Power Verification Test Report

Report No.	:	**SA151221C02B**
Applicant	:	**HTC Corporation**
Address	:	**1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231**
Product	:	**Smartphone**
FCC ID	:	**NM82PS6500**
Brand	:	**HTC**
Model No.	:	**2PS6500**
Standards	:	**FCC 47 CFR Part 2 (2.1093) / IEEE C95.1:1992 / IEEE Std 1528:2013**
		KDB 865664 D01 v01r04 / KDB 865664 D02 v01r02
		KDB 248227 D01 v02r02 / KDB 447498 D01 v06 / KDB 648474 D04 v01r03
		KDB 941225 D01 v03r01 / KDB 941225 D05 v02r05 / KDB 941225 D05A v01r02
		KDB 941225 D06 v02r01
Sample Received Date	:	**Feb. 17, 2016**
Date of Testing	:	**Mar. 11, 2016**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, 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 SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

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Approved By :

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Release Control Record

Report No.	Reason for Change	Date Issued
SA151221C02B	Initial release	Apr. 01, 2016

1. Description of Equipment Under Test

EUT Type	Smartphone
FCC	NM82PS6500
Brand Name	HTC
Model Name	2PS6500
Tx Frequency Bands (Unit: MHz)	GSM850 : 824.2 ~ 848.8 GSM1900 : 1850.2 ~ 1909.8 WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 CDMA BC0 : 824.7 ~ 848.31 CDMA BC1 : 1851.25 ~ 1908.75 LTE Band 2 : 1850.7 ~ 1909.3 (1.4M), 1851.5 ~ 1908.5 (3M), 1852.5 ~ 1907.5 (5M), 1855 ~ 1905 (10M), 1857.5 ~ 1902.5 (15M), 1860 ~ 1900 (20M) LTE Band 4 : 1710.7 ~ 1754.3 (1.4M), 1711.5 ~ 1753.5 (3M), 1712.5 ~ 1752.5 (5M), 1715 ~ 1750 (10M), 1717.5 ~ 1747.5 (15M), 1720 ~ 1745 (20M) LTE Band 5 : 824.7 ~ 848.3 (1.4M), 825.5 ~ 847.5 (3M), 826.5 ~ 846.5 (5M), 829 ~ 844 (10M) LTE Band 7 : 2502.5 ~ 2567.5 (5M), 2505 ~ 2565 (10M), 2507.5 ~ 2562.5 (15M), 2510 ~ 2560 (20M) LTE Band 12 : 699.7 ~ 715.3 (1.4M), 700.5 ~ 714.5 (3M), 701.5 ~ 713.5 (5M), 704 ~ 711 (10M) LTE Band 13 : 779.5 ~ 784.5 (5M), 782 (10M) LTE Band 17 : 706.5 ~ 713.5 (5M), 709 ~ 711 (10M) LTE Band 30 : 2307.5 ~ 2312.5 (5M), 2310 (10M) WLAN : 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 Bluetooth : 2403 ~ 2480 ANT+ : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	GSM & GPRS : GMSK EDGE : 8PSK WCDMA : QPSK CDMA : QPSK LTE : QPSK, 16QAM 802.11b : DSSS 802.11a/g/n/ac : OFDM Bluetooth : GFSK, π/4-DQPSK, 8-DPSK ANT+ : GFSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	GSM850 : 33.5 GSM1900 : 31.0 WCDMA Band II : 24.5 WCDMA Band IV : 24.5 WCDMA Band V : 24.5 CDMA BC0 : 24.5 CDMA BC1 : 24.5 LTE Band 2 : 24.5 LTE Band 4 : 24.5 LTE Band 5 : 24.5 LTE Band 7 : 23.5 LTE Band 12 : 24.0 LTE Band 13 : 24.5 LTE Band 17 : 24.0 LTE Band 30 : 23.5 WLAN 2.4G : 20.0 WLAN 5.2G : 17.5 WLAN 5.3G : 17.5 WLAN 5.6G : 17.5 WLAN 5.8G : 17.5 Bluetooth : 10.5

Antenna Type	Fixed Internal Antenna
EUT Stage	Production Unit

Note:

1. This report is issued as a supplementary report to BV ADT report no.: SA151221C02. The difference compared with original report is to verify the LTE CA power.
2. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

2. **SAR Measurement Evaluation**

2.1 **EUT Configuration and Setting**

LTE Downlink Carrier Aggregation (CA) Setup Configurations

LTE Carrier Aggregation (CA) was defined in 3GPP release 10 and higher. The LTE device in CA mode has one Primary Component Carrier (PCC) and one or more Secondary Component Carriers (SCC). PCC acts as the anchor carrier and can optionally cross-schedule data transmission on SCC. The RRC connection is only handled by one cell, the PCC for downlink and uplink communications. After making a data connection to the PCC, the LTE device adds the SCC on the downlink only. All uplink communications and acknowledgements remain identical to release 8 specifications on the PCC. The combinations of downlink carrier aggregation supported by this device are listed in below.

EUT Supported Combinations of Downlink Carrier Aggregation						
Intra-Band Contiguous CA Operating Bands						
CA_2						
Inter-Band CA Operating Bands (Two Bands)						
CA_2-4	**CA_2-5**	**CA_2-12**	**CA_2-13**	**CA_2-17**	**CA_2-29**	**CA_2-30**	**CA_4-2**
CA_4-5	**CA_4-12**	**CA_4-13**	**CA_4-17**	**CA_4-29**	**CA_5-2**	**CA_5-4**	**CA_5-30**
CA_12-30	**CA_13-2**	**CA_13-4**	**CA_30-29**			
Inter-Band CA Operating Bands (Three Bands)						
CA_2-4-12	**CA_2-4-13**	**CA_2-4-29**	**CA_2-12-30**	**CA_2-29-30**	**CA_4-2-13**	**CA_4-4-12**	**CA_4-12-4**
CA_13-2-4						
Intra-Band Non-Contiguous CA Operating Bands (with Two Sub-Blocks)						
CA_2-2	**CA_4-4**					

2.2 Maximum Output Power

2.2.1 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) is shown as below.

Conducted Power Measurement for LTE-CA (Carrier Aggregation)										
PCC (Primary Component Carrier)					SCC (Secondary Component Carrier)			PCC Tx Power With Out CA	Tx Power With DL-CA Active
LTE Band	BW (MHz)	Uplink Channel	RB Size	RB Offset	LTE Band	BW (MHz)	Downlink Channel			
2	20	18900	1	0	2	20	1098		23.83	23.80
2	20	18900	1	0	4	20	2175		23.83	23.79
2	20	18900	1	0	5	10	2525		23.83	23.76
2	20	18900	1	0	12	10	5095		23.83	23.80
2	20	18900	1	0	13	10	5230		23.83	23.79
2	10	18900	1	0	17	10	5790		23.22	23.21
2	20	18900	1	0	29	10	9715		23.83	23.79
2	20	18900	1	0	30	10	9820		23.83	23.78
4	20	20300	1	0	2	20	900		23.84	23.82
4	20	20300	1	0	5	10	2525		23.84	23.81
4	20	20300	1	0	12	10	5095		23.84	23.81
4	20	20300	1	0	13	10	5230		23.84	23.79
4	10	20350	1	0	17	10	5790		23.33	23.31
4	20	20300	1	0	29	10	9715		23.84	23.82
5	10	20450	1	49	2	20	900		22.53	22.53
5	10	20450	1	49	4	20	2175		22.53	22.53
5	10	20450	1	49	30	10	9820		22.88	22.85
12	10	23060	1	49	30	10	9820		23.14	23.13
13	10	23230	1	24	2	20	900		22.81	22.80
13	10	23230	1	24	4	20	2175		22.81	22.78
30	10	27710	1	0	29	10	9715		22.66	22.66
2	20	18900	1	0	2	20	1100		23.83	23.50
4	20	20300	1	0	4	20	2050		23.84	23..80

Conducted Power Measurement for LTE-CA (Carrier Aggregation)													
PCC (Primary Component Carrier)					SCC1 (Secondary Component Carrier)			SCC2 (Secondary Component Carrier)			PCC Tx Power With Out CA	Tx Power With DL-CA Active
LTE Band	BW (MHz)	Uplink Channel	RB Size	RB Offset	LTE Band	BW (MHz)	Downlink Channel	LTE Band	BW (MHz)	Downlink Channel		
2	20	18900	1	0	4	20	2175	12	10	5095	23.83	23.81
2	20	18900	1	0	4	20	2175	13	10	5230	23.83	23.82
2	20	18900	1	0	4	20	2175	29	10	9715	23.83	23.76
2	20	18900	1	0	12	10	5095	30	10	9820	23.83	23.82
2	20	18900	1	0	29	10	9715	30	10	9820	23.83	23.80
4	20	20300	1	0	2	20	900	13	10	5230	23.84	23.75
4	20	20300	1	0	4	20	2050	12	10	5095	23.84	23.76
4	20	20300	1	0	12	10	5095	4	20	2050	23.90	23.84
13	10	23230	1	24	2	20	900	4	20	2050	22.81	22.78

Note:

1. The LTE-CA for this device is supported to downlink only, and there is no uplink carrier aggregation.

2. The PCC Tx power is measured with SCC downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active, uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4 dB higher than the maximum output power measured when downlink carrier aggregation inactive.

3. This device does not support all LTE-CA configurations. The LTE-CA power was measured for those combinations supported by this device.

3. <u>Measurement Uncertainty</u>

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.707	0.707	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
System Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions - Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom Shell	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	1.5 / 0.7	Normal	1	1	1	1.5	0.7	32
Device Holder Uncertainty	4.2 / 1.8	Normal	1	1	1	4.2	1.8	32
Output Power Variation - SAR Drift Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity - Deviation from Target Values	5.0	Rectangular	√3	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - Measurement Uncertainty	1.0	Normal	1	0.64	0.43	0.6	0.4	25
Liquid Permittivity - Deviation from Target Values	5.0	Rectangular	√3	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - Measurement Uncertainty	0.5	Normal	1	0.60	0.49	0.3	0.2	25
Combined Standard Uncertainty						± 11.2 %	± 10.4 %	
Expanded Uncertainty (K=2)						**± 22.4 %**	**± 20.8 %**	

Uncertainty budget for frequency range 300 MHz to 3 GHz

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.707	0.707	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
System Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions - Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom Shell	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	1.5 / 0.7	Normal	1	1	1	1.5	0.7	32
Device Holder Uncertainty	4.2 / 1.8	Normal	1	1	1	4.2	1.8	32
Output Power Variation - SAR Drift Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity - Deviation from Target Values	5.0	Rectangular	√3	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - Measurement Uncertainty	1.0	Normal	1	0.64	0.43	0.6	0.4	25
Liquid Permittivity - Deviation from Target Values	5.0	Rectangular	√3	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - Measurement Uncertainty	0.5	Normal	1	0.60	0.49	0.3	0.2	25
Combined Standard Uncertainty						**± 12.3 %**	**± 11.5 %**	
Expanded Uncertainty (K=2)						**± 24.6 %**	**± 23.0 %**	

Uncertainty budget for frequency range 3 GHz to 6 GHz

4. <u>Information on the Testing Laboratories</u>

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:

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

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