



# FCC TEST REPORT (PART 27)

**REPORT NO.:** RF130412C14-2

**MODEL NO.:** K009

**FCC ID:** MSQK009

**RECEIVED:** Apr. 12, 2013

**TESTED:** May 06, 2013 ~ May 17, 2013

**ISSUED:** May 27, 2013

**APPLICANT:** ASUSTek COMPUTER INC.

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
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## TABLE OF CONTENTS

RELEASE CONTROL RECORD .....	4
1 CERTIFICATION.....	5
2 SUMMARY OF TEST RESULTS .....	6
2.1 MEASUREMENT UNCERTAINTY .....	10
2.2 TEST SITE AND INSTRUMENTS.....	11
3 GENERAL INFORMATION .....	12
3.1 GENERAL DESCRIPTION OF EUT .....	12
3.2 CONFIGURATION OF SYSTEM UNDER TEST.....	15
3.3 DESCRIPTION OF SUPPORT UNITS.....	15
3.4 DESCRIPTION OF TEST MODES .....	16
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	21
4 TEST TYPES AND RESULTS .....	22
4.1 OUTPUT POWER MEASUREMENT .....	22
4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT.....	22
4.1.2 TEST PROCEDURES.....	22
4.1.3 TEST SETUP .....	23
4.1.4 TEST RESULTS .....	24
4.2 FREQUENCY STABILITY MEASUREMENT .....	44
4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT.....	44
4.2.2 TEST PROCEDURE .....	44
4.2.3 TEST SETUP.....	44
4.2.4 TEST RESULTS .....	45
4.3 OCCUPIED BANDWIDTH MEASUREMENT .....	47
4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT .....	47
4.3.2 TEST SETUP .....	47
4.3.3 TEST PROCEDURES.....	47
4.3.4 TEST RESULTS .....	48
4.4 PEAK TO AVERAGE RATIO .....	54
4.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT .....	54
4.4.2 TEST SETUP .....	54
4.4.3 TEST PROCEDURES.....	54
4.4.4 TEST RESULTS .....	55
4.5 BAND EDGE MEASUREMENT .....	61
4.5.1 LIMITS OF BAND EDGE MEASUREMENT .....	61
4.5.2 TEST SETUP .....	61
4.5.3 TEST PROCEDURES.....	62
4.5.4 TEST RESULTS .....	63
4.6 CONDUCTED SPURIOUS EMISSIONS.....	73
4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT .....	73
4.6.2 TEST PROCEDURE .....	73



A D T

4.6.3	TEST SETUP .....	73
4.6.4	TEST RESULTS .....	74
4.7	RADIATED EMISSION MEASUREMENT .....	77
4.7.1	LIMITS OF RADIATED EMISSION MEASUREMENT .....	77
4.7.2	TEST PROCEDURES.....	77
4.7.3	DEVIATION FROM TEST STANDARD .....	78
4.7.4	TEST SETUP.....	78
4.7.5	TEST RESULTS .....	79
5	INFORMATION ON THE TESTING LABORATORIES .....	105
6	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	106



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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130412C14-2	Original release	May 27, 2013



## 1 CERTIFICATION

**PRODUCT:** ASUS Pad  
**MODEL NO.:** K009  
**BRAND:** ASUS  
**APPLICANT:** ASUSTek COMPUTER INC.  
**TESTED:** May 06, 2013 ~ May 17, 2013  
**TEST SAMPLE:** Production Unit  
**TEST STANDARDS:** **FCC Part 27, Subpart C, F, L**  
**FCC Part 2**  
ANSI C63.4-2003

The above equipment (model: K009) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : Vera Huang , **DATE:** May 27, 2013

Vera Huang / Specialist

**APPROVED BY** : Sam chen , **DATE:** May 27, 2013

Sam Chen / Assistant Manager

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

WCDMA Band 4			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 27.50(d)(4)	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(h)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -30.11dB at 30.00MHz.

LTE BAND 17			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
2.1046 27.50(C)(10)	Maximum Peak Output Power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -32.68dB at 34.05MHz.

<b>LTE BAND 13</b>			
<b>STANDARD SECTION</b>	<b>TEST TYPE</b>	<b>RESULT</b>	<b>REMARK</b>
2.1046 27.50(d)(4)	Maximum Peak Output Power Limit: max. 3 watts e.r.p peak power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(h)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -13.62dB at 1559.60MHz.

LTE BAND 4			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
2.1046 27.50(d)(4)	Maximum Peak Output Power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(h)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -28.33dB at 30.00MHz.

## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

## 2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 21, 2012	Aug. 20, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The test was performed in HwaYa Chamber 10.  
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.  
4. The FCC Site Registration No. is 690701.  
5. The IC Site Registration No. is IC 7450F-10.

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	ASUS Pad	
<b>MODEL NO.</b>	K009	
<b>POWER SUPPLY</b>	5.2Vdc (adapter or host equipment) 3.8Vdc (battery)	
<b>MODULATION TECHNOLOGY</b>	WCDMA Band 4	QPSK, BPSK
	LTE Band 13	QPSK, 16QAM
	LTE Band 17	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
<b>FREQUENCY RANGE</b>	WCDMA Band 4	1712.4MHz ~1752.6MHz
	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711MHz
	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~1747.5MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~1745MHz
	<b>EMISSION DESIGNATOR</b>	WCDMA Band 4
LTE Band 13 Channel Bandwidth: 5MHz		4M49G7D
LTE Band 13 Channel Bandwidth: 10MHz		8M90G7D
LTE Band 17 Channel Bandwidth: 5MHz		4M51G7D
LTE Band 17 Channel Bandwidth: 10MHz		8M98W7D

<b>EMISSION DESIGNATOR</b>	LTE Band 4 Channel Bandwidth: 1.4MHz	1M08G7D
	LTE Band 4 Channel Bandwidth: 3MHz	2M73G7D
	LTE Band 4 Channel Bandwidth: 5MHz	4M50G7D
	LTE Band 4 Channel Bandwidth: 10MHz	8M93W7D
	LTE Band 4 Channel Bandwidth: 15MHz	13M4G7D
	LTE Band 4 Channel Bandwidth: 20MHz	17M9W7D
<b>MAX. ERP POWER (W)</b>	LTE Band 13 Channel Bandwidth: 5MHz	77.62mW
	LTE Band 13 Channel Bandwidth: 10MHz	65.61mW
	LTE Band 17 Channel Bandwidth: 5MHz	78.34mW
	LTE Band 17 Channel Bandwidth: 10MHz	78.70mW
<b>MAX. EIRP POWER (mW)</b>	WCDMA Band 4	193.64mW
	LTE Band 4 Channel Bandwidth: 1.4MHz	299.92mW
	LTE Band 4 Channel Bandwidth: 3MHz	321.37mW
	LTE Band 4 Channel Bandwidth: 5MHz	297.85mW
	LTE Band 4 Channel Bandwidth: 10MHz	213.80mW
	LTE Band 4 Channel Bandwidth: 15MHz	291.07mW
	LTE Band 4 Channel Bandwidth: 20MHz	301.30mW
<b>CATEGORY</b>	3	
<b>ANTENNA TYPE</b>	Fixed Internal Antenna	
<b>DATA CABLE</b>	Refer to Note as below	
<b>I/O PORTS</b>	Refer to users' manual	
<b>ACCESSORY DEVICES</b>	Refer to Note as below	

**NOTE:**

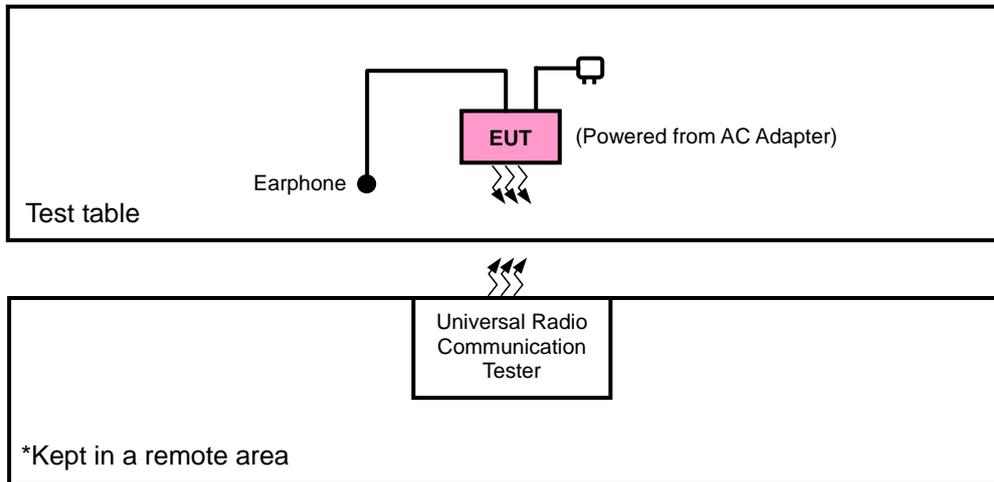
1. The EUT has following accessories.

ITEM	BRAND	MODEL	DESCRIPTION
AC Adapter 1	ASUS	PSM06A-050Q	I/P: 100-240Vac, 50-60Hz, 0.25A O/P: 5.2Vdc, 1.35A
AC Adapter 2	ASUS	PA-1070-07	I/P: 100-240Vac, 50-60Hz, 0.25A O/P: 5.2Vdc, 1.35A
Li-ion Battery	ASUS	C11P1303	Rating: 3.8Vdc, 15Wh
USB cable	ASUS	AA78030	0.9m non-shielded cable w/o ferrite core
LCD Panel	JDI	LT070ME05000	--
Video Camera (Front)	Liteon	12P2SF181	1.2M
Video Camera (Rear)	Chicony	CJAC53220003870LH	5M
WWAN Module	Qualcomm	WTR1605L	--
WLAN Module	Qualcomm	WCN3660	--
CPU	Qualcomm	APQ-8064	1067 NSP (1067 Pin)
eMMC	Hynix	FLASH HYNIX H26M64003DQR 32GB	32G
Mainboard	ASUS	ME571KL MAIN BOARD	--

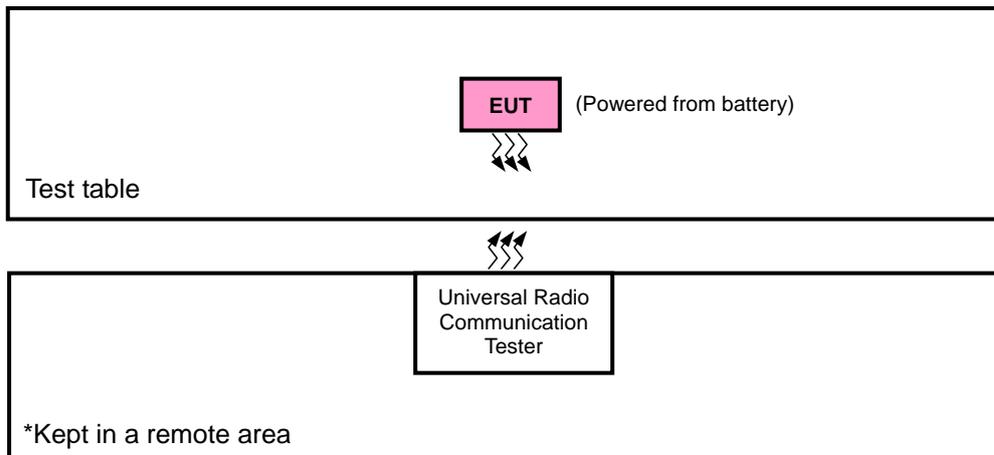
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 CONFIGURATION OF SYSTEM UNDER TEST

#### FOR RADIATION EMISSION TEST



#### FOR E.R.P. TEST



### 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Acon	CW-010M.V	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

**NOTE:** All power cords of the above support units are non shielded (1.8m).

### 3.4 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found as listed below for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

	BAND	AXIS FOR RADIATED EMISSION
ERP/EIRP	WCDMA Band 4	Z
	LTE Band 13	X
	LTE Band 17	X
	LTE Band 4	X
RADIATED EMISSION	WCDMA Band 4	Y
	LTE Band 13	Y
	LTE Band 17	Z
	LTE Band 4	Y

#### WCDMA Band 4

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
FREQUENCY STABILITY	1312 to 1513	1312, 1413, 1513	WCDMA
OCCUPIED BANDWIDTH	1312 to 1513	1312, 1513	WCDMA
BAND EDGE	1312 to 1513	1413	WCDMA
CONDUCTED EMISSION	1312 to 1513	1413	WCDMA
RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA



**LTE Band 13**

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
FREQUENCY STABILITY	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	10MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	10MHz	QPSK	25 RB / 25 RB Offset
				16QAM	1 RB / 24 RB Offset
BAND EDGE	23205 to 23255	23205	5MHz	QPSK	1 RB / 0 RB Offset
				QPSK	25 RB / 0 RB Offset
		23255	5MHz	QPSK	1 RB / 24 RB Offset
				QPSK	25 RB / 0 RB Offset
		23230	10MHz	QPSK	1 RB / 0 RB Offset
				QPSK	50 RB / 0 RB Offset
CONDCUDED EMISSION	23205 to 23255	23230	5MHz	QPSK	1 RB / 0 RB Offset
		23230	10MHz	QPSK	1 RB / 24 RB Offset
RADIATED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		23230	10MHz	QPSK	1 RB / 0 RB Offset
					1 RB / 25 RB Offset

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case were found in QPSK modulation.



**LTE Band 17**

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE	
ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
FREQUENCY STABILITY	23755 to 23825	23790	5MHz	QPSK	1 RB / 0 RB Offset	
	23780 to 23800	23790	10MHz	QPSK	1 RB / 0 RB Offset	
OCCUPIED BANDWIDTH	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset	
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset	
PEAK TO AVERAGE RATIO	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
BAND EDGE	23755 to 23825	23755	5MHz	QPSK	1 RB / 0 RB Offset 25 RB / 0 RB Offset	
		23825	5MHz	QPSK	1 RB / 24 RB Offset 25 RB / 0 RB Offset	
	23780 to 23800	23780	10MHz	QPSK	1 RB / 0 RB Offset 50 RB / 0 RB Offset	
		23800	10MHz	QPSK	1 RB / 49 RB Offset 50 RB / 0 RB Offset	
	CONDCUDED EMISSION	23755 to 23825	23790	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23790	10MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	23755 to 23825	23790	5MHz	QPSK	1 RB / 0 RB Offset	
	23780 to 23800	23790	10MHz	QPSK	1 RB / 0 RB Offset	

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case were found in QPSK modulation.



LTE Band 4

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 2 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 7 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 37 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 50 RB Offset
FREQUENCY STABILITY	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 2 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 7 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 12 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 37 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 50 RB Offset
OCCUPIED BANDWIDTH	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 2 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 7 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 37 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 50 RB Offset
BAND EDGE	19957 to 20393	19957	1.4MHz	QPSK	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		20393	1.4MHz	QPSK	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	19965 to 20385	19965	3MHz	QPSK	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		20385	3MHz	QPSK	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	19975 to 20375	19975	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		20375	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
20000 to 20350	20000	10MHz	QPSK	1 RB / 0 RB Offset	
				50 RB / 0 RB Offset	
	20350	10MHz	QPSK	1 RB / 49 RB Offset	
				50 RB / 0 RB Offset	



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TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
BAND EDGE	20025 to 20325	20025	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
	20050 to 20300	20325	15MHz	QPSK	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
		20050	20MHz	QPSK	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
	20300	20MHz	QPSK	1 RB / 99 RB Offset	
				100 RB / 0 RB Offset	
CONDCUDED EMISSION	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 2 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 7 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 12 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 24 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 37 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 50 RB Offset
RADIATED EMISSION	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 2 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 7 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 12 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 24 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 37 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 50 RB Offset

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case were found in QPSK modulation.

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP/EIRP	25deg. C, 59%RH	3.8Vdc	Howard Kao
FREQUENCY STABILITY	25deg. C, 59%RH	3.8Vdc	Howard Kao
OCCUPIED BANDWIDTH	25deg. C, 59%RH	3.8Vdc	Howard Kao
BAND EDGE	25deg. C, 59%RH	3.8Vdc	Howard Kao
CONDCUDED EMISSION	25deg. C, 59%RH	3.8Vdc	Howard Kao
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Johnson Liao

### **3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**ANSI C63.4-2003**

**ANSI/TIA/EIA-603-C 2004**

**NOTE:** All test items have been performed and recorded as per the above standards.

## 4 TEST TYPES AND RESULTS

### 4.1 OUTPUT POWER MEASUREMENT

#### 4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

Portable stations (hand-held devices) operating in the 704-716 MHz band are limited to 3 watts ERP.

Portable stations (hand-held devices) operating in the 777-787MHz, 776-793 MHz band are limited to 3 watts ERP.

#### 4.1.2 TEST PROCEDURES

##### **EIRP / ERP MEASUREMENT:**

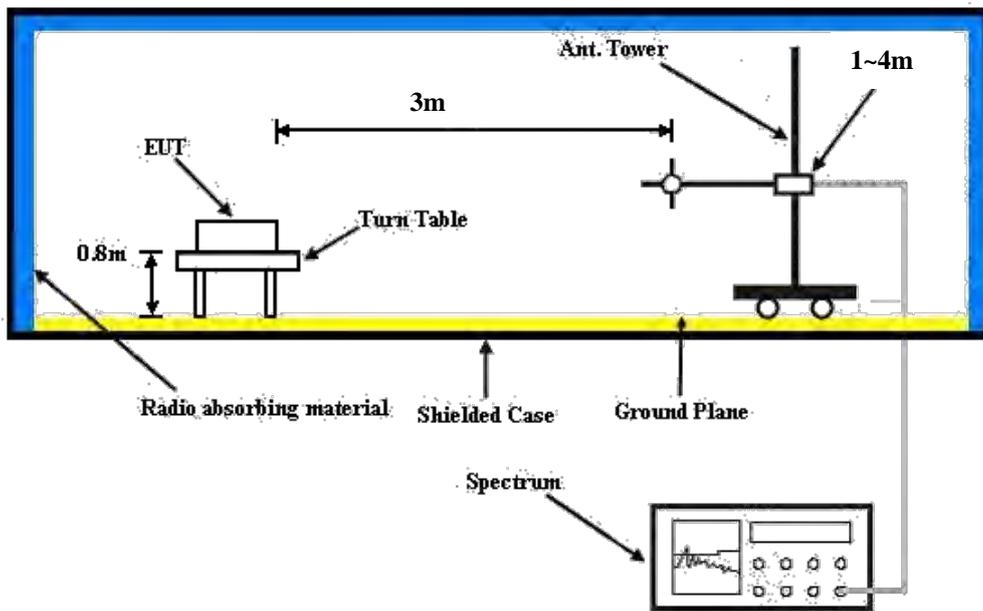
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM, GPRS & EDGE, 5MHz for WCDMA and CDMA mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$   
 $E.R.P \text{ power can be calculated form E.I.R.P power by subtracting the gain of dipole, } E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15\text{dBi.}$

**CONDUCTED POWER MEASUREMENT:**

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA & CDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

**4.1.3 TEST SETUP**

**EIRP / ERP MEASUREMENT:**



For the actual test configuration, please refer to the attached file (Test Setup Photo).

**CONDUCTED POWER MEASUREMENT:**



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.1.4 TEST RESULTS

##### AVERAGE CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
	1312	1413	1513
Channel	1712.4	1732.6	1752.6
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	23.11	<b>23.44</b>	23.38
HSDPA Subtest-1	22.10	22.43	22.37
HSDPA Subtest-2	22.19	22.52	22.46
HSDPA Subtest-3	21.62	21.95	21.89
HSDPA Subtest-4	20.70	21.03	20.97
HSUPA Subtest-1	21.53	21.86	21.80
HSUPA Subtest-2	20.70	21.03	20.97
HSUPA Subtest-3	21.02	21.35	21.29
HSUPA Subtest-4	21.44	21.77	21.71
HSUPA Subtest-5	22.13	22.46	22.40



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LTE Band 17								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
5 MHz	QPSK	23755	706.5	1	0	0	22.9	22.25
		23790	710	1	0	0	22.9	22.32
		23825	713.5	1	0	0	22.9	22.27
		23755	706.5	1	12	0	22.9	22.07
		23790	710	1	12	0	22.9	22.14
		23825	713.5	1	12	0	22.9	22.09
		23755	706.5	1	24	0	22.9	22.02
		23790	710	1	24	0	22.9	22.09
		23825	713.5	1	24	0	22.9	22.04
		23755	706.5	12	0	1	22.9	21.12
		23790	710	12	0	1	22.9	21.19
		23825	713.5	12	0	1	22.9	21.14
		23755	706.5	12	6	1	22.9	21.07
		23790	710	12	6	1	22.9	21.14
		23825	713.5	12	6	1	22.9	21.09
		23755	706.5	12	13	1	22.9	21.11
		23790	710	12	13	1	22.9	21.18
		23825	713.5	12	13	1	22.9	21.13
	23755	706.5	25	0	1	22.9	21.09	
	23790	710	25	0	1	22.9	21.16	
	23825	713.5	25	0	1	22.9	21.11	
	23755	706.5	1	0	1	22.9	21.99	
	23790	710	1	0	1	22.9	22.06	
	23825	713.5	1	0	1	22.9	22.01	
	23755	706.5	1	12	1	22.9	21.81	
	23790	710	1	12	1	22.9	21.88	
	23825	713.5	1	12	1	22.9	21.83	
	23755	706.5	1	24	1	22.9	21.76	
	23790	710	1	24	1	22.9	21.83	
	23825	713.5	1	24	1	22.9	21.78	
	23755	706.5	12	0	2	22.9	20.86	
	23790	710	12	0	2	22.9	20.93	
	23825	713.5	12	0	2	22.9	20.88	
	23755	706.5	12	6	2	22.9	20.81	
	23790	710	12	6	2	22.9	20.88	
	23825	713.5	12	6	2	22.9	20.83	
23755	706.5	12	13	2	22.9	20.85		
23790	710	12	13	2	22.9	20.92		
23825	713.5	12	13	2	22.9	20.87		
23755	706.5	25	0	2	22.9	20.83		
23790	710	25	0	2	22.9	20.9		
23825	713.5	25	0	2	22.9	20.85		
	16QAM	23755	706.5	1	0	1	22.9	21.99
		23790	710	1	0	1	22.9	22.06
		23825	713.5	1	0	1	22.9	22.01
		23755	706.5	1	12	1	22.9	21.81
		23790	710	1	12	1	22.9	21.88
		23825	713.5	1	12	1	22.9	21.83
		23755	706.5	1	24	1	22.9	21.76
		23790	710	1	24	1	22.9	21.83
		23825	713.5	1	24	1	22.9	21.78
		23755	706.5	12	0	2	22.9	20.86
		23790	710	12	0	2	22.9	20.93
		23825	713.5	12	0	2	22.9	20.88
		23755	706.5	12	6	2	22.9	20.81
		23790	710	12	6	2	22.9	20.88
		23825	713.5	12	6	2	22.9	20.83
		23755	706.5	12	13	2	22.9	20.85
		23790	710	12	13	2	22.9	20.92
		23825	713.5	12	13	2	22.9	20.87
	23755	706.5	25	0	2	22.9	20.83	
	23790	710	25	0	2	22.9	20.9	
	23825	713.5	25	0	2	22.9	20.85	



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LTE Band 17								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
10MHz	QPSK	23780	709	1	0	0	22.9	22.82
		23790	710	1	0	0	22.9	22.89
		23800	711	1	0	0	22.9	22.84
		23780	709	1	24	0	22.9	22.64
		23790	710	1	24	0	22.9	22.71
		23800	711	1	24	0	22.9	22.66
		23780	709	1	49	0	22.9	22.59
		23790	710	1	49	0	22.9	22.66
		23800	711	1	49	0	22.9	22.61
		23780	709	25	0	1	22.9	21.69
		23790	710	25	0	1	22.9	21.76
		23800	711	25	0	1	22.9	21.71
		23780	709	25	12	1	22.9	21.64
		23790	710	25	12	1	22.9	21.71
		23800	711	25	12	1	22.9	21.66
		23780	709	25	25	1	22.9	21.68
		23790	710	25	25	1	22.9	21.75
		23800	711	25	25	1	22.9	21.7
	23780	709	50	0	1	22.9	21.66	
	23790	710	50	0	1	22.9	21.73	
	23800	711	50	0	1	22.9	21.68	
	23780	709	1	0	1	22.9	22.46	
	23790	710	1	0	1	22.9	22.53	
	23800	711	1	0	1	22.9	22.48	
	23780	709	1	24	1	22.9	22.28	
	23790	710	1	24	1	22.9	22.35	
	23800	711	1	24	1	22.9	22.3	
	23780	709	1	49	1	22.9	22.23	
	23790	710	1	49	1	22.9	22.3	
	23800	711	1	49	1	22.9	22.25	
	23780	709	25	0	2	22.9	21.33	
	23790	710	25	0	2	22.9	21.4	
	23800	711	25	0	2	22.9	21.35	
	23780	709	25	12	2	22.9	21.28	
	23790	710	25	12	2	22.9	21.35	
	23800	711	25	12	2	22.9	21.3	
23780	709	25	25	2	22.9	21.32		
23790	710	25	25	2	22.9	21.39		
23800	711	25	25	2	22.9	21.34		
23780	709	50	0	2	22.9	21.3		
23790	710	50	0	2	22.9	21.37		
23800	711	50	0	2	22.9	21.32		



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LTE Band 13								
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	MPR	Target Power	Measured Power
5 MHz	QPSK	23205	779.5	1	0	0	23.1	22.89
		23230	782	1	0	0	23.1	22.89
		23255	784.5	1	0	0	23.1	22.89
		23205	779.5	1	12	0	23.1	22.42
		23230	782	1	12	0	23.1	22.42
		23255	784.5	1	12	0	23.1	22.42
		23205	779.5	1	24	0	23.1	22.66
		23230	782	1	24	0	23.1	22.66
		23255	784.5	1	24	0	23.1	22.66
		23205	779.5	12	0	1	23.1	21.69
		23230	782	12	0	1	23.1	21.69
		23255	784.5	12	0	1	23.1	21.69
		23205	779.5	12	6	1	23.1	21.59
		23230	782	12	6	1	23.1	21.59
		23255	784.5	12	6	1	23.1	21.59
		23205	779.5	12	13	1	23.1	21.49
		23230	782	12	13	1	23.1	21.49
		23255	784.5	12	13	1	23.1	21.49
	23205	779.5	25	0	1	23.1	21.55	
	23230	782	25	0	1	23.1	21.55	
	23255	784.5	25	0	1	23.1	21.55	
	23205	779.5	1	0	1	23.1	22.65	
	23230	782	1	0	1	23.1	22.65	
	23255	784.5	1	0	1	23.1	22.65	
	23205	779.5	1	12	1	23.1	22.18	
	23230	782	1	12	1	23.1	22.18	
	23255	784.5	1	12	1	23.1	22.18	
	23205	779.5	1	24	1	23.1	22.42	
	23230	782	1	24	1	23.1	22.42	
	23255	784.5	1	24	1	23.1	22.42	
	23205	779.5	12	0	2	23.1	21.45	
	23230	782	12	0	2	23.1	21.45	
	23255	784.5	12	0	2	23.1	21.45	
	23205	779.5	12	6	2	23.1	21.35	
	23230	782	12	6	2	23.1	21.35	
	23255	784.5	12	6	2	23.1	21.35	
23205	779.5	12	13	2	23.1	21.25		
23230	782	12	13	2	23.1	21.25		
23255	784.5	12	13	2	23.1	21.25		
23205	779.5	25	0	2	23.1	21.31		
23230	782	25	0	2	23.1	21.31		
23255	784.5	25	0	2	23.1	21.31		



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LTE Band 13								
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	MPR	Target Power	Measured Power
10 MHz	QPSK	23230	782	1	0	0	23.1	23.02
		23230	782	1	24	0	23.1	22.55
		23230	782	1	49	0	23.1	22.79
		23230	782	25	0	1	23.1	21.82
		23230	782	25	12	1	23.1	21.72
		23230	782	25	25	1	23.1	21.62
		23230	782	50	0	1	23.1	21.68
	16QAM	23230	782	1	0	1	23.1	22.95
		23230	782	1	24	1	23.1	22.48
		23230	782	1	49	1	23.1	22.72
		23230	782	25	0	2	23.1	21.75
		23230	782	25	12	2	23.1	21.65
		23230	782	25	25	2	23.1	21.55
		23230	782	50	0	2	23.1	21.61



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
1.4 MHz	QPSK	19957	1710.7	1	0	0	23.8	23.23
		20175	1732.5	1	0	0	23.8	23.07
		20393	1754.3	1	0	0	23.8	23.33
		19957	1710.7	1	2	0	23.8	23.54
		20175	1732.5	1	2	0	23.8	23.38
		20393	1754.3	1	2	0	23.8	23.64
		19957	1710.7	1	5	0	23.8	23.51
		20175	1732.5	1	5	0	23.8	23.35
		20393	1754.3	1	5	0	23.8	23.61
		19957	1710.7	3	0	0	23.8	23.33
		20175	1732.5	3	0	0	23.8	23.17
		20393	1754.3	3	0	0	23.8	23.43
		19957	1710.7	3	1	0	23.8	23.49
		20175	1732.5	3	1	0	23.8	23.33
		20393	1754.3	3	1	0	23.8	23.59
		19957	1710.7	3	3	0	23.8	23.32
		20175	1732.5	3	3	0	23.8	23.16
		20393	1754.3	3	3	0	23.8	23.42
	19957	1710.7	6	0	1	23.8	22.25	
	20175	1732.5	6	0	1	23.8	22.09	
	20393	1754.3	6	0	1	23.8	22.35	
	19957	1710.7	1	0	1	23.8	22.7	
	20175	1732.5	1	0	1	23.8	22.54	
	20393	1754.3	1	0	1	23.8	22.8	
	19957	1710.7	1	2	1	23.8	23.01	
	20175	1732.5	1	2	1	23.8	22.85	
	20393	1754.3	1	2	1	23.8	23.11	
	19957	1710.7	1	5	1	23.8	22.98	
	20175	1732.5	1	5	1	23.8	22.82	
	20393	1754.3	1	5	1	23.8	23.08	
	19957	1710.7	3	0	1	23.8	21.82	
	20175	1732.5	3	0	1	23.8	21.81	
	20393	1754.3	3	0	1	23.8	21.83	
	19957	1710.7	3	1	1	23.8	21.86	
	20175	1732.5	3	1	1	23.8	21.86	
	20393	1754.3	3	1	1	23.8	21.96	
19957	1710.7	3	3	1	23.8	21.83		
20175	1732.5	3	3	1	23.8	21.86		
20393	1754.3	3	3	1	23.8	21.85		
19957	1710.7	6	0	2	23.8	21.72		
20175	1732.5	6	0	2	23.8	21.56		
20393	1754.3	6	0	2	23.8	21.82		



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
3MHz	QPSK	19965	1711.5	1	0	0	23.8	23.29
		20175	1732.5	1	0	0	23.8	23.13
		20385	1753.5	1	0	0	23.8	23.39
		19965	1711.5	1	7	0	23.8	23.6
		20175	1732.5	1	7	0	23.8	23.44
		20385	1753.5	1	7	0	23.8	23.7
		19965	1711.5	1	14	0	23.8	23.57
		20175	1732.5	1	14	0	23.8	23.41
		20385	1753.5	1	14	0	23.8	23.67
		19965	1711.5	8	0	1	23.8	22.29
		20175	1732.5	8	0	1	23.8	22.13
		20385	1753.5	8	0	1	23.8	22.39
		19965	1711.5	8	3	1	23.8	22.45
		20175	1732.5	8	3	1	23.8	22.29
		20385	1753.5	8	3	1	23.8	22.55
	19965	1711.5	8	7	1	23.8	22.28	
	20175	1732.5	8	7	1	23.8	22.12	
	20385	1753.5	8	7	1	23.8	22.38	
	19965	1711.5	15	0	1	23.8	22.31	
	20175	1732.5	15	0	1	23.8	22.15	
	20385	1753.5	15	0	1	23.8	22.41	
	19965	1711.5	1	0	1	23.8	22.77	
	20175	1732.5	1	0	1	23.8	22.61	
	20385	1753.5	1	0	1	23.8	22.87	
	19965	1711.5	1	7	1	23.8	23.08	
	20175	1732.5	1	7	1	23.8	22.92	
	20385	1753.5	1	7	1	23.8	23.18	
	19965	1711.5	1	14	1	23.8	23.05	
	20175	1732.5	1	14	1	23.8	22.89	
	20385	1753.5	1	14	1	23.8	23.15	
19965	1711.5	8	0	2	23.8	21.77		
20175	1732.5	8	0	2	23.8	21.61		
20385	1753.5	8	0	2	23.8	21.87		
19965	1711.5	8	3	2	23.8	21.93		
20175	1732.5	8	3	2	23.8	21.77		
20385	1753.5	8	3	2	23.8	22.03		
19965	1711.5	8	7	2	23.8	21.76		
20175	1732.5	8	7	2	23.8	21.6		
20385	1753.5	8	7	2	23.8	21.86		
19965	1711.5	15	0	2	23.8	21.79		
20175	1732.5	15	0	2	23.8	21.63		
20385	1753.5	15	0	2	23.8	21.89		



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
5 MHz	QPSK	19975	1712.5	1	0	0	23.8	23.21
		20175	1732.5	1	0	0	23.8	23.05
		20375	1752.5	1	0	0	23.8	23.31
		19975	1712.5	1	12	0	23.8	23.52
		20175	1732.5	1	12	0	23.8	23.36
		20375	1752.5	1	12	0	23.8	23.62
		19975	1712.5	1	24	0	23.8	23.49
		20175	1732.5	1	24	0	23.8	23.33
		20375	1752.5	1	24	0	23.8	23.59
		19975	1712.5	12	0	1	23.8	22.21
		20175	1732.5	12	0	1	23.8	22.05
		20375	1752.5	12	0	1	23.8	22.31
		19975	1712.5	12	6	1	23.8	22.37
		20175	1732.5	12	6	1	23.8	22.21
		20375	1752.5	12	6	1	23.8	22.47
		19975	1712.5	12	13	1	23.8	22.2
		20175	1732.5	12	13	1	23.8	22.04
		20375	1752.5	12	13	1	23.8	22.3
	19975	1712.5	25	0	1	23.8	22.23	
	20175	1732.5	25	0	1	23.8	22.07	
	20375	1752.5	25	0	1	23.8	22.33	
	19975	1712.5	1	0	1	23.8	22.77	
	20175	1732.5	1	0	1	23.8	22.61	
	20375	1752.5	1	0	1	23.8	22.87	
	19975	1712.5	1	12	1	23.8	23.08	
	20175	1732.5	1	12	1	23.8	22.92	
	20375	1752.5	1	12	1	23.8	23.18	
	19975	1712.5	1	24	1	23.8	23.05	
	20175	1732.5	1	24	1	23.8	22.89	
	20375	1752.5	1	24	1	23.8	23.15	
	19975	1712.5	12	0	2	23.8	21.77	
	20175	1732.5	12	0	2	23.8	21.61	
	20375	1752.5	12	0	2	23.8	21.87	
	19975	1712.5	12	6	2	23.8	21.93	
	20175	1732.5	12	6	2	23.8	21.77	
	20375	1752.5	12	6	2	23.8	22.03	
19975	1712.5	12	13	2	23.8	21.76		
20175	1732.5	12	13	2	23.8	21.6		
20375	1752.5	12	13	2	23.8	21.86		
19975	1712.5	25	0	2	23.8	21.79		
20175	1732.5	25	0	2	23.8	21.63		
20375	1752.5	25	0	2	23.8	21.89		



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
10MHz	QPSK	20000	1715	1	0	0	23.8	22.93
		20175	1732.5	1	0	0	23.8	22.82
		20350	1750	1	0	0	23.8	23.03
		20000	1715	1	24	0	23.8	23.24
		20175	1732.5	1	24	0	23.8	23.08
		20350	1750	1	24	0	23.8	23.34
		20000	1715	1	49	0	23.8	23.21
		20175	1732.5	1	49	0	23.8	23.05
		20350	1750	1	49	0	23.8	23.31
		20000	1715	25	0	1	23.8	21.93
		20175	1732.5	25	0	1	23.8	21.81
		20350	1750	25	0	1	23.8	22.03
		20000	1715	25	12	1	23.8	22.09
		20175	1732.5	25	12	1	23.8	21.93
		20350	1750	25	12	1	23.8	22.19
		20000	1715	25	25	1	23.8	21.92
		20175	1732.5	25	25	1	23.8	21.82
		20350	1750	25	25	1	23.8	22.02
	20000	1715	50	0	1	23.8	21.95	
	20175	1732.5	50	0	1	23.8	21.82	
	20350	1750	50	0	1	23.8	22.05	
	20000	1715	1	0	1	23.8	22.45	
	20175	1732.5	1	0	1	23.8	22.29	
	20350	1750	1	0	1	23.8	22.55	
	20000	1715	1	24	1	23.8	22.76	
	20175	1732.5	1	24	1	23.8	22.6	
	20350	1750	1	24	1	23.8	22.86	
	20000	1715	1	49	1	23.8	22.73	
	20175	1732.5	1	49	1	23.8	22.57	
	20350	1750	1	49	1	23.8	22.83	
	20000	1715	25	0	2	23.8	21.45	
	20175	1732.5	25	0	2	23.8	21.29	
	20350	1750	25	0	2	23.8	21.55	
	20000	1715	25	12	2	23.8	21.61	
	20175	1732.5	25	12	2	23.8	21.45	
	20350	1750	25	12	2	23.8	21.71	
20000	1715	25	25	2	23.8	21.44		
20175	1732.5	25	25	2	23.8	21.28		
20350	1750	25	25	2	23.8	21.54		
20000	1715	50	0	2	23.8	21.47		
20175	1732.5	50	0	2	23.8	21.31		
20350	1750	50	0	2	23.8	21.57		



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
15 MHz	QPSK	20025	1717.5	1	0	0	23.8	23.05
		20175	1732.5	1	0	0	23.8	22.89
		20325	1747.5	1	0	0	23.8	23.15
		20025	1717.5	1	37	0	23.8	23.36
		20175	1732.5	1	37	0	23.8	23.2
		20325	1747.5	1	37	0	23.8	23.46
		20025	1717.5	1	74	0	23.8	23.33
		20175	1732.5	1	74	0	23.8	23.17
		20325	1747.5	1	74	0	23.8	23.43
		20025	1717.5	36	0	1	23.8	22.05
		20175	1732.5	36	0	1	23.8	21.89
		20325	1747.5	36	0	1	23.8	22.15
		20025	1717.5	36	19	1	23.8	22.21
		20175	1732.5	36	19	1	23.8	22.05
		20325	1747.5	36	19	1	23.8	22.31
		20025	1717.5	36	39	1	23.8	22.04
		20175	1732.5	36	39	1	23.8	21.88
		20325	1747.5	36	39	1	23.8	22.14
	20025	1717.5	75	0	1	23.8	22.07	
	20175	1732.5	75	0	1	23.8	21.91	
	20325	1747.5	75	0	1	23.8	22.17	
	20025	1717.5	1	0	1	23.8	22.62	
	20175	1732.5	1	0	1	23.8	22.46	
	20325	1747.5	1	0	1	23.8	22.72	
	20025	1717.5	1	37	1	23.8	22.93	
	20175	1732.5	1	37	1	23.8	22.77	
	20325	1747.5	1	37	1	23.8	23.03	
	20025	1717.5	1	74	1	23.8	22.9	
	20175	1732.5	1	74	1	23.8	22.74	
	20325	1747.5	1	74	1	23.8	23	
	20025	1717.5	36	0	2	23.8	21.62	
	20175	1732.5	36	0	2	23.8	21.46	
	20325	1747.5	36	0	2	23.8	21.72	
	20025	1717.5	36	19	2	23.8	21.78	
	20175	1732.5	36	19	2	23.8	21.62	
	20325	1747.5	36	19	2	23.8	21.88	
20025	1717.5	36	39	2	23.8	21.61		
20175	1732.5	36	39	2	23.8	21.45		
20325	1747.5	36	39	2	23.8	21.71		
20025	1717.5	75	0	2	23.8	21.64		
20175	1732.5	75	0	2	23.8	21.48		
20325	1747.5	75	0	2	23.8	21.74		



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LTE Band 4								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
20MHz	QPSK	20050	1720	1	0	0	23.8	23.32
		20175	1732.5	1	0	0	23.8	23.16
		20300	1745	1	0	0	23.8	23.42
		20050	1720	1	50	0	23.8	23.63
		20175	1732.5	1	50	0	23.8	23.47
		20300	1745	1	50	0	23.8	23.73
		20050	1720	1	99	0	23.8	23.6
		20175	1732.5	1	99	0	23.8	23.44
		20300	1745	1	99	0	23.8	23.7
		20050	1720	50	0	1	23.8	22.32
		20175	1732.5	50	0	1	23.8	22.16
		20300	1745	50	0	1	23.8	22.42
		20050	1720	50	25	1	23.8	22.48
		20175	1732.5	50	25	1	23.8	22.32
		20300	1745	50	25	1	23.8	22.58
	20050	1720	50	50	1	23.8	22.31	
	20175	1732.5	50	50	1	23.8	22.15	
	20300	1745	50	50	1	23.8	22.41	
	20050	1720	100	0	1	23.8	22.34	
	20175	1732.5	100	0	1	23.8	22.18	
	20300	1745	100	0	1	23.8	22.44	
	20050	1720	1	0	1	23.8	23.09	
	20175	1732.5	1	0	1	23.8	22.93	
	20300	1745	1	0	1	23.8	23.19	
	20050	1720	1	50	1	23.8	23.4	
	20175	1732.5	1	50	1	23.8	23.24	
	20300	1745	1	50	1	23.8	23.5	
	20050	1720	1	99	1	23.8	23.37	
	20175	1732.5	1	99	1	23.8	23.21	
	20300	1745	1	99	1	23.8	23.47	
20050	1720	50	0	2	23.8	22.09		
20175	1732.5	50	0	2	23.8	21.93		
20300	1745	50	0	2	23.8	22.19		
20050	1720	50	25	2	23.8	22.25		
20175	1732.5	50	25	2	23.8	22.09		
20300	1745	50	25	2	23.8	22.35		
20050	1720	50	50	2	23.8	22.08		
20175	1732.5	50	50	2	23.8	21.92		
20300	1745	50	50	2	23.8	22.18		
20050	1720	100	0	2	23.8	22.11		
20175	1732.5	100	0	2	23.8	21.95		
20300	1745	100	0	2	23.8	22.21		

**AVERAGE ERP (dBm)**

**LTE BAND 17**

**CHANNEL BANDWIDTH: 5MHz QPSK**

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23755	706.5	-9.64	30.36	18.57	71.94	H
	23790	710	-9.24	30.17	18.78	75.51	H
	23825	713.5	-9.92	30.17	18.10	64.57	H
	23755	706.5	-17.39	32.03	12.49	17.74	V
	23790	710	-17.02	31.98	12.81	19.10	V
	23825	713.5	-16.95	32.06	12.96	19.77	V

**CHANNEL BANDWIDTH: 5MHz 16QAM**

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23755	706.5	-9.71	30.36	18.50	70.79	H
	23790	710	-9.08	30.17	18.94	78.34	H
	23825	713.5	-9.75	30.17	18.27	67.14	H
	23755	706.5	-17.48	32.03	12.40	17.38	V
	23790	710	-17.73	31.98	12.10	16.22	V
	23825	713.5	-17.69	32.06	12.22	16.67	V



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### CHANNEL BANDWIDTH: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23780	709	-9.40	30.17	18.62	72.78	H
	23790	710	-9.56	30.17	18.46	70.15	H
	23800	711	-9.07	30.18	18.96	78.70	H
	23780	709	-17.11	31.96	12.70	18.62	V
	23790	710	-17.26	31.98	12.57	18.07	V
	23800	711	-17.78	32.03	12.10	16.22	V

### CHANNEL BANDWIDTH: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23780	709	-9.41	30.17	18.61	72.61	H
	23790	710	-9.44	30.17	18.58	72.11	H
	23800	711	-9.69	30.18	18.34	68.23	H
	23780	709	-17.19	31.96	12.62	18.28	V
	23790	710	-17.16	31.98	12.67	18.49	V
	23800	711	-17.54	32.03	12.34	17.14	V

### LTE BAND 13

#### CHANNEL BANDWIDTH: 5MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23205	779.5	-11.19	32.24	18.90	77.62	H
	23230	782	-11.19	32.17	18.83	76.38	H
	23255	784.5	-11.19	32.11	18.77	75.34	H
	23205	779.5	-18.08	32.43	12.20	16.60	V
	23230	782	-17.78	32.42	12.49	17.74	V
	23255	784.5	-17.88	32.46	12.43	17.50	V

#### CHANNEL BANDWIDTH: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23205	779.5	-11.79	32.24	18.30	67.61	H
	23230	782	-11.97	32.17	18.05	63.83	H
	23255	784.5	-11.96	32.11	18.00	63.10	H
	23205	779.5	-17.30	32.43	12.98	19.86	V
	23230	782	-17.65	32.42	12.62	18.28	V
	23255	784.5	-17.73	32.46	12.58	18.11	V

#### CHANNEL BANDWIDTH: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23230	782	-11.85	32.17	18.17	65.61	H
	23230	782	-18.03	32.42	12.24	16.75	V

#### CHANNEL BANDWIDTH: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	23230	782	-11.86	32.17	18.16	65.46	H
	23230	782	-18.03	32.42	12.24	16.75	V

### AVERAGE EIRP (dBm)

#### WCDMA BAND 4

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Z	1312	1712.4	-15.12	37.90	22.78	189.67	H
	1413	1732.6	-15.92	37.99	22.07	161.06	H
	1513	1752.6	-15.44	38.31	22.87	193.64	H
	1312	1712.4	-20.72	37.81	17.09	51.17	V
	1413	1732.6	-19.56	37.40	17.84	60.81	V
	1513	1752.6	-20.87	38.22	17.35	54.33	V

#### LTE BAND 4

##### CHANNEL BANDWIDTH: 1.4MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19957	1710.7	-13.13	37.90	24.77	299.92	H
	20175	1732.5	-13.45	37.99	24.54	284.45	H
	20393	1754.3	-13.98	38.31	24.33	271.02	H
	19957	1710.7	-25.41	37.81	12.40	17.38	V
	20175	1732.5	-26.00	38.00	12.00	15.85	V
	20393	1754.3	-25.81	38.22	12.41	17.42	V

##### CHANNEL BANDWIDTH: 1.4MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19957	1710.7	-14.55	37.90	23.35	216.27	H
	20175	1732.5	-14.65	37.99	23.34	215.77	H
	20393	1754.3	-14.98	38.31	23.33	215.28	H
	19957	1710.7	-26.71	37.81	11.10	12.88	V
	20175	1732.5	-26.51	38.00	11.49	14.09	V
	20393	1754.3	-26.96	38.22	11.26	13.37	V



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### CHANNEL BANDWIDTH: 3MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19965	1711.5	-13.74	37.90	24.16	260.62	H
	20175	1732.5	-13.88	37.99	24.11	257.63	H
	20385	1753.5	-13.24	38.31	25.07	321.37	H
	19965	1711.5	-25.46	37.81	12.35	17.18	V
	20175	1732.5	-25.88	38.00	12.12	16.29	V
	20385	1753.5	-25.82	38.22	12.40	17.38	V

### CHANNEL BANDWIDTH: 3MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19965	1711.5	-15.08	37.90	22.82	191.43	H
	20175	1732.5	-15.40	37.99	22.59	181.55	H
	20385	1753.5	-15.39	38.31	22.92	195.88	H
	19965	1711.5	-26.74	37.81	11.07	12.79	V
	20175	1732.5	-26.21	38.00	11.79	15.10	V
	20385	1753.5	-26.67	38.22	11.55	14.29	V



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### CHANNEL BANDWIDTH: 5MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19975	1712.5	-13.43	37.90	24.47	279.90	H
	20175	1732.5	-13.44	37.99	24.55	285.10	H
	20375	1752.5	-13.57	38.31	24.74	297.85	H
	19975	1712.5	-25.15	37.81	12.66	18.45	V
	20175	1732.5	-25.92	38.00	12.08	16.14	V
	20375	1752.5	-26.08	38.22	12.14	16.37	V

### CHANNEL BANDWIDTH: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	19975	1712.5	-15.19	37.90	22.71	186.64	H
	20175	1732.5	-15.64	37.99	22.35	171.79	H
	20375	1752.5	-15.98	38.31	22.33	171.00	H
	19975	1712.5	-26.60	37.81	11.21	13.21	V
	20175	1732.5	-26.34	38.00	11.66	14.66	V
	20375	1752.5	-27.04	38.22	11.18	13.12	V



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### CHANNEL BANDWIDTH: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20000	1715	-15.28	37.99	22.71	186.64	H
	20175	1732.5	-15.44	37.99	22.55	179.89	H
	20350	1750	-15.65	38.36	22.71	186.64	H
	20000	1715	-27.84	37.91	10.07	10.16	V
	20175	1732.5	-27.94	38.00	10.06	10.14	V
	20350	1750	-27.71	38.28	10.57	11.40	V

### CHANNEL BANDWIDTH: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20000	1715	-15.10	37.99	22.89	194.54	H
	20175	1732.5	-15.56	37.99	22.43	174.98	H
	20350	1750	-15.06	38.36	23.30	213.80	H
	20000	1715	-26.10	37.91	11.81	15.17	V
	20175	1732.5	-26.14	38.00	11.86	15.35	V
	20350	1750	-26.30	38.28	11.98	15.78	V



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### CHANNEL BANDWIDTH: 15MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20025	1717.5	-13.90	37.99	24.09	256.45	H
	20175	1732.5	-13.35	37.99	24.64	291.07	H
	20325	1747.5	-13.80	38.36	24.56	285.76	H
	20025	1717.5	-24.97	37.91	12.94	19.68	V
	20175	1732.5	-25.76	38.00	12.24	16.75	V
	20325	1747.5	-25.87	38.28	12.41	17.42	V

### CHANNEL BANDWIDTH: 15MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20025	1717.5	-15.74	37.99	22.25	167.88	H
	20175	1732.5	-15.04	37.99	22.95	197.24	H
	20325	1747.5	-15.64	38.36	22.72	187.07	H
	20025	1717.5	-26.41	37.91	11.50	14.13	V
	20175	1732.5	-26.06	38.00	11.94	15.63	V
	20325	1747.5	-26.42	38.28	11.86	15.35	V



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### CHANNEL BANDWIDTH: 20MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20050	1720	-13.61	37.99	24.38	274.16	H
	20175	1732.5	-13.46	37.99	24.53	283.79	H
	20300	1745	-13.57	38.36	24.79	301.30	H
	20050	1720	-25.85	37.91	12.06	16.07	V
	20175	1732.5	-25.08	38.00	12.92	19.59	V
	20300	1745	-25.44	38.28	12.84	19.23	V

### CHANNEL BANDWIDTH: 20MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
X	20050	1720	-14.40	37.99	23.59	228.56	H
	20175	1732.5	-14.19	37.99	23.80	239.88	H
	20300	1745	-15.32	38.36	23.04	201.37	H
	20050	1720	-26.16	37.91	11.75	14.96	V
	20175	1732.5	-26.91	38.00	11.09	12.85	V
	20300	1745	-26.71	38.28	11.57	14.35	V

## 4.2 FREQUENCY STABILITY MEASUREMENT

### 4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

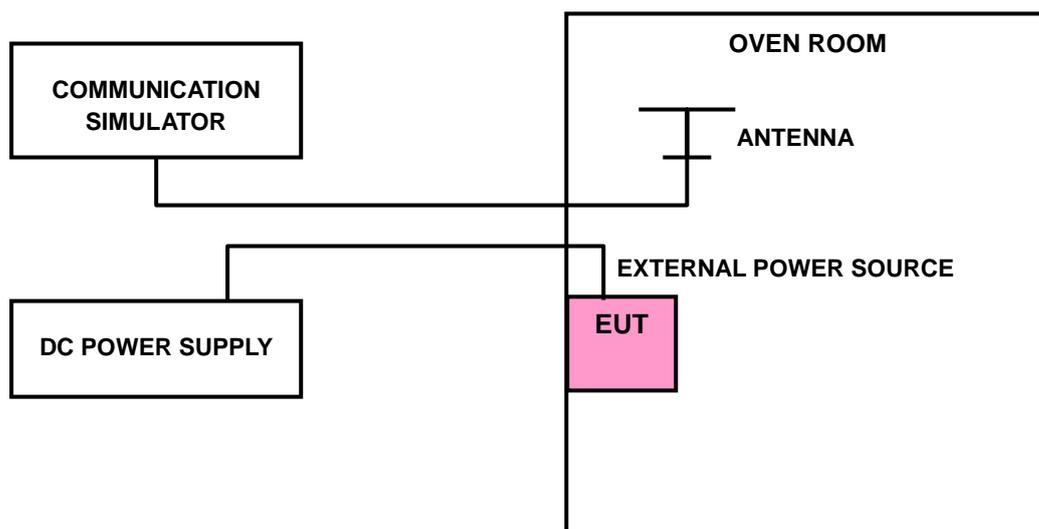
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 4.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 4.2.3 TEST SETUP



#### 4.2.4 TEST RESULTS

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)			LIMIT (ppm)
	WCDMA Band 4	LTE BAND 13		
		5MHz	10MHz	
3.8	0.004	0.01	-0.001	2.5
3.6	0.004	0.01	0.004	2.5
4.35	0.004	0.01	-0.003	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.35Vdc.

TEMP. (°C)	FREQUENCY ERROR (ppm)			LIMIT (ppm)
	WCDMA Band 4	LTE BAND 13		
		5MHz	10MHz	
-30	-	-	-	2.5
-20	-	-	-	2.5
-10	0.004	-0.006	0.007	2.5
0	0.004	0.002	-0.001	2.5
10	0.004	0.006	0.001	2.5
20	0.003	0.004	-0.003	2.5
30	0.004	0.001	0.008	2.5
40	0.004	0.004	0.007	2.5
50	0.004	0.008	0.008	2.5
55	0.004	0.003	-0.006	2.5

**NOTE:**

1. The applicant defined the normal operating temperature of the EUT is from -10°C to 55°C.
2. The EUT would shut down automatically when exceed -10 degree C range.

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)								LIMIT (ppm)
	LTE BAND 4						LTE BAND 17		
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	5MHz	10MHz	
3.8	0.0051	0.0036	-0.0012	0.0013	0.0040	0.0042	-0.0042	0.0068	2.5
3.6	-0.0009	0.0017	0.0014	0.0020	0.0009	0.0021	0.0006	0.0014	2.5
4.35	0.0018	0.0025	-0.0012	-0.0016	0.0031	-0.0012	-0.0028	0.0038	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.35Vdc.

TEMP. (°C)	FREQUENCY ERROR (ppm)								LIMIT (ppm)
	LTE BAND 4						LTE BAND 17		
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	5MHz	10MHz	
-30	-	-	-	-	-	-	-	-	2.5
-20	-	-	-	-	-	-	-	-	2.5
-10	0.0053	-0.0024	0.0005	-0.0012	0.0018	0.0018	0.0017	0.0014	2.5
0	0.0021	0.0014	0.0054	0.0028	0.0017	-0.0016	-0.0006	-0.0030	2.5
10	-0.0028	0.0062	0.0001	0.0026	0.0010	0.0049	0.0018	0.0079	2.5
20	0.0047	0.0011	0.0021	-0.0003	0.0003	0.0001	-0.0015	-0.0008	2.5
30	0.0014	-0.0031	0.0002	0.0020	0.0024	-0.0008	-0.0011	0.0024	2.5
40	0.0054	-0.0029	0.0041	0.0026	-0.0020	0.0028	0.0025	0.0001	2.5
50	0.0029	0.0038	-0.0009	0.0031	0.0047	0.0048	-0.0028	0.0024	2.5
55	0.0015	0.0015	-0.0007	0.0023	0.0024	-0.0006	-0.0058	0.0125	2.5

**NOTE:**

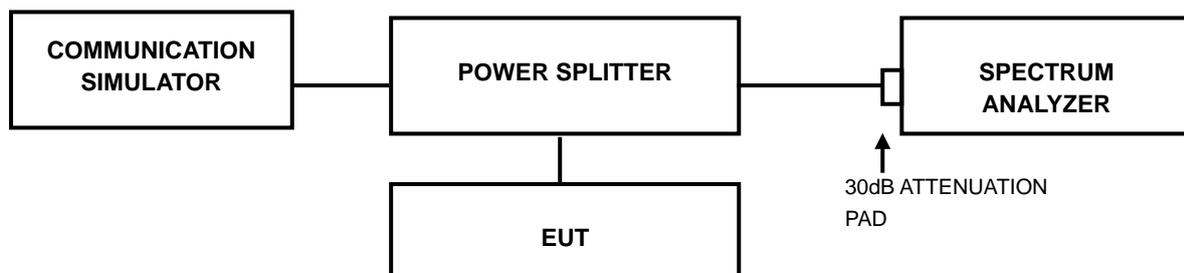
1. The applicant defined the normal operating temperature of the EUT is from -10°C to 55°C.
2. The EUT would shut down automatically when exceed -10 degree C range.

## 4.3 OCCUPIED BANDWIDTH MEASUREMENT

### 4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

### 4.3.2 TEST SETUP

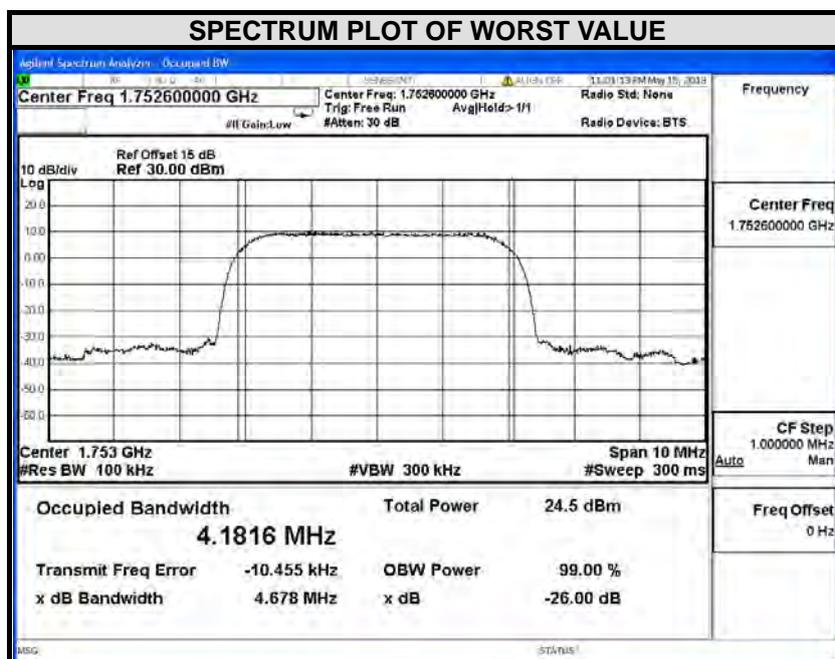


### 4.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 4.3.4 TEST RESULTS

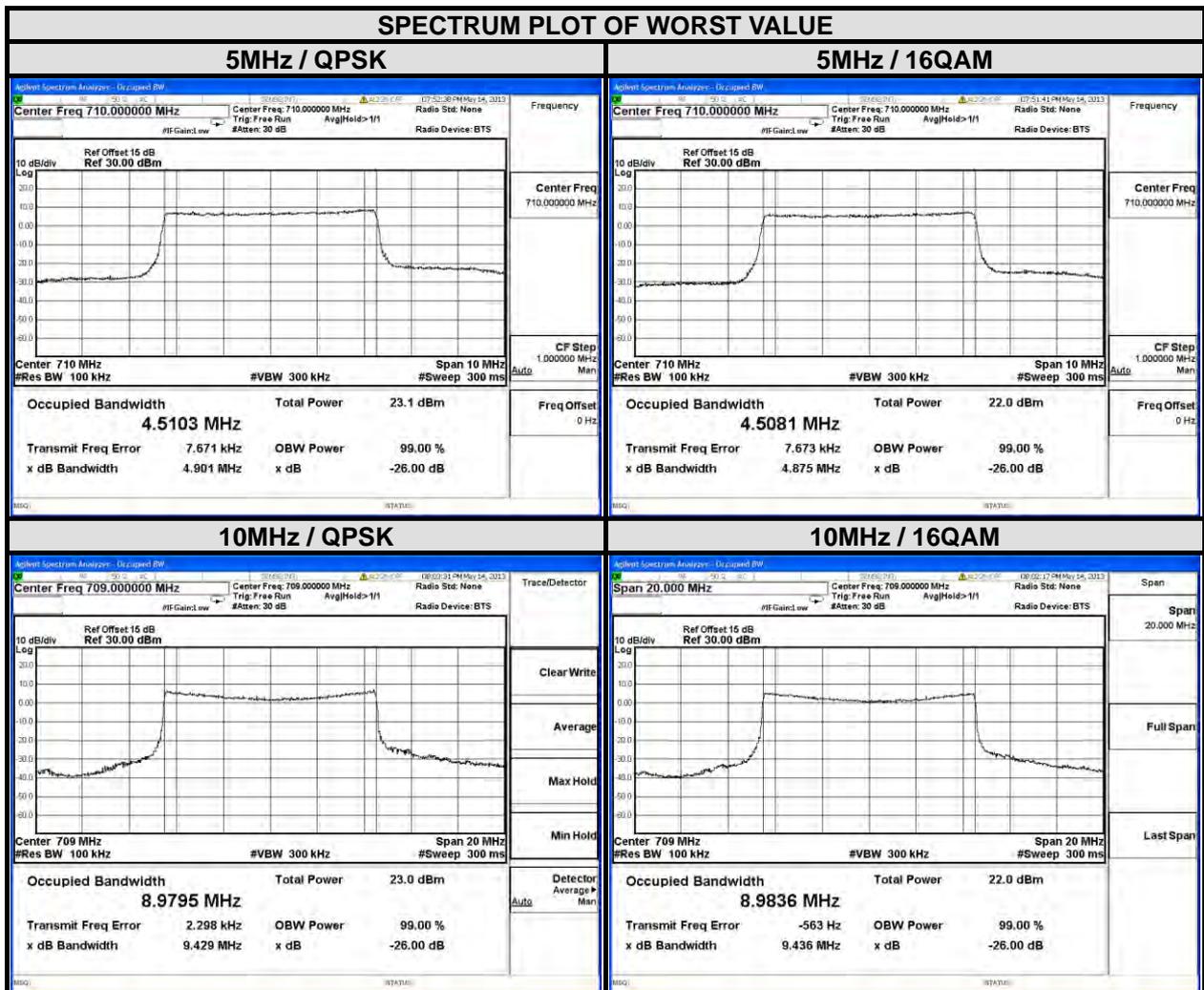
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		WCDMA Band 4
1312	1712.4	4.1784
1413	1732.6	4.1698
1513	1752.6	4.1816





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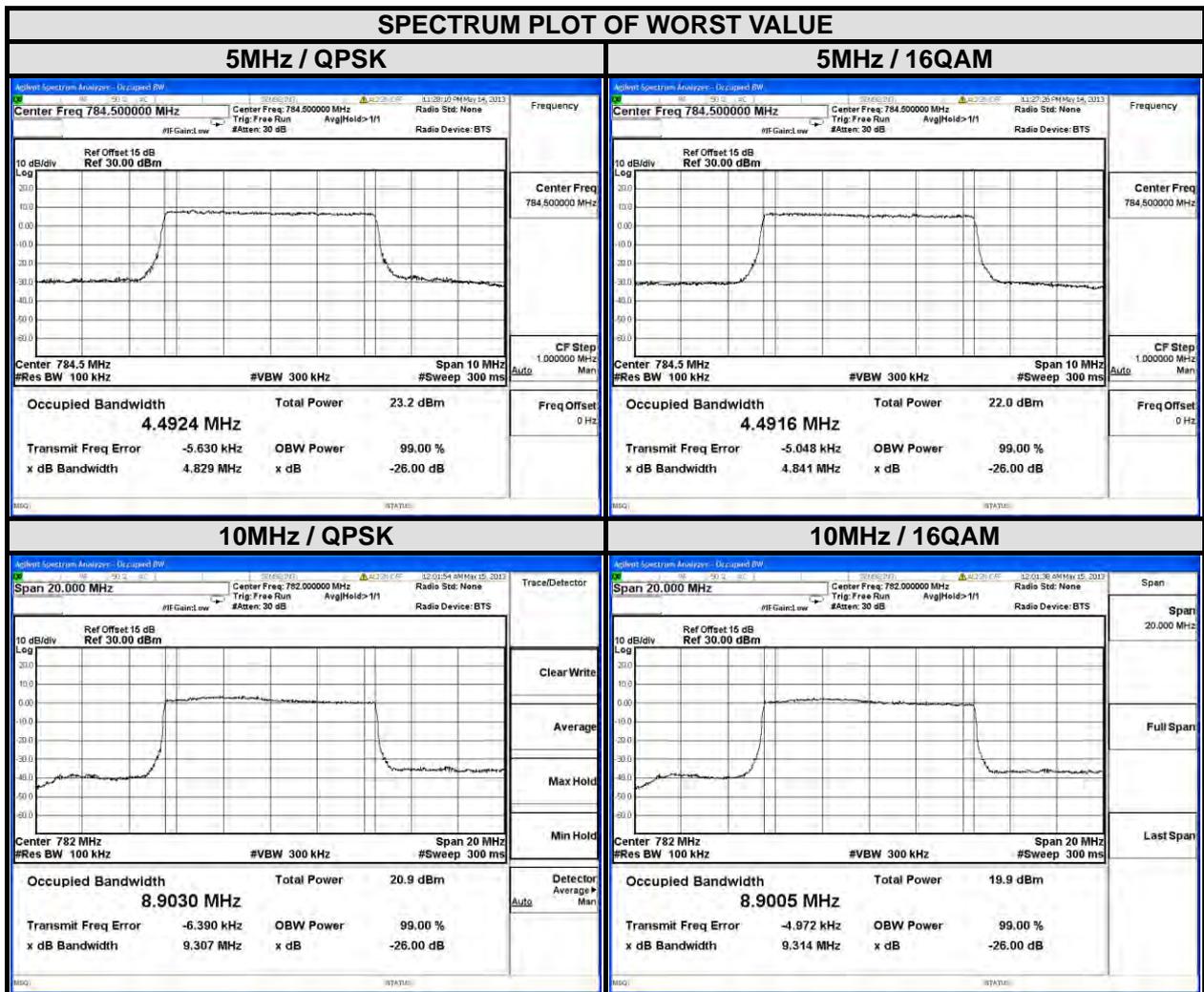
LTE BAND 17							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.4913	4.4895	23780	709.0	8.9795	8.9836
23790	710.0	4.5103	4.5081	23790	710.0	8.9672	8.9717
23825	713.5	4.4667	4.4597	23800	711.0	8.9353	8.9332





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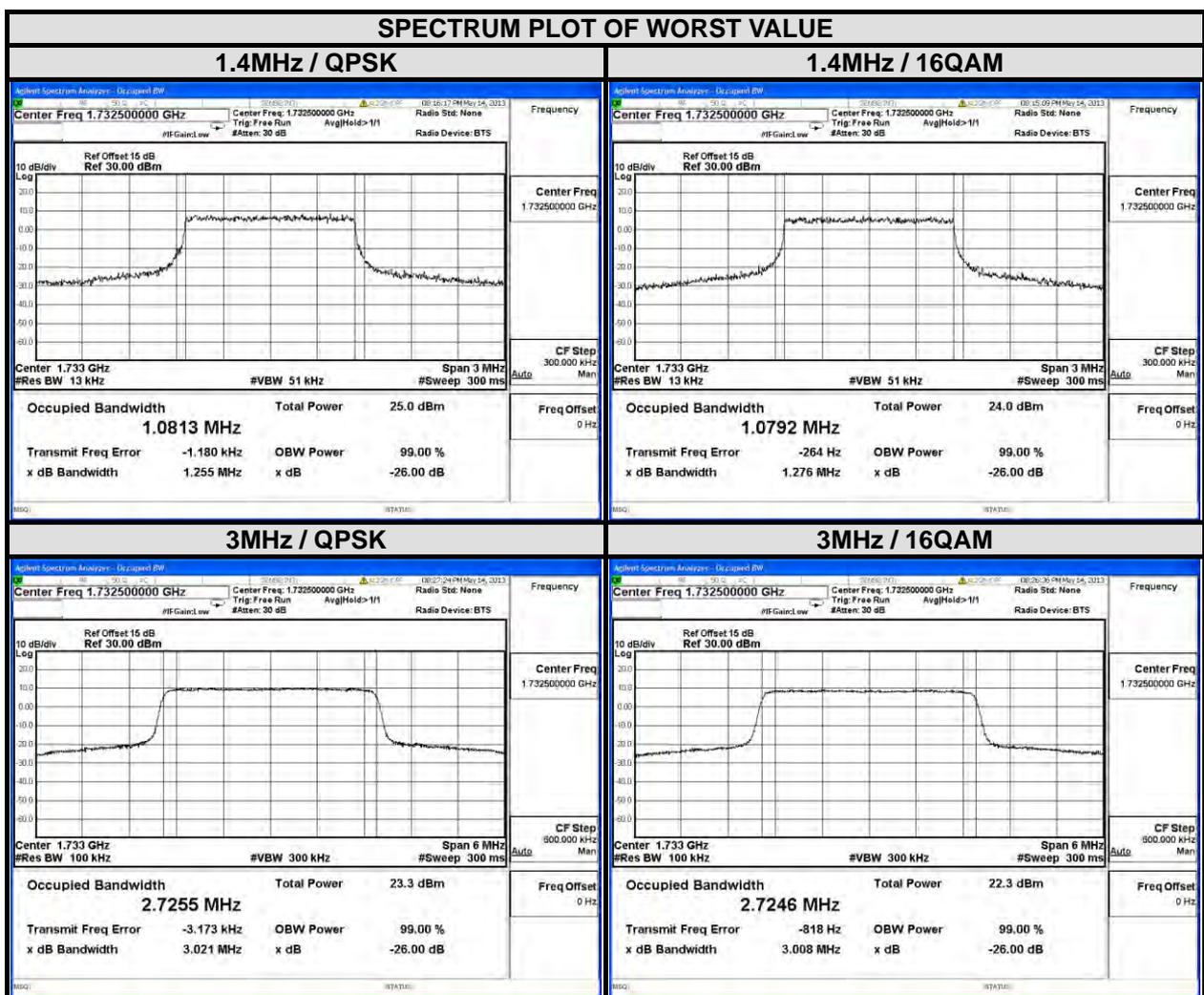
LTE BAND 13							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
23205	779.5	4.4749	4.4709	23230	782.0	8.9030	8.9005
23230	782.0	4.4910	4.4842				
23255	784.5	4.4924	4.4916				



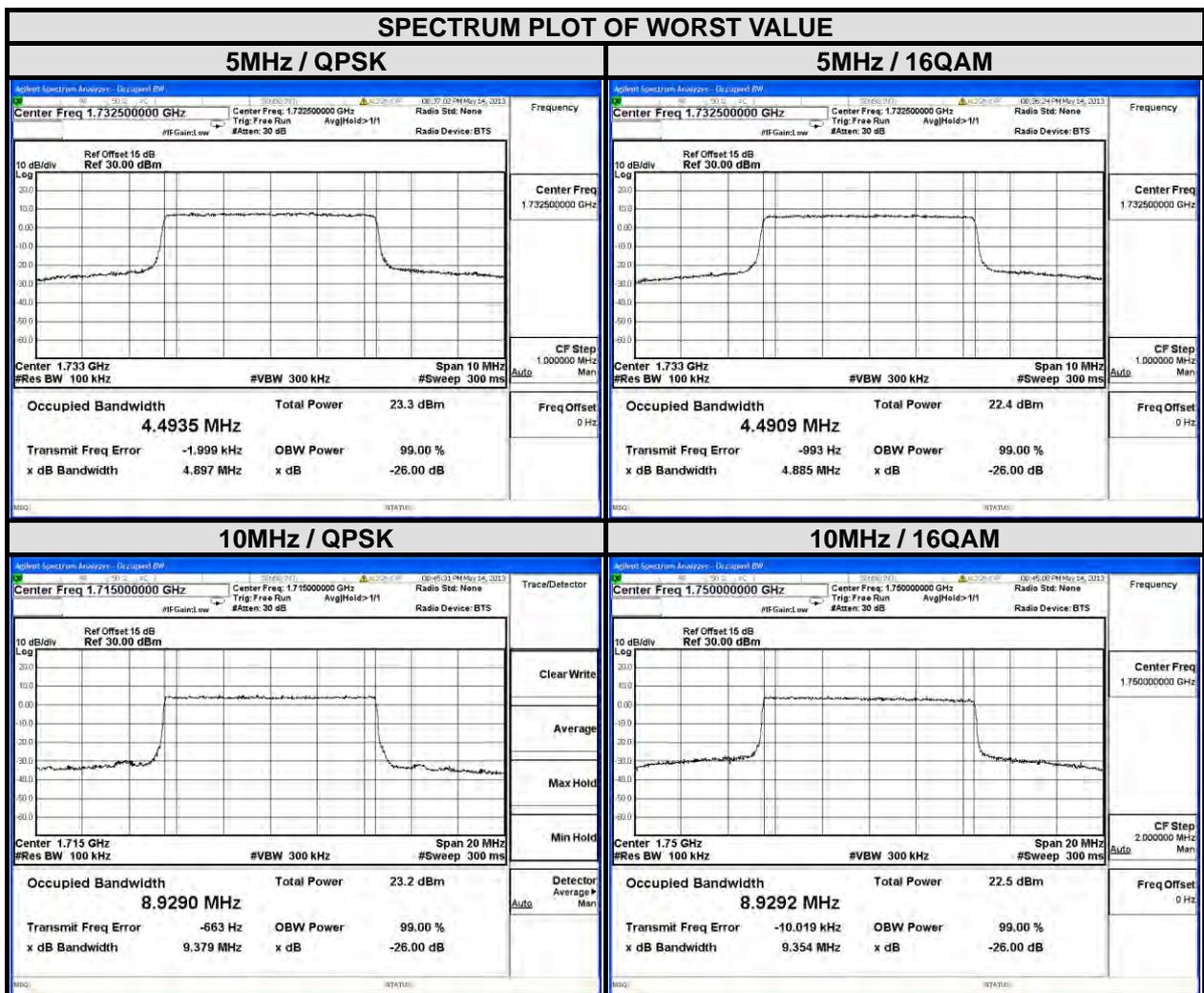


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LTE BAND 4							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.0791	1.0771	19965	1711.5	2.7206	2.7214
20175	1732.5	1.0813	1.0792	20175	1732.5	2.7255	2.7246
20393	1754.3	1.0791	1.0780	20385	1753.5	2.7216	2.7229



LTE BAND 4							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	4.4887	4.4874	20000	1715.0	8.9290	8.9266
20175	1732.5	4.4935	4.4909	20175	1732.5	8.9260	8.9234
20375	1752.5	4.4887	4.4854	20350	1750.0	8.9269	8.9292

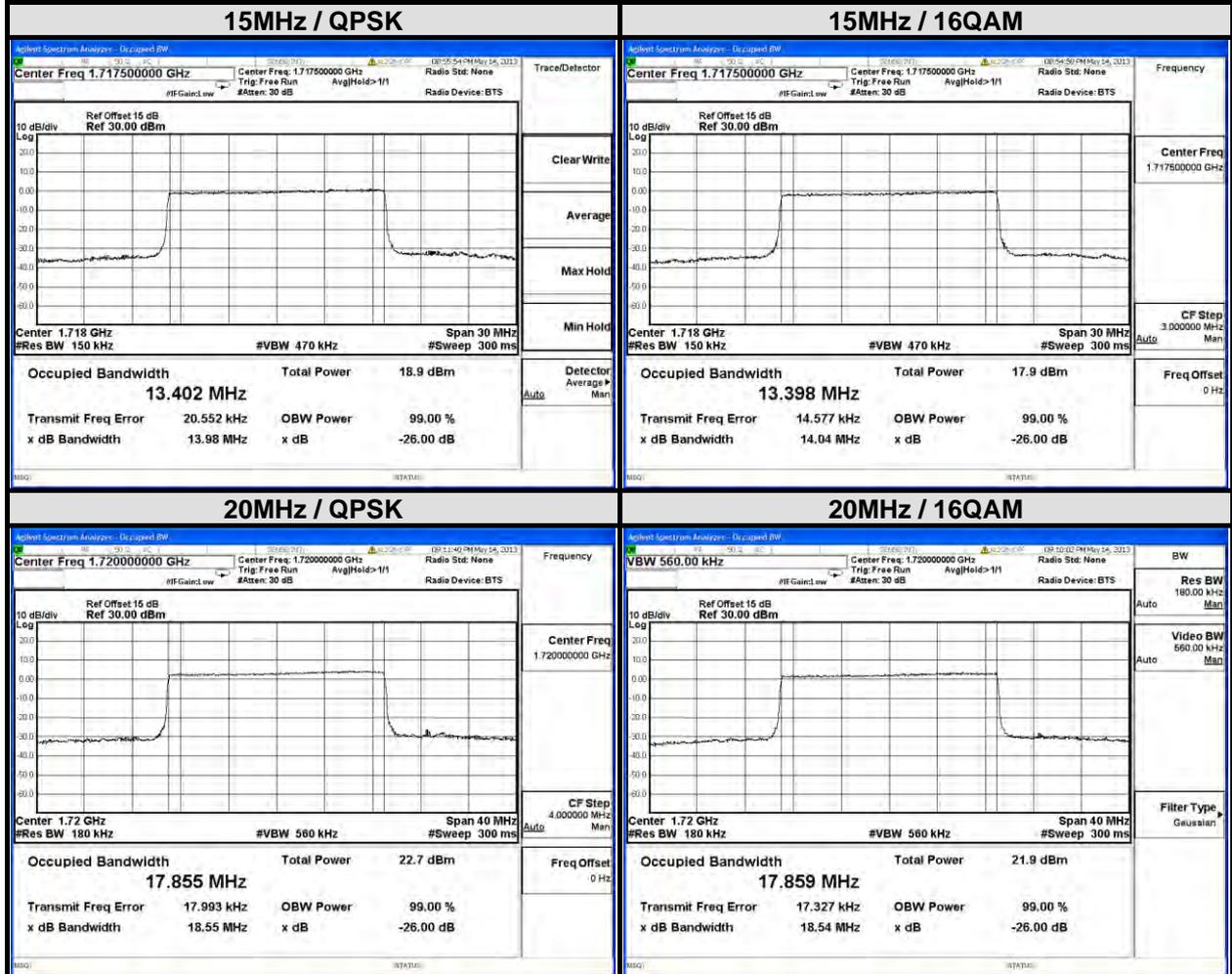




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LTE BAND 4							
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	13.402	13.398	20050	1720	17.855	17.859
20175	1732.5	13.378	13.365	20175	1732.5	17.805	17.810
20325	1747.5	13.373	13.370	20300	1745	17.831	17.831

**SPECTRUM PLOT OF WORST VALUE**

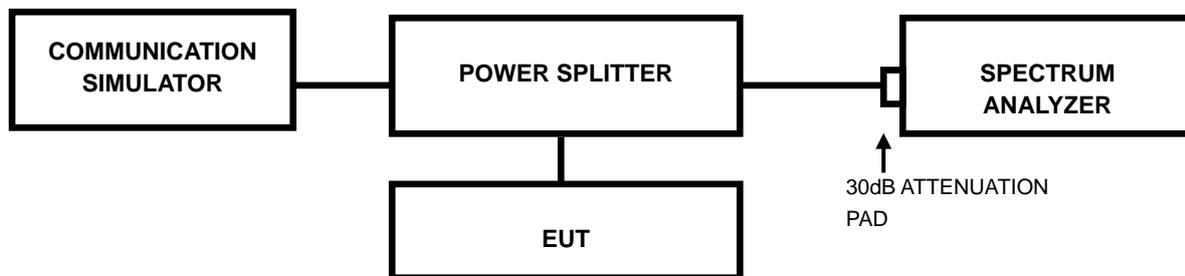


## 4.4 PEAK TO AVERAGE RATIO

### 4.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

### 4.4.2 TEST SETUP

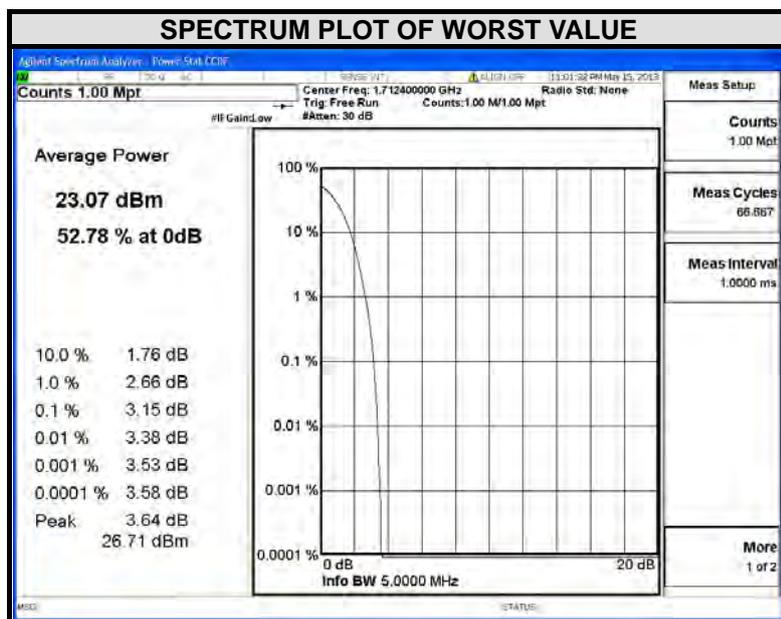


### 4.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.4.4 TEST RESULTS

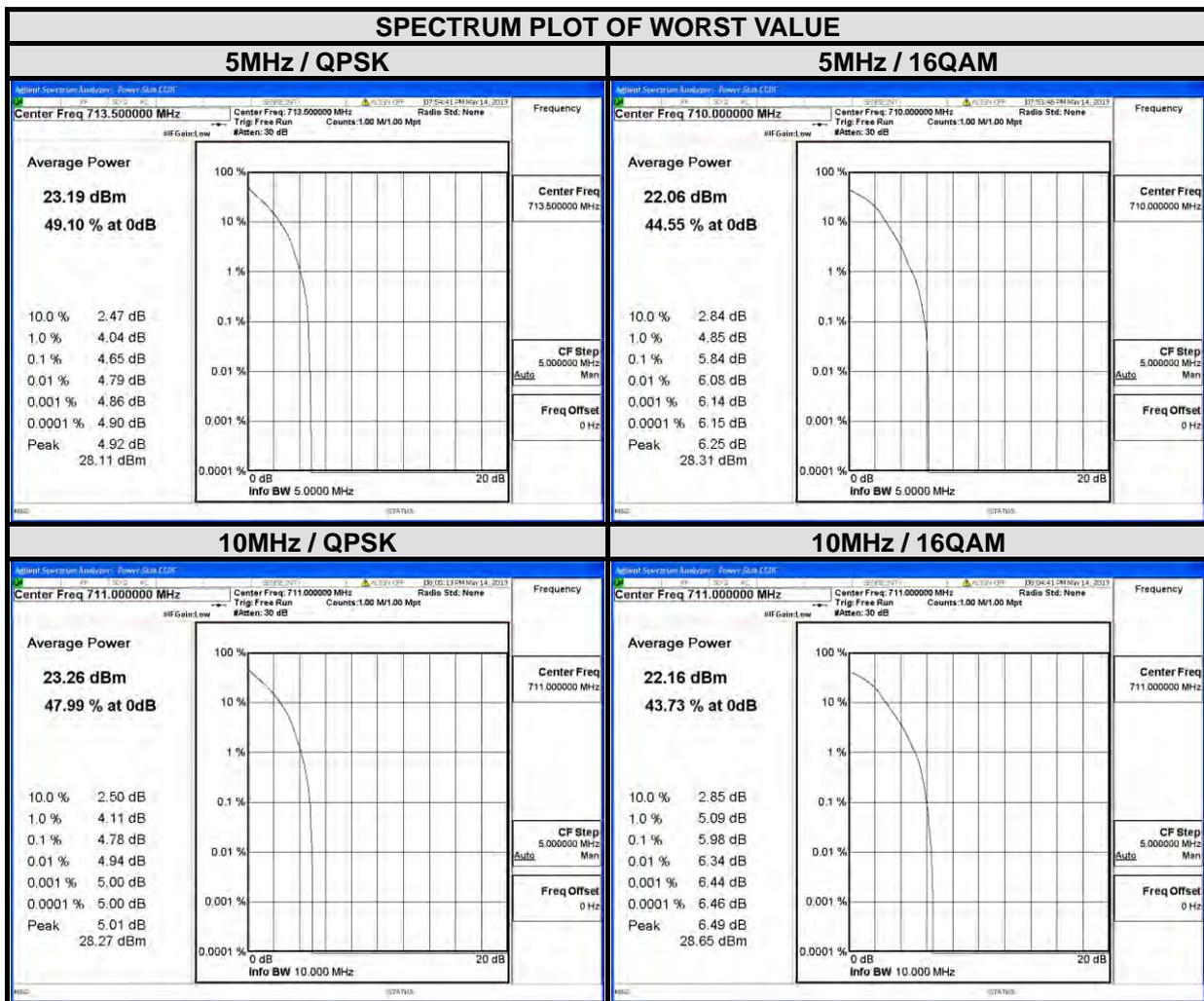
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
		WCDMA BAND 4
1312	1712.4	3.15
1413	1732.6	2.79
1513	1752.6	2.93





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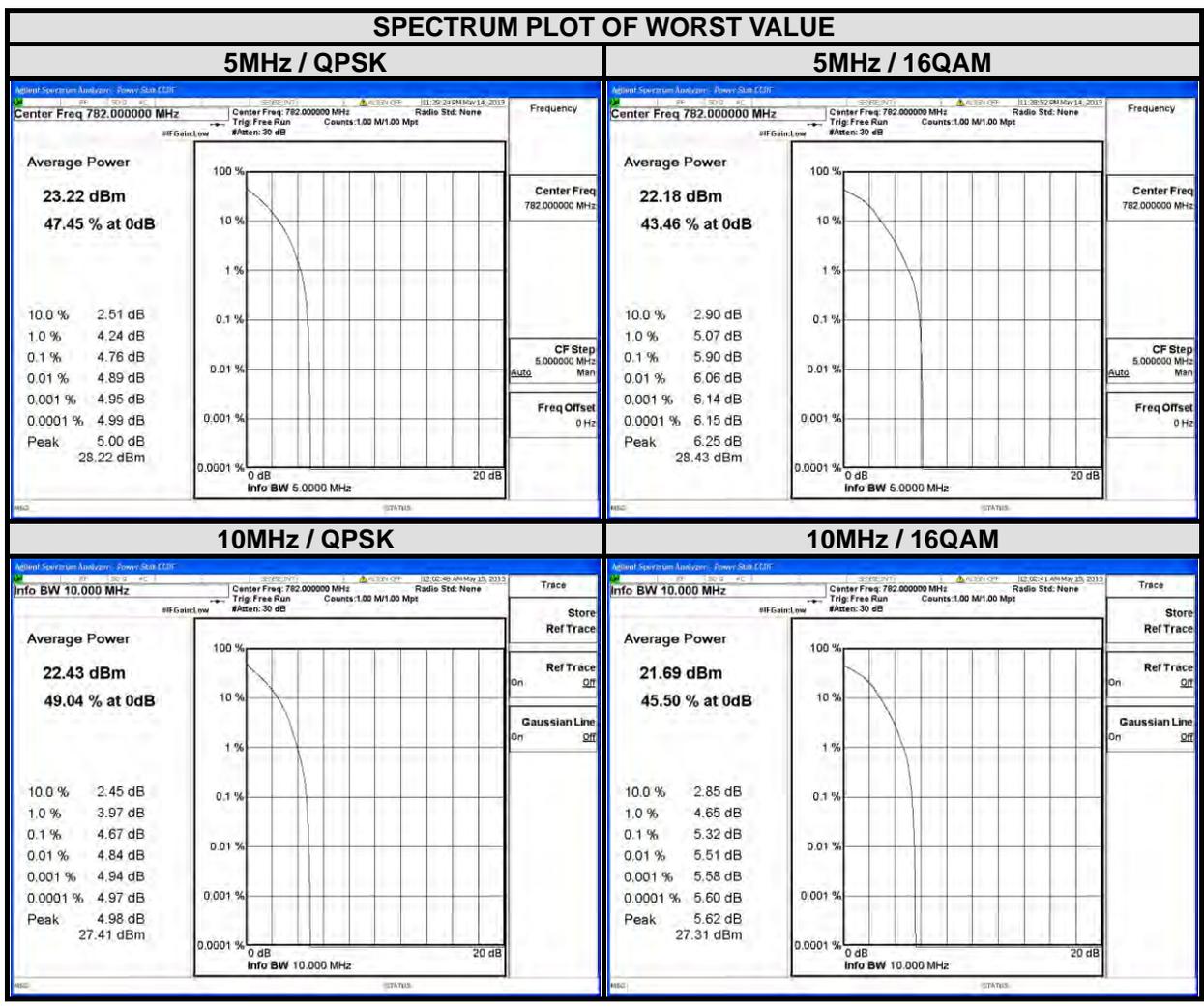
LTE BAND 17							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	3.37	4.43	23780	709.0	3.62	4.61
23790	710.0	4.59	5.84	23790	710.0	4.27	5.32
23825	713.5	4.65	5.81	23800	711.0	4.78	5.98





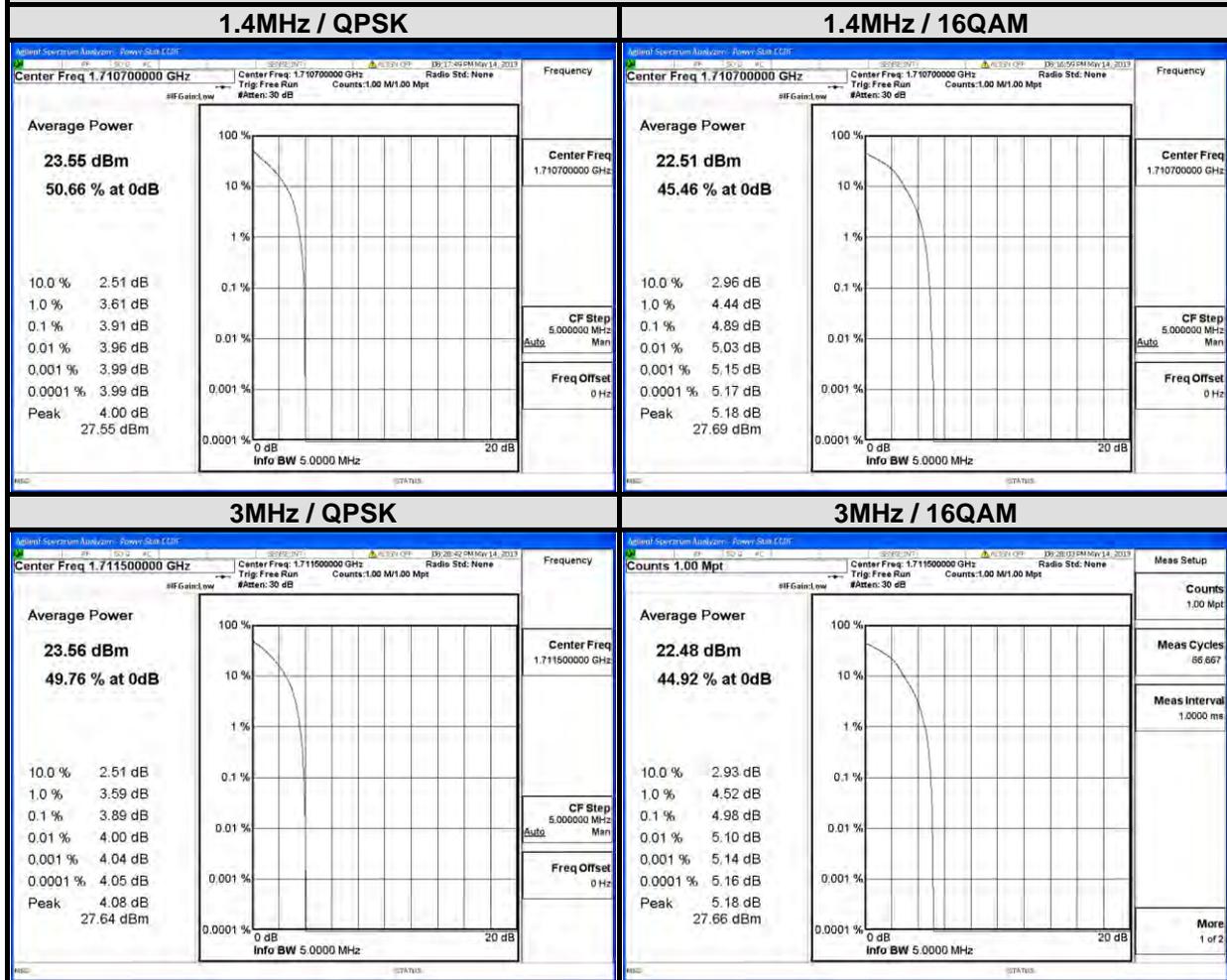
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LTE BAND 13							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
23205	779.5	4.11	5.20	23230	782.0	4.67	5.32
23230	782.0	4.76	5.90				
23255	784.5	4.65	5.86				



LTE BAND 4							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	3.91	4.89	19965	1711.5	3.89	4.98
20175	1732.5	3.50	4.30	20175	1732.5	3.60	4.57
20393	1754.3	3.80	4.89	20385	1753.5	3.68	4.75

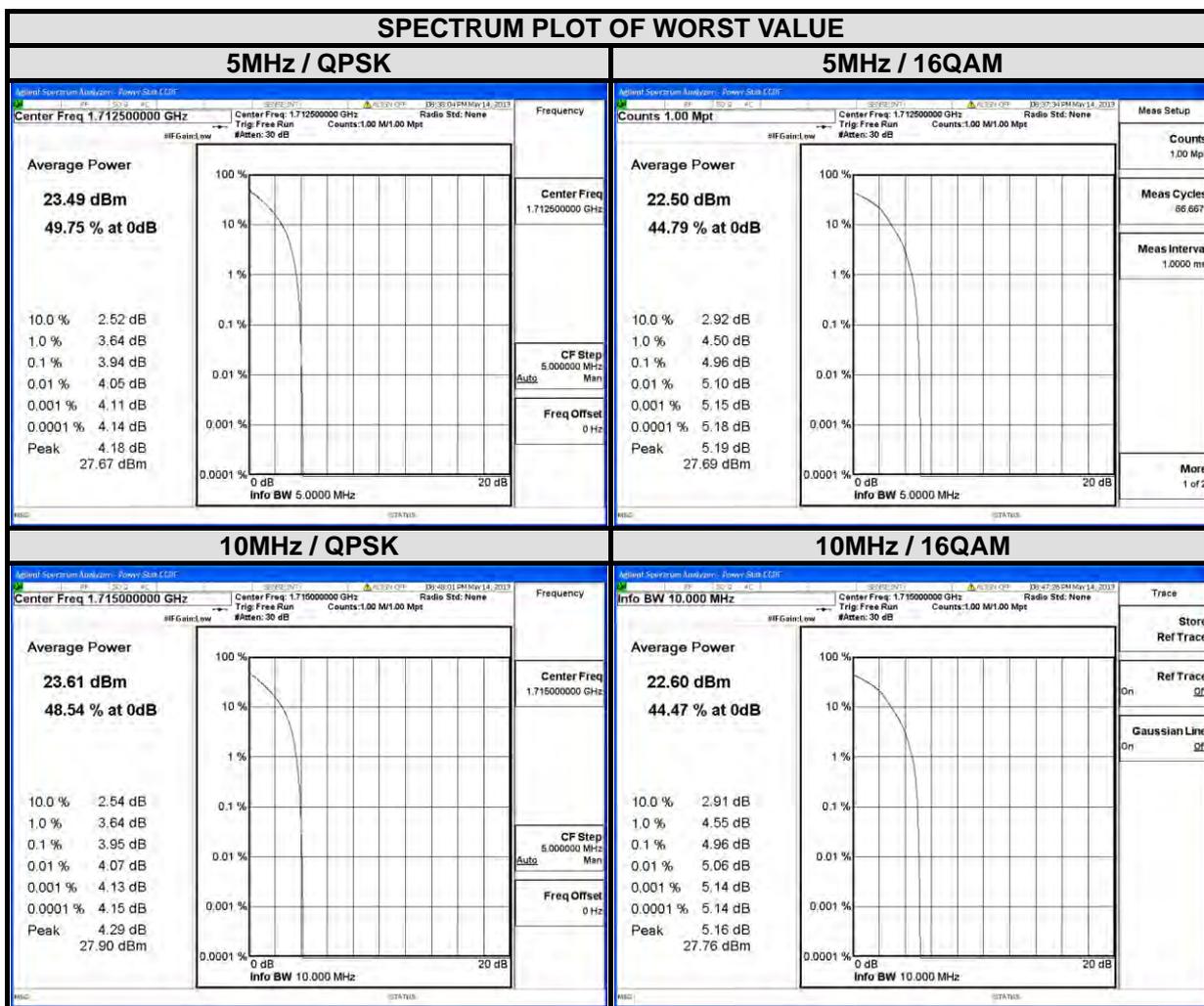
**SPECTRUM PLOT OF WORST VALUE**





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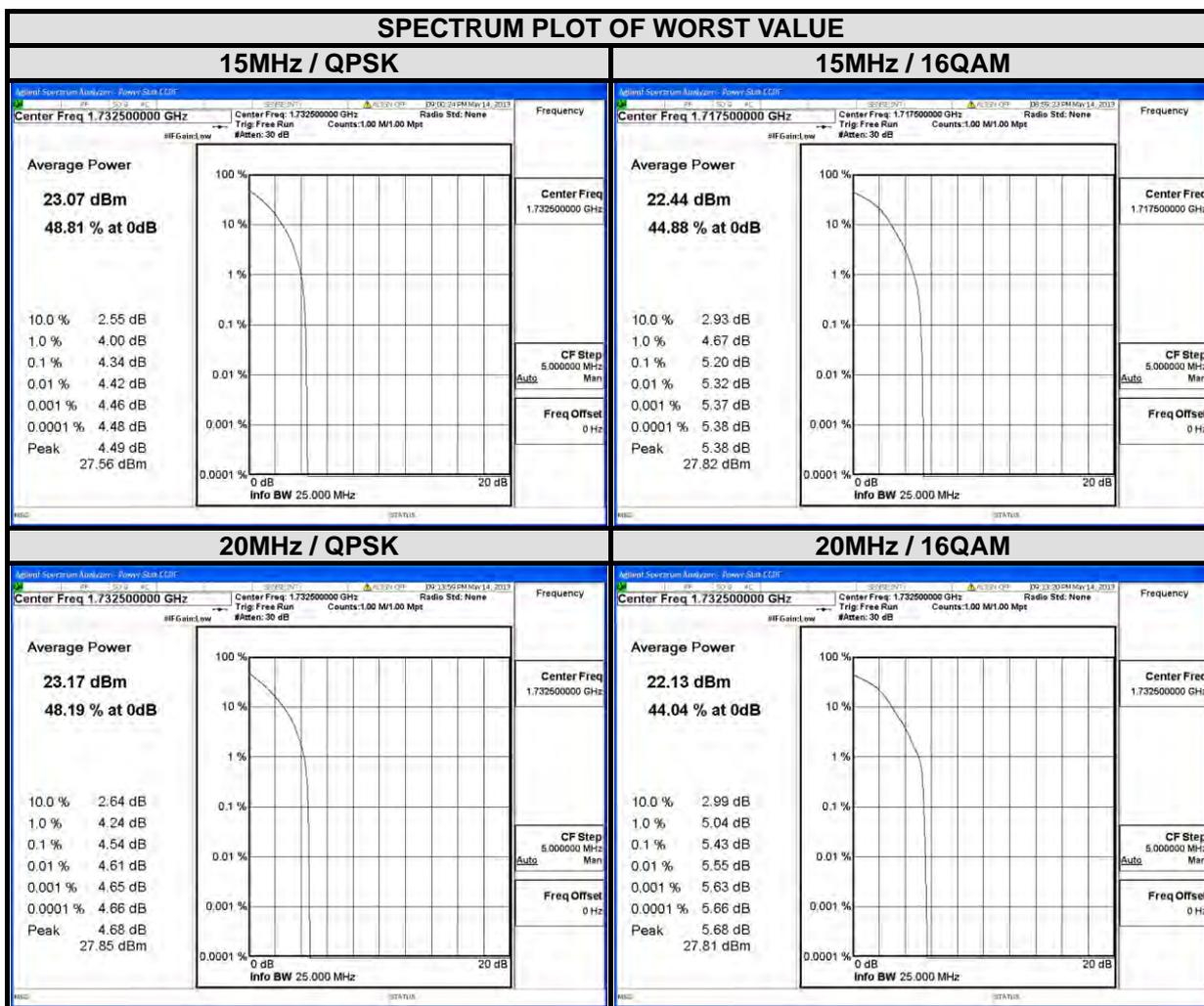
LTE BAND 4							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	3.94	4.96	20000	1715.0	3.95	4.96
20175	1732.5	3.66	4.60	20175	1732.5	3.95	4.73
20375	1752.5	3.45	4.50	20350	1750.0	3.02	4.20





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LTE BAND 4							
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	4.07	5.20	20050	1720	4.10	5.20
20175	1732.5	4.34	5.16	20175	1732.5	4.54	5.43
20325	1747.5	2.95	3.98	20300	1745	3.11	4.20



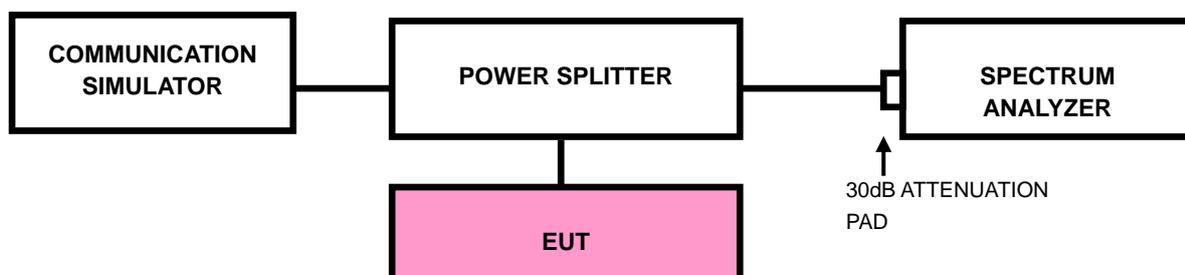
## 4.5 BAND EDGE MEASUREMENT

### 4.5.1 LIMITS OF BAND EDGE MEASUREMENT

For operations in the 704-716 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 1710 – 1755 MHz MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB.

### 4.5.2 TEST SETUP



#### 4.5.3 TEST PROCEDURES

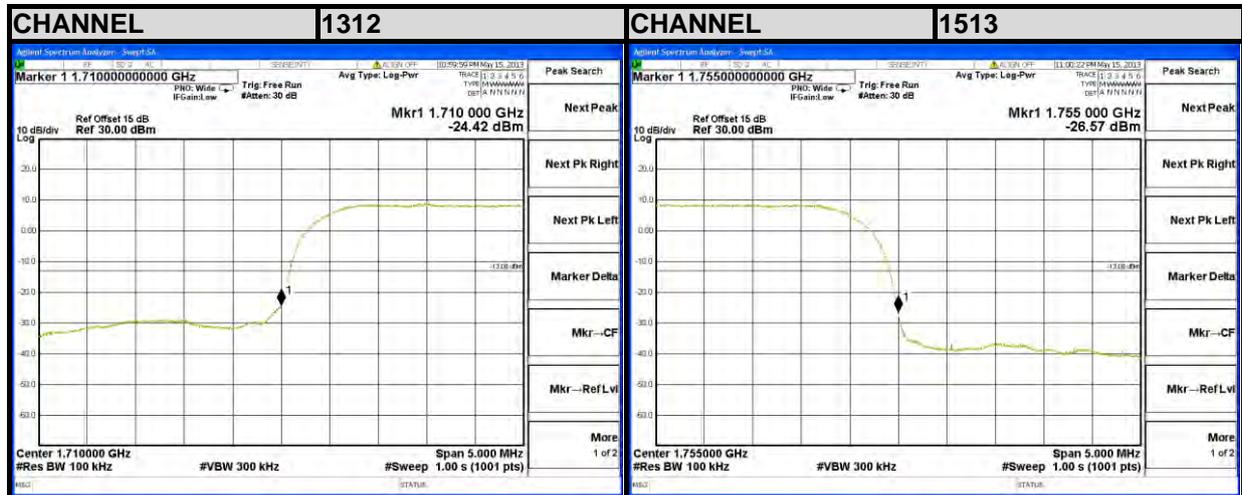
- a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz.
- d. Record the max trace plot into the test report.



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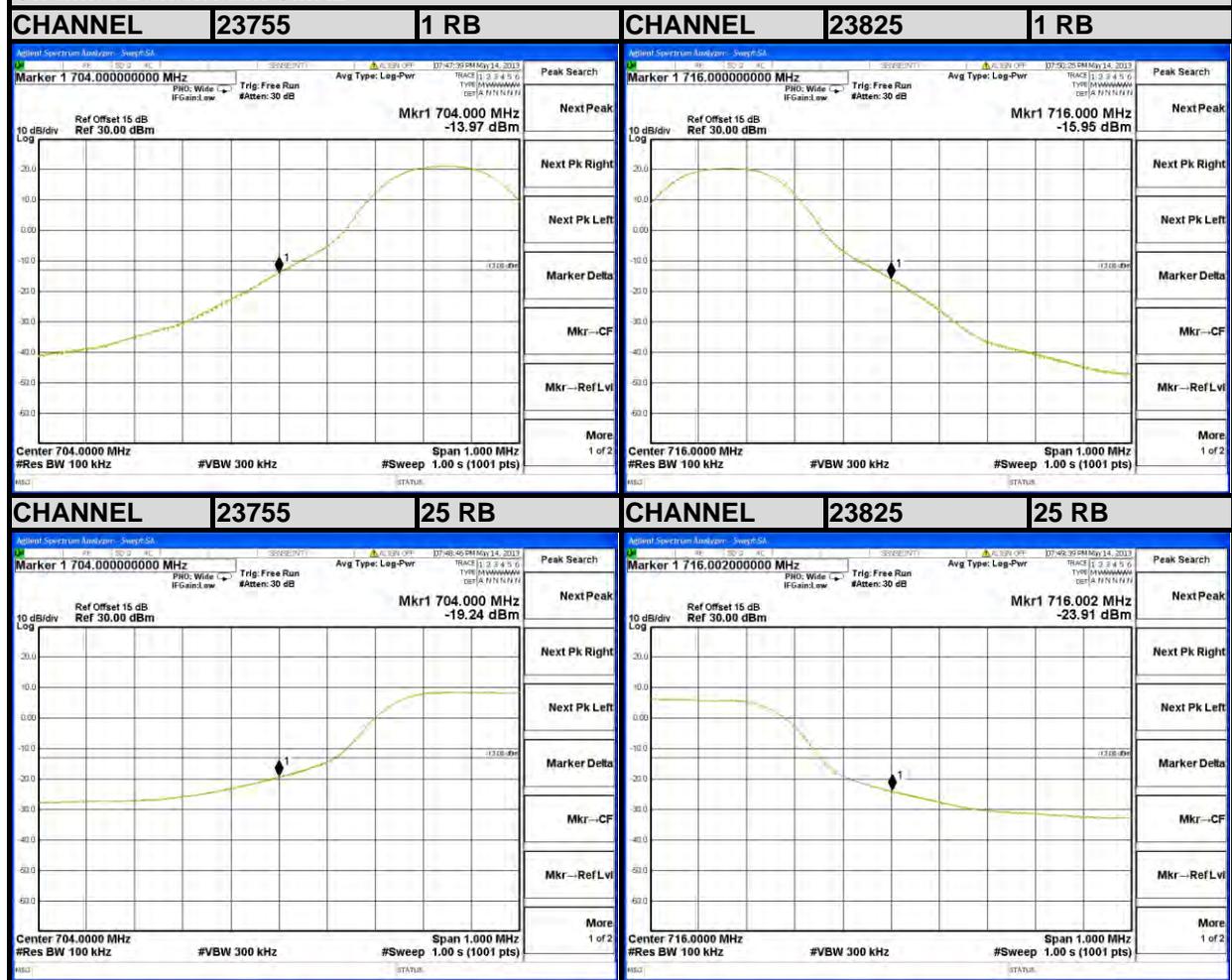
### 4.5.4 TEST RESULTS

#### WCDMA Band 4



#### LTE BAND 17

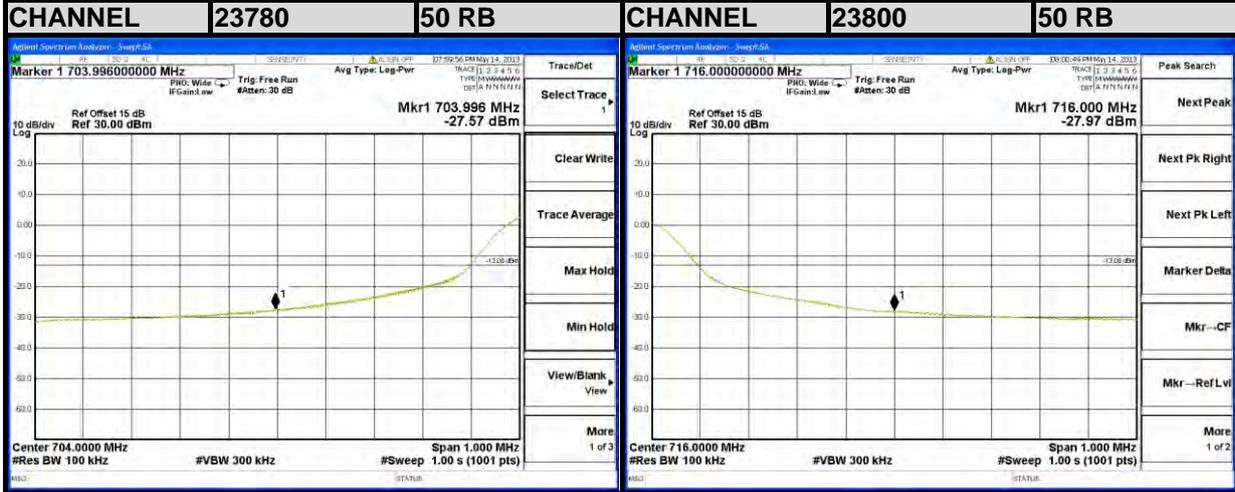
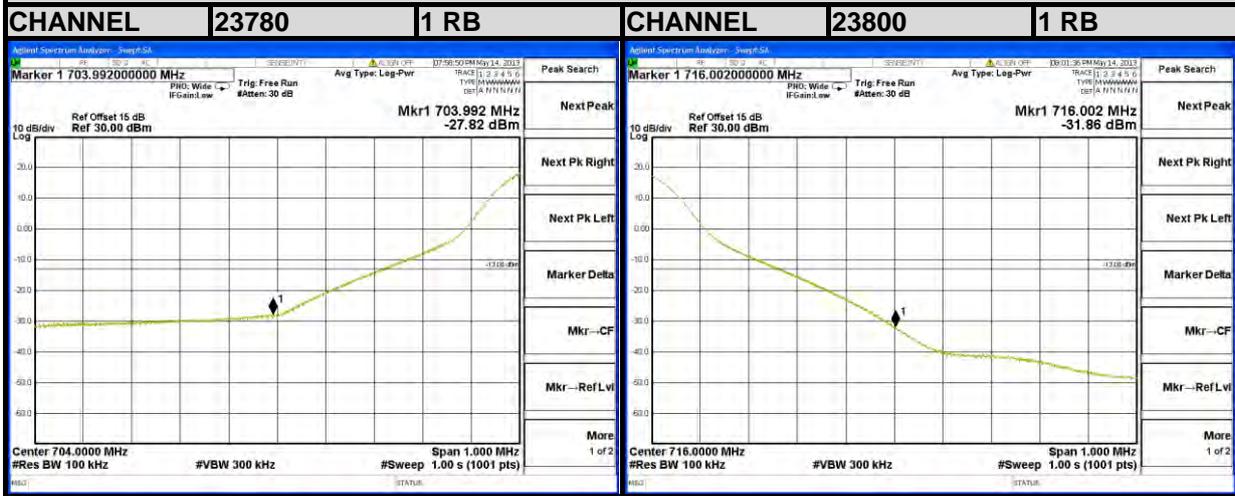
##### Channel Bandwidth: 5MHz





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### Channel Bandwidth: 10MHz

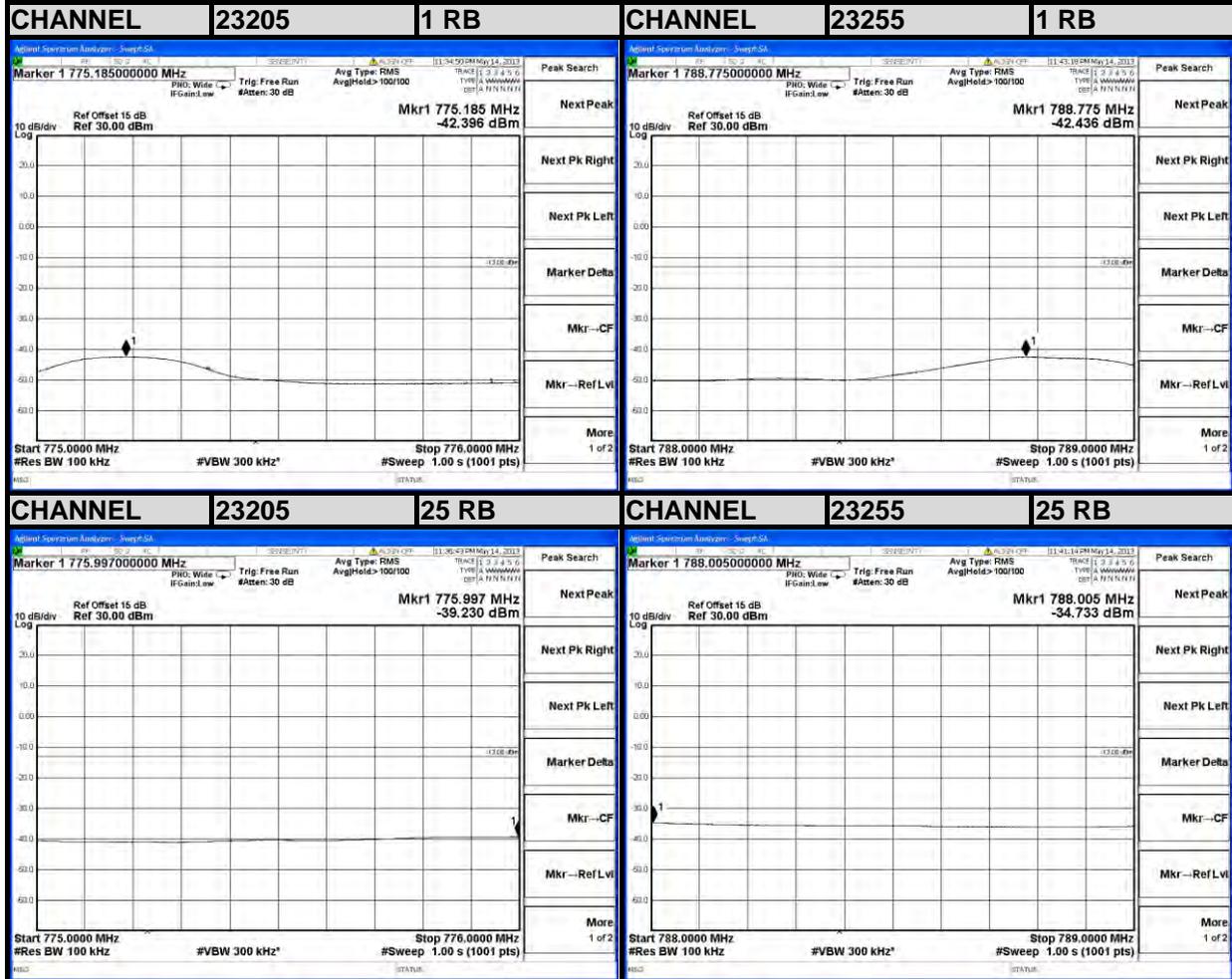




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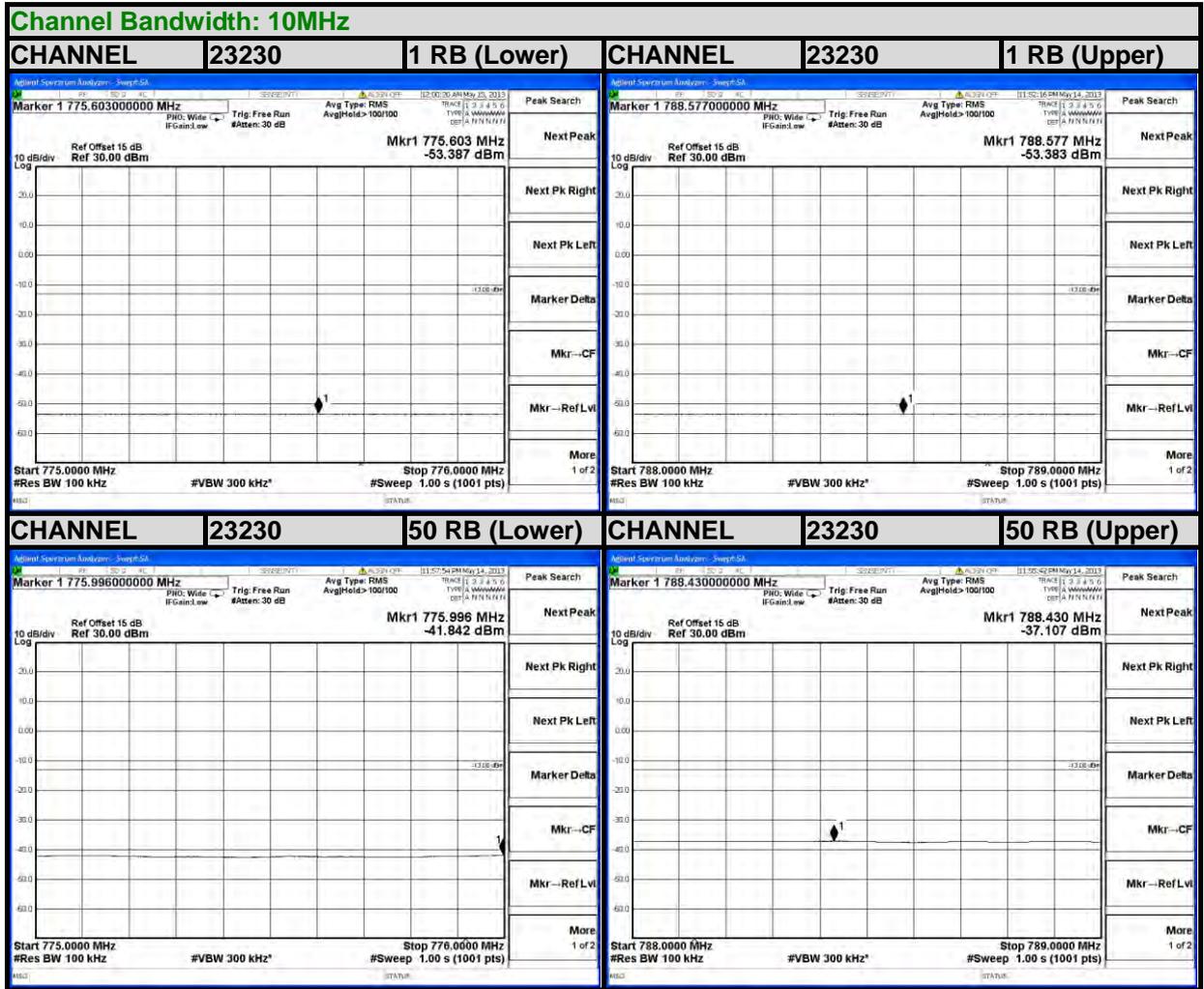
### LTE BAND 13

### Channel Bandwidth: 5MHz





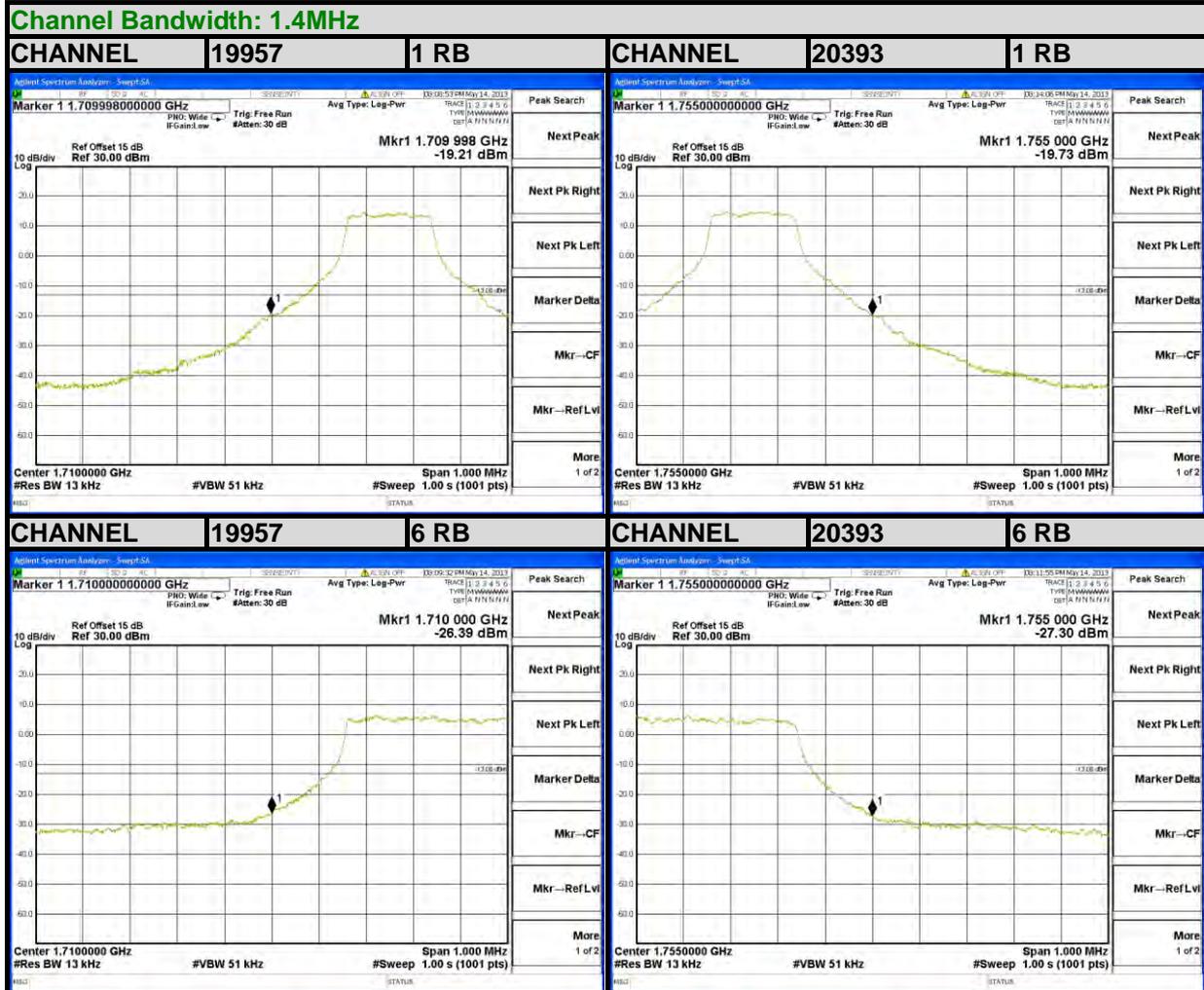
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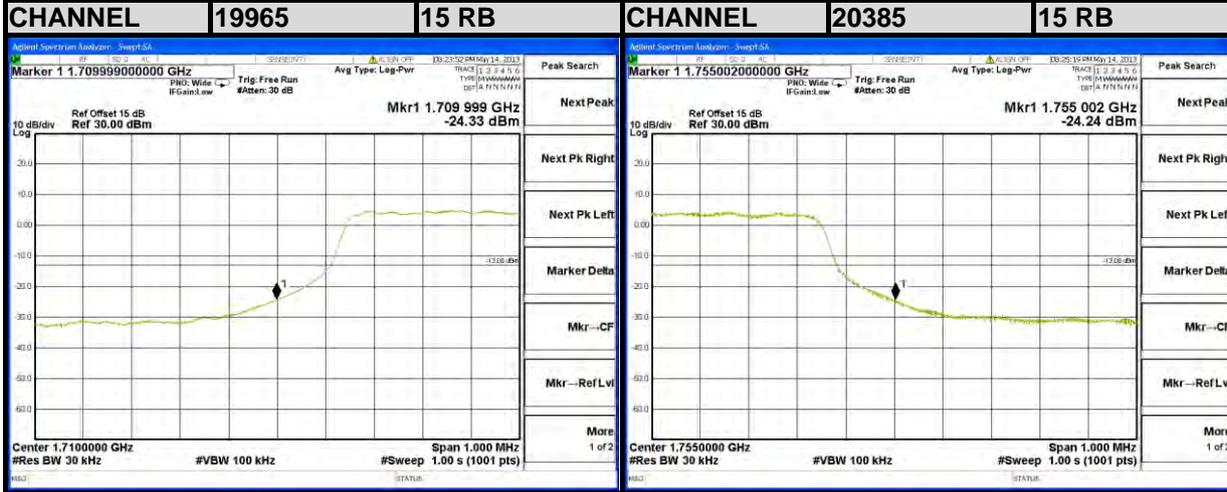
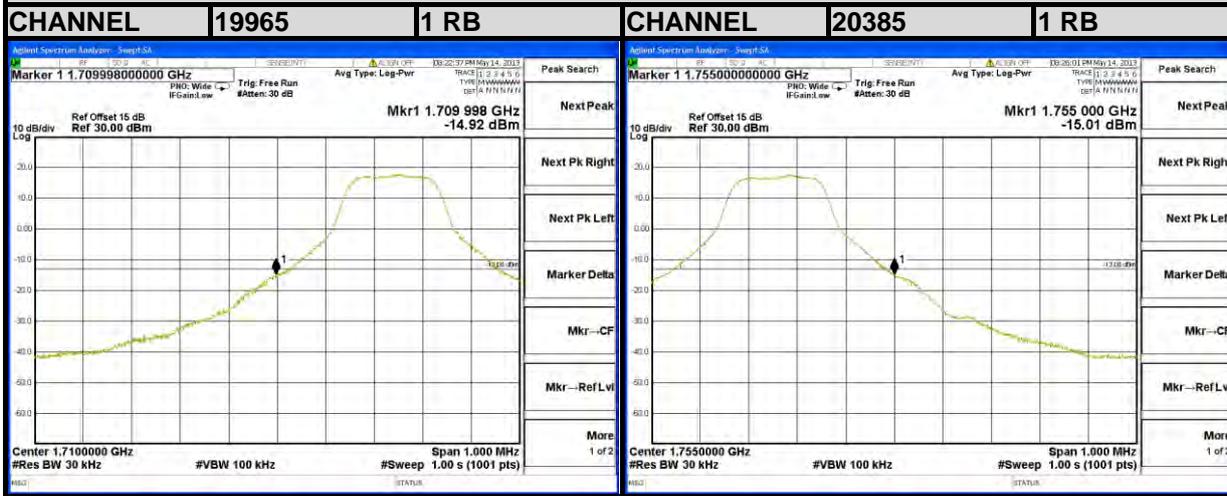
### LTE BAND 4





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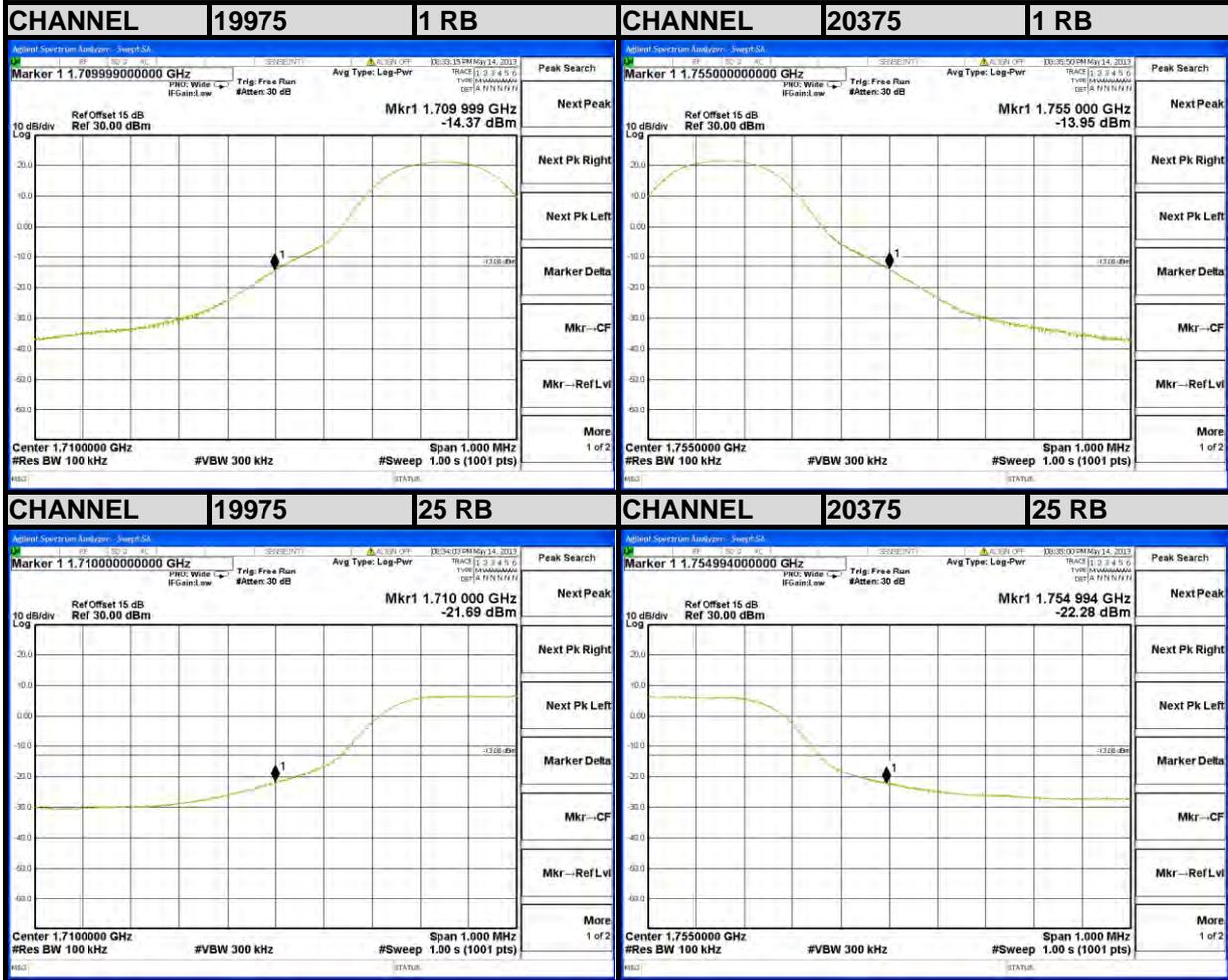
### Channel Bandwidth: 3MHz





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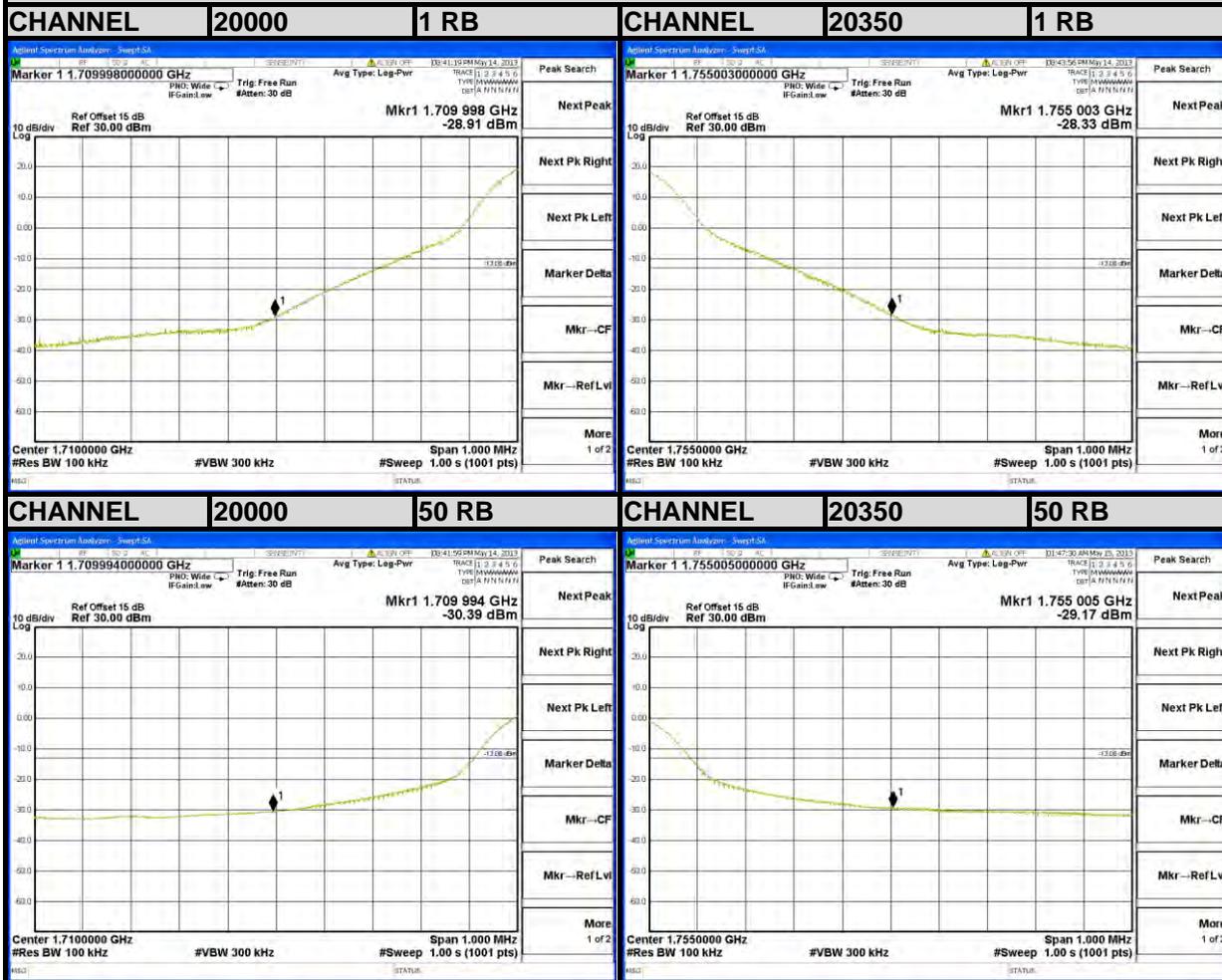
**Channel Bandwidth: 5MHz**





A D T

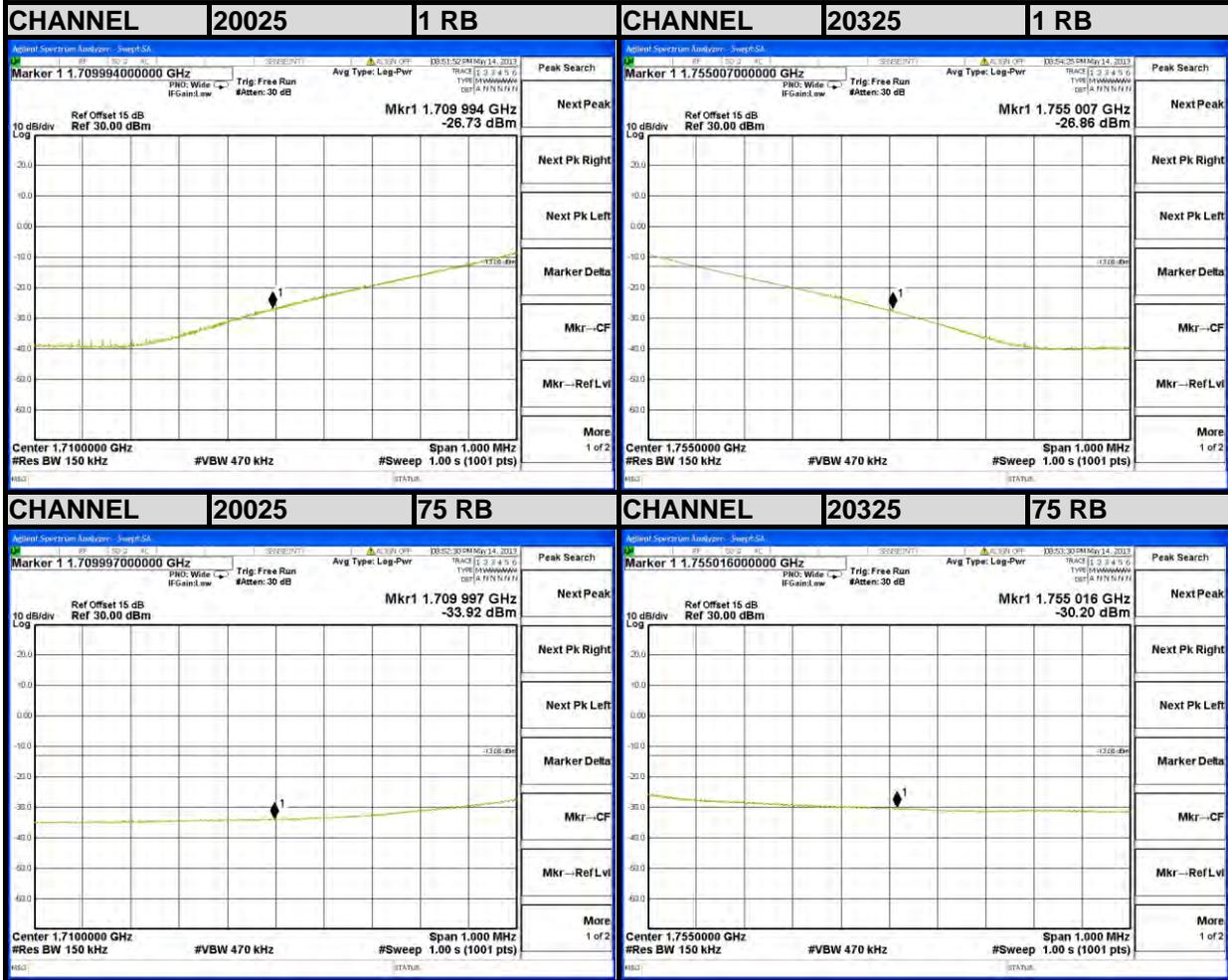
### Channel Bandwidth: 10MHz





A D T

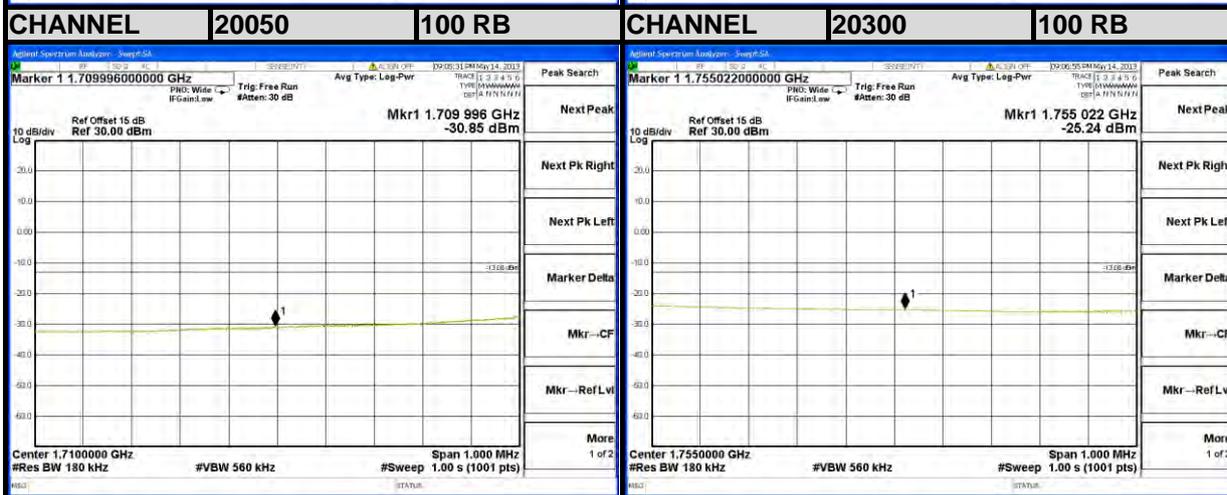
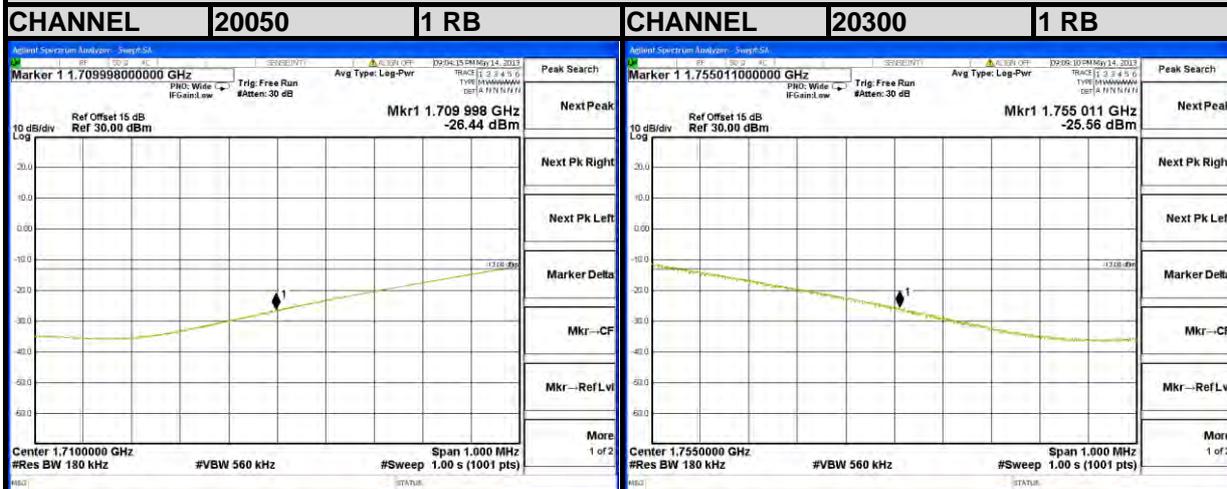
**Channel Bandwidth: 15MHz**





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### Channel Bandwidth: 20MHz



## 4.6 CONDUCTED SPURIOUS EMISSIONS

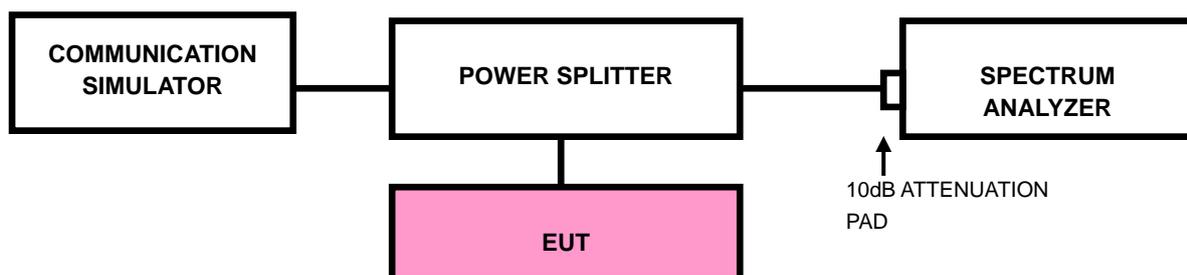
### 4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

### 4.6.2 TEST PROCEDURE

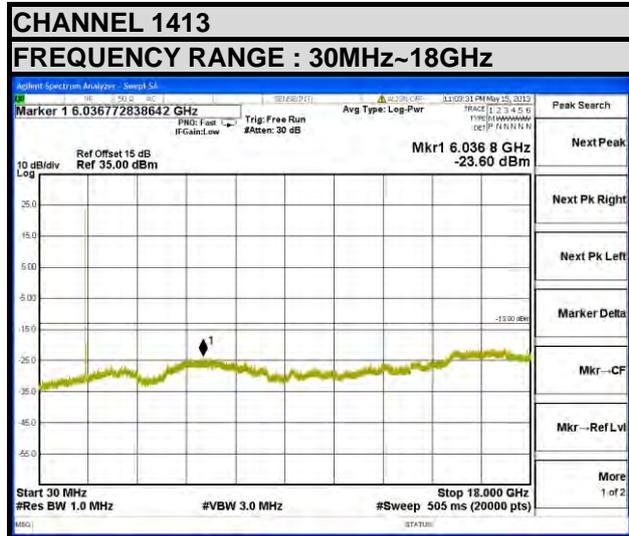
- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 30 MHz to 8GHz for LTE Band 17 and from 30MHz to 18GHz for LTE Band 4. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

### 4.6.3 TEST SETUP

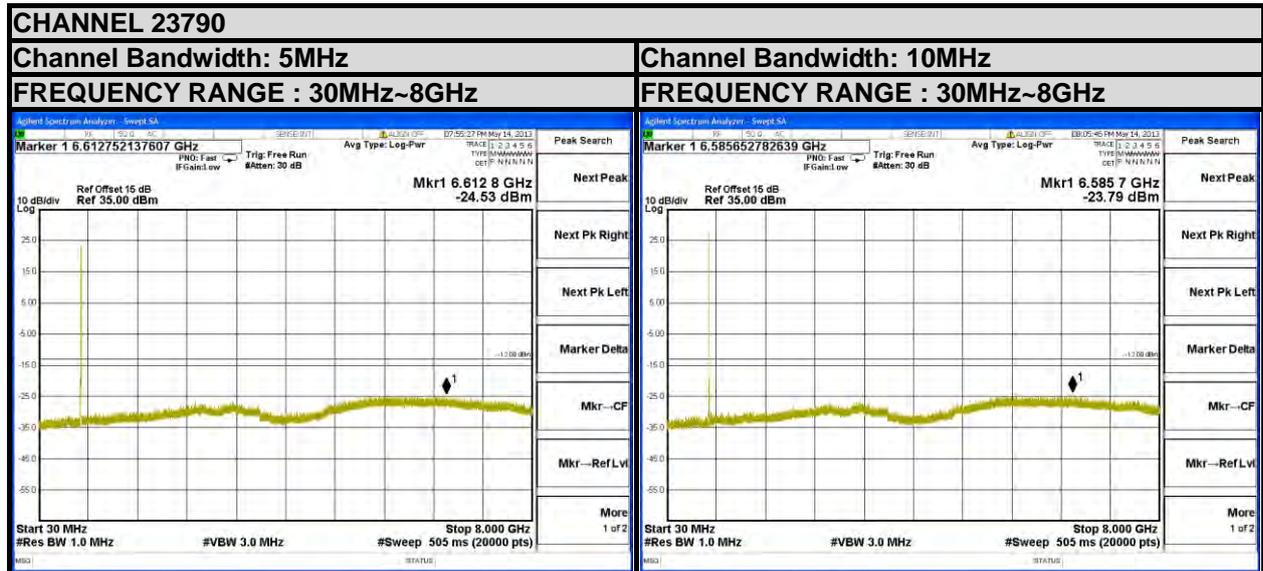


## 4.6.4 TEST RESULTS

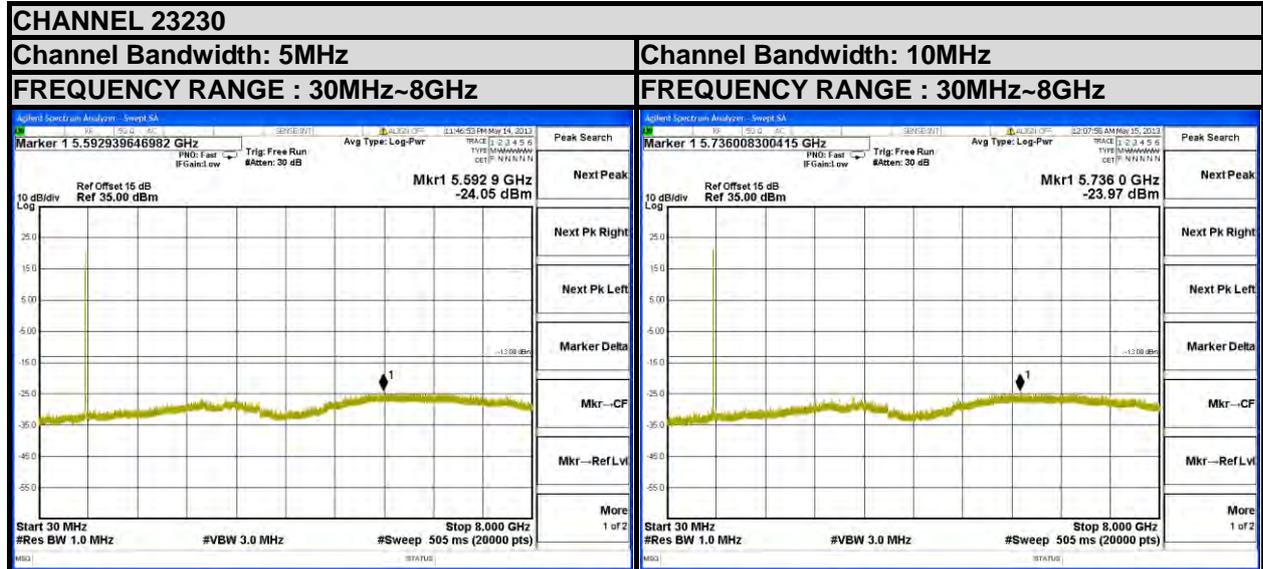
### WCDMA Band 4



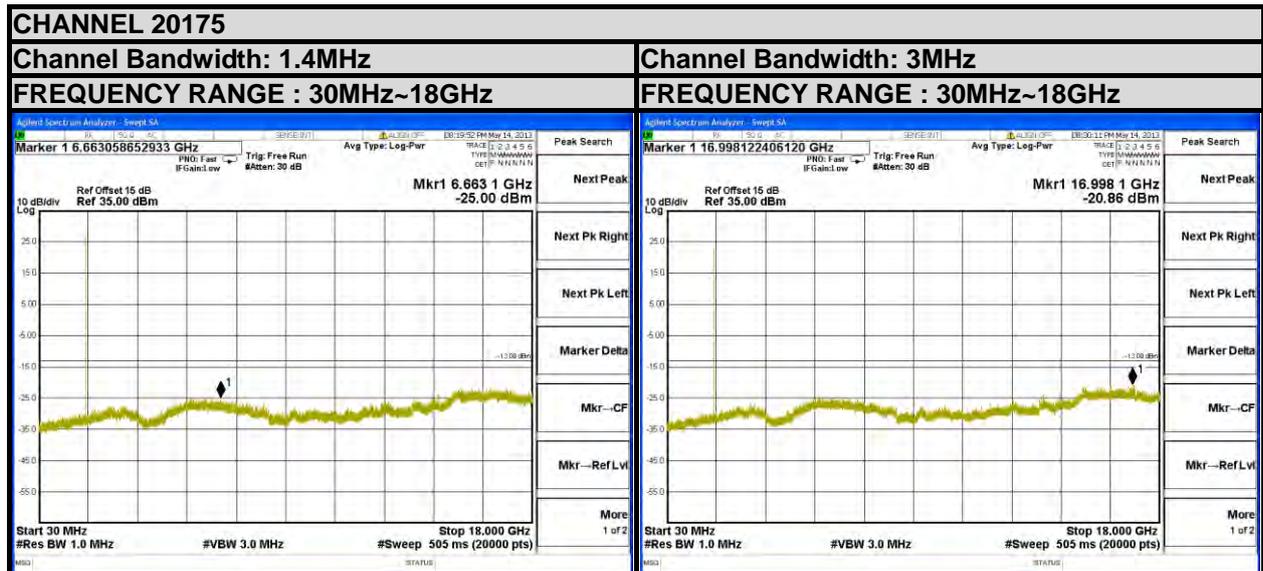
### LTE BAND 17



### LTE BAND 13



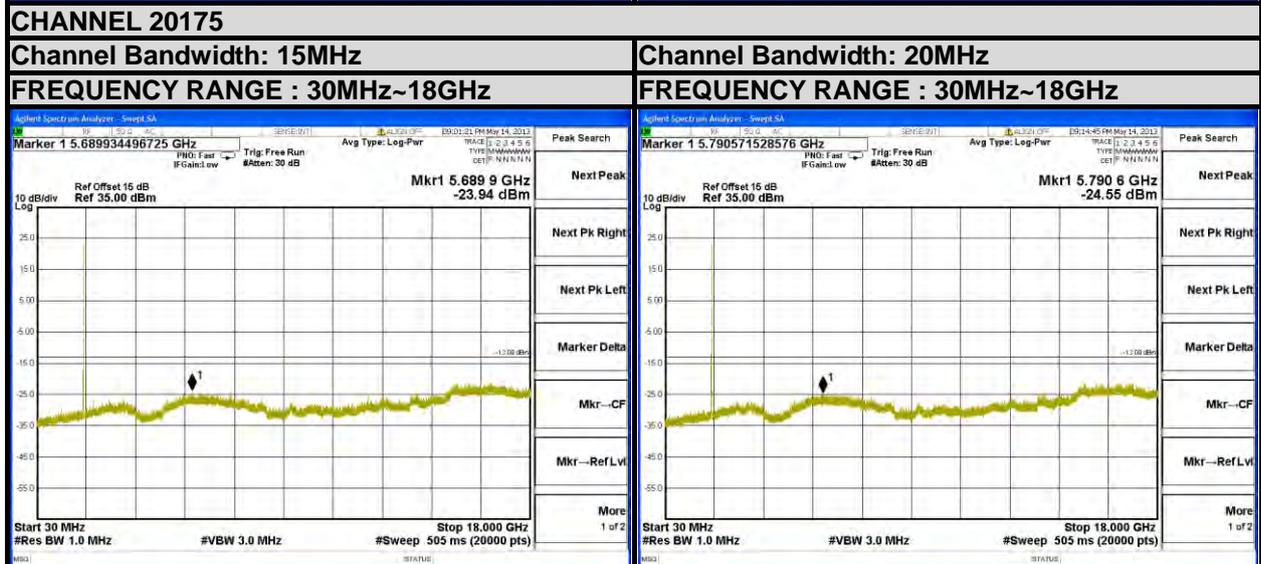
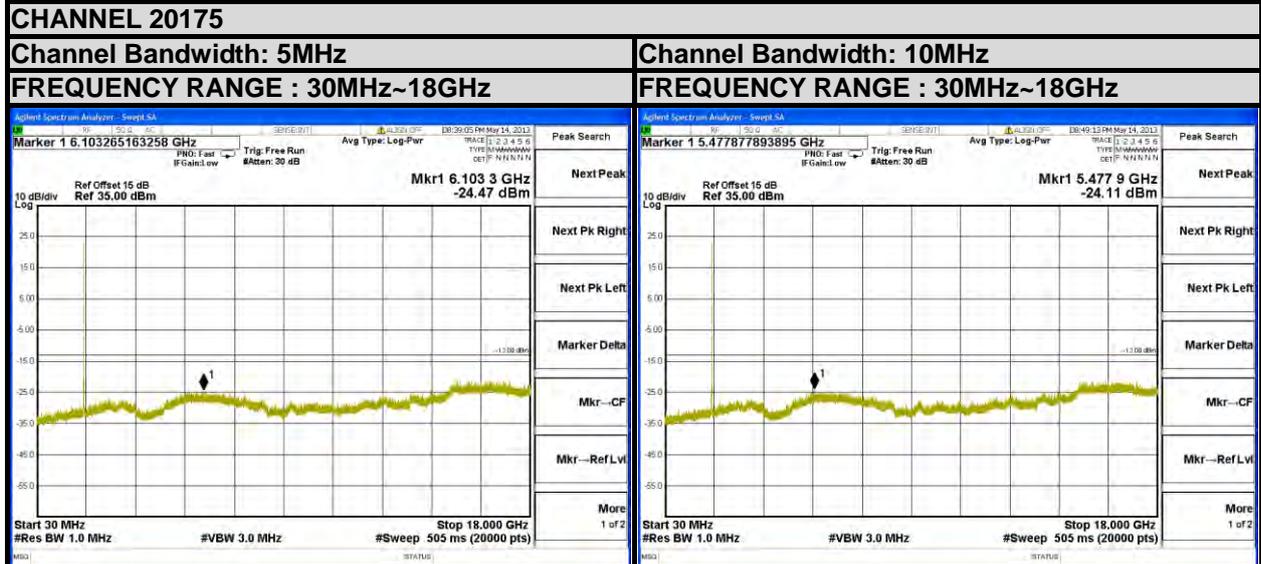
### LTE BAND 4





A D T

### LTE BAND 4



## 4.7 RADIATED EMISSION MEASUREMENT

### 4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

For operations in the 746 – 763 MHz, 775 – 793 MHz, and 805 – 806 MHz bands, emissions in the band 1559 – 1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

### 4.7.2 TEST PROCEDURES

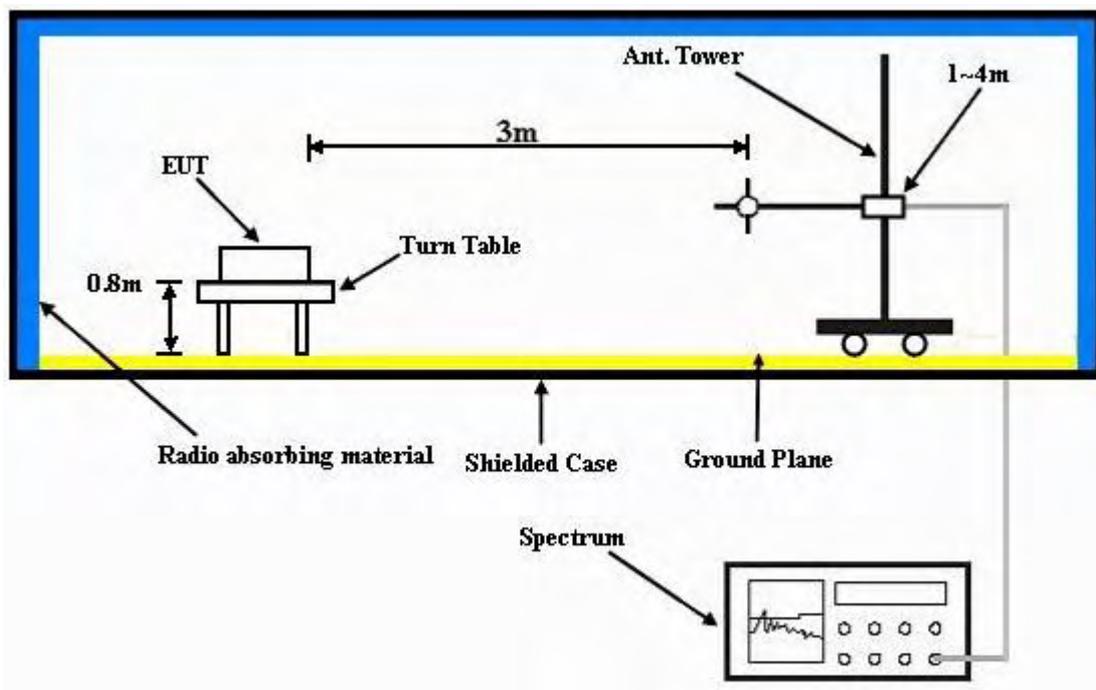
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 4.7.3 DEVIATION FROM TEST STANDARD

No deviation

### 4.7.4 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 4.7.5 TEST RESULTS

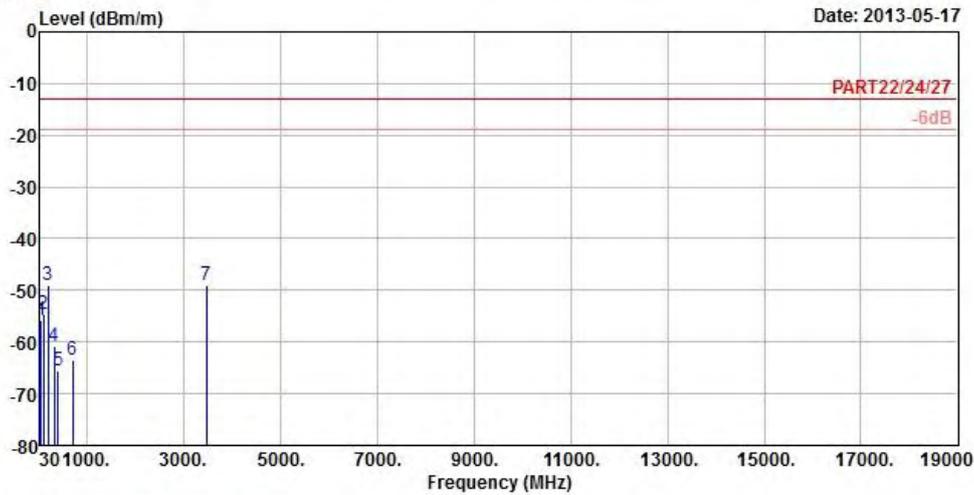
#### WCDMA BAND 4



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 15



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band IV Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	43.50	-55.69	-54.43	-13.00	-42.69	-1.26	Peak
2	98.58	-54.64	-44.22	-13.00	-41.64	-10.42	Peak
3 pp	197.13	-48.91	-41.30	-13.00	-35.91	-7.61	Peak
4	321.00	-60.71	-54.49	-13.00	-47.71	-6.22	Peak
5	402.90	-65.64	-60.07	-13.00	-52.64	-5.57	Peak
6	699.70	-63.39	-64.82	-13.00	-50.39	1.43	Peak
7	3465.20	-49.12	-41.49	-13.00	-36.12	-7.63	Peak



A D T

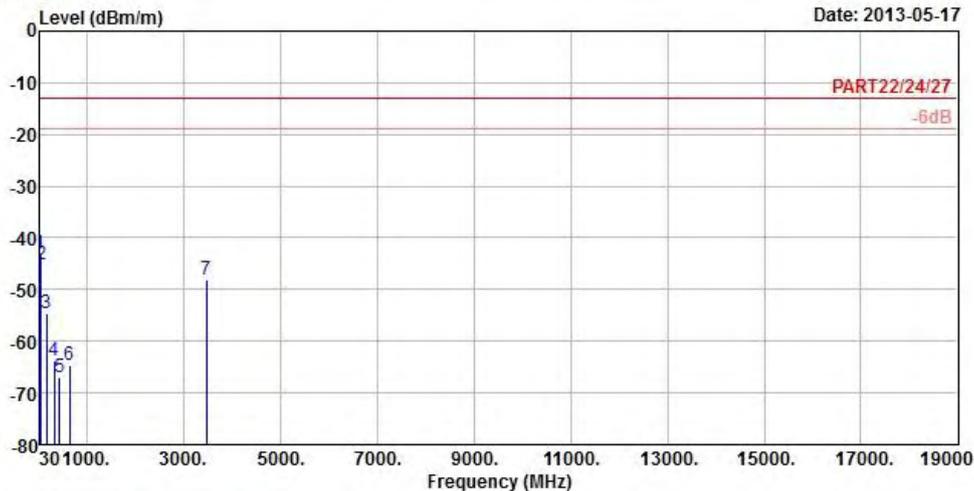


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 16

Date: 2013-05-17



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band IV Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	pp	30.00	-43.11	-44.18	-13.00	-30.11	1.07 Peak
2		42.96	-45.27	-43.94	-13.00	-32.27	-1.33 Peak
3		166.35	-54.69	-48.05	-13.00	-41.69	-6.64 Peak
4		313.30	-63.69	-57.41	-13.00	-50.69	-6.28 Peak
5		424.60	-67.03	-62.03	-13.00	-54.03	-5.00 Peak
6		644.40	-64.60	-65.04	-13.00	-51.60	0.44 Peak
7		3465.20	-48.24	-40.61	-13.00	-35.24	-7.63 Peak

LTE BAND 17

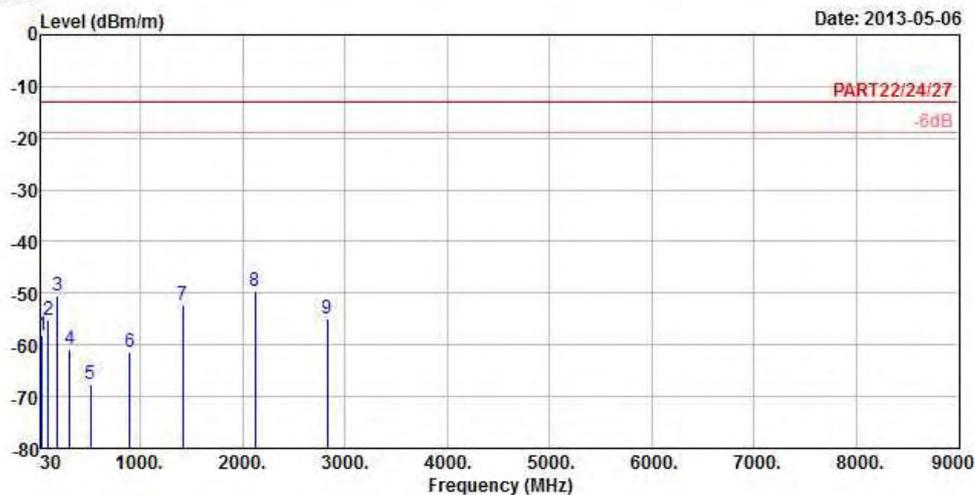
CHANNEL BANDWIDTH: 5MHZ / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 17\_5M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Z

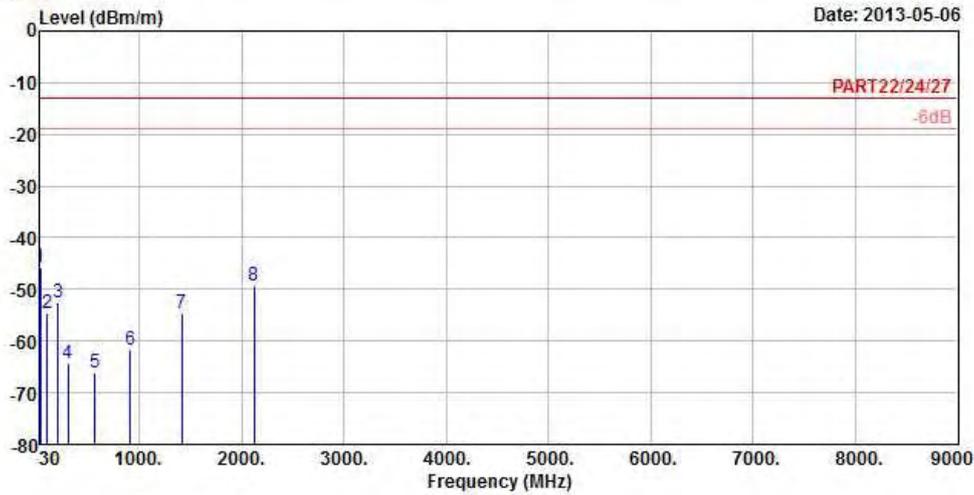
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	40.53	-58.23	-56.77	-13.00	-45.23	-1.46	Peak
2	102.36	-55.34	-44.88	-13.00	-42.34	-10.46	Peak
3	187.14	-50.34	-43.87	-13.00	-37.34	-6.47	Peak
4	312.60	-60.68	-54.39	-13.00	-47.68	-6.29	Peak
5	512.10	-67.49	-64.72	-13.00	-54.49	-2.77	Peak
6	893.60	-61.55	-64.21	-13.00	-48.55	2.66	Peak
7	1415.60	-52.15	-39.64	-13.00	-39.15	-12.51	Peak
8 pp	2123.40	-49.45	-38.96	-13.00	-36.45	-10.49	Peak
9	2831.20	-54.83	-46.73	-13.00	-41.83	-8.10	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 17\_5M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	pp	34.05	-45.68	-43.84	-13.00	-32.68	-1.84 Peak
2		102.63	-54.70	-44.24	-13.00	-41.70	-10.46 Peak
3		203.07	-52.44	-44.62	-13.00	-39.44	-7.82 Peak
4		304.90	-64.31	-57.97	-13.00	-51.31	-6.34 Peak
5		563.20	-66.02	-64.66	-13.00	-53.02	-1.36 Peak
6		913.90	-61.75	-64.72	-13.00	-48.75	2.97 Peak
7		1415.60	-54.63	-42.12	-13.00	-41.63	-12.51 Peak
8		2123.40	-49.40	-38.91	-13.00	-36.40	-10.49 Peak

**LTE BAND 17**

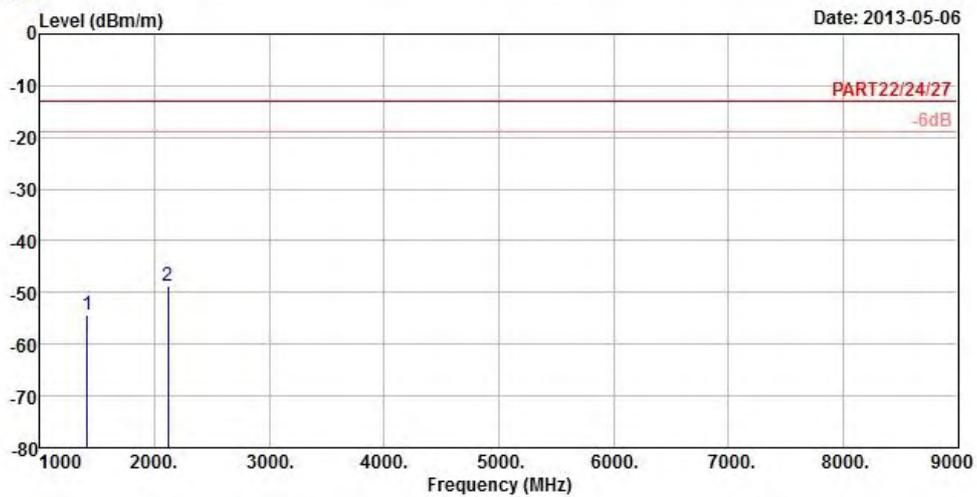
**CHANNEL BANDWIDTH: 10MHZ / QPSK**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



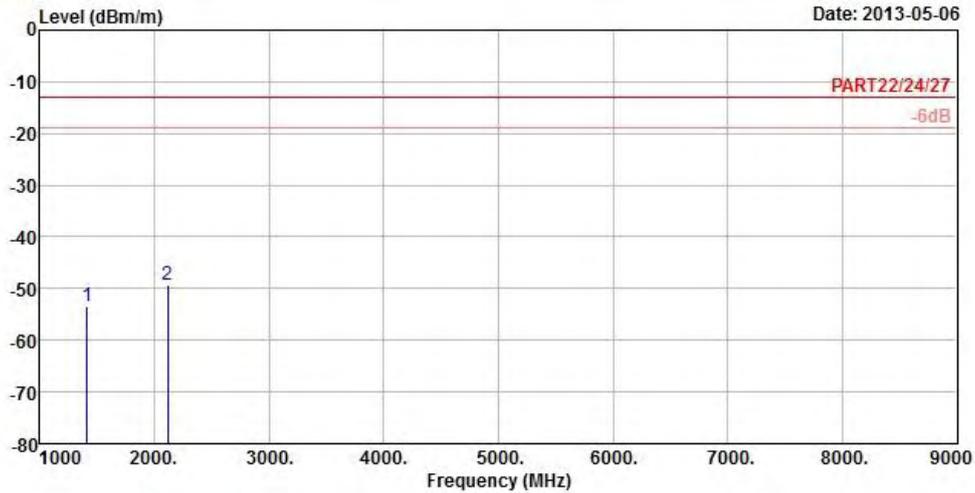
Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 17\_10M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1411.20	-54.22	-41.71	-13.00	-41.22	-12.51	Peak
2 pp	2116.80	-48.75	-38.26	-13.00	-35.75	-10.49	Peak



A D T

Data: 6



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 17\_10M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1411.20	-53.47	-40.96	-13.00	-40.47	-12.51	Peak
2 pp	2116.80	-49.29	-38.80	-13.00	-36.29	-10.49	Peak



A D T

### LTE BAND 13

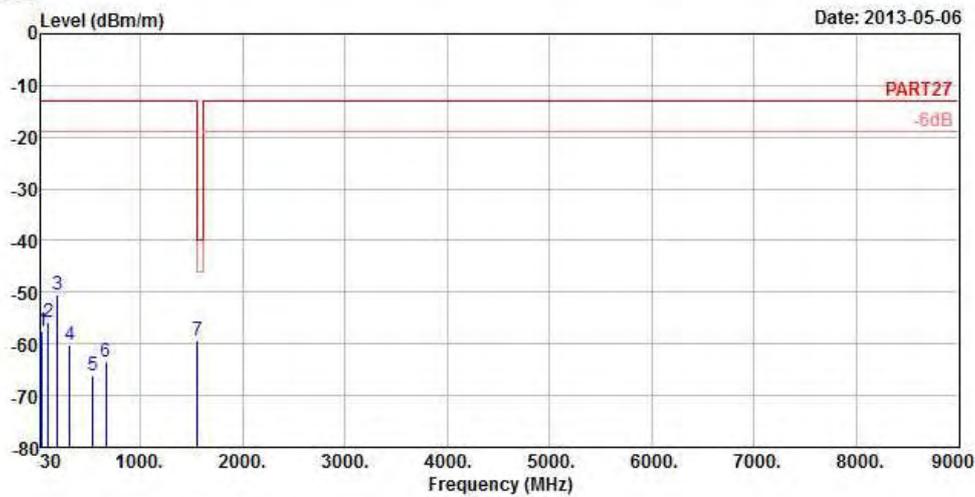
### CHANNEL BANDWIDTH: 5MHZ / QPSK (1 RB / 0 RB OFFSET)



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 9



Site : 966 Chamber 5  
 Condition : PART27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_5M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	40.26	-57.47	-56.01	-13.00	-44.47	-1.46	Peak
2	102.36	-55.66	-45.20	-13.00	-42.66	-10.46	Peak
3	193.08	-50.56	-43.41	-13.00	-37.56	-7.15	Peak
4	310.50	-60.22	-53.92	-13.00	-47.22	-6.30	Peak
5	536.60	-66.17	-64.06	-13.00	-53.17	-2.11	Peak
6	666.80	-63.49	-64.33	-13.00	-50.49	0.84	Peak
7 pp	1559.60	-59.38	-46.11	-40.00	-19.38	-13.27	Peak



A D T

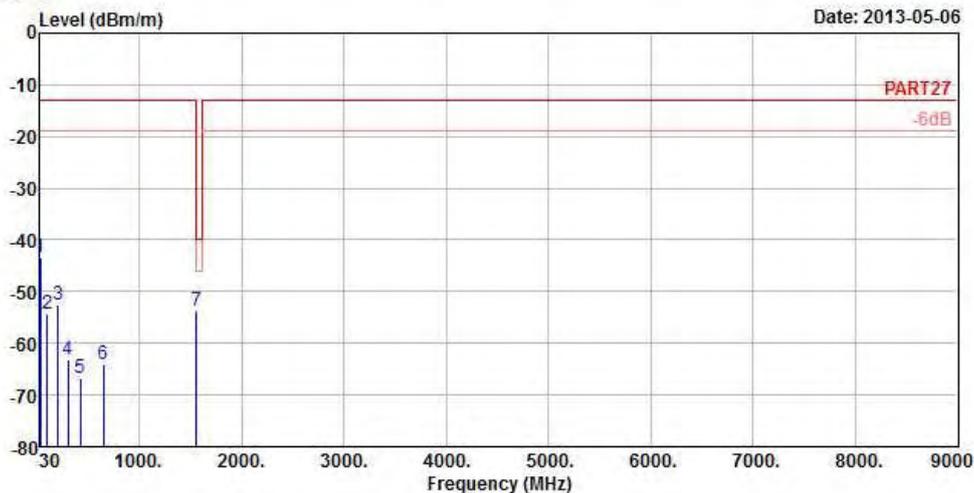


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 10

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_5M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	30.00	-43.31	-44.38	-13.00	-30.31	1.07	Peak
2	101.55	-54.45	-44.01	-13.00	-41.45	-10.44	Peak
3	205.23	-52.42	-44.73	-13.00	-39.42	-7.69	Peak
4	302.10	-63.19	-56.83	-13.00	-50.19	-6.36	Peak
5	426.00	-66.63	-61.65	-13.00	-53.63	-4.98	Peak
6	646.50	-64.05	-64.54	-13.00	-51.05	0.49	Peak
7 pp	1559.60	-53.62	-40.35	-40.00	-13.62	-13.27	Peak

**LTE BAND 13**

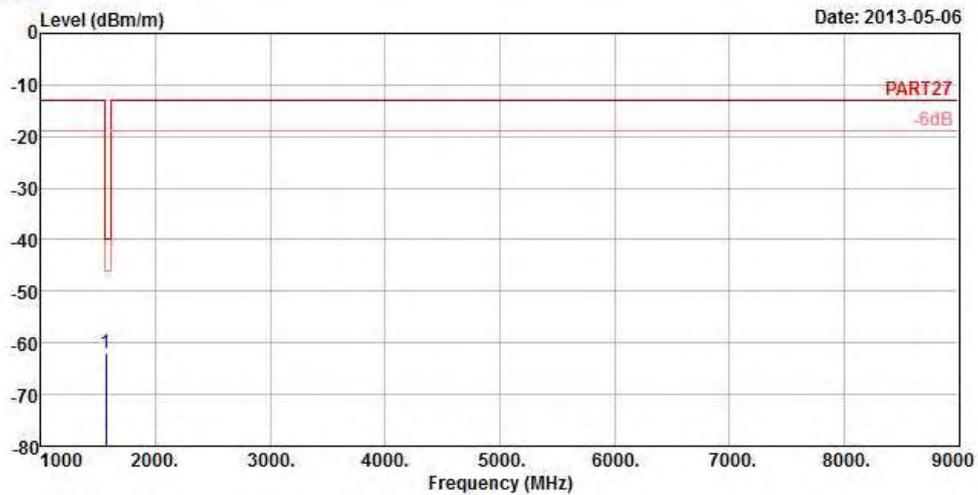
**CHANNEL BANDWIDTH: 5MHZ / QPSK (25 RB / 0 RB OFFSET)**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
 Condition : PART27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_5M\_QPSK(25,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1564.00	-62.01	-48.74	-40.00	-22.01	-13.27	Peak



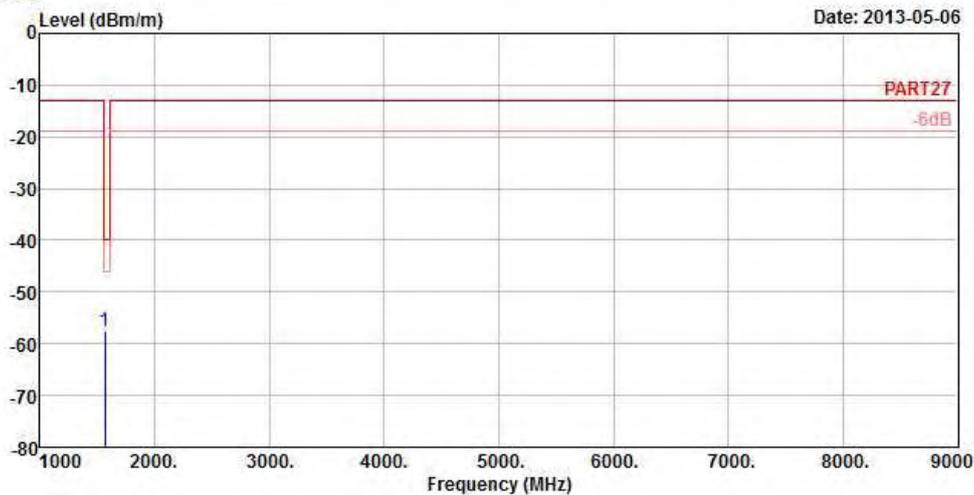
A D T



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5  
 Condition : PART27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_5M\_QPSK(25,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1564.00	-57.68	-44.41	-40.00	-17.68	-13.27	Peak

## LTE BAND 13

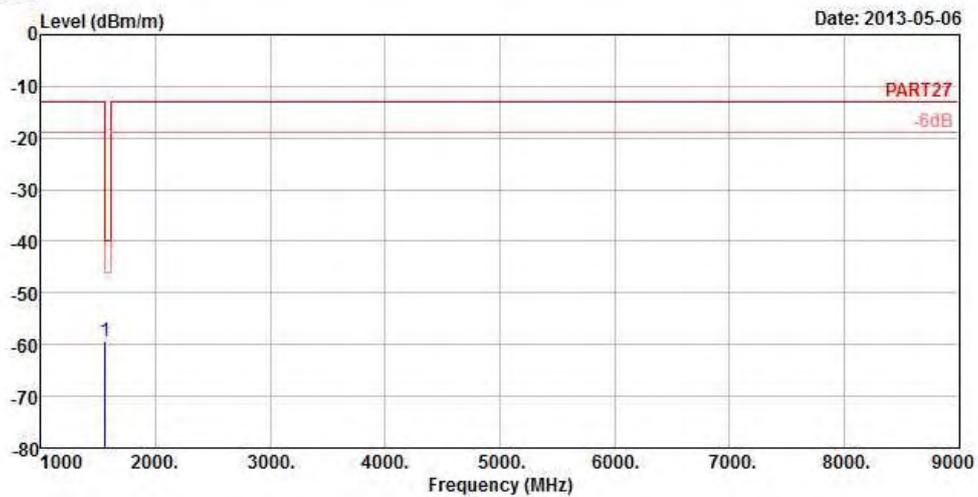
CHANNEL BANDWIDTH: 10MHZ / QPSK (1 RB / 0 RB OFFSET)



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5



Site : 966 Chamber 5  
 Condition : PART27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_10M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1555.20	-59.27	-46.00	-13.00	-46.27	-13.27	Peak



A D T

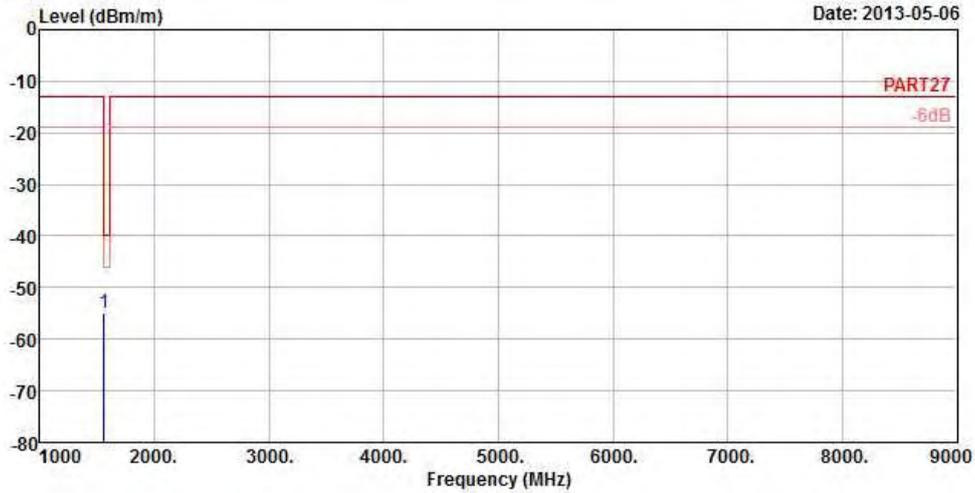


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_10M\_QPSK(1,0) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1555.20	-54.99	-41.72	-13.00	-41.99	-13.27	Peak

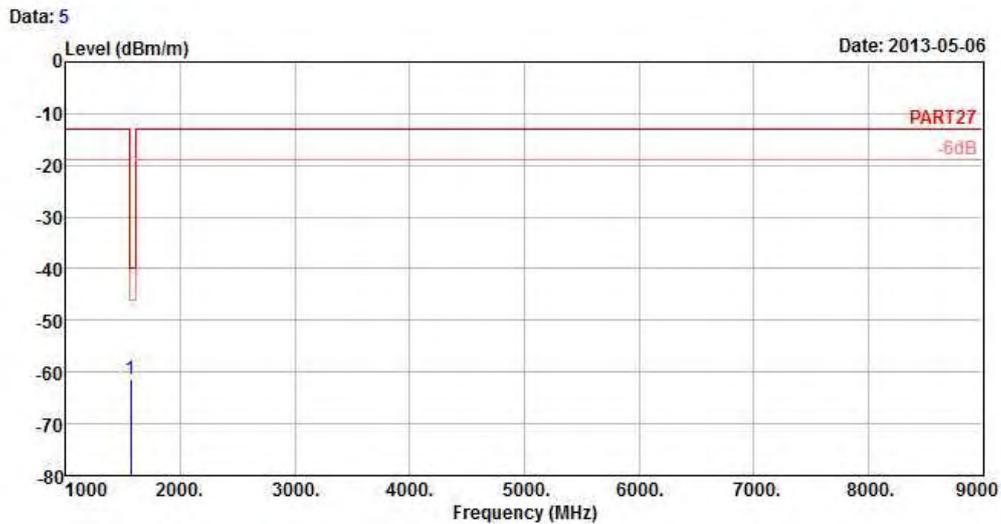
**LTE BAND 13**

**CHANNEL BANDWIDTH: 10MHZ / QPSK (1 RB / 25 RB OFFSET)**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T



Site : 966 Chamber 5  
 Condition : PART27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_10M\_QPSK(1,25) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1564.00	-61.48	-48.21	-40.00	-21.48	-13.27	Peak



A D T

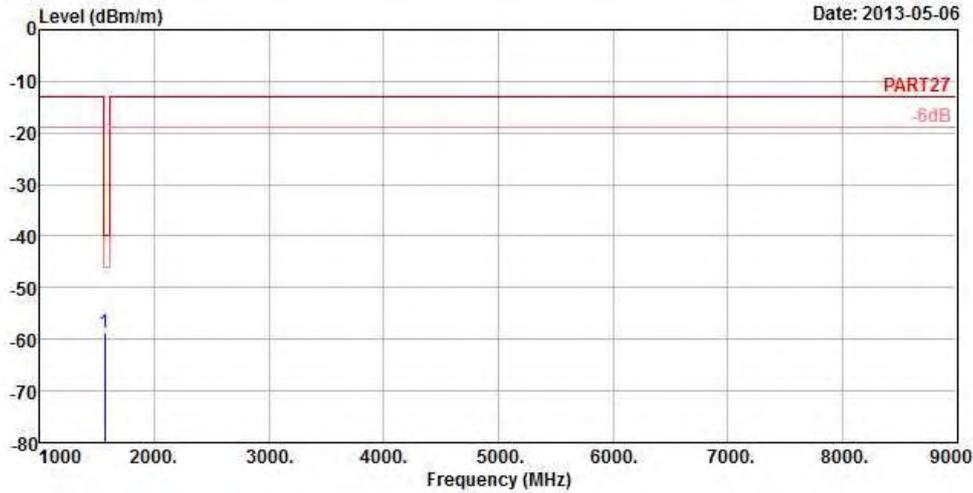


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 13\_10M\_QPSK(1,25) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp 1564.00	-58.69	-45.42	-40.00	-18.69	-13.27	Peak

**LTE BAND 4**  
**CHANNEL BANDWIDTH: 1.4MHZ / QPSK**

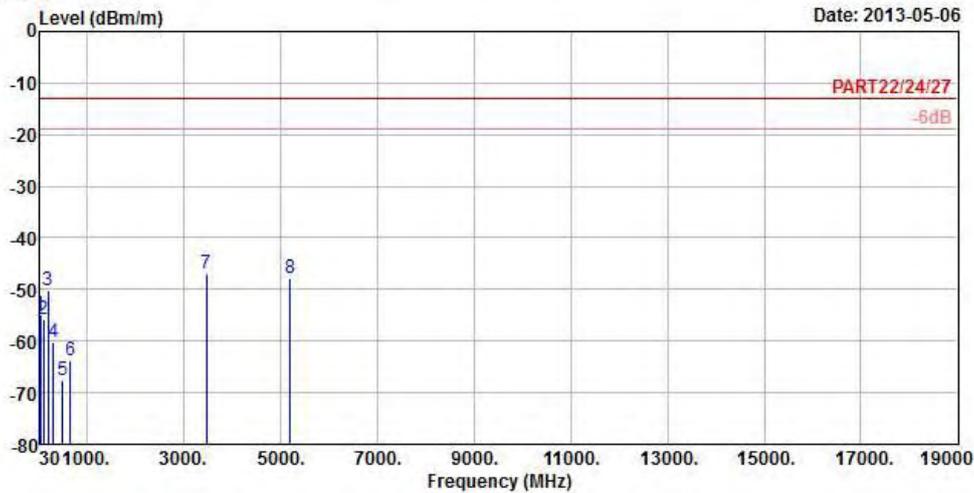


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 15

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_1.4M\_QPSK(1,2) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read	Limit	Over		
	MHz	dBm/m	Level	Line	Limit	Factor	Remark
			dBm	dBm/m	dB	dB/m	
1	42.69	-54.98	-53.65	-13.00	-41.98	-1.33	Peak
2	102.09	-55.68	-45.24	-13.00	-42.68	-10.44	Peak
3	191.46	-50.05	-43.13	-13.00	-37.05	-6.92	Peak
4	304.20	-60.11	-53.77	-13.00	-47.11	-6.34	Peak
5	501.60	-67.57	-64.51	-13.00	-54.57	-3.06	Peak
6	652.10	-63.81	-64.39	-13.00	-50.81	0.58	Peak
7 pp	3464.80	-47.08	-39.45	-13.00	-34.08	-7.63	Peak
8	5197.20	-47.92	-46.84	-13.00	-34.92	-1.08	Peak



A D T

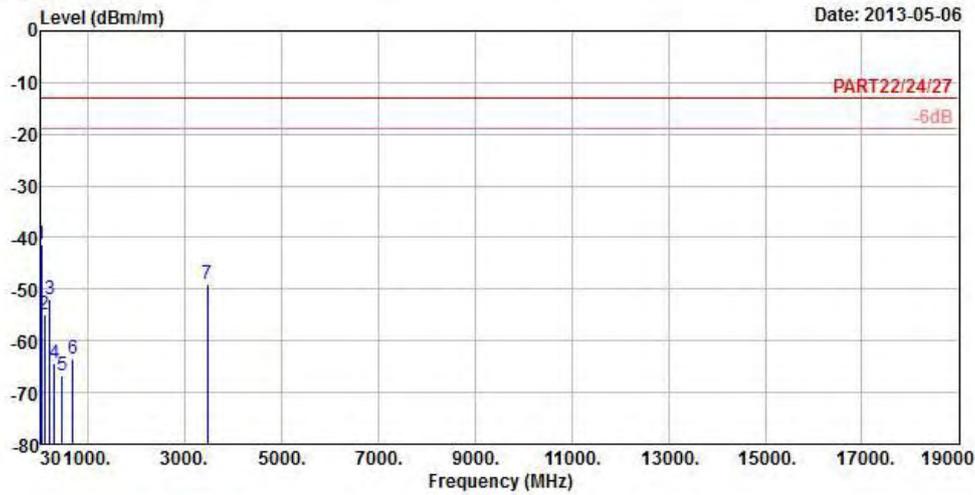


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 16

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_1.4M\_QPSK(1,2) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	pp	30.00	-41.33	-42.40	-13.00	-28.33	1.07 Peak
2		101.82	-54.93	-44.49	-13.00	-41.93	-10.44 Peak
3		203.88	-51.96	-44.18	-13.00	-38.96	-7.78 Peak
4		311.20	-64.27	-57.98	-13.00	-51.27	-6.29 Peak
5		464.50	-66.66	-62.66	-13.00	-53.66	-4.00 Peak
6		693.40	-63.54	-64.87	-13.00	-50.54	1.33 Peak
7		3464.80	-49.10	-41.47	-13.00	-36.10	-7.63 Peak

**LTE BAND 4**  
**CHANNEL BANDWIDTH: 3MHZ / QPSK**

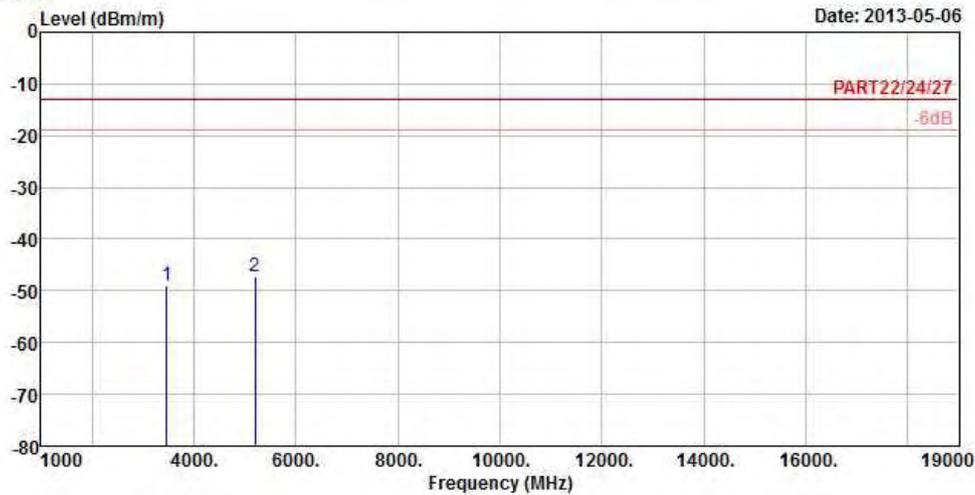


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_3M\_QPSK(1,7) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-48.94	-41.31	-13.00	-35.94	-7.63	Peak
2 pp	5197.50	-47.34	-46.26	-13.00	-34.34	-1.08	Peak



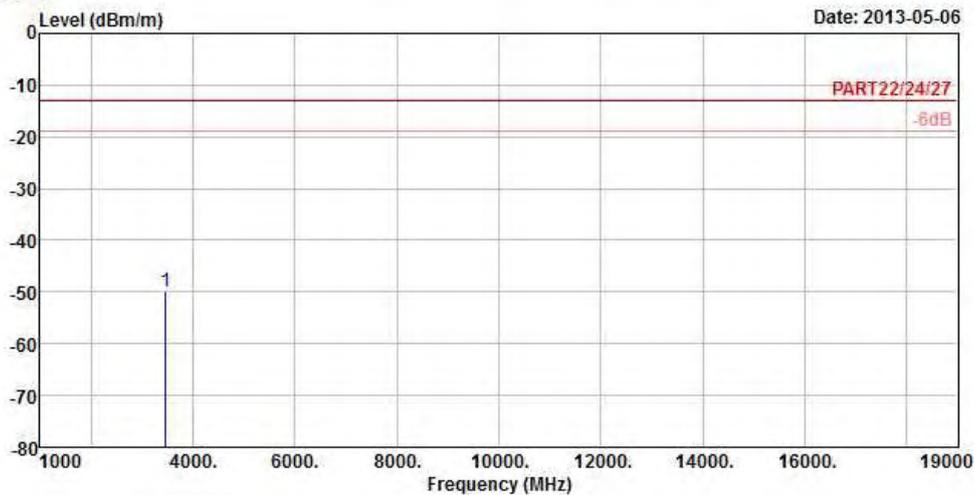
A D T



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_3M\_QPSK(1,7) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	3465.00	-50.02	-42.39	-13.00	-37.02	-7.63	Peak



A D T

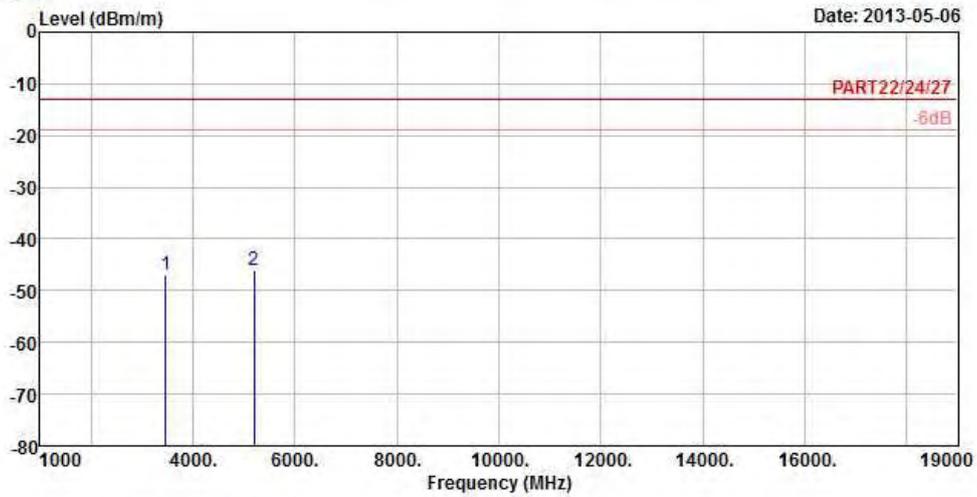
# LTE BAND 4 CHANNEL BANDWIDTH: 5MHZ / QPSK



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_5M\_QPSK(1,12) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

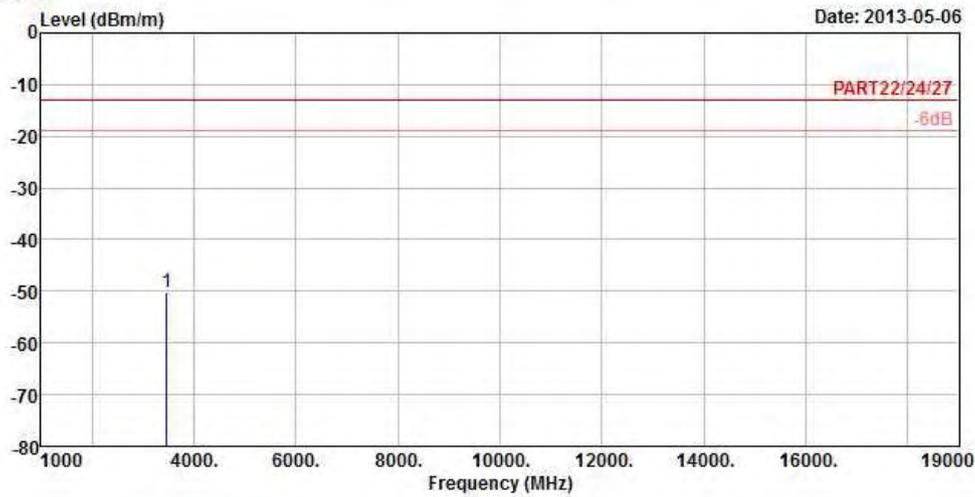
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-47.02	-39.39	-13.00	-34.02	-7.63	Peak
2 pp	5197.50	-45.99	-44.91	-13.00	-32.99	-1.08	Peak



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A D T

Data: 12



Date: 2013-05-06

Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_5M\_QPSK(1,12) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	3465.00	-50.20	-42.57	-13.00	-37.20	-7.63	Peak

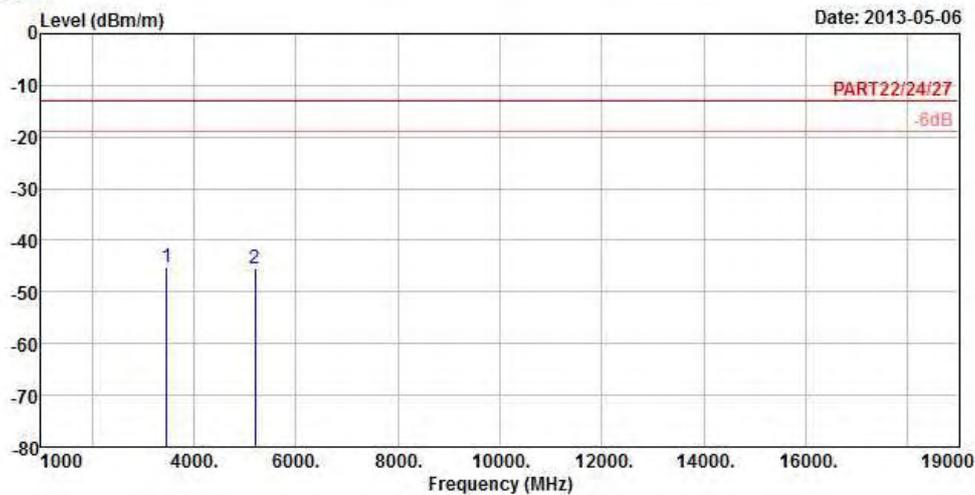
**LTE BAND 4**  
**CHANNEL BANDWIDTH: 10MHZ / QPSK**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_10M\_QPSK(1,24) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

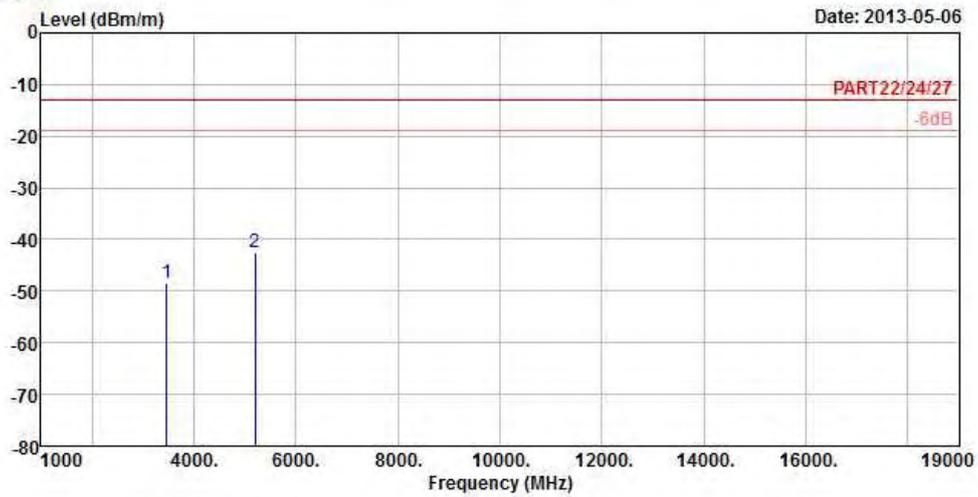
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	pp 3465.00	-45.10	-37.47	-13.00	-32.10	-7.63	Peak
2	5197.50	-45.50	-44.42	-13.00	-32.50	-1.08	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_10M\_QPSK(1,24) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-48.40	-40.77	-13.00	-35.40	-7.63	Peak
2	5197.50	-42.49	-41.41	-13.00	-29.49	-1.08	Peak

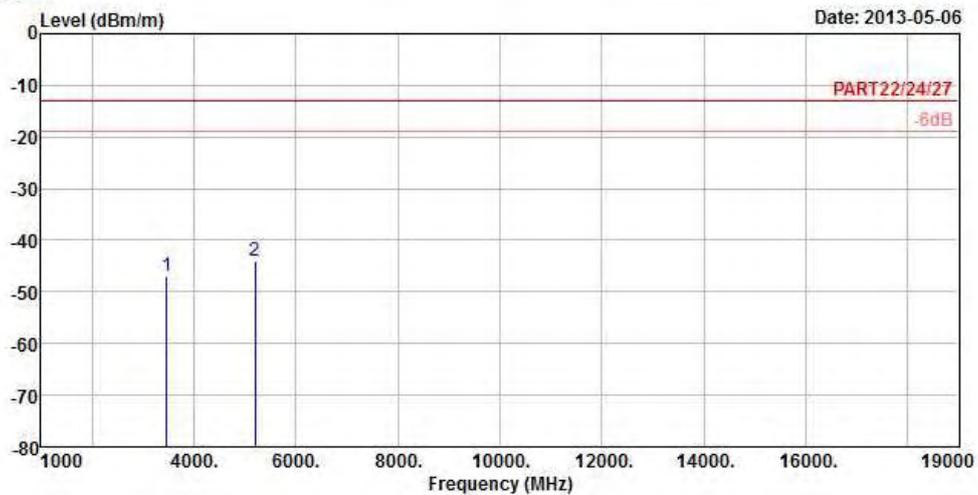
**LTE BAND 4**  
**CHANNEL BANDWIDTH: 15MHZ / QPSK**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_15M\_QPSK(1,37) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

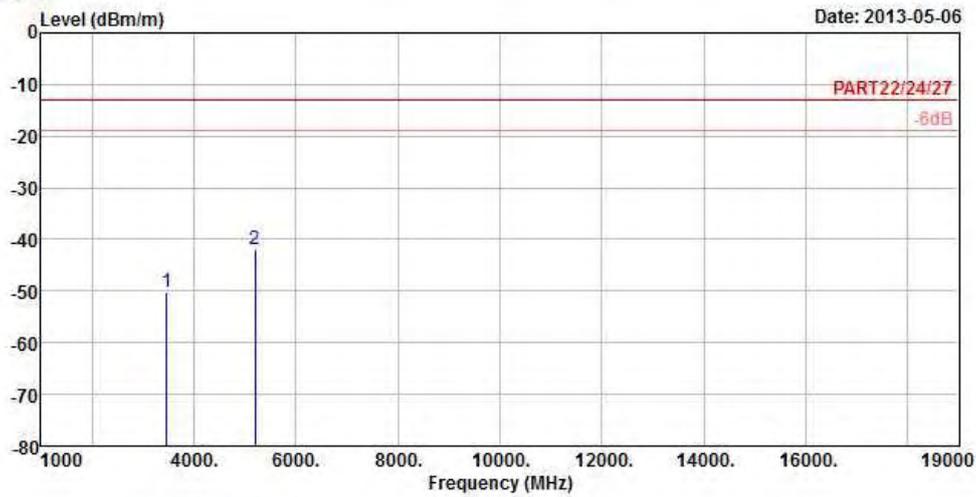
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-46.99	-39.36	-13.00	-33.99	-7.63	Peak
2 pp	5197.50	-43.84	-42.76	-13.00	-30.84	-1.08	Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_15M\_QPSK(1,37) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-50.28	-42.65	-13.00	-37.28	-7.63	Peak
2 pp	5197.50	-41.95	-40.87	-13.00	-28.95	-1.08	Peak

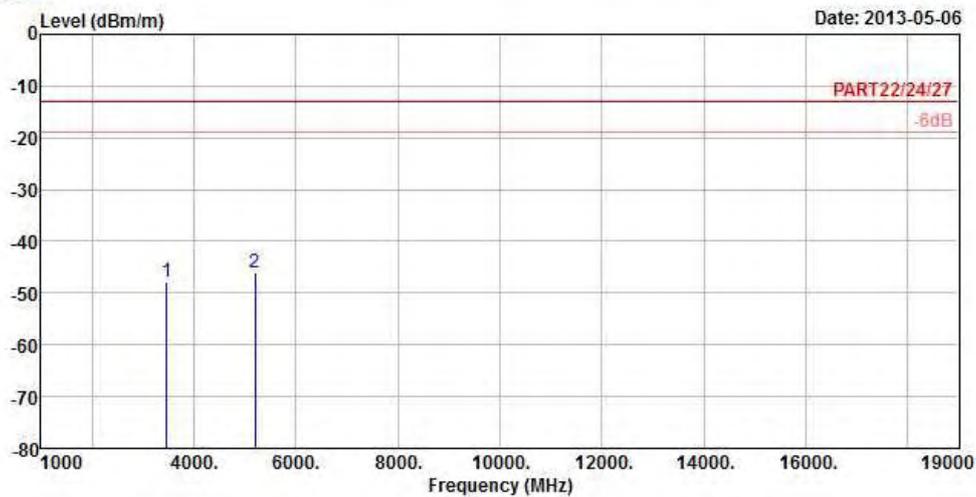
**LTE BAND 4**  
**CHANNEL BANDWIDTH: 20MHZ / QPSK**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 11



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m HORIZONTAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_20M\_QPSK(1,50) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-47.69	-40.06	-13.00	-34.69	-7.63	Peak
2 pp	5197.50	-45.97	-44.89	-13.00	-32.97	-1.08	Peak



A D T

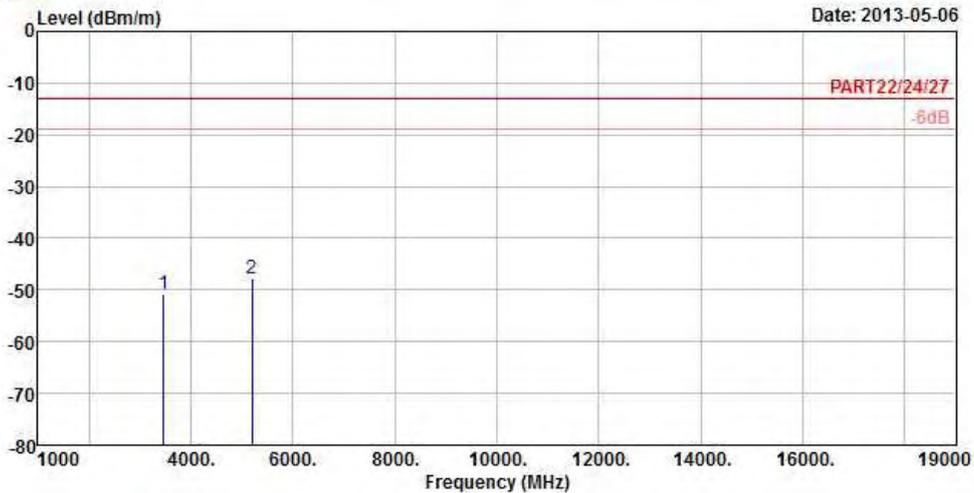


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 12

Date: 2013-05-06



Site : 966 Chamber 5  
 Condition : PART22/24/27 3m VERTICAL  
 Brand/Model: ME571KL  
 Remark : Band 4\_20M\_QPSK(1,50) Link  
 Tested by : Johnson Liao  
 Temperature : 25°C  
 Humidity : 65%  
 Plane : Y

	Read	Limit	Over			
Freq	Level	Level	Line	Limit	Factor	Remark
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.00	-50.83	-43.20	-13.00	-37.83	-7.63 Peak
2 pp	5197.50	-47.96	-46.88	-13.00	-34.96	-1.08 Peak



## 5 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Linko EMC/RF Lab:**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety/Telecom Lab:**

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also.

## **6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No modifications were made to the EUT by the lab during the test.

**---END---**