

Variant FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : WCDMA/CDMA/LTE Multi-Mode Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : ZTE A2017U
FCC ID : SRQ-ZTEA2017U
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

This is a variant report which is only valid together with the original test report. The product was received on Jun. 14, 2016 and testing was completed on Aug. 08, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.



Prepared by: James Huang / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China

TABLE OF CONTENTS

1	GENERAL DESCRIPTION	5
1.1	Applicant.....	5
1.2	Manufacturer	5
1.3	Product Feature of Equipment Under Test	5
1.4	Product Specification of Equipment Under Test	6
1.5	Modification of EUT	7
1.6	Testing Location	8
1.7	Applicable Standards	8
2	TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1	Test Mode.....	9
2.2	Connection Diagram of Test System	10
2.3	Support Unit used in test configuration	11
3	CONDUCTED TEST RESULT	12
3.1	Measuring Instruments.....	12
3.2	Test Setup	12
3.3	Test Result of Conducted Test.....	12
3.4	Conducted Output Power	13
4	RADIATED TEST ITEMS	14
4.1	Measuring Instruments.....	14
4.2	Test Setup	14
4.3	Test Result of Radiated Test.....	14
4.4	Field Strength of Spurious Radiation Measurement	15
5	LIST OF MEASURING EQUIPMENT	16
6	UNCERTAINTY OF EVALUATION	17
APPENDIX A. TEST RESULTS OF CONDUCTED TEST		
APPENDIX B. TEST RESULTS OF RADIATED TEST		
APPENDIX C. TEST SETUP PHOTOGRAPHS		
APPENDIX D. PRODUCT EQUALITY DECLARATION		



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG631604-01A	Rev. 01	This is a variant report for ZTE A2017U. The product equality declaration could be referred to Appendix D. Based on the similarity between two models, only the conducted power and worst case of Spurious Emission from original test report (Sporton Report Number FG631604A) were verified for the differences.	Sep. 01, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Field Strength of Spurious Radiation	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	Under limit 17.79 dB at 3468.000 MHz



1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	WCDMA/CDMA/LTE Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	ZTE A2017U
FCC ID	SRQ-ZTEA2017U
EUT supports Radios application	CDMA/EV-DO/ GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+(16QAM uplink is not supported)/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/Bluetooth v4.2 LE
IMEI Code	Conducted: 990006780015052 Radiation: N/A
HW Version	wwdB
SW Version	A2017UV1.0.0B07
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM/GPRS/EDGE: 850: 824.2 MHz ~ 848.8 MHz 1900: 1850.2 MHz ~ 1909.8MHz WCDMA: Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz CDMA2000: BC0: 824.70 MHz ~ 848.31 MHz BC1: 1851.25 MHz ~ 1908.75 MHz
Rx Frequency	GSM/GPRS/EDGE: 850: 869.2 MHz ~ 893.8 MHz 1900: 1930.2 MHz ~ 1989.8 MHz WCDMA: Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz CDMA2000: BC0: 869.70 MHz ~ 893.31 MHz BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Top Antenna	GSM/GPRS/EDGE: 850: 31.89 dBm 1900: 29.33 dBm WCDMA: Band V: 23.41 dBm Band II: 20.01 dBm Band IV: 19.72 dBm CDMA2000: BC0: 23.42 dBm BC1: 21.42 dBm

Standards-related Product Specification	
Maximum Output Power to Bottom Antenna	GSM/GPRS/EDGE: 850: 31.89 dBm 1900: 30.72 dBm WCDMA: Band V: 24.65 dBm Band II: 23.41 dBm Band IV: 22.70 dBm CDMA2000: BC0: 23.42 dBm BC1: 24.37 dBm
Antenna Type	PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA/DC-HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM uplink is not supported DC-HSDPA: 64QAM CDMA2000 1xRTT: QPSK CDMA2000 1xEV-DO: QPSK/8PSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.	
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	Sporton Site No.	
	TH01-KS	

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	FCC Registration No.
	03CH07-HY	TW1022

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 10th harmonic for GSM850 and WCDMA Band V and CDMA BC0.
2. 30 MHz to 10th harmonic for WCDMA Band IV.
3. 30 MHz to 10th harmonic for GSM1900 and WCDMA Band II and CDMA BC1.

All modes and data rates and positions were investigated.

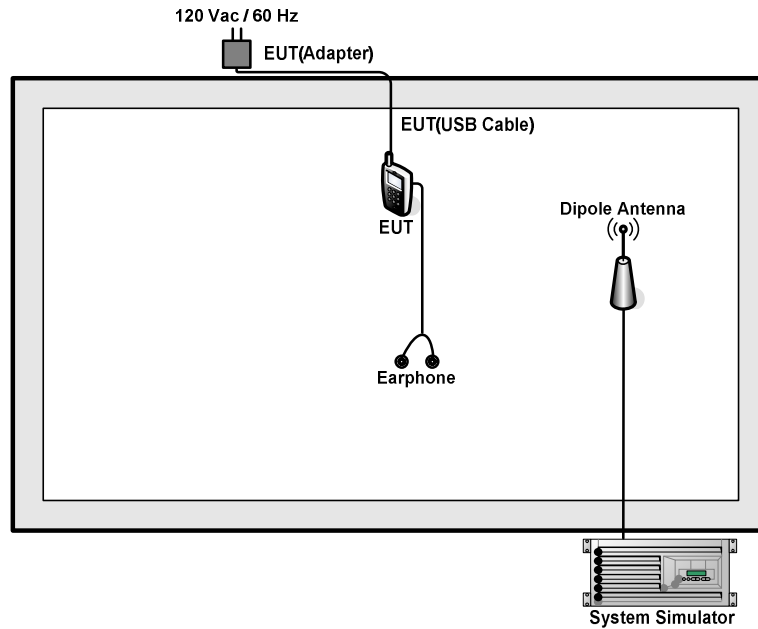
Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	■ GSM Link ■ EDGE class 8 Link	■ GSM Link ■ EDGE class 8 Link
GSM 1900	■ GSM Link ■ EDGE class 8 Link	■ GSM Link ■ EDGE class 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band IV	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
CDMA BC0	■ 1xRTT Link	■ 1xRTT Link
CDMA BC1	■ 1xRTT Link	■ 1xRTT Link

2.2 Connection Diagram of Test System

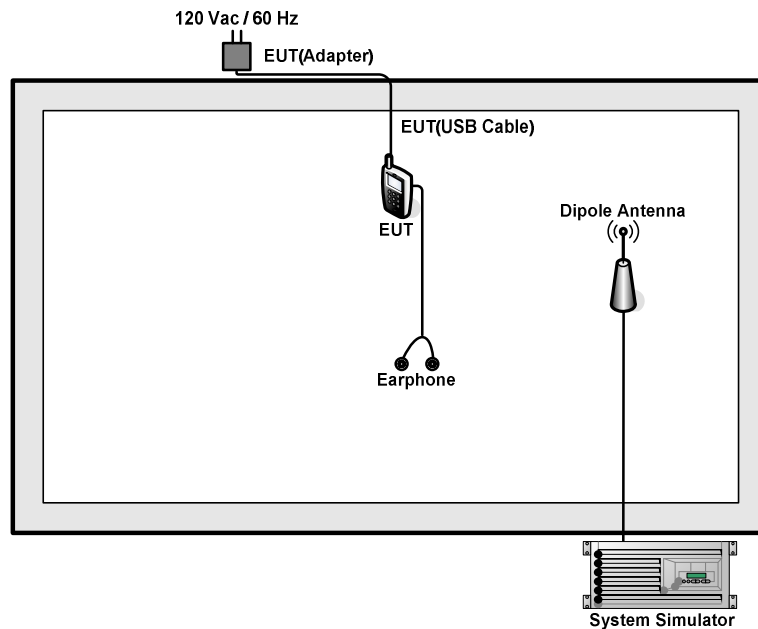
Top Antenna

22H/24E/27L



Bottom Antenna

22H/24E/27L





2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0 m	N/A

3 Conducted Test Result

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

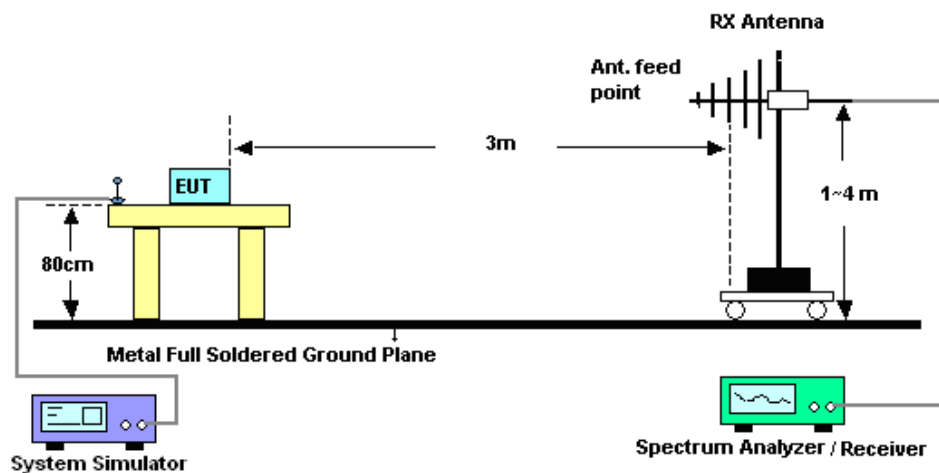
4 Radiated Test Items

4.1 Measuring Instruments

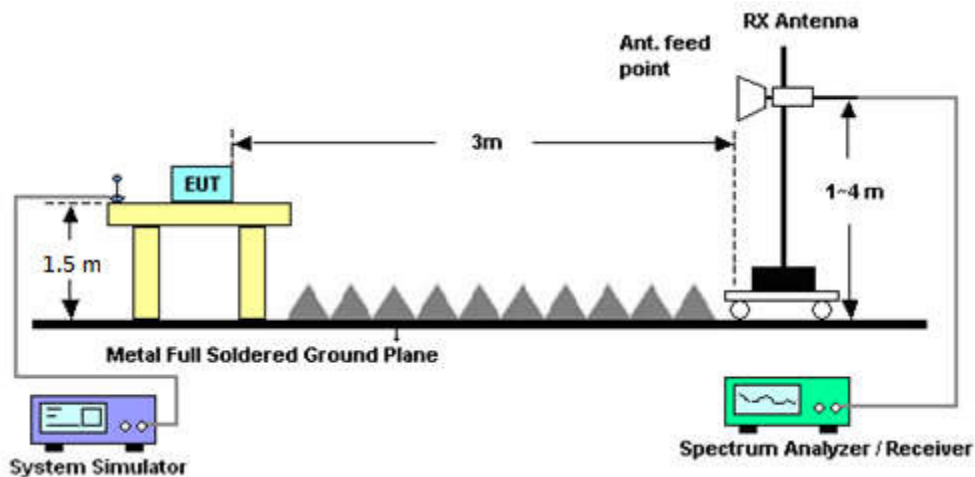
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Field Strength of Spurious Radiation Measurement

4.4.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12. $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D	35419	30MHz to 1GHz	Jan. 13, 2016	Aug. 02, 2016~ Aug. 08, 2016	Jan. 12, 2017	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 21, 2015	Aug. 02, 2016~ Aug. 08, 2016	Aug. 20, 2016	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 02, 2015	Aug. 02, 2016~ Aug. 08, 2016	Nov. 01, 2017	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Aug. 02, 2016~ Aug. 08, 2016	Nov. 01, 2016	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A(MX E)	MY54130085	20Hz ~ 8.4GHz	Nov. 04, 2015	Aug. 02, 2016~ Aug. 08, 2016	Nov. 03, 2016	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Feb. 27, 2016	Aug. 02, 2016~ Aug. 08, 2016	Feb. 26, 2017	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 18, 2016	Aug. 02, 2016~ Aug. 08, 2016	Mar. 17, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	1590075	1GHz ~ 18GHz	Apr. 15, 2016	Aug. 02, 2016~ Aug. 08, 2016	Apr. 14, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-18004 000-33-8P	1840917	18GHz ~ 40GHz	Jun. 02, 2016	Aug. 02, 2016~ Aug. 08, 2016	Jun. 01, 2017	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF780208368	Control Ant Mast	NCR	Aug. 02, 2016~ Aug. 08, 2016	NCR	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	NCR	Aug. 02, 2016~ Aug. 08, 2016	NCR	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	NCR	Aug. 02, 2016~ Aug. 08, 2016	NCR	Radiation (03CH07-HY)

NCR: No Calibration Required

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
---	--------

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.4 dB
---	--------

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.0 dB
---	--------

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Top Antenna

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	31.82	31.82	31.89	29.10	29.18	29.33
GPRS class 8	31.80	31.85	31.87	29.10	29.18	29.33
GPRS class 10	29.76	29.84	29.83	26.67	26.55	26.72
GPRS class 11	27.33	27.35	27.34	24.35	24.61	24.94
GPRS class 12	26.22	26.15	26.17	22.84	22.83	22.79
EGPRS class 8	25.31	25.39	25.37	25.12	25.09	25.15
EGPRS class 10	24.26	24.23	24.24	25.03	25.01	25.04
EGPRS class 11	23.52	23.60	23.61	24.04	23.84	24.01
EGPRS class 12	23.40	23.42	23.48	23.00	22.63	22.72



Conducted Power (*Unit: dBm)									
Band	WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Channel	4132	4182	4233	9262	9400	9538	1312	1413	1513
Frequency	826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
AMR 12.2K	23.40	23.27	23.33	19.85	19.91	20.00	19.70	19.65	19.56
RMC 12.2K	23.41	23.28	23.36	19.88	19.93	20.01	19.72	19.68	19.59
HSDPA Subtest-1	22.73	22.60	22.67	19.12	19.37	19.42	19.24	19.24	19.08
HSDPA Subtest-2	22.68	22.56	22.65	19.13	19.36	19.44	19.24	19.25	19.10
HSDPA Subtest-3	22.21	22.12	22.18	18.68	18.89	18.91	18.77	18.77	18.63
HSDPA Subtest-4	22.22	22.13	22.18	18.69	18.89	18.92	18.75	18.76	18.59
DC-HSDPA Subtest-1	22.70	22.56	22.63	19.20	19.10	19.20	19.30	19.30	19.30
DC-HSDPA Subtest-2	22.63	22.51	22.60	19.18	19.10	19.17	19.28	19.21	19.27
DC-HSDPA Subtest-3	22.20	22.15	22.10	18.62	18.71	18.60	18.82	18.82	18.74
DC-HSDPA Subtest-4	22.11	22.14	22.16	18.70	18.75	18.63	18.86	18.85	18.81
HSUPA Subtest-1	22.73	22.58	22.69	19.19	19.80	19.86	19.62	19.63	19.02
HSUPA Subtest-2	20.74	20.60	20.67	17.22	17.84	17.86	17.76	17.71	17.11
HSUPA Subtest-3	21.75	21.58	21.65	18.18	18.84	18.83	18.65	18.71	18.07
HSUPA Subtest-4	20.72	20.63	20.67	17.18	17.90	17.86	17.73	17.75	17.08
HSUPA Subtest-5	22.70	22.60	22.70	19.20	19.40	19.40	19.30	19.30	19.10

Conducted Power (*Unit: dBm)						
Band	CDMA 2000 BC0			CDMA 2000 BC1		
Channel	1013	384	777	25	600	1175
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75
1xRTT RC1 SO55	23.15	23.01	23.22	21.23	21.32	21.42
1xRTT RC3 SO55	23.26	23.11	23.40	21.24	21.34	21.34
1xRTT RC3 SO32 (+ F-SCH)	23.35	23.19	23.42	21.09	21.29	21.31
1xRTT RC3 SO32 (+SCH)	23.27	23.13	23.25	21.09	21.31	21.33
1xEVDO RTAP 153.6Kbps	23.21	23.13	23.37	21.19	21.31	21.42
1xEVDO RETAP 4096Bits	23.08	23.03	23.22	21.22	21.29	21.38



Bottom Antenna

Conducted Power (*Unit: dBm)						
Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	31.82	31.82	31.89	30.21	30.70	30.72
GPRS class 8	31.8	31.85	31.87	30.19	30.68	30.70
GPRS class 10	29.76	29.84	29.83	28.46	28.32	28.40
GPRS class 11	27.33	27.35	27.34	26.88	26.94	26.97
GPRS class 12	26.22	26.15	26.17	25.92	25.54	25.58
EGPRS class 8	25.31	25.39	25.37	25.19	25.16	25.13
EGPRS class 10	24.26	24.23	24.24	25.06	25.02	25.03
EGPRS class 11	23.52	23.6	23.61	24.01	24.06	24.08
EGPRS class 12	23.4	23.42	23.48	23.91	23.83	23.94

Conducted Power (*Unit: dBm)									
Band	WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Channel	4132	4182	4233	9262	9400	9538	1312	1413	1513
Frequency	826.4	836.4	846.6	1852.4	1880	1907.6	1712.4	1732.6	1752.6
AMR 12.2K	24.61	24.50	24.51	23.20	23.40	23.36	22.65	22.68	22.66
RMC 12.2K	24.65	24.51	24.52	23.20	23.41	23.38	22.66	22.70	22.67
HSDPA Subtest-1	23.56	23.38	23.46	22.12	22.37	22.31	21.87	22.01	21.70
HSDPA Subtest-2	23.59	23.45	23.47	22.14	22.32	22.38	21.93	22.04	21.70
HSDPA Subtest-3	23.12	22.95	23.00	21.66	21.87	21.90	21.42	21.51	21.28
HSDPA Subtest-4	23.11	22.93	22.98	21.66	21.85	21.89	21.41	21.56	21.26
DC-HSDPA Subtest-1	23.48	23.39	24.51	22.18	22.36	22.32	21.85	22.01	21.71
DC-HSDPA Subtest-2	23.45	23.42	23.41	22.15	22.31	22.35	21.92	22.05	21.68
DC-HSDPA Subtest-3	23.10	23.92	23.01	21.68	21.80	21.89	21.41	21.53	21.28
DC-HSDPA Subtest-4	23.15	23.91	23.05	21.58	21.88	21.85	21.40	21.51	21.21
HSUPA Subtest-1	23.57	23.45	23.45	22.17	22.81	22.83	22.39	22.47	21.68
HSUPA Subtest-2	21.55	21.45	21.45	20.15	20.79	20.81	20.39	20.47	19.69
HSUPA Subtest-3	22.59	22.40	22.40	21.10	21.79	21.81	21.37	21.43	20.71
HSUPA Subtest-4	21.61	21.48	21.48	20.16	20.82	20.82	20.38	20.52	19.72
HSUPA Subtest-5	23.60	23.50	23.50	22.20	22.40	22.40	21.90	22.00	21.70



Conducted Power (*Unit: dBm)						
Band	CDMA 2000 BC0			CDMA 2000 BC1		
Channel	1013	384	777	25	600	1175
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75
1xRTT RC1 SO55	23.15	23.01	23.22	23.90	24.35	24.09
1xRTT RC3 SO55	23.26	23.11	23.40	23.77	24.28	24.06
1xRTT RC3 SO32 (+ F-SCH)	23.35	23.19	23.42	23.73	24.37	24.01
1xRTT RC3 SO32 (+SCH)	23.27	23.13	23.25	23.73	24.27	24.05
1xEVDO RTAP 153.6Kbps	23.21	23.13	23.37	23.88	24.30	24.03
1xEVDO RETAP 4096Bits	23.08	23.03	23.22	23.65	24.09	23.98



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Top Antenna

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-57.84	-13	-44.84	-45.99	-59.52	0.99	4.82	H
	2512	-42.00	-13	-29.00	-35.4	-43.97	1.29	5.41	H
	3345	-64.53	-13	-51.53	-60.08	-68.14	1.56	7.32	H
	4184	-61.08	-13	-48.08	-57.17	-65.7	1.87	8.64	H
	1672	-57.86	-13	-44.86	-46.46	-59.54	0.99	4.82	V
	2512	-40.74	-13	-27.74	-34.63	-42.71	1.29	5.41	V
	3345	-64.14	-13	-51.14	-59.93	-67.75	1.56	7.32	V
	4184	-61.44	-13	-48.44	-57.64	-66.06	1.87	8.64	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM850 (EDGE class 8)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-67.16	-13	-54.16	-55.3	-68.84	0.99	4.82	H
	2512	-57.53	-13	-44.53	-50.93	-59.5	1.29	5.41	H
	3345	-64.39	-13	-51.39	-59.93	-68	1.56	7.32	H
	1672	-68.13	-13	-55.13	-56.78	-69.81	0.99	4.82	V
	2512	-60.15	-13	-47.15	-54.02	-62.12	1.29	5.41	V
	3345	-64.30	-13	-51.30	-60.08	-67.91	1.56	7.32	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-56.55	-13	-43.55	-67.80	-68.28	0.87	12.60	H
	5640	-53.21	-13	-40.21	-69.09	-65.24	1.07	13.10	H
	7520	-50.80	-13	-37.80	-69.12	-60.41	1.69	11.30	H
	3760	-55.44	-13	-42.44	-67.91	-67.17	0.87	12.6	V
	5640	-52.31	-13	-39.31	-68.63	-64.34	1.07	13.1	V
	7520	-51.09	-13	-38.09	-69.31	-60.70	1.69	11.3	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



GSM1900 (EDGE class 8)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-55.52	-13	-42.52	-66.77	-67.25	0.87	12.60	H
	5640	-52.32	-13	-39.32	-68.20	-64.35	1.07	13.10	H
	7520	-50.47	-13	-37.47	-68.79	-60.08	1.69	11.30	H
	3760	-54.54	-13	-41.54	-67.01	-66.27	0.87	12.6	V
	5640	-52.12	-13	-39.12	-68.44	-64.15	1.07	13.1	V
	7520	-50.45	-13	-37.45	-68.67	-60.06	1.69	11.3	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band V(RMC 12.2Kbps)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-69.26	-13	-56.26	-57.42	-70.94	0.99	4.82	H
	2504	-65.04	-13	-52.04	-58.44	-67	1.29	5.40	H
	3345	-64.64	-13	-51.64	-60.18	-68.25	1.56	7.32	H
	1672	-69.05	-13	-56.05	-57.67	-70.73	0.99	4.82	V
	2504	-64.86	-13	-51.86	-58.68	-66.82	1.29	5.40	V
	3344	-64.24	-13	-51.24	-60	-67.85	1.56	7.31	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band II(RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-55.98	-13	-42.98	-67.23	-67.71	0.87	12.60	H
	5640	-53.08	-13	-40.08	-68.96	-65.11	1.07	13.10	H
	7520	-50.75	-13	-37.75	-69.07	-60.36	1.69	11.30	H
	3760	-54.27	-13	-41.27	-66.74	-66.00	0.87	12.6	V
	5640	-52.38	-13	-39.38	-68.7	-64.41	1.07	13.1	V
	7520	-50.83	-13	-37.83	-69.05	-60.44	1.69	11.3	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



WCDMA Band IV(RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3468	-64.44	-13	-51.44	-60.46	-70.7	1.59	7.86	H
	5196	-58.71	-13	-45.71	-59.66	-65.96	2.45	9.70	H
	6390	-62.39	-13	-49.39	-67.04	-69.74	2.79	10.13	H
	3468	-64.32	-13	-51.32	-60.22	-70.58	1.59	7.86	V
	5196	-60.72	-13	-47.72	-61.52	-67.97	2.45	9.70	V
	6930	-62.21	-13	-49.21	-66.84	-70.31	2.61	10.72	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

CDMA BC0(1XRTT)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1673.04	-61.41	-13	-48.41	-63.02	-68.10	0.56	9.40	H
	2509.56	-61.20	-13	-48.20	-65.10	-68.90	0.75	10.60	H
	3346.08	-57.29	-13	-44.29	-66.59	-66.89	0.85	12.60	H
	1673.04	-61.15	-13	-48.15	-63.60	-67.84	0.56	9.40	V
	2509.56	-60.75	-13	-47.75	-65.13	-68.45	0.75	10.60	V
	3346.08	-59.57	-13	-46.57	-66.43	-69.17	0.85	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

CDMA BC1(1XRTT)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-55.93	-13	-42.93	-67.18	-67.66	0.87	12.60	H
	5640	-52.61	-13	-39.61	-68.49	-64.64	1.07	13.10	H
	7520	-49.79	-13	-36.79	-68.11	-59.40	1.69	11.30	H
	3760	-54.58	-13	-41.58	-67.05	-66.31	0.87	12.6	V
	5640	-52.13	-13	-39.13	-68.45	-64.16	1.07	13.1	V
	7520	-50.23	-13	-37.23	-68.45	-59.84	1.69	11.3	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



Bottom Antenna

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-48.23	-13	-35.23	-36.11	-49.91	0.99	4.82	H
	2512	-36.17	-13	-23.17	-29.23	-38.14	1.29	5.41	H
	4184	-53.49	-13	-40.49	-49.25	-58.11	1.87	8.64	H
	1672	-49.51	-13	-36.51	-37.76	-51.19	0.99	4.82	V
	2512	-33.58	-13	-20.58	-27.17	-35.55	1.29	5.41	V
	4184	-62.24	-13	-49.24	-58.11	-66.86	1.87	8.64	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM850 (EDGE class 8)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-60.96	-13	-47.96	-48.8	-62.64	0.99	4.82	H
	2512	-52.28	-13	-39.28	-45.33	-54.25	1.29	5.41	H
	3344	-64.86	-13	-51.86	-60.08	-68.47	1.56	7.31	H
	1672	-55.67	-13	-42.67	-43.98	-57.35	0.99	4.82	V
	2512	-50.48	-13	-37.48	-43.99	-52.45	1.29	5.41	V
	3344	-64.87	-13	-51.87	-60.32	-68.48	1.56	7.31	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-46.83	-13	-33.83	-42.59	-53.46	1.69	8.31	H
	5640	-43.28	-13	-30.28	-46.39	-50.33	2.71	9.76	H
	7520	-52.92	-13	-39.92	-57.11	-62.31	2.42	11.81	H
	9400	-46.82	-13	-33.82	-53.65	-56.79	2.57	12.54	H
	3760	-50.00	-13	-37.00	-42.78	-56.63	1.69	8.31	V
	5640	-47.03	-13	-34.03	-50.12	-54.08	2.71	9.76	V
	7520	-59.18	-13	-46.18	-63.61	-68.57	2.42	11.81	V
	9400	-45.41	-13	-32.41	-52.64	-55.38	2.57	12.54	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



GSM1900 (EDGE class 8)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-51.21	-13	-38.21	-46.98	-57.84	1.69	8.31	H
	5640	-49.22	-13	-36.22	-52.33	-56.27	2.71	9.76	H
	7520	-61.40	-13	-48.40	-65.6	-70.79	2.42	11.81	H
	9400	-56.34	-13	-43.34	-63.17	-66.31	2.57	12.54	H
	3760	-55.41	-13	-42.41	-51.2	-62.04	1.69	8.31	V
	5640	-49.13	-13	-36.13	-52.22	-56.18	2.71	9.76	V
	7520	-63.34	-13	-50.34	-67.85	-72.73	2.42	11.81	V
	9400	-53.30	-13	-40.30	-60.53	-63.27	2.57	12.54	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band V(RMC 12.2Kbps)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-66.43	-13	-53.43	-54.47	-68.11	0.99	4.82	H
	2504	-64.26	-13	-51.26	-57.52	-66.22	1.29	5.40	H
	3345	-64.61	-13	-51.61	-60.05	-68.22	1.56	7.32	H
	1672	-65.59	-13	-52.59	-54	-67.27	0.99	4.82	V
	2504	-62.36	-13	-49.36	-55.96	-64.32	1.29	5.40	V
	3345	-64.44	-13	-51.44	-60.06	-68.05	1.56	7.32	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band II(RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-61.92	-13	-48.92	-57.69	-68.55	1.69	8.31	H
	5640	-58.97	-13	-45.97	-60.07	-66.02	2.71	9.76	H
	7520	-64.72	-13	-51.72	-68.98	-74.11	2.42	11.81	H
	3760	-61.71	-13	-48.71	-57.5	-68.34	1.69	8.31	V
	5640	-61.17	-13	-48.17	-64.26	-68.22	2.71	9.76	V
	7520	-63.27	-13	-50.27	-67.71	-72.66	2.42	11.81	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



WCDMA Band IV(RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3468	-32.78	-13	-19.78	-28.51	-39.04	1.59	7.86	H
	5202	-45.52	-13	-32.52	-46.16	-52.77	2.45	9.70	H
	6936	-43.47	-13	-30.47	-47.73	-51.58	2.61	10.72	H
	8670	-60.56	-13	-47.56	-66.66	-70.72	2.41	12.57	H
	3468	-30.79	-13	-17.79	-26.46	-37.05	1.59	7.86	V
	5202	-38.64	-13	-25.64	-39.19	-45.89	2.45	9.70	V
	6936	-41.66	-13	-28.66	-46.02	-49.77	2.61	10.72	V
	8670	-53.48	-13	-40.48	-59.89	-63.64	2.41	12.57	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

CDMA BC0(1XRTT)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672	-69.01	-13	-56.01	-57.06	-70.69	0.99	4.82	H
	2509	-64.25	-13	-51.25	-57.54	-66.21	1.29	5.41	H
	3345	-64.61	-13	-51.61	-60.12	-68.22	1.56	7.32	H
	1672	-67.33	-13	-54.33	-55.81	-69.01	0.99	4.82	V
	2509	-63.96	-13	-50.96	-57.68	-65.92	1.29	5.41	V
	3345	-64.61	-13	-51.61	-60.27	-68.22	1.56	7.32	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

CDMA BC1(1XRTT)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-62.10	-13	-49.10	-57.87	-68.73	1.69	8.31	H
	5640	-61.81	-13	-48.81	-64.92	-68.86	2.71	9.76	H
	7520	-65.12	-13	-52.12	-69.37	-74.51	2.42	11.81	H
	3760	-61.96	-13	-48.96	-57.75	-68.59	1.69	8.31	V
	5640	-61.75	-13	-48.75	-64.84	-68.8	2.71	9.76	V
	7520	-63.26	-13	-50.26	-67.7	-72.65	2.42	11.81	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



Appendix D. Product Equality Declaration

ZTE CORPORATION

Product Change Description

As the applicant of the below model, [ZTE Corporation] declares that the product,

[ZTE A2017U]

[ZTE Corporation]

is the variant of the initial certified product,

[ZTE A2017U]

[ZTE Corporation]

[Project Number:16ZTE027]

SOFTWARE MODIFICATIONS:

Protocol Stack changes: NO

MMS/STK changes: NO

JAVA changes: NO

Other changes detailed: NO

HARDWARE MODIFICATION:

Band changes: NO

Power Amplifier changes: NO

Antenna changes: GPS/WiFi/Bluetooth 3in1 antenna is now updated.

Aiming at improving GPS performance, we updated this antenna and this result to 1dB efficiency better than previous one. Meanwhile, WiFi/Bluetooth efficiency was slightly down.

Before



After

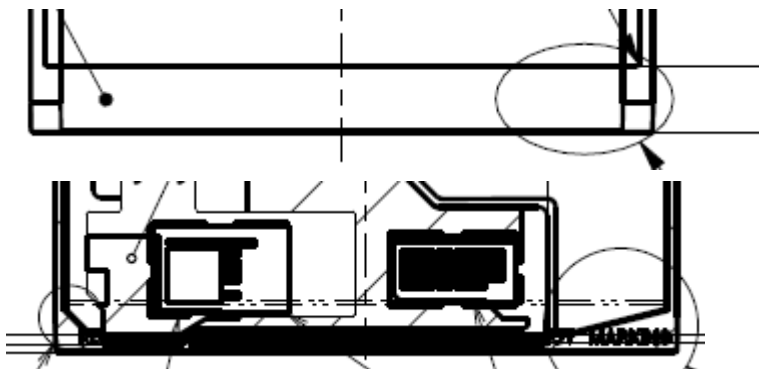


PCB Layout changes: NO

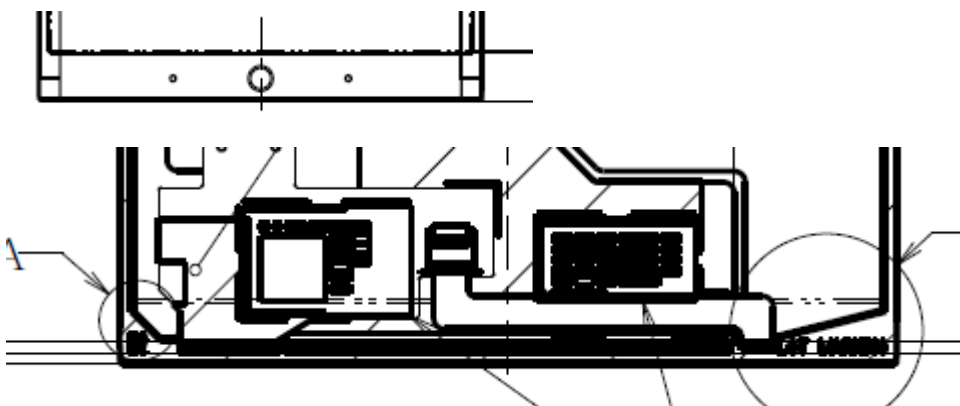
Components on PCB changes: NO

LCD changes: Yes, Added touch key and touch key FPC

Before



After



Speaker changes: NO

Camera changes: NO

Vibrator changes: NO

Bluetooth changes: NO

FM changes: NO

Other changes: NO

MECHANICAL MODIFICATIONS:

Use new metal front/back cover or keypad: NO

Mechanical shell changes: NO

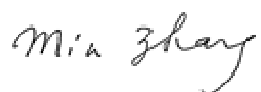
Other changes detailed: NO

ACCESSORY MODIFICATIONS:

Battery changes:NO

AC Adaptor changes:NO

Earphone changes:NO



APPROVED BY: Min zhang

Project Manager: Li xiaofeng

Date:2016-6-6

Company: ZTE Corporation

Address: B109, #889, Bibo Rd, Zhangjiang Hi-Tech Park, Shanghai,China

Tel:+86-21-68896840

Fax: +86-21-68896835