

FCC Test Report

(PART 27)

Report No.: RF151221C02-4

FCC ID: NM82PS6500

Test Model: 2PS6500

Received Date: Dec. 21, 2015

Test Date: Jan. 20, 2016 ~ Feb. 08, 2016

Issued Date: Feb. 25, 2016

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. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
- **Test Location (1):** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.
- Test Location (2): No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specification, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencie



Table of Contents

Re	eleas	e Control Record	3
1	Cer	tificate of Conformity	4
2	Sur	nmary of Test Results	5
		Measurement Uncertainty Test Site And Instruments	
3	Ger	neral Information	8
	3.2 3.3 3.4 3.5	General Description of EUT Configuration of System Under Test 3.2.1 Description of Support Units Test Mode Applicability and Tested Channel Detail EUT Operating Conditions General Description of Applied Standards	9 9 . 10 11 11
4		t Types and Results	
	4.1	Output Power Measurement 4.1.1 Limits of Output Power Measurement 4.1.2 Test Procedures 4.1.3 Test Setup 4.1.4 Test Results	12 12 13
	4.2	Frequency Stability Measurement 4.2.1 Limits of Frequency Stabiliity Measurement 4.2.2 Test Procedure 4.2.3 Test Setup 4.2.4 Test Results	16 16 16
	4.3	 4.2.4 Test Results Occupied Bandwidth Measurement 4.3.1 Limits of Occupied Bandwidth Measurement 4.3.2 Test Procedure 4.3.3 Test Setup 4.3.4 Test Result 	18 18 18 18
	4.4	4.3.4 Test Result Band Edge Measurement 4.4.1 Limits of Band Edge Measurement 4.4.2 Test Setup 4.4.3 Test Procedures 4.4.4 Test Results	20 20 20 20
	4.5	Conducted Spurious Emissions	24 24 24 24
	4.6	4.5.4 Test Results Radiated Emission Measurement. 4.6.1 Limits of Radiated Emission Measurement	27 27 27 27 27 27
5	Pict	tures of Test Arrangements	30
Ap	open	dix – Information on the Testing Laboratories	31



Release Control Record

Issue No.	Description	Date Issued
RF151221C02-4	Original Release	Feb. 25, 2016



1 Certificate of Conformity

Product:	Smartphone
Brand:	HTC
Test Model:	2PS6500
Sample Status:	Production Unit
Applicant:	HTC Corporation
Test Date:	Jan. 20, 2016 ~ Feb. 08, 2016
Standards:	FCC Part 27, Subpart C

The above equipment 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.

Date: Feb. 25, 2016

Feb. 25, 2016

Date:

Prepared by :

Ivonne Wu / Supervisor

rolly

Approved by :

Stanley Wu / Assistant Manager



2 Summary of Test Results

	Applied Standard: FCC Part 27 & Part 2								
FCC Clause	Test Item	Result	Remarks						
2.1046 27.50(a)(3)	Equivalent Isotropic Radiated Power	Pass	Meet the requirement of limit.						
2.1055 27.54 Frequency Stability		Pass	Meet the requirement of limit.						
2.1049	2.1049 Occupied Bandwidth		Meet the requirement of limit.						
2.1051 27.53(a)(4)	Band Edge Measurements		Meet the requirement of limit.						
2.1051 27.53(a)(4)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.						
2.1053 27.53(a)(4)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -7.37 dB at 4620.00 MHz.						

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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Padiated Emissions up to 1 CHz	30 MHz ~ 200 MHz	2.0153 dB
Radiated Emissions up to 1 GHz	200 MHz ~1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB



2.2 Test Site And Instruments

Description & Manaufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	May 19, 2015	May 18, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna ETS-Lindgren	3117	00143293	Jan. 04, 2016	Jan. 03, 2017
Double Ridge Guide Horn Antenna EMCO	3115	5619	Jan. 04, 2016	Jan. 03, 2017
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Jan. 07, 2016	Jan. 06, 2017
Bluetooth Tester	CBT	100980	Apr. 27, 2015	Apr. 26, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier Agilent	310N	187226	Jun. 29, 2015	Jun. 28, 2016
Preamplifier Agilent	83017A	MY39501357	Jun. 29, 2015	Jun. 28, 2016
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 27, 2015	Jun. 26, 2016
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(R FC-SMS-100-SM S-24)	Jun. 27, 2015	Jun. 26, 2016
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Communications Tester-Wireless Agilent	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Radio Communication Analyzer Anritsu	MT8820C	6201240432	Jul. 06, 2015	Jul. 05, 2017



- 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 HsinTien Chamber 1.
 - 3. The horn antenna and preamplifier (model: 83017A) are used only for the measurement of emission frequency above 1 GHz if tested.
 - 4. The FCC Site Registration No. is 149147.
 - 5. The IC Site Registration No. is IC7450I-1.



3 General Information

3.1 General Description of EUT

Product	Smartphone					
Brand	HTC					
Test Model	2PS6500					
Status of EUT	Production Unit					
Power Supply Rating	5.0 Vdc (adapter or host equipment) 3.85 Vdc (Li-ion battery)					
Modulation Type QPSK, 16QAM						
	LTE Band 30 (Channel Bandwidth: 5 MHz)	2307.5 ~ 2312.5 MHz				
Frequency Range	LTE Band 30 (Channel Bandwidth: 10 MHz)	2310 MHz				
Max. EIRP Power	LTE Band 30 (Channel Bandwidth: 5 MHz)	122.77 mW				
	LTE Band 30 (Channel Bandwidth: 10 MHz)	110.33 mW				
Emission Designator	LTE Band 30 (Channel Bandwidth: 5 MHz)	4M50G7D				
Emission Designator	LTE Band 30 (Channel Bandwidth: 10 MHz) 8M97G7D					
Antenna Type	Fixed Internal Antenna					
Accessory Device Refer to Note as below						
Data Cable Supplied	Refer to Note as below					

Note:

1. The EUT's accessories list refers to Ext. Pho.

2. The above EUT information is 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

<Radiated Emission Test>

<E.I.R.P. Test>

Test table	EUT (Powered from battery)

	Universal Radio Communication Tester
*Kept in a remote area	

3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.



3.3 Test Mode Applicability and Tested Channel Detail

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 EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
	EIRP	27685 to 27735	27685, 27710, 27735	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-		27710	27710	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	Frequency	27685 to 27735	27710	5 MHz	QPSK	1 RB / 0 RB Offset
-	Stability	27710	27710	10 MHz	QPSK	1 RB / 0 RB Offset
	Occupied	27685 to 27735	27685, 27710, 27735	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
-	Bandwidth	27710	27710	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	David Edua	27685 to 27735	27685, 27710, 27735	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
-	Band Edge	27710	27710	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	Conducted	27685 to 27735	27710	5 MHz	QPSK	1 RB / 0 RB Offset
-	Emission	27710	27710	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	27685 to 27735	27710	5 MHz	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
EIRP	25 deg. C, 65 % RH	3.85 Vdc	Carlos Chen
Frequency Stability	25 deg. C, 65 % RH	3.85 Vdc	Carlos Chen
Occupied Bandwidth	25 deg. C, 65 % RH	3.85 Vdc	Carlos Chen
Band Edge	25 deg. C, 65 % RH	3.85 Vdc	Carlos Chen
Condcudeted Emission	25 deg. C, 65 % RH	3.85 Vdc	Carlos Chen
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao



3.4 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

3.5 General Description of Applied Standards

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

FCC 47 CFR Part 2 FCC 47 CFR Part 27 KDB 971168 D01 Power Meas License Digital Systems v02r02 ANSI/TIA/EIA-603-D 2010

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. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

4.1.2 Test Procedures

EIRP Measurement:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m 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 1 m to 4 m 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.

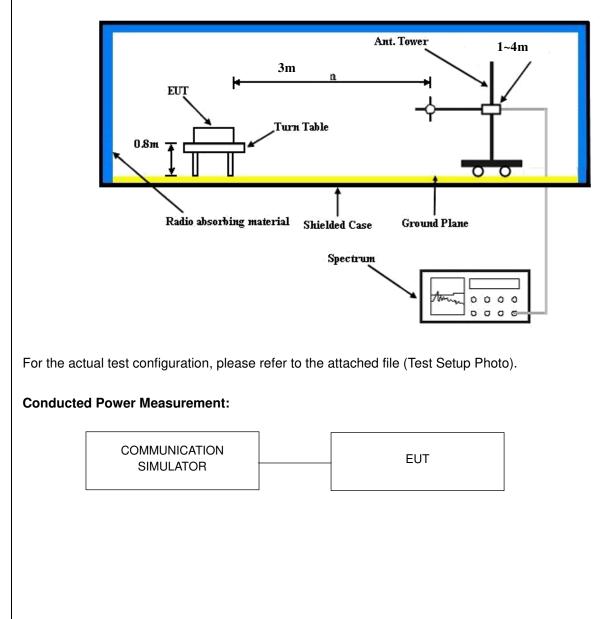
Conducted Power Measurement:

- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. 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:





4.1.4 Test Results

Conducted Output Power (dBm)

	RB Size		QPSK							
LTE Band /			RB Offset	Low Ch 27685	Mid Ch 27710	High Ch 27735	3GPP MPR	Low Ch 27685	Mid Ch 27710	High Ch 27735
BW	5126	Onset	2307.5 MHz	2310.0 MHz	2312.5 MHz	(dB)	2307.5 MHz	2310.0 MHz	2312.5 MHz	(dB)
	1	0	22.54	22.62	22.59	0	21.57	21.67	21.65	1
	1	12	22.01	22.09	22.06	0	20.99	21.07	21.04	1
	1	24	22.30	22.44	22.41	0	21.39	21.47	21.44	1
30 / 5M	12	0	21.02	21.12	21.06	1	19.97	20.09	20.01	2
	12	6	21.10	21.18	21.17	1	20.07	20.16	20.12	2
	12	13	21.03	21.15	21.12	1	19.99	20.13	20.05	2
	25	0	21.06	21.17	21.15	1	20.03	20.15	20.11	2

LTE Band / BW	RB Size	RB Offset	QPSK Mid Ch 27710 2310.0 MHz	3GPP MPR (dB)	16QAM Mid Ch 27710 2310.0 MHz	3GPP MPR (dB)
	1	0	22.67	0	21.71	1
	1	24	22.17	0	21.20	1
	1	49	22.51	0	21.55	1
30 / 10M	25	0	21.23	1	20.26	2
	25	12	21.27	1	20.30	2
	25	25	21.25	1	20.28	2
	50	0	21.26	1	20.29	2



	LTE Band 30							
Channel Bandwidth: 5 MHz / QPSK								
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)	
	27685	2307.5	-23.87	44.24	20.37	108.84		
	27710	2310.0	-24.17	44.20	20.03	100.62	н	
х	27735	2312.5	-23.91	44.80	20.89	122.77		
^	27685	2307.5	-29.12	44.19	15.07	32.14		
	27710	2310.0	-29.07	44.09	15.02	31.75	V	
	27735	2312.5	-28.97	44.50	15.53	35.72		
Channel Bandwidth: 5 MHz / 16QAM								
	27685	2307.5	-24.91	44.24	19.33	85.66		
	27710	2310.0	-25.11	44.20	19.09	81.04	Н	
х	27735	2312.5	-24.82	44.80	19.98	99.56		
	27685	2307.5	-29.75	44.19	14.44	27.80		
	27710	2310.0	-29.83	44.09	14.26	26.66	V	
	27735	2312.5	-29.91	44.50	14.59	28.77		

EIRP Power (dBm)

LTE Band 30								
Channel Bandwidth: 10 MHz / QPSK								
Plane Channel Frequency (MHz) LVL (dBm) Correction Factor (dB) EIRP (dBm) EIRP (mW) Po							Polarization (H/V)	
х	27710	2310.0	-23.77	44.20	20.43	110.33	Н	
	27710	2310.0	-28.89	44.09	15.20	33.10	V	
Channel Bandwidth: 10 MHz / 16QAM								
х	27710	2310.0	-24.81	44.20	19.39	86.84	Н	
	27710	2310.0	-29.36	44.09	14.73	29.70	V	



4.2 Frequency Stability Measurement

4.2.1 Limits of Frequency Stabiliity Measurement

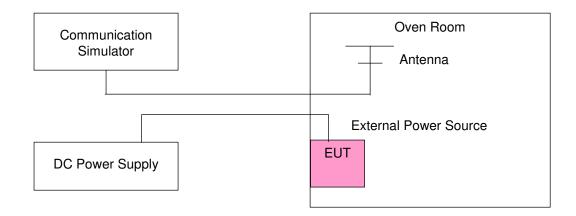
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.2.2 Test Procedure

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5
 °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		
	LTE B	Limit (ppm)	
	5 MHz	10 MHz	
3.85	0.00026	0.00061	2.5
3.6	0.00082	0.00035	2.5
4.4	0.00078	0.00069	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6 Vdc to 4.4 Vdc.

Frequency Error vs. Temperature

	Frequency		
Temp. (℃)	LTE Ba	Limit (ppm)	
	5 MHz	10 MHz	
-30	0.00134	0.00139	2.5
-20	0.00009	0.00009	2.5
-10	0.00139	0.00165	2.5
0	0.00004	0.00134	2.5
10	0.00009	0.00017	2.5
20	0.00022	-0.00169	2.5
30	-0.00013	-0.00013	2.5
40	-0.00035	-0.00074	2.5
50	-0.00056	-0.00095	2.5
55	-0.00052	-0.00052	2.5



4.3 Occupied Bandwidth Measurement

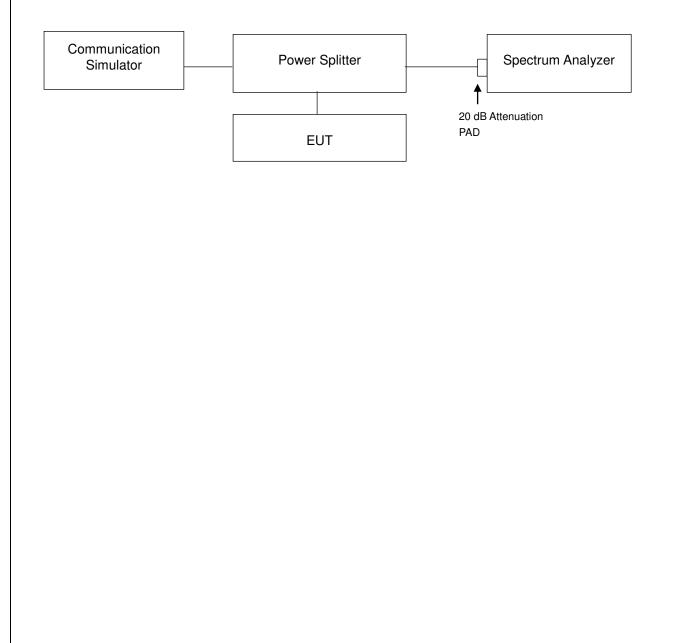
4.3.1 Limits of Occupied Bandwidth Measurement

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 Procedure

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

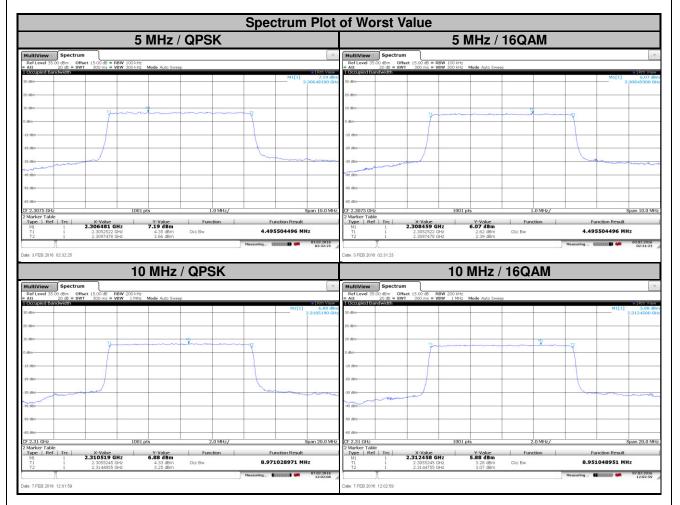
4.3.3 Test Setup





4.3.4 Test Result

LTE Band 30								
(Channel Band	width: 5 MH	z	Channel Bandwidth: 10 MHz				
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency	99 % Occupied Bandwidth (MHz)		
		QPSK	16QAM		(MHz)	QPSK	16QAM	
27685	2307.5	4.4955	4.4955	27710	2310.0	8.9710		
27710	2310.0	4.4955	4.4955				8.9510	
27735	2312.5	4.4955	4.4855					





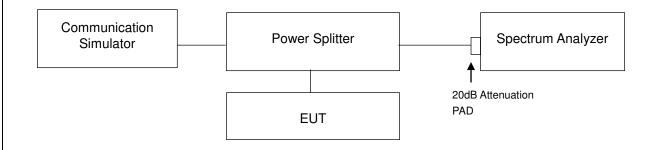
4.4 Band Edge Measurement

4.4.1 Limits of Band Edge Measurement

According to FCC 27.53(a) (4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

- (i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2327 MHz;
- (ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;
- (iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

4.4.2 Test Setup

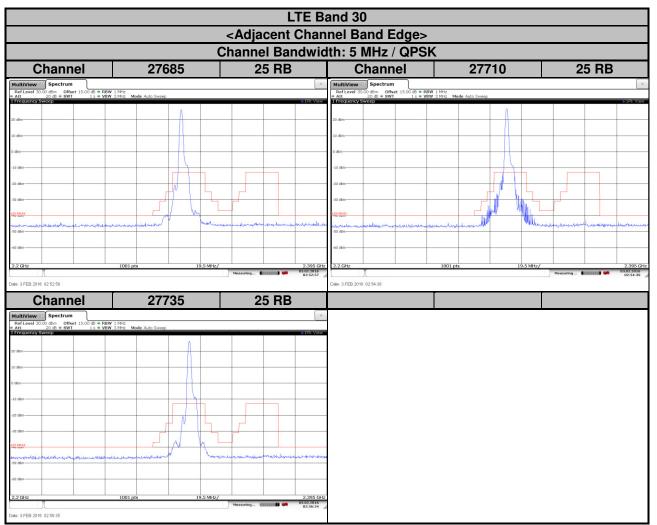


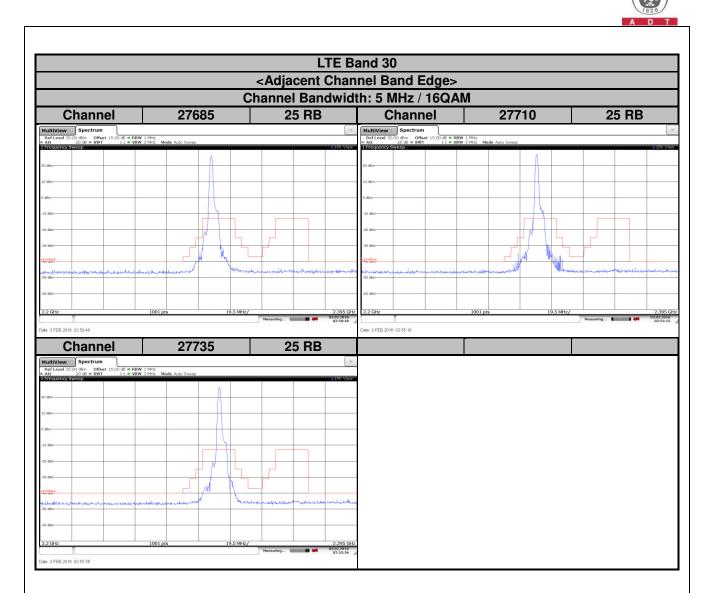
4.4.3 Test Procedures

- a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range).
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. Measuring frequency range is from 2200 MHz to 2395 MHz for LTE Band 30. 10 dB attenuation pad is connected with spectrum. RBW=1 MHz and VBW=3 MHz are used for conducted emission measurement.
- d. Record the max trace plot into the test report.



4.4.4 Test Results







LTE Band 30 Channel Bandwidth: 10 MHz / QPSK								
Channel	27710	50 RB	Channel	27710	50 RB			
Spectrum Ref Level 30.00 dBm Offset 15.00 dB = RBW 20 dB = SWT 18 = VBW requency sweep 18 = VBW	V 1MHz V 3MHz Mode Auto Sweep	• (1 MHz 3 MHz Mode Auto Sweep	• 18m V			
80			20 den					
			40 dim					
48m			-50 dBm					
2 GHz	1001 pts 19.5 MH	z/ 2.395 Measuring 07.02.201 12:07:2		1001 pts 19.5 MHz/	2.395 Measuring 07.02.20 12:06:3			

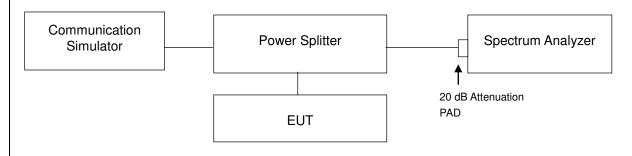


4.5 Conducted Spurious Emissions

4.5.1 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 70 +10 log10(P) dB. The limit of emission is equal to -40 dBm.

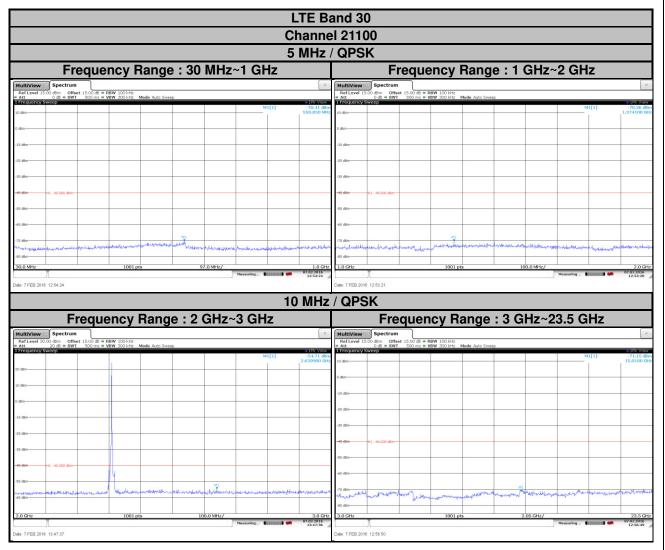
4.5.2 Test Setup

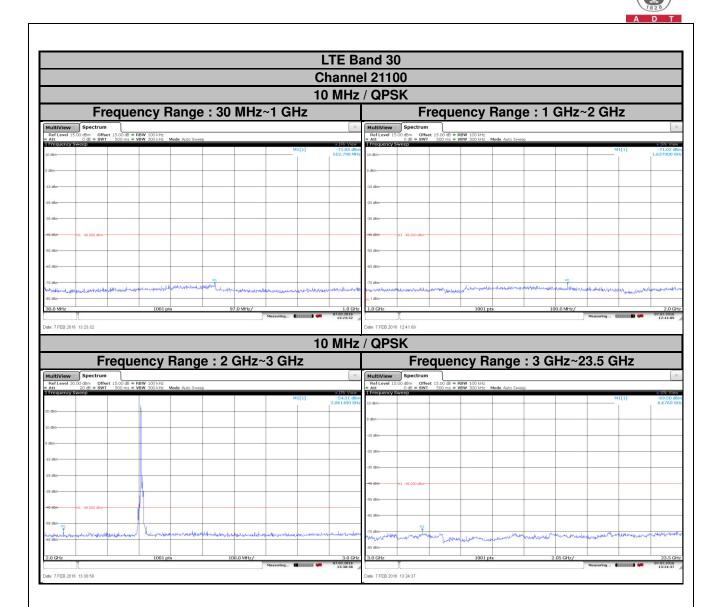


4.5.3 Test Procedure

- 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 23.5 GHz for LTE Band 30. 10 dB attenuation pad is connected with spectrum. RBW=1 MHz and VBW=3 MHz are used for conducted emission measurement.

4.5.4 Test Results







4.6 Radiated Emission Measurement

4.6.1 Limits of Radiated Emission Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 70 +10 log10(P) dB. The limit of emission is equal to -40 dBm.

4.6.2 Test Procedure

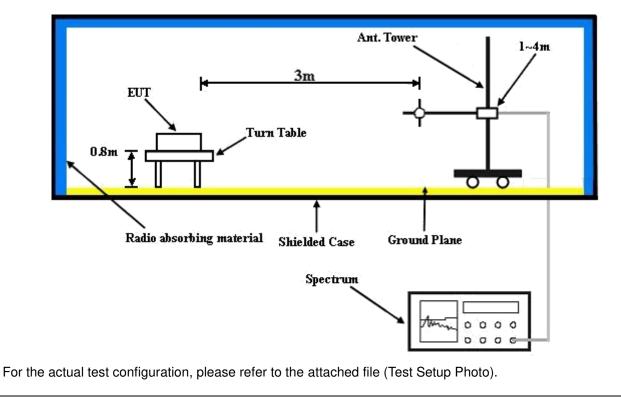
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m 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.P.R power 2.15 dBi.

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

4.6.3 Deviation from Test Standard

No deviation.

4.6.4 Test Setup

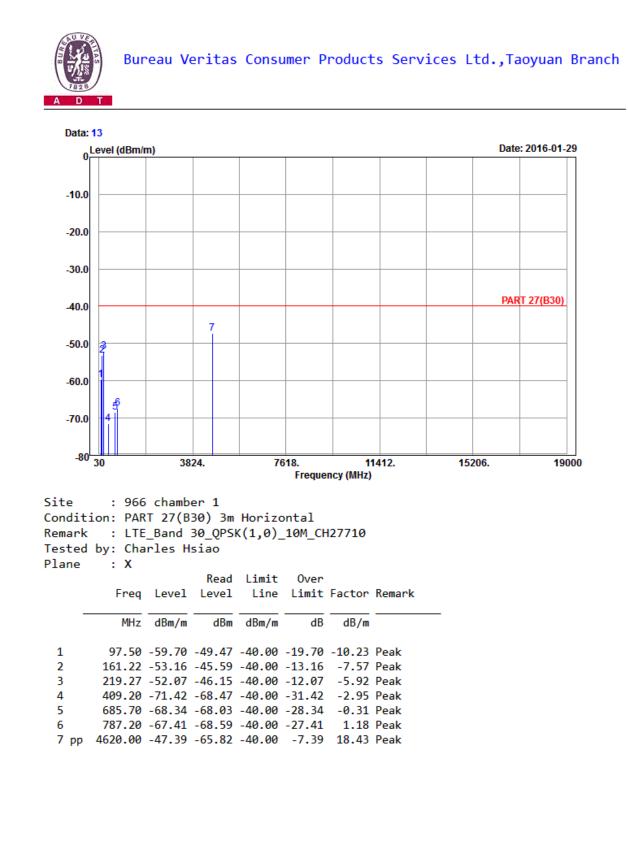




4.6.5 Test Results

LTE Band 30

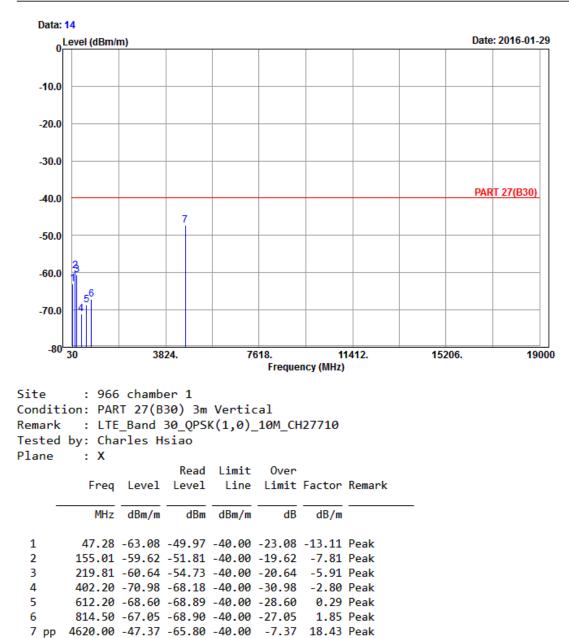
Channel Bandwidth: 10 MHz / QPSK







Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch





5 Pictures of Test Arrangements

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



Appendix – 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/Telecom Lab Tel: 886-3-6668565 Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Tel: 886-3-3183232 Fax: 886-3-3270892

Email: <u>service.adt@tw.bureauveritas.com</u> Web Site: <u>www.bureauveritas-adt.com</u>

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

--- END ---