

# FCC PART 22H, PART 24E FCC PART 27 MEASUREMENT AND TEST REPORT

For

# **POSH Mobile Limited**

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**FCC ID: 2AG8KL550** 

Report Type: **Product Type:** Original Report Ultra Max LTE Robin Zheng **Test Engineer:** Robin Zheng Report Number: RDG160701001-00C **Report Date:** 2016-08-03 )ean. Lau. Dean Liu **Reviewed By:** RF Engineer Bay Area Compliance Laboratories Corp. (Dongguan) **Test Laboratory:** No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

**Note:** This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

# TABLE OF CONTENTS

GENERAL INFORMATION	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	
OBJECTIVE	
RELATED SUBMITTAL(S)/GRANT(S) TEST METHODOLOGY	
TEST FACILITY	
SYSTEM TEST CONFIGURATION	6
JUSTIFICATION	
EQUIPMENT MODIFICATIONS	6
SUPPORT EQUIPMENT LIST AND DETAILS	
CONFIGURATION OF TEST SETUP	
BLOCK DIAGRAM OF TEST SETUP	
SUMMARY OF TEST RESULTS	
FCC §1.1310 & §2.1093- RF EXPOSURE	
APPLICABLE STANDARD	
TEST RESULT	
FCC §2.1047 - MODULATION CHARACTERISTIC	10
FCC § 2.1046, § 22.913 (A) & § 24.232 (C) & § 27.50 - RF OUTPUT POWER	11
APPLICABLE STANDARD	
TEST PROCEDURE	
TEST EQUIPMENT LIST AND DETAILS	
TEST DATA	
FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53- OCCUPIED BANDWIDTH	
APPLICABLE STANDARD	
TEST PROCEDURE	
TEST EQUIPMENT LIST AND DETAILS TEST DATA	
FCC §2.1051, §22.917(A) & §24.238(A) & §27.53- SPURIOUS EMISSIONS AT ANTEN APPLICABLE STANDARD	
TEST PROCEDURE	
TEST EQUIPMENT LIST AND DETAILS.	
TEST DATA	
FCC §2.1053, §22.917 & §24.238 & §27.53- SPURIOUS RADIATED EMISSIONS	145
APPLICABLE STANDARD	
Test Procedure	
TEST EQUIPMENT LIST AND DETAILS TEST DATA	
FCC §22.917(A) & §24.238(A) & §27.53- BAND EDGES	
Applicable Standard	
TEST FROCEDURE  TEST EQUIPMENT LIST AND DETAILS.	
Test Data	

FCC §2.1055, §22.355 & §24.235 & §27.54 - FREQUENCY STABILITY	212
APPLICABLE STANDARD	
Test Procedure	
TEST EQUIPMENT LIST AND DETAILS.	
TEST DATA	213

## **GENERAL INFORMATION**

#### **Product Description for Equipment under Test (EUT)**

The *POSH Mobile Limited*'s product, model number: *L550(FCC ID: 2AG8KL550)* (the "EUT") in this report was a *Ultra Max LTE*, which was measured approximately: 15.1 cm (L) x 7.8 cm (W) x 0.8 cm (H), rated input voltage: DC3.8V rechargeable Li-ion battery or DC5V from adapter.

Adapter information:

PART NO.: U01-5V/1.5A MODEL: TPA-46050150UU

INPUT: 100-240V ~ 50/60Hz 0.3A Max

OUTPUT: DC 5.0V, 1500mA

Note: The series product, model L550, L550A, L550B, L550C are electrically identical, the difference between them just is the model name, we selected L550 for fully testing, the details was explained in the declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 160701001 (Assigned by BACL, Dongguan). The EUT was received on 2016-06-15.

#### **Objective**

This report is prepared on behalf of *POSH Mobile Limited* in accordance with: Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E and part 27 of the Federal Communications Commission's rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

#### Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: 2AG8KL550 FCC Part 15C DSS submissions with FCC ID: 2AG8KL550 FCC Part 15C DTS submissions with FCC ID: 2AG8KL550

#### **Test Methodology**

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services Part 27 – Miscellaneous wireless communications services

Applicable Standards: TIA/EIA 603-D-2010.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan).

## Report No.: RDG160701001-00C

## **Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

# **SYSTEM TEST CONFIGURATION**

#### **Justification**

The EUT was configured for testing according to TIA/EIA-603-D-2010.

The test items were performed with the EUT operating at testing mode.

The operating frequency of Band20 is 832-849MHz.

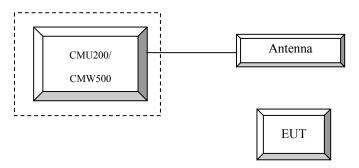
# **Equipment Modifications**

No modification was made to the EUT.

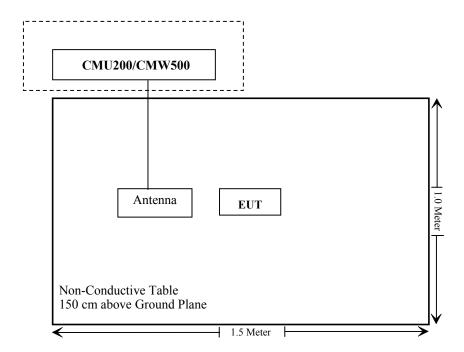
# **Support Equipment List and Details**

Manufacturer	Description	Model	Serial Number
R&S	Universal Radio Communication Tester	CMU200	109038
R&S	Wideband Radio Communication Tester	CMW500	106891
N/A	ANTENNA	N/A	N/A

# **Configuration of Test Setup**



# **Block Diagram of Test Setup**



# **SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Result
§1.1310, §2.1093	RF Exposure	Compliance
\$2.1046; \$ 22.913 (a); \$ 24.232 (c); \$27.50	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
\$ 2.1049; \$ 22.905 \$ 22.917; \$ 24.238; \$27.53	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a); §27.53	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a); §27.53	Spurious Radiation Emissions	Compliance
§ 22.917 (a); § 24.238 (a); §27.53	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235; §27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

# FCC §1.1310 & §2.1093- RF EXPOSURE

# **Applicable Standard**

FCC§1.1310 and §2.1093.

# **Test Result**

Compliant, please refer to the SAR report: RDG160701001-20.

# FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC  $\S$  2.1047(d), Part 22H & 24E, Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

# FCC § 2.1046, § 22.913 (a) & § 24.232 (c) & § 27.50 - RF OUTPUT POWER

#### **Applicable Standard**

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

According to FCC §2.1046 and §27.50 (d), (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

According to §24.232 (d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

#### **Test Procedure**

#### GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

> 27 dBm for EGPRS 850

> 26 dBm for EGPRS 1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test

channel) and BCCH channel]

Channel Type > Off

P0 > 4 dB

Slot Config > Unchanged (if already set under MS signal)

TCH > choose desired test channel

Hopping > Off Main Timeslot > 3

Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input Connection Press Signal on to turn on the signal and change settings

#### **WCDMA-Release 99**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

	Loopback Mode	Test Mode 1
WCDMA General Settings	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc / βd	8/15

#### WCDMA HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA	
	Subset	1	2	3	4	
	Loopback Mode			Test Mode	1	
	Rel99 RMC			12.2kbps RM	IC	
	HSDPA FRC			H-Set1		
WCDMA	Power Control Algorithm			Algorithm2	2	
WCDMA General	βс	2/15	12/15	15/15	15/15	
General - Settings -	βd	15/15	15/15	8/15	4/15	
	βd (SF)	64				
	βc/ βd	2/15	12/15	15/8	15/4	
	βhs	4/15	24/15	30/15	30/15	
	MPR(dB)	0	0	0.5	0.5	
	DACK			8		
	DNAK			8		
HSDPA	DCQI			8		
Specific	Ack-Nack repetition factor	3				
Settings	CQI Feedback			4ms		
	CQI Repetition Factor			2		
	Ahs=βhs/ βc			30/15		

## WCDMA HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA			
	Subset	1	2	3	4	5			
	Loopback Mode			Test Mode 1					
	Rel99 RMC		1	2.2kbps RM	С				
	HSDPA FRC			H-Set1					
	HSUPA Test		HS	UPA Loopb	ack				
WCDM	Power Control Algorithm	Algorithm2							
A	Вс	11/15	6/15	15/15	2/15	15/15			
General	βd	15/15	15/15	9/15	15/15	0			
Settings	Вес	209/225	12/15	30/15	2/15	5/15			
	βc/ βd	11/15	6/15	15/9	2/15	-			
	βhs	22/15	12/15	30/15	4/15	5/15			
	CM(dB)	1.0	3.0	2.0	3.0	1.0			
	MPR(dB)	0	2	1	2	0			
	DACK	-	<del>-</del>	8		· · · ·			
	DNAK 8								
	DCQI	8							
HSDPA	Ack-Nack repetition								
Specific	factor	3							
Settings	CQI Feedback	4ms							
g.	CQI Repetition								
	Factor	2							
	Ahs=βhs/ βc			30/15					
	DE-DPCCH	6	8	8	5	7			
	DHARQ	0	0	0	0	0			
	AG Index	20	12	15	17	21			
	ETFCI	75	67	92	71	81			
	Associated Max UL	242.1	174.9	482.8	205.8	308.9			
	Data Rate kbps	272.1	174.7	402.0	203.8	300.7			
HSUPA Specific Settings	Reference E_FCls	E-TFC E-TFC E-TFCI E-TFC E-TFC E-TFC E-TFC E-TFCI	I PO 4 CI 67 I PO 18 CI 71 I PO23 CI 75 I PO26 CI 81	E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27				

#### HSPA+

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34 121-1

Sub- test	β <sub>c</sub> (Note3)	β <sub>d</sub>	βнs (Note1)	$\beta_{ec}$	β <sub>ed</sub> (2xSF2) (Note 4)	β <sub>ed</sub> (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β <sub>ed</sub> 1: 30/15 β <sub>ed</sub> 2: 30/15	β <sub>ed</sub> 3: 24/15 β <sub>ed</sub> 4: 24/15	3.5	2.5	14	105	105
Note 1: $\Delta_{ACK}$ , $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$ .											
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).  Note 3: DPDCH is not configured, therefore the $\beta_c$ is set to 1 and $\beta_d$ = 0 by default.											
Note 4: β <sub>ed</sub> can not be set directly; it is set by Absolute Grant Value.											
Note 5	Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-										

#### **DC-HSDPA**

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

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

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

Report No.: RDG160701001-00C

#### LTE:

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Cha	MPR (dB)					
	1.4 3.0 5 10 15 20 MHz MHz MHz MHz MHz MHz						
QPSK	>5	> 4	>8	> 12	> 16	> 18	≤1
16 QAM	≤ 5	≤ 4	≤8	≤ 12	≤ 16	≤ 18	≤ 1
16 OAM	> 5	>4	>8	> 12	> 16	> 18	<b>≤2</b>

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS\_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Signalling value	(sub-clause)		bandwidth (MHz)	Blocks (N <sub>RS</sub> )	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
			3	>5	≤ 1
			5	>6	≤1
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	10	>6	≤1
			15	>8	≤1
			20	>10	≤ 1
NO 04	6.6.2.2.2	41	5	>6	s 1
NS_04	6.6.2.2.2	41	10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40 > 55	≤ 1 ≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23'	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
 NS_32					

Radiated method:

ANSI/TIA 603-D section 2.2.17

Report No.: RDG160701001-00C

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
ETS LINDGREN	Horn Antenna	3115	000 527 35	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
Giga	Signal Generator	1026	320408	2015-11-23	2016-11-22
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2015-09-06	2018-09-06
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06
E-Microwave	Attenuator	EMCA10-5RN	OE01203239	2016-05-08	2017-05-08
Pasternack	RF Coaxial Cable	RF-01	N/A	2016-05-06	2017-05-06
Pasternack	RF Coaxial Cable	RF-02	N/A	2016-05-06	2017-05-06
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2016-05-06	2017-05-06

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## **Test Data**

## **Environmental Conditions**

Temperature:	28. 1~32.1°C
Relative Humidity:	54~62%
ATM Pressure:	99.7~100 kPa

The testing was performed by Robin Zheng from 2016-06-17 to 2016-07-12.

## **Conducted Power**

# Cellular Band (Part 22H) & PCS Band (Part 24E)

Peak Output Power (dBm)										
Band	Channel No.	GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
	128	32.20	32.16	31.34	29.57	28.81	26.59	25.69	23.86	22.91
Cellular	190	32.10	32.11	31.22	29.39	28.65	26.11	25.22	23.43	22.51
	251	32.10	32.09	31.16	29.36	28.62	25.77	24.82	23.06	22.13
	512	30.70	30.58	29.65	27.43	26.23	25.38	24.12	22.03	20.93
PCS	661	31.00	30.91	30.04	28.07	26.74	26.19	25.11	22.91	21.79
	810	30.90	30.84	30.11	28.26	26.94	26.50	25.47	23.29	22.11

# WCDMA Band $\, I\!I \,$

			Avei	age Output	Power (dB	m)	
Mode	3GPP Sub Test	Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99 (QPSK)	1	21.63	2.60	22.02	2.76	22.14	2.60
	1	20.50	2.41	20.88	2.81	21.09	2.79
HSDPA	2	20.48	2.68	21.04	2.68	20.94	2.63
(QPSK)	3	20.32	2.40	20.78	2.67	21.02	2.61
	4	20.39	2.52	20.99	2.64	20.94	2.66
	1	20.32	2.41	20.95	2.75	21.16	2.86
	2	20.38	2.65	20.85	2.82	21.14	2.57
HSUPA (QPSK)	3	20.52	2.40	20.70	2.89	20.97	2.69
(41 511)	4	20.51	2.61	20.84	2.73	20.97	2.81
	5	20.60	2.50	21.05	2.91	21.22	2.81
	1	20.61	2.72	20.81	2.69	21.04	2.57
DC-HSDPA	2	20.58	2.52	20.70	2.62	21.27	2.63
(QPSK)	3	20.68	2.77	20.90	2.86	21.05	2.66
	4	20.51	2.74	20.84	2.87	21.07	2.59
HSPA+ (16QAM)	1	20.43	2.41	20.88	2.94	21.23	2.86

Report No.: RDG160701001-00C

# WCDMA Band V

			Aver	age Output	Power (dB	m)	
Mode	3GPP Sub Test	Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99 (QPSK)	1	21.48	2.40	21.50	2.20	21.44	2.48
	1	20.42	2.58	20.41	2.11	20.37	2.52
HSDPA	2	20.48	2.59	20.37	2.04	20.59	2.35
(QPSK)	3	20.34	2.52	20.58	2.23	20.48	2.36
	4	20.27	2.43	20.35	2.21	20.52	2.54
	1	20.51	2.33	20.42	2.22	20.59	2.61
HSUPA	2	20.53	2.23	20.38	2.13	20.48	2.31
(QPSK)	3	20.35	2.58	20.36	2.40	20.36	2.33
	4	20.37	2.57	20.36	2.34	20.29	2.53
	1	20.48	2.32	20.40	2.12	20.43	2.30
	2	20.31	2.46	20.27	2.28	20.30	2.29
DC-HSDPA	3	20.26	2.57	20.57	2.34	20.27	2.44
(QPSK)	4	20.35	2.21	20.56	2.19	20.23	2.30
	5	20.40	2.23	20.38	2.22	20.29	2.68
HSPA+ (16QAM)	1	20.35	2.48	20.40	2.40	20.41	2.41

# LTE Band II (PART 24E)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.65	22.64	23.05
		1#3	22.51	22.54	22.92
		1#5	22.46	22.68	22.94
	QPSK	3#0	22.84	22.48	22.99
		3#1	22.69	22.71	23.02
		3#3	22.54	22.68	23.18
1.4MHz		6#0	21.63	21.64	21.98
1.4MHZ		1#0	21.81	21.69	21.97
		1#3	21.89	21.77	22.05
		1#5	21.94	21.82	22.10
	16QAM	3#0	21.98	21.86	22.14
		3#1	21.76	21.64	21.92
		3#3	21.75	21.63	21.91
		6#0	20.74	20.72	20.87

Channel Bandwidth	Modulation	Resource Block			High
Banawata		& RB offset	Channel	Channel	Channel
			(dBm)	(dBm)	(dBm)
		1#0	22.56	22.61	23.03
		1#7	22.48	22.53	22.95
		1#14	22.67	22.72	23.14
	QPSK	8#0	22.38	22.43	22.85
		8#4	22.40	22.45	22.87
		8#7	22.36	22.41	22.83
3 MHz		15#0	21.69	21.76	22.01
3 1/112		1#0	21.80	22.17	21.92
		1#7	21.66	22.03	21.78
		1#14	21.87	22.24	21.99
	16QAM	8#0	21.94	22.31	22.06
		8#4	21.82	22.19	21.94
		8#7	21.74	22.11	21.86
		15#0	20.72	20.88	21.09
		1#0	22.78	22.73	23.05
		1#12	22.90	22.85	23.17
	QPSK	1#24	22.90	22.85	23.17
		12#0	22.72	22.67	22.99
		12#6	22.60	22.55	22.87
		12#11	22.65	22.60	22.92
5 ) 6T		25#0	21.72	21.73	21.97
5 MHz		1#0	22.05	21.76	22.05
		1#12	22.18	21.89	22.18
	16QAM	1#24	21.99	21.70	21.99
		12#0	22.24	21.95	22.24
		12#6	21.87	21.58	21.87
		12#11	22.06	21.77	22.06
		25#0	20.71	20.94	20.98
		1#0	22.69	22.80	23.01
		1#24	22.63	22.74	22.95
		1#49	22.79	22.90	23.11
	QPSK	25#0	22.86	22.97	23.18
	~	25#12	22.51	22.62	22.83
		25#24	22.59	22.70	22.91
403		50#0	21.75	21.81	21.98
10 MHz		1#0	22.69	22.69	21.98
		1#24	22.87	22.87	22.16
		1#49	22.85	22.85	22.14
	16QAM	25#0	22.78	22.78	22.07
	•	25#12	22.66	22.66	21.95
		25#24	22.76	22.76	22.05
		50#0	21.72	21.78	22.94

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.74	22.69	22.97
		1#37	22.79	22.74	23.02
		1#74	22.68	22.63	22.91
	QPSK	36#0	22.81	22.76	23.04
		36#17	22.86	22.81	23.09
		36#35	22.76	22.71	22.99
15 MHz		75#0	21.84	21.87	22.09
13 MHZ		1#0	21.91	22.25	22.27
		1#37	22.03	22.37	22.39
		1#74	21.88	22.22	22.24
	16QAM	36#0	22.05	22.39	22.41
		36#17	21.94	22.28	22.30
		36#35	21.91	22.25	22.27
		75#0	20.79	20.87	21.06
		1#0	22.75	22.82	22.83
		1#49	22.86	22.93	22.94
		1#99	22.61	22.68	22.69
	QPSK	50#0	22.81	22.88	22.89
		50#24	22.74	22.81	22.82
		50#49	22.66	22.73	22.74
20 MHz		100#0	21.74	21.84	21.95
20 MHZ		1#0	21.90	22.15	22.42
		1#49	21.94	22.19	22.46
		1#99	21.78	22.03	22.30
	16QAM	50#0	21.92	22.17	22.44
		50#24	21.72	21.97	22.24
		50#49	21.93	22.18	22.45
		100#0	20.76	20.91	21.06

# LTE Band IV (PART 27)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.82	22.75	22.90
		1#3	22.66	22.59	22.74
		1#5	22.92	22.85	23.00
	QPSK	3#0	22.95	22.88	23.03
		3#1	22.86	22.79	22.94
		3#3	22.87	22.80	22.95
1 41411-		6#0	21.83	21.75	21.85
1.4MHz		1#0	21.95	21.85	21.94
		1#3	21.91	21.81	21.90
		1#5	22.11	22.01	22.10
	16QAM	3#0	21.94	21.84	21.93
		3#1	22.08	21.98	22.07
		3#3	21.97	21.87	21.96
		6#0	20.87	20.86	20.84
		1#0	22.82	22.70	22.88
		1#7	22.80	22.68	22.86
		1#14	22.62	22.50	22.68
	QPSK	8#0	22.84	22.72	22.90
		8#4	23.01	22.89	23.07
		8#7	23.01	22.89	23.07
2 MH		15#0	21.87	21.85	21.94
3 MHz		1#0	21.95	22.31	21.92
		1#7	21.98	22.34	21.95
		1#14	21.93	22.29	21.90
	16QAM	8#0	22.04	22.40	22.01
		8#4	21.87	22.23	21.84
		8#7	22.11	22.47	22.08
		15#0	20.84	20.97	21.04

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.94	22.81	22.94
		1#12	22.98	22.85	22.98
		1#24	22.92	22.79	22.92
	QPSK	12#0	22.76	22.63	22.76
		12#6	22.96	22.83	22.96
		12#11	23.09	22.96	23.09
5 MHz		25#0	21.84	21.86	21.96
3 MITZ		1#0	22.19	22.85	22.15
		1#12	22.20	22.86	22.16
		1#24	22.30	22.96	22.26
	16QAM	12#0	22.33	22.99	22.29
		12#6	22.34	23.00	22.30
		12#11	22.02	22.68	21.98
		25#0	20.82	20.98	20.94
		1#0	22.89	22.75	22.83
		1#24	22.71	22.57	22.65
		1#49	22.81	22.57	22.65
	QPSK	25#0	22.96	22.57	22.65
		25#12	22.94	22.80	22.88
		25#24	22.80	22.66	22.74
10 MHz		50#0	21.88	21.88	21.96
10 MHZ		1#0	21.93	22.36	22.43
		1#24	21.87	22.30	22.37
		1#49	21.92	22.35	22.42
	16QAM	25#0	21.79	22.22	22.29
		25#12	21.85	22.28	22.35
		25#24	21.80	22.23	22.30
		50#0	20.96	20.93	21.03

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.85	22.74	22.87
		1#37	22.68	22.57	22.70
		1#74	22.77	22.66	22.79
	QPSK	36#0	22.81	22.70	22.83
		36#17	22.69	22.58	22.71
		36#35	22.86	22.75	22.88
15 MHz		75#0	21.87	21.92	21.97
13 MITZ		1#0	22.05	22.36	22.23
		1#37	22.06	22.37	22.24
		1#74	22.09	22.40	22.27
	16QAM	36#0	21.90	22.21	22.08
		36#17	21.94	22.25	22.12
		36#35	22.11	22.42	22.29
		75#0	20.93	20.90	20.95
		1#0	22.91	22.77	22.81
		1#49	22.83	22.69	22.73
		1#99	22.95	22.81	22.85
	QPSK	50#0	23.03	22.89	22.93
		50#24	22.75	22.61	22.65
		50#49	22.94	22.80	22.84
20 MHz		100#0	21.83	21.92	22.97
20 MHZ		1#0	22.05	22.12	22.42
		1#49	22.06	22.13	22.43
		1#99	22.11	22.18	22.48
	16QAM	50#0	22.19	22.26	22.56
		50#24	22.17	22.24	22.54
		50#49	21.86	21.93	22.23
		100#0	20.88	20.93	20.97

# LTE Band VII (PART 27)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.50	22.41	21.94
		1#12	22.59	22.50	22.03
		1#24	22.35	22.26	21.79
	QPSK	12#0	22.67	22.58	22.11
		12#6	22.42	22.33	21.86
		12#11	22.69	22.60	22.13
5 MHz		25#0	21.41	21.39	20.89
3 MITZ		1#0	21.67	21.37	21.00
		1#12	21.84	21.54	21.17
		1#24	21.63	21.33	20.96
	16QAM	12#0	21.61	21.31	20.94
		12#6	21.81	21.51	21.14
		12#11	21.85	21.55	21.18
		25#0	20.34	20.45	19.78
		1#0	22.44	22.40	22.11
		1#24	22.26	22.22	21.93
		1#49	22.35	22.31	22.02
	QPSK	25#0	22.38	22.34	22.05
		25#12	22.62	22.58	22.29
		25#24	22.62	22.58	22.29
10 MHz		50#0	21.32	21.44	20.93
10 MHZ		1#0	21.55	21.85	20.98
		1#24	21.40	21.70	20.83
		1#49	21.50	21.80	20.93
	16QAM	25#0	21.49	21.79	20.92
		25#12	21.40	21.70	20.83
		25#24	21.37	21.67	20.80
		50#0	20.39	20.42	20.76

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.44	22.40	22.22
		1#37	22.49	22.45	22.27
		1#74	22.54	22.50	22.32
	QPSK	36#0	22.39	22.35	22.17
		36#17	22.41	22.37	22.19
		36#35	22.43	22.39	22.21
15 MHz		75#0	21.52	21.47	21.08
13 MHZ		1#0	21.53	21.83	21.52
		1#37	21.38	21.68	21.37
		1#74	21.40	21.70	21.39
	16QAM	36#0	21.61	21.91	21.60
		36#17	21.46	21.76	21.45
		36#35	21.43	21.73	21.42
		75#0	20.43	20.46	20.03
		1#0	22.47	22.44	22.24
		1#49	22.46	22.43	22.23
		1#99	22.45	22.42	22.22
	QPSK	50#0	22.31	22.28	22.08
		50#24	22.52	22.49	22.29
		50#49	22.49	22.46	22.26
20 MHz		100#0	21.48	21.43	21.04
20 MHZ		1#0	21.53	21.66	21.81
		1#49	21.59	21.72	21.87
		1#99	21.41	21.54	21.69
	16QAM	50#0	21.53	21.66	21.81
		50#24	21.72	21.85	22.00
		50#49	21.59	21.72	21.87
		100#0	20.37	20.44	20.04

# LTE Band 12 (PART 27)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.89	22.88	22.91
		Tation   Resource Block & RB offset   Channel (dBm)   (dBm)	23.04		
		1#5	22.70	Channel (dBm)  22.88  23.01  22.69  23.01  22.83  22.90  21.94  21.91  22.06  21.89  22.14  22.04  20.98  22.84  22.94  22.95  22.90  22.85  22.90  21.95  22.45  22.33  22.49  22.59  22.61	22.72
	QPSK	3#0	23.02	23.01	23.04
		3#1	22.84	22.83	22.86
		3#3	22.91	22.90	22.93
1.4MHz		6#0	21.92	21.94	21.95
1.4MHZ		1#0	21.99	21.94	21.92
		1#3	21.96	21.91	21.89
		1#5	22.11	22.06	22.04
	16QAM	3#0	21.94	21.89	21.87
		3#1	22.19	(dBm)  22.88  23.01  22.69  23.01  22.83  22.90  21.94  21.91  22.06  21.89  22.14  22.04  20.98  22.84  22.94  22.95  22.90  22.85  22.90  22.85  22.92  21.95  22.45  22.33  22.49  22.59  22.61	22.12
		3#3	22.09	22.04	22.02
		6#0	20.91	20.98	20.88
		1#0	22.87	22.84	22.93
		1#7	22.97	22.94	23.03
		1#14	22.98	22.95	23.04
	QPSK	8#0	22.93	22.90	22.99
		8#4	22.88	22.85	22.94
		8#7	22.95	22.92	23.01
3 MHz		15#0	21.89	21.95	21.95
3 MHZ		1#0	21.98	22.45	21.89
		1#7	21.86	22.33	21.77
		1#14	22.02	Channel (dBm)  22.88  23.01  22.69  23.01  22.83  22.90  21.94  21.91  22.06  21.89  22.14  22.04  20.98  22.84  22.94  22.95  22.90  22.85  22.90  22.85  22.92  21.95  22.45  22.33  22.49  22.59  22.61	21.93
	16QAM	8#0	21.87		21.78
		8#4	22.12	22.59	22.03
		8#7	22.14	Channel (dBm)  22.88  23.01  22.69  23.01  22.83  22.90  21.94  21.94  21.91  22.06  21.89  22.14  22.04  20.98  22.84  22.94  22.95  22.90  22.85  22.90  22.85  22.92  21.95  22.45  22.33  22.49  22.59  22.61	22.05
		15#0	20.82	21.03	20.97

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.98	22.92	22.98
		Channel (dBm)   Channel (dBm)   (dBm	22.97		
		1#24	Channel (dBm) (dBm) (dBm) (dBm) (dBm) (0 22.98 22.92 12 22.97 22.91 24 23.10 23.04 24 23.08 23.02 24 22.99 22.93 11 23.01 22.95 24 21.91 21.97 21.97 21.97 21.97 21.90 22.12 22.00 24 21.92 21.80 24 21.92 21.80 24 22.95 22.13 24 22.94 22.94 22.93 23.13 23.12 24 22.94 22.94 22.94 22.96 22.96 22.96 22.96 22.96 22.96 22.97 22.90 22.89 22.97 22.90 22.89 22.90 22.89 22.91 22.90 22.91 22.90 22.91 22.90 22.91 22.90 22.91 22.90 22.92 22.91 22.90 22.92 22.91 22.90 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.92 22.93 22.94 22.92 22.9	23.10	
	QPSK	12#0	23.08	Channel (dBm)  22.92  22.91  23.04  23.02  22.93  22.95  21.97  22.00  21.90  21.80  22.13  21.96  21.99  21.08  22.93  22.93  22.93  22.93  23.12  22.89  22.89  22.90  23.12  21.84  22.41  22.47  22.42  22.27  22.44  22.58	23.08
		12#6	22.99		22.99
		12#11	23.01		23.01
5 MHz		25#0	21.91	21.97	20.89
3 MHZ		1#0	22.12	22.00	21.97
		1#12	22.02	21.90	21.87
		1#24	21.92	21.80	21.77
	16QAM	12#0	22.25	(dBm)  22.92  22.91  23.04  23.02  22.93  22.95  21.97  22.00  21.90  21.80  22.13  21.96  21.99  21.08  22.93  22.93  22.93  22.93  23.12  22.89  22.90  23.12  21.84  22.41  22.47  22.42  22.27  22.44  22.58	22.10
		12#6	22.08		21.93
		12#11	22.11		21.96
		25#0	20.87	21.08	20.83
		1#0	22.94	22.93	22.96
		1#24	22.94	22.93	22.96
		1#49	23.13	23.12	23.15
	QPSK	25#0	22.90	22.89	22.92
		25#12	22.91	22.90	22.93
		25#24	23.13	23.12	23.15
10 MHz		50#0	21.94	21.84	21.94
10 MHZ		1#0	22.05	22.41	22.04
		1#24	22.11	22.47	22.10
		1#49	22.06	hannel dBm)         Channel (dBm)           22.98         22.92           22.97         22.91           23.08         23.02           22.99         22.93           23.01         22.95           21.91         21.97           22.12         22.00           22.02         21.90           21.92         21.80           22.25         22.13           22.08         21.96           22.11         21.99           20.87         21.08           22.94         22.93           23.13         23.12           22.90         22.89           22.91         22.90           23.13         23.12           21.94         21.84           22.05         22.41           22.11         22.47           22.06         22.42           21.91         22.27           22.08         22.44           22.22         22.58	22.05
	16QAM	25#0	Channel (dBm) (dBm) 0 22.98 22.92 12 22.97 22.91 24 23.10 23.04 #0 23.08 23.02 #6 22.99 22.93 11 23.01 22.95 #0 21.91 21.97 0 22.12 22.00 12 22.02 21.90 24 21.92 21.80 #0 22.25 22.13 #6 22.08 21.96 11 22.11 21.99 #0 20.87 21.08 0 22.94 22.93 24 22.94 22.93 24 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.94 22.93 #0 22.96 22.89 12 22.91 22.90 24 23.13 23.12 #0 22.91 22.90 24 23.13 23.12 #0 22.91 22.90 24 23.13 23.12 #0 22.91 22.90 24 23.13 23.12 #0 22.91 22.90 24 23.13 23.12 #0 22.91 22.90 24 23.13 23.12 #0 21.94 21.84 0 22.05 22.41 #0 21.94 22.47 #19 22.06 22.42 #0 21.91 22.27 12 22.08 22.44 224 22.22 22.58	21.90	
		25#12	22.08	22.44	22.07
		25#24	22.22	dBm)         (dBm)           22.98         22.92           22.97         22.91           23.08         23.02           22.99         22.93           23.01         22.95           21.91         21.97           22.12         22.00           22.02         21.90           21.92         21.80           22.25         22.13           22.08         21.96           22.11         21.99           20.87         21.08           22.94         22.93           22.94         22.93           22.94         22.93           22.91         22.90           23.13         23.12           22.91         22.90           23.13         23.12           21.94         21.84           22.05         22.41           22.11         22.47           22.06         22.42           21.91         22.27           22.08         22.44           22.22         22.58	22.21
		50#0	20.96	20.98	20.99

# LTE Band 17 (PART 27)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	23.04	22.98	23.03
		Resource Block & RB offset Channel (dBm) Channel (dBm)	22.98		
		1#24	23.11	23.05	23.10
	QPSK	12#0	23.23	23.17	23.22
		12#6	22.94	22.88	22.93
		12#11	23.04	22.98	23.03
5 MHz		25#0	22.01	21.95	21.97
3 MHZ		1#0	22.28	22.05	22.18
		1#12	22.25	22.02	22.15
		1#24	22.43	22.20	22.33
	16QAM	12#0	22.43	22.20	22.33
		12#6	22.36	22.13	22.26
		12#11	22.12	21.89	22.02
		25#0	20.96	21.03	20.91
		1#0	22.93	22.96	23.00
		1#24	22.84	22.87	22.91
		1#49	22.96	22.99	23.03
	QPSK	25#0	22.97	23.00	23.04
		25#12	22.88	22.91	22.95
		25#24	23.08	23.11	23.15
10 MHz		50#0	21.98	22.01	21.98
10 MHZ		1#0	22.12	22.50	22.06
		1#24	22.28	22.66	22.22
		1#49	22.00	Annel Bm)         Channel (dBm)           3.04         22.98           2.99         22.93           3.11         23.05           3.23         23.17           2.94         22.88           3.04         22.98           2.01         21.95           2.28         22.05           2.25         22.02           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.43         22.20           2.36         22.13           2.99         21.03           2.99         22.96           2.84         22.87           2.97         23.00           2.88         22.91           3.08         23.11           .98         22.01           2.28         22.66           2.00         22.38           .96         22.34           2.21         22.59<	21.94
	16QAM	25#0	21.96		21.90
		25#12	22.21	22.59	22.15
		25#24	22.03	Channel (dBm) 22.98 22.93 23.05 23.17 22.88 22.98 21.95 22.05 22.02 22.20 22.20 22.13 21.89 21.03 22.96 22.87 22.99 23.00 22.91 23.11 22.01 22.50 22.38 22.34 22.59 22.41	21.97
		50#0	21.02	21.02	21.02

# LTE Band 20 (PART 22H)

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0	22.29	22.11	22.17
		Resource Block & RB offset         Channel (dBm)         Channel (dBm)           1#0         22.29         22.11           1#12         22.32         22.14           1#24         22.30         22.12           12#0         22.17         21.99           12#6         22.34         22.16           12#11         22.12         21.94           25#0         21.21         21.14           1#0         21.65         21.24           1#12         21.65         21.24           1#24         21.67         21.26           1#24         21.67         21.26           12#1         21.82         21.41           25#0         20.19         20.27           1#0         22.21         22.08           1#24         22.01         21.88           1#24         22.01         21.88           1#49         22.15         22.02           25#0         22.08         21.95           25#12         22.38         22.25           50#0         21.25         21.17           1#0         21.40         21.88           1#24         21.56         22.04     <	22.14	22.20	
		1#24	Channel (dBm)         Channel (dBm)           22.29         22.11           22.32         22.14           22.30         22.12           22.17         21.99           22.34         22.16           22.12         21.94           21.21         21.14           21.65         21.24           21.67         21.26           21.55         21.14           21.61         21.20           21.82         21.41           20.19         20.27           22.21         22.08           22.01         21.88           22.15         22.02           22.38         22.25           22.38         22.25           22.38         22.25           21.25         21.17           21.40         21.88           21.56         22.04           21.57         22.05           21.39         21.87           21.28         21.76	22.18	
	QPSK	12#0	22.17	Channel (dBm)  22.11  22.14  22.12  21.99  22.16  21.94  21.14  21.24  21.26  21.14  21.20  21.41  20.27  22.08  21.88  22.02  21.95  22.25  21.17  21.88  22.04  22.05  21.87  21.76	22.05
		12#6	22.34	22.16	22.22
		12#11	22.12	21.94	22.00
5 MHz		25#0	21.21	21.14	21.24
3 MHZ		1#0	21.65	21.24	21.58
		1#12	21.65	21.24	21.58
		1#24	21.67	21.26	21.60
	16QAM	12#0	21.55	21.14	21.48
		12#6	21.61	21.20	21.54
		12#11	Channel (dBm)  22.29  22.11  22.30  22.12  22.17  21.99  22.34  22.12  21.94  21.21  21.65  21.24  21.65  21.24  21.65  21.24  21.67  21.26  21.55  21.14  21.61  21.20  21.82  21.41  20.19  20.27  22.21  22.08  22.11  22.08  22.12  22.08  22.13  22.14  21.65  21.24  21.65  21.24  21.65  21.24  21.67  21.26  21.26  21.27  21.28  21.41  20.19  20.27  22.21  22.08  22.11  22.08  22.11  22.08  22.15  22.02  22.08  22.15  22.02  22.08  22.15  22.08  22.15  22.02  22.08  22.15  22.05  21.57  21.40  21.88  21.56  22.04  21.57  22.05  21.39  21.87  21.28	21.75	
		25#0	20.19	20.27	20.28
		1#0	22.21	22.08	22.16
		1#24	22.01	21.88	21.96
		1#49	22.15	22.02	22.10
	QPSK	25#0	22.08	21.95	22.03
		25#12	22.38	22.25	22.33
		25#24	22.38	22.25	22.33
10 MHz		50#0	21.25	21.17	21.25
10 MHZ		1#0	21.40	21.88	21.25
		1#24	21.56	22.04	21.41
		1#49	21.57	(dBm)         (dBm)           22.29         22.11           22.32         22.14           22.30         22.12           22.17         21.99           22.34         22.16           22.12         21.94           21.21         21.14           21.65         21.24           21.67         21.26           21.55         21.14           21.61         21.20           21.82         21.41           20.19         20.27           22.21         22.08           22.01         21.88           22.15         22.02           22.08         21.95           22.38         22.25           22.38         22.25           22.38         22.25           21.25         21.17           21.40         21.88           21.56         22.04           21.57         22.05           21.39         21.87           21.28         21.76	21.42
	16QAM	25#0	(dBm)         (dBm)           22.29         22.11           22.32         22.14           22.30         22.12           22.17         21.99           22.34         22.16           22.12         21.94           21.21         21.14           21.65         21.24           21.65         21.24           21.67         21.26           21.55         21.14           21.61         21.20           21.82         21.41           20.19         20.27           22.21         22.08           22.01         21.88           22.15         22.02           22.08         21.95           22.38         22.25           22.38         22.25           22.38         22.25           21.25         21.17           21.40         21.88           21.56         22.04           21.57         22.05           21.39         21.87           21.28         21.76	21.42	
		25#12	21.39	21.87	21.24
		25#24	21.28	(dBm)       22.11       22.14       22.12       21.99       22.16       21.94       21.14       21.24       21.26       21.14       21.20       21.41       20.27       22.08       21.88       22.02       21.95       22.25       22.17       21.88       22.04       22.05       21.87       21.76	21.13
		50#0	20.27	20.27	20.39

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
		1#0		22.21	22.22
		1#37	22.21	22.09	22.10
		1#74	Channel (dBm) (dBm) 22.33 22.21	22.25	
	QPSK	36#0	22.53	22.41	22.42
	36#17 22.	22.42	22.30	22.31	
		36#35	22.44	22.32	22.33
15 MHz		75#0	21.34 21.39	21.35	
13 MHZ		1#0	21.94	22.03	21.61
		1#37	21.87	nnel         Channel (dBm)           33         22.21           21         22.09           36         22.24           53         22.41           42         22.30           44         22.32           34         21.39           94         22.03           87         21.96           78         21.87           88         21.97           99         22.08           03         22.12	21.54
		1#74	21.78	21.87	21.45
	16QAM	36#0	21.88	21.97	21.55
		36#17	21.99	22.08	21.66
		36#35	22.03	22.12	21.70
		75#0	20.36	20.37	20.28

# **Band II**

Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
ODCK	1 RB	20 MHz	3.32	3.36	2.80	13
QPSK	100 RB		5.32	5.36	5.40	13
160414	1 RB	20 MHz	4.16	4.32	3.60	13
16QAM	100 RB	ZU MITIZ	5.84	5.88	5.84	13

# **Band IV**

Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
ODSV	1 RB	20 MHz	3.52	3.96	3.68	13
QPSK	100 RB	20 MHz	5.32	5.32	5.24	13
160414	1 RB	20 MHz	4.40	4.88	4.16	13
16QAM	100 RB	20 MHZ	5.76	5.88	5.76	13

# **Band VII**

Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	3.52	3.28	3.12	13
QFSK	100 RB		5.48	5.32	5.24	13
16QAM	1 RB	20 MHz	4.24	4.44	3.88	13
TOQAM	100 RB	ZU MITIZ	5.88	5.80	5.72	13

# Band 12

Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
ODCK	1 RB	10 MHz	3.60	3.92	3.68	13
QPSK	50 RB		4.52	4.56	4.24	13
160414	1 RB	10 MHz	5.36	4.76	4.44	13
16QAM	50 RB	10 MHZ	5.12	5.24	4.92	13

# Band 17

Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.00	3.64	3.76	13
QFSK	50 RB		4.40	4.28	4.24	13
160414	1 RB	10 MHz	4.64	4.40	4.32	13
16QAM	50 RB	10 MHZ	5.12	5.00	4.92	13

# Band 20

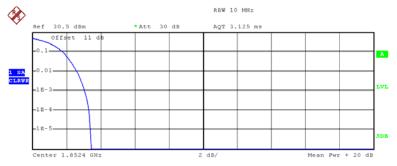
Test Mod	lulation	Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.20	4.48	4.64	13
QFSK	50 RB		4.96	5.00	5.08	13
160414	1 RB	10 MHz	4.88	5.44	5.28	13
16QAM	50 RB	10 MHZ	5.48	5.48	5.60	13

Note: peak-to-average ratio (PAR) <13 dB.

Peak-to-average ratio (PAR)

#### WCDMA Band II





Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.14 dBm
Peak 24.59 dBm
Crest 3.44 dB

10 % 1.80 dB
1 % 2.60 dB

3.08 dB

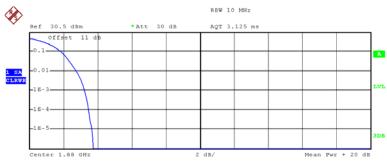
3.32 dB

Date: 12.JUL.2016 20:29:22

.1 %

.01 %

#### **Middle Channel**



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

Peak 25.22 dBm Crest 3.74 dB 10 % 1.88 dB 1 % 2.76 dB .1 % 3.24 dB

21.48 dBm

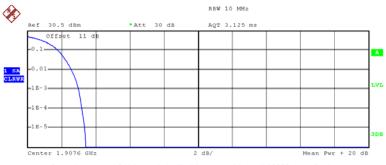
3.48 dB

Mean

.01 %

Date: 12.JUL.2016 20:28:51

#### **High Channel**



Complementary Cumulative Distribution Function (100000 samples)

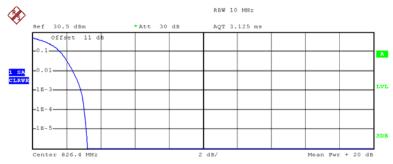
Trace 1
Mean 21.44 dBm
Peak 24.87 dBm
Crest 3.43 dB

10 % 1.80 dB 1 % 2.60 dB .1 % 3.00 dB .01 % 3.20 dB

Date: 12.JUL.2016 20:29:44

#### WCDMA Band V

## Low Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

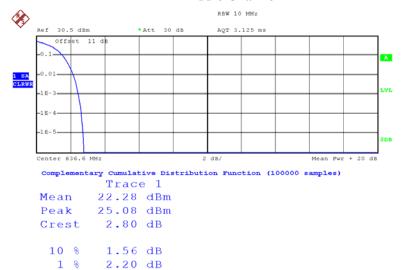
Mean 22.27 dBm
Peak 25.50 dBm
Crest 3.23 dB

10 % 1.64 dB
1 % 2.40 dB

.1 % 2.88 dB .01 % 3.04 dB

Date: 12.JUL.2016 20:30:33

#### **Middle Channel**



Date: 12.JUL.2016 20:30:49

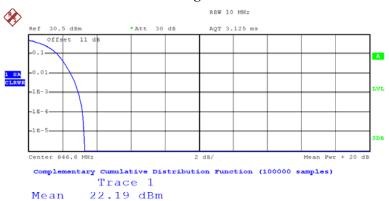
2.48 dB

2.64 dB

.1 %

.01 %

#### High Channel

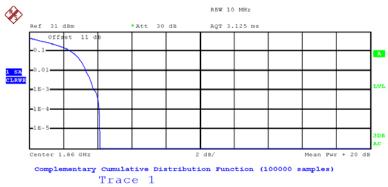


Peak 25.50 dBm Crest 3.32 dB 10 % 1.72 dB 1 % 2.48 dB .1 % 2.96 dB .01 % 3.20 dB

Date: 12.JUL.2016 20:30:20

#### LTE Band II (PART 22H)

#### QPSK\_20MHz\_1RB\_Low Channel

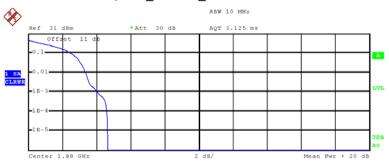


Mean 22.92 dBm Peak 27.05 dBm Crest 4.14 dB

10 % 2.48 dB 1 % 3.32 dB .1 % 3.84 dB .01 % 4.12 dB

Date: 17.JUN.2016 17:50:21

#### QPSK 20MHz 1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)

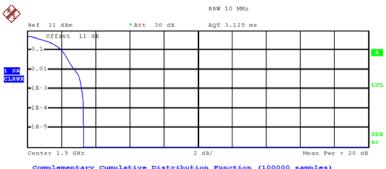
Trace 1
Mean 22.46 dBm
Peak 27.12 dBm
Crest 4.66 dB

10 % 2.52 dB
1 % 3.36 dB

.1 % 4.08 dB .01 % 4.60 dB

Date: 17.JUN.2016 17:54:25

## QPSK\_20MHz\_1RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1 22.62 dBm Mean Peak 25.92 dBm Crest 3.31 dB

10 % 2.00 dB 1 % 2.80 dB .1 % 3.20 dB .01 % 3.32 dB

Date: 17.JUN.2016 17:55:27

## QPSK\_20MHz\_FULL RB Low Channel



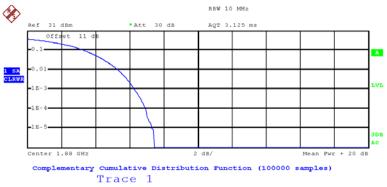
Complementary Cumulative Distribution Function (100000 samples)

Trace 1 Mean 18.74 dBm 25.99 dBm Peak 7.25 dB Crest 10 % 3.40 dB

1 % 5.32 dB 6.32 dB .1 % .01 % 6.80 dB

Date: 17.JUN.2016 17:49:48

### QPSK\_20MHz\_FULL RB Middle Channel



Mean 18.69 dBm Peak 26.13 dBm Crest 7.45 dB

10 % 3.40 dB 1 % 5.36 dB .1 % 6.32 dB .01 % 6.96 dB

Date: 17.JUN.2016 17:50:50

### QPSK 20MHz\_FULL RB High Channel



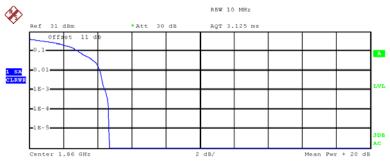
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.52 dBm
Peak 24.86 dBm
Crest 7.35 dB

10 % 3.40 dB 1 % 5.40 dB .1 % 6.36 dB .01 % 7.00 dB

Date: 17.JUN.2016 17:55:00

### 16QAM\_20MHz\_1RB\_Low Channel



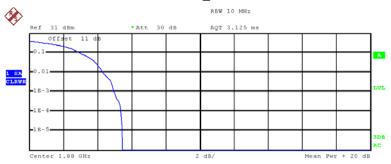
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.96 dBm
Peak 26.63 dBm
Crest 4.67 dB

10 % 2.88 dB 1 % 4.16 dB .1 % 4.44 dB .01 % 4.64 dB

Date: 17.JUN.2016 17:50:31

# 16QAM 20MHz\_1RB Middle Channel



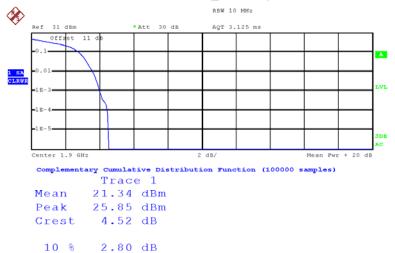
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.53 dBm
Peak 26.98 dBm
Crest 5.45 dB

10 % 3.00 dB 1 % 4.32 dB .1 % 4.96 dB .01 % 5.36 dB

Date: 17.JUN.2016 17:54:34

### 16QAM 20MHz\_1RB High Channel



Date: 17.JUN.2016 17:55:33

1 %

.1 %

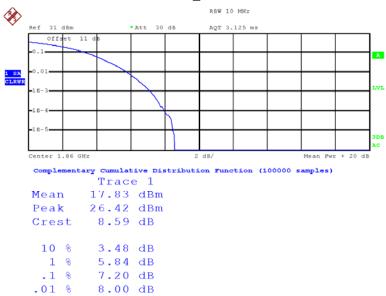
.01 %

3.60 dB

4.04 dB

4.48 dB

# 16QAM 20MHz\_FULL RB Low Channel



Date: 17.JUN.2016 17:50:04

### 16QAM 20MHz\_FULL RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.27 dBm
Peak 25.85 dBm
Crest 8.58 dB

10 % 3.48 dB 1 % 5.88 dB .1 % 7.20 dB .01 % 8.16 dB

Date: 17.JUN.2016 17:54:07

# 16QAM 20MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.03 dBm
Peak 25.64 dBm
Crest 8.62 dB

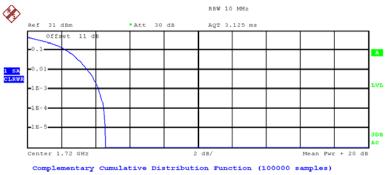
10 % 3.48 dB

1 % 5.84 dB .1 % 7.16 dB .01 % 8.04 dB

Date: 17.JUN.2016 17:55:15

### LTE Band IV (PART 27)

### QPSK\_20MHz\_1RB\_Low Channel

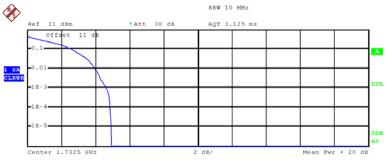


Trace 1 Mean 22.62 dBm Peak 27.19 dBm 4.57 dB Crest

10 % 2.32 dB 1 % 3.52 dB .1 % 4.20 dB .01 % 4.48 dB

Date: 17.JUN.2016 17:56:26

#### QPSK 20MHz 1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples) Trace 1

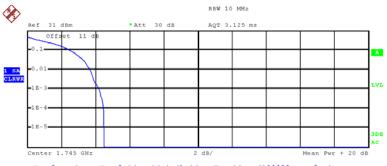
27.62 dBm Peak Crest 4.93 dB 10 % 2.64 dB 1 % 3.96 dB 4.64 dB .1 % .01 % 4.88 dB

Mean

22.68 dBm

Date: 17.JUN.2016 17:57:12

### QPSK\_20MHz\_1RB High Channel



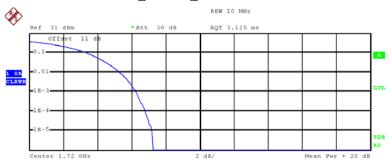
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.76 dBm
Peak 27.26 dBm
Crest 4.51 dB

10 % 2.52 dB 1 % 3.68 dB .1 % 4.24 dB .01 % 4.48 dB

Date: 17.JUN.2016 17:58:02

# QPSK\_20MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)

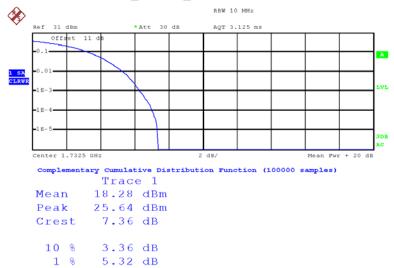
Trace 1
Mean 18.11 dBm
Peak 25.36 dBm
Crest 7.25 dB

10 % 3.44 dB

1 % 5.32 dB .1 % 6.28 dB .01 % 6.80 dB

Date: 17.JUN.2016 17:56:07

### QPSK\_20MHz\_FULL RB Middle Channel



Date: 17.JUN.2016 17:56:54

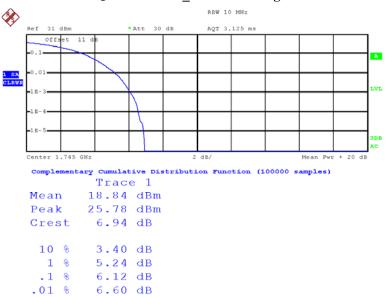
6.32 dB

7.04 dB

.1 %

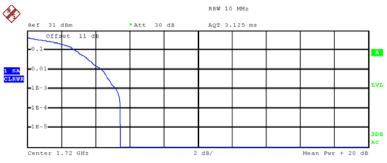
.01 %

### QPSK 20MHz\_FULL RB High Channel



Date: 17.JUN.2016 17:57:46

### 16QAM\_20MHz\_1RB\_Low Channel



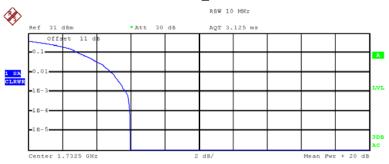
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.51 dBm
Peak 26.98 dBm
Crest 5.47 dB

10 % 2.84 dB 1 % 4.40 dB .1 % 5.24 dB .01 % 5.48 dB

Date: 17.JUN.2016 17:56:32

# 16QAM 20MHz\_1RB Middle Channel



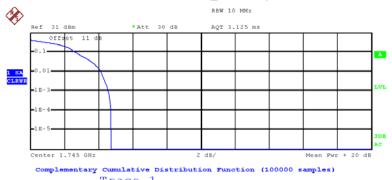
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.72 dBm
Peak 27.69 dBm
Crest 5.97 dB

10 % 3.00 dB 1 % 4.88 dB .1 % 5.76 dB .01 % 5.96 dB

Date: 17.JUN.2016 17:57:18

### 16QAM 20MHz\_1RB High Channel



Trace 1
Mean 22.10 dBm
Peak 26.84 dBm
Crest 4.74 dB

10 % 2.68 dB 1 % 4.16 dB .1 % 4.60 dB .01 % 4.72 dB

Date: 17.JUN.2016 17:58:09

# 16QAM 20MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.17 dBm
Peak 25.50 dBm
Crest 8.33 dB

10 % 3.52 dB 1 % 5.76 dB .1 % 6.96 dB .01 % 7.84 dB

Date: 17.JUN.2016 17:56:15

### 16QAM 20MHz\_FULL RB Middle Channel

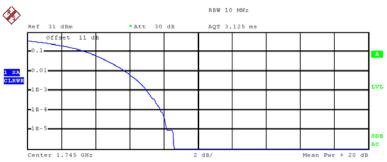


Trace 1 Mean 17.35 dBm Peak 26.06 dBm 8.71 dB Crest

10 % 3.48 dB 5.88 dB 1 % .1 % 7.16 dB .01 % 7.96 dB

Date: 17.JUN.2016 17:57:00

# 16QAM 20MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

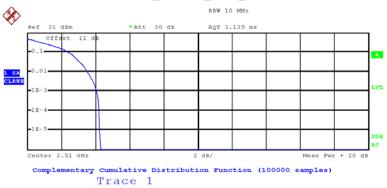
Trace 1 Mean 17.89 dBm 26.49 dBm Peak 8.60 dB Crest 10 % 3.52 dB

1 % 5.76 dB .1 % 7.04 dB .01 % 7.84 dB

Date: 17.JUN.2016 17:57:51

# LTE Band VII (PART 27)

### QPSK\_20MHz\_1RB\_Low Channel

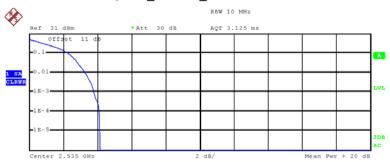


Mean 22.27 dBm Peak 26.56 dBm Crest 4.28 dB

10 % 2.44 dB 1 % 3.52 dB .1 % 4.08 dB .01 % 4.20 dB

Date: 17.JUN.2016 18:52:31

#### QPSK 20MHz 1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

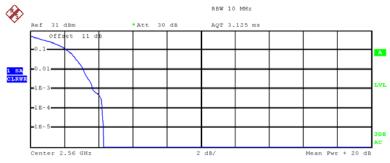
Mean 22.07 dBm
Peak 26.21 dBm
Crest 4.14 dB

10 % 2.28 dB
1 % 3.28 dB
.1 % 3.80 dB

.01 % 4.12 dB

Date: 17.JUN.2016 18:54:12

### QPSK\_20MHz\_1RB High Channel



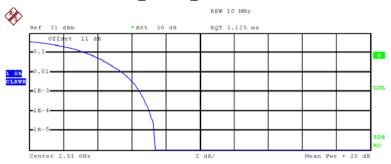
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.91 dBm
Peak 26.21 dBm
Crest 4.29 dB

10 % 2.20 dB 1 % 3.12 dB .1 % 3.68 dB .01 % 4.24 dB

Date: 17.JUN.2016 18:55:14

# QPSK\_20MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)

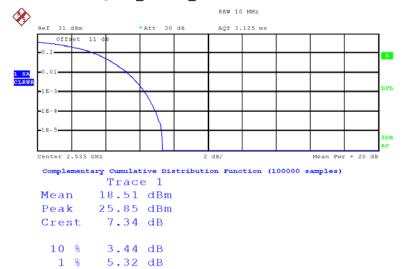
Trace 1
Mean 17.78 dBm
Peak 25.15 dBm
Crest 7.37 dB

10 % 3.40 dB

1 % 5.48 dB .1 % 6.48 dB .01 % 7.04 dB

Date: 17.JUN.2016 18:51:54

### QPSK\_20MHz\_FULL RB Middle Channel



Date: 17.JUN.2016 18:53:47

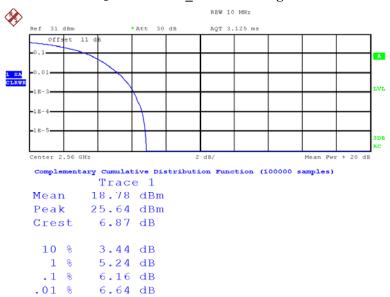
6.32 dB

6.96 dB

1 % .1 %

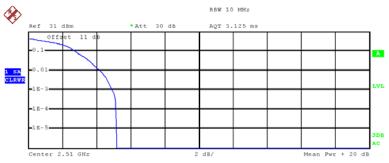
.01 %

### QPSK 20MHz\_FULL RB High Channel



Date: 17.JUN.2016 18:54:49

### 16QAM\_20MHz\_1RB\_Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.33 dBm
Peak 26.49 dBm
Crest 5.16 dB

10 % 2.80 dB 1 % 4.24 dB .1 % 4.92 dB .01 % 5.16 dB

Date: 17.JUN.2016 18:52:36

# 16QAM 20MHz\_1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)

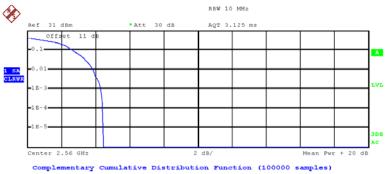
Trace 1
Mean 20.81 dBm
Peak 26.49 dBm
Crest 5.68 dB

10 % 2.92 dB 1 % 4.44 dB .1 % 5.28 dB .01 % 5.60 dB

Date: 17.JUN.2016 18:54:19

#### Report No.: RDG160701001-00C

### 16QAM 20MHz\_1RB High Channel



Trace 1 20.99 dBm Mean Peak 25.43 dBm Crest 4.43 dB

10 % 2.68 dB 3.88 dB 1 % 4.32 dB .1 % .01 % 4.44 dB

Date: 17.JUN.2016 18:55:20

# 16QAM 20MHz\_FULL RB Low Channel



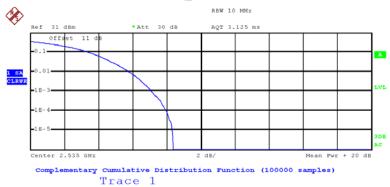
Complementary Cumulative Distribution Function (100000 samples)

Trace 1 Mean 16.99 dBm 25.43 dBm Peak 8.44 dB Crest 10 % 3.48 dB

1 % 5.88 dB 7.16 dB .1 % .01 % 8.04 dB

Date: 17.JUN.2016 18:52:12

### 16QAM 20MHz\_FULL RB Middle Channel

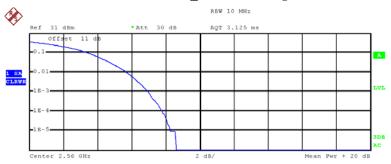


Mean 17.54 dBm Peak 25.92 dBm Crest 8.38 dB

10 % 3.52 dB 1 % 5.80 dB .1 % 7.12 dB .01 % 7.96 dB

Date: 17.JUN.2016 18:53:53

# 16QAM 20MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.81 dBm
Peak 26.42 dBm
Crest 8.61 dB

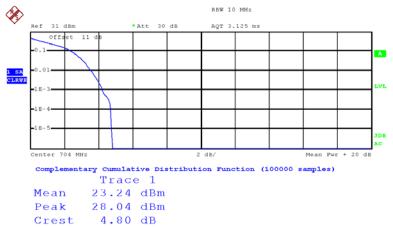
10 % 3.52 dB

1 % 5.72 dB .1 % 7.00 dB .01 % 7.80 dB

Date: 17.JUN.2016 18:54:57

# **LTE Band 12 (PART 27)**

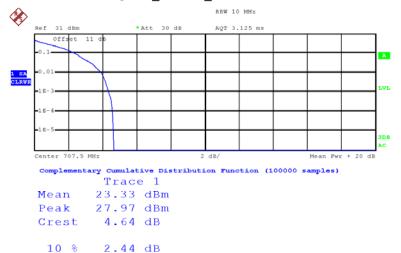
### QPSK\_10MHz\_1RB\_Low Channel



10 % 2.44 dB 1 % 3.60 dB .1 % 4.24 dB .01 % 4.72 dB

Date: 17.JUN.2016 18:00:16

#### QPSK 10MHz 1RB Middle Channel



Date: 17.JUN.2016 18:01:04

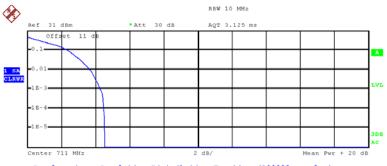
3.92 dB 4.36 dB

4.60 dB

1 %

.1 %

### QPSK\_10MHz\_1RB High Channel



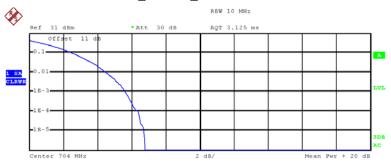
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 23.29 dBm
Peak 27.83 dBm
Crest 4.54 dB

10 % 2.40 dB 1 % 3.68 dB .1 % 4.28 dB .01 % 4.48 dB

Date: 17.JUN.2016 18:01:52

# QPSK\_10MHz\_FULL RB Low Channel



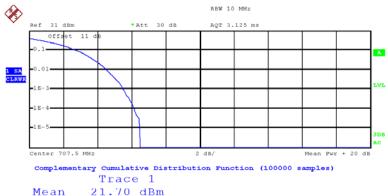
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.61 dBm
Peak 28.39 dBm
Crest 6.78 dB

10 % 2.56 dB 1 % 4.52 dB .1 % 5.64 dB .01 % 6.40 dB

Date: 17.JUN.2016 17:59:56

### QPSK\_10MHz\_FULL RB Middle Channel

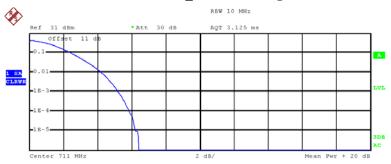


Mean 21.70 dBm Peak 28.18 dBm Crest 6.48 dB

10 % 2.84 dB 1 % 4.56 dB .1 % 5.52 dB .01 % 6.16 dB

Date: 17.JUN.2016 18:00:47

### QPSK 10MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

Mean 21.82 dBm
Peak 28.25 dBm
Crest 6.43 dB

10 % 2.48 dB
1 % 4.24 dB
.1 % 5.24 dB

5.88 dB

Date: 17.JUN.2016 18:01:37

.01 %

### 16QAM\_10MHz\_1RB\_Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 20.25 dBm
Peak 27.39 dBm
Crest 7.14 dB

10 % 3.36 dB 1 % 5.36 dB .1 % 6.36 dB .01 % 6.88 dB

Date: 16.MAY.2016 14:24:28

# 16QAM 10MHz\_1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

Mean 22.29 dBm
Peak 28.32 dBm
Crest 6.03 dB

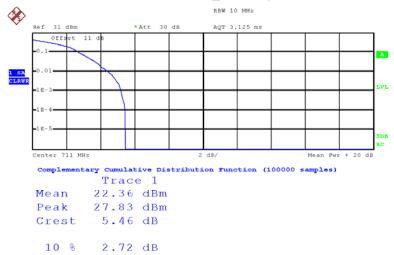
10 % 2.84 dB
1 % 4.76 dB
.1 % 5.52 dB

6.00 dB

Date: 17.JUN.2016 18:01:13

.01 %

### 16QAM 10MHz\_1RB High Channel



Date: 17.JUN.2016 18:01:58

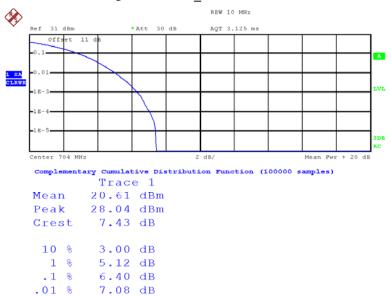
4.44 dB 5.20 dB

5.44 dB

1 %

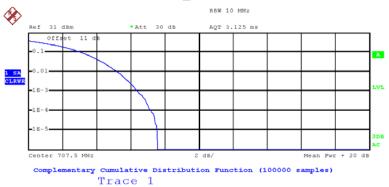
.1 %

# 16QAM 10MHz\_FULL RB Low Channel



Date: 17.JUN.2016 18:00:04

### 16QAM 10MHz\_FULL RB Middle Channel



Mean 20.67 dBm Peak 28.25 dBm Crest 7.58 dB

10 % 3.20 dB 1 % 5.24 dB .1 % 6.44 dB .01 % 7.20 dB

Date: 17.JUN.2016 18:00:54

# 16QAM 10MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

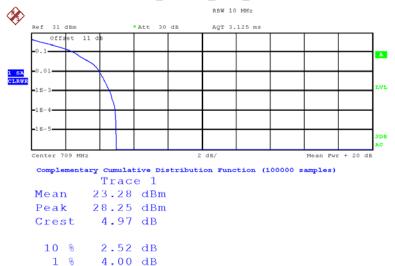
Trace 1
Mean 20.80 dBm
Peak 28.53 dBm
Crest 7.74 dB

1 % 4.92 dB .1 % 6.12 dB .01 % 7.12 dB

Date: 17.JUN.2016 18:01:42

### **LTE Band 17 (PART 27)**

### QPSK\_10MHz\_1RB\_Low Channel



Date: 17.JUN.2016 18:02:55

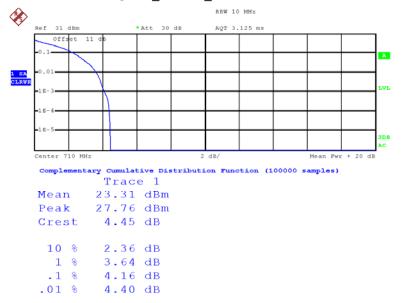
4.64 dB

4.92 dB

.1 %

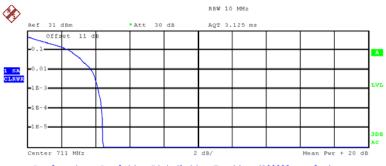
.01 %

#### QPSK 10MHz 1RB Middle Channel



Date: 17.JUN.2016 18:03:54

### QPSK\_10MHz\_1RB High Channel



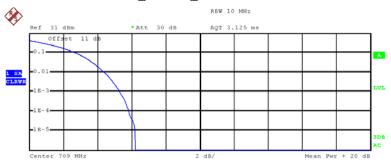
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 23.25 dBm
Peak 27.69 dBm
Crest 4.43 dB

10 % 2.48 dB 1 % 3.76 dB .1 % 4.16 dB .01 % 4.36 dB

Date: 17.JUN.2016 18:04:33

# QPSK\_10MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.81 dBm
Peak 28.04 dBm
Crest 6.23 dB

10 % 2.80 dB 1 % 4.40 dB .1 % 5.32 dB .01 % 5.84 dB

Date: 17.JUN.2016 18:02:36

### QPSK\_10MHz\_FULL RB Middle Channel



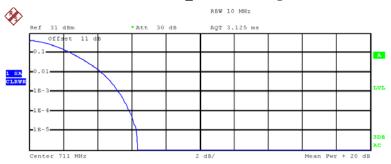
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.82 dBm
Peak 28.04 dBm
Crest 6.22 dB

10 % 2.64 dB 1 % 4.28 dB .1 % 5.12 dB .01 % 5.64 dB

Date: 17.JUN.2016 18:03:38

### QPSK 10MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

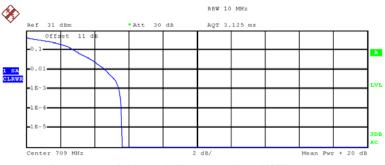
Trace 1
Mean 21.83 dBm
Peak 28.18 dBm
Crest 6.35 dB

10 % 2.48 dB

1 % 4.24 dB .1 % 5.24 dB .01 % 5.88 dB

Date: 17.JUN.2016 18:04:18

### 16QAM\_10MHz\_1RB\_Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.31 dBm
Peak 27.90 dBm
Crest 5.59 dB

10 % 2.84 dB 1 % 4.64 dB .1 % 5.44 dB .01 % 5.56 dB

Date: 17.JUN.2016 18:03:02

# 16QAM 10MHz\_1RB Middle Channel



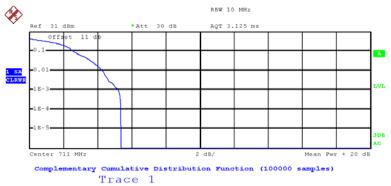
Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.31 dBm
Peak 27.97 dBm
Crest 5.65 dB

10 % 2.76 dB 1 % 4.40 dB .1 % 5.24 dB .01 % 5.60 dB

Date: 17.JUN.2016 18:03:58

### 16QAM 10MHz\_1RB High Channel

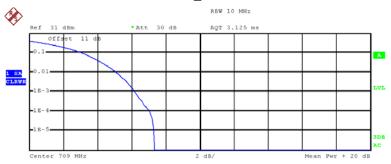


Mean 22.52 dBm Peak 27.90 dBm Crest 5.38 dB

10 % 2.64 dB 1 % 4.32 dB .1 % 5.24 dB .01 % 5.40 dB

Date: 17.JUN.2016 18:04:38

# 16QAM 10MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 20.78 dBm
Peak 28.11 dBm
Crest 7.33 dB

10 % 3.16 dB 1 % 5.12 dB .1 % 6.20 dB .01 % 7.08 dB

Date: 17.JUN.2016 18:02:44

### 16QAM 10MHz\_FULL RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 20.79 dBm
Peak 28.39 dBm
Crest 7.60 dB

10 % 3.04 dB 1 % 5.00 dB .1 % 6.20 dB .01 % 6.96 dB

Date: 17.JUN.2016 18:03:44

# 16QAM 10MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 20.81 dBm
Peak 28.67 dBm
Crest 7.86 dB

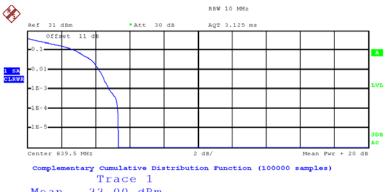
10 % 2.96 dB
1 % 4.92 dB

.1 % 6.16 dB .01 % 7.00 dB

Date: 17.JUN.2016 18:04:23

### LTE Band 20 (PART 22H)

### QPSK\_15MHz\_1RB\_Low Channel

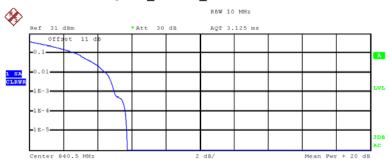


Mean 22.00 dBm Peak 27.33 dBm Crest 5.34 dB

10 % 2.84 dB 1 % 4.20 dB .1 % 4.84 dB .01 % 5.32 dB

Date: 17.JUN.2016 18:06:35

#### QPSK 15MHz 1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

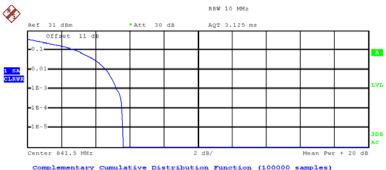
Mean 21.96 dBm
Peak 27.69 dBm
Crest 5.72 dB

10 % 2.76 dB
1 % 4.48 dB
.1 % 5.00 dB

.01 % 5.64 dB

Date: 17.JUN.2016 18:07:24

### QPSK\_15MHz\_1RB High Channel



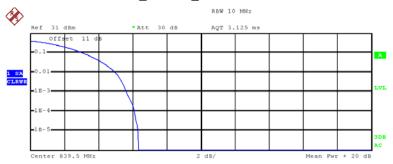
Complementary Cumulative Distribution Function (100000 samples)

Trace 1 21.99 dBm Mean Peak 27.62 dBm Crest 5.63 dB

10 % 2.88 dB 1 % 4.64 dB .1 % 5.24 dB 5.56 dB .01 %

Date: 17.JUN.2016 18:08:12

# QPSK\_15MHz\_FULL RB Low Channel



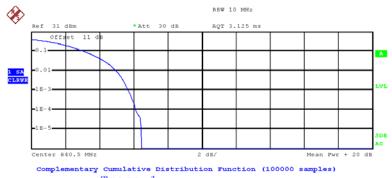
Complementary Cumulative Distribution Function (100000 samples)

Trace 1 Mean 18.73 dBm 25.08 dBm Peak 6.34 dB Crest

10 % 3.12 dB 1 % 4.96 dB .1 % 5.64 dB .01 % 6.12 dB

Date: 17.JUN.2016 18:06:07

### QPSK\_15MHz\_FULL RB Middle Channel

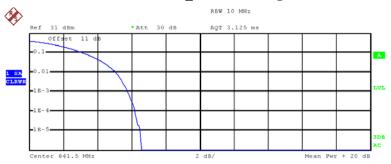


Trace 1
Mean 18.69 dBm
Peak 25.15 dBm
Crest 6.46 dB

10 % 3.16 dB 1 % 5.00 dB .1 % 5.72 dB .01 % 6.12 dB

Date: 17.JUN.2016 18:07:07

# QPSK 15MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

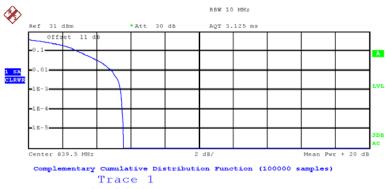
Mean 18.72 dBm
Peak 25.29 dBm
Crest 6.56 dB

10 % 3.20 dB
1 % 5.08 dB
.1 % 5.80 dB

.01 % 6.20 dB

Date: 17.JUN.2016 18:07:56

### 16QAM\_15MHz\_1RB\_Low Channel

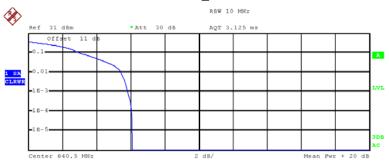


Trace 1
Mean 21.26 dBm
Peak 26.84 dBm
Crest 5.58 dB

10 % 2.96 dB 1 % 4.88 dB .1 % 5.40 dB .01 % 5.52 dB

Date: 17.JUN.2016 18:06:41

# 16QAM 15MHz\_1RB Middle Channel



Complementary Cumulative Distribution Function (100000 samples)

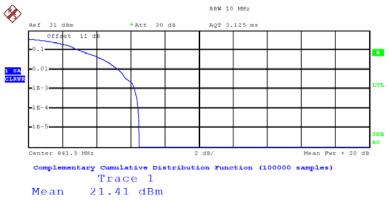
Trace 1
Mean 21.25 dBm
Peak 27.33 dBm
Crest 6.09 dB

10 % 3.08 dB

1 % 5.44 dB .1 % 5.84 dB .01 % 6.08 dB

Date: 17.JUN.2016 18:07:29

### 16QAM 15MHz\_1RB High Channel

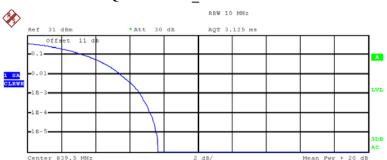


Peak 27.90 dBm Crest 6.48 dB

10 % 3.04 dB 1 % 5.28 dB .1 % 6.24 dB .01 % 6.44 dB

Date: 17.JUN.2016 18:08:19

# 16QAM 15MHz\_FULL RB Low Channel



Complementary Cumulative Distribution Function (100000 samples)  ${\tt Trace} \quad 1$ 

Mean 17.77 dBm
Peak 25.43 dBm
Crest 7.66 dB

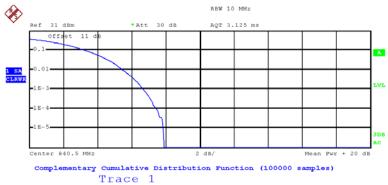
10 % 3.36 dB
1 % 5.48 dB
.1 % 6.64 dB

7.20 dB

Date: 17.JUN.2016 18:06:15

.01 %

### 16QAM 15MHz\_FULL RB Middle Channel



Mean 17.73 dBm Peak 25.64 dBm Crest 7.91 dB

10 % 3.36 dB 1 % 5.48 dB .1 % 6.72 dB .01 % 7.48 dB

Date: 17.JUN.2016 18:07:13

# 16QAM 15MHz\_FULL RB High Channel



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 17.72 dBm
Peak 26.06 dBm
Crest 8.35 dB

10 % 3.40 dB

1 % 5.60 dB .1 % 6.88 dB

.01 % 7.72 dB

Date: 17.JUN.2016 18:08:02

1880.000

1880.000

1880.000

V

Η

V

87.21

87.34

84.84

15.8

15.7

13.4

		Desir	Substituted Method			Ab and the							
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)					
GSM 850 Middle Channel													
836.600	Н	95.29	20.4	0.0	1	19.4	38.45	19.1					
836.600	V	104.23	32.4	0.0	1	31.4	38.45	7.1					
EGPRS 850 Middle Channel													
836.600	Н	89.56	14.6	0.0	1	13.6	38.45	24.9					
836.600	V	98.15	26.4	0.0	1	25.4	38.45	13.1					
			WCDMA	Band V Mido	lle Channel								
836.600	Н	85.13	10.2	0.0	1	9.2	38.45	29.3					
836.600	V	94.59	22.8	0.0	1	21.8	38.45	16.7					
PCS 1900 Middle Channel													
1880.000	Н	90.42	18.8	11.7	1.4	29.1	33.0	3.9					
1880.000	V	88.14	16.7	11.7	1.4	27.0	33.0	6.0					
EGPRS 1900 Middle Channel													
1880.000	Н	89.83	18.2	11.7	1.4	28.5	33.0	4.5					

11.7

WCDMA Band II Middle Channel

11.7

11.7

1.4

1.4

Report No.: RDG160701001-00C

26.1

26.0

23.7

33.0

33.0

33.0

6.9

7.0

9.3

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Abaslata		
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
		<u>'</u>	QPSK 1.4	MHz Midd	le Channel			
1880.000	Н	86.51	14.9	11.7	1.4	25.2	33.00	7.8
1880.000	V	82.22	10.8	11.7	1.4	21.1	33.00	11.9
			QPSK 3	MHz Middl	e Channel			
1880.000	Н	84.35	12.8	11.7	1.4	23.1	33.00	9.9
1880.000	V	80.03	8.6	11.7	1.4	18.9	33.00	14.1
			QPSK 5	MHz Middl	e Channel			
1880.000	Н	82.98	11.4	11.7	1.4	21.7	33.00	11.3
1880.000	V	79.01	7.6	11.7	1.4	17.9	33.00	15.1
		<b>'</b>	QPSK 10	MHz Midd	le Channel			•
1880.000	Н	82.05	10.5	11.7	1.4	20.8	33.00	12.2
1880.000	V	78.30	6.8	11.7	1.4	17.1	33.00	15.9
			QPSK 15	MHz Midd	le Channel	<u> </u>		l
1880.000	Н	83.57	12	11.7	1.4	22.3	33.00	10.7
1880.000	V	79.31	7.9	11.7	1.4	18.2	33.00	14.8
			QPSK 20	MHz Midd	le Channel	<u> </u>		l
1880.000	Н	83.66	12.1	11.7	1.4	22.4	33.00	10.6
1880.000	V	79.63	8.2	11.7	1.4	18.5	33.00	14.5
		•	16QAM 1.	4 MHz Mid	dle Channel			•
1880.000	Н	86.74	15.1	11.7	1.4	25.4	33.00	7.6
1880.000	V	82.43	11	11.7	1.4	21.3	33.00	11.7
			16QAM 3	MHz Midd	lle Channel	<u> </u>		l
1880.000	Н	85.15	13.6	11.7	1.4	23.9	33.00	9.1
1880.000	V	80.84	9.4	11.7	1.4	19.7	33.00	13.3
			16QAM 5	MHz Midd	lle Channel	<u> </u>		
1880.000	Н	83.96	12.4	11.7	1.4	22.7	33.00	10.3
1880.000	V	79.65	8.2	11.7	1.4	18.5	33.00	14.5
		•	16QAM 10	0 MHz Mide	dle Channel			•
1880.000	Н	82.13	10.5	11.7	1.4	20.8	33.00	12.2
1880.000	V	78.14	6.7	11.7	1.4	17.0	33.00	16.0
		•	16QAM 15	MHz Mido	lle Channel	· '		-
1880.000	Н	84.06	12.5	11.7	1.4	22.8	33.00	10.2
1880.000	V	79.96	8.5	11.7	1.4	18.8	33.00	14.2
		•	16QAM 20	0 MHz Mid	dle Channel	· '		-
1880.000	Н	84.37	12.8	11.7	1.4	23.1	33.00	9.9

80.00

8.5

11.7

1.4

18.8

1880.000

14.2

33.00

Report No.: RDG160701001-00C

			Sı	ıbstituted Me	thod			
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			QPSK 1.4	MHz Midd	lle Channel			
1732.500	Н	89.28	16.3	10.9	1.4	25.8	30.00	4.2
1732.500	V	85.28	12	10.9	1.4	21.5	30.00	8.5
			QPSK 3	MHz Middl	e Channel			
1732.500	Н	89.61	16.6	10.9	1.4	26.1	30.00	3.9
1732.500	V	85.94	12.6	10.9	1.4	22.1	30.00	7.9
			QPSK 5	MHz Middl	e Channel			
1732.500	Н	89.47	16.5	10.9	1.4	26.0	30.00	4.0
1732.500	V	85.90	12.6	10.9	1.4	22.1	30.00	7.9
			QPSK 10	MHz Midd	le Channel			
1732.500	Н	88.83	15.8	10.9	1.4	25.3	30.00	4.7
1732.500	V	85.14	11.8	10.9	1.4	21.3	30.00	8.7
	QPSK 15 MHz Middle Channel							
1732.500	Н	89.14	16.1	10.9	1.4	25.6	30.00	4.4
1732.500	V	85.01	11.7	10.9	1.4	21.2	30.00	8.8
			QPSK 20	MHz Midd	le Channel			
1732.500	Н	89.96	17	10.9	1.4	26.5	30.00	3.5
1732.500	V	86.01	12.7	10.9	1.4	22.2	30.00	7.8
			16QAM 1.	4 MHz Mid	dle Channel			
1732.500	Н	89.00	16	10.9	1.4	25.5	30.00	4.5
1732.500	V	85.39	12.1	10.9	1.4	21.6	30.00	8.4
			16QAM 3	MHz Midd	lle Channel			
1732.500	Н	89.53	16.5	10.9	1.4	26.0	30.00	4.0
1732.500	V	86.05	12.7	10.9	1.4	22.2	30.00	7.8
			16QAM 5	MHz Midd	lle Channel			
1732.500	Н	89.40	16.4	10.9	1.4	25.9	30.00	4.1
1732.500	V	85.72	12.4	10.9	1.4	21.9	30.00	8.1
			16QAM 10	MHz Mid	dle Channel			
1732.500	Н	89.76	16.8	10.9	1.4	26.3	30.00	3.7
1732.500	V	85.33	12	10.9	1.4	21.5	30.00	8.5
			16QAM 15	MHz Mido	lle Channel			
1732.500	Н	89.43	16.4	10.9	1.4	25.9	30.00	4.1
1732.500	V	85.33	12	10.9	1.4	21.5	30.00	8.5
			16QAM 20	MHz Mid	dle Channel			
1732.500	Н	89.97	17	10.9	1.4	26.5	30.00	3.5
1732.500	V	86.00	12.7	10.9	1.4	22.2	30.00	7.8

Report No.: RDG160701001-00C

90.10

86.12

89.61

85.46

88.81

85.25

18.9

16.4

18.4

15.7

17.6

15.5

Η

Η

V

Η

V

2535.000

2535.000

2535.000

2535.000

2535.000

2535.000

		Receiver	St	ıbstituted Me	thod	Absolute				
Frequency (MHz)	Polar (H/V)	Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Level (dBm)	Limit (dBm)	Margin (dB)		
			QPSK 5	MHz Middl	e Channel					
2535.000	Н	88.72	17.5	13.1	2.5	28.1	33.00	4.9		
2535.000	V	85.29	15.5	13.1	2.5	26.1	33.00	6.9		
			QPSK 10	MHz Midd	le Channel					
2535.000	Н	90.22	19	13.1	2.5	29.6	33.00	3.4		
2535.000	V	85.90	16.2	13.1	2.5	26.8	33.00	6.2		
			QPSK 15	MHz Midd	le Channel					
2535.000	Н	89.53	18.3	13.1	2.5	28.9	33.00	4.1		
2535.000	V	86.38	16.6	13.1	2.5	27.2	33.00	5.8		
			QPSK 20	MHz Midd	le Channel					
2535.000	Н	89.06	17.9	13.1	2.5	28.5	33.00	4.5		
2535.000	V	85.33	15.6	13.1	2.5	26.2	33.00	6.8		
	16QAM 5 MHz Middle Channel									
2535.000	Н	89.14	17.9	13.1	2.5	28.5	33.00	4.5		
2535.000	V	85.11	15.4	13.1	2.5	26.0	33.00	7.0		
			16QAM 10	MHz Mid	dle Channel					

13.1

16QAM 15 MHz Middle Channel

13.1

13.1 16QAM 20 MHz Middle Channel

13.1

13.1

2.5

2.5

2.5

13.1

Report No.: RDG160701001-00C

29.5

27.0

29.0

26.3

28.2

26.1

33.00

33.00

33.00

33.00

33.00

33.00

3.5

6.0

4.0

6.7

4.8

6.9

LTE Band 12	
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		D	Sı	ıbstituted Me	thod	About 4		
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			QPSK 1.4	MHz Midd	lle Channel			
707.500	Н	92.88	16	0.0	0.9	15.1	34.77	19.7
707.500	V	99.07	24.7	0.0	0.9	23.8	34.77	11.0
			QPSK 3	MHz Middl	e Channel			
707.500	Н	91.03	14.2	0.0	0.9	13.3	34.77	21.5
707.500	V	97.91	23.5	0.0	0.9	22.6	34.77	12.2
			QPSK 5	MHz Middl	e Channel			
707.500	Н	93.25	16.4	0.0	0.9	15.5	34.77	19.3
707.500	V	97.59	23.2	0.0	0.9	22.3	34.77	12.5
			QPSK 10	MHz Midd	le Channel			
707.500	Н	91.82	15	0.0	0.9	14.1	34.77	20.7
707.500	V	93.46	19	0.0	0.9	18.1	34.77	16.7
			16QAM 1.	4 MHz Mid	dle Channel			
707.500	Н	91.81	15	0.0	0.9	14.1	34.77	20.7
707.500	V	98.41	24	0.0	0.9	23.1	34.77	11.7
			16QAM 3	MHz Midd	lle Channel			
707.500	Н	91.21	14.4	0.0	0.9	13.5	34.77	21.3
707.500	V	95.99	21.6	0.0	0.9	20.7	34.77	14.1
		•	16QAM 5	MHz Midd	lle Channel			
707.500	Н	92.15	15.3	0.0	0.9	14.4	34.77	20.4
707.500	V	97.65	23.2	0.0	0.9	22.3	34.77	12.5
		•	16QAM 10	MHz Mid	dle Channel			
707.500	Н	91.94	15.1	0.0	0.9	14.2	34.77	20.6
707.500	V	93.92	19.5	0.0	0.9	18.6	34.77	16.2

Report No.: RDG160701001-00C

# LTE Band 17

		Receiver	St	ıbstituted Me	thod	Absolute		
Frequency (MHz)	Polar (H/V)	Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Level (dBm)	Limit (dBm)	Margin (dB)
			QPSK 5	MHz Midd	e Channel			
710.000	Н	93.61	16.8	0.0	0.9	15.9	34.77	18.9
710.000	V	96.26	21.9	0.0	0.9	21.0	34.77	13.8
			QPSK 10	MHz Midd	le Channel			
710.000	Н	92.88	16.1	0.0	0.9	15.2	34.77	19.6
710.000	V	96.36	22	0.0	0.9	21.1	34.77	13.7
			16QAM 5	MHz Midd	le Channel			
710.000	Н	93.25	16.4	0.0	0.9	15.5	34.77	19.3
710.000	V	97.15	22.8	0.0	0.9	21.9	34.77	12.9
16QAM 10 MHz Middle Channel								
710.000	Н	92.94	16.1	0.0	0.9	15.2	34.77	19.6
710.000	V	95.19	20.8	0.0	0.9	19.9	34.77	14.9

# LTE Band 20

		Receiver	Sı	ıbstituted Me	thod	Absolute			
Frequency (MHz)	Polar (H/V)	Reading (dBµV)	S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	
			QPSK 5	MHz Middl	e Channel				
840.500	Н	95.56	20.7	0.0	1	19.7	38.45	18.8	
840.500	V	98.37	26.6	0.0	1	25.6	38.45	12.9	
			QPSK 10	MHz Midd	le Channel				
840.500	Н	93.26	18.4	0.0	1	17.4	38.45	21.1	
840.500	V	98.31	26.6	0.0	1	25.6	38.45	12.9	
			QPSK 15	MHz Midd	le Channel				
840.500	Н	93.25	18.4	0.0	1	17.4	38.45	21.1	
840.500	V	97.99	26.2	0.0	1	25.2	38.45	13.3	
			16QAM 5	MHz Midd	lle Channel				
840.500	Н	94.28	19.4	0.0	1	18.4	38.45	20.1	
840.500	V	99.24	27.5	0.0	1	26.5	38.45	12.0	
	16QAM 10 MHz Middle Channel								
840.500	Н	93.21	18.3	0.0	1	17.3	38.45	21.2	
840.500	V	97.25	25.5	0.0	1	24.5	38.45	14.0	
	16QAM 15 MHz Middle Channel								
840.500	Н	93.15	18.3	0.0	1	17.3	38.45	21.2	
840.500	V	97.65	25.9	0.0	1	24.9	38.45	13.6	

Report No.: RDG160701001-00C

# FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53- OCCUPIED BANDWIDTH

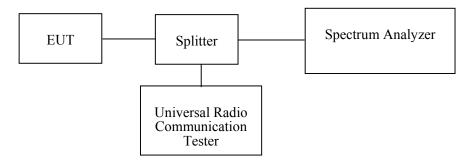
## **Applicable Standard**

FCC §2.1049, §22.917, §22.905, §24.238 and §27.53.

#### **Test Procedure**

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The 26 dB & 99% bandwidth was recorded.



## **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
R&S	Universal Radio Communication Tester	CMU200	109 038	2015-07-28	2016-07-27
R&S	Wideband Radio Communication Tester	CMW500	106891	2015-11-23	2016-11-23
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB- 00036	0E01201047	2016-05-06	2017-05-06
E-Microwave	Attenuator	EMCA10- 5RN	OE01203239	2016-05-08	2017-05-08
Pasternack	RF Coaxial Cable	RF-01	N/A	2016-05-06	2017-05-06
Pasternack	RF Coaxial Cable	RF-02	N/A	2016-05-06	2017-05-06
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2016-05-06	2017-05-06

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## **Test Data**

#### **Environmental Conditions**

Temperature:	30.6~32.1°C
Relative Humidity:	51~54%
ATM Pressure:	99.6~99.7 kPa

The testing was performed by Robin Zheng from 2016-07-12to 2016-07-18.

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

Band	Test Channel	Mode	99% Occupied Bandwidth (kHz)	26 dB Occupied Bandwidth (kHz)
Cellular		GSM	246.5	320.6
Centulai		EDGE 248.5		318.6
PCS		PCS	244.5	314.6
res		EDGE	254.5	318.6
WCDMA Band		Rel 99	4208.4	4849.7
	M	HSDPA	4248.5	4889.8
11		HSUPA	4248.5	4929.9
WCDMA Band		Rel 99		4909.8
		HSDPA	4228.5	4929.9
· ·		HSUPA	4228.5	4929.9

Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
		1.4		1.100	1.275
		3		2.741	3.102
	QPSK	5	M	4.549	5.074
		10	IVI	9.098	10.355
		15		13.527	15.174
		20		18.677	21.076
LTE		1.4		1.106	1.281
Band II		3		2.766	3.090
Build II	160AM	5	M	4.529	5.094
	16QAM	10	IVI	9.098	10.275
		15		13.527	15.114
		20		18.677	21.156

Report No.: RDG160701001-00C

Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
		1.4		1.100	1.276
		3		2.754	3.125
	QPSK	5	М	4.549	5.073
		10		9.098	10.289
		15		13.587	15.020
LTE		20		18.758	21.150
Band IV		1.4		1.112	1.294
		3		2.754	3.101
	160AM	5	М	4.549	5.113
	16QAM	10	M	9.138	10.301
		15		13.527	14.996
		20		18.677	21.198

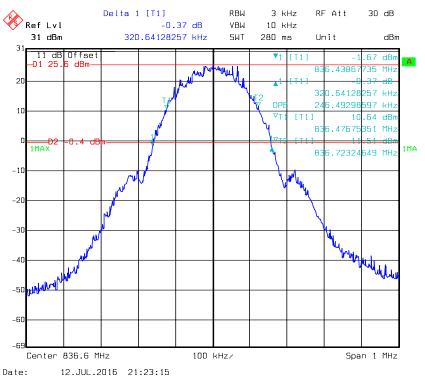
Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
		5		4.549	5.063
	QPSK	10	M M	9.138	10.344
		15		13.587	15.003
LTE		20		18.757	21.286
Band VII		5		4.549	5.083
		10		9.138	10.223
	16QAM	15		13.587	14.925
		20		18.838	21.197

Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
LTE Band XII	QPSK	1.4	M	1.100	1.275
		3		2.766	3.119
		5		4.549	5.115
		10		9.138	10.335
	16QAM	1.4	М	1.112	1.293
		3		2.778	3.123
		5		4.549	5.129
		10		9.098	10.295

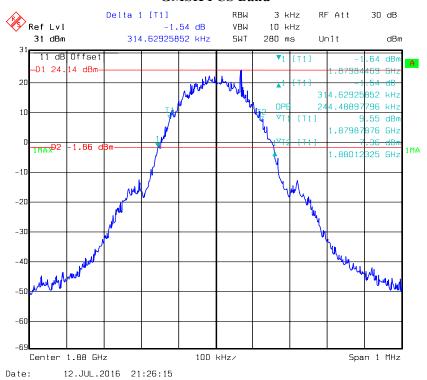
Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
LTE Band XVII	QPSK	5	M	4.549	5.029
		10		9.058	10.163
	16QAM	5	M	4.549	5.087
		10		9.058	10.199

Band	Test Modulation	Test Bandwidth (MHz)	Test Channel	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
LTE Band XX	QPSK	5	M	4.549	5.086
		10		9.138	10.343
		15		13.587	15.000
	16QAM	5	М	4.549	5.108
		10		9.138	10.343
		15		13.647	14.946

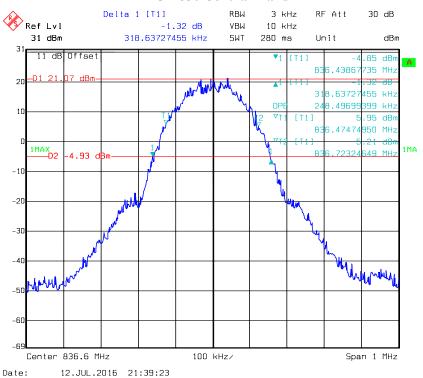
#### **GMSK 850 Cellular Band**



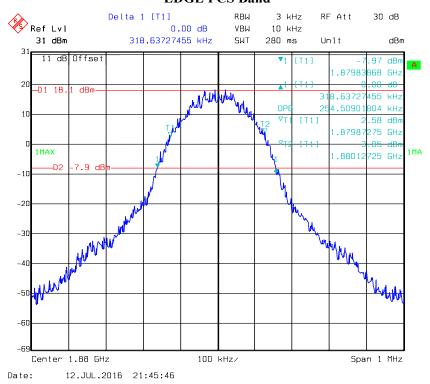
#### **GMSK PCS Band**



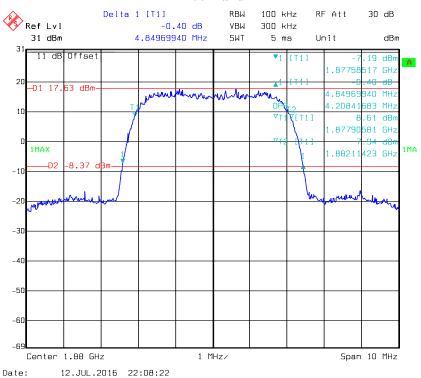
#### **EDGE 850 Cellular Band**



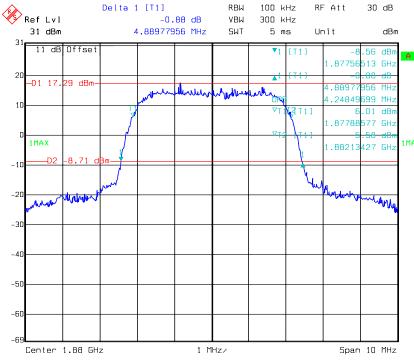
#### **EDGE PCS Band**



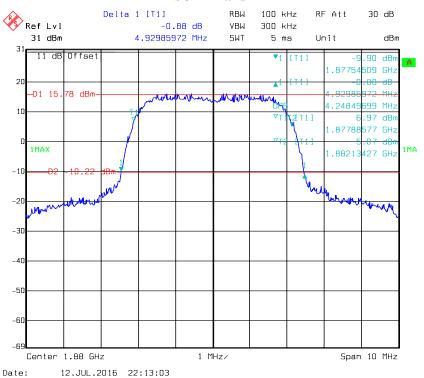
#### **REL99 Band II**



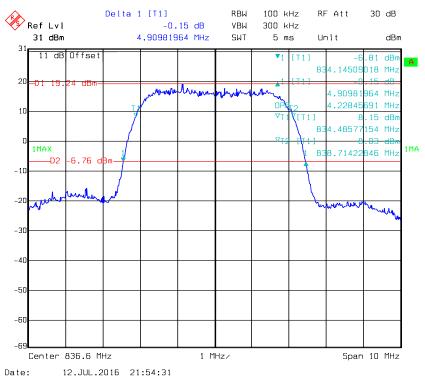
# **HSDPA Band II**



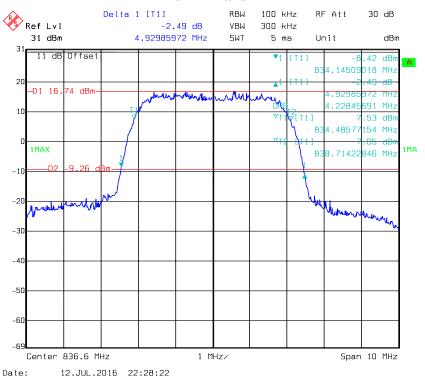
#### **HSUPA Band II**



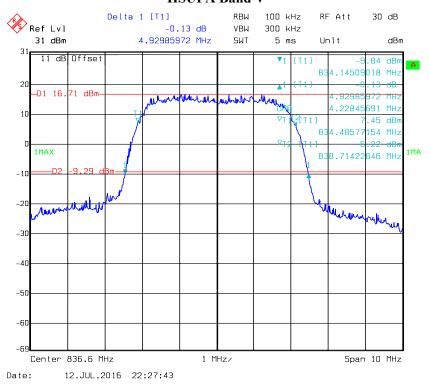
#### **REL99 Band V**



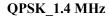
#### **HSDPA Band V**

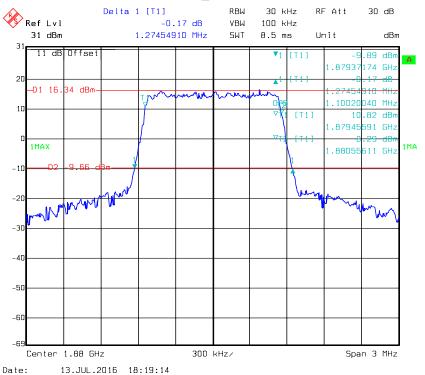


#### **HSUPA Band V**

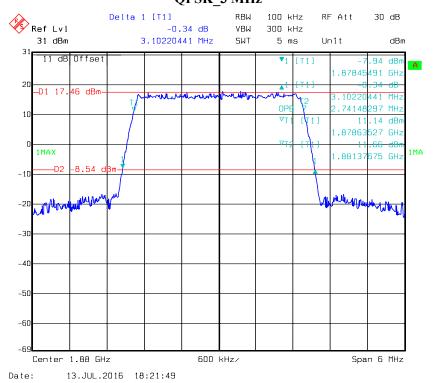


#### LTE Band II

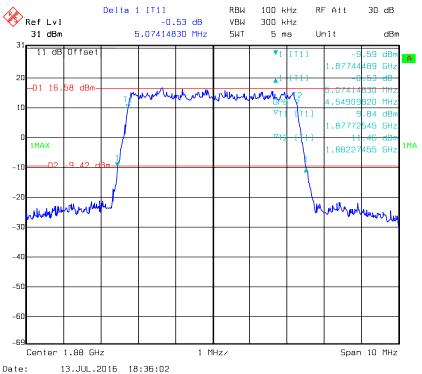




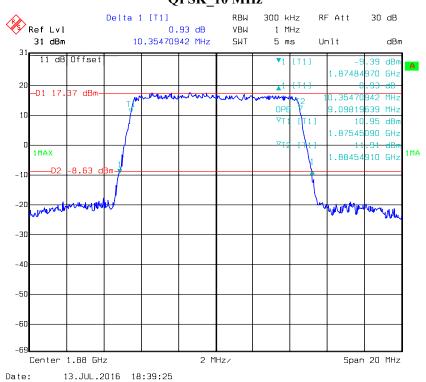
# QPSK 3 MHz



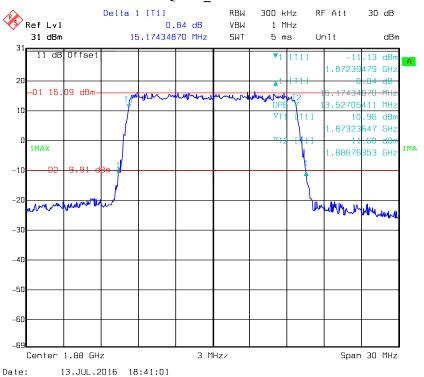
#### QPSK\_5 MHz



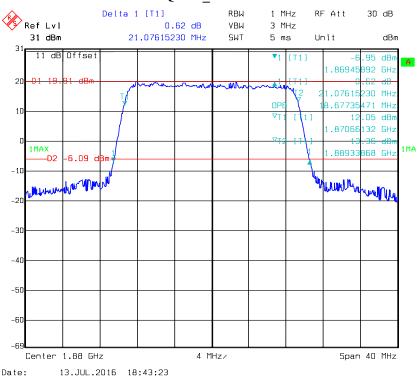
# QPSK\_10 MHz



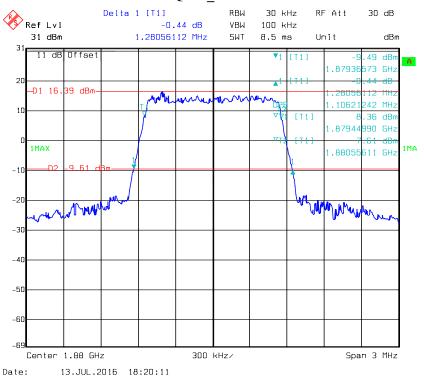
#### QPSK\_15 MHz



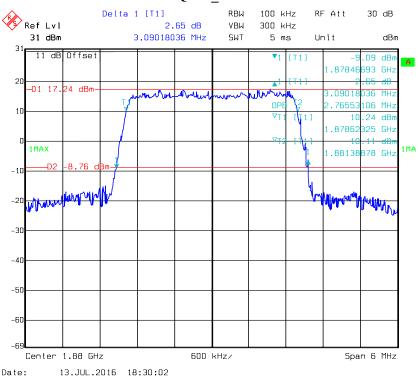
#### QPSK\_20 MHz



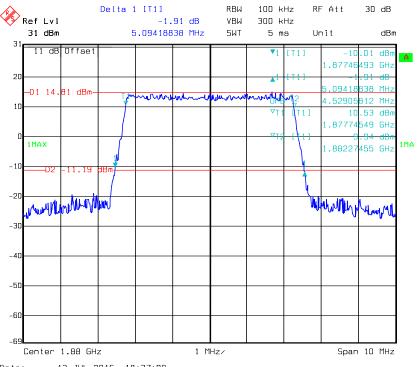
#### 16QAM\_1.4 MHz



#### 16QAM\_3 MHz

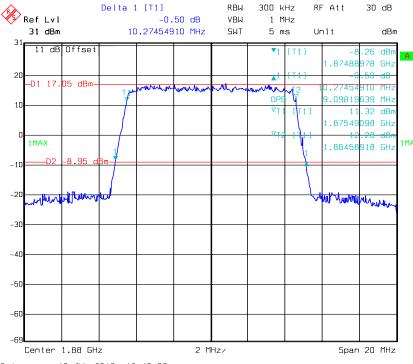


#### 16QAM\_5 MHz



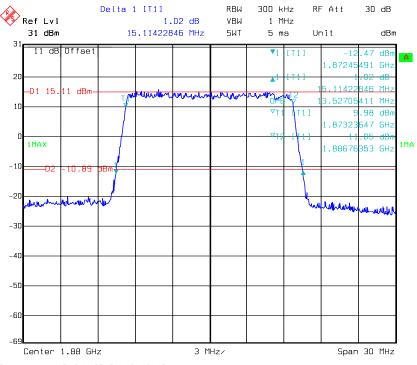
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#### 16QAM\_10 MHz



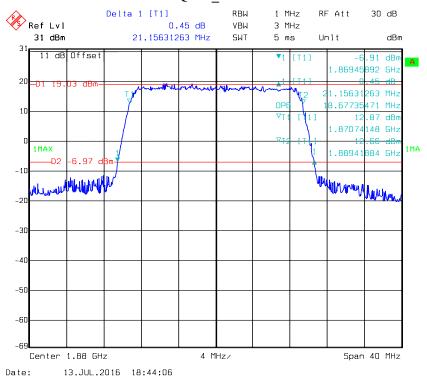
Date: 13.JUL.2016 18:40:09

#### 16QAM\_15 MHz

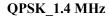


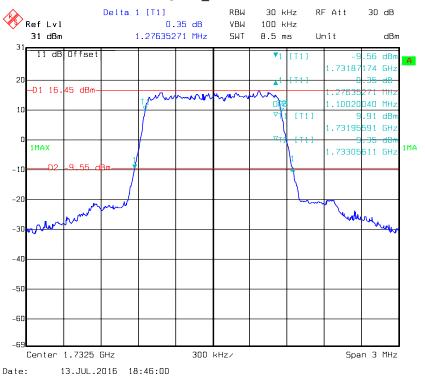
#### Date: 13.JUL.2016 18:42:10

#### 16QAM\_20 MHz

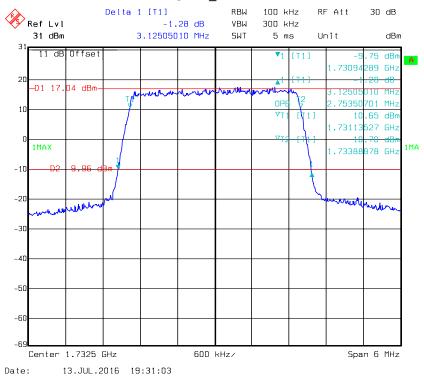


#### LTE Band IV





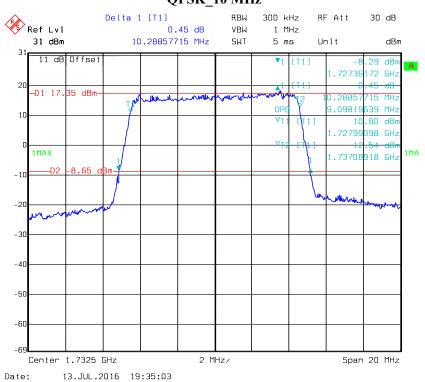
#### **QPSK 3 MHz**



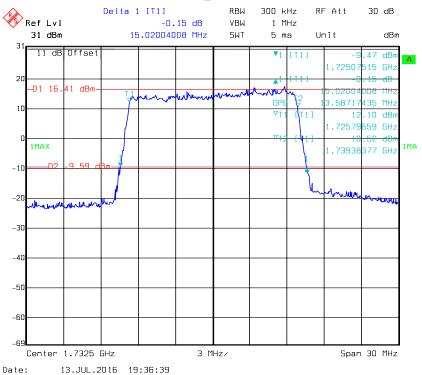
#### QPSK\_5 MHz



# QPSK\_10 MHz

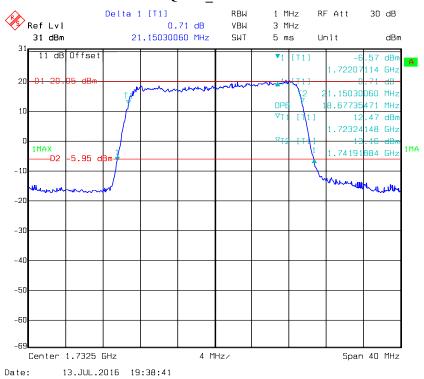


#### QPSK\_15 MHz

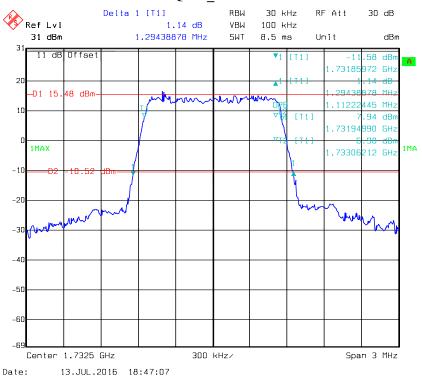


#### 15.302.2010 15.30.33

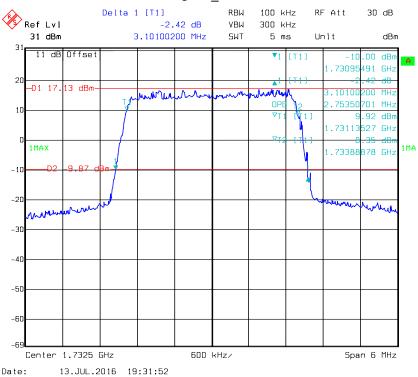
#### QPSK\_20 MHz



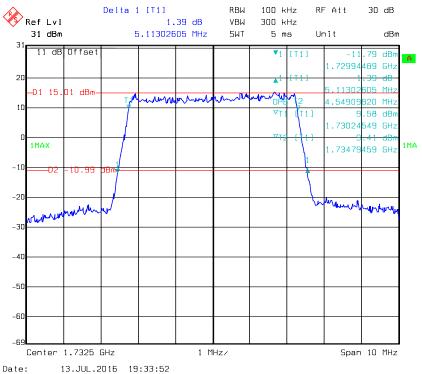
#### 16QAM\_1.4 MHz



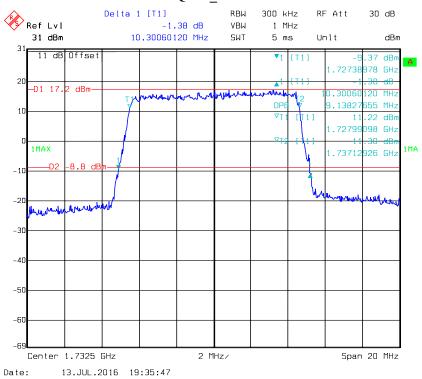
#### 16QAM\_3 MHz



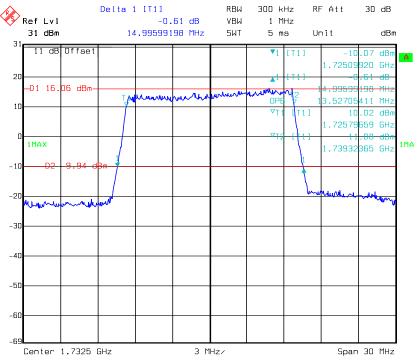
#### **16QAM\_5 MHz**



#### 16QAM\_10 MHz

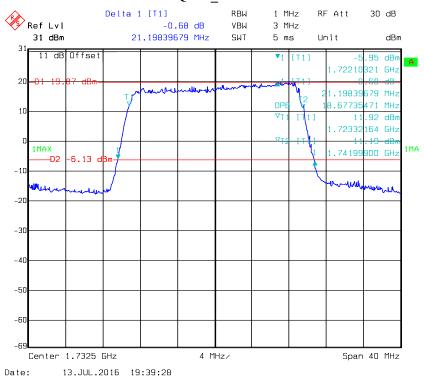


#### 16QAM\_15 MHz



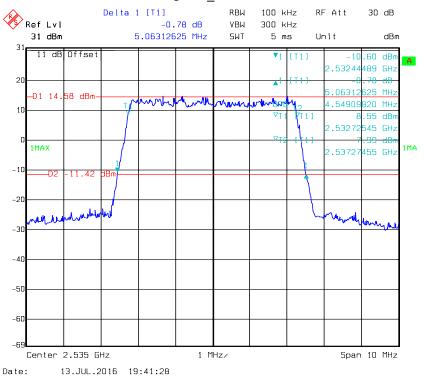
#### Date: 13.JUL.2016 19:37:30

#### 16QAM\_20 MHz

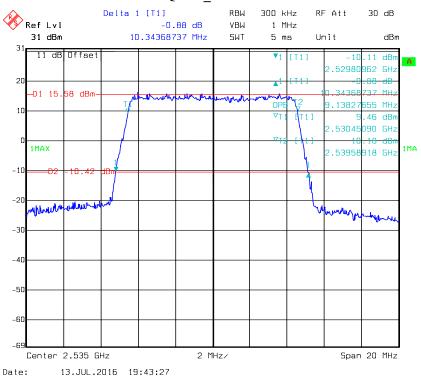


#### LTE Band VII

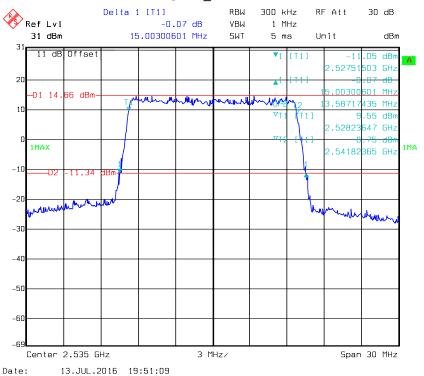




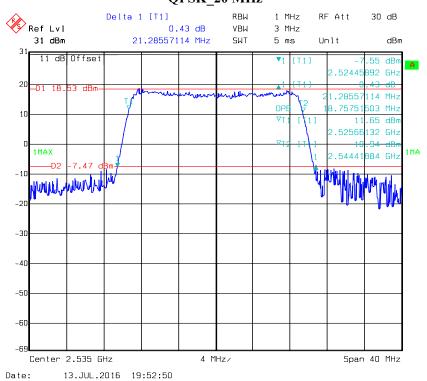
## QPSK\_10 MHz



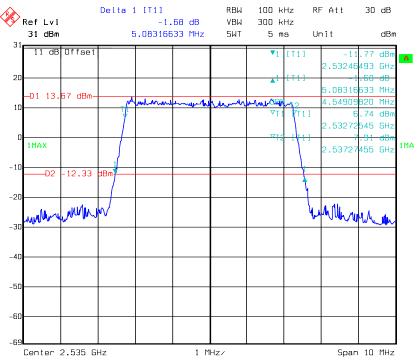
#### QPSK\_15 MHz



# QPSK\_20 MHz

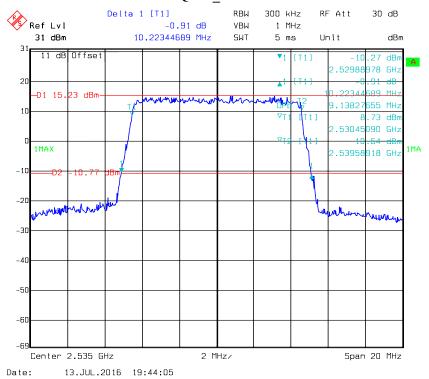


#### **16QAM\_5 MHz**

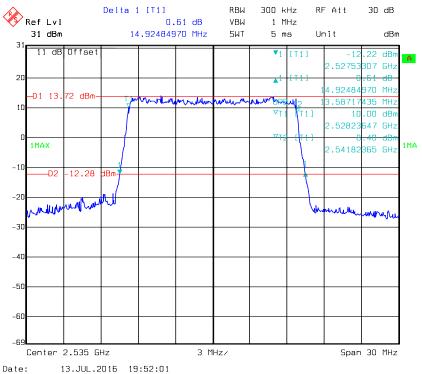


Date: 13.JUL.2016 19:42:22

#### 16QAM\_10 MHz

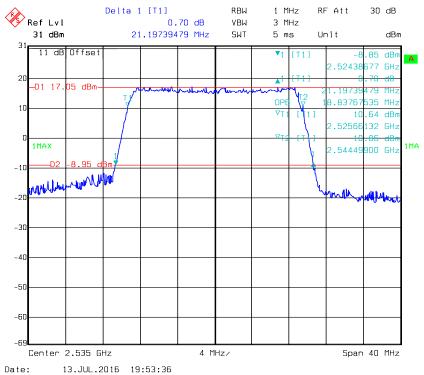


#### 16QAM\_15 MHz



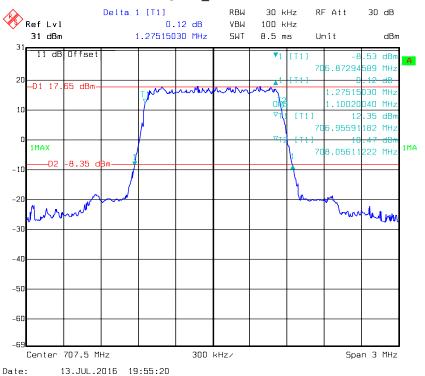
#### e. 13.30E.2010 13.32.01

## 16QAM\_20 MHz

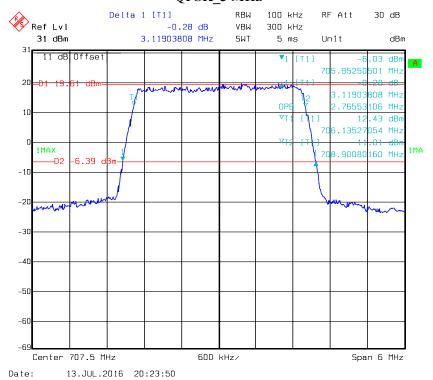


#### LTE Band 12:

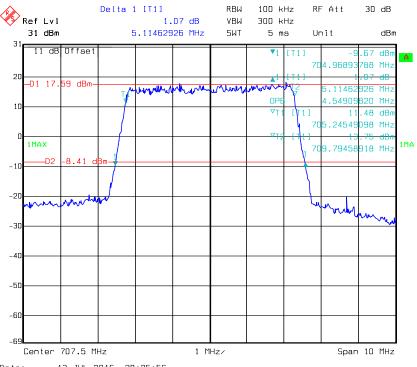
## QPSK\_1.4 MHz



#### QPSK 3 MHz

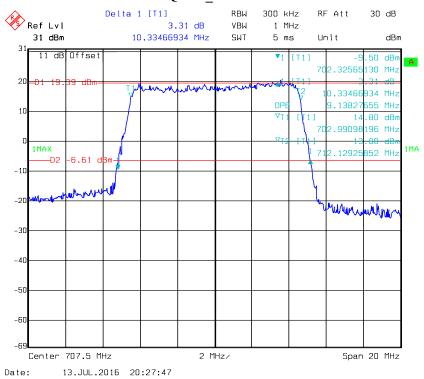


#### QPSK\_5 MHz

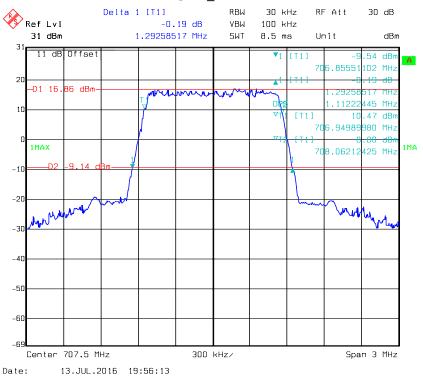


#### Date: 13.JUL.2016 20:25:56

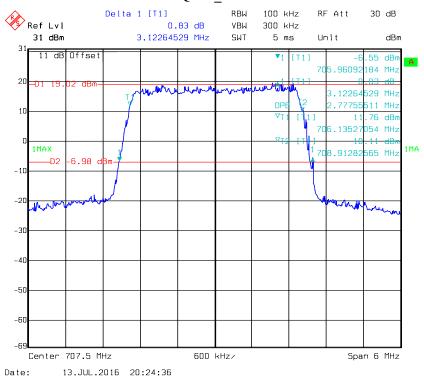
#### QPSK\_10 MHz



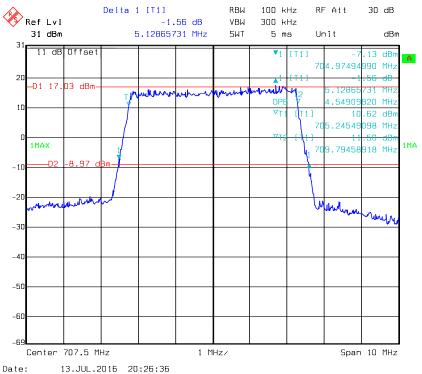
#### 16QAM\_1.4 MHz



#### 16QAM\_3 MHz

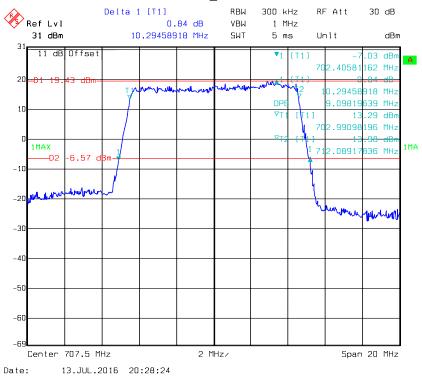


#### **16QAM\_5 MHz**



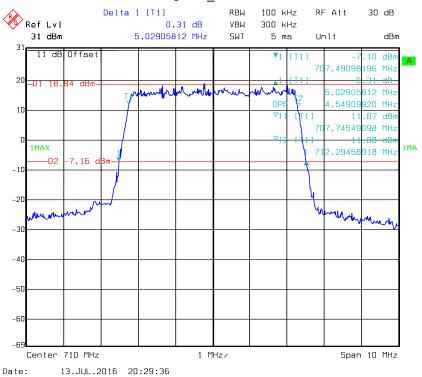
#### 1(OAM 10 M

#### 16QAM\_10 MHz

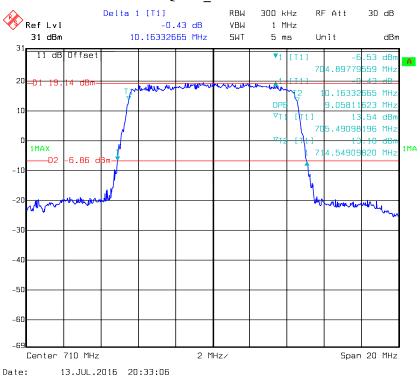


#### LTE Band 17:

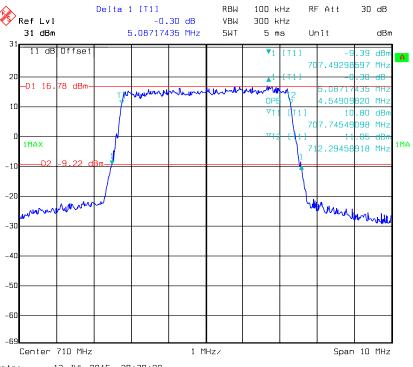




## QPSK\_10 MHz

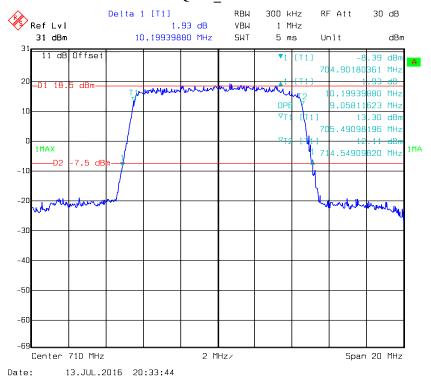


#### **16QAM\_5 MHz**



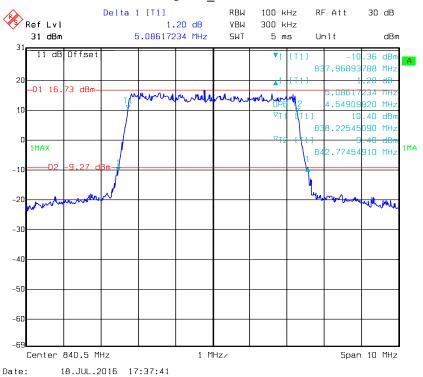
Date: 13.JUL.2016 20:30:20

#### 16QAM\_10 MHz

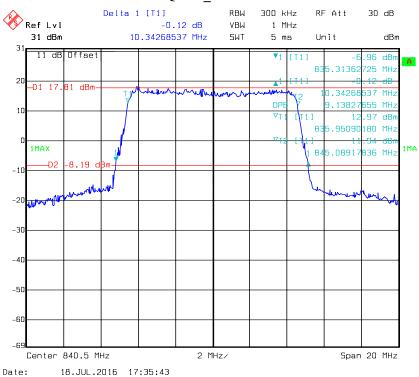


#### LTE Band 20:

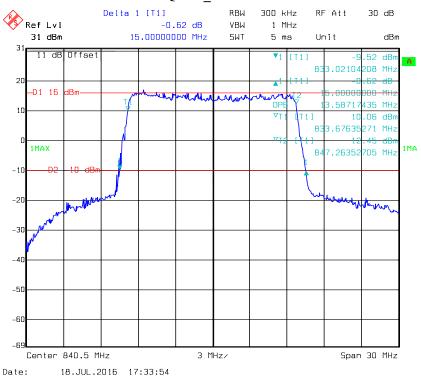




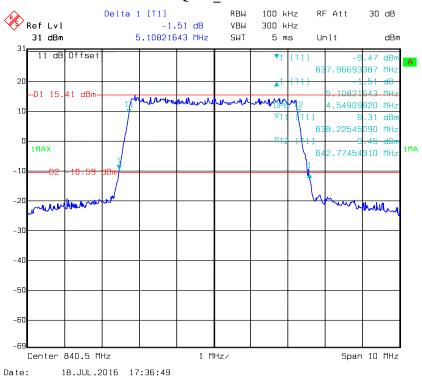
## QPSK\_10 MHz



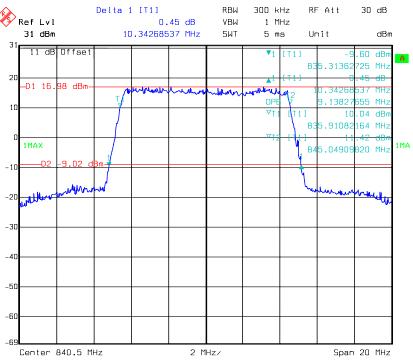
#### QPSK\_15 MHz



## 16QAM\_5 MHz

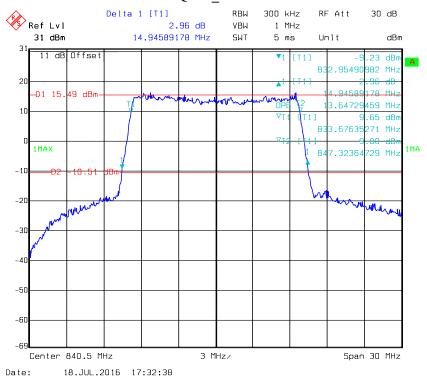


#### 16QAM\_10 MHz



Date: 18.JUL.2016 17:34:52

## 16QAM\_15 MHz



# FCC §2.1051, §22.917(a) & §24.238(a) & §27.53- SPURIOUS EMISSIONS AT ANTENNA TERMINALS

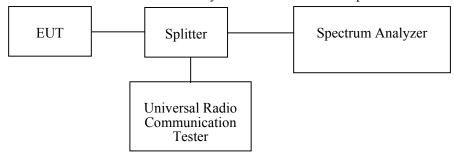
# **Applicable Standard**

FCC §2.1051, §22.917(a), §24.238(a) and §27.53.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

#### **Test Procedure**

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.



#### **Test Equipment List and Details**

Manufacturer	facturer Description		Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
R&S	Universal Radio Communication Tester	CMU200	109 038	2015-07-28	2016-07-27
R&S	Wideband Radio Communication Tester	CMW500	106891	2015-11-23	2016-11-23
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB- 00036	0E01201047	2016-05-06	2017-05-06
E-Microwave	Attenuator	EMCA10- 5RN	OE01203239	2016-05-08	2017-05-08
Pasternack	RF Coaxial Cable	RF-01	N/A	2016-05-06	2017-05-06
Pasternack	RF Coaxial Cable	RF-02	N/A	2016-05-06	2017-05-06
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2016-05-06	2017-05-06

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).