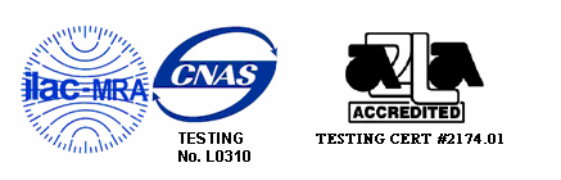

FCC Test Report

Product Name: CDMA Mobile Phone With Bluetooth

Model Number: HUAWEI M750

Report No: SYBH(R) E041042009EB-6

FCC ID: QISM750

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 obtained the accreditation of THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION (A2LA), and Accreditation Council Certificate Number: 2174.01.
3. 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.
4. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-1.
5. The laboratory also has been listed by the VCCI to perform EMC measurements. The accreditation number is R2364, C2583, and T256.
6. The test report is invalid if not marked with "exclusive stamp for the test report".
7. 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.
8. The test report is invalid if there is any evidence of erasure and/or falsification.
9. 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.
10. Normally, the test report is only responsible for the samples that have undergone the test.
11. 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: HUAWEI M750 Report No: SYBH(R)E041042009EB-6 FCC ID: QISM750
REGULATION	**FCC CFR47 Part 2: Subpart J;** **FCC CFR47 Part 15: Subpart C;**
CONCLUSION	**Pass**

General Manager	**2009.04.25**	张兴海	
	Date	Name	signature
Technical Responsibility For Area of Testing	**2009.04.24**	余　辉	
	Date	Name	signature
Test Lab Engineer	**2009.04.22**	胡　俊	
	Date	Name	signature

Contents

1 Summary

The table below summarizes the measurements and results for the CDMA Mobile Phone with Bluetooth M750. 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 With Bluetooth - M750 is subscriber equipment in the CDMA system. The frequency band is US Cellular. The Mobile Phone implements such functions as RF signal receiving / Transmitting, CDMA protocol processing, voice and SMS service etc. The Mobile Phone uses QSC6055 single chipset and Zero-IF technologies.

2.1.2 Support function and Service

The Mobile Phone M750 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: π/4-DQPSK		/
Data and Voice	Modulation: 8DPSK		

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

Apr.18, 2009 to Apr.21, 2009

3.2 General Set up Description

The Bluetooth hopping frequency system of Mobile Phone M750 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
π/4-DQPSK
8DPSK

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 (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 to ~ 240V
AC current maximal:	400mA

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 Mobile Phone With Bluetooth		
HUAWEI M750		
Board and Module		
Equipment Designation / Description	Serial Number	Remarks
-Main board	020NJB2091000226	HC1M750M Ver.A
-LCD	98CP001000Y0	CT028TN05 V.4
-Battery	YAC9210HI0301010	HB5A2H

4.2.2 Adapter Technical Data

AC/DC Adapter Model:	HS-050040U1	HS-050040U1
Manufacturer:	TECH POWER ELECTRONICS （SHENZHEN） CO.,LTD	SHENZHEN HUNTKEY POWER TECHNOLOGY CO., LTD
Rated Voltage	~ 120V, 60Hz	~ 120V, 60Hz
Input Voltage:	~ 100-240V 50/60Hz	~ 100-240V 50/60Hz
Output Voltage;	⎓ 5.0V	⎓ 5.0V
Rated Power:	2W	2W
S/N:	TPA920610532	HKA911933572

4.2.3 Battery Technical Data

Battery Model: HB5A2H
Rated capacity: 1150mAh
Nominal Voltage: ⎓ 3.7V
Charging Voltage: ⎓ 4.2V

4.2.4 FCC Identification

Grantee Code: QIS
Product Code: M750
FCC Identification: QISM750

5 Main Test Instruments

Table 12 Main Test Equipments

Equipment Description	Manufacturer	Model	Serial Number	Calibrated until (MM.DD.YYYY)
Signal Analyzer	R&S	FSP	3604100094	03.17.2010
Signal Analyzer	R&S	FSQ 40	100025	05.11.2009
Test Receiver Display Unit	R&S	ESMI 804.8932.52	829214/011	04.22.2010
Test Receiver RF Unit	R&S	ESMI 1032.5640.53	829550/008	04.22.2010
Receiver	R&S	ESIB 26	100318	04.21.2010
Receiver	R&S	ESCS30	830245/018	04.21.2010
Pre-Amplifier	Agilent	8447D	2944A10146	05.11.2009
Pre-Amplifier	Agilent	83017A	3950M00246	03.04.2010
BiLog Antenna	Schaffner	CBL 6112B	2536	06.07.2009
Horn Antenna	R&S	HF906	359287/006	12.13.2009
Horn Antenna	ETS-Lindgren	3117	3606061621	07.15.2009
Horn Antenna	ETS-Lindgren	3160	3606061623	07.15.2009
Signal Generator	R&S	SMU200A	3604100093	03.17.2010
Signal Generator	R&S	SMR 40	100325	05.11.2009
Artificial Mains Network	R&S	ENV4200	100001	05.11.2009
Universal Radio Communication Tester	R&S	CBT	3608053990	05.21.2009
Spectrum Analyzer	Agilent	PSA E4440A	MY48250132	08.20.2009

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

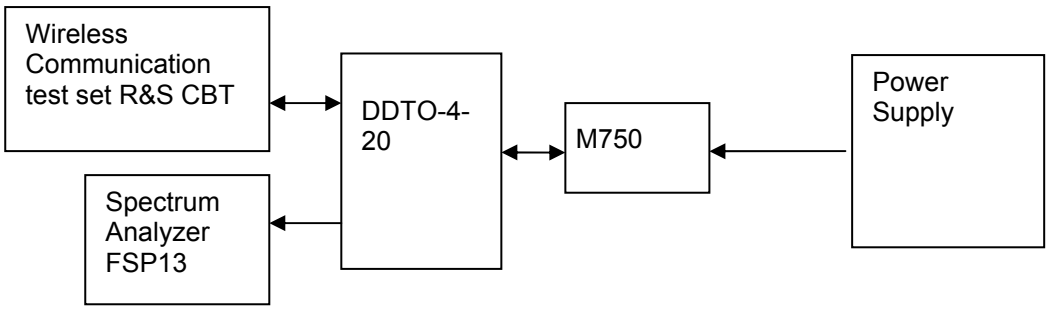

Figure 1. Test Set-up

6.1.4 Measurement Results

Table 15 Measurement Results（Modulation: π/4-DQPSK）

Bandwidth Type	Channel Position	Channel Number	Frequency [GHz]	Measured Bandwidth [MHz]	Result
20dB	B	0	2.402	1.280	Pass
20dB	M	40	2.442	1.284	Pass
20dB	T	78	2.480	1.284	Pass

Table 16 Measurement Results（Modulation: 8DPSK）

Bandwidth Type	Channel Position	Channel Number	Frequency [GHz]	Measured Bandwidth [MHz]	Result
20dB	B	0	2.402	1.284	Pass
20dB	M	40	2.442	1.292	Pass
20dB	T	78	2.480	1.296	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 17 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 18 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 19 Limits（Modulation: π/4-DQPSK）

Regulation:	≥ 0.025 or 2/3 of the 20 dB bandwidth
Limit:	≥ 2/3 × 1.284= 0.856MHz

Table 20 Limits（Modulation: 8DPSK）

Regulation:	≥ 0.025 or 2/3 of the 20 dB bandwidth
Limit:	≥ 2/3 × 1.292= 0.861MHz

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

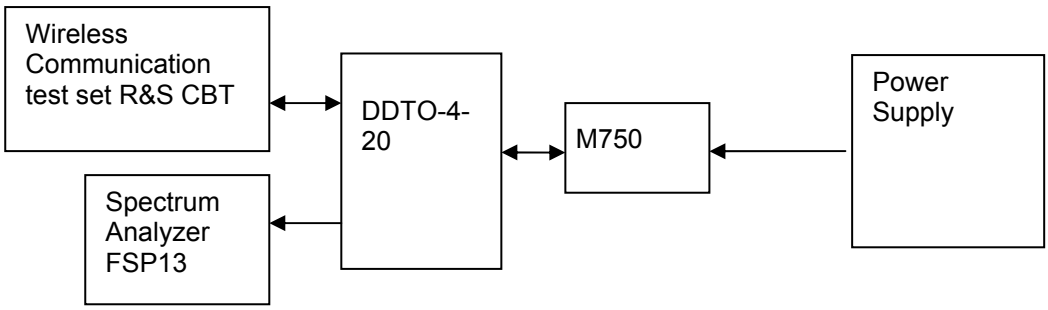

Figure 2. Test Set-up

6.2.4 Measurement Results

Table 21 Measurement Results（Modulation: π/4-DQPSK）

Channel No.	Frequency [GHz]	Channel No.	Frequency [GHz]	Measured frequency separation [MHz]	Limit [MHz]	Result
40	2.442	39	2.441	1.03	≥ 0.856	Pass
40	2.442	41	2.443	1.14	≥ 0.856	Pass

Table 22Measurement Results（Modulation: 8DPSK）

Channel No.	Frequency [GHz]	Channel No.	Frequency [GHz]	Measured frequency separation [MHz]	Limit [MHz]	Result
40	2.442	39	2.441	0.87	≥ 0.861	Pass
40	2.442	41	2.443	1.00	≥ 0.861	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 23 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 24 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 25 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

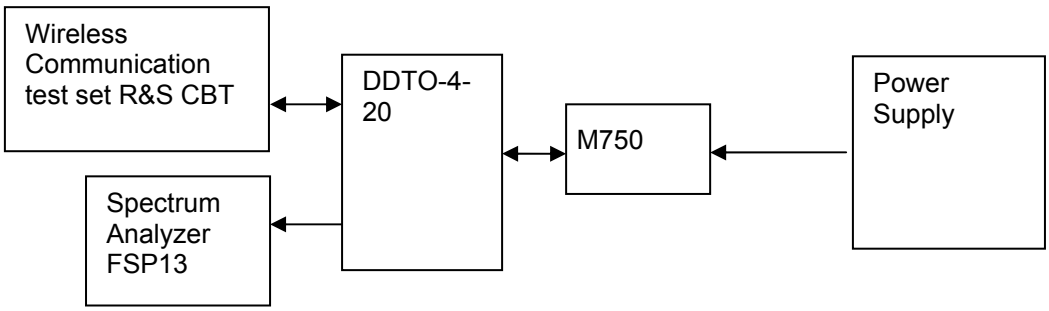

Figure 3. Test Set-up

6.3.4 Measurement Results

Table 26 Measurement Results（Modulation: π/4-DQPSK）

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

Table 27 Measurement Results（Modulation: 8-DPSK）

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 28 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 29 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 30 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 video 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 video 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

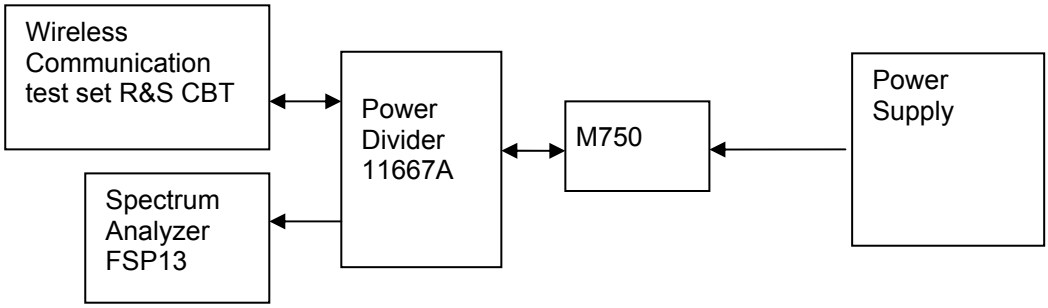

Figure 4. Test Set-up

6.4.4 Measurement Results

Table 31 Measurement Results （Modulation: π/4-DQPSK）

Time of Single Slot [ms]	Numbers of slots in a period	Time of occupied in a period [s]	Limit [s]	Result
2.82	106.7	0.301	≤ 0.4	Pass

Table 32 Measurement Results （Modulation: 8DPSK）

Time of Single Slot [ms]	Numbers of slots in a period	Time of occupied in a period [s]	Limit [s]	Result
2.94	106.7	0.314	≤ 0.4	Pass

Note: The result is measured at 2-DH5\3-DH5 mode in π/4-DQPSK\8DPSK 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 33 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 34 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 35 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

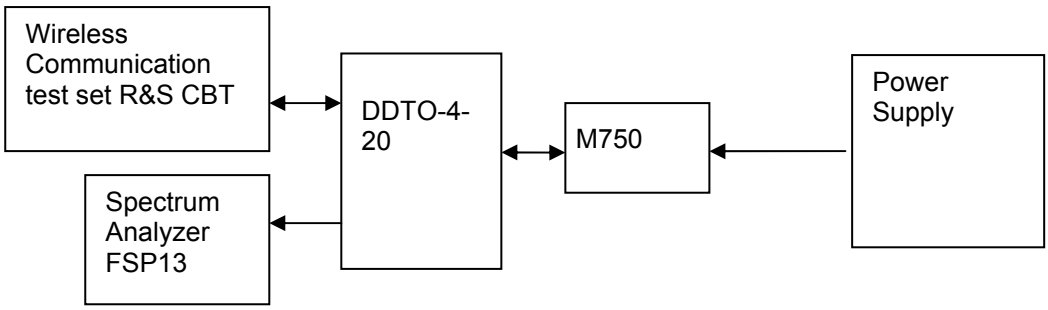

Figure 5. Test Set-up

6.5.4 Measurement Results

Table 36 Measurement Results（Modulation: π/4-DQPSK）

Channel	Channel No.	Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
Bottom	0	2402	0.52	< 30	Pass
Middle	40	2442	0.40	< 30	Pass
Top	78	2480	0.65	< 30	Pass

Table 37 Measurement Results（Modulation: 8DPSK）

Channel	Channel No.	Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
Bottom	0	2402	0.42	< 30	Pass
Middle	40	2442	0.75	< 30	Pass
Top	78	2480	0.41	< 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 38 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 39 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 40 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

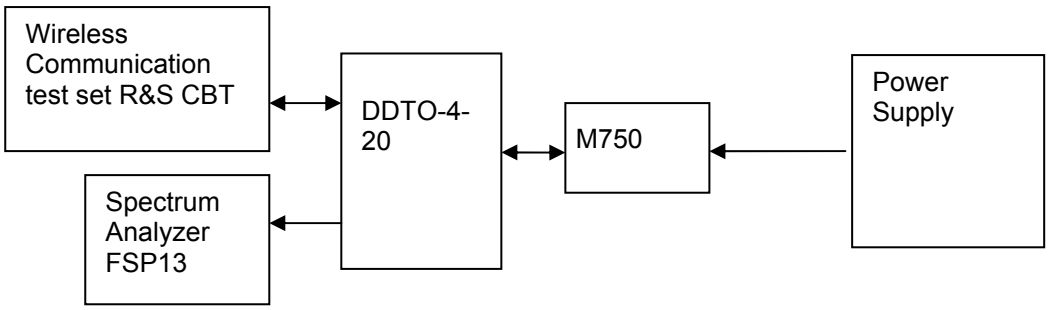

Figure 6. Test Set-up

6.6.4 Measurement Results

Table 41 Measurement Results for Band Edge immediately outside the 2.4GHz Band （Modulation: π/4-DQPSK）

	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
Low Edge	0	2402	-1.46	Off	-54.96	< -21.46	Pass
	-	-	-1.53	On	-57.49	<-21.53	Pass
High Edge	78	2480	-2.02	Off	-57.48	<-22.02	Pass
	-	-	-1.97	On	-57.48	<-21.97	Pass

Table 42 Measurement Results for Band Edge immediately outside the 2.4GHz Band （Modulation: 8DPSK）

	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
Low Edge	0	2402	-1.85	Off	-53.82	< -21.85	Pass
	-	-	-1.84	On	-56.11	< -21.84	Pass
High Edge	78	2480	-1.57	Off	-58.19	<-21.57	Pass
	-	-	-3.04	On	-55.88	<-23.04	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 43 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 44 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 45 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

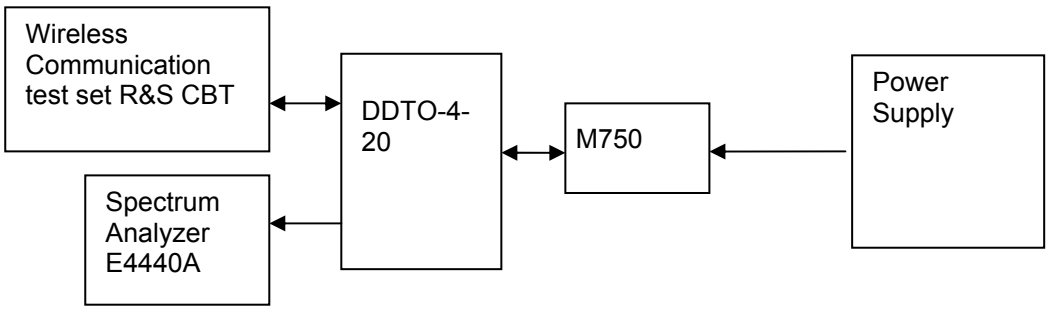

Figure 7. Test Set-up

6.7.4 Measurement Results

Table 46 Measurement Results （Modulation：π/4-DQPSK）

Test Frequency Range	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
9kHz-25GHz	0	2402	-0.40	Off	-32.57	< -20.40	Pass
9kHz-25GHz	40	2442	-1.12	Off	-32.63	< -21.12	Pass
9kHz-25GHz	78	2480	-1.92	Off	-31.64	< -21.92	Pass

Table 47Measurement Results （Modulation：8DPSK）

Test Frequency Range	Channel No.	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max. Spurious Level [dBm]	Limit [dBm]	Result
9kHz-25GHz	0	2402	-0.30	Off	-31.78	< -20.30	Pass
9kHz-25GHz	40	2442	-1.01	Off	-31.78	< -21.01	Pass
9kHz-25GHz	78	2480	-0.98	Off	-31.44	< -20.98	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 48 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 49 Supporting Standards:

ANSI/TIA-603-C: 2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
ANSI C63.4: 2003	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 50 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 (2003). 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 M750 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

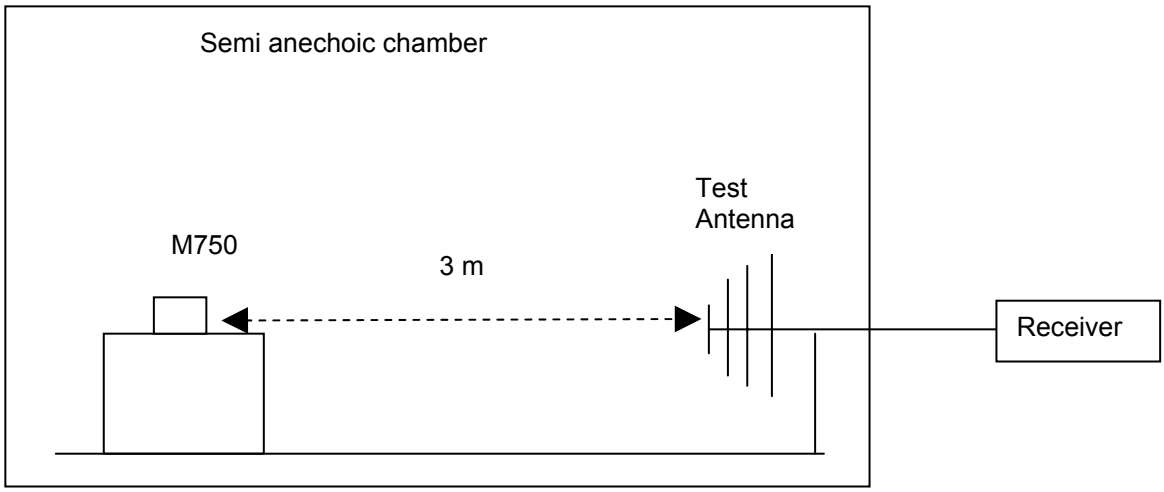

Figure 8. Test Set up

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 51 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
35.600000	20.50	-12.0	40.0	19.5	177.0	196.00	HORIZONTAL
87.960000	14.60	-17.8	40.0	25.4	135.0	154.00	VERTICAL
97.800000	15.50	-14.0	43.5	28.0	220.0	257.00	VERTICAL
291.000000	20.60	-13.7	46.0	25.4	144.0	101.00	VERTICAL
528.300000	26.30	-3.8	46.0	19.7	179.0	147.00	VERTICAL
908.200000	32.60	0.7	46.0	13.4	125.0	301.00	HORIZONTAL
1884.000000	11.40	-10.3	54.0	42.6	117.0	266.00	VERTICAL
2402.000000	75.10	-6.8	54.0	-21.1	191.0	141.00	HORIZONTAL
4255.500000	20.80	-1.0	54.0	33.2	138.0	270.00	HORIZONTAL
4316.000000	23.20	1.9	54.0	30.8	203.0	125.00	VERTICAL
10614.500000	29.10	11.9	54.0	24.9	241.0	170.00	VERTICAL
17875.000000	41.20	26.0	54.0	12.8	248.0	55.00	HORIZONTAL
18782.000000	30.70	18.5	54.0	23.3	285.0	324.00	VERTICAL
19478.000000	30.00	18.9	54.0	24.0	278.0	65.00	VERTICAL

21703.000000	31.90	20.5	54.0	22.1	151.0	331.00	HORIZONTAL
24197.000000	31.00	21.5	54.0	23.0	113.0	304.00	VERTICAL
25390.000000	30.90	23.1	54.0	23.1	254.0	138.00	HORIZONTAL
26497.000000	33.90	27.9	54.0	20.1	211.0	260.00	HORIZONTAL
2310.000000	13.70	-7.3	54.0	40.3	241.0	286.00	HORIZONTAL
2390.000000	18.10	-6.9	54.0	35.9	133.0	178.00	VERTICAL
2402.000000	74.40	-6.7	54.0	-20.4	162.0	127.00	VERTICAL
2483.500000	15.00	-6.7	54.0	39.0	150.0	150.00	HORIZONTAL
2500.000000	13.20	-6.6	54.0	40.8	195.0	180.00	HORIZONTAL

Measured Result of channel: 40 (2442MHz)

Table 52 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
35.600000	20.30	-12.0	40.0	19.7	298.0	68.00	VERTICAL
88.140000	15.10	-17.8	40.0	24.9	186.0	125.00	HORIZONTAL
98.100000	17.20	-14.0	43.5	26.3	279.0	192.00	HORIZONTAL
291.000000	20.10	-13.7	46.0	25.9	285.0	35.00	HORIZONTAL
528.300000	26.40	-3.8	46.0	19.6	162.0	138.00	HORIZONTAL
909.500000	32.70	0.7	46.0	13.3	158.0	235.00	VERTICAL
1610.000000	9.80	-10.9	54.0	44.2	100.0	102.00	HORIZONTAL
2442.000000	74.90	-6.9	54.0	-20.9	213.0	313.00	HORIZONTAL
4180.500000	20.00	-0.6	54.0	34.0	276.0	156.00	HORIZONTAL
6636.000000	21.50	5.5	54.0	32.5	112.0	330.00	VERTICAL
10752.000000	29.40	12.1	54.0	24.6	191.0	297.00	HORIZONTAL
17625.000000	41.80	25.5	54.0	12.2	223.0	181.00	HORIZONTAL
19478.000000	30.50	18.9	54.0	23.5	184.0	186.00	HORIZONTAL
20469.000000	31.00	19.7	54.0	23.0	164.0	40.00	HORIZONTAL
21772.000000	31.20	20.5	54.0	22.8	200.0	181.00	VERTICAL
23532.000000	30.80	20.5	54.0	23.2	294.0	320.00	VERTICAL
24196.500000	30.50	21.5	54.0	23.5	114.0	147.00	HORIZONTAL
26502.000000	34.30	27.9	54.0	19.7	158.0	187.00	HORIZONTAL

Measured Result of channel: 78 (2480MHz)

Table 53 MEASUREMENT RESULT

Frequency (MHz)	Level (dBμV/m)	Transd (dB)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Polarisation
35.600000	20.90	-12.0	40.0	19.1	261.0	218.00	VERTICAL
87.960000	14.10	-17.8	40.0	25.9	221.0	345.00	VERTICAL
97.800000	15.60	-14.0	43.5	27.9	123.0	270.00	HORIZONTAL
291.000000	20.30	-13.7	46.0	25.7	292.0	82.00	VERTICAL
528.300000	26.20	-3.8	46.0	19.8	122.0	168.00	VERTICAL
908.200000	32.60	0.7	46.0	13.4	269.0	185.00	HORIZONTAL
1630.000000	10.0	-10.9	54.0	44.0	168.0	146.00	VERTICAL
2480.000000	75.30	-6.8	54.0	-21.3	180.0	213.00	VERTICAL
4245.000000	20.40	-0.4	54.0	33.6	123.0	223.00	HORIZONTAL
6576.000000	22.50	5.3	54.0	31.5	280.0	141.00	HORIZONTAL
10895.000000	29.80	12.2	54.0	24.2	117.0	52.00	HORIZONTAL
17849.000000	40.70	25.9	54.0	13.3	184.0	134.00	VERTICAL
19019.500000	31.40	18.6	54.0	22.6	200.0	86.00	VERTICAL
19480.500000	30.80	18.9	54.0	23.2	293.0	46.00	VERTICAL
20869.500000	32.70	20.2	54.0	21.3	268.0	298.00	VERTICAL
22548.500000	33.30	20.3	54.0	20.7	265.0	65.00	VERTICAL

24575.000000	31.90	22.0	54.0	22.1	259.0	213.00	HORIZONTAL
26496.500000	34.50	27.9	54.0	19.5	218.0	338.00	VERTICAL
2310.000000	13.00	-7.1	54.0	41.0	114.0	171.00	VERTICAL
2390.000000	13.10	-6.9	54.0	40.9	225.0	81.00	HORIZONTAL
2480.000000	74.70	-6.9	54.0	-20.7	270.0	307.00	VERTICAL
2483.500000	38.50	-6.7	54.0	15.5	175.0	82.00	HORIZONTAL
2500.000000	12.90	-6.6	54.0	41.1	106.0	267.00	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 54 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 55 Supporting Standards:

ANSI C63.4: 2003	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 56 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: 2003.

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 M750 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.

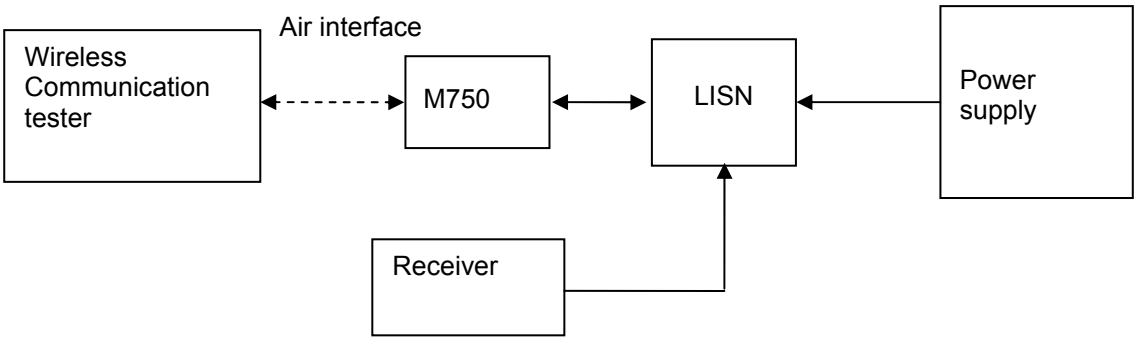

Figure 9. Test Set-up

6.9.4 Measurement Results

Table 57 MEASUREMENT RESULT:QP DECTER

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.406500	39.10	10.0	58	18.9	QP	N	FLO
0.600000	42.70	10.1	56	13.3	QP	N	FLO
2.562000	35.10	10.1	56	20.9	QP	N	FLO
3.412500	35.50	10.2	56	20.5	QP	N	FLO
6.072000	41.40	10.2	60	18.6	QP	N	FLO
6.639000	32.90	10.2	60	27.1	QP	L1	FLO

Table 58 MEASUREMENT RESULT:AV DECTER

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.379500	22.00	10.0	48	26.0	AV	N	FLO
0.609000	31.20	10.1	46	14.8	AV	N	FLO
2.562000	15.70	10.1	46	30.3	AV	N	FLO
3.444000	17.40	10.2	46	28.6	AV	L1	FLO
6.063000	26.70	10.2	50	23.3	AV	N	FLO
6.675000	24.30	10.2	50	25.7	AV	N	FLO

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 59 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	7 pages
Appendix B	Measurement Results Carrier frequency separation measurement	3 pages
Appendix C	Measurement Results Number of hopping channel	3 pages
Appendix D	Measurement Results Time of occupancy	5 pages
Appendix E	Measurement Results Peak output power	7 pages
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Appendix G	Measurement Results Conducted RF spurious	19 pages
Appendix H	Measurement Results Radiated spurious emission	12 pages
Appendix I	Measurement Results Conducted emission test for power port	2 pages
Appendix J	Photos of Test Setup	3 pages

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