FCC Test Report

Product Name: CDMA 1X Digital Mobile Phone with Bluetooth

Model Number: M635

Report No: SYBH(Z-RF)006042011-2005
FCC ID: QISC6071

Reliability Laboratory of Huawei Technologies Co., Ltd.

Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China

Tel: +86 755 28780808 Fax: +86 755 89652518

Notice

1. The laboratory has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L0310.
2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 97456.
3. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-1.
4. The test report is invalid if not marked with "exclusive stamp for the test report".
5. The test report is invalid if not marked with the stamps or the signatures of the persons responsible for performing, revising and approving the test report.
6. The test report is invalid if there is any evidence of erasure and/or falsification.
7. If there is any dissidence for the test report, please file objection to the test centre within 15 days from the date of receiving the test report.
8. Normally, the test report is only responsible for the samples that have undergone the test.
9. Context of the test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of the laboratory.

REPORT ON FCC 47CFR part 15 subpart C Test of CDMA Mobile Phone With Bluetooth

M/N: M635

Report No: SYBH(Z-RF)006042011-2005
FCC ID: QISC6071

CONCLUSION **Pass**

Approved By	**2011-04-11**	**Chenxiaohong**	
	Date	**Name**	**Signature**

Reviewed By	**2011-04-11**	**Xuguangyi**	
	Date	**Name**	**Signature**

Operator	**2011-04-11**	**Wangyue**	
	Date	**Name**	**Signature**

Contents

1 Summary

The table below summarizes the measurements and results for the CDMA Mobile Phone With Bluetooth M635.Detailed results and descriptions are shown in the following pages.

Table 1 Summary of results

FCC Measurement Specification	Description	Result
15.247 (a) (1)	20dB bandwidth measurement	PASS
15.247 (a) (1)	Carrier frequency separation measurement	PASS
15.247 (a) (1) III	Number of hopping channel	PASS
15.247 (a) (1) III	Time of occupancy	PASS
15.247 (b) (1)	Peak output power	PASS
15.247 (d)	Band edge compliance measurement	PASS
15.247 (d)	Conducted RF spurious	PASS
15.247 (d) / 15.205 & 15.209	Radiated spurious emission & Radiated restricted band measurement	PASS
15.207	Conducted emission test for power port	PASS

2 Product Description

2.1 Production Information

2.1.1 General Description

HUAWEI CDMA Mobile Phone M635 is subscriber equipment in the CDMA system. The frequency band is US Cellular, PCS, AWS. The Mobile Phone implements such functions as RF signal receiving / Transmitting, CDMA protocol processing, voice and SMS service etc. It also provides Bluetooth module to synchronize data between a PC and the phone, or to exchange data with other Bluetooth devices.

NOTE: The present document Bluetooth test data reference SYBH(Z-RF)022032011 of M615 test report.

2.1.2 Support function and Service

The Mobile Phone M635 support the Bluetooth's function and service as follows:

Table 2 Service and Test mode List

Service Name	Characteristic	Corresponding Test Mode	Note
Data and Voice	Modulation: GFSK	TM1	/

2.2 Modification Information

For original equipment, following table is not application.

Table 3 Modification Information

Model Number	Board/Module	Original Version	New Version	Modify Information

Not applicable!

3 Test Site Description

The test site of:

Huawei Technologies Co. Ltd.
P.O. Box 518129
Huawei base, bantian,
Longgang District, Shenzhen, China

3.1 Testing Period

The test have been performed during the period of

Mar. 15, 2011 – Mar. 18, 2011

3.2 General Set up Description

The Bluetooth hopping frequency system of Mobile Phone M615 can Support 2.4GHz Band. For compliance with FCC regulation 47CFR part15 subpart C, we set the mobile phone as following test mode to do all compliance tests.

Bluetooth MODE:

TM1: GFSK Modulation

4 Product Description

4.1 Technical Characteristics

4.1.1 Frequency Range

Table 4 Frequency Range

Uplink band:	2400 to 2483.5 MHz	
Downlink band:	2400 to 2483.5 MHz	
Hop frequency support:	☒ YES	☐ NO

4.1.2 Channel Spacing / Separation

Table 5 Channel Spacing / Separation

Channel spacing:	1 MHz
Channel separation:	1 MHz

4.1.3 Type of Emission

Table 6 Type of Emission

Emission Designation:	-

According to CFR 47 (FCC) part 2, subpart C, section 2.201 and 2.202

4.1.4 Antenna Information

Table 7 Antenna Information

Type:	Integrated / Internal
Maximum Gain(dBi):	0.99 (from 2400MHz to 2500MHz)

4.1.5 Environmental Requirements

Table 8 Environmental Requirements

Minimum temperature:	- 10 °C
Maximum temperature:	+ 55 °C
Relative Humidity:	5%-95%

4.1.6 Power Source

Table 9 Power Source

AC voltage nominal:	~120V
AC voltage range	~100V-240V
AC current maximal:	650mA

4.1.7 Tune-up Procedure

According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (9).

Please reference the document Tune-up Procedure in TCF.

4.1.8 Applied DC Voltages and Currents

According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (8).

The voltage and current in the final RF stage is:

Table 10 Applied RF module DC Voltages and Currents

Voltage:	⎓ 3.7V
Current:	100mA According to CFR (FCC) part 2, subpart 2, section 2.1033(c) (8)

4.2 EUT Identification List

4.2.1 Board Information

Table 11 Board Information

CDMA 1X Digital Mobile Phone with Bluetooth		
M635		
Board and Module		
Equipment Designation / Description	Hardware Version	Software
M635	Ver.B	M635C1TB106

4.2.2 Battery Technical Data

Battery Model:	HB5D1H
Rated capacity:	900 mAh
Nominal Voltage:	⎓ 3.7 V
Charging Voltage:	⎓ 4.2 V

4.2.3 FCC Identification

Grantee Code: **QIS**
Product Code: **C6071**
FCC Identification: **QISC6071**

5 Main Test Instruments

Table 12 Main Test Equipments

Equipment Description	Manufacturer	Model	Serial Number	Calibrated until
Power supply	KEITHLEY	2303	1288003	Sep.27,2011
Universal Radio Communication Tester	R&S	CMU200	105822	Oct.24.2011
Wireless Communication Test set	Agilent	N4010A	MY49081592	Dec.14.2011

Universal Radio Communication Tester	Agilent	E5515C	MY50260239	Aug.04,2011
Spectrum Analyzer	Agilent	E4440A	MY49420179	Apr.24,2011
Signal Analyzer	R&S	FSQ31	200021	Sep.27,2011
Temperature Chamber	WEISS	WKL64	24600294	Jan.03,2012
Signal generator	Agilent	E8257D	MY49281095	Jul.9.2011
Vector Signal Generator	R&S	SMU200A	104162	Sep.07,2011
Receiver	R&S	ESU26	100150	06.24.2011
BiLog Antenna	SCHWARZBECK	VULB 9163	9163-356	05.14.2011
Horn Antenna	R&S	HF906	100683	05.14.2011
Horn Antenna	ETS-Lindgren	3160	00091989	09.20.2011
LISN	R&S	ENV216	100382	06.24.2011

6 Transmitter Measurements

6.1 20dB bandwidth measurement

6.1.1 Test Conditions

Table 13 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25 °C
Relative humidity:	76%
Test Configurations:	TM1 at channel No.0, 40, 78

6.1.2 Test Specifications and Limits

6.1.2.1 Specification

CFR 47 (FCC) part 15.247 (a) (1) and DA 00-705

6.1.2.2 Supporting Standards

Table 14 Supporting Standards:

ANSI/TIA-603-C:2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.1.2.3 Limits

Not Applicable.

6.1.3 Test Method and Setup

(a) Connect test port of mobile phone to universal communication tester.
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function, then set the measured frequency number and test the 20dB bandwidth with universal communication tester.

Test setup

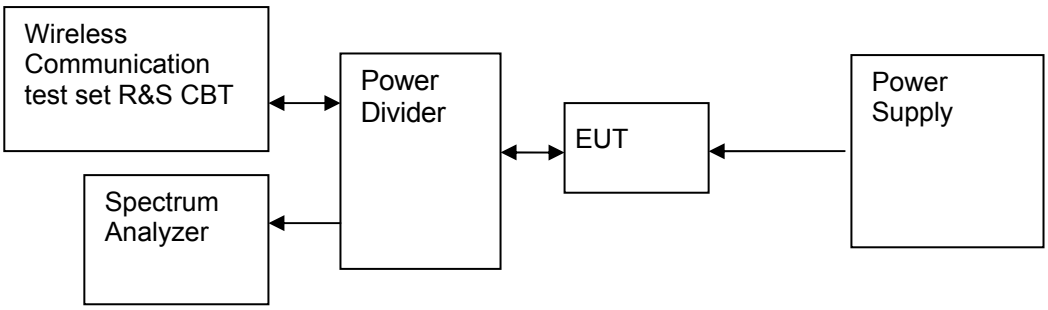

Figure 1. Test Set-up

6.1.4 Measurement Results

Table 15 Measurement Results

Bandwidth Type	Channel Position	Channel Number	Frequency [GHz]	Measured Bandwidth [MHz]	Result
20dB	B	0	2.402	0.975M	Pass
20dB	M	40	2.442	0.943M	Pass
20dB	T	78	2.480	0.965M	Pass

6.1.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix A.

6.2 Carrier frequency separation measurement

6.2.1 Test Conditions

Table 16 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25 °C
Relative humidity:	76%
Test Configurations:	TM1 at channel No.39, 40, 41

6.2.2 Test Specifications and Limits

6.2.2.1 Specification

CFR 47 (FCC) part 15.247 (a) (1) and DA 00-705

6.2.2.2 Supporting Standards

Table 17 Supporting Standards:

ANSI/TIA-603-C:2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.2.2.3 Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Table 18 Limits

Regulation:	≥ 0.025 or 2/3 of the 20 dB bandwidth
Limit:	≥ 2/3 × 0.943M = 0.629 MHz

6.2.3 Test Method and Setup

(a) Connect test port of mobile phone to spectrum analyzer and universal communication tester.
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function, then set the measured frequency number to two adjacent channels separately and test the carrier frequency separation with spectrum analyzer.

Test setup

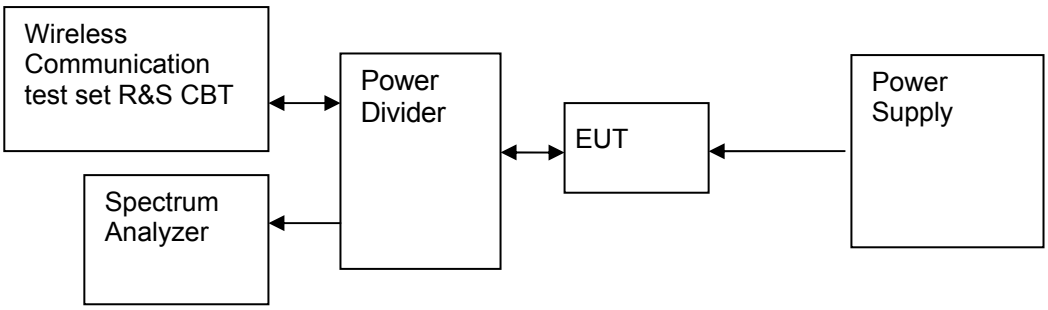

Figure 2. Test Set-up

6.2.4 Measurement Results

Table 19 Measurement Results

Channel No.	Frequency [GHz]	Channel No.	Frequency [GHz]	Measured frequency separation [MHz]	Limit [MHz]	Result
40	2.442	39	2.441	0.9	≥ 0.629	Pass
40	2.442	41	2.443	1.0	≥ 0.629	Pass

6.2.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix B.

6.3 Number of hopping channel

6.3.1 Test Conditions

Table 20 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25 °C
Relative humidity:	76%
Test Configurations:	TM1 at hopping frequency state

6.3.2 Test Specifications and Limits

6.3.2.1 Specification

CFR 47 (FCC) part 15.247 (a) (1) iii and DA 00-705

6.3.2.2 Supporting Standards

Table 21 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.3.2.3 Limits

Number of hopping channel should be compliance with the requirements in part15.247 (a) (1) iii.

Table 22 Limits

Limits	≥ 15 hopping frequency channel

6.3.3 Test Method and Setup

(a) Connect test port of mobile phone to spectrum analyzer and universal communication tester.
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch on frequency hopping function, then set enough count time (larger than 5000 times) to get all the hopping frequency channel displayed on the screen of spectrum analyzer.
(c) Count the quantity of peaks to get the number of hopping channels.

Test setup

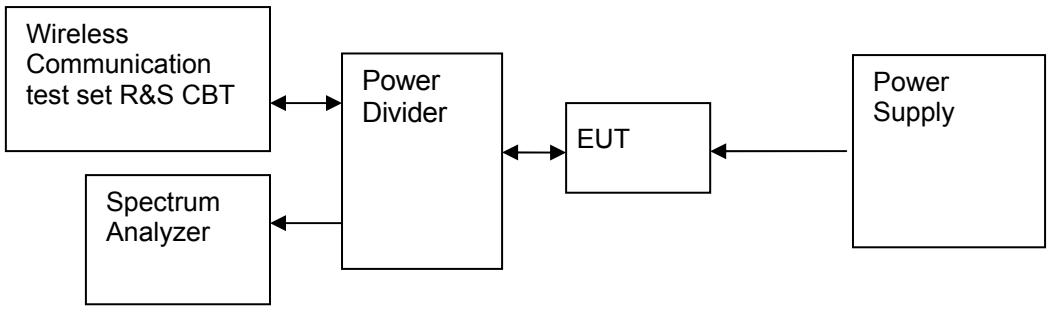

Figure 3. Test Set-up

6.3.4 Measurement Results

Table 23 Measurement Results

Measured frequency range [MHz]	Channel No. range	Measured Channel No.	Limit	Result
2400 to 2483.5	0-78	79	≥ 15	Pass

6.3.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix C.

6.4 Time of occupancy

6.4.1 Test Conditions

Table 24 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25°C
Relative humidity:	76%
Test Configurations:	TM1 at hopping frequency state

6.4.2 Test Specifications and Limits

6.4.2.1 Specification

CFR 47 (FCC) part 15.247 (a) (1) iii and DA 00-705

6.4.2.2 Supporting Standards

Table 25 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.4.2.3 Limits

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Table 26 Limits

Limits for time of occupancy	≤ 0.4s

6.4.3 Test Method and Setup

(a) Connect test port of mobile phone to spectrum analyzer and universal communication tester.
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch on frequency hopping function.
(c) Set the span of spectrum analyzer to 0 Hz, and set the resolution bandwidth to1 MHz and the vedio bandwidth to 1 MHz, then get the time domain measured diagram. and set sweep time to 2 times of one burst occupancy time, and measure the time of occupancy of one burst.
(d) Set the resolution bandwidth to1 MHz and the vedio bandwidth to 3 MHz ,and set the sweep time to a period (0.4 seconds multiplied by the number of hopping channels employed), and count the number of the bursts.
(e) Calculate the time of occupancy in a period with time occupancy of a burst and quantity of bursts.

Test setup

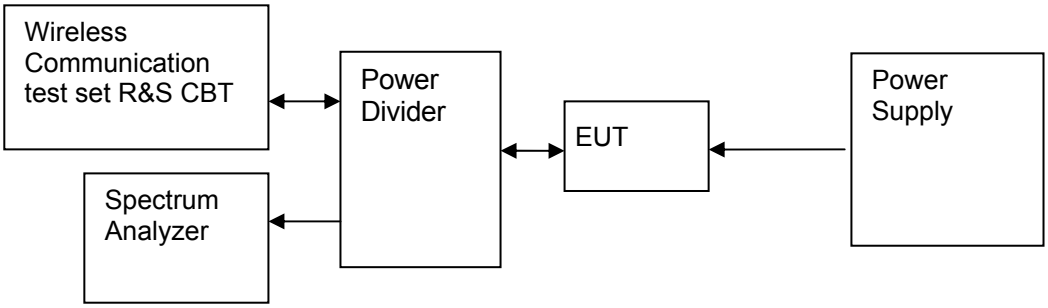

Figure 4. Test Set-up

6.4.4 Measurement Results

Table 27 Measurement Results

Time of Single Slot [ms]	Numbers of slots in a period	Time of occupied in a period [s]	Limit [s]	Result
3	106.7	0.3201	≤ 0.4	Pass

Note: The result is measured at DH5 mode in GFSK modulation, which has longest time in one transmission burst.

6.4.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix D.

6.5 Peak output power

6.5.1 Test Conditions

Table 28 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25 °C
Relative humidity:	76%
Test Configurations:	TM1 at channel No.0, 40, 78

6.5.2 Test Specifications and Limits

6.5.2.1 Specification

CFR 47 (FCC) part 15.247 (b) (1) and DA 00-705

6.5.2.2 Supporting Standards

Table 29 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.5.2.3 Limits

Compliance with part 15.247 (b) (1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watt.

Table 30 Limits

2.4GHz and 5.8GHz hopping frequency system	1 Watt (=30 dBm)

6.5.3 Test Method and Setup

(a) Connect test port of mobile phone to universal communication tester.
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function.
(c) Then set the mobile phone to transmit at high, middle and low frequency and measure the conducted output power separately.

Test setup

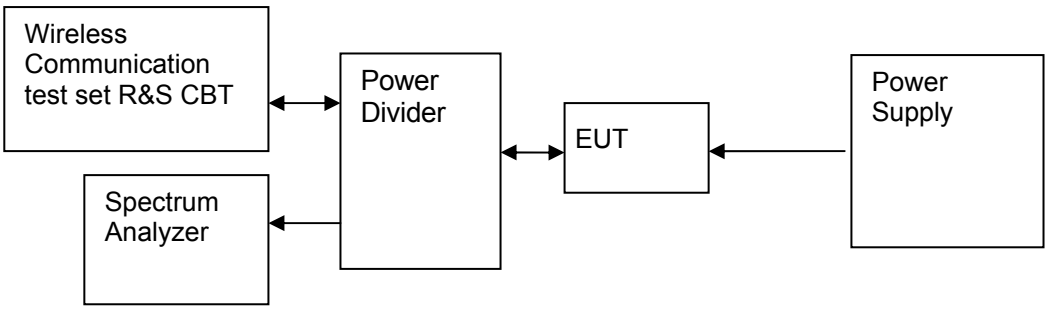

Figure 5. Test Set-up

6.5.4 Measurement Results

Table 31 Measurement Results

Channel	Channel No.	Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
Bottom	0	2402	7.16	< 30	Pass
Middle	40	2442	8.51	< 30	Pass
Top	78	2480	8.03	< 30	Pass

6.5.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix E.

6.6 Band edge spurious emission

6.6.1 Test Conditions

Table 32 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25°C
Relative humidity:	76%
Test Configurations:	TM1 at channel No. 0, 78 and frequency hopping state

6.6.2 Test Specifications and Limits

6.6.2.1 Specification

CFR 47 (FCC) part 15.247 (d) and DA 00-705

6.6.2.2 Supporting Standards

Table 33 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.6.2.3 Limits

Compliance with part 15.247 (d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.
.

Table 34 Limits

Band edge spurious:	20 dBc/100kHz

6.6.3 Test Method and Setup

(a) Connect test port of mobile phone to spectrum analyzer and universal communication tester
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function.
(c) Then set the mobile phone to transmit at high, low frequency and measure the conducted band edge spurious separately.
(d) Switch on the frequency hopping function, and repeat above measurement.

Test setup

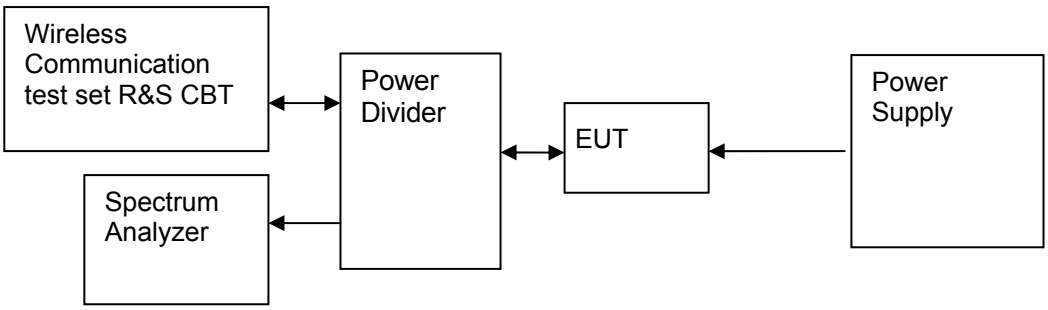

Figure 6. Test Set-up

6.6.4 Measurement Results

Table 35 Measurement Results for Band Edge immediately outside the 2.4GHz Band

	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
Low Edge	0	2402	7.18	Off	-49.22	< -12.82	Pass
	-	-	7.11	On	-55.32	< -12.89	Pass
High Edge	78	2480	7.94	Off	-54.61	< -12.06	Pass
	-	-	7.62	On	-54.77	< -12.38	Pass

6.6.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix F.

6.7 Conducted RF spurious

6.7.1 Test Conditions

Table 36 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Antenna connector
Ambient temperature:	25 °C
Relative humidity:	76%
Test Configurations:	TM1 at channel No.0, 40, 78

6.7.2 Test Specifications and Limits

6.7.2.1 Specification

CFR 47 (FCC) part 15.247 (d) and DA 00-705

6.7.2.2 Supporting Standards

Table 37 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

6.7.2.3 Limits

Compliance with part 15.247 (d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.
.

Table 38 Limits

Band edge spurious:	20 dBc/100kHz

6.7.3 Test Method and Setup

(a) Connect test port of mobile phone to spectrum analyzer and universal communication tester
(b) Set the mobile phone to transmit maximum output power at 2.4GHz and switch off frequency hopping function.
(c) Then set the mobile phone to transmit at high, middle and low frequency and measure the conducted band edge spurious separately.
(d) Switch on the frequency hopping function, and repeat above measurement.

Test setup

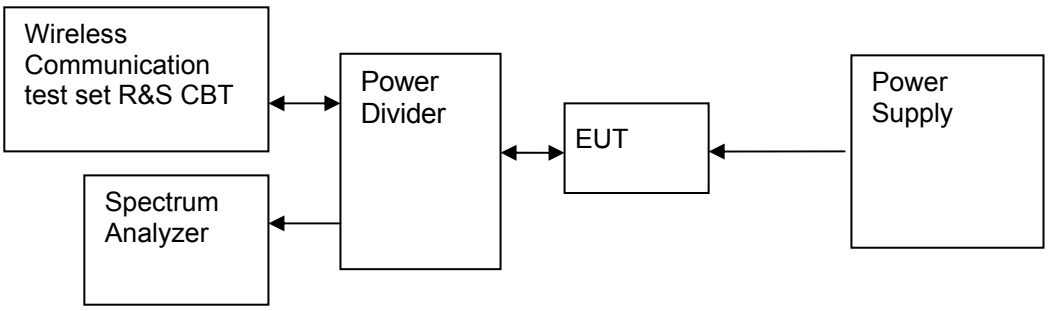

Figure 7. Test Set-up

6.7.4 Measurement Results

Table 39 Measurement Results

Test Frequency Range	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
9kHz-25GHz	0	2402	6.46	Off	-45.78	< -13.54	Pass
9kHz-25GHz	40	2442	8.14	Off	-46.45	< -11.86	Pass
9kHz-25GHz	78	2480	7.06	Off	-45.2	< -12.94	Pass

6.7.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix G.

6.8 Radiated spurious emission & spurious in restricted band

6.8.1 Test Conditions

Table 40 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Enclosure
Ambient temperature:	25 °C
Relative humidity:	55 %
Test Configurations:	TM1 at channel No.0, 40, 78

6.8.2 Test Specifications and Limits

6.8.2.1 Specification

CFR 47 (FCC) part 15.247 (d), 15.205 & 15.209 and DA 00-705

6.8.2.2 Supporting Standards

Table 41 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
ANSI C63.4: 2009	Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

6.8.2.3 Limits

According to part 15.247 (d) / 15.205 & 15.209, all spurious emission in the frequency range from 30MHz to 10th harmonics of carrier frequency should be meet the requirement of following table.

Table 42 Limits

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)	Detector
30 - 88	100	40	3	QP
88 - 216	150	43.5	3	QP
216 - 960	200	46	3	QP
960 -1000	500	54	3	QP
Above 1000	500	54	3	PK

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a) (see above table).

6.8.3 Test Method and Setup

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2009). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.The Radiated Disturbance measurements were made using a Rohde and Schwarz Test Receiver and control software.

A preliminary scan and a final scan of the emissions were made by using test script of software; the emissions were measured using a Quasi-Peak Detector below 1GHz, and AV detector above 1GHz. The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0°to 360°, The receive antenna has two polarizations V and H.

Huawei CDMA Mobile Phone with Bluetooth M635/HUAWEI M635 was communicated with the BTS simulator through Air interface. The Mobile Phone transmits maximum output power at 2.4GHz and switch off frequency hopping function.

Measurement bandwidth: 30 MHz - 1000 MHz: 120 kHz
Measurement bandwidth: 1000 MHz - 10th Carrier Frequency: 1 MHz

Test set up

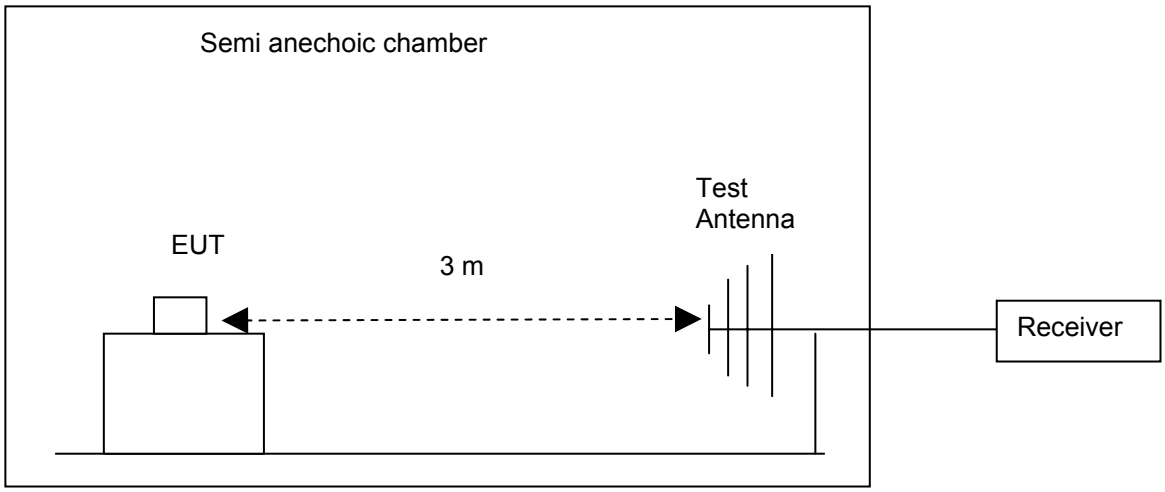

Figure 8. Test Set up

6.8.4 Measurement Results

Note: The following measurement results exceed the limit line is the carrier frequency.

Measured Result of channel: 0 (2402MHz)

Table 43 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
33.168000	23.80	11.7	40.0	16.2	100.0	167.00	VERTICAL
43.192000	25.40	13.1	40.0	14.6	103.0	343.00	VERTICAL
53.336000	19.30	12.7	40.0	20.7	100.0	76.00	VERTICAL
148.312000	20.60	8.9	43.5	22.9	103.0	340.00	VERTICAL
177.204000	20.60	10.7	43.5	22.9	109.0	359.00	VERTICAL
545.208000	28.70	21.3	46.0	17.3	103.0	274.00	VERTICAL
3178.500000	13.60	-8.4	54.0	40.4	100.0	130.00	VERTICAL
4284.200000	16.80	-5.1	54.0	37.2	140.0	241.00	HORIZONTAL
5487.000000	19.40	-2.4	54.0	34.6	114.0	315.00	VERTICAL
8388.300000	22.40	2.9	54.0	31.6	100.0	235.00	VERTICAL
14556.700000	30.00	12.2	54.0	24.0	154.0	60.00	VERTICAL
17974.300000	33.30	17.1	54.0	20.7	120.0	264.00	HORIZONTAL
2310.000000	39.50	33.3	54.0	14.5	100.0	345.00	HORIZONTAL

2390.000000	40.50	33.5	54.0	13.5	106.0	218.00	HORIZONTAL
2483.500000	39.80	33.7	54.0	14.2	109.0	195.00	HORIZONTAL
2500.000000	40.80	33.8	54.0	13.2	102.0	58.00	HORIZONTAL

Measured Result of channel: 40 (2442MHz)

Table 44 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
33.124000	23.70	11.7	40.0	16.3	105.0	127.00	VERTICAL
43.252000	25.70	13.1	40.0	14.3	143.0	153.00	VERTICAL
54.216000	19.30	12.7	40.0	20.7	120.0	176.00	VERTICAL
149.011000	20.50	8.9	43.5	23.0	103.0	210.00	VERTICAL
178.215000	20.90	10.7	43.5	22.6	109.0	219.00	VERTICAL
544.248000	28.90	21.3	46.0	17.1	123.0	204.00	VERTICAL
3526.100000	14.80	-7.3	54.0	39.2	100.0	12.00	VERTICAL
3972.900000	16.40	-5.9	54.0	37.6	121.0	354.00	VERTICAL
4303.300000	16.50	-5.2	54.0	37.5	114.0	354.00	HORIZONTAL
8342.500000	22.70	2.9	54.0	31.3	120.0	6.00	VERTICAL
14550.100000	30.00	12.3	54.0	24.0	120.0	177.00	VERTICAL
17984.900000	33.00	17.2	54.0	21.0	124.0	102.00	HORIZONTAL

Measured Result of channel: 78 (2480MHz)

Table 45 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
33.500000	23.70	11.7	40.0	16.3	105.0	116.00	HORIZONTAL
53.156000	19.30	12.7	40.0	20.7	147.0	230.00	VERTICAL
142.010000	21.20	8.7	43.5	22.3	105.0	304.00	HORIZONTAL
177.084000	19.60	10.7	43.5	23.9	100.0	359.00	VERTICAL
550.521000	28.40	21.4	46.0	17.6	120.0	224.00	VERTICAL
936.548000	34.90	26.5	46.0	11.1	100.0	42.00	VERTICAL
3685.200000	16.00	-6.7	54.0	38.0	100.0	220.00	VERTICAL
4009.100000	16.30	-5.8	54.0	37.7	114.0	35.00	HORIZONTAL
6338.700000	19.10	-1.2	54.0	34.9	121.0	177.00	HORIZONTAL
8363.600000	22.50	2.9	54.0	31.5	102.0	111.00	HORIZONTAL
8744.400000	22.20	3.4	54.0	31.8	104.0	137.00	VERTICAL
17981.400000	33.10	17.2	54.0	20.9	120.0	315.00	HORIZONTAL
2310.000000	39.40	33.7	54.0	14.6	152.0	18.00	VERTICAL
2390.000000	39.60	33.7	54.0	14.4	122.0	58.00	VERTICAL
2483.500000	39.80	33.7	54.0	14.2	127.0	158.00	VERTICAL
2500.000000	39.50	33.7	54.0	14.5	125.0	208.00	VERTICAL

6.8.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix H.

6.9 Conducted Emission at Power Port

6.9.1 Test Conditions

Table 46 Test Conditions

Preconditioning:	0.5 hour
Measured at:	Power port
Ambient temperature:	23.5°C
Relative humidity:	55 %
Test Configurations:	TM1 at channel No. 40

6.9.2 Test Specifications and Limits

6.9.2.1 Specification

CFR 47 (FCC) part 15.207 and DA 00-705

6.9.2.2 Supporting Standards

Table 47 Supporting Standards:

ANSI C63.4: 2009	Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

6.9.2.3 Limits

Compliance with part15.207, conducted emission must meet the requirement of following table.

Table 48 Limits

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

Note: * Decreases with the logarithm of the frequency.

6.9.3 Test Method and Setup

The Table-top EUT was placed upon a non-metallic table 0.8 m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4: 2009.

Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

Huawei CDMA Mobile Phone with Bluetooth M635/HUAWEI M635 was communicated with the BTS simulator through Air interface, the BTS simulator controls the Mobile Phone to transmitter the maximum power which defined in specification of product. The Mobile Phone operated on the typical channel.

Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz;

Test Set-up

The Mobile Phone was setup in the screened chamber and operated under nominal conditions.

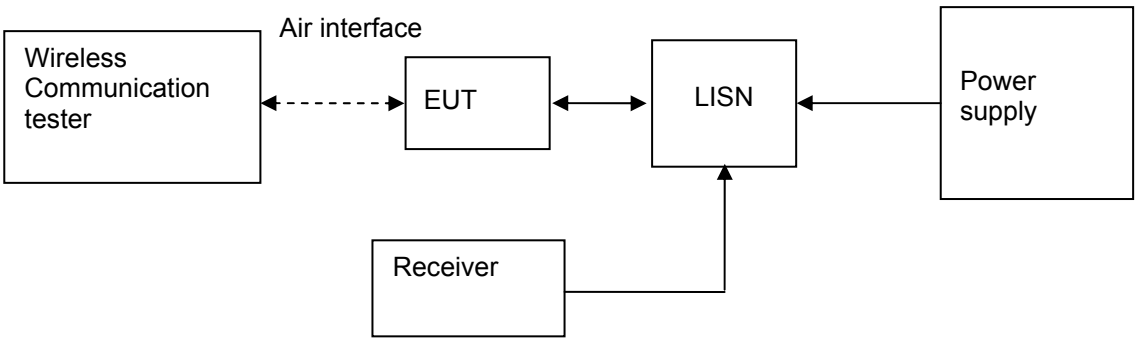

Figure 9. Test Set-up

6.9.4 Measurement Results

Table 49 MEASUREMENT RESULT:QP DECTER

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.294000	48.10	10.0	60	11.9	N	GND
0.672000	41.80	10.1	56	14.2	N	GND
1.114000	42.00	10.1	56	14.0	N	GND
2.072000	40.40	10.1	56	15.6	N	GND
9.508000	27.80	10.3	60	32.2	N	GND
17.318000	36.20	10.3	60	23.8	N	GND

Table 50 MEASUREMENT RESULT:AV DECTER

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.296000	38.70	10.0	50	11.3	N	GND
0.678000	33.00	10.1	46	13.0	N	GND
1.084000	33.20	10.1	46	12.8	N	GND
3.262000	28.20	10.2	46	17.8	N	GND
5.476000	14.30	10.2	50	35.7	N	GND
17.528000	26.10	10.3	50	23.9	N	GND

6.9.5 Conclusion

The equipment **PASSED** the requirement of this clause.
For the measurement results refer to appendix I.

7 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Table 51 System Measurement Uncertainty

Items		Extended Uncertainty
20dB bandwidth measurement	Magnitude (%)	U＝0.2%; k=2
Carrier frequency separation measurement	Magnitude (%)	U＝0.2%; k=2
Time of occupancy	Magnitude (%)	U＝0.2%; k=2
Peak output power	Power(dBm)	U=0.39dB; k=2
Band edge compliance measurement	Disturbance Power(dBm)	U＝2.0dB; k=2
Conducted RF spurious	Disturbance Power(dBm)	U＝2.0dB; k=2
Radiated spurious emission & Radiated restricted band measurement	Field strength (dBμV/m)	U=2.2dB; k=2 U=5dB; k=2
Conducted emission test for power port	Disturbance Voltage(dBμV)	U=4dB; k=2

8 Appendices List

Appendix A	Measurement Results 20dB bandwidth measurement	4 pages
Appendix B	Measurement Results Carrier frequency separation measurement	2 pages
Appendix C	Measurement Results Number of hopping channel	2 pages
Appendix D	Measurement Results Time of occupancy	3 pages
Appendix E	Measurement Results Peak output power	4 pages
Appendix F	Measurement Results Band edge compliance measurement	5 pages
Appendix G	Measurement Results Conducted RF spurious	13 pages
Appendix H	Measurement Results Radiated spurious emission	7 pages
Appendix I	Measurement Results Conducted emission test for power port	2 pages
Appendix J	Photos of Test Setup	3 pages

----- End of Report -----