

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E and PART 27 SUBPART C REQUIREMENT

OF			
Product Name:	PDA Phone		
Brand Name:	Sony		
Type No.:	PM-0873-BV		
Model Difference:	N/A		
FCC ID:	PY7-PM0873		
Report No.:	ER/2015/40155		
Issue Date:	Jun. 24, 2015		
FCC Rule Part:	2 , 22H & 24E & 27C		
Prepared for:	Sony Mobile Communications AB		
	Nya Vattentornet 22188 Lund/Sweden		
Prepared by:	SGS Taiwan Ltd.		
	Electronics & Communication Laboratory		
	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku		
	District, New Taipei City, Taiwan 24803		

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Report No.: ER/2015/40155 Issue Date: Jun. 24, 2015 Page: 2 of 267

VERIFICATION OF COMPLIANCE

Applicant:	Sony Mobile Communications AB
	Nya Vattentornet 22188 Lund/Sweden
Product Name:	PDA Phone
Brand Name:	Sony
Type No.:	PM-0873-BV
Model Difference:	N/A
FCC ID:	PY7-PM0873
File Number:	ER/2015/40155
Date of test:	Apr. 22, 2015 ~ Jun. 24, 2015
Date of EUT Received:	Apr. 22, 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:	Marcus Tseng	Date:	Jun. 24, 2015
Prepared By:	Marcus Tseng / Engineer Karen Huang	Date:	Jun. 24, 2015
Approved By:	Karen Huang / Clerk Jim Chang	Date:	Jun. 24, 2015
		_	

Jim Chang / Asst. Manager

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Revision History

Report Number	Revision	Description	Issue Date
ER/2015/40155	Rev.00	Initial creation of document	Jun. 24, 2015

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1. GENERAL PRODUCT INFORMATION

1.1. Product Description

General:

General:			
Product Name:	PDA Phone		
Brand Name:	Sony		
Type No.:	PM-0873-1	BV	
Model Difference:	N/A		
Data Cable (USB):		: EC450, Supplier: K-one 1242-6715.3, Length: 100 cm	
Simple Hands-Free (SHF-White):	Model No. Type No.:	: MH410c, Supplier: Foster Electric AG-1100	
Car Charger:	Model No.: AN400, Supplier: Salcomp Type No.: CAA-0003013		
BT PHF:	Model No.: MW600, Supplier: BALDA Type No.: DDA-0002029.Bcoupling with Simple Hands Free (Model No.: MH755, Supplier: BALDA, Type No.: AG-0502)		
Product SW/HW version:	30.0.B.0.20 / A		
Radio SW/HW version:	30.0.B.0.20 / A		
Test SW Version:	N/A		
RF power setting in TEST SW:	N/A		
	3.8Vdc		
	Battery:	Model No.: AGPB016-A001, Supplier: Sony Type No.: N/A	
Power Supply:	Adapter:	 Model No.: EP800, Supplier: Phihong Type No.: AC-0300-US Model No.: EP800, Supplier: Salcomp Type No.: AC-0030-US 	
IMEI:	004402454859870		

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GSM / WCDMA/ LTE:

	Operating Frequency	Rated Power	
	GSM/GPRS 850, Class 12	824.2 MHz– 848.8 MHz	33dBm
	EDGE 850, Class 12	824.2 MHz– 848.8 MHz	27dBm
	GSM/GPRS 1900, Class 12	1850.2MHz - 1909.8MHz	30dBm
Cellular Phone	EDGE 1900, Class 12	1850.2MHz - 1909.8MHz	26dBm
Standards Frequency Range and Power	WCDMA/HSUPA/HSDPA /HSPA+ Band II	1852.4MHz – 1907.6MHz	24dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band V	826.4MHz - 846.6MHz	24dBm
	LTE-Band 5 (Bandwidth 1.4MHz)	824.7MHz – 848.3MHz	23dBm
	LTE-Band 5 (Bandwidth 3MHz)	825.5MHz – 847.5MHz	23dBm
	LTE-Band 5 (Bandwidth 5MHz)	826.5MHz – 846.5MHz	23dBm
	LTE-Band 5 (Bandwidth 10MHz)	829.0MHz - 844.0MHz	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 - 2560.0MHz	23dBm

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	GSM 850	246KGXW
	GPRS 850	250KGXW
	EDGE 850	254KG7W
	GSM 1900	246KGXW
	GPRS 1900	248KGXW
	EDGE 1900	248KG7W
	WCDMA Band II	4M22F9W
	HSDPA Band II	4M24F9W
	HSUPA Band II	4M23F9W
	WCDMA Band V	4M24F9W
	HSDPA Band V	4M22F9W
	HSUPA Band V	4M24F9W
	LTE-Band 5 (Bandwidth 1.4MHz) QPSK	1M10G7D
	LTE-Band 5 (Bandwidth 1.4MHz) 16QAM	1M10D7W
Type of Emission:	LTE-Band 5 (Bandwidth 3MHz) QPSK	2M72G7D
	LTE-Band 5 (Bandwidth 3MHz) 16QAM	2M71D7W
	LTE-Band 5 (Bandwidth 5MHz) QPSK	4M52G7D
	LTE-Band 5 (Bandwidth 5MHz) 16QAM	4M52D7W
	LTE-Band 5 (Bandwidth 10MHz) QPSK	9M02G7D
	LTE-Band 5 (Bandwidth 10MHz) 16QAM	9M00D7W
	LTE-Band 7 (Bandwidth 5MHz) QPSK	4M51G7D
	LTE-Band 7 (Bandwidth 5MHz) 16QAM	4M52D7W
	LTE-Band 7 (Bandwidth 10MHz) QPSK	9M03G7D
	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	18M0G7D
	LTE-Band 7 (Bandwidth 20MHz) 16QAM	18M0D7W

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Max ERP/EIRP Power Measurement Result:

	dBm		W
GSM 850 Band	19.91	ERP	0.098
GPRS 850 Band	19.13	ERP	0.082
EDGE 850 Band	18.71	ERP	0.074
GSM 1900 Band	26.20	EIRP	0.417
GPRS 1900 Band	25.60	EIRP	0.363
EDGE 1900 Band	24.61	EIRP	0.289
WCDMA Band II	21.11	EIRP	0.129
HSDPA Band II	22.78	EIRP	0.190
HSUPA Band II	22.17	EIRP	0.165
WCDMA Band V	13.28	ERP	0.021
HSDPA Band V	13.65	ERP	0.023
HSUPA Band V	13.57	ERP	0.023
LTE Band 5 / Bandwidth 1.4MMz / QPSK	15.78	ERP	0.038
LTE Band 5 / Bandwidth 1.4MMz / 16QAM	16.21	ERP	0.042
LTE Band 5/ Bandwidth 3MMz / QPSK	16.14	ERP	0.041
LTE Band 5 / Bandwidth 3MMz / 16QAM	16.69	ERP	0.047
LTE Band 5 / Bandwidth 5MMz / QPSK	15.91	ERP	0.039
LTE Band 5/ Bandwidth 5MMz / 16QAM	16.40	ERP	0.044
LTE Band 5 / Bandwidth 10MMz / QPSK	15.96	ERP	0.039
LTE Band 5 / Bandwidth 10MMz / 16QAM	16.06	ERP	0.040
LTE Band 7 / Bandwidth 5MMz / QPSK	28.51	EIRP	0.710
LTE Band 7 / Bandwidth 5MMz / 16QAM	29.54	EIRP	0.899
LTE Band 7 / Bandwidth 10MMz / QPSK	26.23	EIRP	0.420
LTE Band 7 / Bandwidth 10MMz / 16QAM	27.01	EIRP	0.502
LTE Band 7/ Bandwidth 15MMz / QPSK	28.84	EIRP	0.766
LTE Band 7 /Bandwidth 15MMz / 16QAM	29.10	EIRP	0.813
LTE Band 7 / Bandwidth 20MMz / QPSK	27.84	EIRP	0.608
LTE Band 7 / Bandwidth 20MMz / 16QAM	28.53	EIRP	0.713

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1.2. Product Feature of Equipment Under Test

The equipment under Test (Hereafter Called: EUT) is PDA Phone supporting, GSM / WCDMA / LTE, Wi-Fi 802.11abgn, Bluetooth with GPS and NFC features, and below is details of information.

Product Feature		
Product Name:	PDA Phone	
Brand Name:	Sony	
Type No.:	PM-0873-BV	
Model Difference:	N/A	
FCC ID	PY7-PM0873	
GSM Operating Band(s)	GSM 850 / 1900MHz	
GPRS / EGPRS Multi Slot Class	Class 12	
WCDMA Operating Band(s)	FDD Band II / V	
WCDMA Rel. Version	Release 8	
LTE Operating Band(s)	FCC Band 5 / 7	
LTE Rel. Version	Release 9 / Category 4	
Wi-Fi Specification	802.11a/b/g/n	
Bluetooth Version	V4.0 dual mode+HS	
NFC Specification	NFC	

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, 22, 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.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan. (TAF code 0513)

FCC Registration Numbers are: 990257

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 plane. 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 plane. 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 0.4 dB for low band and 0.7 for high band with 10 dB attenuator and 3.2 splitter.

Low Band: Offset = RF cable loss (dB)+ attenuation factor(dB) =0.4+10+3.2=13.6(dB)

High Band: Offset = RF cable loss (dB)+ attenuation factor(dB) =0.7+10+3.2=13.9(dB)

2.5. Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GSM 850	3.8 Vdc	681
GSM 1900	3.8 Vdc	533
GPRS 850	3.8 Vdc	514
GPRS 1900	3.8 Vdc	526
EDGE 850	3.8 Vdc	597
EDGE 1900	3.8 Vdc	618
WCDMA B2	3.8 Vdc	536
WCDMA B5	3.8 Vdc	526
HSUPA B2	3.8 Vdc	527
HSUPA B5	3.8 Vdc	519
HSDPA B2	3.8 Vdc	533
HSDPA B5	3.8 Vdc	548

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Test Mode	DC voltage (V)	DC current (mA)
LTE Band 5_1.4M QPSK	3.8 Vdc	1023
LTE Band 5_1.4M 16QAM	3.8 Vdc	976
LTE Band 5_3M QPSK	3.8 Vdc	1028
LTE Band 5_3M 16QAM	3.8 Vdc	970
LTE Band 5_5M QPSK	3.8 Vdc	1044
LTE Band 5_5M 16QAM	3.8 Vdc	975
LTE Band 5_10M QPSK	3.8 Vdc	1032
LTE Band 5_10M 16QAM	3.8 Vdc	976
LTE Band 7_5M QPSK	3.8 Vdc	727
LTE Band 7_5M 16QAM	3.8 Vdc	678
LTE Band 7_10M QPSK	3.8 Vdc	736
LTE Band 7_10M 16QAM	3.8 Vdc	685
LTE Band 7_15M QPSK	3.8 Vdc	752
LTE Band 7_15M 16QAM	3.8 Vdc	703
LTE Band 7_20M QPSK	3.8 Vdc	756
LTE Band 7_20M 16QAM	3.8 Vdc	705

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Configuration of Tested System 2.6.

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

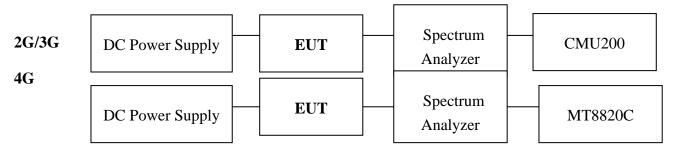
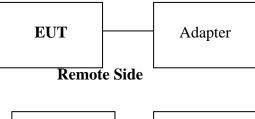


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)



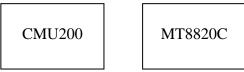


Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Com- munication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	Universal Radio Com- munication Tester	Anritsu	MT8820C	6200307563	shielded	Un-shielded
3.	DC Power Supply	HP	E3640A	KR93300208	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) \$22.913(a)(2) \$24.232(c) \$27.50(h)(2)	ERP/ EIRP measurement	Compliant
§2.1049(h)	Occupied Bandwidth	Compliant
\$2.1051 \$22.917(a) \$24.238(a) \$27.53(g) \$27.50(c)(5) \$27.53(h) \$27.53(m)(4)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
\$2.1053 \$22.917(a) \$24.238(a) \$27.50(c)(5) \$27.53(g) \$27.53(h) \$27.53(f) \$27.53(m)(4)	Field Strength of Spurious Radiation	Compliant
\$24.232(d) \$27.53(d) (5) \$27.50(i) (B)	Peak to Average Ratio	Compliant
\$2.1055(a)(1) \$22.355 \$24.235 \$27.54	Frequency Stability	Compliant

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DESCRIPTION OF TEST MODES 4.

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, XYZ 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	ERP/EIRP	RADIATED EMISSION
GSM/GPRS/EDGE 850	E2-plan	E2-plan
GSM/GPRS/EDGE 1900	E1-plan	E1-plan
WCDMA/HSPA Band II	E1-plan	E1-plan
WCDMA/HSPA Band V	E2-plan	E2-plan
LTE Band 5	H-plan	H-plan
LTE Band 7	E1-plan	E1-plan

GSM/GPRS/EDGE MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	128 to 251	128, 190, 251	GSM/GPRS/EDGE 850
EIRP	512 to 810	512, 661, 810	GSM/GPRS/EDGE 1900
	128 to 251	190	GPRS 850
FREQUENCY STABILITY	512 to 810	661	GPRS 1900
	128 to 251	190	GSM/GPRS/EDGE 850
OCCUPIED BANDWIDTH	512 to 810	661	GSM/GPRS/EDGE 1900
PEAK TO AVERAGE RATIO	128 to 251	128, 190, 251	GSM/GPRS/EDGE 850
FEAK TO AVERAGE KATIO	512 to 810	512, 661, 810	GSM/GPRS/EDGE 1900
BAND EDGE	128 to 251	128, 251	GSM/EDGE 850
BAND EDGE	512 to 810	512, 810	GSM/EDGE 1900
CONDCLIDETED EMISSION	128 to 251	128, 190, 251	GSM/EDGE 850
CONDCUDETED EMISSION	512 to 810	512, 661, 810	GSM/EDGE 1900
RADIATED EMISSION	128 to 251	128, 190, 251	GSM 850
RADIATED ENIISSION	512 to 810	512, 661, 810	GSM 1900

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WCDMA/HSPA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	4132 to 4233	4132, 4183, 4233	WCDMA/HSPA Band V
EIRP	9262 to 9538	9262, 9400, 9583	WCDMA/HSPA Band II
EDEOLIENCX STADILITY	4132 to 4233	4183	WCDMA Band II
FREQUENCY STABILITY	9262 to 9538	9400	WCDMA Band V
	4132 to 4233	4183	WCDMA/HSPA Band II
OCCUPIED BANDWIDTH	9262 to 9538	9400	WCDMA/HSPA Band V
PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4183, 4233	WCDMA/HSPA Band II
FEAK TO AVERAGE KATIO	9262 to 9538	9262, 9400, 9583	WCDMA/HSPA Band V
BAND EDGE	4132 to 4233	4132, 4233	WCDMA Band II
BAND EDGE	9262 to 9538	9262, 9583	WCDMA Band V
CONDCUDETED EMISSION	4132 to 4233	4132, 4183, 4233	WCDMA Band II
CONDCODETED EMISSION	9262 to 9538	9262, 9400, 9583	WCDMA Band V
RADIATED EMISSION	4132 to 4233	4132, 4183, 4233	HSDPA Band II
KADIATED EWISSION	9262 to 9538	9262, 9400, 9583	HSDPA Band V

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LTE Band 5 MODE

TEST ITEM	AVAILABLE	TESTED	CHANNEL	MODULATION	MODE	
	CHANNEL	CHANNEL	BANDWIDTH	MODULATION	MODE	
	20470 to 20643	20470, 20525, 20643	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest	
ERP	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest	
EKP	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest	
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest	
FREQUENCY STABILITY	20450 to 20600	20525	10MHz	QPSK,	Full RB	
	20470 to 20643	20470, 20525, 20643	1.4MHz	QPSK, 16QAM	Full RB	
OCCUPIED	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM	Full RB	
BANDWIDTH	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	Full RB	
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	Full RB	
	20470 to 20643	20470, 20525, 20643	1.4MHz	16QAM	Full RB	
PEAK TO AV-	20415 to 20635	20415, 20525, 20635	3MHz	16QAM	Full RB	
ERAGE RATIO	20425 to 20625	20425, 20525, 20625	5MHz	16QAM	Full RB	
	20450 to 20600	20450, 20525, 20600	10MHz	16QAM	Full RB	
	20470 to 20643	20470, 20643	1.4MHz	QPSK,	1 RB/ 0,5 RB Offes Full RB	
	20415 to 20635	20415, 20635	3MHz	QPSK,	1 RB/ 0,14 RB Offest Full RB	
BAND EDGE	20425 to 20625	20425, 20625	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB	
	20450 to 20600	20450, 20600	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB	
	20470 to 20643	20470, 20525, 20643	1.4MHz	QPSK,	1 RB, 0 RB Offest	
CONDCUDETED	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,	1 RB, 0 RB Offest	
EMISSION	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,	1 RB, 0 RB Offest	
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,	1 RB, 0 RB Offest	
RADIATED EMISSION	20415 to 20635	20415, 20525, 20635	3MHz	16QAM	1 RB/ 14 RB Offest	

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LTE Band 7 MODE

TEST ITEM	AVAILABLE	TESTED	CHANNEL	MODULATION	MODE
	CHANNEL	CHANNEL	BANDWIDTH	NIOD CLITICIT	MODE
	26775 to 21425	26775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
EIRP	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
LIKF	20825 to 21375	20825, 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
	26775 to 21425	26775, 21100, 21425	5MHz	QPSK, 16QAM	Full RB
OCCUPIED	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	Full RB
BANDWIDTH	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	Full RB
	26775 to 21425	26775, 21100, 21425	5MHz	16QAM	Full RB
PEAK TO AV-	20800 to 21400	20800, 21100, 21400	10MHz	16QAM	Full RB
ERAGE RATIO	20825 to 21375	20825, 21100, 21375	15MHz	16QAM	Full RB
	20850 to 21350	20850, 21100, 21350	20MHz	16QAM	Full RB
	26775 to 21425	26775, 21425	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
BAND EDGE	20800 to 21400	20800, 21400	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
BAND EDGE	20825 to 21375	20825, 21375	15MHz	QPSK,	1 RB/ 0,74 RB Offest Full RB
	20850 to 21350	20850, 21350	20MHz	QPSK,	1 RB/ 0,99 RB Offest Full RB
	26775 to 21425	26775, 21100, 21425	5MHz	QPSK,	1 RB, 0 RB Offest
CONDCUDETED	20800 to 21400	20800, 21100, 21400	10MHz	QPSK,	1 RB, 0 RB Offest
EMISSION	20825 to 21375	20825, 21100, 21375	15MHz	QPSK,	1 RB, 0 RB Offest
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK,	1 RB, 0 RB Offest
RADIATED EMISSION	26775 to 21425	26775, 21100, 21425	5MHz	16QAM	1 RB/ 0 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:

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

	30MHz - 167MHz: +/- 4.22dB
Measurement uncertainty	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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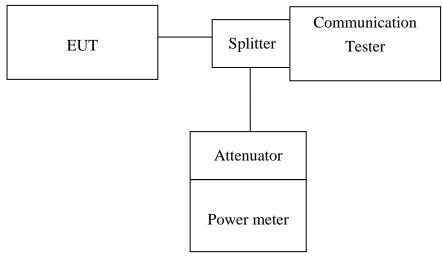


6. RF CONDUCTED OUTPUT POWER MEASUREMENT

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

Conducted Emission (measured at antenna port) Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
ТҮРЕ		NUMBER	NUMBER	CAL.				
Power Meter	Anritsu	ML2495A	1005007	12/20/2014	12/19/2015			
Power Sensor	Anritsu	MA2411B	917032	12/20/2014	12/19/2015			
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016			
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015			
Temperature Chamber	TERCHY	MHG-120LF	911009	05/06/2015	05/05/2016			
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2015	01/01/2016			
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016			
Splitter	Agilent	11636B	N/A	01/02/2015	01/01/2016			
DC Power Supply	Agilent	E3640A	MY52410006	11/10/2014	11/09/2015			

6.5. Measurement Result

RF Conducted Output Power

GSM/GPRS/EDGE (GMSK; 8-PSK) Result:

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Averager Burst Power (dBm)
	824.2	128	33.40	33.30
GSM 850	836.6	190	33.40	33.20
	848.8	251	33.30	33.10
	1850.2	512	30.40	30.20
GSM 1900	1880.0	661	30.30	30.20
	1909.8	810	30.50	30.40

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EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP)	Average Burst Power (4DN 2UP) Class 10 (dBm)	Peak Power (4DN 3UP)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP)	Average Burst Power (4DN 4UP) Class 12 (dBm)
CDDC	824.2	128	33.50	33.30	29.70	29.50	28.40	28.20	28.00	27.80
GPRS 850	836.6	190	33.30	33.20	29.60	29.40	28.20	28.10	27.80	27.70
	848.8	251	33.30	33.20	29.50	29.30	28.20	28.00	27.80	27.60
CDDC	1850.2	512	29.30	29.20	27.60	27.50	26.50	26.40	25.60	25.50
GPRS 1900	1880.0	661	29.30	29.10	27.60	27.50	26.50	26.40	25.60	25.50
	1909.8	810	29.30	29.20	27.70	27.60	26.60	26.50	25.60	25.50
EDGE	824.2	128	29.40	26.20	28.80	25.60	26.90	24.10	26.90	23.80
EDGE 850	836.6	190	29.90	26.70	29.60	26.00	27.40	24.30	27.30	24.30
	848.8	251	30.10	26.80	29.20	25.90	27.50	24.40	27.60	24.40
EDGE	1850.2	512	28.50	25.10	27.70	24.40	27.90	24.20	27.70	24.30
EDGE 1900	1880.0	661	28.70	25.00	27.90	24.20	27.70	24.20	27.70	24.20
	1909.8	810	28.20	25.00	28.00	24.30	27.90	24.30	27.90	24.20

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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. Power
	(MHz)		(dBm)	(dBm)
	1852.4	9262	26.72	23.98
WCDMA Band II	1880.0	9400	27.09	23.96
Duila II	1907.6	9538	26.79	23.99
	826.4	4132	26.76	23.41
WCDMA Band V	836.6	4183	26.74	23.40
Duild	846.6	4233	26.72	23.37
HODDA	1852.4	9262	26.41	22.88
HSDPA Band II	1880.0	9400	26.81	23.03
Duila II	1907.6	9538	26.11	22.91
HODDA	826.4	4132	26.15	22.35
HSDPA Band V	836.6	4183	26.30	22.34
Duild	846.6	4233	26.18	22.27
	1852.4	9262	26.01	22.84
HSUPA Band II	1880.0	9400	26.74	23.02
	1907.6	9538	26.54	23.11
	826.4	4132	26.01	22.39
HSUPA Band V	836.6	4183	26.03	22.27
Duna	846.6	4233	26.22	22.30

Note: The results above reflect max power with all up bits.

Cable loss offset Low Band: 13.6dB

Cable loss offset High Band: 13.9dB

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LTE Result:

LTE Band 5

	LTI	E Band 5_	_Uplink fi	requency	band:82	24 to 849	MHz		
		RB Offset	Conducted power (dBm)						
BW				QPSK	(u)		16QAM		
(MHz)			Channel (Low) 20407	Channel (Mid) 20525	Channel (High) 20643	Channel (Low) 20407	Channel (Mid) 20525	Channel (High) 20643	
	1	0	22.88	22.83	22.86	22.27	22.22	22.26	
1.4	1	5	22.85	22.83	22.82	22.24	22.23	22.01	
1.4	3	2	22.92	22.87	22.83	21.95	21.88	21.86	
	6	0	21.98	21.92	21.92	21.03	20.99	21.02	

	LTE Band 5_Uplink frequency band : 824 to 849 MHz											
				Conducted power								
					(d)	Bm)						
BW	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20415	20525	20635	20415	20525	20635				
	1	0	22.76	22.86	22.77	22.10	22.04	21.98				
2	1	14	22.81	22.81	22.70	22.12	22.09	22.19				
3	8	4	21.95	21.94	21.95	20.95	21.02	20.95				
	15	0	21.93	21.92	21.93	20.97	20.98	20.99				

	LTI	E Band 5_	_Uplink fi	requency	band:82	24 to 849	MHz		
			Conducted power (dBm)						
BW	RB	RB		QPSK			16QAM		
(MHz)	Size	Offset	Channel (Low) 20425	Channel (Mid) 20525	Channel (High) 20625	Channel (Low) 20425	Channel (Mid) 20525	Channel (High) 20625	
	1	0	22.76	22.73	22.97	22.06	22.03	22.25	
_	1	24	22.69	22.85	22.87	22.30	22.05	22.05	
5	12	6	21.95	22.00	22.03	21.02	21.01	21.06	
	25	0	21.95	21.92	21.95	20.97	20.97	21.04	

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	LTE Band 5_Uplink frequency band : 824 to 849 MHz											
				Conducted power (dBm)								
BW	RB	RB		QPSK)						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20450	20525	20600	20450	20525	20600				
	1	0	23.25	23.34	23.30	22.59	22.55	22.66				
10	1	49	23.30	23.24	23.21	22.53	22.62	22.57				
10	25	12	22.26	22.26	22.28	21.27	21.24	21.31				
	50	0	22.29	22.29	22.31	21.31	21.30	21.34				

LTE Band 7

	LTE	Band 7_	Uplink fro	equency b	oand : 250	00 to 2570) MHz				
				Conducted power							
					(d)	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	21.36	21.35	21.44	20.60	20.60	20.50			
_	1	24	21.42	21.25	21.39	20.51	20.66	20.63			
5	12	6	20.47	20.38	20.52	19.40	19.40	19.38			
	25	0	20.43	20.35	20.47	19.43	19.34	19.47			

	LTE	Band 13_	Uplink fr	equency	band : 25	00 to 2570	0 MHz				
				Conducted power							
					(d)	Bm)					
BW	RB	RB		QPSK			16QAM				
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel			
			(Low)	(Mid)	(Low)	(Low)	(Mid)	(Low)			
			20800	21100	21400	20800	21100	21400			
	1	0	21.38	21.43	21.46	20.65	20.65	20.79			
10	1	49	21.42	21.25	21.40	20.64	20.52	20.58			
10	25	12	20.44	20.33	20.48	19.43	19.30	19.44			
	50	0	20.48	20.37	20.48	19.50	19.36	19.47			

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LTE Band 7

	LTE	Band 7_	U <mark>plink fr</mark> o	equency b	oand : 25	00 to 2570) MHz			
				Conducted power						
					(d.	Bm)				
BW				QPSK			16QAM			
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel		
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)		
			20825	21100	21375	20825	21100	21375		
	1	0	21.37	21.39	21.28	20.78	20.75	20.59		
1.5	1	74	21.51	21.23	21.74	20.79	20.61	20.60		
15	36	19	20.54	20.38	20.47	19.51	19.38	19.44		
	75	0	20.50	20.35	20.45	19.50	19.33	19.42		

	LTE	Band 7_	Uplink fro	equency b	oand : 25	00 to 257() MHz		
			Conducted power						
					(d)	Bm)			
BW	RB	RB		QPSK			16QAM		
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel	
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	
			20850	21100	21350	20850	21100	21350	
	1	0	21.72	21.72	21.59	20.85	21.02	20.97	
20	1	99	21.68	21.58	21.63	20.94	21.01	20.98	
20	50	25	20.77	20.66	20.71	19.74	19.57	19.36	
	100	0	20.49	20.60	20.66	19.75	19.56	19.62	

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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	βc	βa	β _d (SF)	β _c /β _d	β _{HS} (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	Avg.	Power (d) Channel	Bm)	Power Class 3 Limita- tion (dBm)	Comments	
		9262	9400	9538	uon (abiii)		
	1	23.57	23.62	23.31	20.3dBm - 25.7dBm	Pass	
HSDPA	2	23.28	23.59	23.30	20.3dBm - 25.7dBm	Pass	
(B2)	3	23.09	23.17	22.78	19.8dBm – 25.7dBm	Pass	
	4	23.16	23.18	22.90	19.8dBm – 25.7dBm	Pass	

Mode	Sub-test	Avg.	Power (d) Channel	Bm)	Power Class 3 Limita-	Comments	
		4132	4183	4233	tion (dBm)		
	1	23.19	23.42	23.72	20.3dBm – 25.7dBm	Pass	
HSDPA	2	23.33	23.45	23.47	20.3dBm - 25.7dBm	Pass	
(B5)	3	22.73	22.94	23.23	19.8dBm – 25.7dBm	Pass	
	4	22.78	22.98	23.29	19.8dBm – 25.7dBm	Pass	

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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	β _c	βa	β _d (SF)	β _c /β _d	$\beta_{\rm HS}$	β_{ec}	β_{ed}	β _{ed} (SF)	β _{ed} (Codes)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	β _{ed} 1: 47/15 β _{ed} 2: 47/15	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

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

Results:

Mode	Sub-test	Avg. 9262	Power (d Channel 9400	Bm) 9538	Power Class 3 Limita- tion (dBm)	Comments
	1	23.32	23.71	23.39	18.8dBm – 25.7dBm	Pass
	2	21.37	21.78	21.43	16.8dBm – 25.7dBm	Pass
HSUPA(B2)	3	22.38	22.73	22.47	17.8dBm – 25.7dBm	Pass
	4	21.50	21.83	21.47	16.8dBm – 25.7dBm	Pass
	5	23.21	23.57	23.30	18.8dBm – 25.7dBm	Pass
Mode	Sub-test	Avg.	Power (d Channel	Bm)	Power Class 3 Limita- tion (dBm)	Comments
		4132	4183	4233		
	1	23.36	23.49	23.52	18.8dBm – 25.7dBm	Pass
	1 2	23.36 21.42	23.49 21.57	23.52 21.56	18.8dBm – 25.7dBm 16.8dBm – 25.7dBm	Pass Pass
HSUPA(B5)						
HSUPA(B5)	2	21.42	21.57	21.56	16.8dBm - 25.7dBm	Pass

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1 CS 1700 Dallu									
PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.2	27.3	25.3	23.1	21.2	19.2	17.2	15.1	13.2
								_	
PCL	9	10	11	12	13	14	15		
Output power (dBm)	11.3	9.2	7.1	5.2	3.2	1.3	-0.1		

Minimum Communications Power Measurement PCS 1900 band

Note: The EUT output power was controlled by simulator. Set Communication Tester CMU200 PCL as above, and get the mobile phone output power reading.

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 RADI-ATED POWER MEASUREMENT

7.1 **Standard Applicable**

FCC 22.913(a) Mobile station is limited to 7W.

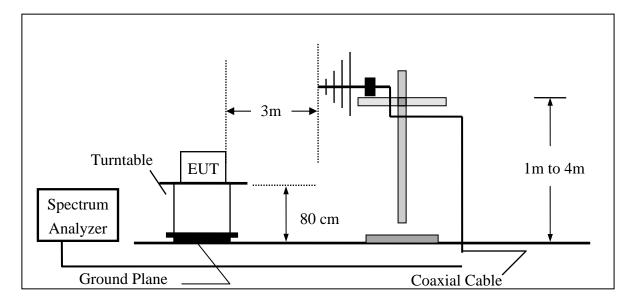
FCC 24.232(b) Mobile station is limited to 2W.

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

FCC 27, 50(d)(4) Portable stations are limited to 1W

7.2 Test SET-UP

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

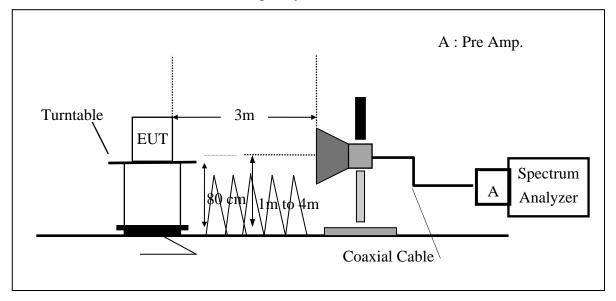


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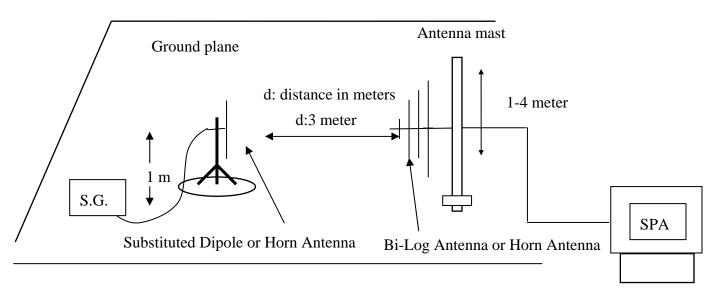
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(B) Radiated Power Test Set-UP Frequency Over 1 GHz

(C) Substituted Method Test Set-UP



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7.3 Measurement Procedure

- 1. The testing follows the Measurement Procedure of FCC KDB 971168 D01
- 2. The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.
- 3. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated
- 4. The testing follows the Measurement Procedure of FCC KDB 971168 D01
- 5. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.
- 6. ERP = S.G. 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.

Set frequency = nominal signal center frequency;

Set span = $2 \times \text{occupied BW}$;

Set RBW $\approx 1 \sim 5\%$ of the span, not to exceed 1 MHz

Set $VBW = 3 \times RBW$;

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 = 601 points, then sweet time = $601*10^{-3} = 6s$.

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FCC ID: PY7-PM0873



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 UE.

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7.4 **Measurement Equipment Used**

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber									
EQUIPMENT TYPE	MFR	MODEL	SERIAL	LAST CAL.	CAL DUE.				
		NUMBER	NUMBER						
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	12/22/2014	12/21/2015				
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/23/2014	12/22/2015				
Bilog Antenna	SCHWAZBECK	VULB9160	3158	10/31/2014	10/30/2015				
Horn antenna	ETS.LINDGREN	3117	123995	05/05/2015	05/04/2016				
Horn antenna	ETS.LINDGREN	3117	123991	12/19/2014	12/18/2015				
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2014	12/24/2015				
Horn Antenna	Schwarzbeck	BBHA9170	185	07/29/2014	07/28/2015				
Network Analyze	Anritsu	MS4644A	1216312	05/23/2015	05/22/2016				
Signal Generator	Agilent	E4438C	MY45093613	08/06/2014	08/05/2015				
Pre-Amplifier	Agilent	8447D	1937A02834	01/02/2015	01/01/2016				
Pre-Amplifier	Agilent	8449B	3008A00578	01/02/2015	01/01/2016				
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/02/2015	01/01/2016				
Attenuator	Mini-Circuit	BW-S10W2+	004	01/02/2015	01/01/2016				
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016				
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015				
Turn Table	HD	DT420	N/A	N.C.R	N.C.R				
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R				
Controller	HD	HD100	N/A	N.C.R	N.C.R				
Low Loss Cable	HUBER+SUHNER	966_Tx	10m	01/02/2015	01/01/2016				
Low Loss Cable	HUBER+SUHNER	966_Rx	3m	01/02/2015	01/01/2016				
3m Site NSA	SGS	966 chamber	N/A	07/15/2014	07/14/2015				

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7.5 Measurement Result: (Peak) -using option of peak measurement

	EUT				Measur	ement		Limit dBm 38.45 38.45 38.45 38.45			
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit			
	MHz		V/H	dBm	dBd	dB	dBm	dBm			
	824.2	128	V	12.83	3.45	-2.94	13.35	38.45			
	824.2	128	Н	19.4	3.45	-2.94	19.91	38.45			
GSM 850	9266	190	V	10.19	3.46	-2.97	10.67	38.45			
USM 850	836.6	190	Н	18.38	3.46	-2.97	18.87	38.45			
	848.8	251	V	11.38	3.47	-3.01	11.84	38.45			
	048.8	251	Н	17.11	3.47	-3.01	17.57	38.45			

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	824.2	128	V	11.39	3.45	-2.94	11.91	38.45
	824.2	128	Н	18.61	3.45	-2.94	19.13	38.45
CDDS 950	926.6	100	V	10.00	3.46	-2.97	10.48	38.45
GPRS 850	836.6	190	Н	18.02	3.46	-2.97	18.51	38.45
	040 0	251	V	11.08	3.47	-3.01	11.54	38.45
	848.8	251	Н	16.83	3.47	-3.01	17.29	38.45

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	824.2	128	V	9.55	3.45	-2.94	10.07	38.45
	824.2	128	Н	18.19	3.45	-2.94	18.71	38.45
	926.6	100	V	8.96	3.46	-2.97	9.45	38.45
EDGE 850	836.6	190	Н	17.23	3.46	-2.97	17.72	dBm 38.45 38.45
	040 0	251	V	10.40	3.47	-3.01	10.86	38.45
	848.8	251	Н	16.22	3.47	-3.01	16.68	38.45

Remark:

(1) The RBW, VBW of SPA for frequency RBW=300 KHz, VBW=1MHz



	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
	1850.2	512	V	25.84	4.84	-4.49	26.20	33.01
	1830.2	312	Н	23.39	4.84	-4.49	23.75	33.01
CSM 1000	1990.0	<i>cc</i> 1	V	24.47	4.79	-4.53	24.74	33.01
GSM 1900	1880.0	661	Н	23.67	4.79	-4.53	23.94	33.01
	1000.9	010	V	25.6	4.74	-4.57	25.78	33.01
	1909.8	810	Н	22.53	4.74	-4.57	22.71	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
	1950 2	510	V	25.24	4.84	-4.49	25.60	33.01
	1850.2	512	Н	22.86	4.84	-4.49	23.22	33.01
CDDS 1000	1000.0	((1	V	24.15	4.79	-4.53	24.42	33.01
GPRS 1900	1880.0	661	Н	22.54	4.79	-4.53	22.8	33.01
	1000.9	010	V	24.79	4.74	-4.57	24.97	33.01
	1909.8	810	Н	21.69	4.74	-4.57	21.87	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
	1850.2	512	V	24.25	4.84	-4.49	24.61	33.01
	1830.2	312	Н	21.66	4.84	-4.49	22.02	33.01
EDCE 1000	1880.0	661	V	23.08	4.79	-4.53	23.35	33.01 33.01 33.01 33.01
EDGE 1900 -	1880.0	001	Н	21.82	4.79	-4.53	22.09	33.01
	1000.9	910	V	23.76	4.74	-4.57	23.94	33.01
	1909.8	810	Н	20.45	4.74	-4.57	20.63	33.01

The RBW, VBW of SPA for frequency RBW=300K, VBW=1MHz (1)



	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	20.76	4.84	-4.49	21.11	33.01
	1852.4	9202	Н	17.85	4.84	-4.49	18.20	33.01
	1000.0	0.400	V	19.79	4.79	-4.53	20.05	33.01
WCDMA B2	1880.0	9400	Н	18.16	4.79	-4.53	18.43	33.01
	1007 (0520	V	20.61	4.75	-4.56	20.80	33.01
	1907.6	9538	Н	17.43	4.75	-4.56	17.61	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
	1952 4	0262	V	22.43	4.84	-4.49	22.78	33.01
	1852.4	9262	Н	19.24	4.84	-4.49	19.59	33.01
	1000.0	0.400	V	21.29	4.79	-4.53	21.55	33.01
HSDPA B2	1880.0	9400	Н	19.27	4.79	-4.53	19.54	33.01
	1007 (0520	V	21.88	4.75	-4.56	22.06	33.01
	1907.6	9538	Н	18.72	4.75	-4.56	18.91	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	21.82	4.84	-4.49	22.17	33.01
	1852.4	9202	Н	18.56	4.84	-4.49	18.92	33.01
LICUDA DO	1880.0	9400	V	20.48	4.79	-4.53	20.75	33.01
HSUPA B2	1880.0	9400	Н	18.82	4.79	-4.53	19.09	dBm 33.01 33.01
	1907.6	9538	V	21.10	4.75	-4.56	21.29	33.01
	1907.0	9220	Н	18.09	4.75	-4.56	18.27	33.01

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



	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	826.4	4132	V	2.54	3.46	-2.95	3.05	38.45
	820.4	4152	Н	11.95	3.46	-2.95	12.46	38.45
	926.6	4102	V	5.50	3.46	-2.97	5.99	38.45
WCDMA B5	836.6	4183	Н	10.17	3.46	-2.97	10.66	38.45
	946.6	4000	V	5.32	3.47	-3.01	5.79	38.45
	846.6	4233	Н	12.82	3.47	-3.00	13.28	38.45

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	826.4	4120	V	3.78	3.46	-2.95	4.29	38.45
	826.4	4132	Н	12.52	3.46	-2.95	13.03	38.45
	926.6	4102	V	6.01	3.46	-2.97	6.50	dBm 38.45
HSDPA B5	836.6	4183	Н	12.11	3.46	-2.97	12.60	38.45
	946.6	4000	V	5.93	3.47	-3.01	6.39	38.45
	846.6	4233	Н	13.18	3.47	-3.00	13.65	38.45

	EUT				Measur	ement		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	80C 4	4120	V	3.36	3.46	-2.95	3.87	38.45
	826.4	4132	Н	12.24	3.46	-2.95	12.75	38.45
LICUDA D5	9266	4102	V	5.97	3.46	-2.97	6.46	38.45
HSUPA B5	836.6	4183	Н	11.65	3.46	-2.97	12.14	dBm 38.45 38.45
	946.6	4000	V	6.05	3.47	-3.00	6.52	38.45
	846.6	4233	Н	13.10	3.47	-3.00	13.57	38.45

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



	EUT			Γ	Measurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	15.26	3.46	-2.94	15.78	38.45
BAND 5	824.7	20407	Н	14.26	3.46	-2.94	14.77	38.45
BW: 1.4M	836.5	20525	V	13.32	3.46	-2.97	13.81	38.45
QPSK	830.3	20323	Н	11.92	3.46	-2.97	12.41	38.45
RB: 1,0	848.3	20643	V	13.48	3.47	-3.00	13.95	38.45
	040.5	48.3 20643 -	Н	9.59	3.47	-3.00	10.05	38.45
	004.7	20.407	V	15.00	3.46	-2.94	15.52	38.45
BAND 5	824.7	20407	Н	14.53	3.46	-2.94	15.05	38.45
BW: 1.4M	836.5	20525	V	13.48	3.46	-2.97	13.96	38.45
QPSK	030.5	20323	Н	11.87	3.46	-2.97	12.36	38.45
RB: 1,5	848.3	20643	V	13.19	3.47	-3.01	13.66	38.45
	040.5	20043	Н	9.17	3.47	-3.01	9.63	38.45
	0247	20.407	V	15.22	3.45	-2.94	15.74	38.45
BAND 5	824.7	20407	Н	14.23	3.46	-2.94	14.75	38.45
BW: 1.4M	836.5	20525	V	13.52	3.46	-2.97	14.01	38.45
16QAM	030.5	20323	Н	11.93	3.46	-2.97	12.42	38.45
RB: 1,0	848.3	20643	V	13.77	3.47	-3.01	14.23	38.45
	040.5	20043	Н	9.83	3.47	-3.00	10.30	38.45
	8247	20407	V	15.70	3.45	-2.94	16.21	38.45
BAND 5	824.7	20407	Н	15.00	3.46	-2.94	15.51	38.45
BW: 1.4M	836.5	20525	V	13.75	3.46	-2.97	14.24	38.45
16QAM	050.5	20323	Н	12.03	3.46	-2.97	12.52	38.45
RB: 1,5	848.3	20643	V	13.45	3.47	-3.01	13.91	38.45
	010.5	20043	Н	9.37	3.47	-3.01	9.83	38.45

(1)

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



	EUT			Γ	Measurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	15.20	3.46	-2.94	15.72	38.45
BAND 5	825.5	20415	Н	14.31	3.45	-2.94	14.83	38.45
BW: 3M	836.5	20525	V	13.29	3.46	-2.97	13.78	38.45
QPSK	830.3	20323	Н	11.86	3.46	-2.97	12.35	38.45
RB: 1,0	847.5	20635	V	13.80	3.47	-3.00	14.26	38.45
	047.5	20033	Н	9.94	3.47	-3.00	10.41	38.45
			V	15.63	3.46	-2.94	16.14	38.45
BAND 5	825.5	20415	Н	14.32	3.46	-2.94	14.83	38.45
BW: 3M	836.5	20525	V	13.65	3.46	-2.98	14.14	38.45
QPSK			Н	11.98	3.46	-2.98	12.47	38.45
RB: 1,14	847.5	20635	V	13.12	3.47	-3.01	13.58	38.45
	0.7.5	20033	Н	8.84	3.47	-3.01	9.30	38.45
	005 5	20.41.5	V	15.12	3.45	-2.94	15.64	38.45
BAND 5	825.5	20415	Н	14.16	3.45	-2.94	14.67	38.45
BW: 3M	836.5	20525	V	13.39	3.46	-2.97	13.88	38.45
16QAM	050.5	20323	Н	11.98	3.46	-2.97	12.47	38.45
RB: 1,0	847.5	20635	V	14.09	3.47	-3.00	14.56	38.45
	0.7.5	20033	Н	10.27	3.47	-3.00	10.73	38.45
	925 5	20.41.5	V	16.18	3.46	-2.94	16.69	38.45
BAND 5	825.5	20415	Н	15.08	3.46	-2.94	15.59	38.45
BW: 3M	836.5	20525	V	14.05	3.46	-2.98	14.53	38.45
16QAM	050.5	20323	Н	12.18	3.46	-2.98	12.66	38.45
RB: 1,14	847.5	20635	V	13.36	3.47	-3.01	13.83	38.45
	·····	20033	Н	9.04	3.47	-3.01	9.50	38.45

(1)

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



	EUT			Γ	Measurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	15.16	3.46	-2.94	15.67	38.45
BAND 5	826.5	20425	Н	14.34	3.46	-2.94	14.85	38.45
BW: 5M	836.5	20525	V	13.02	3.46	-2.97	13.51	38.45
QPSK	830.3	20323	Н	11.75	3.46	-2.97	12.24	38.45
RB: 1,0	846.5	20625	V	15.44	3.46	-2.99	15.91	38.45
	840.5	346.5 20625 -	Н	12.20	3.46	-2.99	12.67	38.45
	0.2 4 5	20.425	V	15.07	3.46	-2.95	15.57	38.45
BAND 5	826.5	20425	Н	14.41	3.46	-2.95	14.92	38.45
BW: 5M	836.5	20525	V	14.01	3.46	-2.98	14.50	38.45
QPSK	650.5	20323	Н	11.93	3.46	-2.98	12.42	38.45
RB: 1,24	846.5	20625	V	13.41	3.47	-3.01	13.87	38.45
	040.5	20025	Н	9.34	3.47	-3.01	9.80	38.45
	006 5	20.425	V	15.40	3.45	-2.94	15.92	38.45
BAND 5	826.5	20425	Н	14.59	3.45	-2.94	15.11	38.45
BW: 5M	836.5	20525	V	13.33	3.46	-2.97	13.82	38.45
16QAM	030.5	20323	Н	12.04	3.46	-2.97	12.54	38.45
RB: 1,0	846.5	20625	V	15.93	3.46	-2.99	16.40	38.45
	010.0	20025	Н	12.70	3.46	-2.99	13.18	38.45
	976 5	20425	V	15.30	3.46	-2.95	15.81	38.45
BAND 5	BAND 5 826.5 20425	20425	Н	14.62	3.46	-2.95	15.13	38.45
BW: 5M	836.5	20525 -	V	14.49	3.46	-2.98	14.97	38.45
16QAM		20323	Н	12.35	3.46	-2.98	12.84	38.45
RB: 1,24	846.5	20625	V	13.57	3.47	-3.01	14.03	38.45
		20020	Н	9.35	3.47	-3.01	9.81	38.45

(1)

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



	EUT			Γ	Measurem	ent		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	14.98	3.46	-2.94	15.50	38.45
BAND 5	829.0	20450	Н	13.99	3.46	-2.94	14.51	38.45
BW: 10M	836.5	20525	V	13.24	3.46	-2.96	13.74	38.45
QPSK	830.3	20323	Н	12.30	3.46	-2.96	12.80	38.45
RB: 1,0	844.0	20600	V	14.60	3.46	-2.98	15.08	38.45
	044.0	20600 -	Н	12.29	3.46	-2.98	12.77	38.45
			V	13.27	3.46	-2.97	13.76	38.45
BAND 5	829.0	20450	Н	11.88	3.46	-2.97	12.37	38.45
BW: 10M	836.5	20525	V	15.48	3.46	-2.99	15.96	38.45
QPSK	030.5	20323	Н	12.57	3.46	-2.99	13.05	38.45
RB: 1,49	844.0	20600	V	13.13	3.47	-3.01	13.59	38.45
	044.0	20000	Н	9.26	3.47	-3.01	9.72	38.45
	000.0	20450	V	15.54	3.46	-2.94	16.06	38.45
BAND 5	829.0	20450	Н	14.53	3.45	-2.94	15.04	38.45
BW: 10M	836.5	20525	V	13.53	3.46	-2.96	14.03	38.45
16QAM	030.5	20323	Н	12.59	3.46	-2.96	13.09	38.45
RB: 1,0	844.0	20600	V	15.04	3.46	-2.98	15.52	38.45
	044.0	20000	Н	12.74	3.46	-2.98	13.23	38.45
		20.450	V	13.29	3.46	-2.96	13.78	38.45
BAND 5	829.0	20450	Н	12.18	3.46	-2.97	12.67	38.45
BW: 10M	836.5	20525	V	15.52	3.46	-2.99	16.00	38.45
16QAM	050.5	20525	Н	13.09	3.46	-2.99	13.57	38.45
RB: 1,49	844.0	20600	V	13.57	3.47	-3.01	14.03	38.45
	044.0	20000	Н	9.48	3.47	-3.01	9.94	38.45

(1)

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



	EUT			Ν	Measurem	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	27.87	5.80	-5.34	28.33	33.01
BAND 7	2502.5	20775	Н	22.63	5.80	-5.34	23.09	33.01
BW: 5M	2525.0	21100	V	27.30	5.87	-5.38	27.78	33.01
QPSK	2535.0	21100	Н	19.96	5.87	-5.39	20.45	33.01
RB: 1,0	2567.5	21425	V	22.62	5.94	-5.44	23.12	33.01
	2307.3	21423	Н	17.63	5.94	-5.44	18.13	33.01
		V	28.05	5.81	-5.35	28.51	33.01	
BAND 7	2502.5	20775	Н	21.00	5.81	-5.35	21.47	33.01
BW: 5M	2535.0	21100	V	27.93	5.88	-5.39	28.42	33.01
QPSK	2333.0	21100	Н	20.15	5.88	-5.39	20.64	33.01
RB: 1,24	2567.5	21425	V	23.75	5.95	-5.44	24.25	33.01
	2307.5	21423	Н	17.68	5.95	-5.44	18.19	33.01
	2502.5	20775	V	29.08	5.80	-5.34	29.54	33.01
BAND 7	2502.5	20775	Н	20.65	5.80	-5.34	21.10	33.01
BW: 5M	2535.0	21100	V	27.77	5.87	-5.39	28.25	33.01
16QAM	2333.0	21100	Н	20.56	5.87	-5.38	21.04	33.01
RB: 1,0	2567.5	21425	V	22.93	5.94	-5.44	23.44	33.01
	2507.5	21425	Н	17.41	5.94	-5.44	17.91	33.01
	2502.5	20775	V	28.74	5.81	-5.35	29.21	33.01
BAND 7	BAND 7	20775	Н	21.61	5.81	-5.35	22.07	33.01
BW: 5M	2535.0	2535.0 21100 -	V	28.63	5.88	-5.39	29.12	33.01
16QAM	2333.0		Н	20.88	5.88	-5.39	21.36	33.01
RB: 1,24	2567.5	21425	V	24.27	5.95	-5.44	24.77	33.01
	2307.3	21723	Н	17.98	5.95	-5.44	18.48	33.01

(1)

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



	EUT			Ν	Measurem	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	25.63	5.80	-5.34	26.08	33.01
BAND 7	2505.0	20800	Н	19.60	5.80	-5.34	20.06	33.01
BW: 10M	2535.0	21100	V	24.10	5.87	-5.38	24.58	33.01
QPSK	2353.0	21100	Н	18.32	5.87	-5.38	18.80	33.01
RB: 1,0	2565.0	21400	V	24.62	5.93	-5.43	25.12	33.01
	2303.0	21400	Н	16.50	5.93	-5.43	17.00	33.01
		•••••	V	24.86	5.82	-5.35	25.33	33.01
BAND 7	2505.0	20800	Н	19.57	5.82	-5.35	20.04	33.01
BW: 10M	2535.0	21100	V	25.74	5.88	-5.40	26.23	33.01
QPSK	2333.0	21100	Н	18.76	5.88	-5.40	19.25	33.01
RB: 1,49	2565.0	21400	V	23.09	5.95	-5.44	23.59	33.01
	2303.0	21400	Н	17.34	5.95	-5.44	17.85	33.01
	2505.0	20000	V	26.33	5.80	-5.34	26.79	33.01
BAND 7	2505.0	20800	Н	20.33	5.80	-5.34	20.79	33.01
BW: 10M	2535.0	21100	V	24.83	5.87	-5.38	25.32	33.01
16QAM	2333.0	21100	Н	19.07	5.87	-5.38	19.55	33.01
RB: 1,0	2565.0	21400	V	25.11	5.93	-5.43	25.61	33.01
	2303.0	21400	Н	17.04	5.93	-5.43	17.54	33.01
	2505.0	20000	V	25.68	5.82	-5.35	26.15	33.01
BAND 7		20800	Н	20.32	5.82	-5.35	20.79	33.01
BW: 10M	2535.0	2535.0 21100 -	V	26.53	5.88	-5.39	27.01	33.01
16QAM	2333.0		Н	19.48	5.89	-5.40	19.97	33.01
RB: 1,49	2565.0	21400	V	23.58	5.95	-5.44	24.09	33.01
	2303.0	21400	Н	17.88	5.95	-5.44	18.39	33.01

(1)

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



	EUT			Ν	Measurem	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	20925	V	27.68	5.80	-5.34	28.14	33.01
BAND 7	2507.5	20825	Н	19.37	5.80	-5.34	19.83	33.01
BW: 15M	2535.0	21100	V	28.36	5.86	-5.38	28.84	33.01
QPSK	2355.0	21100	Н	20.98	5.86	-5.38	21.46	33.01
RB: 1,0	2562.5	21375	V	25.69	5.92	-5.42	26.18	33.01
	2302.5	21373	Н	19.64	5.92	-5.42	20.14	33.01
	2507.5	20825	V	27.45	5.83	-5.36	27.92	33.01
BAND 7	2307.3	20823	Н	15.10	5.83	-5.36	15.57	33.01
BW: 15M	2535.0	21100	V	26.18	5.89	-5.40	26.67	33.01
QPSK	2333.0	21100	Н	20.53	5.89	-5.40	21.02	33.01
RB: 1,74	2562.5	21375	V	25.12	5.95	-5.44	25.63	33.01
	2302.5		Н	20.03	5.95	-5.44	20.54	33.01
	2507.5	20825	V	28.20	5.80	-5.34	28.66	33.01
BAND 7	2307.5	20823	Н	19.84	5.80	-5.34	20.30	33.01
BW: 15M	2535.0	21100	V	28.62	5.86	-5.38	29.10	33.01
16QAM	2333.0	21100	Н	21.62	5.86	-5.38	22.11	33.01
RB: 1,0	2562.5	21375	V	26.23	5.92	-5.42	26.73	33.01
	2302.5	21373	Н	20.22	5.92	-5.42	20.72	33.01
	2507.5	20825	V	28.16	5.83	-5.36	28.63	33.01
BAND 7	2301.3	20023	Н	15.83	5.83	-5.36	16.30	33.01
BW: 15M	2535.0	2535.0 21100 -	V	26.88	5.89	-5.40	27.37	33.01
16QAM	2333.0		Н	21.44	5.89	-5.40	21.93	33.01
RB: 1,74	2562.5	21375	V	25.58	5.95	-5.44	26.09	33.01
	2502.5	21313	Н	20.49	5.95	-5.44	21.00	33.01

(1)

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



	EUT			Γ	Measurem	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	20050	V	25.89	5.80	-5.34	26.35	33.01
BAND 7	2510.0	20850	Н	21.98	5.80	-5.34	22.44	33.01
BW: 20M	2535.0	21100	V	27.35	5.86	-5.38	27.84	33.01
QPSK	2355.0	21100	Н	21.09	5.86	-5.38	21.57	33.01
RB: 1,0	2560.0	21350	V	24.91	5.91	-5.41	25.41	33.01
	2300.0	21550	Н	19.08	5.91	-5.42	19.58	33.01
	2510.0 20850	V	25.17	5.84	-5.36	25.65	33.01	
BAND 7	2310.0	2510.0 20850	Н	18.87	5.84	-5.36	19.34	33.01
BW: 20M	2535.0	21100	V	25.85	5.89	-5.40	26.34	33.01
QPSK	2333.0	21100	Н	19.62	5.89	-5.40	20.11	33.01
RB: 1,99	2560.0	21350	V	24.68	5.95	-5.44	25.18	33.01
	2500.0	21550	Н	19.83	5.95	-5.44	20.34	33.01
	2510.0	20850	V	26.56	5.80	-5.34	27.02	33.01
BAND 7	2310.0	20050	Н	22.66	5.80	-5.34	23.12	33.01
BW: 20M	2535.0	21100	V	28.05	5.86	-5.37	28.53	33.01
16QAM	2555.0	21100	Н	21.64	5.86	-5.38	22.12	33.01
RB: 1,0	2560.0	21350	V	25.50	5.91	-5.41	26.00	33.01
	2500.0	21550	Н	19.67	5.91	-5.41	20.17	33.01
	2510.0	20850	V	25.86	5.84	-5.36	26.34	33.01
BAND 7	2510.0	20050	Н	19.54	5.84	-5.36	20.02	33.01
BW: 20M	2535.0	21100	V	26.63	5.89	-5.40	27.12	33.01
16QAM	2333.0	21100	Н	20.46	5.89	-5.40	20.95	33.01
RB: 1,99	2560.0	21350	V	25.07	5.95	-5.44	25.58	33.01
	2500.0	21330	Н	20.27	5.95	-5.44	20.77	33.01

(1)

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

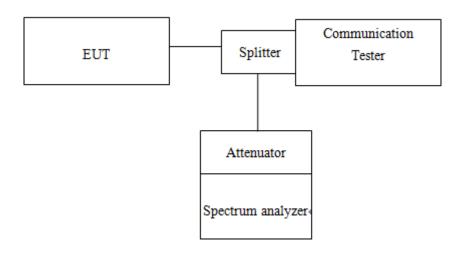


8. OCCUPIED BANDWIDTH MEASUREMENT

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

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 26dB BW is arrow-mark

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8.4. Measurement Equipment Used

Conc	lucted Emission (n	neasured at a	ntenna port) T	est Site	
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2015	01/28/2016
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2015	01/01/2016
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016
Splitter	Agilent	11636B	N/A	01/02/2015	01/01/2016
DC Power Supply	Agilent	E3640A	MY52410006	11/10/2014	11/09/2015

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8.5. Measurement Result

99% Bandwidth

Frequency (MHz)	СН	99% Bandwidth (MHz) GSM 850	99% Bandwidth (MHz) GPRS 850	99% Bandwidth (MHz) EDGE 850
824.20	129			
824.20 836.60	128 190	0.245 0.246	0.250 0.243	0.254 0.252
848.80	251	0.246	0.246	0.248

Frequency (MHz)	СН	99% Bandwidth (MHz) GSM 1900	99% Bandwidth (MHz) GPRS 1900	99% Bandwidth (MHz) EDGE 1900
1850.20	512	0.246	0.243	0.247
1880.00	661	0.245	0.243	0.244
1909.80	810	0.242	0.248	0.248

Frequency (MHz)	СН	99% Bandwidth (MHz) WCDMA II	99% Bandwidth (MHz) HSDPA II	99% Bandwidth (MHz) HSUPA II
1850.20	9262	4.1942	4.1705	4.2005
1880.00	9400	4.2249	4.2377	4.2004
1909.80	9538	4.1998	4.1748	4.2268

Frequency (MHz)	СН	99% Bandwidth (MHz) WCDMA V	99% Bandwidth (MHz) HSDPA V	99% Bandwidth (MHz) HSUPA V
826.40	4132	4.1988	4.1917	4.1971
836.60	4183	4.2237	4.2131	4.2109
846.60	4233	4.2354	4.2152	4.2350

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LTE BAND 5								
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz				
Frequency	- · (H		99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM	
824.7	20407	1.0967	1.1007	825.5	20415	2.7125	2.7019	
836.5	20525	1.0966	1.0982	836.5	20525	2.7094	2.6964	
848.3	20643	1.0968	1.1035	847.5	20635	2.7183	2.7055	

	LTE BAND 5								
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz					
Frequency CH		99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)	-	QPSK	16QAM		
826.5	20425	4.5049	4.5031	829.0	20450	9.0163	8.9692		
836.5	20525	4.5184	4.5231	836.5	20525	9.0202	9.0046		
846.5	20625	4.5077	4.5194	844.0	20600	8.9765	8.9565		



LTE BAND 7								
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz				
Frequency CH		99% Bandwidth (MHz)	ndwidth Bandwidth MHz) (MHz) Frequency		СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM	
2502.5	20775	4.5130	4.5197	2505.0	20800	9.0299	8.9650	
2535.0	21100	4.5029	4.5179	2535.0	21100	9.0313	8.3965	
2567.5	21425	4.4996	4.5114	2565.0	21400	9.0265	8.9187	

	LTE BAND 7								
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz					
Frequency CH		99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)	011	QPSK	QPSK 16QAM	(MHz)		QPSK	16QAM		
2507.5	20825	13.4585	13.4963	2510.0	20850	17.8995	17.9308		
2535.0	21100	13.4498	13.4387	2535.0	21100	17.9518	17.9620		
2562.5	21375	13.4330	13.4624	2560.0	21350	17.8759	17.9040		



26dB Bandwidth

Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
		GSM 850	GPRS 850	EDGE 850
824.20	128	0.321	0.317	0.331
836.60	190	0.310	0.323	0.315
848.80	251	0.318	0.322	0.314

Frequency (MHz)	СН	26dB Bandwidth (MHz) GSM 1900	26dB Bandwidth (MHz) GPRS 1900	26dB Bandwidth (MHz) EDGE 1900
1850.20	512	0.317	0.314	0.311
1880.00	661	0.316	0.319	0.319
1909.80	810	0.316	0.317	0.313

Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
(MHz)	Cli	WCDMA II	HSDPA II	HSUPA II
1850.20	9262	4.792	4.828	4.882
1880.00	9400	4.822	4.845	4.774
1909.80	9538	4.813	4.754	4.815

Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	
(MHz)	Сп	WCDMA V	HSDPA V	HSUPA V	
826.40	4132	4.802	4.831	4.845	
836.60	4183	4.807	4.845	4.820	
846.60	4233	4.812	4.834	4.798	



LTE BAND 5								
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz				
Frequency CH	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM	
824.7	20407	1.268	1.270	825.5	20415	2.955	2.956	
836.5	20525	1.265	1.271	836.5	20525	2.970	2.962	
848.3	20643	1.260	1.287	847.5	20635	2.968	2.959	

	LTE BAND 5									
Channel bandwidth: 5MHz				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			
826.5	20425	5.090	5.023	829.0	20450	9.911	9.741			
836.5	20525	4.946	5.090	836.5	20525	9.912	9.767			
846.5	20625	5.050	4.956	844.0	20600	9.865	9.770			



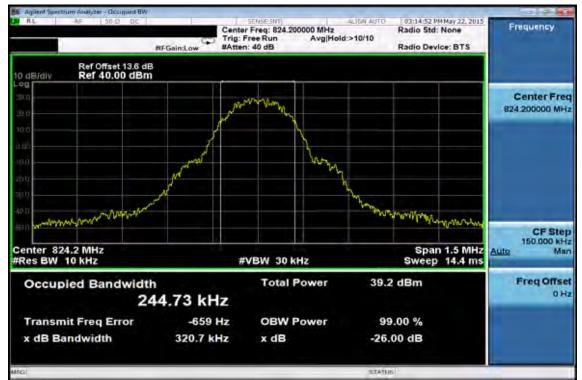
	LTE BAND 7								
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz					
Frequency CH	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
(MHz)	011	QPSK	16QAM	(MHz)		QPSK	16QAM		
2502.5	20775	5.031	5.062	2505.0	20800	9.854	9.780		
2535.0	21100	4.921	5.062	2535.0	21100	9.929	9.443		
2567.5	21425	4.940	5.062	2565.0	21400	9.932	9.471		

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	15.035	14.877	2510.0	20850	19.475	19.518
2535.0	21100	14.383	14.401	2535.0	21100	19.539	19.410
2562.5	21375	14.314	14.401	2560.0	21350	19.357	19.477

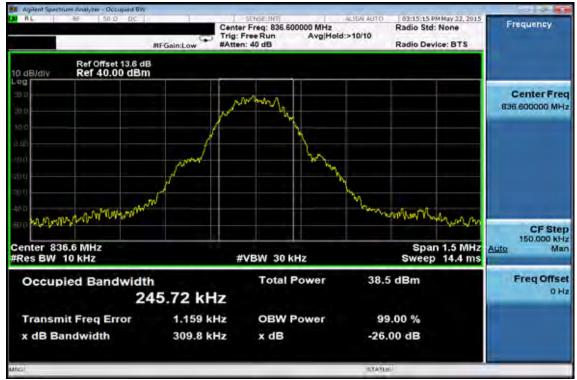


99% Bandwidth Test Data

GSM 850 Channel Low



GSM 850 Channel Mid



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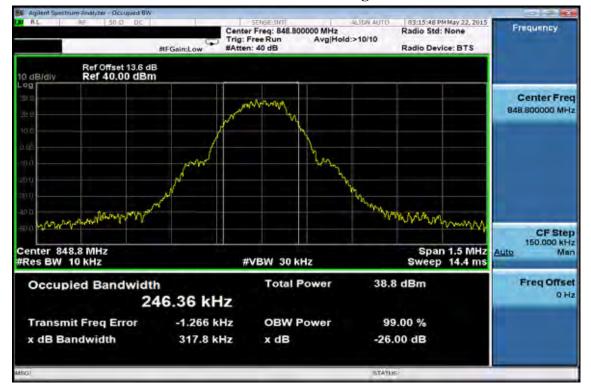
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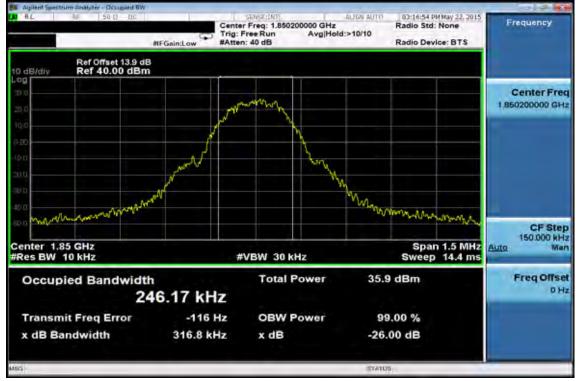
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GSM 850 Channel High



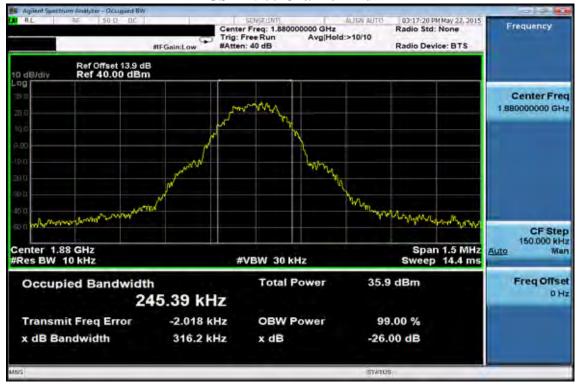
GSM 1900 Channel Low



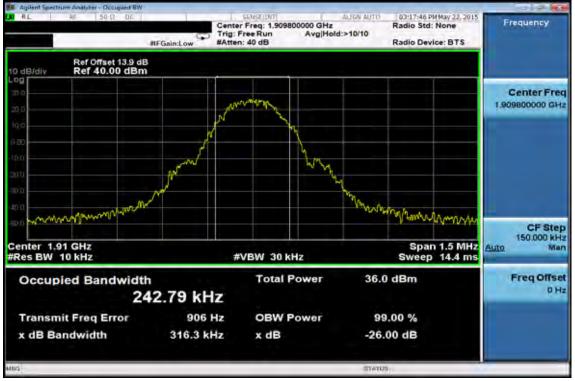
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GSM 1900 Channel Mid



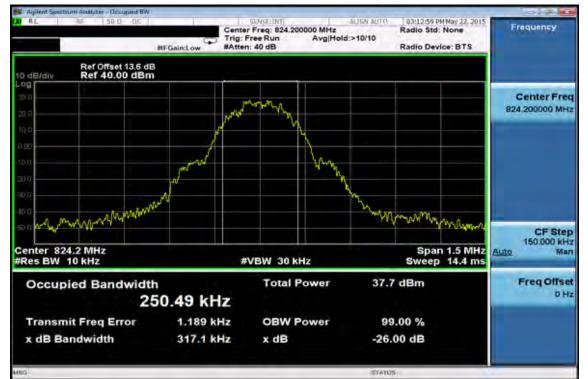
GSM 1900 Channel High



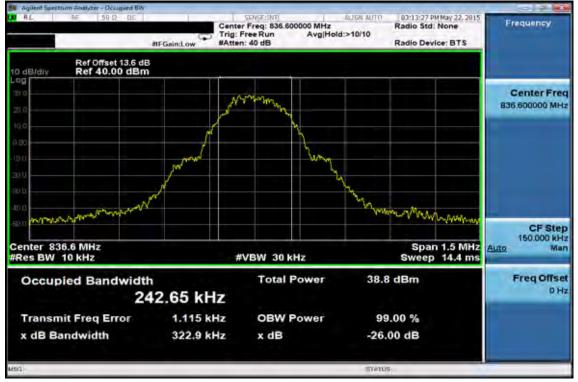
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GPRS 850 Channel Low



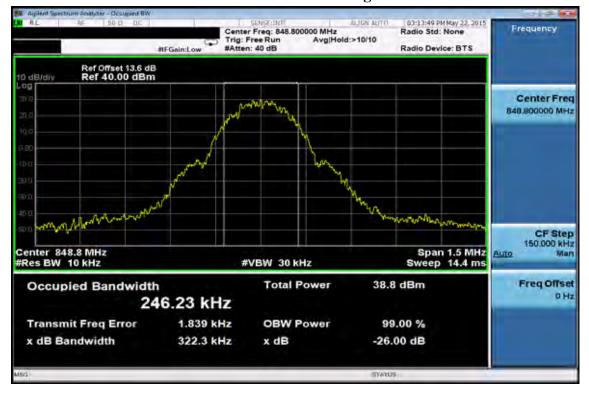
GPRS 850 Channel Mid



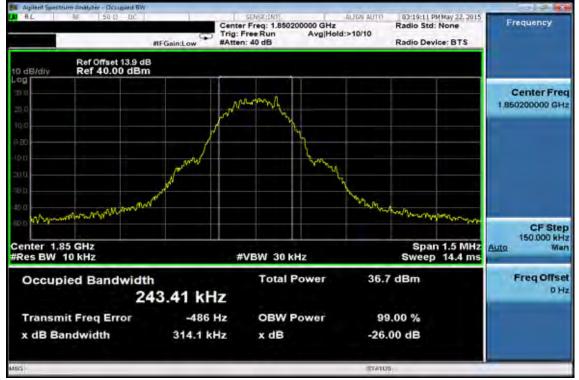
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GPRS 850 Channel High



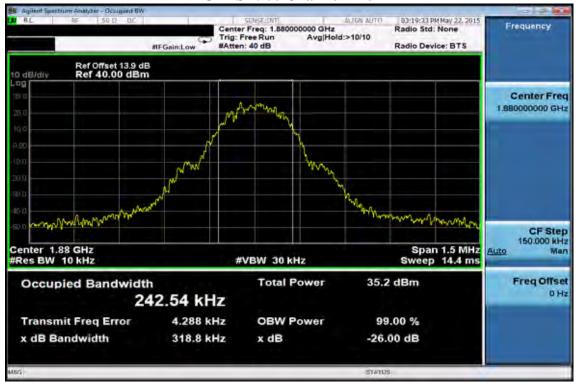
GPRS 1900 Channel Low



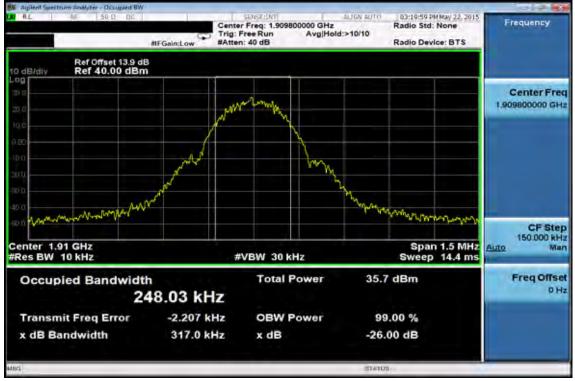
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GPRS 1900 Channel Mid



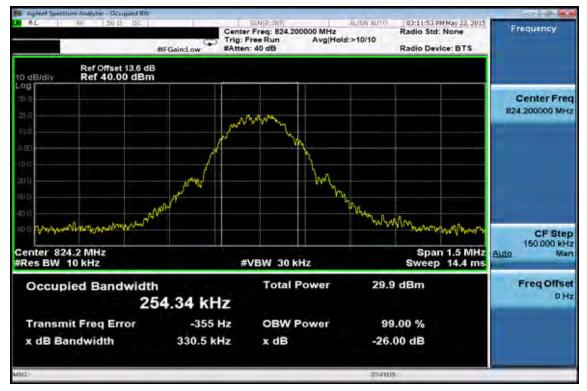
GPRS 1900 Channel High



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EDGE 850 Channel Low



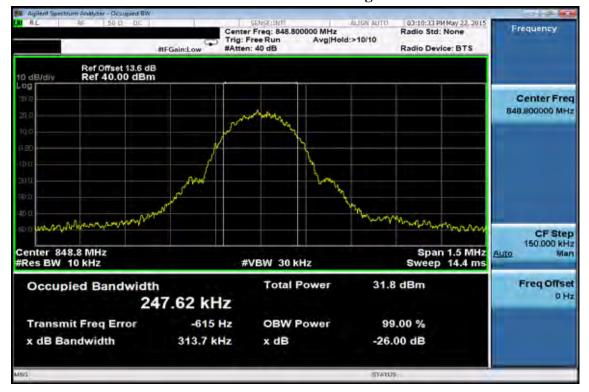
EDGE 850 Channel Mid



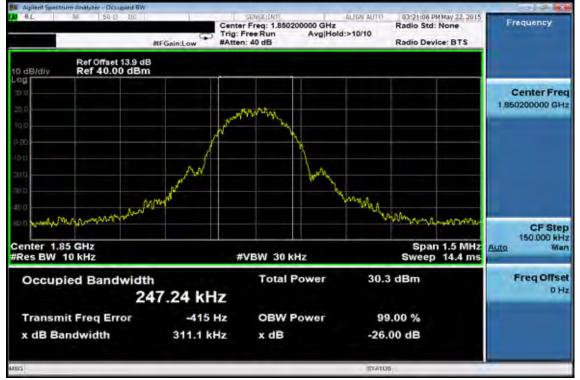
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EDGE 850 Channel High



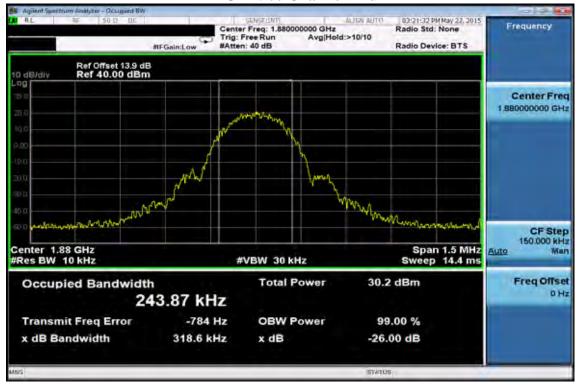
EDGE 1900 Channel Low



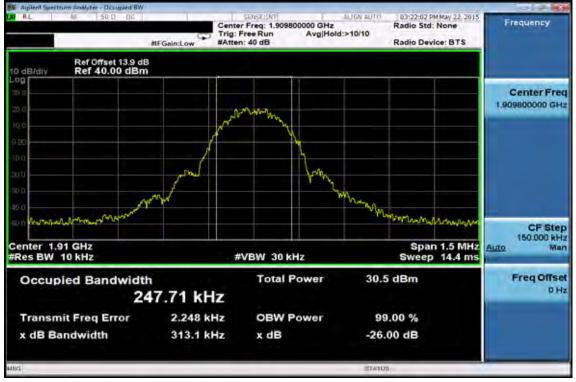
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EDGE 1900 Channel Mid



EDGE 1900 Channel High



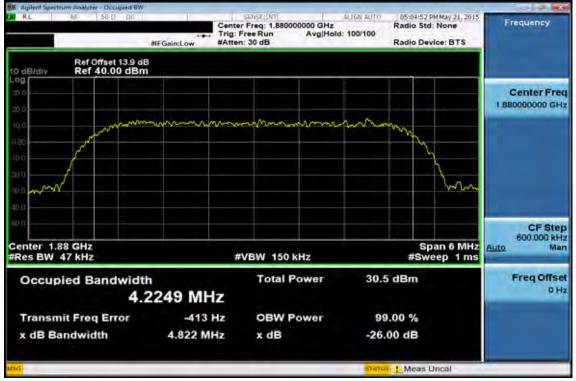
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WCDMA II Channel Low



WCDMA II Channel Mid



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WCDMA II Channel High



WCDMA V Channel Low



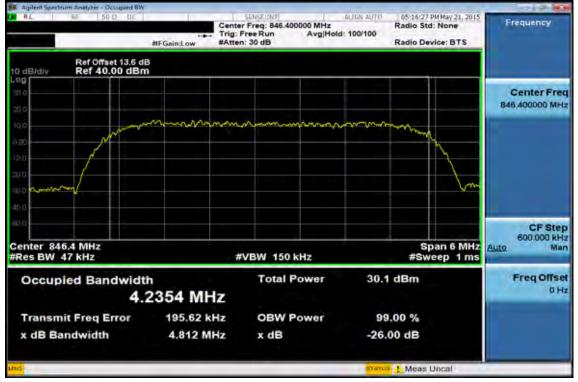
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WCDMA V Channel Mid



WCDMA V Channel High



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HSDPA II Channel Low



HSDPA II Channel Mid



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HSDPA II Channel High



HSDPA V Channel Low



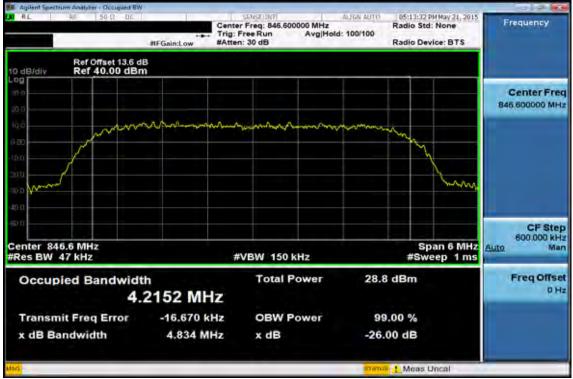
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HSDPA V Channel Mid



HSDPA V Channel High



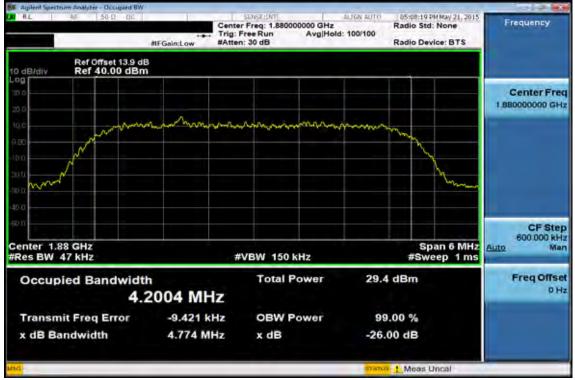
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HSUPA II Channel Low



HSUPA II Channel Mid



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HSUPA II Channel High



HSUPA V Channel Low



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HSUPA V Channel Mid

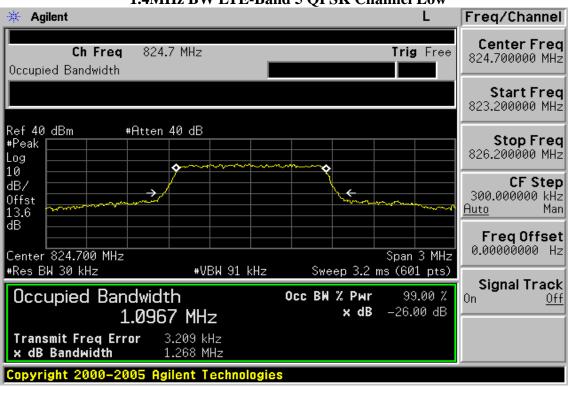


HSUPA V Channel High

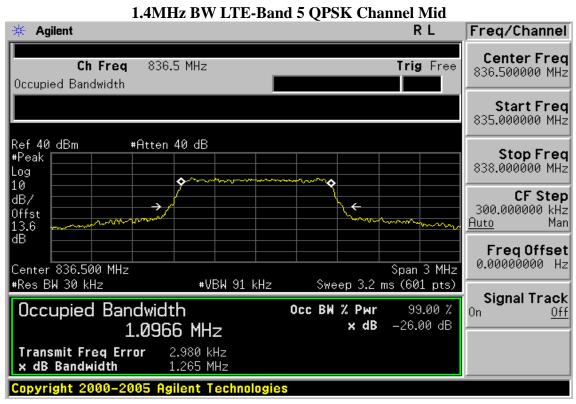


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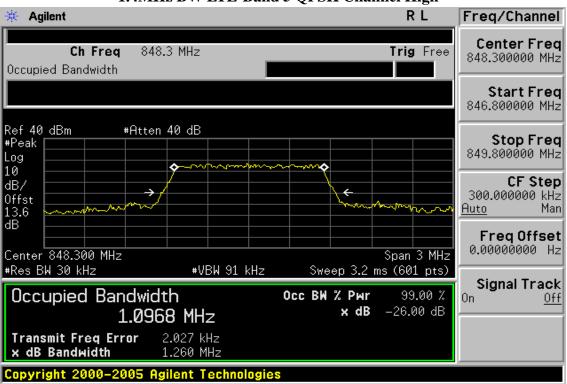


1.4MHz BW LTE-Band 5 QPSK Channel Low

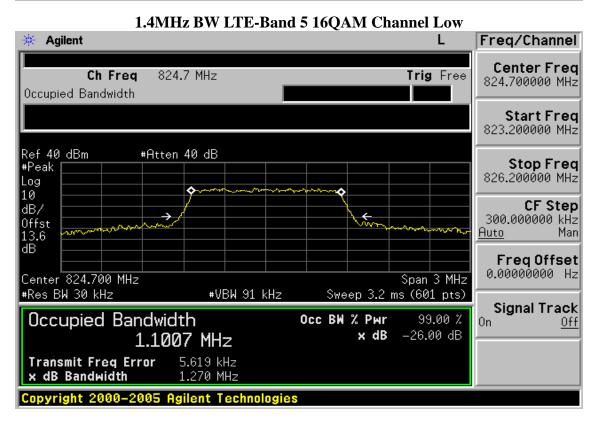


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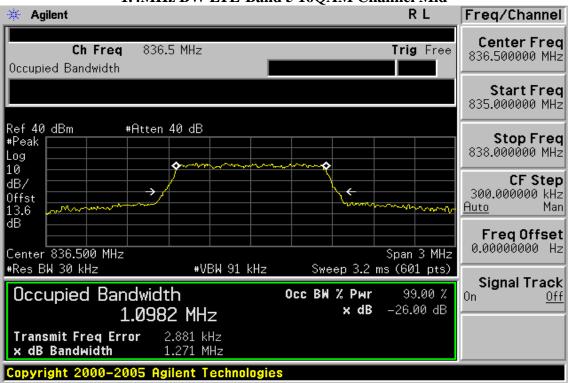


1.4MHz BW LTE-Band 5 QPSK Channel High

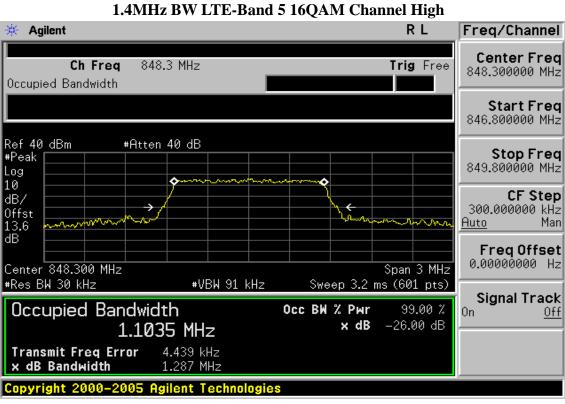


Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



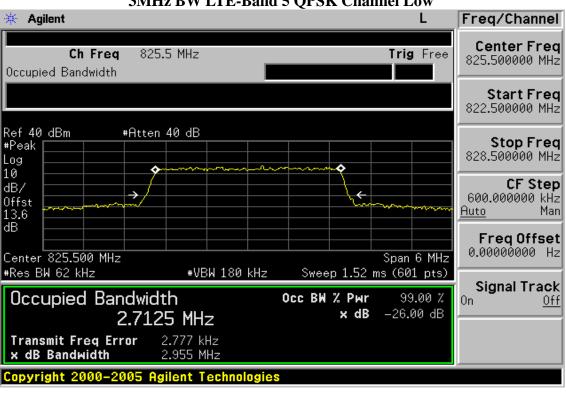


1.4MHz BW LTE-Band 5 16QAM Channel Mid

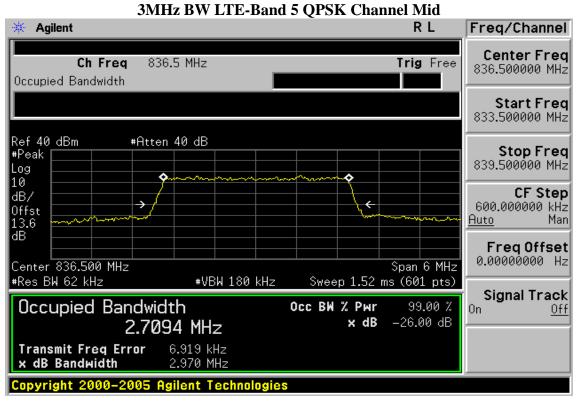


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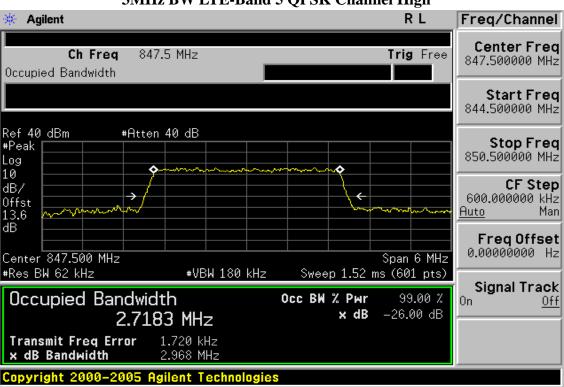


3MHz BW LTE-Band 5 QPSK Channel Low

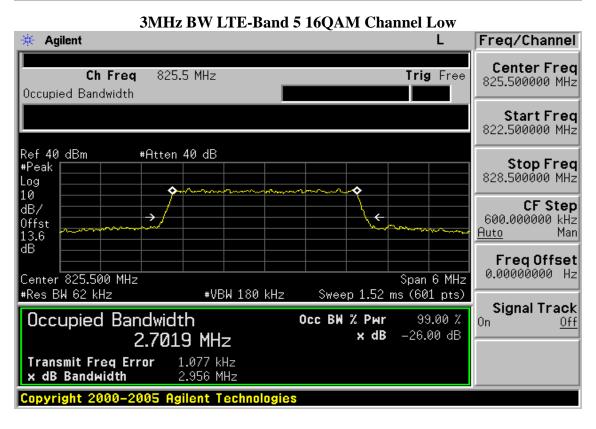


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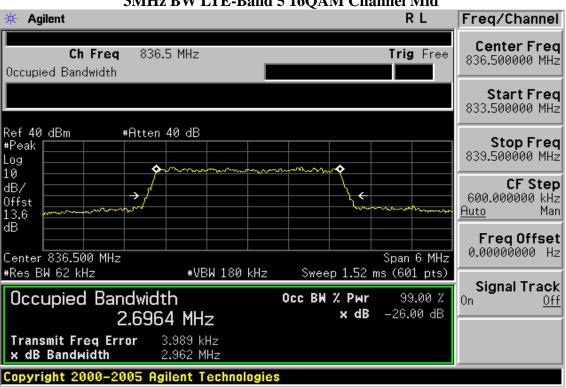
3MHz BW LTE-Band 5 QPSK Channel High



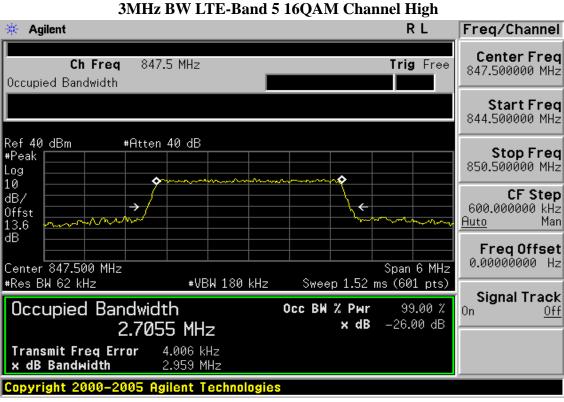
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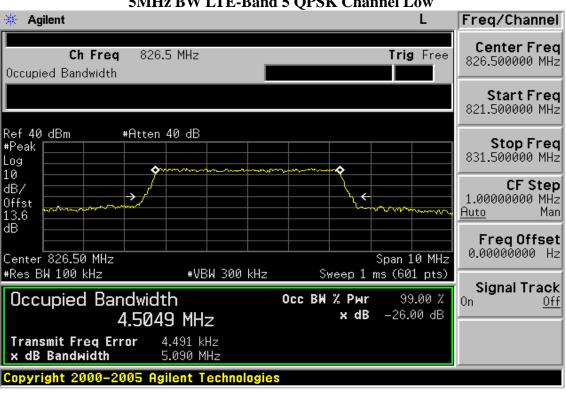


3MHz BW LTE-Band 5 16QAM Channel Mid

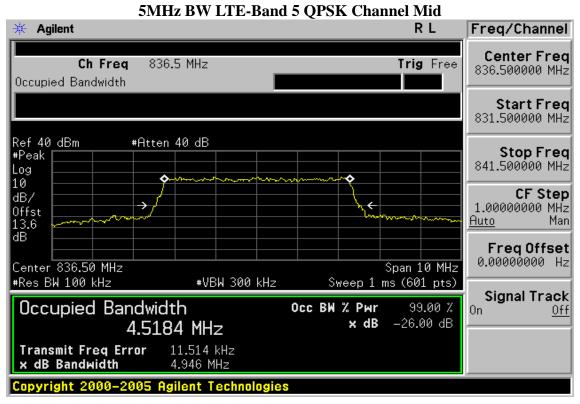


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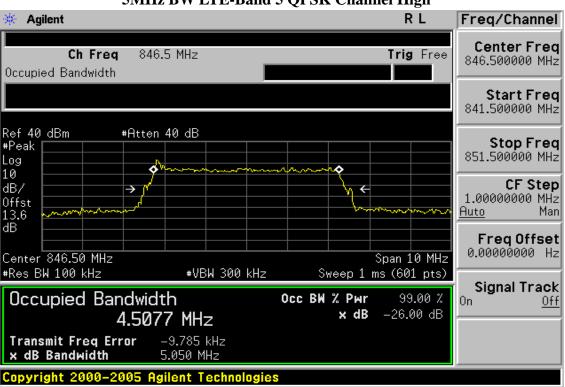


5MHz BW LTE-Band 5 QPSK Channel Low

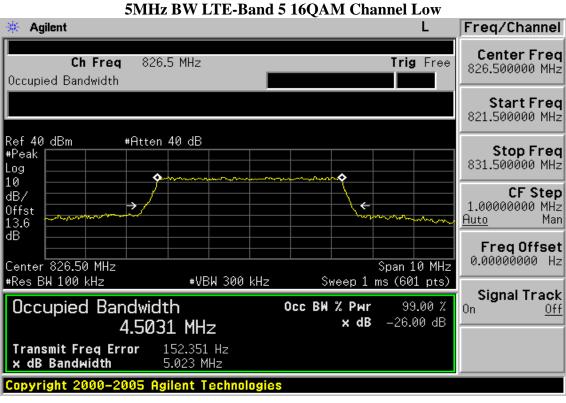


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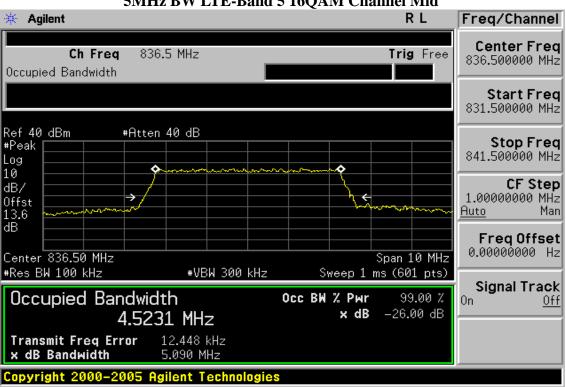
5MHz BW LTE-Band 5 QPSK Channel High



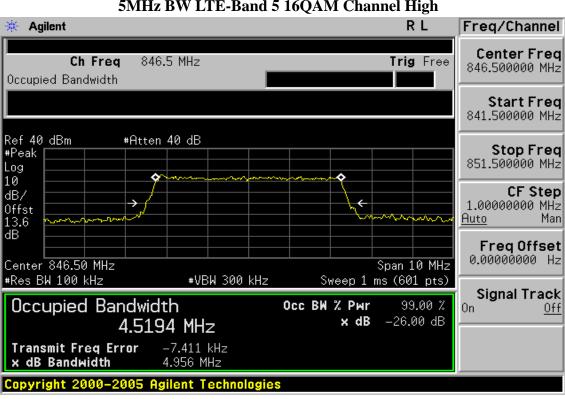
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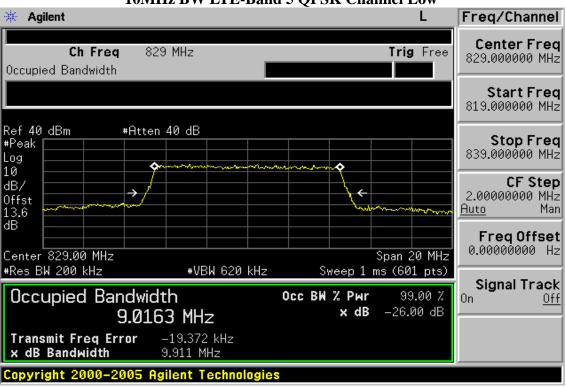
5MHz BW LTE-Band 5 16QAM Channel Mid



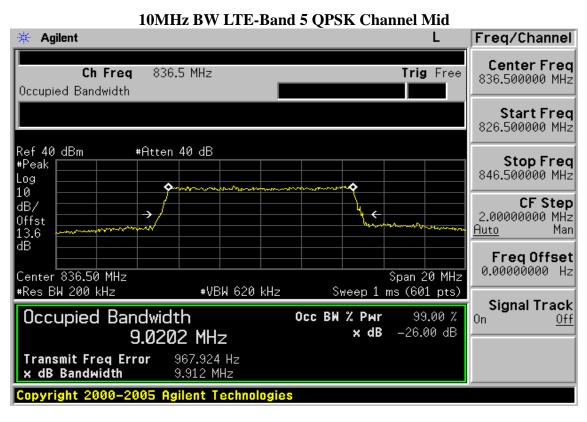
5MHz BW LTE-Band 5 16QAM Channel High

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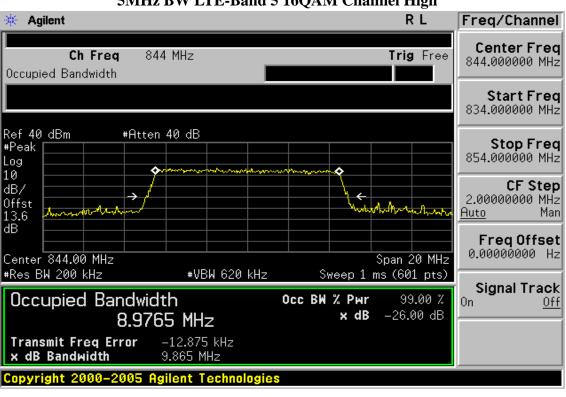


10MHz BW LTE-Band 5 QPSK Channel Low

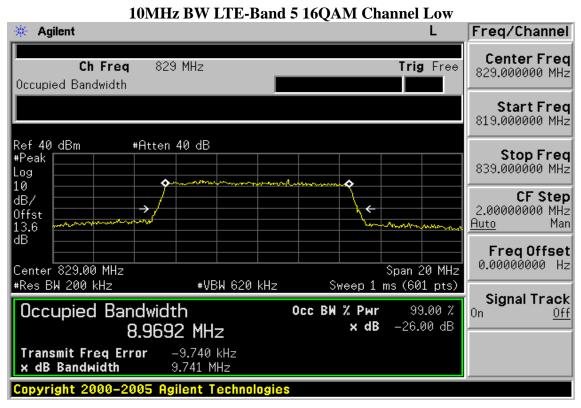


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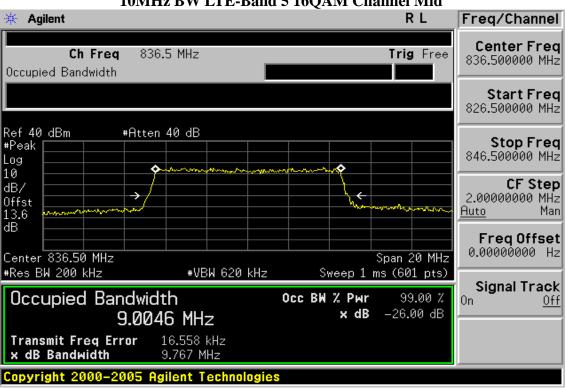


5MHz BW LTE-Band 5 16QAM Channel High

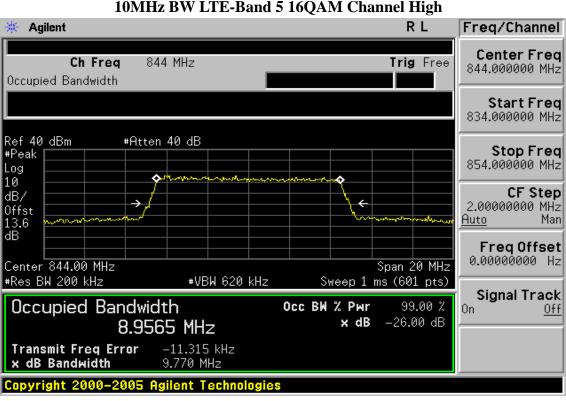


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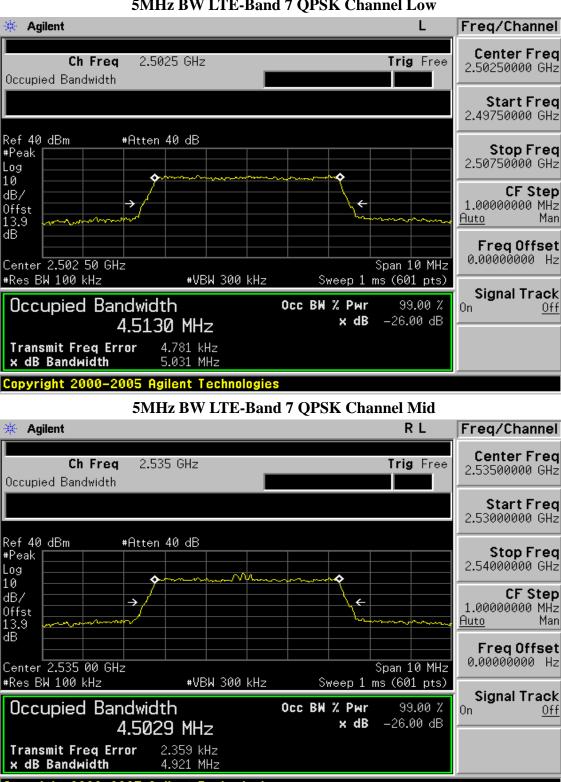
10MHz BW LTE-Band 5 16QAM Channel Mid



10MHz BW LTE-Band 5 16QAM Channel High

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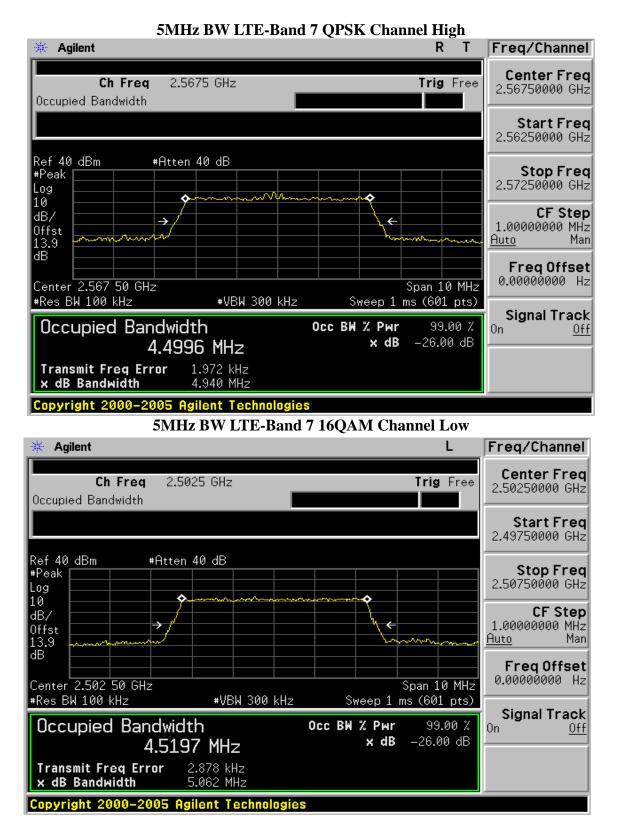
5MHz BW LTE-Band 7 QPSK Channel Low

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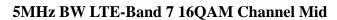






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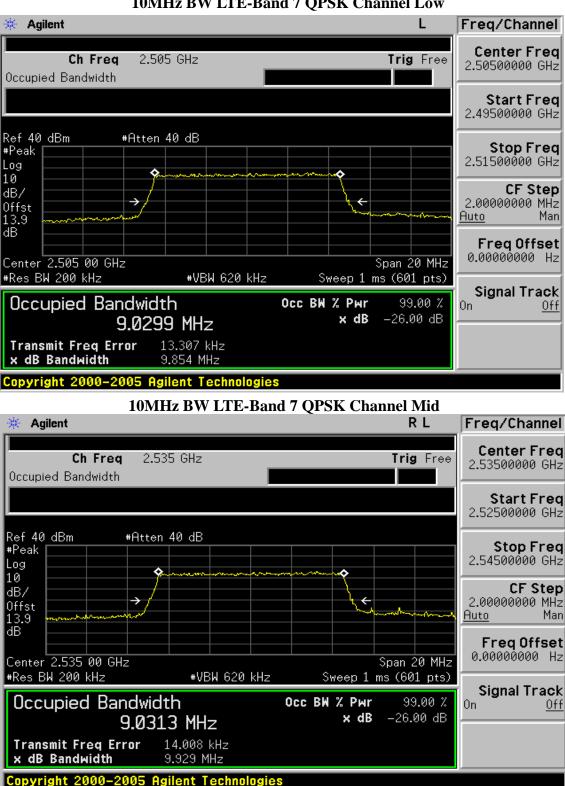
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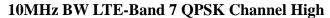




10MHz BW LTE-Band 7 QPSK Channel Low

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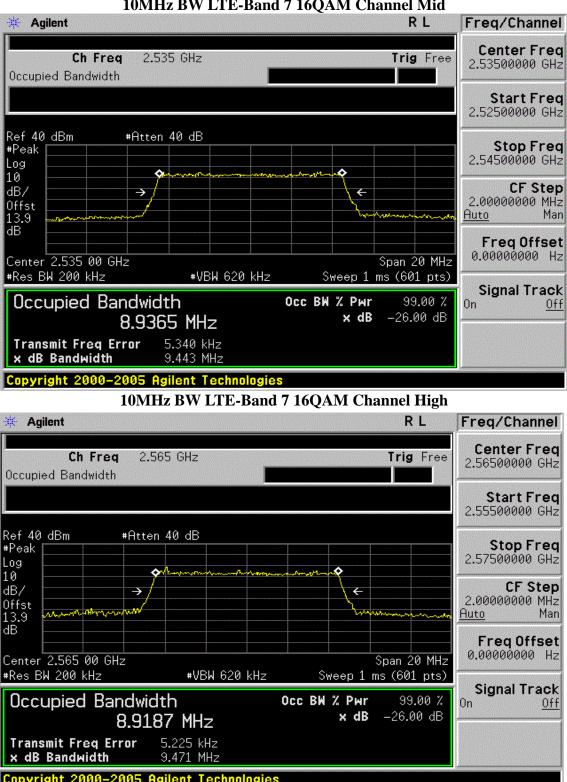
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10MHz BW LTE-Band 7 16QAM Channel Mid

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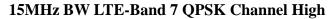


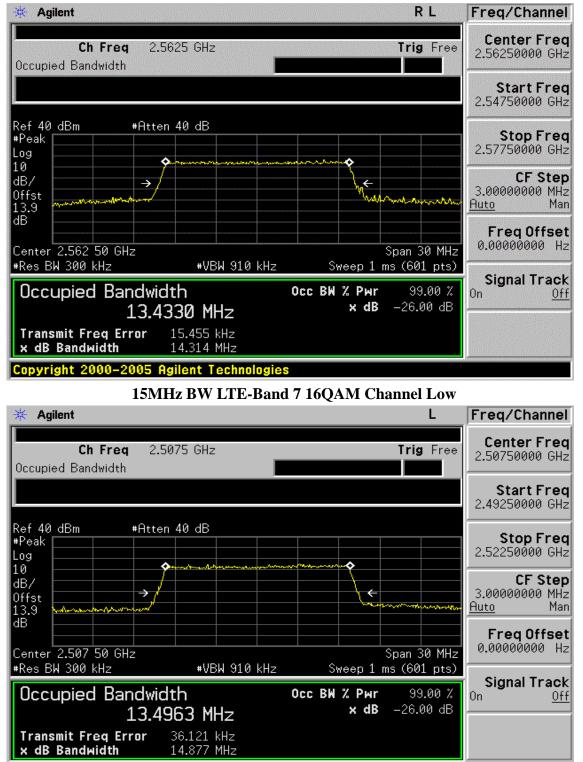
15MHz BW LTE-Band 7 QPSK Channel Low

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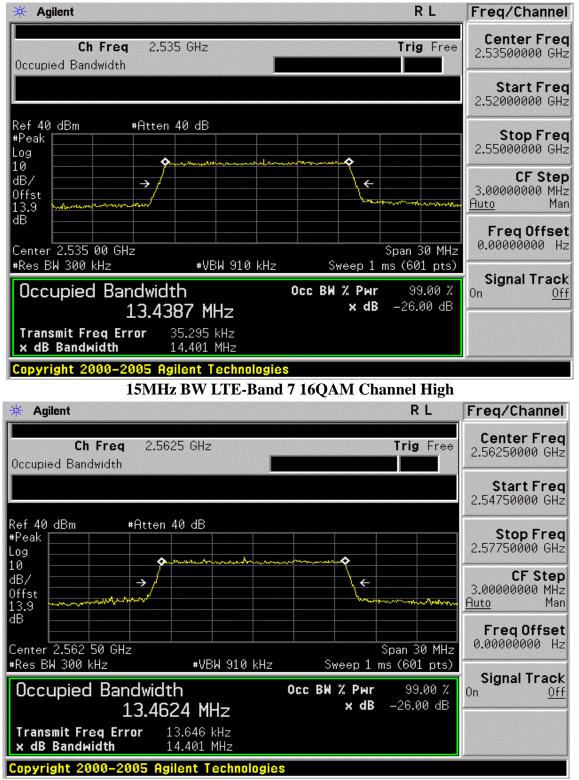
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15MHz BW LTE-Band 7 Channel Mid



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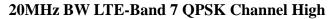


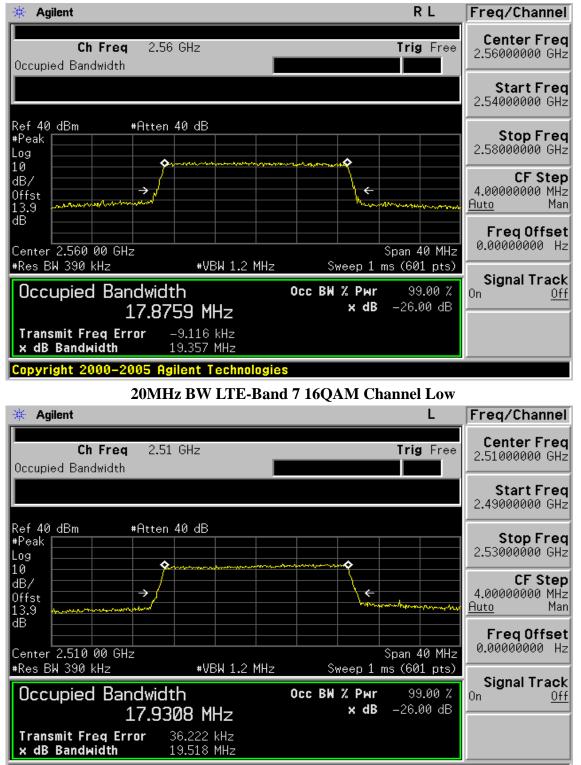


20MHz BW LTE-Band 7 QPSK Channel Low

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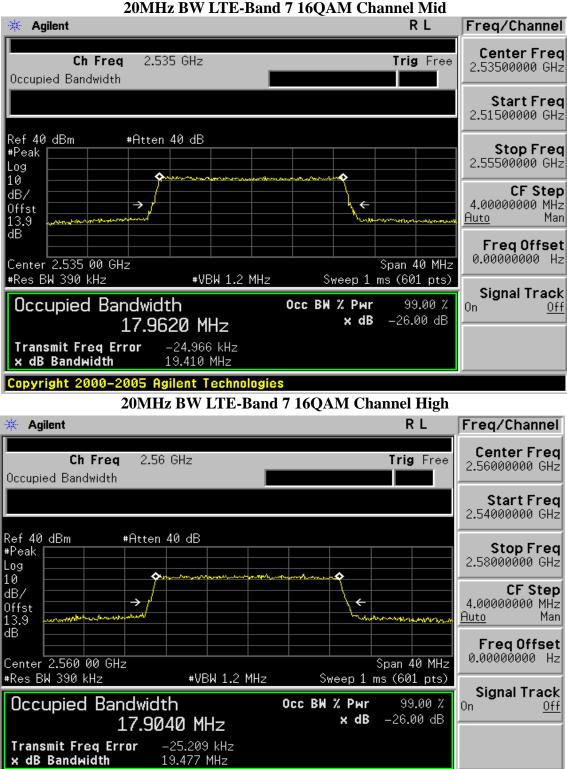
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9. OUT OF BAND EMISSION AT ANTENNA TERMINALS

9.1. Standard Applicable

FCC \$22.917(a), \$24.238(a), \$27.53(g)(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).

Band Edge Measurement:

FCC §27.53(c) (5) & FCC §27.53(g)

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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.

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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 or 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.

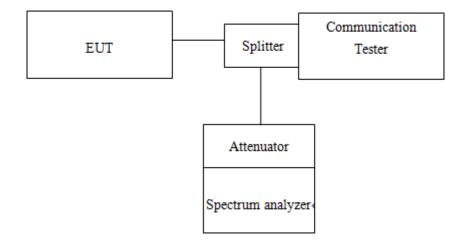
Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission 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

Conducted Emission (measured at antenna port) Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2015	01/28/2016				
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016				
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015				
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2015	01/01/2016				
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016				
Splitter	Splitter Agilent		N/A	01/02/2015	01/01/2016				
DC Power Supply	Agilent	E3640A	MY52410006	11/10/2014	11/09/2015				

9.5. Measurement Result:

Refer to next pages.

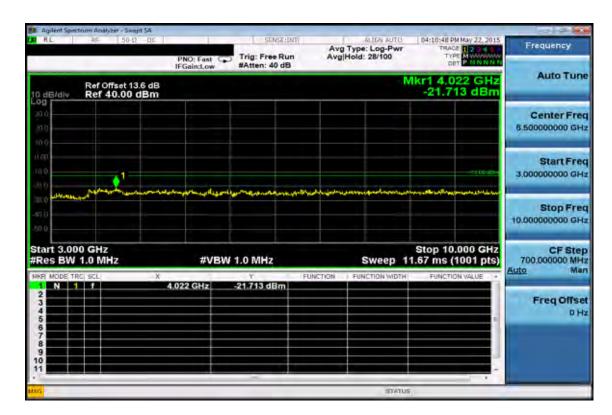
NOTE: The occurrence of the spike on the conducted emission is the signal of the fundamental emission.

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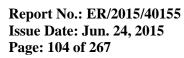
Out of Band emission at antenna terminals - GSM 850 Channel Lowest



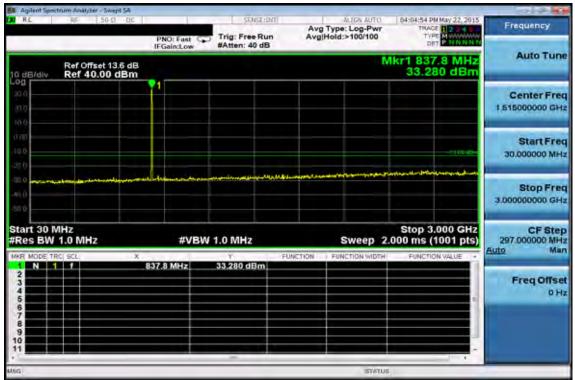
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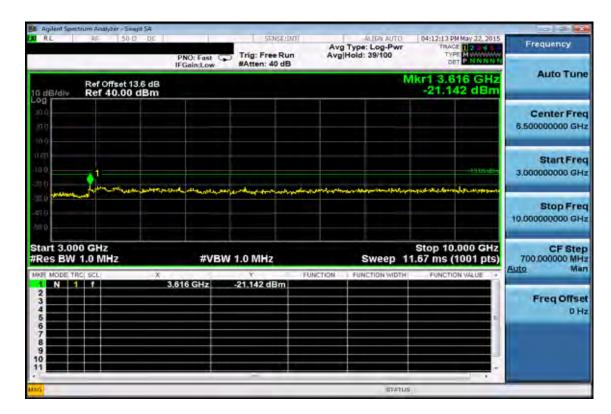
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Out of Band emission at antenna terminals – GSM 850 Channel Mid

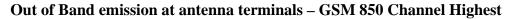


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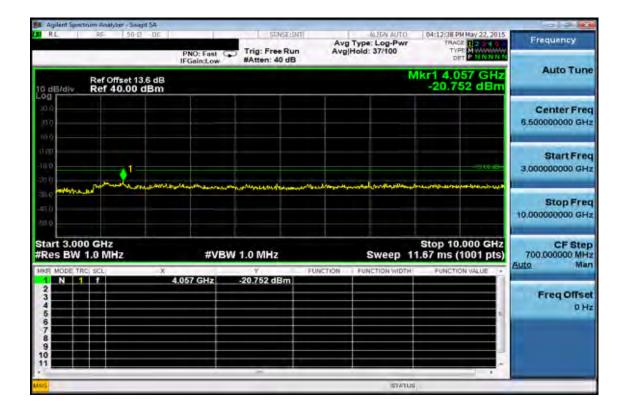
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R.L.	RF 50 Q	-06	SENSE: INT	ALIGN AUTO	04:05:30 PM May 22, 2015	
		PNO: Fast IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 2345 TYPE MUNNIN DET PNNNNN	Frequency
dB/div	Ref Offset 13.6 Ref 40.00 de			N	1kr1 849.7 MHz 33.293 dBm	Auto Tune
						Center Freq 1,515000000 GHz
0 0					-1503 eBre	Start Freq 30.000000 MHz
0		and a start of the	ng n	un and a second for a second se	ya kipendi ya kuma ya ku kili ya ku ku k	Stop Freq 3.000000000 GHz
	1.0 MHz		3W 1.0 MHz		Stop 3.000 GHz .000 ms (1001 pts)	CF Step 297.000000 MHz Auto Man
R MODE TR	C SCL	x 849.7 MHz	Y FL 33,293 dBm	INCTION FUNCTION WIDTH	FUNCTION WALVE	Freq Offset 0 Hz
			-	STATUS		-



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Band edge emission at antenna terminals - GSM 850 Channel Lowest

Band edge emission at antenna terminals – GSM 850 Channel Highest

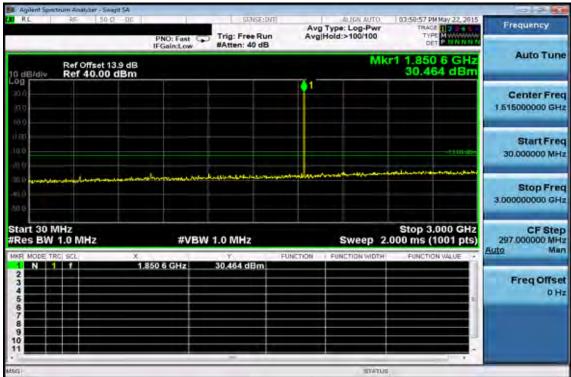


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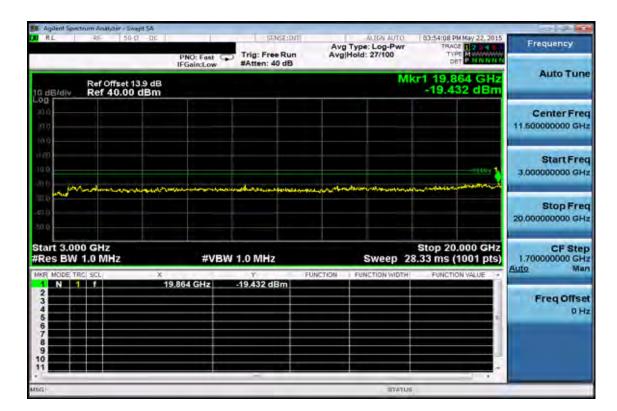
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Out of Band emission at antenna terminals - GSM 1900 Channel Lowest

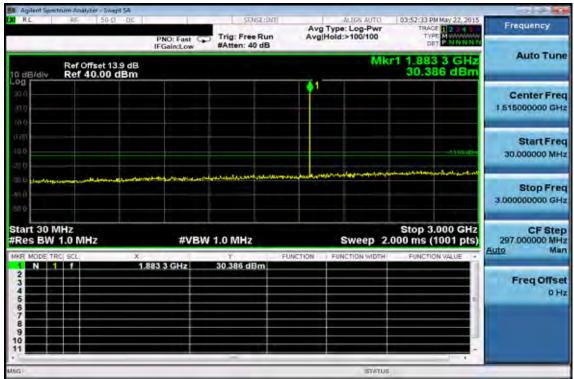


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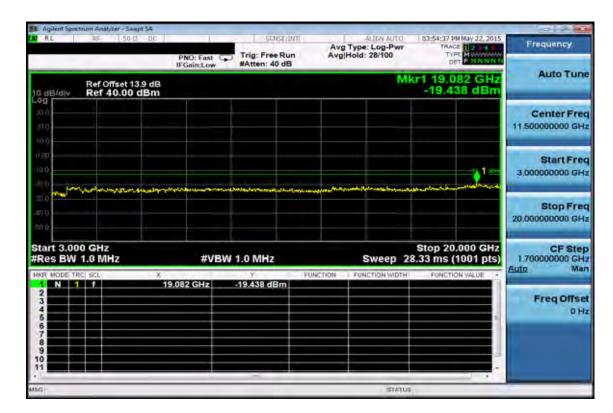
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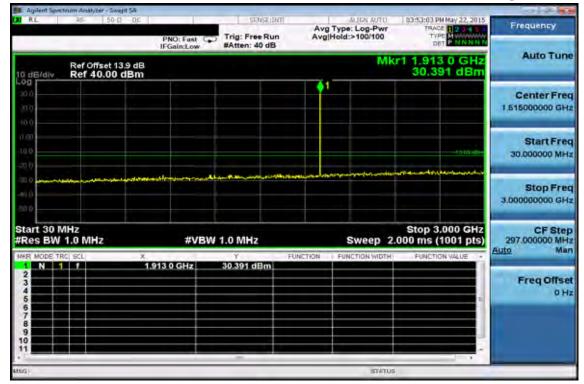
Out of Band emission at antenna terminals – GSM 1900 Channel Mid

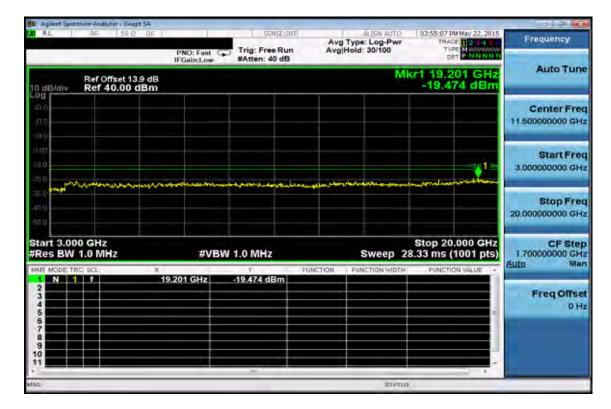


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Out of Band emission at antenna terminals – GSM 1900 Channel Highest





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Band edge emission at antenna terminals - GSM 1900 Channel Lowest

Band edge emission at antenna terminals - GSM 1900 Channel Highest



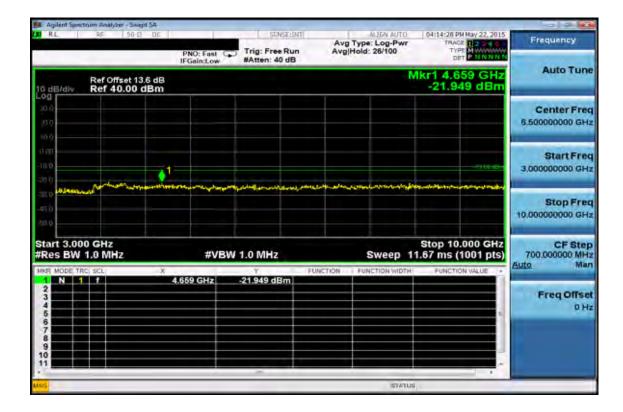
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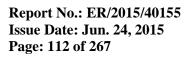
Out of Band emission at antenna terminals - EDGE 850 Channel Lowest

RL.	RF 50 C	-BC		SUNST: IN		ALIGN AUTO	04:08:05 PM May 22, 2015	Frequency
		P IF(NO: Fast 😱 Gain:Low	Trig: Free Run #Atten: 40 dB	Avg	Type: Log-Pwr Hold:>100/100	TYPE M	
0 dB/div	Ref Offset 13. Ref 40.00 d	6 dB IBm				M	kr1 826.0 MHz 27.897 dBm	Auto Tune
10.0 10.0 10.0								Center Freq 1.515000000 GHz
00							12 00 sbm	Start Freq 30.000000 MHz
0.0 0.0	ingener an de Windlack and		n de processioned de	شېرىيە يەر يەت يەر يېرى سەر يەر يەت يەر يېرى		^{يوري} معلى معرفي _{ال} روني المراجع	a tha shake a s	Stop Freq 3.000000000 GHz
tart 30 M Res BW	1.0 MHz		#VBW	1.0 MHz			Stop 3.000 GHz 000 ms (1001 pts)	CF Step 297.000000 MHz Auto Man
AKR MODE TR	C SCL	× 826.	0 MHz	27.897 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE +	
3 4 5 6								Freq Offset 0 Hz
7 8 9								
a				-	-	STATUS		

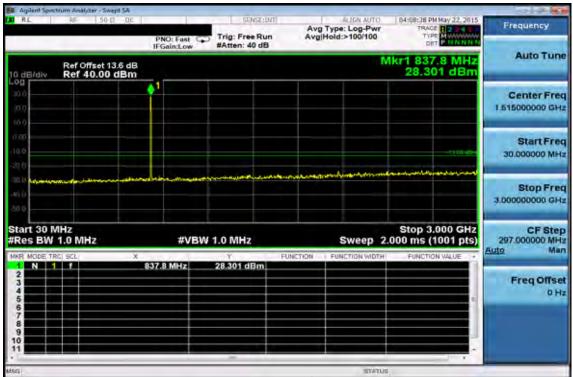


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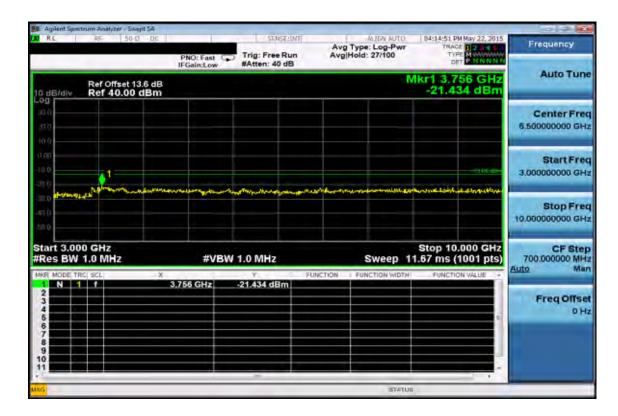
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Out of Band emission at antenna terminals – EDGE 850 Channel Mid



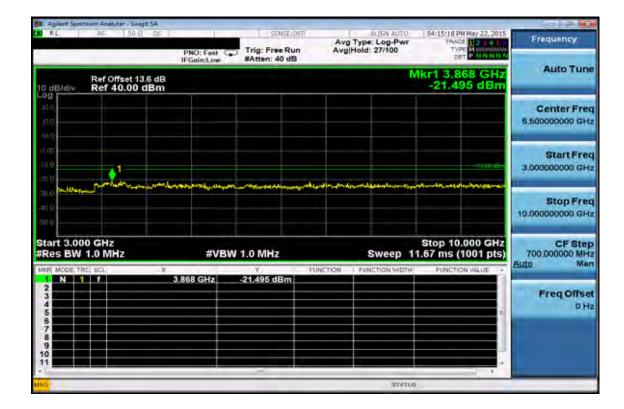
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Out of Band emission at antenna terminals - EDGE 850 Channel Highest

RL	RF 50 0	-06	SENST: DAT	ALIGN AUTO	04:09:49 PM May 22, 2015	Frequency
		PNO: Fast IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 12345 TYPE MUNNIN DET PINNNNN	
0 dB/div	Ref Offset 13.0 Ref 40.00 d			M	kr1 849.7 MHz 28.410 dBm	Auto Tune
00 00 00						Center Freq 1.515000000 GHz
iao 100					-210640-	Start Freq 30.000000 MHz
10.0 MID 50.0	*****		ىيىلىغىنەترەيلاشىرىدىن _{يون} ىرىسى _{لامىر} ىيانى	ajje og og som en so	99900000000000000000000000000000000000	Stop Freq 3.000000000 GHz
	1.0 MHz		3W 1.0 MHz		Stop 3.000 GHz 000 ms (1001 pts)	CF Step 297.000000 MHz Auto Man
AKR MODE TH		× 849.7 MHz	Y FU 28.410 dBm	NCTION FUNCTION.WIDTH	FUNCTION VALUE	Freq Offset
5 6 7 8 9 10						
			-	STATUS		,



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Band edge emission at antenna terminals - EDGE 850 Channel Lowest

Band edge emission at antenna terminals - EDGE 850 Channel Highest



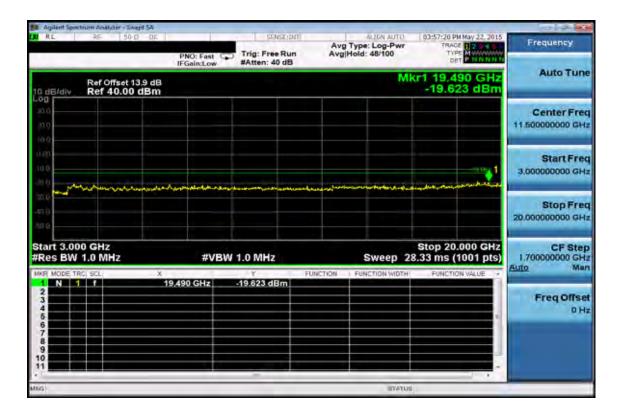
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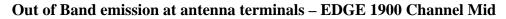
Out of Band emission at antenna terminals – EDGE 1900 Channel Lowest



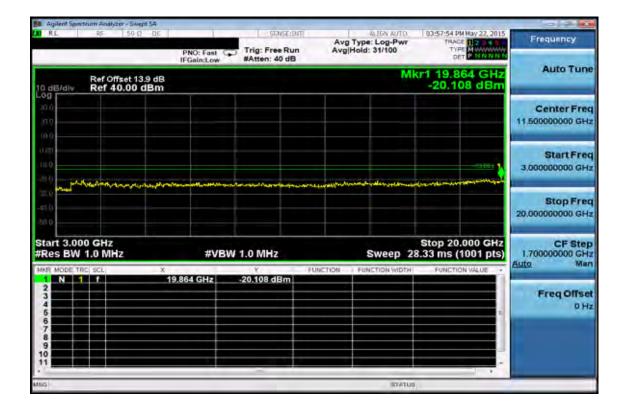
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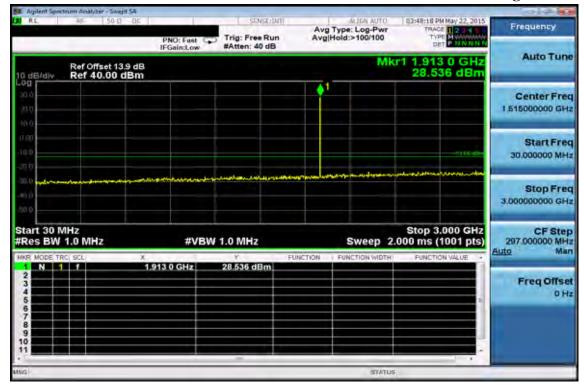
Agilent Spectrum Analyzer - Swept SA RL RF 50-0 - DE		SINSFERI	ALIGN AUTO	03:49:10 PM May 22, 2015	
	PNO: Fast	Trig: Free Run #Atten: 40 dB	Avg Type: Log-Pw Avg Hold:>100/100	TRACE 12049 TYPE MULLAND	Frequency
Ref Offset 13.9 dB	Auto Tur				
00 00 00					Center Fre
10				-4500 sD-	Start Fre 30.000000 MH
10	م ا «مرد ایرا مرا همای است.	un gestanninge stan en	an a	angen allen an Tanlan angen dadan	Stop Fre 3.000000000 GH
art 30 MHz Res BW 1.0 MHz	#VBW	1.0 MHz	Sweep	Stop 3.000 GHz 2.000 ms (1001 pts)	CF Ste 297.000000 MH Auto Ma
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	880 3 GHz	28.263 dBm		PONCTION VALUE	Freq Offse 0 H
6 7 8 9 9 0					
a		-	STA	nus	

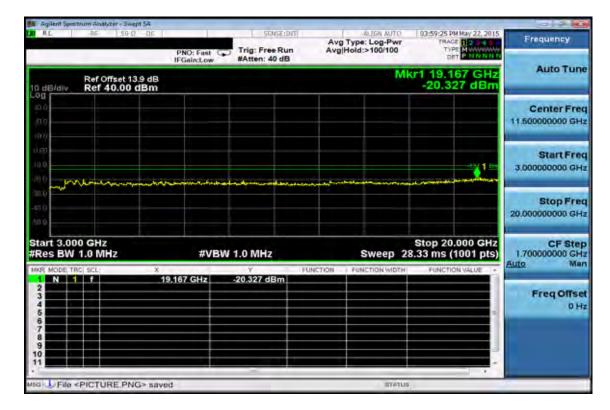


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Out of Band emission at antenna terminals - EDGE 1900 Channel Highest





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Band edge emission at antenna terminals – EDGE 1900 Channel Lowest

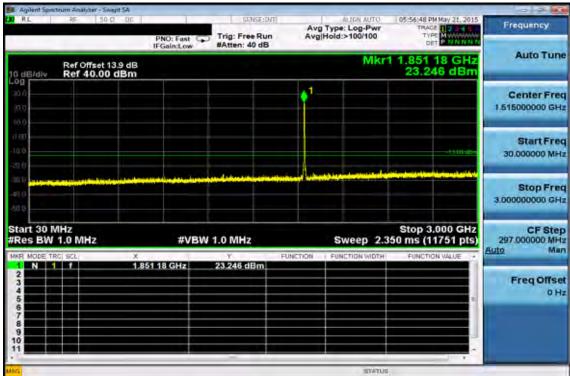
Band edge emission at antenna terminals - EDGE 1900 Channel Highest



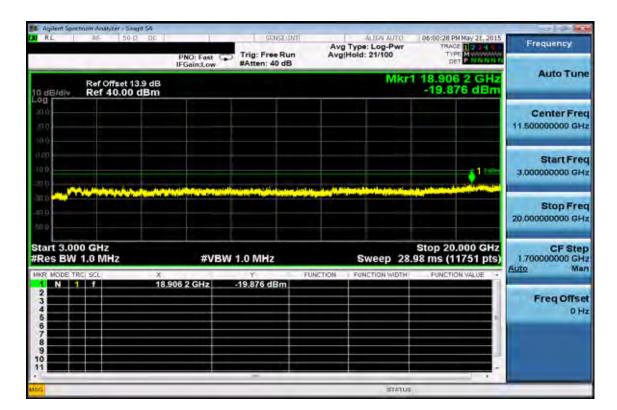
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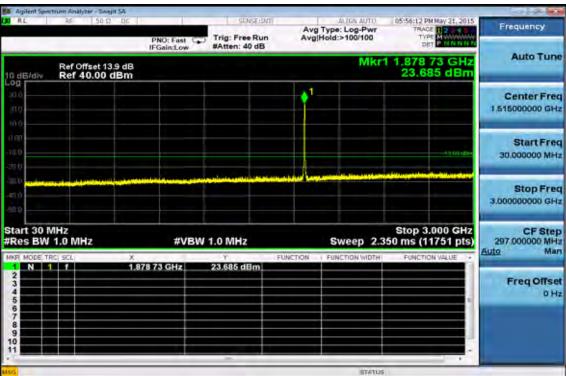
Out of Band emission at antenna terminals – WCDMA II Channel Lowest



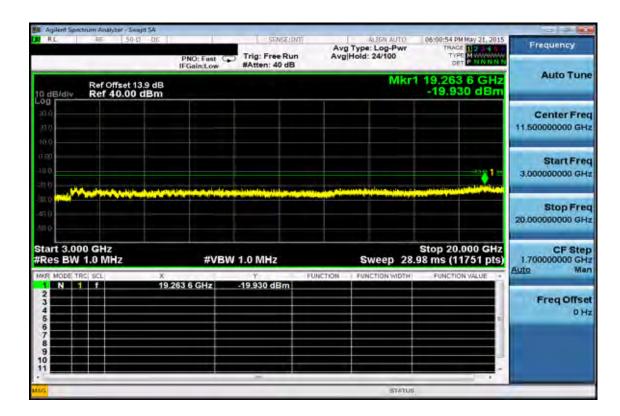
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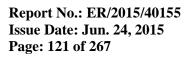


Out of Band emission at antenna terminals – WCDMA II Channel Mid



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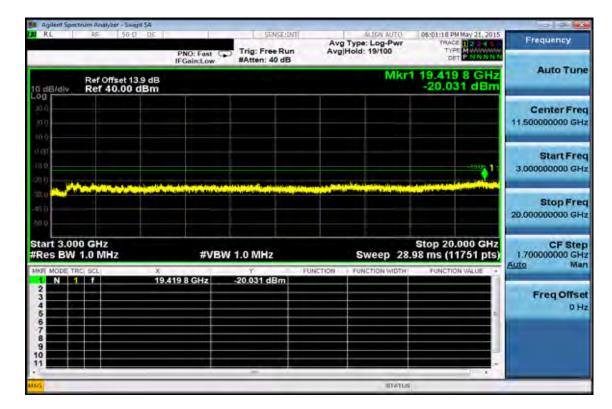
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Out of Band emission at antenna terminals – WCDMA II Channel Highest





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Band edge emission at antenna terminals - WCDMA II Channel Lowest

Band edge emission at antenna terminals - WCDMA II Channel Highest



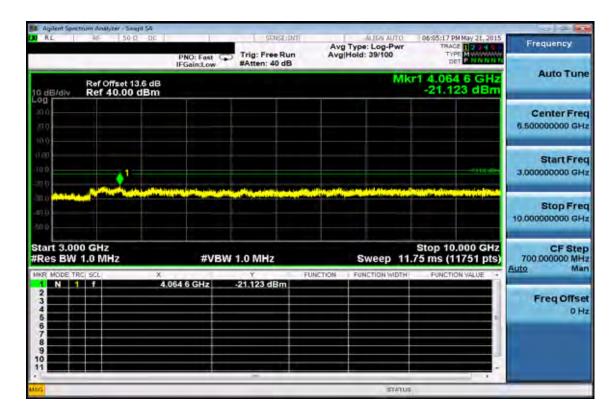
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Out of Band emission at antenna terminals - WCDMA V Channel Lowest



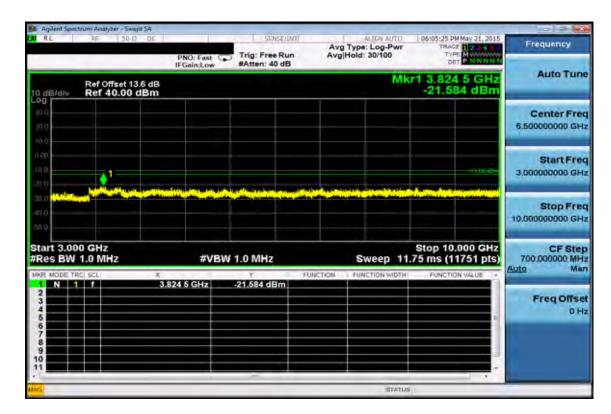
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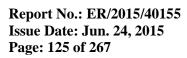


Out of Band emission at antenna terminals - WCDMA V Channel Mid



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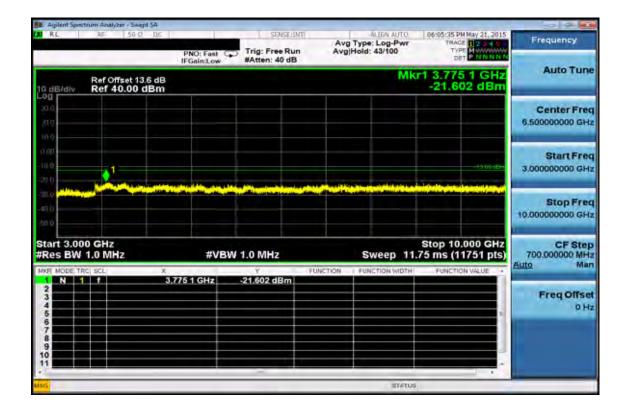
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Out of Band emission at antenna terminals - WCDMA V Channel Highest

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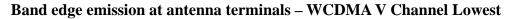


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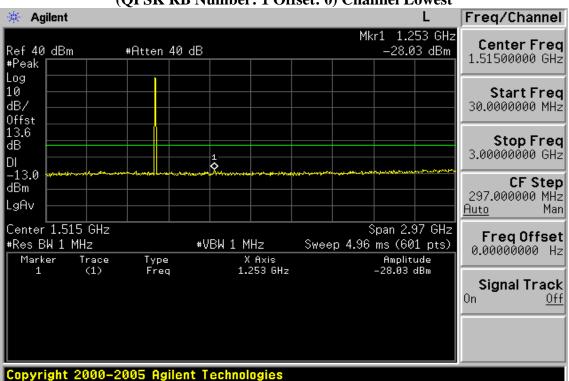
Band edge emission at antenna terminals - WCDMA V Channel Highest



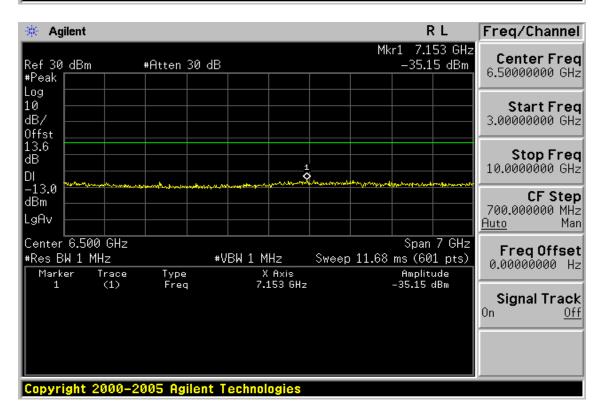
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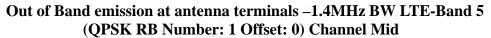


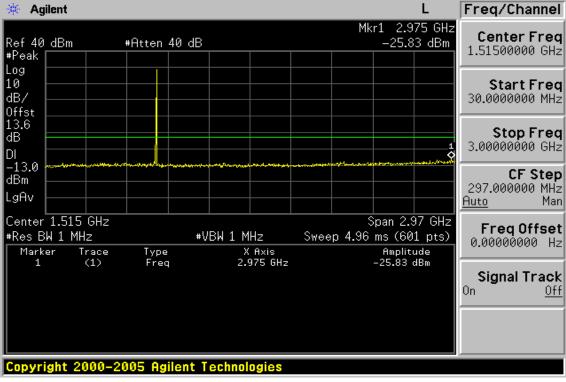
Out of Band emission at antenna terminals-1.4MHz BW LTE-Band 5 (OPSK RB Number: 1 Offset: 0) Channel Lowest

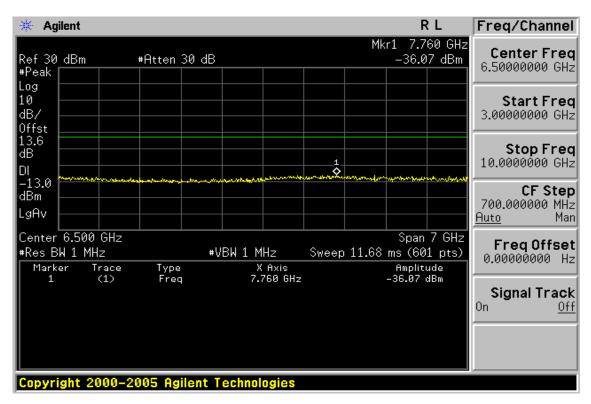


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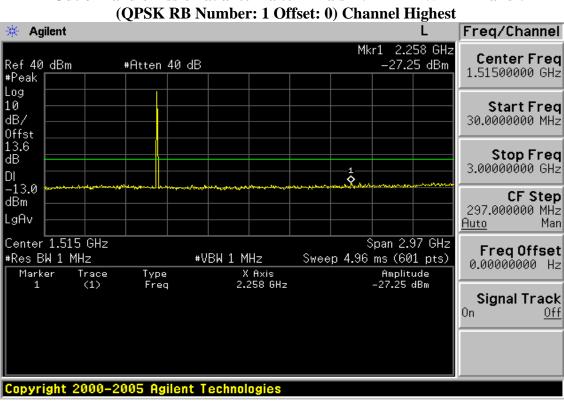




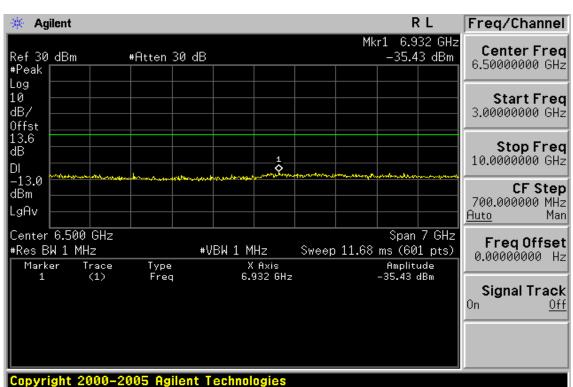


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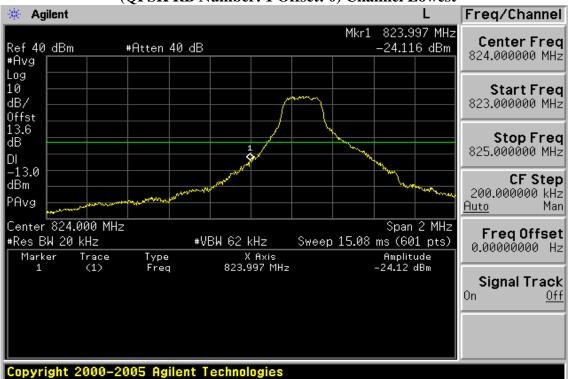


Out of Band emission at antenna terminals-1.4MHz BW LTE-Band 5



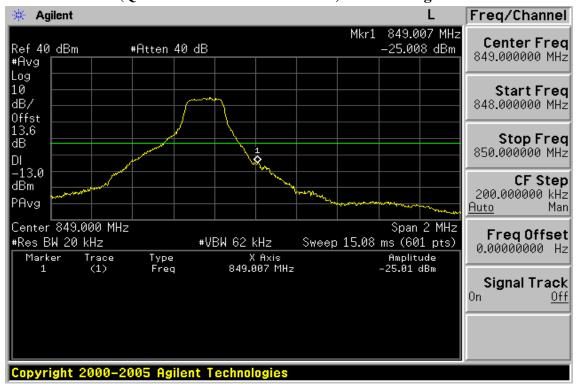
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Band edge emission at antenna terminals –1.4MHz BW LTE-Band 5 (QPSK RB Number: 1 Offset: 0) Channel Lowest

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



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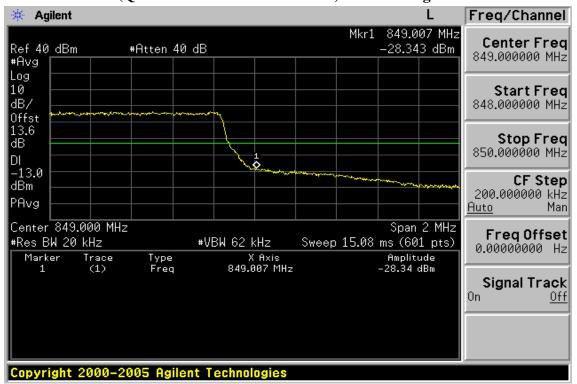
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Band edge emission at antenna terminals –1.4MHz BW LTE-Band 5 (QPSK RB Number: 6 Offset: 0) Channel Lowest

Band edge emission at antenna terminals –1.4MHz BW LTE-Band 5 (QPSK RB Number: 6 Offset: 0) Channel Highest

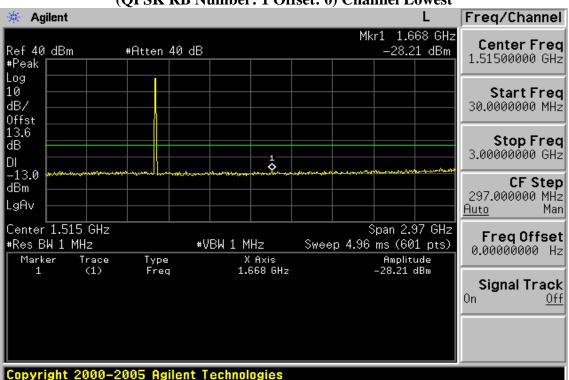


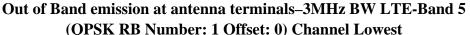
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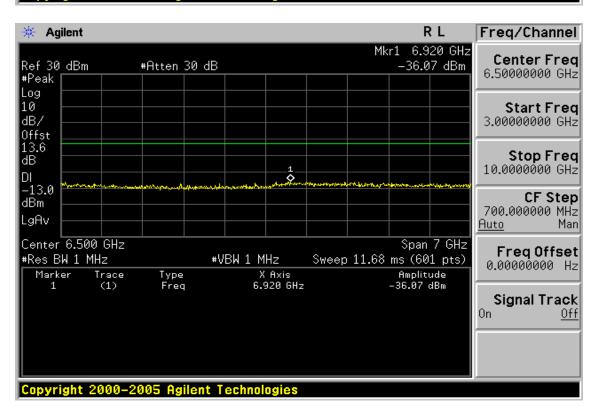
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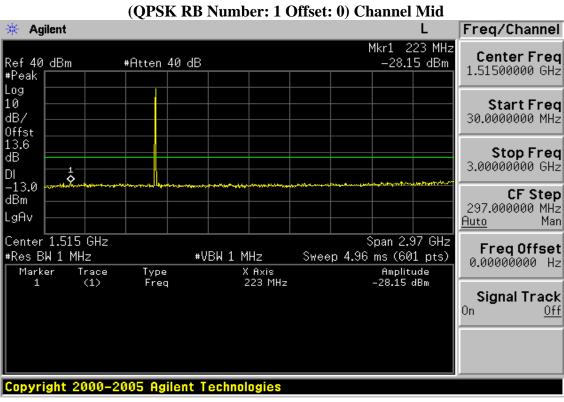


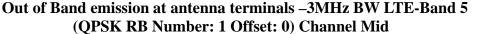


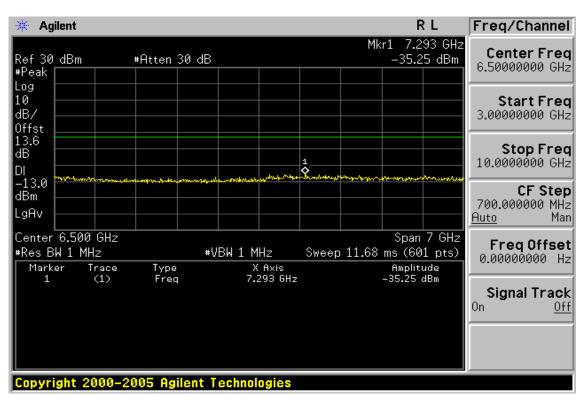


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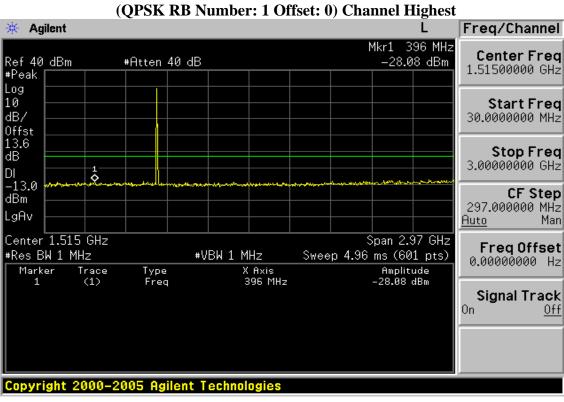


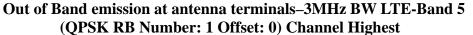


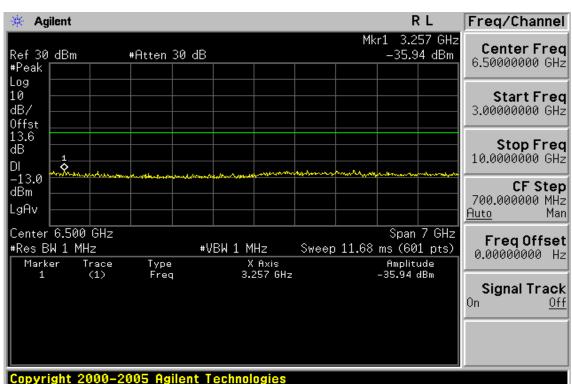


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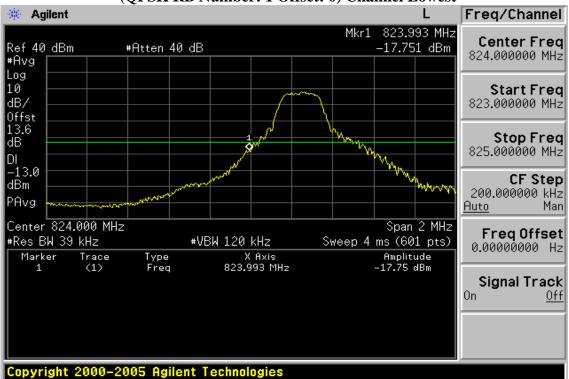






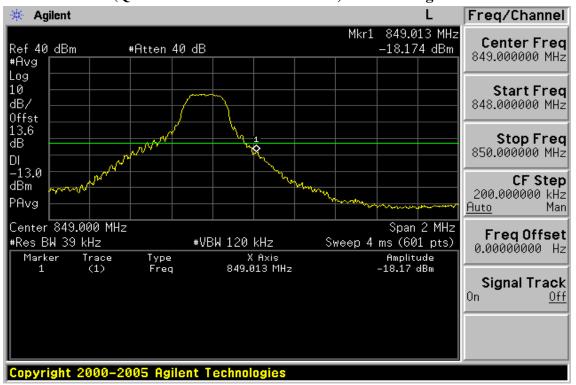
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Band edge emission at antenna terminals –3MHz BW LTE-Band 5 (QPSK RB Number: 1 Offset: 0) Channel Lowest

Band edge emission at antenna terminals –3MHz BW LTE-Band 5 (QPSK RB Number: 1 Offset: 14) Channel Highest

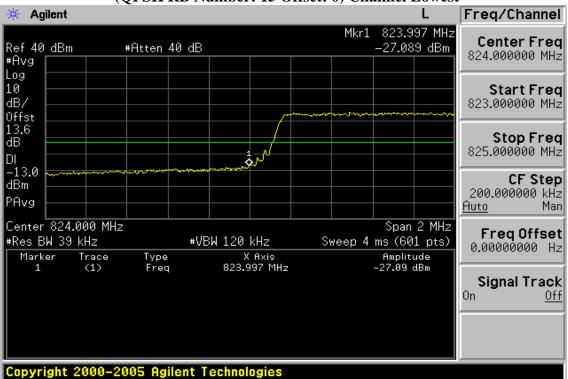


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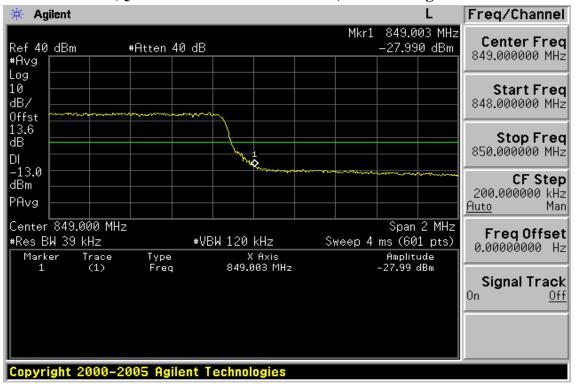
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Band edge emission at antenna terminals –3MHz BW LTE-Band 5 (QPSK RB Number: 15 Offset: 0) Channel Lowest

Band edge emission at antenna terminals –3MHz BW LTE-Band 5 (QPSK RB Number: 15 Offset: 0) Channel Highest



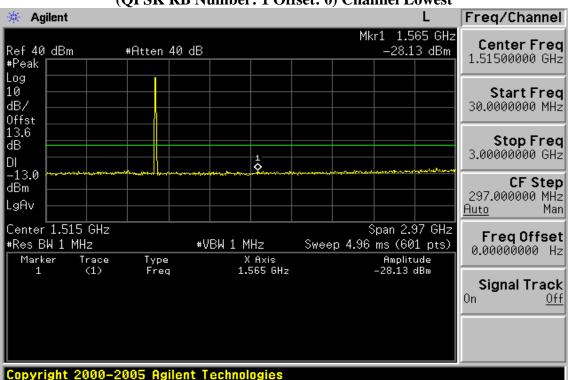
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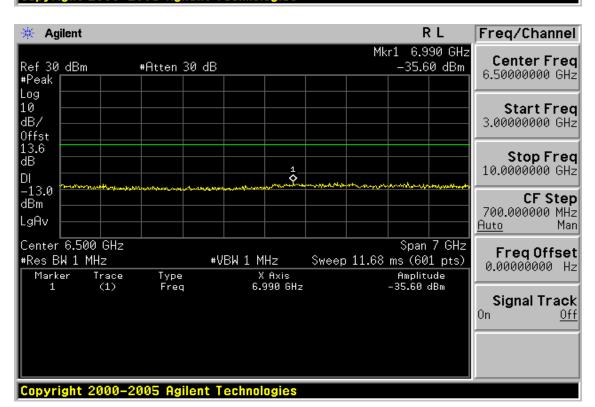
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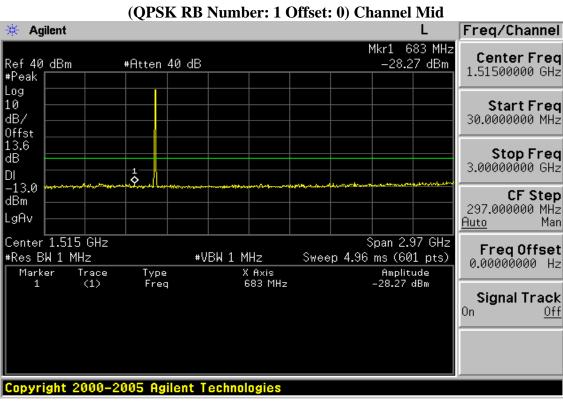
Out of Band emission at antenna terminals-5MHz BW LTE-Band 5 (OPSK RB Number: 1 Offset: 0) Channel Lowest



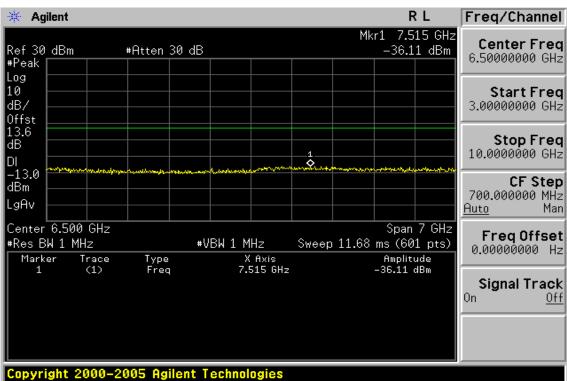
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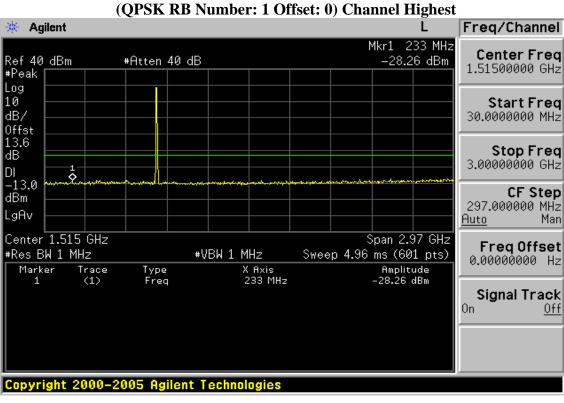


Out of Band emission at antenna terminals -5MHz BW LTE-Band 5

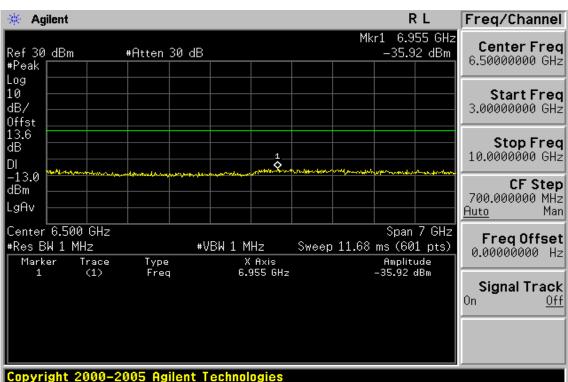


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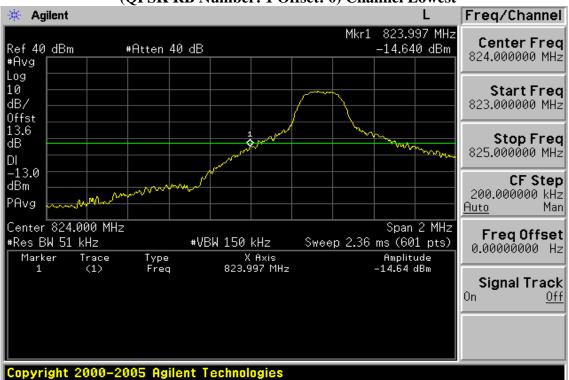
Out of Band emission at antenna terminals-5MHz BW LTE-Band 5



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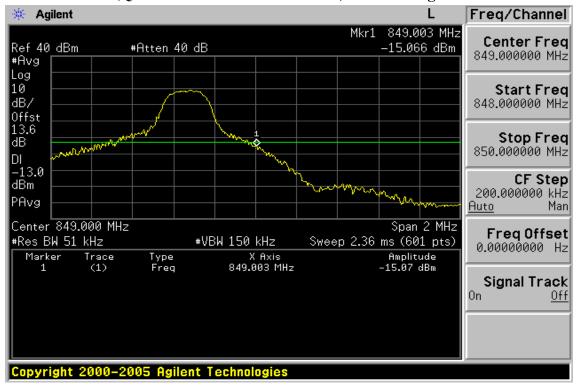
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Band edge emission at antenna terminals –5MHz BW LTE-Band 5 (QPSK RB Number: 1 Offset: 0) Channel Lowest

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



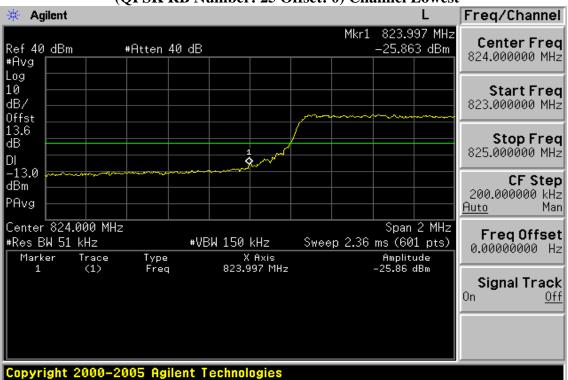
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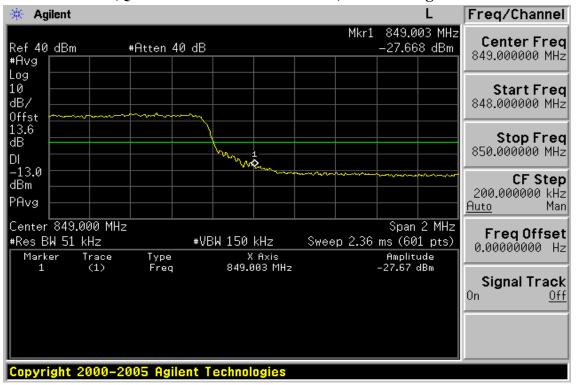
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Band edge emission at antenna terminals –5MHz BW LTE-Band 5 (QPSK RB Number: 25 Offset: 0) Channel Lowest

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



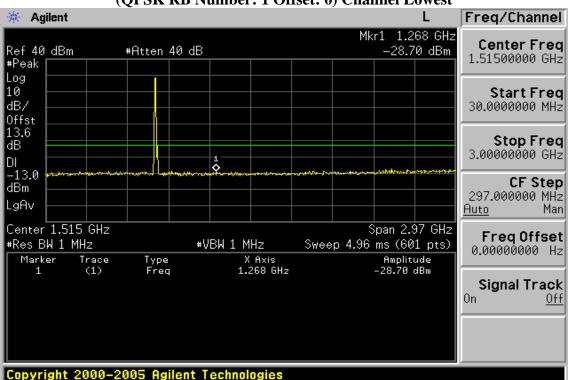
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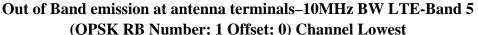
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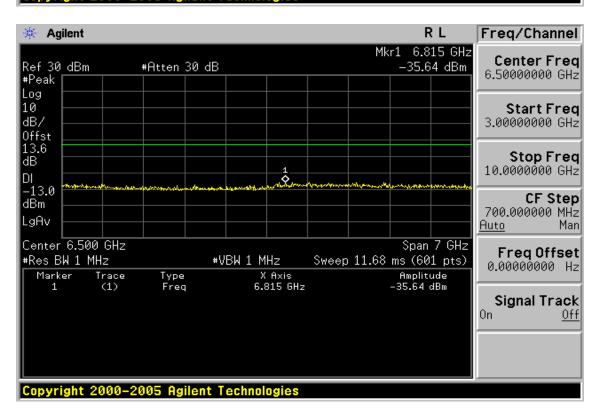
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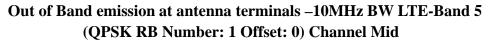


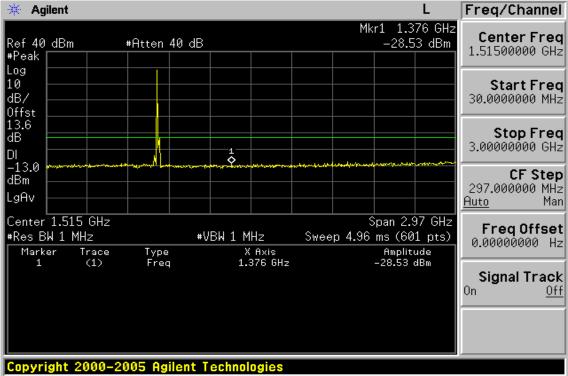


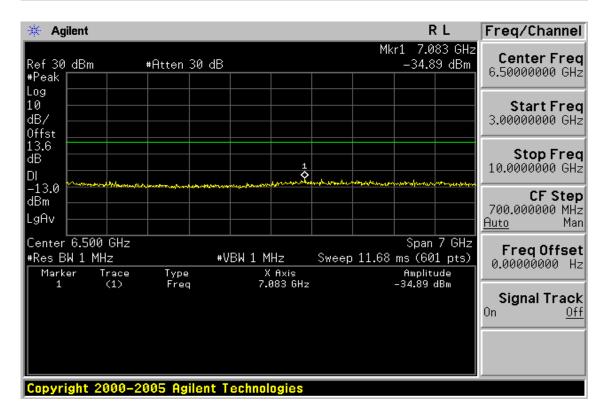


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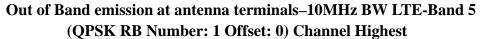


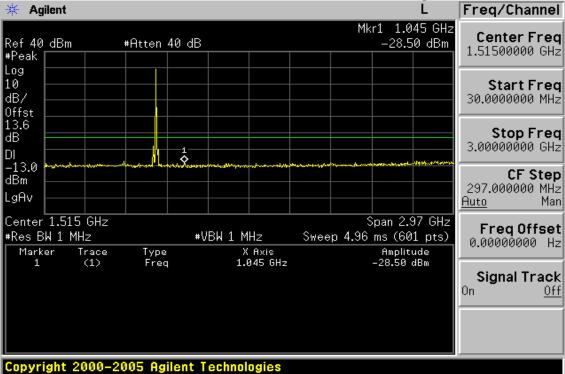


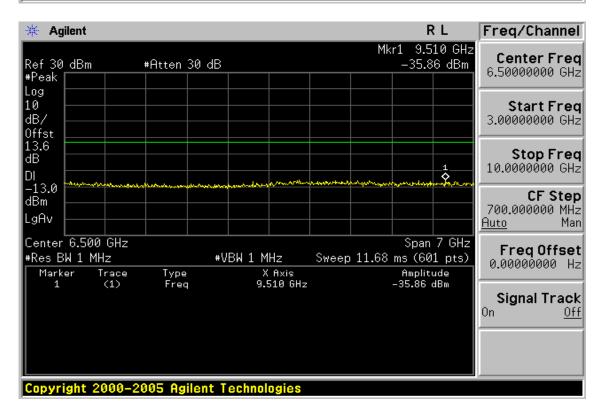


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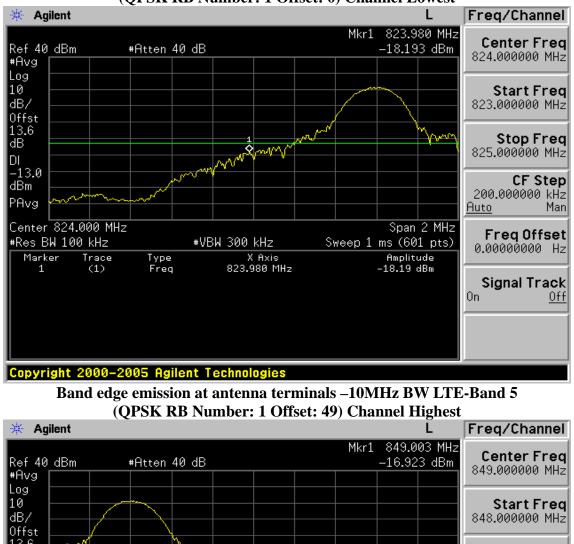




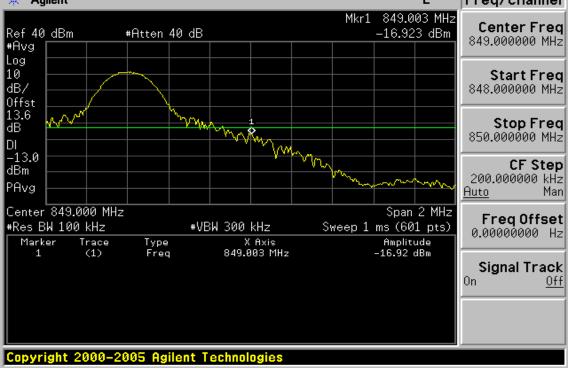


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Band edge emission at antenna terminals –10MHz BW LTE-Band 5 (QPSK RB Number: 1 Offset: 0) Channel Lowest



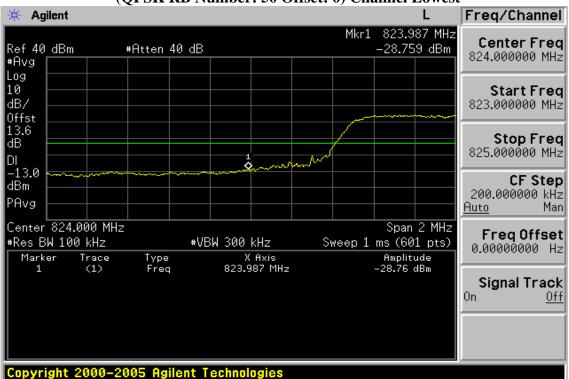
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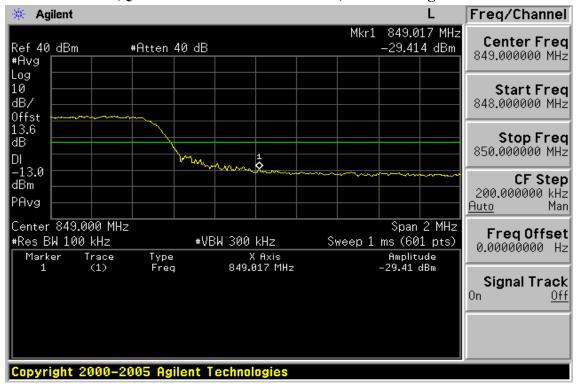
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Band edge emission at antenna terminals –10MHz BW LTE-Band 5 (QPSK RB Number: 50 Offset: 0) Channel Lowest

Band edge emission at antenna terminals –10MHz BW LTE-Band 5 (QPSK RB Number: 50 Offset: 0) Channel Highest



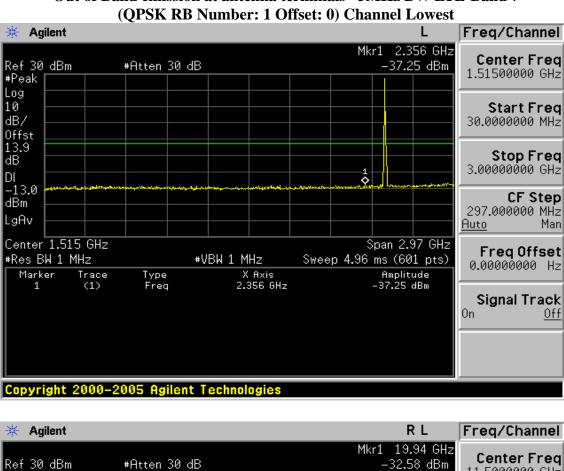
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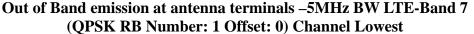
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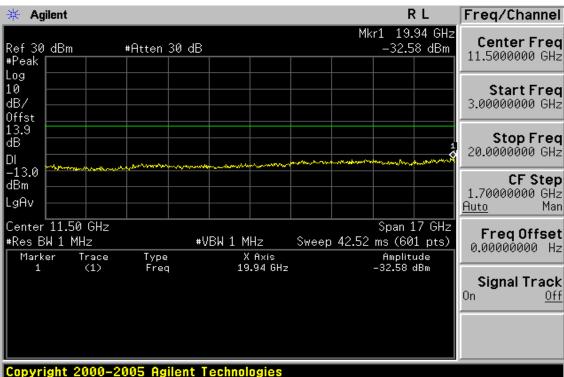
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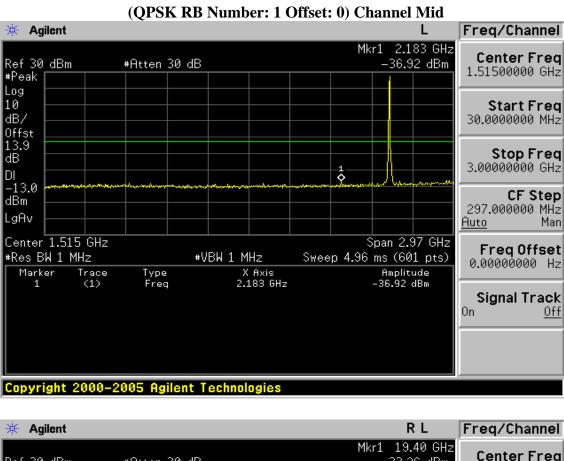




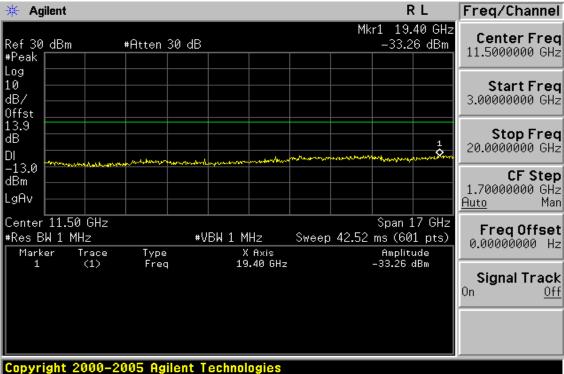




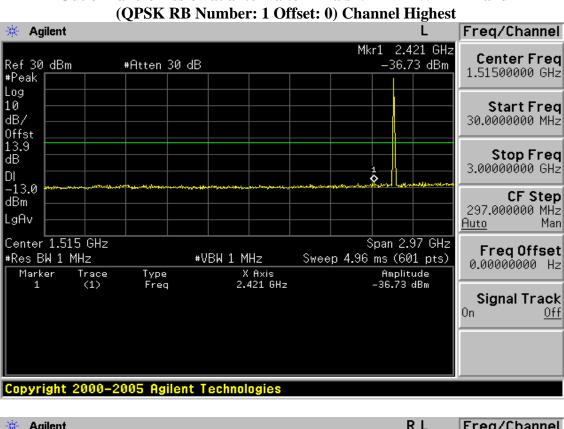




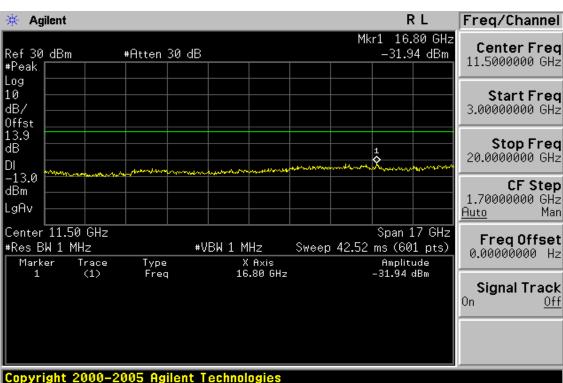
Out of Band emission at antenna terminals –5MHz BW LTE-Band 7





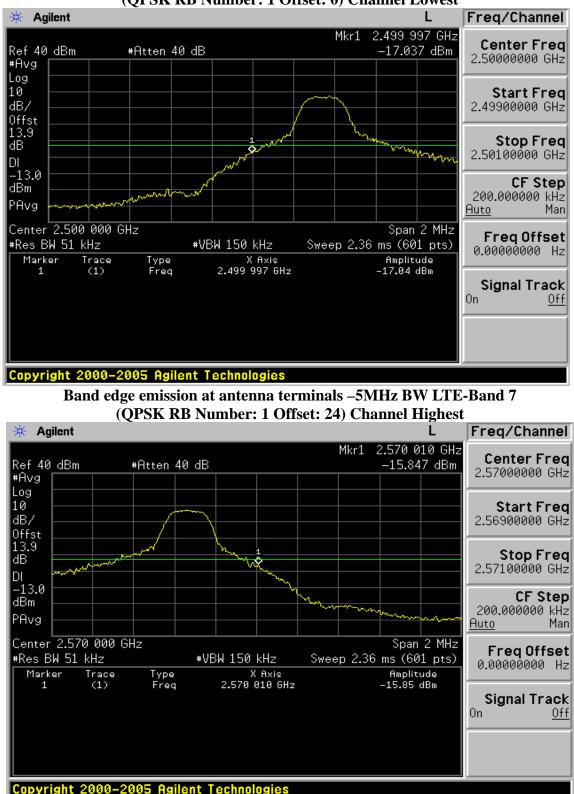


Out of Band emission at antenna terminals-5MHz BW LTE-Band 7



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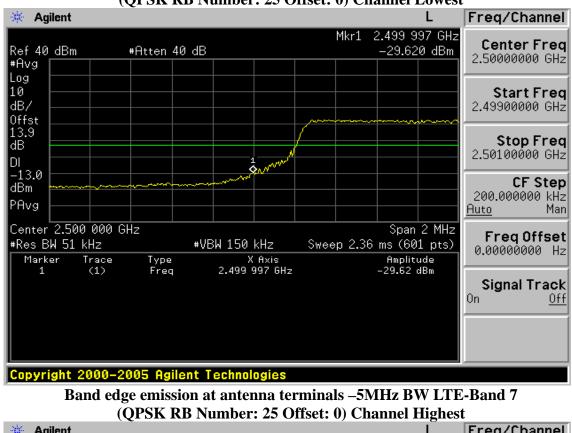


Band edge emission at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Lowest

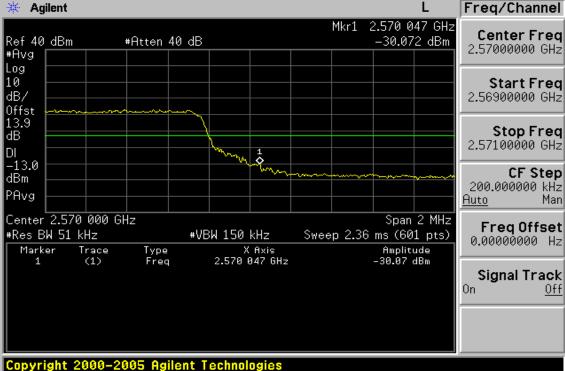
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Band edge emission at antenna terminals –5MHz BW LTE-Band 7 (QPSK RB Number: 25 Offset: 0) Channel Lowest



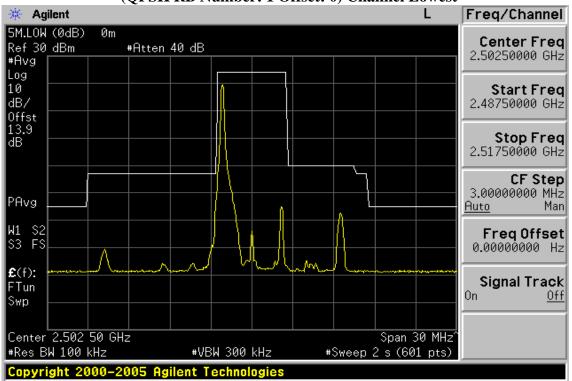
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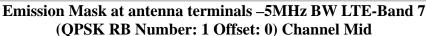
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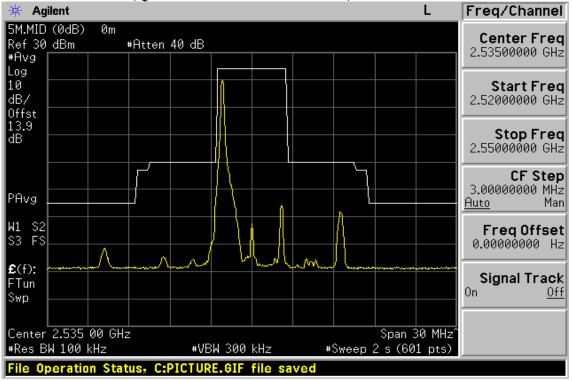




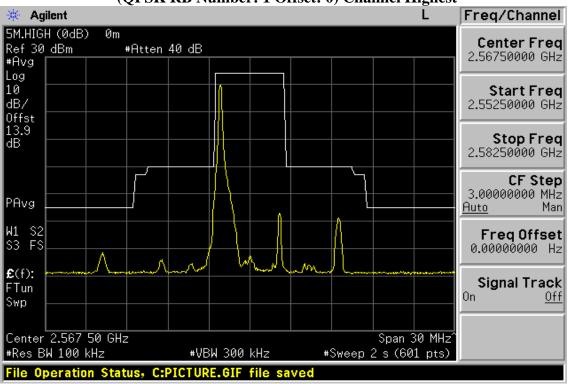


Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Lowest



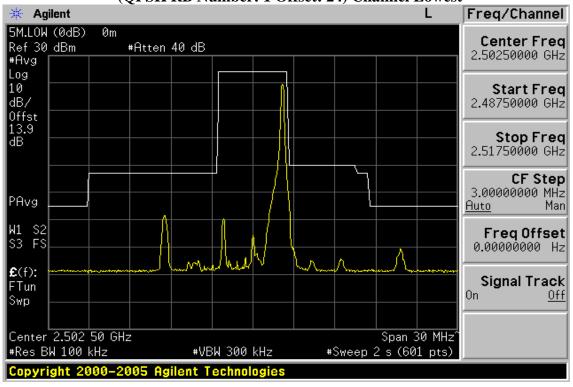






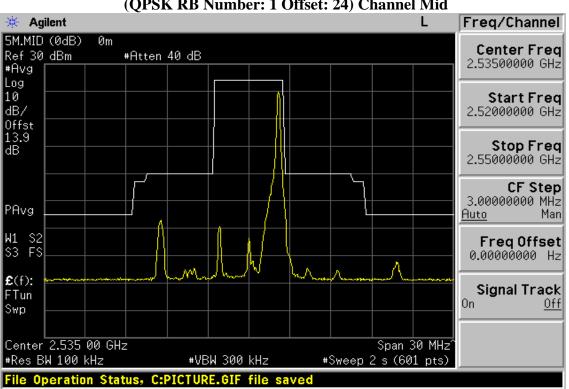


Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 24) Channel Lowest



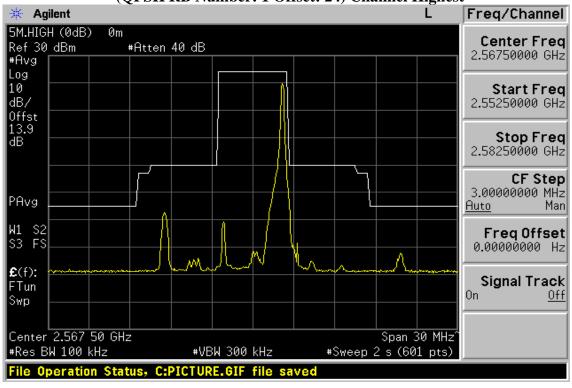
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Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 24) Channel Mid

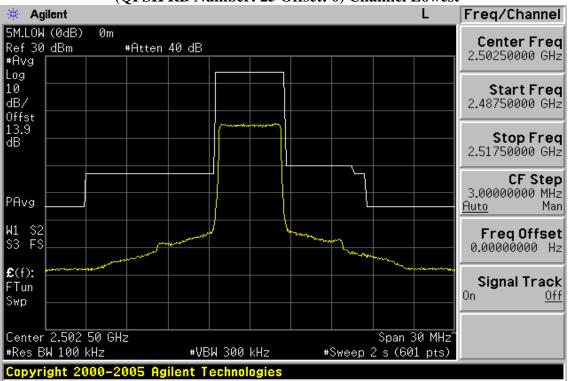
Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 24) Channel Highest



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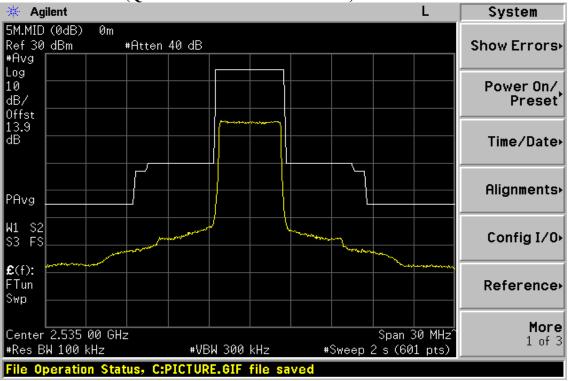
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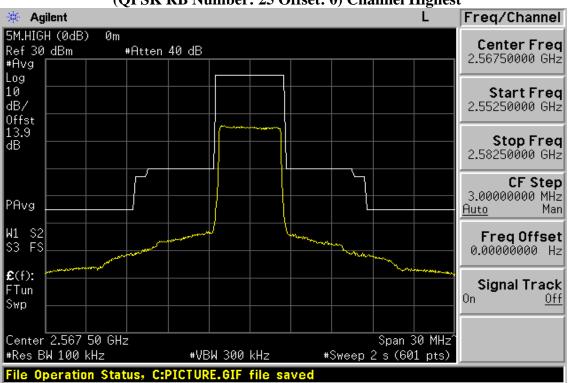
Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (OPSK RB Number: 25 Offset: 0) Channel Lowest

Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 25 Offset: 0) Channel Mid



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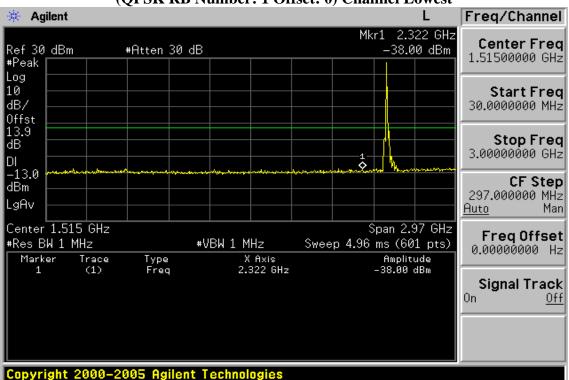


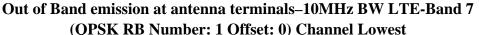


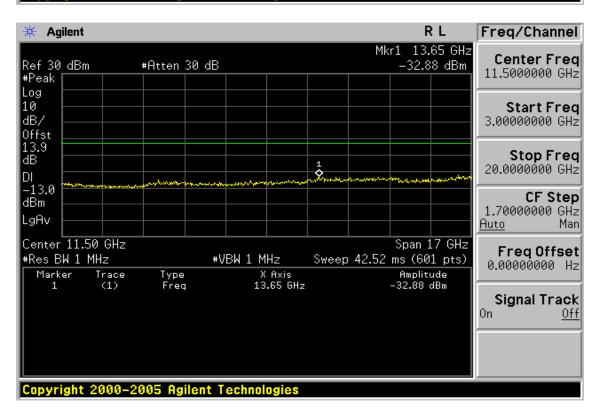
Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 25 Offset: 0) Channel Highest

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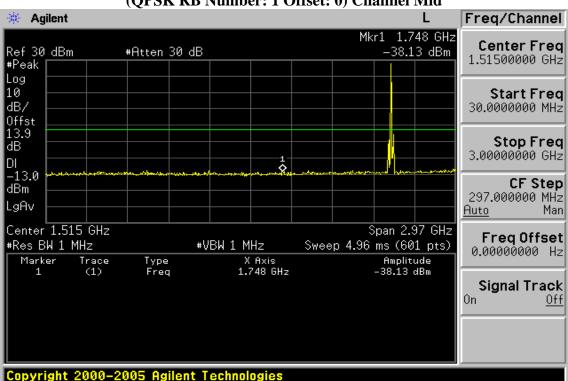


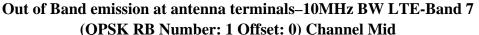


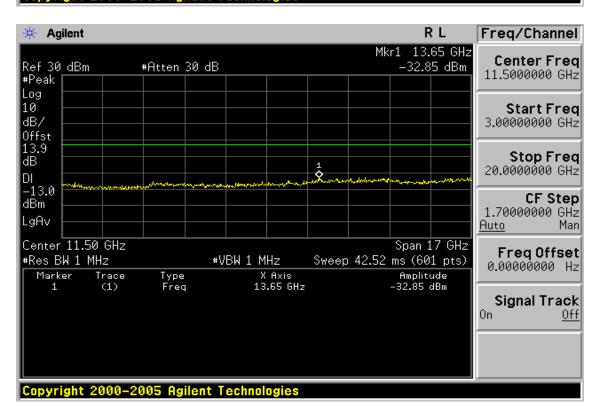


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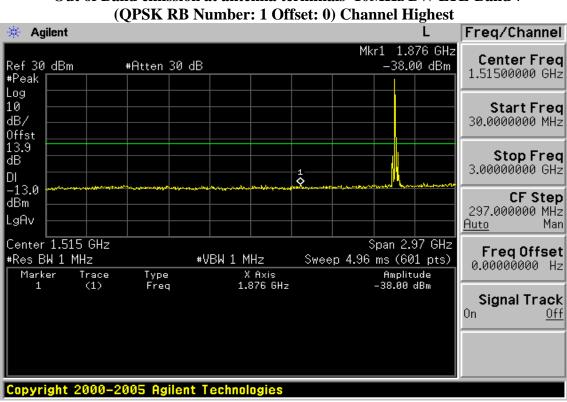


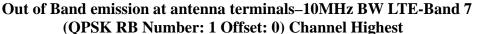


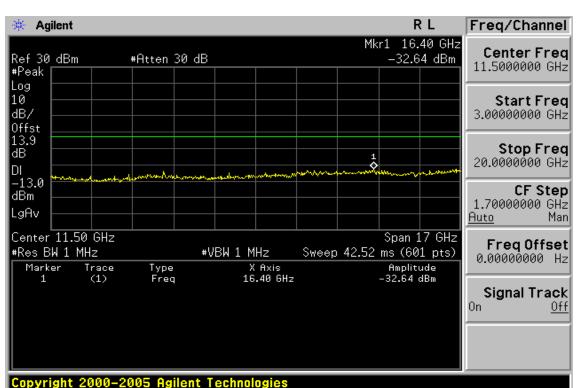


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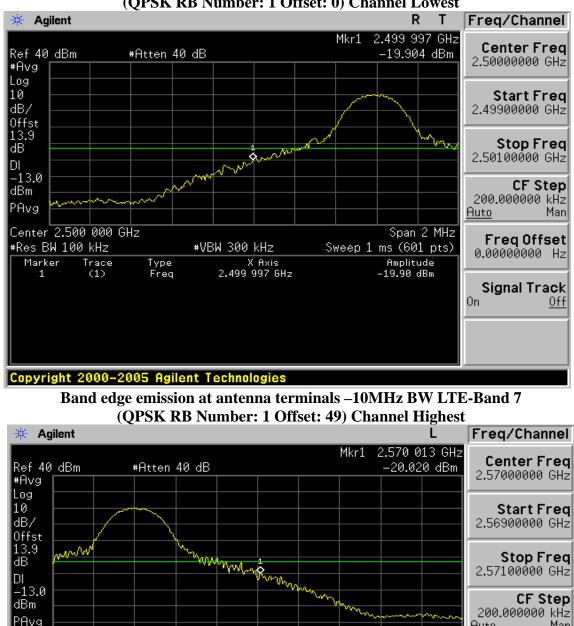












Band edge emission at antenna terminals -10MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Lowest

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#VBW 300 kHz

X Axis

2.570 013 GHz

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Туре

Freq

Center 2.570 000 GHz

Trace

(1)

#Res BW 100 kHz

Marker

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Auto

0n

Span 2 MHz

Amplitude

-20.02 dBm

Sweep 1 ms (601 pts)

Man

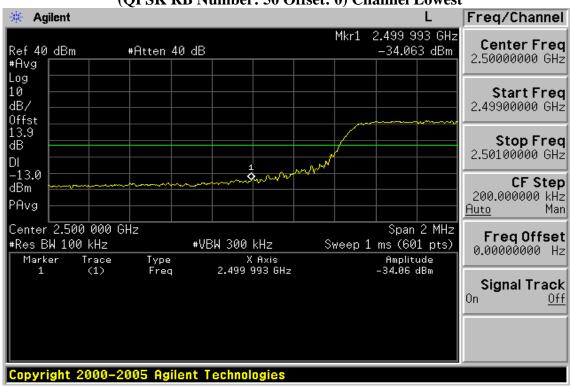
Off

Freq Offset

0.00000000 Hz

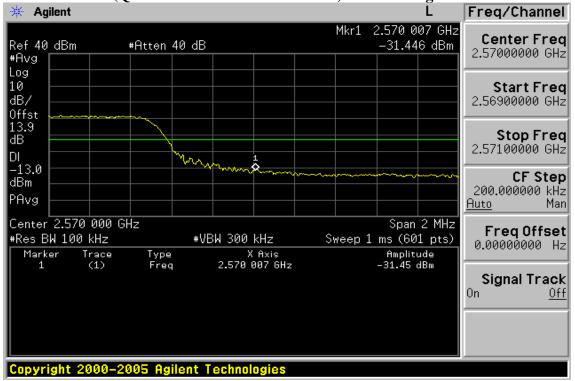
Signal Track





Band edge emission at antenna terminals –10MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Lowest

Band edge emission at antenna terminals –10MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Highest



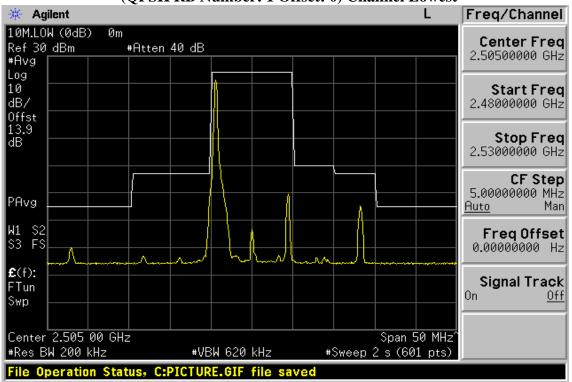
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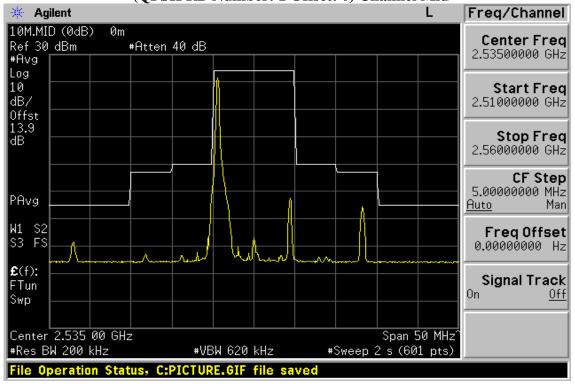






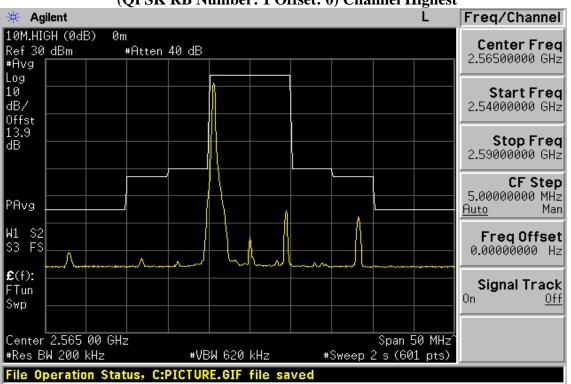
Emission Mask at antenna terminals -10MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 0) Channel Lowest

Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Mid



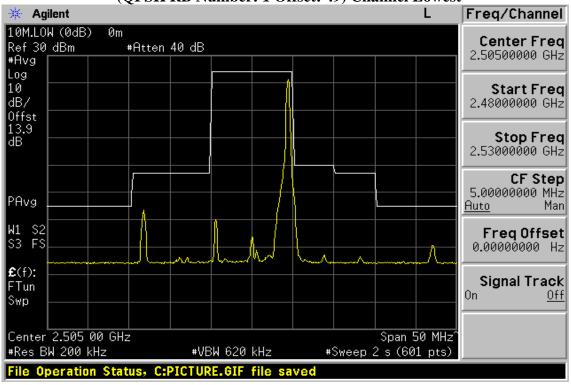
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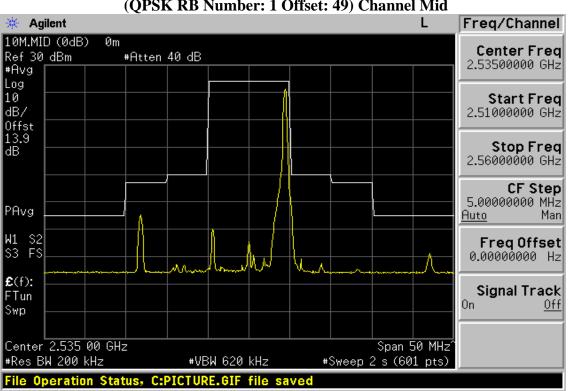


Emission Mask at antenna terminals -10MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 49) Channel Lowest



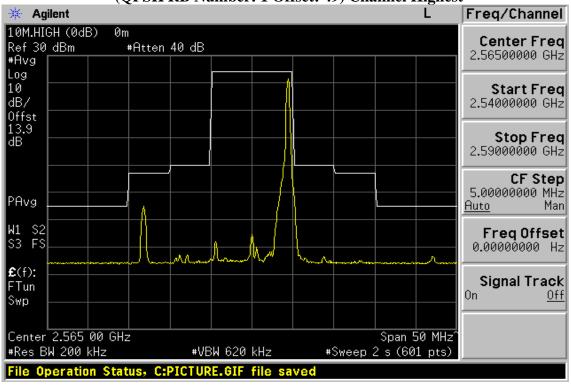
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Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 49) Channel Mid

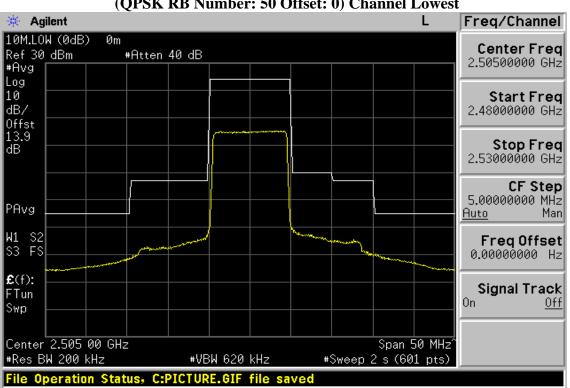
Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 49) Channel Highest



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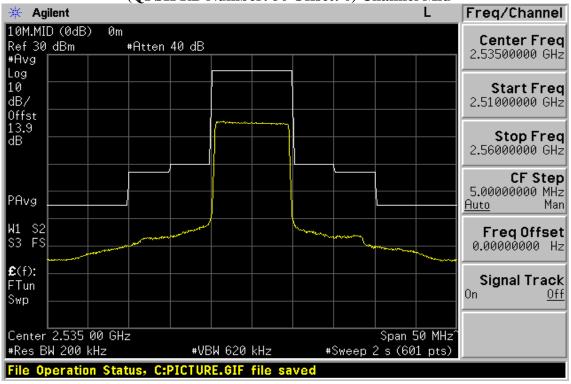
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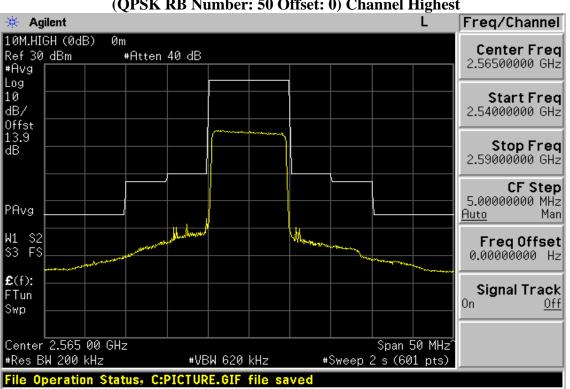


Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Mid



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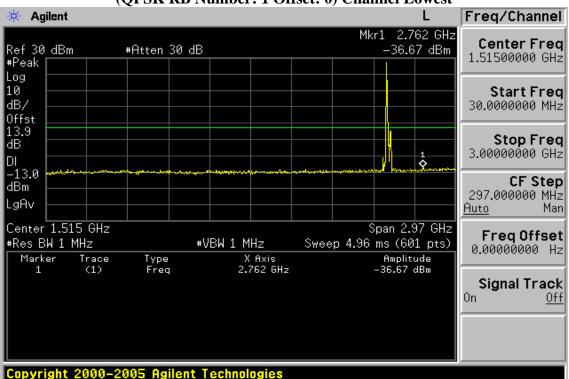




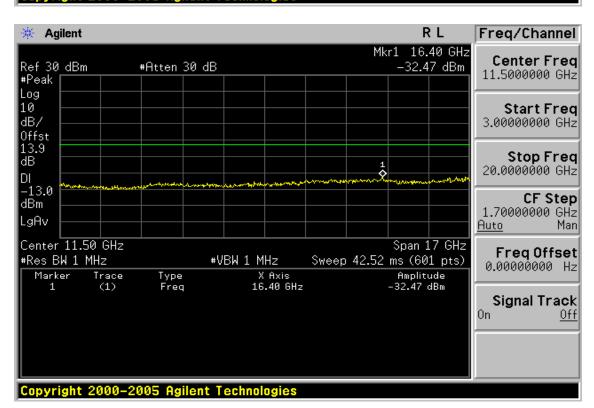
Emission Mask at antenna terminals -5MHz BW LTE-Band 7 (QPSK RB Number: 50 Offset: 0) Channel Highest

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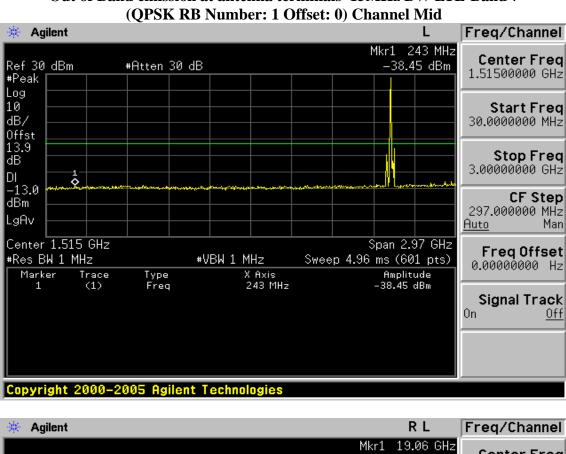
Out of Band emission at antenna terminals-15MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 0) Channel Lowest



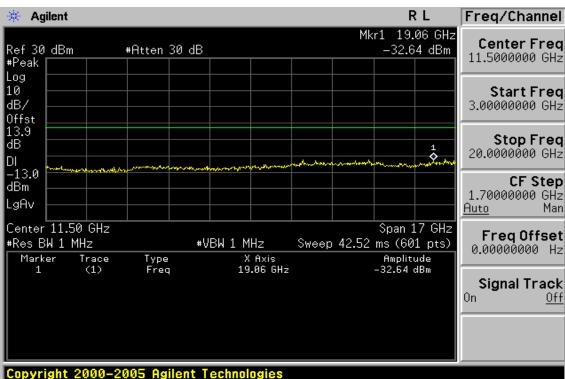
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Out of Band emission at antenna terminals-15MHz BW LTE-Band 7





Marker

1

Trace

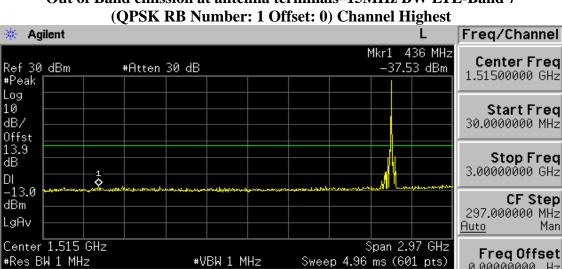
(1)

0.00000000 Hz

Signal Track

Off

0n



Sweep 4.96 ms (601 pts)

Amplitude -37.53 dBm

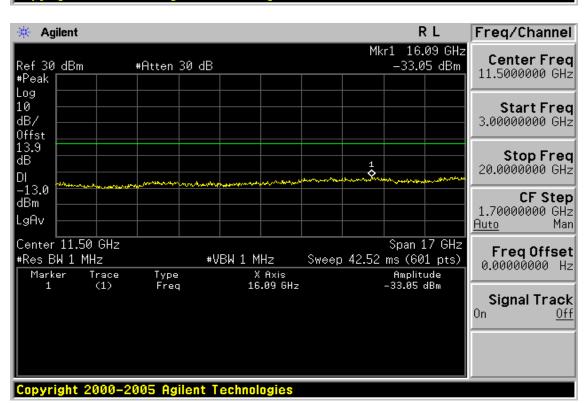
#VBW 1 MHz

X Axis 436 MHz

Out of Band emission at antenna terminals-15MHz BW LTE-Band 7

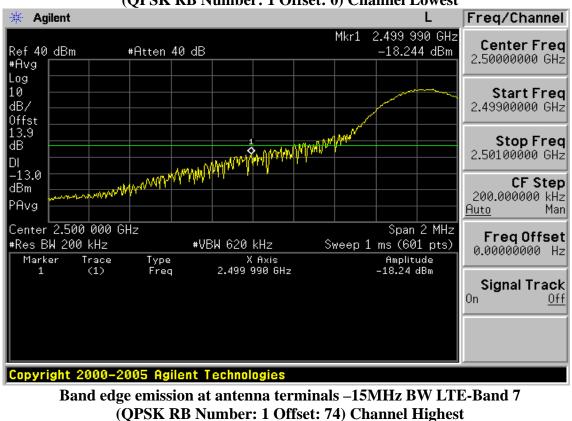
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Band edge emission at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Lowest

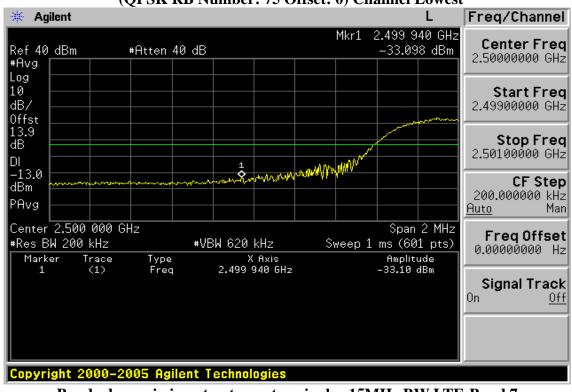


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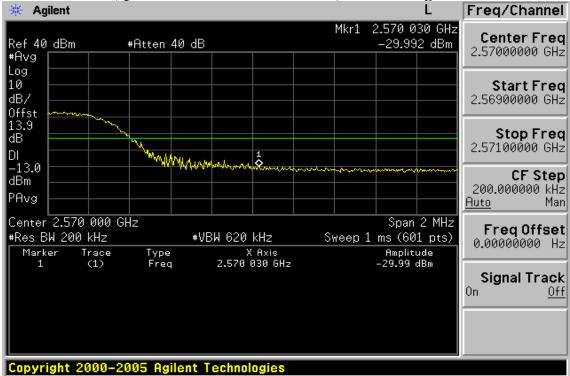
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Band edge emission at antenna terminals -15MHz BW LTE-Band 7 (**QPSK RB Number: 75 Offset: 0**) Channel Lowest

Band edge emission at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 75 Offset: 0) Channel Highest

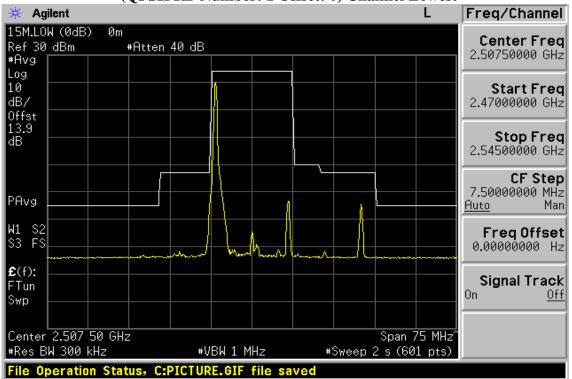


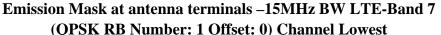
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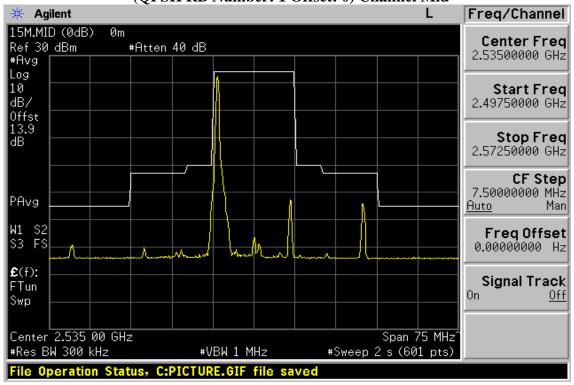






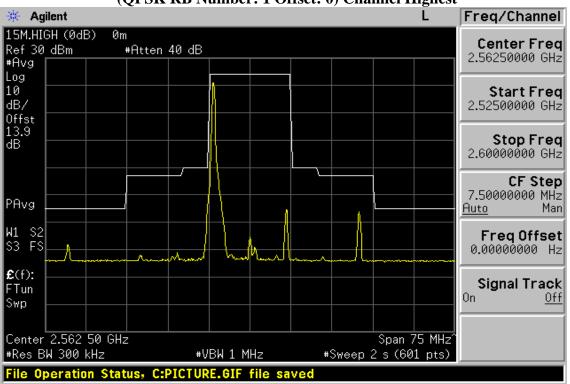


Emission Mask at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Mid



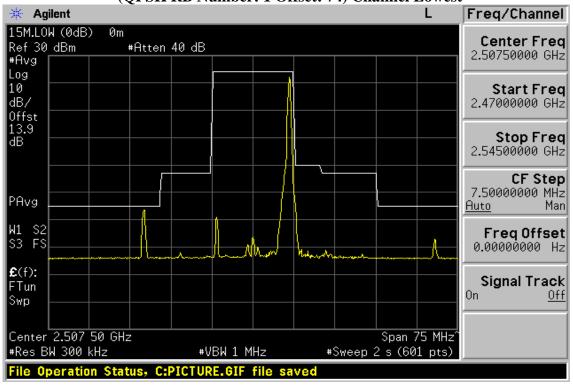
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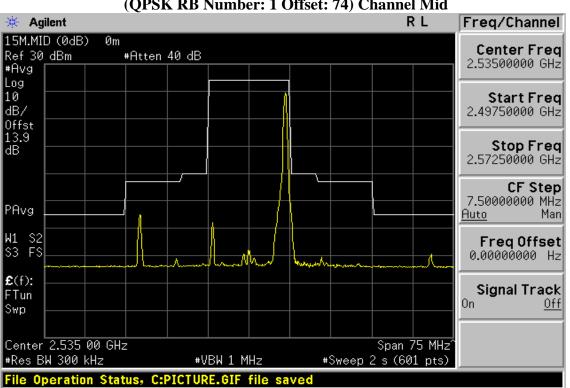


Emission Mask at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 74) Channel Lowest



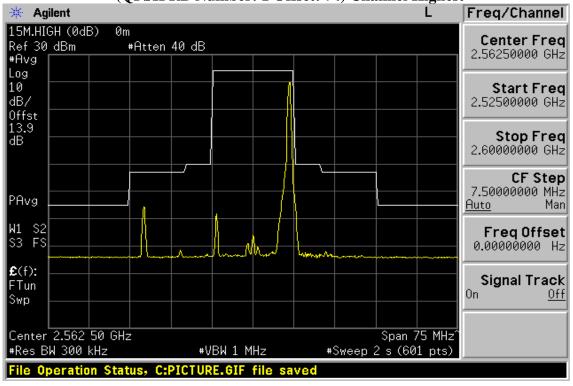
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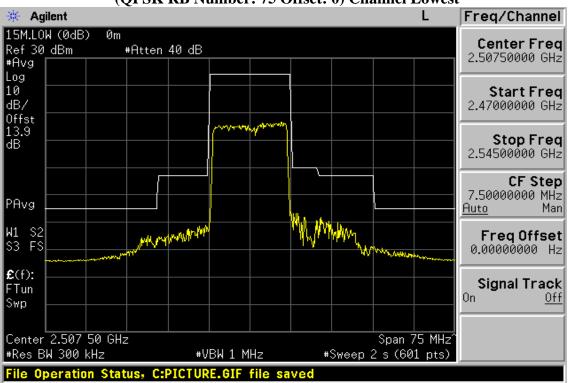
Emission Mask at antenna terminals –15MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 74) Channel Mid

Emission Mask at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 74) Channel Highest



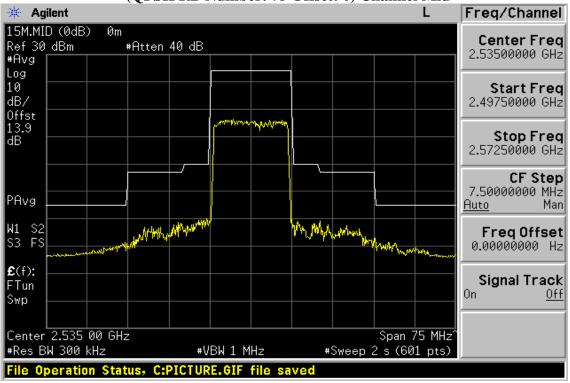
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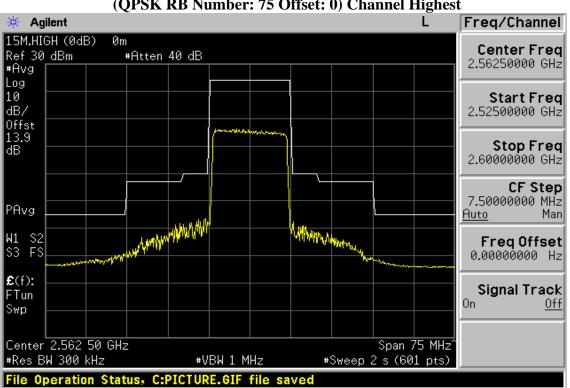
Emission Mask at antenna terminals –15MHz BW LTE-Band 7 (OPSK RB Number: 75 Offset: 0) Channel Lowest

Emission Mask at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 75 Offset: 0) Channel Mid



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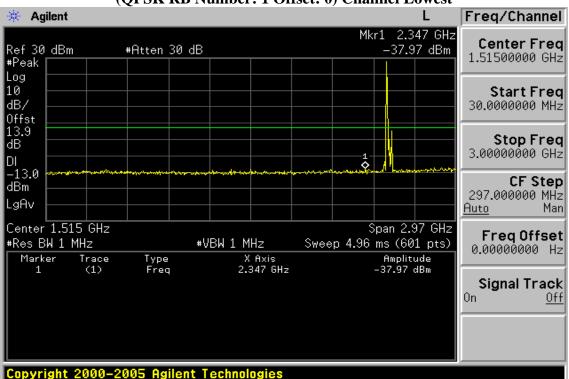


Emission Mask at antenna terminals -15MHz BW LTE-Band 7 (QPSK RB Number: 75 Offset: 0) Channel Highest

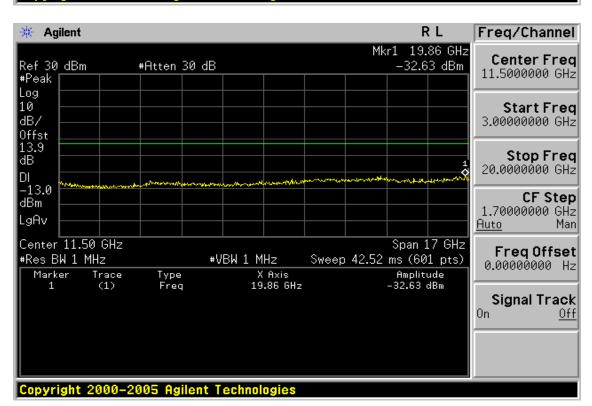
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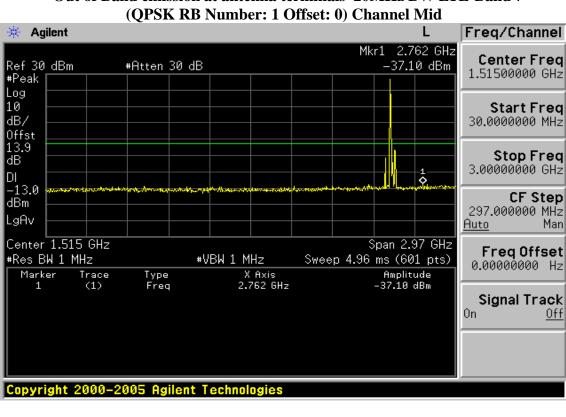
Out of Band emission at antenna terminals-20MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 0) Channel Lowest

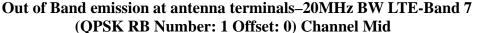


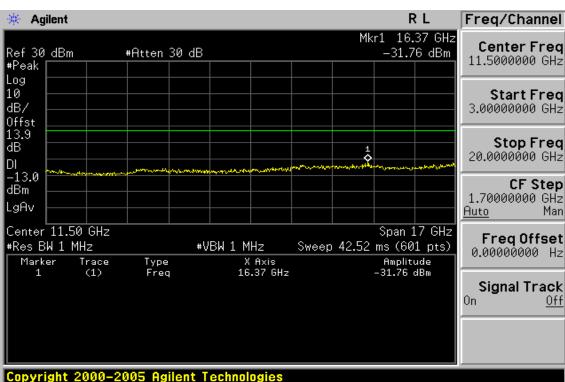
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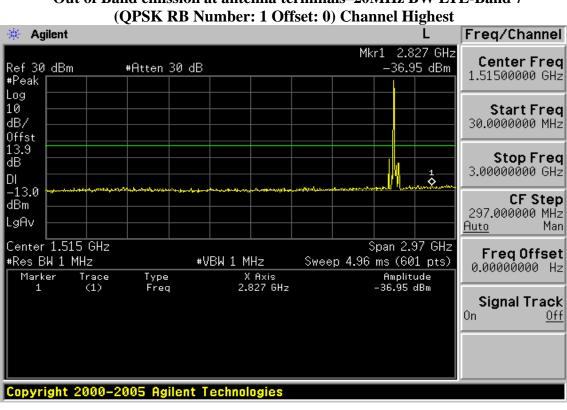


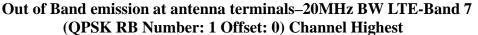


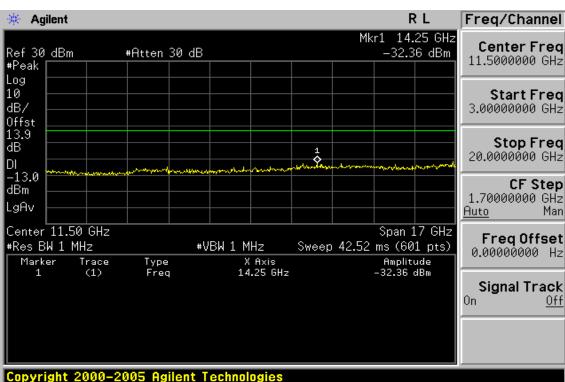




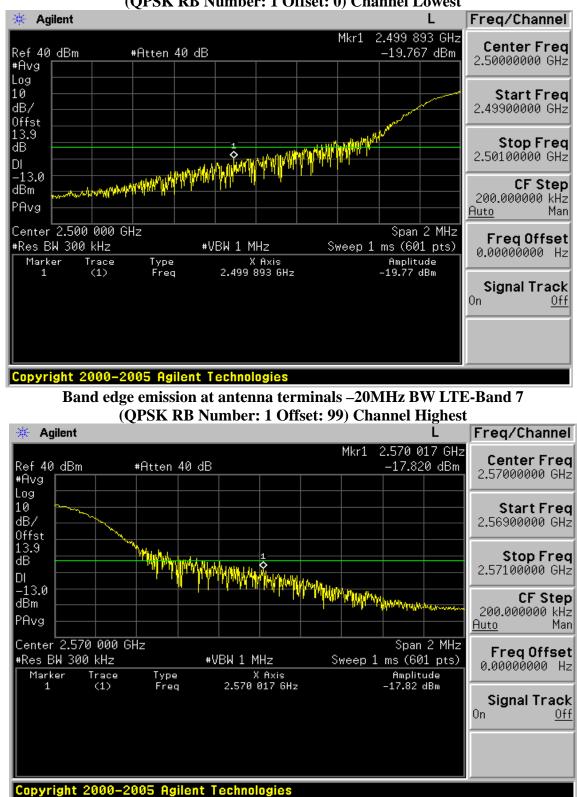










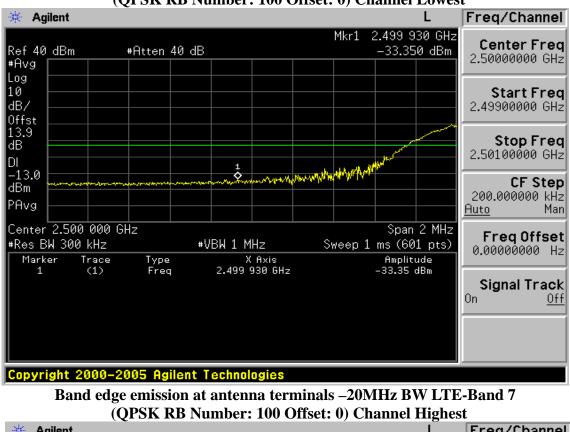


Band edge emission at antenna terminals –20MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 0) Channel Lowest

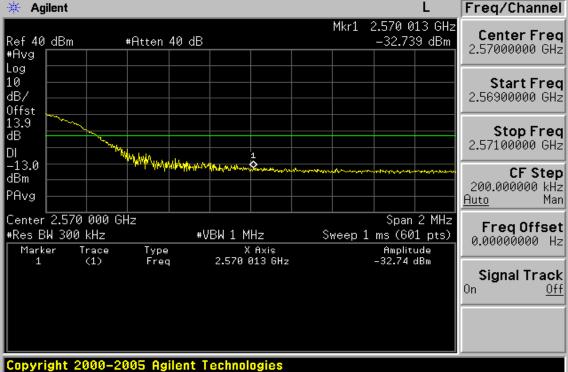
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Band edge emission at antenna terminals –20MHz BW LTE-Band 7 (QPSK RB Number: 100 Offset: 0) Channel Lowest

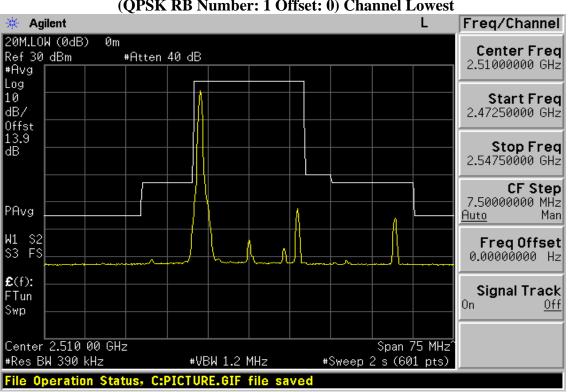


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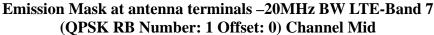
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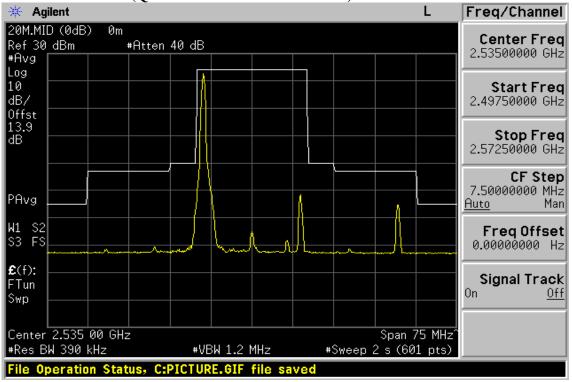
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Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 0) Channel Lowest

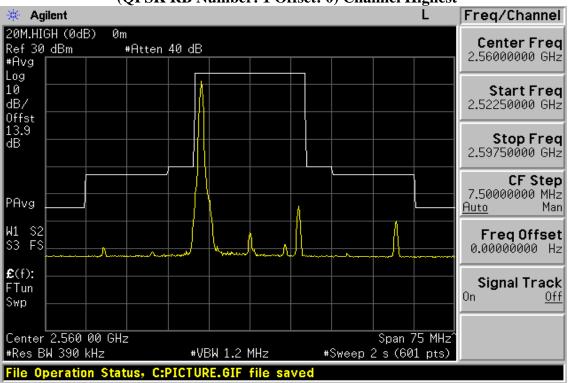




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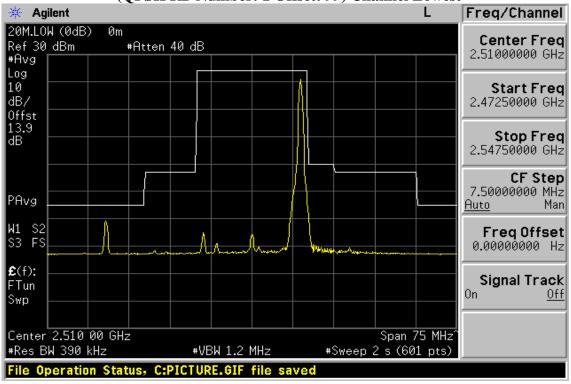
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Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 0) Channel Highest

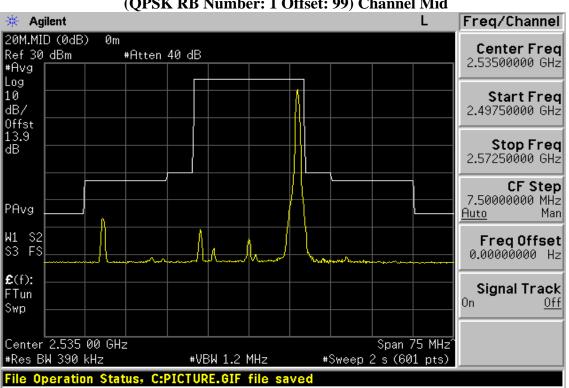
Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 99) Channel Lowest



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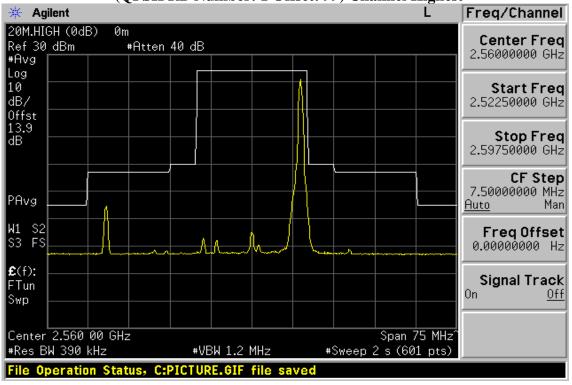
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Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (OPSK RB Number: 1 Offset: 99) Channel Mid

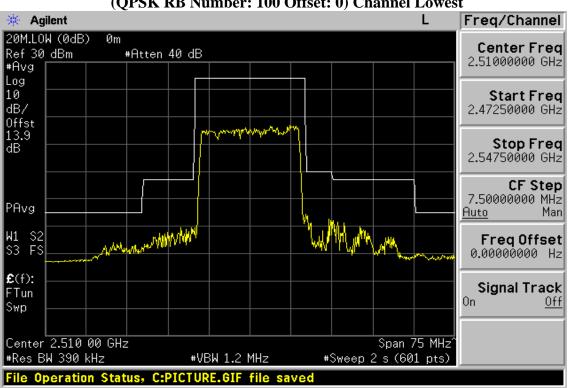
Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (QPSK RB Number: 1 Offset: 99) Channel Highest



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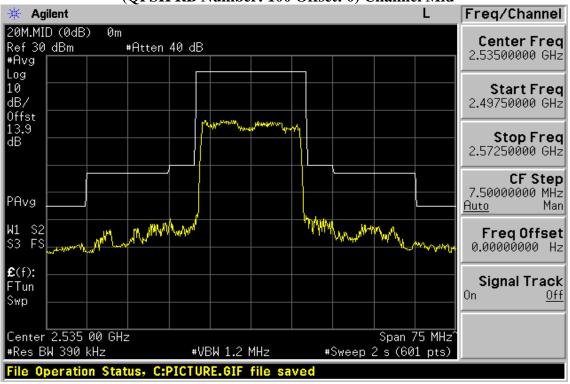
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Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (OPSK RB Number: 100 Offset: 0) Channel Lowest

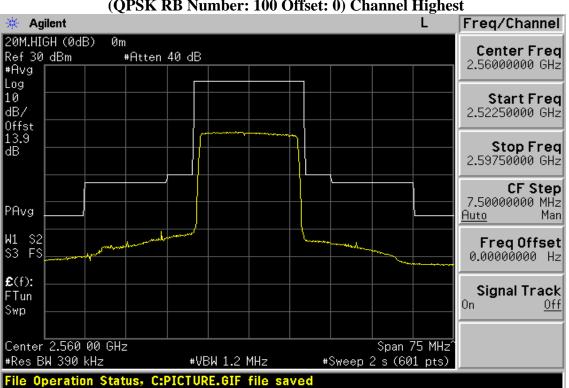
Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (QPSK RB Number: 100 Offset: 0) Channel Mid



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Emission Mask at antenna terminals -20MHz BW LTE-Band 7 (QPSK RB Number: 100 Offset: 0) Channel Highest

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10. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

10.1. Standard Applicable

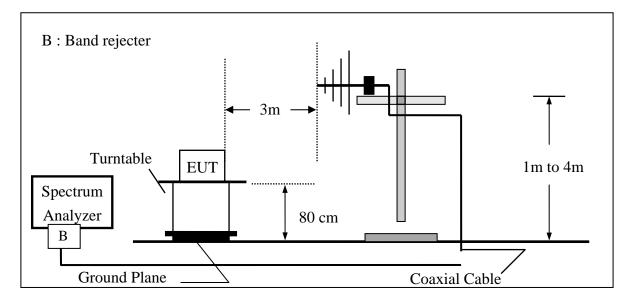
According to FCC §2.1053,

FCC \$22.917(a), \$24.238(a), \$27.53(g)(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).

FCC §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).

10.2. EUT Setup

Radiated Emission Test Set-Up, Frequency Below 1000MHz

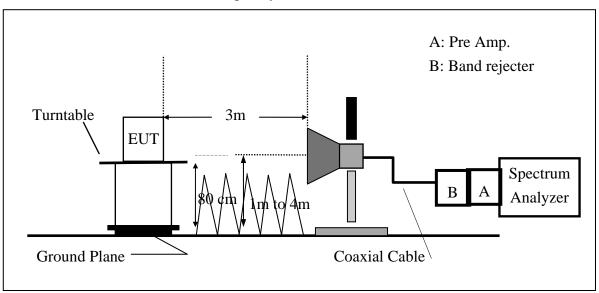


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Radiated Emission Test Set-UP Frequency Over 1 GHz

10.3. Measurement Procedure:

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

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

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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10.4. Measurement Equipment Used:

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber									
EQUIPMENT TYPE	MFR	MODEL	SERIAL	LAST CAL.	CAL DUE.				
		NUMBER	NUMBER						
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	12/22/2014	12/21/2015				
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/23/2014	12/22/2015				
Bilog Antenna	SCHWAZBECK	VULB9160	3158	10/31/2014	10/30/2015				
Horn antenna	ETS.LINDGREN	3117	123995	05/05/2015	05/04/2016				
Horn antenna	ETS.LINDGREN	3117	123991	12/19/2014	12/18/2015				
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2014	12/24/2015				
Horn Antenna	Schwarzbeck	BBHA9170	185	07/29/2014	07/28/2015				
Network Analyze	Anritsu	MS4644A	1216312	05/23/2015	05/22/2016				
Signal Generator	Agilent	E4438C	MY45093613	08/06/2014	08/05/2015				
Pre-Amplifier	Agilent	8447D	1937A02834	01/02/2015	01/01/2016				
Pre-Amplifier	Agilent	8449B	3008A00578	01/02/2015	01/01/2016				
Pre-Amplifier	plifier EMC Instruments Corp.		980135	01/02/2015	01/01/2016				
Attenuator	Mini-Circuit	BW-S10W2+	004	01/02/2015	01/01/2016				
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016				
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015				
Turn Table	HD	DT420	N/A	N.C.R	N.C.R				
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R				
Controller	HD	HD100	N/A	N.C.R	N.C.R				
Low Loss Cable	HUBER+SUHNER	966_Tx	10m	01/02/2015	01/01/2016				
Low Loss Cable	HUBER+SUHNER	966_Rx	3m	01/02/2015	01/01/2016				
Filter 800-1000	Micro-Tronics	EWT	M2	01/02/2015	01/01/2016				
Filter 1800-2000	Micro-Tronics	EWT	M2	01/02/2015	01/01/2016				
Filter 1700-1800	Micro-Tronics	BRC15751	001	01/02/2015	01/01/2016				
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	01/02/2015	01/01/2016				
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	01/02/2015	01/01/2016				
3m Site NSA	SGS	966 chamber	N/A	07/15/2014	07/14/2015				

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10.5. Measurement Result:

Radiated Spurious Emission Measurement Result: GSM 850 Mode

ARFCN **Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:CH 128 :GSM 850 :824.2 MHz :TX LOW :E2 Plan

Test Date Temp./Humi. Engineer

:2015-06-11 :22 deg_C / 53 RH :Curry

Measurement Antenna Pol.

:VERTICAL



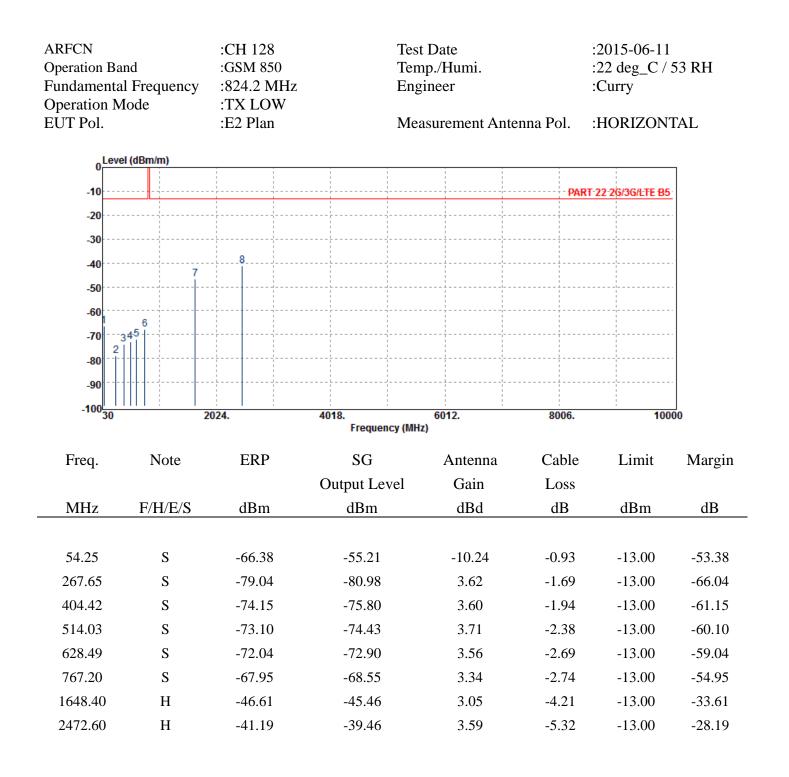
Frequency (MHz)

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
74.62	S	-54.67	-49.29	-4.35	-1.03	-13.00	-41.67
238.55	S	-75.25	-76.93	3.29	-1.60	-13.00	-62.25
464.56	S	-73.80	-75.16	3.47	-2.11	-13.00	-60.80
606.18	S	-69.57	-70.30	3.47	-2.74	-13.00	-56.57
689.60	S	-68.46	-69.28	3.43	-2.62	-13.00	-55.46
761.38	S	-67.39	-67.99	3.32	-2.72	-13.00	-54.39
1648.40	Н	-49.08	-47.92	3.05	-4.21	-13.00	-36.08
2472.60	Н	-38.39	-36.66	3.59	-5.32	-13.00	-25.39

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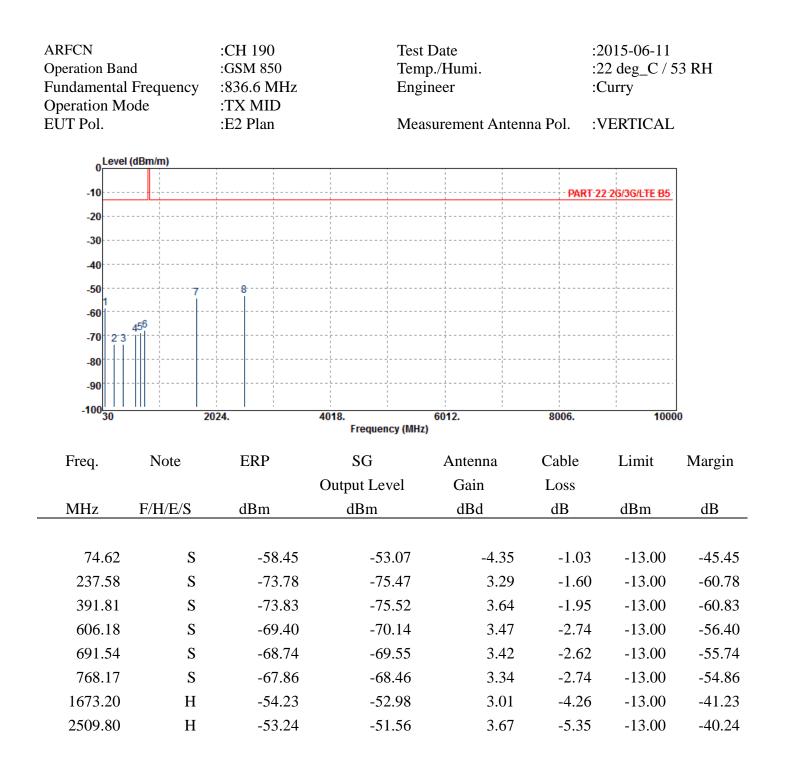


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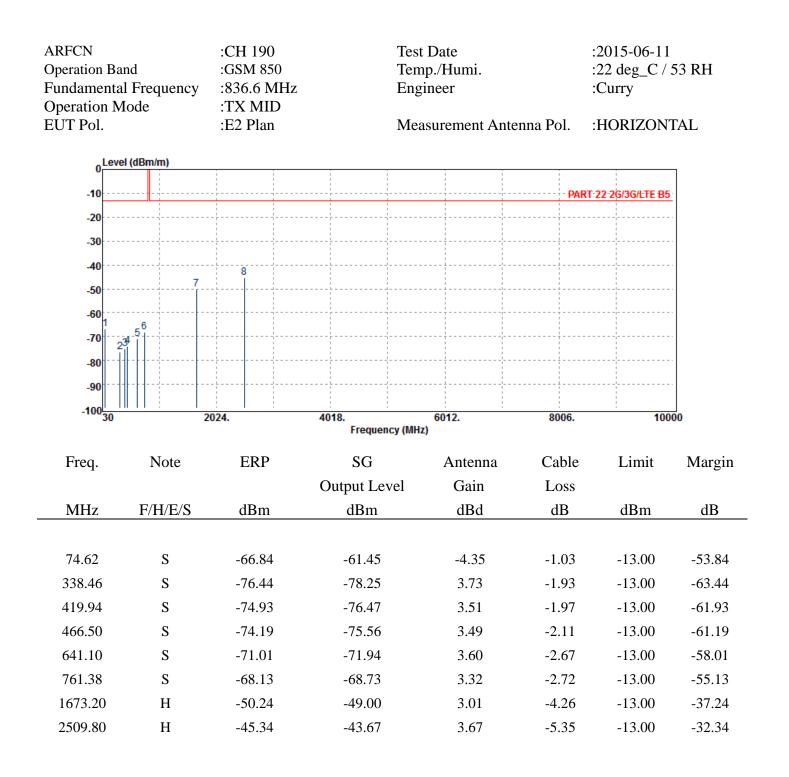


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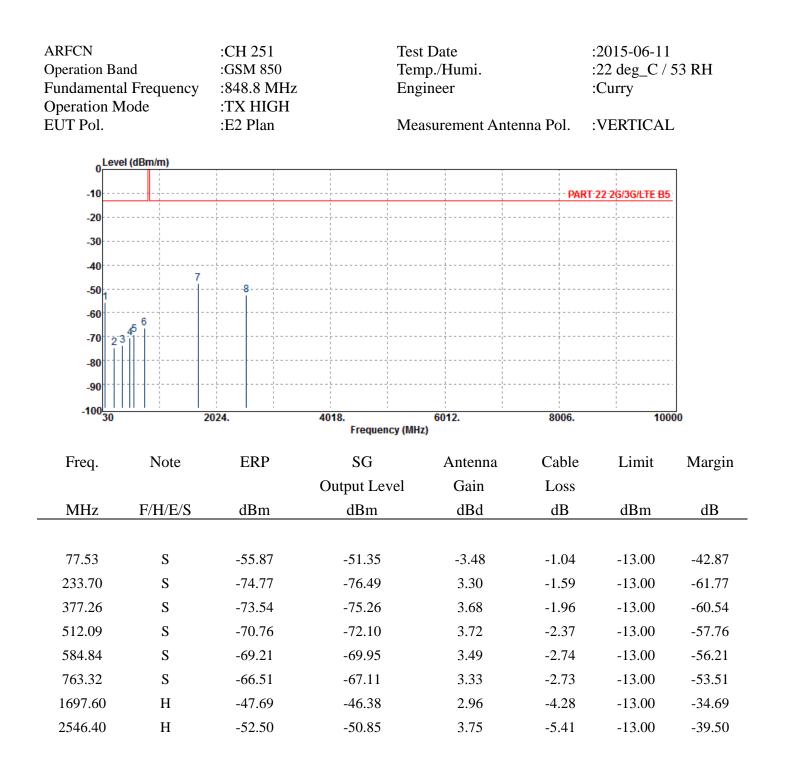


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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 251 :GSM 850 :848.8 MHz :TX HIGH :E2 Plan	Ten Eng	: Date np./Humi. ineer asurement Ante	nna Pol.	:2015-06-11 :22 deg_C / :Curry :HORIZON	53 RH
oLeve	l (dBm/m)						
-10					DAD	T-22-2G/3G/LTE B5	
-20					PAR		-
-30							
-40	7	g					
-50							
-60							
	4						
- 80	·						
-90							
-100						100	
30	2	024.	4018. Frequency (MH	6012. z)	8006.	100	00
Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
MHz	F/H/E/S	dBm	-			dBm	dB
<u>MHz</u> 34.85	F/H/E/S S	dBm -69.39	-			dBm -13.00	dB -56.39
			dBm	dBd	dB		
34.85	S	-69.39	-54.93	dBd -13.67	dB -0.78	-13.00	-56.39
34.85 153.19	S S	-69.39 -78.04	dBm -54.93 -74.76	dBd -13.67 -1.88	dB -0.78 -1.40	-13.00 -13.00	-56.39 -65.04
34.85 153.19 379.20	S S S	-69.39 -78.04 -74.64	dBm -54.93 -74.76 -76.36	dBd -13.67 -1.88 3.68	dB -0.78 -1.40 -1.95	-13.00 -13.00 -13.00	-56.39 -65.04 -61.64
34.85 153.19 379.20 525.67	S S S S	-69.39 -78.04 -74.64 -72.74	dBm -54.93 -74.76 -76.36 -73.97	dBd -13.67 -1.88 3.68 3.67	dB -0.78 -1.40 -1.95 -2.44	-13.00 -13.00 -13.00 -13.00	-56.39 -65.04 -61.64 -59.74
34.85 153.19 379.20 525.67 692.51	S S S S S	-69.39 -78.04 -74.64 -72.74 -69.59	dBm -54.93 -74.76 -76.36 -73.97 -70.39	dBd -13.67 -1.88 3.68 3.67 3.42	dB -0.78 -1.40 -1.95 -2.44 -2.62	-13.00 -13.00 -13.00 -13.00 -13.00	-56.39 -65.04 -61.64 -59.74 -56.59
34.85 153.19 379.20 525.67 692.51 765.26	S S S S S S	-69.39 -78.04 -74.64 -72.74 -69.59 -69.53	dBm -54.93 -74.76 -76.36 -73.97 -70.39 -70.12	dBd -13.67 -1.88 3.68 3.67 3.42 3.33	dB -0.78 -1.40 -1.95 -2.44 -2.62 -2.73	-13.00 -13.00 -13.00 -13.00 -13.00 -13.00	-56.39 -65.04 -61.64 -59.74 -56.59 -56.53

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Radiated Spurious Emission Measurement Result: GSM 1900 Mode

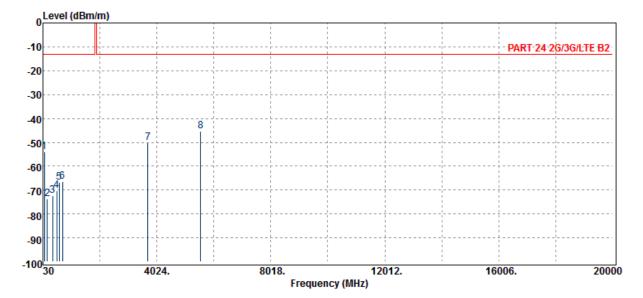
:CH 512
:GSM 1900
:1850.2 MHz
:TX LOW
:E1 Plan

Test Date Temp./Humi. Engineer

:2015-06-11 :22 deg_C / 53 RH :Curry

Measurement Antenna Pol.

:VERTICAL



Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
73.65	S	-54.08	-50.55	-2.50	-1.03	-13.00	-41.08
178.41	S	-73.85	-75.22	2.87	-1.50	-13.00	-60.85
372.41	S	-72.38	-76.27	5.85	-1.96	-13.00	-59.38
511.12	S	-70.33	-73.83	5.87	-2.36	-13.00	-57.33
606.18	S	-66.94	-69.82	5.62	-2.74	-13.00	-53.94
720.64	S	-66.49	-69.36	5.49	-2.63	-13.00	-53.49
3700.40	Н	-50.14	-51.69	8.43	-6.88	-13.00	-37.14
5550.60	Н	-45.31	-46.86	10.10	-8.55	-13.00	-32.31

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ARFCN Operation Bar Fundamental Operation M EUT Pol.	Frequency	:CH 512 :GSM 1900 :1850.2 MHz :TX LOW :E1 Plan	Z	Test Date Temp./Humi. Engineer Measurement Antenna Pol.		:2015-06-11 :22 deg_C / 53 RH :Curry :HORIZONTAL	
0 Level	(dBm/m)						7
-10					PAF	RT-24-26/36/LTE B2	P
-20							-
-30							
-40			·				
-50	7	8	· · · · · · · · · · · · · · · · · · ·				
-60			·				
- 70							
-80							
-90						 	
-100 <mark>30</mark>	4	024.	8018.	12012.	16006.	200	000
			Frequency				
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Leve	el Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
52.31	S	-67.01	-57.46	-8.63	-0.92	-13.00	-54.01
75.59	S	-67.55	-64.61	-1.91	-1.03	-13.00	-54.55
180.35	S	-76.90	-78.60	3.20	-1.50	-13.00	-63.90
379.20	S	-72.06	-75.93	5.83	-1.95	-13.00	-59.06
522.76	S	-71.56	-74.96	5.83	-2.43	-13.00	-58.56
721.61	S	-67.73	-70.59	5.49	-2.63	-13.00	-54.73
3700.40	Н	-46.68	-48.22	8.43	-6.88	-13.00	-33.68
5550.60	Н	-51.29	-52.84	10.10	-8.55	-13.00	-38.29

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 661 :GSM 1900 :1880.0 MHz :TX MID :E1 Plan	T E	est Date emp./Humi. ngineer leasurement Ante	nna Pol.	:2015-06-11 :22 deg_C / :Curry :VERTICAI	53 RH
Leve	l (dBm/m)						_
-10					PAR	T-24-26/36/LTE B2	
-20	<u> </u>						-
-30					 	 	
-40							
-50		7 ¦			 	 	
-60	3						
-70 ²							
-80							
-90							
-100 <mark> </mark>	4	024.	8018.	12012.	16006.	200	00
			Frequency (MHz)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
73.65	S	-54.58	-51.05	-2.50	-1.03	-13.00	-41.58
289.96	S	-72.74	-76.57	5.58	-1.74	-13.00	-59.74
340.40	S	-71.73	-75.68	5.89	-1.93	-13.00	-58.73
550.89	S	-69.04	-72.20	5.73	-2.58	-13.00	-56.04
655.65	S	-66.99	-70.10	5.76	-2.65	-13.00	-53.99
773.02	S	-65.49	-68.24	5.51	-2.75	-13.00	-52.49
3760.00	Н	-47.50	-48.94	8.46	-7.02	-13.00	-34.50

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 661 :GSM 1900 :1880.0 MH :TX MID :E1 Plan	Z	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2015-06-11 :22 deg_C / :Curry :HORIZON	53 RH
Leve	el (dBm/m)						
0							
-10 -20					PAR	T-24-26/36/LTE B2	-
-20							
-30					 	 	
-50		7			 	 	
-60			· · · · · · · · · · · · · · · · · · ·			 	
- 70	6						
- 80					 		
-90							
-100 <mark>30</mark>			0040	12012.	40000		
30	4	1024.	8018. Frequen	12012. cy (MHz)	16006.	200	00
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
_			Output Lev	vel Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
34.85	S	-68.04	-55.73	-11.52	-0.78	-13.00	-55.04
145.43	S	-76.07	-74.53	-0.17	-1.36	-13.00	-63.07
321.97	S	-75.31	-79.28	5.84	-1.87	-13.00	-62.31
384.05	S	-72.05	-75.91	5.81	-1.95	-13.00	-59.05
596.48	S	-69.91	-72.76	5.60	-2.75	-13.00	-56.91
776.90	S	-65.95	-68.70	5.52	-2.77	-13.00	-52.95
3760.00	Н	-47.31	-48.76	8.46	-7.02	-13.00	-34.31

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Operation M EUT Pol.	and :GSM 1900 Tem al Frequency :1909.8 MHz Eng Mode :TX HIGH :E1 Plan Mea		Test Date Temp./Humi. Engineer Measurement Ante	nna Pol.	:2015-06-11 :22 deg_C / 53 RH :Curry Pol. :VERTICAL			
oLeve	el (dBm/m)	· · · ·			i	i	7	
-10					PAR	T-24-26/36/LTE-B2		
-20								
-30								
-40		-						
-50		Ζ						
-60	3							
-70 24	·							
-80								
-90								
-100 <mark>30</mark>		024.	8018.	12012.	16006.	200		
50	4	024.	Frequency		10000.	200	00	
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
1			Output Leve		Loss		U	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
75.59	S	-55.33	-52.38	-1.91	-1.03	-13.00	-42.33	
267.65	S	-73.04	-77.13	5.77	-1.69	-13.00	-60.04	
361.74	S	-72.49	-76.41	5.88	-1.96	-13.00	-59.49	
455.83	S	-70.98	-74.44	5.54	-2.08	-13.00	-57.98	
580.96	S	-66.81	-69.74	5.65	-2.72	-13.00	-53.81	
772.05	S	-64.44	-67.19	5.50	-2.75	-13.00	-51.44	
3819.60	Н	-51.68	-53.12	8.50	-7.05	-13.00	-38.68	

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 810 :GSM 1900 :1909.8 MHz :TX HIGH :E1 Plan	z E	est Date emp./Humi. ngineer Ieasurement Ante	:2015-06-11 :22 deg_C / 53 RH :Curry :HORIZONTAL		
OLeve	l (dBm/m)						-
-10					PAR	T-24-26/36/LTE B2	
-20	<u> </u>			·			-
-30							
-40	·						
-50		7 ¦					
-60							
- 70 - 3							
-80							
-90 *****							
-100 <mark>-100</mark> -30	4	024.	8018.	12012.	16006.	200	
50		·02-1.	Frequency (I		10000.	200	
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
72.68	S	-66.99	-63.16	-2.81	-1.02	-13.00	-53.99
169.68	S	-75.95	-75.88	1.42	-1.48	-13.00	-62.95
380.17	S	-72.45	-76.32	5.82	-1.95	-13.00	-59.45
515.97	S	-71.52	-74.98	5.85	-2.39	-13.00	-58.52
600.36	S	-70.62	-73.47	5.59	-2.75	-13.00	-57.62
768.17	S	-66.48	-69.24	5.49	-2.74	-13.00	-53.48
3819.60	Н	-48.74	-50.19	8.50	-7.05	-13.00	-35.74

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Radiated Spurious Emission Measurement Result: HSDPA II Mode

:CH 9262
:HSDPA B2
:1852.4 MHz
:TX LOW
:E1 Plan

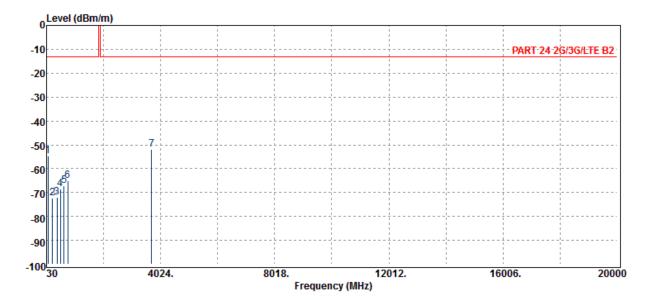
Test Date Temp./Humi. Engineer

:VERTICAL Measurement Antenna Pol.

:Curry

:2015-06-11

:22 deg_C / 53 RH



Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
73.65	S	-54.76	-51.23	-2.50	-1.03	-13.00	-41.76
241.46	S	-72.37	-76.22	5.46	-1.61	-13.00	-59.37
397.63	S	-72.09	-75.92	5.78	-1.95	-13.00	-59.09
517.91	S	-68.40	-71.85	5.85	-2.40	-13.00	-55.40
650.80	S	-67.15	-70.27	5.78	-2.66	-13.00	-54.15
773.99	S	-65.15	-67.90	5.51	-2.76	-13.00	-52.15
3704.80	Н	-52.05	-53.59	8.43	-6.89	-13.00	-39.05

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 9262 :HSDPA B2 :1852.4 MH :TX LOW :E1 Plan	Z	Test Date Temp./Humi. Engineer Measurement Ante	enna Pol.	:2015-06-11 :22 deg_C / :Curry :HORIZON	53 RH
0 Leve	l (dBm/m)						-
-10					PAR	RT-24-26/36/LTE B2	
-20	/L						-
-30						 	
-40						 	
-50						 	
-60					 	 	
- 70 3 ⁴						 	
- 80							
-90						 	
-100 <mark>-100</mark> -100	4	1024.	8018.	12012.	16006.	200	00
			Frequenc		100001	200	
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Leve	el Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
34.85	S	-68.40	-56.09	-11.52	-0.78	-13.00	-55.40
171.62	S	-76.63	-76.86	1.72	-1.49	-13.00	-63.63
341.37	S	-73.47	-77.42	5.89	-1.94	-13.00	-60.47
495.60	S	-71.72	-75.32	5.87	-2.28	-13.00	-58.72
653.71	S	-69.10	-72.22	5.77	-2.65	-13.00	-56.10
766.23	S	-65.79	-68.54	5.48	-2.73	-13.00	-52.79
3704.80	Н	-53.19	-54.73	8.43	-6.89	-13.00	-40.19

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency lode	:CH 9400 :HSDPA B2 :1880.0 MH :TX MID :E1 Plan	Z	Test Date Temp./Humi. Engineer Measurement Ante	enna Pol.	:2015-06-11 :22 deg_C / :Curry :VERTICAI	53 RH
oLeve	l (dBm/m)				1	i I	7
-10					PAR	T-24-26/36/LTE B2	
-20							
-30							
-40							
-50							
-60 م)						
-70 2							
-80							
-90	·						
-100 <mark>30</mark>	4	024.	8018.	12012.	16006.	200	00
			Frequenc	cy (MHz)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Lev	el Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
75.59	S	-55.92	-52.98	-1.91	-1.03	-13.00	-42.92
343.31	S	-71.89	-75.83	5.89	-1.94	-13.00	-58.89
468.44	S	-70.40	-73.93	5.65	-2.12	-13.00	-57.40
519.85	S	-68.88	-72.31	5.84	-2.41	-13.00	-55.88
599.39	S	-66.74	-69.59	5.59	-2.75	-13.00	-53.74
761.38	S	-64.58	-67.33	5.47	-2.72	-13.00	-51.58
3760.00	Н	-51.61	-53.05	8.46	-7.02	-13.00	-38.61

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 9400 :HSDPA B2 :1880.0 MH2 :TX MID :E1 Plan	z F	Test Date Temp./Humi. Engineer Measurement Ante	nna Pol.	:2015-06-11 :22 deg_C / :Curry :HORIZON	53 RH
oLeve	l (dBm/m)						7
-10					PAR	T-24-26/36/LTE B2	
-20				·	 		
-30				·			
-40				· · · · · · · · · · · · · · · · · · ·			
-50		7		· · · · · · · · · · · · · · · · · · ·			
-60	3			·		 	
-70 345							
-80 - 1							
-90							
-100 <mark>30</mark>	4	024.	8018.	12012.	16006.	200	00
			Frequency	(MHz)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	l Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
40.67	S	-68.65	-57.25	-10.57	-0.84	-13.00	-55.65
267.65	S	-76.61	-80.70	5.77	-1.69	-13.00	-63.61
339.43	S	-73.33	-77.29	5.88	-1.93	-13.00	-60.33
460.68	S	-71.31	-74.80	5.59	-2.10	-13.00	-58.31
619.76	S	-70.46	-73.42	5.67	-2.71	-13.00	-57.46
767.20	S	-65.83	-68.58	5.49	-2.74	-13.00	-52.83
3760.00	Н	-53.71	-55.15	8.46	-7.02	-13.00	-40.71

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 9538 :HSDPA B2 :1907.6 MH :TX HIGH :E1 Plan	Z	Test Date Temp./Humi. Engineer Measurement Ant	enna Pol.	:2015-06-11 :22 deg_C / :Curry :VERTICAI	53 RH
0 Leve	el (dBm/m)						7
-10					PAR	T-24-26/36/LTE B2	
-20							
-30						 	
-40						 	
-50		7					
- 60	6						
- 70 2 ³⁴		-					
-80							
-90 • • • •							
-100 <mark>30</mark>	4	024.	8018. Erecuence	12012.	16006.	200	00
			Frequency	y (MH2)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Leve		Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
75.59	S	-55.79	-52.85	-1.91	-1.03	-13.00	-42.79
209.45	S	-73.50	-77.80	5.85	-1.55	-13.00	-60.50
369.50	S	-72.28	-76.18	5.85	-1.96	-13.00	-59.28
457.77	S	-70.98	-74.45	5.56	-2.09	-13.00	-57.98
621.70	S	-67.34	-70.31	5.68	-2.71	-13.00	-54.34
765.26	S	-65.65	-68.40	5.48	-2.73	-13.00	-52.65
3815.20	Н	-54.99	-56.44	8.49	-7.05	-13.00	-41.99

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	l Frequency	:CH 9538 :HSDPA B2 :1907.6 MH: :TX HIGH :E1 Plan	z E	Test Date Temp./Humi. Engineer Measurement Ante	nna Pol.	:2015-06-11 :22 deg_C / :Curry :HORIZON	53 RH
oLeve	l (dBm/m)				i	i	7
-10	 				PAR	T-24-26/36/LTE-B2	
-20							
-30							
-40							
-50		7					
-60	5						
-70-4							
-80							
-90							
-100 <mark>-100</mark> 30	4	1024.	8018.	12012.	16006.	200	00
			Frequency (
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
53.28	S	-67.10	-57.82	-8.36	-0.93	-13.00	-54.10
145.43	S	-76.51	-74.97	-0.17	-1.36	-13.00	-63.51
289.96	S	-76.62	-80.46	5.58	-1.74	-13.00	-63.62
409.27	S	-72.89	-76.67	5.72	-1.94	-13.00	-59.89
510.15	S	-70.93	-74.44	5.87	-2.36	-13.00	-57.93
764.29	S	-65.73	-68.48	5.48	-2.73	-13.00	-52.73
3815.20	Н	-54.85	-56.30	8.49	-7.05	-13.00	-41.85

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Radiated Spurious Emission Measurement Result: HSDPA V Mode

ARFCN :CH	I 4132
Operation Band :HS	DPA B5
Fundamental Frequency :826	5.4 MHz
Operation Mode :TX	LOW
EUT Pol. :E2	Plan

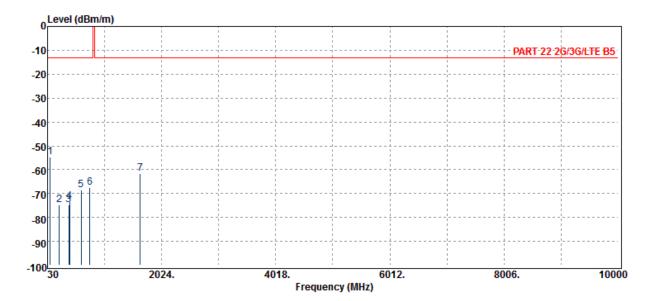
Test Date Temp./Humi. Engineer

:VERTICAL Measurement Antenna Pol.

:Curry

:2015-06-11

:22 deg_C / 53 RH

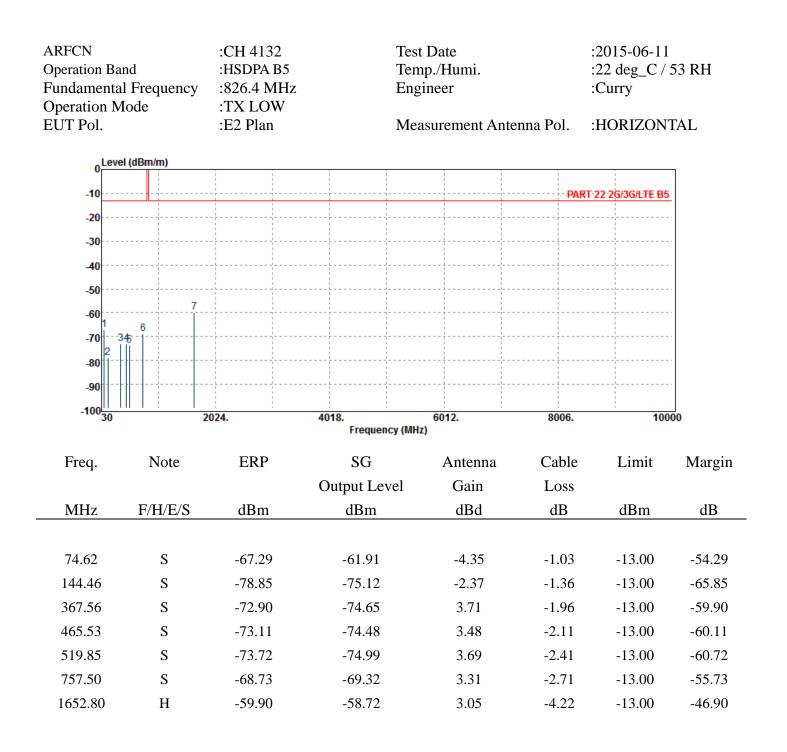


Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
78.50	S	-54.51	-50.27	-3.19	-1.05	-13.00	-41.51
234.67	S	-74.80	-76.51	3.30	-1.59	-13.00	-61.80
400.54	S	-74.60	-76.27	3.62	-1.95	-13.00	-61.60
416.06	S	-73.35	-74.92	3.53	-1.96	-13.00	-60.35
619.76	S	-68.45	-69.26	3.52	-2.71	-13.00	-55.45
766.23	S	-67.57	-68.17	3.33	-2.73	-13.00	-54.57
1652.80	Н	-61.56	-60.38	3.05	-4.22	-13.00	-48.56

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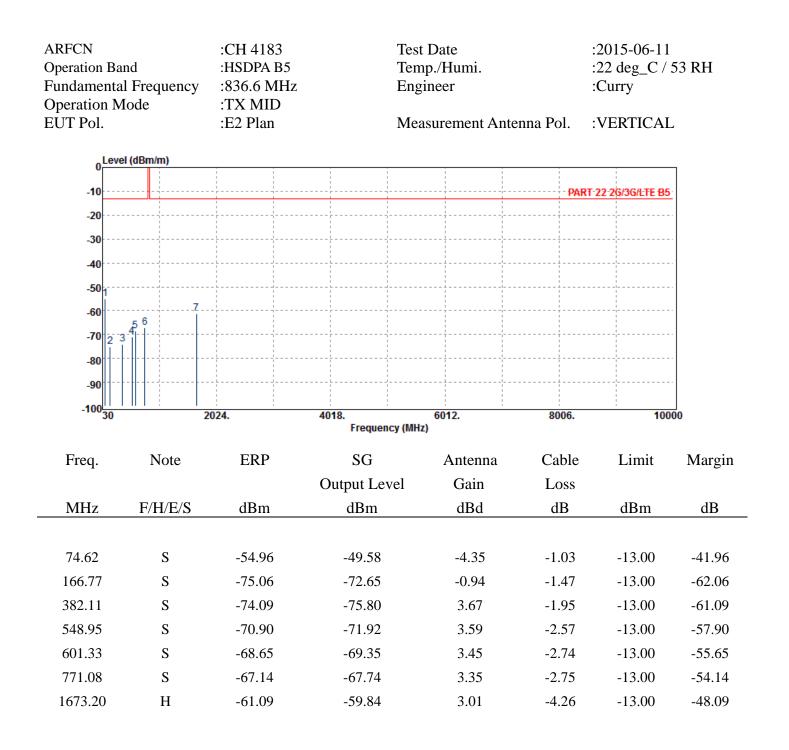


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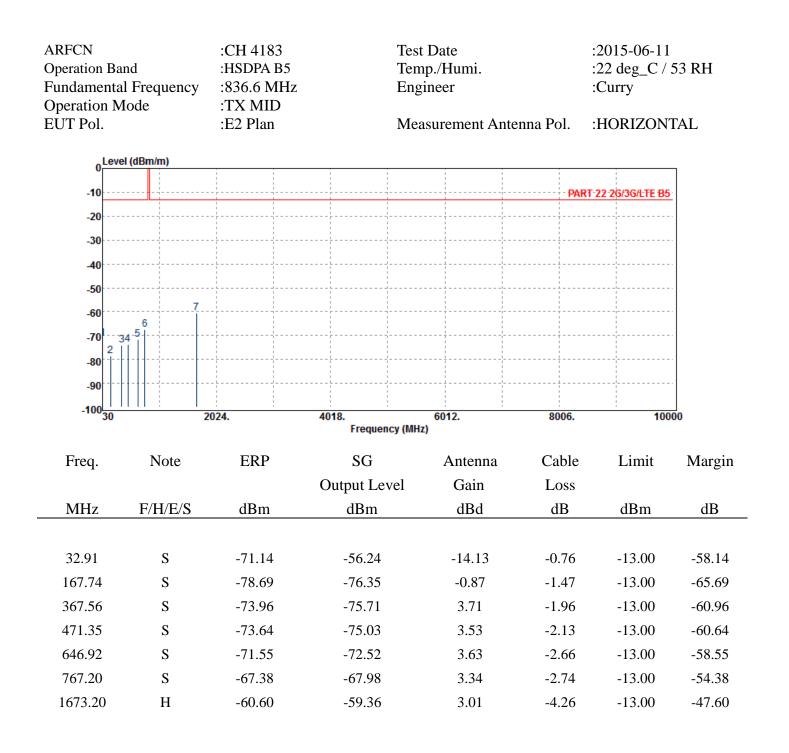


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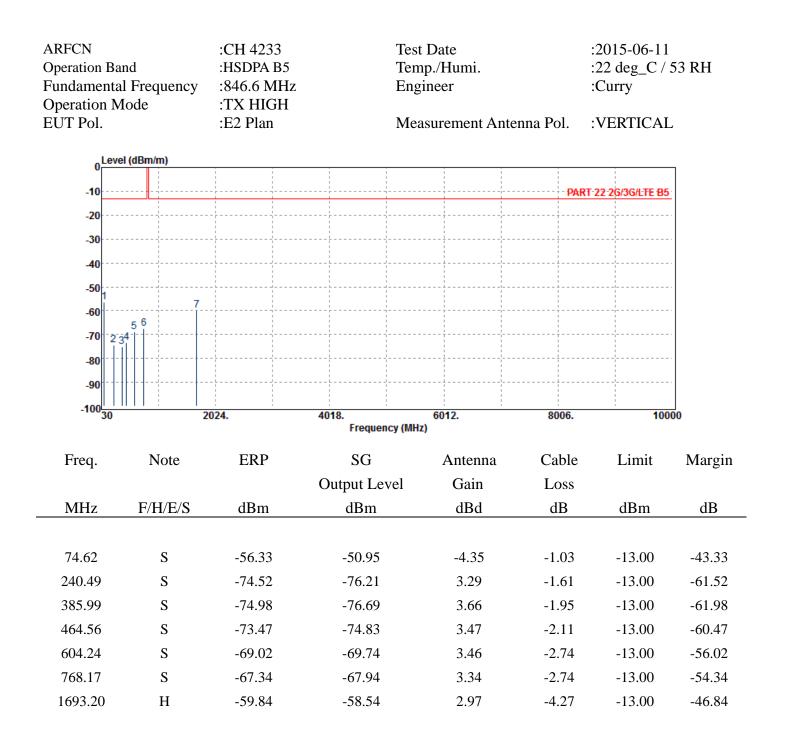


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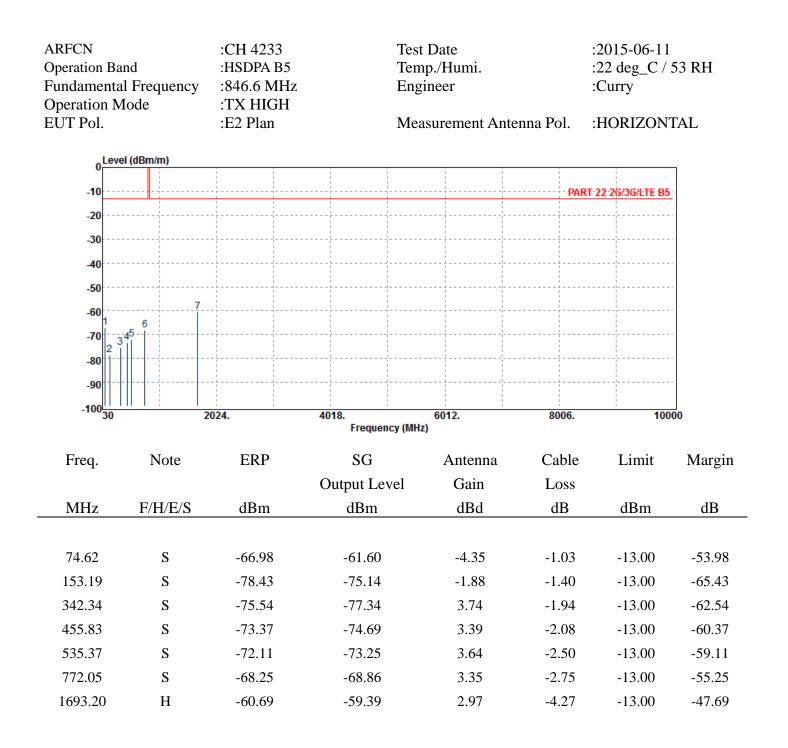


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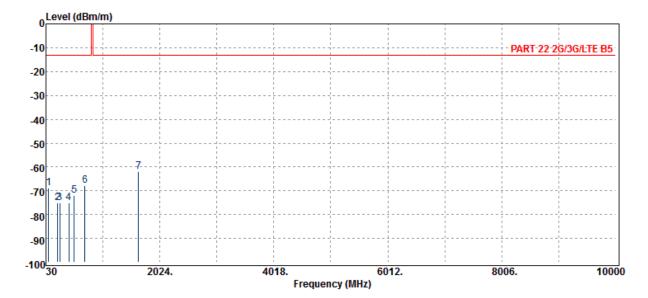
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Radiated Spurious Emission Measurement Result: 3MHz BW LTE-Band 5(The Worst Case)

ARFCN	:CH 20415 16QAM BW 3 RB 1 14	³ Test Date	:2015-06-11
Operation Band	:LTE B5	Temp./Humi.	:21 deg_C / 52 RH
Fundamental Frequency	:825.5 MHz	Engineer	:Curry
Operation Mode	:TX LOW		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
78.50	S	-68.85	-64.61	-3.19	-1.05	-13.00	-55.85
236.61	S	-74.97	-76.67	3.29	-1.60	-13.00	-61.97
272.50	S	-75.25	-77.09	3.54	-1.70	-13.00	-62.25
427.70	S	-75.00	-76.47	3.46	-2.00	-13.00	-62.00
526.64	S	-71.98	-73.19	3.67	-2.45	-13.00	-58.98
710.94	S	-67.81	-68.57	3.36	-2.60	-13.00	-54.81
1651.00	Н	-62.00	-60.83	3.05	-4.22	-13.00	-49.00

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ARFCN Operation Ba	and al Frequency	:CH 20415 1 RB 1 14 :LTE B5 :825.5 MHz	Ter	t Date np./Humi. gineer		:2015-06-11 :21 deg_C / :Curry	
Operation N EUT Pol.		:TX LOW :H Plan		asurement Ante		:HORIZON	TAL
0 Lev	vel (dBm/m)						_
-10					PART	22 26/36/LTE B5	
-20		· · · · · · · · · · · · · · · · · · ·				 	
-30				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
-40						 	
-50	 					 	
-60							
-70	45 31						
-80							
-90							
-100 <mark> </mark> 30	2	2024.	4018. Frequency (MH	6012.	8006.	100	00
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
		15	Output Level	Gain	Loss	15	15
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
72 65	c	60.00	62.20	1 65	1.02	12.00	56.00
73.65	S	-69.00	-63.32 -79.22	-4.65 1.05	-1.03	-13.00	-56.00
180.35 348.16	S S	-79.68 76.67	-79.22 -78.47	1.05 3.76	-1.50 -1.96	-13.00 -13.00	-66.68 -63.67
348.16 398.60	S S	-76.67 -74.66	-78.47 -76.34		-1.96 -1.95		-63.67
598.00 531.49	S S	-74.00	-76.34 -74.94	3.62 3.65	-1.93	-13.00 -13.00	-61.66
776.90	S	-69.51	-74.94	3.37	-2.48	-13.00	-56.51
1651.00	H	-61.32	-60.16	3.05	-4.22	-13.00	-48.32
1001.00		01.02	00.10	2.00		10.00	10.52

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ARFCN		:CH 20415 1 RB 1 14	6QAM BW 3 _{Tes}	t Date		:2015-06-11		
Operation Band		:LTE B5		np./Humi.		:21 deg_C / 52 RH		
Fundament Operation N	al Frequency	:836.5 MHz :TX MID	Eng	Engineer :Curry				
EUT Pol.	vioue	:H Plan	Me	asurement Anter	nna Pol.	:VERTICA	L	
(Level (dBm/m)							
-10	D					PART-22-26/36/L1	E 85	
-20	0							
-30	D					 		
-40	D			·				
-50	D	8						
-60	0 ¹	7						
-7(0 2 4 ⁵			·		·		
-80	D	·		·		·		
-9(
-10	0 <mark> </mark> 30	2024.	4018.	6012.	800	6.	10000	
			Frequency	(MHZ)				
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
76.56	S	-62.25	-57.44	-3.77	-1.04	-13.00	-49.25	
235.64	S	-75.17	-76.87	3.30	-1.59	-13.00	-62.17	
255.04	S	-75.46	-77.37	3.56	-1.65	-13.00	-62.46	
439.34	S	-73.53	-74.90	3.40	-2.03	-13.00	-60.53	
536.34	S	-71.97	-73.10	3.63	-2.50	-13.00	-58.97	
770.11	S	-67.73	-68.33	3.35	-2.74	-13.00	-54.73	
1673.00	Н	-60.20	-58.95	3.01	-4.26	-13.00	-47.20	
2509.50	Н	-55.74	-54.06	3.67	-5.35	-13.00	-42.74	

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	al Frequency	:CH 20415 RB 1 14 :LTE B5 :836.5 MHz :TX MID :H Plan	Tei En	st Date np./Humi. gineer easurement Ante	nna Pol.	:2015-06-11 :21 deg_C / :Curry :HORIZON	
0 Lev	vel (dBm/m)						Г
-10					PAR	T-22-26/36/LTE-B5	
-20····							
-30	 						
-40	 						
-50	7	8					
-60	6						
-70	<u>4</u> 5						
-80				·			
-90 ****							
-100 <mark>30</mark>	2	024.	4018. Frequency (M	6012. Hz)	8006.	100	00
Enor	Note	TIDD			Cabla	Limit	Monain
Freq.	Note	EIRP	SG Output Loval	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBi	Loss dB	dBm	dB
MITZ	Γ/Π/Ε/3	UDIII	UDIII	UDI	ŰБ	UDIII	uБ
34.85	S	-72.09	-57.64	-13.67	-0.78	-13.00	-59.09
154.16	S	-79.04	-75.81	-1.82	-1.41	-13.00	-66.04
342.34	S	-75.35	-77.15	3.74	-1.94	-13.00	-62.35
367.56	S	-74.29	-76.04	3.71	-1.96	-13.00	-61.29
473.29	S	-74.03	-75.43	3.54	-2.14	-13.00	-61.03
776.90	S	-68.92	-69.52	3.37	-2.77	-13.00	-55.92
1673.00	Н	-55.46	-54.22	3.01	-4.26	-13.00	-42.46

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ARFCN Operation Ba Fundamenta Operation M EUT Pol.	al Frequency	RB 1 14 :LTE B5 :848.3 MHz :TX HIGH	Te Er	est Date emp./Humi. ngineer		:2015-06-11 :21 deg_C / :Curry	52 RH
EUT POI.		:H Plan	IVI	easurement Ante	enna Pol.	:VERTICAI	
0 Lev	el (dBm/m)						7
-10					PART	22 2G/3G/LTE B5	
-20							
-30							
-40							
-50		7					
-60							
-70	6 3 ⁴⁵						
-80							
-90						 	
-100 <mark>-100</mark> -30	2	2024.	4018.	6012.	8006.	100	00
			Frequency (M				
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
78.50	S	-61.88	-57.64	-3.19	-1.05	-13.00	-48.88
235.64	S	-75.24	-76.94	3.30	-1.59	-13.00	-62.24
348.16	S	-74.76	-76.56	3.76	-1.96	-13.00	-61.76
450.01	S	-72.64	-73.92	3.34	-2.07	-13.00	-59.64
547.01	S	-71.39	-72.43	3.60	-2.56	-13.00	-58.39
759.44	S	-68.13	-68.73	3.31	-2.72	-13.00	-55.13
2544.90	Н	-56.11	-54.45	3.75	-5.41	-13.00	-43.11

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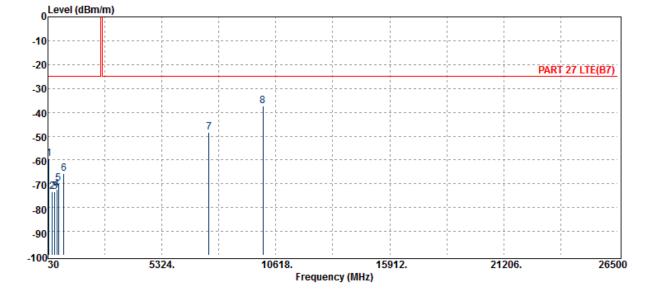
ARFCN Operation Band Fundamental Frequency Operation Mode EUT Pol.	:CH 20643 16 RB 1 14 :LTE B5 :848.3 MHz :TX HIGH :H Plan	Tem Eng	Date p./Humi. ineer surement Ante	:	2015-06-11 21 deg_C / Curry HORIZON	52 RH
0 Level (dBm/m)		· · · · ·				-
-10				PART	22-26/36/LTE B5	
-20						
-30						
-40					, , , , ,	
-50	7				 	
-60					1 1 	
-7070						
-80						
-90						
-100 <mark> </mark>	024.	4018.	6012.	8006.	100	100
		Frequency (MHz)			
Freq. Note	EIRP	SG	Antenna	Cable	Limit	Margin
		Output Level	Gain	Loss		
MHz F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
32.91 S	-71.55	-56.66	-14.13	-0.76	-13.00	-58.55
163.86 S	-79.06	-76.45	-1.15	-1.46	-13.00	-66.06
343.31 S	-76.43	-78.23	3.74	-1.94	-13.00	-63.43
437.40 S	-74.73	-76.11	3.41	-2.03	-13.00	-61.73
508.21 S	-73.88	-75.27	3.73	-2.35	-13.00	-60.88
786.60 S	-69.30	-69.90	3.40	-2.80	-13.00	-56.30
2544.90 H	-48.64	-46.98	3.75	-5.41	-13.00	-35.64

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Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 7(The Worst Case)

ARFCN	:CH 20775 16QAM BW : RB 1 0	⁵ Test Date	:2015-06-11
Operation Band	:LTE B7	Temp./Humi.	:24 deg_C / 59 RH
Fundamental Frequency	:2502.5 MHz	Engineer	:Curry
Operation Mode	:TX LOW		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
75.59	S	-59.59	-56.65	-1.91	-1.03	-25.00	-34.59
237.58	S	-73.40	-77.24	5.44	-1.60	-25.00	-48.40
350.10	S	-73.48	-77.42	5.91	-1.97	-25.00	-48.48
445.16	S	-72.16	-75.63	5.52	-2.05	-25.00	-47.16
522.76	S	-69.95	-73.35	5.83	-2.43	-25.00	-44.95
765.26	S	-65.71	-68.46	5.48	-2.73	-25.00	-40.71
7507.50	Н	-48.48	-50.47	11.71	-9.71	-25.00	-23.48
10010.00	Н	-37.23	-38.51	12.60	-11.32	-25.00	-12.23

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ARFCN		:CH 20775 1 RB 1 0	6QAM BW 5	Test Date		:2015-06-11	
	al Frequency	:LTE B7 :2502.5 MHz :TX LOW		Femp./Humi. Engineer		:24 deg_C / 5 :Curry	59 RH
Operation N EUT Pol.	loue	:E1 Plan	Ν	Measurement Ante	enna Pol.	:HORIZON7	TAL
Lou	ol (dDm/m)						
0	el (dBm/m)]
-10					·		
-20	·					PART 27 LTE(B7)	
-30			8	· · · · · · · · · · · · · · · · · · ·	·		
-40		7	Ĭ		· · · · · · · · · · · · · · · · · · ·		
-50							
- 60 6					·		
-70					·		
-80					·		
-90					·		
-100 <mark>-100</mark> -100	5	5324.	10618.	15912.	21206.	2650])0
			Frequency	(MHZ)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Leve	l Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
30.00	S	-69.54	-56.08	-12.73	-0.73	-25.00	-44.54
160.95	S	-76.77	-76.11	0.78	-1.44	-25.00	-51.77
340.40	S	-74.92	-78.88	5.89	-1.93	-25.00	-49.92
381.14	S	-72.76	-76.63	5.82	-1.95	-25.00	-47.76
536.34	S	-71.56	-74.84	5.78	-2.50	-25.00	-46.56
740.04	S	-66.88	-69.65	5.45	-2.67	-25.00	-41.88
7507.50	Н	-43.77	-45.76	11.71	-9.71	-25.00	-18.77
10010.00	Н	-39.96	-41.25	12.60	-11.32	-25.00	-14.96

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ARFCN		:CH 21100 1 RB 1 0	16QAM BW 5 _{To}	est Date		:2015-06-11	
	al Frequency	:LTE B7 :2535 MHz		emp./Humi. ngineer		:24 deg_C / : :Curry	59 RH
Operation M EUT Pol.	lode	:TX MID :E1 Plan	N	leasurement Ante	nna Pol.	:VERTICAL	,
Leve	el (dBm/m)						
-10							
-20							
-30						PART 27 LTE(B7)	
			8				
-40		7					
-50							
-60 - 6							
-70 2							
-80							
-90							
-100 <mark>-100</mark> -30	5	5324.	10618. Frequency (I	15912. MHz)	21206.	265	วีอ
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
78.50	S	-58.31	-56.22	-1.04	-1.05	-25.00	-33.31
246.31	S	-73.28	-77.18	5.53	-1.63	-25.00	-48.28
345.25	S	-73.09	-77.04	5.90	-1.95	-25.00	-48.09
439.34	S	-71.48	-74.99	5.55	-2.03	-25.00	-46.48
534.40	S	-68.93	-72.23	5.79	-2.49	-25.00	-43.93
752.65	S	-65.44	-68.18	5.44	-2.70	-25.00	-40.44
7605.00	Н	-49.36	-51.40	11.79	-9.75	-25.00	-24.36
10140.00	Н	-34.77	-36.11	12.63	-11.30	-25.00	-9.77

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ARFCN		:CH 21100 1 RB 1 0	6QAM BW 5 T	Test Date		:2015-06-11	
	al Frequency	:LTE B7 :2535 MHz :TX MID		Temp./Humi. Engineer		:24 deg_C / : :Curry	59 RH
Operation M EUT Pol.	loue	:E1 Plan	Ν	Measurement Ante	enna Pol.	:HORIZON	TAL
Leve	el (dBm/m)						
0]
-10							
-20						PART 27 LTE(B7)	
-30							
-40		7	8				
-50		· · · · · · · · · · · · · · · · · · ·					
-60 6							
-70 - 2							
-80		· - [
-90							
-100 <mark>30</mark>	5	i324.	10618. Frequency	15912. (MHz)	21206.	2650	00
				(1112)			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	l Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
36.79	S	-69.73	-57.77	-11.17	-0.80	-25.00	-44.73
172.59	S	-76.62	-77.02	1.89	-1.49	-25.00	-51.62
343.31	S	-73.96	-77.91	5.89	-1.94	-25.00	-48.96
405.39	S	-72.67	-76.47	5.74	-1.94	-25.00	-47.67
493.66	S	-71.91	-75.51	5.86	-2.26	-25.00	-46.91
791.45	S	-66.78	-69.52	5.57	-2.82	-25.00	-41.78
7605.00	Н	-45.93	-47.96	11.79	-9.75	-25.00	-20.93
10140.00	Н	-42.03	-43.37	12.63	-11.30	-25.00	-17.03

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ARFCN		:CH 21425 1 RB 1 0	6QAM BW 5 _{Test}	Date		:2015-06-11	
	al Frequency	:LTE B7 :2567.5 MHz :TX HIGH		p./Humi. ineer		:24 deg_C / : :Curry	59 RH
Operation N EUT Pol.	noue	:E1 Plan	Mea	surement Ante	nna Pol.	:VERTICAL	
Lov	el (dBm/m)						
0]
-10							
-20						PART 27 LTE(B7)	
-30		<mark>1</mark>	8				
-40		7					
-50		····					
- 60	3						
-702							
-80							
-90							
-100 <mark>-100</mark>	5	5 324.	10618.	15912.	21206.	265	 00
			Frequency (MHz	()			
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
							_
76.56	S	-60.74	-58.09	-1.62	-1.04	-25.00	-35.74
235.64	S	-72.98	-76.83	5.45	-1.59	-25.00	-47.98
298.69	S	-72.71	-76.68	5.75	-1.78	-25.00	-47.71
400.54	S	-71.87	-75.69	5.77	-1.95	-25.00	-46.87
546.04	S	-69.22	-72.42	5.75	-2.55	-25.00	-44.22
764.29	S	-65.76	-68.50	5.48	-2.73	-25.00	-40.76
7702.50	Н	-47.86	-49.85	11.87	-9.87	-25.00	-22.86
	11	17.00					
10270.00	Н	-34.25	-35.36	12.65	-11.54	-25.00	-9.25

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ARFCN		:CH 21425 1 RB 1 0	6QAM BW 5 _{Te}	est Date		:2015-06-11	
	al Frequency	:LTE B7 :2567.5 MH2		emp./Humi. ngineer		:24 deg_C / 5 :Curry	59 RH
Operation N EUT Pol.	lode	:TX HIGH :E1 Plan	N	leasurement Ante	nna Pol.	:HORIZONT	TAL
Lev	el (dBm/m)						
0]
-10							
-20						PART 27 LTE(B7)	
-30	1		8				
-40		7					
-50							
- 60)						
- 70		·					
-80							
-90							
-100 <mark>30</mark>	5	i 324.	10618. Frequency (I	15912. MHz)	21206.	2650	00
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
32.91	S	-67.94	-55.20	-11.98	-0.76	-25.00	-42.94
173.56	S	-76.99	-77.55	2.05	-1.49	-25.00	-51.99
333.61	S	-74.89	-78.85	5.87	-1.91	-25.00	-49.89
440.31	S	-71.92	-75.42	5.55	-2.04	-25.00	-46.92
517.91	S	-70.90	-74.34	5.85	-2.40	-25.00	-45.90
786.60	S	-66.57	-69.31	5.55	-2.80	-25.00	-41.57
7702.50	Н	-48.20	-50.19	11.87	-9.87	-25.00	-23.20
10270.00	Н	-40.22	-41.33	12.65	-11.54	-25.00	-15.22

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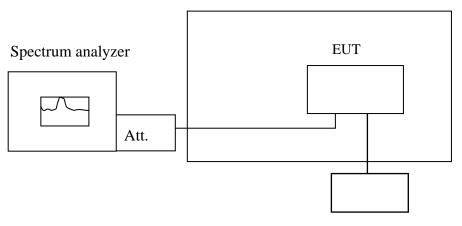
11. FREQUENCY STABILITY MEASUREMENT

12.1. Standard Applicable:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

12.2. Test Set-up:

Temperature Chamber



Variable DC Power Supply

Note: Measurement setup for testing on Antenna connector

12.3. Measurement Procedure:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Set chamber temperature to 25 . Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as declared by the manufacturer, record the maximum frequency change.

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12.4. Measurement Equipment Used:

Conducted Emission (measured at antenna port) Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
ТҮРЕ		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2015	01/28/2016			
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016			
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015			
Temperature Chamber	TERCHY	MHG-120LF	911009	05/06/2015	05/05/2016			
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2015	01/01/2016			
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016			
Splitter	Agilent	11636B	N/A	01/02/2015	01/01/2016			
DC Power Supply	Agilent	E3640A	MY52410006	11/10/2014	11/09/2015			

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12.5. Measurement Result:

FREQUENCY ERROR vs. VOLTAGE

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz								
		Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency						
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)				
		()						
4.4	20	836.599998	4	2091				
3.8	20	836.599994	0	2091				
3.2	20	836.599993	-1	2091				
2.9	20	826 50000	4	2001				
(End point)	20	836.599998	4	2091				

FREQUENCY ERROR vs. TEMPERATURE

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz							
	Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency					
Vdc	Temperature	(MHz)	Delta (Hz)	Limit (Hz)			
3.8	50	836.599996	2	2091			
3.8	40	836.599995	1	2091			
3.8	30	836.599994	0	2091			
3.8	20	836.599994	0	2091			
3.8	10	836.600002	8	2091			
3.8	0	836.599999	5	2091			
3.8	-10	836.600000	6	2091			
3.8	-20	836.599996	2	2091			
3.8	-30	836.599997	3	2091			

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Reference Frequency: GPRS 1900 Mid Channel 1880 MHz							
Limit: +/- 2.5 ppm							
Power Supply Environment Frequency							
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)			
4.4	20	1879.999997	-2	4700			
3.8	20	1879.999999	0	4700			
3.2	20	1879.999998	-1	4700			
2.9	20	1070 00000		1700			
(End point)	20	1879.999999	0	4700			

FREQUENCY ERROR vs. VOLTAGE

FREQUENCY ERROR vs. TEMPERATURE

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz							
	Limit: +/- 2.5 ppm						
Power Supply	Environment	ronment Frequency					
Vdc	Temperature	(MHz)	Delta (Hz)	Limit (Hz)			
3.8	50	1879.999997	-2	4700			
3.8	40	1879.999999	0	4700			
3.8	30	1879.999998	-1	4700			
3.8	20	1879.999999	0	4700			
3.8	10	1880.000002	3	4700			
3.8	0	1879.999999	0	4700			
3.8	-10	1879.999997	-2	4700			
3.8	-20	1879.999998	-1	4700			
3.8	-30	1880.000000	1	4700			

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1	Reference Frequency: WCDMA II Mid Channel 1880 MHz							
	Limit: +/- 2.5 ppm							
Power Supply Environment Frequency Data (II-)								
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)				
4.4	20	1879.999998 -1		4700				
3.8	20	1879.999999	0	4700				
3.2	20	1880.000001	2	4700				
2.9		1000 00000		1700				
(End point)	20	1880.000002	3	4700				

FREOUENCY ERROR vs. VOLTAGE

FREQUENCY ERROR vs. TEMPERATURE

Reference Frequency: WCDMA II Mid Channel 1880							
Limit: +/- 2.5 ppm							
Power Supply	ver Supply Environment Frequency Dalka (Up)						
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)			
3.8	50	1879.999999	0	4700			
3.8	40	1880.000001	2	4700			
3.8	30	1880.000000	1	4700			
3.8	20	1879.999999	0	4700			
3.8	10	1880.000002	3	4700			
3.8	0	1879.999999	0	4700			
3.8	-10	1879.999997	-2	4700			
3.8	-20	1879.999999	0	4700			
3.8	-30	1879.999999	0	4700			

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Reference Frequency: WCDMA V Mid Channel 836.6 MHz							
Limit: +/- 2.5 ppm							
Power Supply Environment Frequency							
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)			
4.4	20	836.599999	-3	2091			
3.8	20	836.600002	0	2091			
3.2	20	836.599999	-3	2091			
2.9			2	0001			
(End point)	20	836.599999	-3	2091			

FREOUENCY ERROR vs. VOLTAGE

FREQUENCY ERROR vs. TEMPERATURE

Reference Frequency: WCDMA V Mid Channel 836.6 MHz							
	Limit: +/- 2.5 ppm						
Power Supply	er Supply Environment Frequency Delta (Uz)						
Vdc	Temperature ()	(MHz)	Delta (Hz)	Limit (Hz)			
3.8	50	836.599998	-4	2091			
3.8	40	836.599999	-3	2091			
3.8	30	836.600003	1	2091			
3.8	20	836.600002	0	2091			
3.8	10	836.599996	-6	2091			
3.8	0	836.599998	-4	2091			
3.8	-10	836.599998	-4	2091			
3.8	-20	836.599999	-3	2091			
3.8	-30	836.600000	-2	2091			

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FREQUENCY ERROR vs. VOLTAGE

Reference Frequency:		LTE B5 Mid Channel	836.5	MHz 10M QPSK CH 20525			
	Limit: +/- 2.5 ppm						
Power Sup- ply	Environment	Frequency					
Vdc	Temperature	(MHz)	Delta (Hz)	Limit (Hz)			
4.37	25	836.500004	1.30	2091			
3.8	25	836.500003	0.00	2091			
3.23	25	836.500004	0.70	2091			
3.22 (End Point)	25	836.500005	1.90	2091			

FREOUENCY ERROR vs. TEMPERATURE

Reference Frequency:		LTE B5 Mid Channel	836.5	MHz	10M QPSK CH 20525		
		Limit: +/	- 2.5 ppm				
Power Supply	Environment	Frequency					Limit (Uz)
Vdc	Temperature	(MHz)	Delta (Hz)		Limit (Hz)		
3.8	-30	836.500006	2.60		2091		
3.8	-20	836.500006	3.10		2091		
3.8	-10	836.500006	2.30		2091		
3.8	0	836.500004	0.90		2091		
3.8	10	836.500004	0.70		2091		
3.8	20	836.500003	0.00		2091		
3.8	30	836.500004	0.60		2091		
3.8	40	836.500005	1.40		2091		
3.8	50	836.500005	1.90		2091		

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FREQUENCY ERROR vs. VOLTAGE

Reference Frequency:		LTE B7 Mid Channel	2535.0	MHz 10M QPSK CH 21100		
	Limit: +/- 2.5 ppm					
Power Sup- ply	Environment	Frequency				
Vdc	Temperature	(MHz)	Delta (Hz)	Limit (Hz)		
4.37	25	2535.000008	2.90	6338		
3.8	25	2535.000005	0.00	6338		
3.23	25	2535.000006	1.00	6338		
3.15 (End Point)	25	2535.000009	3.50	6338		

FREQUENCY ERROR vs. TEMPERATURE

Reference Frequency:		LTE B7 Mid Channel	2535.0	MHz 10M QPSK CH 21100
		Limit: +/- 2.5	ppm	
Power Supply	Environment	Frequency	Delte (Uz)	
Vdc	Temperature ()	(MHz) Delta (Hz		Limit (Hz)
3.8	-30	2535.000010	4.20	6338
3.8	-20	2535.000009	3.00	6338
3.8	-10	2535.000008	2.60	6338
3.8	0	2535.000007	1.80	6338
3.8	10	2535.000006	0.40	6338
3.8	20	2535.000006	0.00	6338
3.8	30	2535.000004	-1.90	6338
3.8	40	2535.000004	-1.40	6338
3.8	50	2535.000005	-0.80	6338

Note: The battery is rated 3.8V dc.

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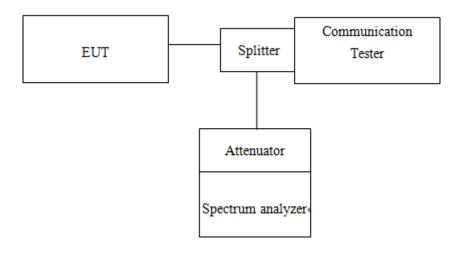


PEAK TO AVERAGE RATIO 3.

13.1. Standard Applicable

The peak-to-average ration (PAR) of the transmission may not exceed 13dB.

13.2. Test SET-UP



13.3. Measurement Procedure

- 1. KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:
- 2. Set resolution/measurement bandwidth \geq signal's occupied bandwidth; & internal =1ms
- 3. Set the number of counts to a value that stabilizes the measured CCDF curve.

Conducted Emission (measured at antenna port) Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2015	01/28/2016	
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2015	02/10/2016	
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/08/2014	10/09/2015	
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2015	01/01/2016	
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016	
Splitter	Agilent	11636B	N/A	01/02/2015	01/01/2016	
DC Power Supply	Agilent	E3640A	MY52410006	11/10/2014	11/09/2015	

13.4. Measurement Equipment Used

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13.5. Measurement Result

Tabular Results:

Frequency	СН	P	eak-to-Average Ra (dB)	ıtio
(MHz)	Сп	GSM	GPRS	EDGE
824.20	128	10.43	9.70	12.00
836.60	190	9.72	10.56	12.52
848.80	251	9.72	10.32	12.23

Frequency	СН	Pe	eak-to-Average Ra (dB)	itio
(MHz)	Ch	GSM	GPRS	EDGE
1850.20	512	9.77	10.12	12.90
1880.00	661	9.55	9.53	12.28
1909.80	810	9.98	8.69	12.32

Frequency	СН	Peak-to-Average Ratio (dB)				
(MHz)	Ch	WCDMA II	HSDPA II	HSUPA II		
1850.20	9262	2.76	3.78	3.70		
1880.00	9400	2.87	3.84	3.88		
1909.80	9538	2.70 3.77 3.73				

Frequency	СН	Peak-to-Average Ratio (dB)				
(MHz)	en	WCDMA V	HSDPA V	HSUPA V		
826.40	4132	2.99	3.63	3.81		
836.60	4183	3.00	3.59	3.83		
846.60	4233	2.99	4.09	3.96		

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LTE BAND 5									
Channel bandwidth: 1.4MHz				Cha	annel bar	ndwidth: 3Ml	Hz		
Frequency (MHz) CH	CII	Peak-to-Average Ratio (dB)		Frequency	СН	Peak-to-Average Ratio (dB)			
	Сп	16QAM	LIMIT	(MHz)	Сп	16QAM	LIMIT		
824.7	20407	6.56	13	825.5	20415	6.30	13		
836.5	20525	6.90	13	836.5	20525	6.71	13		
848.3	20643	6.66	13	847.5	20635	6.38	13		

LTE BAND 5									
Channel bandwidth: 5MHz				Cha	nnel ban	dwidth: 10M	Hz		
Frequency (MHz) CH	Peak-to-Av (d	erage Ratio B) Frequen		СН	Peak-to-Average Ratio (dB)				
	СП	16QAM	LIMIT	(MHz)	Сп	16QAM	LIMIT		
826.5	20425	6.50	13	8229.0	20450	6.43	13		
836.5	20525	6.77	13	836.5	20525	6.67	13		
846.5	20625	6.54	13	844.0	20600	6.52	13		

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LTE BAND 7									
Channel bandwidth: 5MHz				Cha	nnel ban	dwidth: 10M	Hz		
Frequency	V CH Peak-to-Average Ratio (dB)		Frequency	СЦ		Average Ratio (dB)			
(MHz)	СН	16QAM	LIMIT	(MHz)	СН	16QAM	LIMIT		
2502.5	23755	6.43	13	2505.0	20800	6.46	13		
2535.0	21100	6.44	13	2535.0	21100	6.35	13		
2567.5	21425	6.06	13	2565.0	21400	6.07	13		

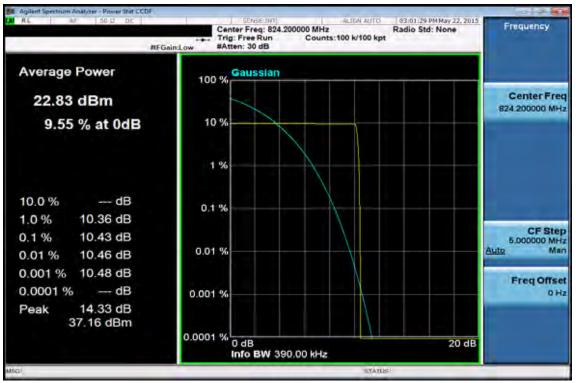
LTE BAND 7									
Channel bandwidth: 15MHz				Cha	nnel ban	dwidth: 20M	Hz		
Frequency	Peak-to-Average Ratio (dB)		Frequency	СН	Peak-to-Average Ratio (dB)				
(MHz)	СН	16QAM	LIMIT	(MHz)	СН	16QAM	LIMIT		
2507.5	20825	6.73	13	2510.0	20850	7.14	13		
2535.0	21100	6.65	13	2535.0	21100	6.97	13		
2562.5	21375	6.52	13	2560.0	21350	6.96	13		

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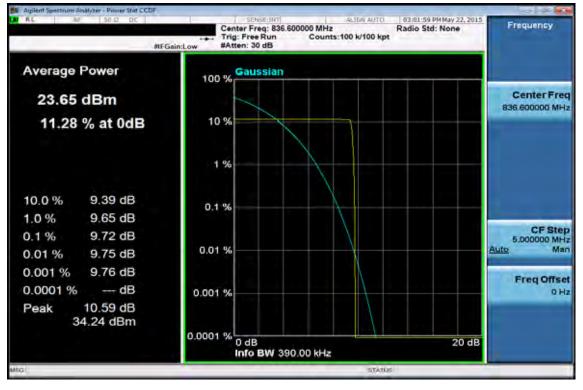


Measurement Results:

GSM 850 Channel Low



GSM 850 Channel Mid

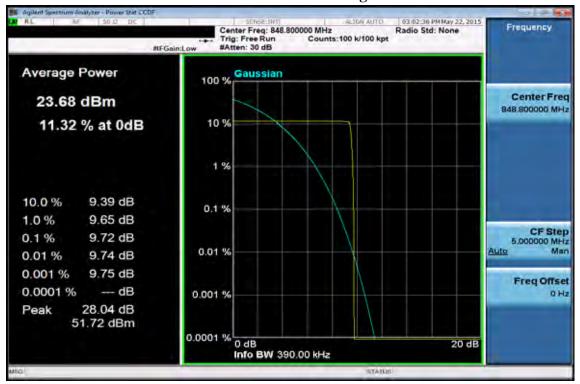


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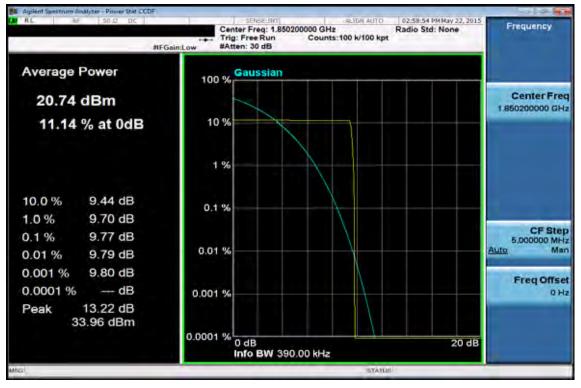
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GSM 850 Channel High



GSM 1900 Channel Low

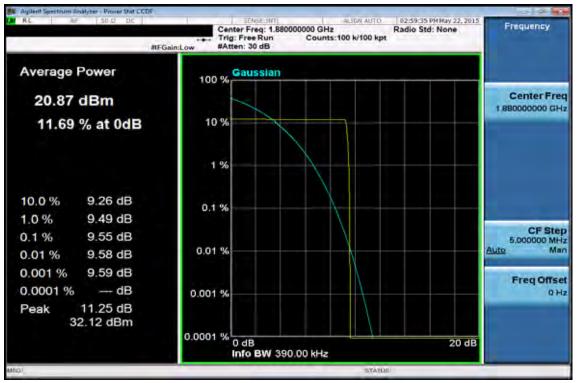


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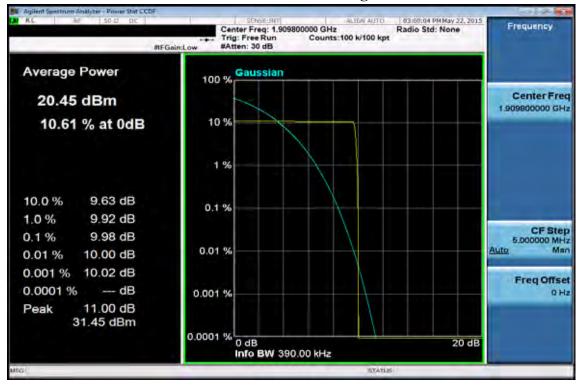
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GSM 1900 Channel Mid



GSM 1900 Channel High

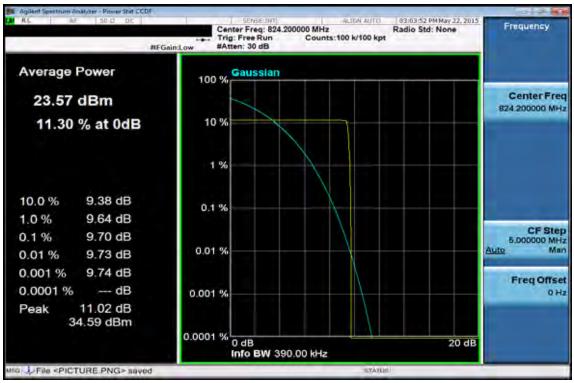


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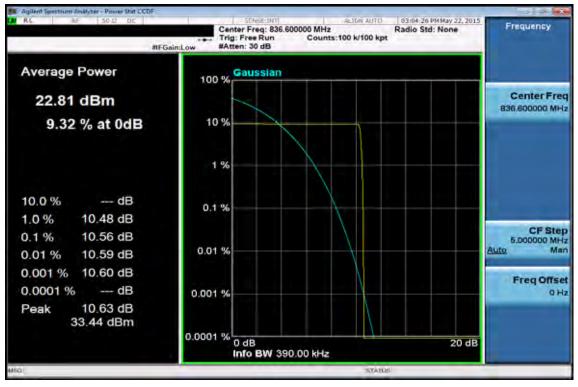
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GPRS 850 Channel Low



GPRS 850 Channel Mid

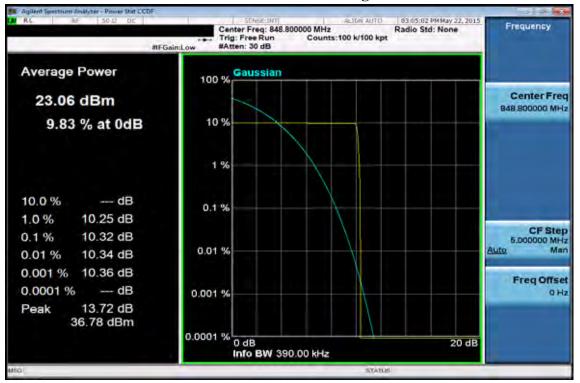


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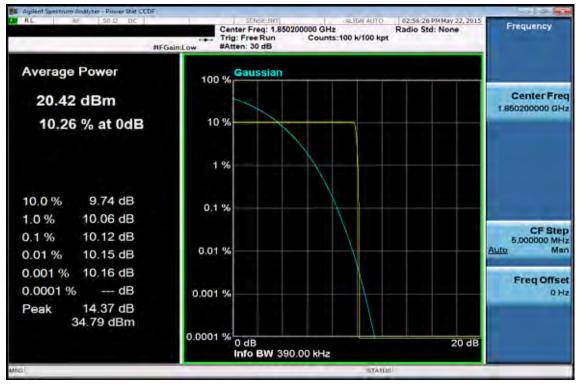
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GPRS 850 Channel High



GPRS 1900 Channel Low

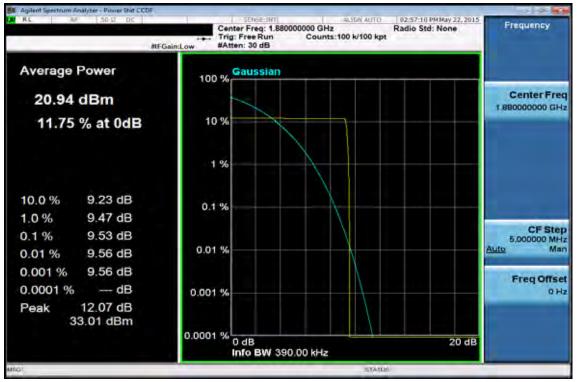


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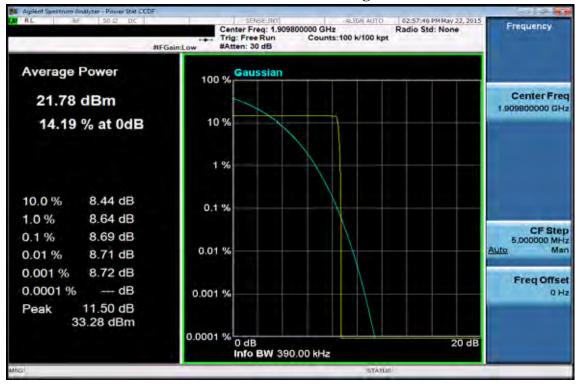
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GPRS 1900 Channel Mid



GPRS 1900 Channel High

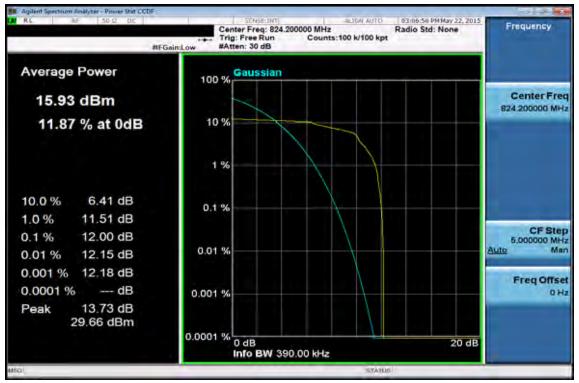


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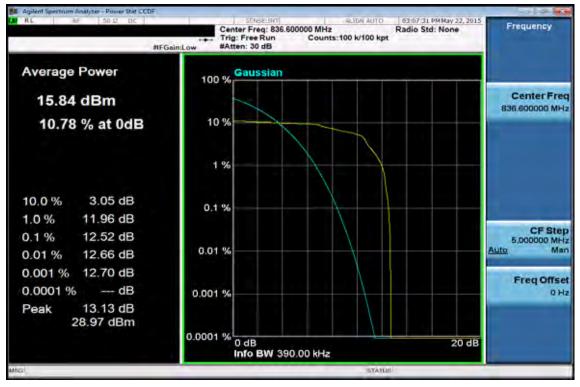
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EDGE 850 Channel Low



EDGE 850 Channel Mid

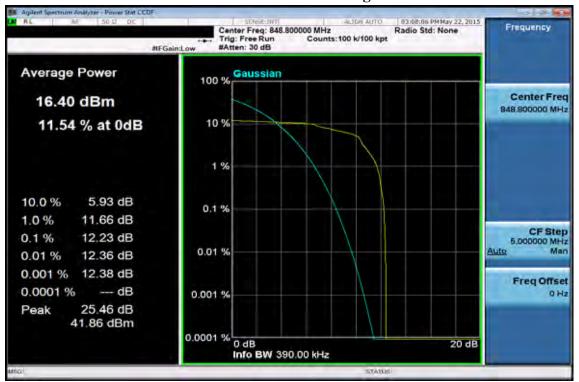


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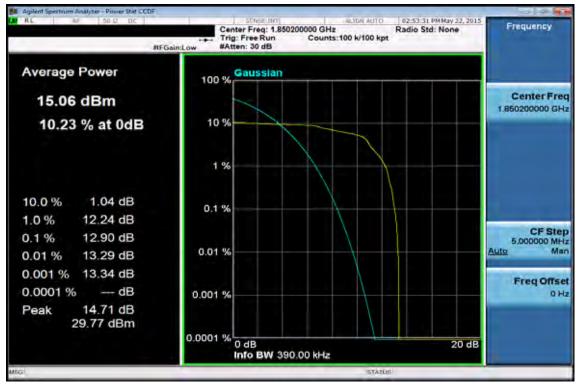
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EDGE 850 Channel High



EDGE 1900 Channel Low

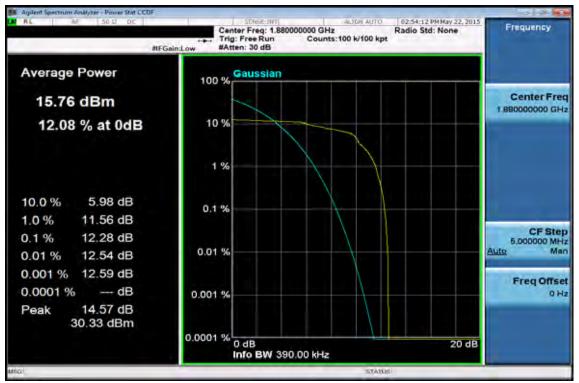


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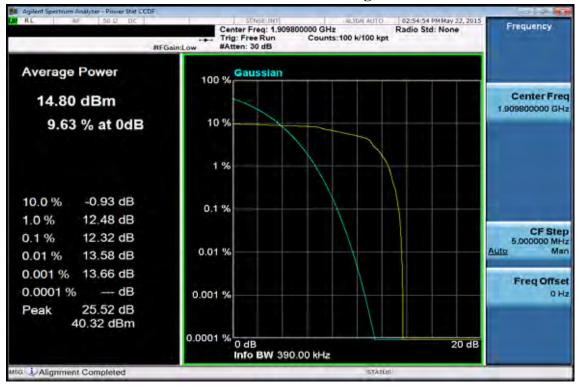
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EDGE 1900 Channel Mid



EDGE 1900 Channel High

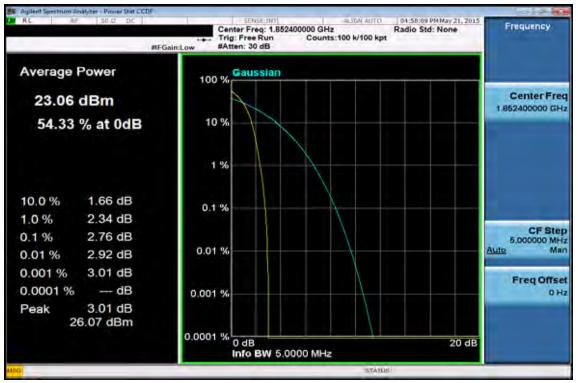


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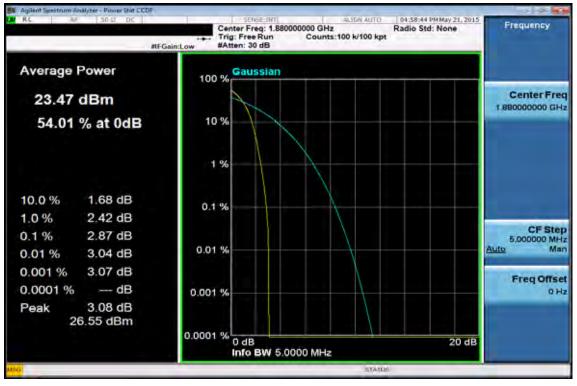
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WCDMA Band II Channel Low



WCDMA Band II Channel Mid



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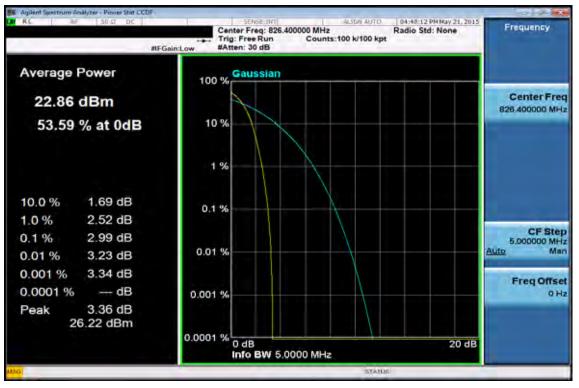
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04:59:24 PM May 21, 2015 Center Freq: 1,907600000 GHz Trig: Free Run Counts: #Atten: 30 dB Frequency Radio Std: None Counts:100 k/100 kpt #FGain:Low Average Power Gaussian 100 % Center Fred 22.93 dBm 1.907600000 GHz 10 % 54.68 % at 0dB 1% 10.0 % 1.65 dB 0.1 % 1.0 % 2.32 dB CF Step 0.1% 2.70 dB 5.000000 MHz 0.01 % Auto Man 0.01 % 2.89 dB 0.001 % 2.94 dB Freq Offset 0.0001 % --- dB 0.001 % 0 Hz Peak 2.96 dB 25.89 dBm 0.0001 % 0 dB 20 dB Info BW 5.0000 MHz UTATE

WCDMA Band II Channel High

WCDMA Band V Channel Low



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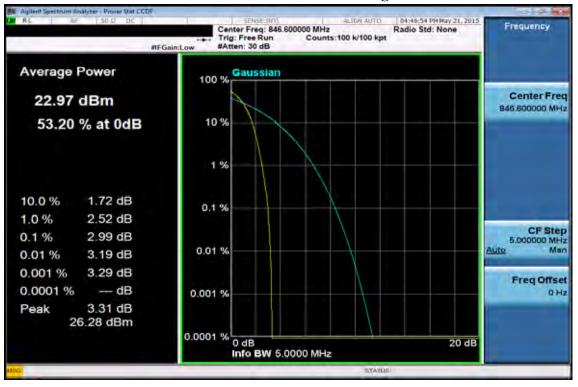
and State CCT 04:47:37 PM May 21, 2015 ALIGN AUTO. Center Freq: 836.600000 MHz Trig: Free Run Counts #Atten: 30 dB Frequency Radio Std: None Counts:100 k/100 kpt #FGain:Low Average Power Gaussian 100 % Center Fred 22.93 dBm 836.600000 MHz 10 % 53.26 % at 0dB 1% 1.71 dB 10.0 % 0.1 % 1.0 % 2.51 dB CF Step 0.1% 3.00 dB 5.000000 MHz 0.01 % Auto Man 0.01 % 3.25 dB 0.001 % 3.31 dB Freq Offset 0.0001 % --- dB 0.001 % 0 Hz 3.34 dB Peak 26.27 dBm 0.0001 % 0 dB 20 dB

WCDMA Band V Channel Mid

WCDMA Band V Channel High

UTATE

Info BW 5.0000 MHz

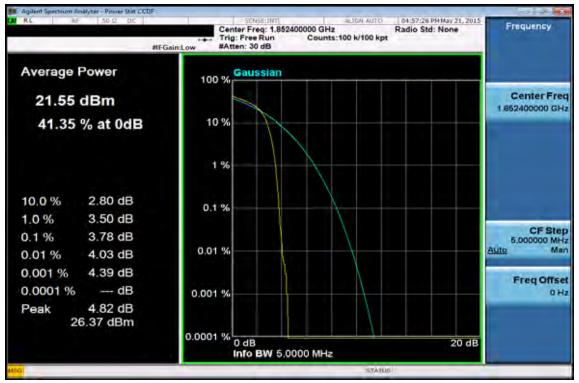


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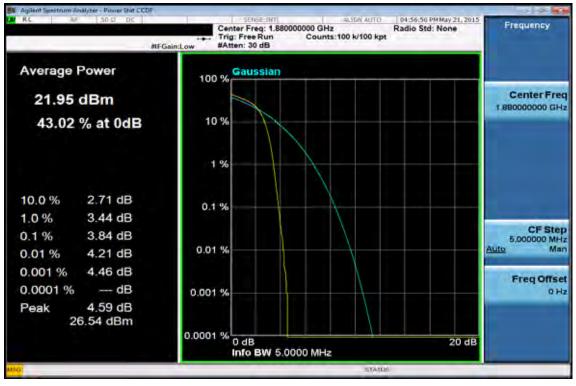
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HSDPA Band II Channel Low



HSDPA Band II Channel Mid

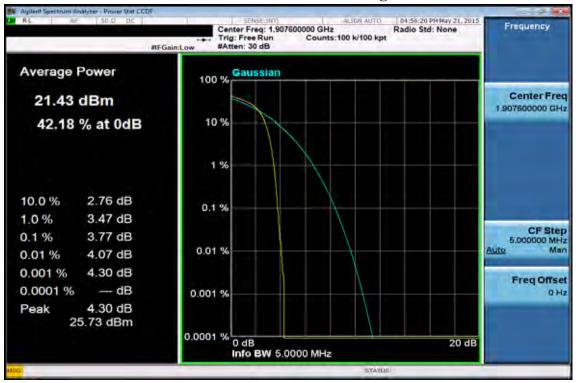


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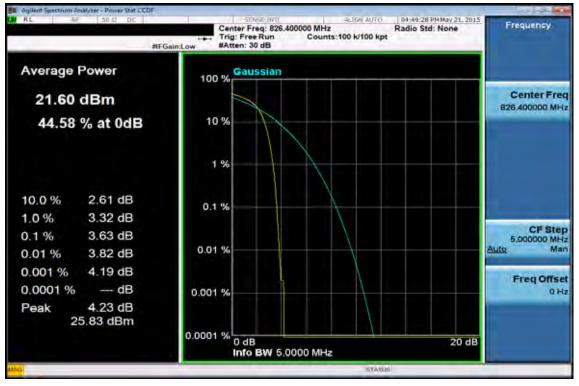
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HSDPA Band II Channel High



HSDPA Band V Channel Low

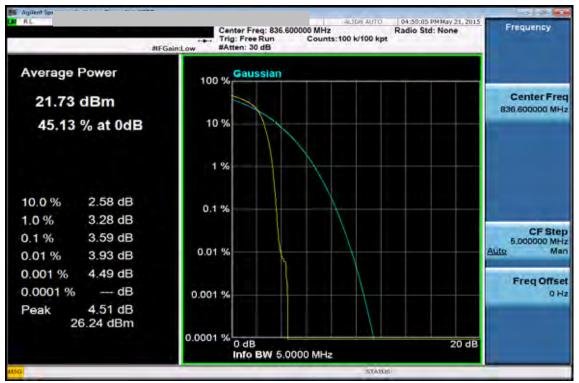


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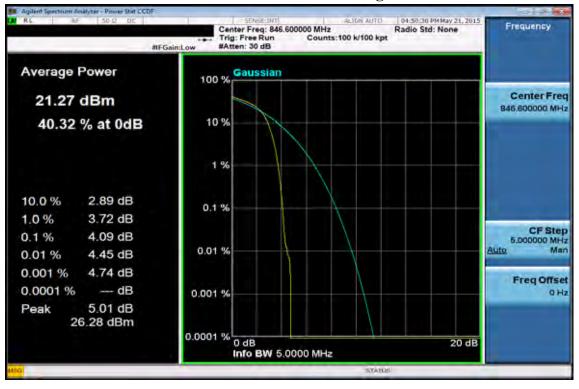
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HSDPA Band V Channel Mid



HSDPA Band V Channel High

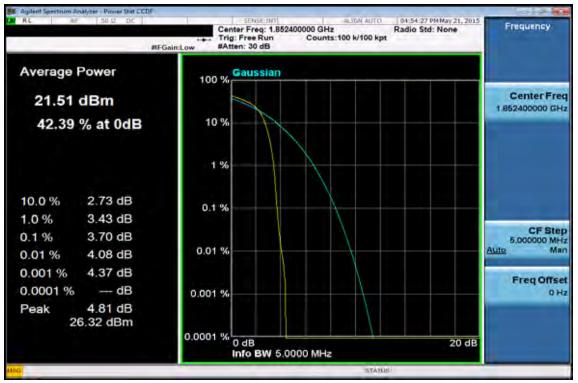


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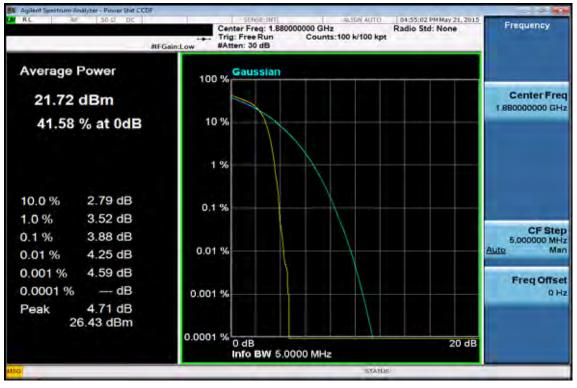
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HSUPA Band II Channel Low



HSUPA Band II Channel Mid

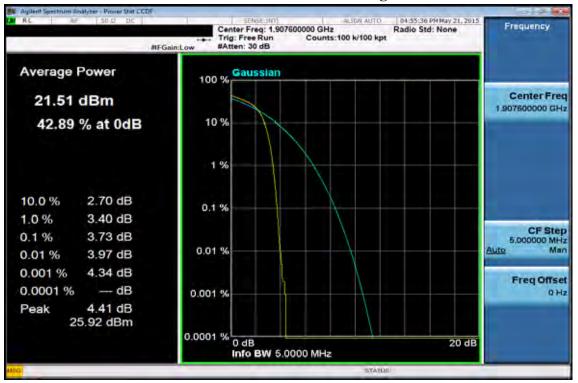


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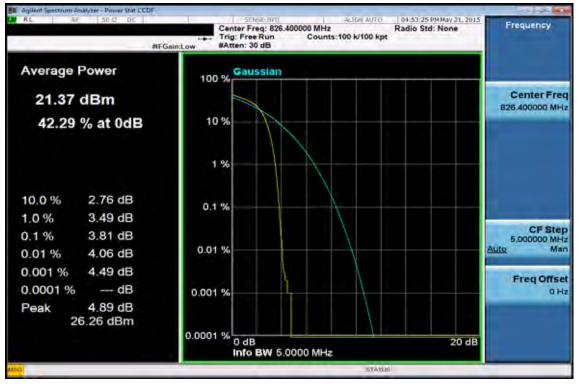
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HSUPA Band II Channel High



HSUPA Band V Channel Low

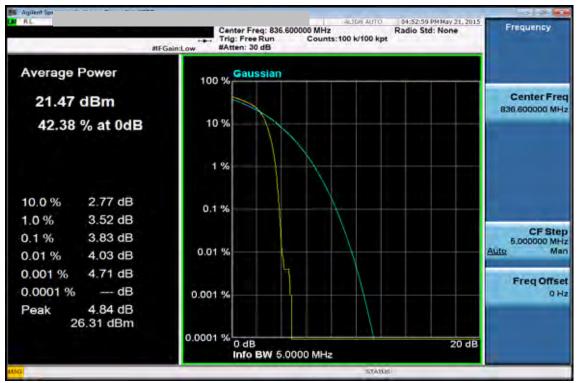


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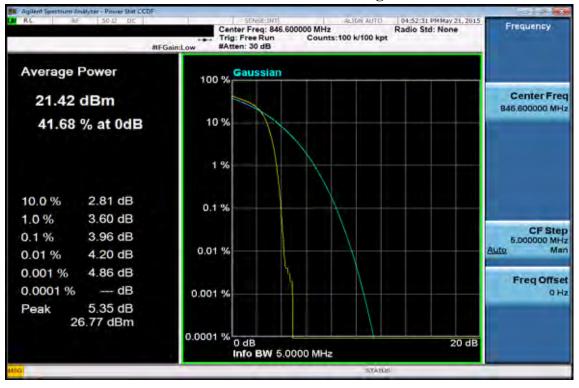
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HSUPA Band V Channel Mid



HSUPA Band V Channel High



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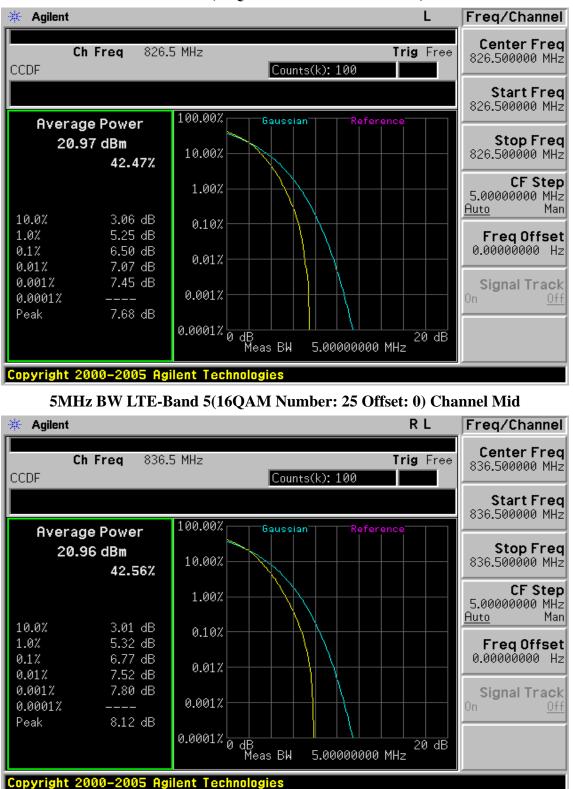








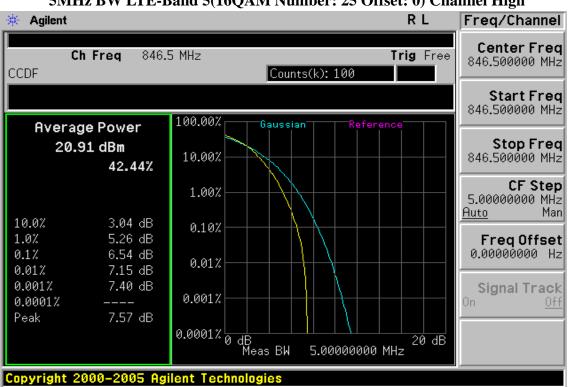




5MHz BW LTE-Band 5(16QAM Number: 25 Offset: 0) Channel Low

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





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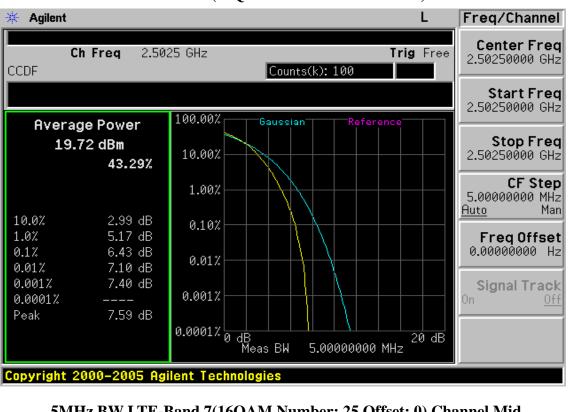
10MHz BW LTE-Band 5(16OAM Number: 50 Offset: 0) Channel Mid

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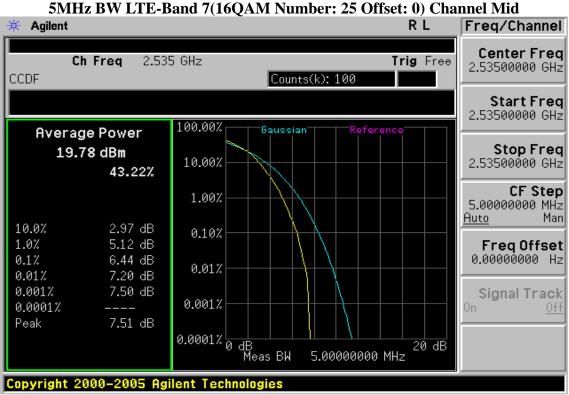
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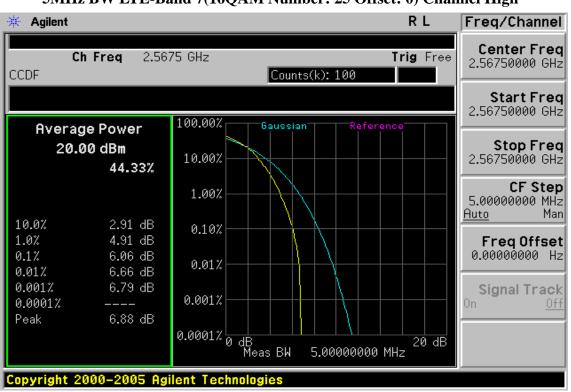






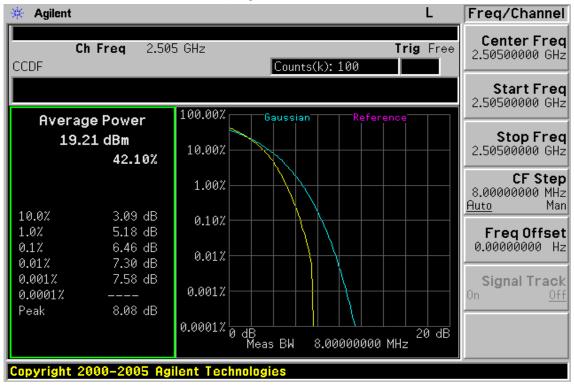






5MHz BW LTE-Band 7(16QAM Number: 25 Offset: 0) Channel High

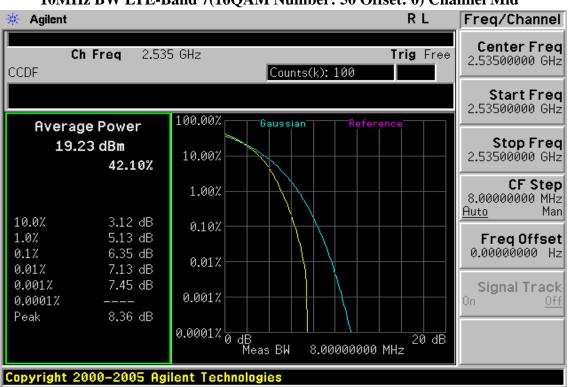
10MHz BW LTE-Band 7(16QAM Number: 50 Offset: 0) Channel Low



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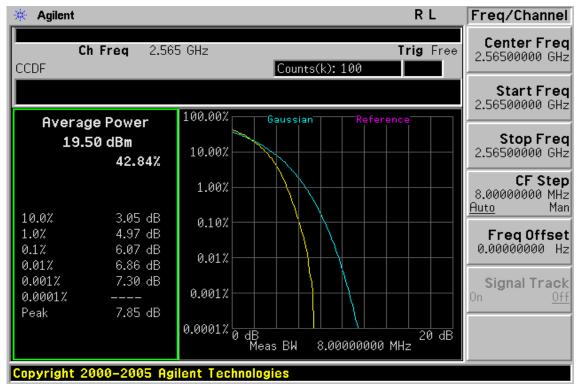
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10MHz BW LTE-Band 7(16OAM Number: 50 Offset: 0) Channel Mid

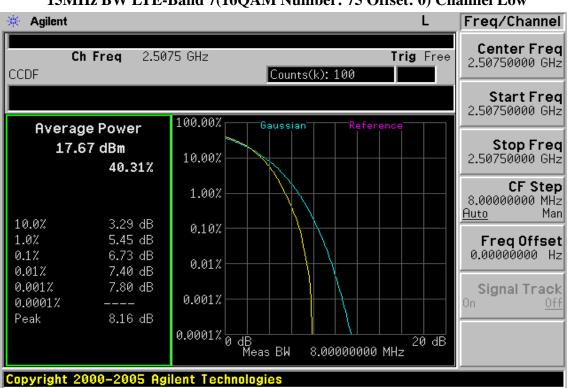
10MHz BW LTE-Band 7(16QAM Number: 50 Offset: 0) Channel High



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

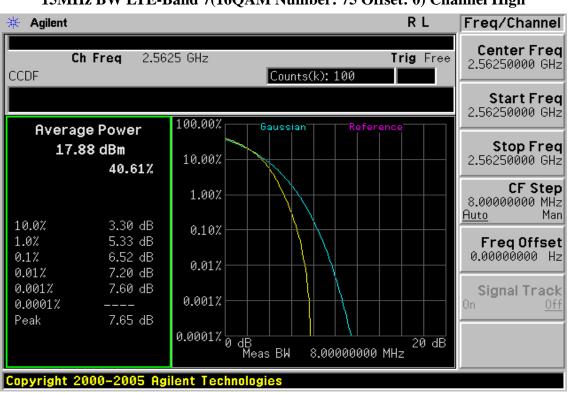
15MHz BW LTE-Band 7(16QAM Number: 75 Offset: 0) Channel Mid



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

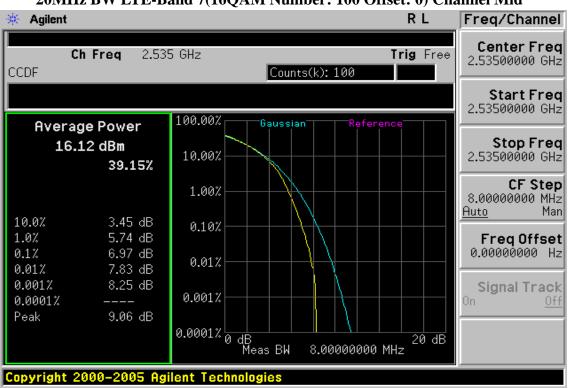
20MHz BW LTE-Band 7(16QAM Number: 100 Offset: 0) Channel Low



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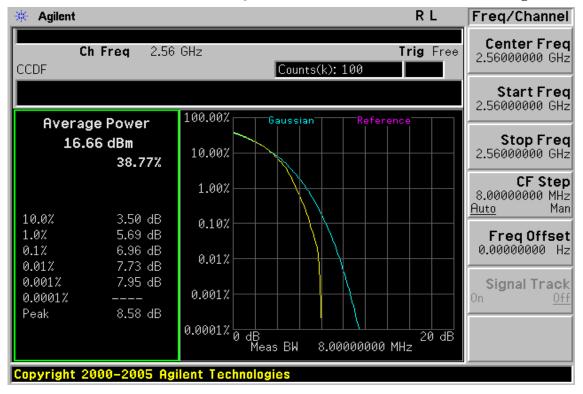
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20MHz BW LTE-Band 7(16OAM Number: 100 Offset: 0) Channel Mid

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



~ End of Report ~

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