



FCC TEST REPORT (PART 24)

REPORT NO.: RF121023C07-1
MODEL NO.: P530A
FCC ID: UZI-P530A
RECEIVED: Oct. 23, 2012
TESTED: Nov. 06 ~ Nov. 08, 2012
ISSUED: Nov. 27, 2012

APPLICANT: BandRich Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121023C07-1	Original release	Nov. 27, 2012



1 CERTIFICATION

PRODUCT: LTE/HSPA+ Mobile Router

MODEL: P530A

BRAND: BandLuxe

APPLICANT: BandRich Inc.

TESTED: Nov. 06 ~ Nov. 08, 2012

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 24, Subpart E

The above equipment (model: P530A) 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 : Ivonne Wu , **DATE** : Nov. 27, 2012
Ivonne Wu / Senior Specialist

APPROVED BY : James Lee , **DATE** : Nov. 27, 2012
James Lee / Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 24.232	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	PASS	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -16.43dB at 3755.60MHz.

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 Agilent	N9038A	MY51210203	Dec. 22, 2011	Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 26, 2012	Oct. 25, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 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
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Mar. 23, 2012	Mar. 22, 2013
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	E5515C	MY52102544	Sep. 05, 2012	Sep. 04, 2013
Radio Communication Analyzer	MT8820C	6201127458	May 25, 2012	May 24, 2013

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 9.

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 460141.

5. The IC Site Registration No. is IC 7450F-4.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	LTE/HSPA+ Mobile Router	
MODEL NO.	P530A	
POWER SUPPLY	5.0Vdc from adapter	
MODULATION TYPE	WCDMA	BPSK
	LTE Band 2	QPSK, 16QAM
	LTE Band 25	QPSK, 16QAM
FREQUENCY RANGE	WCDMA	1852.4MHz ~ 1907.6MHz
	LTE Band 2 (Channel Bandwidth: 5MHz)	1852.5MHz ~ 1907.5MHz
	LTE Band 2 (Channel Bandwidth: 10MHz)	1855MHz ~ 1905MHz
	LTE Band 2 (Channel Bandwidth: 15MHz)	1857.5MHz ~ 1902.5MHz
	LTE Band 2 (Channel Bandwidth: 20MHz)	1860MHz ~ 1900MHz
	LTE Band 25 (Channel Bandwidth: 5MHz)	1860MHz ~ 1912.5MHz
	LTE Band 25 (Channel Bandwidth: 10MHz)	1855MHz ~ 1910MHz
	LTE Band 25 (Channel Bandwidth: 15MHz)	1857.5MHz ~ 1907.5MHz
	LTE Band 25 (Channel Bandwidth: 20MHz)	1860MHz ~ 1905MHz



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MAX. EIRP POWER	WCDMA	289.73mW
	LTE Band 2 (Channel Bandwidth: 5MHz)	QPSK: 304.09mW 16QAM: 228.56mW
	LTE Band 2 (Channel Bandwidth: 10MHz)	QPSK: 266.69mW 16QAM: 225.42mW
	LTE Band 2 (Channel Bandwidth: 15MHz)	QPSK: 310.46mW 16QAM: 250.03mW
	LTE Band 2 (Channel Bandwidth: 20MHz)	QPSK: 308.32mW 16QAM: 248.89mW
	LTE Band 25 (Channel Bandwidth: 5MHz)	QPSK: 297.17mW 16QAM: 243.22mW
	LTE Band 25 (Channel Bandwidth: 10MHz)	QPSK: 289.07mW 16QAM: 233.35mW
	LTE Band 25 (Channel Bandwidth: 15MHz)	QPSK: 303.39mW 16QAM: 244.34mW
	LTE Band 25 (Channel Bandwidth: 20MHz)	QPSK: 291.07mW 16QAM: 240.99mW
	EMISSION DESIGNATOR	WCDMA
LTE Band 2 (Channel Bandwidth: 5MHz)		QPSK: 4M49G7D 16QAM: 4M49W7D
LTE Band 2 (Channel Bandwidth: 10MHz)		QPSK: 8M91G7D 16QAM: 8M92W7D
LTE Band 2 (Channel Bandwidth: 15MHz)		QPSK: 13M4G7D 16QAM: 13M4W7D
LTE Band 2 (Channel Bandwidth: 20MHz)		QPSK: 17M8G7D 16QAM: 17M9W7D
LTE Band 25 (Channel Bandwidth: 5MHz)		QPSK: 4M49G7D 16QAM: 4M49W7D
LTE Band 25 (Channel Bandwidth: 10MHz)		QPSK: 8M92G7D 16QAM: 8M92W7D
LTE Band 25 (Channel Bandwidth: 15MHz)		QPSK: 13M4G7D 16QAM: 13M4W7D
LTE Band 25 (Channel Bandwidth: 20MHz)		QPSK: 17M9G7D 16QAM: 17M9W7D



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WCDMA RELEASE VERSION	6
ANTENNA TYPE	Fixed Internal antenna
I/O PORTS	Refer to users' manual
DATA CABLE	1m non-shielded USB cable without core
ACCESSORY DEVICES	Adapter

NOTE:

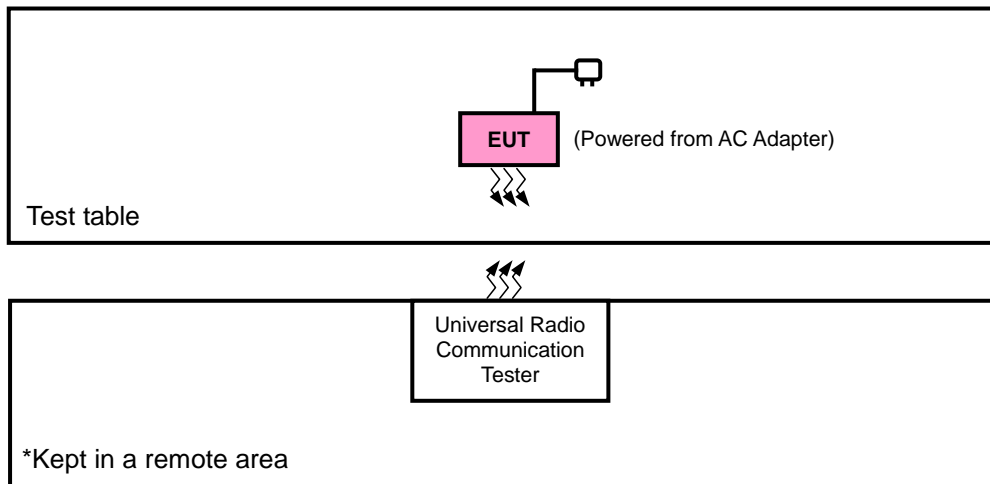
1. The EUT consumes power from the following adapter.

ADAPTER	
BRAND:	PHIHONG
MODEL:	PSA05A-050Q
INPUT:	100-240Vac ~ 0.2A, 50-60Hz
OUTPUT:	5Vdc, 1A

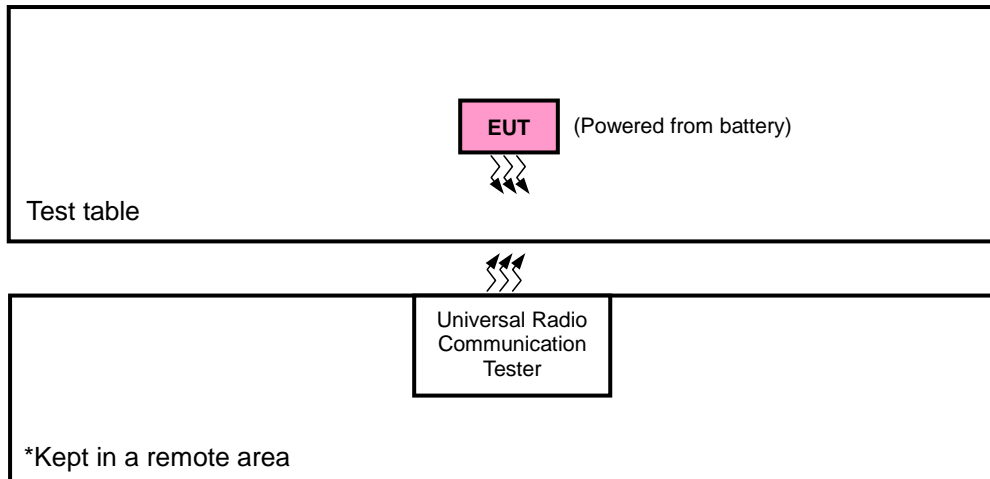
2. The HW version is V01.
3. The SW version is B2031V01.
4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR E.I.R.P. TEST



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

3.4 TEST ITEM AND TEST CONFIGURATION

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 when positioned on Y-plane for EIRP, Y-axis for WCDMA and LTE Band 25, and X-axis for LTE Band 2 for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
-	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
-	FREQUENCY STABILITY	9262 to 9538	9400	WCDMA
-	OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA
-	PEAK TO AVERAGE RATIO	9262 to 9538	9262, 9400, 9538	WCDMA
-	BAND EDGE	9262 to 9538	9262, 9538	WCDMA
-	CONDCUDED EMISSION	9262 to 9538	9400	WCDMA
-	RADIATED EMISSION	9262 to 9538	9400	WCDMA

LTE BAND 2 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE	
EIRP	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset	
				16QAM	1 RB / 12 RB Offset	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 24 RB Offset	
				16QAM	1 RB / 24 RB Offset	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 37 RB Offset	
				16QAM	1 RB / 37 RB Offset	
18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 50 RB Offset		
			16QAM	1 RB / 50 RB Offset		
FREQUENCY STABILITY	18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset	
	18650 to 19150	18900	10MHz	QPSK	1 RB / 24 RB Offset	
	18675 to 19125	18900	15MHz	QPSK	1 RB / 37 RB Offset	
	18700 to 19100	18900	20MHz	QPSK	1 RB / 50 RB Offset	
OCCUPIED BANDWIDTH	18625 to 19175	18625, 18900, 19175	5MHz	QPSK / 16QAM	25 RB / 0 RB Offset	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK / 16QAM	50 RB / 0 RB Offset	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK / 16QAM	75 RB / 0 RB Offset	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK / 16QAM	100 RB / 0 RB Offset	
PEAK TO AVERAGE RATIO	18625 to 19175	18625, 18900, 19175	5MHz	QPSK / 16QAM	1 RB / 0 RB Offset	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK / 16QAM	1 RB / 24 RB Offset	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK / 16QAM	1 RB / 37 RB Offset	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK / 16QAM	1 RB / 50 RB Offset	
BAND EDGE	18625 to 19175	18625	5MHz	QPSK	1 RB / 0 RB Offset 25 RB / 0 RB Offset	
		19175	5MHz	QPSK	1 RB / 24 RB Offset 25 RB / 0 RB Offset	
	18650 to 19150	18650	10MHz	QPSK	1 RB / 0 RB Offset 50 RB / 0 RB Offset	
		19150	10MHz	QPSK	1 RB / 49 RB Offset 50 RB / 0 RB Offset	
	18675 to 19125	18675	15MHz	QPSK	1 RB / 0 RB Offset 75 RB / 0 RB Offset	
		19125	15MHz	QPSK	1 RB / 74 RB Offset 75 RB / 0 RB Offset	
	18700 to 19100	18700	20MHz	QPSK	1 RB / 0 RB Offset 100 RB / 0 RB Offset	
		19100	20MHz	QPSK	1 RB / 99 RB Offset 100 RB / 0 RB Offset	
	CONDCUDED EMISSION	18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18900	10MHz	QPSK	1 RB / 24 RB Offset
18675 to 19125		18900	15MHz	QPSK	1 RB / 37 RB Offset	
18700 to 19100		18900	20MHz	QPSK	1 RB / 50 RB Offset	



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TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
RADIATED EMISSION	18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
	18650 to 19150	18900	10MHz	16QAM	1 RB / 12 RB Offset
					25 RB / 0 RB Offset
	18675 to 19125	18900	15MHz	QPSK	1 RB / 24 RB Offset
					50 RB / 0 RB Offset
	18700 to 19100	18900	20MHz	16QAM	1 RB / 24 RB Offset
					50 RB / 0 RB Offset
	18675 to 19125	18900	15MHz	QPSK	1 RB / 37 RB Offset
					75 RB / 0 RB Offset
	18700 to 19100	18900	20MHz	16QAM	1 RB / 37 RB Offset
					75 RB / 0 RB Offset
18625 to 19175	18900	5MHz	QPSK	1 RB / 50 RB Offset	
				100 RB / 0 RB Offset	
18650 to 19150	18900	10MHz	16QAM	1 RB / 50 RB Offset	
				100 RB / 0 RB Offset	



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LTE BAND 25 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE	
EIRP	26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset	
				16QAM	1 RB / 0 RB Offset	
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK	1 RB / 0 RB Offset	
				16QAM	1 RB / 0 RB Offset	
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK	1 RB / 0 RB Offset	
				16QAM	1 RB / 37 RB Offset	
26140 to 26590	26140, 26365, 26590	20MHz	QPSK	1 RB / 50 RB Offset		
			16QAM	1 RB / 50 RB Offset		
FREQUENCY STABILITY	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset	
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset	
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset	
	26140 to 26590	26140, 26365, 26590	20MHz	16QAM	1 RB / 50 RB Offset	
OCCUPIED BANDWIDTH	26065 to 26665	26065, 26365, 26665	5MHz	QPSK / 16QAM	25 RB / 0 RB Offset	
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK / 16QAM	50 RB / 0 RB Offset	
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK / 16QAM	75 RB / 0 RB Offset	
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK / 16QAM	100 RB / 0 RB Offset	
PEAK TO AVERAGE RATIO	26065 to 26665	26065, 26365, 26665	5MHz	QPSK / 16QAM	1 RB / 0 RB Offset	
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK / 16QAM	1 RB / 0 RB Offset	
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK / 16QAM	1 RB / 0 RB Offset	
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK / 16QAM	1 RB / 50 RB Offset	
BAND EDGE	26065 to 26665	26065	5MHz	QPSK	1 RB / 0 RB Offset	
		26665	5MHz	QPSK	25 RB / 0 RB Offset	
	26090 to 26640	26090	10MHz	QPSK	1 RB / 24 RB Offset	
		26640	10MHz	QPSK	25 RB / 0 RB Offset	
	26115 to 26615	26115	15MHz	QPSK	1 RB / 0 RB Offset	
		26615	15MHz	QPSK	50 RB / 0 RB Offset	
	26140 to 26590	26140	20MHz	QPSK	1 RB / 49 RB Offset	
		26590	20MHz	QPSK	50 RB / 0 RB Offset	
	CONDCUDED EMISSION	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
26115 to 26615		26365	15MHz	QPSK	1 RB / 0 RB Offset	
26140 to 26590		26140, 26365, 26590	20MHz	16QAM	1 RB / 99 RB Offset	



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TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
RADIATED EMISSION	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
				16QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
				16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
				16QAM	1 RB / 37 RB Offset
					75 RB / 0 RB Offset
26140 to 26590	26365	20MHz	QPSK	1 RB / 50 RB Offset	
				100 RB / 0 RB Offset	
			16QAM	1 RB / 50 RB Offset	
				100 RB / 0 RB Offset	

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	26deg. C, 58%RH	3.8Vdc	Howard Kao
FREQUENCY STABILITY	26deg. C, 58%RH	3.8Vdc	Howard Kao
OCCUPIED BANDWIDTH	26deg. C, 58%RH	3.8Vdc	Howard Kao
BAND EDGE	26deg. C, 58%RH	3.8Vdc	Howard Kao
CONDCUDED EMISSION	26deg. C, 58%RH	3.8Vdc	Howard Kao
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu

3.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.6 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 24

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

Mobile and portable stations are limited to 2 watts EIRP

4.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

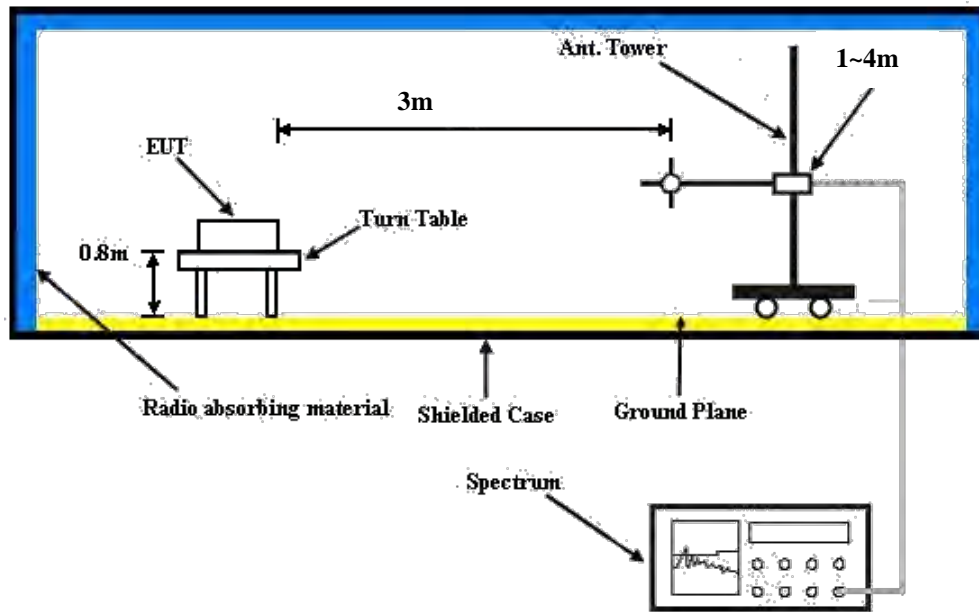
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM, GPRS & EDGE, 5MHz for WCDMA, and 10MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated 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. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA & LTE 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.

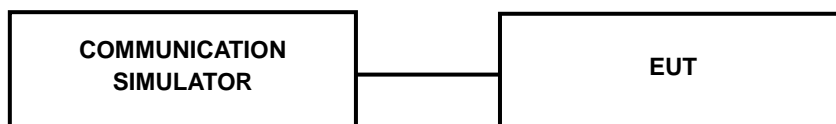
4.1.3 TEST SETUP

EIRP 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).



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4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA II		
	9262	9400	9538
Channel	1852.4	1880.0	1907.6
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	22.63	22.93	22.48
HSDPA Subtest-1	21.62	21.94	21.39
HSDPA Subtest-2	21.48	21.80	21.25
HSDPA Subtest-3	21.06	21.38	20.83
HSDPA Subtest-4	21.11	21.43	20.88
HSUPA Subtest-1	21.21	21.46	21.18
HSUPA Subtest-2	19.33	19.47	19.30
HSUPA Subtest-3	20.31	20.48	20.21
HSUPA Subtest-4	19.36	19.48	19.31
HSUPA Subtest-5	21.22	21.38	21.11



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LTE Band 2								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
5 MHz	QPSK	18625	1852.5	1	0	0	22.9	22.76
		18900	1880	1	0	0	22.9	22.63
		19175	1907.5	1	0	0	22.9	22.62
		18625	1852.5	1	12	0	22.9	22.76
		18900	1880	1	12	0	22.9	22.63
		19175	1907.5	1	12	0	22.9	22.62
		18625	1852.5	1	24	0	22.9	22.66
		18900	1880	1	24	0	22.9	22.53
		19175	1907.5	1	24	0	22.9	22.52
		18625	1852.5	12	0	1	22.9	21.61
		18900	1880	12	0	1	22.9	21.48
		19175	1907.5	12	0	1	22.9	21.47
		18625	1852.5	12	6	1	22.9	21.61
		18900	1880	12	6	1	22.9	21.48
		19175	1907.5	12	6	1	22.9	21.47
		18625	1852.5	12	13	1	22.9	21.62
		18900	1880	12	13	1	22.9	21.49
		19175	1907.5	12	13	1	22.9	21.48
	18625	1852.5	25	0	1	22.9	21.48	
	18900	1880	25	0	1	22.9	21.35	
	19175	1907.5	25	0	1	22.9	21.34	
	18625	1852.5	1	0	1	22.9	21.55	
	18900	1880	1	0	1	22.9	21.42	
	19175	1907.5	1	0	1	22.9	21.41	
	18625	1852.5	1	12	1	22.9	21.73	
	18900	1880	1	12	1	22.9	21.6	
	19175	1907.5	1	12	1	22.9	21.59	
	18625	1852.5	1	24	1	22.9	21.58	
	18900	1880	1	24	1	22.9	21.45	
	19175	1907.5	1	24	1	22.9	21.44	
18625	1852.5	12	0	2	22.9	20.6		
18900	1880	12	0	2	22.9	20.47		
19175	1907.5	12	0	2	22.9	20.46		
18625	1852.5	12	6	2	22.9	20.61		
18900	1880	12	6	2	22.9	20.48		
19175	1907.5	12	6	2	22.9	20.47		
18625	1852.5	12	13	2	22.9	20.63		
18900	1880	12	13	2	22.9	20.5		
19175	1907.5	12	13	2	22.9	20.49		
18625	1852.5	25	0	2	22.9	20.48		
18900	1880	25	0	2	22.9	20.35		
19175	1907.5	25	0	2	22.9	20.34		
	16QAM	18625	1852.5	1	0	1	22.9	21.55
		18900	1880	1	0	1	22.9	21.42
		19175	1907.5	1	0	1	22.9	21.41
		18625	1852.5	1	12	1	22.9	21.73
		18900	1880	1	12	1	22.9	21.6
		19175	1907.5	1	12	1	22.9	21.59
		18625	1852.5	1	24	1	22.9	21.58
		18900	1880	1	24	1	22.9	21.45
		19175	1907.5	1	24	1	22.9	21.44
		18625	1852.5	12	0	2	22.9	20.6
		18900	1880	12	0	2	22.9	20.47
		19175	1907.5	12	0	2	22.9	20.46



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LTE Band 2								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
10MHz	QPSK	18650	1855	1	0	0	22.9	22.76
		18900	1880	1	0	0	22.9	22.59
		19150	1905	1	0	0	22.9	22.55
		18650	1855	1	24	0	22.9	22.77
		18900	1880	1	24	0	22.9	22.6
		19150	1905	1	24	0	22.9	22.56
		18650	1855	1	49	0	22.9	22.69
		18900	1880	1	49	0	22.9	22.52
		19150	1905	1	49	0	22.9	22.48
		18650	1855	25	0	1	22.9	21.58
		18900	1880	25	0	1	22.9	21.41
		19150	1905	25	0	1	22.9	21.37
		18650	1855	25	12	1	22.9	21.57
		18900	1880	25	12	1	22.9	21.4
		19150	1905	25	12	1	22.9	21.36
	18650	1855	25	25	1	22.9	21.55	
	18900	1880	25	25	1	22.9	21.38	
	19150	1905	25	25	1	22.9	21.34	
	18650	1855	50	0	1	22.9	21.38	
	18900	1880	50	0	1	22.9	21.21	
	19150	1905	50	0	1	22.9	21.17	
	18650	1855	1	0	1	22.9	21.62	
	18900	1880	1	0	1	22.9	21.45	
	19150	1905	1	0	1	22.9	21.41	
	18650	1855	1	24	1	22.9	21.74	
	18900	1880	1	24	1	22.9	21.57	
	19150	1905	1	24	1	22.9	21.53	
	18650	1855	1	49	1	22.9	21.63	
	18900	1880	1	49	1	22.9	21.46	
	19150	1905	1	49	1	22.9	21.42	
18650	1855	25	0	2	22.9	20.58		
18900	1880	25	0	2	22.9	20.41		
19150	1905	25	0	2	22.9	20.37		
18650	1855	25	12	2	22.9	20.55		
18900	1880	25	12	2	22.9	20.38		
19150	1905	25	12	2	22.9	20.34		
18650	1855	25	25	2	22.9	20.4		
18900	1880	25	25	2	22.9	20.23		
19150	1905	25	25	2	22.9	20.19		
18650	1855	50	0	2	22.9	20.38		
18900	1880	50	0	2	22.9	20.21		
19150	1905	50	0	2	22.9	20.17		



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LTE Band 2								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
15MHz	QPSK	18675	1857.5	1	0	0	22.9	22.7
		18900	1880	1	0	0	22.9	22.58
		19125	1902.5	1	0	0	22.9	22.48
		18675	1857.5	1	37	0	22.9	22.83
		18900	1880	1	37	0	22.9	22.71
		19125	1902.5	1	37	0	22.9	22.61
		18675	1857.5	1	74	0	22.9	22.64
		18900	1880	1	74	0	22.9	22.52
		19125	1902.5	1	74	0	22.9	22.42
		18675	1857.5	36	0	1	22.9	21.43
		18900	1880	36	0	1	22.9	21.31
		19125	1902.5	36	0	1	22.9	21.21
		18675	1857.5	36	19	1	22.9	21.42
		18900	1880	36	19	1	22.9	21.3
		19125	1902.5	36	19	1	22.9	21.2
	18675	1857.5	36	39	1	22.9	21.4	
	18900	1880	36	39	1	22.9	21.28	
	19125	1902.5	36	39	1	22.9	21.18	
	18675	1857.5	75	0	1	22.9	21.36	
	18900	1880	75	0	1	22.9	21.24	
	19125	1902.5	75	0	1	22.9	21.14	
	18675	1857.5	1	0	1	22.9	21.51	
	18900	1880	1	0	1	22.9	21.39	
	19125	1902.5	1	0	1	22.9	21.29	
	18675	1857.5	1	37	1	22.9	21.76	
	18900	1880	1	37	1	22.9	21.64	
	19125	1902.5	1	37	1	22.9	21.54	
	18675	1857.5	1	74	1	22.9	21.6	
	18900	1880	1	74	1	22.9	21.48	
	19125	1902.5	1	74	1	22.9	21.38	
18675	1857.5	36	0	2	22.9	20.39		
18900	1880	36	0	2	22.9	20.27		
19125	1902.5	36	0	2	22.9	20.17		
18675	1857.5	36	19	2	22.9	20.24		
18900	1880	36	19	2	22.9	20.12		
19125	1902.5	36	19	2	22.9	20.02		
18675	1857.5	36	39	2	22.9	20.29		
18900	1880	36	39	2	22.9	20.17		
19125	1902.5	36	39	2	22.9	20.07		
18675	1857.5	75	0	2	22.9	20.28		
18900	1880	75	0	2	22.9	20.16		
19125	1902.5	75	0	2	22.9	20.06		



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LTE Band 2								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
20MHz	QPSK	18700	1860	1	0	0	22.9	22.77
		18900	1880	1	0	0	22.9	22.65
		19100	1900	1	0	0	22.9	22.63
		18700	1860	1	50	0	22.9	22.85
		18900	1880	1	50	0	22.9	22.73
		19100	1900	1	50	0	22.9	22.71
		18700	1860	1	99	0	22.9	22.7
		18900	1880	1	99	0	22.9	22.58
		19100	1900	1	99	0	22.9	22.56
		18700	1860	50	0	1	22.9	21.51
		18900	1880	50	0	1	22.9	21.39
		19100	1900	50	0	1	22.9	21.37
		18700	1860	50	25	1	22.9	21.46
		18900	1880	50	25	1	22.9	21.34
		19100	1900	50	25	1	22.9	21.32
	18700	1860	50	50	1	22.9	21.45	
	18900	1880	50	50	1	22.9	21.33	
	19100	1900	50	50	1	22.9	21.31	
	18700	1860	100	0	1	22.9	21.49	
	18900	1880	100	0	1	22.9	21.37	
	19100	1900	100	0	1	22.9	21.35	
	18700	1860	1	0	1	22.9	21.68	
	18900	1880	1	0	1	22.9	21.56	
	19100	1900	1	0	1	22.9	21.54	
	18700	1860	1	50	1	22.9	21.79	
	18900	1880	1	50	1	22.9	21.67	
	19100	1900	1	50	1	22.9	21.65	
	18700	1860	1	99	1	22.9	21.64	
	18900	1880	1	99	1	22.9	21.52	
	19100	1900	1	99	1	22.9	21.5	
18700	1860	50	0	2	22.9	20.51		
18900	1880	50	0	2	22.9	20.39		
19100	1900	50	0	2	22.9	20.37		
18700	1860	50	25	2	22.9	20.46		
18900	1880	50	25	2	22.9	20.34		
19100	1900	50	25	2	22.9	20.32		
18700	1860	50	50	2	22.9	20.47		
18900	1880	50	50	2	22.9	20.35		
19100	1900	50	50	2	22.9	20.33		
18700	1860	100	0	2	22.9	20.46		
18900	1880	100	0	2	22.9	20.34		
19100	1900	100	0	2	22.9	20.32		



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LTE Band 25									
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured	
			(MHz)				Power	Power	
5MHz	QPSK	26065	1860	1	0	0	22.8	22.73	
		26365	1882.5	1	0	0	22.8	22.61	
		26665	1912.5	1	0	0	22.8	22.37	
		26065	1860	1	12	0	22.8	22.66	
		26365	1882.5	1	12	0	22.8	22.54	
		26665	1912.5	1	12	0	22.8	22.3	
		26065	1860	1	24	0	22.8	22.45	
		26365	1882.5	1	24	0	22.8	22.33	
		26665	1912.5	1	24	0	22.8	22.09	
		26065	1860	12	0	1	22.8	21.48	
		26365	1882.5	12	0	1	22.8	21.36	
		26665	1912.5	12	0	1	22.8	21.12	
		26065	1860	12	6	1	22.8	21.47	
		26365	1882.5	12	6	1	22.8	21.35	
		26665	1912.5	12	6	1	22.8	21.11	
		26065	1860	12	13	1	22.8	21.4	
		26365	1882.5	12	13	1	22.8	21.28	
		26665	1912.5	12	13	1	22.8	21.04	
		26065	1860	25	0	1	22.8	21.31	
		26365	1882.5	25	0	1	22.8	21.19	
		26665	1912.5	25	0	1	22.8	20.95	
	26065	16QAM	26065	1860	1	0	1	22.8	21.55
	26365		26365	1882.5	1	0	1	22.8	21.43
	26665		26665	1912.5	1	0	1	22.8	21.19
	26065		26065	1860	1	12	1	22.8	21.5
	26365		26365	1882.5	1	12	1	22.8	21.38
	26665		26665	1912.5	1	12	1	22.8	21.14
	26065		26065	1860	1	24	1	22.8	21.37
	26365		26365	1882.5	1	24	1	22.8	21.25
	26665		26665	1912.5	1	24	1	22.8	21.01
	26065		26065	1860	12	0	2	22.8	20.51
	26365		26365	1882.5	12	0	2	22.8	20.39
	26665		26665	1912.5	12	0	2	22.8	20.15
26065	26065	1860	12	6	2	22.8	20.54		
26365	26365	1882.5	12	6	2	22.8	20.42		
26665	26665	1912.5	12	6	2	22.8	20.18		
26065	26065	1860	12	13	2	22.8	20.44		
26365	26365	1882.5	12	13	2	22.8	20.32		
26665	26665	1912.5	12	13	2	22.8	20.08		
26065	26065	1860	25	0	2	22.8	20.31		
26365	26365	1882.5	25	0	2	22.8	20.19		
26665	26665	1912.5	25	0	2	22.8	19.95		



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LTE Band 25								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
10MHz	QPSK	26090	1855	1	0	0	22.8	22.75
		26365	1882.5	1	0	0	22.8	22.57
		26640	1910	1	0	0	22.8	22.5
		26090	1855	1	24	0	22.8	22.69
		26365	1882.5	1	24	0	22.8	22.51
		26640	1910	1	24	0	22.8	22.44
		26090	1855	1	49	0	22.8	22.6
		26365	1882.5	1	49	0	22.8	22.42
		26640	1910	1	49	0	22.8	22.35
		26090	1855	25	0	1	22.8	21.41
		26365	1882.5	25	0	1	22.8	21.23
		26640	1910	25	0	1	22.8	21.16
		26090	1855	25	12	1	22.8	21.44
		26365	1882.5	25	12	1	22.8	21.26
		26640	1910	25	12	1	22.8	21.19
		26090	1855	25	25	1	22.8	21.38
		26365	1882.5	25	25	1	22.8	21.2
		26640	1910	25	25	1	22.8	21.13
	26090	1855	50	0	1	22.8	21.3	
	26365	1882.5	50	0	1	22.8	21.12	
	26640	1910	50	0	1	22.8	21.05	
	26090	1855	1	0	1	22.8	21.59	
	26365	1882.5	1	0	1	22.8	21.41	
	26640	1910	1	0	1	22.8	21.34	
	26090	1855	1	24	1	22.8	21.49	
	26365	1882.5	1	24	1	22.8	21.31	
	26640	1910	1	24	1	22.8	21.24	
	26090	1855	1	49	1	22.8	21.41	
	26365	1882.5	1	49	1	22.8	21.23	
	26640	1910	1	49	1	22.8	21.16	
	26090	1855	25	0	2	22.8	20.38	
	26365	1882.5	25	0	2	22.8	20.2	
26640	1910	25	0	2	22.8	20.13		
26090	1855	25	12	2	22.8	20.42		
26365	1882.5	25	12	2	22.8	20.24		
26640	1910	25	12	2	22.8	20.17		
26090	1855	25	25	2	22.8	20.4		
26365	1882.5	25	25	2	22.8	20.22		
26640	1910	25	25	2	22.8	20.15		
26090	1855	50	0	2	22.8	20.32		
26365	1882.5	50	0	2	22.8	20.14		
26640	1910	50	0	2	22.8	20.07		



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LTE Band 25								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
15MHz	QPSK	26115	1857.5	1	0	0	22.8	22.76
		26365	1882.5	1	0	0	22.8	22.6
		26615	1907.5	1	0	0	22.8	22.45
		26115	1857.5	1	37	0	22.8	22.76
		26365	1882.5	1	37	0	22.8	22.6
		26615	1907.5	1	37	0	22.8	22.45
		26115	1857.5	1	74	0	22.8	22.72
		26365	1882.5	1	74	0	22.8	22.56
		26615	1907.5	1	74	0	22.8	22.41
		26115	1857.5	36	0	1	22.8	21.48
		26365	1882.5	36	0	1	22.8	21.32
		26615	1907.5	36	0	1	22.8	21.17
		26115	1857.5	36	19	1	22.8	21.56
		26365	1882.5	36	19	1	22.8	21.4
		26615	1907.5	36	19	1	22.8	21.25
		26115	1857.5	36	39	1	22.8	21.44
		26365	1882.5	36	39	1	22.8	21.28
		26615	1907.5	36	39	1	22.8	21.13
		26115	1857.5	75	0	1	22.8	21.33
		26365	1882.5	75	0	1	22.8	21.17
		26615	1907.5	75	0	1	22.8	21.02
	26115	1857.5	1	0	1	22.8	21.58	
	26365	1882.5	1	0	1	22.8	21.42	
	26615	1907.5	1	0	1	22.8	21.27	
	26115	1857.5	1	37	1	22.8	21.62	
	26365	1882.5	1	37	1	22.8	21.46	
	26615	1907.5	1	37	1	22.8	21.31	
	26115	1857.5	1	74	1	22.8	21.45	
	26365	1882.5	1	74	1	22.8	21.29	
	26615	1907.5	1	74	1	22.8	21.14	
	26115	1857.5	36	0	2	22.8	20.41	
	26365	1882.5	36	0	2	22.8	20.25	
	26615	1907.5	36	0	2	22.8	20.1	
26115	1857.5	36	19	2	22.8	20.38		
26365	1882.5	36	19	2	22.8	20.22		
26615	1907.5	36	19	2	22.8	20.07		
26115	1857.5	36	39	2	22.8	20.44		
26365	1882.5	36	39	2	22.8	20.28		
26615	1907.5	36	39	2	22.8	20.13		
26115	1857.5	75	0	2	22.8	20.37		
26365	1882.5	75	0	2	22.8	20.21		
26615	1907.5	75	0	2	22.8	20.06		



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LTE Band 25								
BW	Modulation	CH	Frequency	RB	RB Offset	MPR	Target	Measured
			(MHz)				Power	Power
20MHz	QPSK	26140	1860	1	0	0	22.8	22.72
		26365	1882.5	1	0	0	22.8	22.67
		26590	1905	1	0	0	22.8	22.63
		26140	1860	1	50	0	22.8	22.79
		26365	1882.5	1	50	0	22.8	22.74
		26590	1905	1	50	0	22.8	22.7
		26140	1860	1	99	0	22.8	22.64
		26365	1882.5	1	99	0	22.8	22.59
		26590	1905	1	99	0	22.8	22.55
		26140	1860	50	0	1	22.8	21.47
		26365	1882.5	50	0	1	22.8	21.42
		26590	1905	50	0	1	22.8	21.38
		26140	1860	50	25	1	22.8	21.47
		26365	1882.5	50	25	1	22.8	21.42
		26590	1905	50	25	1	22.8	21.38
	26140	1860	50	50	1	22.8	21.51	
	26365	1882.5	50	50	1	22.8	21.46	
	26590	1905	50	50	1	22.8	21.42	
	26140	1860	100	0	1	22.8	21.53	
	26365	1882.5	100	0	1	22.8	21.48	
	26590	1905	100	0	1	22.8	21.44	
	26140	1860	1	0	1	22.8	21.61	
	26365	1882.5	1	0	1	22.8	21.56	
	26590	1905	1	0	1	22.8	21.52	
	26140	1860	1	50	1	22.8	21.74	
	26365	1882.5	1	50	1	22.8	21.69	
	26590	1905	1	50	1	22.8	21.65	
	26140	1860	1	99	1	22.8	21.62	
	26365	1882.5	1	99	1	22.8	21.57	
	26590	1905	1	99	1	22.8	21.53	
26140	1860	50	0	2	22.8	20.48		
26365	1882.5	50	0	2	22.8	20.43		
26590	1905	50	0	2	22.8	20.39		
26140	1860	50	25	2	22.8	20.47		
26365	1882.5	50	25	2	22.8	20.42		
26590	1905	50	25	2	22.8	20.38		
26140	1860	50	50	2	22.8	20.46		
26365	1882.5	50	50	2	22.8	20.41		
26590	1905	50	50	2	22.8	20.37		
26140	1860	100	0	2	22.8	20.44		
26365	1882.5	100	0	2	22.8	20.39		
26590	1905	100	0	2	22.8	20.35		



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EIRP POWER (dBm)

WCDMA

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	9262	1852.4	-20.67	38.19	17.52	56.49	H
	9400	1880.0	-20.83	38.70	17.87	61.24	H
	9538	1907.6	-21.25	38.43	17.18	52.24	H
	9262	1852.4	-13.86	38.48	24.62	289.73	V
	9400	1880.0	-14.20	38.59	24.39	274.79	V
	9538	1907.6	-14.64	38.87	24.23	264.85	V

LTE Band 2

Channel Bandwidth: 5MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18625	1852.5	-18.57	38.19	19.62	91.62	H
	18900	1880.0	-18.75	38.70	19.95	98.86	H
	19175	1907.5	-18.69	38.43	19.74	94.19	H
	18625	1852.5	-14.02	38.48	24.46	279.25	V
	18900	1880.0	-14.01	38.59	24.58	287.08	V
	19175	1907.5	-14.04	38.87	24.83	304.09	V

Channel Bandwidth: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18625	1852.5	-19.75	38.19	18.44	69.82	H
	18900	1880.0	-20.47	38.70	18.23	66.53	H
	19175	1907.5	-19.55	38.43	18.88	77.27	H
	18625	1852.5	-15.16	38.48	23.32	214.78	V
	18900	1880.0	-15.00	38.59	23.59	228.56	V
	19175	1907.5	-15.63	38.87	23.24	210.86	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)
Y	18650	1855.0	-18.64	38.19	19.55	90.16	H
	18900	1880.0	-18.64	38.70	20.06	101.39	H
	19150	1905.0	-18.89	38.43	19.54	89.95	H
	18650	1855.0	-14.40	38.48	24.08	255.86	V
	18900	1880.0	-14.33	38.59	24.26	266.69	V
	19150	1905.0	-14.75	38.87	24.12	258.23	V

Channel Bandwidth: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18650	1855.0	-19.55	38.19	18.64	73.11	H
	18900	1880.0	-19.57	38.70	19.13	81.85	H
	19150	1905.0	-19.72	38.43	18.71	74.30	H
	18650	1855.0	-15.11	38.48	23.37	217.27	V
	18900	1880.0	-15.06	38.59	23.53	225.42	V
	19150	1905.0	-15.47	38.87	23.40	218.78	V

Channel Bandwidth: 15MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18675	1857.5	-18.89	38.19	19.30	85.11	H
	18900	1880.0	-18.75	38.70	19.95	98.86	H
	19125	1902.5	-18.48	38.43	19.95	98.86	H
	18675	1857.5	-13.56	38.48	24.92	310.46	V
	18900	1880.0	-14.38	38.59	24.21	263.63	V
	19125	1902.5	-14.26	38.87	24.61	289.07	V



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Channel Bandwidth: 15MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18675	1857.5	-19.71	38.19	18.48	70.47	H
	18900	1880.0	-20.69	38.70	18.01	63.24	H
	19125	1902.5	-20.37	38.43	18.06	63.97	H
	18675	1857.5	-14.50	38.48	23.98	250.03	V
	18900	1880.0	-15.43	38.59	23.16	207.01	V
	19125	1902.5	-15.30	38.87	23.57	227.51	V

Channel Bandwidth: 20MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18700	1860.0	-18.30	38.19	19.89	97.50	H
	18900	1880.0	-19.51	38.70	19.19	82.99	H
	19100	1900.0	-19.12	38.43	19.31	85.31	H
	18700	1860.0	-13.93	38.48	24.55	285.10	V
	18900	1880.0	-13.70	38.59	24.89	308.32	V
	19100	1900.0	-14.01	38.87	24.86	306.20	V

Channel Bandwidth: 20MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	18700	1860.0	-20.06	38.19	18.13	65.01	H
	18900	1880.0	-20.33	38.70	18.37	68.71	H
	19100	1900.0	-20.01	38.43	18.42	69.50	H
	18700	1860.0	-14.72	38.48	23.76	237.68	V
	18900	1880.0	-15.36	38.59	23.23	210.38	V
	19100	1900.0	-14.91	38.87	23.96	248.89	V

**LTE Band 25****Channel Bandwidth: 5MHz QPSK**

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26065	1860	-19.65	38.19	18.54	71.45	H
	26365	1882.5	-20.05	38.70	18.65	73.28	H
	26665	1912.5	-19.69	38.43	18.74	74.82	H
	26065	1852.5	-14.14	38.48	24.34	271.64	V
	26365	1882.5	-13.86	38.59	24.73	297.17	V
	26665	1912.5	-14.88	38.87	23.99	250.61	V

Channel Bandwidth: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26065	1860	-20.55	38.19	17.64	58.08	H
	26365	1882.5	-20.90	38.70	17.80	60.26	H
	26665	1912.5	-20.48	38.43	17.95	62.37	H
	26065	1852.5	-15.12	38.48	23.36	216.77	V
	26365	1882.5	-14.73	38.59	23.86	243.22	V
	26665	1912.5	-15.73	38.87	23.14	206.06	V

Channel Bandwidth: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26090	1855.0	-19.54	38.19	18.65	73.28	H
	26365	1882.5	-20.29	38.70	18.41	69.34	H
	26640	1910.0	-19.92	38.43	18.51	70.96	H
	26090	1855.0	-14.14	38.48	24.34	271.64	V
	26365	1882.5	-13.98	38.59	24.61	289.07	V
	26640	1910.0	-14.31	38.87	24.56	285.76	V



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Channel Bandwidth: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26090	1855.0	-20.44	38.19	17.75	59.57	H
	26365	1882.5	-21.17	38.70	17.53	56.62	H
	26640	1910.0	-20.79	38.43	17.64	58.08	H
	26090	1855.0	-15.00	38.48	23.48	222.84	V
	26365	1882.5	-15.06	38.59	23.53	225.42	V
	26640	1910.0	-15.19	38.87	23.68	233.35	V

Channel Bandwidth: 15MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26115	1857.5	-19.48	38.19	18.71	74.30	H
	26365	1882.5	-20.44	38.70	18.26	66.99	H
	26615	1907.5	-19.82	38.43	18.61	72.61	H
	26115	1857.5	-14.05	38.48	24.43	277.33	V
	26365	1882.5	-14.20	38.59	24.39	274.79	V
	26615	1907.5	-14.05	38.87	24.82	303.39	V

Channel Bandwidth: 15MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26115	1857.5	-20.99	38.19	17.20	52.48	H
	26365	1882.5	-21.67	38.70	17.03	50.47	H
	26615	1907.5	-20.90	38.43	17.53	56.62	H
	26115	1857.5	-14.72	38.48	23.76	237.68	V
	26365	1882.5	-14.71	38.59	23.88	244.34	V
	26615	1907.5	-15.20	38.87	23.67	232.81	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)
Y	26140	1860.0	-19.51	38.19	18.68	73.79	H
	26365	1882.5	-19.80	38.70	18.90	77.62	H
	26590	1905.0	-19.96	38.43	18.47	70.31	H
	26140	1860.0	-14.22	38.48	24.26	266.69	V
	26365	1882.5	-14.76	38.59	23.83	241.55	V
	26590	1905.0	-14.23	38.87	24.64	291.07	V

Channel Bandwidth: 20MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
Y	26140	1860.0	-20.32	38.19	17.87	61.24	H
	26365	1882.5	-21.65	38.70	17.05	50.70	H
	26590	1905.0	-20.84	38.43	17.59	57.41	H
	26140	1860.0	-15.06	38.48	23.42	219.79	V
	26365	1882.5	-15.59	38.59	23.00	199.53	V
	26590	1905.0	-15.05	38.87	23.82	240.99	V

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

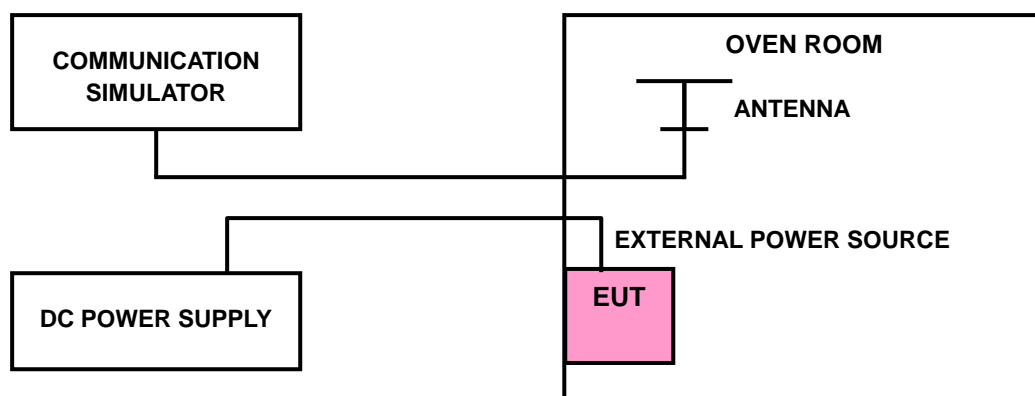
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)									LIMIT (ppm)
	WCDMA	LTE Band 2				LTE Band 25				
		5MHz	10MHz	15MHz	20MHz	5MHz	10MHz	15MHz	20MHz	
3.8	-0.005	0.005	-0.007	-0.008	-0.015	-0.003	0.003	-0.007	-0.009	2.5
3.6	-0.005	-0.008	-0.018	-0.021	-0.011	0.009	-0.009	0.007	0.004	2.5
4.2	-0.005	0.013	-0.008	-0.013	-0.022	0.006	-0.007	-0.007	-0.007	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE

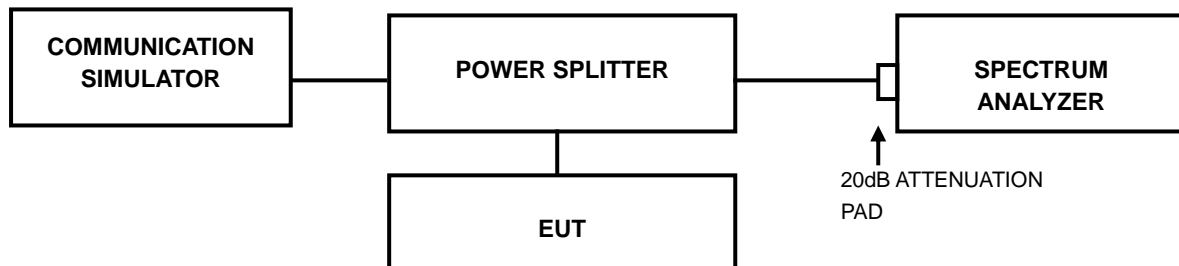
TEMP. (°C)	FREQUENCY ERROR (ppm)									LIMIT (ppm)
	WCDMA	LTE Band 2				LTE Band 25				
		5MHz	10MHz	15MHz	20MHz	5MHz	10MHz	15MHz	20MHz	
-30	-0.005	0.013	-0.014	-0.029	-0.020	-0.005	-0.004	-0.008	-0.004	2.5
-20	-0.005	0.011	-0.018	-0.020	-0.015	-0.002	-0.003	-0.005	-0.002	2.5
-10	-0.005	-0.002	-0.017	-0.010	-0.012	0.003	-0.007	-0.006	-0.001	2.5
0	-0.004	0.002	-0.009	0.006	-0.012	-0.001	-0.002	-0.006	0.002	2.5
10	-0.005	0.003	-0.010	0.008	-0.011	0.002	-0.006	-0.005	0.006	2.5
20	-0.005	-0.002	-0.006	0.011	-0.027	0.004	-0.009	-0.002	-0.010	2.5
30	-0.005	-0.009	-0.002	-0.008	-0.018	-0.003	0.003	0.005	-0.006	2.5
40	-0.006	0.002	-0.018	0.009	-0.017	0.005	0.004	-0.006	-0.008	2.5
50	-0.005	-0.021	-0.005	-0.014	-0.015	0.006	-0.005	-0.006	-0.004	2.5
55	-0.005	-0.019	-0.006	0.002	-0.018	-0.003	-0.005	-0.005	-0.009	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP

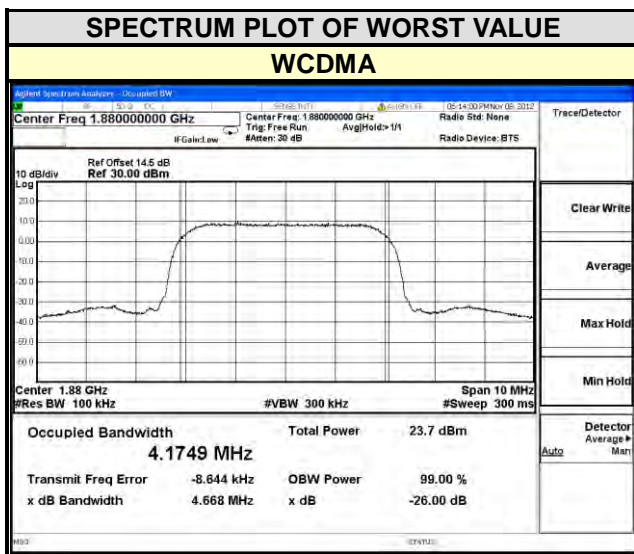




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4.3.3 TEST RESULTS

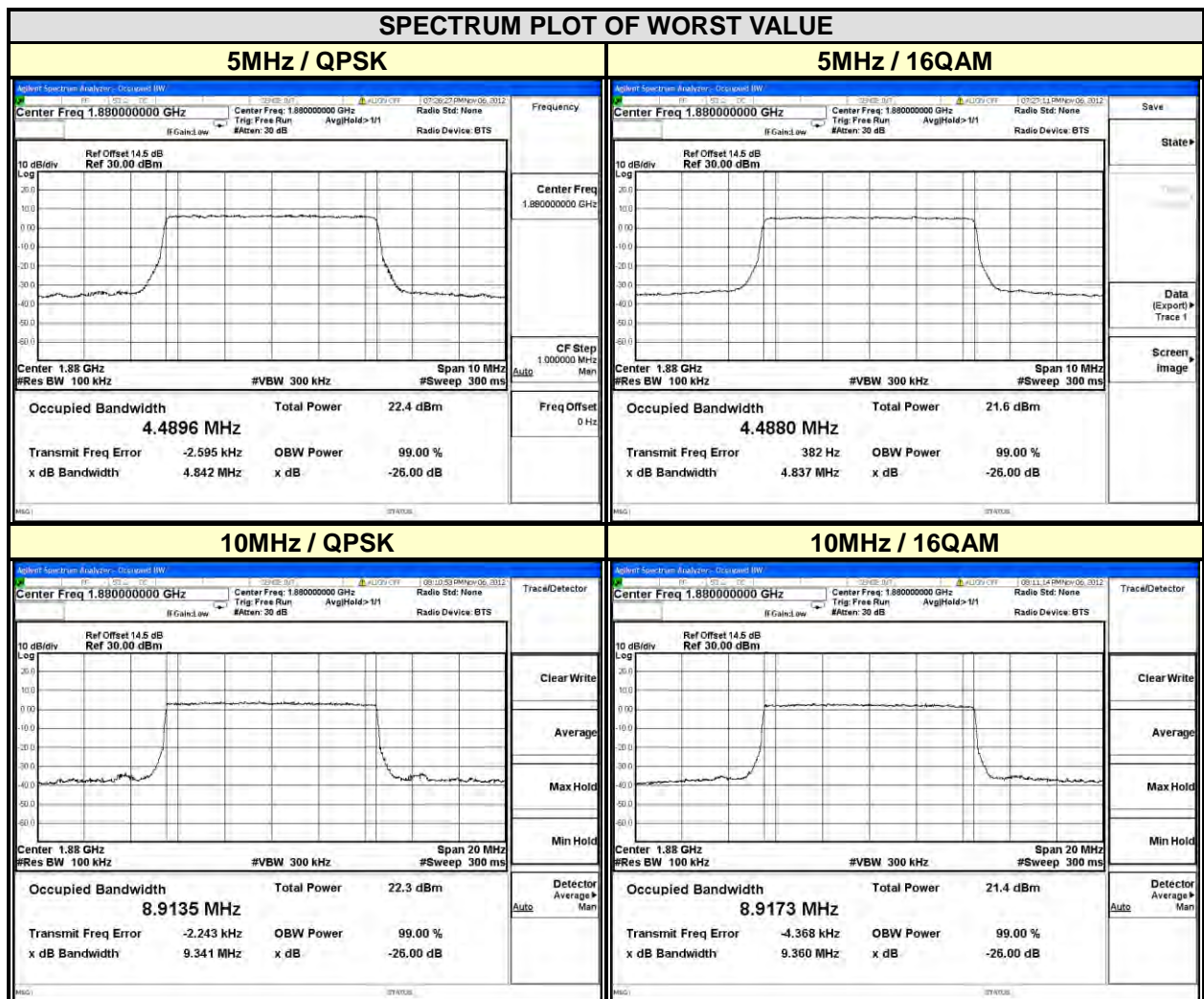
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		WCDMA
9262	1852.4	4.1725
9400	1880.0	4.1749
9538	1907.6	4.1692





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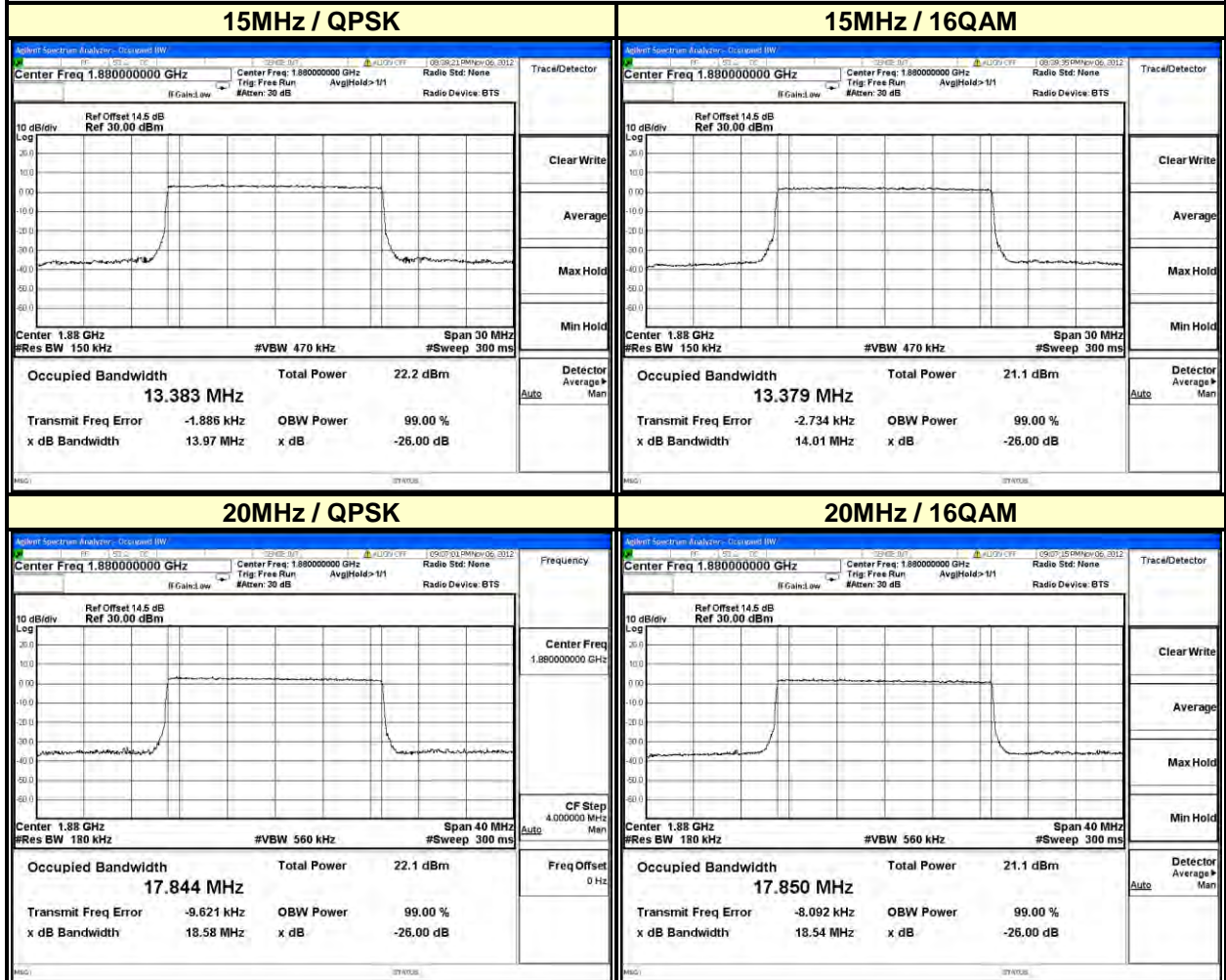
LTE BAND 2							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.4851	4.4863	18650	1855	8.9067	8.9110
18900	1880	4.4896	4.4880	18900	1880	8.9135	8.9173
19175	1907.5	4.4867	4.4827	19150	1905	8.8987	8.8980
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	13.357	13.344	18700	1860	17.737	17.748
18900	1880	13.383	13.379	18900	1880	17.844	17.850
19125	1902.5	13.339	13.332	19100	1900	17.742	17.759





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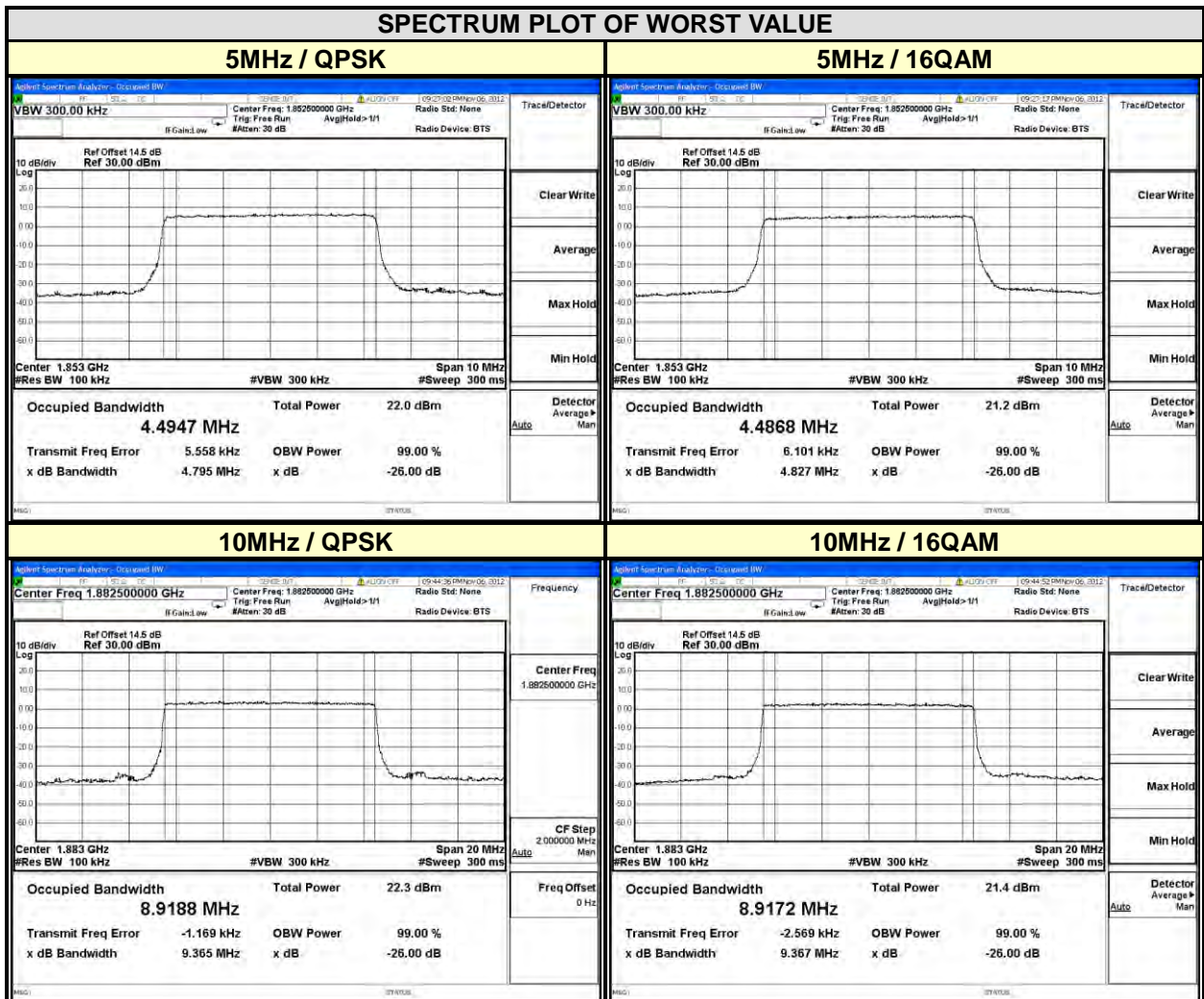
SPECTRUM PLOT OF WORST VALUE





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LTE BAND 25							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26065	1860	4.4947	4.4868	26090	1855	8.9064	8.9129
26365	1882.5	4.4869	4.4866	26365	1882.5	8.9188	8.9172
26665	1912.5	4.4932	4.4854	26640	1910	8.9082	8.9067
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26115	1857.5	13.348	13.334	26140	1860	17.743	17.752
26365	1882.5	13.380	13.377	26365	1882.5	17.855	17.850
26615	1907.5	13.345	13.333	26590	1905	17.736	17.736

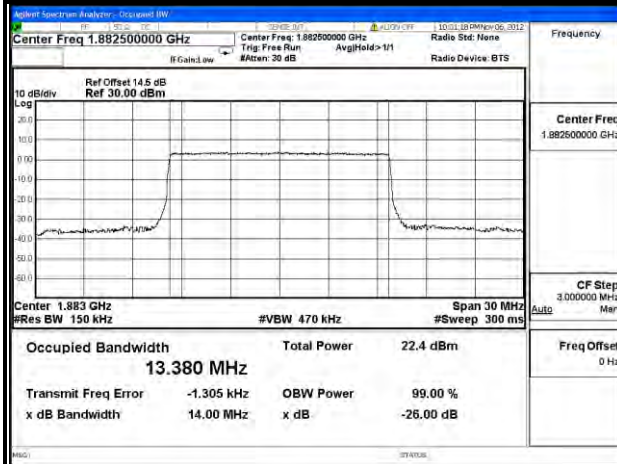




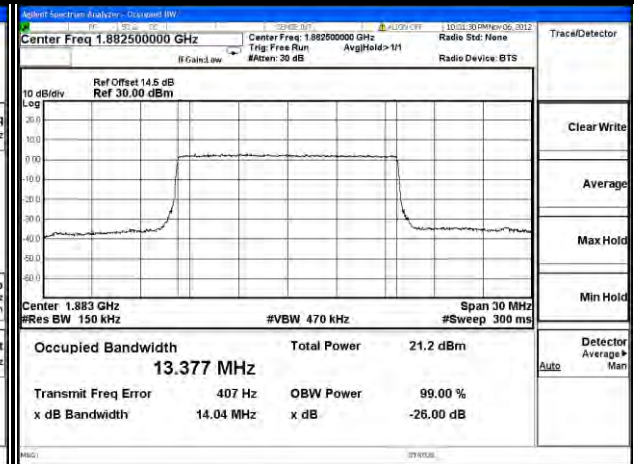
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SPECTRUM PLOT OF WORST VALUE

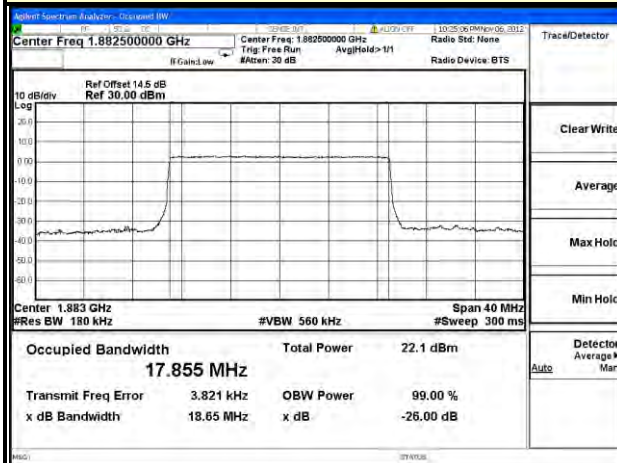
15MHz / QPSK



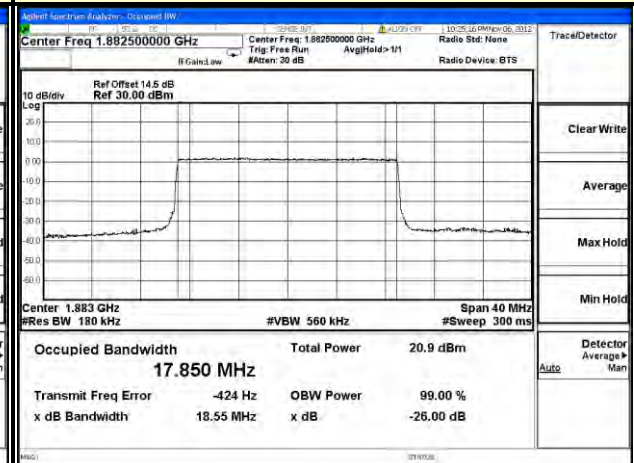
15MHz / 16QAM



20MHz / QPSK



20MHz / 16QAM

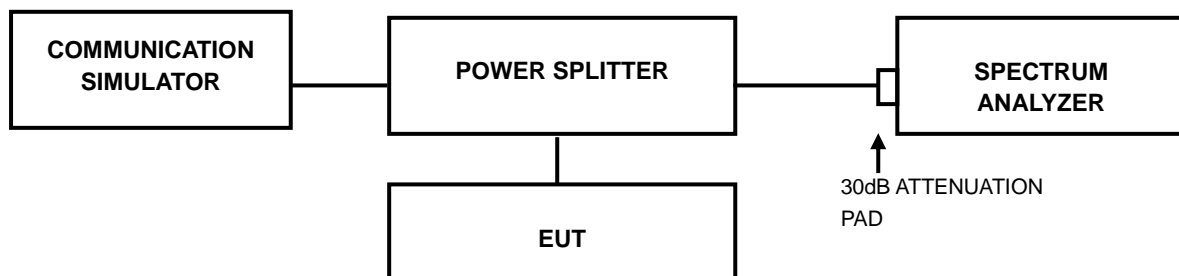


4.4 PEAK TO AVERAGE RATIO

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



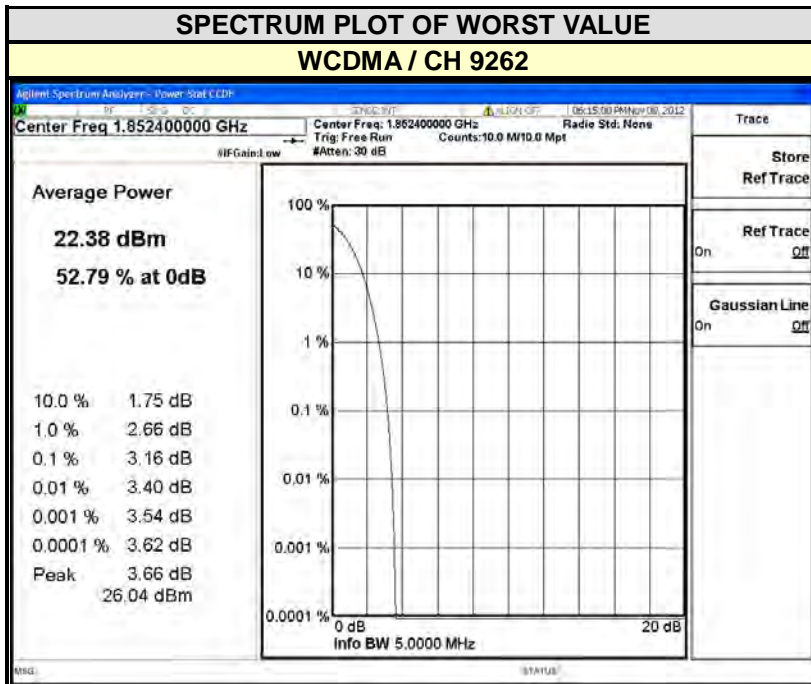
4.4.3 TEST PROCEDURES

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

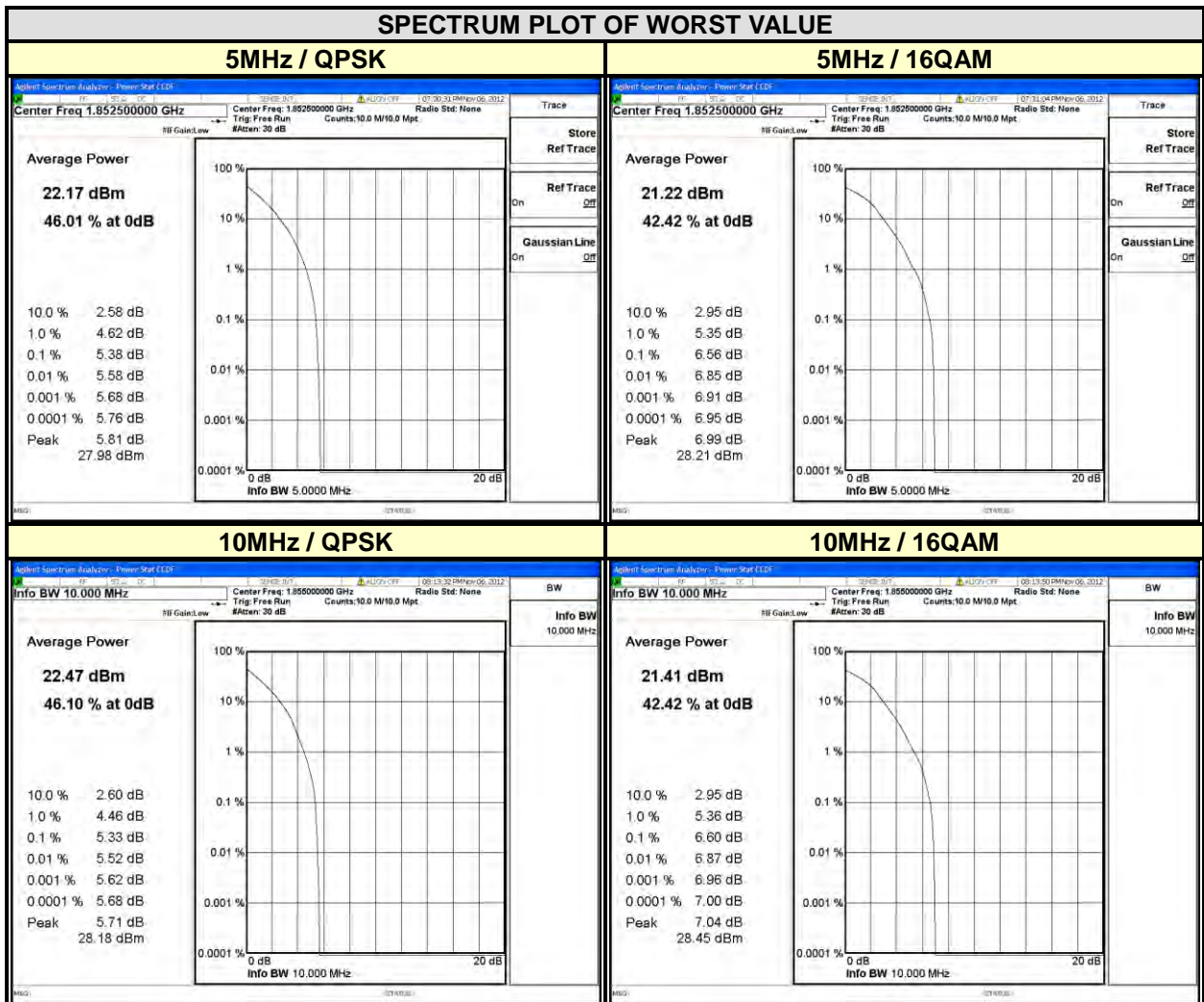
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
		WCDMA
9262	1852.4	3.16
9400	1880.0	3.11
9538	1907.6	3.11





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LTE BAND 2							
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
18625	1852.5	5.38	6.56	18650	1855	5.33	6.60
18900	1880	4.98	6.14	18900	1880	4.92	6.08
19175	1907.5	5.09	6.28	19150	1905	4.70	5.84
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
18675	1857.5	5.21	6.42	18700	1860	5.18	6.26
18900	1880	4.97	6.16	18900	1880	4.88	6.08
19125	1902.5	4.81	5.96	19100	1900	4.56	5.66

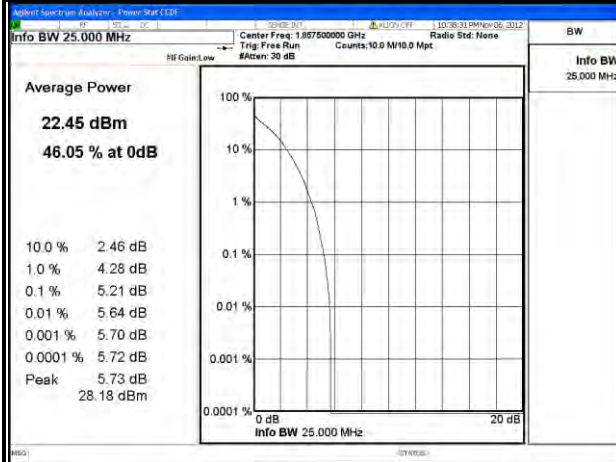




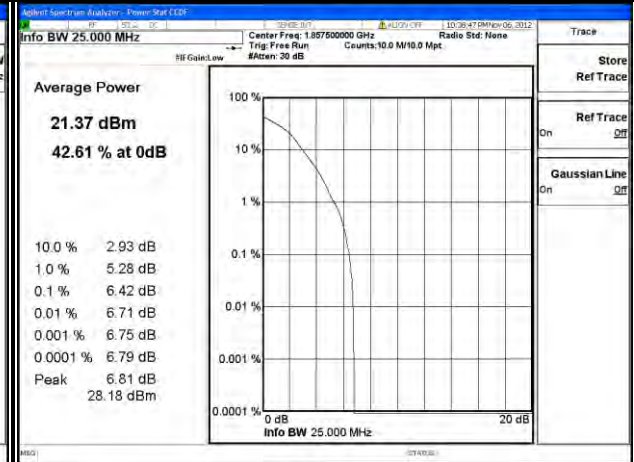
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SPECTRUM PLOT OF WORST VALUE

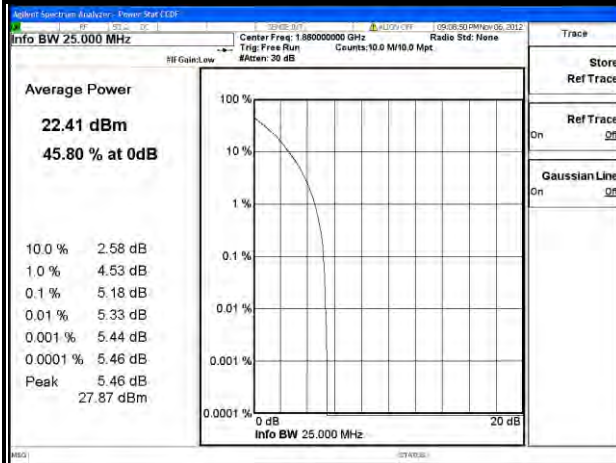
15MHz / QPSK



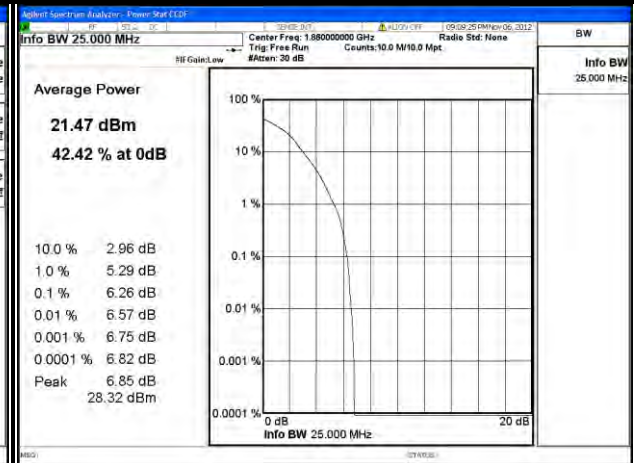
15MHz / 16QAM



20MHz / QPSK



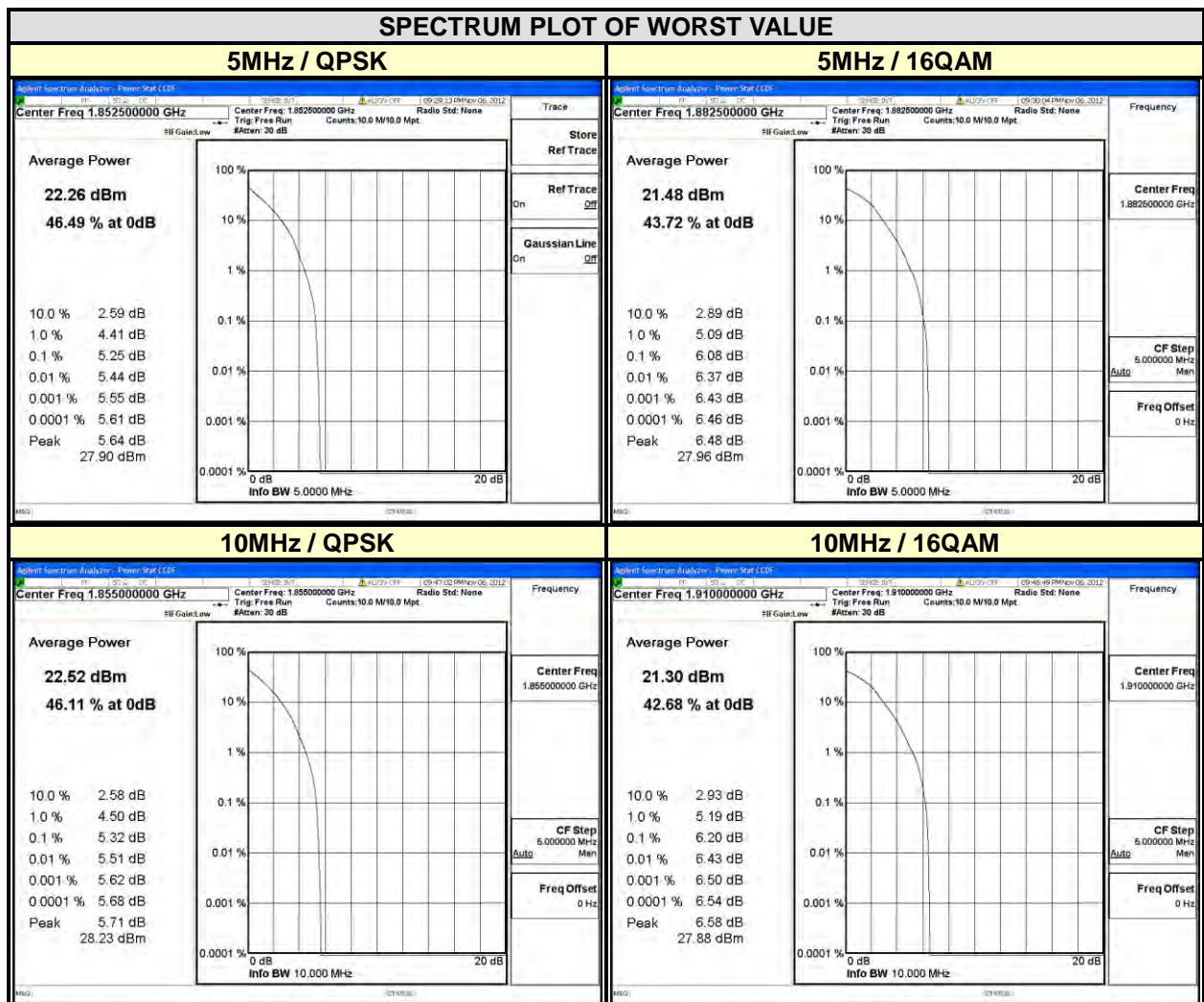
20MHz / 16QAM





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LTE BAND 25							
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
26065	1860	5.25	6.02	26090	1855	5.32	5.97
26365	1882.5	4.90	6.08	26365	1882.5	4.94	6.02
26665	1912.5	4.83	5.99	26640	1910	5.06	6.20
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
26115	1857.5	4.90	5.85	26140	1860	5.11	5.75
26365	1882.5	4.89	6.07	26365	1882.5	5.48	6.25
26615	1907.5	4.70	5.87	26590	1905	5.27	5.89

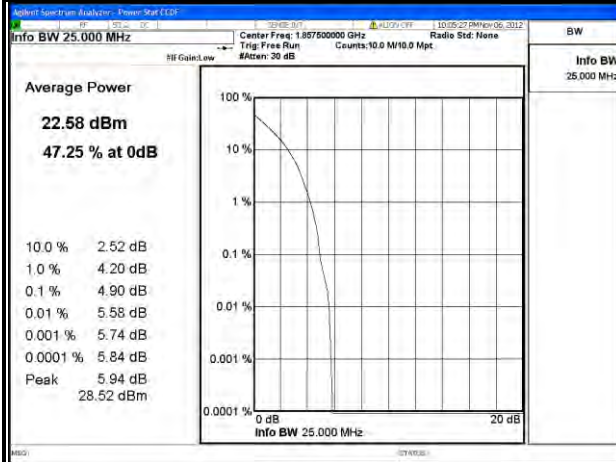




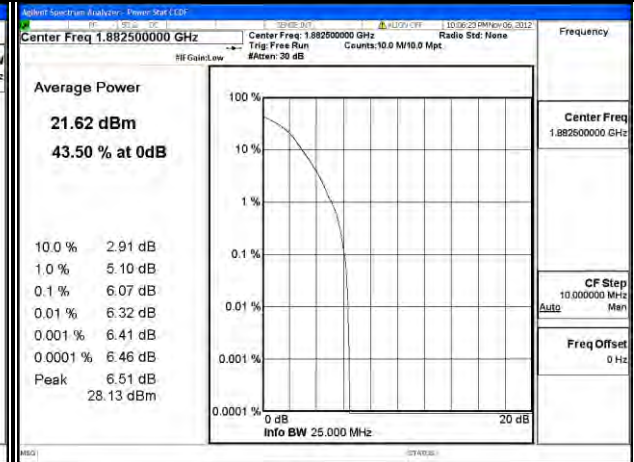
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SPECTRUM PLOT OF WORST VALUE

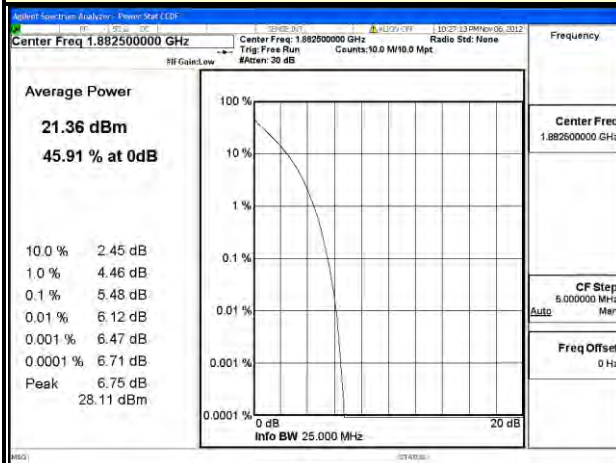
15MHz / QPSK



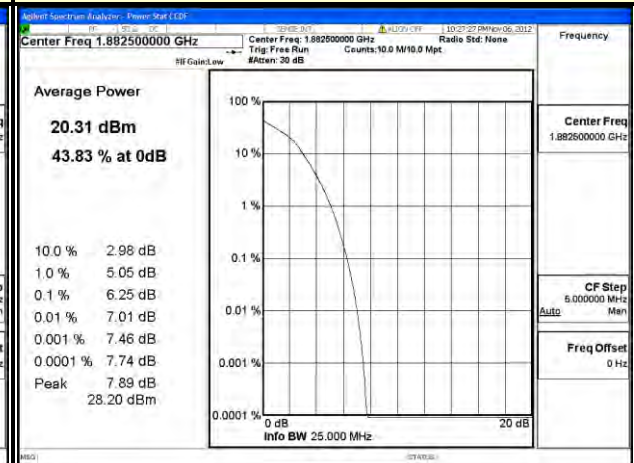
15MHz / 16QAM



20MHz / QPSK



20MHz / 16QAM

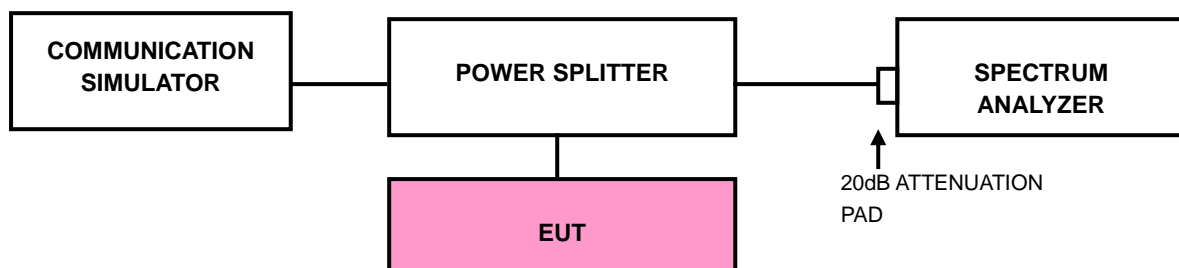


4.5 BAND EDGE MEASUREMENT

4.5.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 TEST SETUP



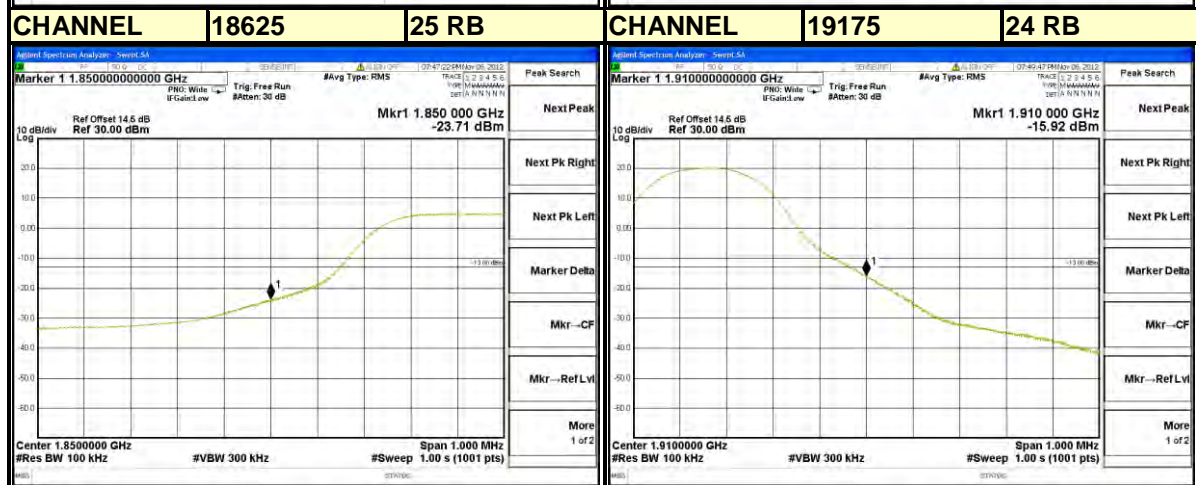
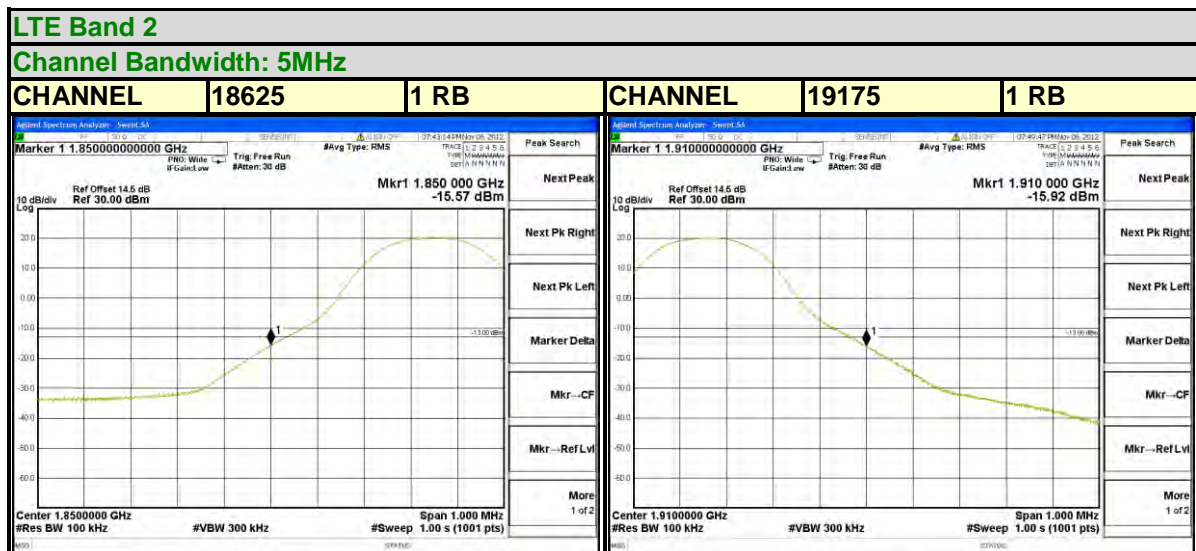
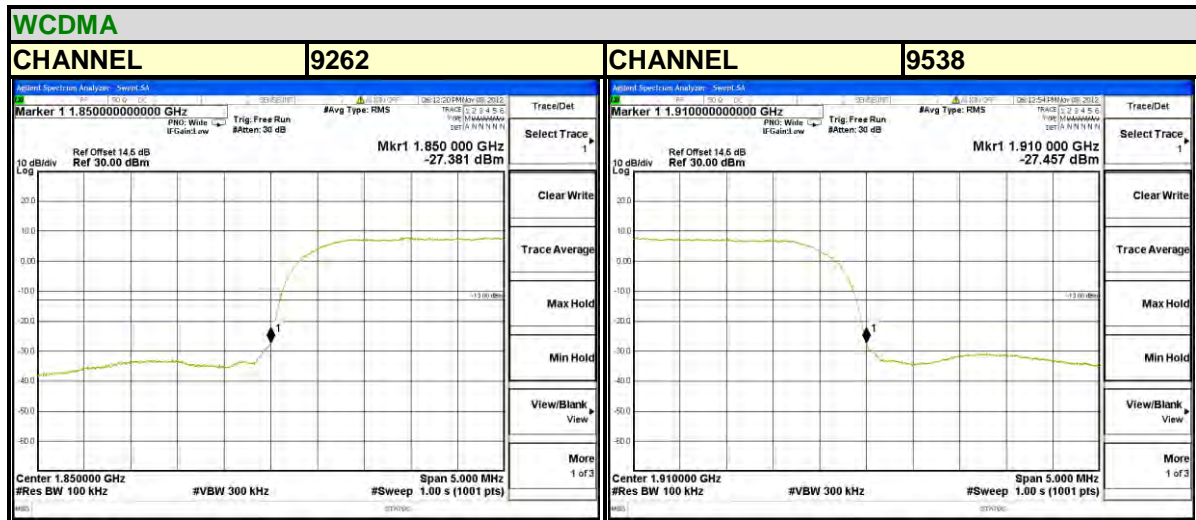
4.5.3 TEST PROCEDURES

- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA).
- c. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 5MHz and 10MHz).
- d. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Channel Bandwidth 15MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 180kHz and VB of the spectrum is 560kHz (LTE Channel Bandwidth 20MHz).
- f. Record the max trace plot into the test report.



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4.5.4 TEST RESULTS

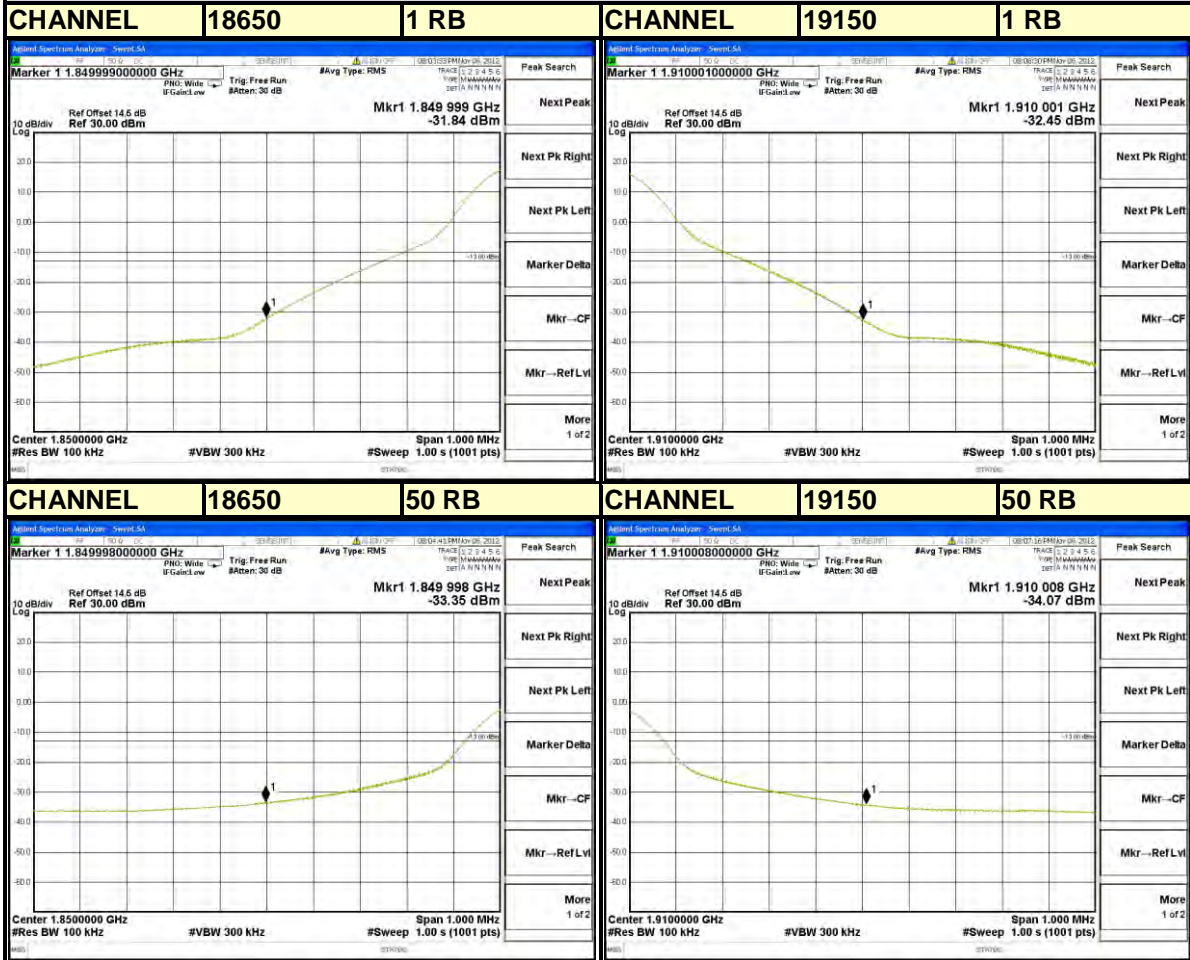




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LTE Band 2

Channel Bandwidth: 10MHz

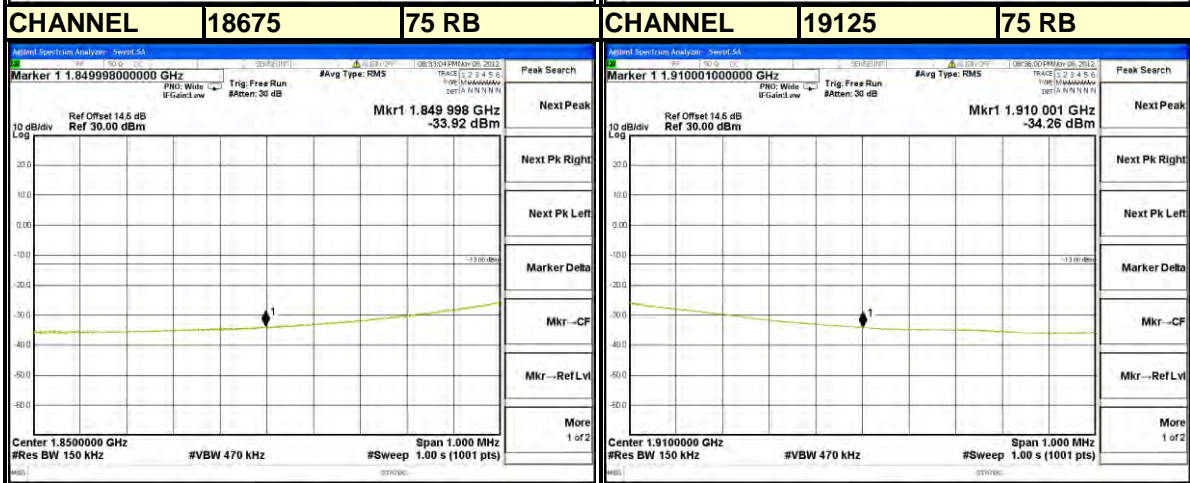
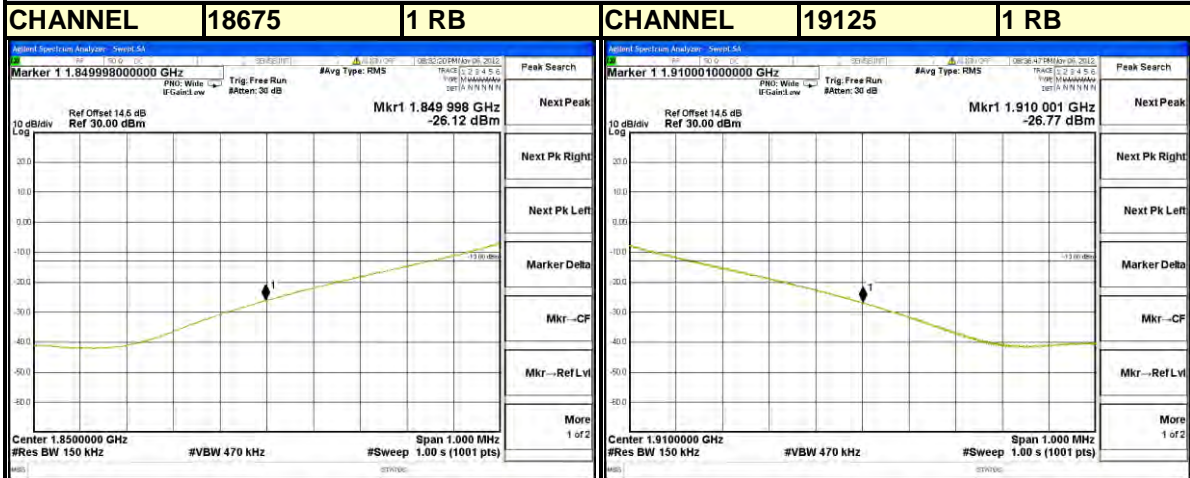




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LTE Band 2

Channel Bandwidth: 15MHz

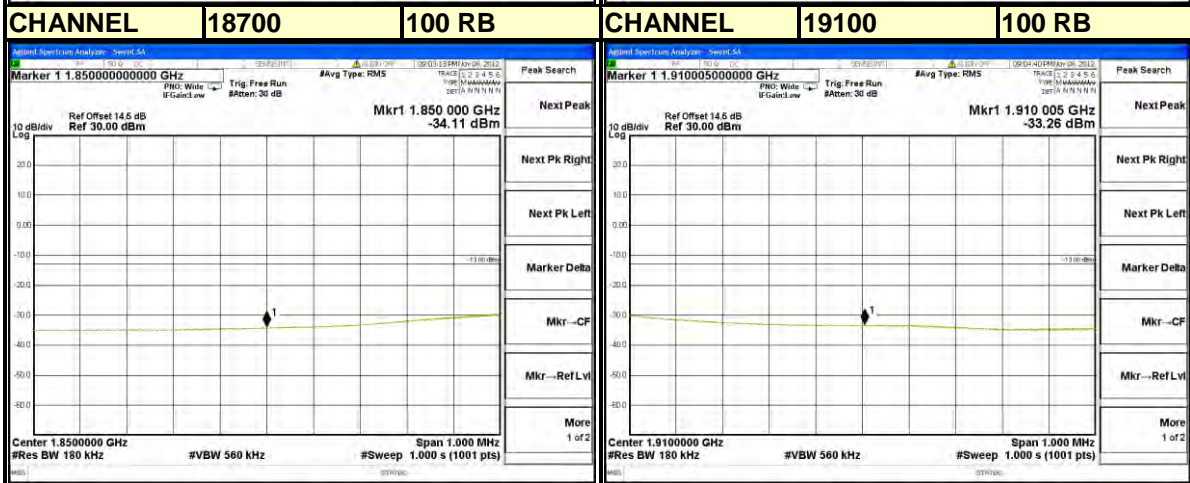
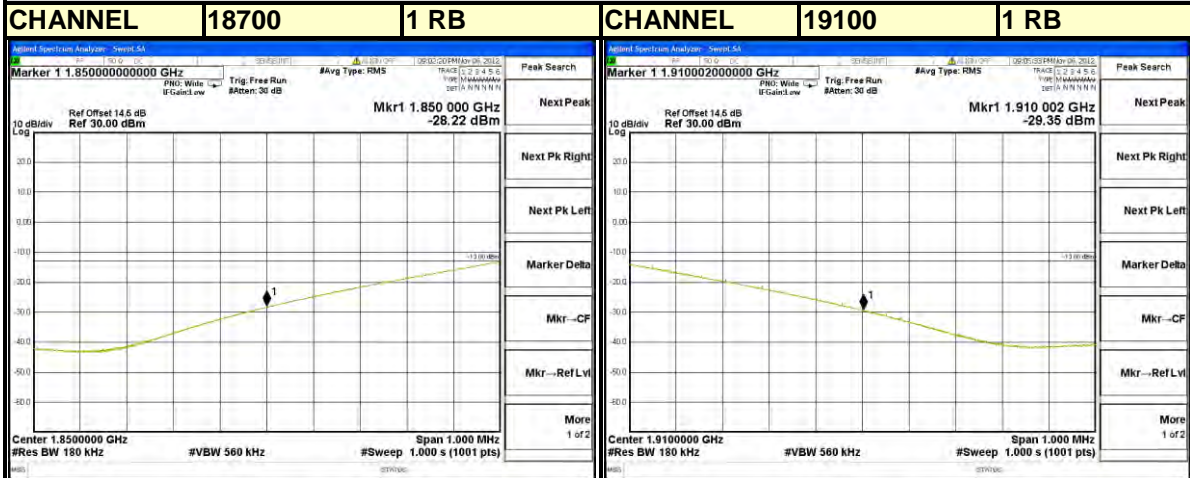




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LTE Band 2

Channel Bandwidth: 20MHz

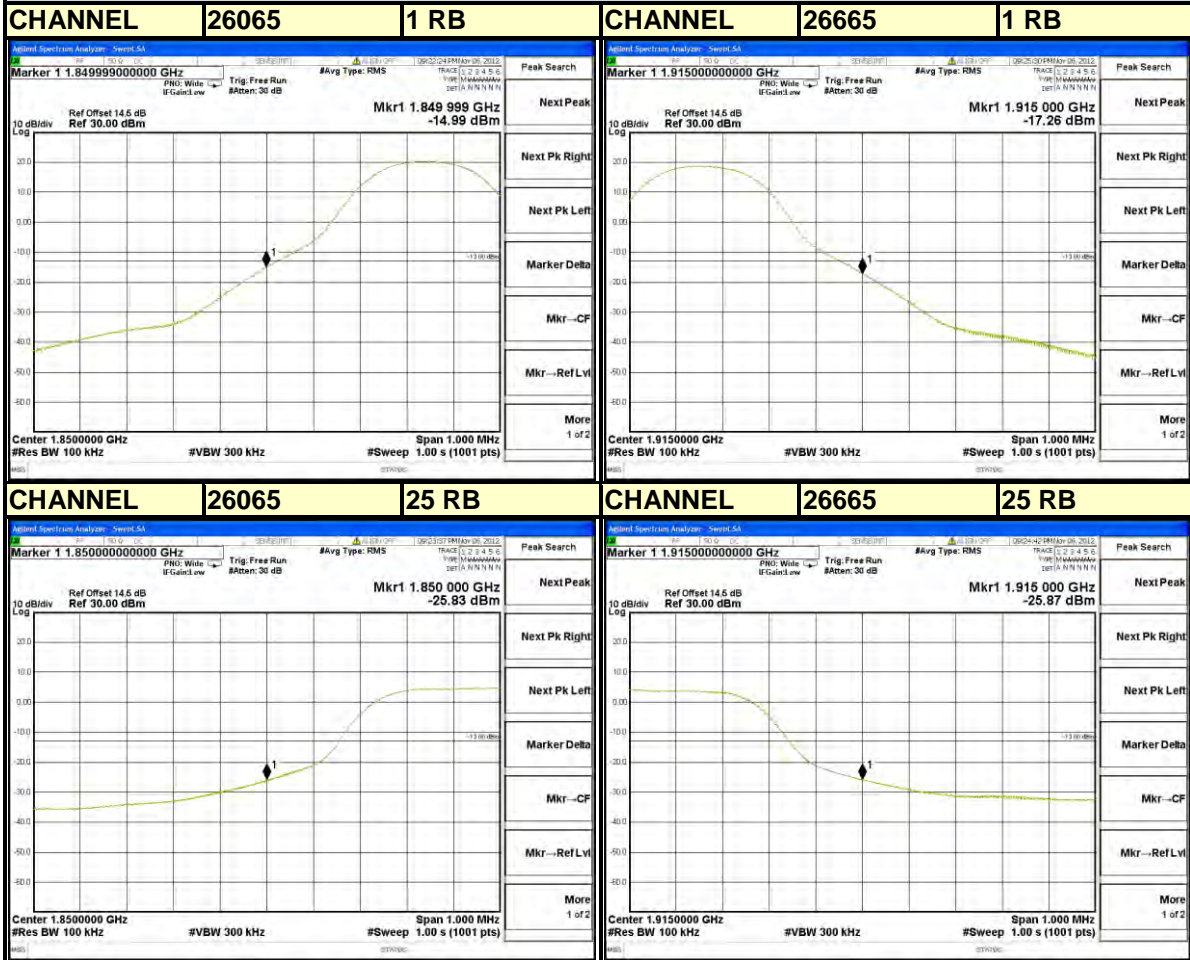




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LTE Band 25

Channel Bandwidth: 5MHz

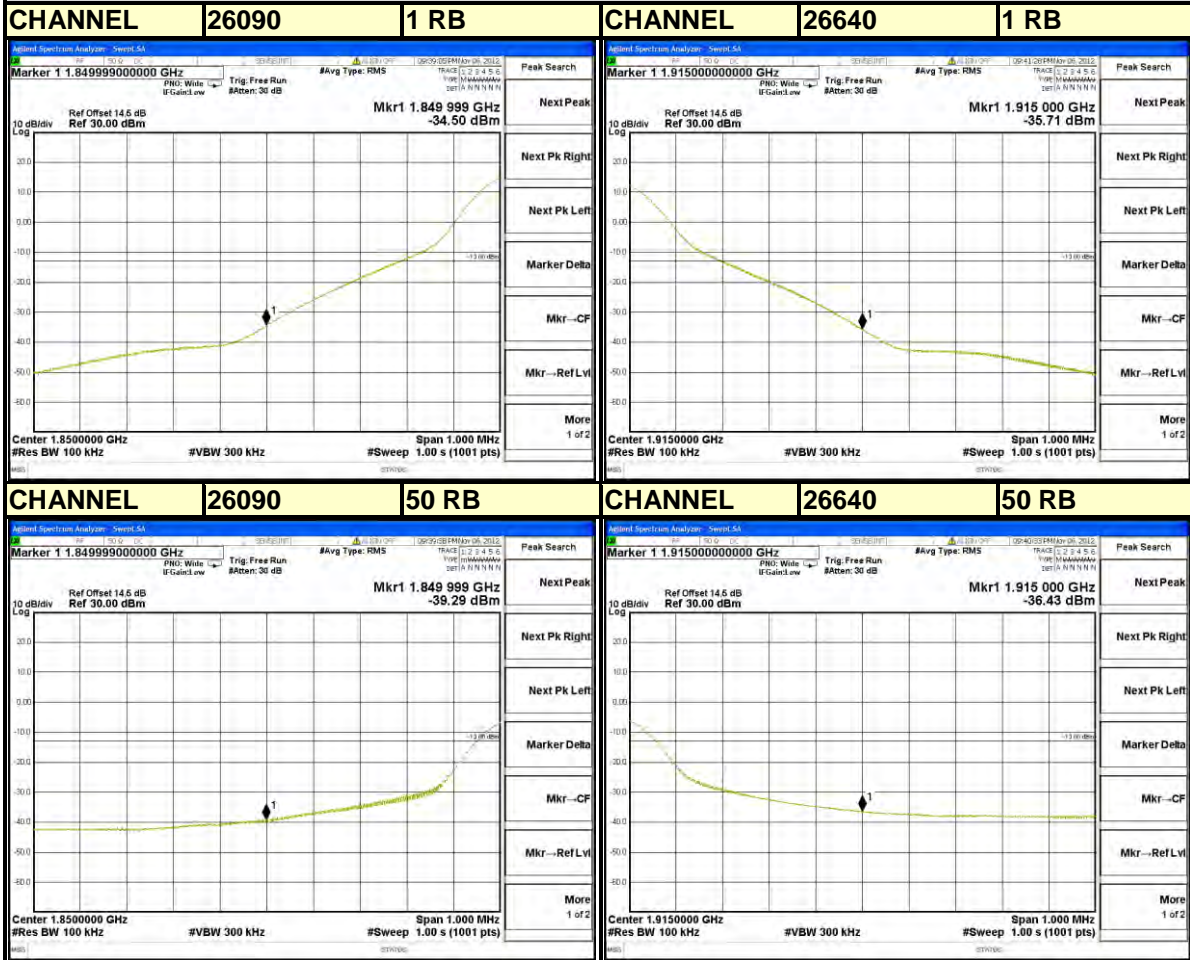




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LTE Band 25

Channel Bandwidth: 10MHz

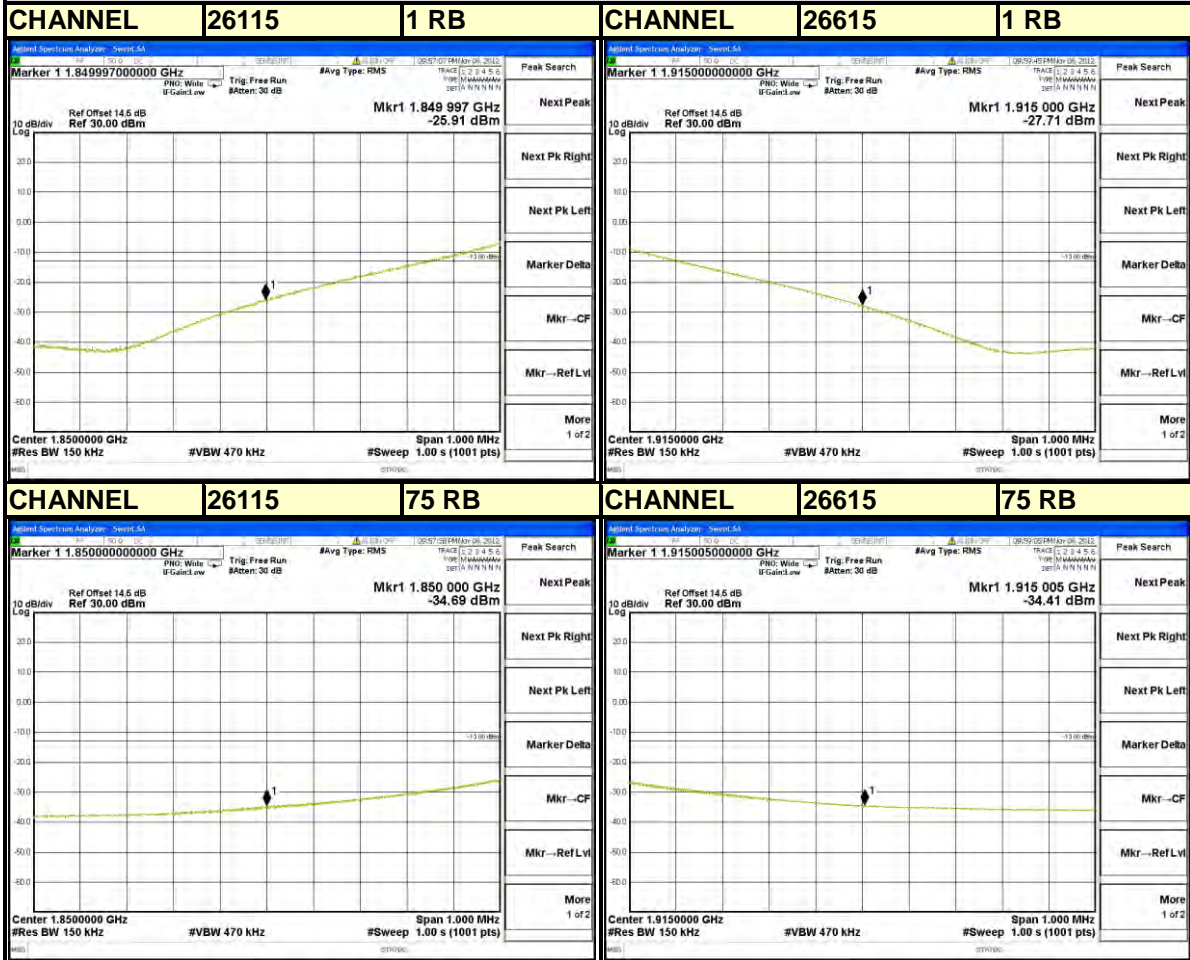




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LTE Band 25

Channel Bandwidth: 15MHz

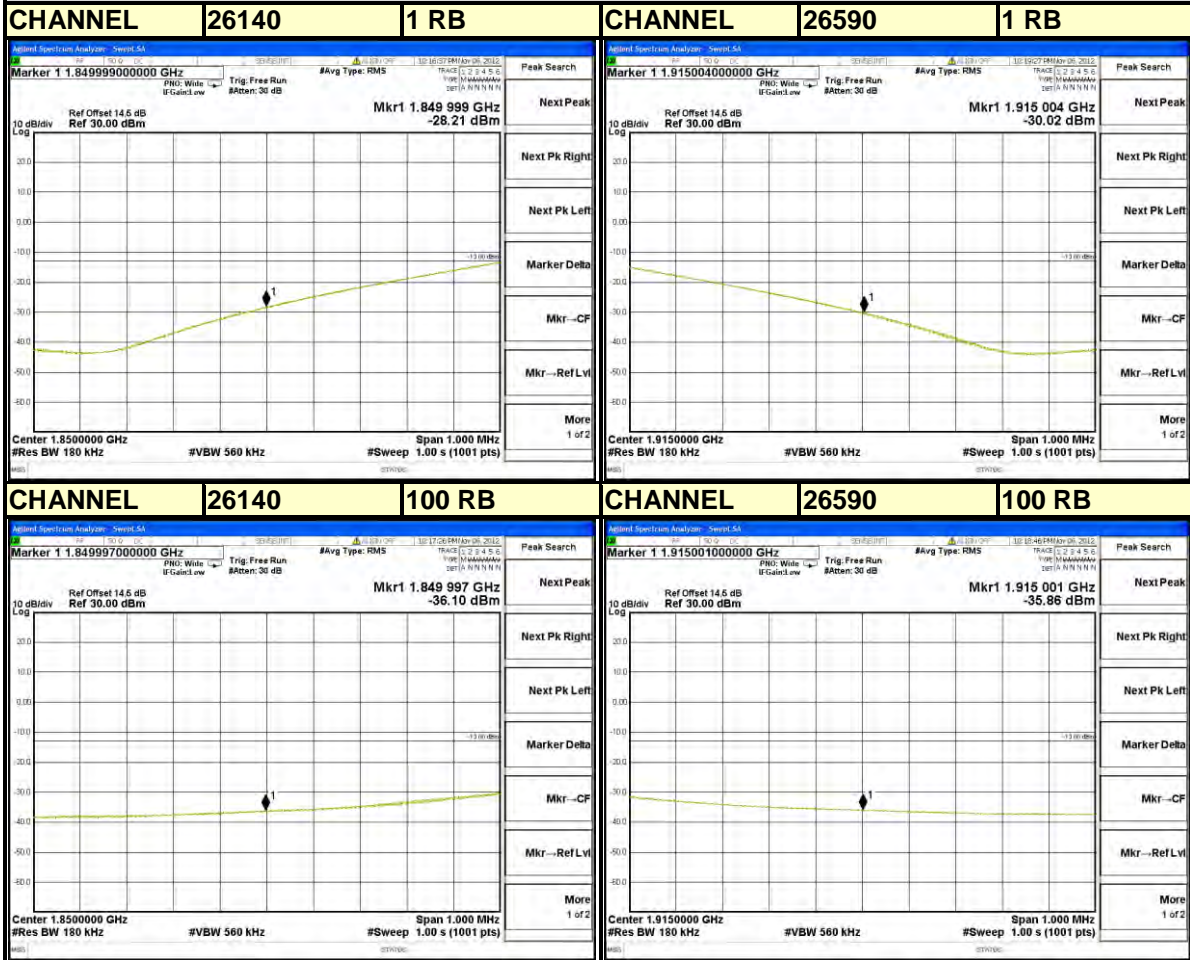




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LTE Band 25

Channel Bandwidth: 20MHz



4.6 CONDUCTED SPURIOUS EMISSIONS

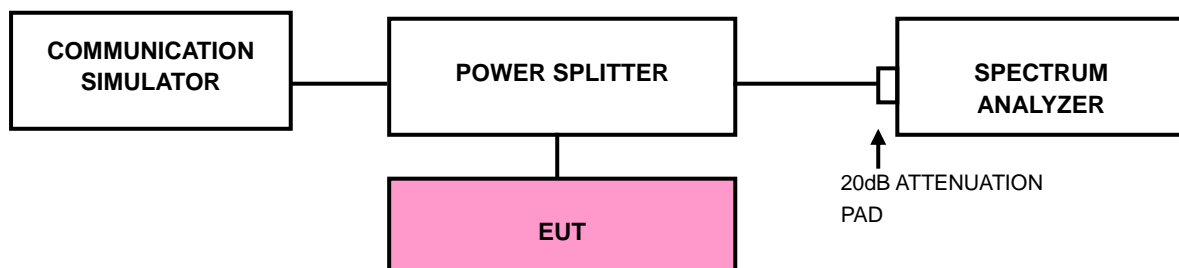
4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.6.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 30 MHz to 19.1GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

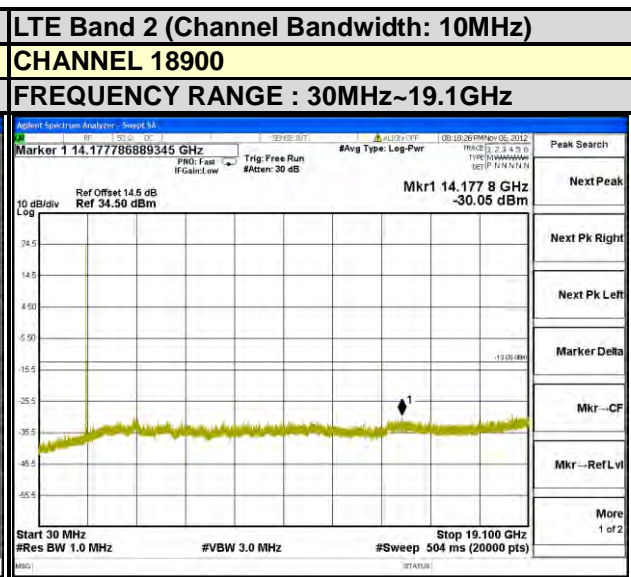
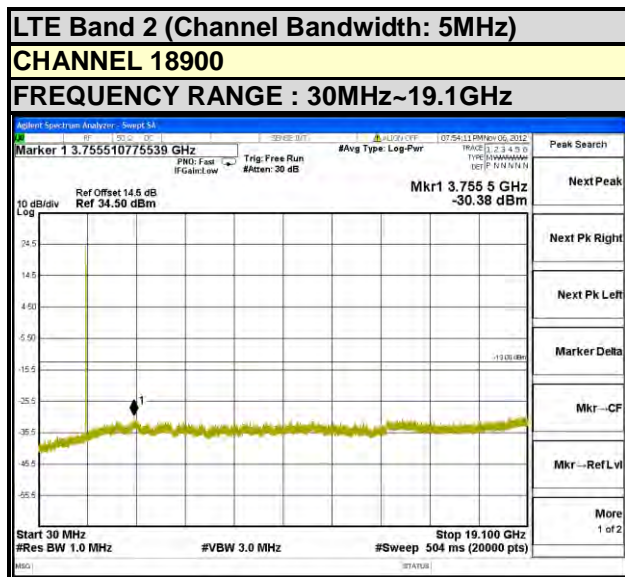
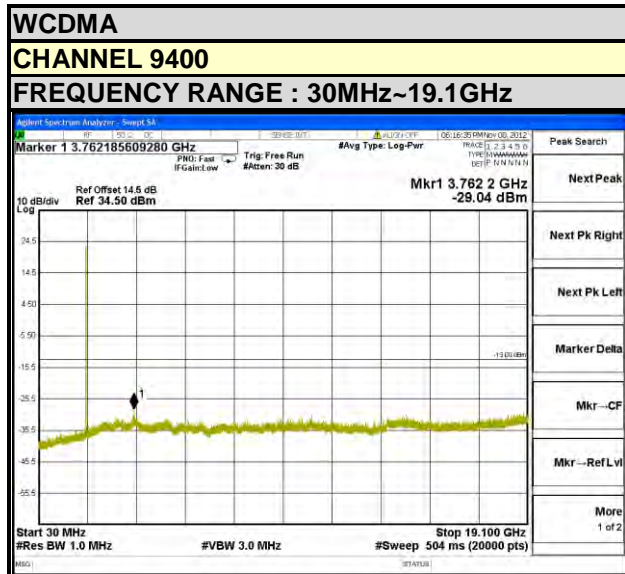
4.6.3 TEST SETUP





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4.6.4 TEST RESULTS





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LTE Band 2 (Channel Bandwidth: 15MHz)	LTE Band 2 (Channel Bandwidth: 20MHz)
CHANNEL 18900	CHANNEL 18900
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
LTE Band 25 (Channel Bandwidth: 5MHz)	LTE Band 25 (Channel Bandwidth: 10MHz)
CHANNEL 26365	CHANNEL 26365
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
LTE Band 25 (Channel Bandwidth: 15MHz)	LTE Band 25 (Channel Bandwidth: 20MHz)
CHANNEL 26365	CHANNEL 26365
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz