

# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**

# INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E and PART 27 SUBPART C & SUBPART L REQUIREMENT

	OF
Product Name:	PDA Phone
Brand Name:	Sony
Type No.:	PM-0871-BV
Model Difference:	N/A
FCC ID:	PY7-PM0871
Report No.:	ER/2015/50038
Issue Date:	Jul. 13, 2015
FCC Rule Part:	2 , 22H & 24E & 27C & L
Prepared for:	Sony Mobile Communications AB
	Nya Vattentornet 22188 Lund/Sweden
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FCC ID: PY7-PM0871

Report No.: ER/2015/50038 Issue Date: Jul. 13, 2015 Page: 2 of 424

# VERIFICATION OF COMPLIANCE

Applicant:	Sony Mobile Communications AB
	Nya Vattentornet 22188 Lund/Sweden
Product Name:	PDA Phone
Brand Name:	Sony
Type No.:	PM-0871-BV
Model Difference:	N/A
FCC ID:	PY7-PM0871
File Number:	ER/2015/50038
Date of test:	Apr. 23, 2014 ~ Jul. 09, 2015
Date of EUT Received:	Apr. 23, 2014

# 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:	Jul. 13, 2015	
Prepared By:	Marcus Tseng / Engineer Tiffany Kao	Date:	Jul. 13, 2015	
Approved By:	Tiffany Kao / Clerk	Date:	Jul. 13, 2015	

Jim Chang / Asst. Manager

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# **Revision History**

Report Number	Revision	Description	Issue Date	
ER/2015/50038 Rev.00		Initial creation of document	Jul. 13, 2015	

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# **Table of Contents**

1.	GEN	ERAL PRODUCT INFORMATION	6
	1.1.	Product Description	6
	1.2.	Product Feature of Equipment Under Test	13
	1.3.	Test Methodology of Applied Standards	14
	1.4.	Test Facility	14
	1.5.	Special Accessories	14
	1.6.	Equipment Modifications	14
2.	SYS	TEM TEST CONFIGURATION	15
	2.1.	EUT Configuration	15
	2.2.	EUT Exercise	15
	2.3.	Test Procedure	15
	2.4.	Measurement Results Explanation Example	16
	2.5.	Final Amplifier Voltage and Current Information:	16
	2.6.	Configuration of Tested System	20
3.	SUN	IMARY OF TEST RESULTS	21
4.	DES	CRIPTION OF TEST MODES	22
	4.1.	The Worst Test Modes and Channel Details	22
5.	MEA	ASUREMENT UNCERTAINTY	
6.	RF (	CONDUCTED OUTPUT POWER MEASUREMENT	
	6.1.	Standard Applicable	29
	6.2.	Test Set-up	29
	6.3.	Measurement Procedure	29
	6.4.	Measurement Equipment Used	30
	6.5.	Measurement Result	30
7.	EFF	ECTIVE RADIATED POWER AND EQUIVALENT ISOTROPIC RADIATED POWH	ER
	ME	ASUREMENT	.44
	7.1.	Standard Applicable	44
	7.2.	Test SET-UP	44
	7.3.	Measurement Procedure	46
	7.4.	Measurement Equipment Used	47
	7.5.	Measurement Result: (Peak) -using option of peak measurement	48
8.	OCO	CUPIED BANDWIDTH MEASUREMENT	72
	8.1.	Standard Applicable	72
	8.2.	Test Set-up	72

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# **FCC ID: PY7-PM0871**

	8.3.	Measurement Procedure	72
	8.4.	Measurement Equipment Used	73
	8.5.	Measurement Result	74
9.	OUT	OF BAND EMISSION AT ANTENNA TERMINALS	
	9.1.	Standard Applicable	
	9.2.	Test SET-UP	164
	9.3.	Measurement Procedure	164
	9.4.	Measurement Equipment Used	
	9.5.	Measurement Result:	
10.	FIEL	D STRENGTH OF SPURIOUS RADIATION MEASUREMENT	
	10.1.	Standard Applicable	
	10.2.	EUT Setup	
	10.3.	Measurement Procedure:	
	10.4.	Measurement Equipment Used:	
	10.5.	Measurement Result:	
11.	FRE	QUENCY STABILITY MEASUREMENT	
	11.1.	Standard Applicable:	
	11.2.	Test Set-up:	
	11.3.	Measurement Procedure:	
	11.4.	Measurement Equipment Used:	
	11.5.	Measurement Result:	
12.	PEA	K TO AVERAGE RATIO	
	12.1.	Standard Applicable	
	12.2.	Test SET-UP	
	12.3.	Measurement Procedure	
	12.4.	Measurement Equipment Used	
	12.5.	Measurement Result	

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# **1. GENERAL PRODUCT INFORMATION**

# 1.1. Product Description

General:

General:			
Product Name:	PDA Phon	e	
Brand Name:	Sony		
Type No.:	PM-0871-BV		
Model Difference:	N/A		
Data Cable (USB):		: EC450, Supplier: K-one 242-6715.3, 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.B coupling with Simple Hands Free (Model No.: : MH755, Supplier: BALDA, Type No.: AG-0502)		
Product SW/HW version:	30.0.B.1.10 / A		
Radio SW/HW version:	30.0.B.1.1	0 / 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:	<ol> <li>Model No.: EP800, Supplier: Phihong Type No.: AC-0300-US</li> <li>Model No.: EP800, Supplier: Salcomp Type No.: AC-0030-US</li> </ol>	
IMEI:	004402455197677		

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#### GSM / WCDMA / LTE:

	Operating Frequency		Rated Power
	GSM/GPRS 850	824.2 MHz- 848.8 MHz	33dBm
	EDGE 850	824.2 MHz- 848.8 MHz	27dBm
	GSM/GPRS 1900	1850.2MHz - 1909.8MHz	30dBm
	EDGE 1900	1850.2MHz - 1909.8MHz	26dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band II	1852.4MHz – 1907.6MHz	24dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band V	826.4MHz - 846.6MHz	24dBm
	LTE-Band 2 (Bandwidth 1.4MHz)	1850.7MHz-1909.3MHz	23dBm
Cellular Phone	LTE-Band 2 (Bandwidth 3MHz)	1851.5MHz – 1908.5MHz	23dBm
Standards Frequency Range and Power	LTE-Band 2 (Bandwidth 5MHz)	1852.5MHz – 1907.5MHz	23dBm
	LTE-Band 2 (Bandwidth 10MHz)	1855.0MHz – 1905.0MHz	23dBm
	LTE-Band 2 (Bandwidth 15MHz)	1857.5MHz – 1902.5MHz	23dBm
	LTE-Band 2 (Bandwidth 20MHz)	1860.0MHz - 1900.0MHz	23dBm
	LTE-Band 4 (Bandwidth 1.4MHz)	1710.7MHz-1754.3MHz	23dBm
	LTE-Band 4 (Bandwidth 3MHz)	1711.5MHz – 1753.5MHz	23dBm
	LTE-Band 4 (Bandwidth 5MHz)	1712.5MHz – 1752.5MHz	23dBm
	LTE-Band 4 (Bandwidth 10MHz)	1715MHz – 1750MHz	23dBm
	LTE-Band 4 (Bandwidth 15MHz)	1717.5MHz – 1747.5MHz	23dBm
	LTE-Band 4 (Bandwidth 20MHz)	1720MHz – 1745MHz	23dBm

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	Operating Frequency	Rated Power	
	LTE-Band 5 (Bandwidth 1.4MHz)	824.7MHz - 848.3MHz	23dBm
	LTE-Band 5 (Bandwidth 3MHz) 825.5MHz – 847.5MHz		23dBm
Cellular Phone	LTE-Band 5 (Bandwidth 5MHz)	826.5MHz – 846.5MHz	23dBm
Standards Frequency Range and Power	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 - 2560MHz	23dBm



	G914.050	
	GSM 850	251KGXW
	EDGE 850	257KG7W
	GSM 1900	253KGXW
	EDGE 1900	246KG7W
	WCDMA Band II	4M21F9W
	WCDMA Band V	4M24F9W
	HSDPA Band II	4M23F9W
	HSDPA Band V	4M24F9W
	HSUPA Band II	4M21F9W
	HSUPA Band V	4M23F9W
	LTE-Band 2 (Bandwidth 1.4MHz) QPSK	1M10G7D
	LTE-Band 2 (Bandwidth 1.4MHz) 16QAM	1M10D7W
	LTE-Band 2 (Bandwidth 3MHz) QPSK	2M71G7D
	LTE-Band 2 (Bandwidth 3MHz) 16QAM	2M72D7W
	LTE-Band 2 (Bandwidth 5MHz) QPSK	4M54G7D
	LTE-Band 2 (Bandwidth 5MHz) 16QAM	4M52D7W
Tour of Euclidean	LTE-Band 2 (Bandwidth 10MHz) QPSK	9M02G7D
Type of Emission:	LTE-Band 2 (Bandwidth 10MHz) 16QAM	8M98D7W
	LTE-Band 2 (Bandwidth 15MHz) QPSK	13M5G7D
	LTE-Band 2 (Bandwidth 15MHz) 16QAM	13M5D7W
	LTE-Band 2 (Bandwidth 20MHz) QPSK	18M0G7D
	LTE-Band 2 (Bandwidth 20MHz) 16QAM	18M0D7W
	LTE-Band 4 (Bandwidth 1.4MHz) QPSK	1M10G7D
	LTE-Band 4 (Bandwidth 1.4MHz) 16QAM	1M10D7W
	LTE-Band 4 (Bandwidth 3MHz) QPSK	2M72G7D
	LTE-Band 4 (Bandwidth 3MHz) 16QAM	2M71D7W
	LTE-Band 4 (Bandwidth 5MHz) QPSK	4M52G7D
	LTE-Band 4 (Bandwidth 5MHz) 16QAM	4M52D7W
	LTE-Band 4 (Bandwidth 10MHz) QPSK	9M01G7D
	LTE-Band 4 (Bandwidth 10MHz) 16QAM	8M97D7W
	LTE-Band 4 (Bandwidth 15MHz) QPSK	13M5G7D
	LTE-Band 4 (Bandwidth 15MHz) 16QAM	13M5D7W
	LTE-Band 4 (Bandwidth 20MHz) QPSK	18M0G7D
	LTE-Band 4 (Bandwidth 20MHz) 16QAM	18M0D7W
		10100/10



	LTE-Band 5 (Bandwidth 1.4MHz) QPSK	1M10G7D
	LTE-Band 5 (Bandwidth 1.4MHz) 16QAM	1M10D7W
	LTE-Band 5 (Bandwidth 3MHz) QPSK	2M75G7D
	LTE-Band 5 (Bandwidth 3MHz) 16QAM	2M71D7W
	LTE-Band 5 (Bandwidth 5MHz) QPSK	4M49G7D
	LTE-Band 5 (Bandwidth 5MHz) 16QAM	4M52D7W
	LTE-Band 5 (Bandwidth 10MHz) QPSK	8M99G7D
Type of Emission	LTE-Band 5 (Bandwidth 10MHz) 16QAM	9M00D7W
Type of Emission:	LTE-Band 7 (Bandwidth 5MHz) QPSK	4M51G7D
	LTE-Band 7 (Bandwidth 5MHz) 16QAM	4M51D7W
	LTE-Band 7 (Bandwidth 10MHz) QPSK	9M01G7D
	LTE-Band 7 (Bandwidth 10MHz) 16QAM	9M00D7W
	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



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

	dBm		W
GSM 850	21.99	ERP	0.15812
EDGE 850	21.20	ERP	0.13183
GSM 1900	27.24	EIRP	0.52966
EDGE 1900	26.44	EIRP	0.44055
WCDMA Band II	22.95	EIRP	0.19724
WCDMA Band V	14.17	ERP	0.02612
HSDPA Band II	23.52	EIRP	0.22491
HSDPA Band V	15.77	ERP	0.03776
HSUPA Band II	23.46	EIRP	0.22182
HSUPA Band V	15.40	ERP	0.03467
LTE-Band 2 (Bandwidth 1.4MHz) QPSK	26.96	EIRP	0.49659
LTE-Band 2 (Bandwidth 1.4MHz) 16QAM	26.41	EIRP	0.43752
LTE-Band 2 (Bandwidth 3MHz) QPSK	26.32	EIRP	0.42855
LTE-Band 2 (Bandwidth 3MHz) 16QAM	26.69	EIRP	0.46666
LTE-Band 2 (Bandwidth 5MHz) QPSK	26.51	EIRP	0.44771
LTE-Band 2 (Bandwidth 5MHz) 16QAM	26.76	EIRP	0.47424
LTE-Band 2 (Bandwidth 10MHz) QPSK	26.52	EIRP	0.44875
LTE-Band 2 (Bandwidth 10MHz) 16QAM	26.81	EIRP	0.47973
LTE-Band 2 (Bandwidth 15MHz) QPSK	26.86	EIRP	0.48529
LTE-Band 2 (Bandwidth 15MHz) 16QAM	27.07	EIRP	0.50933
LTE-Band 2 (Bandwidth 20MHz) QPSK	26.89	EIRP	0.48865
LTE-Band 2 (Bandwidth 20MHz) 16QAM	26.96	EIRP	0.49659

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	dBm		W
LTE-Band 4 (Bandwidth 1.4MHz) QPSK	25.97	EIRP	0.39537
LTE-Band 4 (Bandwidth 1.4MHz) 16QAM	26.23	EIRP	0.41976
LTE-Band 4 (Bandwidth 3MHz) QPSK	25.45	EIRP	0.35075
LTE-Band 4 (Bandwidth 3MHz) 16QAM	25.75	EIRP	0.37584
LTE-Band 4 (Bandwidth 5MHz) QPSK	25.48	EIRP	0.35318
LTE-Band 4 (Bandwidth 5MHz) 16QAM	25.92	EIRP	0.39084
LTE-Band 4 (Bandwidth 10MHz) QPSK	25.66	EIRP	0.36813
LTE-Band 4 (Bandwidth 10MHz) 16QAM	26.22	EIRP	0.41879
LTE-Band 4 (Bandwidth 15MHz) QPSK	25.99	EIRP	0.39719
LTE-Band 4 (Bandwidth 15MHz) 16QAM	26.57	EIRP	0.45394
LTE-Band 4 (Bandwidth 20MHz) QPSK	25.77	EIRP	0.37757
LTE-Band 4 (Bandwidth 20MHz) 16QAM	26.48	EIRP	0.44463
LTE-Band 5 (Bandwidth 1.4MHz) QPSK	14.93	ERP	0.03112
LTE-Band 5 (Bandwidth 1.4MHz) 16QAM	15.40	ERP	0.03467
LTE-Band 5 (Bandwidth 3MHz) QPSK	15.69	ERP	0.03707
LTE-Band 5 (Bandwidth 3MHz) 16QAM	16.26	ERP	0.04227
LTE-Band 5 (Bandwidth 5MHz) QPSK	16.31	ERP	0.04276
LTE-Band 5 (Bandwidth 5MHz) 16QAM	16.73	ERP	0.0471
LTE-Band 5 (Bandwidth 10MHz) QPSK	15.66	ERP	0.03681
LTE-Band 5 (Bandwidth 10MHz) 16QAM	16.01	ERP	0.0399
LTE-Band 7 (Bandwidth 5MHz) QPSK	30.04	EIRP	1.00925
LTE-Band 7 (Bandwidth 5MHz) 16QAM	30.58	EIRP	1.14288
LTE-Band 7 (Bandwidth 10MHz) QPSK	29.56	EIRP	0.90365
LTE-Band 7 (Bandwidth 10MHz) 16QAM	30.43	EIRP	1.10408
LTE-Band 7 (Bandwidth 15MHz) QPSK	29.13	EIRP	0.81846
LTE-Band 7 (Bandwidth 15MHz) 16QAM	30.17	EIRP	1.03992
LTE-Band 7 (Bandwidth 20MHz) QPSK	29.00	EIRP	0.79433
LTE-Band 7 (Bandwidth 20MHz) 16QAM	30.15	EIRP	1.03514



# **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 NFC features, and below is details of information.

Product Feature		
Product Name:	PDA Phone	
Brand Name:	Sony	
Type No.:	PM-0871-BV	
Model Difference:	N/A	
FCC ID	PY7-PM0871	
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 2 / 4 / 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 Plan. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

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

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

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## 2.4. Measurement Results Explanation Example

#### For all conducted test items:

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

#### Note:

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

Following shows an offset computation example with cable loss 0.4 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)

#### DC voltage (V) DC current (mA) **Test Mode GSM 850** 3.8 698 **GSM 1900** 3.8 547 **GPRS 850** 3.8 511 **GPRS 1900** 3.8 496 **EDGE 850** 3.8 614 **EDGE 1900** 3.8 646 WCDMA B2 3.8 518 WCDMA B5 3.8 511 HSUPA B2 3.8 533 HSUPA B5 3.8 514 HSDPA B2 3.8 541

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

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HSDPA B5

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3.8

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號

536



Report No.: ER/2015/50038 Issue Date: Jul. 13, 2015 Page: 17 of 424

Test Mode	DC voltage (V)	DC current (mA)
LTE Band 2_1.4M QPSK	3.8	990
LTE Band 2_1.4M 16QAM	3.8	933
LTE Band 2_3M QPSK	3.8	988
LTE Band 2_3M 16QAM	3.8	941
LTE Band 2_5M QPSK	3.8	996
LTE Band 2_5M 16QAM	3.8	923
LTE Band 2_10M QPSK	3.8	1021
LTE Band 2_10M 16QAM	3.8	954
LTE Band 2_15M QPSK	3.8	1015
LTE Band 2_15M 16QAM	3.8	961
LTE Band 2_20M QPSK	3.8	1012
LTE Band 2_20M 16QAM	3.8	976

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Test Mode	DC voltage (V)	DC current (mA)
LTE Band 4_1.4M QPSK	3.8	1176
LTE Band 4_1.4M 16QAM	3.8	1079
LTE Band 4_3M QPSK	3.8	1171
LTE Band 4_3M 16QAM	3.8	1075
LTE Band 4_5M QPSK	3.8	1155
LTE Band 4_5M 16QAM	3.8	1072
LTE Band 4_10M QPSK	3.8	1132
LTE Band 4_10M 16QAM	3.8	1087
LTE Band 4_15M QPSK	3.8	1147
LTE Band 4_15M 16QAM	3.8	1095
LTE Band 4_20M QPSK	3.8	1154
LTE Band 4_20M 16QAM	3.8	1096

Test Mode	DC voltage (V)	DC current (mA)
LTE Band 5_1.4M QPSK	3.8	1033
LTE Band 5_1.4M 16QAM	3.8	987
LTE Band 5_3M QPSK	3.8	1030
LTE Band 5_3M 16QAM	3.8	973
LTE Band 5_5M QPSK	3.8	1046
LTE Band 5_5M 16QAM	3.8	974
LTE Band 5_10M QPSK	3.8	1029
LTE Band 5_10M 16QAM	3.8	969

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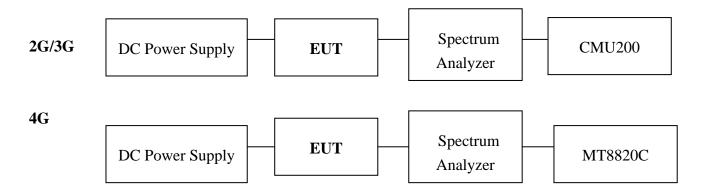
Test Mode	DC voltage (V)	DC current (mA)
LTE Band 7_5M QPSK	3.8	721
LTE Band 7_5M 16QAM	3.8	669
LTE Band 7_10M QPSK	3.8	733
LTE Band 7_10M 16QAM	3.8	679
LTE Band 7_15M QPSK	3.8	748
LTE Band 7_15M 16QAM	3.8	697
LTE Band 7_20M QPSK	3.8	744
LTE Band 7_20M 16QAM	3.8	694

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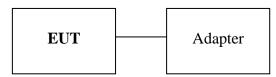


# 2.6. Configuration of Tested System

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



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



# **Remote Side**



# **Table 2-1 Equipment Used in**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio 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	MY40005907	shielded	Un-shielded

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# 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
\$2.1046(a) \$22.913(a)(2) \$24.232(c) \$27.50(c)(2) \$27.50(c)(9) \$27.50(d)(2) \$27.50(d)(4) \$27.50(h)(2)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% & 26dB Occuupied Bandwidth	Compliant
\$2.1051 \$22.917(a) \$24.238(a) \$27.53(g) \$27.50(c)(5) \$27.53(h) \$27.53(m)(4)(6)	Out of Band Emissions at An- tenna 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(m)(4)	Field Strength of Spurious Ra- diation	Compliant
\$24.232(d) \$27.53(d) (5) \$27.50(i) (B)	Peak to Average Ratio	Compliant
§27.53(f)	Spurious emission in 1559 -1610MHz Band	Compliant
\$2.1055(a)(1) \$22.355 \$24.235 \$27.54	Frequency Stability	Compliant

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# 4. DESCRIPTION OF TEST MODES

# 4.1. The Worst Test Modes and Channel Details

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

BAND	ERP/EIRP	RADIATED EMISSION
GSM/GPRS/EDGE 850	E1-plan	E1-plan
GSM/GPRS/EDGE 1900	E2-plan	E2-plan
WCDMA/HSPA Band II	E2-plan	E2-plan
WCDMA/HSPA Band IV	E1-plan	E1-plan
WCDMA/HSPA Band V	E1-plan	E1-plan
LTE Band 2	E1-plan	E1-plan
LTE Band 5	E1-plan	E1-plan
LTE Band 4	E1-plan	E1-plan
LTE Band 7	E2-plan	E2-plan

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#### **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
EDEOLIENCY STADULITY	128 to 251	190	GPRS 850
FREQUENCY STABILITY	512 to 810	661	GPRS 1900
OCCUPIED BANDWIDTH	128 to 251	190	GSM/EDGE 850
OCCUPIED BANDWIDTH	512 to 810	661	GSM/EDGE 1900
PEAK TO AVERAGE RATIO	128 to 251	128, 190, 251	GSM/GPRS/EDGE 850
FEAR TO AVERAGE RATIO	512 to 810	512, 661, 810	GSM/GPRS/EDGE 1900
BAND EDGE	128 to 251	128, 251	GSM/EDGE 850
BANDEDGE	512 to 810	512, 810	GSM/EDGE 1900
CONDCUDETED 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
KADIA I ED EMISSION	512 to 810	512, 661, 810	GSM 1900

#### 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
FREQUENCY STABILITY	4132 to 4233	4183	WCDMA Band II
	9262 to 9538	9400	WCDMA Band V
OCCUPIED BANDWIDTH	4132 to 4233	4183	WCDMA/HSPA Band II
	9262 to 9538	9400	WCDMA/HSPA Band V
PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4183, 4233	WCDMA/HSPA Band II
	9262 to 9538	9262, 9400, 9583	WCDMA/HSPA Band V
BAND EDGE	4132 to 4233	4132, 4183, 4233	WCDMA Band II
	9262 to 9538	9262, 9400, 9583	WCDMA Band V
CONDCUDETED EMISSION	4132 to 4233	4132, 4183, 4233	WCDMA Band II
	9262 to 9538	9262, 9400, 9583	WCDMA Band V
RADIATED EMISSION	4132 to 4233	4132, 4183, 4233	HSDPA Band II
	9262 to 9538	9262, 9400, 9583	HSDPA Band V

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### LTE Band 2 MODE

	AVAILABLE	TESTED	CHANNEL		MODE
TEST ITEM	CHANNEL	CHANNEL	BANDWIDTH	MODULATION	MODE
	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest
FIDD	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
EIRP	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	18650 to 19150	18900	10MHz	QPSK,	Full RB
	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	Full RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	Full RB
OCCUPIED	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	Full RB
BANDWIDTH	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	Full RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	Full RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	Full RB
	18607 to 19193	18607, 18900, 19193	1.4MHz	16QAM	Full RB
	18615 to 19185	18615, 18900, 19185	3MHz	16QAM	Full RB
PEAK TO AV-	18625 to 19175	18625, 18900, 19175	5MHz	16QAM	Full RB
ERAGE RATIO	18650 to 19150	18650, 18900, 19150	10MHz	16QAM	Full RB
	18675 to 19125	18675, 18900, 19125	15MHz	16QAM	Full RB
	18700 to 19100	18700, 18900, 19100	20MHz	16QAM	Full RB
	18607 to 19193	18607, 19193	1.4MHz	QPSK,	1 RB/ 0,5 RB Offes Full RB
	18615 to 19185	18615, 19185	3MHz	QPSK,	1 RB/ 0,14 RB Offest Full RB
BAND EDGE	18625 to 19175	18625, 19175	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
BAND EDGE	18650 to 19150	18650, 19150	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
	18675 to 19125	18675, 19125	15MHz	QPSK,	1 RB/ 0,74 RB Offest Full RB
	18700 to 19100	18700, 19100	20MHz	QPSK,	1 RB/ 0,99 RB Offest Full RB
	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,	1 RB, 0 RB Offest
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK,	1 RB, 0 RB Offest
CONDCUDETED	18625 to 19175	18625, 18900, 19175	5MHz	QPSK,	1 RB, 0 RB Offest
EMISSION	18650 to 19150	18650, 18900, 19150	10MHz	QPSK,	1 RB, 0 RB Offest
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK,	1 RB, 0 RB Offest
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK,	1 RB, 0 RB Offest
RADIATED EMISSION	18675 to 19125	18675, 18900, 19125	15MHz	16QAM	1 RB/ 74 RB Offest

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#### LTE Band 4 MODE

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TEST ITEM	AVAILABLE	TESTED	CHANNEL	MODULATION	MODE
	CHANNEL	CHANNEL	BANDWIDTH	MODULATION	WIODE
	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest
EIRP	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
EIKF	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	20000 to 20350	20175	10MHz	QPSK,	Full RB
	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	Full RB
OCCUPIED	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	Full RB
BANDWIDTH	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	Full RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	Full RB
-	20029 to 20329 20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	Full RB
	19957 to 19393	19957, 20175, 19393	1.4MHz	16QAM	Full RB
-	19965 to 22385	19965, 20175, 22385	3MHz	16QAM	Full RB
PEAK TO AV-	19975 to 20375	19975, 20175, 20375	5MHz	16QAM	Full RB
ERAGE RATIO	20000 to 20350	20000, 20175, 20350	10MHz	16QAM	Full RB
ERAOL RATIO	20000 to 20350 20025 to 20325	20025, 20175, 20325	15MHz	16QAM	Full RB
-	20029 to 20329 20050 to 20300	20050, 20175, 20300	20MHz	16QAM	Full RB
	19957 to 19393	19957, 19393	1.4MHz	QPSK,	1 RB/ 0,5 RB Offes Full RB
	19965 to 22385	19965, 22385	3MHz	QPSK,	1 RB/ 0,14 RB Offest Full RB
BAND EDGE	19975 to 20375	19975, 20375	5MHz	QPSK,	1 RB/ 0,24 RB Offest Full RB
BAND EDGE	20000 to 20350	20000, 20350	10MHz	QPSK,	1 RB/ 0,49 RB Offest Full RB
	20025 to 20325	20025, 20325	15MHz	QPSK,	1 RB/ 0,74 RB Offest Full RB
	20050 to 20300	20050, 20300	20MHz	QPSK,	1 RB/ 0,99 RB Offest Full RB
	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK,	1 RB, 0 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK,	1 RB, 0 RB Offest
CONDCUDETED	19975 to 20375	19975, 20175, 20375	5MHz	QPSK,	1 RB, 0 RB Offest
EMISSION	20000 to 20350	20000, 20175, 20350	10MHz	QPSK,	1 RB, 0 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK,	1 RB, 0 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK,	1 RB, 0 RB Offest
RADIATED EMISSION	20025 to 20325	20025, 20175, 20325	15MHz	16QAM,	1 RB, 74 RB Offest

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#### LTE Band 5 MODE

TEST ITEM	AVAILABLE	TESTED	CHANNEL	MODULATION	MODE
IESI IIENI	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	20425 to 20625	20425, 20525, 20625	5MHz	16QAM	1 RB/ 0 RB Offest

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#### LTE Band 7 MODE

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

Note: The given application is dual SIM build of certified product, PY7-PM0872. It differs only in the mental shield covering the portion of slot space that is preserved in the built applicable PY7-PM0872 and LTE/WCDMA/HSPA band difference which will not support LTE band 12 / 13 /17 and WCDMA/HSPA band IV that is preserved in the built applicable PY7-PM0872. Except for the change as aforementioned above, all hardware, software relevant to RF Parameter of Physical layer, I/O signal remains unchanged, and the data as measured in the authorization of PY7-PM0872 and remains, and entails representative.

This test report demonstrates the result of spot-check on Radiated Spurious Emission in order to reveal of the evidence of compliance record proving the implementation of this model causes no degradation as compared to build, PY7-PM0872.

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

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

This uncertainty represents an expanded uncertainty expressed at approximately the

95% confidence level using a coverage factor of k=2.

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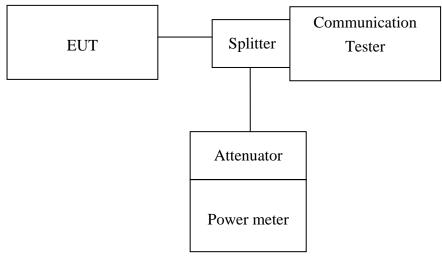


# 6. RF CONDUCTED OUTPUT POWER MEASUREMENT

# 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

Conc	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					
Spectrum Analyzer	Agilent	E4440A	MY45304525	05/05/2015	05/04/2016					
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					

#### 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	33.30	33.20
GSM 850	836.6	190	33.40	33.20
	848.8	251	33.30	33.20
	1850.2	512	29.60	29.50
GSM 1900	1880.0	661	29.40	29.30
	1909.8	810	29.60	29.40

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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)
	824.2	128	33.30	33.20	29.30	29.10	28.20	28.10	27.60	27.50
GPRS 850	836.6	190	33.30	33.20	29.30	29.20	28.30	28.20	27.70	27.50
850	848.8	251	33.30	33.20	29.30	29.20	28.20	28.10	27.70	27.60
CDDC	1850.2	512	29.60	29.40	28.30	28.10	27.20	27.10	25.80	25.70
GPRS 1900	1880.0	661	29.40	29.30	28.20	28.10	27.50	27.30	26.10	25.90
1700	1909.8	810	29.60	29.50	28.60	28.20	28.00	27.80	26.60	26.40
EDGE	824.2	128	29.10	25.80	28.40	25.20	28.40	25.20	27.70	24.90
EDGE 850	836.6	190	29.30	26.10	28.70	25.50	28.70	25.50	27.80	24.80
050	848.8	251	29.40	26.10	28.70	25.50	28.60	25.50	27.90	24.90
EDCE	1850.2	512	29.00	25.40	28.30	24.80	28.30	25.00	27.20	23.70
EDGE 1900	1880.0	661	28.80	25.30	28.00	24.70	28.10	24.80	27.20	23.60
1700	1909.8	810	28.90	25.40	28.30	24.70	28.10	24.90	27.00	23.70



# WCDMA MODE:

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

#### **Results:**

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Avg. Power (dBm)
	1852.4	9262	26.42	23.67
WCDMA Band II	1880.0	9400	26.99	23.91
Dalla II	1907.6	9538	26.29	23.47
	826.4	4132	26.53	23.31
WCDMA Band V	836.6	4183	26.76	23.40
Dana v	846.6	4233	26.61	23.43
	1852.4	9262	25.96	22.66
HSDPA Band II	1880.0	9400	26.42	22.85
Dalla II	1907.6	9538	25.73	22.29
HODDA	826.4	4132	25.94	22.24
HSDPA Band V	836.6	4183	26.04	22.32
Dalla	846.6	4233	26.11	22.38
HOLDA	1852.4	9262	25.93	22.61
HSUPA Band II	1880.0	9400	26.42	22.82
Dana II	1907.6	9538	25.76	22.33
HOLDA	826.4	4132	25.98	22.25
HSUPA Band V	836.6	4183	25.97	22.31
Duna v	846.6	4233	26.04	22.40

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

Cable loss offset Low Band: 0.4dB

Cable loss offset High Band: 0.7dB

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## **LTE Result:**

#### LTE Band 2

	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
			Conducted power							
					(d]	Bm)				
BW	RB	RB		QPSK			16QAM			
(MHz)	(MHz) Size O	Offset	Channel	Channel	Channel	Channel	Channel	Channel		
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)		
			18607	18900	19193	18607	18900	19193		
	1	0	23.29	23.40	23.35	22.56	22.68	22.41		
1.4	1	5	23.29	23.39	23.32	22.44	22.70	22.46		
1.4	3	2	23.34	23.43	23.43	22.35	22.39	22.38		
	6	0	22.42	22.49	22.53	21.47	21.49	21.50		

	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
				Conducted power						
					(dl	Bm)				
BW	RB RB			QPSK			16QAM			
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel		
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)		
			18615	18900	19185	18615	18900	19185		
	1	0	23.25	23.37	23.35	22.39	22.62	22.52		
	1	14	23.25	23.39	23.33	22.47	22.71	22.29		
3	8	4	22.40	22.49	22.51	21.43	21.56	21.48		
	15	0	22.42	22.51	22.50	21.41	21.53	21.49		

	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz											
				Conducted power								
BW					(dl	Bm)						
	RB	RB		QPSK		16QAM						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			18625	18900	19175	18625	18900	19175				
	1	0	23.46	23.44	23.42	22.49	22.32	22.62				
_	1	24	23.29	23.34	23.33	22.46	22.62	22.34				
5	12	6	22.55	22.51	22.54	21.32	21.54	21.52				
	25	0	22.53	22.47	22.52	21.44	21.31	21.47				

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	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz											
					Conduct	ted power	r					
					(dl	Bm)						
BW	RB	RB	QPSK			16QAM						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			18650	18900	19150	18650	18900	19150				
	1	0	23.49	23.49	23.47	22.62	22.82	22.59				
10	1	49	23.41	23.32	23.31	22.60	22.78	22.50				
10	25	12	22.50	22.53	22.55	21.47	21.54	21.52				
	50	0	22.45	22.43	22.29	21.45	21.52	21.55				

	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz											
				Conducted power								
BW					(d]	Bm)						
	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			18675	18900	19125	18675	18900	19125				
	1	0	23.31	23.56	23.43	22.78	22.87	22.76				
15	1	74	23.45	23.44	23.39	22.56	22.64	22.46				
13	36	19	22.57	22.58	22.59	21.53	21.59	21.41				
	75	0	22.60	22.59	22.58	21.55	21.59	21.30				

	LTE Band 2_Uplink frequency band : 1850 to 1910 MHz											
			Conducted power									
BW					(d]	Bm)						
	RB	RB	QPSK			16QAM						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			18700	18900	19100	18700	18900	19100				
	1	0	23.55	23.50	23.42	22.79	22.79	22.71				
•	1	99	23.28	23.38	23.25	22.66	22.60	22.53				
20	50	25	22.57	22.56	22.55	21.56	21.58	21.56				
	100	0	22.56	22.48	22.45	21.55	21.61	21.53				



#### LTE Band 4

	LTE B	and 4_U	plink fre	quency l	band:17	710 to 17	55 MHz			
					Conduct	ted power	r			
					(dl	Bm)				
BW	RB	RB		QPSK			16QAM			
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel		
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)		
			19957	20175	20393	19957	20175	20393		
	1	0	23.15	23.19	23.21	22.32	22.29	22.32		
1.4	1	5	23.01	23.14	23.15	22.37	22.41	22.37		
1.4	3	2	23.24	23.26	23.26	22.23	22.28	22.20		
	6	0	22.28	22.29	22.33	21.33	21.33	21.25		

	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz											
					Conduct	ted power	r					
					(dl	Bm)						
BW	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			19965	20175	20385	19965	20175	20385				
	1	0	23.13	23.16	23.15	22.46	22.35	22.43				
	1	14	23.12	23.11	23.14	22.20	22.45	22.33				
3	8	4	22.26	22.28	22.19	21.30	21.34	21.23				
	15	0	22.30	22.30	22.31	21.29	21.31	21.29				

	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz											
				Conducted power								
BW (MHz)					(d]	Bm)						
	RB	RB		QPSK			16QAM					
	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			19975	20175	20375	19975	20175	20375				
	1	0	23.22	23.24	23.24	22.41	22.46	22.26				
_	1	24	23.17	23.15	23.16	22.43	22.47	22.29				
5	12	6	22.30	22.31	22.34	21.31	21.33	21.31				
	25	0	22.29	22.28	22.31	21.26	21.29	21.27				

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	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz											
						ted power	r					
BW					(dl	Bm)						
	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20000	20175	20350	20000	20175	20350				
	1	0	23.29	23.31	23.38	22.47	22.53	22.58				
10	1	49	23.16	23.13	23.23	22.39	22.31	22.32				
10	25	12	22.31	22.29	22.34	21.27	21.25	21.29				
	50	0	22.29	22.34	22.40	21.34	21.31	21.36				

	LTE Band 4_Uplink frequency band : 1710 to 1755 MHz											
					Conduct	ted power	r					
BW					(d]	Bm)						
	RB	RB		QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20025	20175	20325	20025	20175	20325				
	1	0	23.32	23.33	23.37	22.61	22.62	22.74				
	1	74	23.20	23.20	23.20	22.22	22.47	22.31				
15	36	19	22.37	22.35	22.39	21.34	21.34	21.35				
	75	0	22.35	22.31	22.37	21.33	21.28	21.36				

	LTE Band 4_Uplink frequency band : 1710 to 1755 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)				
			20050	20175	20300	20050	20175	20300				
	1	0	23.35	23.35	23.33	22.61	22.62	22.62				
•	1	99	23.15	23.13	23.13	22.46	22.46	22.34				
20	50	25	22.39	22.31	22.31	21.34	21.34	21.32				
	100	0	22.34	22.32	22.32	21.34	21.32	21.31				



### LTE Band 5

	LTE I	Band 5_U	U <b>plink f</b> r	equency	band : 8	824 to 84	9 MHz					
		RB	Conducted power									
				(dBm)								
BW	RB			QPSK			16QAM					
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel				
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20407	20525	20643	20407	20525	20643				
	1	0	23.12	23.08	23.05	22.52	22.45	22.33				
1.4	1	5	23.08	23.06	23.03	22.51	22.50	22.36				
1.4	3	2	23.11	23.07	23.05	22.20	22.16	22.14				
	6	0	22.18	22.17	22.17	21.15	21.27	21.24				

	LTE Band 5_Uplink frequency band : 824 to 849 MHz												
			Conducted power										
					(d)	Bm)							
BW	RB Size	RB		QPSK			16QAM						
(MHz)		Offset	Channel	Channel	Channel	Channel	Channel	Channel					
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)					
			20415	20525	20635	20415	20525	20635					
	1	0	22.93	23.07	22.91	22.29	22.36	22.18					
	1	14	23.05	23.04	23.02	22.49	22.31	22.41					
3	8	4	22.20	22.18	22.16	21.28	21.27	21.25					
	15	0	22.19	22.16	22.12	21.26	21.21	21.19					

	LTE Band 5_Uplink frequency band : 824 to 849 MHz												
				Conducted power									
				(dBm)									
BW	RB	RB		QPSK			16QAM						
(MHz)	Size	Offset	Channel	Channel									
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)					
			20425	20525	20625	20425	20525	20625					
	1	0	23.12	23.15	23.14	22.42	22.58	22.53					
_	1	24	23.08	23.01	22.98	22.51	22.46	22.40					
5	12	6	22.22	22.21	22.18	21.26	21.25	21.20					
	25	0	22.18	22.16	22.10	21.23	21.23	21.18					



	LTE Band 5_Uplink frequency band : 824 to 849 MHz												
			Conducted power										
				(dBm)									
BW	RB	RB		QPSK			16QAM						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel					
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)					
			20450	20525	20600	20450	20525	20600					
	1	0	23.13	23.17	23.20	22.50	22.47	22.52					
10	1	49	23.03	23.09	23.02	22.36	22.35	22.40					
10	25	12	22.13	22.19	22.18	21.17	21.23	21.23					
	50	0	22.09	22.11	22.19	21.06	21.26	21.22					

### LTE Band 7

	LTE Band 7_Uplink frequency band : 2500 to 2570 MHz												
			Conducted power										
				(dBm)									
BW	RB	RB		QPSK			16QAM						
(MHz)	Size	Offset	Channel	Channel	Channel	Channel	Channel	Channel					
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)					
			20775	21100	21425	20775	21100	21425					
	1	0	22.45	22.48	22.43	21.78	21.79	21.91					
_	1	24	22.46	22.48	22.46	21.78	21.76	21.90					
5	12	6	21.64	21.59	21.70	20.44	20.53	20.80					
	25	0	21.46	21.45	21.46	20.45	20.46	20.42					

	LTE Band 7_Uplink frequency band : 2500 to 2570 MHz											
			Conducted power									
				(dBm)								
BW	RB	RB		16QAM								
(MHz)	Size	Offset	Channel	Channel Channel Channel Channel Channel Channel								
			(Low)	(Mid)	(High)	(Low)	(Mid)	(High)				
			20800	21100	21400	20800	21100	21400				
	1	0	22.45	22.47	22.48	21.73	21.75	21.95				
10	1	49	22.45	22.45	22.48	21.74	21.91	21.79				
10	25	12	21.68	21.61	21.61	20.56	20.53	20.62				
	50	0	21.45	21.47	21.46	20.60	20.62	20.56				



	LTE B	and 7_U	plink fre	quency l	band : 25	500 to 25	70 MHz					
		RB		Conducted power								
				(dBm)								
BW	RB			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	22.32	22.38	22.21	21.98	21.75	21.96				
	1	74	22.35	22.29	22.31	21.99	21.87	22.00				
15	36	19	21.73	21.46	21.88	20.84	20.67	20.83				
	75	0	21.47	21.48	21.47	20.86	20.67	20.84				

	LTE Band 7_Uplink frequency band : 2500 to 2570 MHz											
				Conducted power								
	RB			(dBm)								
BW		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	22.48	22.47	22.45	21.70	21.69	21.77				
•	1	99	22.31	22.47	22.49	21.72	21.73	21.87				
20	50	25	21.65	21.51	21.63	20.63	20.54	20.62				
	100	0	21.46	21.48	21.45	20.45	20.43	20.43				

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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	$\beta_d$	β <sub>d</sub> (SF)	β <sub>c</sub> /β <sub>d</sub>	β <sub>HS</sub> (Note1, Note 2)	<b>CM (dB)</b> ( <i>Note 3</i> )	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			
	1	23.84	23.80	23.33	20.3dBm – 25.7dBm	Pass	
HSDPA	2	23.55	23.77	23.32	20.3dBm – 25.7dBm	Pass	
<b>(B2)</b>	3	23.36	23.35	22.80	19.8dBm – 25.7dBm	Pass	
	4	23.43	23.36	22.92	19.8dBm – 25.7dBm	Pass	

Mode	Sub-test	U	Power (d Channel	Bm)	Power Class 3 Limita-	Comments
		4132	4183	4233	tion (dBm)	
	1	23.10	23.26	23.55	20.3dBm – 25.7dBm	Pass
HSDPA	2	23.24	23.29	23.30	20.3dBm - 25.7dBm	Pass
<b>(B5)</b>	3	22.64	22.78	23.06	19.8dBm – 25.7dBm	Pass
	4	22.69	22.82	23.12	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	βc	βa	β <sub>d</sub> (SF)	β <sub>c</sub> /β <sub>d</sub>	$\beta_{\rm HS}$	β <sub>ec</sub>	$\beta_{ed}$	β <sub>ed</sub> (SF)	β <sub>ed</sub> (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 <sub>ed</sub> 1: 47/15 β <sub>ed</sub> 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.

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**Results:** 

Mode	Sub-test	Avg.	Power (d Channel	Bm)	Power Class 3 Limita-	Comments
		9262	9400	9538	tion (dBm)	
	1	23.59	23.89	23.41	18.8dBm – 25.7dBm	Pass
	2	21.64	21.96	21.45	16.8dBm – 25.7dBm	Pass
HSUPA(B2)	3	22.65	22.91	22.49	17.8dBm – 25.7dBm	Pass
	4	21.77	22.01	21.49	16.8dBm – 25.7dBm	Pass
	5	23.48	23.75	23.32	18.8dBm – 25.7dBm	Pass

Mode	Sub-test	Avg.	Power (d Channel	Bm)	Power Class 3 Limita- tion (dBm)	Comments
		4132 4183 4233		uon (abm)		
	1	23.27	23.33	22.35	18.8dBm – 25.7dBm	Pass
	2	21.33	21.41	21.39	16.8dBm – 25.7dBm	Pass
HSUPA(B5)	3	22.31	22.39	22.43	17.8dBm – 25.7dBm	Pass
	4	21.38	21.47	21.47	16.8dBm – 25.7dBm	Pass
	5 2		23.16	23.24	18.8dBm – 25.7dBm	Pass



1 CS 1900 Dallu									
PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.3	27.3	25.3	23.3	21.3	19.2	17.2	15.2	13.2
PCL	9	10	11	12	13	14	15		
Output power (dBm)	11.2	9.2	7.2	5.1	3.2	1.5	-0.2		

### **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

According to FCC §2.1046

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

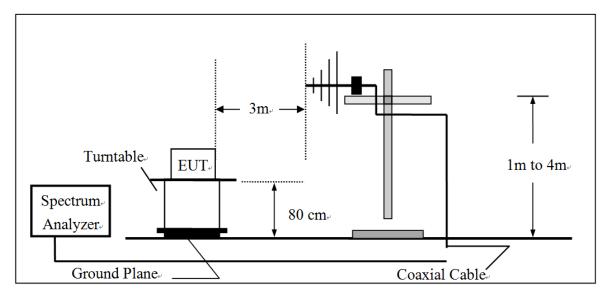
FCC 24.232(b) Mobile and portable stations are limited to 2 W EIRP.

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

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

# 7.2. Test SET-UP

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



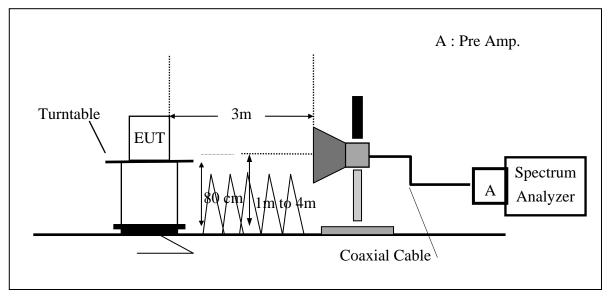
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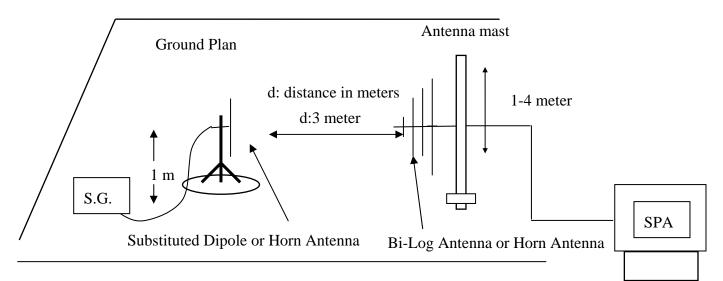
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### (B) Radiated Power Test Set-UP Frequency Over 1 GHz

(C) Substituted Method Test Set-UP



FCC ID: PY7-PM0871



# 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 X 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 =  $601*10^{-3} = 6$ s.

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		
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	004.0	824.2 128	V	13.47	3.45	-2.94	13.99	38.45
	824.2		Н	21.47	3.45	-2.94	21.99	38.45
GSM 850	926.6	100	V	12.81	3.46	-2.97	13.30	38.45
<b>USIVI 850</b>	836.6	190	Н	21.48	3.46	-2.97	21.96	38.45
	848.8	251	V	11.61	3.47	-3.01	12.07	38.45
			Н	20.39	3.47	-3.01	20.85	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	24.2 128	V	12.36	3.45	-2.94	12.88	38.45
	824.2		Н	21.31	3.45	-2.94	21.83	38.45
GPRS 850	9266	190	V	12.42	3.46	-2.97	12.91	38.45
GPK5 850	836.6	190	Н	21.26	3.46	-2.97	21.74	38.45
	848.8	251	V	11.29	3.47	-3.01	11.75	38.45
	040.0	231	Н	20.24	3.47	-3.01	20.70	38.45

	EUT			Measurement								
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit				
	MHz		V/H	dBm	dBd	dB	dBm	dBm				
	<u>824 2</u>	824.2 128	V	10.97	3.45	-2.94	11.49	38.45				
	824.2		Н	20.31	3.45	-2.94	20.83	38.45				
EDGE 850	926.6	190	V	11.57	3.46	-2.97	12.06	38.45				
EDGE 850	836.6	190	Н	20.72	3.46	-2.97	21.20	38.45				
	848.8	251	V	10.59	3.47	-3.01	11.06	38.45				
			Н	19.69	3.47	-3.01	20.15	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	17.12	4.84	-4.49	17.48	33.01
	1830.2	312	Н	26.51	4.84	-4.49	26.87	33.01
GSM 1900	1990.0	661	V	19.53	4.79	-4.53	19.79	33.01
GSW 1900	1880.0	661	Н	25.85	4.79	-4.53	26.12	33.01
	1909.8	810	V	18.66	4.74	-4.57	18.84	33.01
	1909.0	010	Н	27.06	4.74	-4.57	27.24	33.01

	EUT			Measurement							
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	16.82	4.84	-4.49	17.17	33.01			
	1830.2	512	Н	26.44	4.84	-4.49	26.80	33.01			
GPRS 1900	1880.0	661	V	19.15	4.79	-4.53	19.42	33.01			
GPK5 1900	1880.0	001	Н	25.49	4.79	-4.53	25.76	33.01			
	1909.8	<u> 910</u>	V	18.39	4.74	-4.57	18.57	33.01			
	1909.0	810	Н	26.90	4.74	-4.57	27.08	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	16.58	4.84	-4.49	16.94	33.01
	1830.2	512	Н	26.09	4.84	-4.49	26.44	33.01
EDGE 1900	1990.0	661	V	18.00	4.79	-4.53	18.27	33.01
EDGE 1900	1880.0		Н	24.86	4.79	-4.53	25.12	33.01
	1909.8	810	V	17.26	4.74	-4.57	17.44	33.01
	1909.8	810	Н	25.71	4.74	-4.57	25.89	33.01

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



	EUT			Measurement							
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	1852.4 9262	V	12.24	4.84	-4.49	12.59	33.01			
	1852.4		Н	22.60	4.84	-4.49	22.95	33.01			
WCDMA B2	1880.0	9400	V	13.85	4.79	-4.53	14.12	33.01			
WCDMA B2	1880.0	9400	Н	22.63	4.79	-4.53	22.90	33.01			
	1907.6	0529	V	12.85	4.75	-4.56	13.03	33.01			
	1907.0	9538	Н	21.92	4.75	-4.56	22.10	33.01			

	EUT			Measurement							
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	13.64	4.84	-4.49	13.99	33.01			
	1852.4	9262	Н	22.94	4.84	-4.49	23.29	33.01			
HSDPA B2	1990.0	9400	V	16.52	4.79	-4.53	16.79	33.01			
ISDPA D2	1880.0	9400	Н	23.26	4.79	-4.53	23.52	33.01			
	1907.6	9538	V	14.79	4.75	-4.56	14.97	33.01			
	1907.0	7530	Н	13.01	4.84	-4.49	13.36	33.01			

	EUT				Measur	ement		Limit dBm 33.01					
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	23.07	4.75	-4.56	23.26	33.01					
	1852.4	9202	Н	22.89	4.84	-4.49	23.25	33.01					
HSUPA B2	1880.0	9400	V	15.37	4.79	-4.53	15.63	33.01					
ISUPA D2	1880.0	9400	Н	23.19	4.79	-4.53	23.46	33.01					
	1007.6	9538	V	14.41	4.75	-4.56	14.60	33.01					
	1907.6	9338	Н	22.74	4.75	-4.56	22.92	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	5.80	3.46	-2.94	6.31	38.45
	820.4	4152	Н	13.66	3.46	-2.94	14.17	38.45
WCDMA B5	0266	4183	V	4.13	3.46	-2.97	4.61	38.45
WCDMA B5	836.6	4185	Н	13.48	3.46	-2.97	13.97	38.45
	846.6	4233	V	4.14	3.47	-3.01	4.61	38.45
	040.0	4233	Н	13.11	3.47	-3.01	13.57	38.45

	EUT				Measur	ement	1	
Operation Band	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
	9761	4132	V	7.01	3.46	-2.94	7.52	38.45
	826.4	4152	Н	15.26	3.46	-2.94	15.77	38.45
HSDPA B5	0266	4102	V	5.53	3.46	-2.97	6.02	38.45
порра во	836.6	4183	Н	15.19	3.46	-2.97	15.68	<b>dBm</b> 38.45 38.45
	846.6	4233	V	5.63	3.47	-3.01	6.09	38.45
	040.0	4233	Н	14.89	3.47	-3.01	15.35	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	4132	V	6.84	3.46	-2.94	7.35	38.45
	820.4	4152	Н	14.89	3.46	-2.94	15.40	38.45
HSUPA B5	836.6	4183	V	4.76	3.46	-2.97	5.24	38.45
пзора вз	830.0	4185	Н	14.75	3.46	-2.97	15.24	38.45
	9166	4233	V	5.10	3.47	-3.01	5.56	38.45
	846.6	4233	Н	14.34	3.47	-3.01	14.80	38.45

(1) The RBW, VBW of SPA for frequency RBW= 5MHz, 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	26.60	4.84	-4.49	26.96	33.01
BAND 2	1850.7	18607	Н	22.15	4.84	-4.49	22.51	33.01
<b>BW: 1.4M</b>	1880.0	18900	V	25.46	4.80	-4.52	25.73	33.01
QPSK	1000.0	10900	Н	20.69	4.80	-4.52	20.96	33.01
<b>RB: 1,0</b>	1909.3	19193	V	24.70	4.75	-4.56	24.88	33.01
	1909.5	17175	Н	18.82	4.75	-4.56	19.00	33.01
	1050 7	10/07	V	25.22	4.84	-4.49	25.58	33.01
BAND 2	1850.7	18607	Н	20.03	4.84	-4.49	20.39	33.01
BW: 1.4M QPSK	1880.0	18900	V	25.71	4.79	-4.53	25.97	33.01
	1000.0	10,00	Н	20.68	4.79	-4.53	20.95	33.01
<b>RB: 1,5</b>	1909.3	19193	V	24.10	4.75	-4.56	24.28	33.01
	170710		Н	18.20	4.74	-4.57	EIRP         Limit           dBm         dBm           26.96         33.01           22.51         33.01           25.73         33.01           20.96         33.01           20.96         33.01           20.96         33.01           20.96         33.01           20.96         33.01           21.38         33.01           20.39         33.01           20.39         33.01           20.39         33.01           20.39         33.01           20.39         33.01           20.39         33.01           20.39         33.01           21.38         33.01           225.68         33.01           20.70         33.01           20.70         33.01           20.70         33.01           21.36         33.01           25.69         33.01           25.69         33.01           25.69         33.01           25.69         33.01           20.58         33.01           20.58         33.01           20.58         33.01           21.42	
	1850.7	18607	V	25.32	4.84	-4.49	25.68	33.01
BAND 2	1630.7	18007	Н	20.34	4.84	-4.49	20.70	33.01
<b>BW: 1.4M</b>	1880.0	18900	V	25.82	4.80	-4.52	26.09	33.01
16QAM		10,00	Н	21.09	4.80	-4.52	21.36	33.01
<b>RB: 1,0</b>	1909.3	19193	V	24.94	4.75	-4.56	25.12	33.01
			Н	19.11	4.75	-4.56	19.29	33.01
	1850.7	18607	V	25.33	4.84	-4.49	25.69	33.01
BAND 2 BW: 1.4M 16QAM RB: 1,5	1030.7	10007	Н	20.23	4.84	-4.49	20.58	33.01
	1880.0	18900	V	26.14	4.79	-4.53	26.41	33.01
			Н	21.16	4.79	-4.53	21.42	33.01
	1909.3	19193	V	24.49	4.75	-4.56	24.67	33.01
			Н	18.56	4.75	-4.56	18.74	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	25.09	4.84	-4.49	25.45	33.01
BAND 2	1851.5	18615	Н	20.14	4.84	-4.49	20.49	33.01
<b>BW: 3M</b>	1880.0	18900	V	25.25	4.80	-4.52	25.53	33.01
QPSK	1880.0	18900	Н	20.58	4.80	-4.52	20.86	33.01
<b>RB: 1,0</b>	1908.5	19185	V	24.93	4.75	-4.56	25.12	33.01
	1908.5	19105	Н	19.25	4.75	-4.56	19.44	33.01
	1051 5	10615	V	25.01	4.84	-4.49	25.36	33.01
BAND 2		18615	Н	19.83	4.84	-4.49	20.18	33.01
BW: 3M QPSK	1880.0	18900	V	26.05	4.79	-4.53	26.32	33.01
	1000.0	10,00	Н	20.57	4.79	-4.53	20.84	33.01
<b>RB: 1,14</b>	1908.5	19185	V	24.23	4.75	-4.56	24.41	33.01
	170010	17100	Н	18.18	4.75	-4.56	18.36	33.01
	1851.5	18615	V	25.26	4.84	-4.49	25.61	33.01
BAND 2	1651.5	18015	Н	20.31	4.84	-4.49	20.66	33.01
<b>BW: 3M</b>	1880.0	18900	V	25.56	4.80	-4.52	25.83	33.01
16QAM	100010	10,00	Н	20.88	4.80	-4.52	21.15	33.01
<b>RB: 1,0</b>	1908.5	19185	V	25.16	4.75	-4.56	25.35	33.01
		1,100	Н	19.47	4.75	-4.56	19.66	33.01
	1851.5	18615	V	25.25	4.84	-4.49	25.60	33.01
BAND 2 BW: 3M 16QAM	1031.3	10013	Н	20.24	4.84	-4.49	20.59	33.01
	1880.0	18900	V	26.43	4.79	-4.53	26.69	33.01
			Н	20.94	4.79	-4.53	21.20	33.01
<b>RB: 1,14</b>	1908.5	19185	V	24.62	4.75	-4.56	24.80	33.01
			Н	18.56	4.75	-4.56	18.74	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
	1050 5	10.00	V	25.21	4.84	-4.49	25.57	33.01
BAND 2	1852.5	18625	Н	20.33	4.84	-4.49	20.69	33.01
<b>BW: 5M</b>	1000.0	10000	V	24.84	4.80	-4.52	25.11	33.01
QPSK	1880.0	18900	Н	20.57	4.80	-4.52	20.84	33.01
<b>RB: 1,0</b>	1007.5	10175	V	24.54	4.75	-4.56	24.73	33.01
	1907.5	19175	Н	19.05	4.75	-4.56	19.24	33.01
	1050 5	10.005	V	24.93	4.84	-4.49	25.28	33.01
BAND 2		18625	Н	19.44	4.84	-4.49	19.78	33.01
BW: 5M QPSK	1990.0	10000	V	26.25	4.79	-4.53	26.51	33.01
	1880.0	18900	Н	20.81	4.79	-4.53	21.07	33.01
<b>RB: 1,24</b>	1007.5	10175	V	24.42	4.75	-4.56	24.60	33.01
	1907.5	19175	Н	18.34	4.75	-4.56	18.52	33.01
	1952 5	19625	V	25.37	4.84	-4.49	25.73	33.01
BAND 2	1852.5	18625	Н	20.38	4.84	-4.49	20.74	33.01
<b>BW: 5M</b>	1880.0	18900	V	25.05	4.80	-4.52	25.32	33.01
16QAM	1000.0	18900	Н	20.82	4.80	-4.52	21.10	33.01
<b>RB: 1,0</b>	1907.5	19175	V	24.76	4.75	-4.56	24.96	33.01
	1907.5	19175	Н	19.35	4.75	-4.56	19.54	33.01
	1852.5	18625	V	25.12	4.84	-4.49	25.47	33.01
BAND 2 BW: 5M 16QAM	1032.3	10023	Н	19.63	4.84	-4.49	19.98	33.01
	1880.0	18900	V	26.49	4.79	-4.53	26.76	33.01
	1000.0	10900	Pol.         V/H         V         H <tr td=""></tr>	21.05	4.79	-4.53	21.31	33.01
<b>RB: 1,24</b>	1907.5	19175	V	24.65	4.74	-4.57	24.83	33.01
	1707.3	19175	Н	18.62	4.74	-4.57	18.80	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
		10.170	V	25.19	4.84	-4.49	25.55	33.01
BAND 2	1855.0	18650	Н	20.18	4.84	-4.49	20.54	33.01
<b>BW: 10M</b>			V	23.73	4.80	-4.52	24.01	33.01
QPSK	1880.0	18900	Н	20.09	4.80	-4.52	20.37	33.01
<b>RB: 1,0</b>	1007.0	10170	V	23.77	4.76	-4.55	23.97	33.01
	1905.0	19150	Н	18.35	4.76	-4.55	18.56	33.01
	10550	10.570	V	24.77	4.83	-4.50	25.10	33.01
DAND 2	1855.0	18650	Н	17.88	4.83	-4.50	18.21	33.01
BAND 2 BW: 10M QPSK	1000.0	10000	V	26.26	4.79	-4.53	26.52	33.01
	1880.0	18900	Н	20.50	4.79	-4.53	20.75	33.01
•	1005.0	10150	V	24.58	4.75	-4.56	24.76	33.01
<b>RB: 1,49</b>	1905.0	19150	Н	18.52	4.75	-4.56	18.70	33.01
	1055.0	10650	V	25.38	4.84	-4.49	25.74	33.01
BAND 2	1855.0	18650	Н	20.42	4.84	-4.49	20.77	33.01
<b>BW: 10M</b>	1000.0	10000	V	24.10	4.80	-4.52	24.39	33.01
16QAM	1880.0	18900	Н	20.46	4.80	-4.52	20.74	33.01
<b>RB: 1,0</b>	1005.0	10150	V	24.02	4.76	-4.55	24.22	33.01
	1905.0	19150	Н	18.56	4.76	-4.55	18.77	33.01
	1955 0	19650	V	25.03	4.83	-4.50	25.37	33.01
BAND 2 BW: 10M 16QAM	1855.0	18650	Н	18.17	4.83	-4.50	18.50	33.01
	1000.0	10000	V	26.56	4.79	-4.53	26.81	33.01
	1880.0	18900	Н	20.80	4.79	LossEIRPIdBdBm $0$ -4.4925.553-4.4920.543-4.5224.013-4.5220.373-4.5523.973-4.5518.563-4.5025.103-4.5018.213-4.5326.523-4.5624.763-4.5618.703-4.5624.763-4.5524.393-4.5220.743-4.5524.223-4.5524.223-4.5518.773-4.5025.373-4.5025.373-4.5321.053-4.5321.053-4.5321.053-4.5624.993	33.01	
<b>RB: 1,49</b>	1005.0	10150	V	24.81	4.75	-4.56	24.99	33.01
	1905.0	19150	Н	18.75	4.75	-4.56	18.93	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	25.19	4.84	-4.49	25.55	33.01
BAND 2	1857.5	18675	Н	20.26	4.84	-4.49	20.62	33.01
<b>BW: 15M</b>	1000.0	10000	V	23.27	4.81	-4.52	23.56	33.01
QPSK	1880.0	18900	Н	19.50	4.81	-4.52	19.79	33.01
<b>RB: 1,0</b>	1000 5	10105	V	24.86	4.77	-4.55	25.08	33.01
	1902.5	19125	Н	18.57	4.77	-4.55	18.79	33.01
	1057.5	10.575	V	24.57	4.82	-4.50	24.88	33.01
BAND 2	1857.5	18675	Н	17.60	4.82	-4.50	17.92	33.01
BW: 15M QPSK	1000.0	10000	V	26.61	4.78	-4.53	26.86	33.01
	1880.0	18900	Н	20.52	4.78	-4.54	20.77	33.01
<b>RB: 1,74</b>	1002.5	10125	V	24.69	4.75	-4.56	24.88	33.01
	1902.5	19125	Н	18.66	4.75	-4.56	18.84	33.01
	1057.5	10/75	V	25.40	4.84	-4.49	25.75	33.01
BAND 2	1857.5	186/5	Н	20.39	4.84	-4.49	20.75	33.01
<b>BW: 15M</b>	1990.0	10000	V	23.60	4.81	-4.52	23.89	33.01
<b>16QAM</b>	1880.0	18900	Н	19.82	4.80	-4.52	20.11	33.01
<b>RB: 1,0</b>	1002.5	10125	V	25.06	4.77	-4.55	25.28	33.01
	1902.3	19125	Н	18.79	4.77	-4.55	19.01	33.01
	1057 5	10675	V	24.82	4.82	-4.50	25.14	33.01
BAND 2 BW: 15M 16QAM	1837.3	180/3	Н	17.91	4.82	-4.50	18.23	33.01
	1990.0	18000	V	26.82	4.78	-4.53	27.07	33.01
	1000.0	10900	Н	20.70	4.78	aa         Cable Loss         EIRP           dB         dBm           -4.49         25.55           -4.49         20.62           -4.52         23.56           -4.52         19.79           -4.55         25.08           -4.55         18.79           -4.50         17.92           -4.50         17.92           -4.53         26.86           -4.54         20.77           -4.56         24.88           -4.56         24.88           -4.56         24.88           -4.56         18.84           -4.56         24.88           -4.52         20.77           -4.56         24.88           -4.56         18.84           -4.56         24.88           -4.56         18.84           -4.49         20.75           -4.49         20.75           -4.52         23.89           -4.52         20.11           -4.55         19.01           -4.55         19.01           -4.50         25.14           -4.50         18.23	20.95	33.01
<b>RB: 1,74</b>	1002.5	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.75	-4.56	25.15	33.01		
	1902.5	19125	Н	18.95	4.75	-4.56	19.14	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
			V	25.35	4.84	-4.49	25.71	33.01
BAND 2	1860.0	18700	Н	20.24	4.84	-4.49	20.60	33.01
<b>BW: 20M</b>			V	22.74	4.81	-4.51	23.03	33.01
QPSK	1880.0	18900	Н	18.65	4.81	-4.51	18.95	33.01
<b>RB: 1,0</b>	1000.0	10100	V	26.07	4.78	-4.54	26.31	33.01
	1900.0	19100	Н	19.37	4.78	-4.54	19.61	33.01
	10.00.0	10500	V	23.15	4.81	-4.51	23.45	33.01
BAND 2	1860.0 1	18700	Н	17.87	4.81	-4.51	18.17	33.01
BW: 20M QPSK	1000.0	10000	V	26.65	4.78	-4.54	26.89	33.01
	1880.0	18900	Н	19.94	4.78	-4.54	20.18	33.01
<b>RB: 1,99</b>	1000.0	10100	V	24.85	4.75	-4.56	25.03	33.01
	1900.0	19100	Н	18.51	4.75	-4.56	18.69	33.01
	10.00 0	10700	V	25.38	4.84	-4.49	25.73	33.01
BAND 2	1860.0	18700	Н	20.35	4.84	-4.49	20.71	33.01
<b>BW: 20M</b>	1000.0	10000	V	23.03	4.81	-4.51	23.33	33.01
16QAM	1880.0	18900	Н	18.99	4.81	-4.51	19.28	33.01
<b>RB: 1,0</b>	1000.0	10100	V	26.11	4.78	-4.54	26.34	33.01
	1900.0	19100	Н	19.43	4.78	-4.54	19.67	33.01
	1000.0	10700	V	23.51	4.81	-4.51	23.81	33.01
BAND 2 BW: 20M 16QAM	1860.0	18700	Н	18.29	4.81	-4.51	18.59	33.01
	1000.0	10000	V	26.71	4.78	-4.54	26.96	33.01
	1880.0	18900	Н	20.10	4.78	-4.54	20.34	33.01
<b>RB: 1,99</b>	1000.0	10100	V	25.03	4.75	-4.56	25.22	33.01
	1900.0	19100	Н	18.72	4.75	-4.56	18.90	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
			V	25.17	5.09	-4.29	25.97	30.00
BAND 4	1710.7	19957	Н	20.21	5.09	-4.29	21.01	30.00
<b>BW: 1.4M</b> /	1732.5	20175	V	24.65	5.05	-4.31	25.39	30.00
QPSK	1732.5	20175	Н	21.91	5.05	-4.31	22.65	30.00
<b>RB: 1,0</b>	1754.3	20393	V	24.40	5.01	-4.37	25.04	30.00
	1734.5	20393	Н	20.04	5.01	-4.37	20.69	30.00
	1510 5	10055	V	24.94	5.09	-4.29	25.74	30.00
BAND 4	1710.7	19957	Н	19.98	5.09	-4.29	20.78	30.00
BW: 1.4M QPSK	1732.5	20175	V	24.74	5.05	-4.31	25.48	30.00
	1752.5	20175	Н	21.95	5.05	-4.31	22.68	30.00
<b>RB: 1,5</b>	1754.3	20393	V	24.38	5.01	-4.37	25.01	30.00
	1734.5	20373	Н	20.06	5.01	-4.37	20.70	30.00
	17107	10057	V	25.42	5.09	-4.29	26.23	30.00
BAND 4	1710.7	19957	Н	20.59	5.09	-4.29	21.39	30.00
<b>BW: 1.4M</b>	1732.5	20175	V	24.93	5.05	-4.31	25.66	30.00
16QAM	1,52.5	20175	Н	22.24	5.05	-4.31	22.98	30.00
<b>RB: 1,0</b>	1754.3	20393	V	24.46	5.01	-4.37	25.10	30.00
	170 110	20070	Н	20.36	5.01	-4.37	21.00	30.00
	1710.7	19957	V	25.19	5.09	-4.29	25.99	30.00
BAND 4 BW: 1.4M 16QAM RB: 1,5	1/10./	1773/	Н	20.43	5.09	-4.29	21.23	30.00
	1732.5	20175	V	25.18	5.05	-4.31	25.92	30.00
			Н	22.37	5.05	-4.31	23.10	30.00
	1754.3	20393	V	24.46	5.01	-4.37	25.09	30.00
		_0000	Н	20.39	5.01	-4.37	21.02	30.00

(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	24.64	5.09	-4.29	25.45	30.00
BAND 4	1711.5	19965	Н	20.12	5.09	-4.29	20.92	30.00
<b>BW: 3M</b>	1732.5	20175	V	23.78	5.05	-4.31	24.52	30.00
QPSK	1732.5	20173	Н	21.65	5.05	-4.31	22.40	30.00
<b>RB: 1,0</b>	1753.5	20385	V	24.00	5.01	-4.37	24.65	30.00
	1755.5	20385	Н	20.03	5.02	-4.37	20.68	30.00
	1711.5	10065	V	24.04	5.09	-4.29	24.83	30.00
BAND 4		19965	Н	19.66	5.09	-4.29	20.46	30.00
BW: 3M QPSK	1732.5	20175	V	24.49	5.05	-4.31	25.23	30.00
	1752.5	20175	Н	22.09	5.05	-4.32	22.82	30.00
<b>RB: 1,14</b>	1753.5	20385	V	24.14	5.01	-4.37	24.78	30.00
	110010	20000	Н	20.23	5.01	-4.37	20.86	30.00
	1711.5	19965	V	24.95	5.09	-4.29	25.75	30.00
BAND 4	1711.5	19903	Н	20.46	5.09	-4.29	21.26	30.00
<b>BW: 3M</b>	1732.5	20175	V	24.16	5.05	-4.31	24.90	30.00
16QAM			Н	21.95	5.05	-4.31	22.69	30.00
<b>RB: 1,0</b>	1753.5	20385	V	24.24	5.01	-4.37	24.89	30.00
			Н	20.30	5.02	-4.37	20.95	30.00
	1711.5	19965	V	24.41	5.09	-4.29	25.20	30.00
BAND 4 BW: 3M 16QAM	1/11.5	17705	Н	20.01	5.09	-4.29	20.80	30.00
	1732.5	20175	V	24.93	5.05	-4.31	25.67	30.00
			H	22.56	5.05	-4.32	23.29	30.00
<b>RB: 1,14</b>	1753.5	20385	V	24.33	5.01	-4.37	24.96	30.00
			Н	20.46	5.01	-4.37	21.09	30.00

(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
			V	24.68	5.09	-4.29	25.48	30.00
BAND 4	1712.5	19975	Н	19.92	5.09	-4.29	20.72	30.00
<b>BW: 5M</b>	1732.5	20175	V	23.63	5.05	-4.31	24.38	30.00
QPSK	1732.3	20175	Н	21.43	5.05	-4.31	22.18	30.00
<b>RB: 1,0</b>	1752.5	20375	V	23.95	5.02	-4.36	24.60	30.00
	1752.5	20373	Н	20.00	5.02	-4.36	20.65	30.00
	1710 5	10075	V	23.77	5.08	-4.29	24.56	30.00
BAND 4	1712.5	19975	Н	19.33	5.08	-4.29	20.12	30.00
<b>BW: 5M</b>	<b>SW: 5M</b> 1732.5	20175	V	24.73	5.04	-4.32	25.45	30.00
QPSK	1,52.5	20175	Н	22.14	5.05	-4.32	22.87	30.00
<b>RB: 1,24</b>	1752.5	20375	V	24.15	5.01	-4.37	24.78	30.00
	1,02.0	20070	Н	20.18	5.01	-4.37	20.82	30.00
	1712.5	19975	V	25.04	5.09	-4.29	25.84	30.00
BAND 4	1/12.5	19975	Н	20.34	5.09	-4.29	21.14	30.00
<b>BW: 5M</b>	1732.5	20175	V	23.93	5.05	-4.31	24.68	30.00
16QAM			Н	21.73	5.05	-4.31	22.48	30.00
<b>RB: 1,0</b>	1752.5	20375	V	24.24	5.02	-4.36	24.90	30.00
			Н	20.39	5.02	-4.36	21.05	30.00
	1712.5	19975	V	24.07	5.08	-4.29	24.86	30.00
BAND 4	1/12.3	19975	Н	19.66	5.08	-4.29	20.44	30.00
<b>BW: 5M</b>	BW: 5M         1732.5         20175           16QAM         1752.5         20375	20175	V	25.19	5.04	-4.32	25.92	30.00
-		Н	22.60	5.05	-4.32	23.33	30.00	
<b>RB: 1,24</b>		V	24.32	5.01	-4.38	24.96	30.00	
			Н	20.45	5.01	-4.37	21.09	30.00

(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	24.47	5.09	-4.29	25.27	30.00
BAND 4	1715.0	20000	Н	19.92	5.09	-4.29	20.72	30.00
<b>BW: 10M</b>	1732.5	20175	V	22.84	5.06	-4.30	23.59	30.00
QPSK	1732.5	20175	Н	21.00	5.06	-4.30	21.76	30.00
<b>RB: 1,0</b>	1750.0	20350	V	24.31	5.03	-4.35	24.99	30.00
	1750.0	20330	Н	20.45	5.03	-4.35	21.13	30.00
	1715.0	20000	V	22.67	5.07	-4.30	23.45	30.00
BAND 4	1715.0	20000	Н	19.73	5.07	-4.30	20.51	30.00
<b>BW: 10M</b>	BW: 10M QPSK 1732.5 2	20175	V	24.94	5.04	-4.32	25.66	30.00
QPSK		20175	Н	22.30	5.04	-4.32	23.02	30.00
<b>RB: 1,49</b>	1750.0	20350	V	24.11	5.01	-4.37	24.74	30.00
	1750.0	20330	Н	20.19	5.01	-4.37	20.83	30.00
	1715.0	20000	V	24.85	5.09	-4.29	25.65	30.00
BAND 4	1715.0	20000	Н	20.28	5.09	-4.29	21.08	30.00
<b>BW: 10M</b>	1732.5	20175	V	23.06	5.06	-4.30	23.82	30.00
16QAM	175210	20170	Н	21.21	5.06	-4.30	21.96	30.00
<b>RB: 1,0</b>	1750.0	20350	V	24.75	5.03	-4.35	25.43	30.00
	1.2010		Н	20.91	5.03	-4.35	21.59	30.00
	1715.0	20000	V	22.89	5.07	-4.30	23.67	30.00
BAND 4	1/13.0	20000	Н	19.97	5.07	-4.30	20.74	30.00
<b>BW: 10M</b>	1732.5 20175 1750.0 20350	V	25.50	5.04	-4.32	26.22	30.00	
16QAM		Н	22.82	5.04	-4.32	23.54	30.00	
<b>RB: 1,49</b>		V	24.25	5.01	-4.37	24.89	30.00	
	1,0000	10000	Н	20.37	5.01	-4.37	21.01	30.00

(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
			V	24.56	5.09	-4.29	25.37	30.00
BAND 4	1717.5	20025	Н	19.77	5.09	-4.29	20.57	30.00
<b>BW: 15M</b>	1732.5	20175	V	22.68	5.06	-4.30	23.44	30.00
QPSK	1732.5	20175	Н	20.55	5.06	-4.30	21.30	30.00
<b>RB: 1,0</b>	1747.5	20325	V	25.28	5.03	-4.34	25.98	30.00
	1747.5	20323	Н	21.79	5.03	-4.34	22.49	30.00
	1717 5	20025	V	22.50	5.06	-4.30	23.26	30.00
BAND 4	1717.5	20025	Н	20.36	5.06	-4.30	21.12	30.00
<b>BW: 15M</b>	BW: 15M QPSK 1732.5	20175	V	25.29	5.04	-4.33	25.99	30.00
QPSK		20175	Н	22.11	5.04	-4.33	22.82	30.00
<b>RB: 1,74</b>	1747.5	20325	V	24.04	5.01	-4.37	24.68	30.00
	171710	20020	Н	20.16	5.01	-4.37	20.80	30.00
	1717.5	20025	V	24.89	5.09	-4.29	25.69	30.00
BAND 4	1/1/.5	20023	Н	20.11	5.09	-4.29	20.91	30.00
BW: 15M	1732.5	20175	V	22.83	5.06	-4.30	23.59	30.00
16QAM			Н	20.71	5.06	-4.30	21.47	30.00
<b>RB: 1,0</b>	1747.5	20325	V	25.85	5.03	-4.34	26.55	30.00
			Н	22.40	5.03	-4.34	23.10	30.00
	1717.5	20025	V	22.64	5.06	-4.30	23.40	30.00
BAND 4	1/1/.5	20025	Н	20.53	5.06	-4.30	21.29	30.00
<b>BW: 15M</b> 16QAM	1732.5	20175	V	25.86	5.04	-4.33	26.57	30.00
			Н	22.70	5.04	-4.33	23.40	30.00
<b>RB: 1,74</b>	1747.5 2	20325	V	24.21	5.01	-4.37	24.85	30.00
			Н	20.46	5.01	-4.37	21.10	30.00

(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	24.36	5.09	-4.29	25.16	30.00
BAND 4	1720.0	20050	Н	19.70	5.09	-4.29	20.50	30.00
<b>BW: 20M</b>	1732.5	20175	V	22.44	5.07	-4.30	23.20	30.00
QPSK	1752.5	20173	Н	20.23	5.07	-4.30	21.00	30.00
<b>RB: 1,0</b>	1745.0	20300	V	25.05	5.04	-4.32	25.77	30.00
	1743.0	20300	Н	22.24	5.04	-4.32	22.96	30.00
			V	23.27	5.06	-4.30	24.02	30.00
BAND 4	1720.0	20050	Н	21.02	5.06	-4.30	21.77	30.00
<b>BW: 20M</b>	<b>BW: 20M</b> 1732.5	20175	V	25.01	5.03	-4.34	25.71	30.00
<b>QPSK</b> 173	1732.5	20175	Н	21.32	5.03	-4.34	22.01	30.00
<b>RB: 1,99</b>	1745.0	20300	V	23.85	5.01	-4.37	24.49	30.00
	1743.0	20300	Н	20.18	5.01	-4.37	20.82	30.00
	1720.0	20050	V	24.70	5.09	-4.29	25.50	30.00
BAND 4	1720.0	20050	Н	20.00	5.09	-4.29	20.80	30.00
<b>BW: 20M</b>	1732.5	20175	V	22.63	5.07	-4.30	23.40	30.00
16QAM	1752.5	20175	Н	20.43	5.07	-4.30	21.20	30.00
<b>RB: 1,0</b>	1745.0	20300	V	25.52	5.04	-4.32	26.24	30.00
	1743.0	20300	Н	22.76	5.04	-4.32	23.48	30.00
	1720.0	20050	V	23.57	5.06	-4.30	24.33	30.00
BAND 4	BAND 4 1720.0	20050	Н	20.52	5.06	-4.30	21.29	30.00
BW: 20M	1732.5	20175	V	25.79	5.03	-4.34	26.48	30.00
16QAM	<b>16QAM</b> <b>RB: 1 99</b>	20175	Pol.         Output         Gain         Loss         ELRP $V/H$ dBm         dBi         dB         dBm $50$ V         24.36         5.09         -4.29         25.16 $60$ H         19.70         5.09         -4.29         20.50 $75$ V         22.44         5.07         -4.30         23.20 $75$ H         20.23         5.07         -4.30         23.20 $75$ H         20.23         5.07         -4.30         21.00 $00$ V         25.05         5.04         -4.32         25.77 $00$ H         22.24         5.04         -4.32         22.96 $70$ H         22.24         5.04         -4.32         22.96 $70$ H         21.02         5.06         -4.30         21.77 $75$ V         25.01         5.03         -4.34         25.71 $75$ H         21.32         5.03         -4.34         22.01 $75$ H         20.18         5.01         -4.37	22.92	30.00			
<b>RB: 1,99</b>		20300	V	24.04	5.01	-4.37	24.68	30.00
	171010	20000	Н	20.40	5.01	-4.37	21.04	30.00

(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	12.33	3.45	-2.94	12.85	38.45
BAND 5	824.7	20407	Н	13.91	3.45	-2.94	14.43	38.45
<b>BW: 1.4M</b>	836.5	20525	V	10.70	3.46	-2.97	11.19	38.45
QPSK	830.3	20323	Н	13.79	3.46	-2.97	14.28	38.45
<b>RB: 1,0</b>	848.3	20643	V	11.08	3.47	-3.01	11.54	38.45
	040.5	20043	Н	14.00	3.47	-3.01	14.46	38.45
	0247	20.407	V	12.60	3.46	-2.94	13.11	38.45
BAND 5	824.7	20407	Н	14.42	3.46	-2.94	14.93	38.45
<b>BW: 1.4M</b>	<b>QPSK</b> 836.5	20525	V	10.71	3.46	-2.97	11.20	38.45
•		20323	Н	13.74	3.46	-2.97	14.23	38.45
<b>RB: 1,5</b>	848.3	20643	V	10.48	3.47	-3.01	10.94	38.45
	0.1010	20010	Н	13.41	3.47	-3.00	13.88	38.45
	824.7	20407	V	12.51	3.45	-2.94	13.03	38.45
BAND 5	824.7	20407	Н	14.20	3.45	-2.94	14.71	38.45
<b>BW: 1.4M</b>	836.5	20525	V	10.90	3.46	-2.97	11.39	38.45
16QAM		20020	Н	13.92	3.46	-2.97	14.41	38.45
<b>RB: 1,0</b>	848.3	20643	V	11.20	3.47	-3.01	11.66	38.45
		20010	Н	14.32	3.47	-3.00	14.78	38.45
	824.7	20407	V	13.08	3.46	-2.94	13.59	38.45
BAND 5	024.7	20407	Н	14.88	3.46	-2.94	15.40	38.45
<b>BW: 1.4M</b>	836.5	5 20525 -	V	10.99	3.46	-2.97	11.48	38.45
16QAM	836.5 20525	Н	14.02	3.46	-2.97	14.51	38.45	
<b>RB: 1,5</b>	848 3	848.3 20643	V	10.72	3.47	-3.01	11.18	38.45
		20010	Н	13.68	3.47	-3.01	14.14	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	12.42	3.45	-2.94	12.94	38.45
BAND 5	825.5	20415	Н	13.81	3.45	-2.94	14.33	38.45
<b>BW: 3M</b>	836.5	20525	V	11.01	3.46	-2.97	11.50	38.45
QPSK	830.3	20323	Н	13.68	3.46	-2.97	14.17	38.45
<b>RB: 1,0</b>	847.5	20635	V	11.62	3.47	-3.00	12.09	38.45
	847.3	20055	Н	14.56	3.47	-3.00	15.02	38.45
			V	13.28	3.46	-2.94	13.79	38.45
BAND 5	825.5	20415	Н	15.18	3.46	-2.94	15.69	38.45
BW: 3M QPSK	836.5	20525	V	11.38	3.46	-2.97	11.86	38.45
		20323	Н	13.97	3.46	-2.97	14.46	38.45
<b>RB: 1,14</b>	847.5	20635	V	10.39	3.47	-3.01	10.85	38.45
	047.5	20033	Н	13.04	3.47	-3.01	13.50	38.45
	025 5	20415	V	12.61	3.46	-2.94	13.12	38.45
BAND 5	825.5	20415	Н	14.13	3.45	-2.94	14.65	38.45
<b>BW: 3M</b>	836.5	20525	V	11.26	3.46	-2.97	11.75	38.45
<b>16QAM</b>	050.5	20323	Н	13.89	3.46	-2.97	14.38	38.45
<b>RB: 1,0</b>	847.5	20635	V	11.86	3.47	-3.00	12.33	38.45
	017.5	20035	Н	14.77	3.47	-3.00	15.23	38.45
	075 5	20415	V	13.85	3.46	-2.94	14.37	38.45
BAND 5         825.5           BW: 3M         836.5           16QAM         836.5	823.3	20415	Н	15.75	3.46	-2.94	16.26	38.45
	836.5	20525	V	11.71	3.46	-2.98	12.20	38.45
		20020	Н	14.25	3.46	-2.98	14.74	38.45
<b>RB: 1,14</b>	847.5 20635 -	V	10.59	3.47	-3.01	11.05	38.45	
	017.0	20055	Н	13.21	3.47	-3.01	13.67	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	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	12.28	3.46	-2.94	12.80	38.45
BAND 5	826.5	20425	Н	13.79	3.45	-2.94	14.31	38.45
<b>BW: 5M</b>	836.5	20525	V	11.03	3.46	-2.97	11.53	38.45
QPSK	830.5	20323	Н	13.65	3.46	-2.97	14.14	38.45
<b>RB: 1,0</b>	846.5	20625	V	13.31	3.46	-2.99	13.78	38.45
	040.5	20025	Н	15.84	3.46	-2.99	16.31	38.45
	006 5	20.425	V	13.10	3.46	-2.95	13.61	38.45
BAND 5	826.5	20425	Н	15.00	3.46	-2.95	15.50	38.45
<b>BW: 5M</b>	836.5	20525	V	11.72	3.46	-2.98	12.21	38.45
QPSK		20323	Н	14.19	3.46	-2.98	14.68	38.45
<b>RB: 1,24</b>	846.5	20625	V	10.47	3.47	-3.01	10.93	38.45
	010.0	20025	Н	12.82	3.47	-3.01	13.28	38.45
	826.5	20425	V	12.67	3.45	-2.94	13.19	38.45
BAND 5	826.5	20425	Н	14.14	3.45	-2.94	14.66	38.45
<b>BW: 5M</b>	836.5	20525	V	11.26	3.46	-2.97	11.76	38.45
16QAM		20020	Н	13.89	3.46	-2.97	14.38	38.45
<b>RB: 1,0</b>	846.5	20625	V	13.71	3.47	-2.99	14.19	38.45
	01010	20020	Н	16.26	3.46	-2.99	16.73	38.45
	976 5	20425	V	13.57	3.46	-2.95	14.08	38.45
BAND 5	BAND 5	20425	Н	15.45	3.46	-2.95	15.96	38.45
BW: 5M 16QAM RB: 1,24	836.5	20525	V	12.07	3.46	-2.98	12.56	38.45
		20020	Н	14.53	3.46	-2.98	15.01	dBm           38.45
	846.5	20625	V	10.70	3.47	-3.00	11.16	38.45
	010.0	20025	Н	13.03	3.47	-3.00	13.49	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	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
			V	12.63	3.45	-2.94	13.15	38.45
BAND 5	829.0	20450	Н	13.84	3.46	-2.94	14.36	38.45
<b>BW: 10M</b>	836.5	20525	V	11.46	3.46	-2.96	11.95	38.45
QPSK	830.3	20323	Н	14.07	3.46	-2.96	14.56	38.45
<b>RB: 1,0</b>	844.0	20600	V	12.23	3.46	-2.98	12.71	38.45
	044.0	20000	Н	14.59	3.46	-2.98	15.07	38.45
	0.00	20150	V	10.97	3.46	-2.97	11.46	38.45
BAND 5	829.0	20450	Н	12.73	3.46	-2.97	13.22	38.45
<b>BW: 10M</b>	BW: 10M 836.5	20525	V	12.39	3.46	-2.99	12.86	38.45
QPSK	650.5	20323	Н	15.18	3.46	-2.98	15.66	38.45
<b>RB: 1,49</b>	844.0	20600	V	10.44	3.47	-3.01	10.90	38.45
	011.0	20000	Н	12.87	3.47	-3.01	13.33	38.45
	820.0	20.450	V	12.77	3.45	-2.94	13.29	38.45
BAND 5	829.0	20450	Н	14.08	3.45	-2.94	14.60	38.45
<b>BW: 10M</b>	836.5	20525	V	11.66	3.46	-2.96	12.16	38.45
16QAM	050.5	20323	Н	14.30	3.46	-2.96	14.80	38.45
<b>RB: 1,0</b>	844.0	20600	V	12.44	3.46	-2.98	12.92	38.45
	011.0	20000	Н	14.88	3.46	-2.98	15.36	38.45
	820.0	20450	V	11.24	3.46	-2.97	11.73	38.45
BAND 5	BAND 5 829.0 204	20450	Н	12.98	3.46	-2.96	13.48	38.45
BW: 10M	836.5	20525	V	12.75	3.46	-2.99	13.23	38.45
16QAM	836.5 20525	20525	Н	15.54	3.46	-2.99	16.01	38.45
<b>RB: 1,49</b>		V	10.68	3.47	-3.00	11.14	38.45	
	0.77.0	20000	Н	13.13	3.47	-3.00	13.59	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	24.80	5.80	-5.34	25.26	33.01
BAND 7	2502.5	20775	Н	29.21	5.80	-5.34	29.67	33.01
<b>BW: 5M</b>	2535.0	21100	V	22.28	5.87	-5.39	22.77	33.01
QPSK	2333.0	21100	Н	29.51	5.87	-5.38	30.00	33.01
<b>RB: 1,0</b>	2567.5	21425	V	19.81	5.94	-5.44	20.31	33.01
	2307.5	21423	Н	26.52	5.94	-5.44	27.02	33.01
	2502.5	20775	V	24.32	5.81	-5.35	24.79	33.01
BAND 7	2502.5	20775	Н	29.57	5.81	-5.35	30.04	33.01
<b>BW: 5M</b>	<b>QPSK</b> 2535.0 2	21100	V	21.17	5.88	-5.39	21.66	33.01
-		21100	Н	29.50	5.88	-5.39	29.99	33.01
<b>RB: 1,24</b>	2567.5	21425	V	18.44	5.95	-5.44	18.94	33.01
	2507.5	21123	Н	26.92	5.95	-5.44	27.43	33.01
	2502.5	20775	V	25.32	5.80	-5.34	25.78	33.01
BAND 7	2502.5	20775	Н	30.07	5.80	-5.34	30.53	33.01
<b>BW: 5M</b>	2535.0	21100	V	22.63	5.87	-5.38	23.11	33.01
16QAM		21100	Н	30.10	5.87	-5.38	30.58	33.01
<b>RB: 1,0</b>	2567.5	21425	V	20.00	5.94	-5.44	20.50	33.01
			Н	27.30	5.94	-5.44	27.81	33.01
	2502.5	20775	V	24.71	5.81	-5.35	25.17	33.01
BAND 7	BAND 7	20773	Н	29.60	5.81	-5.35	30.07	33.01
BW: 5M 16QAM RB: 1,24	2535.0	21100	V	21.32	5.88	-5.39	21.81	33.01
			Н	29.89	5.88	-5.39	30.37	33.01
	2567.5	21425	V	19.14	5.95	-5.44	19.65	33.01
	2567.5 2		Н	27.02	5.95	-5.44	27.52	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	25.17	5.80	-5.34	25.63	33.01
BAND 7	2505.0	20800	Н	29.10	5.80	-5.34	29.56	33.01
<b>BW: 10M</b>	2535.0	21100	V	23.49	5.87	-5.38	23.98	33.01
QPSK	2353.0	21100	Н	28.66	5.87	-5.38	29.14	33.01
<b>RB: 1,0</b>	2565.0	21400	V	20.44	5.93	-5.43	20.94	33.01
	2303.0	21400	Н	27.36	5.93	-5.43	27.86	33.01
	2505.0	20000	V	21.90	5.82	-5.35	22.37	33.01
BAND 7	2505.0	20800	Н	28.57	5.82	-5.35	29.04	33.01
<b>BW: 10M</b>	2535.0	21100	V	20.71	5.88	-5.40	21.19	33.01
QPSK	2333.0	21100	Н	28.57	5.89	-5.40	29.06	33.01
<b>RB: 1,49</b>	2565.0	21400	V	19.10	5.95	-5.44	19.61	33.01
	2303.0	21400	Н	26.21	5.95	-5.44	26.72	33.01
	2505.0	20000	V	25.31	5.80	-5.34	25.77	33.01
BAND 7	2505.0	20800	Н	29.98	5.80	-5.34	30.43	33.01
<b>BW: 10M</b>	2535.0	21100	V	23.92	5.87	-5.38	24.40	33.01
16QAM	2555.0	21100	Н	29.88	5.87	-5.38	30.37	33.01
<b>RB: 1,0</b>	2565.0	21400	V	20.68	5.93	-5.43	21.18	33.01
	2303.0	21400	Н	27.96	5.93	-5.43	28.46	33.01
	2505.0	20000	V	22.37	5.82	-5.35	22.84	33.01
BAND 7	BAND 7 2505.0 208	20800	Н	29.59	5.82	-5.35	30.06	33.01
BW: 10M 16QAM	2535.0	21100	V	20.90	5.88	-5.40	21.39	33.01
	2333.0	21100	Н	28.86	5.88	-5.40	29.35	33.01
RB: 1,49	2565.0	21400	V	19.21	5.95	-5.44	19.71	33.01
	2303.0	21-100	Н	26.82	5.95	-5.44	27.33	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	20825	V	26.56	5.80	-5.34	27.02	33.01
BAND 7	2307.3	20823	Н	28.67	5.80	-5.34	29.13	33.01
<b>BW: 15M</b>	2535.0	21100	V	25.48	5.86	-5.38	25.96	33.01
QPSK	2555.0	21100	Н	28.45	5.86	-5.38	28.93	33.01
<b>RB: 1,0</b>	2562.5	21375	V	23.43	5.92	-5.42	23.93	33.01
	2302.3	21373	Н	26.90	5.92	-5.42	27.40	33.01
	2507.5	20825	V	25.37	5.83	-5.36	25.84	33.01
BAND 7	2307.5	20823	Н	28.12	5.83	-5.36	28.60	33.01
<b>BW: 15M</b>	2535.0	21100	V	25.19	5.89	-5.40	25.68	33.01
QPSK	2555.0	21100	Н	27.59	5.89	-5.40	28.08	33.01
<b>RB: 1,74</b>	2562.5	21375	V	24.96	5.95	-5.44	25.47	33.01
	2302.5	21373	Н	25.96	5.95	-5.44	26.47	33.01
	2507.5	20825	V	25.57	5.80	-5.34	26.03	33.01
BAND 7	2307.5	20825	Н	29.71	5.80	-5.34	30.17	33.01
<b>BW: 15M</b>	2535.0	21100	V	26.41	5.86	-5.38	26.89	33.01
16QAM	2555.0	21100	Н	28.96	5.86	-5.38	29.44	33.01
<b>RB: 1,0</b>	2562.5	21375	V	24.26	5.92	-5.42	24.76	33.01
	2502.5	21313	Н	27.63	5.92	-5.42	28.13	33.01
	2507.5	20825	V	26.49	5.83	-5.36	26.96	33.01
BAND 7	2307.5	20025	Н	29.25	5.83	-5.36	29.72	33.01
<b>BW: 15M</b>	2535.0	21100 -	V	26.10	5.89	-5.40	26.59	33.01
16QAM	2000.0		Н	28.56	5.89	-5.40	29.05	33.01
<b>RB: 1,74</b>	2562.5 21375	V	21.64	5.95	-5.44	22.15	33.01	
	2302.3	21313	Н	26.74	5.95	-5.44	27.25	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	20850	V	24.03	5.80	-5.34	24.49	33.01
BAND 7	2510.0	20050	Н	28.54	5.80	-5.34	29.00	33.01
<b>BW: 20M</b>	2535.0	21100	V	24.68	5.86	-5.38	25.16	33.01
QPSK	2333.0	21100	Н	27.53	5.86	-5.37	28.02	33.01
<b>RB: 1,0</b>	2560.0	21350	V	21.31	5.91	-5.41	21.81	33.01
	2500.0	21330	Н	26.74	5.91	-5.41	27.24	33.01
	2510.0	20850	V	23.10	5.84	-5.36	23.58	33.01
BAND 7	2510.0	20050	Н	27.59	5.84	-5.36	28.07	33.01
<b>BW: 20M</b>	<b>QPSK</b> 2535.0 21	21100	V	19.09	5.89	-5.40	19.58	33.01
QPSK		21100	Н	27.56	5.89	-5.40	28.05	33.01
RB: 1,99	2560.0	21350	V	19.15	5.95	-5.44	19.66	33.01
	2500.0	21330	Н	26.12	5.95	-5.44	26.62	33.01
	2510.0	20850	V	25.17	5.80	-5.34	25.63	33.01
BAND 7	2510.0	20050	Н	29.69	5.80	-5.34	30.15	33.01
<b>BW: 20M</b>	2535.0	21100	V	25.61	5.86	-5.37	26.09	33.01
<b>16QAM</b>	2555.0	21100	Н	28.47	5.85	-5.37	28.95	33.01
<b>RB: 1,0</b>	2560.0	21350	V	22.14	5.91	-5.41	22.64	33.01
	2500.0	21550	Н	27.65	5.91	-5.41	28.14	33.01
	2510.0	20850	V	24.19	5.84	-5.36	24.67	33.01
BAND 7	2510.0	20050	Н	28.68	5.84	-5.36	29.16	33.01
<b>BW: 20M</b>	<b>20M</b> 2535.0 21100	V	20.07	5.89	-5.40	20.56	33.01	
16QAM	2000.0	35.0 21100	Н	28.49	5.90	-5.40	28.98	33.01
<b>RB: 1,99</b>	2560.0 21350	V	19.79	5.95	-5.44	20.30	33.01	
	22 30.0	21000	Н	26.86	5.95	-5.44	27.37	33.01

(1)

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

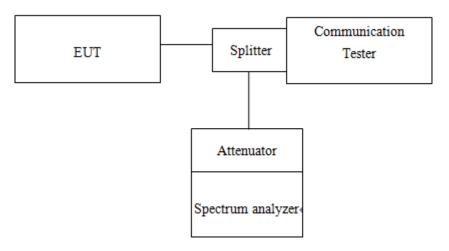


# 8. OCCUPIED BANDWIDTH MEASUREMENT

### 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

### 99% &26dB Bandwidth with detector peak

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%.

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## 8.4. Measurement Equipment Used

Conc	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						

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# 8.5. Measurement Result 99% Bandwidth

Frequency	СН	99% Bandwidth (KHz)	99% Bandwidth (KHz)	99% Bandwidth (KHz)
(MHz)	Cli	GSM 850	GPRS 850	EDGE 850
824.20	128	245.05	251.41	247.42
836.60	190	242.53	245.45	256.91
848.80	251	250.52	250.18	249.69

Frequency (MHz)	СН	99% Bandwidth (KHz) GSM 1900	99% Bandwidth (KHz) GPRS 1900	99% Bandwidth (KHz) EDGE 1900	
1850.20	512	249.94	240.51	242.65	
1880.00	661	253.31	243.21	245.17	
1909.80	810	245.28	252.25	246.32	

Frequency (MHz)	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	99% Bandwidth (MHz)
	Сп	WCDMA II	HSDPA II	HSUPA II
1850.20	9262	4.2064	4.2274	4.2129
1880.00	9400	4.1934	4.2343	4.1986
1909.80	9538	4.2056	4.2318	4.1987

Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	99% Bandwidth (MHz)
(MHz)	Сп	WCDMA V	HSDPA V	HSUPA V
826.40	4132	4.1850	4.1909	4.1957
836.60	4183	4.2372	4.2230	4.2316
846.60	4233	4.1965	4.2351	4.2102

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	LTE BAND 2									
Channel bandwidth: 1.4MHz				Cha	annel bar	ndwidth: 3M	Hz			
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)			
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM			
1850.7	18607	1.1002	1.1014	1851.5	18615	2.7083	2.7122			
1880.0	18900	1.0944	1.0984	1880.0	18900	2.7102	2.7151			
1909.3	19193	1.1003	1.1011	1908.5	19185	2.7099	2.7074			

LTE BAND 2									
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz					
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)	011	QPSK	16QAM	(MHz)		QPSK	16QAM		
1852.5	18625	4.5214	4.5245	1855.0	18650	8.9983	8.9829		
1880.0	18900	4.5416	4.4956	1880.0	18900	8.9954	8.9729		
1907.5	19175	4.5136	4.5088	1905.0	19150	9.0160	8.9677		

	LTE BAND 2									
Channel bandwidth: 15MHz				Cha	nnel ban	dwidth: 20M	Hz			
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)			
(MHz)	011	QPSK	16QAM	(MHz)		QPSK	16QAM			
1857.5	18675	13.4829	13.4962	1860.0	18700	17.9375	17.9572			
1880.0	18900	13.3860	13.4768	1880.0	18900	17.9377	17.9190			
1902.5	19125	13.4615	13.4861	1900.0	19100	17.9817	17.9056			

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LTE BAND 4									
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz					
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
1710.7	19957	1.0981	1.1009	1711.5	19965	2.7149	2.7079		
1732.5	20175	1.0933	1.0974	1732.5	20175	2.7098	2.6930		
1754.3	20393	1.0998	1.0982	1753.5	20385	2.7185	2.7026		

LTE BAND 4									
Channel bandwidth: 5MHz				Cha	nnel ban	dwidth: 10M	Hz		
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
1712.5	19957	4.5111	4.5129	1715.0	20000	8.9977	8.9667		
1732.5	20175	4.5123	4.5158	1732.5	20175	8.9635	8.9743		
1752.5	20375	4.5163	4.5090	1750.0	20350	9.0077	8.9710		

LTE BAND 4									
Channel bandwidth: 15MHz				Cha	nnel ban	dwidth: 20M	Hz		
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
1717.5	20025	13.4466	13.4640	1720.0	20050	17.9208	17.9718		
1732.5	20175	13.4788	13.4831	1732.5	20175	17.9676	17.9720		
1747.5	20325	13.4690	13.4555	1745.0	20300	17.9009	17.9319		

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	LTE BAND 5									
Channel bandwidth: 1.4MHz				Ch	Channel bandwidth: 3MHz					
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)			
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM			
824.7	20407	1.0965	1.1047	825.5	20415	2.7035	2.7057			
836.5	20525	1.0924	1.0982	836.5	20525	2.7184	2.7107			
848.3	20643	1.0909	1.0983	847.5	20635	2.7472	2.7053			

LTE BAND 5									
Channel bandwidth: 5MHz				Cha	nnel ban	dwidth: 10M	Hz		
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
826.5	20425	4.5398	4.5165	829.0	20450	8.9918	8.9662		
836.5	20525	4.5350	4.5149	836.5	20525	8.9865	8.9960		
846.5	20625	4.4869	4.5147	844.0	20600	8.9878	8.9847		

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LTE BAND 7									
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz					
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)	_	QPSK	16QAM	(MHz)		QPSK	16QAM		
2502.5	20775	4.5114	4.5070	2505.0	20800	9.0131	8.9765		
2535.0	21100	4.5080	4.4921	2535.0	21100	9.0070	8.9851		
2567.5	21425	4.5064	4.5005	2565.0	21400	8.9881	8.9285		

LTE BAND 7									
Channel bandwidth: 15MHz				Cha	nnel ban	dwidth: 20M	Hz		
Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)	Frequency	СН	99% Bandwidth (MHz)	99% Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
2507.5	20825	13.4513	13.4655	2510.0	20850	17.9339	17.9375		
2535.0	21100	13.4720	13.4942	2535.0	21100	17.9786	17.9897		
2562.5	21375	13.4590	13.4270	2560.0	21350	17.8732	17.8878		

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# **26dB Bandwidth**

Frequency	СН	26dB Bandwidth (KHz)	26dB Bandwidth (KHz)	26dB Bandwidth (KHz)	
(MHz)	Cli	GSM 850	GPRS 850	EDGE 850	
824.20	128	310.8	323.3	311.8	
836.60	190	314.8	309.1	325.3	
848.80	251	312.8	315.4	324.1	

Frequency (MHz)	СН	26dB Bandwidth (KHz) GSM 1900	26dB Bandwidth (KHz) GPRS 1900	26dB Bandwidth (KHz) EDGE 1900	
1850.20	512	316.9	301.6	300.3	
1880.00	661	325.0	308.6	317.9	
1909.80	810	315.1	321.9	319.7	

Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
(MHz)	CII	WCDMA II	HSDPA II	HSUPA II
1850.20	9262	4.831	4.809	4.867
1880.00	9400	4.839	4.827	4.836
1909.80	9538	4.811	4.797	4.867

Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)
(MHz)	Сп	WCDMA V	HSDPA V	HSUPA V
826.40	4132	4.796	4.778	4.815
836.60	4183	4.777	4.849	4.817
846.60	4233	4.796	4.821	4.815

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	LTE BAND 2									
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz						
Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)			
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM			
1850.7	18607	1.284	1.274	1851.5	18615	2.979	2.965			
1880.0	18900	1.265	1.262	1880.0	18900	2.972	2.949			
1909.3	19193	1.270	1.266	1908.5	19185	2.963	2.977			

LTE BAND 2									
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			
1852.5	18625	5.068	4.987	1855.0	18650	9.803	9.819		
1880.0	18900	4.753	4.953	1880.0	18900	9.894	9.834		
1907.5	19175	5.005	5.049	1905.0	19150	9.838	9.859		

LTE BAND 2									
Channel bandwidth: 15MHz				Cha	nnel ban	dwidth: 20M	Hz		
Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
1857.5	18675	14.857	14.666	1860.0	18700	19.598	19.503		
1880.0	18900	14.431	14.602	1880.0	18900	19.433	19.108		
1902.5	19125	14.576	14.751	1900.0	19100	19.426	19.438		

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LTE BAND 4									
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz					
Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
(MHz)		QPSK	16QAM	(MHz)		QPSK	16QAM		
1710.7	19957	1.264	1.261	1711.5	19965	2.964	2.983		
1732.5	20175	1.258	1.267	1732.5	20175	2.970	2.984		
1754.3	20393	1.265	1.270	1753.5	20385	2.973	2.964		

LTE BAND 4									
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		
1712.5	19957	5.084	5.053	1715.0	20000	9.721	9.751		
1732.5	20175	5.023	4.972	1732.5	20175	9.787	9.787		
1752.5	20375	5.022	4.985	1750.0	20350	9.891	9.818		

LTE BAND 4									
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz					
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM			QPSK	16QAM		
1717.5	20025	14.666	14.769	1720.0	20050	19.262	19.601		
1732.5	20175	14.728	14.852	1732.5	20175	19.444	19.309		
1747.5	20325	14.684	14.658	1745.0	20300	19.167	19.332		

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LTE BAND 5									
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz					
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM			QPSK	16QAM		
824.7	20407	1.268	1.292	825.5	20415	2.977	2.969		
836.5	20525	1.262	1.268	836.5	20525	2.959	2.940		
848.3	20643	1.261	1.274	847.5	20635	2.923	2.959		

LTE BAND 5									
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz					
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM			QPSK	16QAM		
826.5	20425	5.049	5.041	829.0	20450	9.904	9.821		
836.5	20525	5.030	5.020	836.5	20525	9.671	9.879		
846.5	20625	4.847	5.013	844.0	20600	9.832	9.778		

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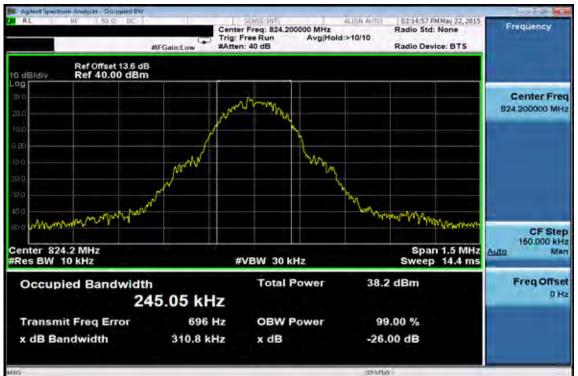
LTE BAND 7								
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz				
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	
		QPSK	16QAM	(MHz)		QPSK	16QAM	
2502.5	20775	5.071	5.051	2505.0	20800	9.889	9.848	
2535.0	21100	5.017	4.903	2535.0	21100	9.889	9.848	
2567.5	21425	5.020	4.903	2565.0	21400	9.538	9.393	

LTE BAND 7									
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz					
Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)	Frequency (MHz)	СН	26dB Bandwidth (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM			QPSK	16QAM		
2507.5	20825	14.684	14.682	2510.0	20850	19.401	19.418		
2535.0	21100	14.459	14.367	2535.0	21100	19.514	19.179		
2562.5	21375	14.669	14.405	2560.0	21350	19.126	19.211		

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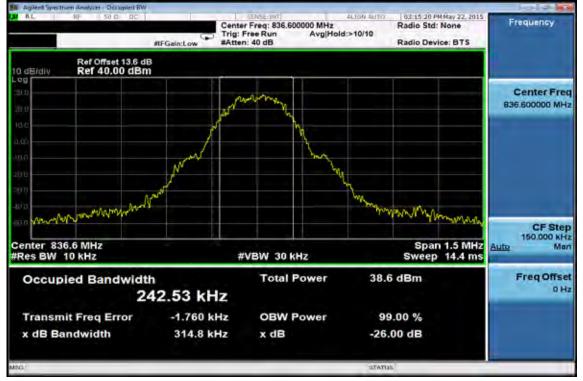


## 99% & 26dB Bandwidth Test Data



## **GSM 850 Channel Low**

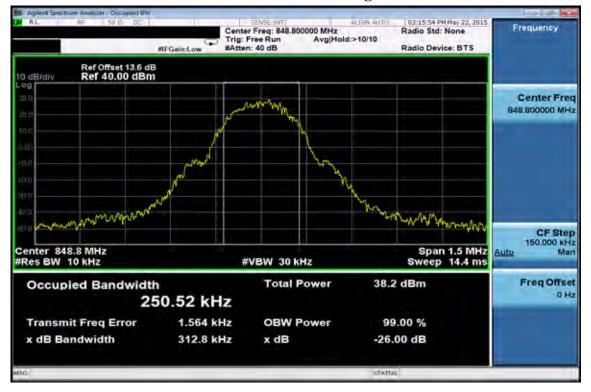
**GSM 850 Channel Mid** 



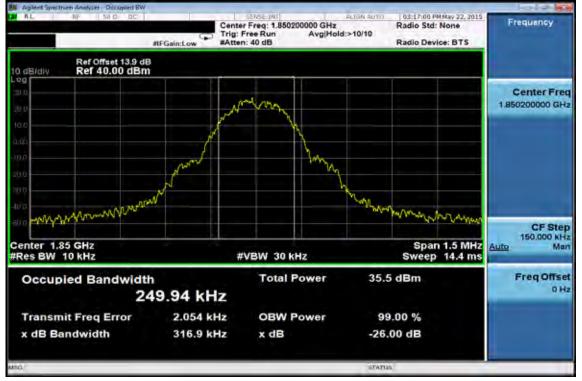
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### **GSM 850 Channel High**



## **GSM 1900 Channel Low**

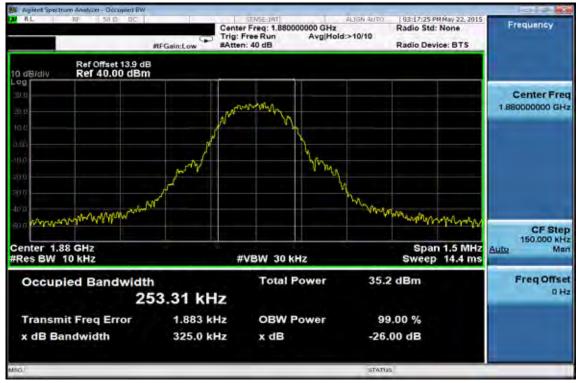


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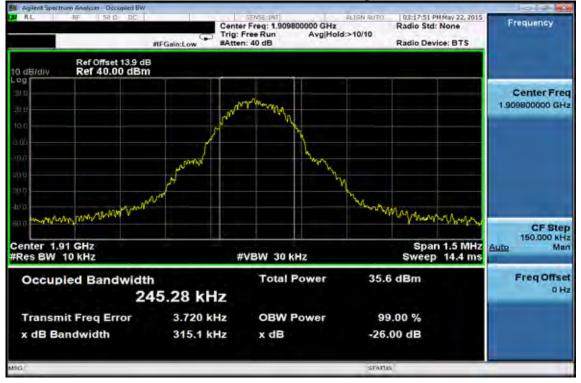
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**GSM 1900 Channel Mid** 



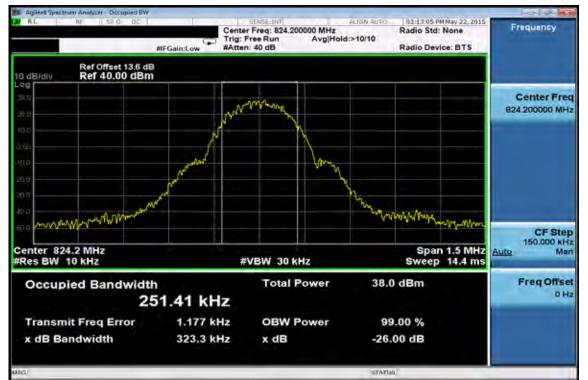
#### **GSM 1900 Channel High**



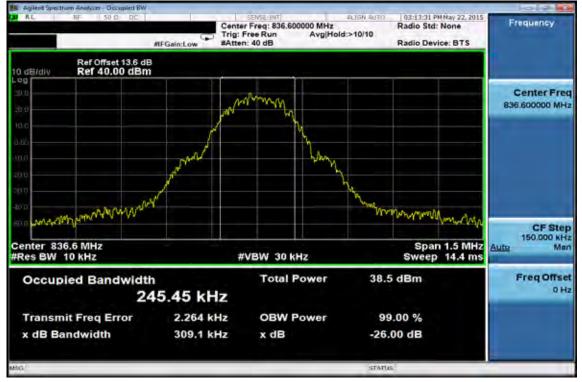
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### **GPRS 850 Channel Low**



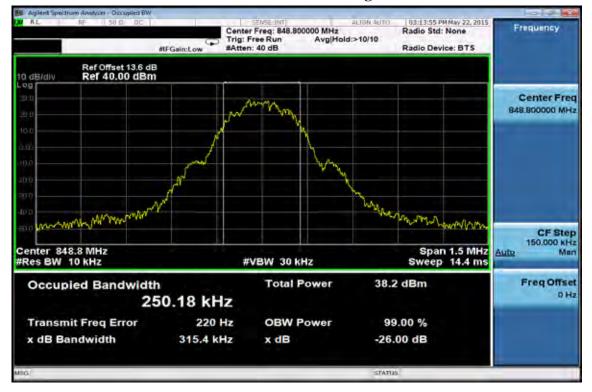
#### **GPRS 850 Channel Mid**



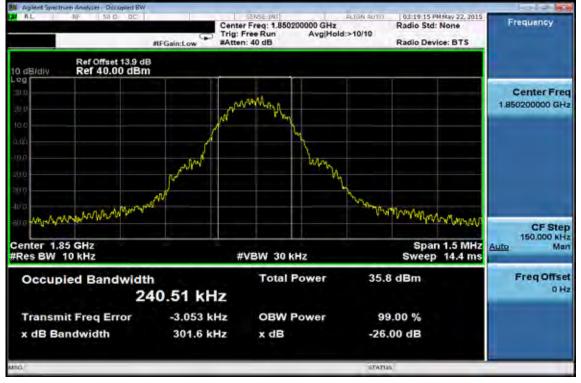
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### **GPRS 850 Channel High**



## **GPRS 1900 Channel Low**

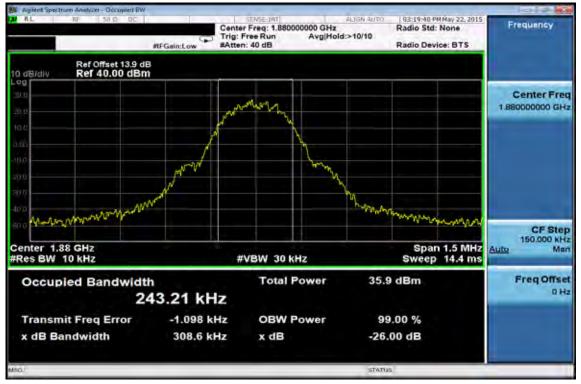


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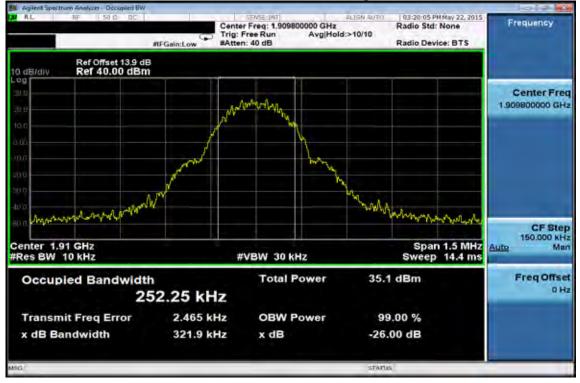
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**GPRS 1900 Channel Mid** 



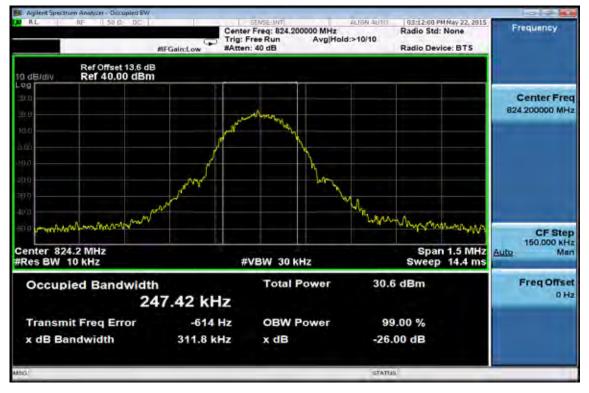
#### **GPRS 1900 Channel High**



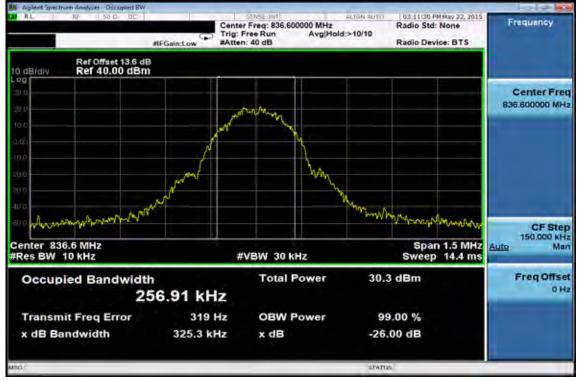
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#### **EDGE 850 Channel Low**



## **EDGE 850 Channel Mid**

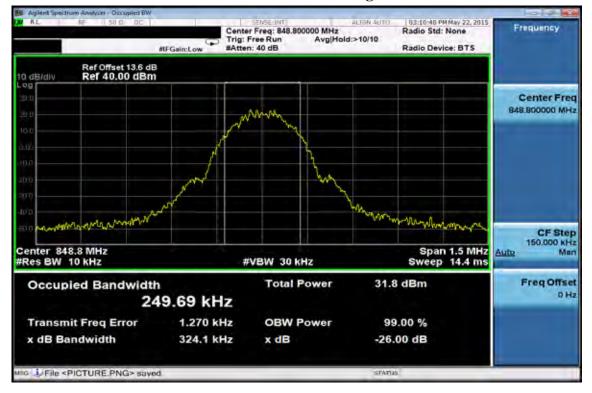


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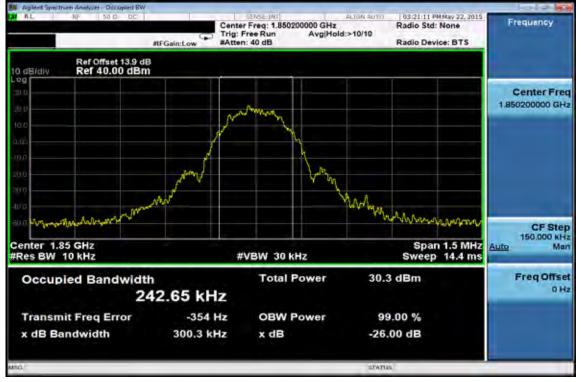
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### **EDGE 850 Channel High**



## **EDGE 1900 Channel Low**

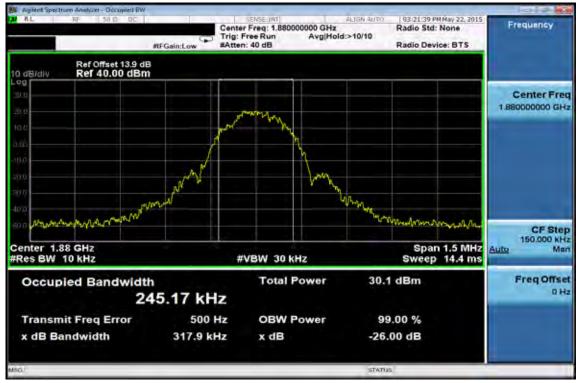


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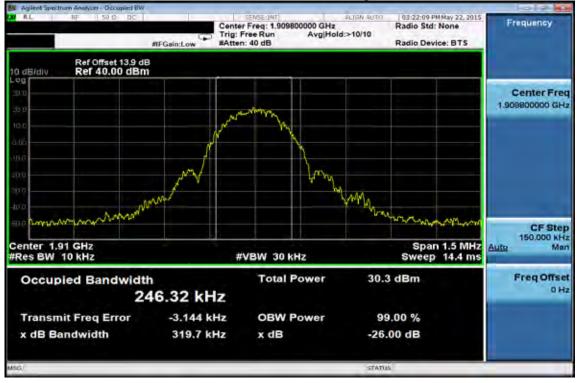
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**EDGE 1900 Channel Mid** 



**EDGE 1900 Channel High** 



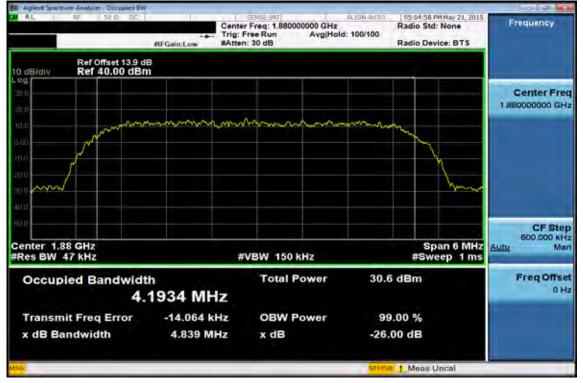
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WCDMA II Channel Low



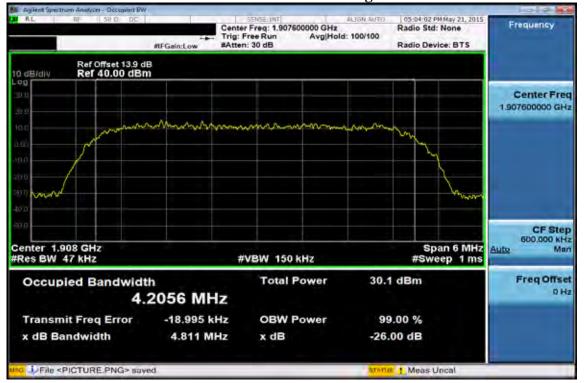
## WCDMA II Channel Mid



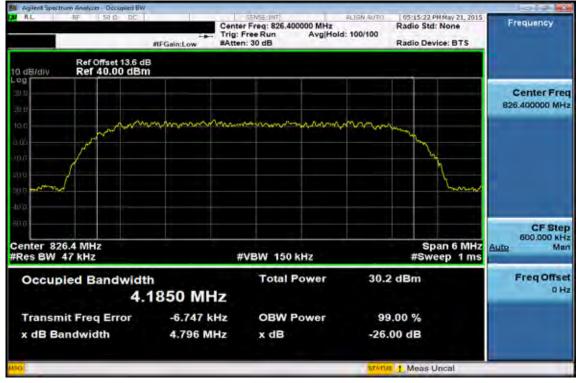
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## WCDMA II Channel High



### WCDMA V Channel Low



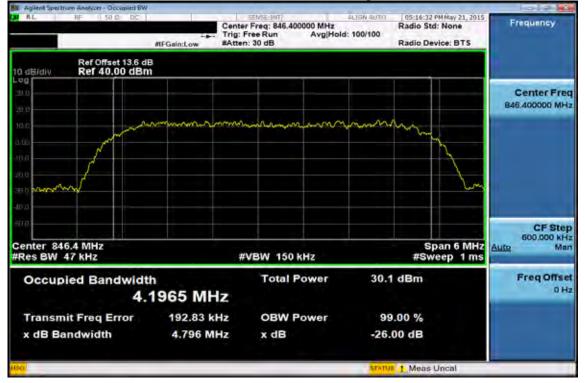
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WCDMA V Channel Mid



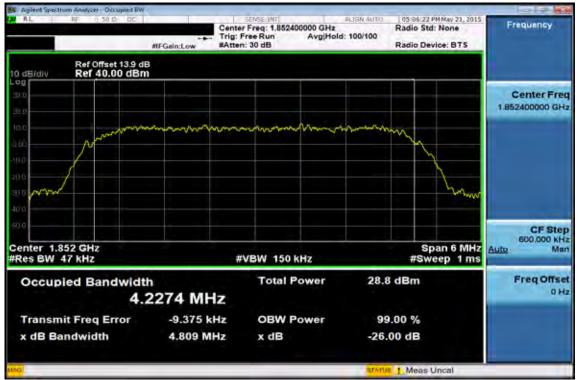
WCDMA V Channel High



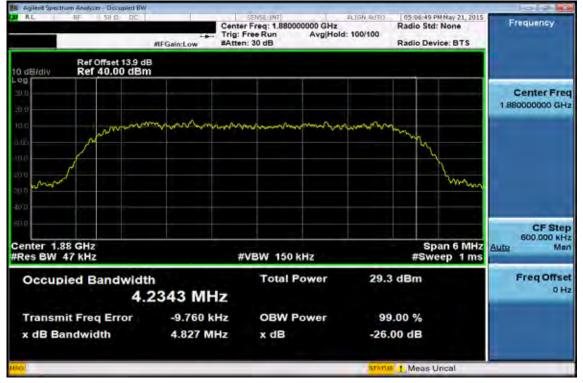
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**HSDPA II Channel Low** 



**HSDPA II Channel Mid** 



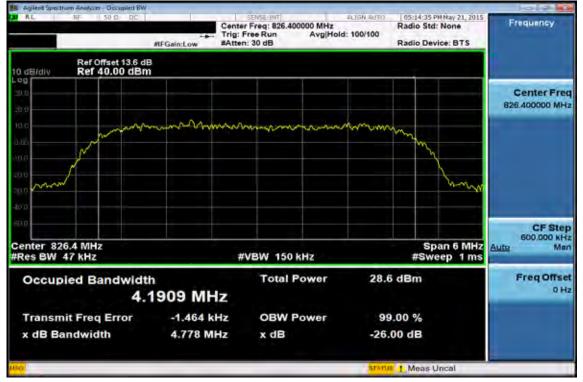
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**HSDPA II Channel High** 



**HSDPA V Channel Low** 



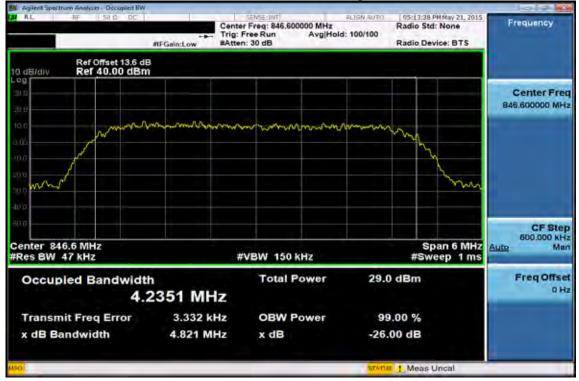
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**HSDPA V Channel Mid** 



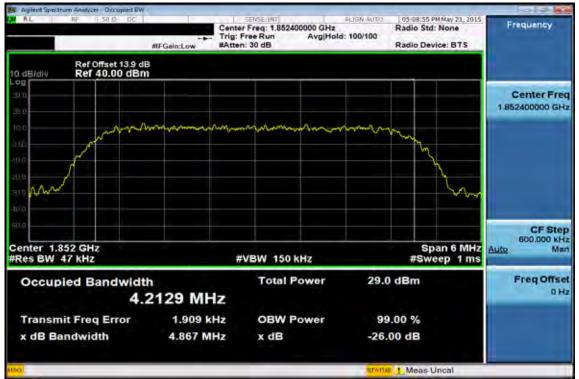
## **HSDPA V Channel High**



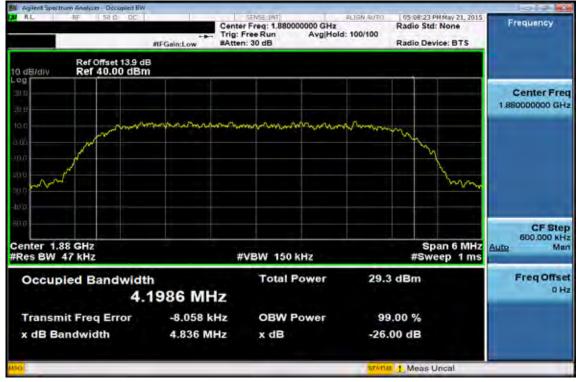
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**HSUPA II Channel Low** 



#### **HSUPA II Channel Mid**



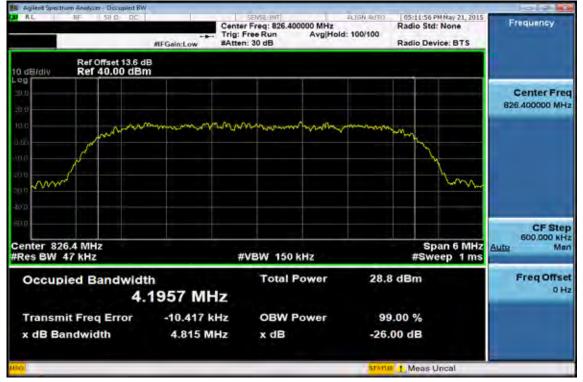
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**HSUPA II Channel High** 



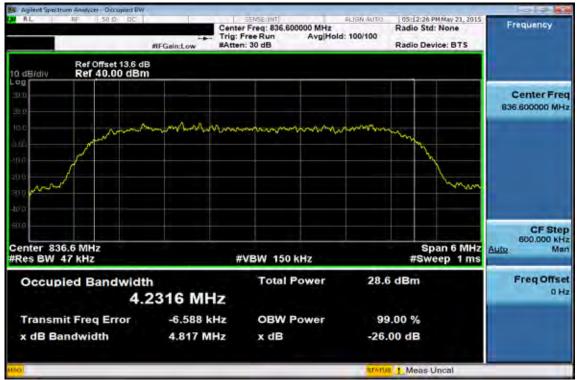
**HSUPA V Channel Low** 



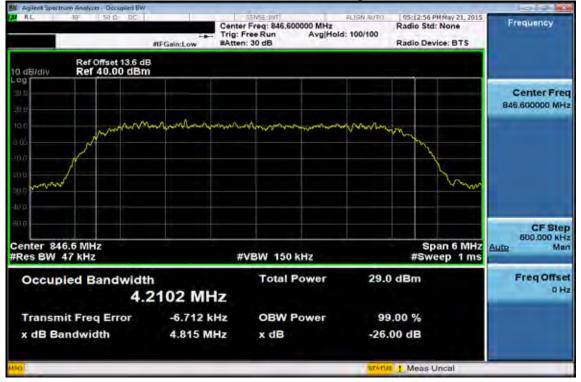
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**HSUPA V Channel Mid** 

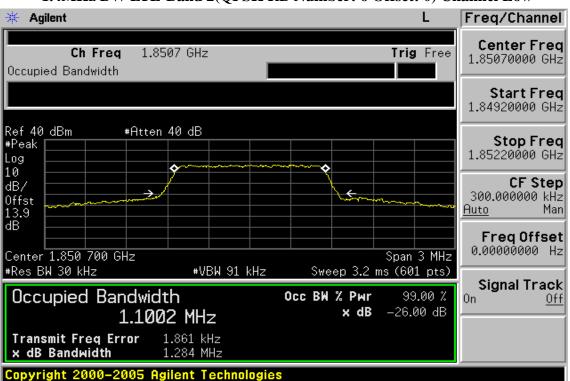


## **HSUPA V Channel High**



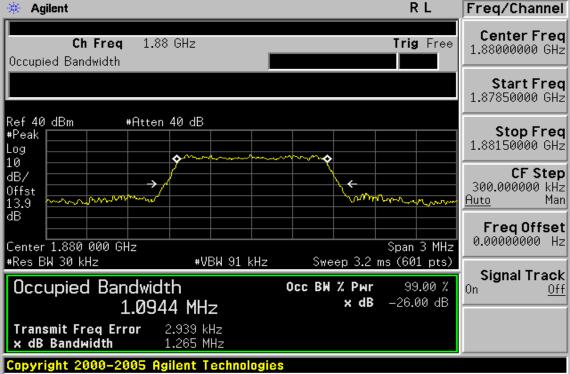
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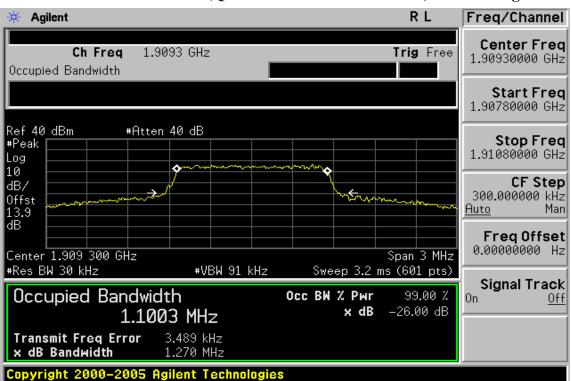
1.4MHz BW LTE-Band 2(QPSK RB Number: 6 Offset: 0) Channel Low

## 1.4MHz BW LTE-Band 2(QPSK RB Number: 6 Offset: 0) Channel Mid



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1.4MHz BW LTE-Band 2(QPSK RB Number: 6 Offset: 0) Channel High

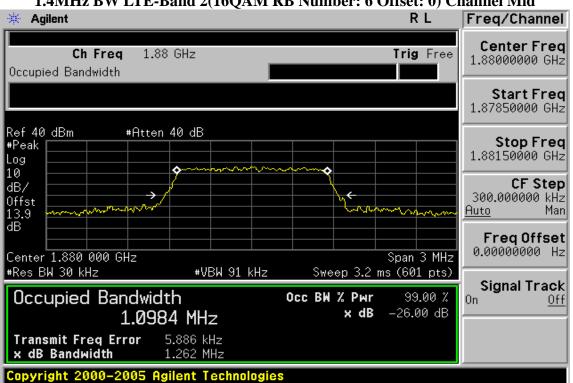
## 1.4MHz BW LTE-Band 2(16QAM RB Number: 6 Offset: 0) Channel Low



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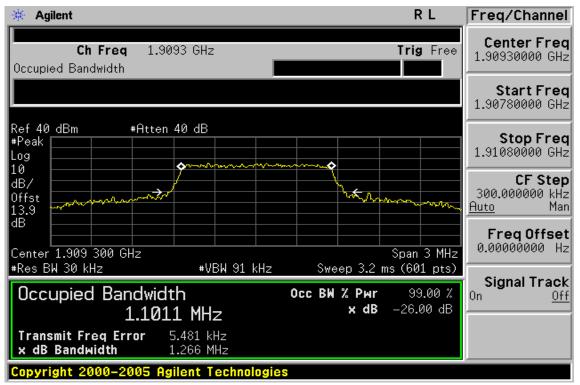
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1.4MHz BW LTE-Band 2(16QAM RB Number: 6 Offset: 0) Channel Mid

## 1.4MHz BW LTE-Band 2(16QAM RB Number: 6 Offset: 0) Channel High

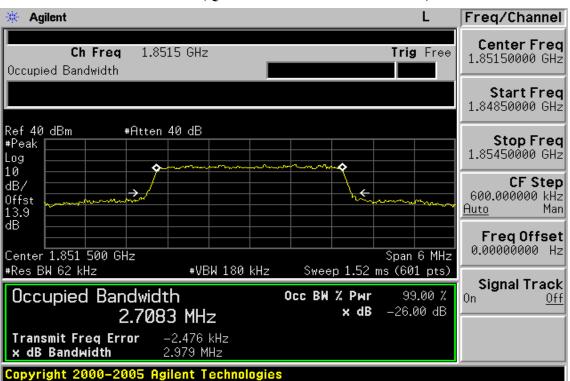


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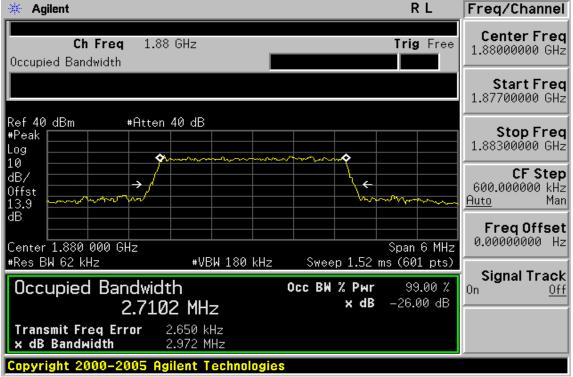
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## 3MHz BW LTE-Band 2(OPSK RB Number: 15 Offset: 0) Channel Low

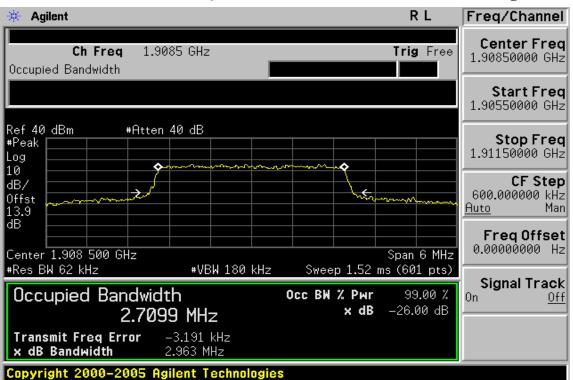
## 3MHz BW LTE-Band 2(QPSK RB Number: 15 Offset: 0) Channel Mid



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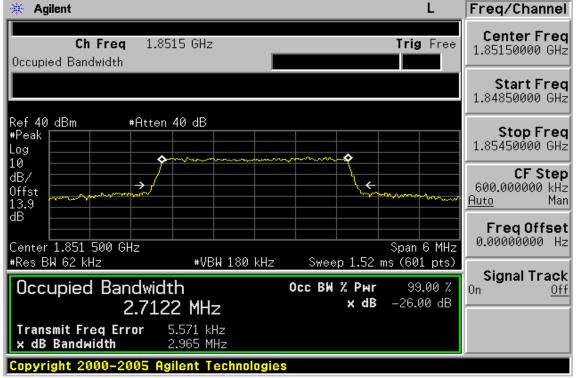
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3MHz BW LTE-Band 2(QPSK RB Number: 15 Offset: 0) Channel High

### 3MHz BW LTE-Band 2(16QAM RB Number: 15 Offset: 0) Channel Low

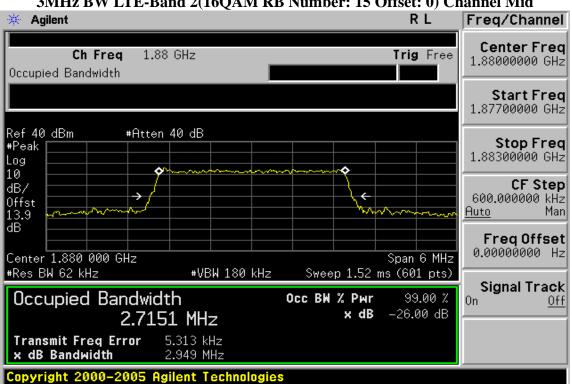


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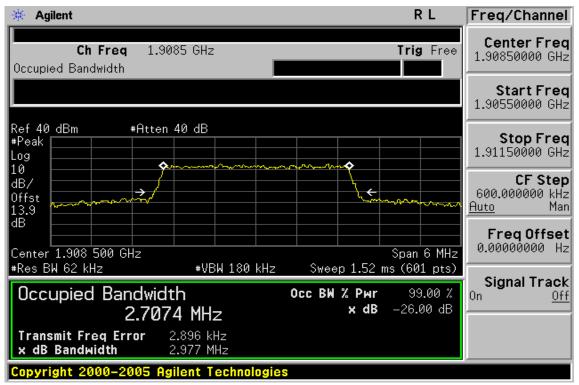
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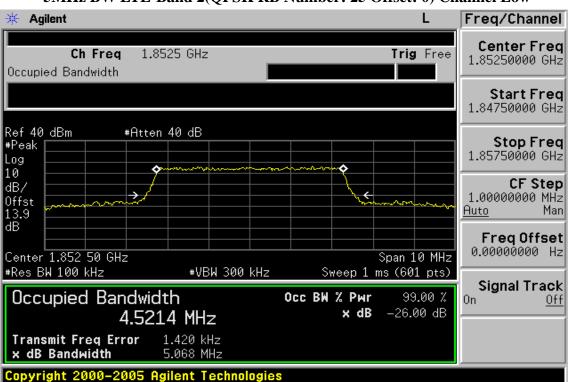
#### 3MHz BW LTE-Band 2(16QAM RB Number: 15 Offset: 0) Channel Mid

### 3MHz BW LTE-Band 2(16QAM RB Number: 15 Offset: 0) Channel High



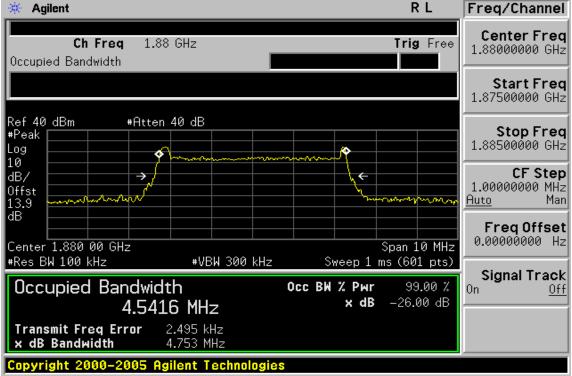
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5MHz BW LTE-Band 2(QPSK RB Number: 25 Offset: 0) Channel Low

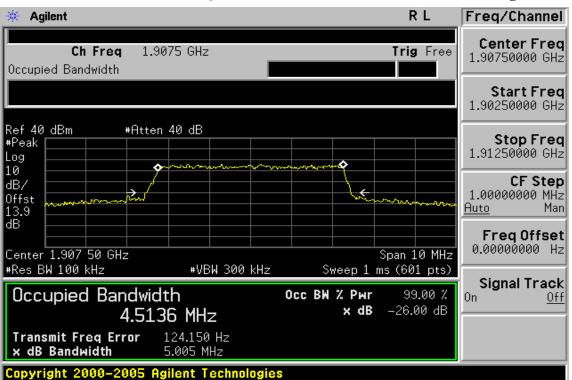
## 5MHz BW LTE-Band 2(QPSK RB Number: 25 Offset: 0) Channel Mid



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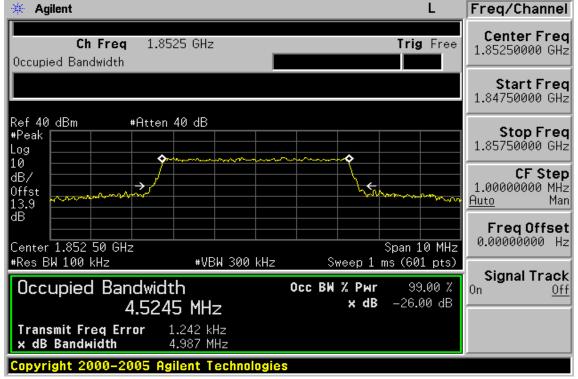
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5MHz BW LTE-Band 2(QPSK RB Number: 25 Offset: 0) Channel High

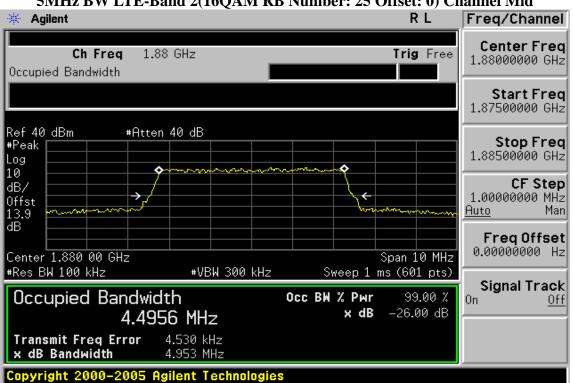
#### 5MHz BW LTE-Band 2(16QAM RB Number: 25 Offset: 0) Channel Low



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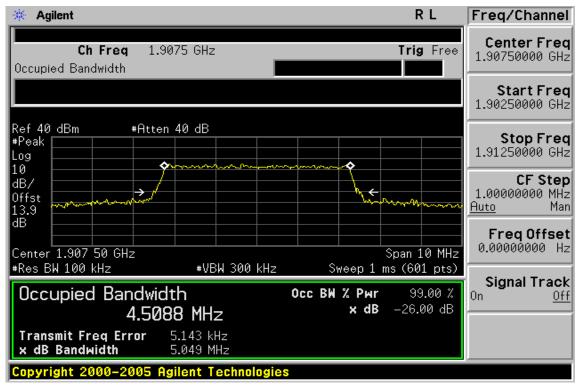
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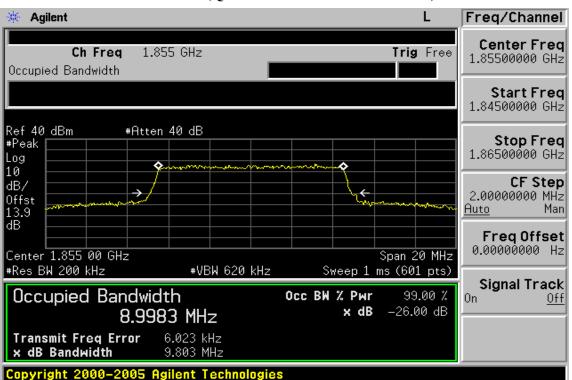
### 5MHz BW LTE-Band 2(16QAM RB Number: 25 Offset: 0) Channel Mid

#### 5MHz BW LTE-Band 2(16QAM RB Number: 25 Offset: 0) Channel High



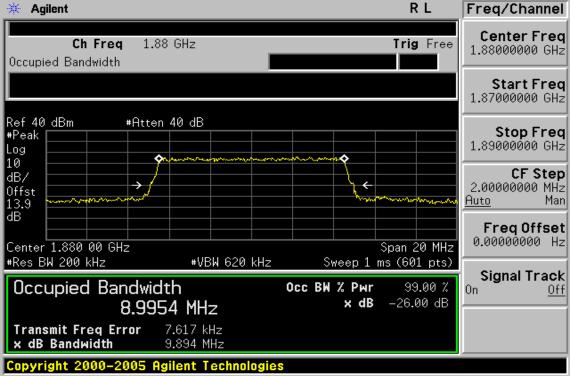
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## 10MHz BW LTE-Band 2(OPSK RB Number: 50 Offset: 0) Channel Low

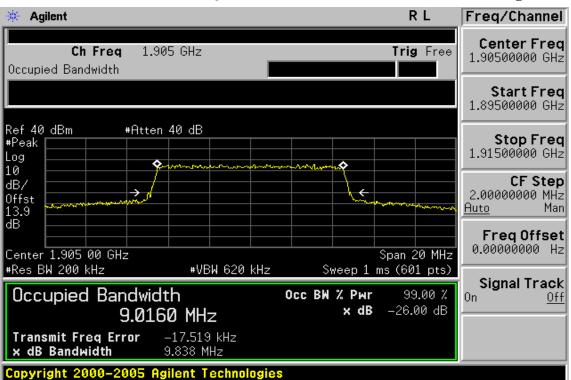
# 10MHz BW LTE-Band 2(OPSK RB Number: 50 Offset: 0) Channel Mid



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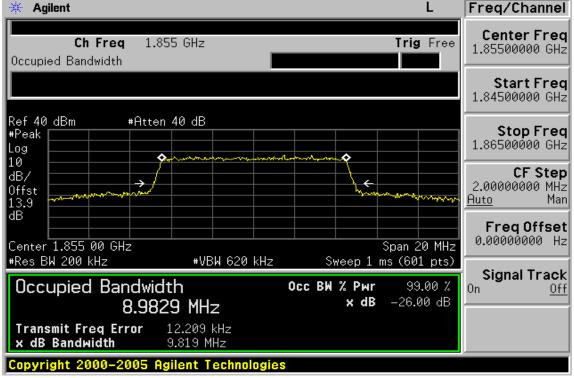
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10MHz BW LTE-Band 2 (QPSK RB Number: 50 Offset: 0) Channel High

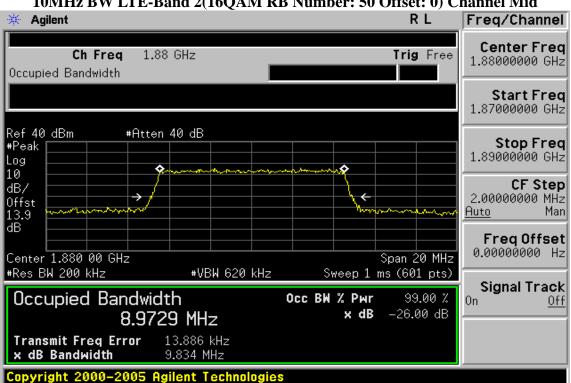
## 10MHz BW LTE-Band 2(16QAM RB Number: 50 Offset: 0) Channel Low



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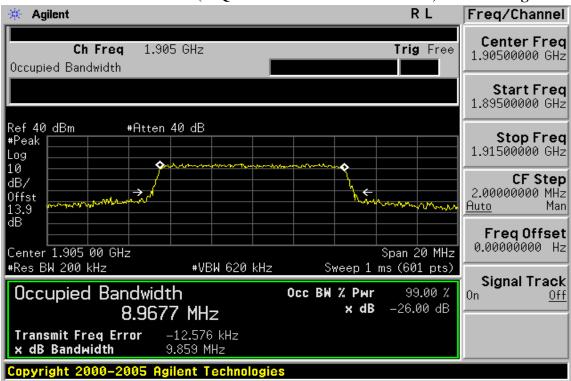
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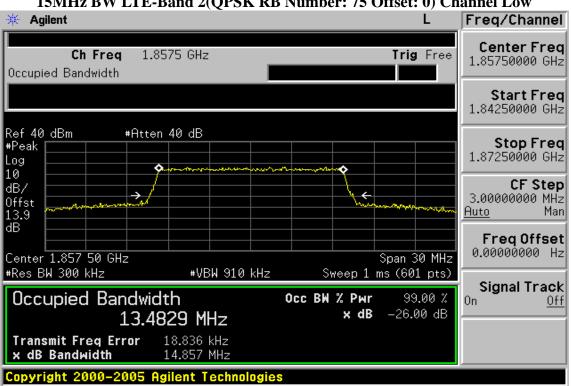
#### 10MHz BW LTE-Band 2(16QAM RB Number: 50 Offset: 0) Channel Mid





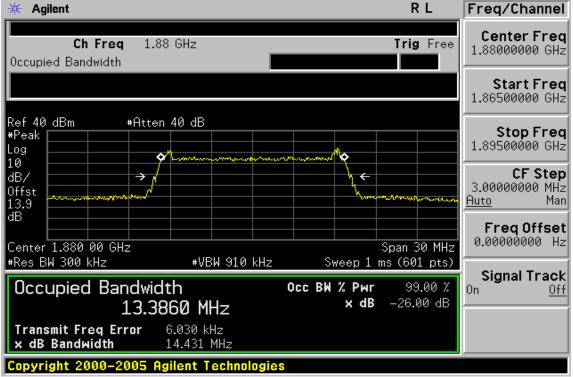
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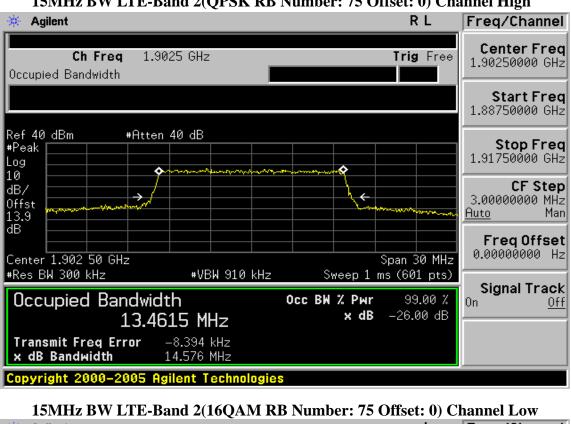
## 15MHz BW LTE-Band 2(QPSK RB Number: 75 Offset: 0) Channel Low

# 15MHz BW LTE-Band 2(QPSK RB Number: 75 Offset: 0) Channel Mid

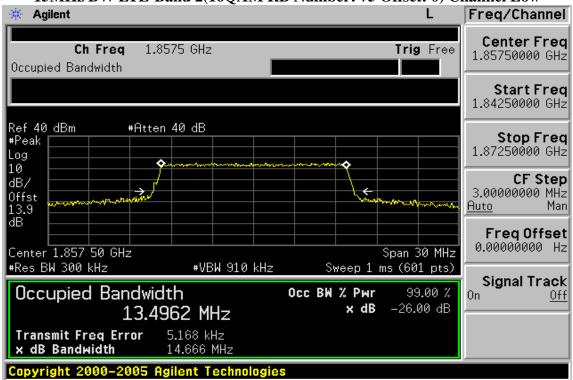


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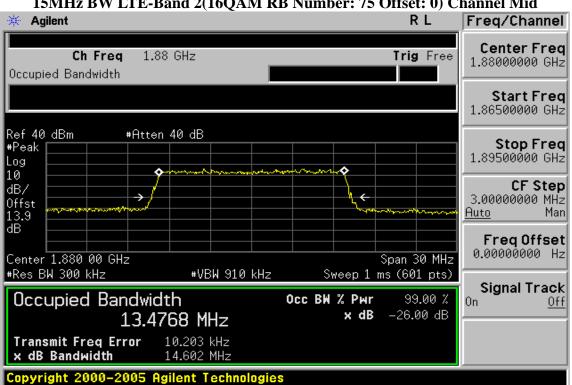
#### 15MHz BW LTE-Band 2(QPSK RB Number: 75 Offset: 0) Channel High



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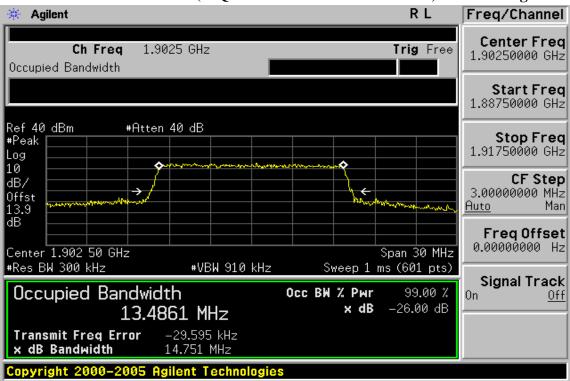
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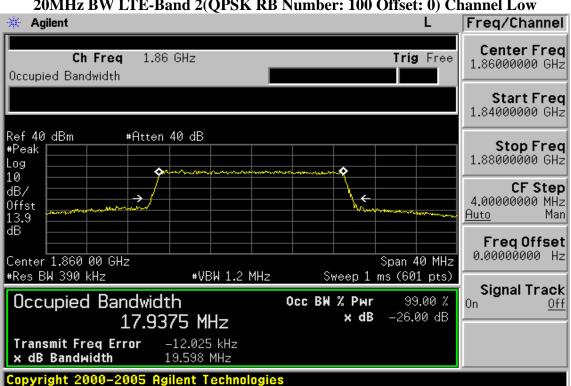
#### 15MHz BW LTE-Band 2(16QAM RB Number: 75 Offset: 0) Channel Mid

### 15MHz BW LTE-Band 2(16QAM RB Number: 75 Offset: 0) Channel High



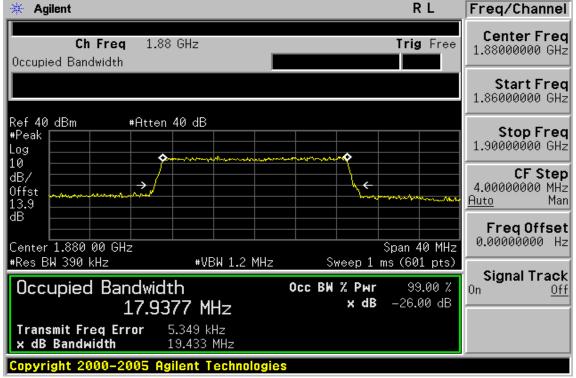
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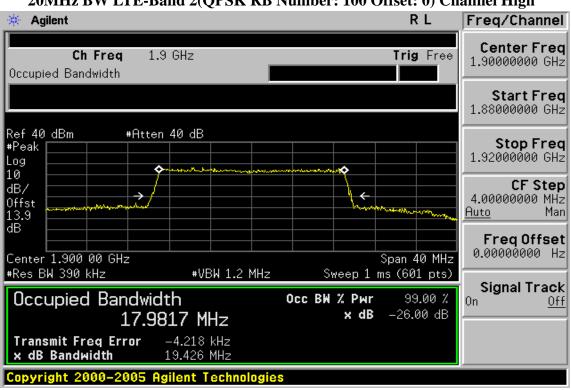
## 20MHz BW LTE-Band 2(QPSK RB Number: 100 Offset: 0) Channel Low

## 20MHz BW LTE-Band 2(QPSK RB Number: 100 Offset: 0) Channel Mid



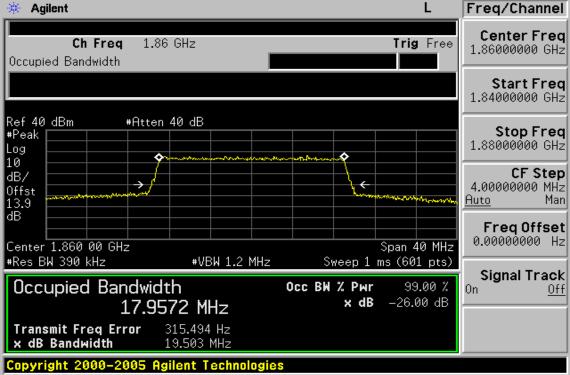
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20MHz BW LTE-Band 2(QPSK RB Number: 100 Offset: 0) Channel High

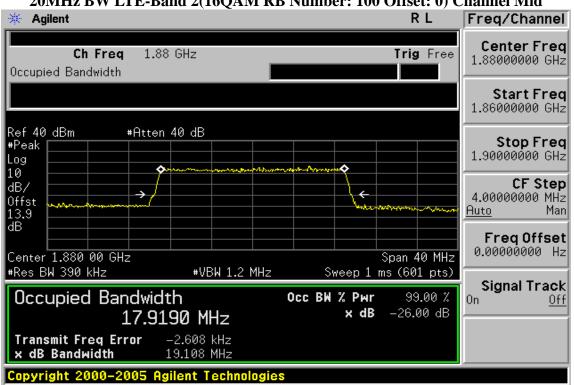
# 20MHz BW LTE-Band 2(16QAM RB Number: 100 Offset: 0) Channel Low



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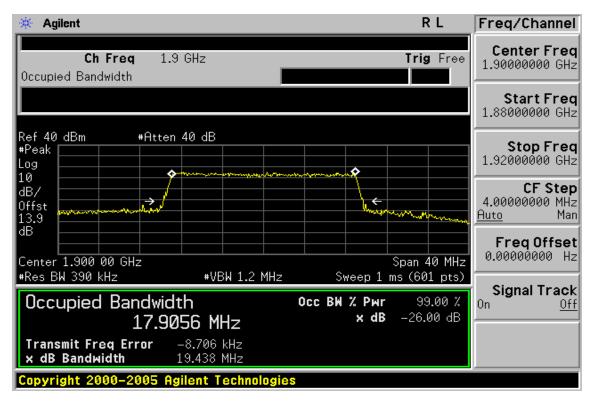
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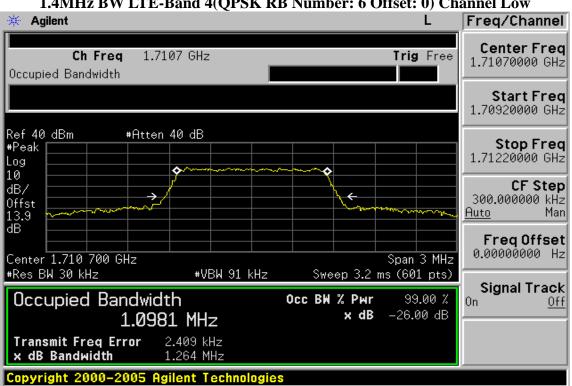
#### 20MHz BW LTE-Band 2(16QAM RB Number: 100 Offset: 0) Channel Mid

## 20MHz BW LTE-Band 2(16QAM RB Number: 100 Offset: 0) Channel High



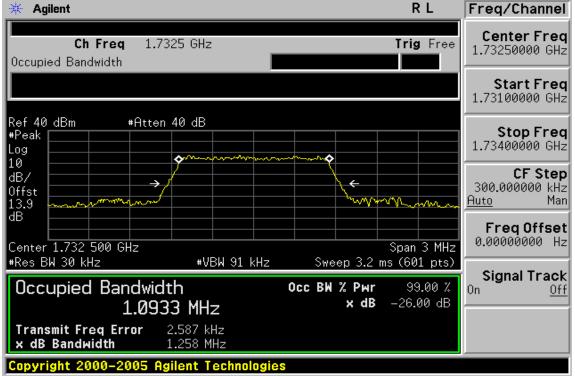
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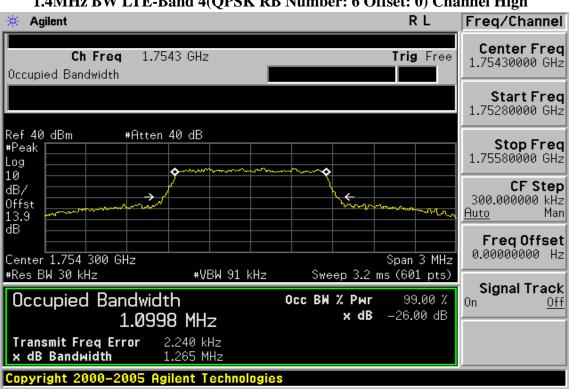
## 1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel Low

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



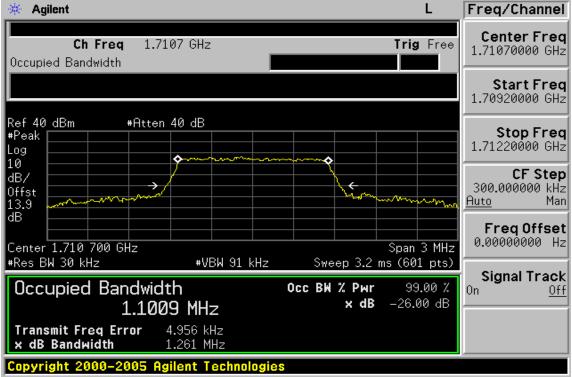
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1.4MHz BW LTE-Band 4(QPSK RB Number: 6 Offset: 0) Channel High

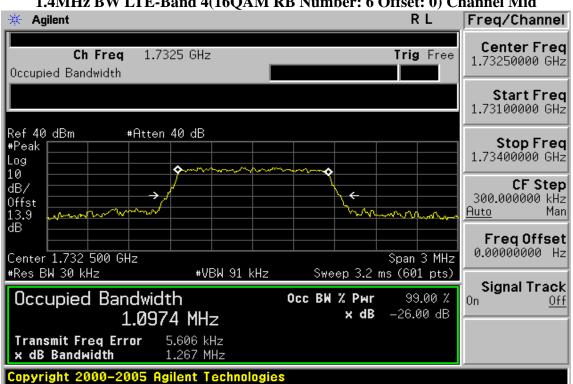
## 1.4MHz BW LTE-Band 4(16QAM RB Number: 6 Offset: 0) Channel Low



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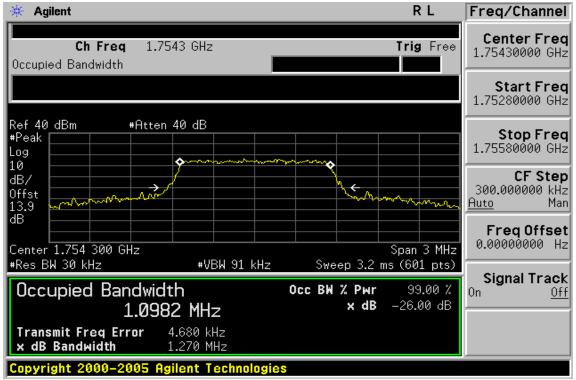
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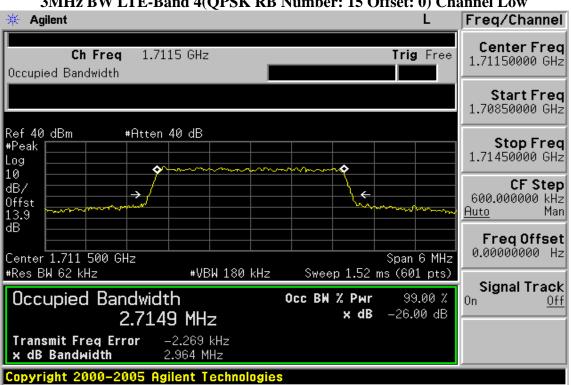
#### 1.4MHz BW LTE-Band 4(16QAM RB Number: 6 Offset: 0) Channel Mid

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

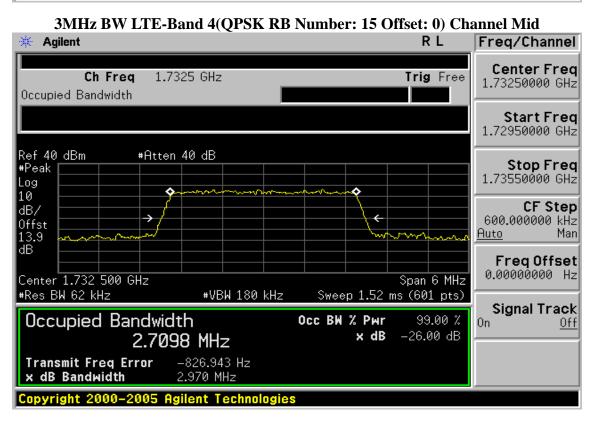


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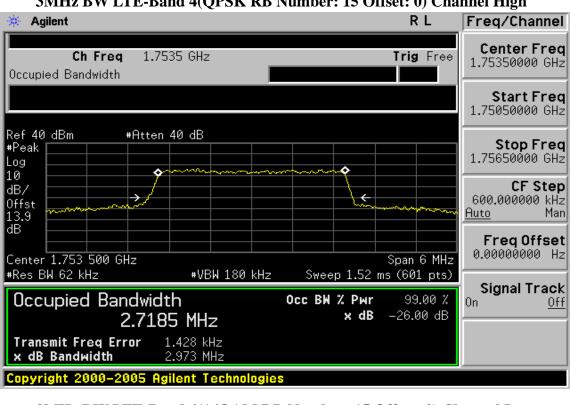


# 3MHz BW LTE-Band 4(QPSK RB Number: 15 Offset: 0) Channel Low



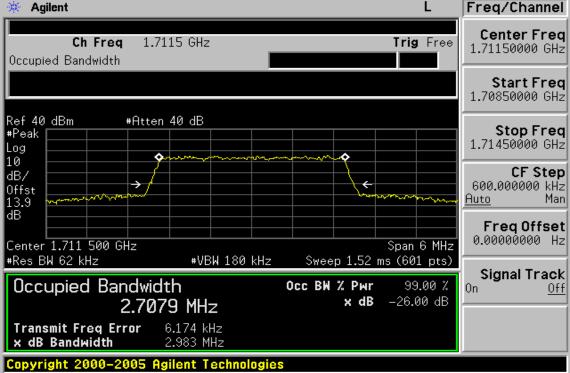
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## 3MHz BW LTE-Band 4(QPSK RB Number: 15 Offset: 0) Channel High

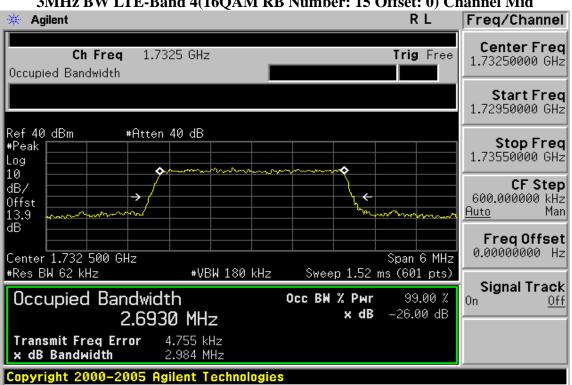




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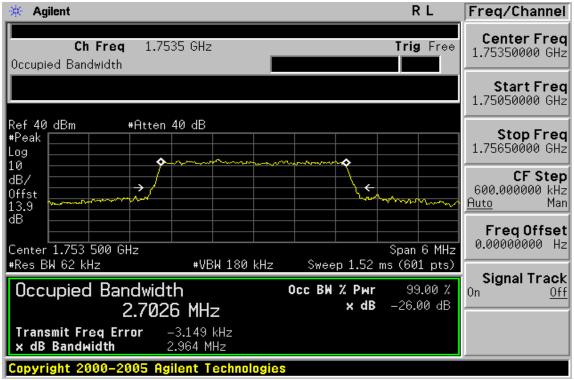
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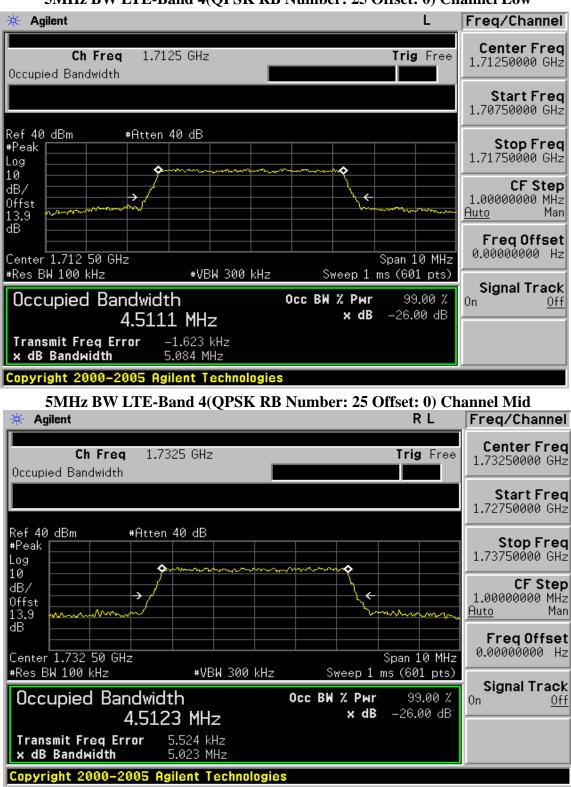
## 3MHz BW LTE-Band 4(16QAM RB Number: 15 Offset: 0) Channel Mid

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



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

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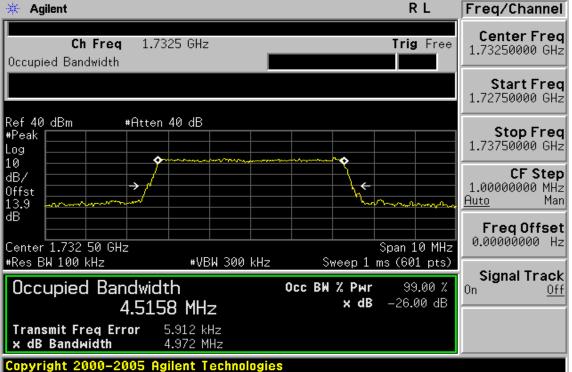
5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel High

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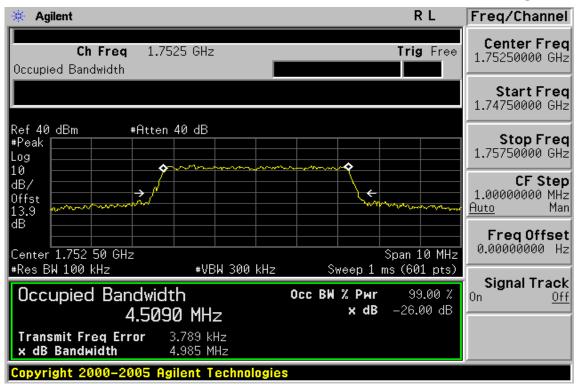
Contest States the states are results and the states are results are results and the states are results ar tronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/terms-e-document.htm">www.sgs.com/terms-e-document.htm</a>. Attention is frawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.





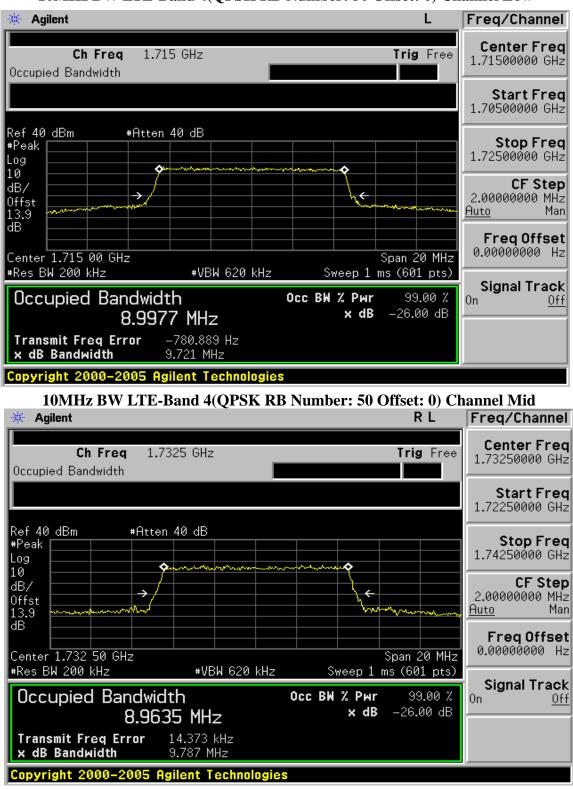


5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel High



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

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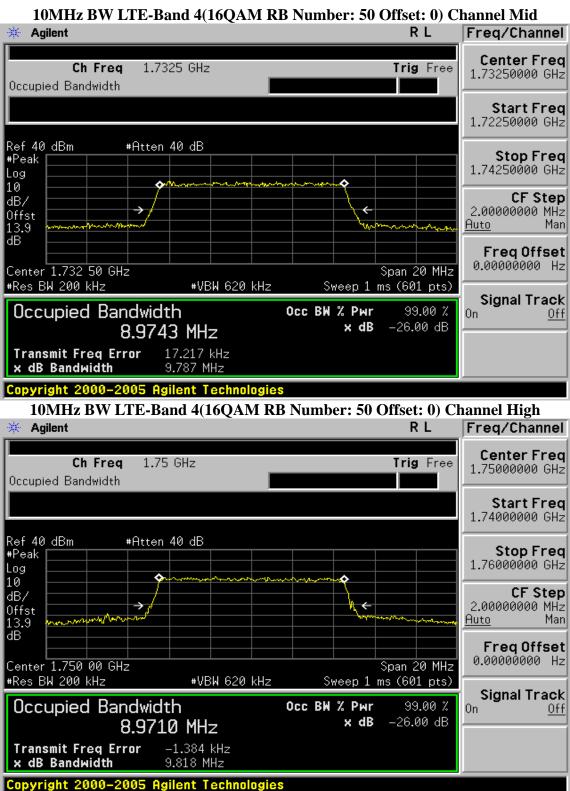


10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel High

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

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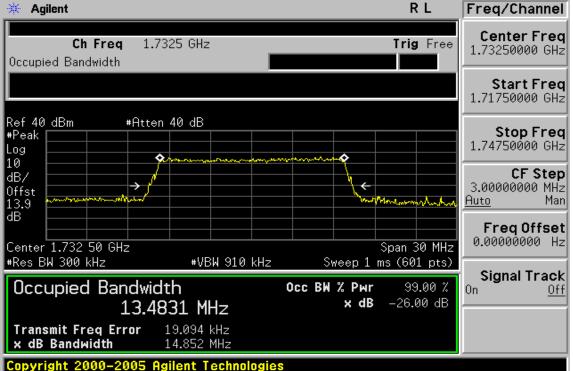
15MHz BW LTE-Band 4(QPSK RB Number: 75 Offset: 0) Channel High

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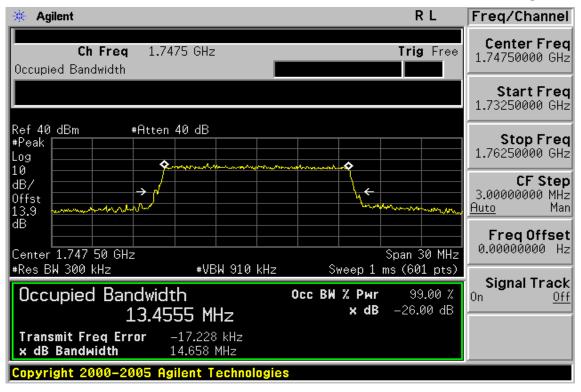
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15MHz BW LTE-Band 4(16QAM RB Number: 75 Offset: 0) Channel High



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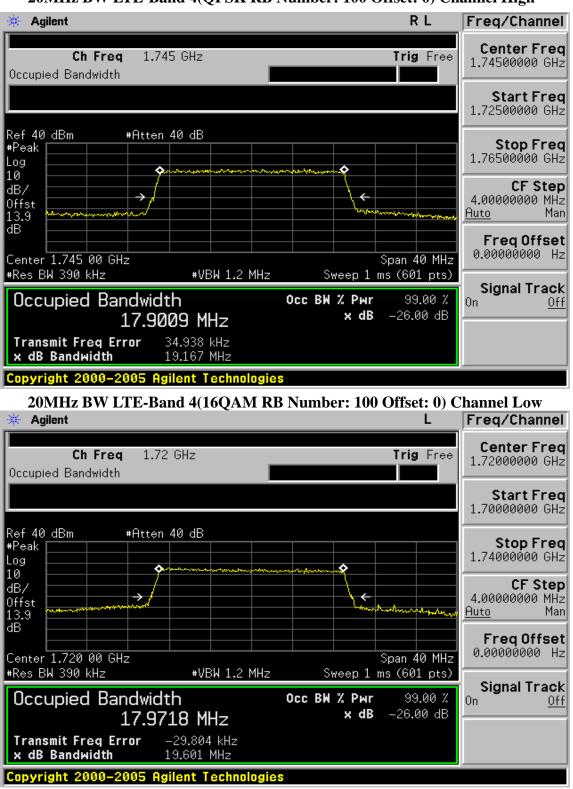




20MHz BW LTE-Band 4(OPSK RB Number: 100 Offset: 0) Channel Low

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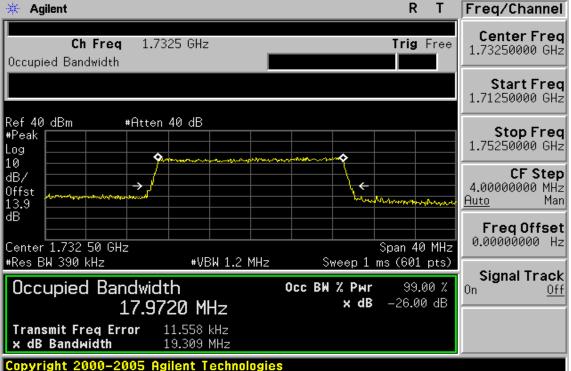
20MHz BW LTE-Band 4(QPSK RB Number: 100 Offset: 0) Channel High

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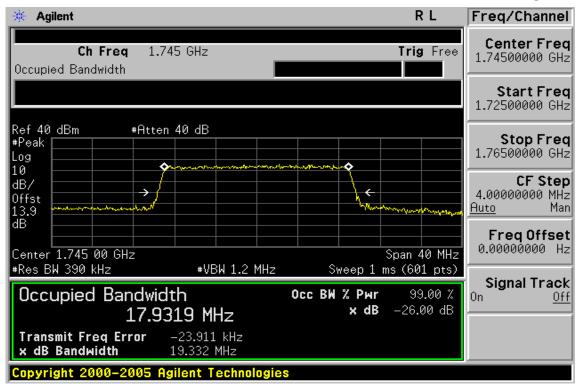
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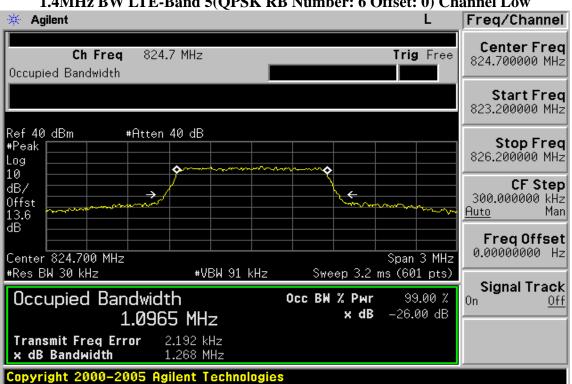


20MHz BW LTE-Band 4(16QAM RB Number: 100 Offset: 0) Channel High



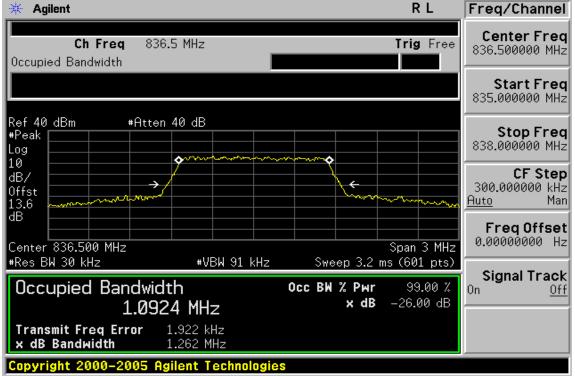
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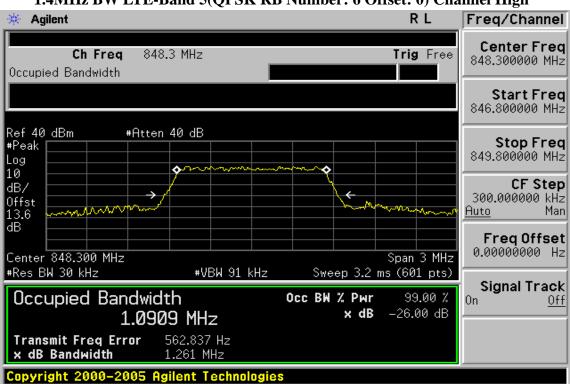
## 1.4MHz BW LTE-Band 5(QPSK RB Number: 6 Offset: 0) Channel Low

## 1.4MHz BW LTE-Band 5(QPSK RB Number: 6 Offset: 0) Channel Mid



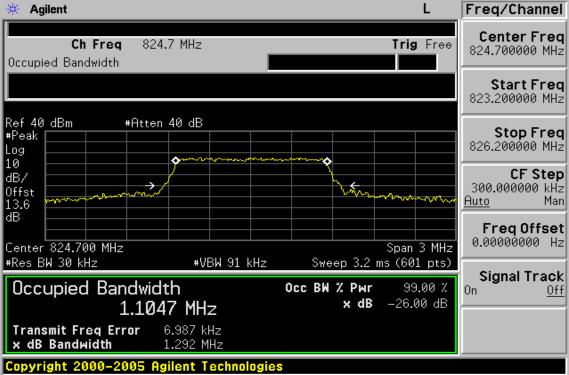
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1.4MHz BW LTE-Band 5(QPSK RB Number: 6 Offset: 0) Channel High

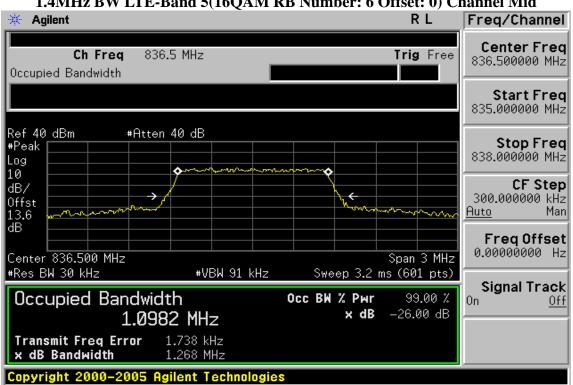
## 1.4MHz BW LTE-Band 5(16QAM RB Number: 6 Offset: 0) Channel Low



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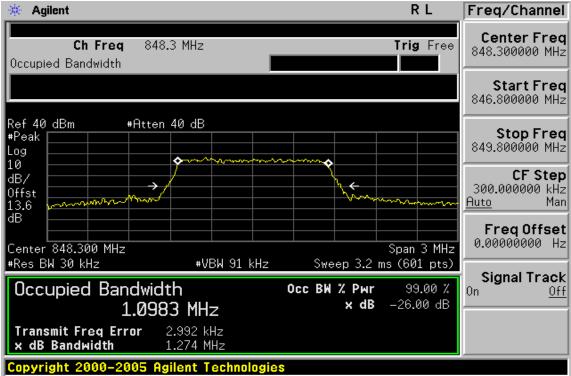
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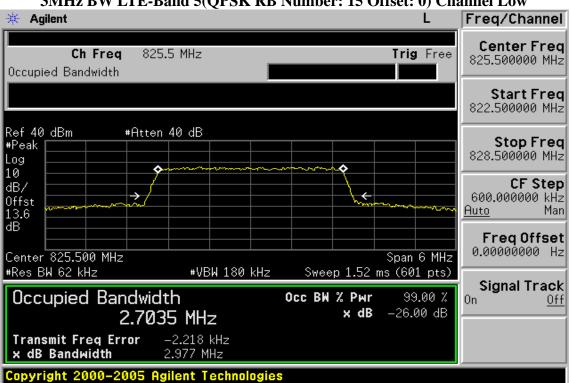
#### 1.4MHz BW LTE-Band 5(16QAM RB Number: 6 Offset: 0) Channel Mid





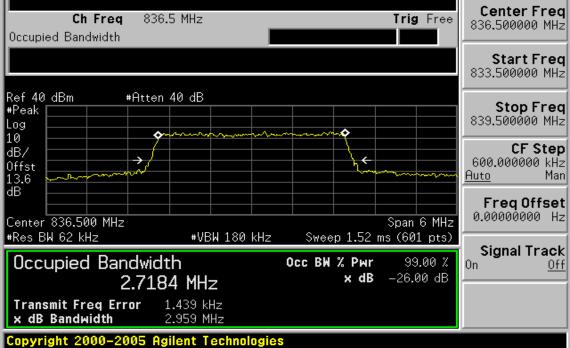
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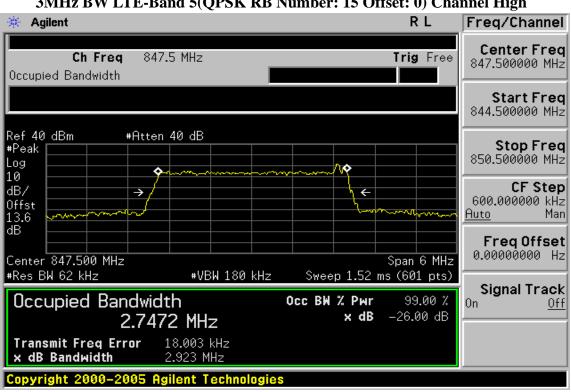
# 3MHz BW LTE-Band 5(QPSK RB Number: 15 Offset: 0) Channel Low





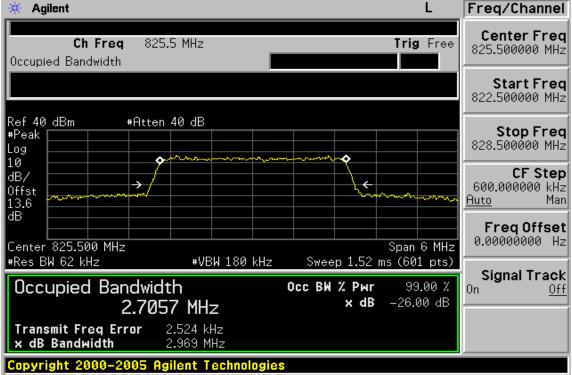
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## 3MHz BW LTE-Band 5(QPSK RB Number: 15 Offset: 0) Channel High

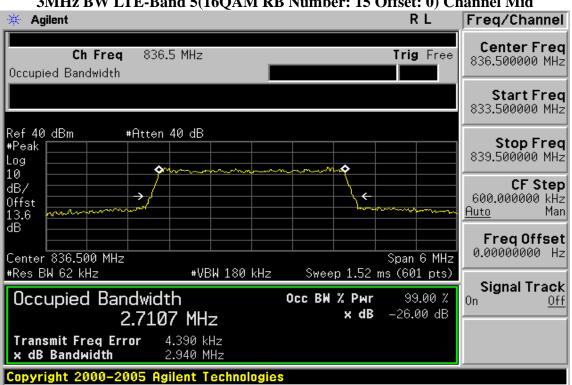
# 3MHz BW LTE-Band 5(16QAM RB Number: 15 Offset: 0) Channel Low



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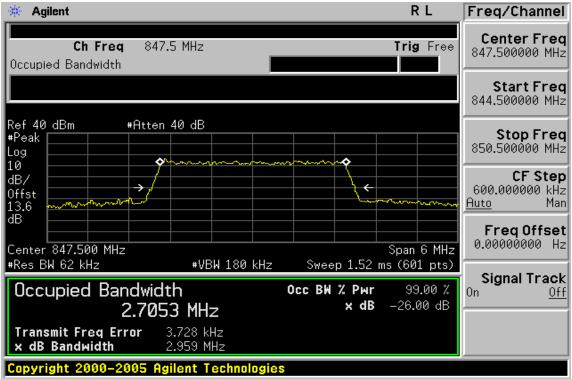
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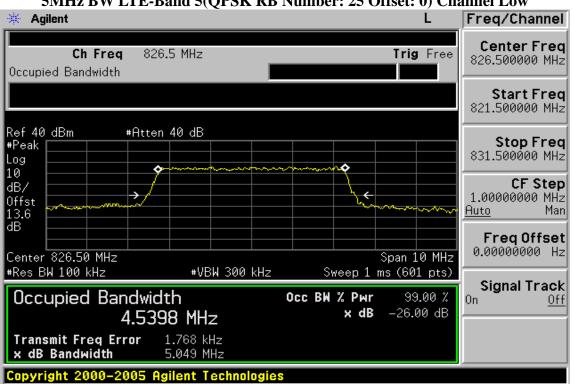
## 3MHz BW LTE-Band 5(16QAM RB Number: 15 Offset: 0) Channel Mid

### 3MHz BW LTE-Band 5(16QAM RB Number: 15 Offset: 0) Channel High

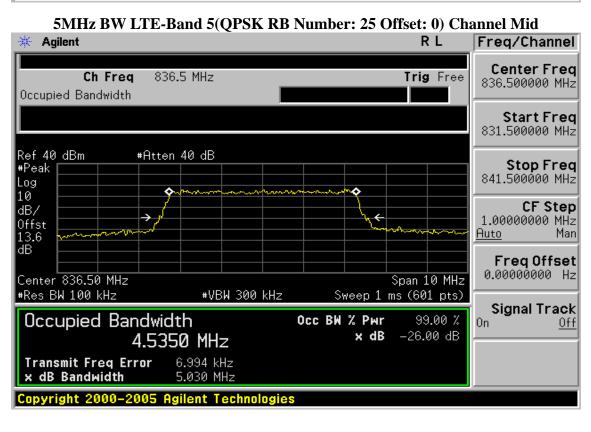


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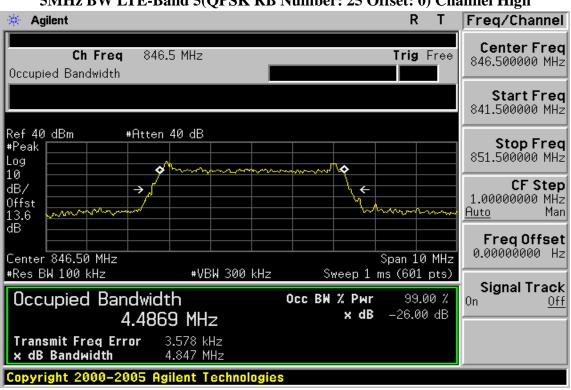


# 5MHz BW LTE-Band 5(QPSK RB Number: 25 Offset: 0) Channel Low



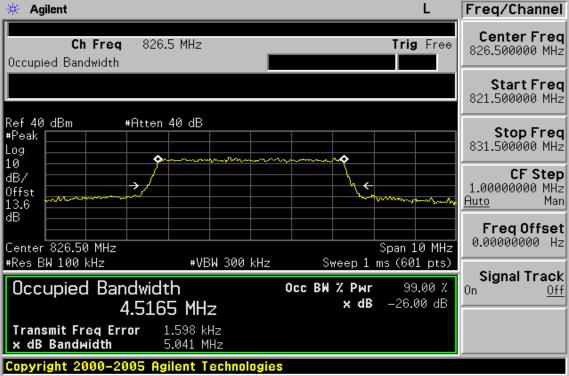
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5MHz BW LTE-Band 5(QPSK RB Number: 25 Offset: 0) Channel High

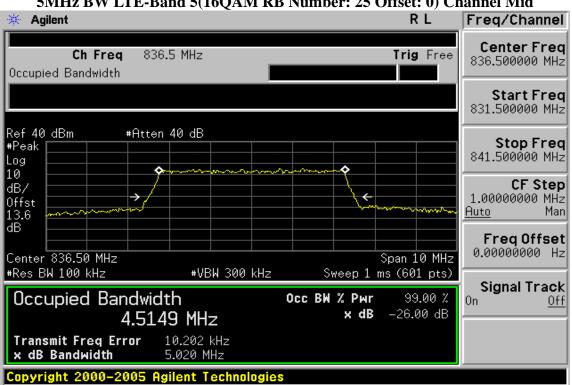
## 5MHz BW LTE-Band 5(16QAM RB Number: 25 Offset: 0) Channel Low



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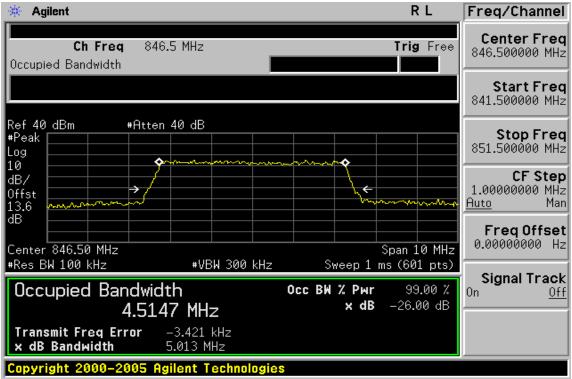
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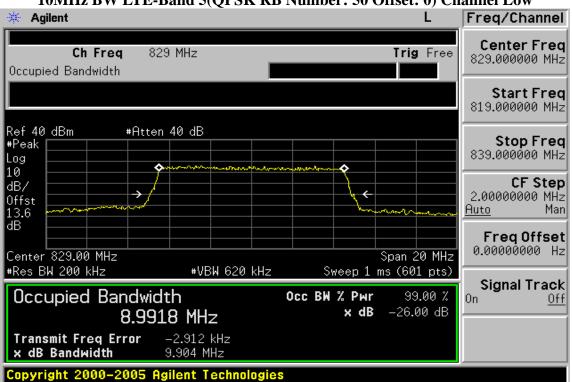
# 5MHz BW LTE-Band 5(16QAM RB Number: 25 Offset: 0) Channel Mid

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



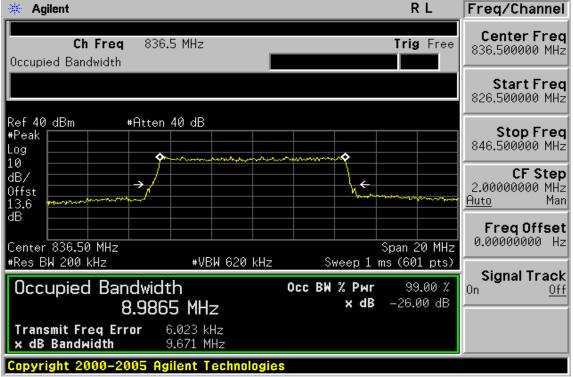
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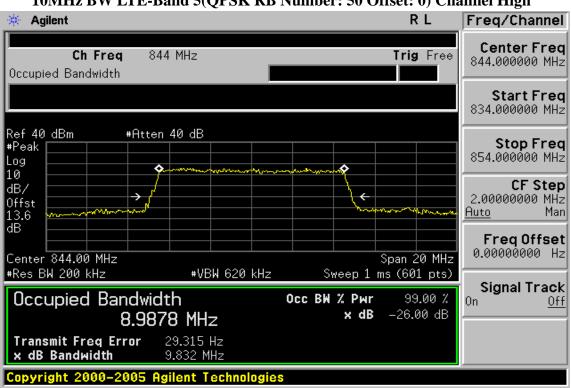
10MHz BW LTE-Band 5(QPSK RB Number: 50 Offset: 0) Channel Low

#### 10MHz BW LTE-Band 5(QPSK RB Number: 50 Offset: 0) Channel Mid



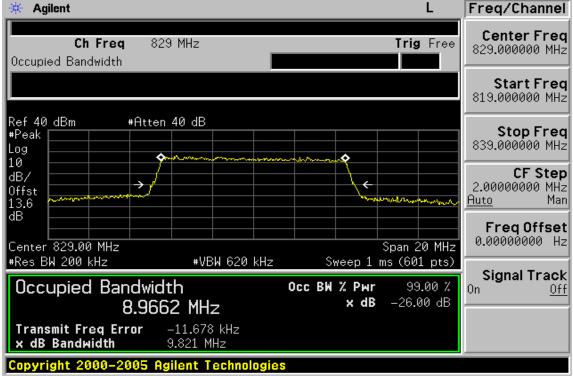
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## 10MHz BW LTE-Band 5(QPSK RB Number: 50 Offset: 0) Channel High

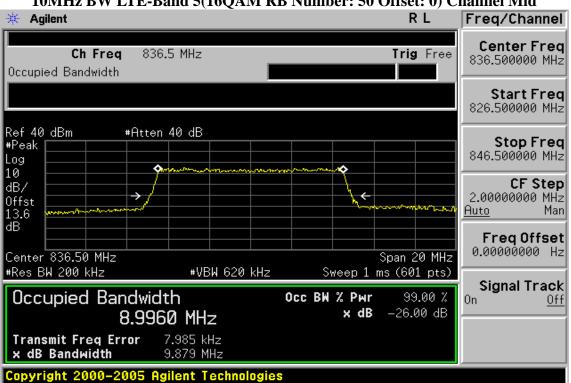




Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

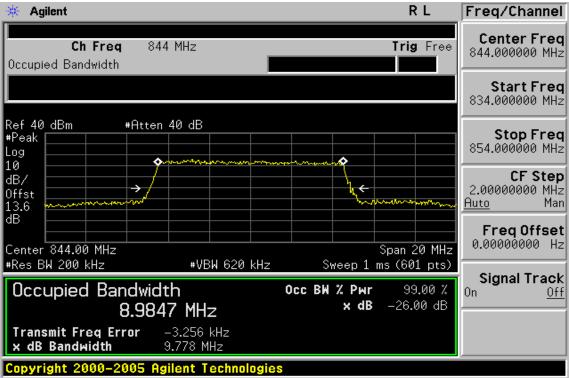
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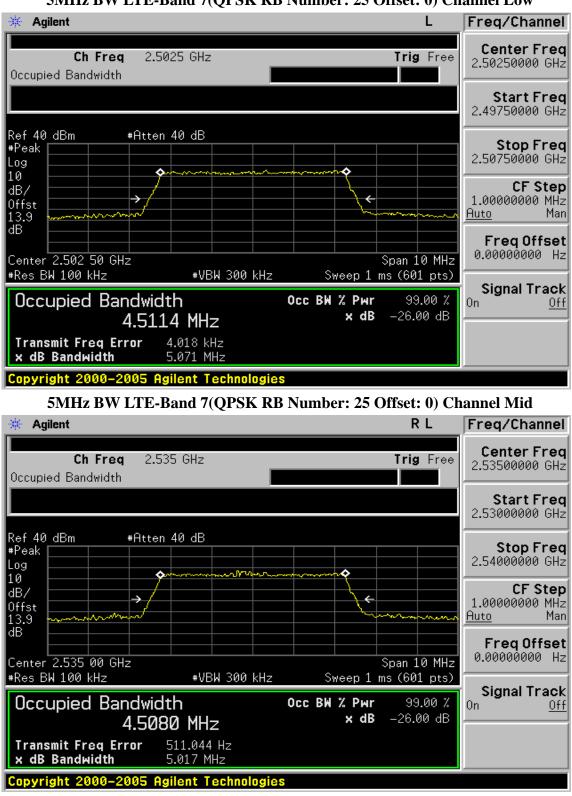
### 10MHz BW LTE-Band 5(16QAM RB Number: 50 Offset: 0) Channel Mid

### 10MHz BW LTE-Band 5(16QAM RB Number: 50 Offset: 0) Channel High



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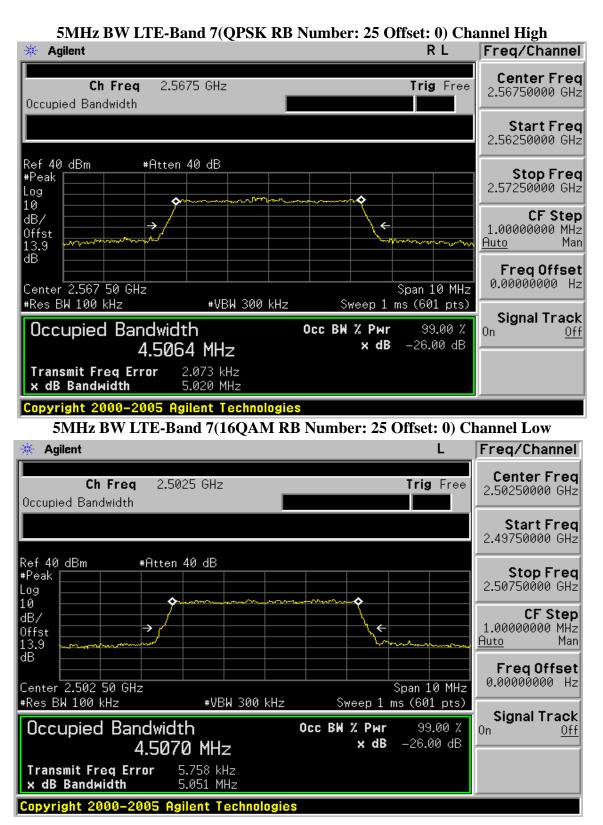




5MHz BW LTE-Band 7(QPSK RB Number: 25 Offset: 0) Channel Low

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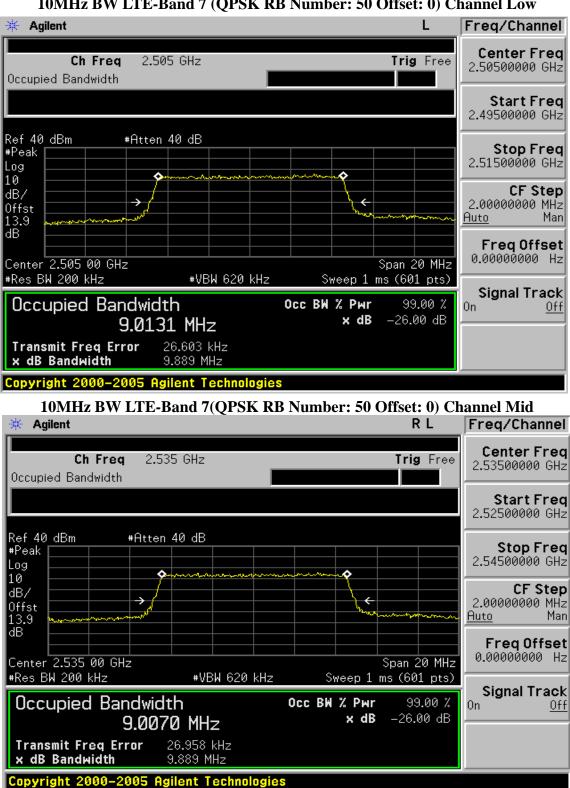








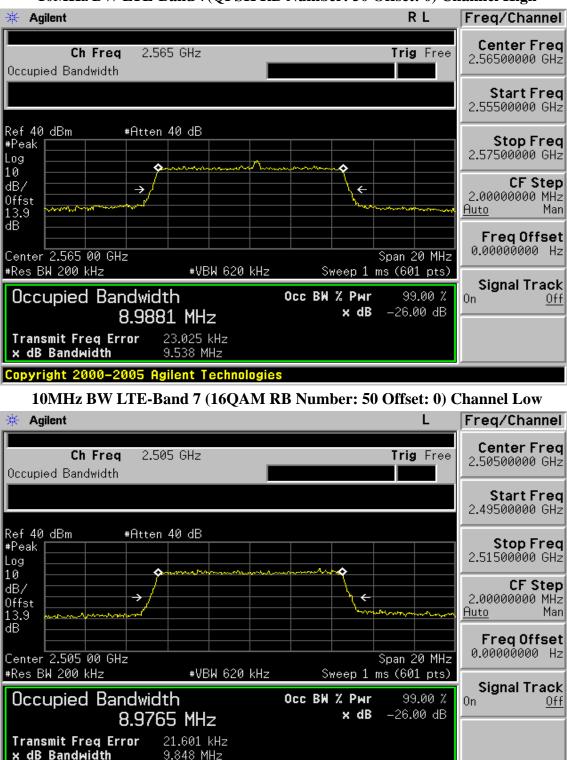




10MHz BW LTE-Band 7 (OPSK RB Number: 50 Offset: 0) Channel Low

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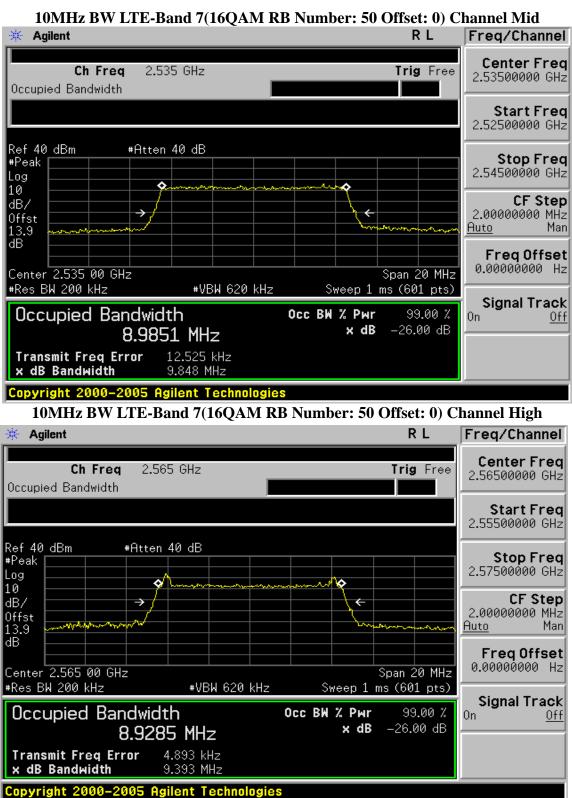


10MHz BW LTE-Band 7(QPSK RB Number: 50 Offset: 0) Channel High

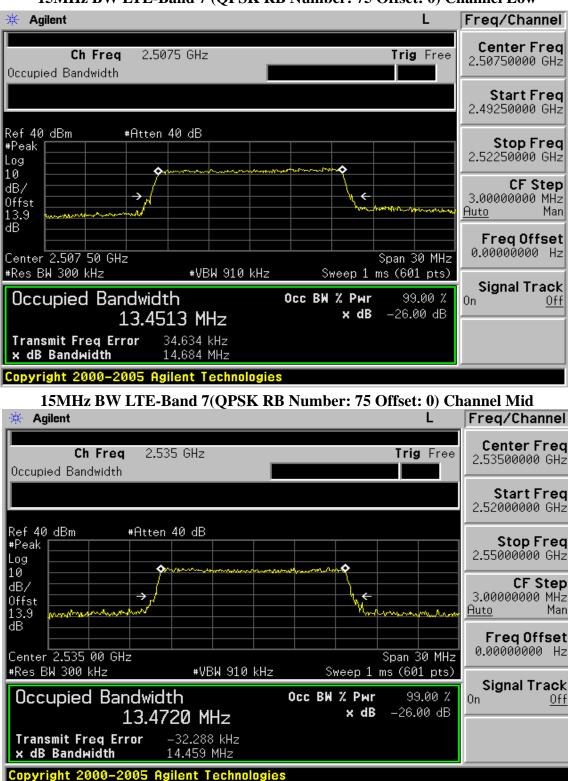
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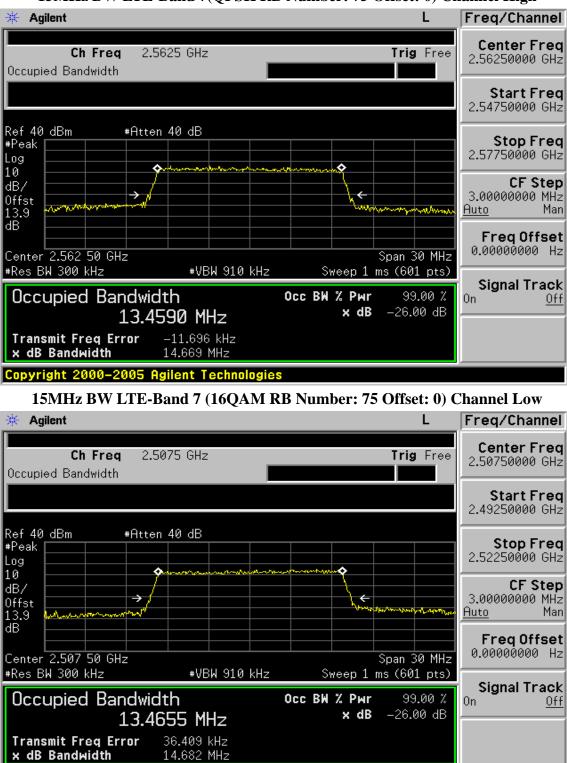




15MHz BW LTE-Band 7 (OPSK RB Number: 75 Offset: 0) Channel Low

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

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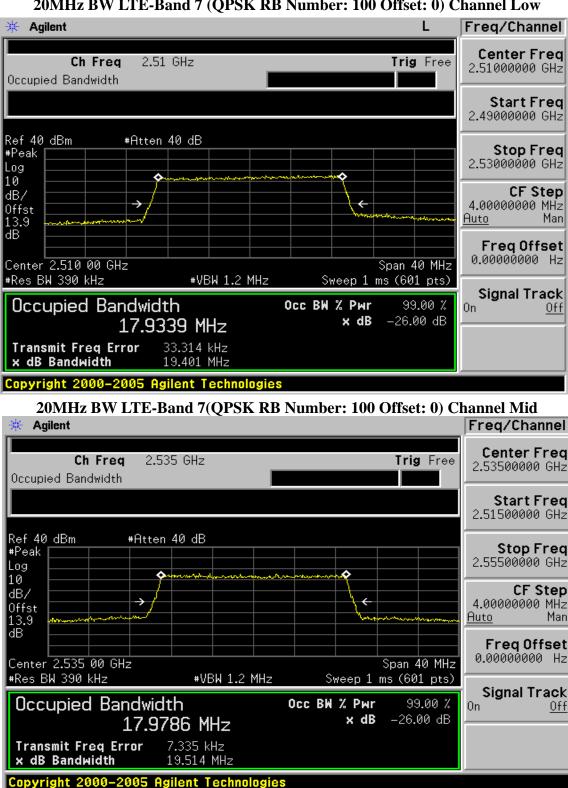
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20MHz BW LTE-Band 7 (OPSK RB Number: 100 Offset: 0) Channel Low

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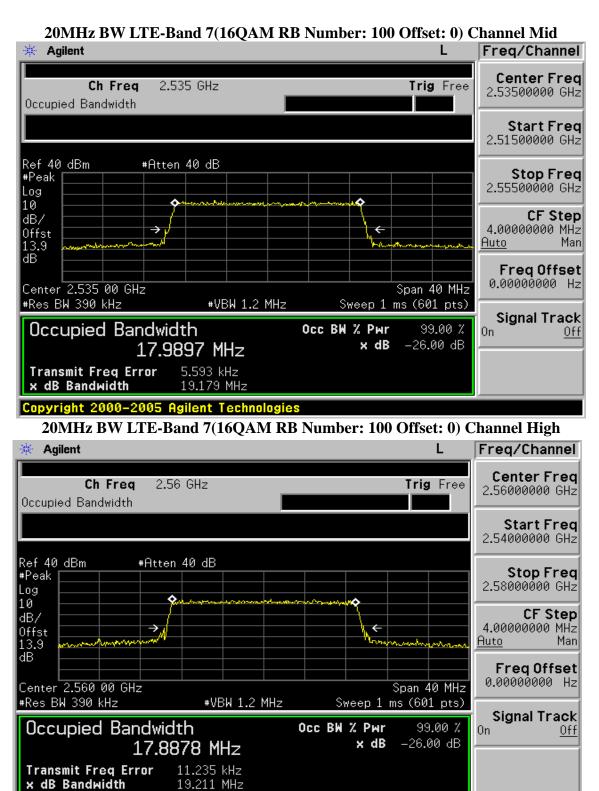


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