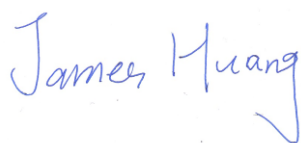


Variant FCC RF Test Report

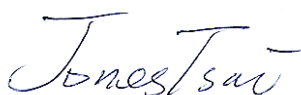
APPLICANT : ZTE CORPORATION
EQUIPMENT : WCDMA/GSM(GPRS) Dual-mode digital mobile phone
BRAND NAME : ZTE
MODEL NAME : Z223
FCC ID : Q78-Z222
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

This is a variant report which is only valid together with the original test report. The product was received on Oct. 16, 2015 and testing was completed on Nov. 12, 2015. 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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG202301-06	Rev. 01	This is a variant report for Z223. The product equality declaration could be referred to Appendix A. All the test cases were performed on the original test report which can be referred to Sporton Report Number FG202301. Based on the original test report, only the conducted power, ERP/EIRP and radiated spurious emission were verified for the differences.	Nov. 25, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	N/A	PASS	-
3.2	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	PASS	-
3.2	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.3	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 30.34 dB at 2510.000 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/GSM(GPRS) Dual-mode digital mobile phone
Brand Name	ZTE
Model Name	Z223
FCC ID	Q78-Z222
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSDPA/ Bluetooth v2.0 + EDR
IMEI Code	Conducted: 868899020000374 Radiation: 868899020000382 ERP/EIRP: 868899020000374
HW Version	u38A
SW Version	V1.0.3
EUT Stage	Identical Prototype

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 subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 32.17 dBm GSM1900 : 29.35 dBm WCDMA Band V : 23.07 dBm WCDMA Band II : 22.72 dBm
Antenna Type	PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink)

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)
Part 22	GSM850 GSM	GMSK	0.9354
Part 22	GSM850 EDGE class 8	8PSK	0.2698
Part 22	WCDMA Band V RMC 12.2Kbps	QPSK	0.1189
Part 24	GSM1900 GSM	GMSK	1.1169
Part 24	GSM1900 EDGE class 8	8PSK	0.5093
Part 24	WCDMA Band II RMC 12.2Kbps	QPSK	0.2871

1.7 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.		FCC Registration No.
	TH01-KS	03CH03-KS	306251

Note: The test site complies with ANSI C63.4 2009 requirement.

1.8 Applicable Standards

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

- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ 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.
2. 30 MHz to 10th harmonic for GSM1900 and WCDMA Band II.

All modes and data rates and positions were investigated.

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

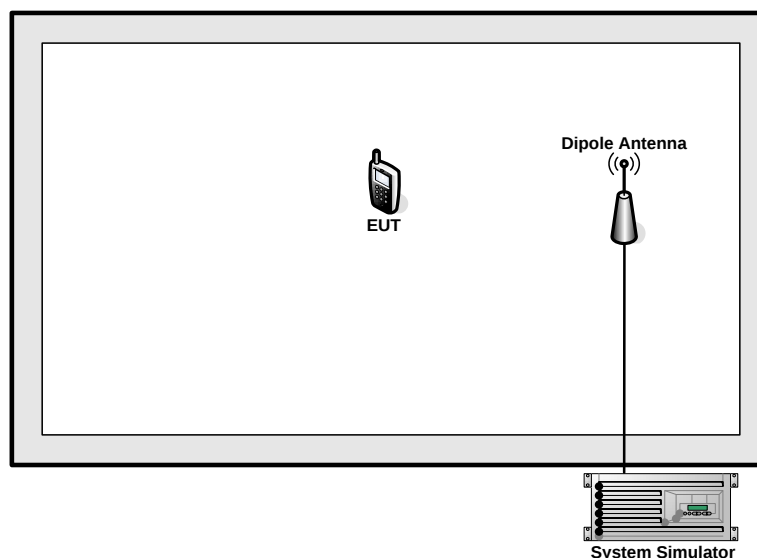
Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	■ GSM Link	■ GSM Link
	■ EDGE class 8 Link	■ EDGE class 8 Link
GSM 1900	■ GSM Link	■ GSM Link
	■ EDGE class 8 Link	■ EDGE class 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

Conducted Power Measurement Results:

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	32.15	32.17	32.08	29.09	29.35	29.11
GPRS 8	32.14	32.15	32.07	29.08	29.33	29.11
GPRS 10	30.01	30.11	30.03	27.09	27.31	27.14
EGPRS 8	26.30	26.32	26.34	25.14	25.41	25.19
EGPRS 10	24.18	24.20	24.14	23.13	23.39	23.18

Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency	826.4	836.4	846.6	1852.4	1880.0	1907.6
AMR	22.91	22.88	23.05	22.65	22.69	22.51
RMC 12.2K	22.92	22.89	23.07	22.69	22.72	22.55
HSDPA Subtest-1	22.82	22.78	23.02	22.65	22.71	22.51
HSDPA Subtest-2	22.81	22.71	23.00	22.62	22.69	22.48
HSDPA Subtest-3	22.81	22.78	22.98	22.59	22.68	22.42
HSDPA Subtest-4	22.84	22.81	22.99	22.61	22.71	22.40

2.2 Connection Diagram of Test System



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

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

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.

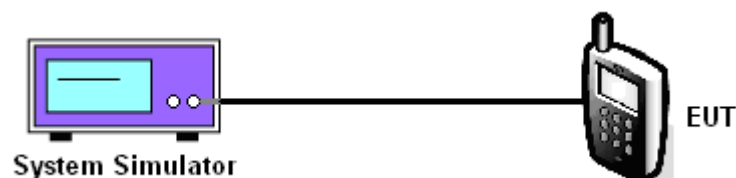
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 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.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.15	32.17	32.08	26.30	26.32	26.34	22.92	22.89	23.07

PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	29.09	29.35	29.11	25.14	25.41	25.19	22.69	22.72	22.55

Note: maximum burst average power for GSM, and maximum average power for WCDMA.

3.2 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.2.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-D-2010, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-D-2010 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$. Take the record of the output power at substitution antenna.

	GSM/GPRS/EDGE	WCDMA/HSPA
SPAN	500kHz	10MHz
RBW	10kHz	100kHz
VBW	30kHz	300kHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

3.2.4 Test Result of ERP

GSM850 (GSM) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	29.18	0.8279	15.12	0.0325
Middle	836.4	29.71	0.9354	15.63	0.0366
Highest	848.8	29.70	0.9333	15.40	0.0347
Limit	ERP < 7W	Result		PASS	

GSM850 (EDGE class 8) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	824.2	23.53	0.2254	9.56	0.0090
Middle	836.4	24.27	0.2673	10.16	0.0104
Highest	848.8	24.31	0.2698	9.83	0.0096
Limit	ERP < 7W	Result		PASS	

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	826.4	20.47	0.1114	6.23	0.0042
Middle	836.4	20.54	0.1132	5.86	0.0039
Highest	846.6	20.75	0.1189	6.17	0.0041
Limit	ERP < 7W	Result		PASS	

3.2.5 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	30.48	1.1169	28.23	0.6653
Middle	1880.0	30.29	1.0691	28.83	0.7638
Highest	1909.8	30.01	1.0023	29.23	0.8375
Limit	EIRP < 2W	Result		PASS	

GSM1900 (EDGE class 8) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1850.2	27.07	0.5093	24.94	0.3119
Middle	1880.0	26.69	0.4667	25.35	0.3428
Highest	1909.8	26.48	0.4446	25.85	0.3846
Limit	EIRP < 2W	Result		PASS	

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP					
Channel	Frequency (MHz)	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	1852.4	24.58	0.2871	22.43	0.1750
Middle	1880.0	23.83	0.2415	22.39	0.1734
Highest	1907.6	23.85	0.2427	23.30	0.2138
Limit	EIRP < 2W	Result		PASS	

3.3 Field Strength of Spurious Radiation Measurement

3.3.1 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.

3.3.2 Measuring Instruments

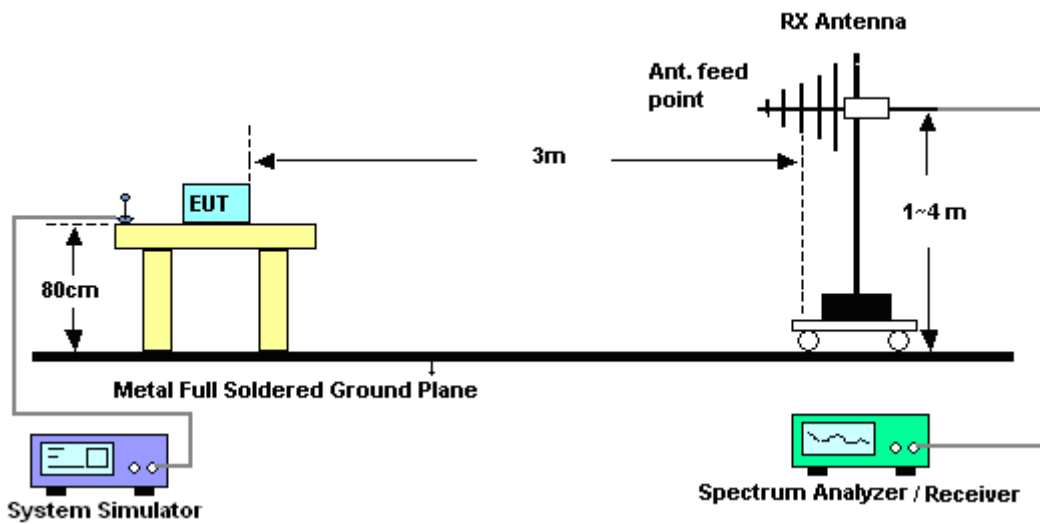
The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

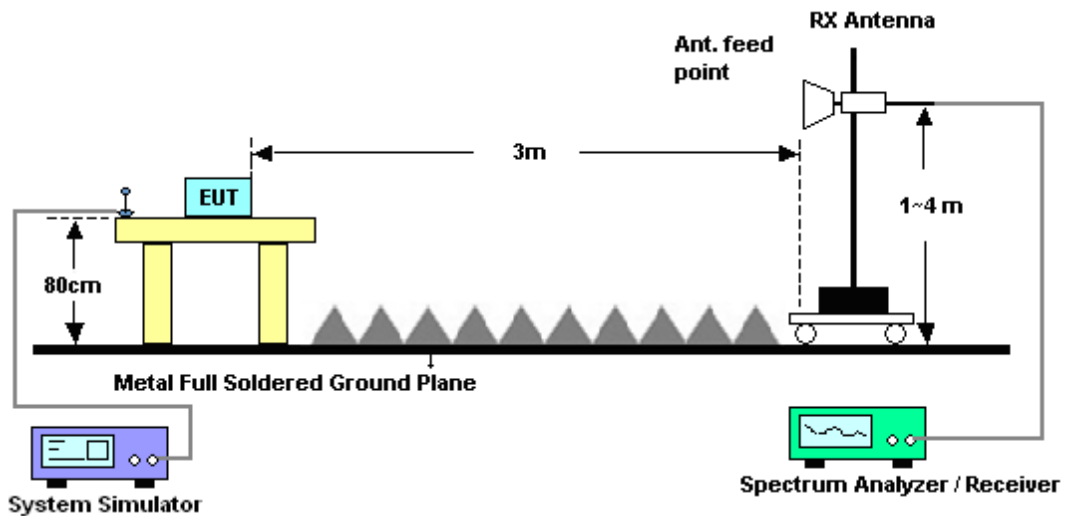
1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 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)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.3.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.3.5 Test Result of Field Strength of Spurious Radiated

Band :	GSM850	Temperature :	22~23°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-54.04	-13	-41.04	-54.65	-56.06	1.73	5.90	H	Pass
2510	-47.57	-13	-34.57	-52.06	-50.11	2.11	6.80	H	Pass
3345	-57.99	-13	-44.99	-63.07	-60.77	2.47	7.40	H	Pass

Band :	GSM850	Temperature :	22~23°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-51.95	-13	-38.95	-53.85	-53.97	1.73	5.90	V	Pass
2510	-43.34	-13	-30.34	-49.28	-45.88	2.11	6.80	V	Pass
3345	-56.17	-13	-43.17	-61.46	-58.95	2.47	7.40	V	Pass



Band :	GSM850					Temperature :	22~23℃		
Test Mode :	EDGE class 8 Link (8PSK)					Relative Humidity :	41~42%		
Test Engineer :	Leve Zhao					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-55.45	-13	-42.45	-55.96	-57.47	1.73	5.90	H	Pass
2509	-58.22	-13	-45.22	-62.35	-60.76	2.11	6.80	H	Pass
3345	-60.85	-13	-47.85	-65.93	-63.63	2.47	7.40	H	Pass

Band :	GSM850	Temperature :	22~23°C						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1674	-52.28	-13	-39.28	-54.14	-54.30	1.73	5.90	V	Pass
2510	-53.45	-13	-40.45	-58.87	-55.99	2.11	6.80	V	Pass
3345	-60.66	-13	-47.66	-65.95	-63.44	2.47	7.40	V	Pass



Band :	GSM1900	Temperature :	22~23°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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)	Result
3759	-46.52	-13	-33.52	-56.74	-51.52	2.60	7.60	H	Pass
5640	-53.28	-13	-40.28	-67.27	-60.28	3.10	10.10	H	Pass
7521	-50.40	-13	-37.40	-69.13	-56.56	5.77	11.93	H	Pass

Band :	GSM1900	Temperature :	22~23℃						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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)	Result
3762	-50.00	-13	-37.00	-60.78	-55.00	2.60	7.60	V	Pass
5640	-49.00	-13	-36.00	-63.46	-56.00	3.10	10.10	V	Pass
7521	-52.68	-13	-39.68	-70.6	-58.84	5.77	11.93	V	Pass



Band :	GSM1900	Temperature :	22~23℃						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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)	Result
3759	-47.65	-13	-34.65	-57.85	-52.65	2.60	7.60	H	Pass
5640	-54.27	-13	-41.27	-68.26	-61.27	3.10	10.10	H	Pass
7521	-52.22	-13	-39.22	-70.95	-58.38	5.77	11.93	H	Pass

Band :	GSM1900	Temperature :	22~23℃						
Test Mode :	EDGE class 8 Link (8PSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3759	-52.44	-13	-39.44	-62.96	-57.44	2.60	7.60	V	Pass
5640	-51.54	-13	-38.54	-66	-58.54	3.10	10.10	V	Pass
7521	-51.51	-13	-38.51	-69.43	-57.67	5.77	11.93	V	Pass



Band :	WCDMA Band V					Temperature :	22~23℃		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	41~42%		
Test Engineer :	Leve Zhao					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-60.95	-13	-47.95	-61.07	-62.97	1.73	5.90	H	Pass
2509	-58.67	-13	-45.67	-62.80	-61.21	2.11	6.80	H	Pass
3345	-59.08	-13	-46.08	-64.16	-61.86	2.47	7.40	H	Pass

Band :	WCDMA Band V					Temperature :	22~23℃		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	41~42%		
Test Engineer :	Leve Zhao					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1672	-60.49	-13	-47.49	-61.76	-62.51	1.73	5.90	V	Pass
2509	-58.89	-13	-45.89	-64.38	-61.43	2.11	6.80	V	Pass
3348	-52.84	-13	-39.84	-58.33	-55.62	2.47	7.40	V	Pass



Band :	WCDMA Band II	Temperature :	22~23℃						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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)	Result
3759	-46.89	-13	-33.89	-57.11	-51.89	2.60	7.60	H	Pass
5640	-51.99	-13	-38.99	-65.98	-58.99	3.10	10.10	H	Pass
7521	-50.54	-13	-37.54	-69.27	-56.70	5.77	11.93	H	Pass

Band :	WCDMA Band II	Temperature :	22~23℃						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	41~42%						
Test Engineer :	Leve Zhao	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3762	-47.58	-13	-34.58	-58.52	-52.58	2.60	7.60	V	Pass
5640	-51.39	-13	-38.39	-65.85	-58.39	3.10	10.10	V	Pass
7521	-52.54	-13	-39.54	-70.46	-58.70	5.77	11.93	V	Pass

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2015	Nov. 12, 2015	May 03, 2016	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Jun. 05, 2015	Oct. 20, 2015	Jun. 04, 2016	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Jun. 25, 2015	Oct. 20, 2015	Jun. 24, 2016	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Jun. 25, 2015	Oct. 20, 2015	Jun. 24, 2016	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz ~40GHz	Mar. 03, 2015	Oct. 20, 2015	Mar. 02, 2016	Radiation (03CH03-KS)
Amplifier	Burgeon	BPA-530	102212	0.01MHz~3000MHz	Aug. 10, 2015	Oct. 20, 2015	Aug. 09, 2016	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18~40GHz	Aug. 27, 2015	Oct. 20, 2015	Aug. 26, 2016	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1	1889560	1GHz~18GHz	Aug. 10, 2015	Oct. 20, 2015	Aug. 09, 2016	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Oct. 28, 2014	Oct. 20, 2015	Oct. 27, 2015	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 20, 2015	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 20, 2015	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 20, 2015	NCR	Radiation (03CH03-KS)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.5 dB
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Appendix A. Product Equality Declaration

ZTE CORPORATION

Product Change Description

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

[Z223]

[ZTE Corporation]

is the variant of the initial certified product,

[Z222]

[ZTE Corporation]

SOFTWARE MODIFICATIONS:

Protocol Stack changes: NO

MMS/STK changes: NO

JAVA changes: NO

Other changes detailed: Driver for camera and NV change

HARDWARE MODIFICATION:

Band changes: NO

Power Amplifier changes: NO

Antenna changes: NO

PCB Layout changes: NO

Components on PCB changes: Yes/ LDO Component

LCD changes: NO

Speaker changes: NO

Camera changes: Yes

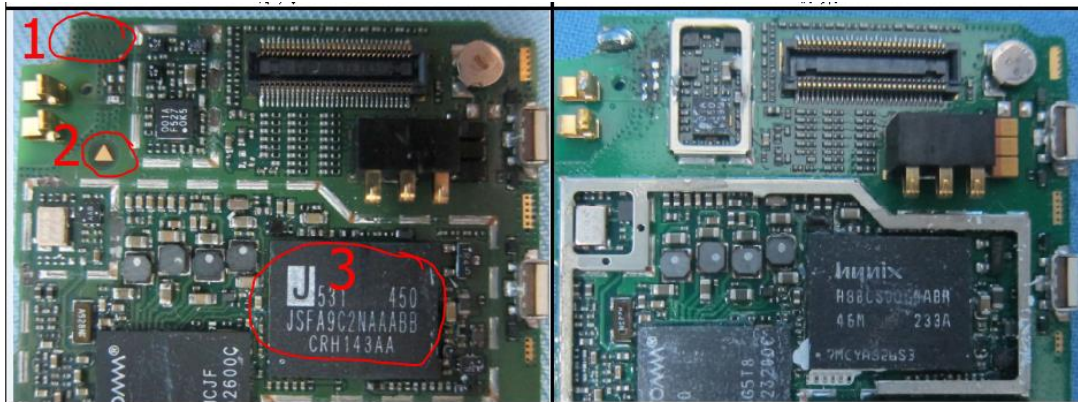
Vibrator changes: NO

Bluetooth changes: NO

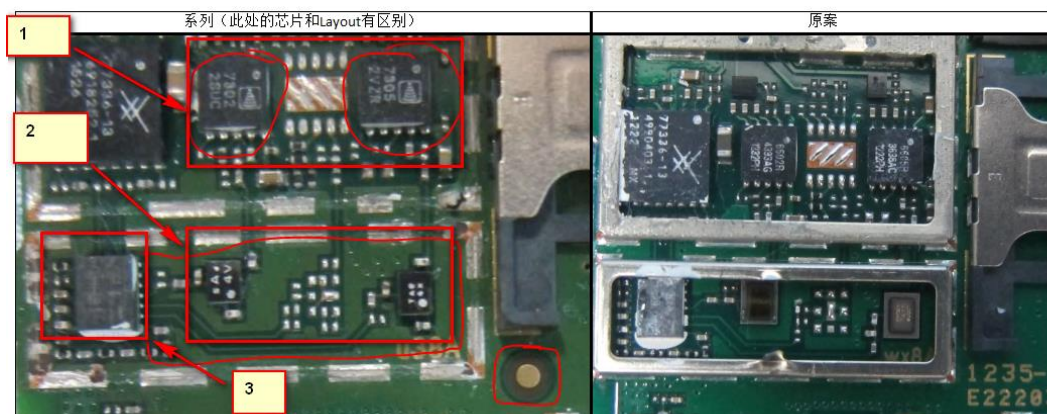
FM changes: NO

Other changes: Band 5/Band 2 balance SAW duplexer/ SP8T RF Switch

1, HARDWARE MODIFICATION



1. No difference here. //Normally there is no solder ball as in the right picture.
2. This is just for the new manufacturing process, and there is no difference in electrical characteristics.
3. The manufacturers of the IC is different, and so the silkprint is different respectively.



- 1, RF PA. Manufacturer is different. The old device is obsoleted
- 2, RF duplexer. Package 2520 is obsoleted. The new device is 1814 package. Duing to the package of duplexers change, the layout is modified .
- 3,RF switch. Manufacturer is different. The old device is obsoleted
- 4,Duing to duplexer change, the antenna is modified a little.

RF NV change.

RF switch is changed, so that some NV which controls the the switch logic is changed.

MECHANICAL MODIFICATIONS:

Use new metal front/back cover or keypad: Yes/Front cover and back cover

Mechanical shell changes: NO

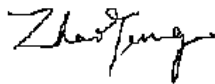
Other changes detailed: NO

ACCESSORY MODIFICATIONS:

Battery changes: NO

AC Adaptor changes: NO

Earphone changes: NO



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