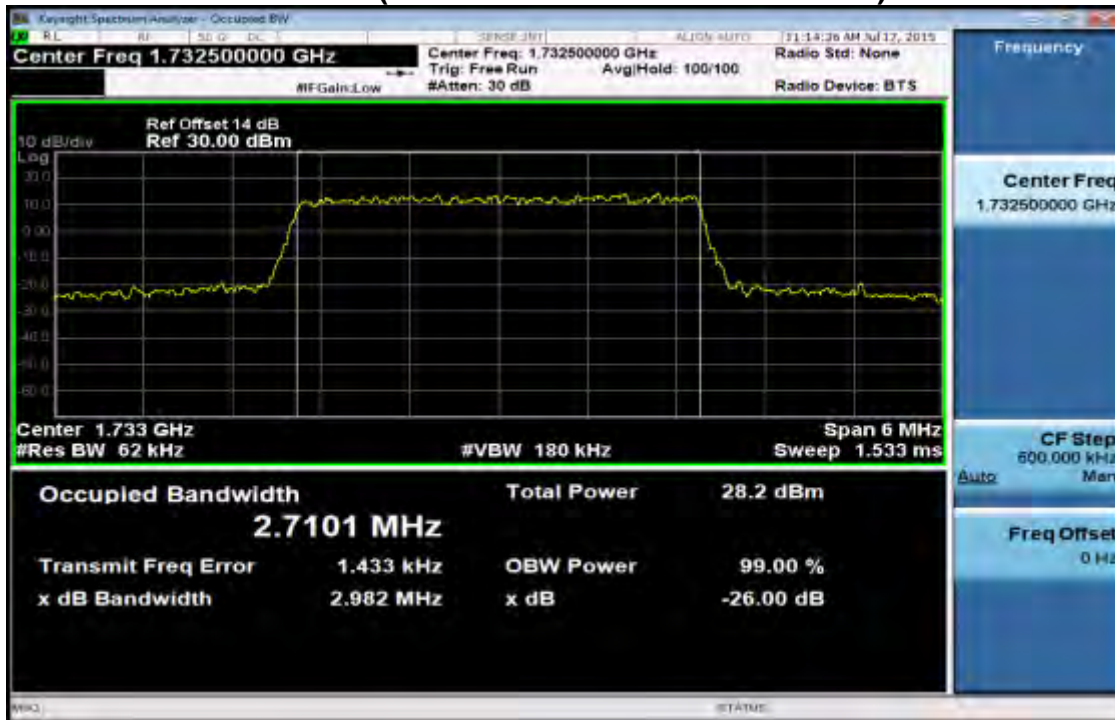
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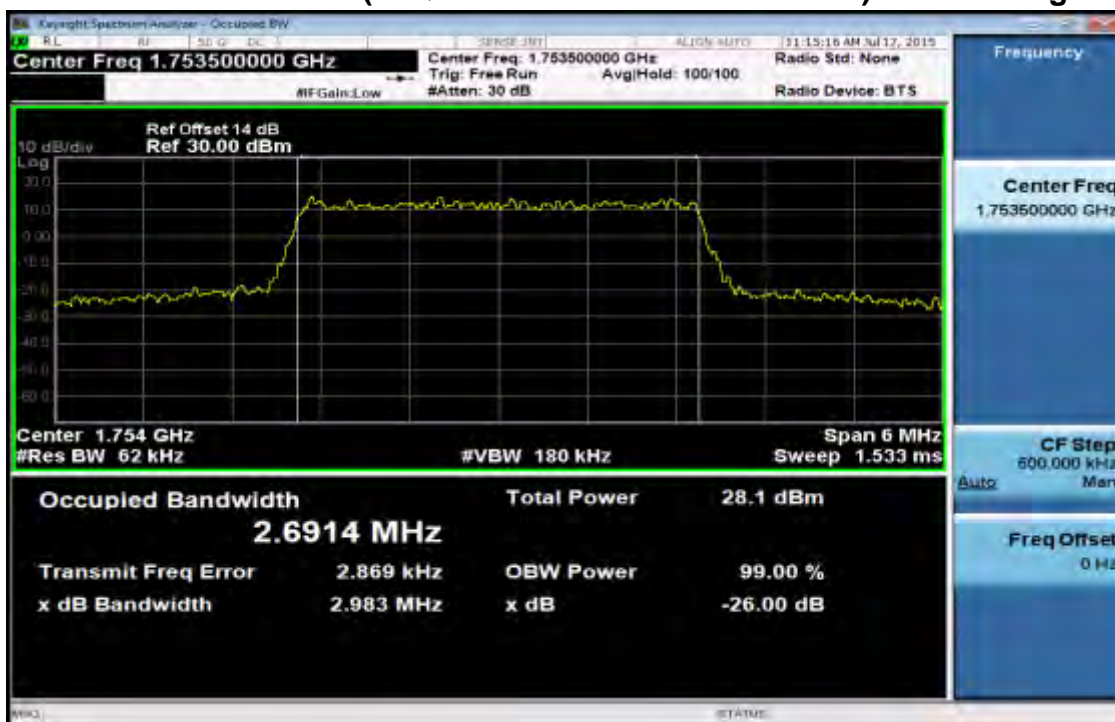
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**3MHz BW LTE-Band 4(16QAM RB Number: 15 Offset: 0) Channel Mid**



**3MHz BW LTE-Band 4(16QAM RB Number: 15 Offset: 0) Channel High**



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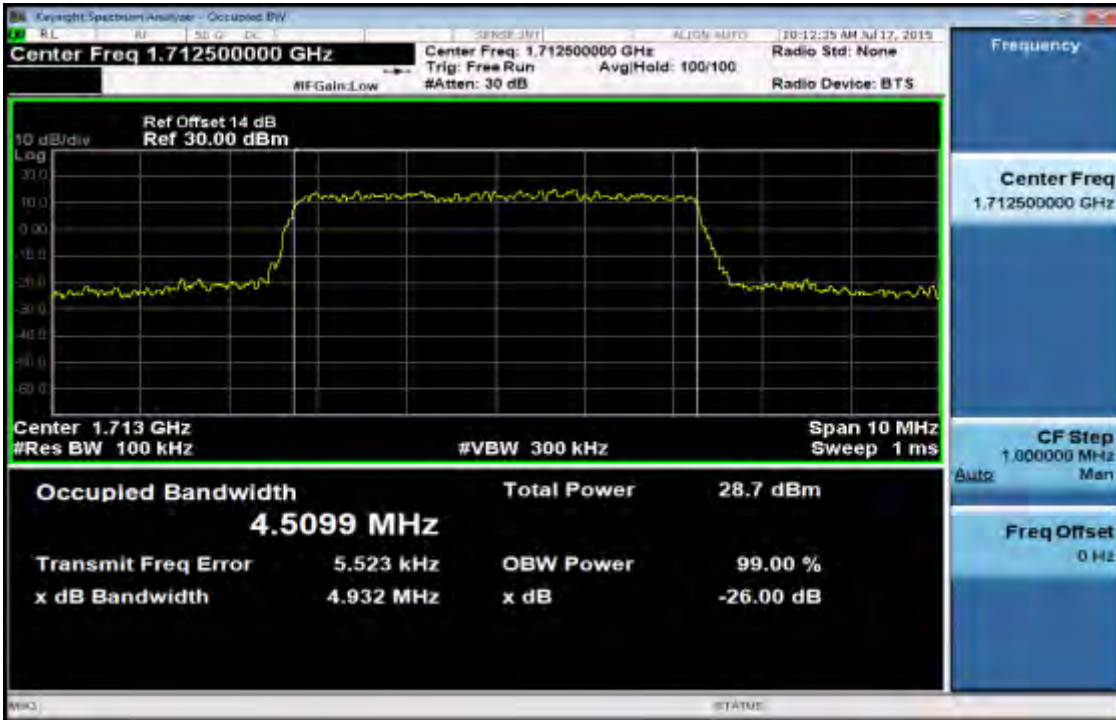
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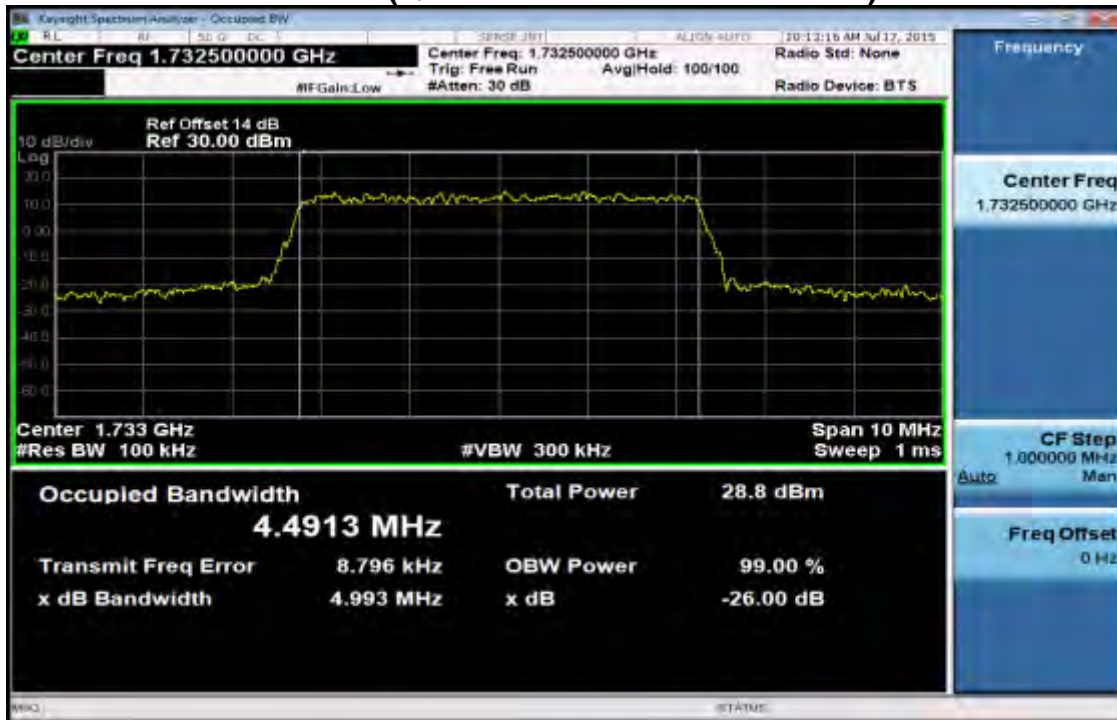
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5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel Low



5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel Mid



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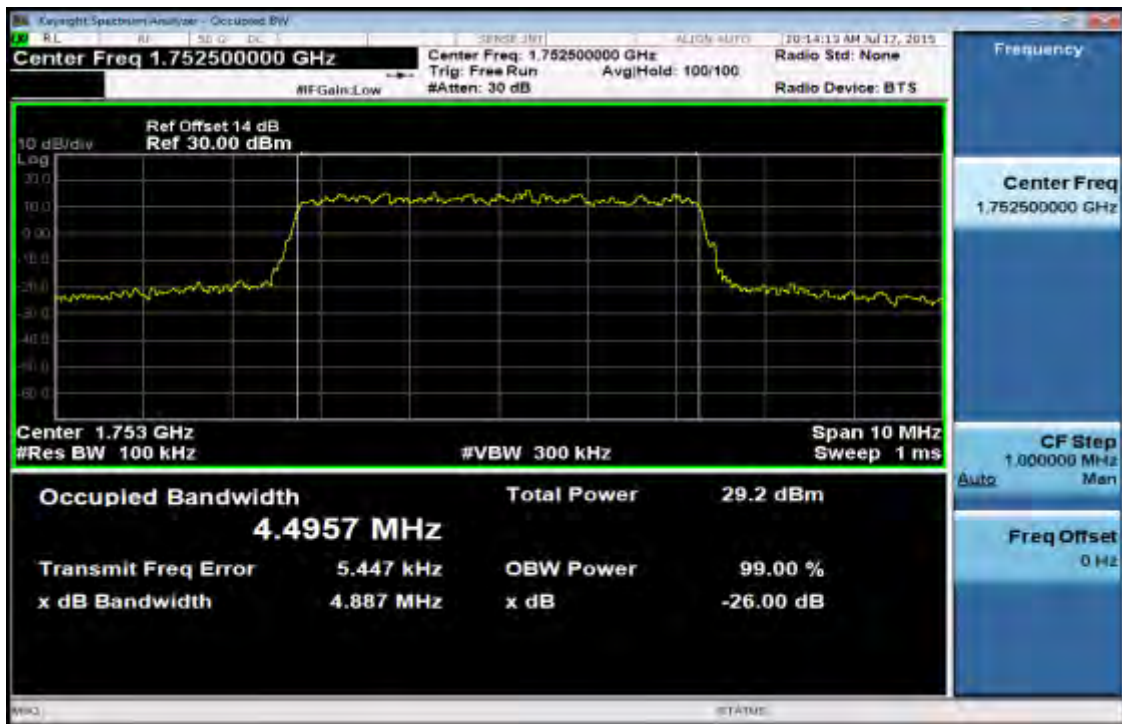
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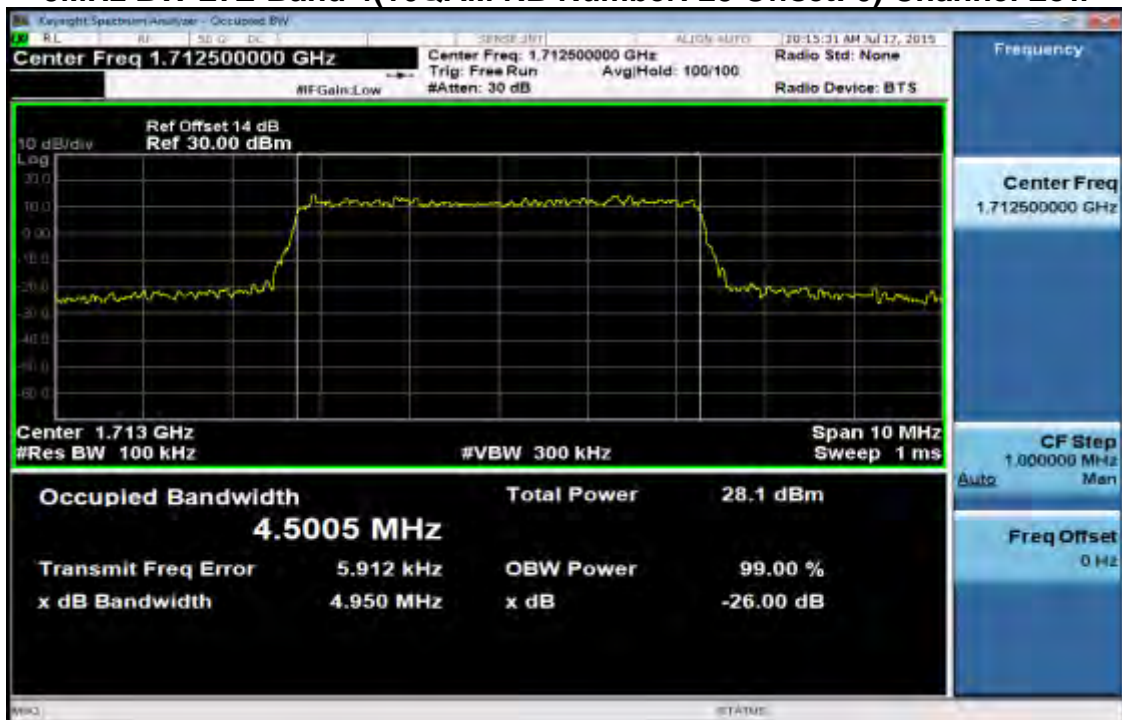
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**5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel High**



**5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel Low**



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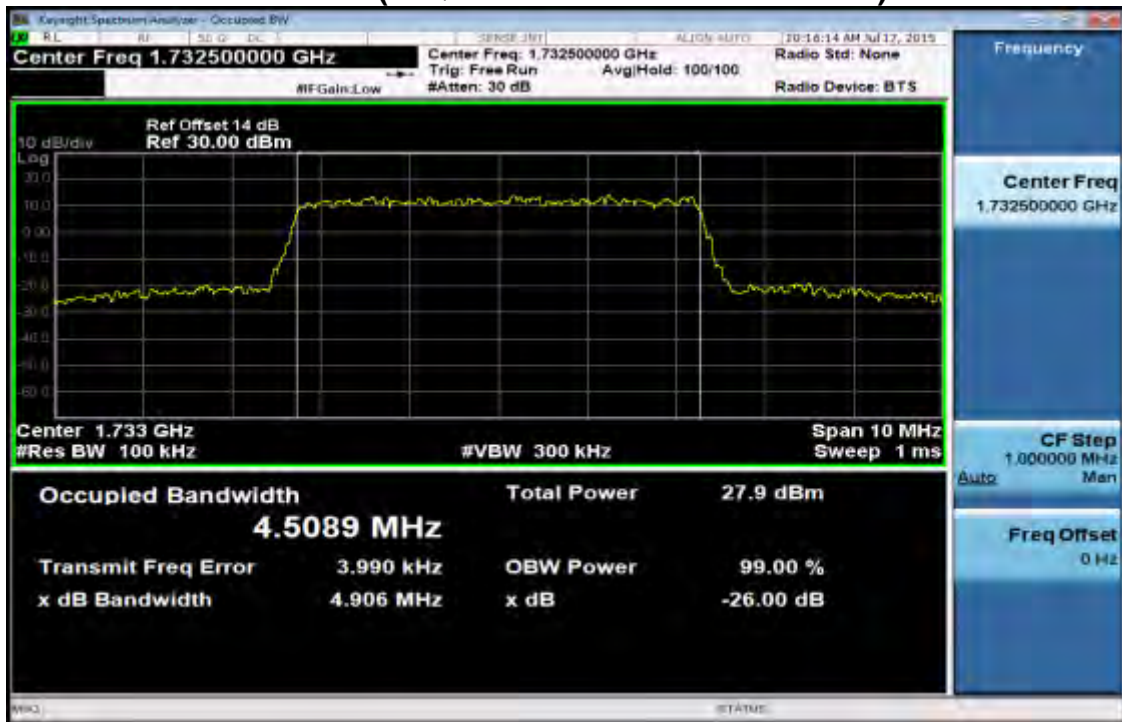
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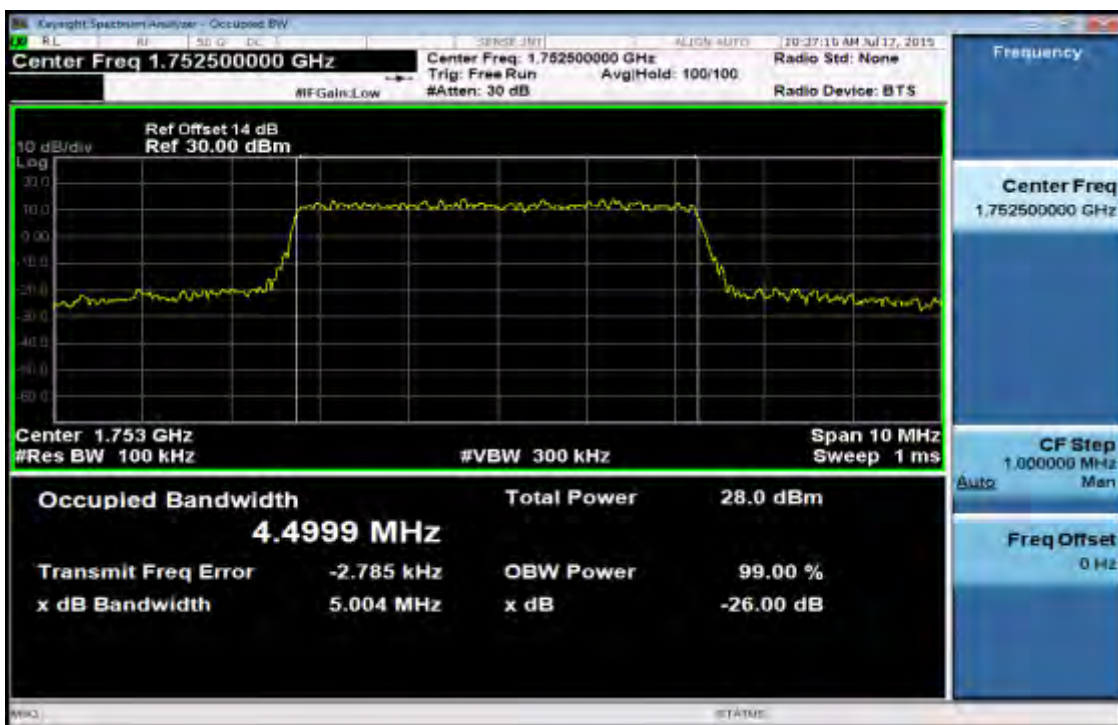
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**5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel Mid**



**5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel High**



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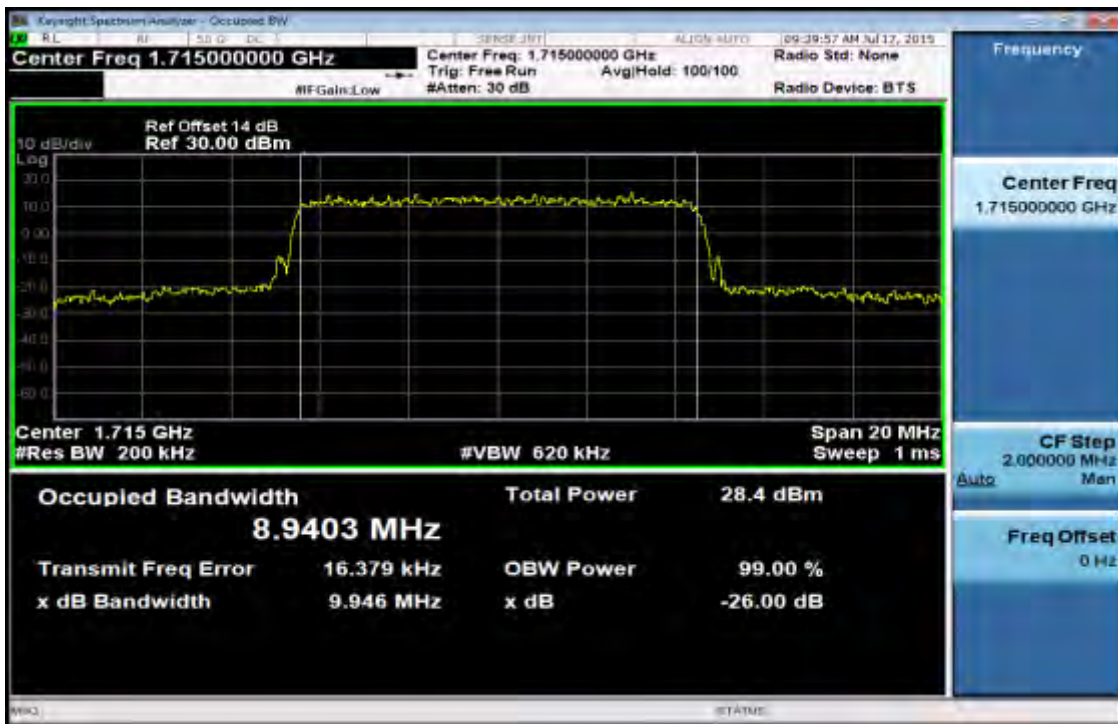
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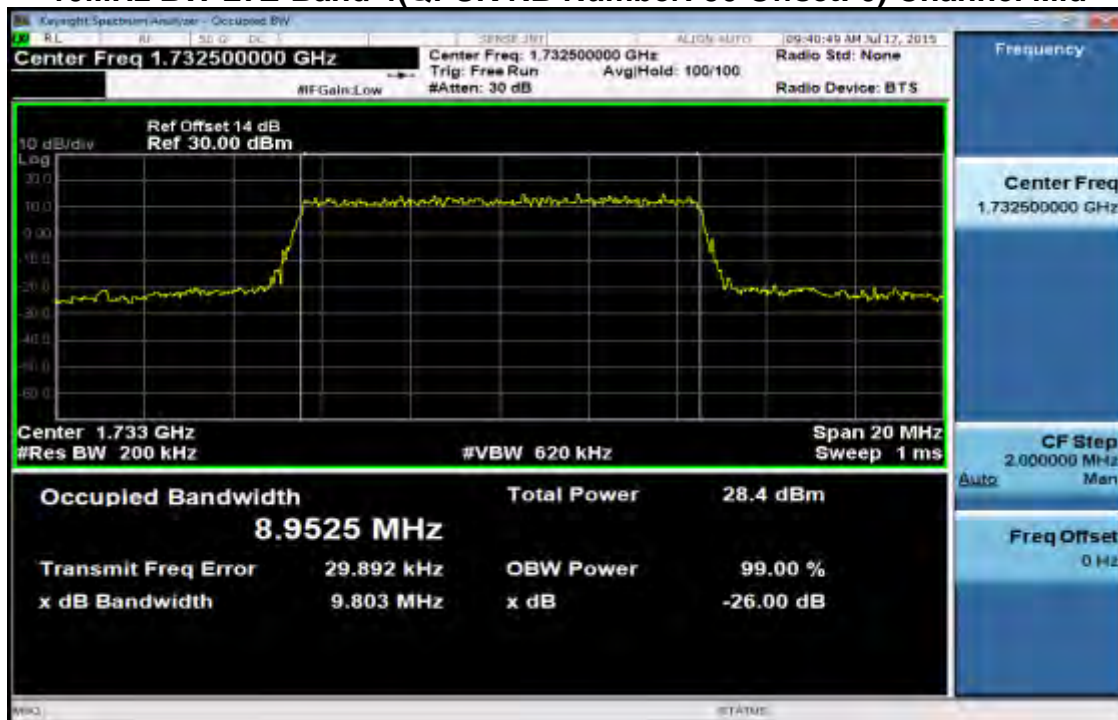
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**10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel Low**



**10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel Mid**



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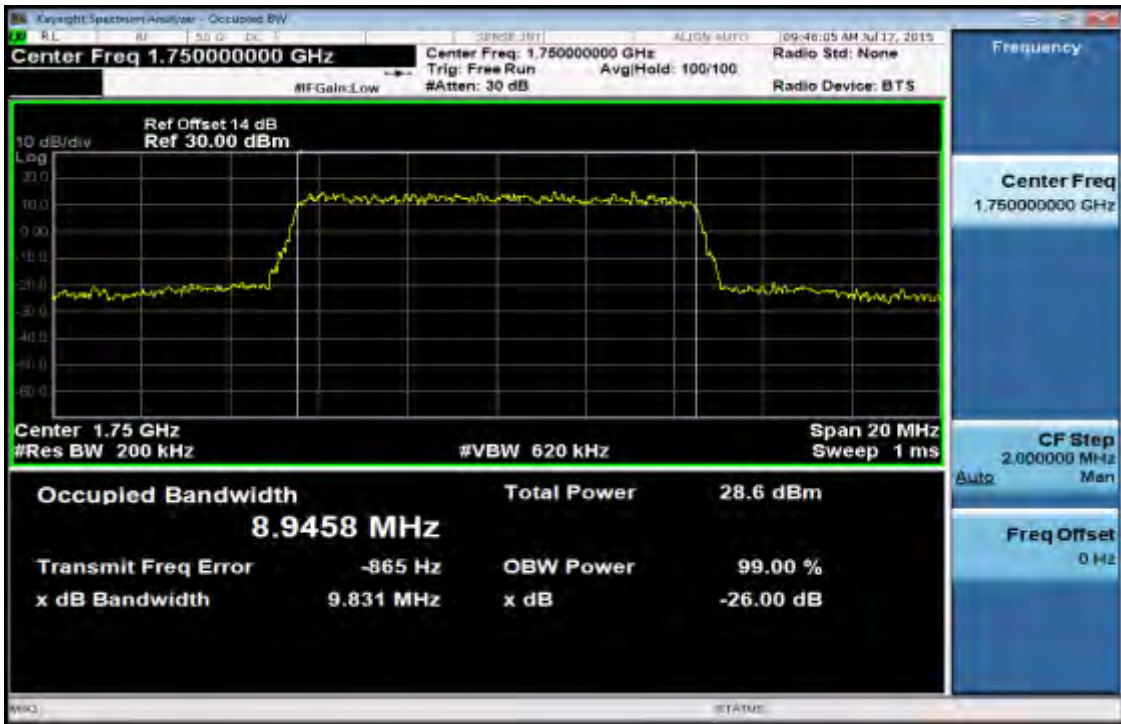
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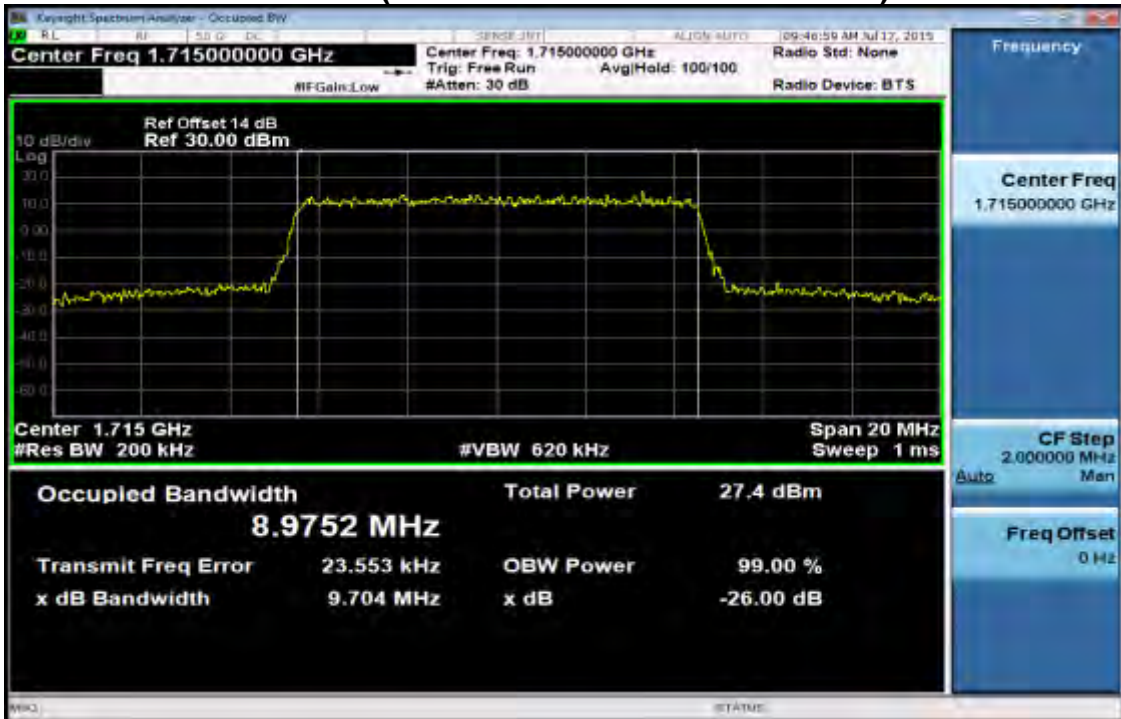
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**10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel High**



**10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel Low**



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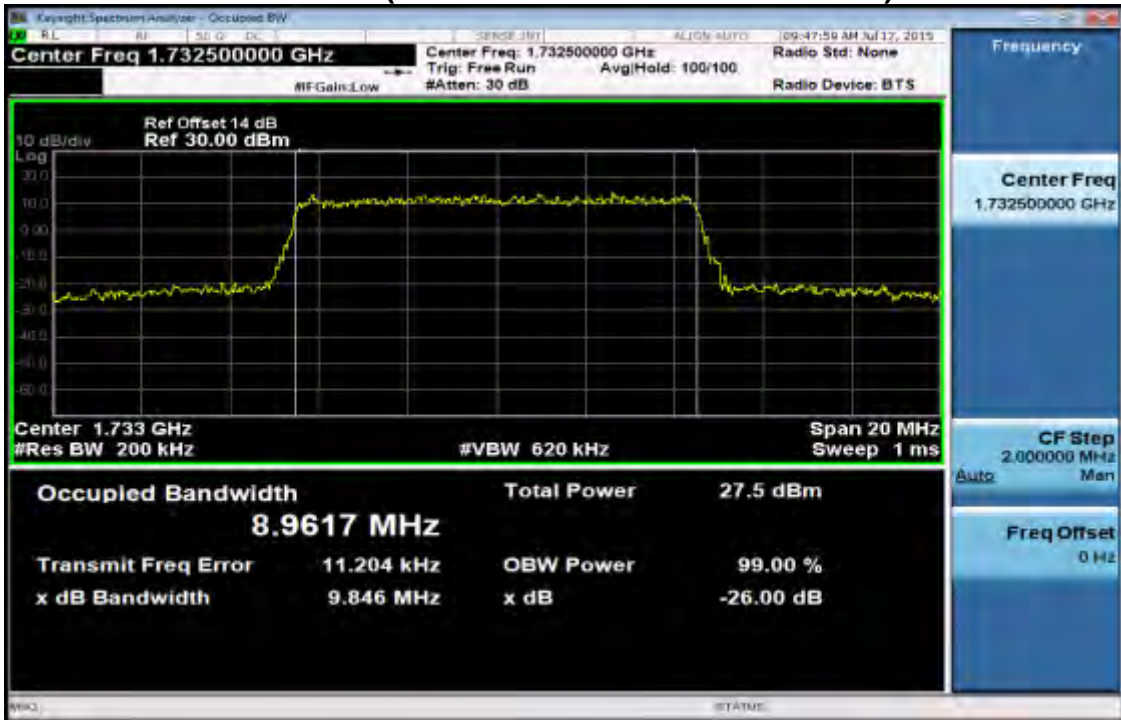
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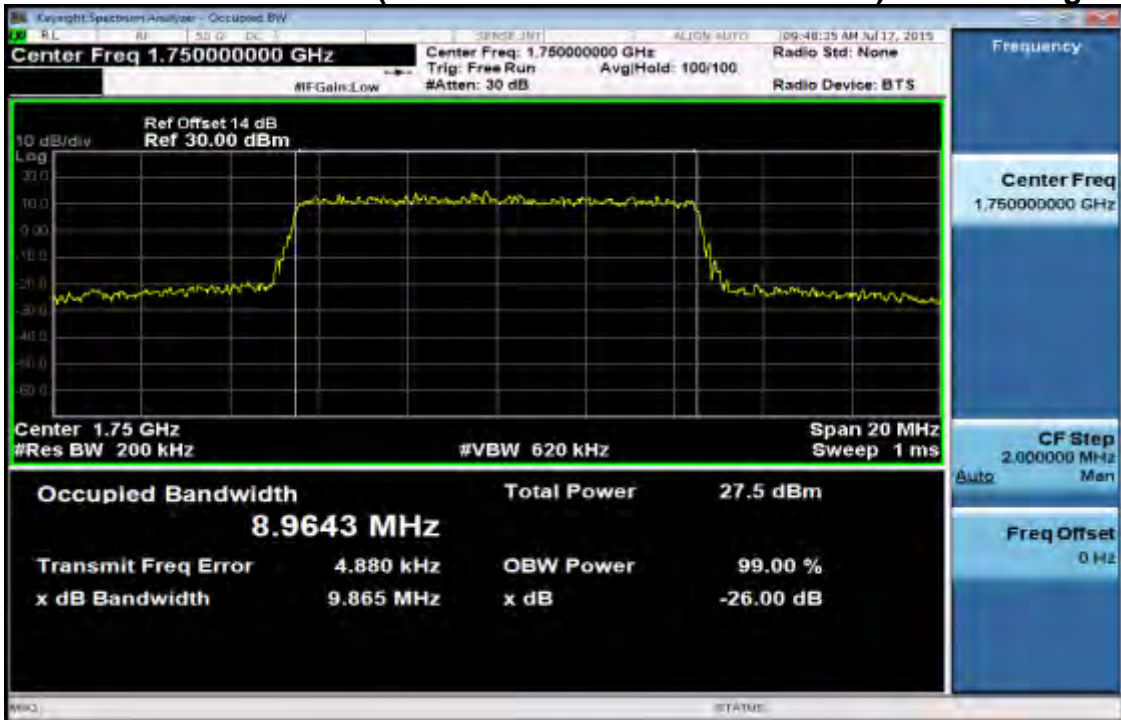
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**10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel Mid**



**10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel High**



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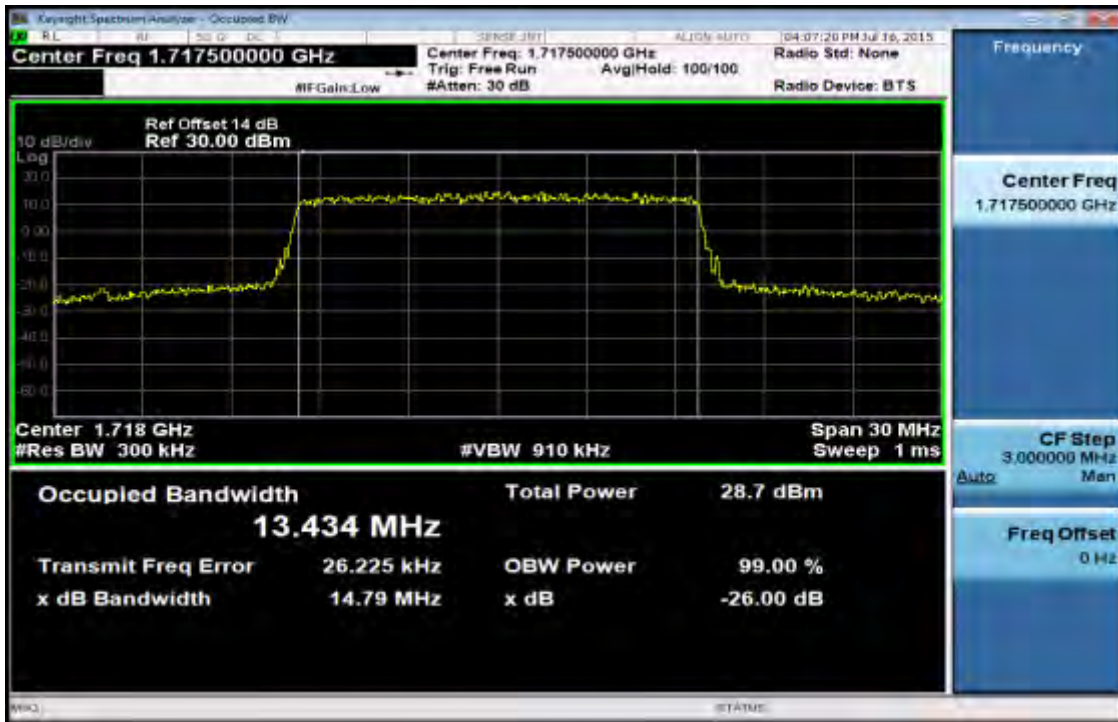
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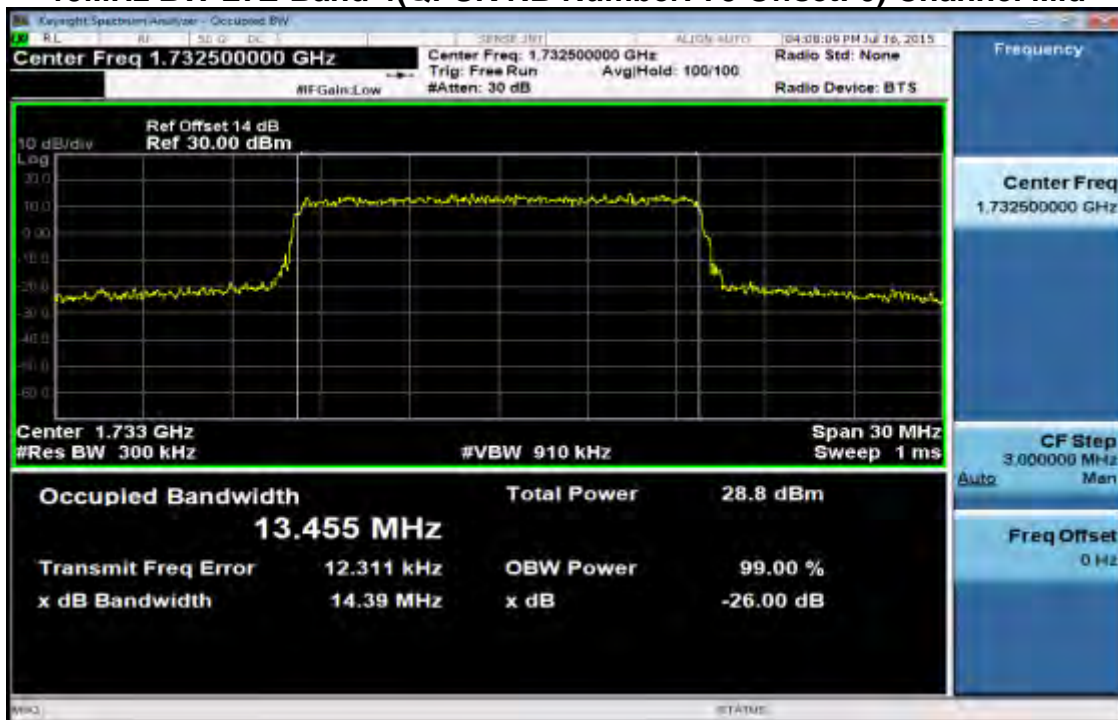
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**15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel Low**



**15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel Mid**



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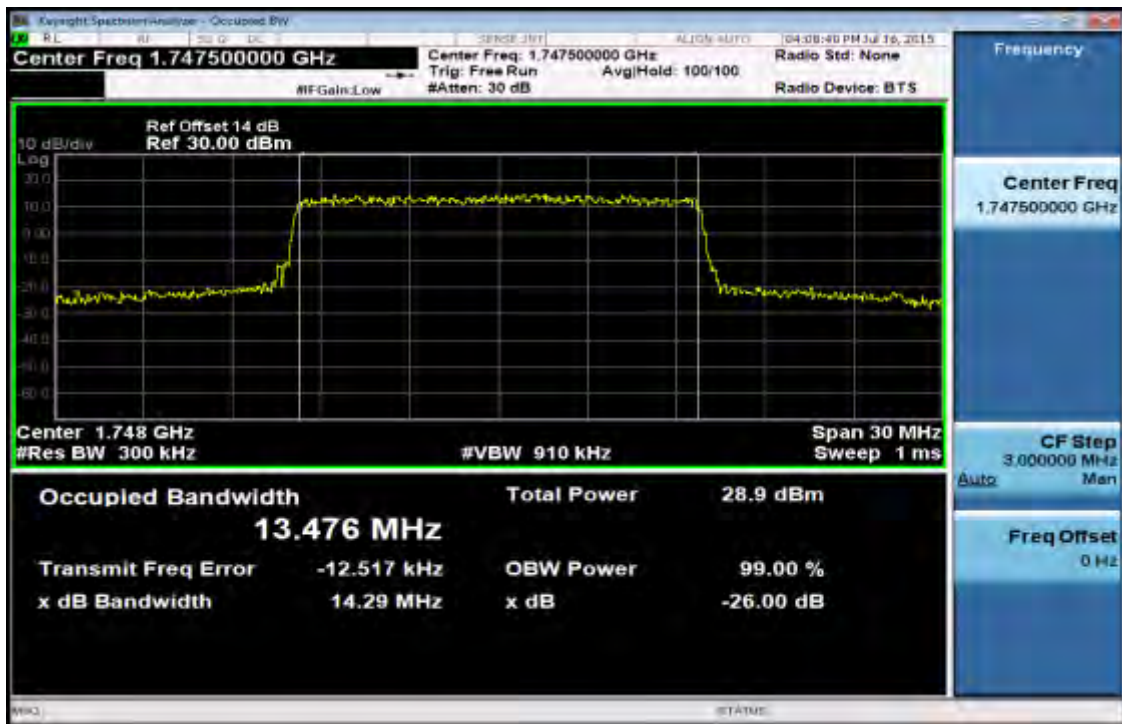
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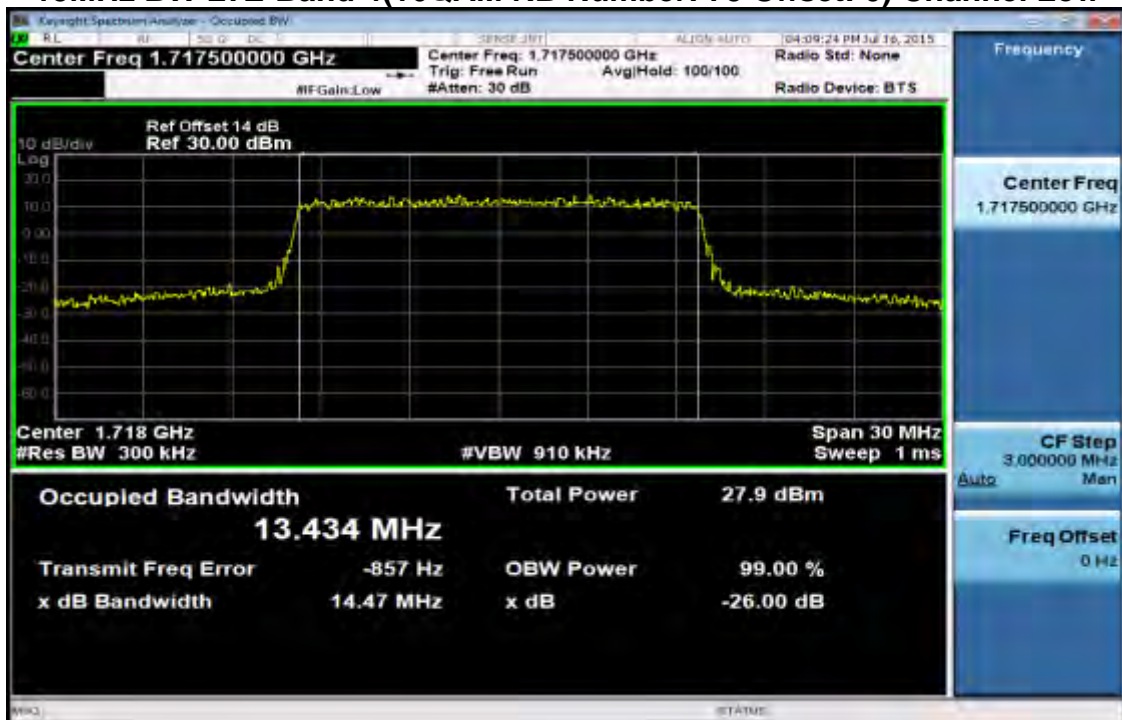
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**15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel High**



**15MHz BW LTE-Band 4(16QAM RB Number: 75 Offset: 0) Channel Low**



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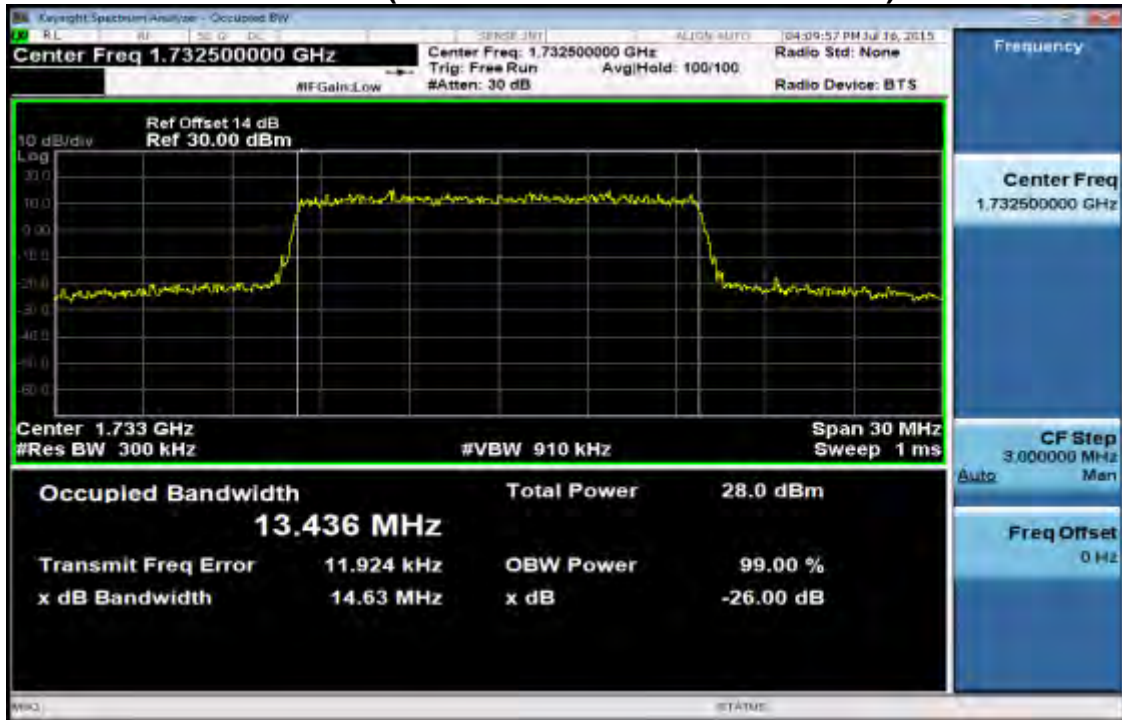
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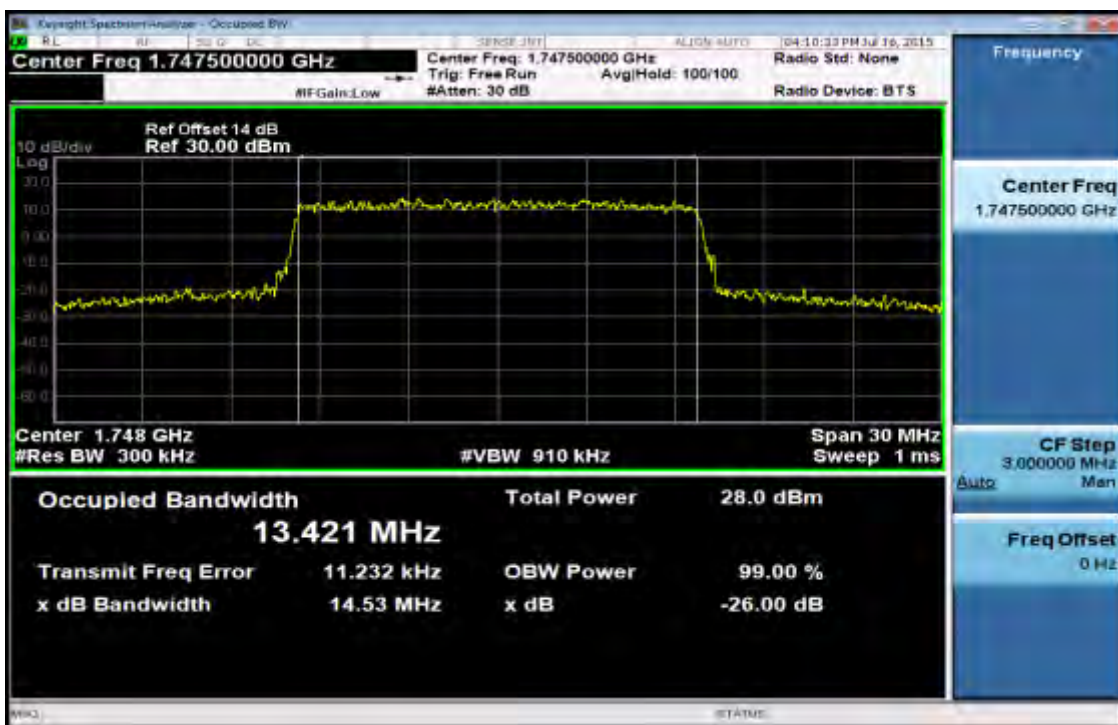
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**15MHz BW LTE-Band 4(16QAM RB Number: 75 Offset: 0) Channel Mid**



**15MHz BW LTE-Band 4(16QAM RB Number: 75 Offset: 0) Channel High**



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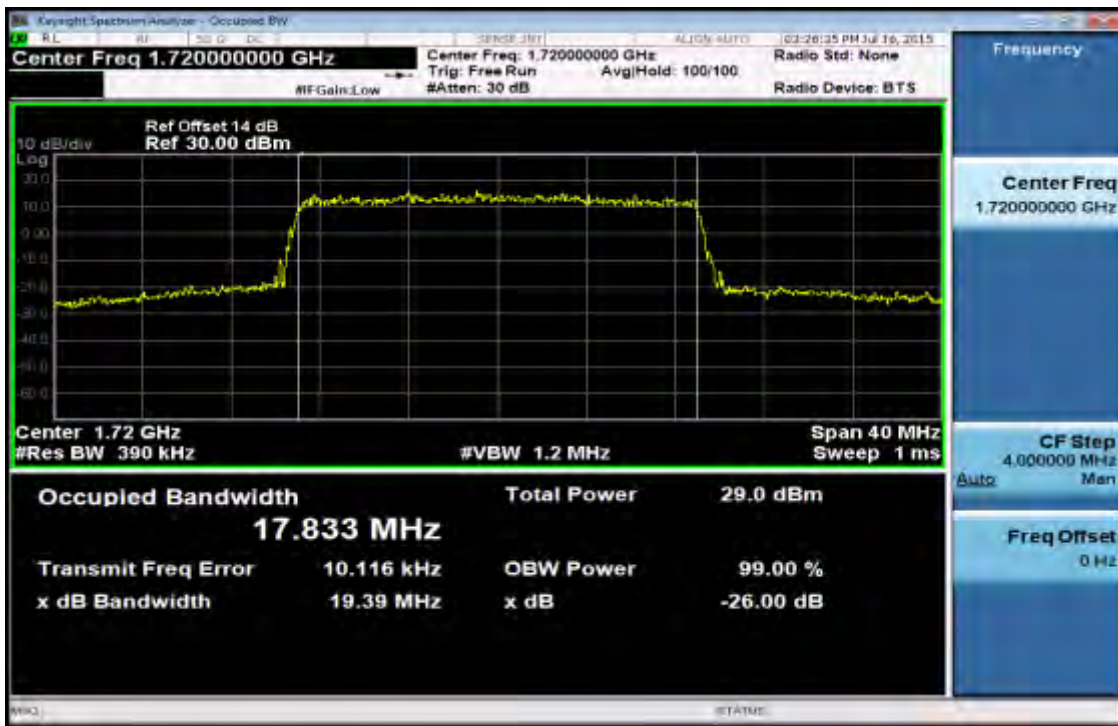
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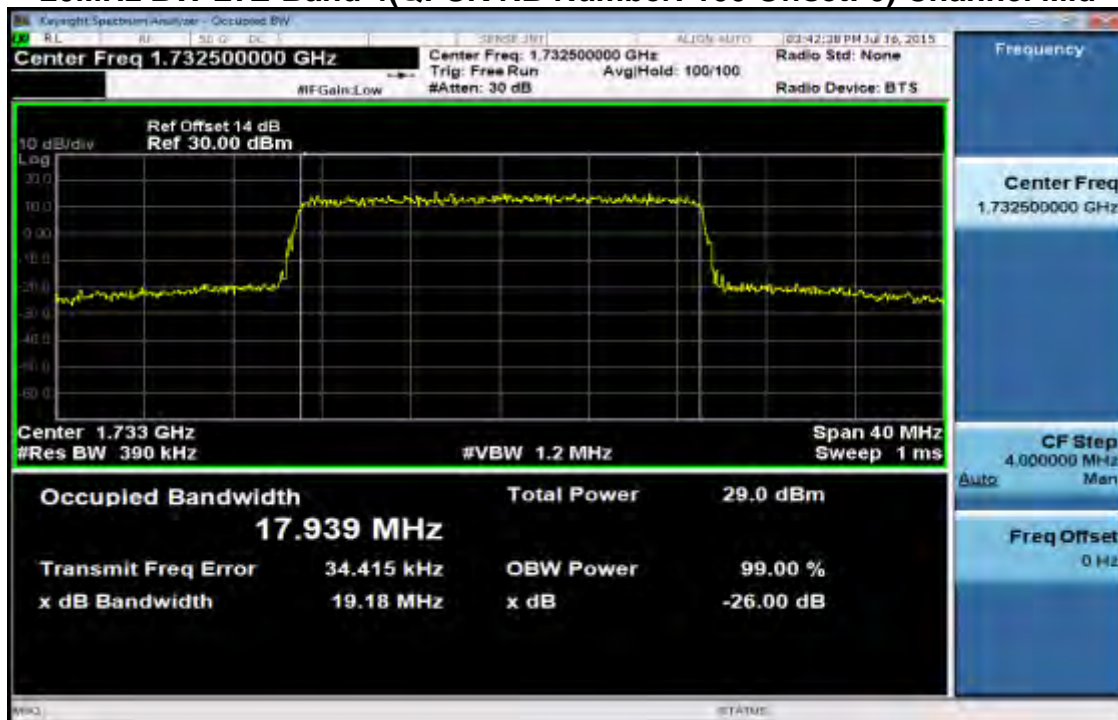
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**20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel Low**



**20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel Mid**



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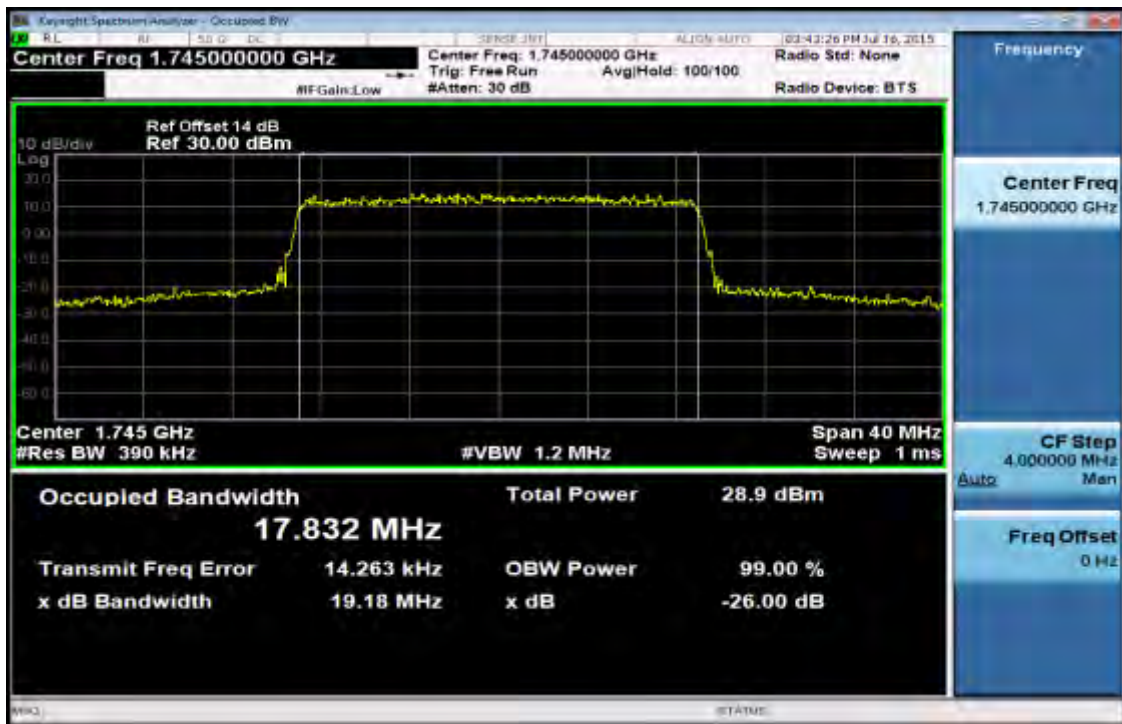
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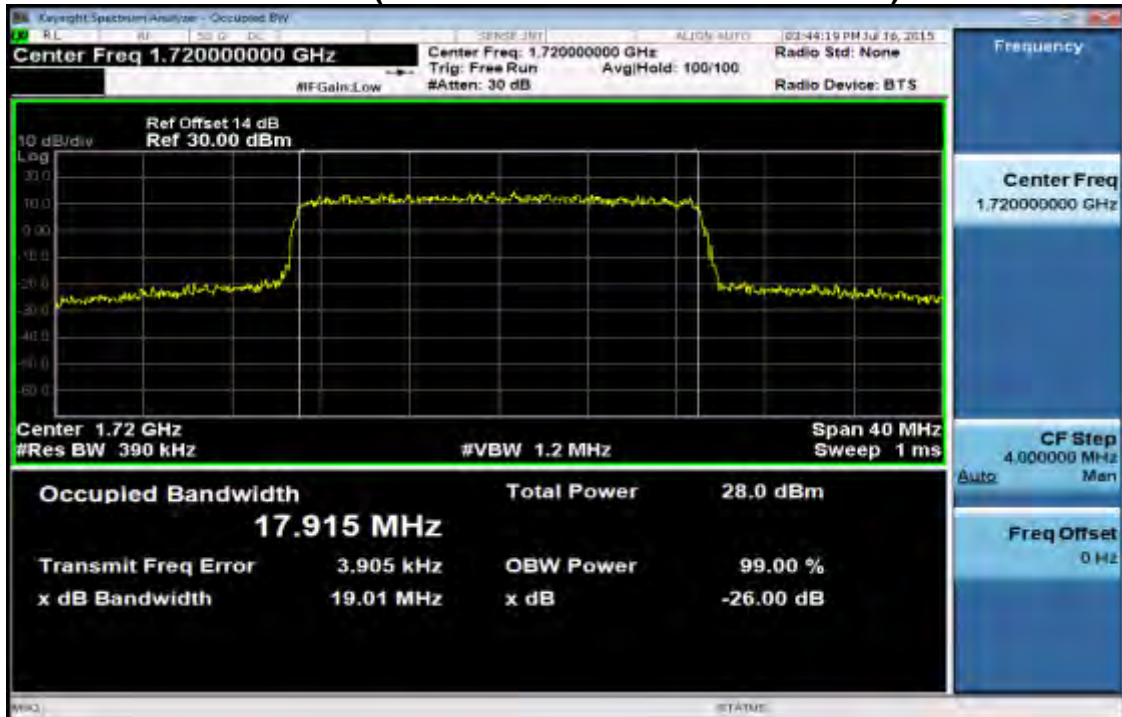
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**20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel High**



**20MHz BW LTE-Band 4(16QAM RB Number: 100 Offset: 0) Channel Low**



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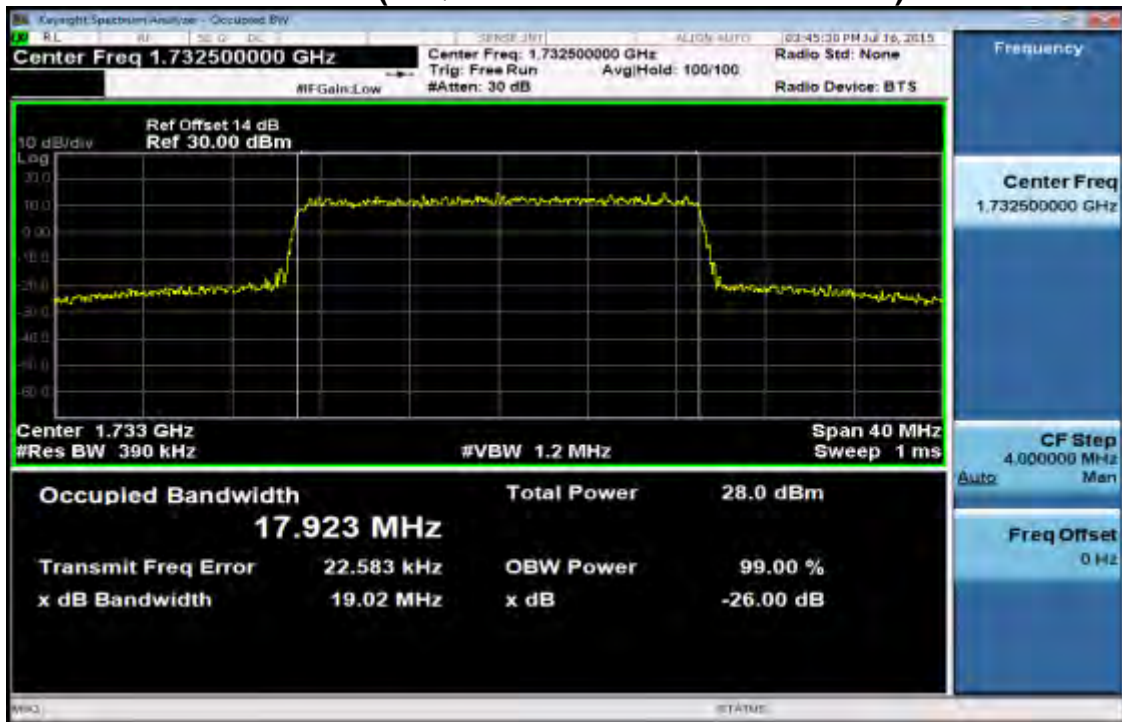
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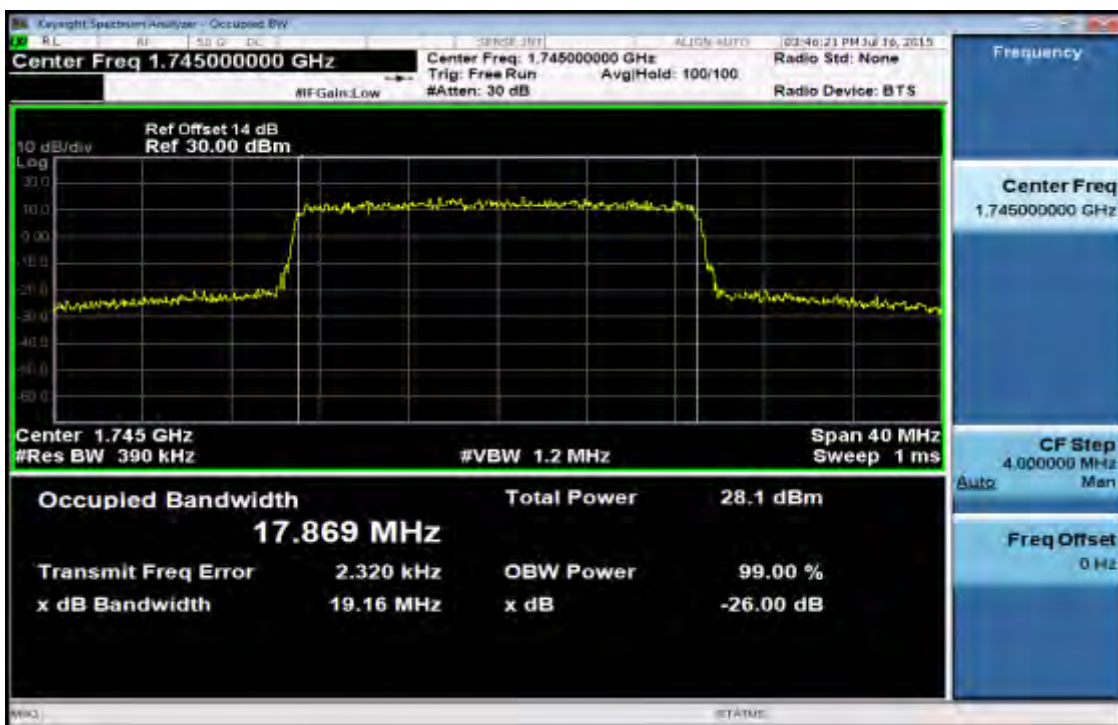
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**20MHz BW LTE-Band 4(16QAM RB Number: 100 Offset: 0) Channel Mid**



**20MHz BW LTE-Band 4(16QAM RB Number: 100 Offset: 0) Channel High**



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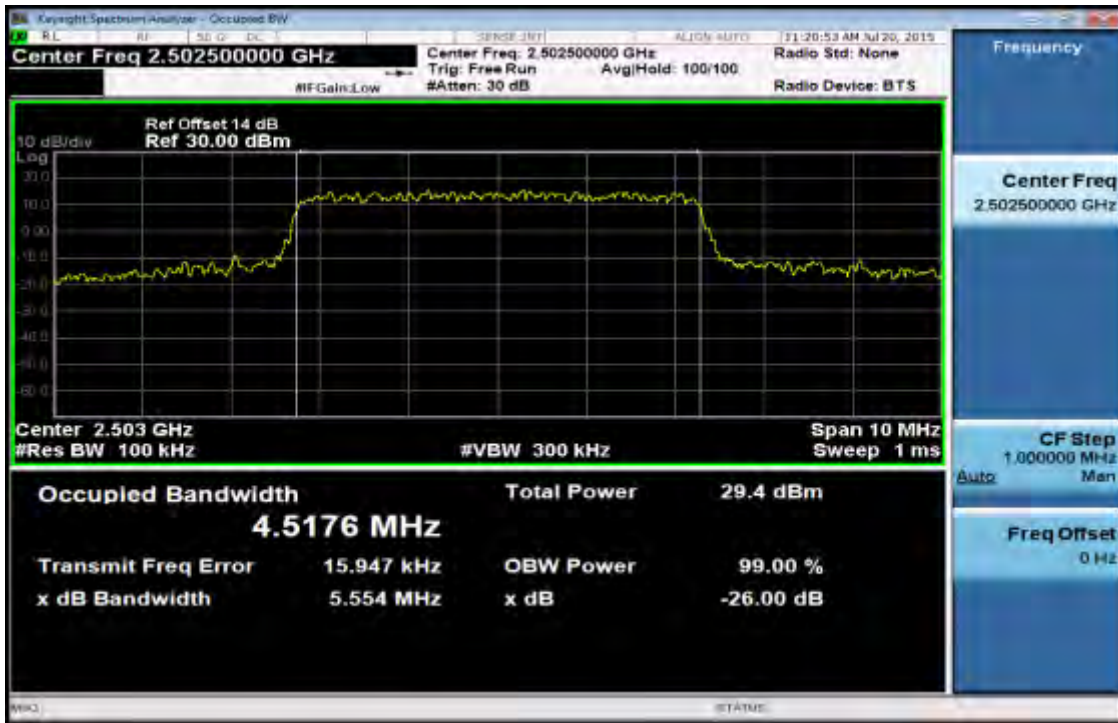
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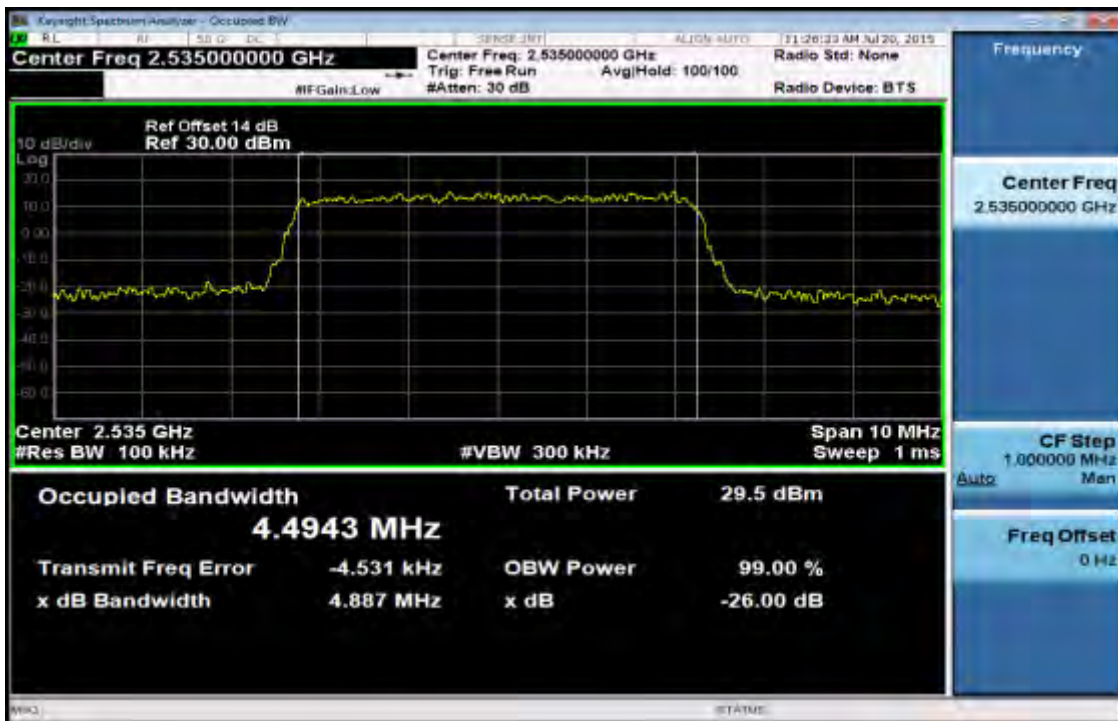
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**5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel Low**



**5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel Mid**



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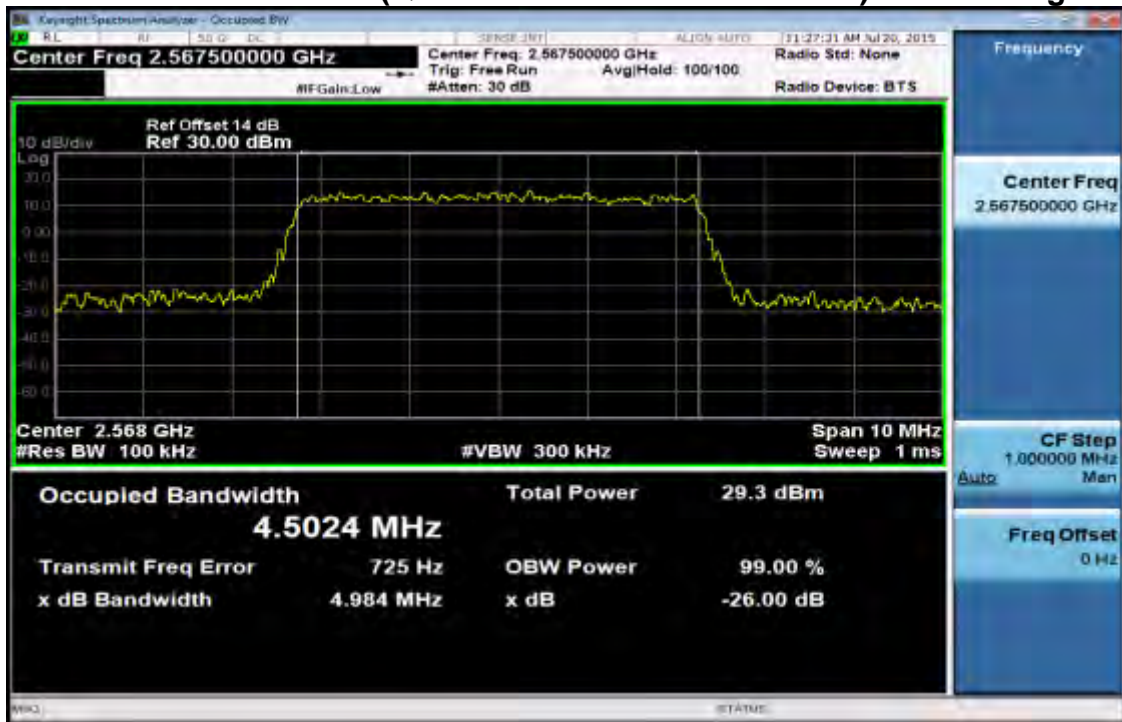
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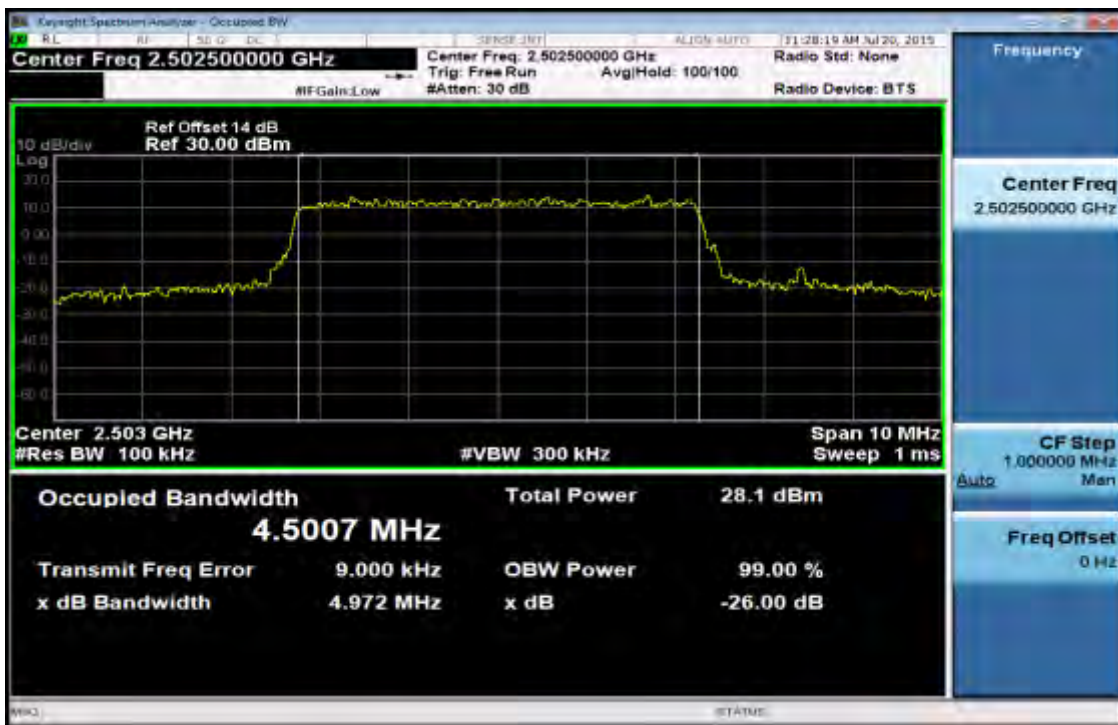
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**5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel High**



**5MHz BW LTE-Band 7(16QAM RB Number: 25 Offset: 0) Channel Low**



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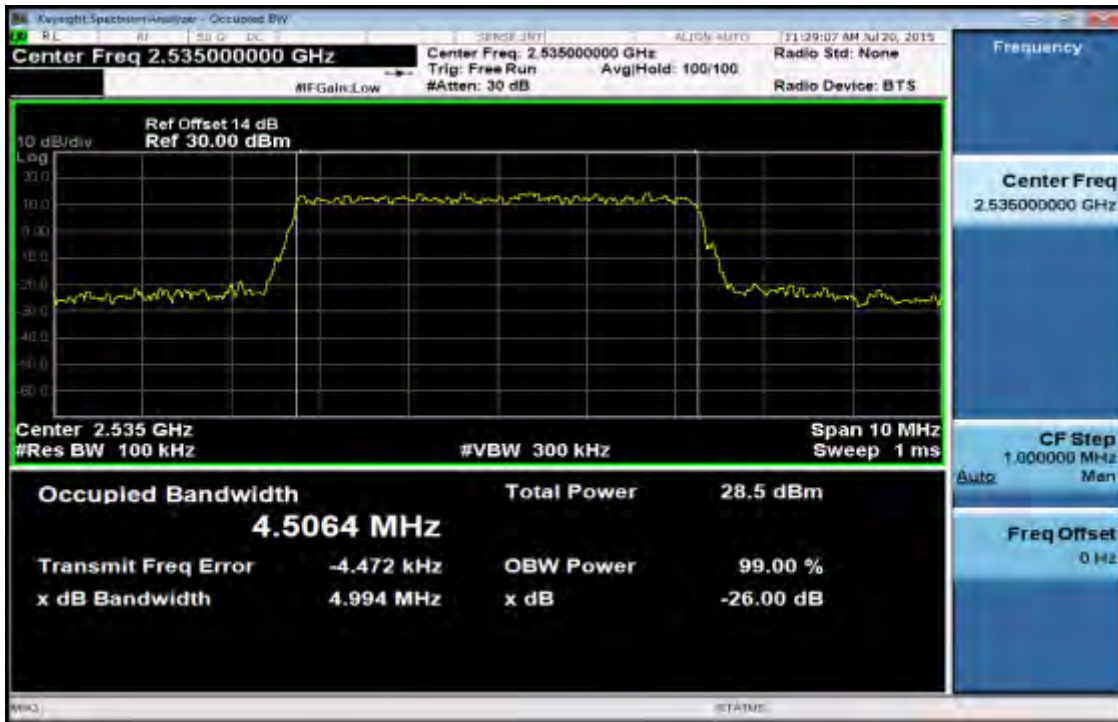
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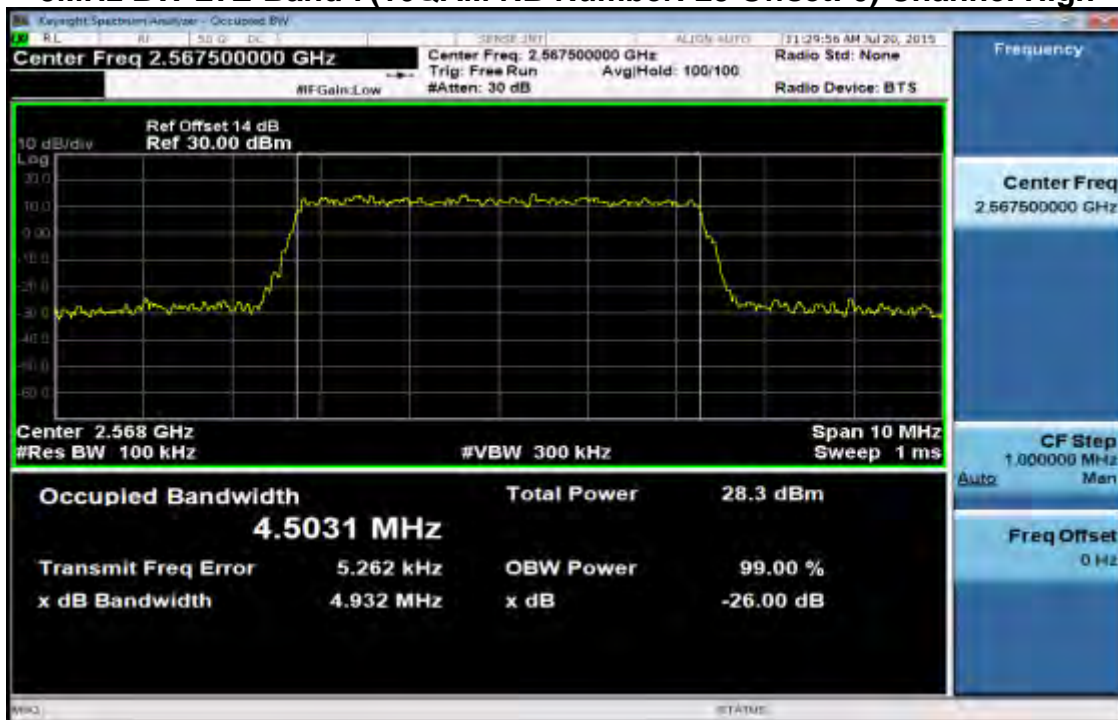
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**5MHz BW LTE-Band 7(16QAM RB Number: 25 Offset: 0) Channel Mid**



**5MHz BW LTE-Band 7(16QAM RB Number: 25 Offset: 0) Channel High**



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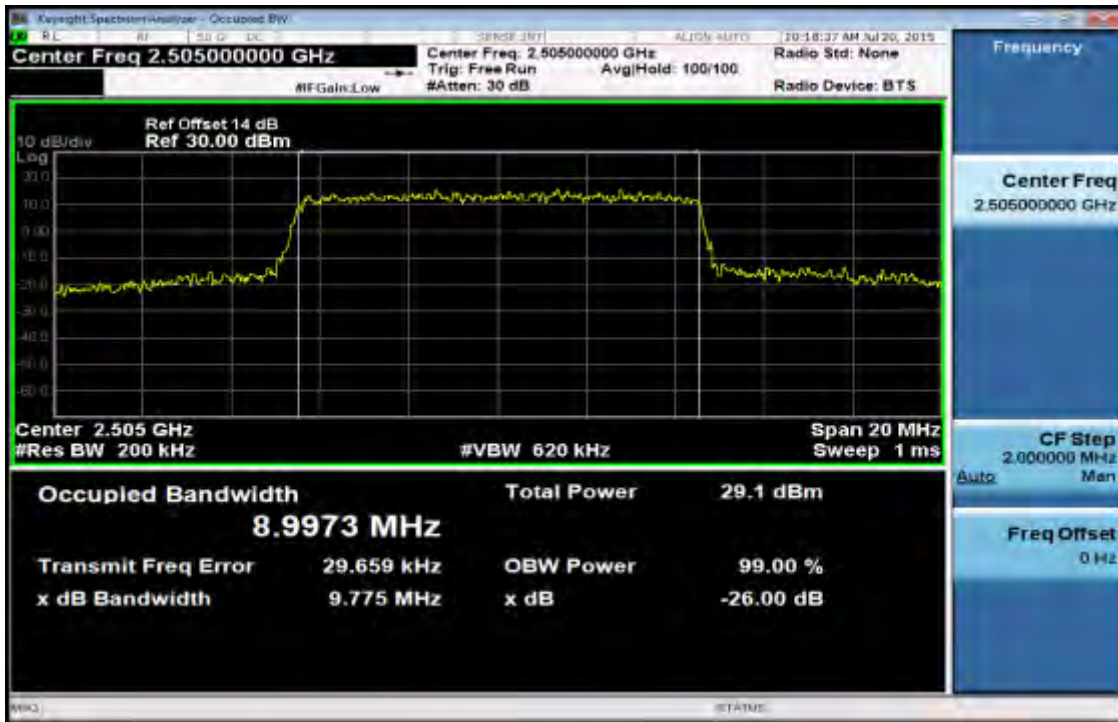
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f (886-2) 2298-0488

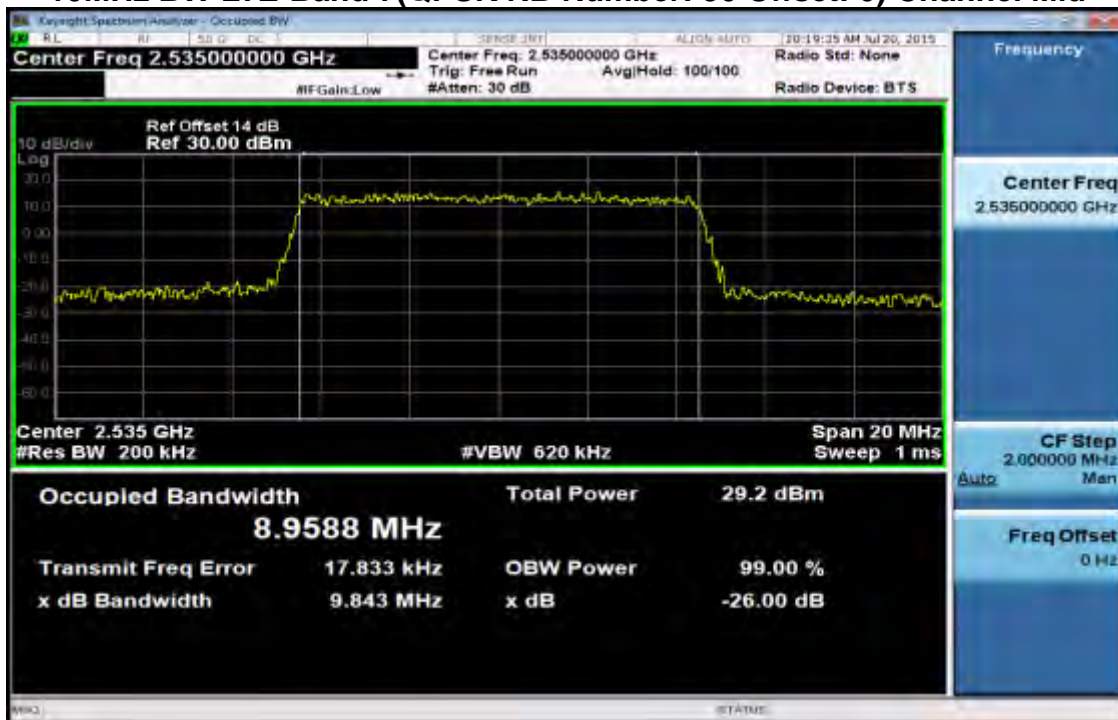
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**10MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Low**



**10MHz BW LTE-Band 7(QPSK RB Number: 50 Offset: 0) Channel Mid**



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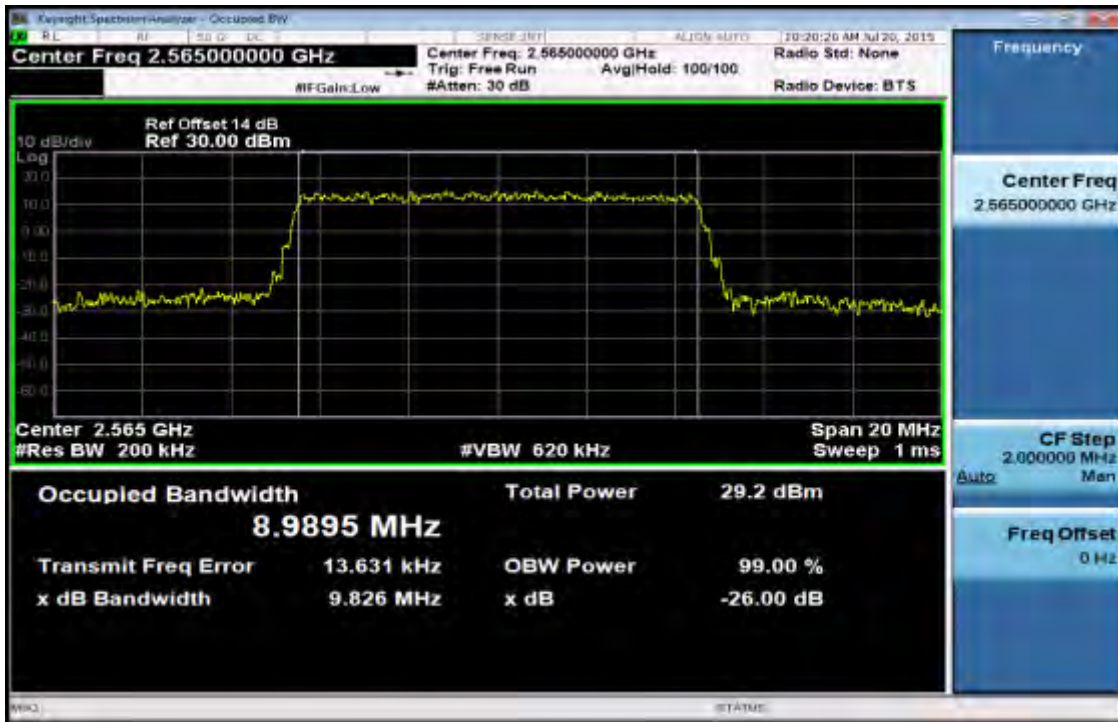
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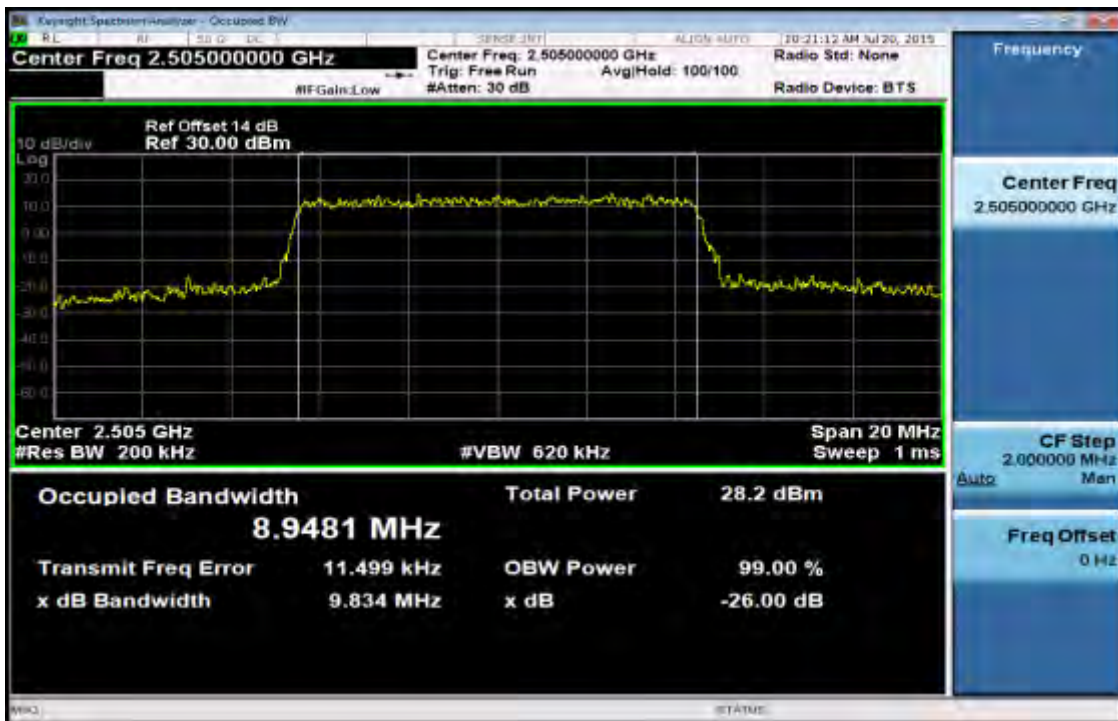
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**10MHz BW LTE-Band 7(QPSK RB Number: 50 Offset: 0) Channel High**



**10MHz BW LTE-Band 7 (16QAM RB Number: 50 Offset: 0) Channel Low**



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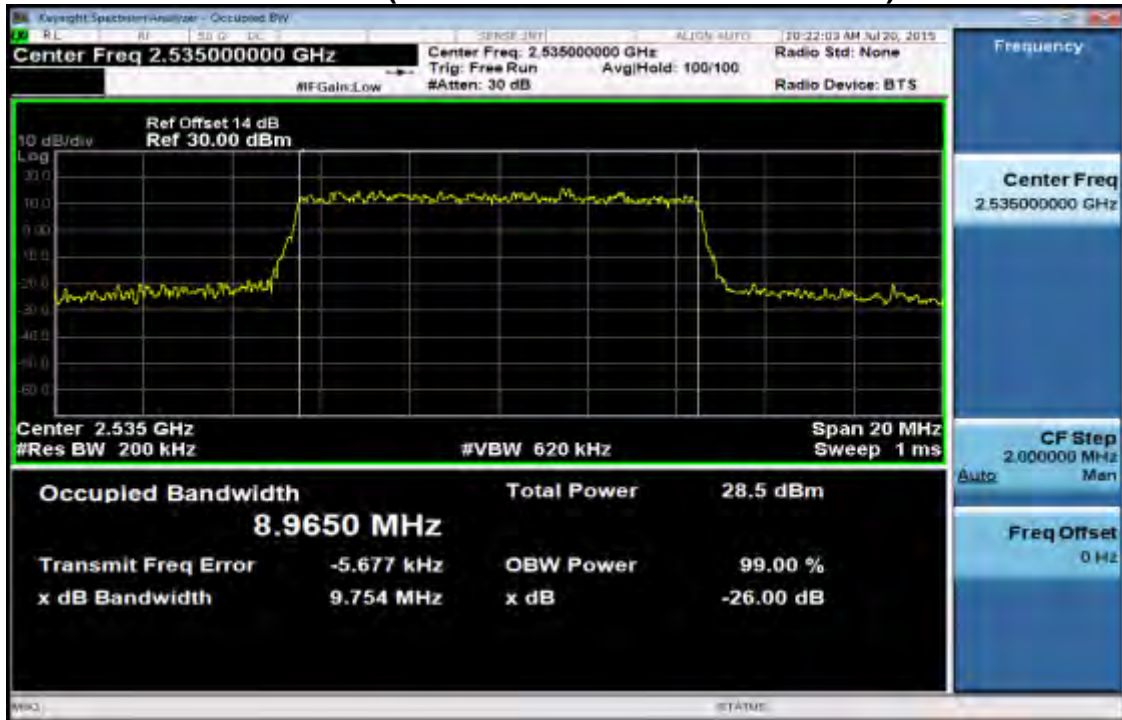
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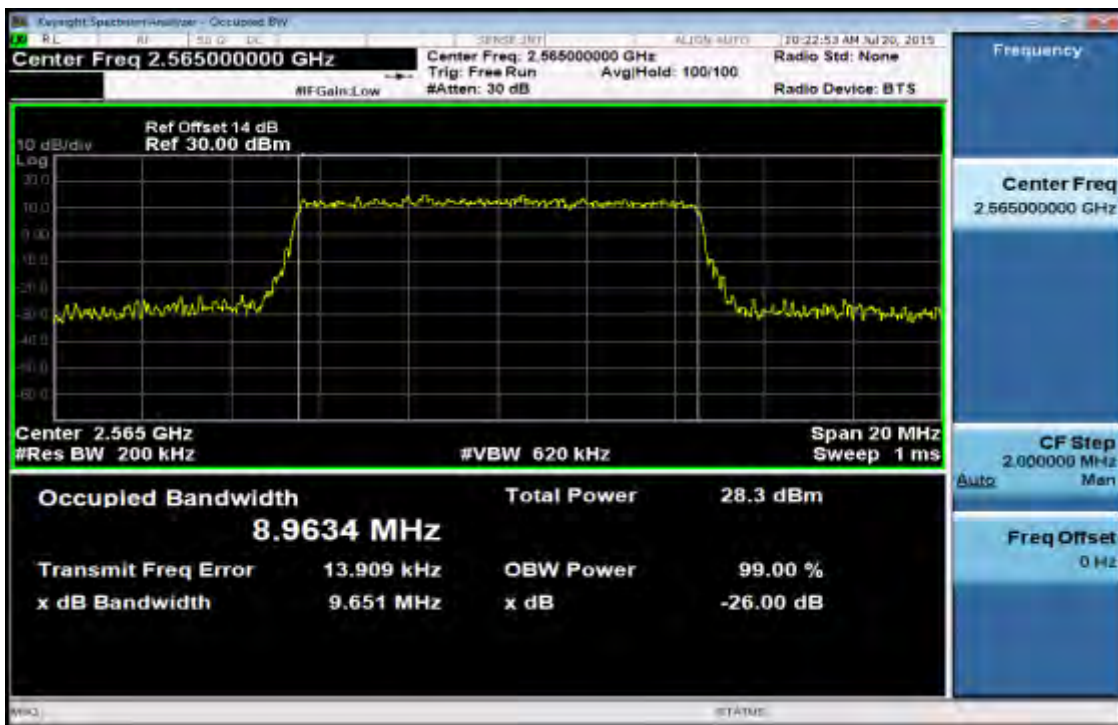
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10MHz BW LTE-Band 7(16QAM RB Number: 50 Offset: 0) Channel Mid



10MHz BW LTE-Band 7(16QAM RB Number: 50 Offset: 0) Channel High



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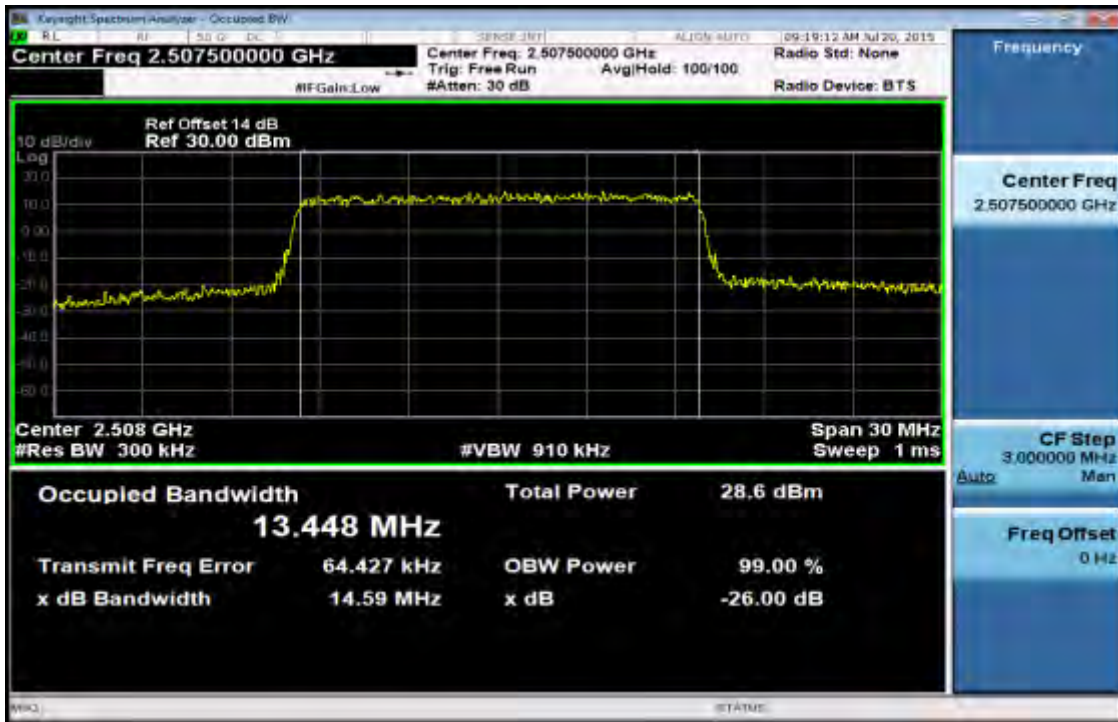
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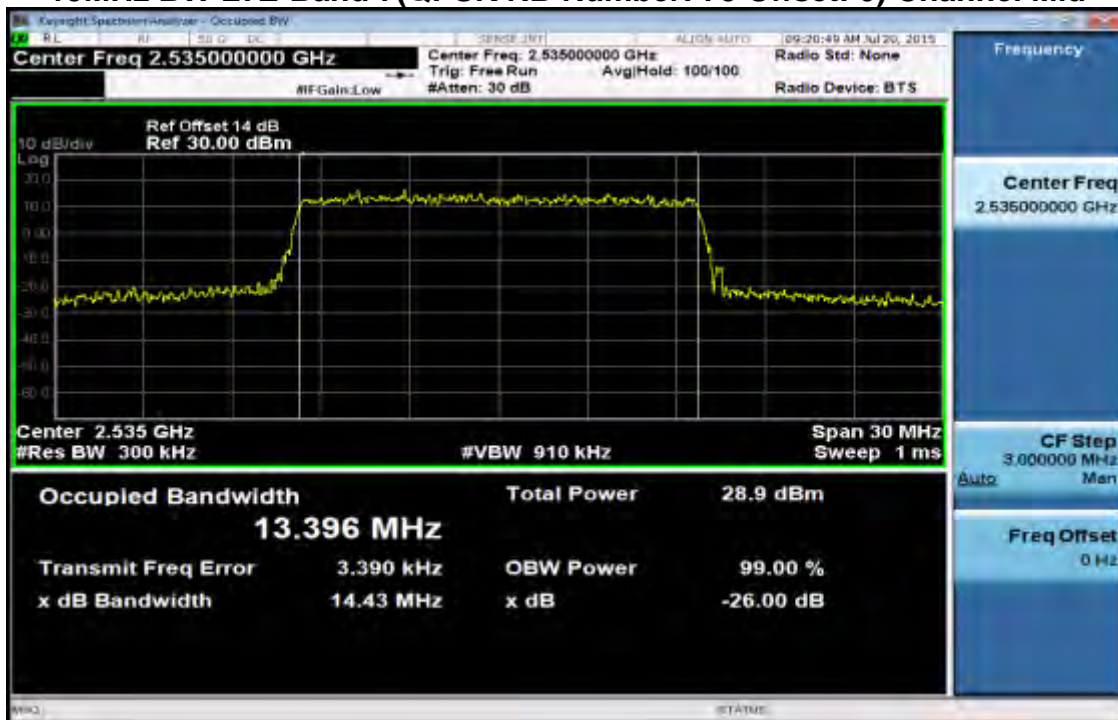
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**15MHz BW LTE-Band 7 (QPSK RB Number: 75 Offset: 0) Channel Low**



**15MHz BW LTE-Band 7(QPSK RB Number: 75 Offset: 0) Channel Mid**



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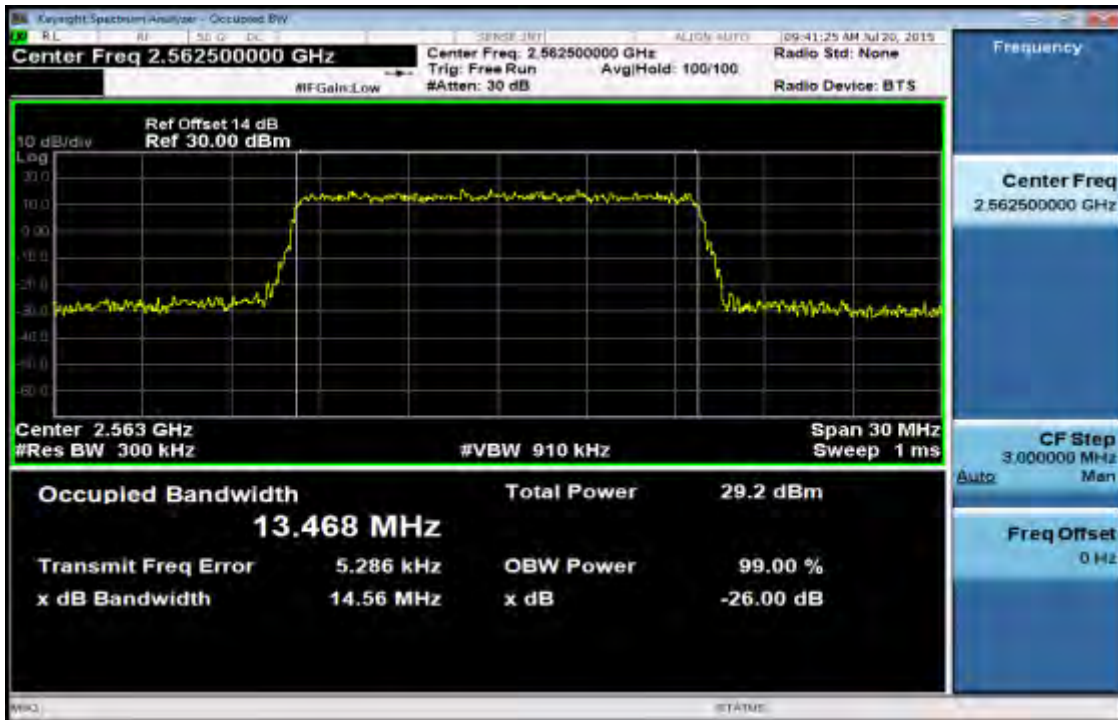
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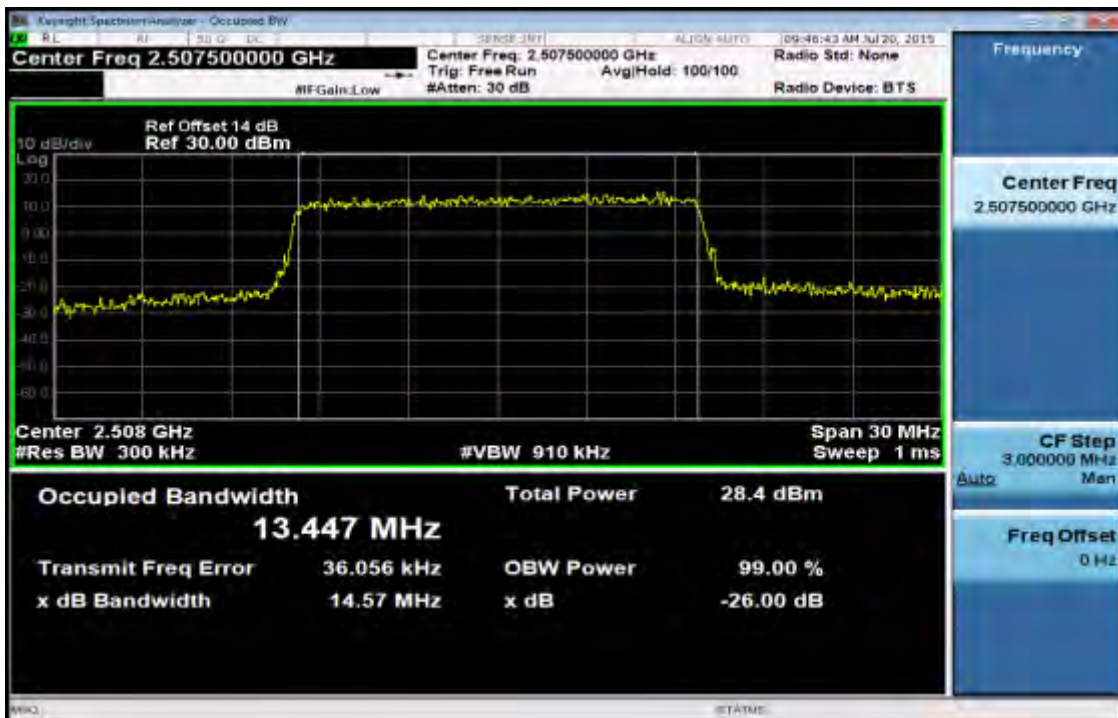
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**15MHz BW LTE-Band 7(QPSK RB Number: 75 Offset: 0) Channel High**



**15MHz BW LTE-Band 7 (16QAM RB Number: 75 Offset: 0) Channel Low**



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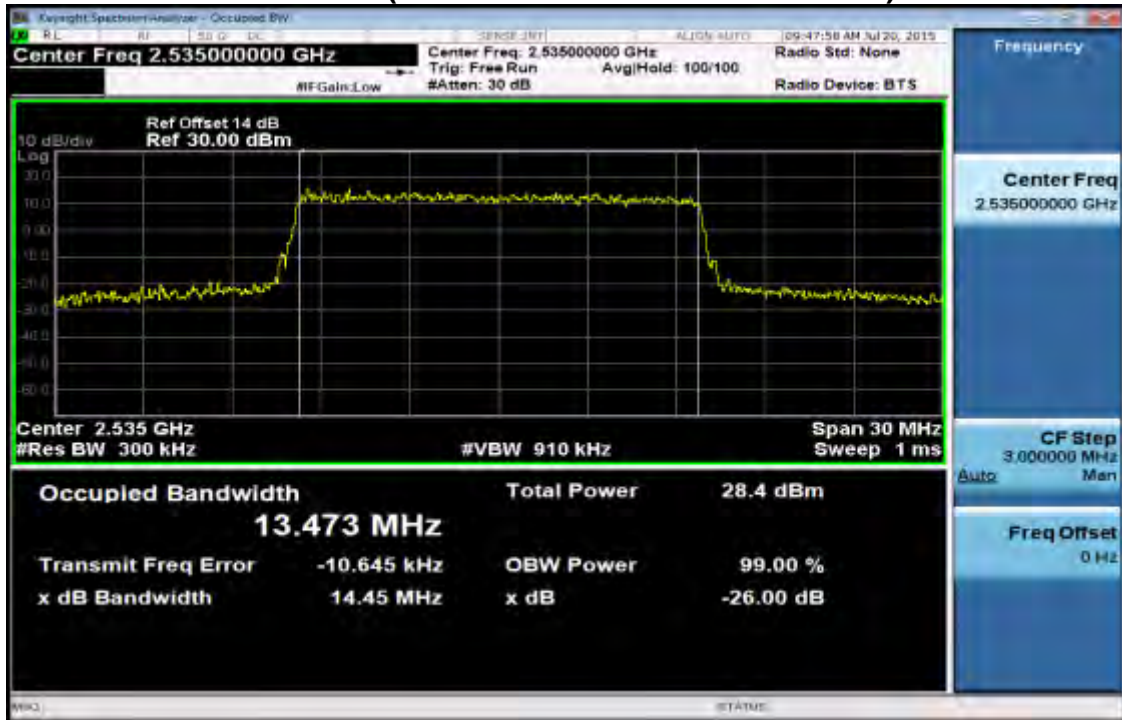
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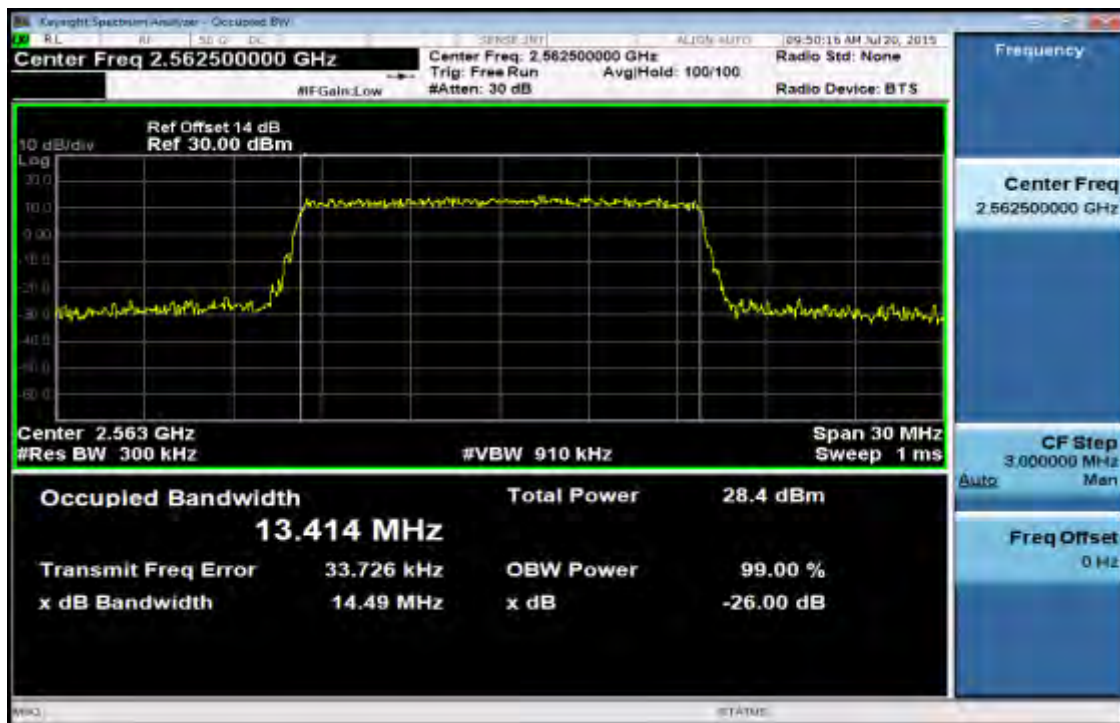
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15MHz BW LTE-Band 7(16QAM RB Number: 75 Offset: 0) Channel Mid



15MHz BW LTE-Band 7(16QAM RB Number: 75 Offset: 0) Channel High



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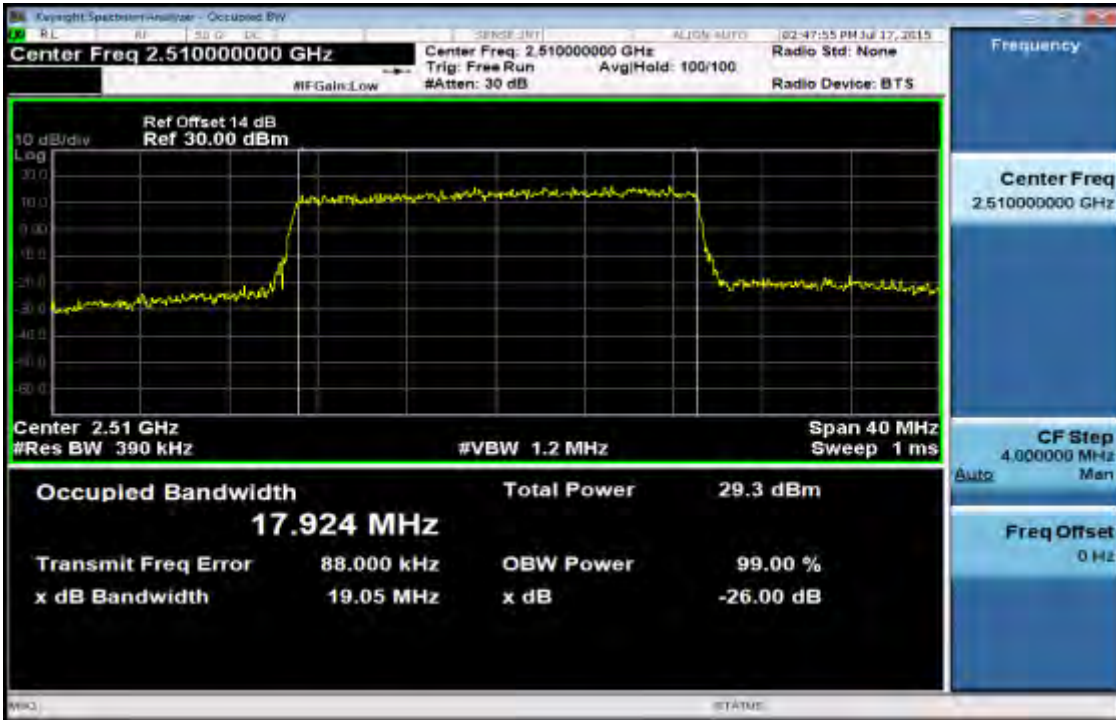
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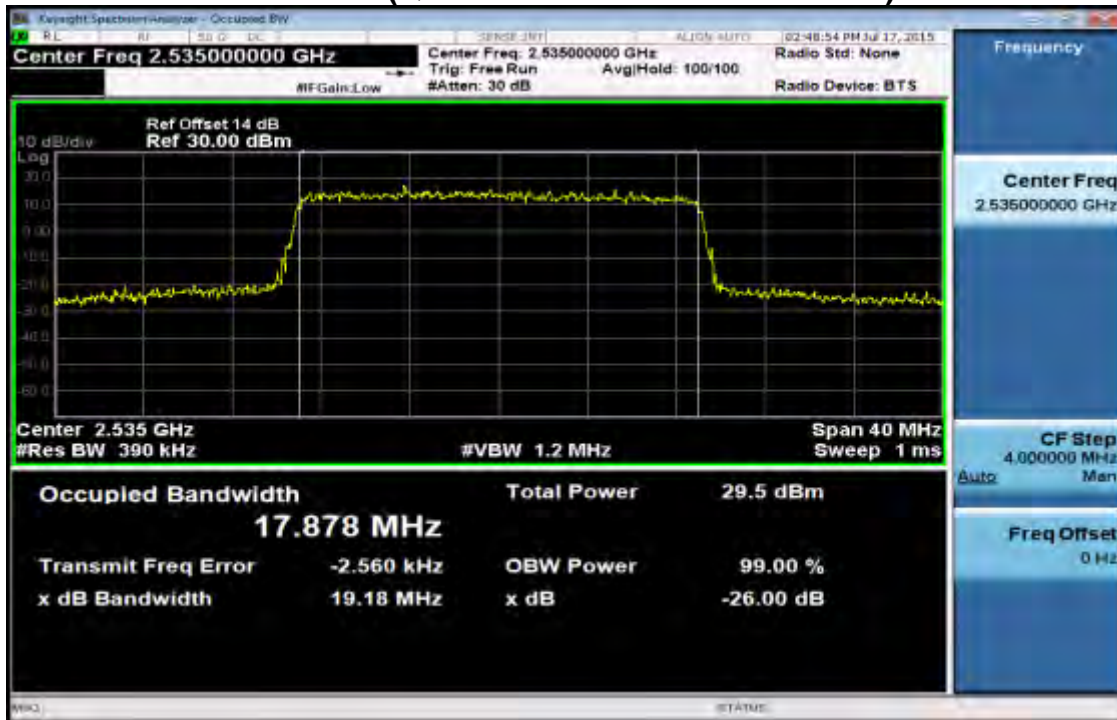
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**20MHz BW LTE-Band 7 (QPSK RB Number: 100 Offset: 0) Channel Low**



**20MHz BW LTE-Band 7(QPSK RB Number: 100 Offset: 0) Channel Mid**



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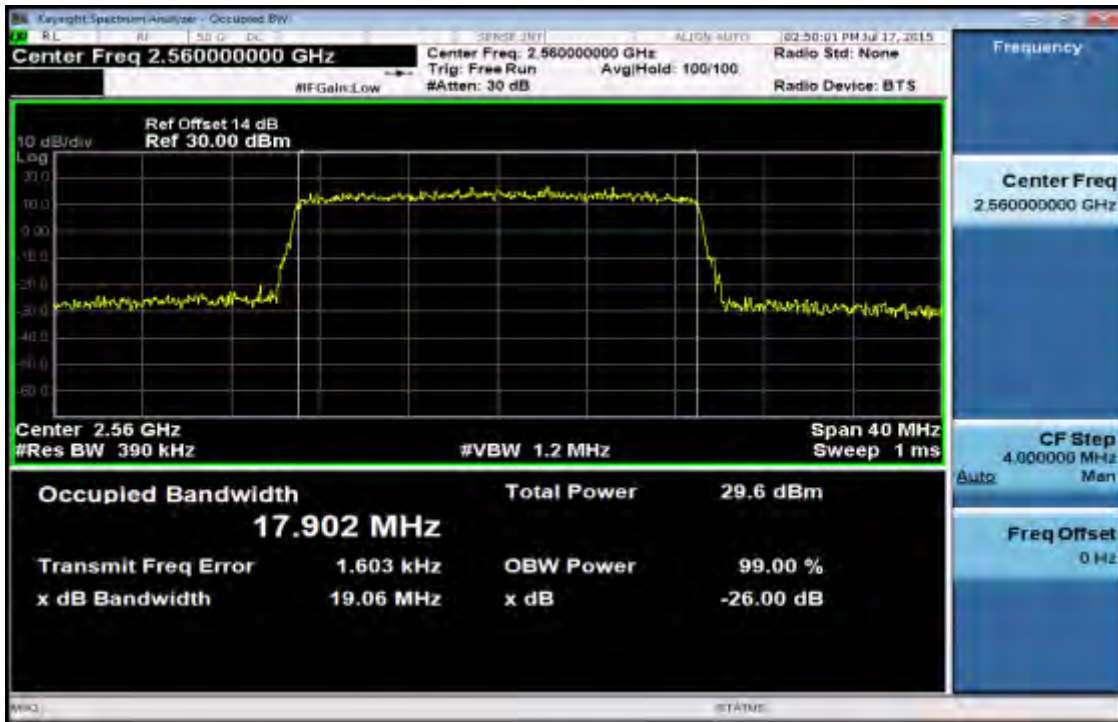
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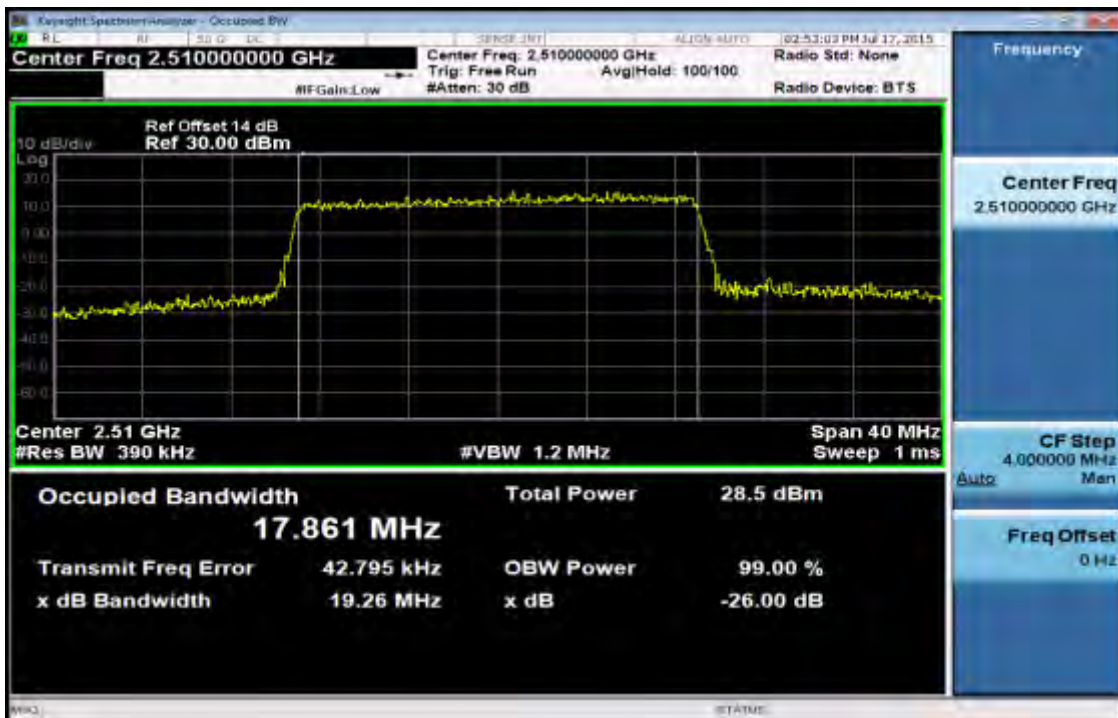
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**20MHz BW LTE-Band 7(QPSK RB Number: 100 Offset: 0) Channel High**



**20MHz BW LTE-Band 7 (16QAM RB Number: 100 Offset: 0) Channel Low**



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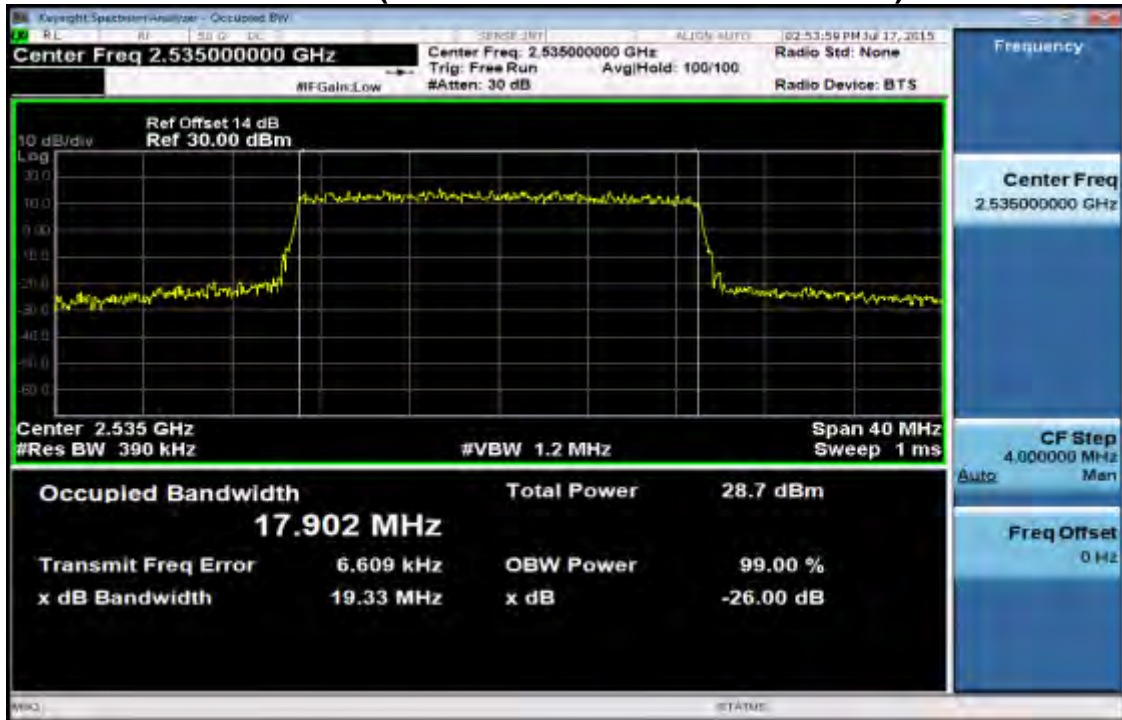
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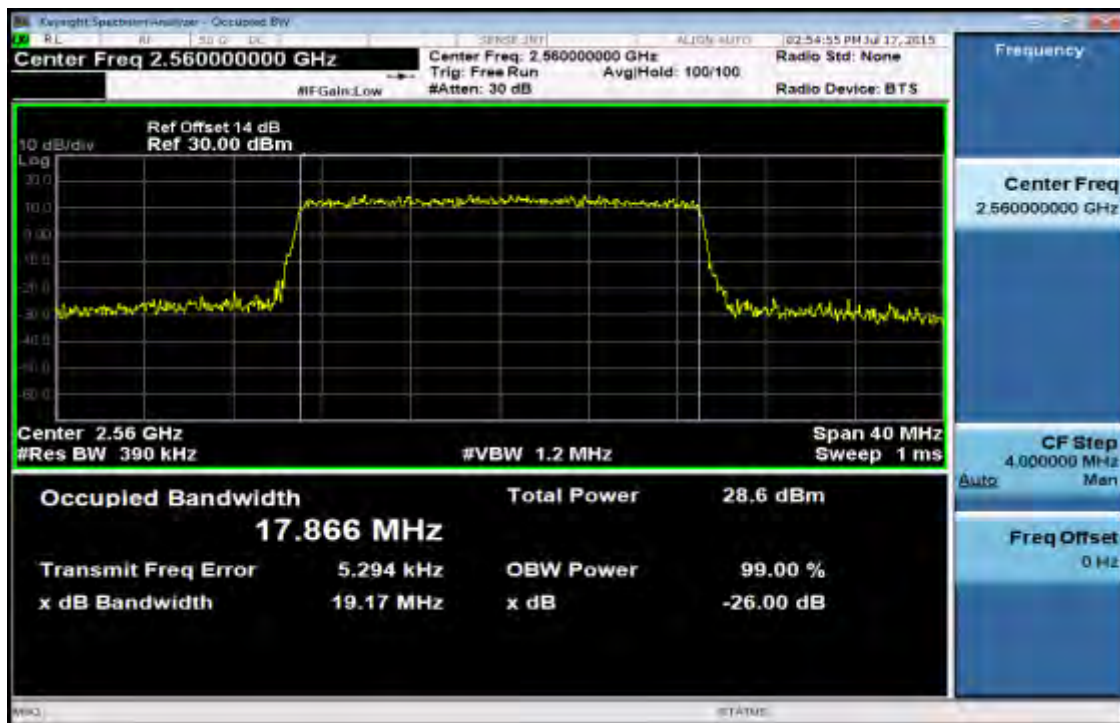
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**20MHz BW LTE-Band 7(16QAM RB Number: 100 Offset: 0) Channel Mid**



**20MHz BW LTE-Band 7(16QAM RB Number: 100 Offset: 0) Channel High**



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## 9. OUT OF BAND EMISSION AT ANTENNA TERMINALS

### 9.1. Standard Applicable

FCC §24.238(a), §27.53(h), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm).

§27.53 (m) (4) shall not be less than  $55 + 10 \log$ (mean output power in watt) dBc below the mean power output outside a license's frequency block (-25dBm).)

#### FCC §27.53(h)

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in § 27.53(m)(6). In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

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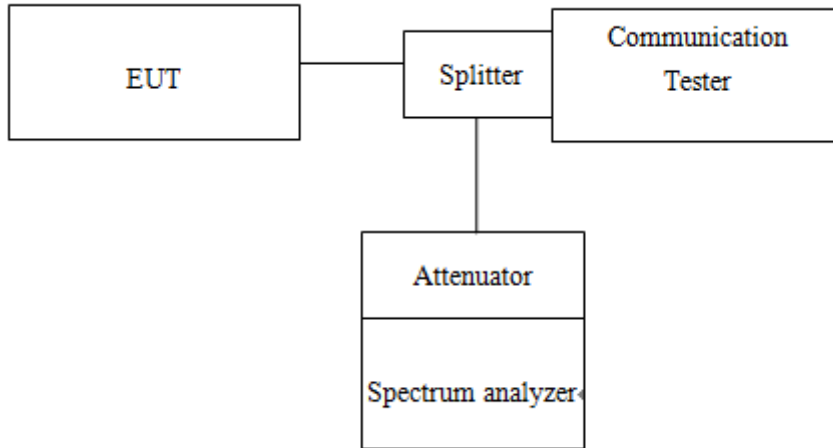
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## 9.2. Test SET-UP



## 9.3. Measurement Procedure

### Conducted Emission

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

1. To connect Antenna Port of EUT to Spectrum.
2. Set RBW = 1MHz & VBW = 1MHz on Spectrum.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

### Band Edge

1. To connect Antenna Port of EUT to Spectrum.
2. The band edge of low and high channels for the highest RF powers was measured. Setting RBW  $\geq$  1% EBW.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

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**9.4. Measurement Equipment Used**

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015
Communication Tester	Anritsu	MT8820C	6201107337	05/27/2015	05/26/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A 195C	RF01	12/19/2014	12/18/2015
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/18/2015	06/17/2016
DC Block	PASTERNAK	PE8210	RF29	12/19/2014	12/18/2015
Splitter	RF-LAMBAD	RFLT2W1G1 8G	RF35	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2015	05/03/2016

**9.5. Measurement Result:**

Refer to next pages.

**NOTE: The occurrence of the spike on the conducted emission is the signal of the fundamental emission.**

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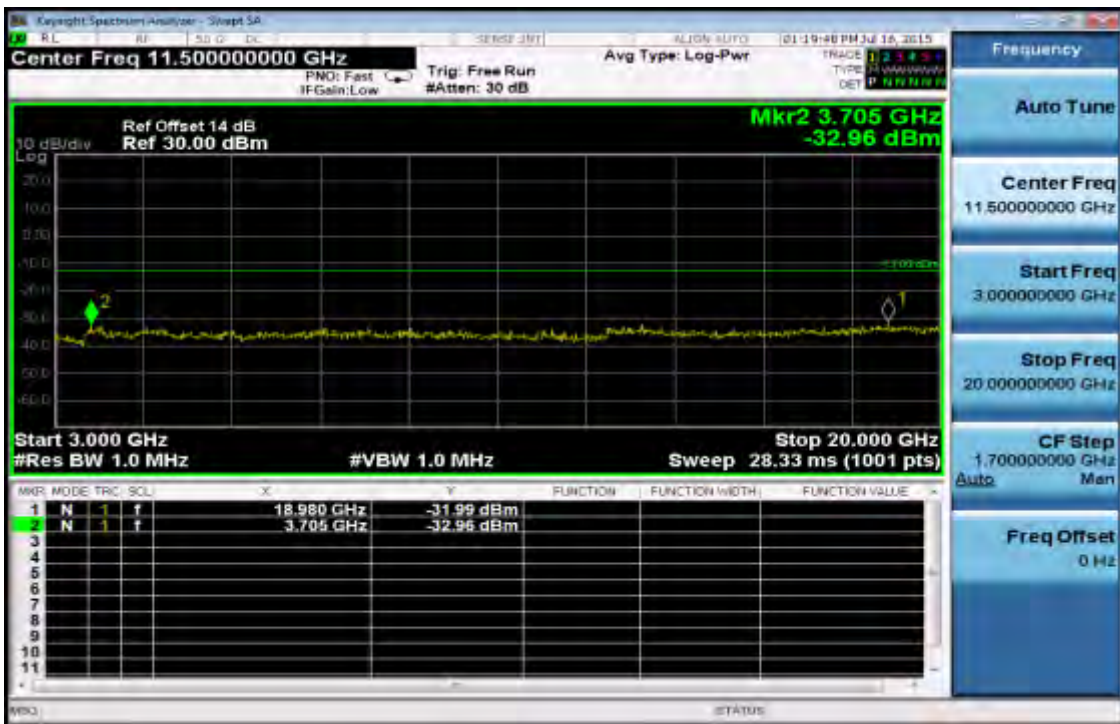
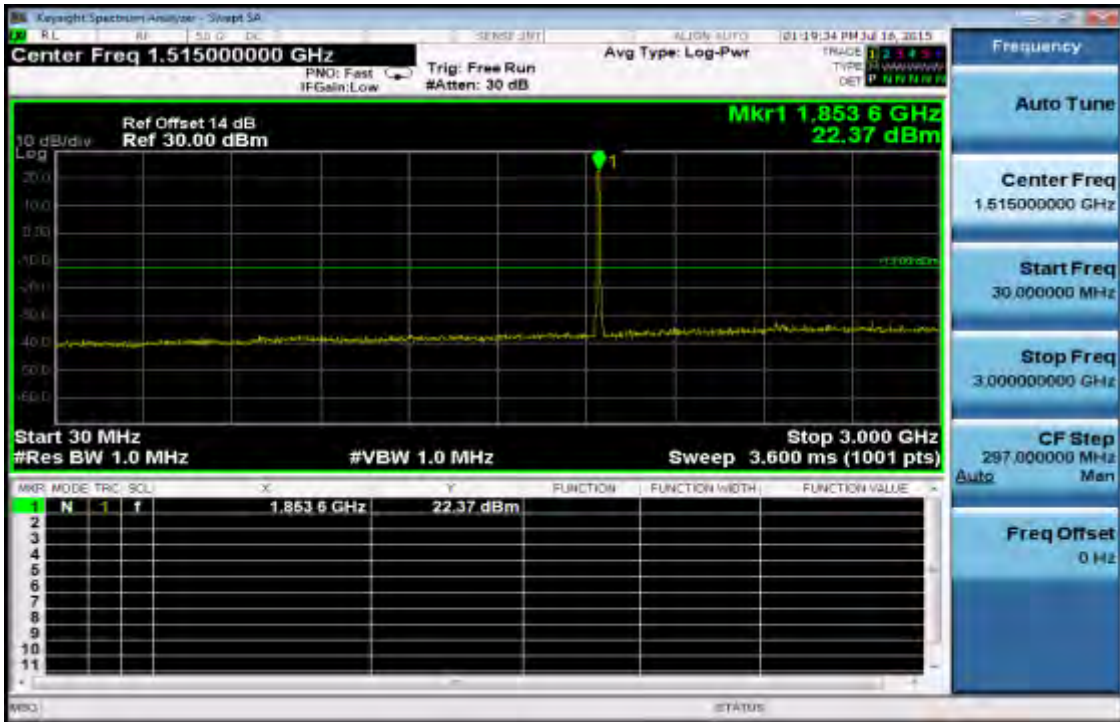
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Out of Band emission at antenna terminals – WCDMA II Channel Lowest



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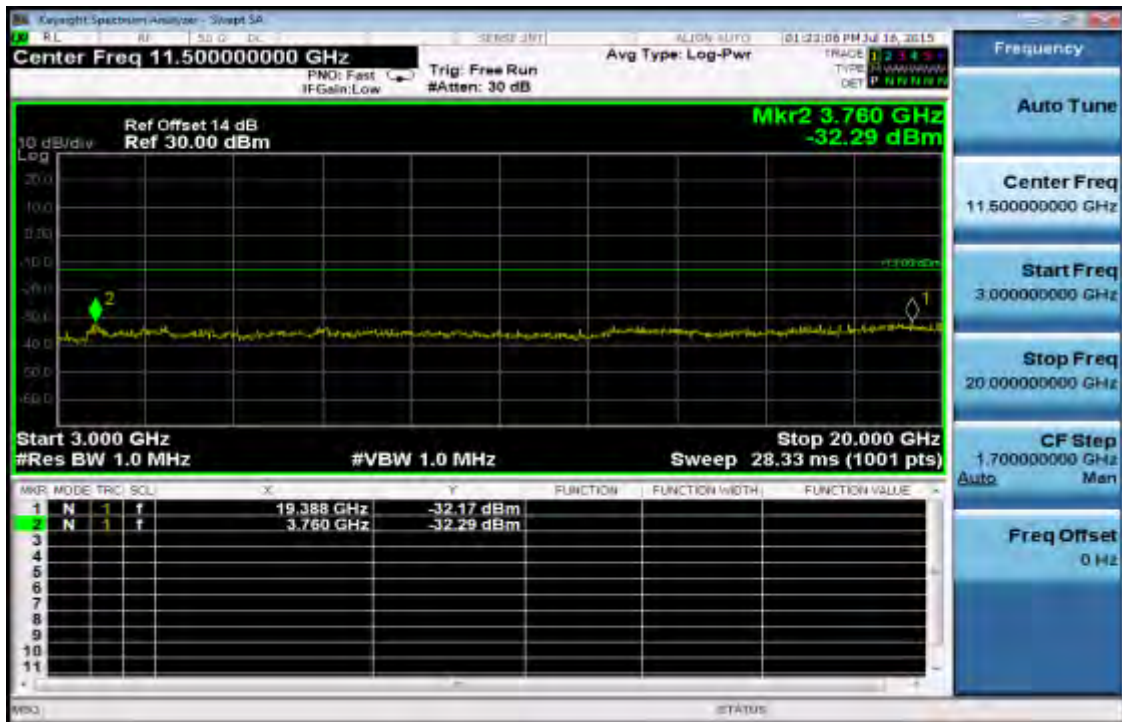
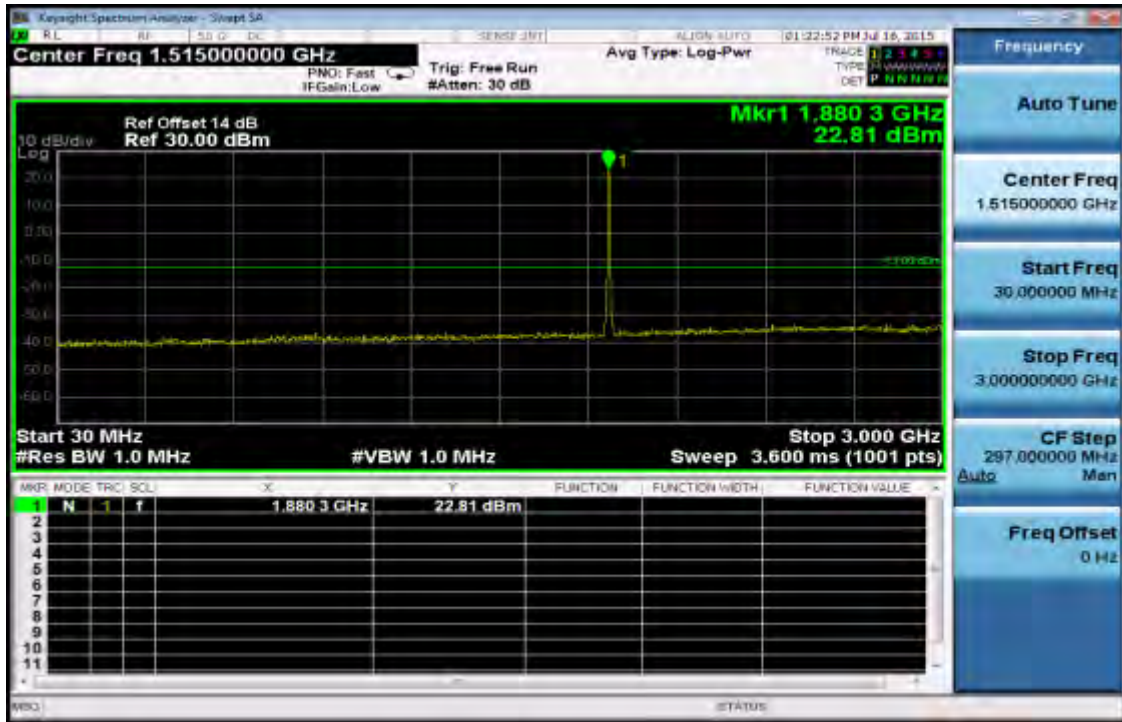
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Out of Band emission at antenna terminals – WCDMA II Channel Mid



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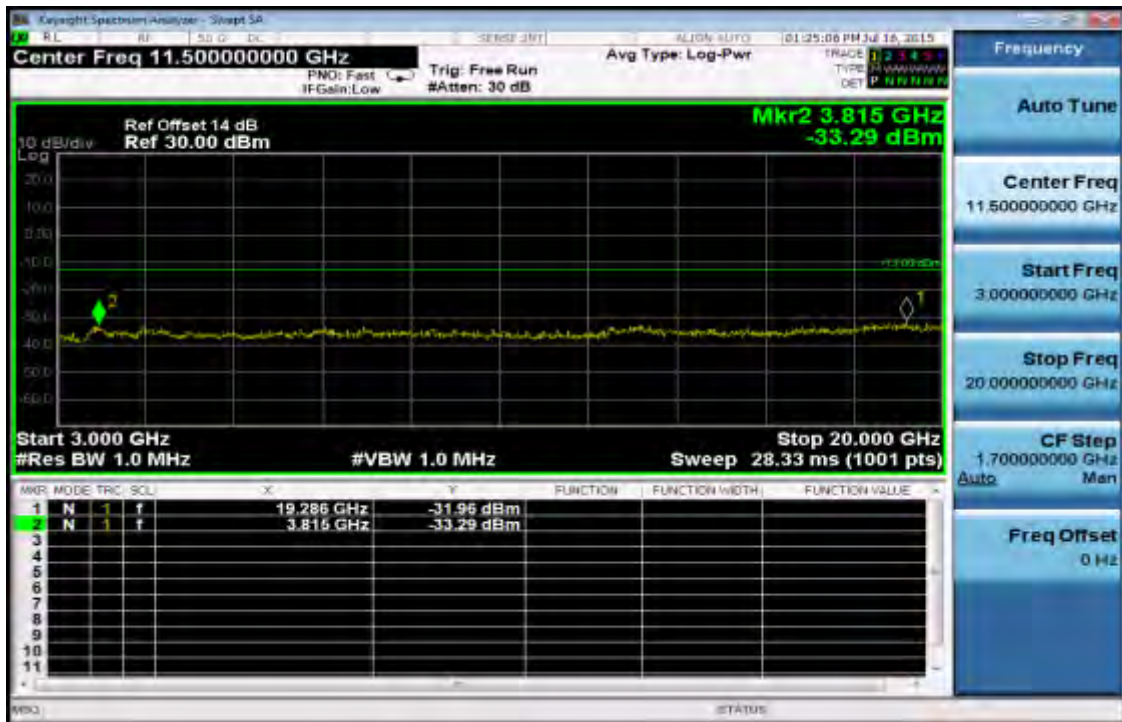
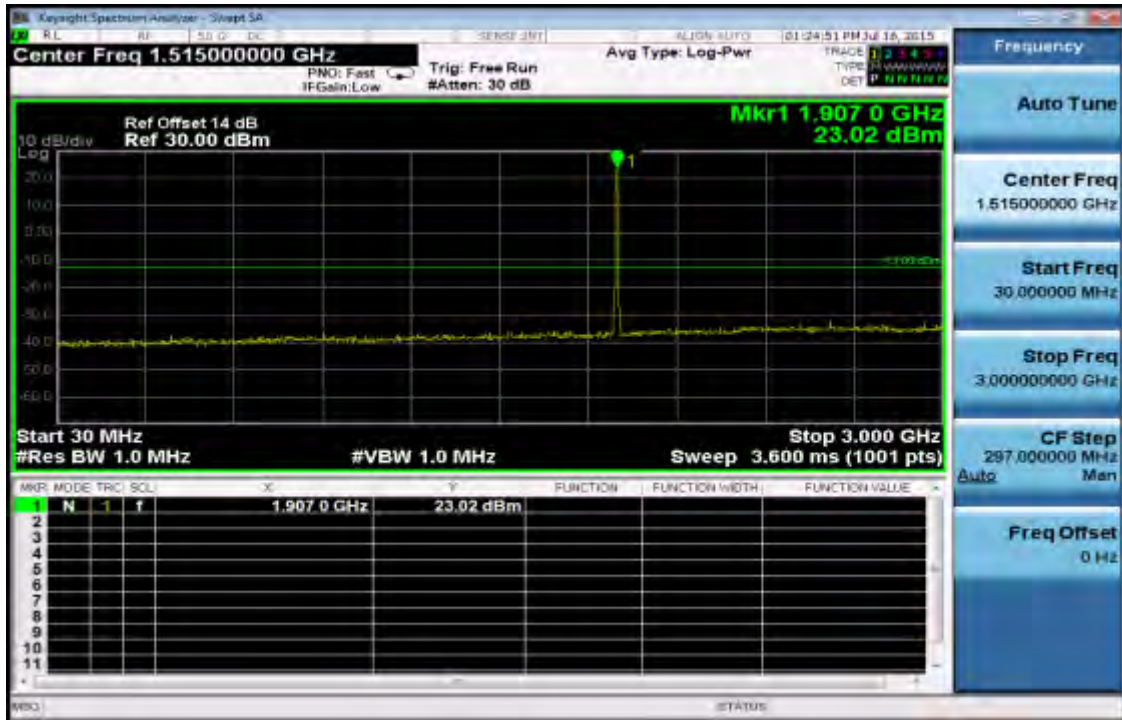
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Out of Band emission at antenna terminals – WCDMA II Channel Highest



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**Band edge emission at antenna terminals – WCDMA II Channel Lowest**



**Band edge emission at antenna terminals – WCDMA II Channel Highest**



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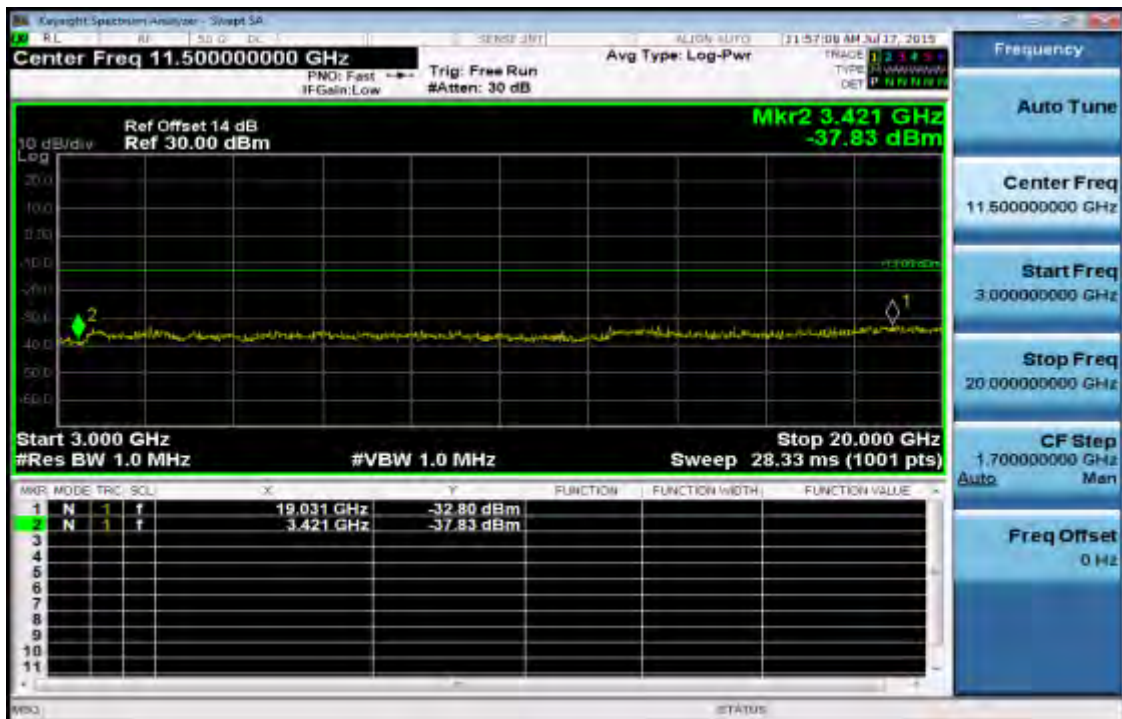
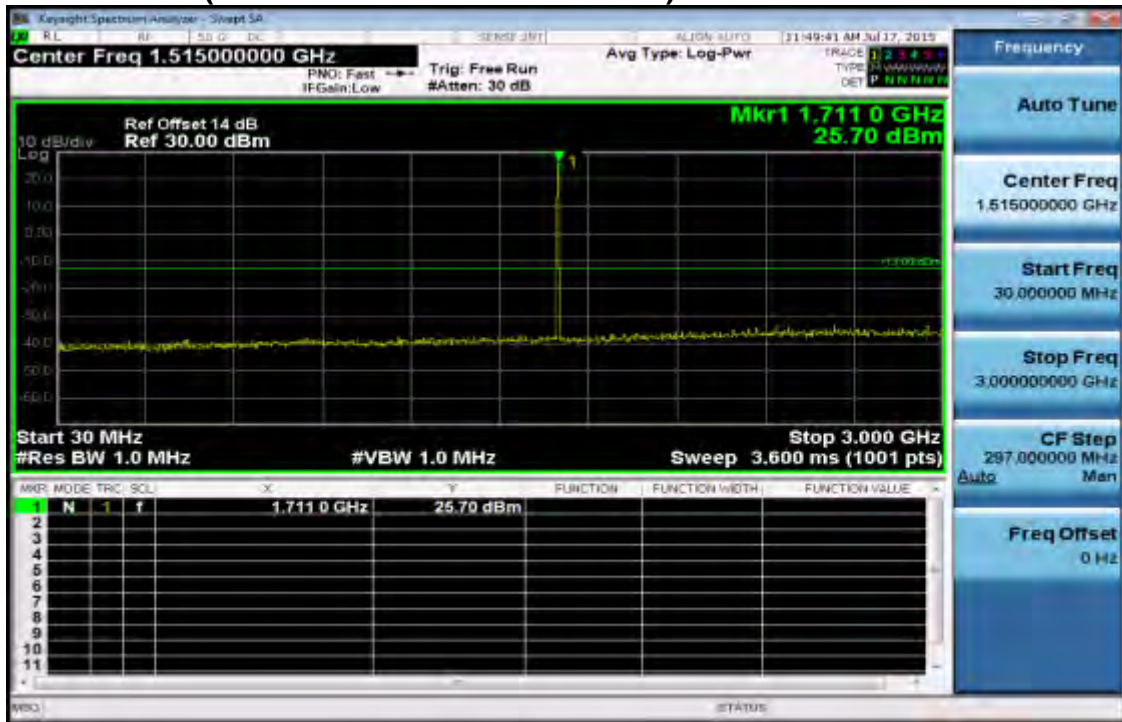
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Out of Band emission at antenna terminals–1.4MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest



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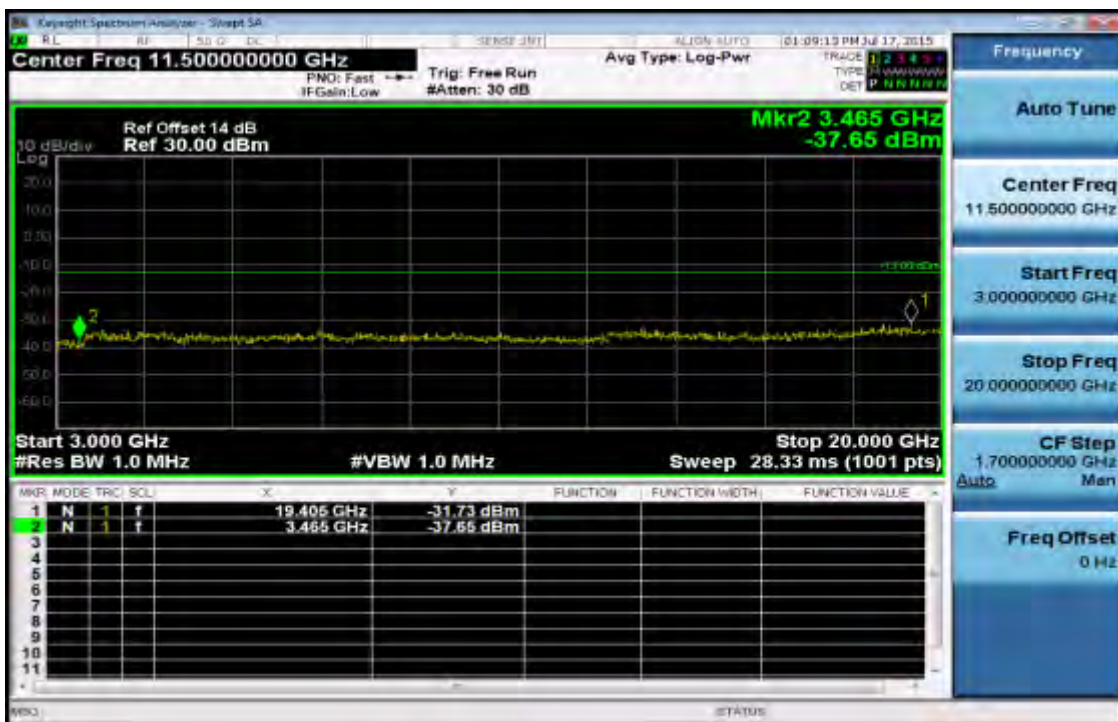
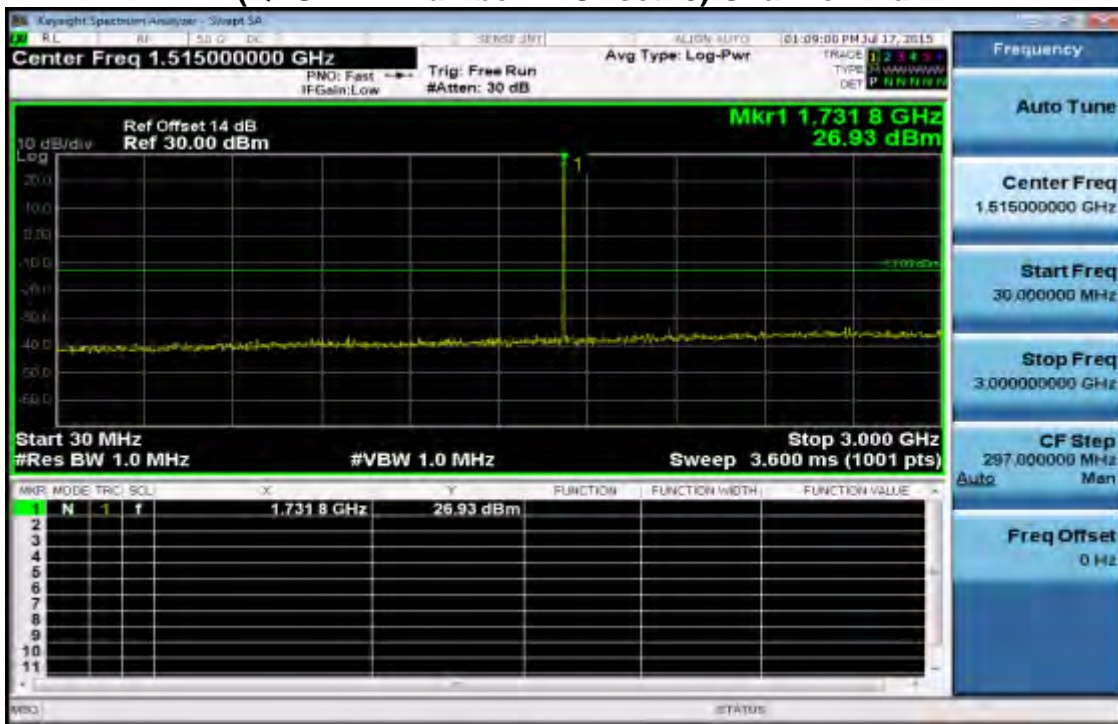
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**Out of Band emission at antenna terminals–1.4MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**



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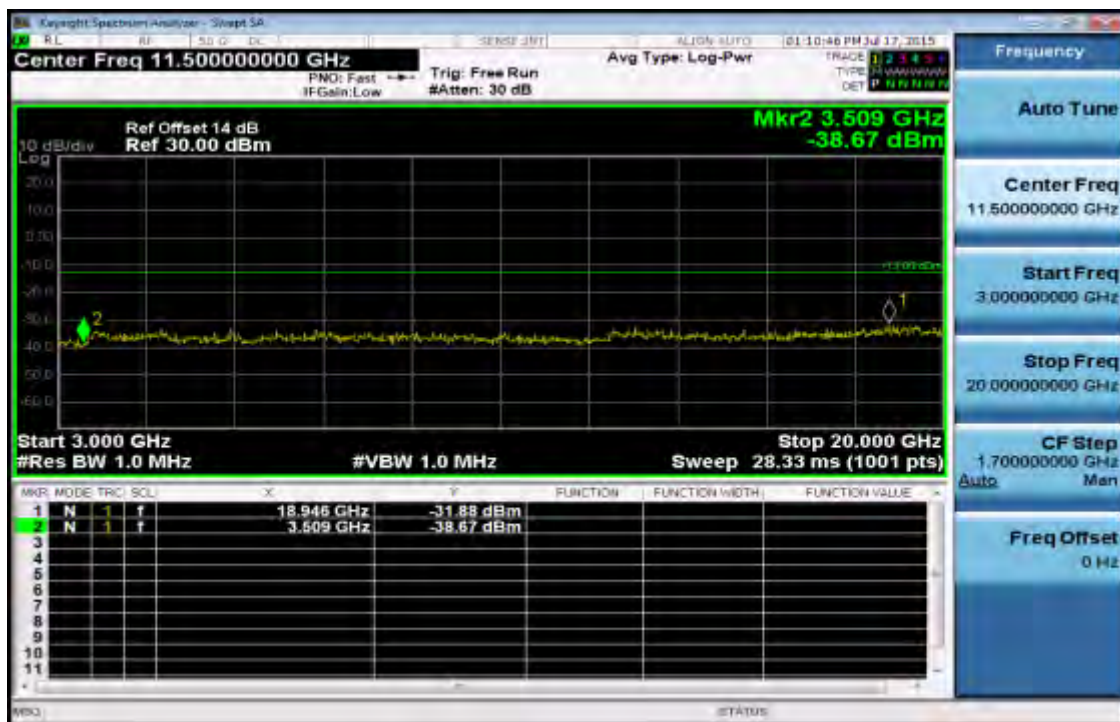
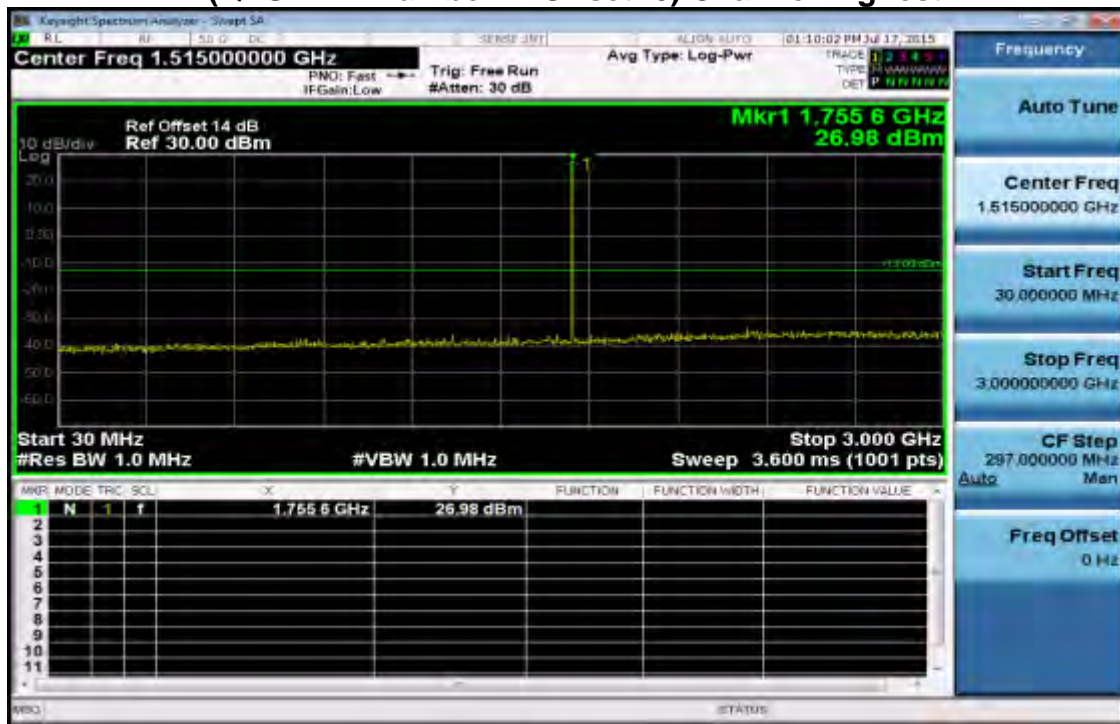
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**Out of Band emission at antenna terminals–1.4MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –1.4MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 5) Channel Highest**



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**Band edge emission at antenna terminals –1.4MHz BW LTE-Band 4  
 (QPSK RB Number: 6 Offset: 0) Channel Highest**



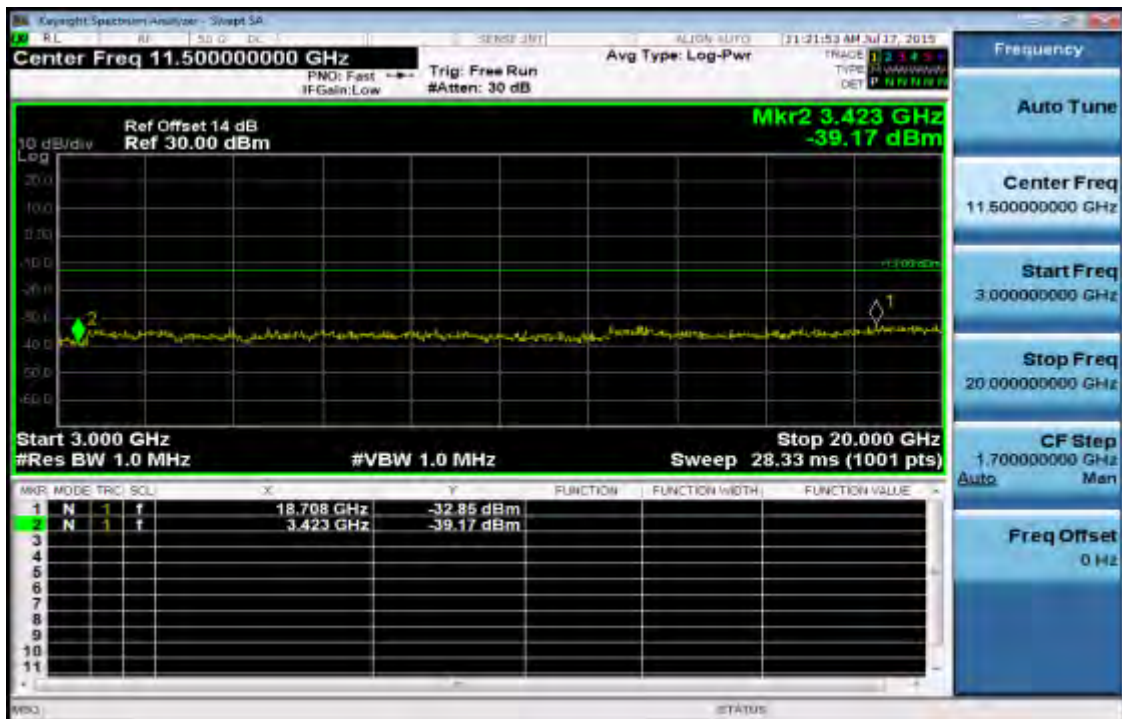
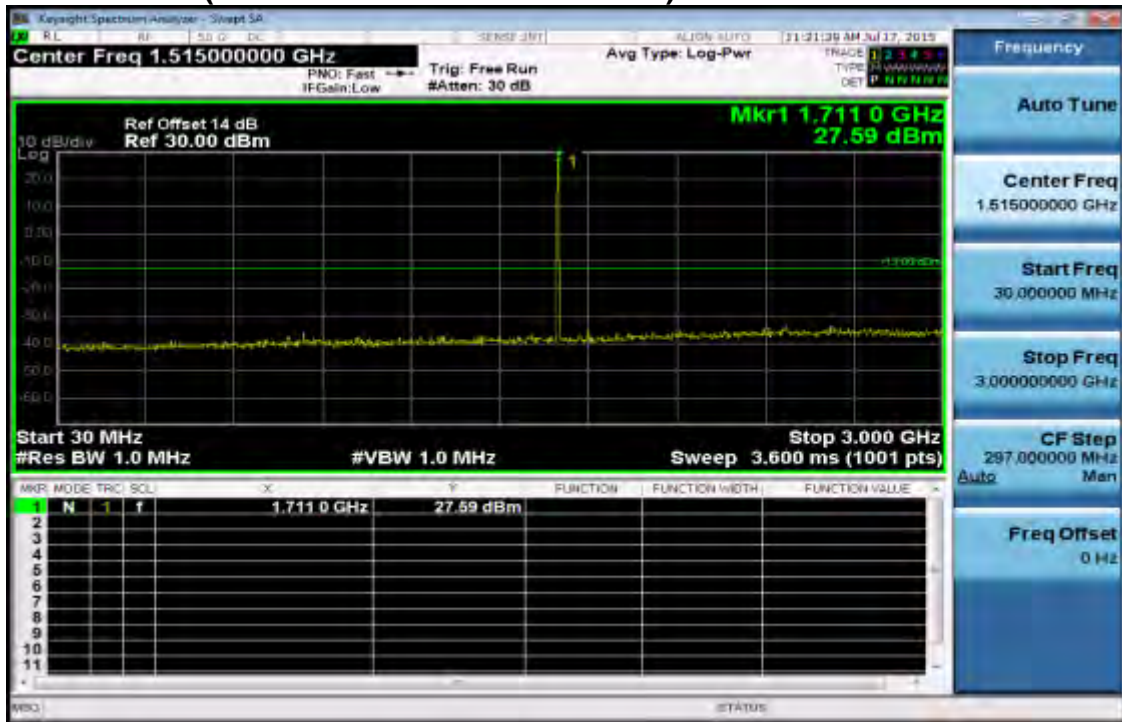
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**Out of Band emission at antenna terminals–3MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



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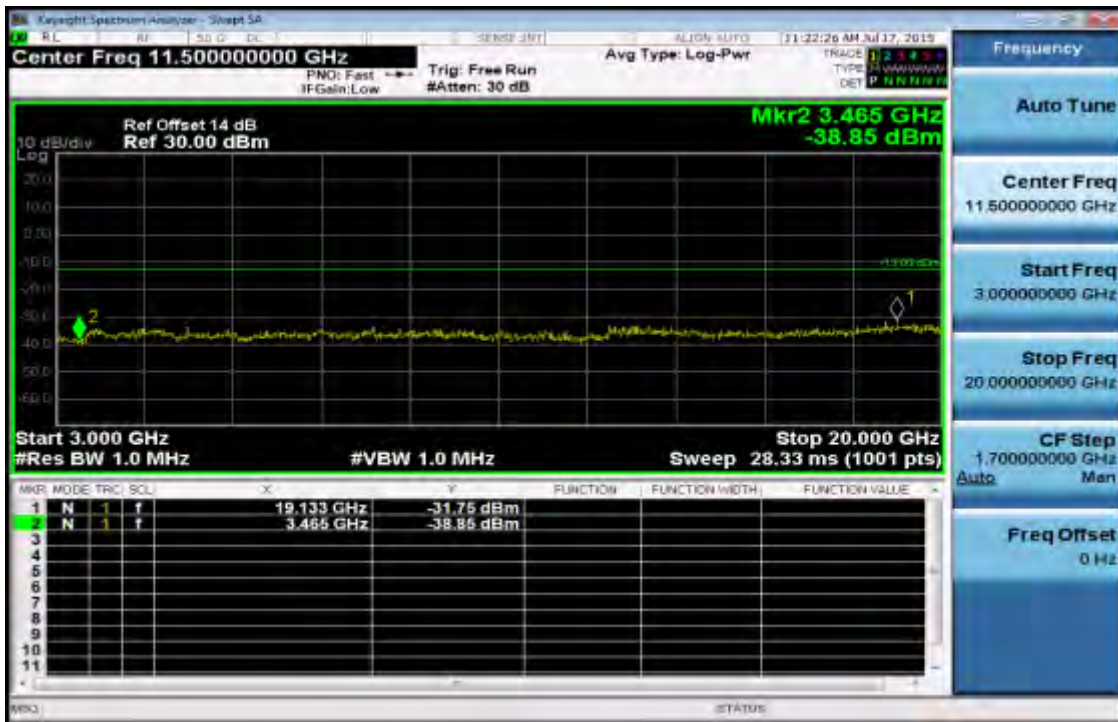
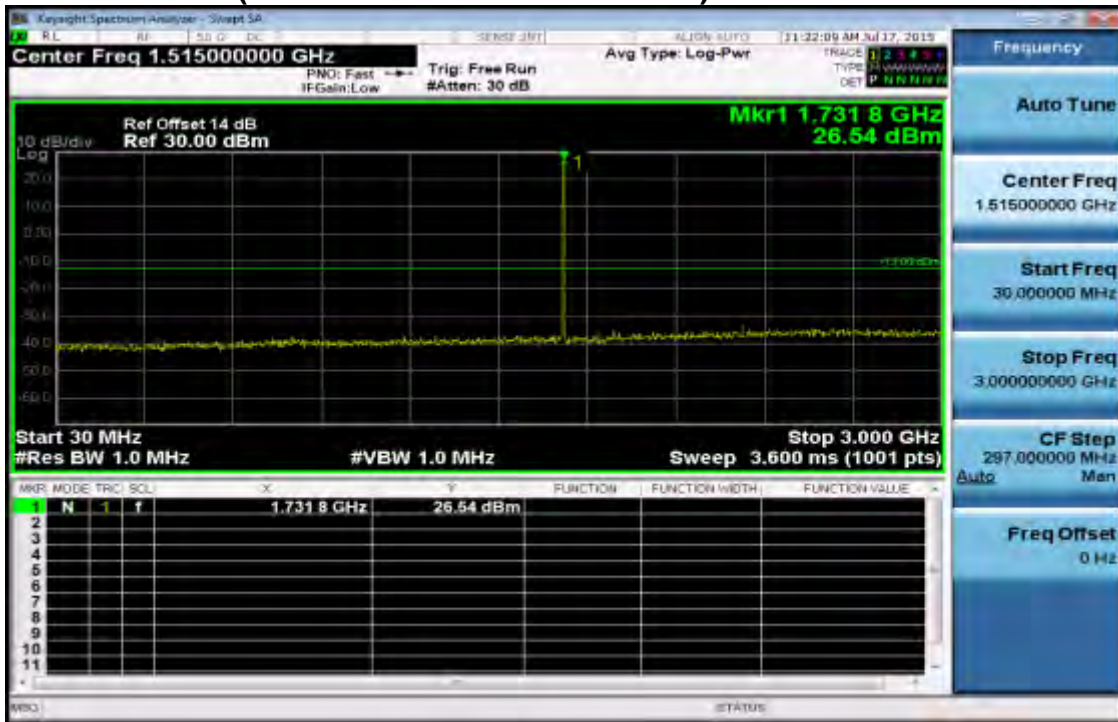
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Out of Band emission at antenna terminals –3MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid

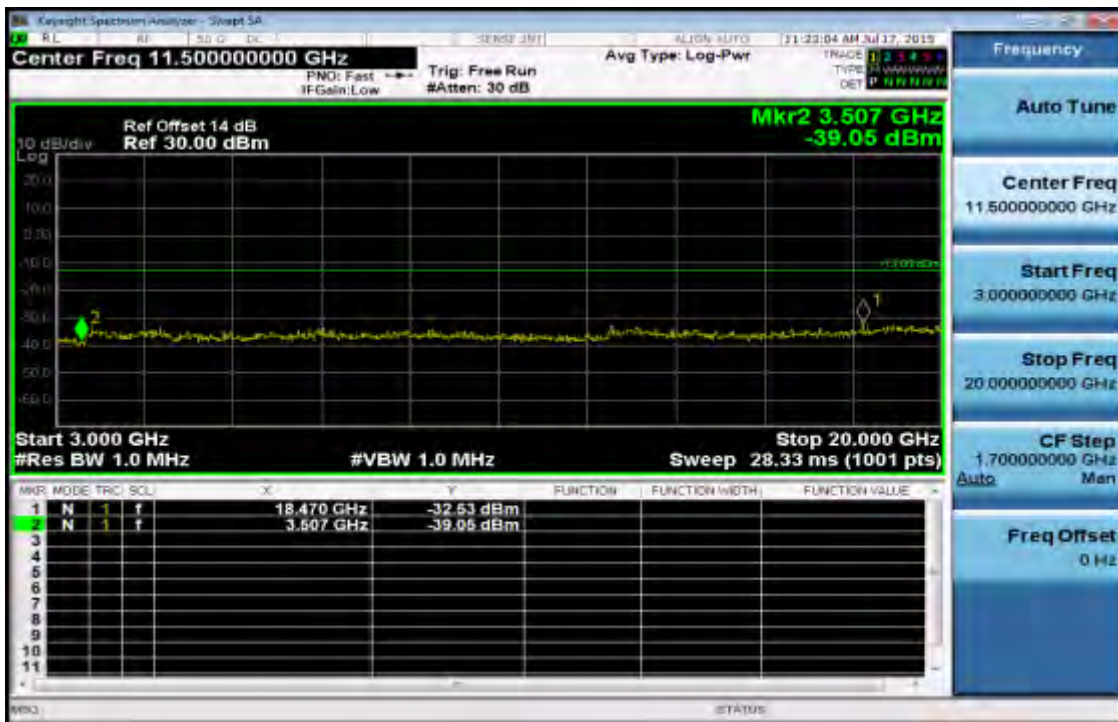
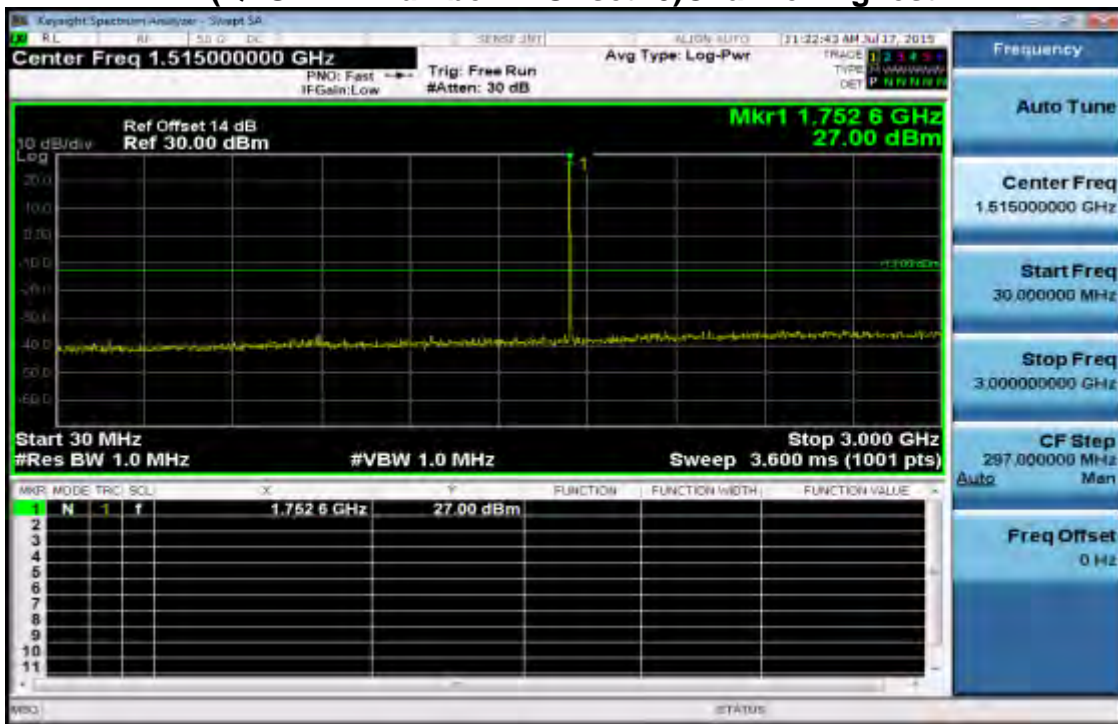


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**Out of Band emission at antenna terminals–3MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0)Channel Highest**



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**Band edge emission at antenna terminals –3MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –3MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 14) Channel Highest**



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**Band edge emission at antenna terminals –3MHz BW LTE-Band 4  
 (QPSK RB Number: 15 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –3MHz BW LTE-Band 4  
 (QPSK RB Number: 15 Offset: 0) Channel Highest**

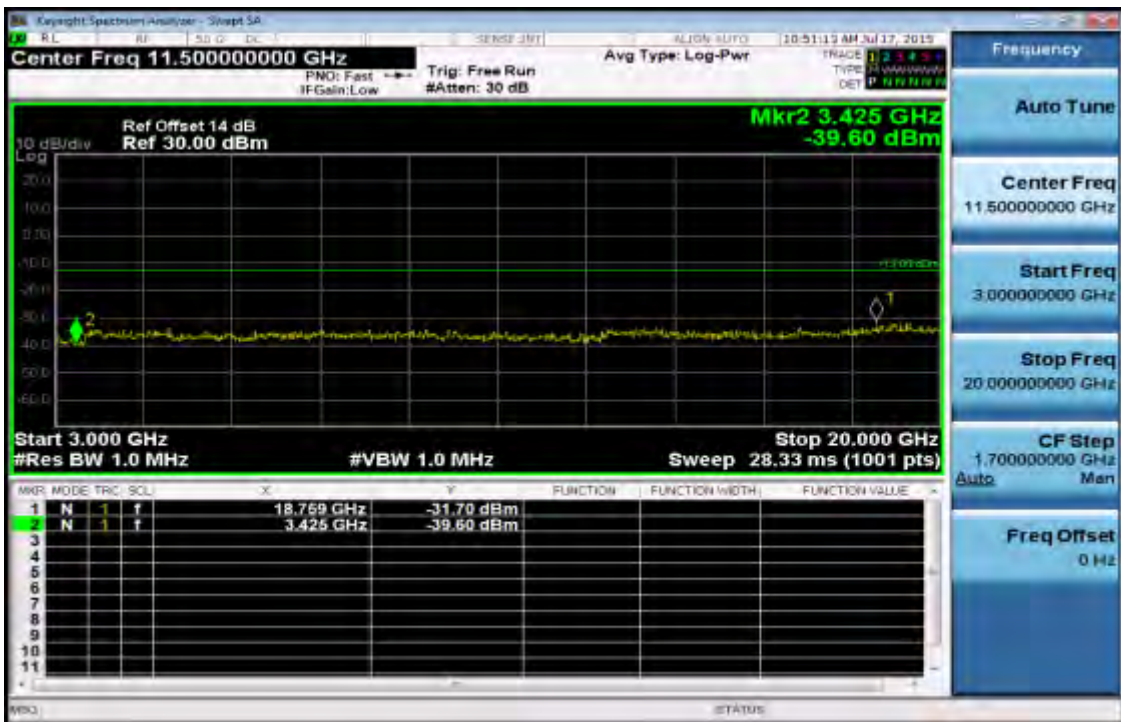
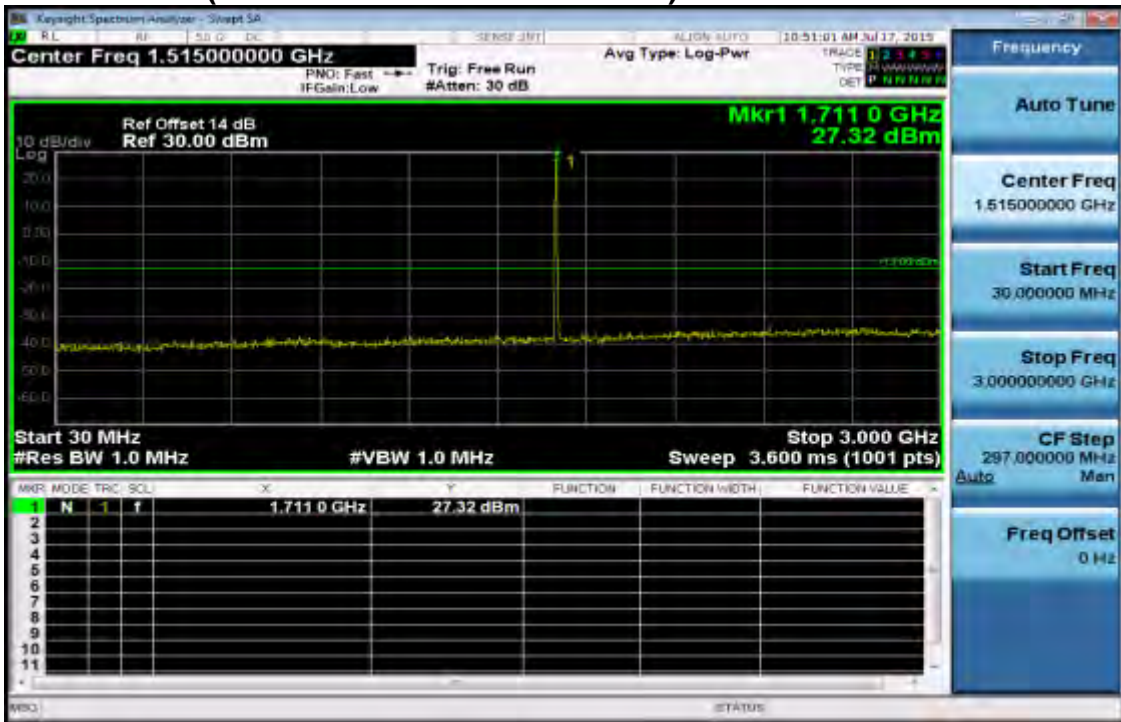


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Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0)Channel Lowest



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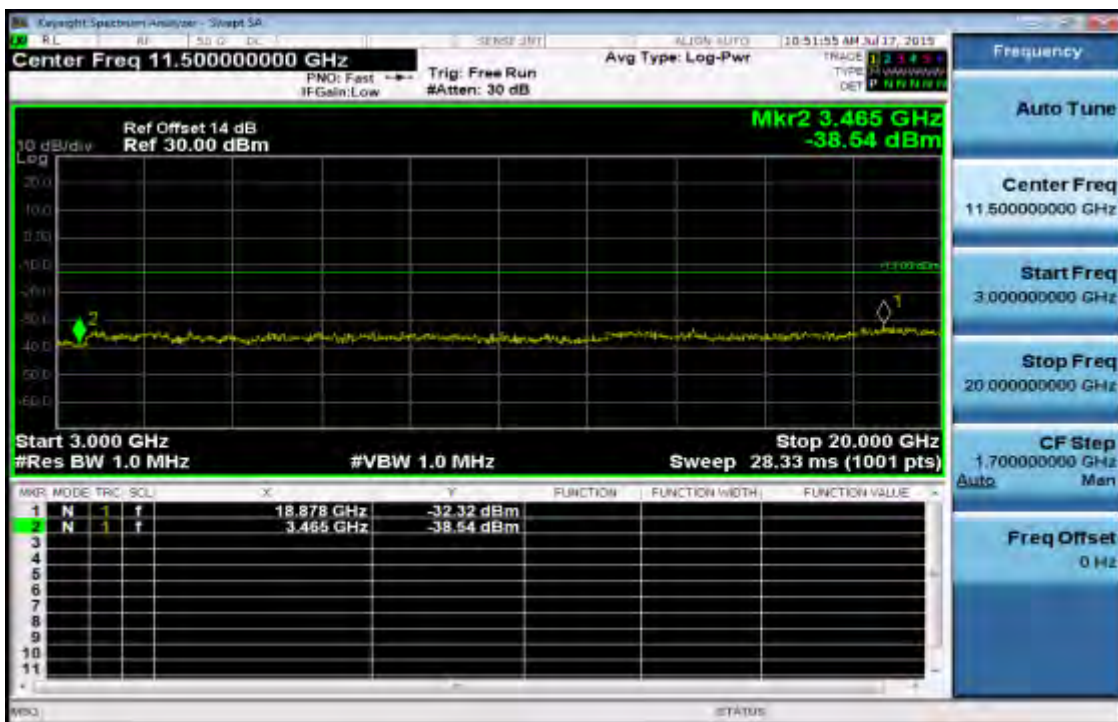
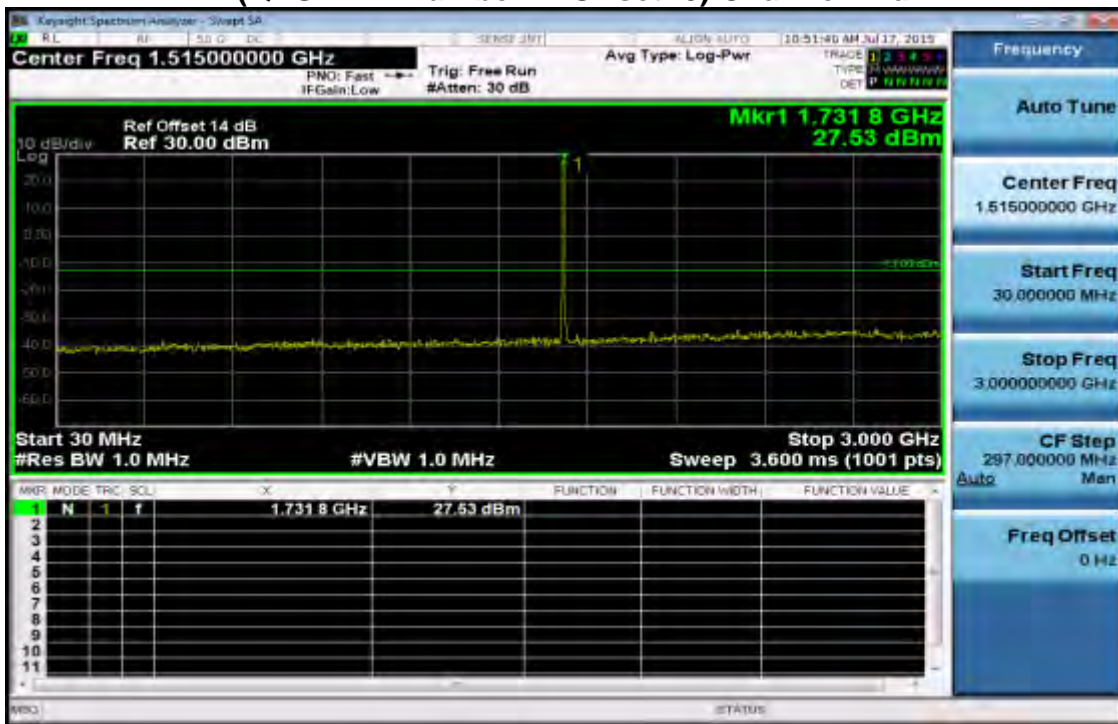
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**Out of Band emission at antenna terminals –5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

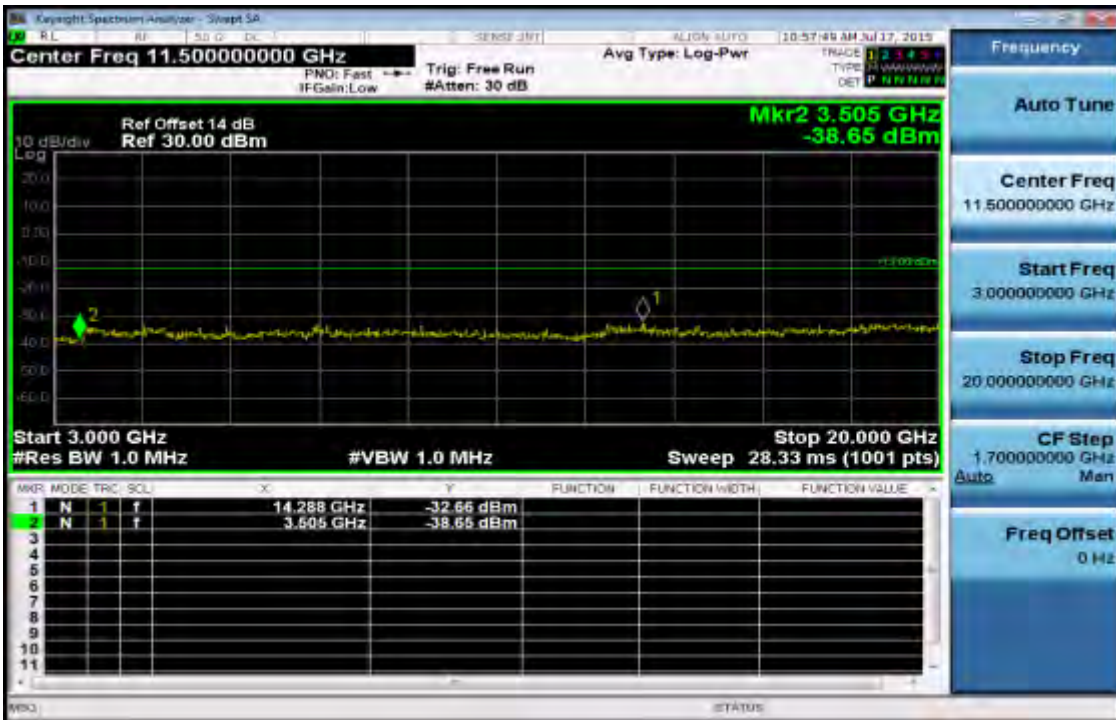


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**Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0)Channel Highest**



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**Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 24) Channel Highest**



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**Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
 (QPSK RB Number: 25 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
 (QPSK RB Number: 25 Offset: 0) Channel Highest**

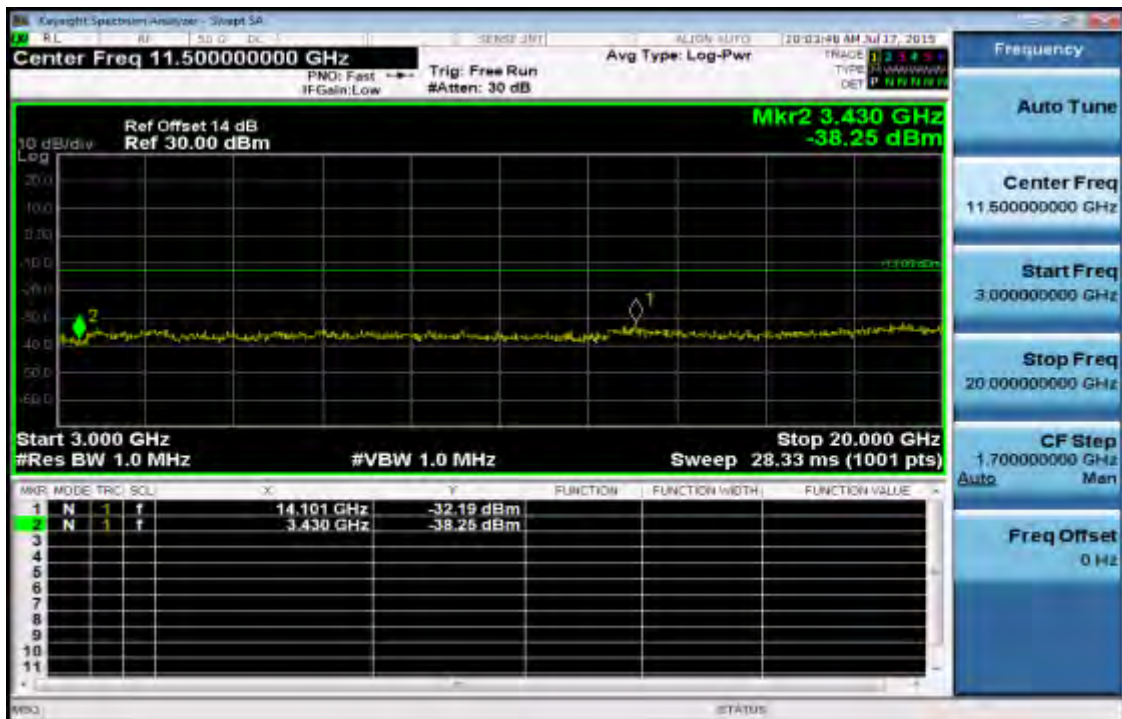


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Out of Band emission at antenna terminals–10MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest



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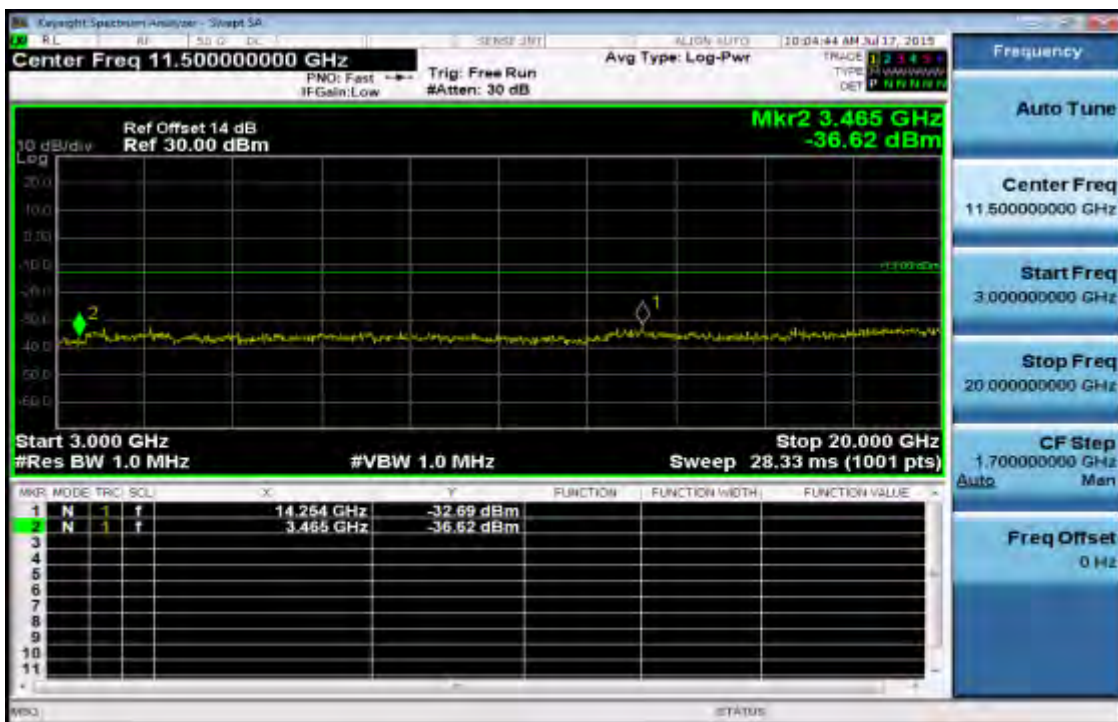
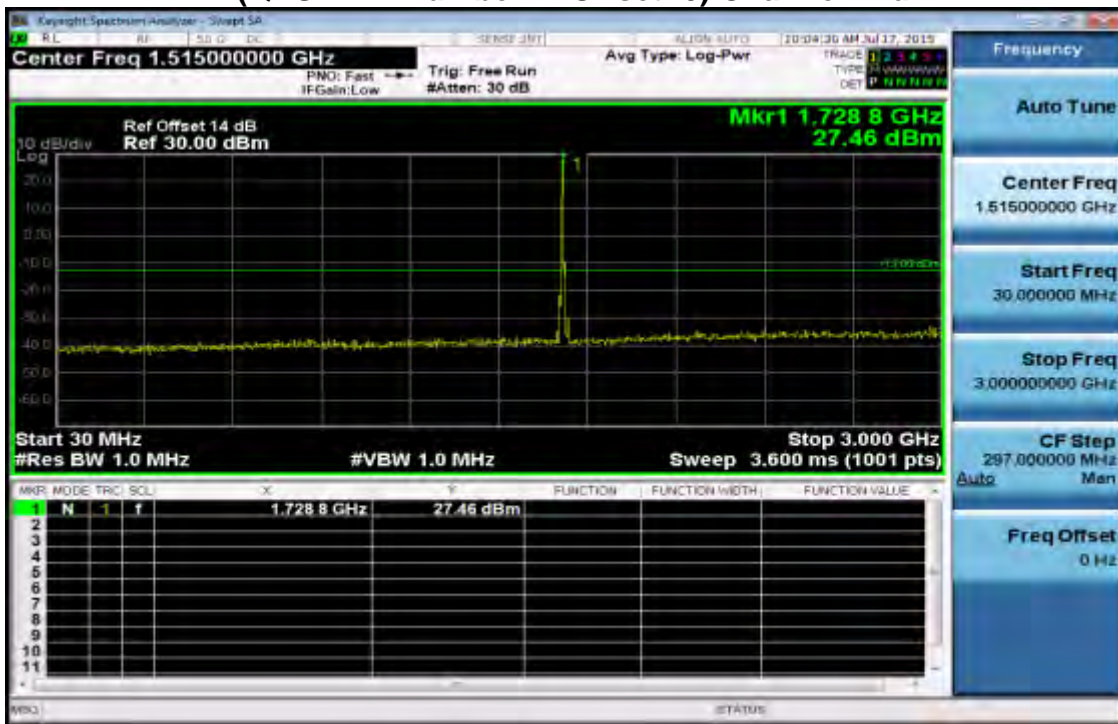
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**Out of Band emission at antenna terminals –10MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

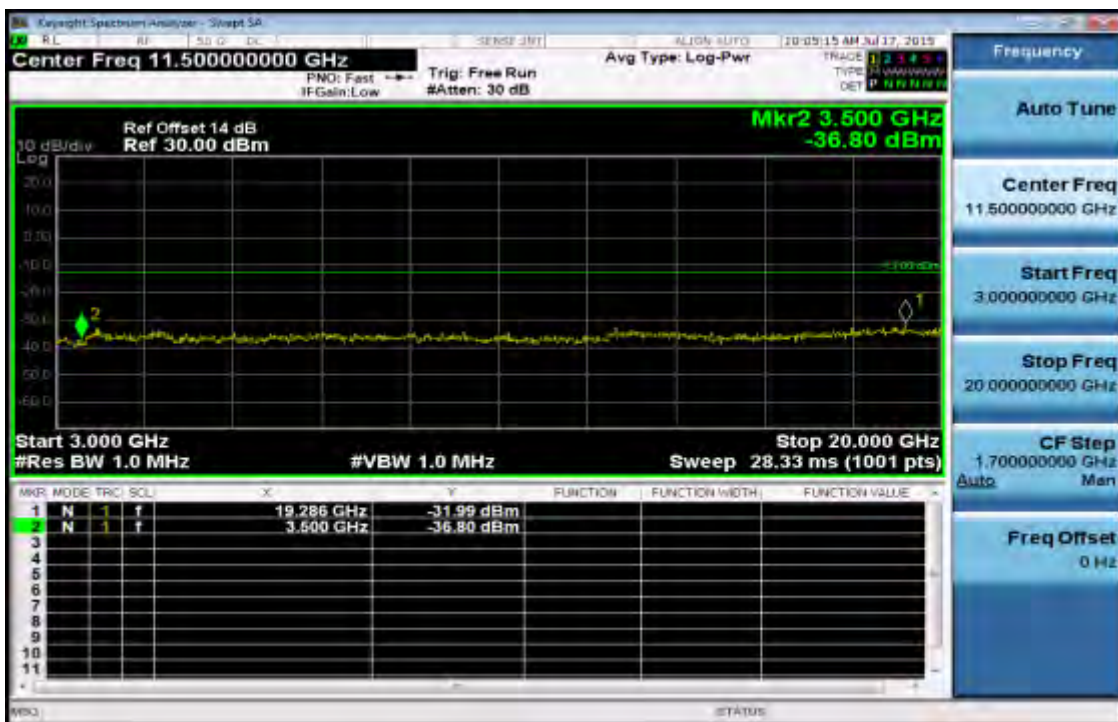
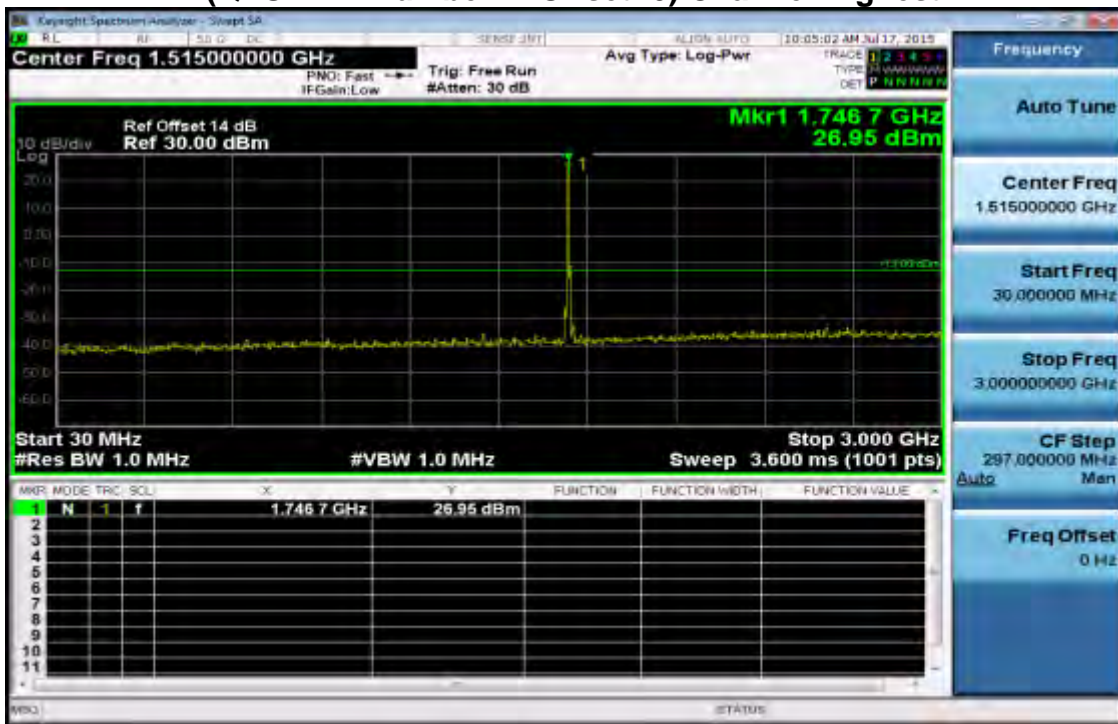


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**Out of Band emission at antenna terminals–10MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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**Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 49) Channel Highest**



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**Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
 (QPSK RB Number: 50 Offset: 0) Channel Lowest**



**Figure 9-88: Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
 (QPSK RB Number: 50 Offset: 0) Channel Highest**

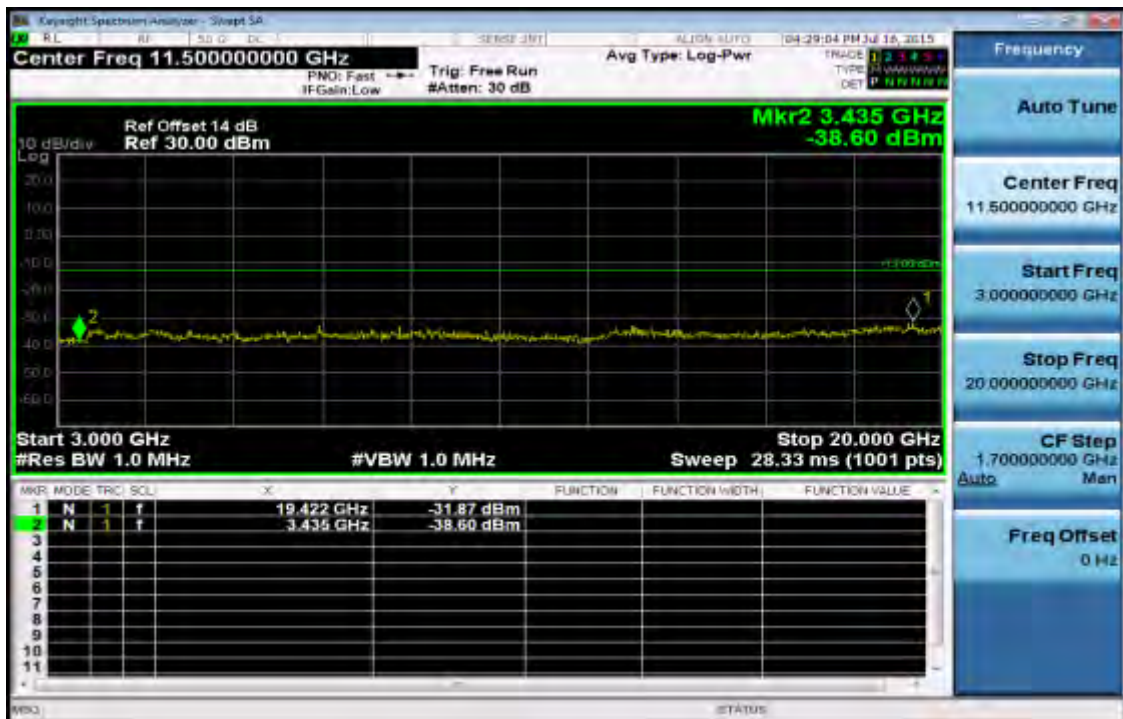
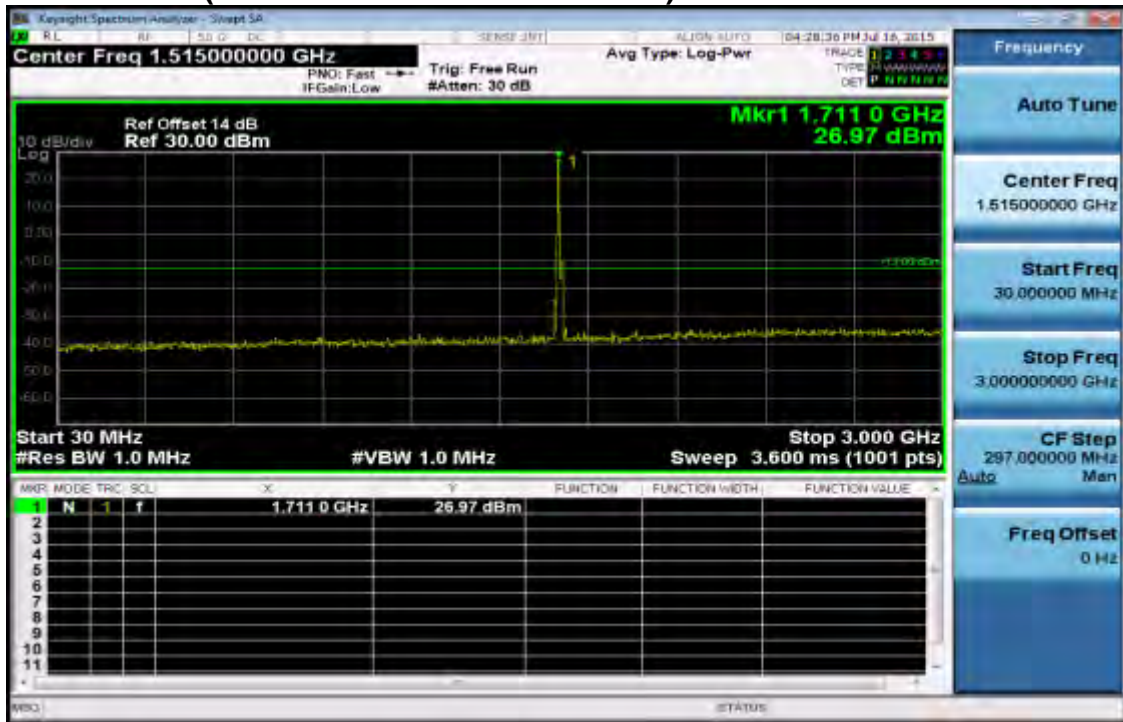


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Out of Band emission at antenna terminals–15MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest



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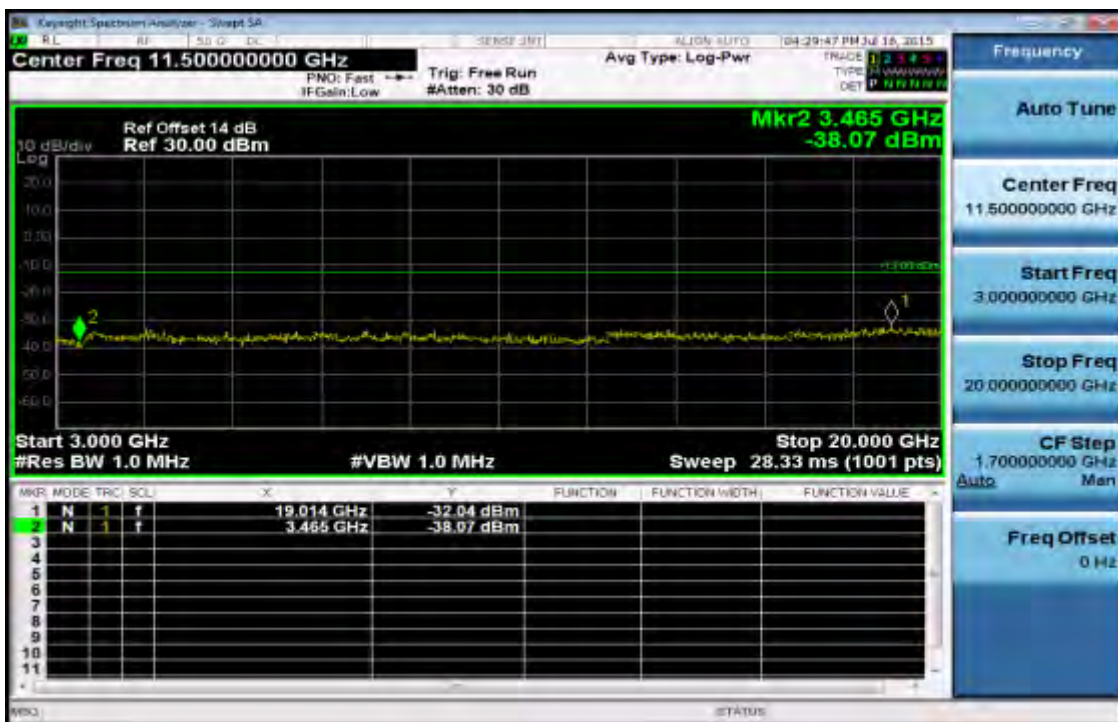
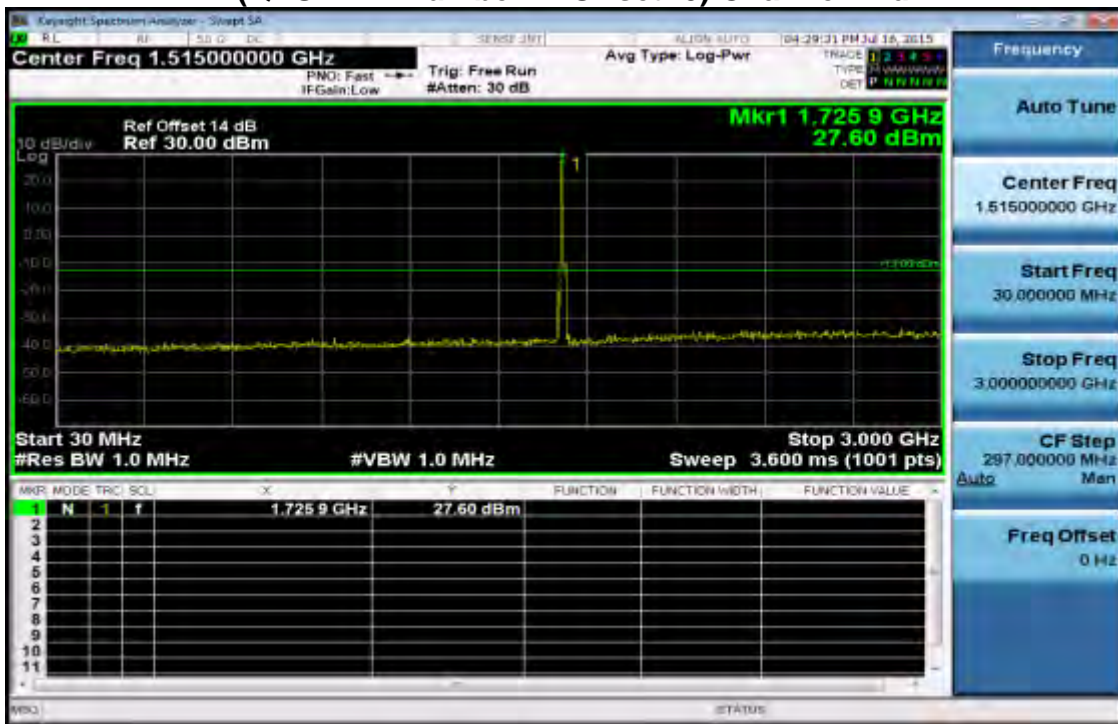
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**Out of Band emission at antenna terminals –15MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

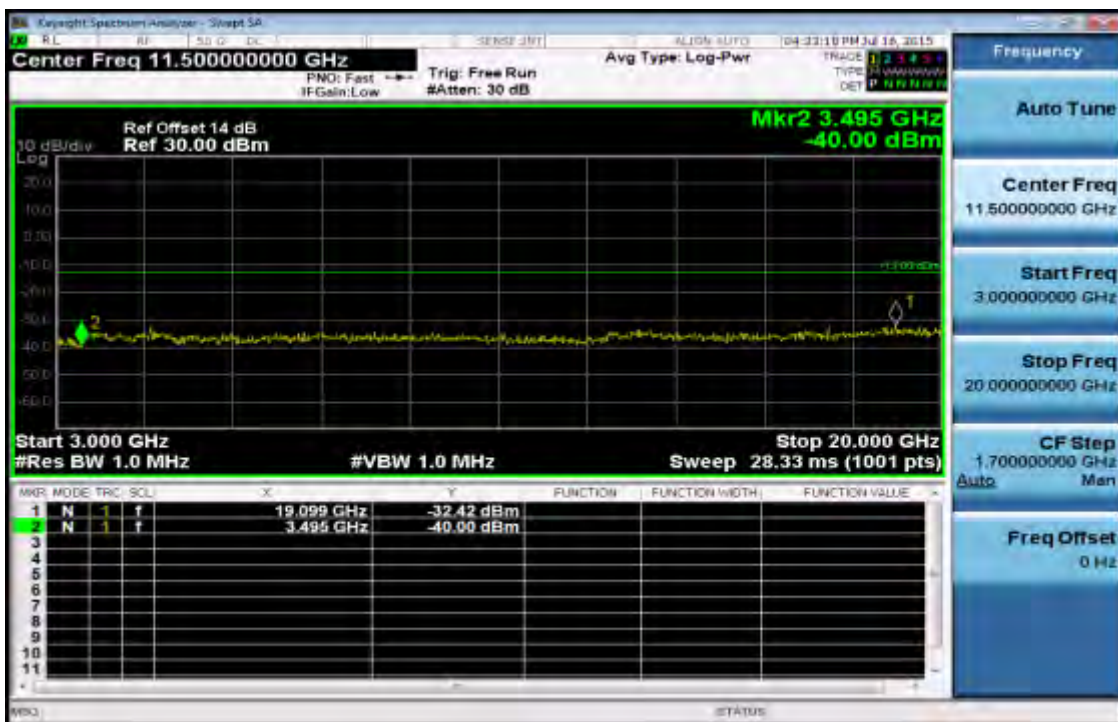
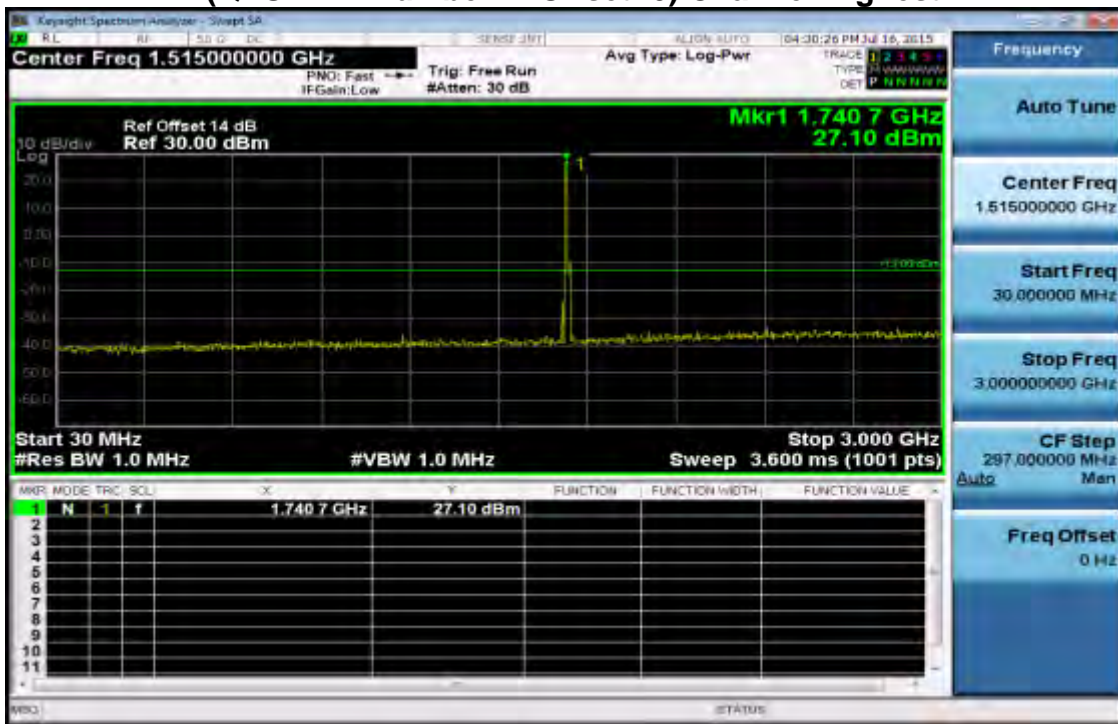


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**Out of Band emission at antenna terminals–15MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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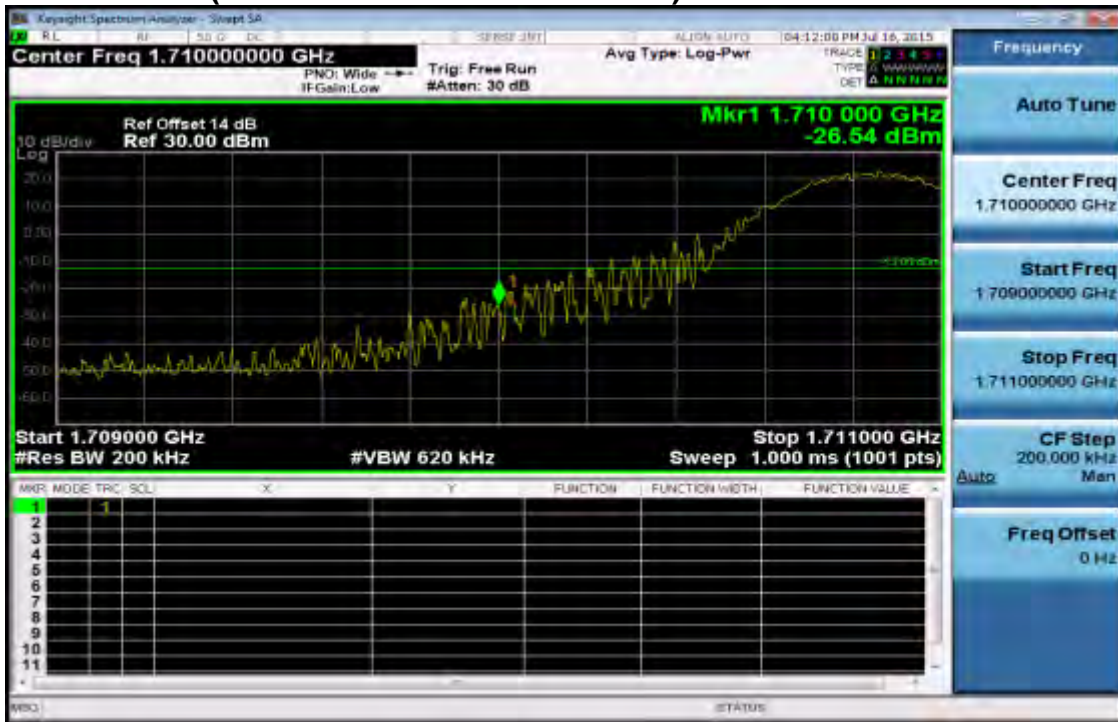
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**Band edge emission at antenna terminals –15MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –15MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 74) Channel Highest**



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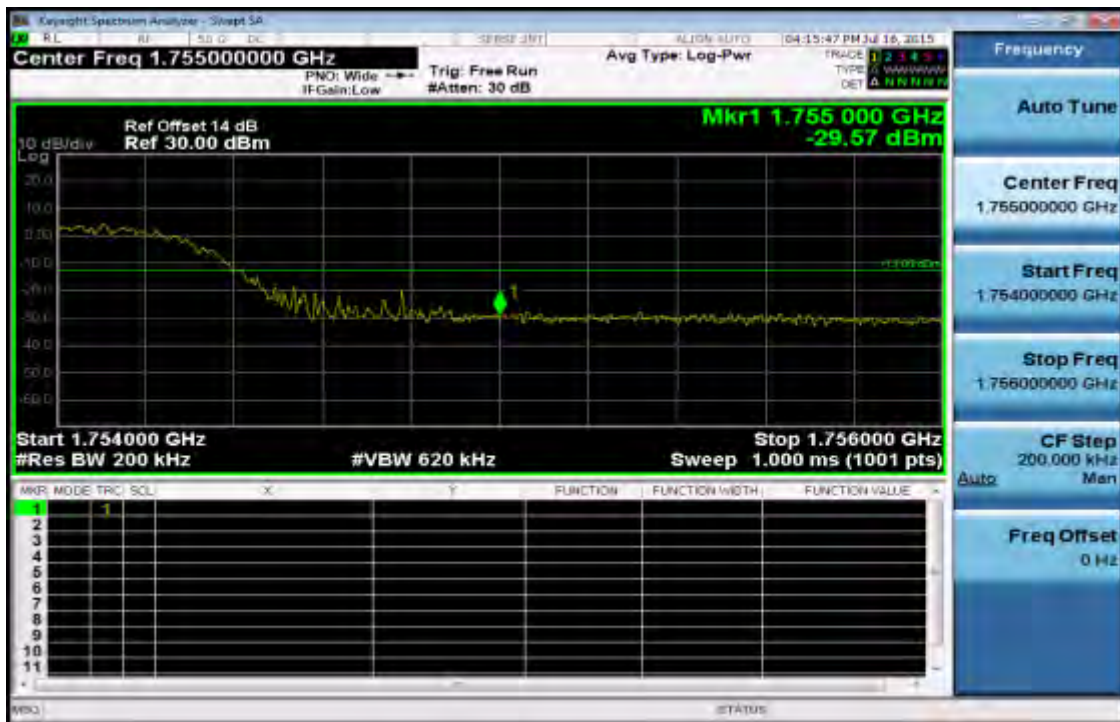
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**Band edge emission at antenna terminals –15MHz BW LTE-Band 4  
 (QPSK RB Number: 75 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –15MHz BW LTE-Band 4  
 (QPSK RB Number: 75 Offset: 0) Channel Highest**

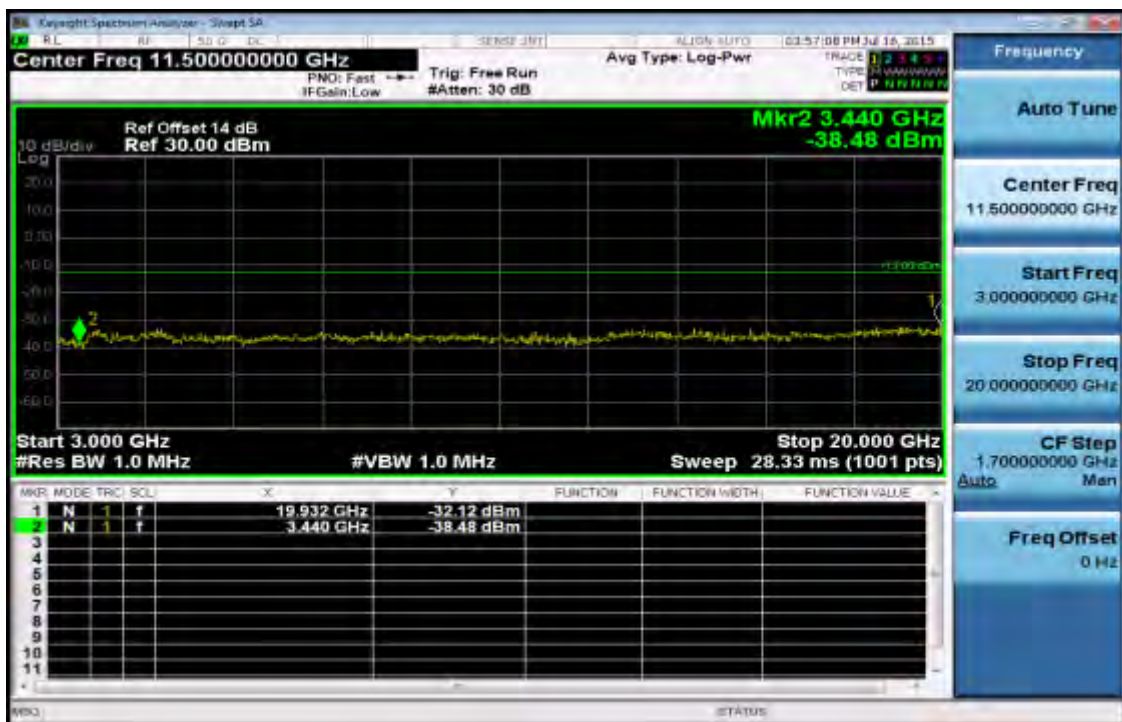
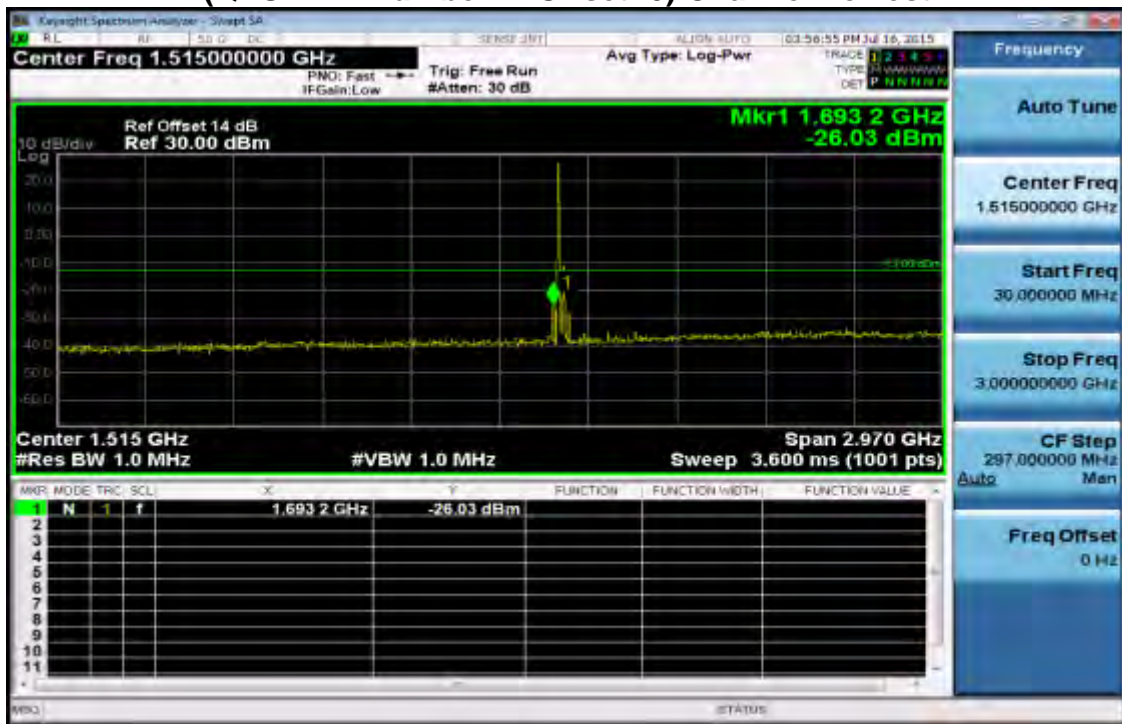


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**Out of Band emission at antenna terminals–20MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



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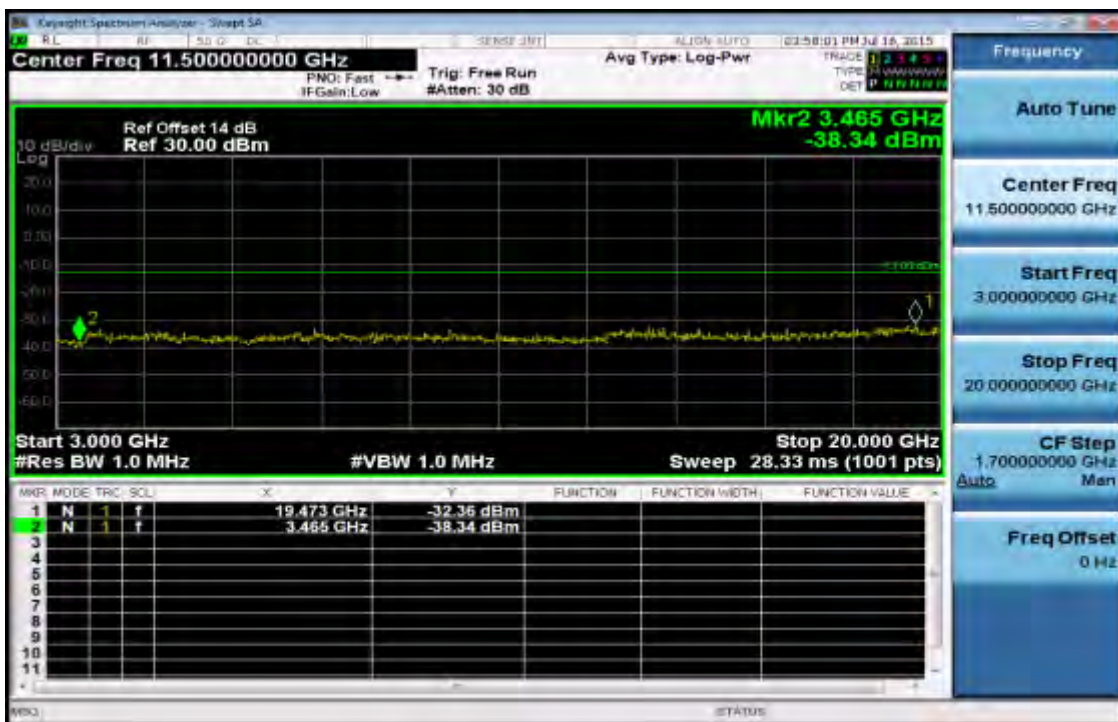
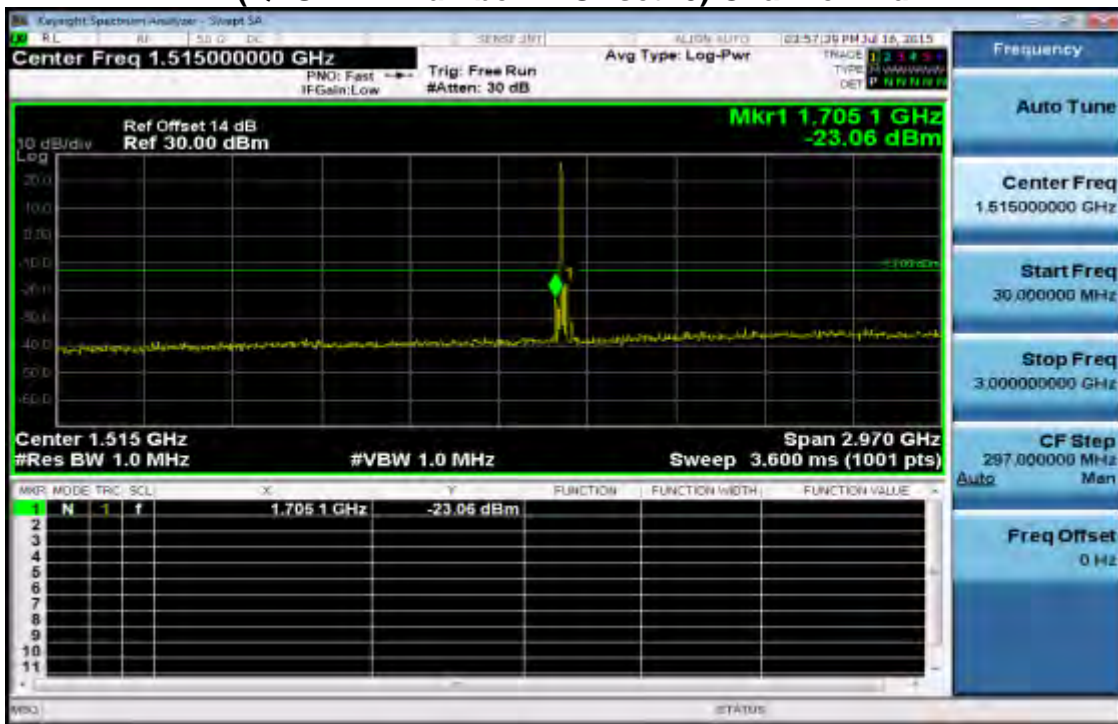
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**Out of Band emission at antenna terminals –20MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

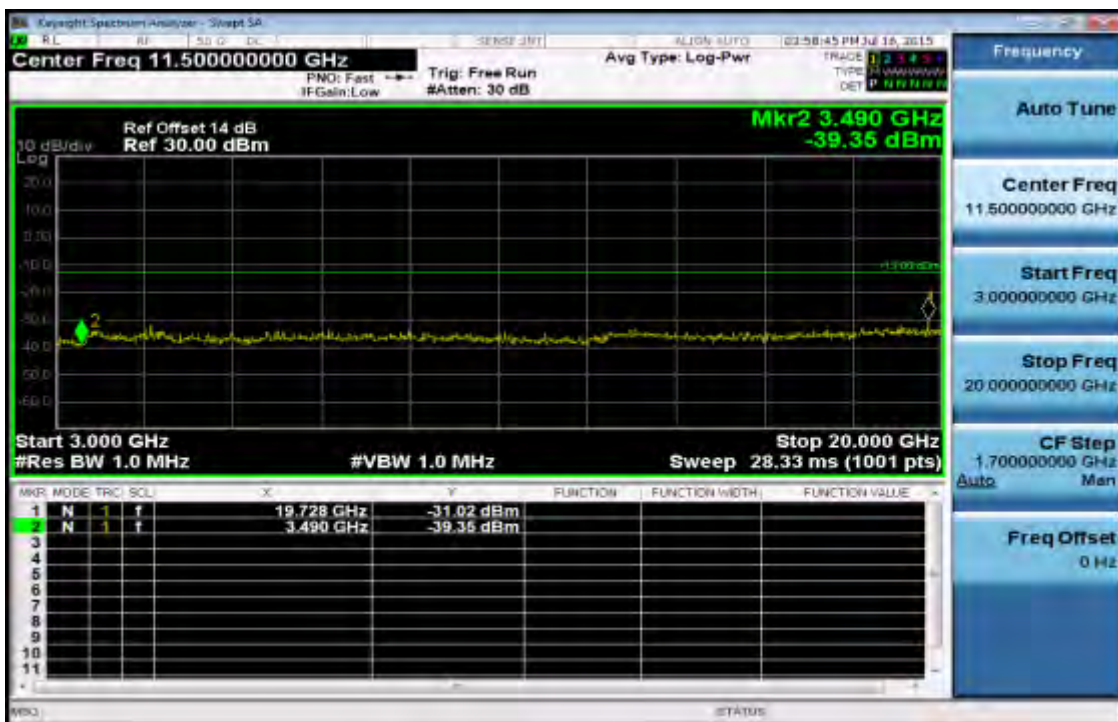
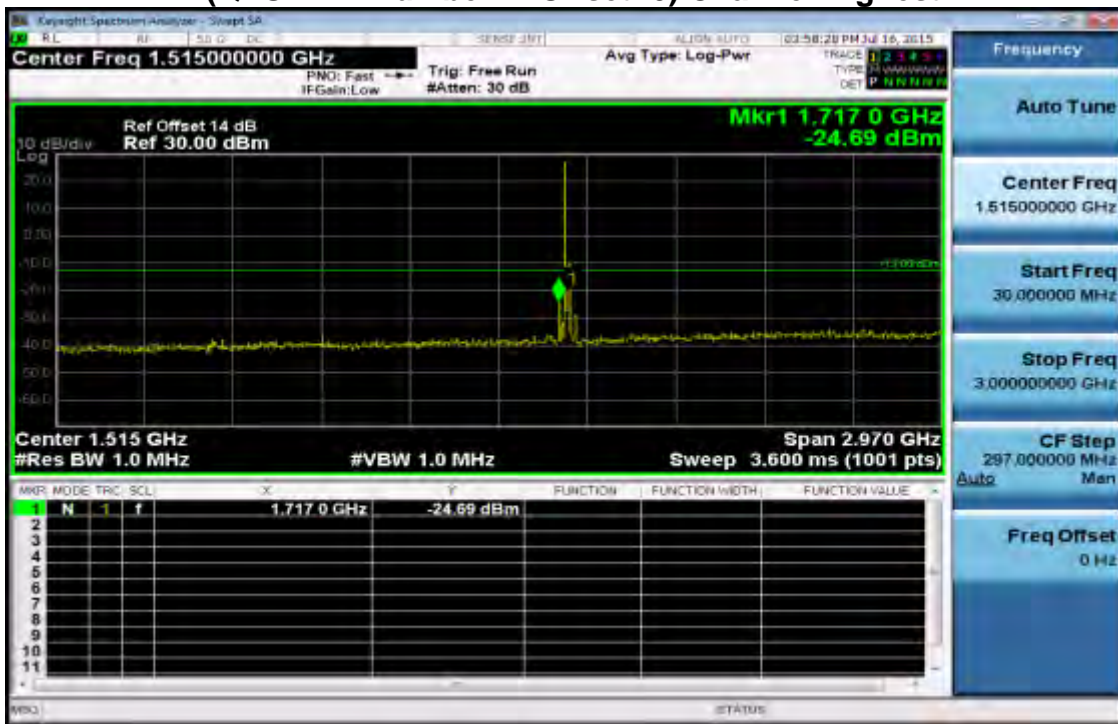


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**Out of Band emission at antenna terminals–20MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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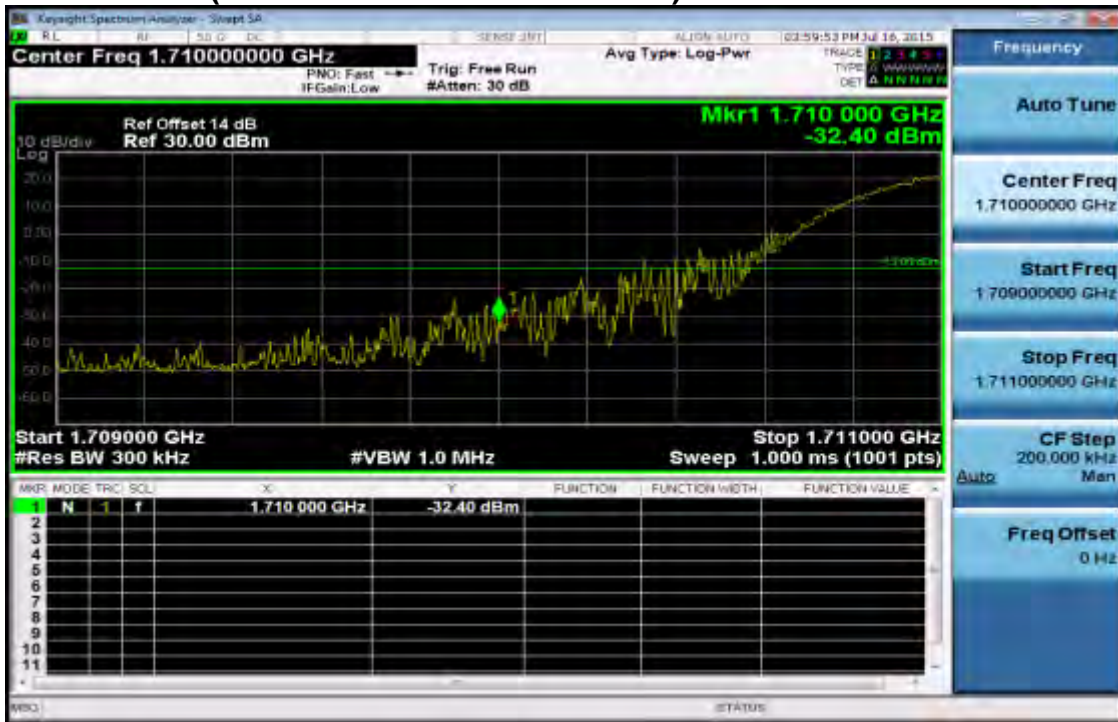
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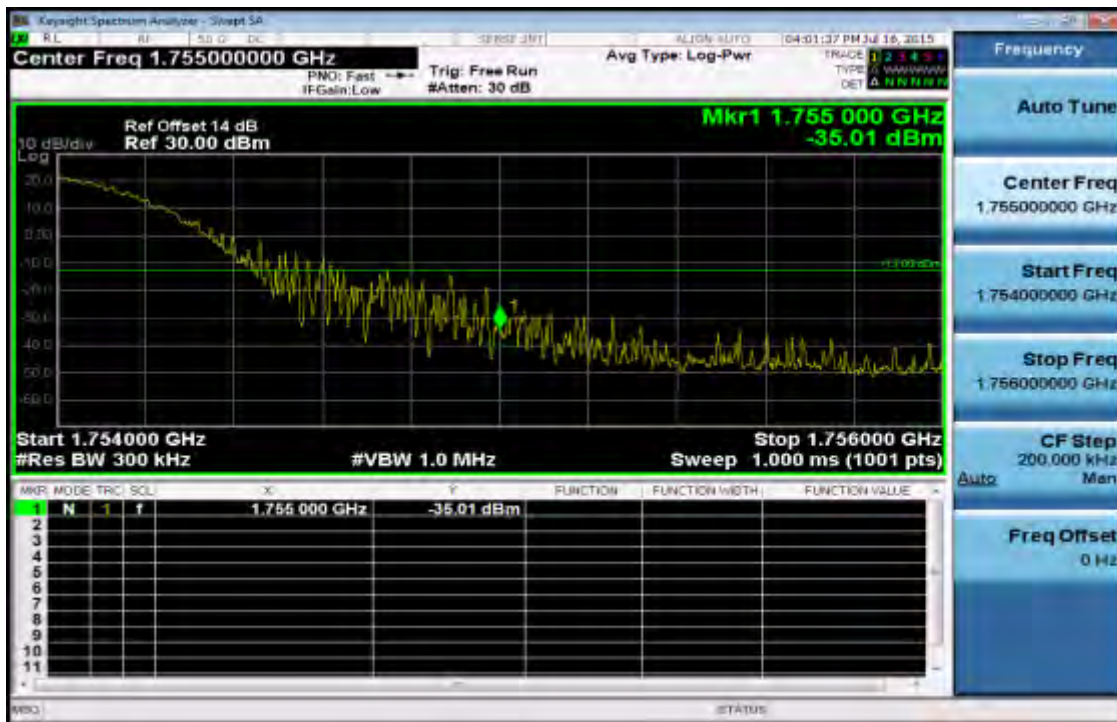
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**Band edge emission at antenna terminals –20MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –20MHz BW LTE-Band 4  
 (QPSK RB Number: 1 Offset: 99) Channel Highest**



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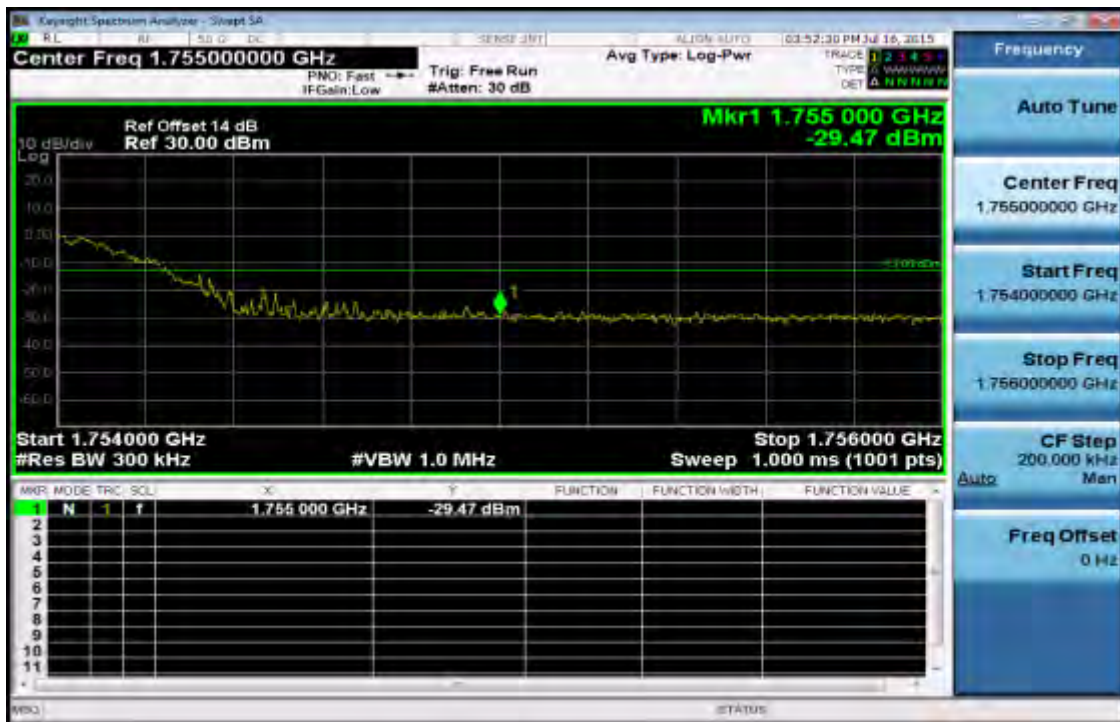
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**Band edge emission at antenna terminals –20MHz BW LTE-Band 4  
 (QPSK RB Number: 100 Offset: 0) Channel Lowest**



**Band edge emission at antenna terminals –20MHz BW LTE-Band 4  
 (QPSK RB Number: 100 Offset: 0) Channel Highest**



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