



FCC RF Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : WCDMA/LTE multi-mode Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : Z987
FCC ID : SRQ-Z987
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Sep. 25, 2014 and testing was completed on Oct. 11, 2014. 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-C-2004 and the testing has shown the tested sample to be 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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG492504B	Rev. 01	EUT is variant version of Z980L (FCC ID: SRQ-Z980L), and now the variant sample is with FCC ID: SRQ-Z987, The product equality declaration could be referred to Appendix B. Due to the similarity, the parent sample RF performance is representative and part of test data (Sporton Report Number FG472902B with FCC ID: SRQ-Z980L) is referenced; only the conducted power, ERP/EIRP and radiated spurious emission were verified for the differences of the variant sample.	Oct. 22, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.2	§22.913(a)(2)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(c)(10)	Effective Radiated Power (Band 17)	ERP < 3 Watt		
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
3.3	§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 17)	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 25.76 dB at 2124.000 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/LTE multi-mode Digital Mobile Phone
Brand Name	ZTE
Model Name	Z987
FCC ID	SRQ-Z987
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	wvmA
SW Version	Z987V1.2.5
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	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.40 dBm LTE Band 4 : 22.75 dBm LTE Band 5 : 22.87 dBm LTE Band 17 : 22.60 dBm
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

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	BW	Maximum EIRP
Part 24E	LTE Band 2	QPSK	1.4 MHz	0.2858 W
Part 24E	LTE Band 2	16QAM	1.4 MHz	0.2183 W
Part 24E	LTE Band 2	QPSK	3 MHz	-
Part 24E	LTE Band 2	16QAM	3 MHz	-
Part 24E	LTE Band 2	QPSK	5 MHz	-
Part 24E	LTE Band 2	16QAM	5 MHz	-
Part 24E	LTE Band 2	QPSK	10 MHz	-
Part 24E	LTE Band 2	16QAM	10 MHz	-
Part 24E	LTE Band 2	QPSK	15 MHz	-
Part 24E	LTE Band 2	16QAM	15 MHz	-
Part 24E	LTE Band 2	QPSK	20 MHz	0.2825 W
Part 24E	LTE Band 2	16QAM	20 MHz	0.2080 W
Part 27L	LTE Band 4	QPSK	1.4 MHz	0.3199 W
Part 27L	LTE Band 4	16QAM	1.4 MHz	0.2443 W
Part 27L	LTE Band 4	QPSK	3 MHz	-
Part 27L	LTE Band 4	16QAM	3 MHz	-
Part 27L	LTE Band 4	QPSK	5MHz	-
Part 27L	LTE Band 4	16QAM	5MHz	-
Part 27L	LTE Band 4	QPSK	10MHz	-
Part 27L	LTE Band 4	16QAM	10MHz	-
Part 27L	LTE Band 4	QPSK	15MHz	-
Part 27L	LTE Band 4	16QAM	15MHz	-
Part 27L	LTE Band 4	QPSK	20MHz	0.3148 W
Part 27L	LTE Band 4	16QAM	20MHz	0.2553 W

FCC Rule	System	Type of Modulation	BW	Maximum ERP
Part 22H	LTE Band 5	QPSK	1.4 MHz	0.0492 W
Part 22H	LTE Band 5	16QAM	1.4 MHz	0.0391 W
Part 22H	LTE Band 5	QPSK	3 MHz	-
Part 22H	LTE Band 5	16QAM	3 MHz	-
Part 22H	LTE Band 5	QPSK	5 MHz	-
Part 22H	LTE Band 5	16QAM	5 MHz	-
Part 22H	LTE Band 5	QPSK	10 MHz	0.0627 W
Part 22H	LTE Band 5	16QAM	10 MHz	0.0478 W
Part 27H	LTE Band 17	QPSK	5MHz	0.0665 W
Part 27H	LTE Band 17	16QAM	5MHz	0.0512 W
Part 27H	LTE Band 17	QPSK	10MHz	0.0634 W
Part 27H	LTE Band 17	16QAM	10MHz	0.0410 W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.			
	TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC Registration No.
	TH01-KS	03CH01-KS	OTA01-KS	149928

Note: The test site complies with ANSI C63.4 2003 requirement.

1.8 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), 27(H)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01

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

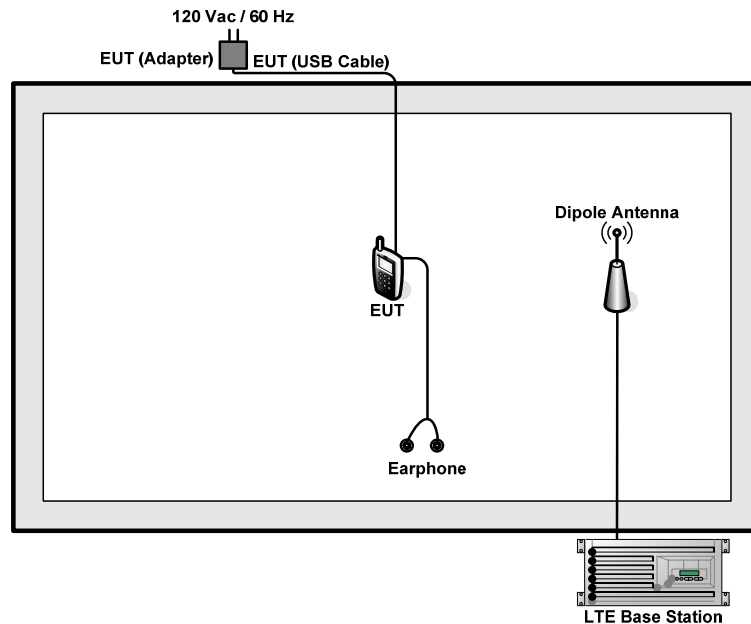
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 with maximum output power.

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

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
E.R.P./ E.I.R.P.	2	v					v	v	v	v			v	v	v
	4	v					v	v	v	v			v	v	v
	5	v			v	-	-	v	v	v			v	v	v
	17	-	-	v	v	-	-	v	v	v			v	v	v
Radiated Spurious Emission	2	v	v	v	v	v	v	v		v				v	
	4	v	v	v	v	v	v	v		v				v	
	5	v	v	v	v	-	-	v		v				v	
	17	-	-	v	v	-	-	v		v				v	
Note	1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. For E.R.P/E.I.R.P. measurement, the widest bandwidth of each band is chosen for testing due to highest conducted power. Besides, the lowest bandwidth of each band is also measured for reporting only. 4. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.														

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Earphone	Apple	MC690ZP/A	FCC DoC	Unshielded, 1.6 m	N/A

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 force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

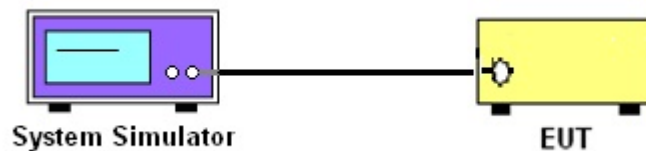
3.1.2 Measuring Instruments

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 the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.1.4 Test Setup





3.1.5 Test Result of Conducted Output Power

<LTE Band 2 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	21.77	21.99	22.12
20	QPSK	1	49	21.75	21.91	22.18
20	QPSK	1	99	21.82	22.03	22.40
20	QPSK	50	0	20.68	21.01	21.16
20	QPSK	50	24	20.75	20.86	21.10
20	QPSK	50	49	20.80	21.07	21.17
20	QPSK	100	0	20.80	20.97	21.15
20	16QAM	1	0	20.44	20.76	20.85
20	16QAM	1	49	20.94	21.29	21.10
20	16QAM	1	99	20.67	20.70	21.05
20	16QAM	50	0	19.70	19.98	20.18
20	16QAM	50	24	19.77	20.06	20.14
20	16QAM	50	49	19.70	20.08	20.22
20	16QAM	100	0	19.78	19.94	20.14
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	21.53	21.95	22.21
15	QPSK	1	37	21.66	21.90	22.10
15	QPSK	1	74	21.81	22.20	22.27
15	QPSK	36	0	20.61	20.94	21.13
15	QPSK	36	18	20.73	20.90	21.12
15	QPSK	36	37	20.73	21.03	21.22
15	QPSK	75	0	20.67	21.03	21.32
15	16QAM	1	0	20.23	20.63	20.68
15	16QAM	1	37	20.51	21.15	20.97
15	16QAM	1	74	20.59	21.21	21.11
15	16QAM	36	0	19.56	19.88	20.11
15	16QAM	36	18	19.69	19.91	20.15
15	16QAM	36	37	19.70	20.08	20.23
15	16QAM	75	0	19.67	20.04	20.09



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	21.40	21.97	22.14
10	QPSK	1	24	21.78	21.84	22.10
10	QPSK	1	49	21.84	22.10	22.22
10	QPSK	25	0	20.51	20.89	21.29
10	QPSK	25	12	20.69	20.95	21.17
10	QPSK	25	24	20.75	20.96	21.19
10	QPSK	50	0	20.71	20.95	21.13
10	16QAM	1	0	20.58	21.18	20.81
10	16QAM	1	24	20.96	21.19	21.30
10	16QAM	1	49	21.01	21.20	21.47
10	16QAM	25	0	19.50	19.90	20.08
10	16QAM	25	12	19.62	20.01	20.14
10	16QAM	25	24	19.79	20.08	20.27
10	16QAM	50	0	19.54	19.92	20.15
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	21.44	21.97	22.32
5	QPSK	1	12	21.56	21.84	21.98
5	QPSK	1	24	21.63	22.09	22.33
5	QPSK	12	0	20.43	20.92	21.17
5	QPSK	12	6	20.46	21.01	21.16
5	QPSK	12	11	20.56	20.93	21.20
5	QPSK	25	0	20.49	20.89	21.17
5	16QAM	1	0	20.28	20.91	21.08
5	16QAM	1	12	20.64	20.74	20.84
5	16QAM	1	24	20.65	21.50	21.10
5	16QAM	12	0	19.40	19.97	20.25
5	16QAM	12	6	19.38	19.97	20.25
5	16QAM	12	11	19.46	19.92	20.22
5	16QAM	25	0	19.41	20.01	20.20



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	21.59	22.11	22.29
3	QPSK	1	7	21.67	21.77	22.07
3	QPSK	1	14	21.75	22.21	22.30
3	QPSK	8	0	20.68	20.90	21.11
3	QPSK	8	4	20.56	20.95	21.07
3	QPSK	8	7	20.66	20.89	21.15
3	QPSK	15	0	20.75	20.90	21.12
3	16QAM	1	0	20.54	20.63	21.22
3	16QAM	1	7	20.58	21.11	21.23
3	16QAM	1	14	20.43	21.08	21.22
3	16QAM	8	0	19.66	19.97	20.01
3	16QAM	8	4	19.74	20.00	19.99
3	16QAM	8	7	19.80	20.00	20.05
3	16QAM	15	0	19.64	19.92	20.01
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	21.40	22.15	22.26
1.4	QPSK	1	2	21.42	22.18	22.19
1.4	QPSK	1	5	21.52	22.08	22.24
1.4	QPSK	3	0	21.51	22.11	22.26
1.4	QPSK	3	1	21.53	22.21	22.27
1.4	QPSK	3	2	21.49	22.20	22.19
1.4	QPSK	6	0	20.44	20.91	21.17
1.4	16QAM	1	0	20.65	20.87	21.35
1.4	16QAM	1	2	20.63	20.65	21.19
1.4	16QAM	1	5	20.33	20.79	21.08
1.4	16QAM	3	0	20.45	20.84	21.16
1.4	16QAM	3	1	20.32	20.80	21.07
1.4	16QAM	3	2	20.42	20.86	21.15
1.4	16QAM	6	0	19.34	19.70	20.14

**<LTE Band 4 Conducted Power>**

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	22.36	22.50	22.75
20	QPSK	1	49	22.22	22.39	22.51
20	QPSK	1	99	22.24	22.35	22.41
20	QPSK	50	0	21.30	21.50	21.59
20	QPSK	50	24	21.25	21.36	21.50
20	QPSK	50	49	21.23	21.37	21.45
20	QPSK	100	0	21.31	21.39	21.50
20	16QAM	1	0	21.31	21.56	21.30
20	16QAM	1	49	21.42	21.66	21.95
20	16QAM	1	99	21.00	20.93	21.22
20	16QAM	50	0	20.29	20.34	20.55
20	16QAM	50	24	20.35	20.39	20.53
20	16QAM	50	49	20.22	20.38	20.49
20	16QAM	100	0	20.32	20.45	20.62
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.39	22.50	22.66
15	QPSK	1	37	22.29	22.37	22.65
15	QPSK	1	74	22.20	22.47	22.52
15	QPSK	36	0	21.22	21.37	21.41
15	QPSK	36	18	21.18	21.33	21.51
15	QPSK	36	37	21.25	21.34	21.35
15	QPSK	75	0	21.28	21.41	21.49
15	16QAM	1	0	21.19	21.64	21.75
15	16QAM	1	37	20.86	21.00	21.33
15	16QAM	1	74	21.01	21.41	21.36
15	16QAM	36	0	20.30	20.36	20.55
15	16QAM	36	18	20.27	20.37	20.52
15	16QAM	36	37	20.23	20.41	20.62
15	16QAM	75	0	20.25	20.48	20.51



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	22.38	22.53	22.74
10	QPSK	1	24	22.37	22.37	22.45
10	QPSK	1	49	22.34	22.51	22.55
10	QPSK	25	0	21.21	21.30	21.50
10	QPSK	25	12	21.19	21.31	21.46
10	QPSK	25	24	21.17	21.29	21.46
10	QPSK	50	0	21.31	21.35	21.51
10	16QAM	1	0	21.50	21.60	21.68
10	16QAM	1	24	21.40	21.52	21.67
10	16QAM	1	49	21.49	21.55	21.31
10	16QAM	25	0	20.38	20.37	20.49
10	16QAM	25	12	20.26	20.32	20.65
10	16QAM	25	24	20.21	20.35	20.52
10	16QAM	50	0	20.34	20.41	20.48
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.28	22.27	22.50
5	QPSK	1	12	22.20	22.30	22.45
5	QPSK	1	24	22.31	22.36	22.56
5	QPSK	12	0	21.24	21.34	21.50
5	QPSK	12	6	21.16	21.35	21.47
5	QPSK	12	11	21.26	21.20	21.48
5	QPSK	25	0	21.22	21.48	21.49
5	16QAM	1	0	20.99	20.95	21.63
5	16QAM	1	12	20.95	21.01	21.59
5	16QAM	1	24	21.09	21.06	21.69
5	16QAM	12	0	20.30	20.36	20.55
5	16QAM	12	6	20.36	20.39	20.51
5	16QAM	12	11	20.32	20.49	20.54
5	16QAM	25	0	20.30	20.31	20.55



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.29	22.42	22.62
3	QPSK	1	7	22.19	22.34	22.45
3	QPSK	1	14	22.25	22.35	22.45
3	QPSK	8	0	21.24	21.34	21.47
3	QPSK	8	4	21.19	21.32	21.46
3	QPSK	8	7	21.23	21.46	21.45
3	QPSK	15	0	21.21	21.29	21.53
3	16QAM	1	0	21.46	21.50	21.60
3	16QAM	1	7	21.04	20.94	21.37
3	16QAM	1	14	20.96	21.21	21.58
3	16QAM	8	0	20.30	20.53	20.58
3	16QAM	8	4	20.33	20.51	20.58
3	16QAM	8	7	20.27	20.55	20.55
3	16QAM	15	0	20.18	20.30	20.55
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.32	22.29	22.64
1.4	QPSK	1	2	22.30	22.32	22.48
1.4	QPSK	1	5	22.31	22.45	22.66
1.4	QPSK	3	0	22.36	22.60	22.67
1.4	QPSK	3	1	22.27	22.58	22.60
1.4	QPSK	3	2	22.28	22.55	22.57
1.4	QPSK	6	0	21.30	21.45	21.53
1.4	16QAM	1	0	21.40	21.64	21.78
1.4	16QAM	1	2	21.08	21.25	21.61
1.4	16QAM	1	5	20.99	21.42	21.75
1.4	16QAM	3	0	21.16	21.19	21.51
1.4	16QAM	3	1	21.24	21.33	21.35
1.4	16QAM	3	2	21.27	21.43	21.51
1.4	16QAM	6	0	20.21	20.32	20.50



<LTE Band 5 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	22.78	22.87	22.70
10	QPSK	1	24	22.77	22.70	22.54
10	QPSK	1	49	22.74	22.59	22.56
10	QPSK	25	0	21.72	21.75	21.66
10	QPSK	25	12	21.70	21.49	21.56
10	QPSK	25	24	21.65	21.65	21.61
10	QPSK	50	0	21.70	21.69	21.65
10	16QAM	1	0	21.91	21.58	21.64
10	16QAM	1	24	21.89	21.20	21.53
10	16QAM	1	49	21.90	21.46	21.45
10	16QAM	25	0	20.83	20.76	20.64
10	16QAM	25	12	20.68	20.82	20.77
10	16QAM	25	24	20.83	20.69	20.74
10	16QAM	50	0	20.77	20.43	20.66
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	22.70	22.62	22.80
5	QPSK	1	12	22.57	22.57	22.64
5	QPSK	1	24	22.62	22.59	22.64
5	QPSK	12	0	21.67	21.66	21.65
5	QPSK	12	6	21.76	21.45	21.68
5	QPSK	12	11	21.76	21.61	21.63
5	QPSK	25	0	21.71	21.64	21.59
5	16QAM	1	0	21.75	21.30	21.24
5	16QAM	1	12	21.70	21.48	21.72
5	16QAM	1	24	21.78	21.77	21.82
5	16QAM	12	0	20.89	20.70	20.69
5	16QAM	12	6	20.80	20.81	20.72
5	16QAM	12	11	20.78	20.76	20.66
5	16QAM	25	0	20.77	20.67	20.66



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	22.77	22.72	22.65
3	QPSK	1	7	22.72	22.58	22.59
3	QPSK	1	14	22.64	22.63	22.61
3	QPSK	8	0	21.67	21.66	21.66
3	QPSK	8	4	21.66	21.71	21.68
3	QPSK	8	7	21.74	21.62	21.67
3	QPSK	15	0	21.69	21.65	21.61
3	16QAM	1	0	21.94	21.45	21.90
3	16QAM	1	7	21.91	21.44	21.60
3	16QAM	1	14	21.53	21.42	21.73
3	16QAM	8	0	20.66	20.78	20.75
3	16QAM	8	4	20.68	20.83	20.66
3	16QAM	8	7	20.74	20.75	20.77
3	16QAM	15	0	20.70	20.69	20.69
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	22.80	22.61	22.70
1.4	QPSK	1	2	22.73	22.66	22.69
1.4	QPSK	1	5	22.85	22.78	22.69
1.4	QPSK	3	0	22.84	22.59	22.66
1.4	QPSK	3	1	22.86	22.83	22.72
1.4	QPSK	3	2	22.69	22.64	22.66
1.4	QPSK	6	0	21.73	21.63	21.64
1.4	16QAM	1	0	21.68	21.50	21.53
1.4	16QAM	1	2	21.77	21.39	21.34
1.4	16QAM	1	5	21.53	21.79	21.49
1.4	16QAM	3	0	21.80	21.80	21.64
1.4	16QAM	3	1	21.51	21.61	21.55
1.4	16QAM	3	2	21.69	21.50	21.57
1.4	16QAM	6	0	20.63	20.44	20.60



<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	22.55	22.48	22.43
10	QPSK	1	24	22.58	22.60	22.45
10	QPSK	1	49	22.41	22.58	22.44
10	QPSK	25	0	21.57	21.53	21.48
10	QPSK	25	12	21.59	21.54	21.56
10	QPSK	25	24	21.58	21.53	21.52
10	QPSK	50	0	21.61	21.55	21.59
10	16QAM	1	0	21.65	21.21	21.46
10	16QAM	1	24	21.64	21.17	21.30
10	16QAM	1	49	21.70	21.32	21.72
10	16QAM	25	0	20.58	20.63	20.64
10	16QAM	25	12	20.65	20.58	20.52
10	16QAM	25	24	20.69	20.51	20.61
10	16QAM	50	0	20.56	20.59	20.45
Channel				23755	23790	23825
Frequency (MHz)				706.5	710	713.5
5	QPSK	1	0	22.56	22.32	22.43
5	QPSK	1	12	22.57	22.45	22.50
5	QPSK	1	24	22.55	22.31	22.38
5	QPSK	12	0	21.62	21.58	21.45
5	QPSK	12	6	21.53	21.54	21.51
5	QPSK	12	11	21.57	21.58	21.53
5	QPSK	25	0	21.57	21.54	21.57
5	16QAM	1	0	21.37	21.69	21.40
5	16QAM	1	12	21.23	21.63	21.31
5	16QAM	1	24	21.30	21.56	21.38
5	16QAM	12	0	20.64	20.60	20.50
5	16QAM	12	6	20.51	20.65	20.55
5	16QAM	12	11	20.52	20.53	20.46
5	16QAM	25	0	20.49	20.50	20.56

Note: Maximum average power for LTE.

3.2 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.2.1 Description of the ERP/EIRP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r01. Mobile and portable (hand-held) stations operating are limited to average ERP of 7 watts with LTE band 5 and 3 watts with LTE band 17.

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 and 1 watt with LTE band 4.

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 EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer which used a channel power option across EUT's signal bandwidth per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

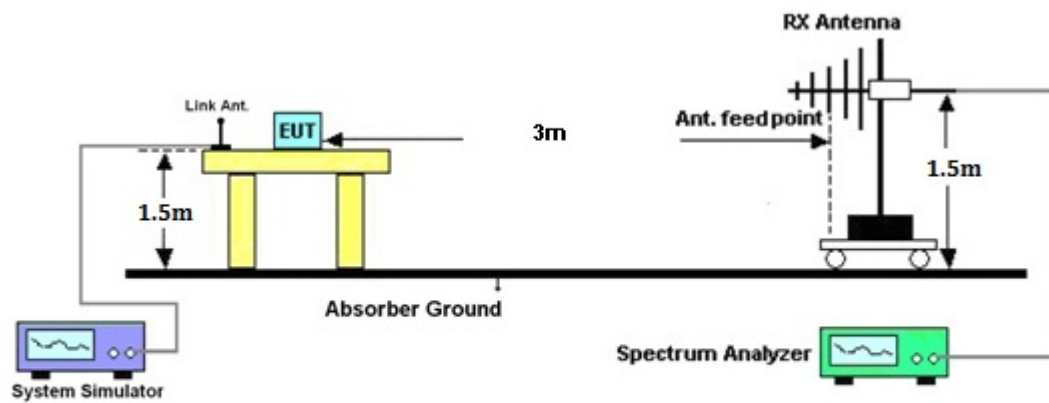
$E_s = R_s + AF$

AF (dB/m) : Receive antenna factor

R_t : The highest received signal in spectrum analyzer for EUT.

R_s : The highest received signal in spectrum analyzer for substitution antenna.

3.2.4 Test Setup



3.2.5 Test Result of ERP/EIRP

LTE Band 2 Radiated Power EIRP								
LTE Band	Channel BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	EIRP (W)	H/V
			RB Size	RB Offset				
2	1.4	QPSK	3	1	1850.7	23.09	0.2037	H
2	1.4	QPSK	3	1	1880	23.62	0.2301	H
2	1.4	QPSK	3	1	1909.3	24.16	0.2606	H
2	1.4	QPSK	3	1	1850.7	23.21	0.2094	V
2	1.4	QPSK	3	1	1880	23.58	0.2280	V
2	1.4	QPSK	3	1	1909.3	24.56	0.2858	V
2	1.4	16QAM	1	0	1850.7	22.11	0.1626	H
2	1.4	16QAM	1	0	1880	22.46	0.1762	H
2	1.4	16QAM	1	0	1909.3	23.02	0.2004	H
2	1.4	16QAM	1	0	1850.7	22.14	0.1637	V
2	1.4	16QAM	1	0	1880	22.38	0.1730	V
2	1.4	16QAM	1	0	1909.3	23.39	0.2183	V
2	20	QPSK	1	99	1860	23.78	0.2388	H
2	20	QPSK	1	99	1880	23.68	0.2333	H
2	20	QPSK	1	99	1900	24.24	0.2655	H
2	20	QPSK	1	99	1860	23.66	0.2323	V
2	20	QPSK	1	99	1880	23.73	0.2360	V
2	20	QPSK	1	99	1900	24.51	0.2825	V
2	20	16QAM	1	49	1860	22.43	0.1750	H
2	20	16QAM	1	49	1880	22.58	0.1811	H
2	20	16QAM	1	49	1900	23.05	0.2018	H
2	20	16QAM	1	49	1860	22.44	0.1754	V
2	20	16QAM	1	49	1880	22.38	0.1730	V
2	20	16QAM	1	49	1900	23.18	0.2080	V



LTE Band 4 Radiated Power EIRP								
LTE Band	Channel BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	EIRP (dBm)	EIRP (W)	H/V
			RB Size	RB Offset				
4	1.4	QPSK	3	0	1710.7	23.65	0.2317	H
4	1.4	QPSK	3	0	1732.5	24.59	0.2877	H
4	1.4	QPSK	3	0	1754.3	25.05	0.3199	H
4	1.4	QPSK	3	0	1710.7	23.59	0.2286	V
4	1.4	QPSK	3	0	1732.5	24.46	0.2793	V
4	1.4	QPSK	3	0	1754.3	24.78	0.3006	V
4	1.4	16QAM	1	0	1710.7	22.81	0.1910	H
4	1.4	16QAM	1	0	1732.5	23.48	0.2228	H
4	1.4	16QAM	1	0	1754.3	23.88	0.2443	H
4	1.4	16QAM	1	0	1710.7	22.73	0.1875	V
4	1.4	16QAM	1	0	1732.5	23.31	0.2143	V
4	1.4	16QAM	1	0	1754.3	23.6	0.2291	V
4	20	QPSK	1	0	1720	22.92	0.1959	H
4	20	QPSK	1	0	1732.5	23.95	0.2483	H
4	20	QPSK	1	0	1745	24.98	0.3148	H
4	20	QPSK	1	0	1720	22.91	0.1954	V
4	20	QPSK	1	0	1732.5	23.81	0.2404	V
4	20	QPSK	1	0	1745	24.8	0.3020	V
4	20	16QAM	1	49	1720	22.79	0.1901	H
4	20	16QAM	1	49	1732.5	23.23	0.2104	H
4	20	16QAM	1	49	1745	24.07	0.2553	H
4	20	16QAM	1	49	1720	22.67	0.1849	V
4	20	16QAM	1	49	1732.5	23.08	0.2032	V
4	20	16QAM	1	49	1745	23.81	0.2404	V



LTE Band 5 Radiated Power ERP								
LTE Band	Channel BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	ERP (W)	H/V
			RB Size	RB Offset				
5	1.4	QPSK	3	1	824.7	16.92	0.0492	H
5	1.4	QPSK	3	1	836.5	16.87	0.0486	H
5	1.4	QPSK	3	1	848.3	16.10	0.0407	H
5	1.4	QPSK	3	1	824.7	8.51	0.0071	V
5	1.4	QPSK	3	1	836.5	8.79	0.0076	V
5	1.4	QPSK	3	1	848.3	8.82	0.0076	V
5	1.4	16QAM	3	0	824.7	15.92	0.0391	H
5	1.4	16QAM	3	0	836.5	15.77	0.0378	H
5	1.4	16QAM	3	0	848.3	14.94	0.0312	H
5	1.4	16QAM	3	0	824.7	7.46	0.0056	V
5	1.4	16QAM	3	0	836.5	7.68	0.0059	V
5	1.4	16QAM	3	0	848.3	7.71	0.0059	V
5	10	QPSK	1	0	829	17.66	0.0583	H
5	10	QPSK	1	0	836.5	17.97	0.0627	H
5	10	QPSK	1	0	844	17.21	0.0526	H
5	10	QPSK	1	0	829	9.12	0.0082	V
5	10	QPSK	1	0	836.5	9.49	0.0089	V
5	10	QPSK	1	0	844	9.43	0.0088	V
5	10	16QAM	1	0	829	16.40	0.0437	H
5	10	16QAM	1	0	836.5	16.79	0.0478	H
5	10	16QAM	1	0	844	16.01	0.0399	H
5	10	16QAM	1	0	829	8.02	0.0063	V
5	10	16QAM	1	0	836.5	8.50	0.0071	V
5	10	16QAM	1	0	844	8.31	0.0068	V



LTE Band 17 Radiated Power ERP								
LTE Band	Channel BW (MHz)	Modulation	RB Configuration		Freq. (MHz)	ERP (dBm)	ERP (W)	H/V
			RB Size	RB Offset				
17	5	QPSK	1	12	706.5	18.23	0.0665	H
17	5	QPSK	1	12	710	17.92	0.0619	H
17	5	QPSK	1	12	713.5	17.17	0.0521	H
17	5	QPSK	1	12	706.5	5.48	0.0035	V
17	5	QPSK	1	12	710	5.43	0.0035	V
17	5	QPSK	1	12	713.5	4.68	0.0029	V
17	5	16QAM	1	0	706.5	17.09	0.0512	H
17	5	16QAM	1	0	710	16.84	0.0483	H
17	5	16QAM	1	0	713.5	16.39	0.0436	H
17	5	16QAM	1	0	706.5	4.4	0.0028	V
17	5	16QAM	1	0	710	4.05	0.0025	V
17	5	16QAM	1	0	713.5	4.06	0.0025	V
17	10	QPSK	1	24	709	18.02	0.0634	H
17	10	QPSK	1	24	710	17.91	0.0618	H
17	10	QPSK	1	24	711	17.66	0.0583	H
17	10	QPSK	1	24	709	5.15	0.0033	V
17	10	QPSK	1	24	710	5.19	0.0033	V
17	10	QPSK	1	24	711	5.07	0.0032	V
17	10	16QAM	1	49	709	16.13	0.0410	H
17	10	16QAM	1	49	710	15.89	0.0388	H
17	10	16QAM	1	49	711	15.44	0.0350	H
17	10	16QAM	1	49	709	3.62	0.0023	V
17	10	16QAM	1	49	710	3.21	0.0021	V
17	10	16QAM	1	49	711	2.62	0.0018	V

3.3 Radiated Spurious Emission Measurement

3.3.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. 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 EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

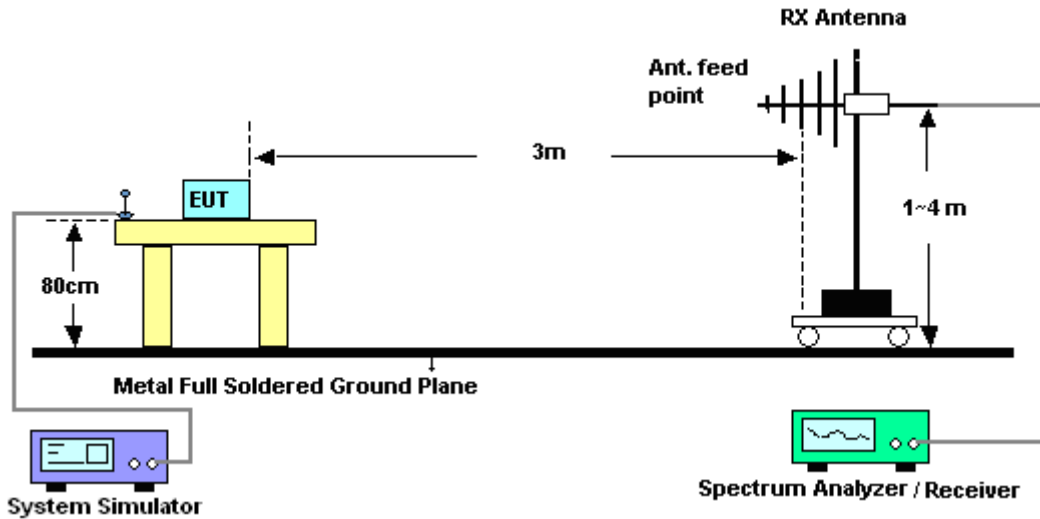
$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13\text{dBm}.$$

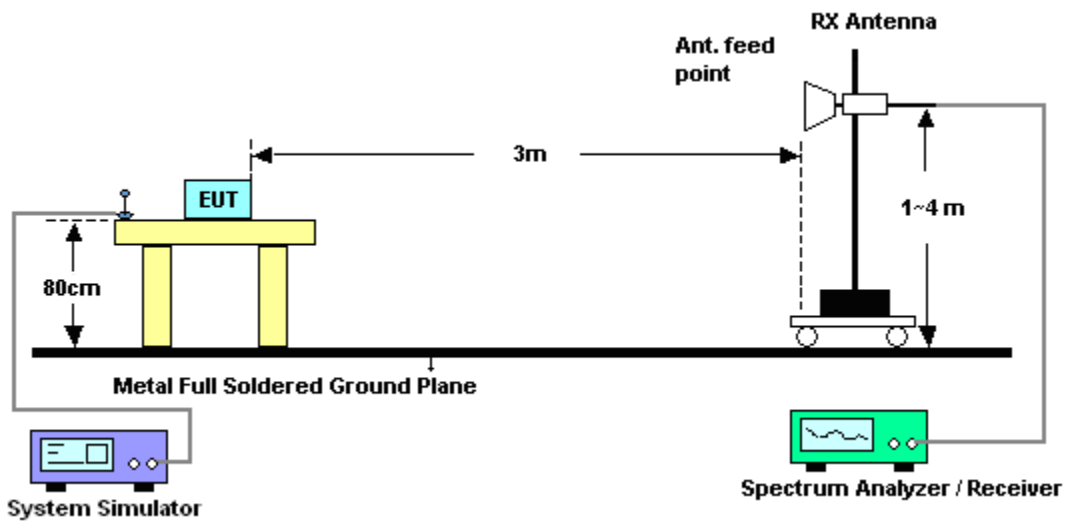
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

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 :	LTE Band 2					Temperature :	22~23℃		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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	-48.22	-13	-35.22	-56.21	-54.60	0.78	7.16	H	Pass
5637	-56.61	-13	-43.61	-66.67	-65.15	1.04	9.58	H	Pass
7518	-53.71	-13	-40.71	-65.25	-63.82	1.35	11.46	H	Pass

Band :	LTE Band 2				Temperature :		22~23°C		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0				Relative Humidity :		42~43%		
Test Engineer :	Star Wei				Polarization :		Vertical		
Remark :	Spurious emissions within 30-10th harmonic 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	-51.54	-13	-38.54	-60.1	-57.92	0.78	7.16	V	Pass
5637	-54.02	-13	-41.02	-66.67	-62.56	1.04	9.58	V	Pass
7518	-49.00	-13	-36.00	-63.09	-59.11	1.35	11.46	V	Pass



Band :	LTE Band 2	Temperature :	22~23°C						
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-10th harmonic 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	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3756	-48.91	-13	-35.91	-56.76	-55.29	0.78	7.16	H	Pass
5635	-56.87	-13	-43.87	-66.93	-65.41	1.04	9.58	H	Pass
7515	-52.84	-13	-39.84	-64.38	-62.95	1.35	11.46	H	Pass

Band :	LTE Band 2	Temperature :	22~23℃						
Test Mode :	3MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading	Power	loss	Gain	(H/V)	
				(dBm)	(dBm)	(dB)	(dBi)		
3756	-51.03	-13	-38.03	-59.76	-57.41	0.78	7.16	V	Pass
5635	-54.27	-13	-41.27	-66.92	-62.81	1.04	9.58	V	Pass
7515	-46.60	-13	-33.60	-60.69	-56.71	1.35	11.46	V	Pass



Band :	LTE Band 2					Temperature :	22~23℃		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
3756	-47.35	-13	-34.35	-55.57	-53.73	0.78	7.16	H	Pass
5632	-55.17	-13	-42.17	-65.23	-63.71	1.04	9.58	H	Pass
7509	-54.73	-13	-41.73	-66.27	-64.84	1.35	11.46	H	Pass

Band :	LTE Band 2				Temperature :	22~23°C			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3756	-50.83	-13	-37.83	-59.63	-57.21	0.78	7.16	V	Pass
5632	-53.24	-13	-40.24	-65.89	-61.78	1.04	9.58	V	Pass
7512	-48.49	-13	-35.49	-62.58	-58.60	1.35	11.46	V	Pass



Band :	LTE Band 2					Temperature :	22~23°C		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
3750	-47.85	-13	-34.85	-55.93	-54.23	0.78	7.16	H	Pass
5625	-56.14	-13	-43.14	-66.20	-64.68	1.04	9.58	H	Pass
7500	-53.75	-13	-40.75	-65.29	-63.86	1.35	11.46	H	Pass

Band :	LTE Band 2					Temperature :	22~23°C		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic 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	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3750	-49.30	-13	-36.30	-58.43	-55.68	0.78	7.16	V	Pass
5625	-53.84	-13	-40.84	-66.49	-62.38	1.04	9.58	V	Pass
7503	-45.50	-13	-32.50	-59.59	-55.61	1.35	11.46	V	Pass



Band :	LTE Band 2				Temperature :	22~23°C			
Test Mode :	15MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3747	-48.77	-13	-35.77	-56.65	-55.15	0.78	7.16	H	Pass
5616	-55.04	-13	-42.04	-65.10	-63.58	1.04	9.58	H	Pass
7491	-54.03	-13	-41.03	-65.57	-64.14	1.35	11.46	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C						
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-10th harmonic 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	Reading	Power	loss	Gain		
			(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3747	-50.50	-13	-37.50	-59.4	-56.88	0.78	7.16	V	Pass
5617	-54.02	-13	-41.02	-66.67	-62.56	1.04	9.58	V	Pass
7491	-52.65	-13	-39.65	-66.74	-62.76	1.35	11.46	V	Pass



Band :	LTE Band 2					Temperature :	22~23℃		
Test Mode :	20MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3741	-42.86	-13	-29.86	-52.13	-49.24	0.78	7.16	H	Pass
5610	-55.82	-13	-42.82	-65.88	-64.36	1.04	9.58	H	Pass
7479	-53.16	-13	-40.16	-64.70	-63.27	1.35	11.46	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C						
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Vertical						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3741	-50.32	-13	-37.32	-59.28	-56.70	0.78	7.16	V	Pass
5610	-53.88	-13	-40.88	-66.53	-62.42	1.04	9.58	V	Pass
7485	-47.82	-13	-34.82	-61.91	-57.93	1.35	11.46	V	Pass



Band :	LTE Band 4					Temperature :	22~23°C		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
3462	-63.40	-13	-50.40	-65.63	-68.80	2.2	7.60	H	Pass
5195	-59.07	-13	-46.07	-68.94	-65.85	3.12	9.90	H	Pass
6927	-57.44	-13	-44.44	-65.73	-65.33	2.98	10.87	H	Pass
8658	-54.62	-13	-41.62	-65.57	-64.11	2.97	12.46	H	Pass

Band :	LTE Band 4				Temperature :	22~23℃			
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3462	-65.21	-13	-52.21	-66.23	-70.61	2.2	7.6	V	Pass
5196	-57.74	-13	-44.74	-65.71	-64.52	3.12	9.9	V	Pass
6930	-53.68	-13	-40.68	-64.2	-61.57	2.98	10.87	V	Pass
8661	-50.50	-13	-37.50	-61.65	-59.99	2.97	12.46	V	Pass



Band :	LTE Band 4	Temperature :	22~23°C						
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3462	-62.92	-13	-49.92	-65.15	-68.32	2.2	7.60	H	Pass
5193	-58.77	-13	-45.77	-68.64	-65.55	3.12	9.90	H	Pass
6924	-57.63	-13	-44.63	-65.92	-65.52	2.98	10.87	H	Pass
8655	-53.79	-13	-40.79	-64.74	-63.28	2.97	12.46	H	Pass

Band :	LTE Band 4				Temperature :	22~23℃			
Test Mode :	3MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3462	-64.64	-13	-51.64	-65.66	-70.04	2.2	7.6	V	Pass
5193	-58.65	-13	-45.65	-66.62	-65.43	3.12	9.9	V	Pass
6924	-54.56	-13	-41.56	-65.08	-62.45	2.98	10.87	V	Pass
8658	-50.58	-13	-37.58	-61.73	-60.07	2.97	12.46	V	Pass



Band :	LTE Band 4					Temperature :	22~23°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
3459	-63.00	-13	-50.00	-65.23	-68.40	2.2	7.60	H	Pass
5190	-56.58	-13	-43.58	-66.45	-63.36	3.12	9.90	H	Pass
6921	-57.55	-13	-44.55	-65.84	-65.44	2.98	10.87	H	Pass
8649	-55.19	-13	-42.19	-66.14	-64.68	2.97	12.46	H	Pass

Band :	LTE Band 4				Temperature :	22~23℃			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3459	-63.59	-13	-50.59	-64.61	-68.99	2.2	7.6	V	Pass
5190	-60.40	-13	-47.40	-68.37	-67.18	3.12	9.9	V	Pass
6921	-53.55	-13	-40.55	-64.07	-61.44	2.98	10.87	V	Pass
8655	-50.33	-13	-37.33	-61.48	-59.82	2.97	12.46	V	Pass



Band :	LTE Band 4	Temperature :	22~23°C						
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading	Power	loss	Gain	(H/V)	
3456	-63.87	-13	-50.87	-66.10	-69.27	2.2	7.60	H	Pass
5184	-53.98	-13	-40.98	-63.85	-60.76	3.12	9.90	H	Pass
6909	-57.23	-13	-44.23	-65.52	-65.12	2.98	10.87	H	Pass
8637	-54.32	-13	-41.32	-65.27	-63.81	2.97	12.46	H	Pass

Band :	LTE Band 4				Temperature :	22~23°C			
Test Mode :	10MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3455	-64.47	-13	-51.47	-65.49	-69.87	2.2	7.6	V	Pass
5184	-54.50	-13	-41.50	-62.47	-61.28	3.12	9.9	V	Pass
6910	-55.46	-13	-42.46	-65.98	-63.35	2.98	10.87	V	Pass
8643	-50.98	-13	-37.98	-62.13	-60.47	2.97	12.46	V	Pass



Band :	LTE Band 4	Temperature :	22~23°C						
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading	Power	loss	Gain	(H/V)	
3450	-63.10	-13	-50.10	-65.33	-68.50	2.2	7.60	H	Pass
5175	-57.04	-13	-44.04	-66.91	-63.82	3.12	9.90	H	Pass
6900	-58.38	-13	-45.38	-66.67	-66.27	2.98	10.87	H	Pass
8625	-53.67	-13	-40.67	-64.62	-63.16	2.97	12.46	H	Pass

Band :	LTE Band 4				Temperature :	22~23°C			
Test Mode :	15MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3450	-64.64	-13	-51.64	-65.66	-70.04	2.2	7.6	V	Pass
5175	-59.00	-13	-46.00	-66.97	-65.78	3.12	9.9	V	Pass
6900	-54.21	-13	-41.21	-64.73	-62.10	2.98	10.87	V	Pass
8631	-50.01	-13	-37.01	-61.16	-59.50	2.97	12.46	V	Pass



Band :	LTE Band 4	Temperature :	22~23°C						
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	42~43%						
Test Engineer :	Star Wei	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3444	-63.03	-13	-50.03	-65.26	-68.43	2.2	7.60	H	Pass
5167	-56.86	-13	-43.86	-66.73	-63.64	3.12	9.90	H	Pass
6891	-57.93	-13	-44.93	-66.22	-65.82	2.98	10.87	H	Pass

Band :	LTE Band 4				Temperature :	22~23℃			
Test Mode :	20MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
3444	-66.08	-13	-53.08	-67.1	-71.48	2.2	7.6	V	Pass
5167	-58.02	-13	-45.02	-65.99	-64.80	3.12	9.9	V	Pass
6891	-55.09	-13	-42.09	-65.61	-62.98	2.98	10.87	V	Pass



Band :	LTE Band 5					Temperature :	22~23℃		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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	-74.44	-13	-61.44	-65.56	-75.09	0.57	3.37	H	Pass
2510	-63.33	-13	-50.33	-62.00	-65.56	0.78	5.16	H	Pass
3342	-65.54	-13	-52.54	-65.17	-69.18	0.87	6.66	H	Pass

Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1672	-68.69	-13	-55.69	-64.89	-69.34	0.57	3.37	V	Pass
2510	-60.95	-13	-47.95	-63.38	-63.18	0.78	5.16	V	Pass
3344	-64.16	-13	-51.16	-65.22	-67.80	0.87	6.66	V	Pass



Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	3MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
1670	-73.47	-13	-60.47	-64.59	-74.12	0.57	3.37	H	Pass
2506	-60.99	-13	-47.99	-59.66	-63.22	0.78	5.16	H	Pass
3340	-65.23	-13	-52.23	-64.86	-68.87	0.87	6.66	H	Pass

Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	3MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1670	-69.09	-13	-56.09	-65.29	-69.74	0.57	3.37	V	Pass
2506	-59.15	-13	-46.15	-62.04	-61.38	0.78	5.16	V	Pass
3340	-63.16	-13	-50.16	-64.22	-66.80	0.87	6.66	V	Pass



Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
1668	-74.02	-13	-61.02	-65.14	-74.67	0.57	3.37	H	Pass
2504	-61.21	-13	-48.21	-59.88	-63.44	0.78	5.16	H	Pass
3336	-65.68	-13	-52.68	-65.31	-69.32	0.87	6.66	H	Pass

Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1668	-69.39	-13	-56.39	-65.59	-70.04	0.57	3.37	V	Pass
2504	-55.43	-13	-42.43	-60.03	-57.66	0.78	5.16	V	Pass
3336	-64.28	-13	-51.28	-65.34	-67.92	0.87	6.66	V	Pass



Band :	LTE Band 5					Temperature :	22~23℃		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
1664	-74.25	-13	-61.25	-65.37	-74.90	0.57	3.37	H	Pass
2498	-55.55	-13	-42.55	-56.53	-57.78	0.78	5.16	H	Pass
3326	-65.87	-13	-52.87	-65.50	-69.51	0.87	6.66	H	Pass

Band :	LTE Band 5					Temperature :	22~23°C		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1663	-68.17	-13	-55.17	-64.37	-68.82	0.57	3.37	V	Pass
2496	-49.35	-13	-36.35	-56.32	-51.58	0.78	5.16	V	Pass
3362	-64.14	-13	-51.14	-65.20	-67.78	0.87	6.66	V	Pass



Band :	LTE Band 17				Temperature :	22~23°C			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Horizontal			
Remark :	Spurious emissions within 30-10th harmonic 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)	
1416	-72.03	-13	-59.03	-63.15	-77.43	2.2	7.60	H	Pass
2124	-38.76	-13	-25.76	-43.25	-45.54	3.12	9.90	H	Pass
2830	-68.10	-13	-55.10	-66.77	-75.99	2.98	10.87	H	Pass

Band :	LTE Band 17				Temperature :	22~23°C			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
1415	-67.91	-13	-54.91	-64.11	-73.31	2.2	7.6	V	Pass
2124	-45.47	-13	-32.47	-53.59	-52.25	3.12	9.9	V	Pass
2830	-64.12	-13	-51.12	-66.55	-72.01	2.98	10.87	V	Pass



Band :	LTE Band 17					Temperature :	22~23℃		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	42~43%		
Test Engineer :	Star Wei					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic 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)	
1410	-73.88	-13	-60.88	-65.00	-79.28	2.2	7.60	H	Pass
2118	-41.74	-13	-28.74	-45.97	-48.52	3.12	9.90	H	Pass
2820	-67.42	-13	-54.42	-66.09	-75.31	2.98	10.87	H	Pass

Band :	LTE Band 17				Temperature :	22~23°C			
Test Mode :	10MHz QPSK RB Size 1 Offset 0				Relative Humidity :	42~43%			
Test Engineer :	Star Wei				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic 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)	
1410	-68.70	-13	-55.70	-64.9	-74.10	2.2	7.6	V	Pass
2118	-52.00	-13	-39.00	-58.12	-58.78	3.12	9.9	V	Pass
2820	-62.84	-13	-49.84	-65.27	-70.73	2.98	10.87	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, 2014	Oct. 08, 2014	May 03, 2015	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	Oct. 05, 2014~ Oct. 06, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	Oct. 05, 2014~ Oct. 06, 2014	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	Oct. 05, 2014~ Oct. 06, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 08, 2014	Oct. 05, 2014~ Oct. 06, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 18, 2013	Oct. 05, 2014~ Oct. 06, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 10, 2014	Oct. 05, 2014~ Oct. 06, 2014	Mar. 09, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	Oct. 05, 2014~ Oct. 06, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Dec. 10, 2013	Oct. 05, 2014~ Oct. 06, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 05, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 05, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 05, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP 7	100819	9kHz~7GHz	May 04, 2014	Oct. 05, 2014~ Oct. 11, 2014	May 03, 2015	ERP/EIRP (OTA01-KS)
Switch Control Manframe	Agilent	3499A	MY42005452	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Dual 1-to-6(4) MW MUX	Agilent	N2276A	MY42000841	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002573	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002586	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Diagonal Dual Polarized Horn	ETS-Lindgren	3164-04	00066993	700MHz~6GHz	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00066604	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Conical Log Spiral (Small)	ETS-Lindgren	3102	00066951	1~10GHz	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Turn Table	ETS-Lindgren	2088	N/A	Resolution : 0.1degree	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Limiting Amplifier	ETS-lindgren	109643	920326	10MHz~2.5GHz	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
EMQuest	ETS-Lindgren	EMQ-100	1125	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)
Medium Duty Holder	ETS-Lindgren	2015	N/A	N/A	N/A	Oct. 05, 2014~ Oct. 11, 2014	N/A	ERP/EIRP (OTA01-KS)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.5
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Appendix B. Product Equality Declaration

ZTE CORPORATION**Product Change Description**

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

[Z987]
[ZTE Corporation]

is the variant of the initial certified product,

[Z980L]
[ZTE Corporation]
[Project Number:14ZTE130]

SOFTWARE MODIFICATIONS:

Protocol Stack changes: NO

MMS/STK changes: NO

JAVA changes: NO

Other changes detailed: Yes. No longer support UMTS BAND IV.

HARDWARE MODIFICATION:

Band changes: Yes, No longer support UMTS BAND IV.

Power Amplifier changes: NO

Antenna changes: Changed all main antenna. (Bluetooth/WIFI antenna is same as previous Z980L)

PCB Layout changes: NO

Components on PCB changes: NO

LCD changes: NO

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

Min Zhang

APPROVED BY: MIN ZHANG

Project Manager: zhangjunhui

Date:2014-9-18

Company: ZTE Corporation

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

Tel: +86-21-68896840

Fax: +86-21-68896835