SUPPLEMENTARY FCC TEST REPORT

(PART 90 Subpart R)

REPORT NO.:	RF120524C18C
MODEL NO.:	LEX 700
FCC ID:	UZ7LEX700
RECEIVED:	Mar. 05, 2014
TESTED:	Mar. 21, 2014 ~ Mar. 27, 2014
ISSUED:	Apr. 08, 2014

APPLICANT: Motorola Solutions, Inc.

ADDRESS: One Motorola Plaza, Holtsville, NY 11742-1300 USA

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.

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REPORT ISSUE HISTORY RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
1	Original release	Jul. 04, 2012
2	1. Revised applicant on page 1, 5 2. Revised description on page 6	Aug. 10, 2012
3	Added description to clearly specify the modulation/ RB used on page 18	Sep. 21, 2012
4	Revised worst modulation on page 10, 11, 18, 39, 40	Oct. 03, 2012
5	1. Revised description on page 8 2. Revised channel number and the frequency in the ERP table on page 18	Oct. 11, 2012
6	1. Apply for a C2PC 2. Add LTE Band 14	Apr. 08, 2014

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120524C18C	Original release	Apr. 08, 2014

1 CERTIFICATION

PRODUCT :	MISSION CRITICAL HANDHELD
MODEL NO. :	LEX 700
BRAND :	Motorola
APPLICANT :	Motorola Solutions, Inc.
TESTED :	Mar. 21, 2014 ~ Mar. 27, 2014
TEST SAMPLE :	ENGINEERING SAMPLE
TEST STANDARDS :	**FCC Part 90 Subpart R**
	FCC Part 2

The above equipment (model: LEX 700) 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 : Gina Liu , **DATE:** Apr. 08, 2014

Gina Liu / Specialist

APPROVED BY : Sam chen , **DATE:** Apr. 08, 2014

Sam Chen / Senior Project Engineer

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
2.1046 90.542(a)(7)	Maximum Peak Output Power Limit: max. 3 watts e.r.p peak power	PASS	Meet the requirement of limit. Maximum ERP is 22.13dBm at 793MHz.
2.1055 90.539	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
90.210(n)	Emission Mask	PASS	Meet the requirement of limit.
90.543(c)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 90.543(e)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1051 90.543(e)(2)	Emission in the 769–775 MHz and 799–805 MHz band	PASS	Meet the requirement of limit.
2.1053 90.543(e)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -30.55dB at 2392.20MHz.
2.1053 90.543(f)	Emissions in the band 1559–1610 MHz	PASS	Meet the requirement of limit. Minimum passing margin is -9.71dB at 1594.80MHz.

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
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.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	MISSION CRITICAL HANDHELD
MODEL NO.	LEX 700
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.7Vdc (Li-ion battery)
MODULATION TECHNOLOGY	LTE Band 14, QPSK, 16QAM
MULTIPLE ACCESS METHOD	FDD
DUPLEX METHOD	FDD
FREQUENCY RANGE	**LTE Band 14 (Channel Bandwidth: 5MHz):** 790.5MHz ~ 795.5MHz **LTE Band 14 (Channel Bandwidth: 10MHz):** 793MHz
CHANNEL BANDWIDTH	5MHz, 10MHz
UE CATEGORY	3
MAX. ERP POWER	**LTE Band 14 (Channel Bandwidth: 5MHz):** 118.03mW **LTE Band 14 (Channel Bandwidth: 10MHz):** 163.31mW
ANTENNA TYPE	Refer to NOTE as below
OPERATION TEMPERATURE RANGE	-20°C ~ 50°C
DATA CABLE	Refer to NOTE as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to NOTE as below

NOTE:

1. The EUT has following accessories.

Battery 1	
P/N	82-154162-01
RATING	3.7V, 1880mAh/7.0Wh

Battery 2	
P/N	82-154162-02
RATING	3.7V, 3760mAh/13.9Wh

*Battery 2 was the worst for final test.

ADAPTER	
BRAND	MOTOROLA
MODEL	IU08-2050120-WP
INPUT	100-240Vac, 50/60Hz, 0.2A
OUTPUT	5Vdc, 1.2A

USB charging cable	
BRAND	MOTOROLA
MODEL	25-128458-01R
CABLE	1.5m shielded cable without core

2. EUT software and firmware version.

MODEL NUMBER	Motorola LEX700
EAVERSION	2.50
SSPAM	2.10

ANDROID VERSION	4.2.2

MODEL NUMBER	Motorola LEX700
EAVERSION	2.50
SSPAM	2.10

BASEBAND VERSION	
CM VERSION	3.6.6.0
SDK VERSION	3.7.18.2
DRIVER VERSION	3.7.18.2
FW VERSION	2.1.2.11

KEMEL VERSION	3.4.48-g6d5c08e lex700@INFBA00094 #1 Fri Jan 31 13:51:11 IST 2014

BUILD NUMBER	teton-eng 4.2.2 JDQ39 eng.lex700.20140131.135434 test-keys

3. The following antennas for the EUT.

Item	Type	Gain(dBi)	Connector
Main	Inverted-F	-0.6	NA
Diversity	Inverted-F	-1.0	NA
Monitoring	Inverted-F	-2.5	NA

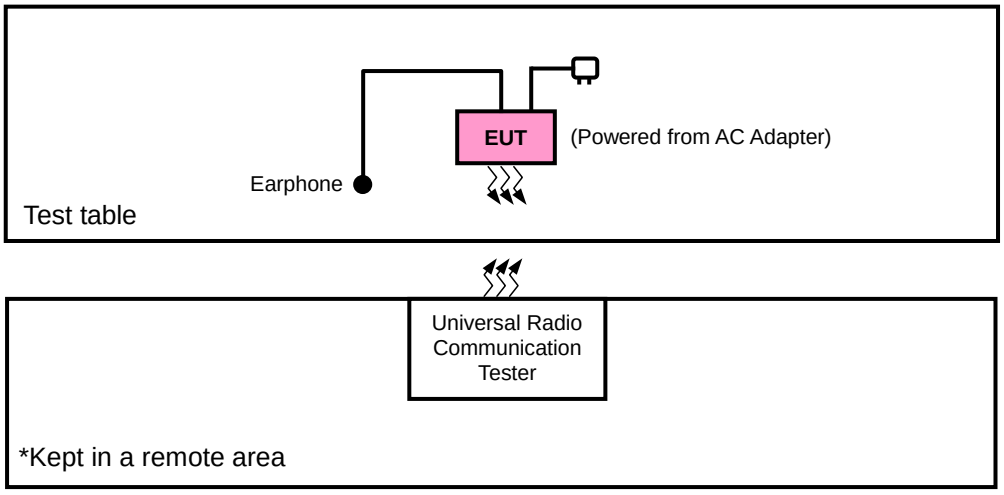
*Main antenna was the worst for the final test.

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

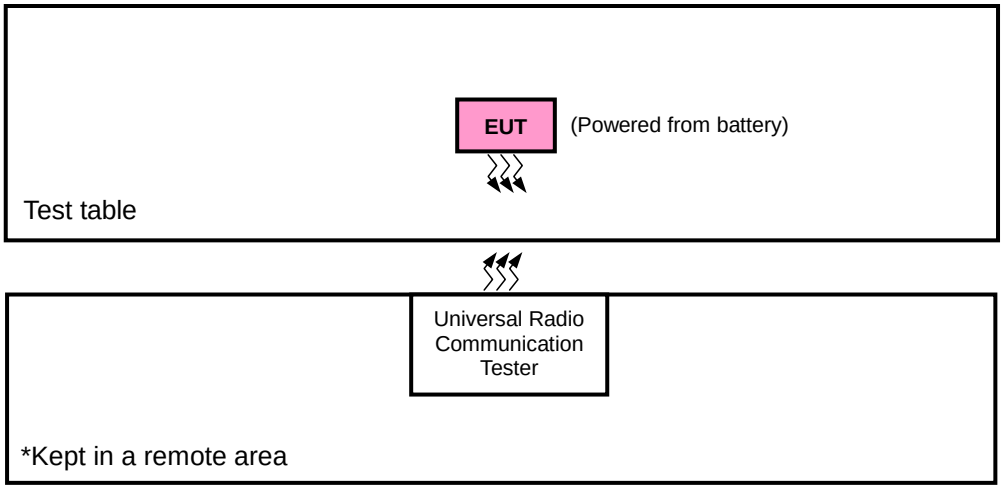
3.2 DESCRIPTION OF TEST MODES

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR E.R.P. TEST



3.3 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 E.R.P. and Y-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

LTE BAND 14 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
-	OUTPUT POWER	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	-
		23330	23330	10MHz	QPSK, 16QAM	-
	E.R.P.	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		23330	23330	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
-	FREQUENCY STABILITY	23305 to 23355	23330	5MHz	QPSK	1 RB / 12 RB Offset
		23330	23330	10MHZ	QPSK	1 RB / 49 RB Offset
-	OCCUPIED BANDWIDTH	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	BAND EDGE	23305 to 23355	23305, 23355	5MHz	QPSK	1 RB / 25 RB offset
		23330	23330	10MHZ	QPSK	1 RB / 50 RB offset
-	EMISSION MASK	23305 to 23355	23305	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23330	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
			23355	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						1 RB / 49 RB Offset
						50 RB / 0 RB Offset
-	CONDCUDETED EMISSION	23305 to 23355	23330	5MHz	QPSK	1 RB / 12 RB Offset
		23330	23330	10MHZ	QPSK	1 RB / 49 RB Offset
-	RADIATED EMISSION	23305 to 23355	23330	5MHz	QPSK	1 RB / 12 RB Offset
		23330	23330	10MHZ	QPSK	1 RB / 49 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
OUTPUT POWER	26deg. C, 58%RH	3.7Vdc	Howard Kao
ERP	26deg. C, 58%RH	3.7Vdc	Howard Kao
FREQUENCY STABILITY	26deg. C, 58%RH	3.7Vdc	Howard Kao
OCCUPIED BANDWIDTH	26deg. C, 58%RH	3.7Vdc	Howard Kao
BAND EDGE	26deg. C, 58%RH	3.7Vdc	Howard Kao
EMISSION MASK	26deg. C, 58%RH	3.7Vdc	Howard Kao
CONDCUDETED EMISSION	26deg. C, 58%RH	3.7Vdc	Howard Kao
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Johnson Liao

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a LTE 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.

3.5 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Cotron	RC E160	NA	NA
2	Radio Communication Analyzer	Anritsu	MT8820C	6201240431	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 2 acted as communication partners to transfer data.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Per FCC Part 90.542(a)(6)(7),
Control stations and mobile stations transmitting in the 793–798 MHz band are limited to 30 watts E.R.P.

Portable stations (hand-held devices) transmitting in the 793–798 MHz band are limited to 3 watts E.R.P.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
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
Loop Antenna	EM-6879	264	Dec. 10, 2013	Dec. 09, 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
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Jul. 18, 2013	Jul. 17, 2014
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, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC 7450F-10.

4.1.3 TEST PROCEDURES

ERP MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Agilent Spectrum Analyzer. All measurements were done at 1 channel. RWB and VBW is 5MHz for LTE

b. E.I.R.P power 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 a. Record the power level of S.G

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn

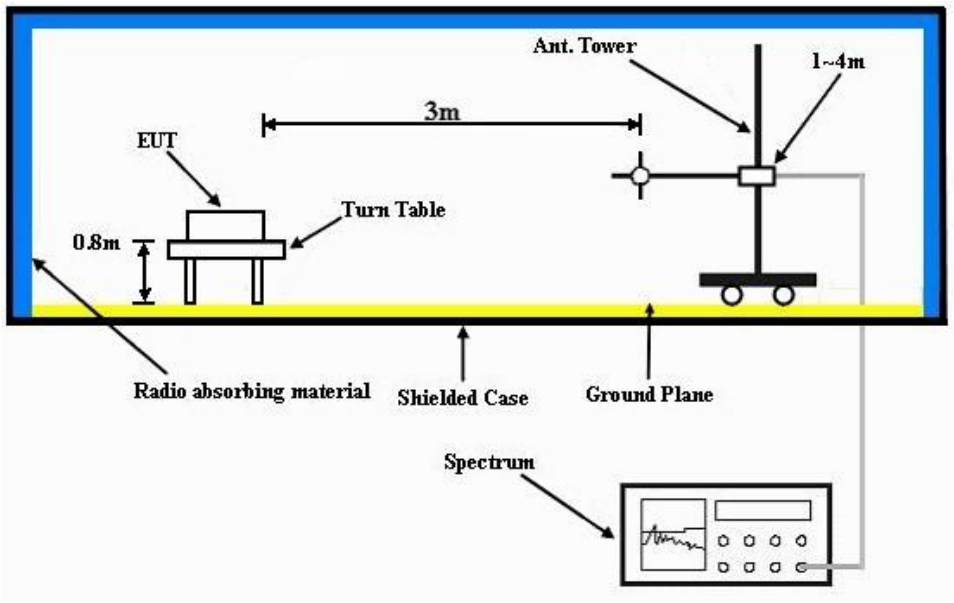
e. E.R.P = E.I.R.P- 2.15 dB

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with CDMA & 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.

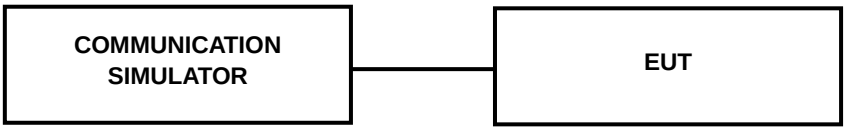
4.1.4 TEST SETUP

ERP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



4.1.5 EUT OPERATING CONDITIONS

1) Upload test waveform to signal generator and produce test signal to link up with EUT.

2) Execute test tool to control EUT transmit at specific modulation, RB size, frequency and output power level continuously.

Note: Test waveform and tool are provided by client.

4.1.6 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band / BW	Modulation	RB Size	RB Offset	Low CHG 23305 Frequency 790.5 MHz	Mid CH 23330 Frequency 793 MHz	High CH 23355 Frequency 795.5 MHz	3PGG MPR (dB)
14 / 5M	QPSK	1	0	22.90	22.69	22.98	0
		1	12	23.45	23.12	23.55	0
		1	24	23.00	22.63	23.06	0
		12	0	22.76	22.68	23.13	1
		12	6	22.78	22.77	22.97	1
		12	13	23.07	23.01	23.23	1
		25	0	22.94	22.85	23.05	1
	16QAM	1	0	21.88	21.67	21.96	1
		1	12	22.43	22.10	22.53	1
		1	24	21.98	21.61	22.04	1
		12	0	21.74	21.66	22.11	2
		12	6	21.76	21.75	21.95	2
		12	13	22.05	21.99	22.21	2
		25	0	21.92	21.83	22.03	2

Band / BW	Modulation	RB Size	RB Offset	Mid CH 23330 Frequency 793 MHz	3PGG MPR (dB)
14 / 10M	QPSK	1	0	22.69	0
		1	24	22.94	0
		1	49	23.59	0
		25	0	23.02	1
		25	12	23.08	1
		25	25	23.13	1
		50	0	23.22	1
	16QAM	1	0	21.66	1
		1	24	21.91	1
		1	49	22.56	1
		25	0	21.99	2
		25	12	22.05	2
		25	25	22.10	2
		50	0	22.19	2

ERP POWER (dBm)

LTE Band 14							
Channel Bandwidth: 5MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	23305	790.5	-9.31	32.18	20.72	118.03	H
	23330	793.0	-9.55	32.17	20.47	111.43	H
	23355	795.5	-9.91	32.26	20.20	104.71	H
	23305	790.5	-16.64	32.69	13.90	24.55	V
	23330	793.0	-16.92	32.72	13.65	23.17	V
	23355	795.5	-16.24	32.85	14.46	27.93	V

LTE Band 14							
Channel Bandwidth: 5MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	23305	790.5	-10.46	32.18	19.57	90.57	H
	23330	793.0	-10.82	32.17	19.20	83.18	H
	23355	795.5	-10.67	32.26	19.44	87.90	H
	23305	790.5	-17.16	32.69	13.38	21.78	V
	23330	793.0	-17.23	32.72	13.34	21.58	V
	23355	795.5	-17.11	32.85	13.59	22.86	V

LTE Band 14							
Channel Bandwidth: 10MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	23330	793.0	-7.89	32.17	22.13	163.31	H
	23330	793.0	-15.83	32.72	14.74	29.79	V

LTE Band 14							
Channel Bandwidth: 10MHz / 16QAM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	23330	793.0	-10.36	32.17	19.66	92.47	H
	23330	793.0	-16.97	32.72	13.60	22.91	V

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

4.2.2 TEST PROCEDURE

a. The oven room could control the temperatures and humidity.

b. Power must be removed when changing from one temperature to another or one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.

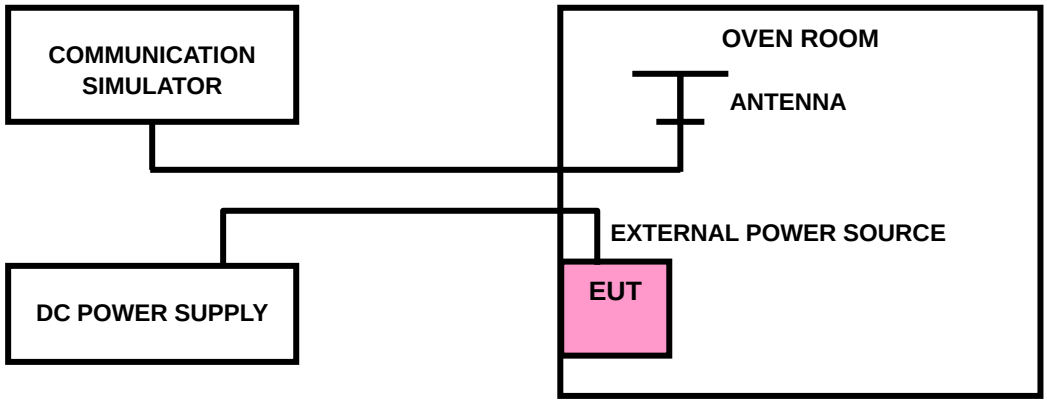
c. Laptop pc is connected the external power supply to control the DC input power. The various Volts from the minimum to maximum working voltage. Each step shall be record the frequency error rate.

d. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing.

e. 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 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.2.5 TEST RESULTS

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	LTE Band 14		
	5MHz	10MHz	
3.7	0.04	0.02	1.25
3.18	0.03	0.02	1.25
4.255	0.02	0.03	1.25

NOTE: The applicant defined the normal working voltage of the battery is from 3.18Vdc to 4.255Vdc.

FREQUENCY ERROR vs. TEMPERATURE

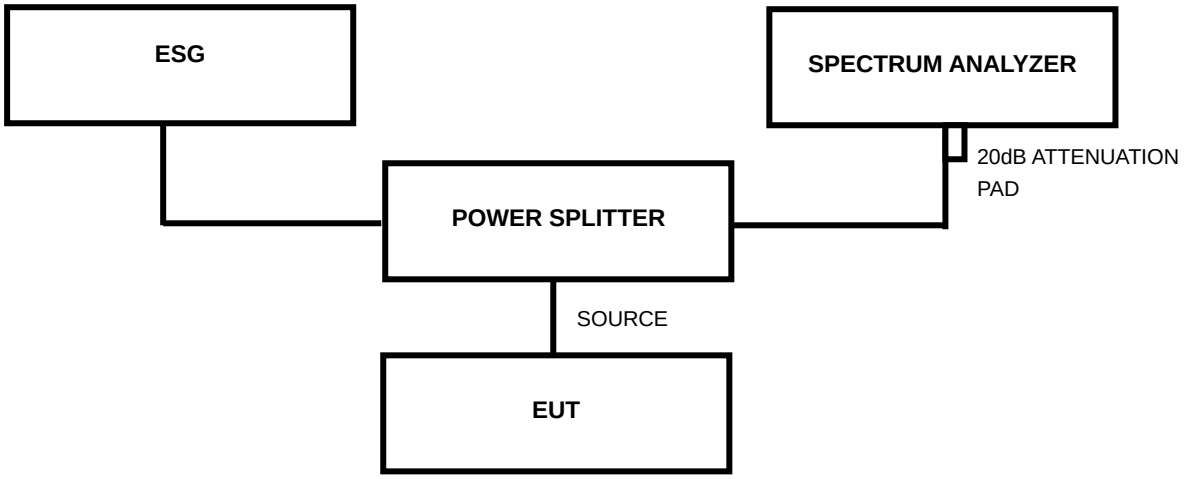
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	LTE Band 14		
	5MHz	10MHz	
-20	0.03	-0.06	1.25
-10	0.04	-0.08	1.25
0	0.02	-0.02	1.25
10	0.06	-0.06	1.25
20	0.05	-0.04	1.25
30	0.05	0.02	1.25
40	-0.06	0.03	1.25
50	0.05	0.06	1.25

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

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

4.3.2 TEST SETUP



4.3.3 TEST PROCEDURES

a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between signal generator and spectrum analyzer.

b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.4 EUT OPERATING CONDITIONS

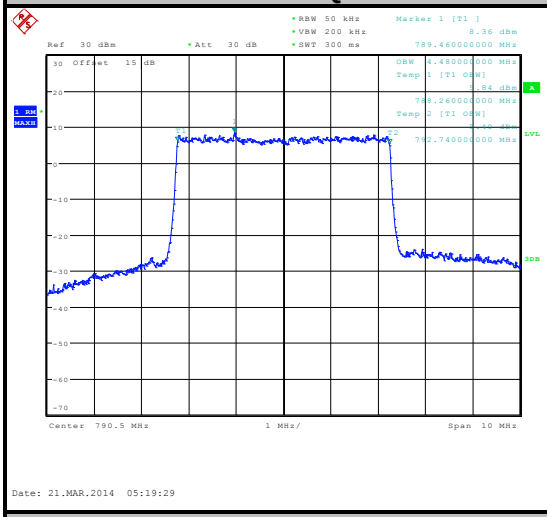
Same as 4.1.5.

4.3.5 TEST RESULTS

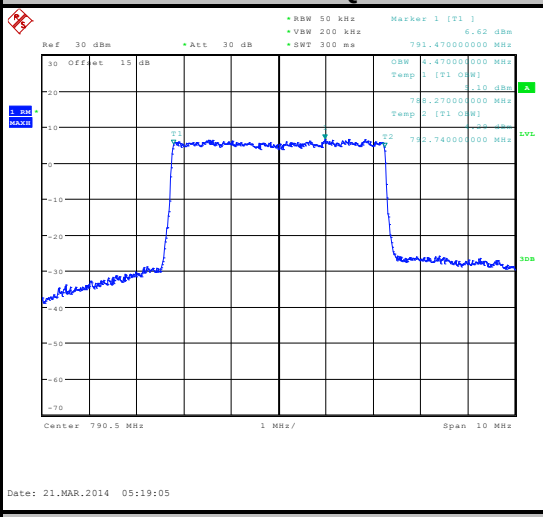
LTE BAND 14							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
23305	790.5	4.48	4.47	23330	793.0	8.94	8.94
23330	793.0	4.47	4.47				
23355	795.5	4.48	4.47				

SPECTRUM PLOT OF WORST VALUE

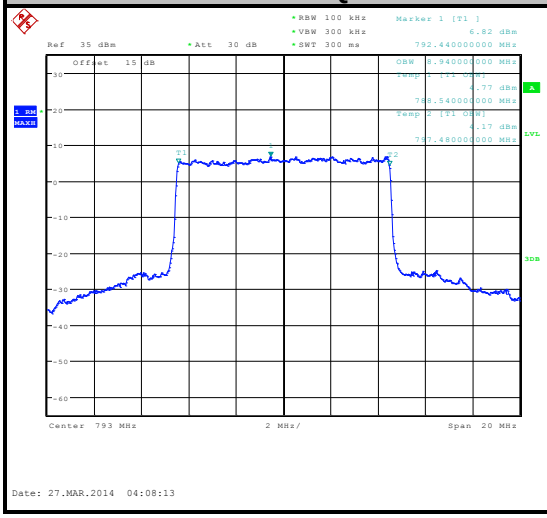
5MHz / QPSK



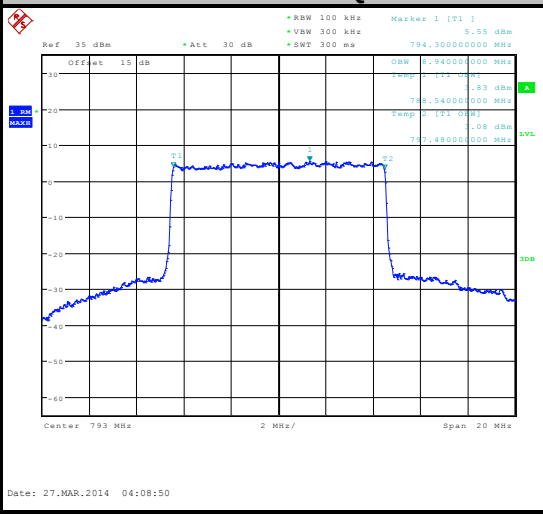
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM



4.4 EMISSION MASK MEASUREMENT

4.4.1 LIMITS OF EMISSION MASK MEASUREMENT

Per 90.210(n), Emission mask shall comply with 90.210(b)

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB

4.4.2 TEST PROCEDURES

1. The power was measured with Agilent Spectrum Analyzer. All measurements were done at 1 channel.
2. The measurement used the power splitter via EUT RF power connector between signal generator and spectrum analyzer.
3. Record the test plot.

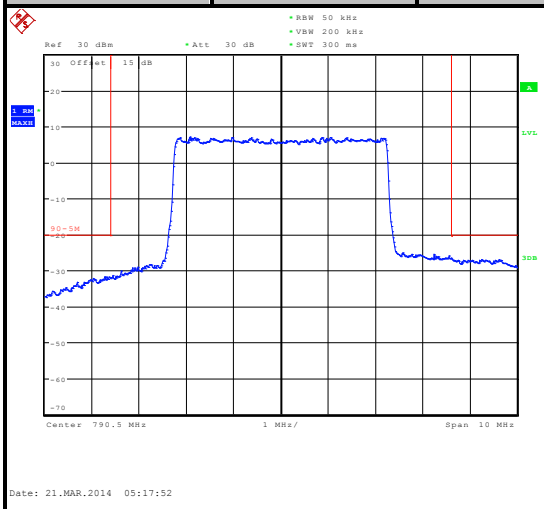
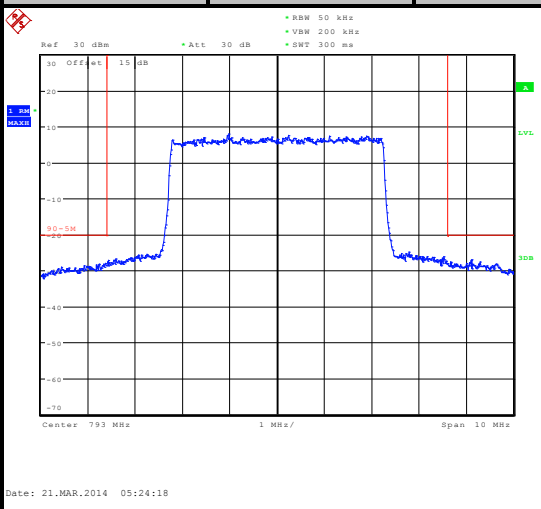
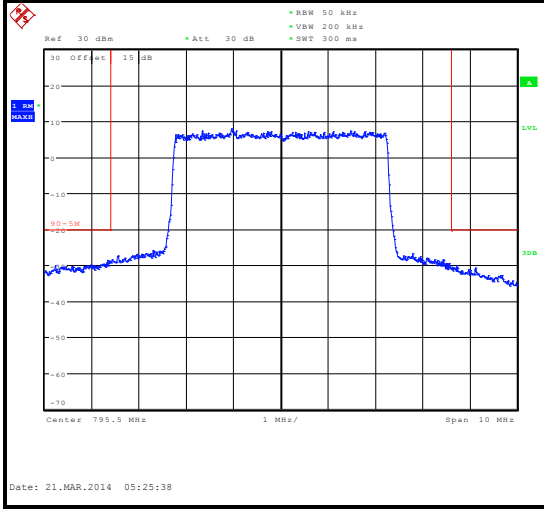
4.4.3 TEST SETUP

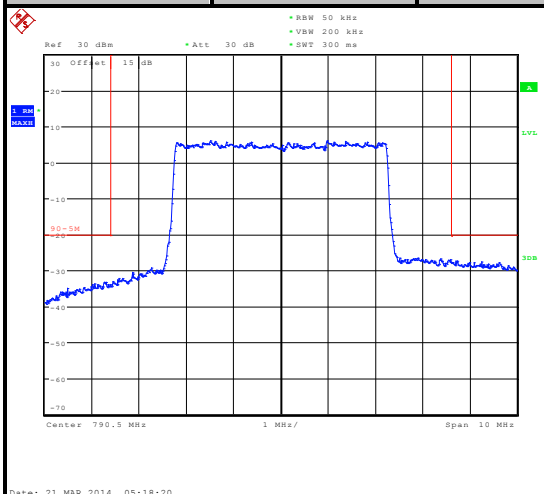
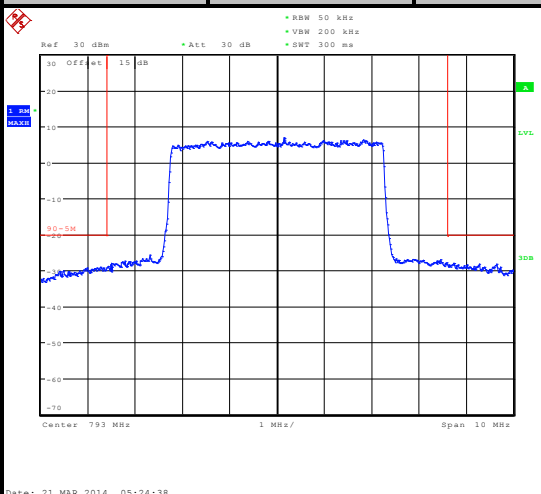
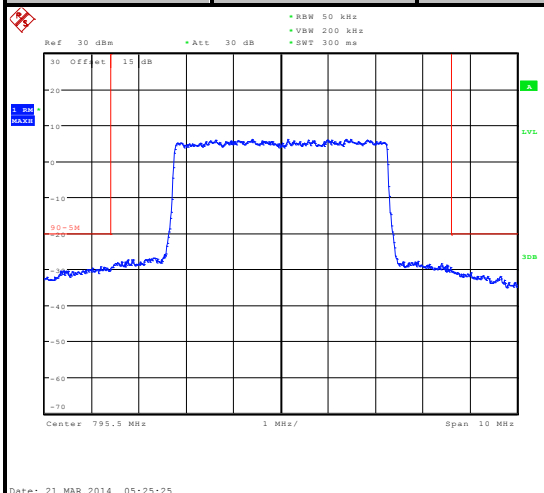
Same as Item 4.3.3

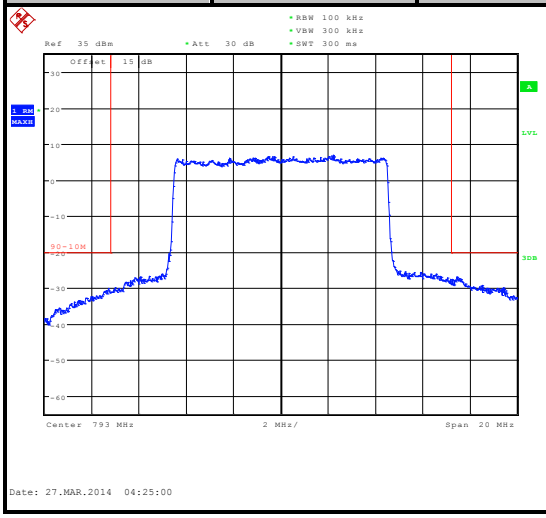
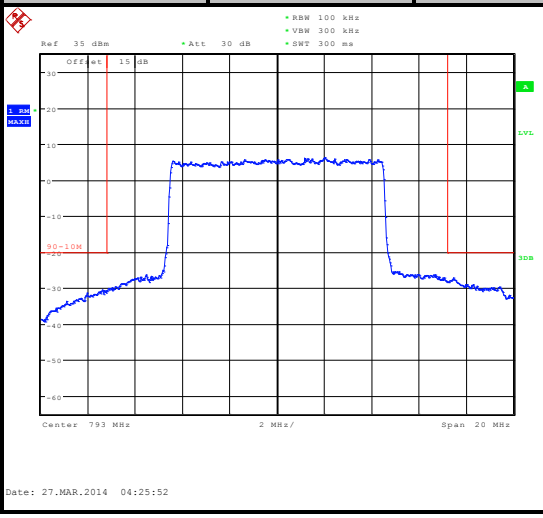
4.4.4 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.4.5 TEST RESULTS

LTE Band 14					
Channel Bandwidth: 5MHz / QPSK					
CHANNEL	23305	25 RB	CHANNEL	23330	25 RB
					
CHANNEL	23355	25 RB			
					

LTE Band 14					
Channel Bandwidth: 5MHz / 16QAM					
CHANNEL	23305	25 RB	CHANNEL	23330	25 RB
					
CHANNEL	23355	25 RB			
					

LTE Band 14					
Channel Bandwidth: 10MHz / QPSK			Channel Bandwidth: 10MHz / 16QAM		
CHANNEL	23330	50 RB	CHANNEL	23330	50 RB
					

4.5 BAND EDGE MEASUREMENT

4.5.1 LIMITS OF BAND EDGE MEASUREMENT

On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1MHz bandwidth for frequencies greater than 1 GHz .

4.5.2 TEST PROCEDURES

a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Agilent Spectrum Analyzer. All measurements were done at 1 channel

b. The band edge measurement used the power splitter via EUT RF power connector between signal generator and spectrum analyzer. This splitter loss, attenuator loss and cable loss are the worst loss 21 dB in the transmitted path track.

c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz.

d. Record the max trace plot into the test report.

4.5.3 TEST SETUP

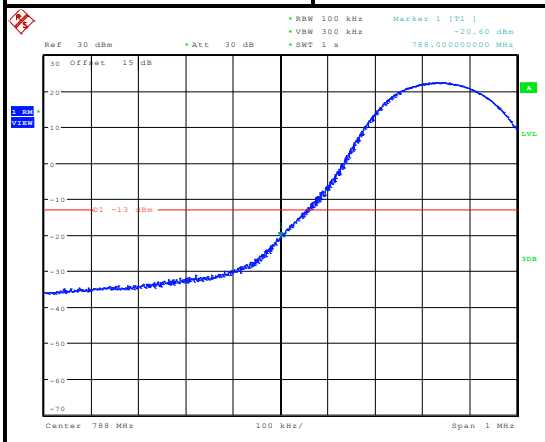
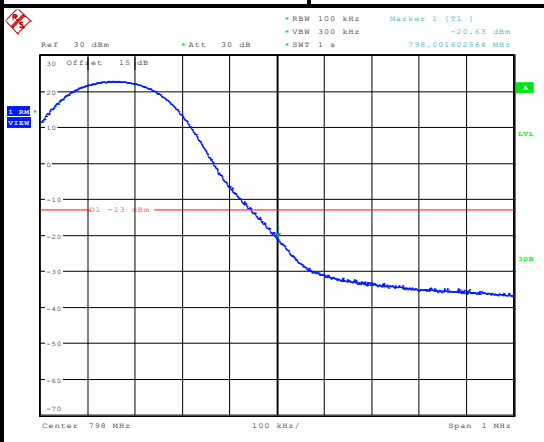
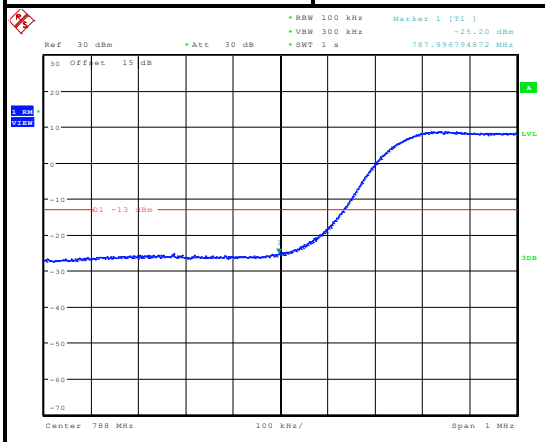
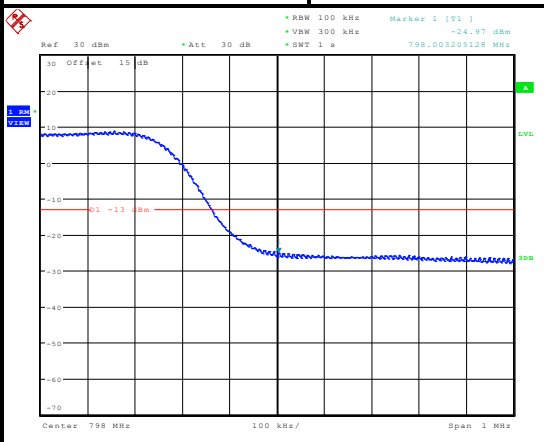
Same as Item 4.3.3

4.5.4 EUT OPERATING CONDITION

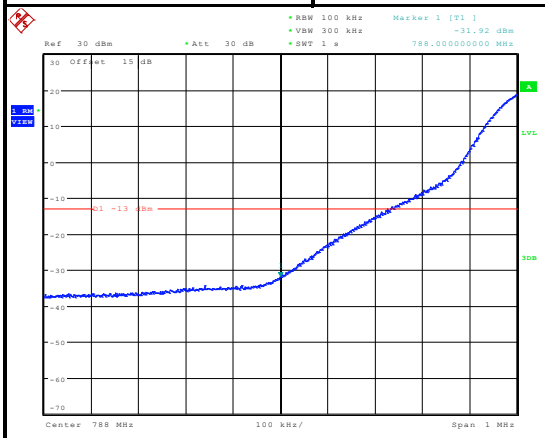
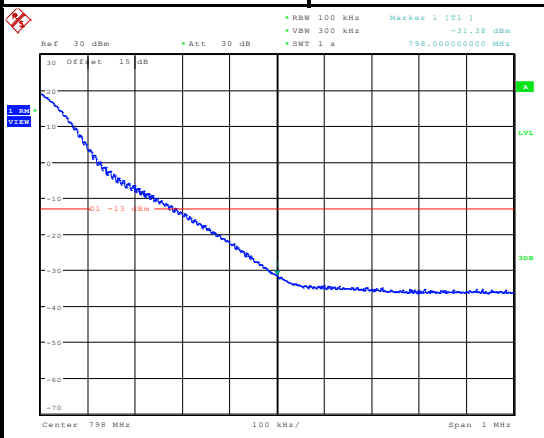
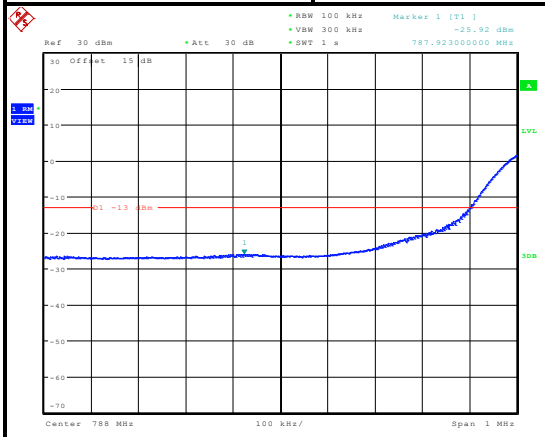
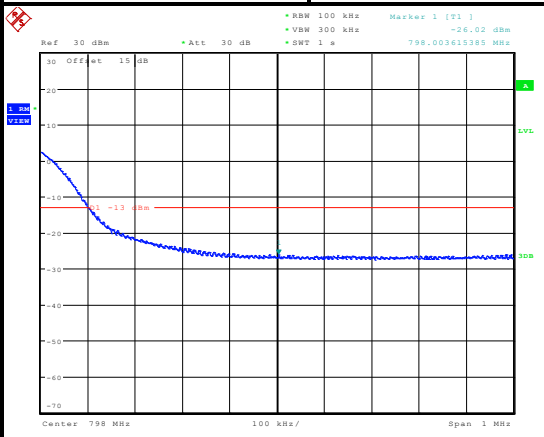
Same as 4.1.5.

4.5.5 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

LTE Band 14			
QPSK			
790.5MHz	1RB	795.5MHz	1RB
			
790.5MHz	25RB	795.5MHz	25RB
			

CHANNEL BANDWIDTH: 10MHz

LTE Band 14			
QPSK			
793.0MHz	1RB	793.0MHz	1RB
			
793.0MHz	50RB	793.0MHz	50RB
			

4.6 CONDUCTED SPURIOUS EMISSIONS

4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm.

On all frequencies between 769 – 775 MHz and 799 – 805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

4.6.2 TEST PROCEDURE

a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Agilent Spectrum Analyzer. All measurements were done at 1 channel.

b. The conducted spurious emission used the power splitter via EUT RF power connector between signal generator and spectrum analyzer.

c. When the spectrum scanned from 30MHz to 8GHz, it shall be connected to the band reject filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.

4.6.3 TEST SETUP

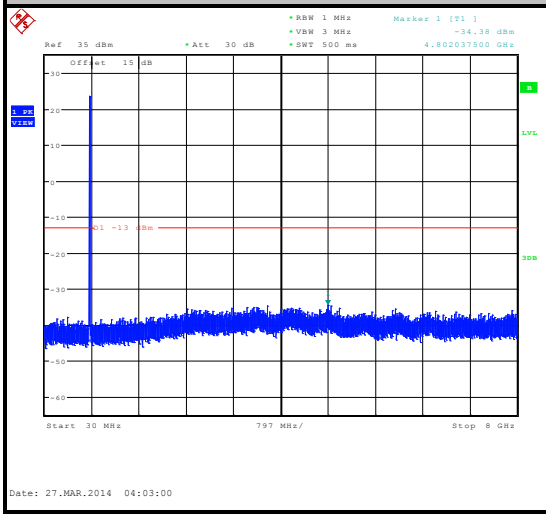
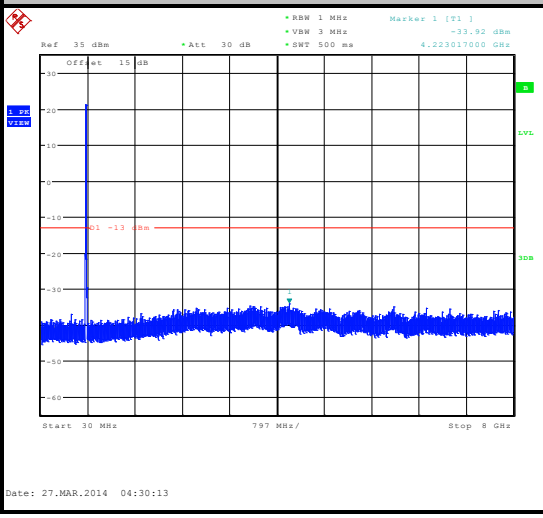
Same as 4.3.3

4.6.4 EUT OPERATING CONDITIONS

Same as 4.1.5.

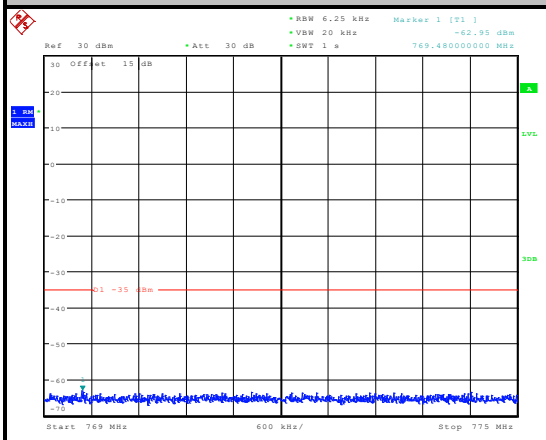
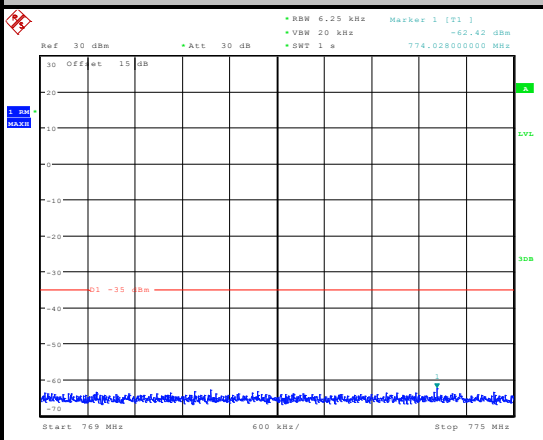
4.6.5 TEST RESULTS

FREQUENCY RANGE: 30MHz~8GHz

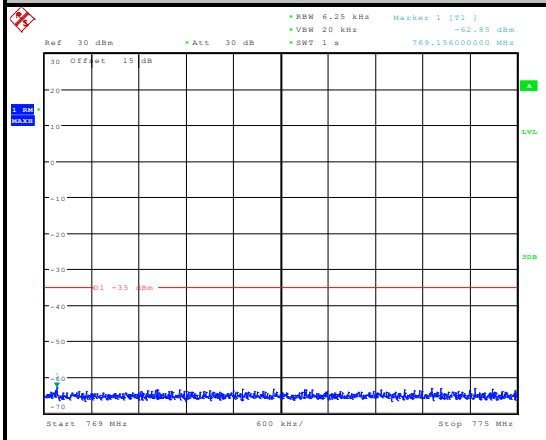
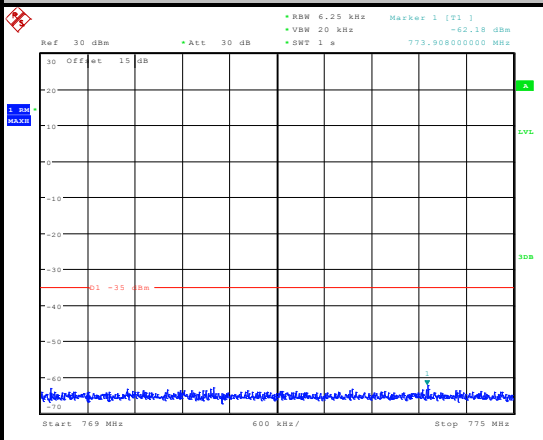
793.0MHz	
Channel Bandwidth: 5MHz	**Channel Bandwidth: 10MHz**
	

EMISSION IN THE 769–775 MHZ AND 799–805 MHZ BAND

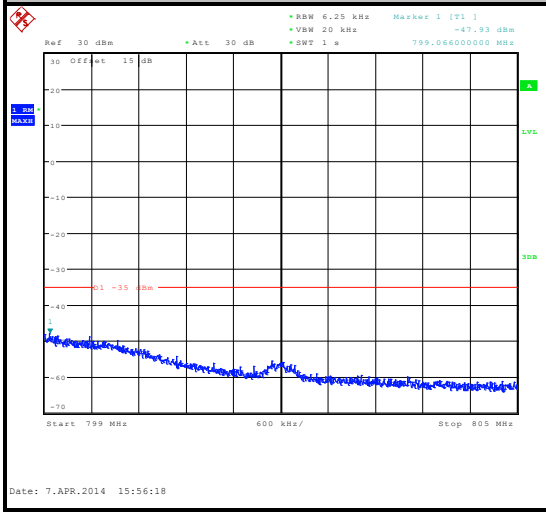
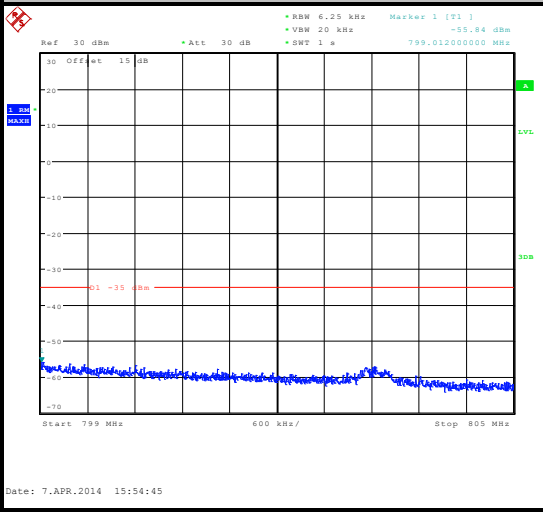
CHANNEL BANDWIDTH: 5MHZ / QPSK / 1 RB ALLOCATED AT THE LOWER EDGE

Channel Bandwidth: 5MHz	Channel Bandwidth: 10MHz
	

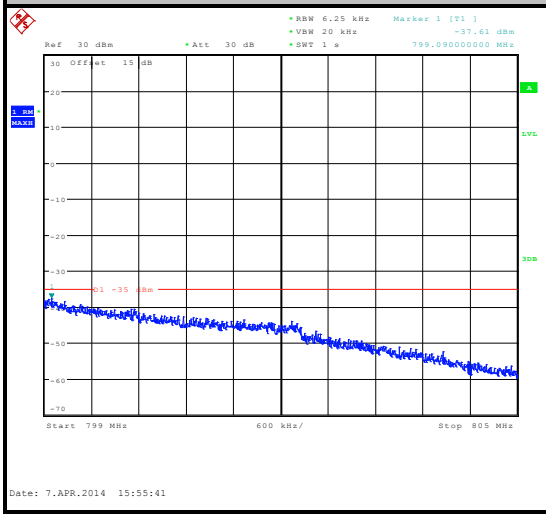
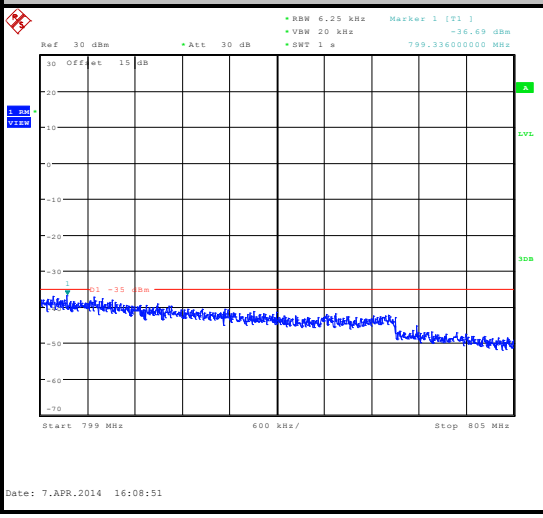
CHANNEL BANDWIDTH: 5MHZ / QPSK / 25 RB ALLOCATED AT THE LOWER EDGE

Channel Bandwidth: 5MHz / 25RB	Channel Bandwidth: 10MHz / 50RB
	

CHANNEL BANDWIDTH: 5MHZ / QPSK / 1 RB ALLOCATED AT THE LOWER EDGE

Channel Bandwidth: 5MHz	Channel Bandwidth: 10MHz
	

CHANNEL BANDWIDTH: 5MHZ / QPSK / 25 RB ALLOCATED AT THE LOWER EDGE

Channel Bandwidth: 5MHz / 25RB	Channel Bandwidth: 10MHz / 50RB
	

4.7 RADIATED EMISSION MEASUREMENT

4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1)The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

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

4.7.2 TEST INSTRUMENTS

Same as 4.1.2.

4.7.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the receiving antenna, which was mounted on antenna tower and its position at 0.8 m above the ground.

c. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading and recorded the value.

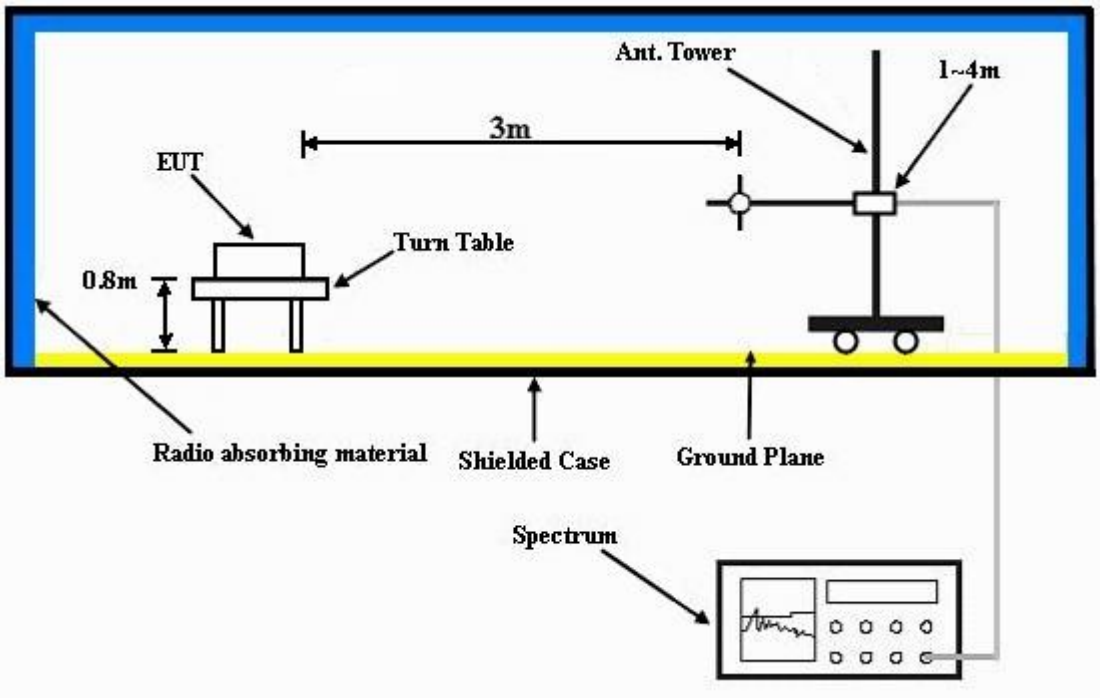
d. Repeat step a ~ c for horizontal polarization.

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

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP



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

4.7.6 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.7.7 TEST RESULTS

LTE Band 14

CHANNEL BANDWIDTH: 5MHz / QPSK

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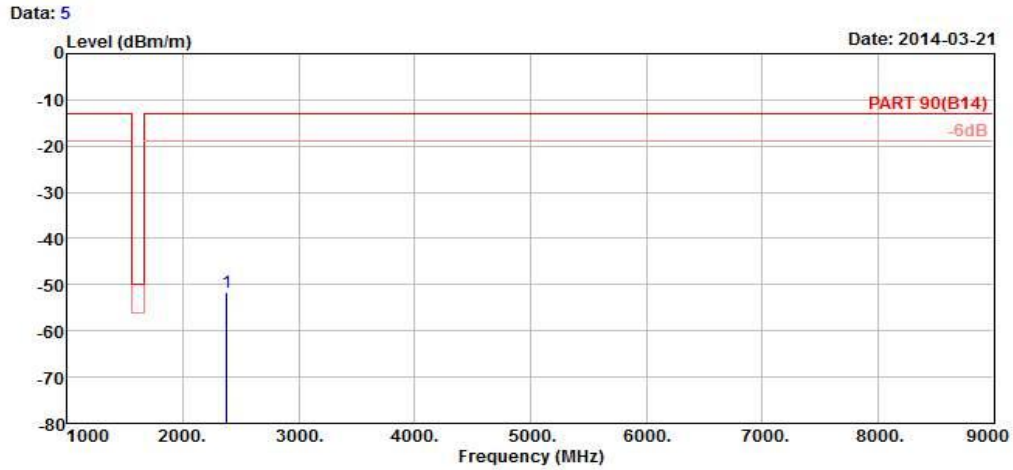
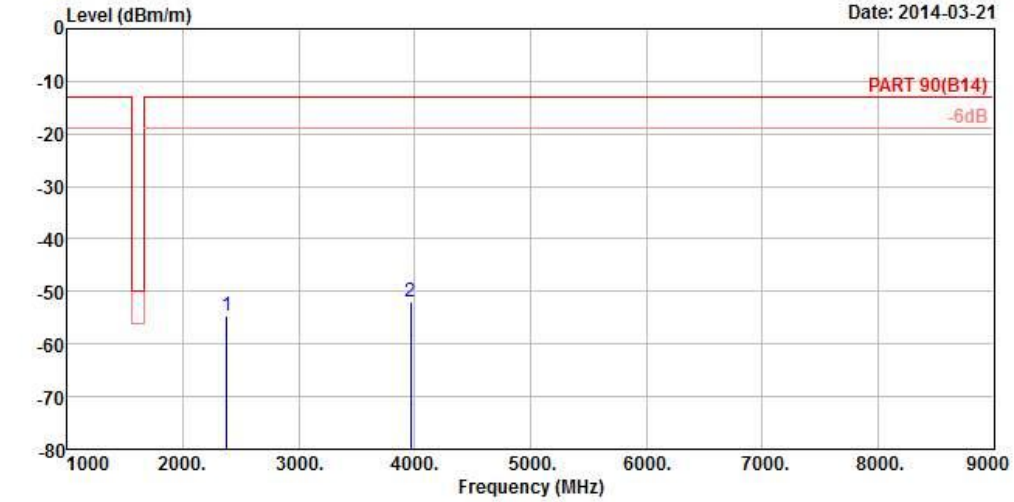



```
Site        : 966 Chamber 5
Condition   : PART 90(B14) 3m HORIZONTAL
Brand/Model: LEX700
Remark      : LTE Band 14_5M_QPSK(1.12) Link
Tested by   : Johnson Liao
Temprature  : 25℃
Humidity    : 65%
Plane       : Y
```

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	2379.00	-51.63	-41.24	-13.00	-38.63	-10.39	Peak

Data: 6



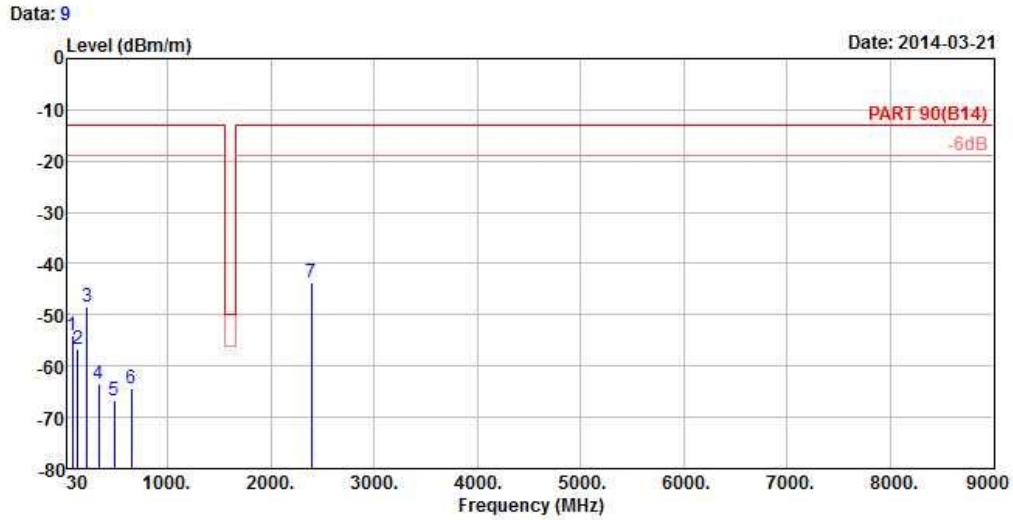
Site : 966 Chamber 5
Condition : PART 90(B14) 3m VERTICAL
Brand/Model: LEX700
Remark : LTE Band 14_5M_QPSK(1.12) Link
Tested by : Johnson Liao
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	2379.00	-54.58	-44.19	-13.00	-41.58	-10.39	Peak
2 pp	3965.00	-52.02	-44.47	-13.00	-39.02	-7.55	Peak

LTE Band 14

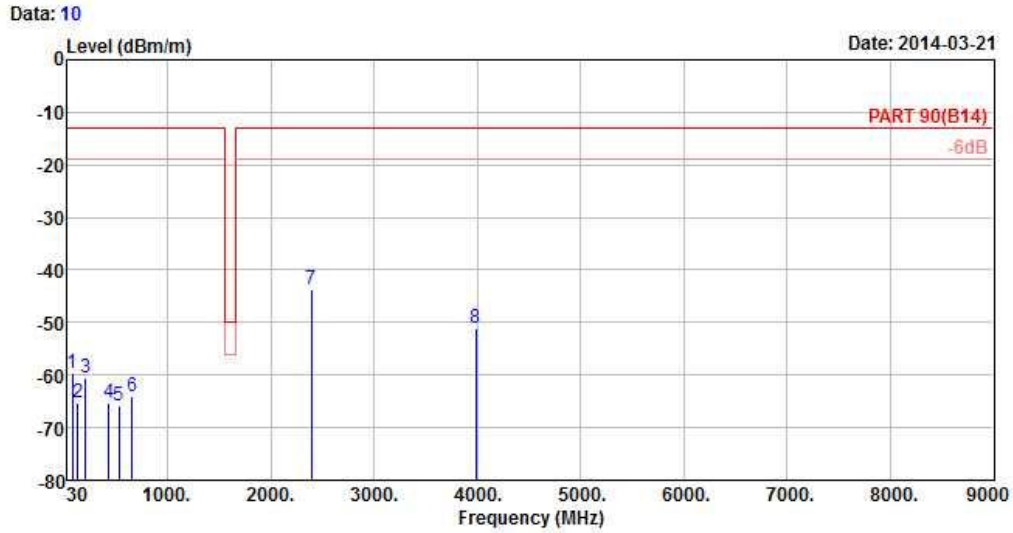
CHANNEL BANDWIDTH: 10MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART 90(B14) 3m HORIZONTAL
Brand/Model: LEX700
Remark : LTE Band 14_10M_QPSK(1.49) Link
Tested by : Johnson Liao
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	74.01	-54.07	-44.39	-13.00	-41.07	-9.68	Peak
2	128.55	-56.80	-48.29	-13.00	-43.80	-8.51	Peak
3	220.08	-48.39	-41.36	-13.00	-35.39	-7.03	Peak
4	336.40	-63.58	-57.47	-13.00	-50.58	-6.11	Peak
5	479.90	-66.67	-63.07	-13.00	-53.67	-3.60	Peak
6	649.30	-64.44	-64.96	-13.00	-51.44	0.52	Peak
7 pp	2392.20	-43.55	-33.16	-13.00	-30.55	-10.39	Peak



Site : 966 Chamber 5
Condition : PART 90(B14) 3m VERTICAL
Brand/Model: LEX700
Remark : LTE Band 14_10M_QPSK(1.49) Link
Tested by : Johnson Liao
Temprature : 25℃
Humidity : 65%
Plane : Y

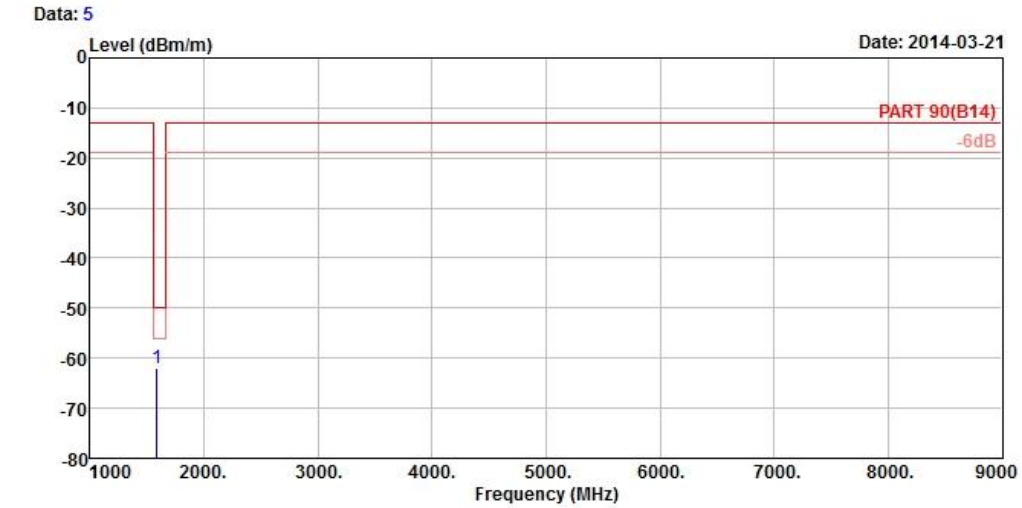
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	81.03	-59.57	-49.27	-13.00	-46.57	-10.30	Peak
2	126.39	-65.26	-55.97	-13.00	-52.26	-9.29	Peak
3	207.66	-60.52	-52.92	-13.00	-47.52	-7.60	Peak
4	432.30	-65.36	-60.55	-13.00	-52.36	-4.81	Peak
5	528.20	-65.97	-63.65	-13.00	-52.97	-2.32	Peak
6	653.50	-63.97	-64.58	-13.00	-50.97	0.61	Peak
7 pp	2392.20	-43.58	-33.19	-13.00	-30.58	-10.39	Peak
8	3987.00	-50.94	-43.37	-13.00	-37.94	-7.57	Peak

Emissions in the band 1559–1610 MHz

LTE Band 14

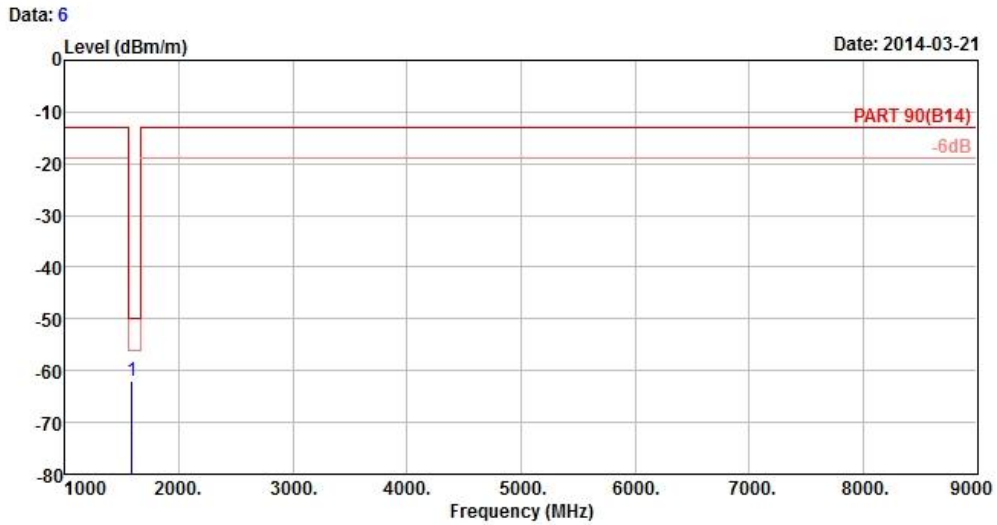
CHANNEL BANDWIDTH: 5MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




```
Site        : 966 Chamber 5
Condition   : PART 90(B14) 3m HORIZONTAL
Brand/Model: LEX700
Remark      : LTE Band 14_5M_QPSK(1.12) Link
Tested by   : Johnson Liao
Temprature : 25℃
Humidity    : 65%
Plane       : Y
```

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1586.00	-62.04	-48.14	-50.02	-12.02	-13.90	Peak



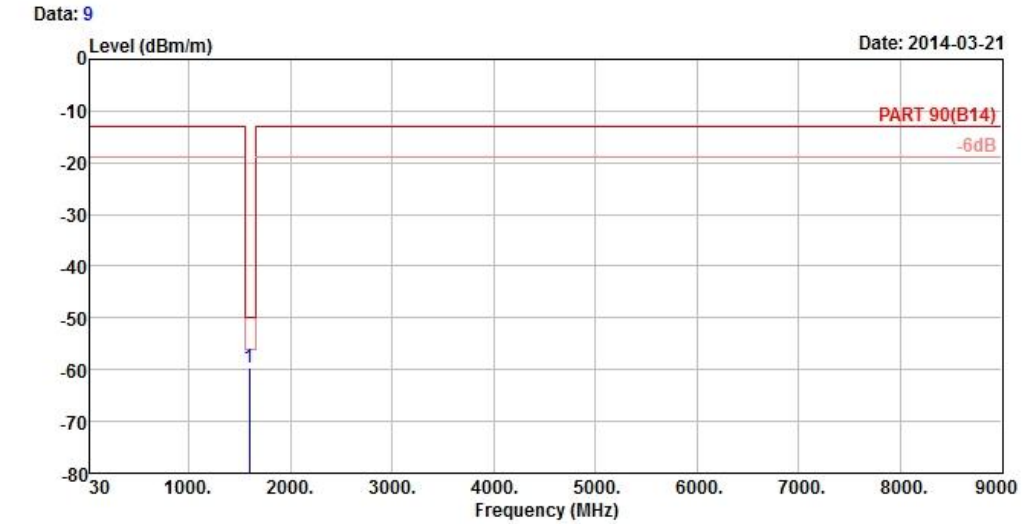
Site : 966 Chamber 5
Condition : PART 90(B14) 3m VERTICAL
Brand/Model: LEX700
Remark : LTE Band 14_5M_QPSK(1.12) Link
Tested by : Johnson Liao
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1586.00	-61.99	-48.09	-50.02	-11.97	-13.90	Peak

LTE Band 14

CHANNEL BANDWIDTH: 10MHz / QPSK

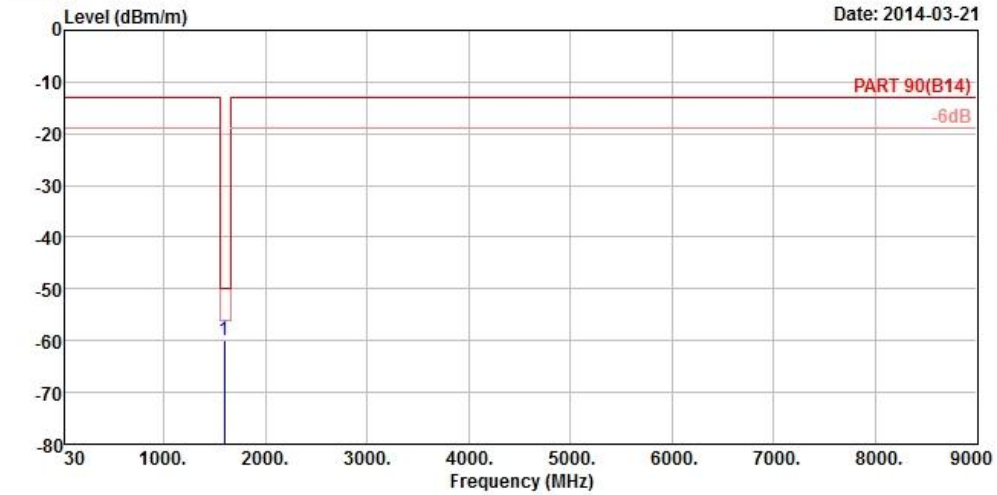
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




```
Site        : 966 Chamber 5
Condition   : PART 90(B14) 3m HORIZONTAL
Brand/Model: LEX700
Remark      : LTE Band 14_10M_QPSK(1.49) Link
Tested by   : Johnson Liao
Temprature  : 25℃
Humidity    : 65%
Plane       : Y
```

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1594.80	-59.73	-45.83	-50.02	-9.71	-13.90	Peak

Data: 10



Site : 966 Chamber 5
Condition : PART 90(B14) 3m VERTICAL
Brand/Model: LEX700
Remark : LTE Band 14_10M_QPSK(1.49) Link
Tested by : Johnson Liao
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1594.80	-59.89	-45.99	-50.02	-9.87	-13.90	Peak

5 INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
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Hwa Ya EMC/RF/Safety/Telecom Lab:
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Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

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

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

---END---