FCC TEST REPORT
(PART 90S)

REPORT NO.: RF140624C19-4
MODEL NO.: 0P82300
FCC ID: NM80P82300
RECEIVED: Jun. 24, 2014
TESTED: Jul. 18, 2014 ~ Aug. 02, 2014
ISSUED: Aug. 26, 2014

APPLICANT: HTC Corporation

ADDRESS: 1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

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

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Testing Laboratory
2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140624C19-4	Original release	Aug. 26, 2014

1 CERTIFICATION

PRODUCT: Tablet
MODEL: 0P82300
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: Jul. 18, 2014 ~ Aug. 02, 2014
TEST SAMPLE: Production Unit
STANDARDS: **FCC PART 90, Subpart S**
FCC Part 2

The above equipment (model: 0P82300) 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 :** Aug. 26, 2014
Ivonne Wu / Supervisor

APPROVED BY : Sam Chen , **DATE :** Aug. 26, 2014
Sam Chen / Senior Project Engineer

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 90.635 (b)	Effective Radiated Power	PASS	Meet the requirement of limit.
2.1055 90.213	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 90.209	Occupied Bandwidth (*)	PASS	Meet the requirement of limit.
2.1051 90.209	Emission Masks	PASS	Meet the requirement of limit.
2.1051 90.691	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 90.691	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -27.47dB at 124.77MHz.

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	100744	Apr. 15, 2014	Apr. 14, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27. 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 18, 2013	Dec. 17, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 26, 2013	Dec. 25, 2014
Preamplifier EMCI	EMC 184045	980116	Jan. 13, 2014	Jan. 12, 2015
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software BV ADT	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
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	E5515C	MY52102544	Sep. 05, 2012	Sep. 04, 2014
Radio Communication Analyzer	MT8820C	6201300640	Aug. 01, 2013	Jul. 31, 2015

NOTE: 1. The calibration interval of the above test instruments is 12/24 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

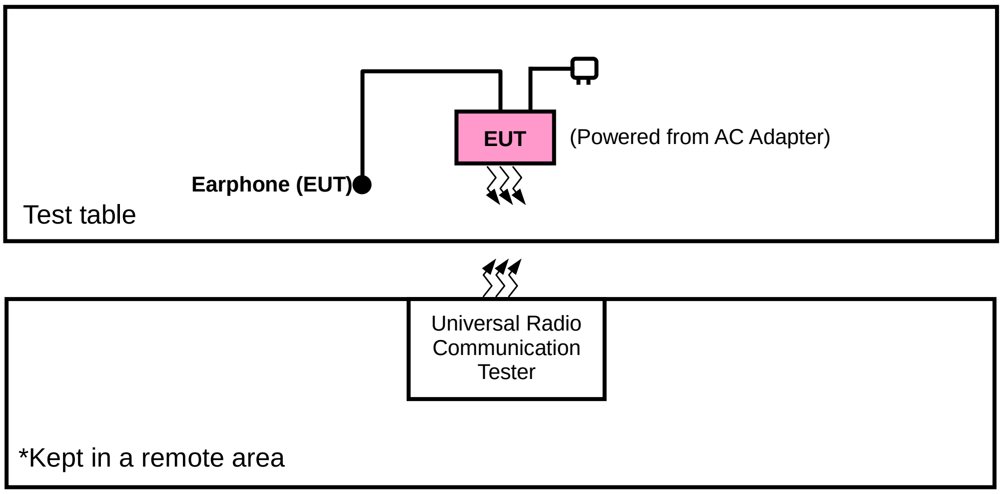
EUT	Tablet	
MODEL NO.	0P82300	
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (battery)	
MODULATION TYPE	**LTE Band 26**	QPSK, 16QAM
FREQUENCY RANGE	**LTE Band 26 (Channel Bandwidth: 1.4MHz)**	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
MAX. ERP POWER	**LTE Band 26 (Channel Bandwidth: 1.4MHz)**	30.05mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	31.10mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	30.46mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	32.28mW
EMISSION DESIGNATOR	**LTE Band 26 (Channel Bandwidth: 1.4MHz)**	1M09G7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	2M69G7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	4M50G7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	8M91G7D
ANTENNA TYPE	Fixed Internal antenna	
I/O PORTS	Refer to users' manual	
DATA CABLE	Refer to NOTE as below	
ACCESSORY DEVICES	Refer to NOTE as below	

NOTE:

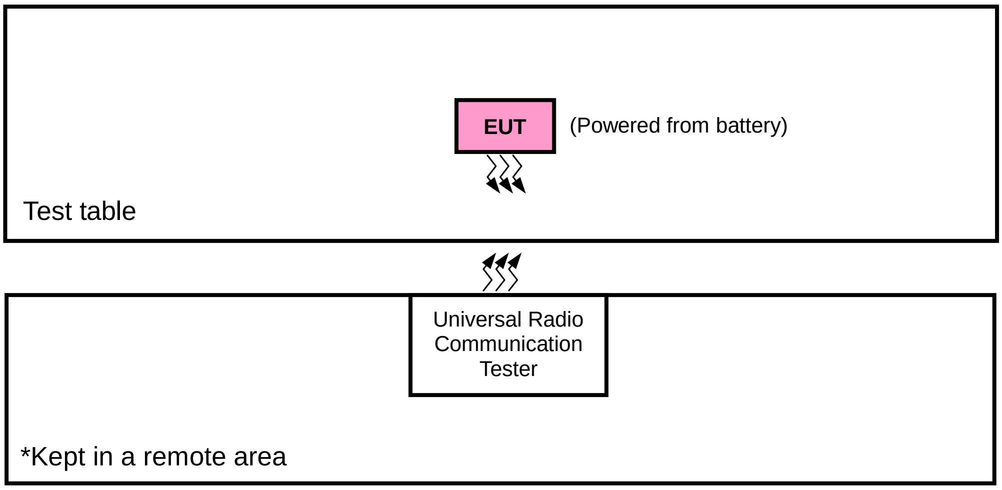
1. There're 2 configurations for the EUT listed as below.
   Main sample (A): Battery 1 + eMMC 16G
   2nd sample (B): Battery 2 + eMMC 32G
   ✧Only the worst test data was presented in the report.
2. The EUT's accessories list refers to EUT photo.
3. The above EUT information was declared by manufacturer 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.

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 X-plane for ERP, Z-axis for Mode A and X-axis for Mode B for radiated emission for antenna 1. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	Main sample
B	2nd sample

LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	ERP	26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26740	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26740	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHZ	QPSK	1 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
A	EMISSION MASK	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
A	CONDCUDETED EMISSION	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26740	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26740	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHZ	QPSK	1 RB / 0 RB Offset
A, B	RADIATED EMISSION	26740	26740	10MHZ	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	26deg. C, 58%RH	3.8Vdc	Dylan Yang
FREQUENCY STABILITY	26deg. C, 58%RH	3.8Vdc	Dylan Yang
OCCUPIED BANDWIDTH	26deg. C, 58%RH	3.8Vdc	Dylan Yang
BAND EDGE	26deg. C, 58%RH	3.8Vdc	Dylan Yang
CONDCUDETED EMISSION	26deg. C, 58%RH	3.8Vdc	Dylan Yang
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Harry Hsueh

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 90
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 / Portable station are limited to 100 watts e.r.p.

4.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

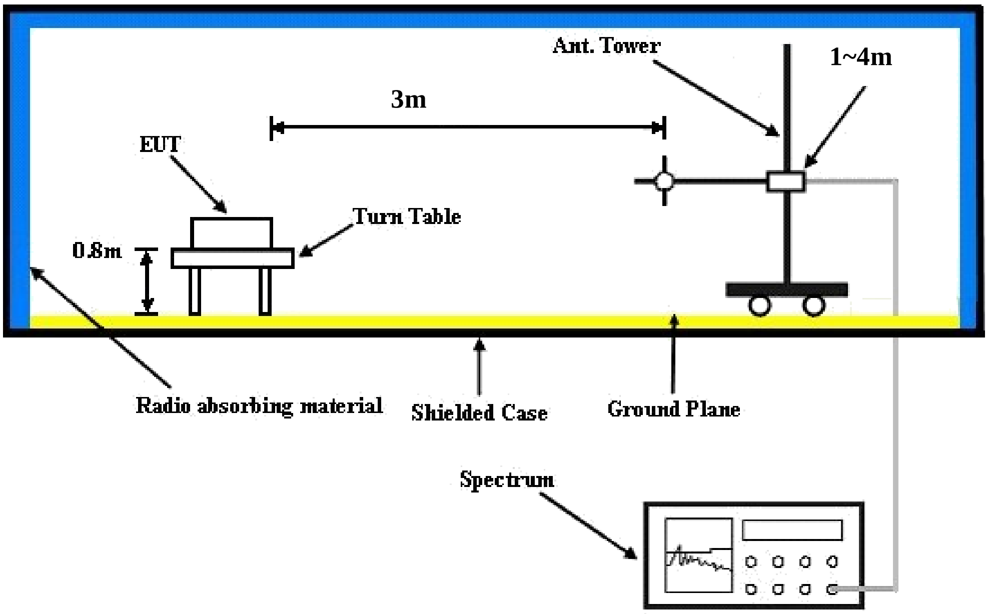
a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10MHz for LTE mode.
b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum 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 = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

CONDUCTED POWER MEASUREMENT:

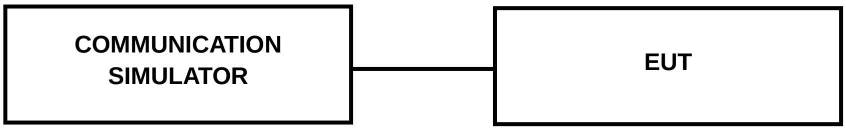
The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



CONDUCTED POWER MEASUREMENT:



4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band / BW	RB Size	RB Offset	QPSK Low CH 26697 814.7 MHz	QPSK Mid CH 26740 819.0 MHz	QPSK High CH 26783 823.3 MHz	3GPP MPR (dB)	16QAM Low CH 26697 814.7 MHz	16QAM Mid CH 26740 819.0 MHz	16QAM High CH 26783 823.3 MHz	3GPP MPR (dB)
26 / 1.4M	1	0	22.07	22.03	22.00	0	21.06	21.02	20.99	1
	1	2	21.99	21.99	21.97	0	20.98	20.98	20.96	1
	1	5	21.96	22.02	21.97	0	20.95	21.01	20.96	1
	3	0	21.08	21.01	20.99	0	20.07	20.00	19.98	1
	3	1	21.04	21.17	21.00	0	20.03	20.16	19.99	1
	3	3	20.99	21.00	20.99	0	19.98	19.99	19.98	1
	6	0	21.09	21.01	20.98	1	20.08	20.00	19.97	2

Band / BW	RB Size	RB Offset	QPSK Low CH 26705 815.5 MHz	QPSK Mid CH 26740 819.0 MHz	QPSK High CH 26775 822.5 MHz	3GPP MPR (dB)	16QAM Low CH 26705 815.5 MHz	16QAM Mid CH 26740 819.0 MHz	16QAM High CH 26775 822.5 MHz	3GPP MPR (dB)
26 / 3M	1	0	22.13	22.09	22.06	0	21.12	21.08	21.05	1
	1	7	22.05	22.05	22.03	0	21.04	21.04	21.02	1
	1	14	22.02	22.08	22.03	0	21.01	21.07	21.02	1
	8	0	21.14	21.07	21.05	1	20.13	20.06	20.04	2
	8	3	21.10	21.23	21.06	1	20.09	20.22	20.05	2
	8	7	21.05	21.06	21.05	1	20.04	20.05	20.04	2
	15	0	21.15	21.07	21.04	1	20.14	20.06	20.03	2

Band / BW	RB Size	RB Offset	QPSK Low CH 26715 816.5 MHz	QPSK Mid CH 26740 819.0 MHz	QPSK High CH 26765 821.5 MHz	3GPP MPR (dB)	16QAM Low CH 26715 816.5 MHz	16QAM Mid CH 26740 819.0 MHz	16QAM High CH 26765 821.5 MHz	3GPP MPR (dB)
26 / 5M	1	0	22.20	22.16	22.13	0	21.19	21.15	21.12	1
	1	12	22.12	22.12	22.10	0	21.11	21.11	21.09	1
	1	24	22.09	22.15	22.10	0	21.08	21.14	21.09	1
	12	0	21.21	21.14	21.12	1	20.20	20.13	20.11	2
	12	6	21.17	21.30	21.13	1	20.16	20.29	20.12	2
	12	13	21.12	21.13	21.12	1	20.11	20.12	20.11	2
	25	0	21.22	21.14	21.11	1	20.21	20.13	20.10	2

Band / BW	RB Size	RB Offset	QPSK Mid CH 26740 819.0 MHz	3GPP MPR (dB)	16QAM Mid CH 26740 819.0 MHz	3GPP MPR (dB)
26 / 10M	1	0	**22.28**	0	21.27	1
	1	24	22.20	0	21.19	1
	1	49	22.17	0	21.16	1
	25	0	21.29	1	20.28	2
	25	12	21.25	1	20.24	2
	25	25	21.20	1	20.19	2
	50	0	21.30	1	20.29	2

ERP POWER (dBm)

MODE A

LTE Band 26							
Channel Bandwidth: 1.4MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26697	814.7	-14.28	31.208	14.78	30.05	H
	26740	819.0	-14.46	31.3	14.69	29.44	H
	26783	823.3	-14.70	31.222	14.37	27.37	H
	26697	814.7	-15.89	31.504	13.46	22.20	V
	26740	819.0	-15.18	31.117	13.79	23.92	V
	26783	823.3	-16.29	31.922	13.48	22.29	V

LTE Band 26							
Channel Bandwidth: 1.4MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26697	814.7	-15.18	31.208	13.88	24.42	H
	26740	819.0	-15.77	31.3	13.38	21.78	H
	26783	823.3	-15.83	31.222	13.24	21.10	H
	26697	814.7	-16.82	31.504	12.53	17.92	V
	26740	819.0	-16.46	31.117	12.51	17.81	V
	26783	823.3	-17.54	31.922	12.23	16.72	V

LTE Band 26							
Channel Bandwidth: 3MHz / QPSK							
Plane	**Channel**	**Frequency (MHz)**	**LVL (dBm)**	**Correction Factor(dB)**	**ERP(dBm)**	**ERP(mW)**	**Polarization (H/V)**
X	26705	815.5	-14.13	31.208	14.93	31.10	H
	26740	819.0	-14.36	31.3	14.79	30.13	H
	26775	822.5	-14.48	31.222	14.59	28.79	H
	26705	815.5	-15.82	31.504	13.53	22.56	V
	26740	819.0	-15.09	31.117	13.88	24.42	V
	26775	822.5	-16.22	31.922	13.55	22.66	V

LTE Band 26							
Channel Bandwidth: 3MHz / 16QAM							
Plane	**Channel**	**Frequency (MHz)**	**LVL (dBm)**	**Correction Factor(dB)**	**ERP(dBm)**	**ERP(mW)**	**Polarization (H/V)**
X	26705	815.5	-14.94	31.208	14.12	25.81	H
	26740	819.0	-15.57	31.3	13.58	22.80	H
	26775	822.5	-15.83	31.222	13.24	21.10	H
	26705	815.5	-16.59	31.504	12.76	18.90	V
	26740	819.0	-16.27	31.117	12.70	18.61	V
	26775	822.5	-17.55	31.922	12.22	16.68	V

LTE Band 26							
Channel Bandwidth: 5MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26715	816.5	-14.22	31.208	14.84	30.46	H
	26740	819.0	-14.42	31.3	14.73	29.72	H
	26765	821.5	-14.52	31.222	14.55	28.52	H
	26715	816.5	-15.66	31.504	13.69	23.41	V
	26740	819.0	-15.16	31.117	13.81	24.03	V
	26765	821.5	-16.10	31.922	13.67	23.29	V

LTE Band 26							
Channel Bandwidth: 5MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26715	816.5	-15.12	31.208	13.94	24.76	H
	26740	819.0	-15.49	31.3	13.66	23.23	H
	26765	821.5	-15.81	31.222	13.26	21.19	H
	26715	816.5	-16.79	31.504	12.56	18.05	V
	26740	819.0	-16.11	31.117	12.86	19.31	V
	26765	821.5	-17.52	31.922	12.25	16.80	V

LTE Band 26							
Channel Bandwidth: 10MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26740	819.0	-14.06	31.3	15.09	32.28	H
	26740	819.0	-14.87	31.117	14.10	25.69	V

LTE Band 26							
Channel Bandwidth: 10MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26740	819.0	-14.98	31.3	14.17	26.12	H
	26740	819.0	-15.65	31.117	13.32	21.46	V

MODE B

LTE Band 26							
Channel Bandwidth: 10MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26740	819.0	-14.14	31.3	15.01	31.70	H
	26740	819.0	-15.06	31.117	13.91	24.59	V

LTE Band 26							
Channel Bandwidth: 10MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	26740	819.0	-15.25	31.3	13.90	24.55	H
	26740	819.0	-15.98	31.117	12.99	19.89	V

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

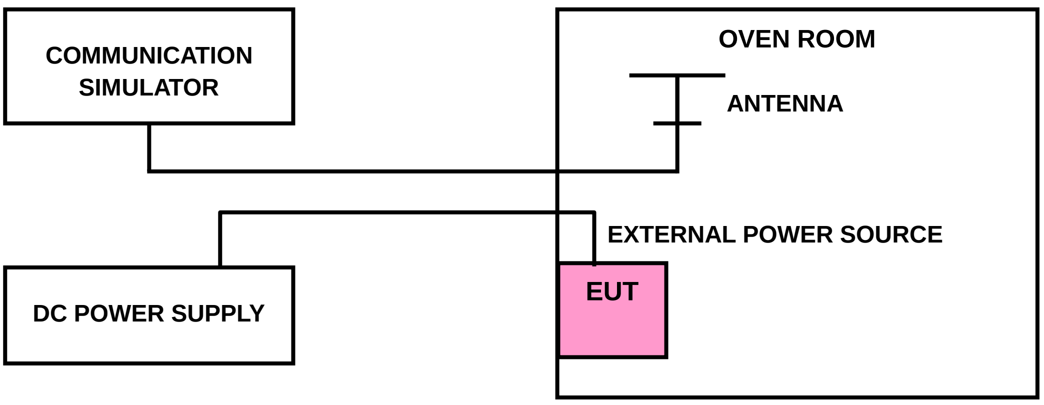
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

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 ±0.5℃ 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)
	LTE Band 26				
	1.4MHz	3MHz	5MHz	10MHz	
3.8	-0.005	-0.006	-0.006	-0.008	2.5
3.6	-0.003	-0.002	-0.006	-0.006	2.5
4.35	-0.003	-0.003	-0.004	-0.006	2.5

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

FREQUENCY ERROR vs. TEMPERATURE

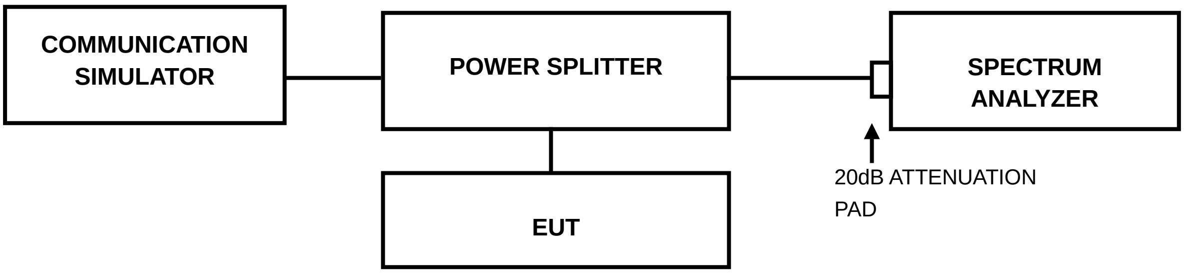
TEMP. (℃)	FREQUENCY ERROR (ppm)				LIMIT (ppm)
	LTE Band 26				
	1.4MHz	3MHz	5MHz	10MHz	
-30	-0.002	-0.002	-0.006	-0.005	2.5
-20	-0.005	-0.005	-0.005	-0.005	2.5
-10	-0.003	-0.007	-0.005	-0.005	2.5
0	-0.001	-0.005	-0.003	-0.004	2.5
10	-0.005	-0.003	-0.005	-0.006	2.5
20	-0.005	-0.001	-0.004	-0.004	2.5
30	-0.004	-0.002	-0.003	-0.002	2.5
40	-0.003	-0.003	-0.002	-0.002	2.5
50	-0.002	-0.004	-0.004	-0.003	2.5
55	-0.005	-0.006	-0.002	-0.007	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

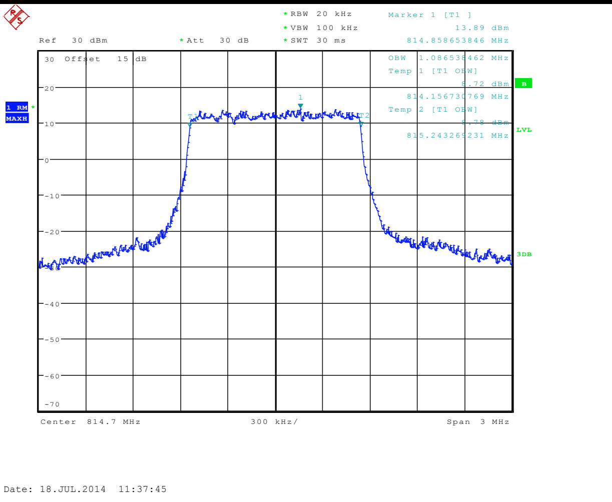


4.3.3 TEST RESULTS

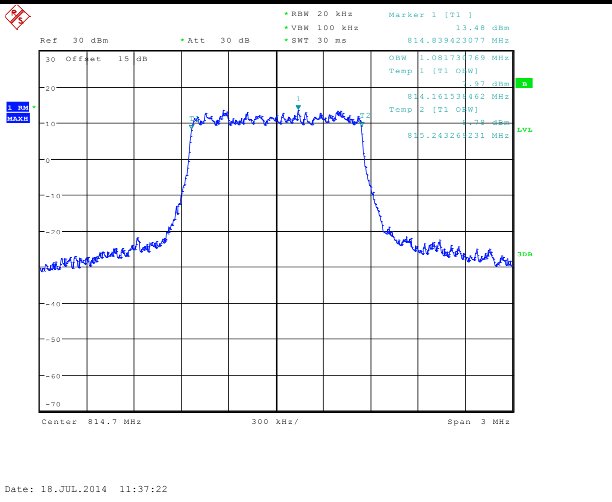
LTE BAND 26							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26697	814.7	1.09	1.08	26705	815.5	2.69	2.68
26740	819.0	1.09	1.08	26740	819.0	2.68	2.68
26783	823.3	1.09	1.08	26775	822.5	2.68	2.68

SPECTRUM PLOT OF WORST VALUE

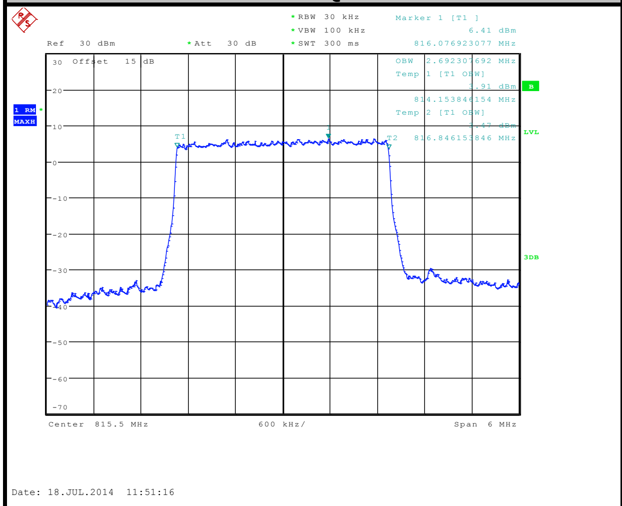
1.4MHz / QPSK



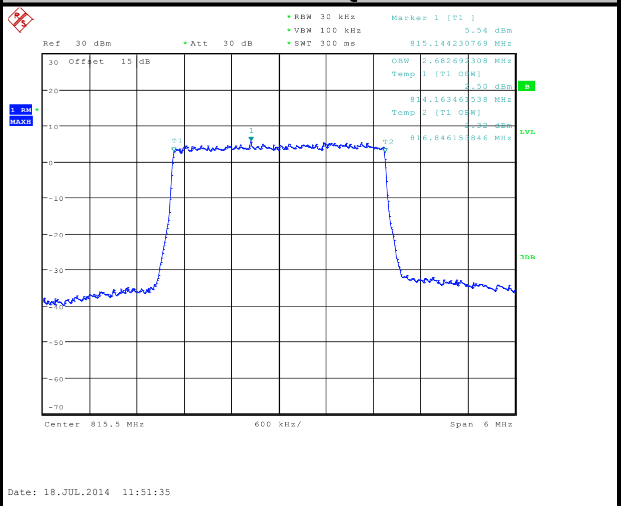
1.4MHz / 16QAM



3MHz / QPSK



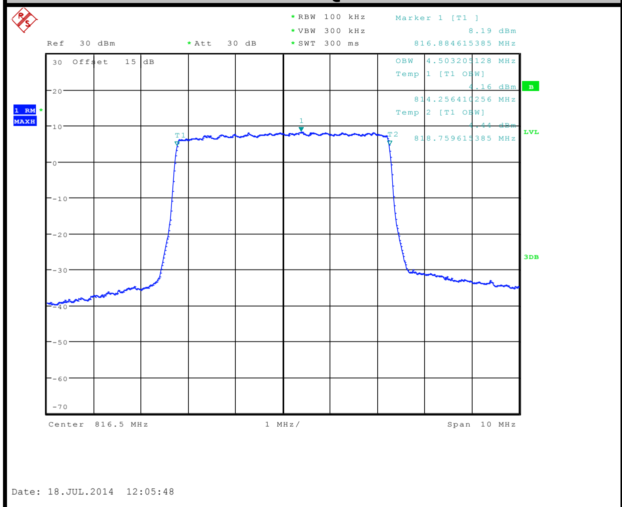
3MHz / 16QAM



LTE BAND 26							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26715	816.5	4.50	4.49	26740	819.0	8.91	8.91
26740	819.0	4.49	4.49				
26765	821.5	4.49	4.49				

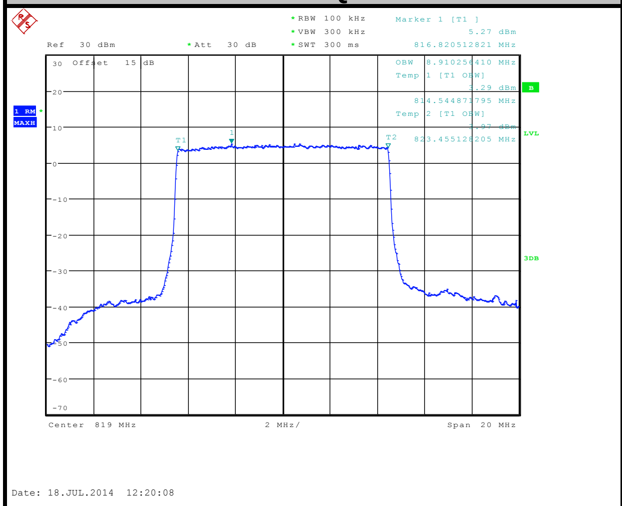
SPECTRUM PLOT OF WORST VALUE

5MHz / QPSK



5MHz / 16QAM

10MHz / QPSK



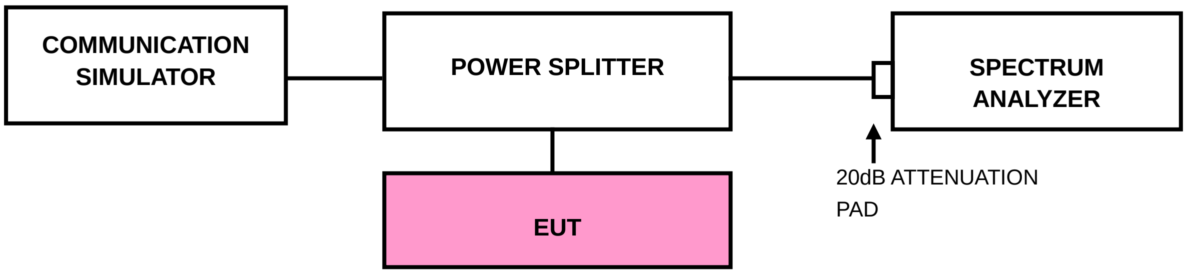
10MHz / 16QAM

4.4 EMISSION MASK MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50+10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

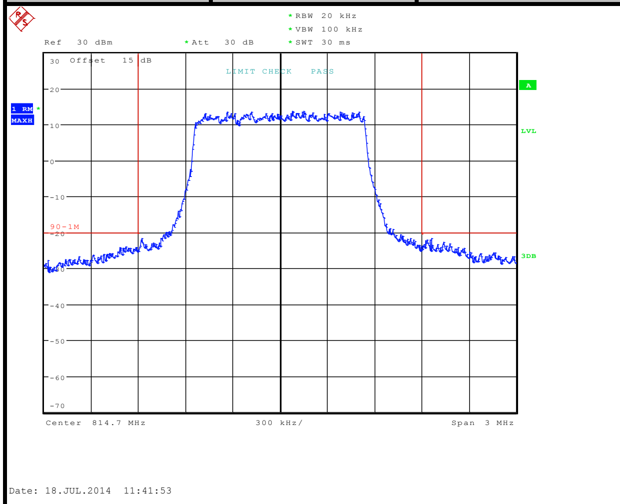
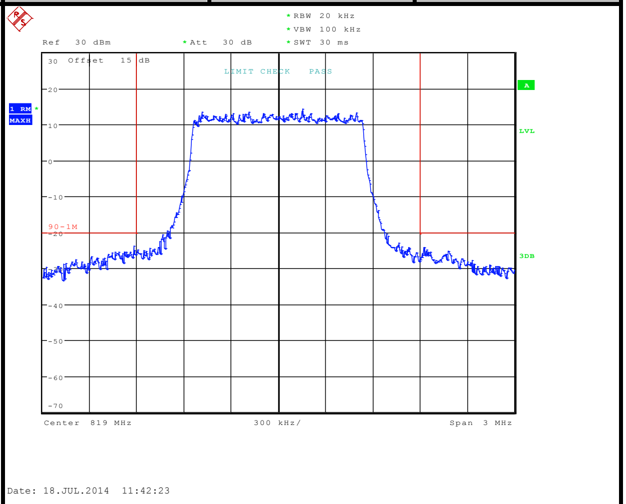
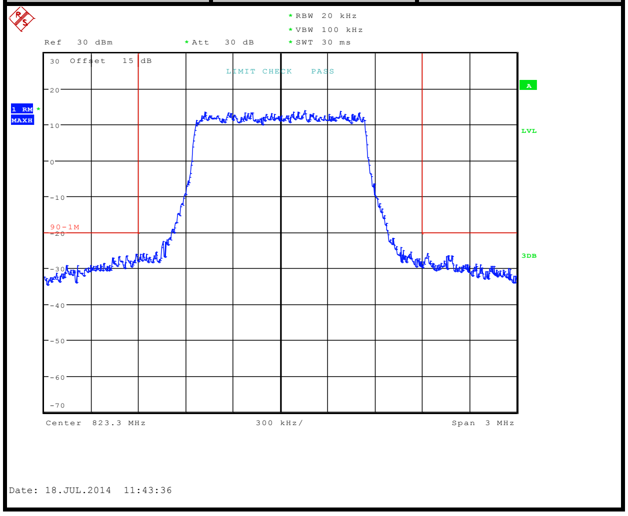
4.4.2 TEST SETUP

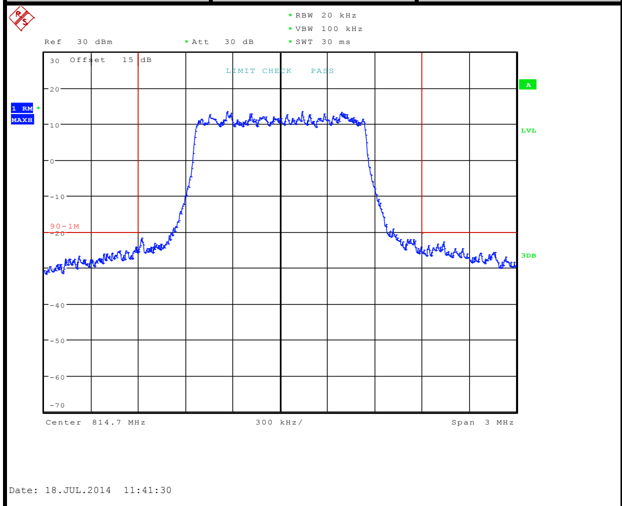
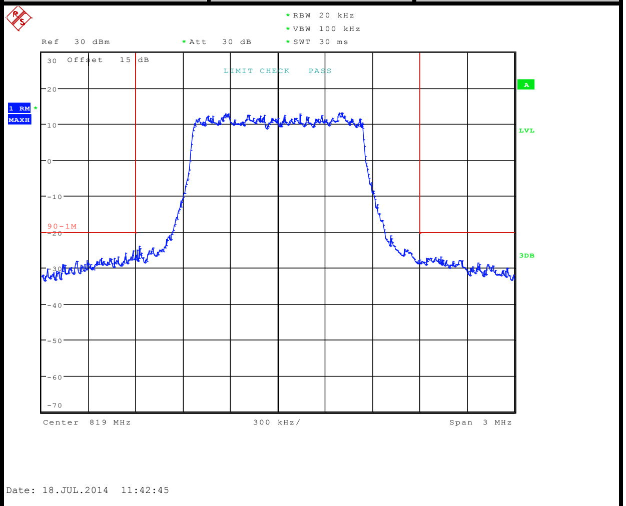
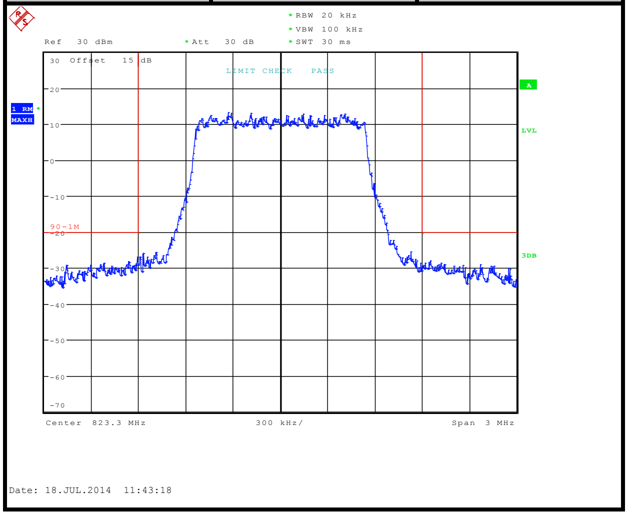


4.4.3 TEST PROCEDURES

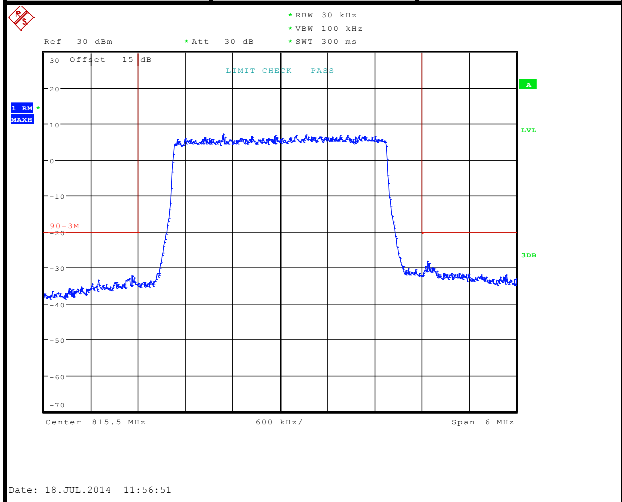
a. The measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
b. Record the test plot.

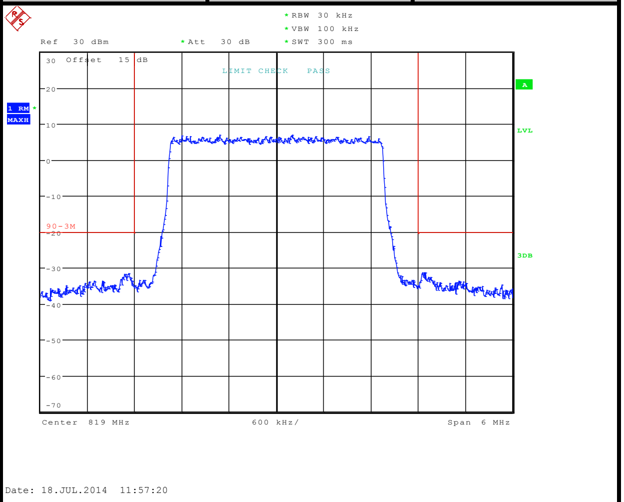
4.4.4 TEST RESULTS

LTE Band 26					
Channel Bandwidth: 1.4MHz / QPSK					
CHANNEL	26697	6 RB	CHANNEL	26740	6 RB
					
CHANNEL	26783	6 RB			
					

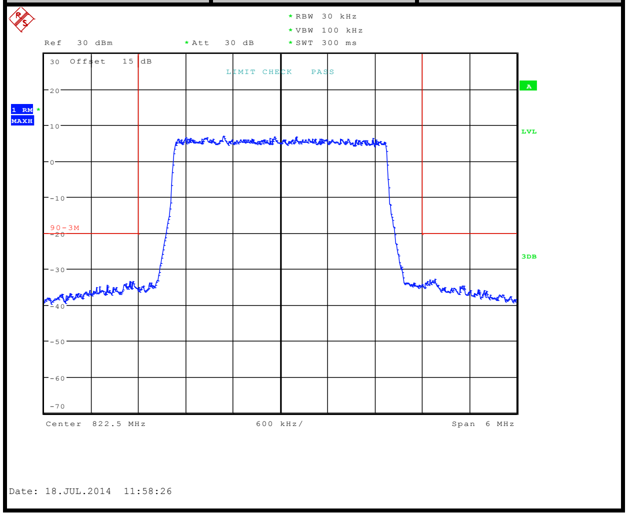
LTE Band 26					
Channel Bandwidth: 1.4MHz / 16QAM					
CHANNEL	26697	6 RB	CHANNEL	26740	6 RB
					
CHANNEL	26783	6 RB			
					

LTE Band 26					
Channel Bandwidth: 3MHz / QPSK					
CHANNEL	26705	15 RB	CHANNEL	26740	15 RB

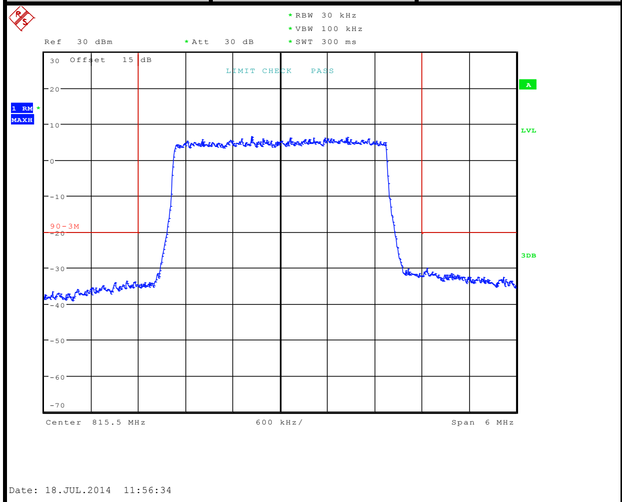


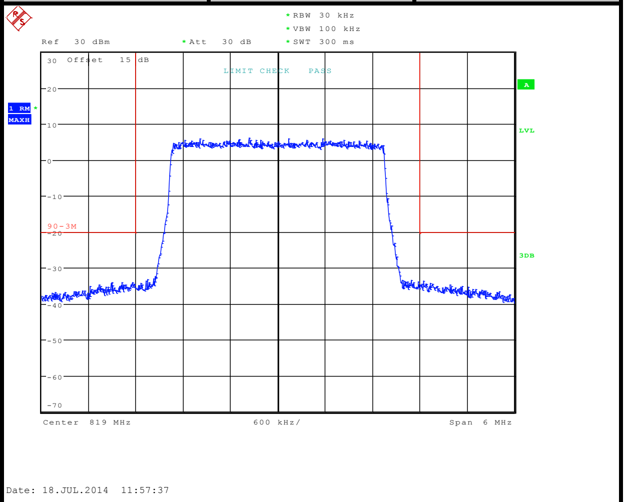


CHANNEL	26775	15 RB

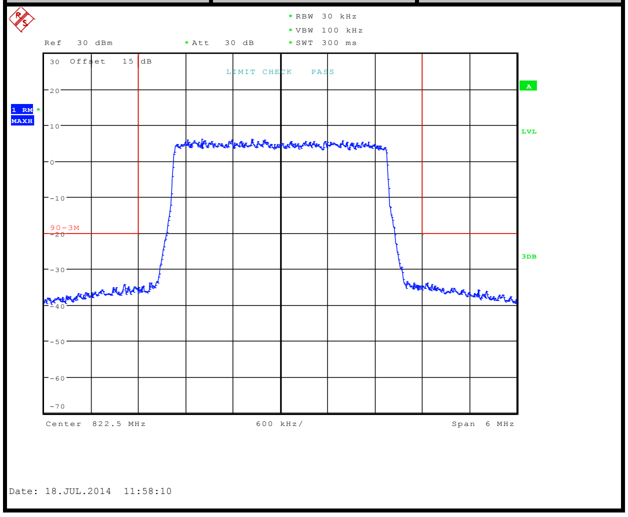


LTE Band 26					
Channel Bandwidth: 3MHz / 16QAM					
CHANNEL	26705	15 RB	CHANNEL	26740	15 RB

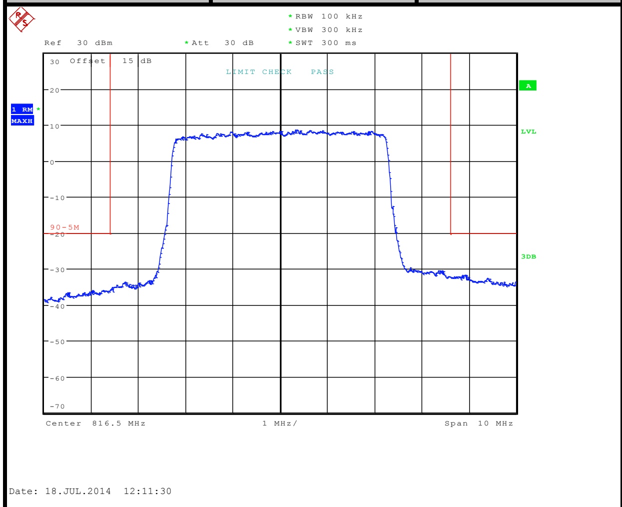


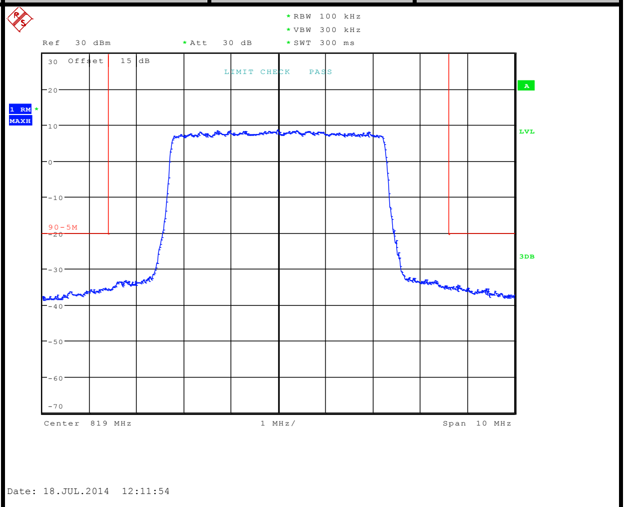


CHANNEL	26775	15 RB

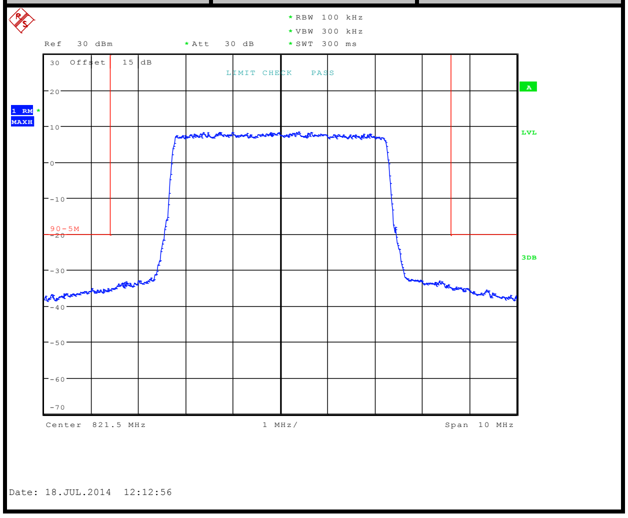


LTE Band 26					
Channel Bandwidth: 5MHz / QPSK					
CHANNEL	26715	25 RB	CHANNEL	26740	25 RB

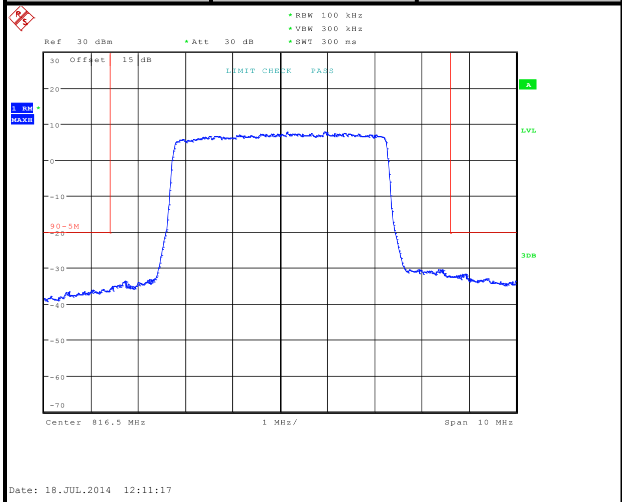


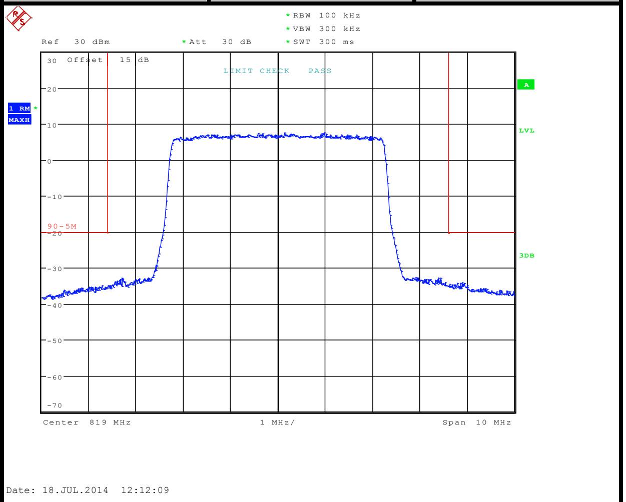


CHANNEL	26765	25 RB

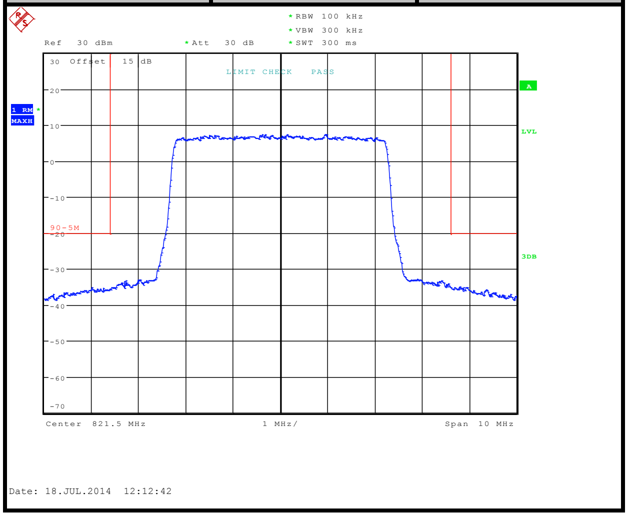


LTE Band 26					
Channel Bandwidth: 5MHz / 16QAM					
CHANNEL	26715	25 RB	CHANNEL	26740	25 RB

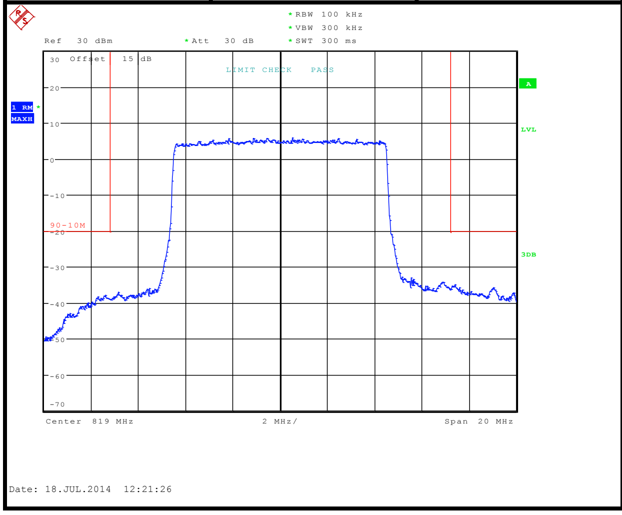


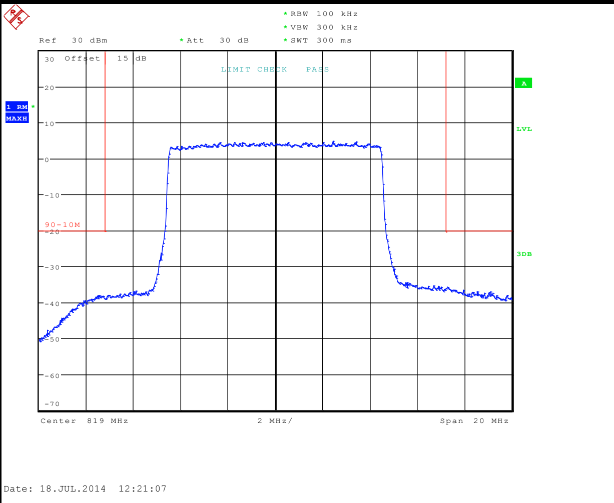


CHANNEL	26765	25 RB



LTE Band 26					
Channel Bandwidth: 10MHz / QPSK			Channel Bandwidth: 10MHz / 16QAM		
CHANNEL	26740	50 RB	CHANNEL	26740	50 RB





4.5 CONDUCTED SPURIOUS EMISSIONS

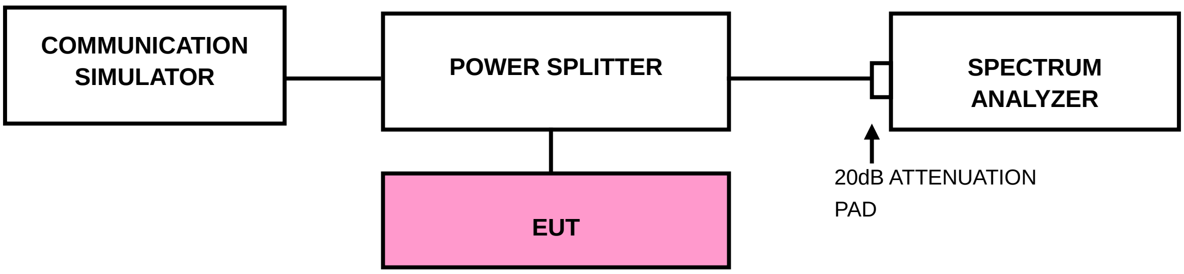
4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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 is equal to -13dBm.

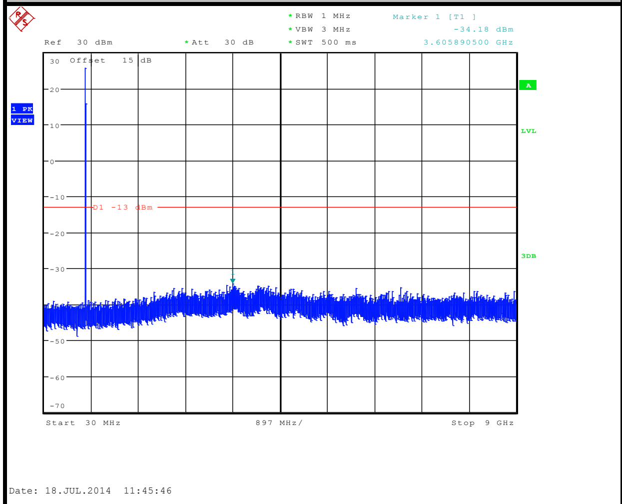
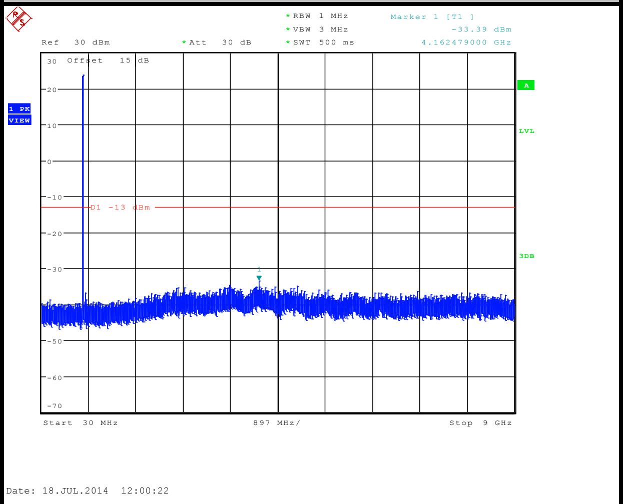
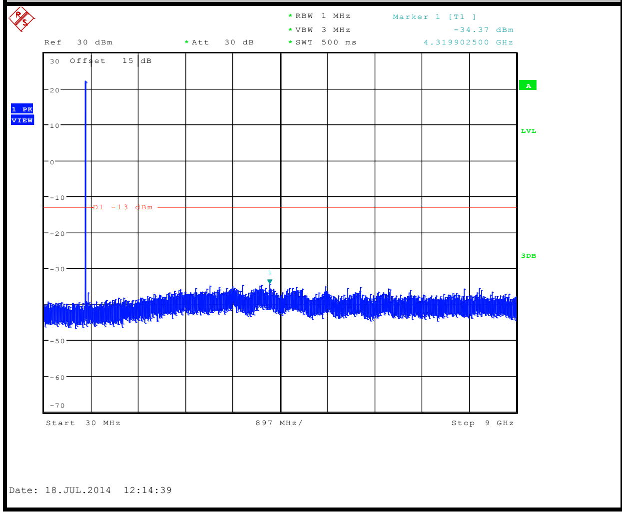
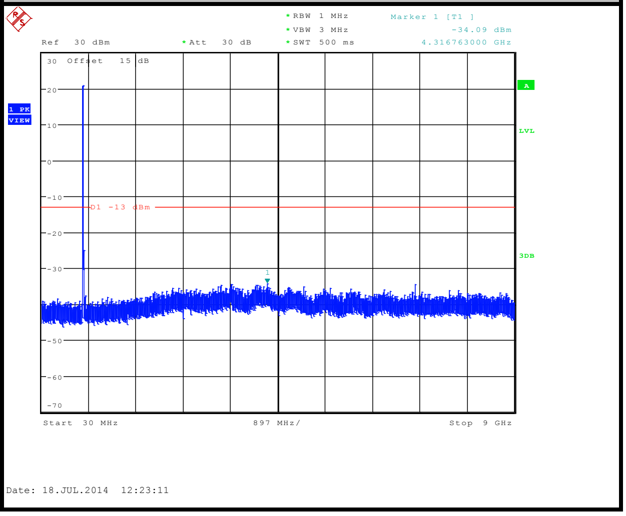
4.5.2 TEST PROCEDURE

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 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.5.3 TEST SETUP



4.5.4 TEST RESULTS

<table>
<tr><th colspan="2">LTE BAND 26</th></tr>
<tr><th colspan="2">CHANNEL 26740</th></tr>
<tr><th>Channel Bandwidth: 1.4MHz</th><th>Channel Bandwidth: 3MHz</th></tr>
<tr><td>
</td><td>
</td></tr>
<tr><th>Channel Bandwidth: 5MHz</th><th>Channel Bandwidth: 10MHz</th></tr>
<tr><td>
</td><td>
</td></tr>
</table>

4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION 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 is equal to -13dBm.

4.6.2 TEST PROCEDURES

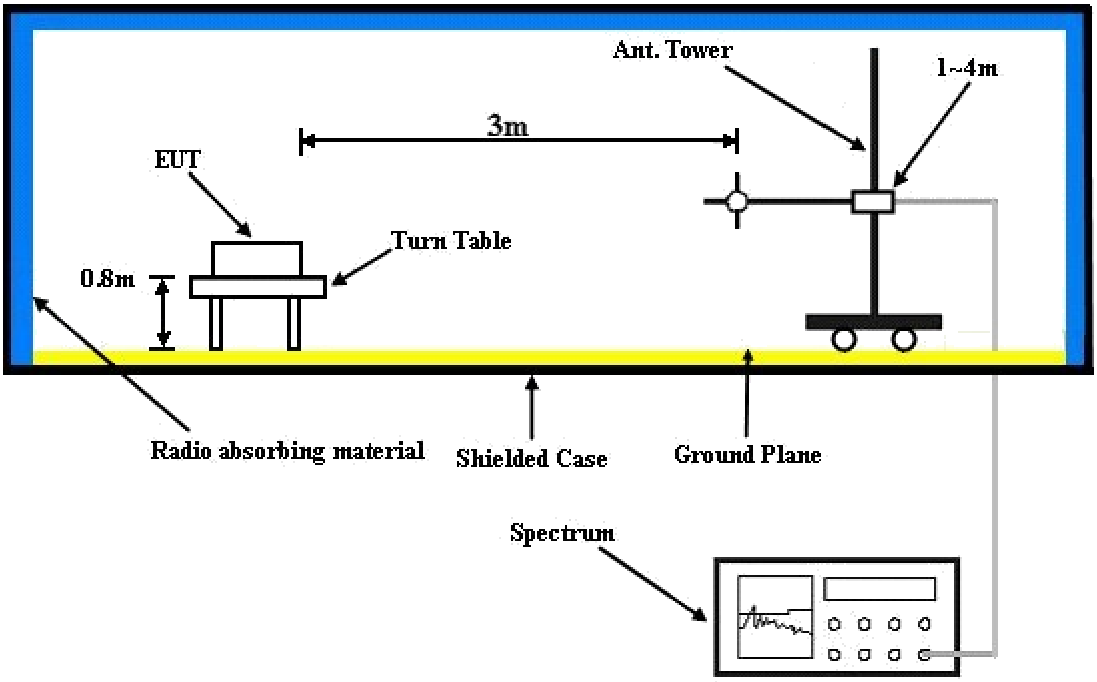
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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. EIRP = Output power level of S.G – TX cable loss + 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, E.R.P power = E.I.R.P power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation

4.6.4 TEST SETUP



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

4.6.5 TEST RESULTS

MODE A

LTE Band 26

CHANNEL BANDWIDTH: 10MHz / QPSK

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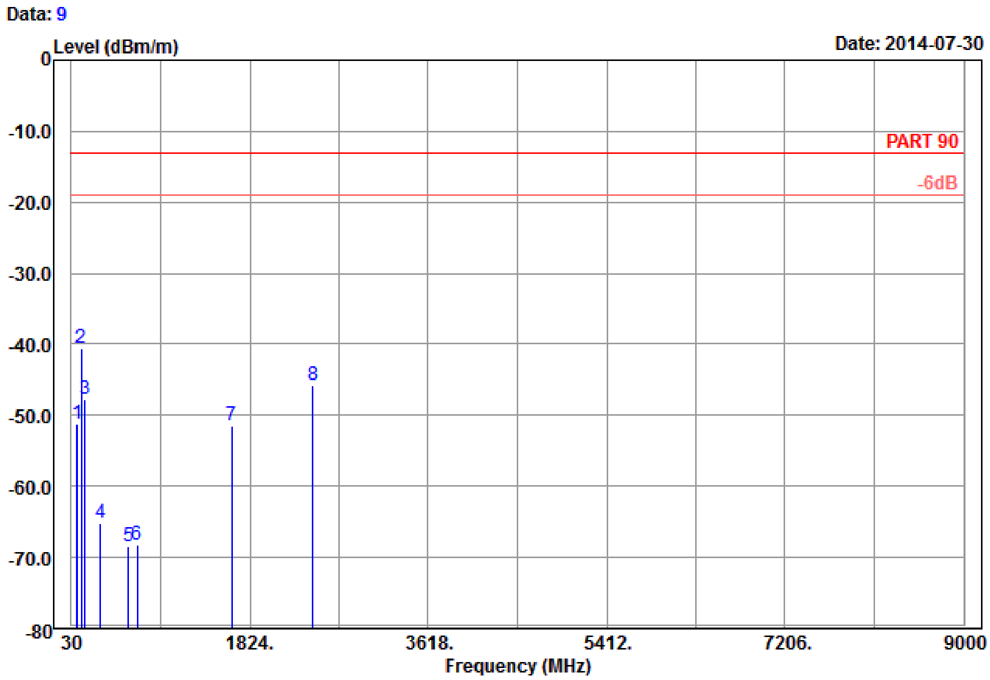

Site : 966 chamber 5
Condition: PART 90 3m Horizontal
Remark : LTE_Band 26_QPSK(1,0)_10M_CH26740
Tested by: Harry Hsueh
Plane : Z
ANT : Aux

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	91.02	-51.26	-40.64	-13.00	-38.26	-10.62	Peak
2 pp	124.77	-40.47	-32.52	-13.00	-27.47	-7.95	Peak
3	164.73	-47.72	-40.53	-13.00	-34.72	-7.19	Peak
4	322.40	-65.11	-59.41	-13.00	-52.11	-5.70	Peak
5	601.00	-68.41	-68.83	-13.00	-55.41	0.42	Peak
6	687.10	-68.18	-67.87	-13.00	-55.18	-0.31	Peak
7	1638.00	-51.40	-58.96	-13.00	-38.40	7.56	Peak
8	2457.00	-45.81	-56.83	-13.00	-32.81	11.02	Peak

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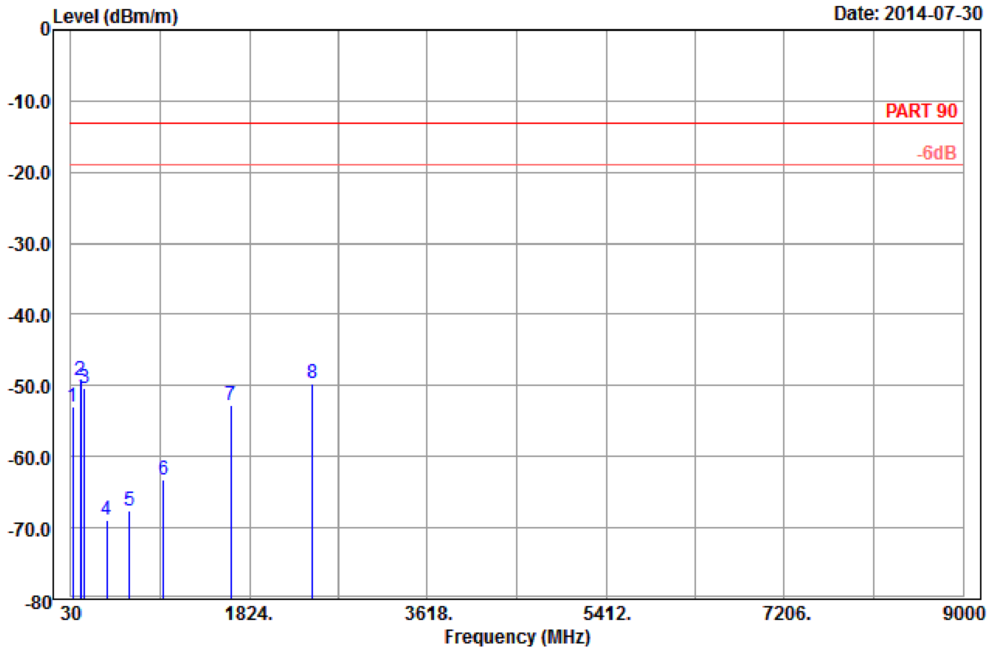
Data: 10



Site : 966 chamber 5
Condition: PART 90 3m Vertical
Remark : LTE_Band 26_QPSK(1,0)_10M_CH26740
Tested by: Harry Hsueh
Plane : Z
ANT : Aux

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	47.55	-52.91	-39.80	-13.00	-39.91	-13.11	Peak
2 pp	124.50	-49.36	-41.35	-13.00	-36.36	-8.01	Peak
3	167.70	-50.41	-43.51	-13.00	-37.41	-6.90	Peak
4	392.40	-68.79	-65.69	-13.00	-55.79	-3.10	Peak
5	622.00	-67.53	-67.71	-13.00	-54.53	0.18	Peak
6	964.30	-63.32	-68.47	-13.00	-50.32	5.15	Peak
7	1638.00	-52.81	-60.37	-13.00	-39.81	7.56	Peak
8	2457.00	-49.63	-60.65	-13.00	-36.63	11.02	Peak

MODE B

LTE Band 26

CHANNEL BANDWIDTH: 10MHz / QPSK

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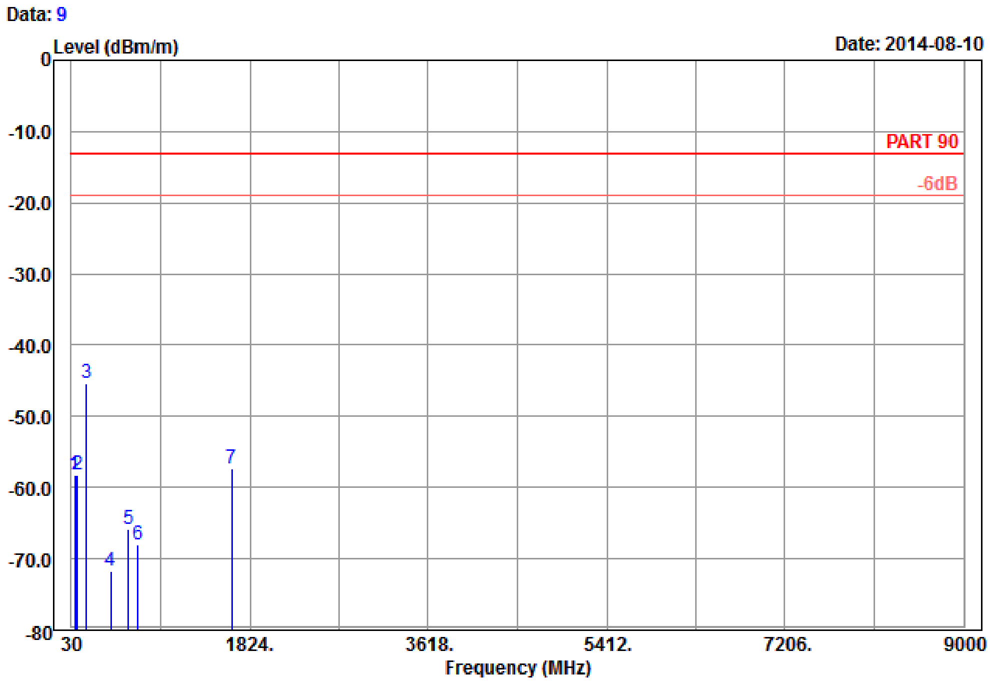


```
Site      : 966 chamber 5
Condition: PART 90 3m Horizontal
Remark    : LTE_Band 26_QPSK(1,0)_10M_CH26740
Tested by: Harry Hsueh
Plane     : X
ANT       : Aux
```

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	66.72	-58.27	-45.17	-13.00	-45.27	-13.10	Peak
2	91.02	-58.21	-47.59	-13.00	-45.21	-10.62	Peak
3 pp	182.28	-45.34	-39.73	-13.00	-32.34	-5.61	Peak
4	420.40	-71.69	-68.50	-13.00	-58.69	-3.19	Peak
5	599.60	-65.92	-66.31	-13.00	-52.92	0.39	Peak
6	695.50	-67.92	-67.57	-13.00	-54.92	-0.35	Peak
7	1638.00	-57.40	-64.96	-13.00	-44.40	7.56	Peak

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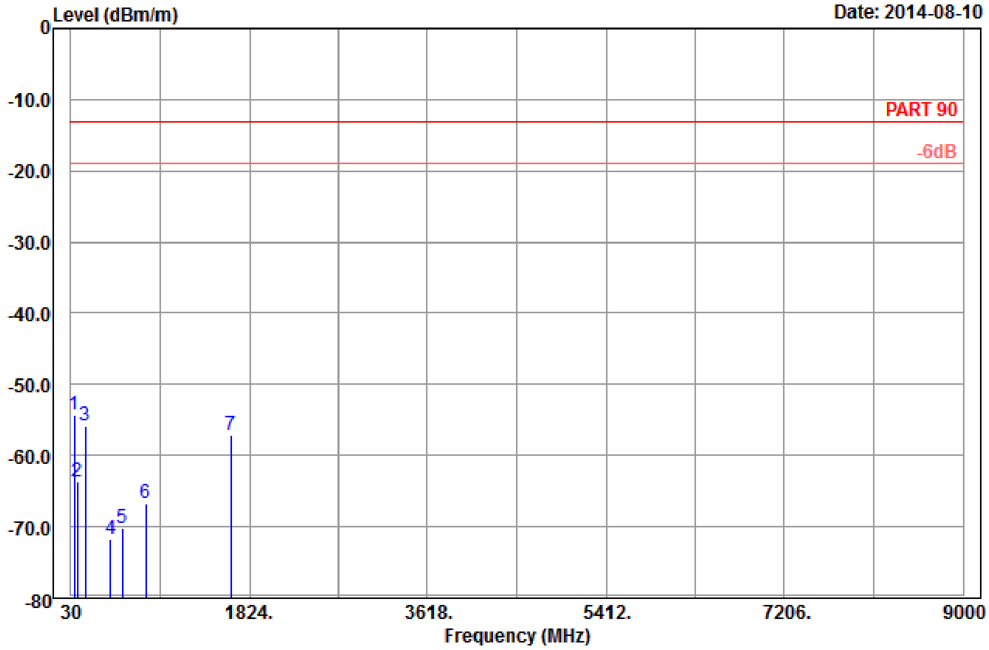
Data: 10



Site : 966 chamber 5
Condition: PART 90 3m Vertical
Remark : LTE_Band 26_QPSK(1,0)_10M_CH26740
Tested by: Harry Hsueh
Plane : X
ANT : Aux

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	66.72	-54.21	-41.11	-13.00	-41.21	-13.10	Peak
2	93.99	-63.63	-53.18	-13.00	-50.63	-10.45	Peak
3	173.91	-55.87	-49.57	-13.00	-42.87	-6.30	Peak
4	433.70	-71.79	-68.31	-13.00	-58.79	-3.48	Peak
5	548.50	-70.11	-68.38	-13.00	-57.11	-1.73	Peak
6	782.30	-66.75	-67.61	-13.00	-53.75	0.86	Peak
7	1638.00	-57.20	-64.76	-13.00	-44.20	7.56	Peak

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 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
Web Site: www.bureauveritas-adt.com

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

7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---