

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
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Prepared by:	SGS Taiwan Ltd.
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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 Isai	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		Aug. 20, 2015

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1. GENERAL PRODUCT INFORMATION

1.1. Product Description

General:

General.					
Product Name:	AL9S				
Marketing Name:	Klic K4 Sı	Klic K4 Smartphone			
Brand Name:	Kalley				
Model No.:	K4-02 4G				
Model Difference:	N/A				
Software version:	SA52A.W	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.				
	3.8Vdc from Li-ion rechargeable battery				
Power Supply:	Battery: Partl No.: E1GU111K2003, Supplier: K				
	Adapter:	Model No.: DSA-5PJM-05 FUS 050100 Supplier: DVE			
IMEI:	357264049401632				

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GSM / WCDMA / LTE:

	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
Cellular Phone	LTE-Band 4 (Bandwidth 5MHz)	1712.5MHz – 1752.5MHz	23dBm
Standards Fre- quency Range and	LTE-Band 4 (Bandwidth 10MHz)	1715MHz – 1750MHz	23dBm
Power	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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	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
Type of Emission:	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:

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

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

2.5. Final Amplifier Voltage and Current Information:

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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2.6. Configuration of Tested System

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

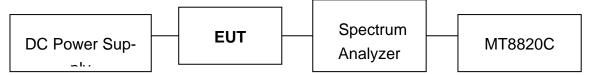
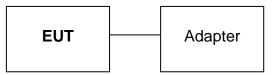


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)



Remote Side



Table 2-1 Equipment Used in

lte m	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 Occuupied 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
CONDCUDETED 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
	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
EIRP	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
LINF	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
	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	Full RB
OCCUPIED BANDWIDTH	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
	19957 to 19393	19957, 20175, 19393	1.4MHz	16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	16QAM	Full RB
PEAK TO AV- ERAGE RATIO	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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	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
BAND EDGE	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
	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
CONDCUDETED	19975 to 20375	19975, 20175, 20375	5MHz	QPSK,	1 RB, 0 RB Offest
EMISSION	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

		TEOTED			
TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
5100	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
EIRP	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
	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	Full RB
OCCUPIED	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	Full RB
BANDWIDTH	20850 to 21375	20850, 21100, 21375	15MHz	QPSK, 16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	Full RB
	20775 to 21425	20775, 21100, 21425	5MHz	16QAM	Full RB
PEAK TO AV-	20800 to 21400	20800, 21100, 21400	10MHz	16QAM	Full RB
ERAGE RATIO	20850 to 21375	20850, 21100, 21375	15MHz	16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	16QAM	Full RB
	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
BAND EDGE	20800 to 21400	20800, 21100, 21400	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
BAND LUGL	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
	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,	1 RB, 0 RB Offest
CONDCUDETED EMISSION	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	+/- 0.70 dB
Terminals and Band Edge	
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	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
(Polarization : Vertical)	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
(Polarization : Horizontal)	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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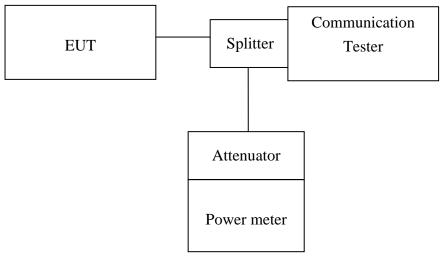


6. RF CONDUCTED OUTPUT POWER MEASUREMENT

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

Conduc	ted Emission (m	neasured at a	antenna port)	Test Site	
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
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	PASTERNACK	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	СН	Peak Power	Avg. Pow- er
	(MHz)		(dBm)	(dBm)
	1852.4	9262	26.71	23.36
WCDMA Band II	1880.0	9400	26.63	23.22
Dana n	1907.6	9538	26.52	23.18
	1852.4	9262	25.83	22.18
HSDPA Band II	1880.0	9400	25.90	22.06
Dana II	1907.6	9538	25.75	21.99
	1852.4	9262	25.25	21.48
HSUPA Band II	1880.0	9400	25.23	21.42
Bandin	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											
				Conducted power								
					(dE	Bm)						
BW	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			19957	20175	20393	19957	20175	20393				
	1	0	22.36	22.47	22.47	21.11	21.15	21.34				
1.4	1	5	22.25	22.39	22.44	21.09	21.34	21.60				
1.4	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										
				Conducted power							
					(dE	<u>Bm)</u>					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	nannel Channel Channel Channel Channel Char							
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			19965	20175	20385	19965	20175	20385			
	1	0	22.47	22.49	22.60	21.68	21.60	21.81			
	1	14	22.38	22.59	22.56	21.19	21.59	21.53			
3	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											
				Conducted power (dBm)								
					(dE	sm)						
BW	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			19975	20175	20375	19975	20175	20375				
	1	0	22.48	22.50	22.55	20.95	21.27	21.18				
_	1	24	22.29	22.52	22.62	21.26	21.33	21.57				
5	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										
				Conducted power (dBm)							
BW	RB	RB		QPSK	,	· ·	16QAM				
(MHz)	Size	Offset	Channel			Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			20000	20175	20350	20000	20175	20350			
	1	0	22.56	22.66	22.56	21.20	21.82	21.78			
10	1	49	22.53	22.48	22.69	21.41	21.41	21.36			
10	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										
				Conducted power							
					(dE	3m)					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel			
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			20025	20175	20325	20025	20175	20325			
	1	0	22.62	22.65	22.66	21.33	21.63	21.57			
45	1	74	22.65	22.53	22.69	21.35	21.55	21.50			
15	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											
				Conducted power								
					(dE	3m)						
BW	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20050	20175	20300	20050	20175	20300				
	1	0	22.68	22.69	22.71	21.43	21.28	21.53				
	1	99	2254	22.61	22.58	21.48	21.80	21.90				
20	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										
			Conducted power								
					(dE	Bm)					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel			
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			20775	21100	21425	20775	21100	21425			
	1	0	22.02	22.81	22.35	20.67	21.88	21.01			
_	1	24	22.45	22.88	22.66	21.02	21.99	21.20			
5	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										
				Conducted power							
					(dE	3m)					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel			
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			20800	21100	21400	20800	21100	21400			
	1	0	21.82	22.85	22.38	20.73	21.84	21.26			
10	1	49	22.03	22.87	22.34	20.97	21.96	21.18			
10	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										
				Conducted power (dBm)							
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel (Low) 20825	Channel (Mid) 21100	Channel (High) 21375	Channel (Low) 20825	Channel (Mid) 21100	Channel (High) 21375			
	1	0	22.04	22.73	22.31	21.00	21.97	21.67			
	1	74	22.24	22.85	22.76	21.82	21.97	21.31			
15	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										
				Conducted power							
					(dE	3m)					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	nannel Channel Channel Channel Channel Chan							
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)			
			20850	21100	21350	20850	21100	21350			
	1	0	21.88	22.83	22.44	20.27	21.96	21.22			
	1	99	22.42	22.90	22.41	21.08	21.97	21.45			
20	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: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β _c	β _d	β _d (SF)	β _c /β _d	βнs (Note1, 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	-	Power (d Channel	lBm)	Power Class 3 Lim-	Comments	
		9262	9400	9538	itation (dBm)		
	1	23.53	23.11	23.04	20.3dBm – 25.7dBm	Pass	
HSDPA	2	23.24	23.08	23.03	20.3dBm – 25.7dBm	Pass	
(B2)	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

Parameter During Connection setup	Unit	Value
P-CPICH Ec/lor	dB	-10
P-CCPCH and SCH_Ec/lor	dB	-12
PICH _Ec/lor	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH Ec/lor	dB	-5
OCNS_Ec/lor	dB	-3.1

Table E.5.0: Levels for HSDPA connection setup

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.

	Parameter	Unit	Value				
Nominal	Avg. Inf. Bit Rate	kbps	60				
Inter-TTI	Distance	TTI's	1				
Number	of HARQ Processes	Proces	6				
		ses	0				
Informati	on Bit Payload (N_{INF})	Bits	120				
Number	Code Blocks	Blocks	1				
Binary C	hannel Bits Per TTI	Bits	960				
Total Ava	ailable SML's in UE	SML's	19200				
Number	of SML's per HARQ Proc.	SML's	3200				
Coding F		0.15					
Number	of Physical Channel Codes	Codes	1				
Modulati	on		QPSK				
Note 1:	The RMC is intended to be used for						
	mode and both cells shall transmit with identical						
	parameters as listed in the table.						
Note 2:							
	retransmission is not allowed. The		icy and				
	constellation version 0 shall be us	ed.					

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

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Inf. Bit Payload	120				
CRC Addition	120	24 CRC			
Code Block Segmentation	144				
Turbo-Encoding (R=1/3)			432		12 Tail Bits
1st Rate Matching			432		
RV Selection		960]	
Physical Channel Segmentation	960				

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				
Loopback Mode	Test Mode 1							
Rel99 RMC	12.2kbps RMC							
HSDPA FRC	H-Set1							
Power Control Algorithm	Algorithm2							
βc	2/15	12/15	15/15	15/15				
βd	15/15	15/15	8/15	4/15				
βd (SF)	64							
βc/βd	2/15	12/15	15/8	15/4				
βhs	4/15	24/15	30/15	30/15				
MPR	0	5 12/15 15/15 5 15/15 8/15 6 12/15 15/8	0.5					
DACK	8	8						
DNAK	8							
DCQI	8							
Ack-Nack Repetition factor	3							
CQI Feedback	4ms							
CQI Repetition Factor	2							
Ahs = βhs/ βc	30/15							
	Subtest Loopback Mode Rel99 RMC HSDPA FRC Power Control Algorithm βc βd βd (SF) βc/βd βhs MPR DACK DNAK DCQI Ack-Nack Repetition factor CQI Feedback CQI Repetition Factor	Subtest1Loopback ModeTest Mode 1Rel99 RMC12.2kbps RMCHSDPA FRCH-Set1Power Control AlgorithmAlgorithm2βc2/15βd15/15βd (SF)64βc/βd2/15βhs4/15MPR0DACK8DNAK8DCQI8Ack-Nack Repetition factor3CQI Feedback4msCQI Repetition Factor2	Subtest 1 2 Loopback Mode Test Mode 1 Rel99 RMC 12.2kbps RMC HSDPA FRC H-Set1 Power Control Algorithm Algorithm2 βc 2/15 12/15 βd 15/15 15/15 βd (SF) 64 βc/βd 2/15 12/15 βd (SF) 64 βc/βd 2/15 12/15 βhs 4/15 24/15 MPR 0 0 DACK 8 DCQI 8 Ack-Nack Repetition factor 3 CQI Feedback 4ms CQI Repetition Factor 2	Subtest 1 2 3 Loopback Mode Test Mode 1				

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Results:

DC-HSDPA conducted power table:

	Max. Rated Avg.		D 100	DC-HSDPA mode AV(dBm)					
Band	СН	Power + Max. Tolerance (dBm)	Rel99 AV(dBm)	SUB-1	SUB-2	SUB-3	SUB-4		
	9262	23.5	23.36	23.26	21.27	21.21	21.24		
WCDMA Band II	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: β values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub- test	βc	βd	β _d (SF)	βc/βd	βнs	β _{ec}	β_{ed}	β _{ed} (SF)	β _{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	209/22 5	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	β _{ed} 1: 47/15 β _{ed} 2: 47/15		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	-	Power (d Channel	IBm)	Power Class 3 Lim- itation (dBm)	Comments	
		9262	9400	9538			
	1	23.28	23.20	23.12	18.8dBm – 25.7dBm	Pass	
	2	21.33	21.27	21.16	16.8dBm – 25.7dBm	Pass	
HSUPA(B2)	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

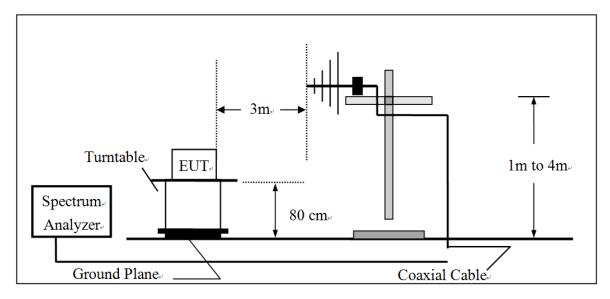
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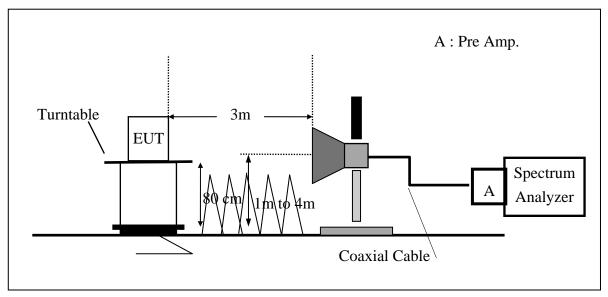


7.2. Test SET-UP

(A) Radiated Power Test Set-Up, Frequency Below1000MHz



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

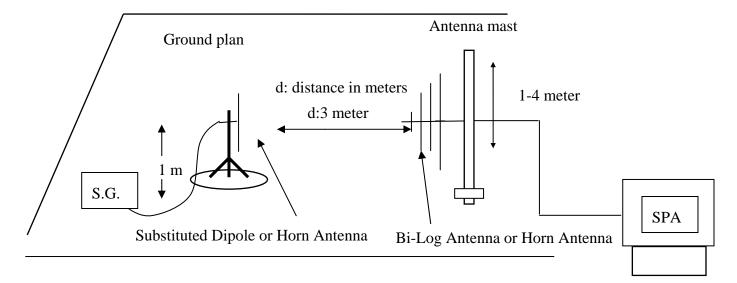


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(C) Substituted Method Test Set-UP



7.3. Measurement Procedure

- 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
- 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. output (dBm) + Antenna Gain (dBd) Cable Loss (dB)
- 7. ERP = S.G. output (dBm) + Antenna Gain (dBd) 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 > =3xRBW.

(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 sweet time = 601*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*log (TBW/RBW), where TBW is the transmission of UE exceeding the maximum BW UE can extends, and RBW is the resolution BW in spectrum.

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7.4. Measurement Equipment Used

ERP, I	EIRP MEASUREM		NT List 966	Chamber	
EQUIPMENT TYPE	MFR	MODEL	SERIAL	LAST CAL.	CAL DUE.
		NUMBER	NUMBER		
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				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
	1852.4	9262	V	25.96	5.35	-5.35	25.96	33.01
	1052.4	9202	Н	22.27	5.35	-5.35	22.27	33.01
WCDMA B2	1880.0	9400	V	26.73	5.29	-5.4	26.62	33.01
	1000.0	9400	Н	23.2	5.29	-5.4	23.09	33.01
- 	1907.6	9538	V	26.52	5.22	-5.39	26.35	33.01
	1907.0	9000	Н	22.65	5.22	-5.39	22.48	33.01

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
	1852.4	9262	V	25.34	5.35	-5.35	25.34	33.01
	1002.4	9202	Н	21.16	5.35	-5.35	21.16	dBm 34 33.01 16 33.01 14 33.01 6 33.01 18 33.01
HSDPA B2	1880.0	9400	V	26.55	5.29	-5.4	26.44	33.01
	1000.0	9400	Н	21.71	5.29	-5.4	21.6	33.01
-	1907.6	9538	V	25.35	5.22	-5.39	25.18	33.01
	1907.0	9000	Н	21.68	5.22	-5.39	21.51	33.01

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
	1852.4	0262	V	26.36	5.35	-5.35	26.36	33.01
	1002.4	9262	Н	22.51	5.35	-5.35	22.51	dBm
HSUPA B2	1880.0	9400	V	26.94	5.29	-5.4	26.83	33.01
NOUPA D2	1000.0	9400	Н	23.23	5.29	-5.4	23.12	33.01
-	1907.6	0520	V	26.5	5.22	-5.39	26.33	33.01
	1907.0	9538	Н	22.73	5.22	-5.39	22.56	33.01

Remark :

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

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	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	24.11	5.69	-5.17	24.63	30.00
BAND 4	1710.7	19957	Н	20.24	5.69	-5.17	20.76	30.00
BW: 1.4M/	1732.5	20175	V	23.59	5.64	-5.24	23.99	30.00
QPSK	1752.5	20175	Н	21.50	5.64	-5.24	21.90	30.00
RB: 1,0	1754.3	20393	V	24.86	5.58	-5.29	25.15	30.00
	1754.5	20393	Н	23.22	5.58	-5.29	23.51	30.00
	47407	40057	V	24.31	5.69	-5.17	24.83	30.00
BAND 4	1710.7	19957	Н	20.31	5.69	-5.17	20.83	30.00
BW: 1.4M	W: 1.4M 1732.5	20175	V	23.49	5.64	-5.25	23.88	30.00
QPSK	1702.0	20170	Н	21.38	5.64	-5.25	21.77	30.00
RB: 1,5	1754.3	20393	V	24.91	5.58	-5.29	25.20	30.00
	1704.0	20000	Н	23.27	5.58	-5.29	23.56	30.00
	4740 7	10057	V	24.16	5.69	-5.17	24.68	30.00
BAND 4	1710.7	19957	Н	20.31	5.69	-5.17	20.83	30.00
BW: 1.4M	1732.5	20175	V	23.67	5.64	-5.24	24.07	30.00
16QAM		20110	Н	21.47	5.64	-5.24	21.87	30.00
RB: 1,0	1754.3	20393	V	24.90	5.58	-5.29	25.19	30.00
			Н	23.40	5.58	-5.29	23.69	30.00
	1710 7	19957	V	24.38	5.68	-5.17	24.89	30.00
16QAM	1710.7	19907	Н	20.39	5.69	-5.17	20.91	30.00
	1732.5	20175	V	23.60	5.63	-5.24	23.99	30.00
			Н	21.76	5.63	-5.24	22.15	30.00
RB: 1,5	1754.3	20393	V	25.00	5.58	-5.29	25.29	30.00
			Н	23.43	5.58	-5.29	23.72	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	23.93	5.69	-5.17	24.45	30.00
BAND 4	1711.5	19965	Н	20.18	5.69	-5.17	20.70	30.00
BW: 3M	1732.5	20175	V	23.70	5.64	-5.24	24.10	30.00
QPSK	1752.5	20175	Н	21.50	5.64	-5.24	21.90	30.00
RB: 1,0	1753.5	20385	V	24.53	5.59	-5.30	24.82	30.00
	1755.5	20303	Н	23.14	5.59	-5.30	23.43	30.00
		1711.5 19965	V	24.46	5.68	-5.17	24.97	30.00
BAND 4	1/11.5 1	19965	Н	20.38	5.68	-5.17	20.89	30.00
BW: 3M QPSK	1732.5	20175	V	23.49	5.63	-5.25	23.87	30.00
	1102.0	20170	Н	21.64	5.63	-5.25	22.02	30.00
RB: 1,14	1753.5	20385	V	24.81	5.58	-5.28	25.11	30.00
	1100.0	20000	Н	23.25	5.58	-5.28	23.55	30.00
	1711.5	19965	V	24.20	5.69	-5.17	24.72	30.00
BAND 4	1711.5	19900	Н	20.14	5.69	-5.17	20.66	30.00
BW: 3M	1732.5	20175	V	23.80	5.64	-5.24	24.20	30.00
16QAM			Н	21.60	5.64	-5.24	22.00	30.00
RB: 1,0	1753.5	20385	V	24.62	5.59	-5.30	24.91	30.00
			Н	23.22	5.59	-5.30	23.51	30.00
	1711.5	19965	V	24.15	5.69	-5.17	24.67	30.00
BAND 4 BW: 3M 16QAM		19903	Н	20.47	5.68	-5.17	20.98	30.00
	1732.5	20175	V	23.58	5.63	-5.25	23.96	30.00
			Н	21.72	5.63	-5.25	22.10	30.00
RB: 1,14	1753.5	20385	V	25.00	5.58	-5.29	25.29	30.00
			Н	23.47	5.58	-5.28	23.77	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	23.93	5.69	-5.17	24.45	30.00
BAND 4	1712.5	19975	Н	20.21	5.69	-5.17	20.73	30.00
BW: 5M	1720 F	20175	V	23.80	5.64	-5.23	24.21	30.00
QPSK	1732.5	20175	Н	21.41	5.64	-5.23	21.82	30.00
RB: 1,0	1752.5	20375	V	24.28	5.59	-5.30	24.57	30.00
	1752.5	20375	H	22.88	5.59	-5.30	23.17	30.00
			V	24.84	5.68	-5.17	25.35	30.00
BAND 4	1712.5	19975	Н	20.28	5.69	-5.17	20.80	30.00
BW: 5M	1732.5	20175	V	23.43	5.63	-5.25	23.81	30.00
QPSK	1732.5	20175	Н	21.68	5.63	-5.25	22.06	30.00
RB: 1,24	1752.5	20375	V	24.89	5.58	-5.29	25.18	30.00
	1752.5	20373	Н	23.23	5.58	-5.29	23.52	30.00
	4740 5	40075	V	23.98	5.69	-5.17	24.50	30.00
BAND 4	1712.5	19975	Н	20.29	5.69	-5.17	20.81	30.00
BW: 5M	1732.5	20175	V	23.90	5.64	-5.23	24.31	30.00
16QAM	1732.3	20175	Н	21.55	5.64	-5.23	21.96	30.00
RB: 1,0	1752.5	20375	V	24.46	5.59	-5.30	24.75	30.00
	1702.0	20070	Н	23.06	5.59	-5.30	23.35	30.00
	1710 5	10075	V	24.86	5.68	-5.18	25.36	30.00
BAND 4	1712.5	19975	Н	20.30	5.69	-5.18	20.81	30.00
BW: 5M	/: 5M	20175	V	23.54	5.63	-5.25	23.92	30.00
16QAM		20170	Н	21.74	5.63	-5.25	22.12	30.00
RB: 1,24	1752.5	20375	V	24.98	5.58	-5.28	25.28	30.00
	1702.0	20010	Н	23.39	5.58	-5.28	23.69	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	23.96	5.69	-5.17	24.48	30.00
BAND 4	1715.0	20000	Н	20.25	5.69	-5.17	20.77	30.00
BW: 10M	1732.5	20175	V	24.04	5.65	-5.23	24.46	30.00
QPSK	1732.5	20175	Н	21.36	5.65	-5.23	21.78	30.00
RB: 1,0	1750.0	20350	V	23.86	5.61	-5.31	24.16	30.00
	1750.0	20330	Н	22.44	5.61	-5.31	22.74	30.00
	4745.0	20000	V	24.79	5.67	-5.20	25.26	30.00
BAND 4	1715.0	20000	Н	21.15	5.67	-5.20	21.62	30.00
BW: 10M QPSK	1732.5	20175	V	23.34	5.63	-5.26	23.71	30.00
	1752.5	20175	Н	21.90	5.63	-5.26	22.27	30.00
RB: 1,49	1750.0	20350	V	24.77	5.58	-5.29	25.06	30.00
	1700.0	20000	Н	23.24	5.58	-5.29	23.53	30.00
	1715 0	20000	V	24.03	5.69	-5.17	24.55	30.00
BAND 4	1715.0	20000	Н	20.30	5.69	-5.17	20.82	30.00
BW: 10M	1732.5	20175	V	24.15	5.65	-5.23	24.57	30.00
16QAM	1102.0	20170	Н	21.50	5.65	-5.23	21.92	30.00
RB: 1,0	1750.0	20350	V	23.90	5.61	-5.30	24.21	30.00
	1700.0	20000	Н	22.56	5.61	-5.30	22.87	30.00
	1715 0	20000	V	25.05	5.67	-5.20	25.52	30.00
BAND 4 BW: 10M 16QAM	1715.0	20000	Н	21.38	5.67	-5.20	21.85	30.00
	1732.5	20175	V	23.37	5.63	-5.26	23.74	30.00
	1102.0		Н	21.95	5.63	-5.26	22.32	30.00
RB: 1,49	1750.0	20350	V	24.99	5.58	-5.29	25.28	30.00
	1700.0	20000	Н	23.45	5.58	-5.29	23.74	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	24.01	5.69	-5.17	24.53	30.00
BAND 4	1717.5	20025	Н	20.30	5.69	-5.17	20.82	30.00
BW: 15M	1732.5	20175	V	24.33	5.65	-5.22	24.76	30.00
QPSK	1732.5	20175	Н	21.33	5.65	-5.22	21.76	30.00
RB: 1,0	1747.5	20325	V	23.47	5.62	-5.28	23.81	30.00
	1747.5	20323	Н	23.14	5.62	-5.28	23.48	30.00
		20025	V	24.32	5.66	-5.21	24.77	30.00
BAND 4	1717.5	20025	Н	21.52	5.66	-5.21	21.97	30.00
BW: 15M	1732.5	20175	V	23.43	5.62	-5.27	23.78	30.00
QPSK	1702.0	20170	Н	22.09	5.62	-5.27	22.44	30.00
RB: 1,74	1747.5	20325	V	24.75	5.59	-5.29	25.05	30.00
		20020	Н	23.14	5.59	-5.29	23.44	30.00
	1717.5	20025	V	24.07	5.69	-5.17	24.59	30.00
BAND 4	1717.5	20025	Н	20.31	5.69	-5.17	20.83	30.00
BW: 15M	1732.5	20175	V	24.52	5.65	-5.22	24.95	30.00
16QAM		20110	Н	21.48	5.65	-5.22	21.91	30.00
RB: 1,0	1747.5	20325	V	23.54	5.62	-5.28	23.88	30.00
			Н	22.44	5.62	-5.28	22.78	30.00
	1717.5	20025	V	24.55	5.66	-5.21	25.00	30.00
BAND 4	1717.5	20023	Н	21.68	5.66	-5.21	22.13	30.00
BW: 15M	1/32.5 20	20175	V	23.51	5.62	-5.27	23.86	30.00
16QAM			Н	22.15	5.62	-5.27	22.50	30.00
RB: 1,74	1747.5	20325	V	25.00	5.58	-5.29	25.29	30.00
		_0020	Н	23.42	5.58	-5.29	23.71	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	24.04	5.69	-5.17	24.56	30.00
BAND 4	1720.0	20050	Н	20.31	5.69	-5.17	20.83	30.00
BW: 20M	1720 F	20175	V	25.67	5.66	-5.21	26.12	30.00
QPSK	1732.5	20175	Н	21.27	5.66	-5.21	21.72	30.00
RB: 1,0	1745.0	20300	V	23.44	5.63	-5.26	23.81	30.00
	1745.0	20300	Н	22.03	5.63	-5.26	22.40	30.00
	(======		V	23.84	5.64	-5.23	24.25	30.00
BAND 4	1720.0 2	20050	Н	21.59	5.64	-5.23	22.00	30.00
BW: 20M QPSK	1732.5	20175	V	23.65	5.66	-5.21	24.10	30.00
	1732.5	20175	Н	21.27	5.66	-5.21	21.72	30.00
RB: 1,99	1745.0	20300	V	24.76	5.59	-5.29	25.06	30.00
	1743.0	20300	Н	22.37	5.59	-5.29	22.67	30.00
	4700.0	00050	V	24.17	5.69	-5.17	24.69	30.00
BAND 4	1720.0	20050	Н	20.40	5.69	-5.17	20.92	30.00
BW: 20M	1732.5	20175	V	24.92	5.66	-5.21	25.37	30.00
16QAM	1732.3	20175	Н	21.45	5.66	-5.21	21.90	30.00
RB: 1,0	1745.0	20300	V	23.54	5.63	-5.26	23.91	30.00
	1740.0	20000	Н	22.10	5.63	-5.26	22.47	30.00
	4700.0	20050	V	24.04	5.65	-5.23	24.46	30.00
BAND 4 1720. BW: 20M 1732.	1720.0	20050	Н	21.77	5.65	-5.23	22.19	30.00
	1732 5	20175	V	23.72	5.61	-5.29	24.04	30.00
	1702.0	20170	Н	22.23	5.61	-5.29	22.55	30.00
RB: 1,99	1745.0	20300	V	25.00	5.59	-5.29	25.30	30.00
	17-5.0	20000	Н	23.42	5.59	-5.29	23.72	30.00

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	21.29	5.80	-5.85	21.24	33.01
BAND 7	2502.5	20775	Н	17.69	5.80	-5.85	17.64	33.01
BW: 5M	2525.0	21100	V	22.21	5.87	-5.85	22.24	33.01
QPSK	2535.0	21100	Н	18.03	5.87	-5.85	18.06	33.01
RB: 1,0	2567.5	21425	V	22.67	5.95	-5.91	22.71	33.01
	2307.5	21420	Н	17.94	5.95	-5.91	17.98	33.01
		2502.5 20775	V	21.64	5.81	-5.84	21.61	33.01
BAND 7	2502.5 20	20775	Н	18.04	5.81	-5.84	18.01	33.01
BW: 5M QPSK	2535.0	21100	V	21.88	5.88	-5.85	21.91	33.01
	2333.0	21100	Н	17.78	5.88	-5.85	17.81	33.01
RB: 1,24	2567.5	21425	V	21.20	5.96	-5.91	21.25	33.01
	2307.5	21720	Н	16.50	5.96	-5.91	16.55	33.01
	0500 5	00775	V	21.59	5.80	-5.85	21.54	33.01
BAND 7	2502.5	20775	Н	17.90	5.80	-5.85	17.85	33.01
BW: 5M	2535.0	21100	V	22.37	5.88	-5.85	22.40	33.01
16QAM	2000.0	21100	Н	18.26	5.87	-5.85	18.28	33.01
RB: 1,0	2567.5	21425	V	22.64	5.95	-5.91	22.68	33.01
	2307.3	21720	Н	17.91	5.95	-5.91	17.95	33.01
	2502 5	20775	V	21.94	5.81	-5.84	21.91	33.01
BAND 7	2502.5	20775	Н	18.31	5.81	-5.84	18.28	33.01
BW: 5M 16QAM	2535.0	21100	V	22.02	5.88	-5.85	22.05	33.01
	2000.0	21100	Н	17.94	5.88	-5.85	17.97	33.01
RB: 1,24	2567.5	21425	V	21.85	5.96	-5.91	21.90	33.01
	2007.0	21720	Н	17.05	5.96	-5.91	17.10	33.01

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
			V	21.64	5.80	-5.85	21.59	33.01
BAND 7	2505.0	20800	Н	17.65	5.80	-5.85	17.60	33.01
BW: 10M	2535.0	21100	V	22.36	5.87	-5.85	22.38	33.01
QPSK	2000.0	21100	Н	17.93	5.87	-5.85	17.95	33.01
RB: 1,0	2565.0	21400	V	23.32	5.94	-5.90	23.36	33.01
	2303.0	21400	Н	18.69	5.94	-5.90	18.73	33.01
	0505.0		V	21.67	5.82	-5.83	21.66	33.01
BAND 7	2505.0 2	20800	Н	18.14	5.82	-5.83	18.13	33.01
BW: 10M QPSK	2535.0	21100	V	21.83	5.89	-5.85	21.87	33.01
	2000.0	21100	Н	17.62	5.89	-5.85	17.66	33.01
RB: 1,49	2565.0	21400	V	20.71	5.96	-5.91	20.76	33.01
	2000.0	21100	Н	15.93	5.96	-5.91	15.98	33.01
	2505.0	20800	V	21.62	5.80	-5.85	21.57	33.01
BAND 7	2505.0	20000	Н	18.10	5.80	-5.85	18.05	33.01
BW: 10M	2535.0	21100	V	22.50	5.87	-5.85	22.52	33.01
16QAM			Н	18.14	5.57	-5.85	17.86	33.01
RB: 1,0	2565.0	21400	V	23.06	5.94	-5.90	23.10	33.01
			Н	18.59	5.94	-5.90	18.63	33.01
	2505.0	20800	V	22.27	5.81	-5.84	22.24	33.01
BAND 7 BW: 10M 16QAM	2303.0	20000	Н	18.63	5.81	-5.84	18.60	33.01
	2535.0	21100	V	21.89	5.89	-5.85	21.93	33.01
			Н	17.75	5.89	-5.85	17.79	33.01
RB: 1,49	2565.0	21400	V	21.30	5.96	-5.91	21.35	33.01
			Н	16.34	5.96	-5.91	16.39	33.01

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
	2507.5	20825	V	21.58	5.80	-5.85	21.53	33.01
BAND 7	2507.5	20025	Н	17.74	5.80	-5.85	17.69	33.01
BW: 15M	2535.0	21100	V	22.64	5.86	-5.84	22.66	33.01
QPSK	2333.0	21100	Н	17.70	5.86	-5.84	17.72	33.01
RB: 1,0	2562.5	21375	V	23.14	5.93	-5.88	23.19	33.01
	2302.3	21373	Н	18.64	5.93	-5.88	18.69	33.01
	2507.5	20825	V	21.73	5.83	-5.83	21.73	33.01
BAND 7 BW: 15M	2007.0	20025	Н	18.10	5.83	-5.83	18.10	33.01
	2535.0	21100	V	21.46	5.90	-5.85	21.51	33.01
QPSK		21100	Н	16.94	5.90	-5.85	16.99	33.01
RB: 1,74	2562.5	21375	V	20.31	5.96	-5.91	20.36	33.01
		21070	Н	16.04	5.96	-5.91	16.09	33.01
	2507.5	20825	V	21.74	5.80	-5.85	21.69	33.01
BAND 7	2307.3		Н	17.87	5.80	-5.85	17.82	33.01
BW: 15M	2535.0	21100	V	22.71	5.86	-5.84	22.73	33.01
16QAM	2000.0	21100	Н	17.78	5.86	-5.84	17.80	33.01
RB: 1,0	2562.5	21375	V	23.34	5.93	-5.88	23.39	33.01
	2002.0	21070	Н	18.41	5.93	-5.88	18.46	33.01
	2507.5	20825	V	21.77	5.83	-5.83	21.77	33.01
BAND 7	2007.0	20020	Н	18.26	5.83	-5.83	18.26	33.01
BW: 15M	2535.0	21100	V	22.07	5.89	-5.85	22.11	33.01
16QAM	2000.0	_ 100	Н	17.16	5.90	-5.85	17.21	33.01
RB: 1,74	2562.5	21375	V	20.81	5.96	-5.91	20.86	33.01
	2002.0	21070	Н	16.37	5.96	-5.91	16.42	33.01

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



	EUT			N	leasurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
	2510.0	20850	V	22.04	5.80	-5.85	21.99	33.01
BAND 7	2510.0	20650	Н	17.69	5.80	-5.85	17.64	33.01
BW: 20M	2535.0	21100	V	22.84	5.86	-5.84	22.86	33.01
QPSK	2333.0	21100	Н	18.09	5.86	-5.84	18.11	33.01
RB: 1,0	2560.0	21350	V	22.16	5.92	-5.86	22.22	33.01
	2300.0	21000	Н	18.29	5.92	-5.86	18.35	33.01
	2510.0	20850	V	23.41	5.84	-5.83	23.42	33.01
BAND 7	2310.0	20000	Н	17.62	5.84	-5.83	17.63	33.01
BW: 20M	2535.0	21100	V	21.53	5.90	-5.85	21.58	33.01
QPSK		21100	Н	17.08	5.90	-5.85	17.13	33.01
RB: 1,99	2560.0	21350	V	21.03	5.96	-5.91	21.08	33.01
			Н	15.35	5.96	-5.91	15.40	33.01
	2510.0 20	20850	V	22.28	5.80	-5.85	22.23	33.01
BAND 7			Н	17.94	5.80	-5.85	17.89	33.01
BW: 20M	2535.0	21100	V	22.92	5.86	-5.84	22.94	33.01
16QAM			Н	18.27	5.86	-5.84	18.29	33.01
RB: 1,0	2560.0	21350	V	22.12	5.92	-5.86	22.18	33.01
	200010	2.000	Н	18.52	5.92	-5.86	18.58	33.01
	2510.0	20850	V	23.50	5.84	-5.83	23.51	33.01
BAND 7			Н	17.85	5.84	-5.83	17.86	33.01
BW: 20M 16QAM	2535.0	21100	V	21.68	5.90	-5.85	21.73	33.01
			Н	17.35	5.90	-5.85	17.40	33.01
RB: 1,99	2560.0	21350	V	21.42	5.96	-5.91	21.47	33.01
	2000.0		Н	15.80	5.96	-5.91	15.85	33.01

(1)

The RBW, VBW of SPA for frequency RBW= 8MHz, VBW= 8MHz



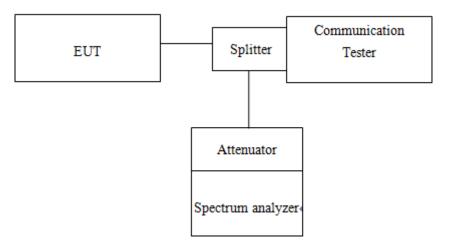
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8. OCCUPIED BANDWIDTH MEASUREMENT

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

Conduc	ted Emission (m	neasured at a	antenna port)	Test Site	
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
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	PASTERNACK	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			99% Bandwidth (MHz)	99% Bandwidth (MHz)
(MHz)		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	4.1606	4.1651	4.1548

	LTE BAND 4										
Char	nnel bai	ndwidth: 1.4	4MHz	Cha	annel ba	ndwidth: 3	ИНz				
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)				
(MHz)		QPSK	16QAM	(MHz)		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	2.7191	2.7101				
1754.3	20393	1.0962	1.1034	1753.5	20385	2.7025	2.6914				

	LTE BAND 4										
Channel bandwidth: 5MHz				Cha	nnel ba	ndwidth: 10	MHz				
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)				
(MHz)	QPSK	QPSK	16QAM	(MHz)		QPSK	16QAM				
1712.5	19957	4.5099	4.5005	1715.0	20000	8.9403	8.9752				
1732.5	20175	4.4913	4.5089	1732.5	20175	8.9525	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	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)				
(MHZ)	(MHz)	QPSK	16QAM	(MHz)		QPSK	16QAM				
1717.5	20025	13.434	13.434	1720.0	20050	17.833	17.915				
1732.5	20175	13.455	13.436	1732.5	20175	17.939	17.923				
1747.5	20325	13.476	13.421	1745.0	20300	17.832	17.869				

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

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



26dB Bandwidth

Frequency	СН	26dB Band- width (MHz)	26dB Band- width (MHz)	26dB Band- width (MHz)	
(MHz)		WCDMA II	HSDPA II	HSUPA II	
1850.20	9262	4.630	4.641	4.602	
1880.00	9400	4.614	4.603	4.600	
1909.80	9538	4.619	4.613	4.585	

	LTE BAND 4									
Char	nnel bai	ndwidth: 1.4	1MHz	Channel bandwidth: 3MHz						
Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)			
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM			
1710.7	19957	1.308	1.283	1711.5	19965	2.983	2.970			
1732.5	20175	1.274	1.286	1732.5	20175	2.998	2.982			
1754.3	20393	1.269	1.288	1753.5	20385	2.983	2.983			

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

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

LTE BAND 7								
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz				
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM	
2502.5	20775	5.554	4.972	2505.0	20800	9.775	9.834	
2535.0	21100	4.887	4.994	2535.0	21100	9.843	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)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM	
2507.5	20825	14.59	14.57	2510.0	20850	19.05	19.26	
2535.0	21100	14.43	14.45	2535.0	21100	19.18	19.33	
2562.5	21375	14.56	14.49	2560.0	21350	19.06	19.17	

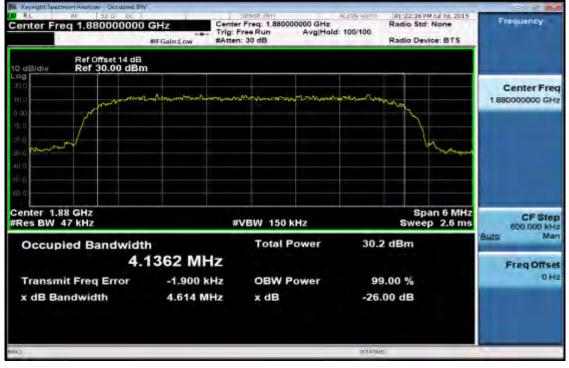


99% & 26dB Bandwidth Test Data



WCDMA II Channel Low

WCDMA II Channel Mid



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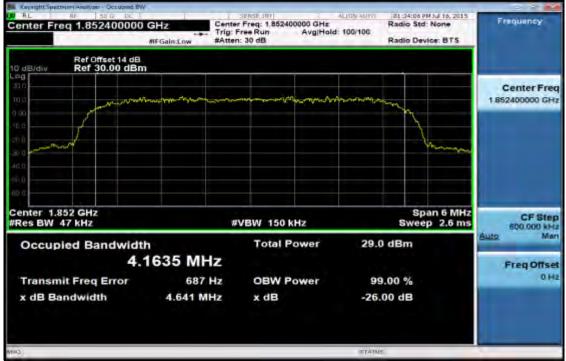
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WCDMA II Channel High



HSDPA II Channel Low



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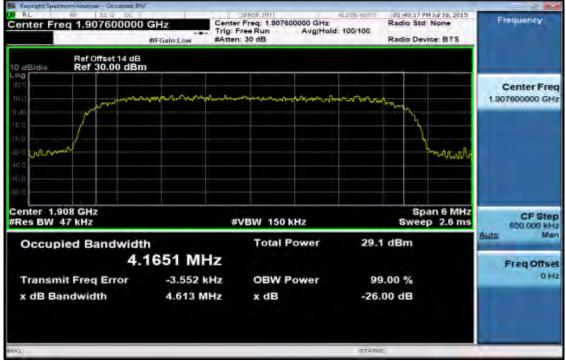
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HSDPA II Channel Mid



HSDPA II Channel High

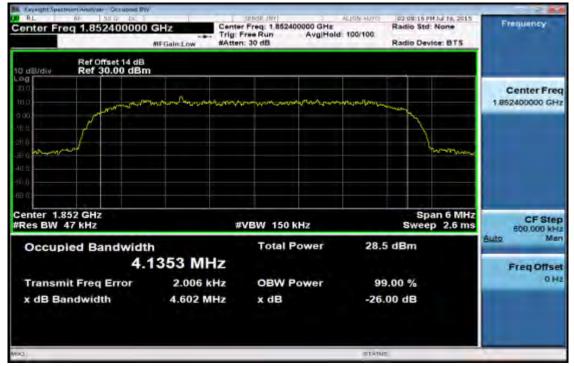


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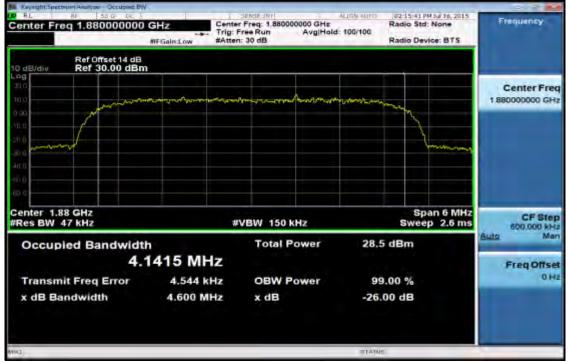
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HSUPA II Channel Low



HSUPA II Channel Mid

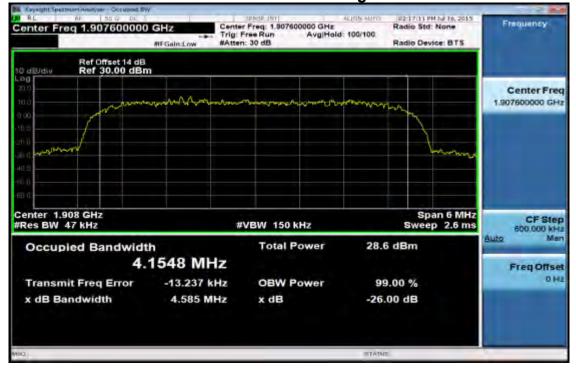


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HSUPA II Channel High

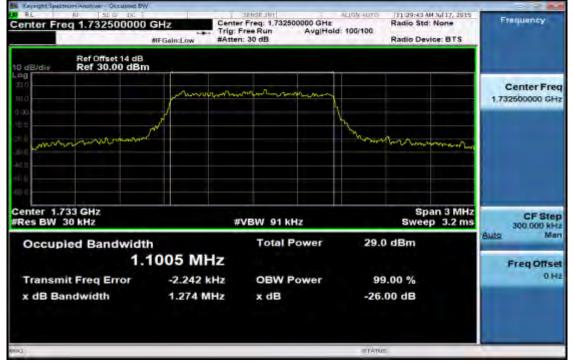




RI 111:27:45 AM Jul 17, 2019 Radio Std: None Center Freq: 1.710700000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 30 dB Frequency Center Freg 1.710700000 GHz Radio Device: BTS MFGain:Low Ref Offset 14 dB Ref 30.00 dBm **Center Freq** 1.710700000 GHz Center 1.711 GHz #Res BW 30 kHz Span 3 MHz Sweep 3.2 ms CF Step #VBW 91 kHz 300.000 kHL Mar Auto Total Power 28.8 dBm **Occupied Bandwidth** 1.0957 MHz Freq Offset 0 HI Transmit Freq Error -1.122 kHz **OBW Power** 99.00 % 1.308 MHz x dB Bandwidth x dB -26.00 dB

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

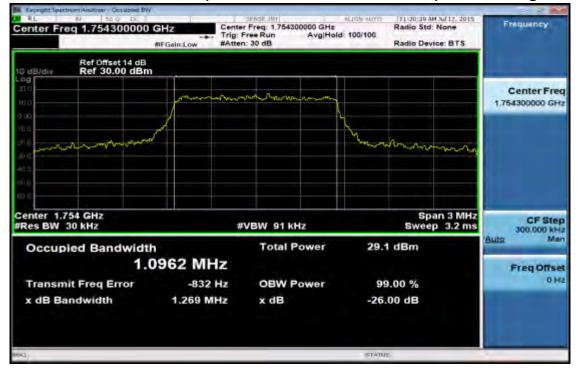


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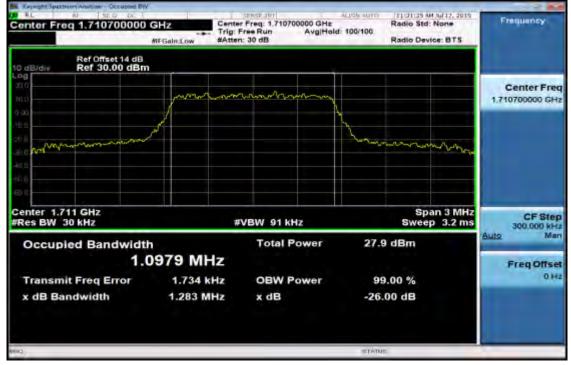
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1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel High



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



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RI Radio Std: None Center Freq: 1.732500000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 30 dB Frequency Center Freg 1.732500000 GHz Radio Device: BTS MFGain:Low Ref Offset 14 dB Ref 30.00 dBm **Center Freq** 1.732500000 GHz Center 1.733 GHz #Res BW 30 kHz Span 3 MHz Sweep 3.2 ms CF Step #VBW 91 kHz 300.000 kHL Mar Auto 27.8 dBm Total Power **Occupied Bandwidth** 1.1015 MHz Freq Offset 0 HZ Transmit Freq Error 2.124 kHz **OBW Power** 99.00 % 1.286 MHz x dB Bandwidth x dB -26.00 dB

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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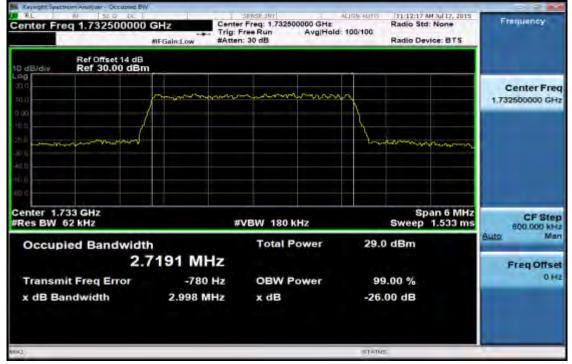
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RI Radio Std: None Center Freq: 1.711500000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 30 dB Frequency Center Freg 1.711500000 GHz Radio Device: BTS MFGain:Low Ref Offset 14 dB Ref 30.00 dBm Center Freq 1.711500000 GHz Center 1.712 GHz #Res BW 62 kHz Span 6 MHz Sweep 1.533 ms CF Step #VBW 180 kHz 600.000 kH. Mar Auto Total Power 29.0 dBm **Occupied Bandwidth** 2.7060 MHz Freq Offset 0 HI Transmit Freq Error 10.173 kHz **OBW Power** 99.00 % x dB Bandwidth 2.983 MHz x dB -26.00 dB

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

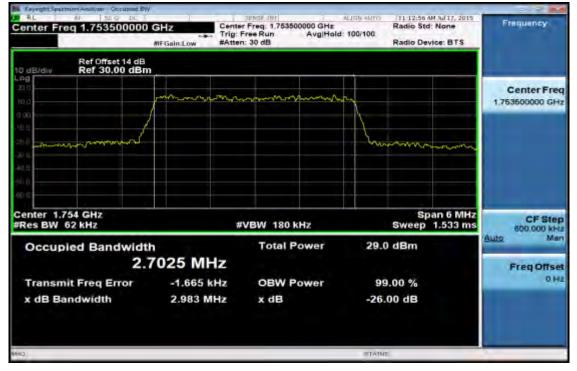


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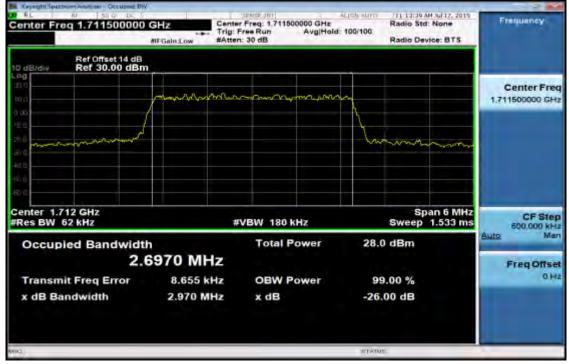
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3MHz BW LTE-Band 4(16QAM RB Number: 15 Offset: 0) Channel Low



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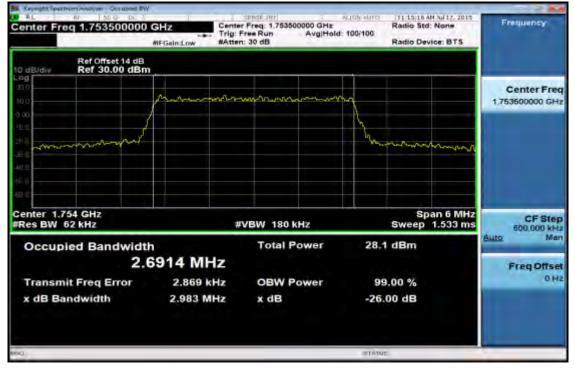
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RI 11:14:36 AM Jul 17, 2019 Radio Std: None Center Freq: 1.732500000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 30 dB Frequency Center Freg 1.732500000 GHz Radio Device: BTS MFGain:Low Ref Offset 14 dB Ref 30.00 dBm **Center Freq** 1.732500000 GHz Center 1.733 GHz #Res BW 62 kHz Span 6 MHz Sweep 1.533 ms CF Step #VBW 180 kHz 600.000 k Mar Auto Total Power 28.2 dBm **Occupied Bandwidth** 2.7101 MHz Freq Offset 0 HI Transmit Freq Error 1.433 kHz **OBW Power** 99.00 % x dB Bandwidth 2.982 MHz x dB -26.00 dB

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



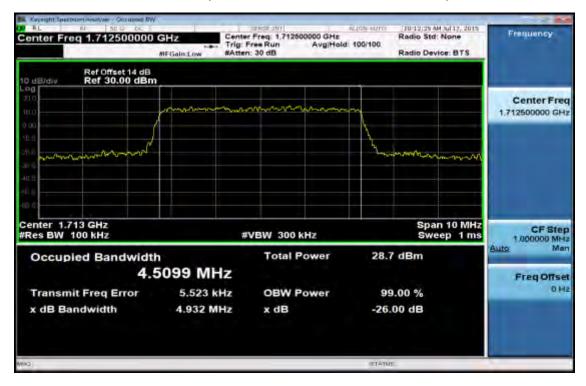
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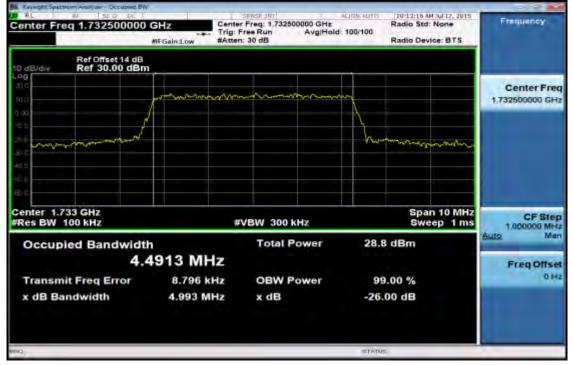
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5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel Low



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

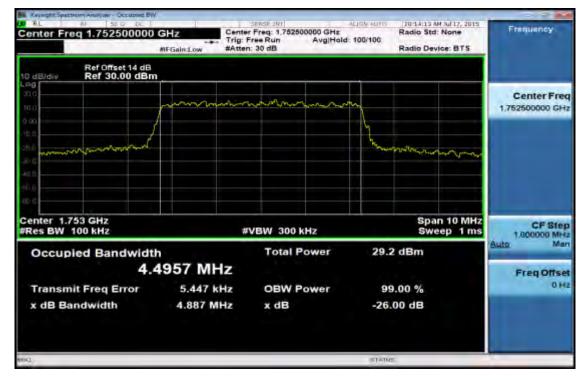


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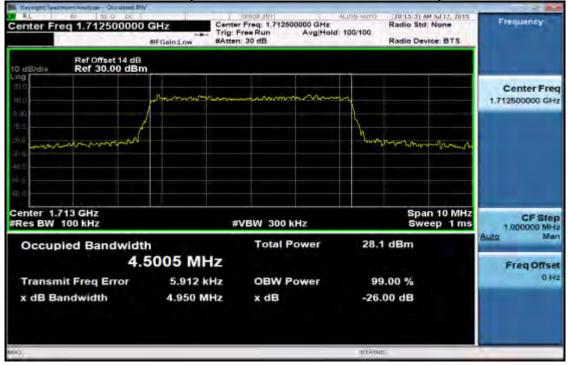
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5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel High



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



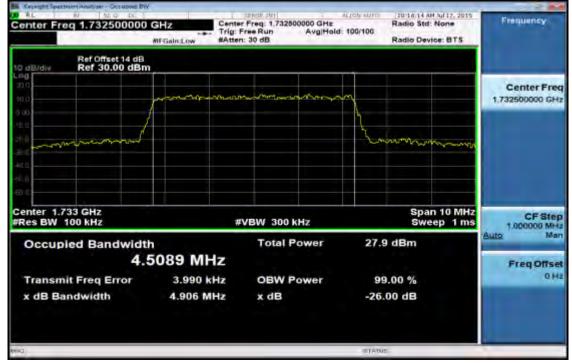
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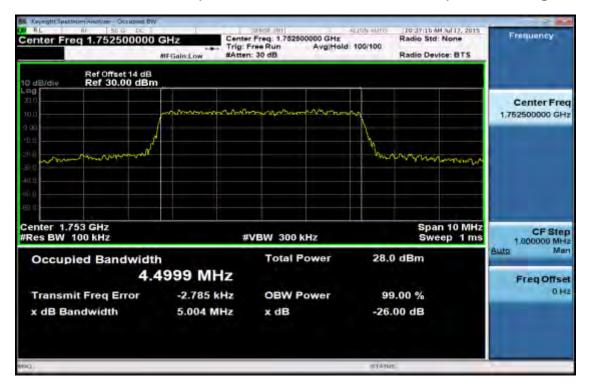
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5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel Mid



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

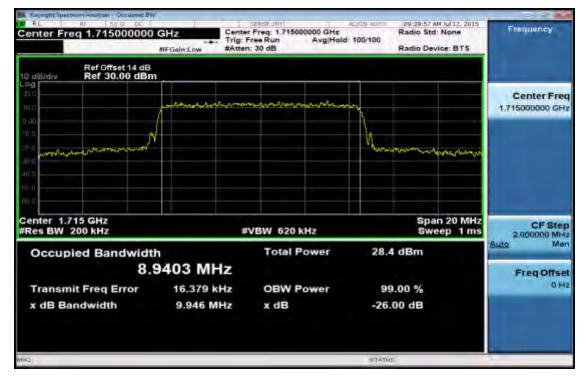


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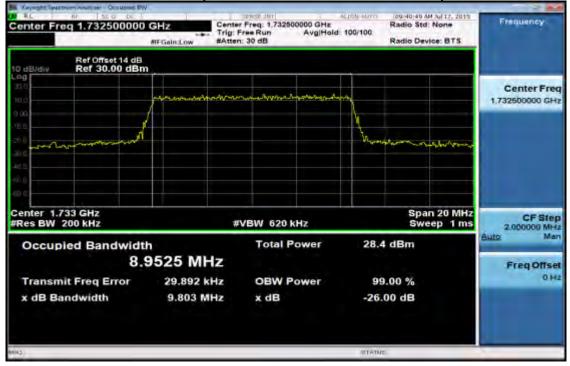
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10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel Low



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



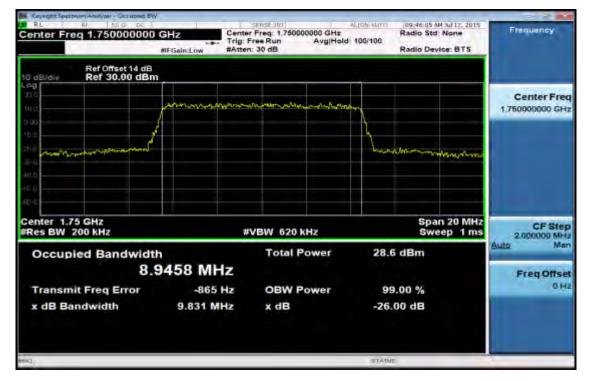
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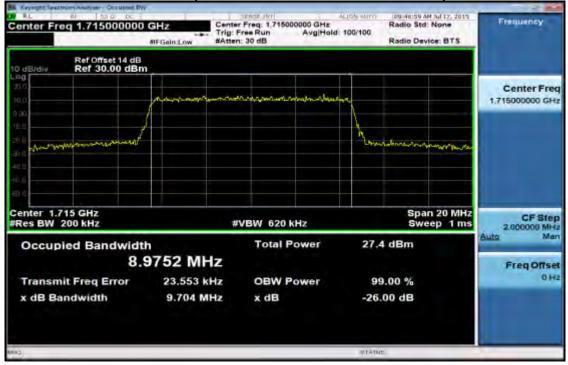
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10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel High



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



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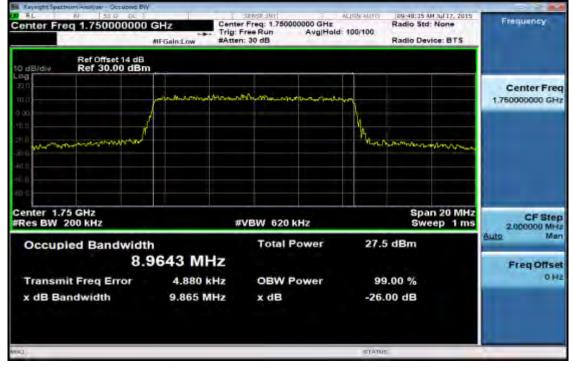
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10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel Mid



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

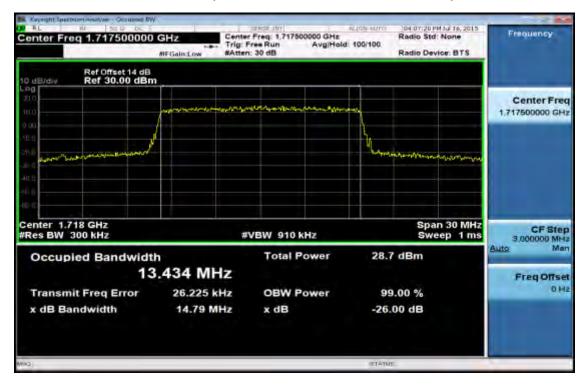


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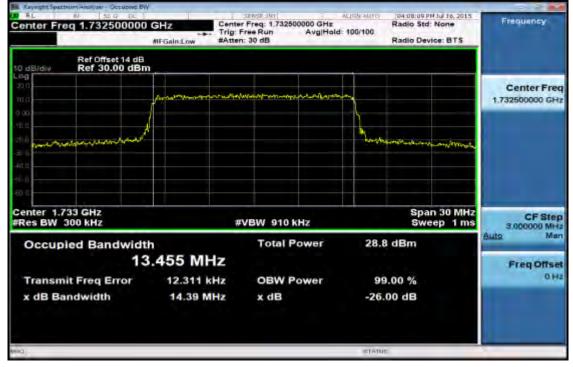
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15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel Low



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

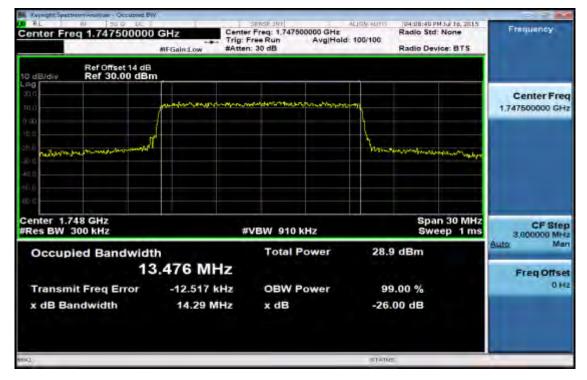


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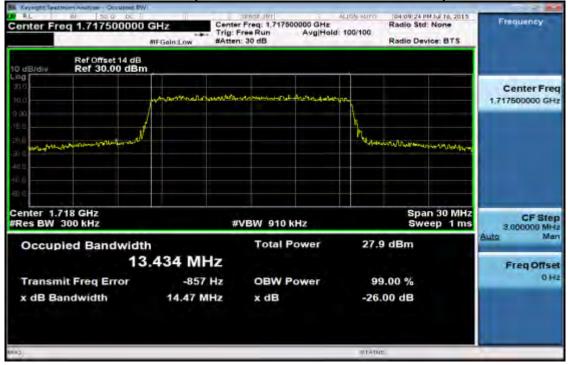
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15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel High



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

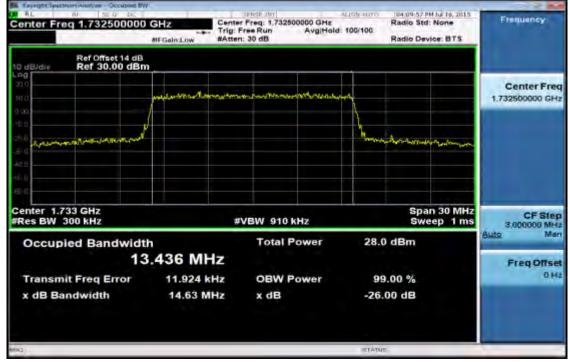


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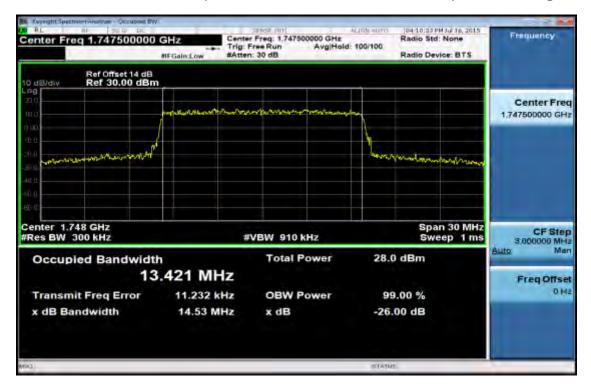
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15MHz BW LTE-Band 4(16QAM RB Number: 75 Offset: 0) Channel Mid



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

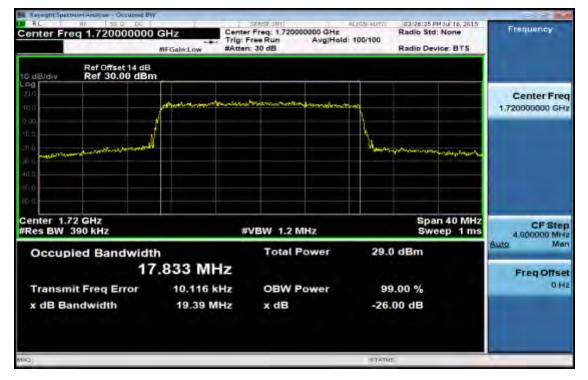


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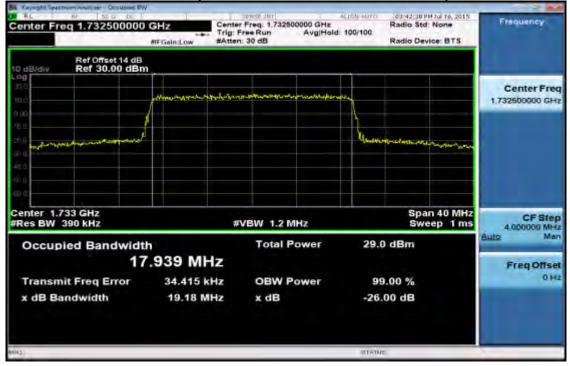
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20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel Low



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

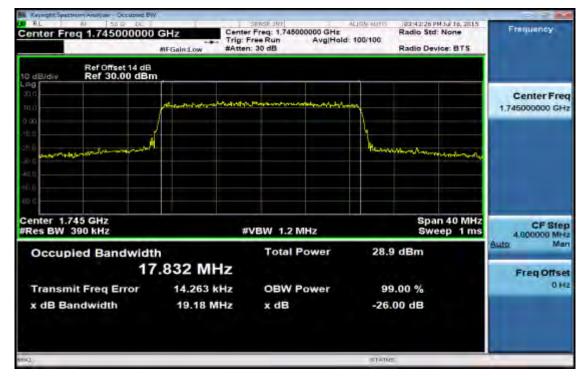


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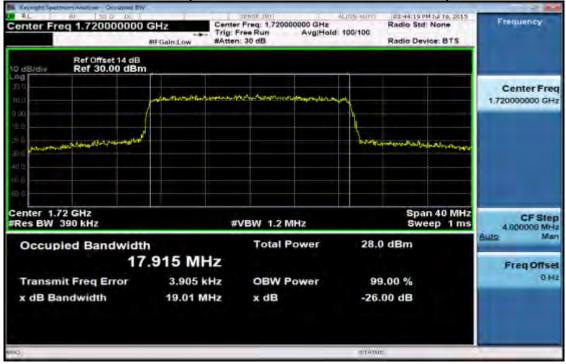
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20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel High



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

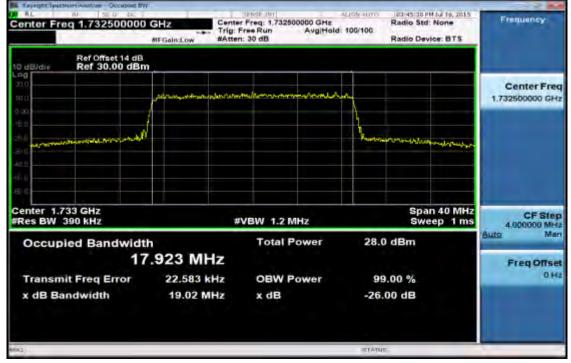


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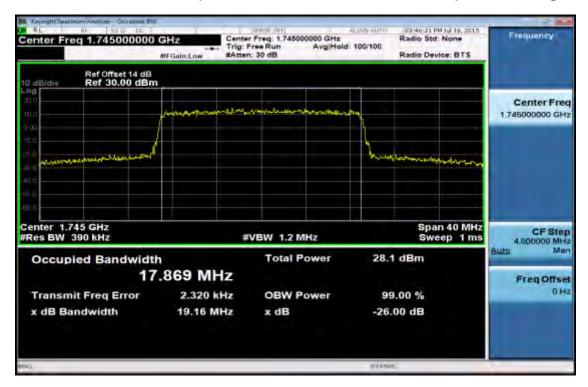
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20MHz BW LTE-Band 4(16QAM RB Number: 100 Offset: 0) Channel Mid



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

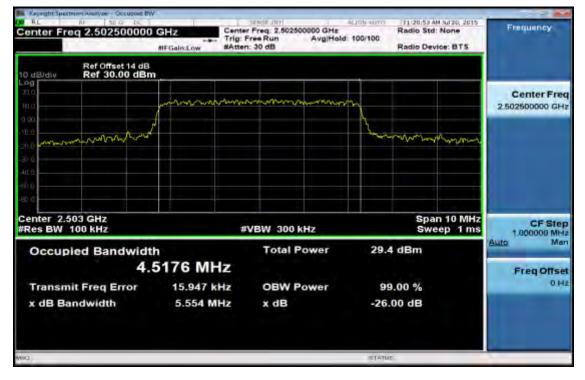


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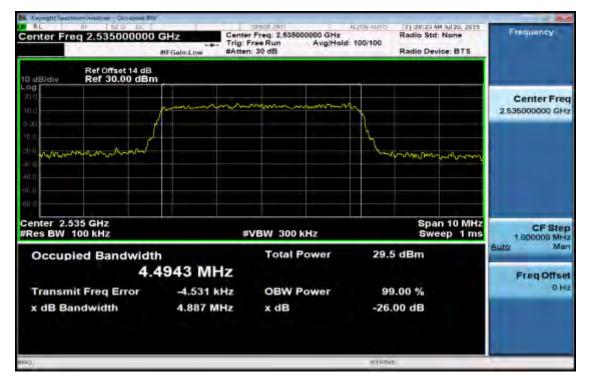
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5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel Low



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

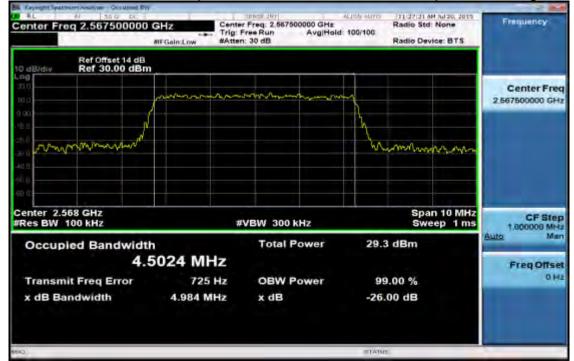


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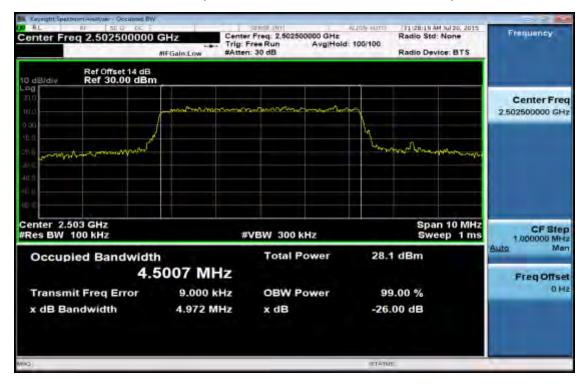
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5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel High



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

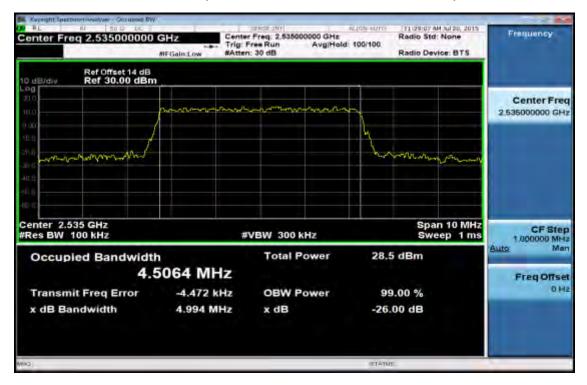


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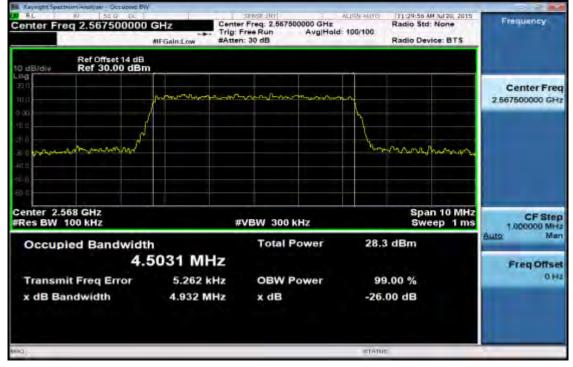
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5MHz BW LTE-Band 7(16QAM RB Number: 25 Offset: 0) Channel Mid



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

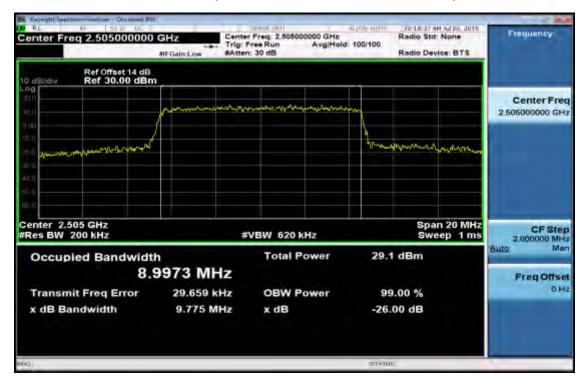


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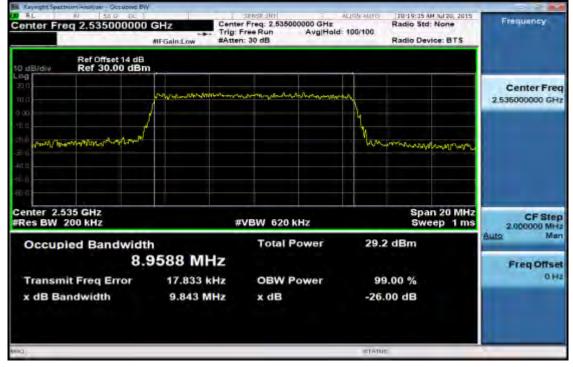
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10MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Low



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

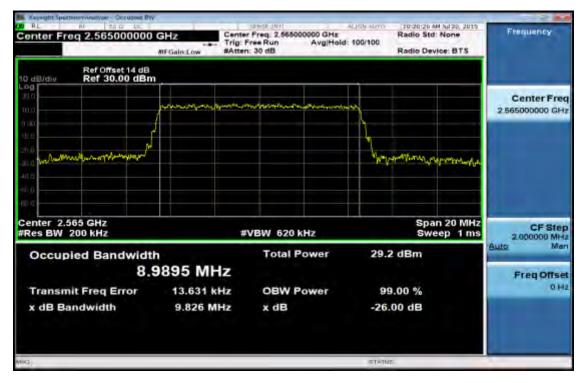


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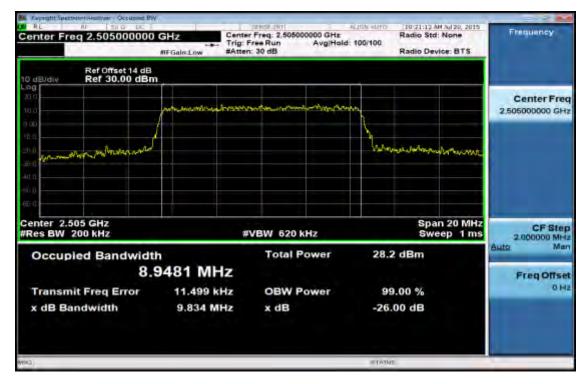
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10MHz BW LTE-Band 7(QPSK RB Number: 50 Offset: 0) Channel High



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

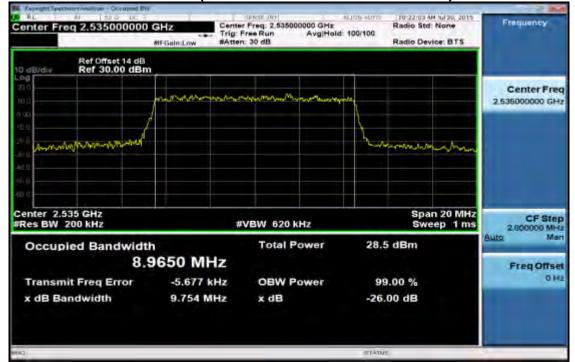


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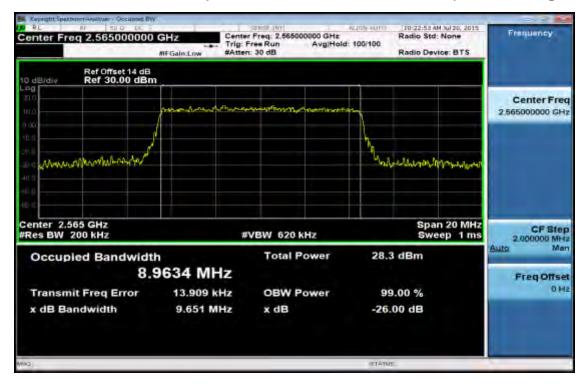
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10MHz BW LTE-Band 7(16QAM RB Number: 50 Offset: 0) Channel Mid



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



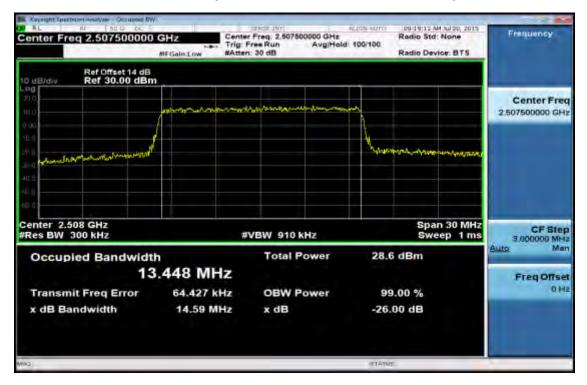
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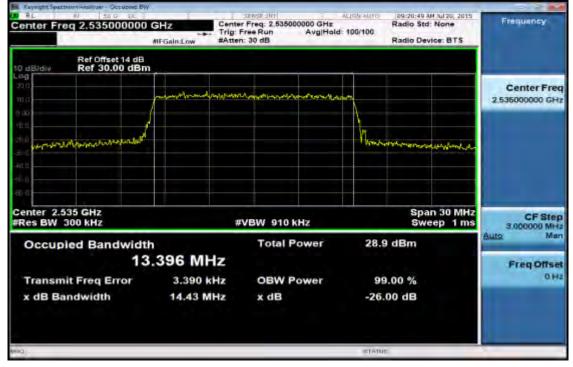
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15MHz BW LTE-Band 7 (QPSK RB Number: 75 Offset: 0) Channel Low



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

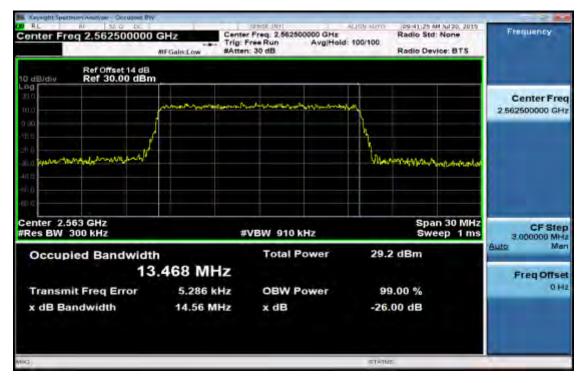


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15MHz BW LTE-Band 7(QPSK RB Number: 75 Offset: 0) Channel High



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

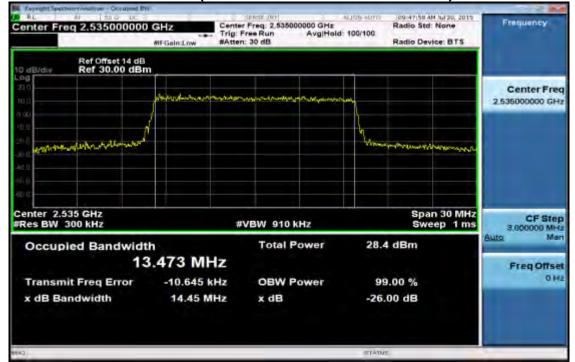


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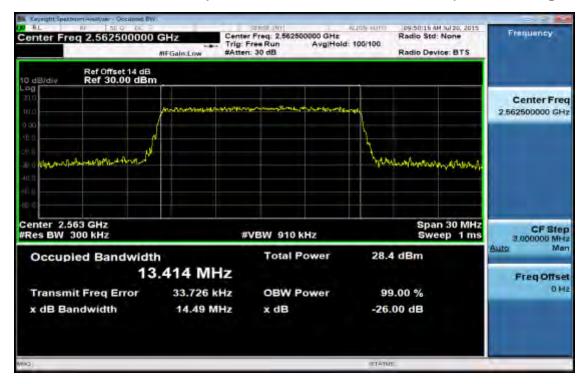
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15MHz BW LTE-Band 7(16QAM RB Number: 75 Offset: 0) Channel Mid



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

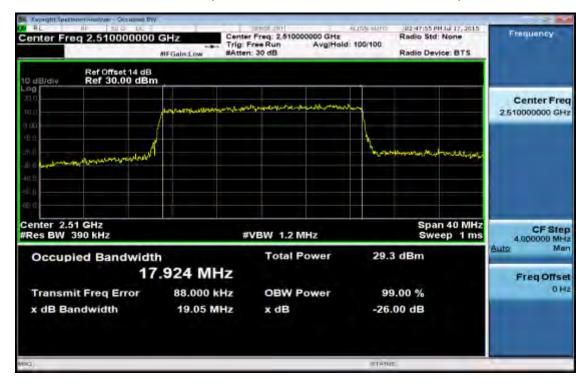


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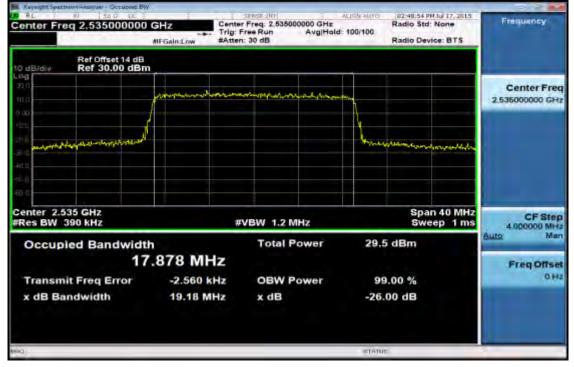
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20MHz BW LTE-Band 7 (QPSK RB Number: 100 Offset: 0) Channel Low



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

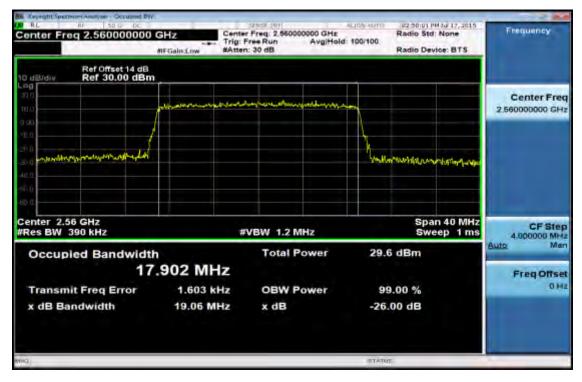


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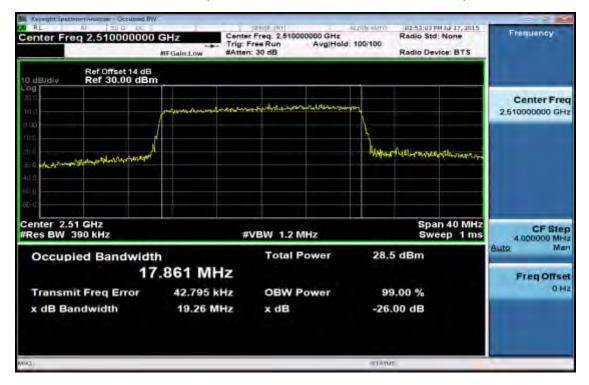
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20MHz BW LTE-Band 7(QPSK RB Number: 100 Offset: 0) Channel High



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

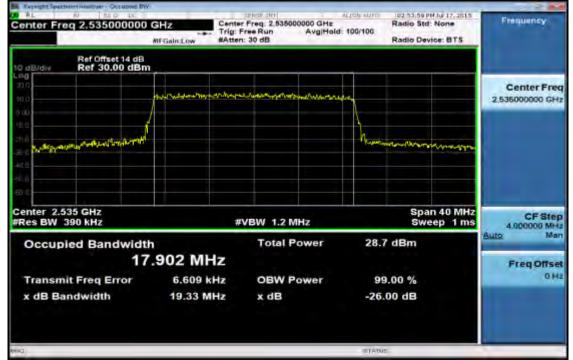


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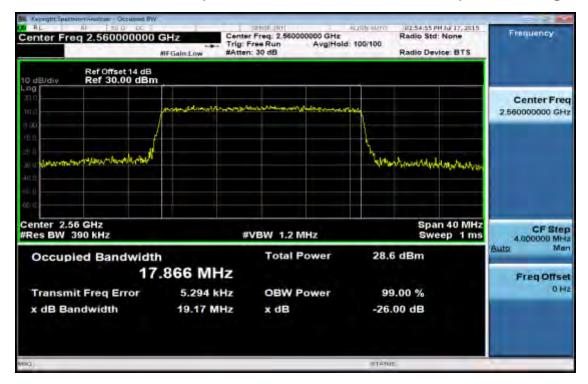
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20MHz BW LTE-Band 7(16QAM RB Number: 100 Offset: 0) Channel Mid



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 +10log(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 that 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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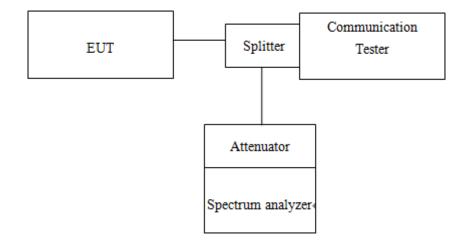
Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission 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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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.
- The band edge of low and high channels for the highest RF powers was measured. Setting RBW ≥ 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

Conduc	Conducted Emission (measured at antenna port) Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
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	PASTERNACK	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.

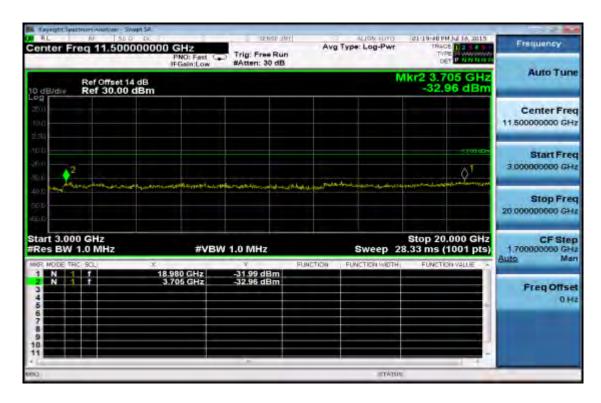
NOTE: The occurrence of the spike on the conducted emission is the signal of the fundamental emission.

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

RL M 1.51500000	0 GHz	Avg Type: Log-Pwr	1119:34 PM Jul 16, 2015	Frequency
	PNO: Fast Trig: Free Run IFGain:Low #Atten: 30 dB		DET P N P N P	
Ref Offset 14 dB		Mkrt	1,853 6 GHz 22,37 dBm	Auto Tune
10 10				Center Freq 1.515000000 GHz
			11034De	Start Freq 30,000000 MHz
210 200	Arosti Handrad yang disebakan <mark>yang sukan sukan ang programikan disebut</mark>	and harmon and a surround and	hinden an	Stop Freq 3.000000000 GHz
art 30 MHz Res BW 1.0 MHz	#VBW 1.0 MHz	Sweep 3.6	Stop 3.000 GHz 00 ms (1001 pts)	CF Step 297.000000 MHz
R MODE TRC SOL X	1.863 6 GHz 22.37 dBm	NETION FUNCTION WIDTH	FUNCTION VALUE -	Auto Man
				Freq Offset 0 Hz
	-		111	. · · · · · · · · · · · · · · · · · · ·

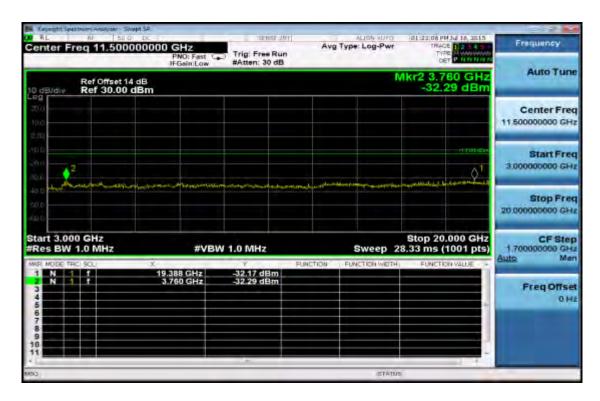


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Out of Band emission at antenna terminals – WCDMA II Channel Mid

							telters Anualyzer -	sight Speci	Keya
Frequency	01:22:52 PMJul 16, 2015 TRADE 1 2 14 10 TYPE 2004000000	Type: Log-Pwr		Trig: Free Run		00000 G		er Fre	ente
Auto Tune	1 1.880 3 GHz 22.81 dBm	Mkr		#Atten: 30 dB	PNO: Fast G FGain:Low	4 dB	Ref Offset		
Center Freq 1.515000000 GHz	22.01 000					dBm	Ref 30.0	Vdiv	
Start Freq 30,000000 MHz	-101405								
Stop Freq 3.000000000 GHz			un property of the		ala terreta anti-		944-C ⁴⁴ 7-C449	dani ini	
CF Step 297.000000 MHz Auto Man	Stop 3.000 GHz 500 ms (1001 pts)			1.0 MHz	#VBW		.0 MHz		es
Freq Offset 0 Hz	FUNCTION VALUE	FUNCTION WOTH	FUNETION	22.81 dBm	3 GHz	¥ 1,880			
		STÁTUS							3

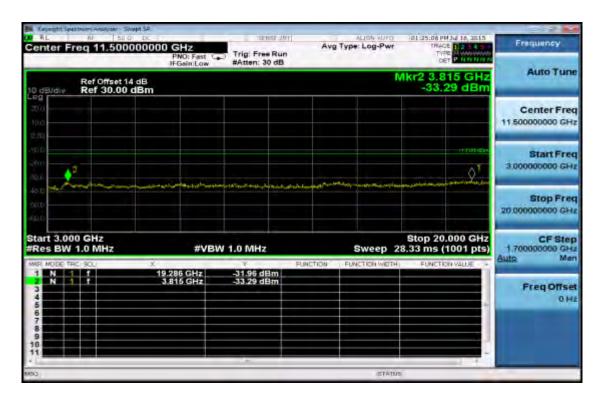


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Out of Band emission at antenna terminals – WCDMA II Channel Highest

21434 16, 2615 Center Freq 1.515000000 GHz Frequency Avg Type: Log-Pwr Trig: Free Run PNO: Fast C Auto Tune Mkr1 1,907 0 GHz 23,02 dBm Ref Offset 14 dB Ref 30.00 dBm Center Freq 1.515000000 GHz Start Freq 30.000000 MHz Stop Freq 3,00000000 GH Stop 3.000 GHz Sweep 3.600 ms (1001 pts) Start 30 MHz #Res BW 1.0 MHz CF Step 297.000000 MH #VBW 1.0 MHz 1.907 0 GHz 23.02 dBm Freq Offset OH



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Band edge emission at antenna terminals – WCDMA II Channel Lowest

11:12 PM Jul 16, 3615 Frequency Avg Type: Log-Pw Center Freq 1.850000000 GHz Trig: Free Run #Atten: 30 dB PNO: Wide Car IFGain:Low Auto Tune Mkr1 1.850 000 GHz -34.07 dBm Ref Offset 14 dB Ref 30.00 dBm Center Freq 1.850000000 GHz Start Freq 1 849500000 GH Stop Freq 1 850500000 GH CF Step 100.000 kHz Man Start 1.8495000 GHz #Res BW 47 kHz Stop 1.8505000 GHz Sweep 1.000 ms (1001 pts) #VBW 150 kHz Auto 1.850 000 GHz -34.07 dBm Freq Offset OH

Band edge emission at antenna terminals – WCDMA II Channel Highest



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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

GHz	SPARE UNIT		WIGH ADIA	[J1:49:41 AM Jul 17, 2015	
PNO: Fast	Trig: Free Run #Atten: 30 dB	Ave	Type: Log-Pwr	TYPE PUNKING	
			Mk	r1 1.711 0 GHz 25.70 dBm	Auto Tuni
		1			Center Fre 1.515000000 GH
				1103an	Start Fre 30,00000 MH
م ې وليه ديدا يې و تړه واسبې	مى بەر يەر يەر يەر يەر يەر يەر يەر يەر يەر ي	L _{menin} en	pagaa gada daha gi waxa da	and a second	Stop Fre 3.00000000 GH
#VBW 1	1.0 MHz		Sweep 3	Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297.000000 MH Auto Ma
711 0 GHz	25.70 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
					Freq Offse 0 H
		the second se #VBW 1.0 MHz	۲ ۲ PLINETION	WK	Mkr1 1,711 0 GHz 25.70 dBm 1 <t< td=""></t<>

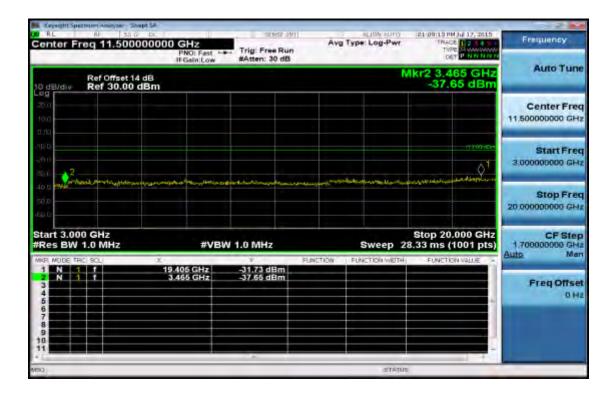
Reynopht Spectream Anunyter - Skrept SA RL RF SD G DC		SENSE JUT	ALIGN ADITO	11:57:00 AM Jul 17, 2015	
enter Freq 11.50000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TYPE NUMBER	Frequency
Ref Offset 14 dB	In Galificon	HE STREET	N	4kr2 3.421 GHz -37.83 dBm	Auto Tun
20 00 00					Center Fre 11.500000000 GH
2					Start Fre 3.000000000 GH
	49-49 ⁻⁶ 9-6-6-6-6-77-68-6-4		and the second state of th		Stop Fre 20.00000000 GH
art 3.000 GHz Res BW 1.0 MHz	#VB\	W 1.0 MHz	Sweep 2	Stop 20.000 GHz 8.33 ms (1001 pts)	CF Ste 1.70000000 GH Auto Ma
	0.031 GHz 1.421 GHz	-32.80 dBm -37.83 dBm	INCTION . FUNCTION WETH	FUNCTION VALUE	Freq Offse
		1 F.	STÁTUS	14	

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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

enter Freg 1.515000000		Trig: Free Ru	A	g Type: Log-Pwr	01:09:00 PM Jul 17, 3515	Frequency
Ref Offset 14 dB	PN0: Fast H IFGain:Low	#Atten: 30 dE		Mkr	1 1,731 8 GHz 26,93 dBm	Auto Tun
			1			Center Fre 1.515000000 GH
рб фл фл					<102 cDe	Start Fre 30,000000 MH
0 U La provincia de la provinc	naithean the ann		and the second second	and a second		Stop Fre 3.00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VB	W 1.0 MHz		Sweep 3.0	Stop 3.000 GHz 500 ms (1001 pts)	CF Ste 297.000000 Mi
						Auto Ma
KR MODE TRO SOL	731 8 GHz	26.93 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE ×	
N MODE TRC SOL X	731 8 GHz	26.93 dBm		FUNCTION WOTH:	FUNCTION VALUE	Auto Mi Freq Offs 0 (

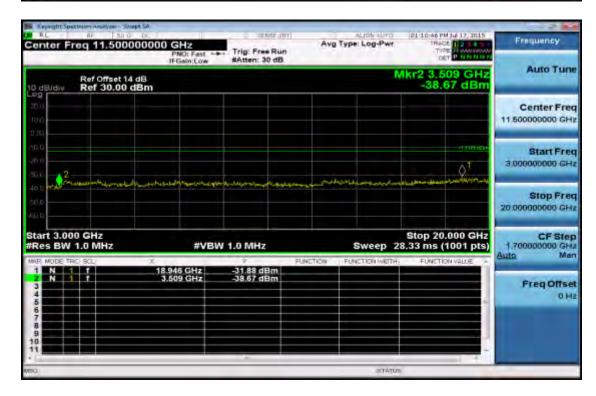


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Out of Band emission at antenna terminals-1.4MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Highest

RL RP 50 C Conterner Analyse - Swept SA RL RP 50 C Co Center Freq 1.51500000	0 GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	01110:02 PM 34 37, 2515 TRADE 1 2 3 4 5 T TIPE DEMONSTRATE OFT P NOTATION	Frequency
Ref Offset 14 dB			Mk	r1 1,755 6 GHz 26,98 dBm	Auto Tune
20.0 10.0 1.0					Center Free 1.515000000 GH
2010				1100 dDr-	Start Free 30,000000 MH
40 0 2000 2000 2000 2000 2000 2000 2000	and the state of the second	inna lanananda matala	and the second		Stop Fre 3,000000000 GH
Start 30 MHz #Res BW 1.0 MHz	#VBW	1.0 MHz	Sweep 3.	Stop 3.000 GHz 600 ms (1001 pts)	CF Step 297.000000 MH Auto Mar
	1.755 6 GHz	26,98 dBm		FORCIONADE	Freq Offse OH
80			STATUS	11	,*



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Band edge emission at antenna terminals –1.4MHz BW LTE-Band 4 (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 Lowest



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

RL AF Shop DC						
enter Freq 1.515000000	GHz PNO: Fast	Trig: Free Ru #Atten: 30 dB	Av	g Type: Log-Pwr	11:31:30 AM Jul 17, 2015 TNACE 1 2 1 4 TYPE IN MARKING OET P N.N. 14	Frequency
Ref Offset 14 dB				MK	r1 1,711 0 GH 27,59 dBn	Auto Tun
			1			Center Fre 1.515000000 GH
ρύ μου φο					CP (0) EF	Start Fre 30.000000 MH
00	al-ina posticipane la	10-696	tra hurianan	and the approximation of the second	ig di ancor and the tracticities and	Stop Fre 3.000000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBW	1.0 MHz		Sweep 3	Stop 3.000 GH .600 ms (1001 pts	
KR MODE TRC SOL X	11 0 GHz	¥ 27.59 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto mit
234466						Freq Offs 01
10				STATUS	6	-

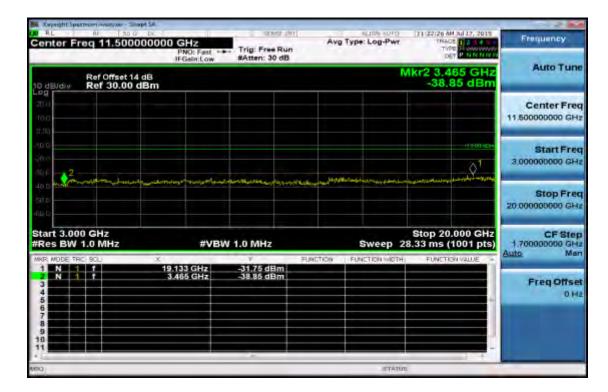
Keynight Spectrum Anulyzer - Skrept SA					3.2
Center Freg 11.50000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	11:31:53 AM 3u(17, 2015 TNECE 12 3 4 3 5 TVPE N 00000000 OET P N 0 10011	Frequency
Ref Offset 14 dB Ref 30.00 dBm			N	kr2 3.423 GHz -39.17 dBm	Auto Tun
00 200 100 110					Center Fre 11.500000000 GH
100 100 201 2					Start Fre 3.000000000 GH
40 0 	e lege transportation	and a construction of a construction of a	na the familie and an		Stop Fre 20 00000000 GH
Start 3.000 GHz #Res BW 1.0 MHz	#VB\	W 1.0 MHz		Stop 20.000 GHz 8.33 ms (1001 pts)	CF Ste 1.70000000 GH Auto Ma
	3.708 GHz 3.423 GHz	-32.85 dBm -39.17 dBm	INCTION , FUNCTION WETH	FUNCTION VALUE	Freq Offse 0 H
		1.00	STATUS		,

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

Keynight Spectrum Anusyter - Skrept SA RL RP 50 G DC		SPASE JA		N ION SUITO	[11:22:09 AM Jul 17, 2015	1000
enter Freq 1.515000000	GHz PNO: Fast	and the second		g Type: Log-Pwr		Frequency
Ref Offset 14 dB				Mk	r1 1,731 8 GHz 26,54 dBm	Auto Tun
Pg 20.0 10.0			1			Center Fre 1.515000000 GH
					(10) @P	Start Fre 30,00000 MH
0 D gangingkala, ga na gannina da da na da n O D	and a state of the		na bonaine	ne-wayaan ahaan dha		Stop Fre 3.00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBV	V 1.0 MHz		Sweep 3	Stop 3.000 GHz .600 ms (1001 pts)	CF Ste 297.000000 MH Auto Ma
	731 8 GHz	7 26.54 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Batty me
2 3 4 5 6 6 7 8 9 9 0 0						Freq Offse 0 H
PART AND					-	

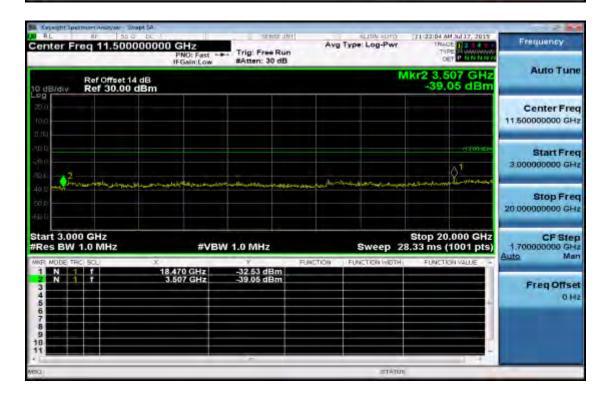


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Out of Band emission at antenna terminals-3MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0)Channel Highest

Keynight Spectrum Anunyter - Skrept SA						
enter Freg 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Av	g Type: Log-Pwr	11-22:43 AM Jul 17, 2019 TREOS 12 3 4 3 TYPE NUMBER OFT P NUMBER	Frequency
Ref Offset 14 dB				Mk	r1 1,752 6 GHz 27,00 dBm	Auto Tun
			1			Center Fre 1.515000000 GH
рб					1103 aDe	Start Fre 30,00000 MH
0 D annoral an 6 D	والمطلب وسياديهم والمعيم فالعالي الم	ng baan na an	and for more than the	مى بىلى يەل الىرىپى بىلى يەل	and the stand of the	Stop Fre 3.00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBW	1.0 MHz			Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297.000000 MH Auto Ma
NR MODE TRC SCL X	752 6 GHz	27.00 dBm	FUNCTION	. FUNCTION WIDTH	FUNCTION VALUE	Freq Offse 0 H
		~		STATUS		,



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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

enter Freq 1.5		ast Trig: Fre		Avg Type: Log-Pwr	10:51:01 AM Jul 17, 2015 TRACE 1 2 3 4 5 TYPE 14 CARDING	Frequency
	IFGain: set 14 dB 0.00 dBm	Low #Atten: 3	IQ dB	M	(r1 1.711 0 GH 27.32 dBn	Auto Tun
00 10.0			1			Center Fre 1.515000000 GP
235 p.D M.N D.D					-110340	Start Fre 30,000000 Mi
				In the Income Statement	and and the state of the state	
0.0	ud gorter had godd or Alfredinger	in series of the full of the				
tart 30 MHz		#VBW 1.0 MHz			Stop 3.000 GH 9,600 ms (1001 pts	3.000000000 Gi
tart 30 MHz Res BW 1.0 MH		#VBW 1.0 MHz	FUNC	Sweep 3	Stop 3.000 GH 3.600 ms (1001 pts	
tart 30 MHz Res BW 1.0 MH	z	#VBW 1.0 MHz	FUNC	Sweep 3	Stop 3.000 GH 3.600 ms (1001 pts	3.00000000 Gi

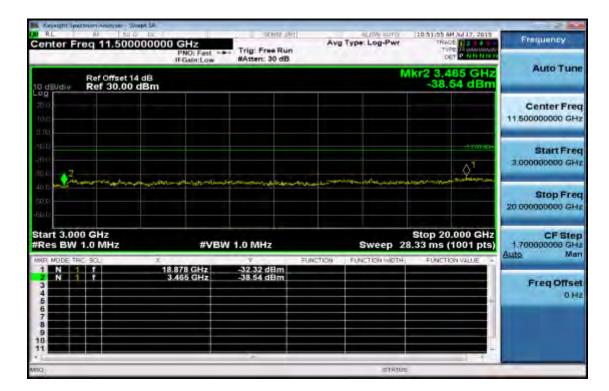
Keyinght Spectrum Anutyter - Skept SA	-				3.2
Center Freg 11.50000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	10:51:13 AM Jul 17, 2015 TNACE 1 2 3 4 5 TYPE IN VIOLANCE DET P N VIOLANCE	Frequency
Ref Offset 14 dB Ref 30.00 dBm	Auto Tun				
20/0 10/0 1/20					Center Fre 11.500000000 GP
90 200					Start Fre 3.000000000 Gi
	Shiph a series and	n Mahim ya Panang Shekara ya shiye	ميكنوموا ^{لمن} اسمواليسياطي من راباستينوي 1994 و من المنابع المن		Stop Fr 20.00000000 G
tart 3.000 GHz Res BW 1.0 MHz	#VB1	V 1.0 MHz	Sweep 2	Stop 20.000 GHz 8.33 ms (1001 pts)	CF St 1.700000000 G Auto M
	8,769 GHz 3,425 GHz	¥	INETION : FUNCTION WIDTH	FUNCTION VALUE	Freq Offs
5		-	≡TÁTUS	14	

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

RL 0 1.515000000	GHz	SENSE:		a Type: Log-Pwr	10:51:40 AM Jul 17, 2015 TRADE TRADE	Frequency
	PNO: Fast	#Atten: 30 dl			DET P NIN TIN	
Ref Offset 14 dB				MK	r1 1.731 8 GHz 27.53 dBm	Auto Tur
20 00 00			1			Center Fr 1.515000000 Gi
10 00 00					3100 an	Start Fr 30.000000 M
0 0 0 0 0 0 0 0	seethersteerday	n station of the state of the s	netropa Userson	ana herrora ann an a	and the second	Stop Fr 3.000000000 Gi
tart 30 MHz Res BW 1.0 MHz	#VBV	V 1.0 MHz		Sweep 3.	Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297,000000 Mi Auto M
R MODE TRC SOL X	731 8 GHz	9 27.53 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto M
						Freq Offs
2 3 4 5 6 7 7 8 9 0						0

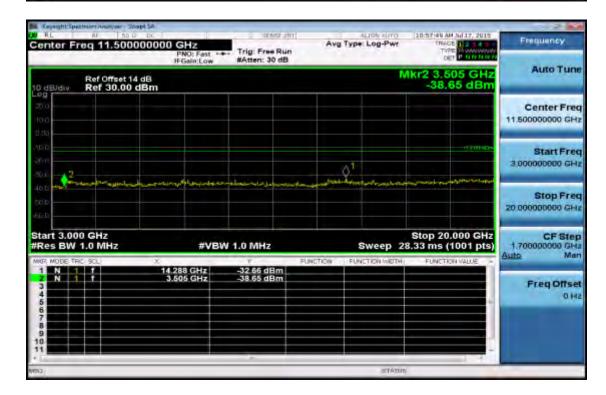


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Out of Band emission at antenna terminals–5MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0)Channel Highest

enter Freg 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB		Aug Type: Log-Pwr	10:57119 AM Jul 17, 2019 TRADE D 2 3 4 3 Trate IN subsected OET 9 Minutes	Frequency
Ref Offset 14 dB Ref 30.00 dBm				MK	r1 1.749 6 GHz 27.51 dBm	Auto Tuni
100						Center Fre 1.515000000 GH
1910					4.100 dBt	Start Fre 30,00000 MH
0 0	na an a			the manager banking office	ang - Salah Ang Salah	Stop Fre 3.000000000 GH
Res BW 1.0 MHz	#VBW	1.0 MHz	FUNCTION		Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297.000000 Mit Auto Mit
	749 6 GHz	27.51 dBm	POILTIO	FUNCTION VICTOR	FORCIONALDE	Freq Offse
10				ETÁTUS		



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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

Reynight Spectrum Analyzer - Skrept SA RL R/ Sb G DC		SENSE JAT		ALIGN AUTO	10-02:06 AM Jul 17, 2015	
enter Freq 1.51500000	PNO: Fast	Trig: Free Run #Atten: 30 dB		Avg Type: Log-Pwr		Frequency Auto Tune
Ref Offset 14 dB dB/div Ref 30.00 dBm			Mkr1 1,711 0 GHz 26.95 dBm			
			1			Center Fre 1.515000000 GH
00 00 00						Start Fre 30,000000 MH
00 		na mi an ana da bara		مىتىللىۋىپەلەللەيلەر بىسىلىرىدىنەتىرىپور	han la la sense sense de la	Stop Fre 3.00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBW	1.0 MHz		Sweep 3	Stop 3.000 GHz .600 ms (1001 pts)	CF Ste 297,000000 MH Auto Ma
R MODE TRC SCL X	711 0 GHz	7 26.95 dBm	FUNCT	TION FUNCTION WIDTH	FUNCTION VALUE ×	Auto Me
2344					÷	Freq Offse
2			-	≡TÁTU!	6	

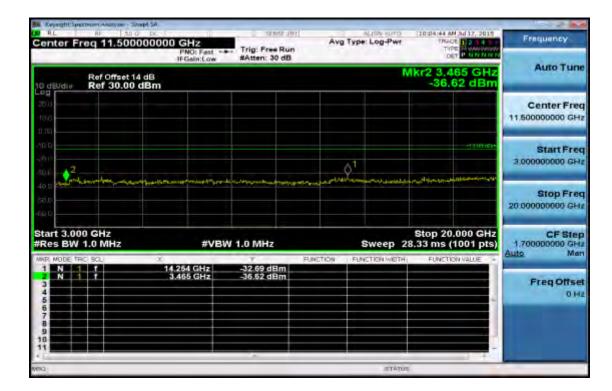
Keyeight Spectrem Analyzer - Skept SA	_				0.2
enter Freq 11.500000000	GHZ PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	10-03/40 AM 34 (17, 2015 TNACE 1 2 3 4 3 5 Type N voluments OET P N N M 11	Frequency
Ref Offset 14 dB Ref 30.00 dBm			N	1kr2 3,430 GHz -38,25 dBm	Auto Tun
000					Center Fre 11.500000000 GH
pb 00			\$'	1101604	Start Fre 3,000000000 GH
	n-Marin-Inigiais-	n Maria di patri ang	al and a state of the second sector of the second		Stop Fre 20.000000000 GH
tart 3.000 GHz Res BW 1.0 MHz	#VBW	1.0 MHz	Sweep 2	Stop 20.000 GHz 8.33 ms (1001 pts)	CF Ste 1.70000000 GH Auto Ma
1 N 1 T 14.	101 GHz 430 GHz	-32.19 dBm -38.25 dBm			Freq Offse 0 H
0 7 8 9 9 1 1					
1 0			STÁTUS	1 1	

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

Keynotit Spectrum Anunyter - Skept SA						1 1 2 2 M
enter Freg 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Ave	Type: Log-Pwr	10:04:30 AM Jul 37, 2015 TREOS 1 2 3 4 3 TYPE PLONGED AT 10 DET P NW NW	Frequency
Ref Offset 14 dB				MK	r1 1,728 8 GHz 27,46 dBm	Auto Tune
0.0			1			Center Free 1.515000000 GH
00 00 01					11074De	Start Free 30,000000 MH
	مىيىتىۋىچىلىك ^ى تە	a	Alexand	فيها يسبح مطريعها فيتقا	nene-lanene-lanenheiten (Stop Free 3,00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBV	V 1.0 MHz		Sweep 3.	Stop 3.000 GHz 600 ms (1001 pts)	CF Ster 297,000000 MH Auto Me
NR MODE TRC SCL X	728 8 GHz	27.46 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Charly The
234445666667789999999999999999999999999999999						Freq Offse 0 H
		~		STATUS	1.4	

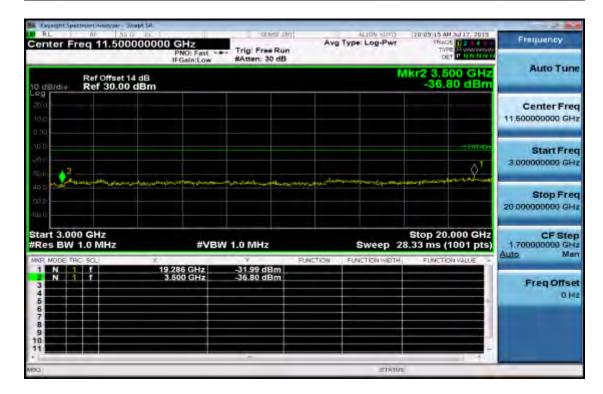


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Out of Band emission at antenna terminals–10MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Highest

enter Freg 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	10:05:02 AM Jul 17, 2015 TRACE 1 2 3 4 3 TYPE N WWWWW OET P N N N M N	Frequency
Ref Offset 14 dB 0 dB/div Ref 30.00 dBm			MK	1 1,746 7 GHz 26,95 dBm	Auto Tun
					Center Fre 1.515000000 GH
000				1102600	Start Fre 30,000000 MH
00 <mark>Selection and an anno 1990 Selection anno 1990</mark>	al standy you have been	ministanis de transferantes de la constantes de la constantes de la constantes de la constantes de la constante La constantes de la constant	Constant and the second s		Stop Fre 3.00000000 Gi
tart 30 MHz Res BW 1.0 MHz	#VBV	V 1.0 MHz	Sweep 3.	Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297.000000 Mi Auto M
KR MODE TRC SCL X	746 7 GHz	Y FU 26.95 dBm	INCTION : FUNCTION WIDTH:	FUNCTION VALUE ×	Freq Offs
5 6 7 8 9 9 9 1 1					
3		-	STÁTUS	1.4	



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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

Running and Sharper - Strept SA		SPARE IN		ALIGN AUTO	04-28,36 PM Jul 16, 2615	20.2
enter Freq 1.51500000	PNO: Fast			Avg Type: Log-Pwr		Frequency
Ref Offset 14 dB				Mk	r1 1.711 0 GHz 26.97 dBm	Auto Tun
200 0.0 150			1			Center Fre 1.515000000 GH
						Start Fre 30,000000 MH
		ada waxaa waxaa ka	m Lun		gan-ganasta kata sya sanatang	Stop Fre 3.00000000 GH
	#VBW	1.0 MHz		Sweep 3	Stop 3.000 GHz .600 ms (1001 pts)	297,000000 MH
Res BW 1.0 MHz R MODE TRC SCL X	#VBW	26.97 dBm	FUNCT		Stop 3.000 GHz 600 ms (1001 pts) FUNCTION VALUE	297,000000 MH
		Ŷ	FUNCTI		600 ms (1001 pts)	297.000000 Mi Auto Ma Freq Offse
Res BW 1.0 MHz		Ŷ	FLAIETI		600 ms (1001 pts)	CF Ste 297,00000 MH Auto Me Freq Offse 0 H

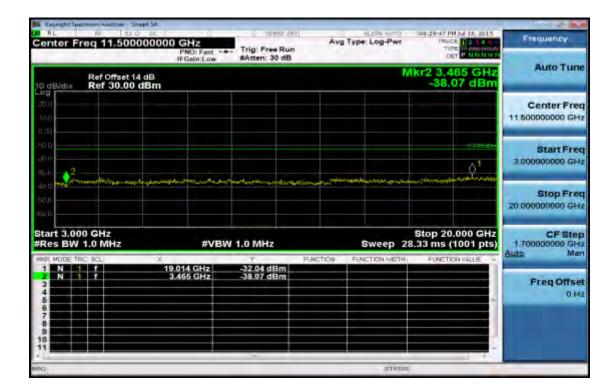
Keyenghit Spectrum Anunyzer - Skrept S					1012
Center Freq 11.500000		Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	104-29:04 PMJul 36, 2615 TM4CE 1 2 3 4 3 TYPE Providence DET P N 1/ M 011	Frequency
Ref Offset 14 dB			N	/kr2 3.435 GHz -38.60 dBm	Auto Tune
2000 10.0 1.100					Center Free 11.500000000 GH
-000 -000 -001 - 2			and the second state of th	11034De	Start Fre 3,000000000 GH
40 0 000000000000000000000000000000000		a Marina Sana Sana Sana Sana Sana Sana Sana S		الأكر عندي الكر علي	Stop Fre 20 00000000 GH
Start 3.000 GHz #Res BW 1.0 MHz	#VBV	1.0 MHz	Sweep 2	Stop 20.000 GHz 8.33 ms (1001 pts)	CF Ste 1.70000000 GH Auto Ma
MKR MODE TRC SCL	× 19.422 GHz	-31.87 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	Charge the
2 N 1 7 34 6 6 7	3.435 GHz	-38.60 dBm		-	Freq Offse 0 H
8 9 10 11			==		
DB C			STATUS	1	

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

Keyeight Spectrum Anunyter - Skrept SA						
enter Freq 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB		a Type: Log-Pwr	THESE TO A THE	Frequency
Ref Offset 14 dB	1 555112.00			MK	r1 1,725 9 GHz 27,60 dBm	Auto Tuni
00 10			1			Center Fre 1.515000000 GH
					1100 din	Start Fre 30,00000 MH
00		a dina a tangan	- I farmine	andrassinger-IghapanapAlapha	anian ana ang ang ang ang ang ang ang ang a	Stop Fre 3.00000000 GH
art 30 MHz Res BW 1.0 MHz	#VBV	V 1.0 MHz		Sweep 3.	Stop 3.000 GHz 600 ms (1001 pts)	CF Ste 297.000000 MH Auto Ma
R MODE TRC SOL X	725 9 GHz	27.60 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Cially Inte
						Freq Offse 0 H
				STATUS		,

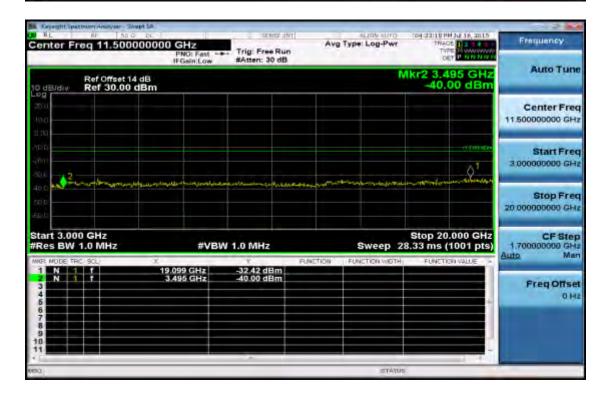


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Out of Band emission at antenna terminals–15MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Highest

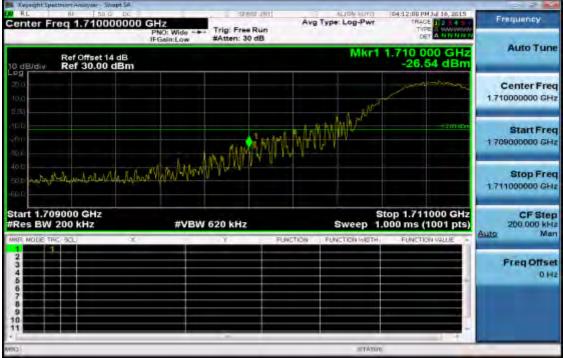
RL AP 50.0 DC		SENSE UNT		ALION AUTO	104:30:26 PM Jul 16, 2015	1
enter Freq 1.51500000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Typ	e: Log-Pwr	TRACE 234 TO THE PLANE	Frequency
Ref Offset 14 dB				MK	1 1.740 7 GHz 27.10 dBm	Auto Tun
			1			Center Fre 1.515000000 GH
9.00 19.00 19.10					1100100	Start Fre 30,000000 MH
он 6 С	ىرىنىيەر بىرىن بەر بىرىنى بەر بىرىنى	minanaigninaign	langang ta sidaw	ener die eerste de terre fan de t	gunijecturening metradismenter	Stop Fre 3.00000000 GH
tart 30 MHz Res BW 1.0 MHz	#VBW				Stop 3.000 GHz 600 ms (1001 pts)	
MRR MODE TRC: SCL XC	.740 7 GHz	27.10 dBm	ICTION I FU	INCTION WOTH	FUNCTION VALUE	Freq Offse 0 H
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83				ETÁTUS		-



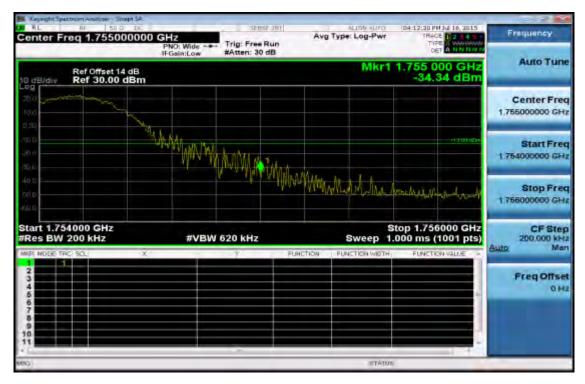
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Band edge emission at antenna terminals –15MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Lowest



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



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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

		1 1,693 2 GHz -26.03 dBm	Auto Tur Center Fre 1.51500000 GP Start Fre 30.000000 MP Stop Fre
	llang [h]s [Taken ang a sana ang a sang		1,515000000 G Start Fri 30,000000 M Stop Fri
uters of the second	llang bija bilakere ang samana sa parabi		30,000000 M Stop Fr
and the second	and an and a second		the second se
			3,000000000 G
		Span 2.970 GHz 500 ms (1001 pts) FUNCTION VALUE	CF St 297.000000 M Auto M
-26.03 dBm			Freq Offs 0
-	státus	141	
	Ý FUN	FLINCTION WIGHTH	/BW 1.0 MHz Sweep 3.600 ms (1001 pts) * FUNCTION -26.03 dBm FUNCTION WOTH -26.03 dBm FUNCTION WOTH

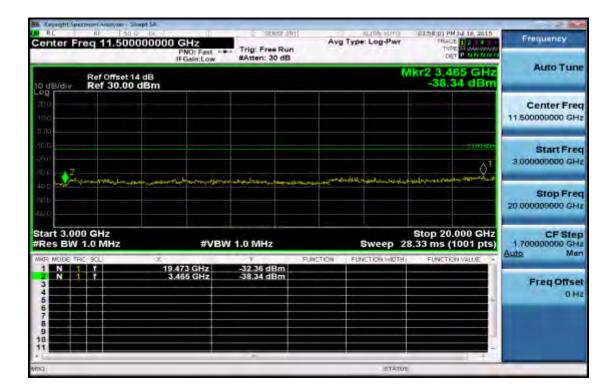
RL RI 50 G DC		SENSE JAT	ALION AUTO	03-57:00 PM3u 16, 2015		
Center Freq 11.50000000	PNO: Fast		Avg Type: Log-Pwr	TYPE NOW WAY	Frequency	
Ref Offset 14 dB			M	4r2 3,440 GHz -38,48 dBm	Auto Tune	
20.0 10.0 1.10					Center Free 11.500000000 GH	
λού 200				100 ctr	Start Free 3.000000000 GH	
40 D	i un d'e serven de de s	erternettes buildebuy	٣٩ ما ما يولغ (١٩ ما	n literange in the set of the set	Stop Fre 20.00000000 GH	
Start 3.000 GHz #Res BW 1.0 MHz	#VBW	1.0 MHz		Stop 20.000 GHz 33 ms (1001 pts)	CF Step 1.700000000 GH Auto Ma	
1 N 1 1	932 GHz 3.440 GHz	-32.12 dBm -38.48 dBm		- CHICKEN VEDE	Freq Offse 0 H	
10 11		E.	STATUS			

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

Keyeight Spectrum Analyzer - Skrept SA						
enter Freq 1.515000000	GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	THECE 1 2 14 1 THECE 1 2 14 1 THE NUMBER	Frequency	
Ref Offset 14 dB Ref 30.00 dBm -23.06 dBm					Auto Tuni	
100 100					Center Free 1.515000000 GH	
рб фл			1	-100 C	Start Free 30.000000 MH	
0 D - New York and a state of the second sec	na da falina da seconda da second Seconda da seconda da se	annian chancer of	Hand and the second sec		Stop Free 3.000000000 GH	
enter 1.515 GHz Res BW 1.0 MHz	#VBV	/ 1.0 MHz	Sweep 3	Span 2.970 GHz 3.600 ms (1001 pts)	CF Ste 297,000000 MH	
RR MODE TRC SCL X	705 1 GHz	-23.06 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma	
2 3 4 5 6 6 7 8 9 0 0					Freq Offse 0 H	
		-	STATU		,	

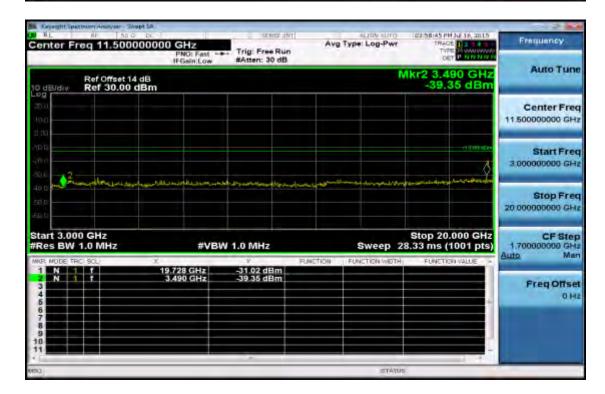


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Out of Band emission at antenna terminals-20MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Highest

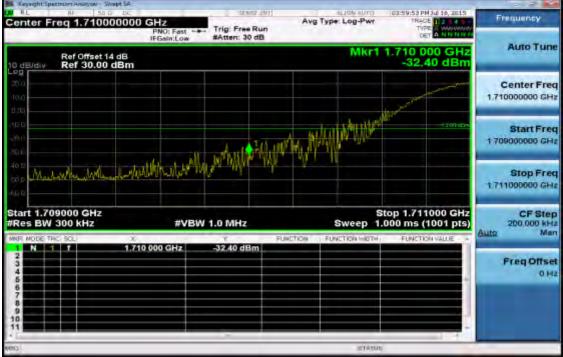
Reperchet Spectralmi Anualyzer - Silvept SA RL N/ 50 G DC	SENSE JW	nuov suro	03-58:28 PM Jul 16, 2615	
enter Freq 1.515000000		Avg Type: Log-Pwr	TRACE 2 2 4 5 TYPE PROMOTION	Frequency
Ref Offset 14 dB dE/div Ref 30.00 dBm		M	(r1 1,717 0 GHz -24,69 dBm	Auto Tune
700 100				Center Fred 1.515000000 GH:
0.00 0.00 0.00		Ń.	(10) an	Start Free 30,000000 MH
0 D 3999945-59999469645-694-694-694-994- 0 D	1947 - Harris Addur, Angelson (1951) Addur, 1973	and the second s	naan oo aan dhalaa dhalaa ay ay ah	Stop Free 3.000000000 GH
Res BW 1.0 MHz	#VBW 1.0 MHz	Sweep 3	Span 2.970 GHz 600 ms (1001 pts)	CF Step 297.000000 MH Auto Mar
	717 0 GHz24.69 dBm			Freq Offse 0 Ha
7 8 9 10				
2		STÁTU	1	



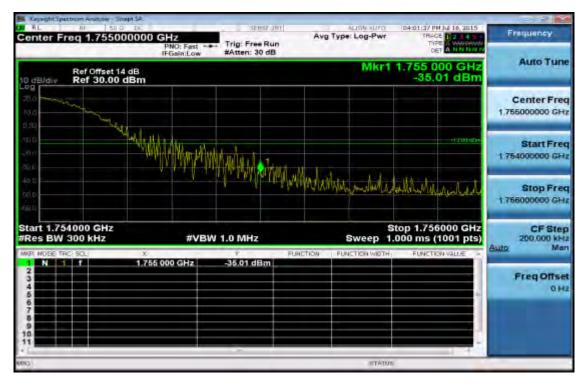
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Band edge emission at antenna terminals –20MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Lowest



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



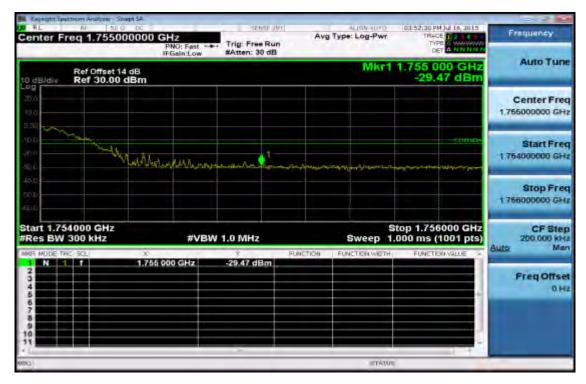
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Band edge emission at antenna terminals –20MHz BW LTE-Band 4 (QPSK RB Number: 100 Offset: 0) Channel Lowest



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



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