Shenzhen Huatongwei International Inspection Co., Ltd.

1/F,Bldg 3,Hongfa Hi-tech Industrial Park,Genyu Road,Tianliao,Gongming,Shenzhen,China Phone:86-755-26748019 Fax:86-755-26748089 http://www.szhtw.com.cn



FCC REPORT

Report Reference No.....:: TRE1807009502 R/C..... 95680

FCC ID.....:: ZSW-30-071

Applicant's name.....: b mobile HK Limited

Address....: Flat 18, 14/F Block 1, Golden Industrial Building, 16-26 Kwai Tak

Street, Kwai Chung, New Territories, Hong Kong.

Manufacturer....: b mobile HK Limited

Flat 18, 14/F Block 1, Golden Industrial Building, 16-26 Kwai Tak Address....:

Street, Kwai Chung, New Territories, Hong Kong.

Mobile Phone Test item description:

Trade Mark: **Bmobile**

Model/Type reference..... AX1074

Listed Model(s):

FCC CFR Title 47 Part 2 Standard::

> FCC CFR Title 47 Part 22 FCC CFR Title 47 Part 24

Date of receipt of test sample.....: Jul.17 2018

Date of testing..... Jul.18 2018- Jul.27 2018

Date of issue....: Jul.30 2018

Result....: **Pass**

Compiled by

(position+printedname+signature)...: File administrators Candy Liu

Supervised by

(position+printedname+signature)....: Project Engineer Edward Pan fanghui.Zhu Aaron.Fang

Approved by

(position+printedname+signature)....: Manager Hans Hu

Testing Laboratory Name:: Shenzhen Huatongwei International Inspection Co., Ltd.

1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Address....:

Tianliao, Gongming, Shenzhen, China

Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

The test report merely correspond to the test sample.

Report No.: TRE1807009502 Page: 2 of 24 Issued: 2017-07-30

Contents

<u>1.</u>	TEST STANDARDS AND REPORT VERSION	3
1.1.	Applicable Standards	3
1.2.	Report version information	3
	•	
<u>2.</u>	TEST DESCRIPTION	4
<u>3.</u>	SUMMARY	5
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	Operation state	6
3.4.	EUT configuration	6
3.5.	Modifications	6
<u>4.</u>	TEST ENVIRONMENT	7
		·
4.1.	Address of the test laboratory	7
4.2.	Test Facility	7
4.3.	Equipments Used during the Test	8
4.4.	Environmental conditions	9
4.5.	Statement of the measurement uncertainty	9
<u>5.</u>	TEST CONDITIONS AND RESULTS	10
5.1.	Conducted Output Power	10
5.2.	Peak-Average Ratio	11
5.3.	99% Occupied Bandwidth & 26 dB Bandwidth	12
5.4.	Band Edge	13
5.5.	Conducted Spurious Emissions	14
5.6.	Frequency stability VS Temperature measurement	15
5.7.	Frequency stability VS Voltage measurement	16
5.8.	ERP and EIRP	17
5.9.	Radiated Spurious Emission	20
<u>6.</u>	TEST SETUP PHOTOS	24
7	EXTERNAL AND INTERNAL PHOTOS	2 4
<u>7.</u>	EXTERNAL AND INTERNAL PHOTOS	24
<u>8.</u>	APPENDIX REPORT	24

Report No.: TRE1807009502 Page: 3 of 24 Issued: 2017-07-30

1. TEST STANDARDS AND REPORT VERSION

1.1. Applicable Standards

The tests were performed according to following standards:

<u>FCC Rules Part 2:</u> FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

FCC Rules Part 22: PRIVATE LAND MOBILE RADIO SERVICES.

FCC Rules Part 24: PUBLIC MOBILE SERVICES

TIA/EIA 603 E March 2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

ANSI C63.26: 2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

KDB 971168 D01 Power Meas License Digital Systems v03: MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2018-07-30	Original

Report No.: TRE1807009502 Page: 4 of 24 Issued: 2017-07-30

2. Test Description

Test Item	Section in CFR 47	Result	Test Engineer
	Part 2.1046		
Conducted Output Power	Part 22.913(a)	Pass	Baozhu Hu
	Part 24.232(c)		
Peak-to-Average Ratio	Part 24.232	Pass	Baozhu Hu
000/ 0	Part 2.1049		
99% Occupied Bandwidth & 26 dB Bandwidth	Part 22.917(b)	Pass	Baozhu Hu
Bandwidth	Part 24.238(b)		
	Part 2.1051		
Band Edge	Part 22.917	Pass	Baozhu Hu
	Part 24.238		
	Part 2.1051		
Conducted Spurious Emissions	Part 22.917	Pass	Baozhu Hu
	Part 24.238		
	Part 2.1055(a)(1)(b)		
Frequency stability vs temperature	Part 22.355	Pass	Baozhu Hu
	Part 24.235		
	Part 2.1055(d)(1)(2)		
Frequency stability vs voltage	Part 22.355	Pass	Baozhu Hu
	Part 24.235		
ERP and EIRP	Part 22.913(a)	Door	liuru Don
ERF and EIRF	Part 24.232(b)	Pass	Jiuru Pan
	Part 2.1053		
Radiated Spurious Emissions	Part 22.917	Pass	Jiuru Pan
	Part 24.238		

Note: The measurement uncertainty is not included in the test result.

Report No.: TRE1807009502 Page: 5 of 24 Issued: 2017-07-30

3. **SUMMARY**

3.1. Client Information

Applicant:	b mobile HK Limited	
Address:	Flat 18, 14/F Block 1, Golden Industrial Building, 16-26 Kwai Street, Kwai Chung, New Territories, Hong Kong.	
Manufacturer:	b mobile HK Limited	
Address:	Flat 18, 14/F Block 1, Golden Industrial Building, 16-26 Kwai Tak Street, Kwai Chung, New Territories, Hong Kong.	

3.2. Product Description

Name of EUT:	Mobile Phone		
Trade Mark:	Bmobile		
Model No.:	AX1074		
Listed Model(s):	-		
IMEI Code:	Conducted: 362523432430513 Radiated: 362523432430604		
SIM Information:	Support Two SIM Card		
Power supply:	3.7V		
Adapter information:	Input: 100-240Va.c. 50-60Hz 0.2A Output: 5.0Vd.c. 700mA		
Hardware version:	W4G01_MB_V3.0_20170406		
Software version:	Bmobile_AX1074_TIGO_CO_V001		
3G:			
Operation Band:	FDD Band II, FDD Band V		
Power Class:	Class 3		
Modulation Type:	QPSK		
Transmit frequency:	FDD Band II: 1852.40MHz~1907.60MHz FDD Band V: 826.40MHz~846.60MHz		
Receive frequency:	FDD Band II: 1932.40MHz~1987.60MHz FDD Band V: 871.40MHz~891.60MHz		
DC-HSUPA Release Version:	Not Supported		
Antenna type:	Monopole Antenna		
Antenna gain:	Band II: -0.5dBi, Band V: -0.5dBi		

Report No.: TRE1807009502 Page: 6 of 24 Issued: 2017-07-30

3.3. Operation state

Test frequency list

FDD E	Band II	FDD Ba	and V
Channel	Frequency (MHz) Channel Freq		Frequency (MHz)
9262	1852.40	4132	826.40
9400	1880.00	4183	836.60
9538	1907.60	4233	846.60

> Test mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03 and ANSI C63.26-2015 with maximum output power.

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

Radiated emissions were investigated as following frequency range:

30 MHz to 10th harmonic for FDD Band II, Band V.

The Test EUT support two SIM card(SIM1,SIM2),so all the tests are performed at each SIM card (SIM1,SIM2) mode, the datum recorded is the worst case for all the mode at SIM1 Card mode.

All modes and data rates and positions were investigated.

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

Test modes					
Band	Conducted				
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link			
WCDMA Band II	WCDMA Band II ■ RMC 12.2Kbps Link				

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

supplied by the manufacturer

supplied by the lab

		Manufacturer:	1
		Model No.:	1
		Manufacturer:	1
0	/	Model No.:	/

3.5. Modifications

No modifications were implemented to meet testing criteria.

Report No.: TRE1807009502 Page: 7 of 24 Issued: 2017-07-30

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China.

4.2. Test Facility

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files.

IC-Registration No.:5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No.: 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

Report No.: TRE1807009502 Page: 8 of 24 Issued: 2017-07-30

4.3. Equipments Used during the Test

RF Co	RF Conducted Test							
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)		
1	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018		
2	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/26/2017	10/25/2018		
3	Spectrum Analyzer	Rohde&Schwarz	FSW26	103440	11/11/2017	11/10/2018		
4	MXA Signal Analyzer	Agilent	N9020A	MY5050187	11/10/2017	11/09/2018		
5	Splitter	Mini-Circuit	ZAPD-4	400059	03/18/2018	03/17/2019		
6	Climate Chamber	ESPEC	EL-10KA	05107008	11/10/2017	11/09/2018		

Radia	Radiated Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)	
1	EMI Test Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018	
2	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2018	
3	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	04/05/2017	04/04/2020	
4	Preamplifier	SCHWARZBECK	BBV 9743	9743-0022	10/18/2017	10/17/2018	
5	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	11/21/2017	11/20/2018	
6	EMI Test Software	R&S	ESK1	N/A	N/A	N/A	
7	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018	
8	Horn Antenna	SCHWARZBECK	9120D	1011	03/27/2017	03/26/2020	
9	Horn Antenna	SCHWARZBECK	BBHA9170	25841	03/25/2018	03/24/2019	
10	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-248	10/18/2017	10/17/2018	
11	High pass filter	Compliance Direction systems	BSU-6	34202	11/11/2017	11/10/2018	
12	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	11/21/2017	11/20/2018	
13	Signal Generator	Rohde&Schwarz	SMB100A	114360	06/11/2018	06/10/2019	
14	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018	
15	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/26/2017	10/25/2018	
16	EMI Test Software	Audix	E3	N/A	N/A	N/A	
17	Turntable	MATURO	TT2.0	N/A	N/A	N/A	
18	Antenna Mast	MATURO	TAM-4.0-P	N/A	N/A	N/A	

Report No.: TRE1807009502 Page: 9 of 24 Issued: 2017-07-30

4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

	VN=Nominal Voltage	DC 3.70V
Voltage	VL=Lower Voltage	DC 3.60V
	VH=Higher Voltage	DC 4.20V
Tomporoturo	TN=Normal Temperature	25 °C
Temperature	Extreme Temperature	From −30° to + 50° centigrade
Humidity	30~60 %	
Air Pressure	950-1050 hPa	

4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01"Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 1"and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	MeasurementUncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emissio 1~18GHz	5.16 dB	(1)
Radiated Emissio 18-40GHz	5.54 dB	(1)
Occupied Bandwidth		(1)

⁽¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

Report No.: TRE1807009502 Page: 10 of 24 Issued: 2017-07-30

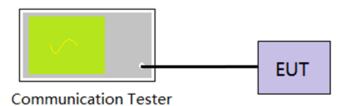
5. TEST CONDITIONS AND RESULTS

5.1. Conducted Output Power

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT output port was connected to communication tester.
- 2. Set EUT at maximum power through communication tester.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure the maximum burst average power.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix A on the section 8 appendix report

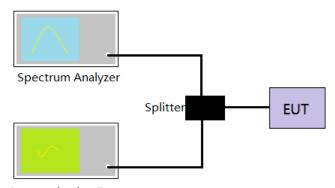
Report No.: TRE1807009502 Page: 11 of 24 Issued: 2017-07-30

5.2. Peak-Average Ratio

LIMIT

13dB

TEST CONFIGURATION



Communication Tester

TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Center Frequency = Carrier frequency, RBW > Emission bandwidth of signal
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- 5. The measurement interval was set depending on the type of signal analyzed.
 - i. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.
 - ii. For bursttransmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that issynced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in whichthetransmitter is operating at maximum power
- 6. Record the maximum PAPR level associated with a probability of 0.1%.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

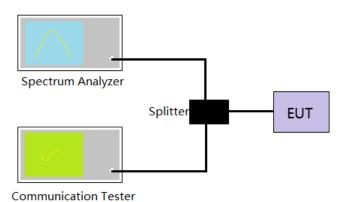
Refer to appendix B on the section 8 appendix report

Report No.: TRE1807009502 Page: 12 of 24 Issued: 2017-07-30

5.3. 99% Occupied Bandwidth & 26 dB Bandwidth

LIMIT N/A

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Spectrum analyzer setting as follow:

Center Frequency= Carrier frequency, RBW=1% to 5% of anticipated OBW, VBW= 3 * RBW, Detector=Peak,

Trace maximum hold.

4. Record the value of 99% Occupied bandwidth and -26dB bandwidth.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix C on the section 8 appendix report

Report No.: TRE1807009502 Page: 13 of 24 Issued: 2017-07-30

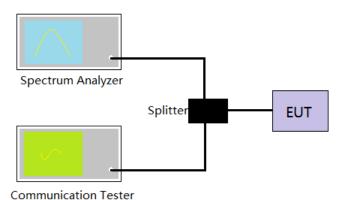
5.4. Band Edge

<u>LIMIT</u>

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. The band edges of low and high channels were measured.
- Spectrum analyzer setting as follow:
 RBW=100KHz, VBW = 300KHz, Sweep time= Auto
- 5. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix D on the section 8 appendix report

Report No.: TRE1807009502 Page: 14 of 24 Issued: 2017-07-30

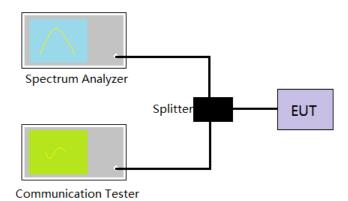
5.5. Conducted Spurious Emissions

LIMIT

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
- 2. Set EUT in maximum power output.
- 3. Spectrum analyzer setting as follow:

Below 1GHz, RBW=100KHz, VBW = 300KHz, Detector=Peak, Sweep time= Auto Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peak, Sweep time= Auto Scan frequency range up to 10th harmonic.

4. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix E on the section 8 appendix report

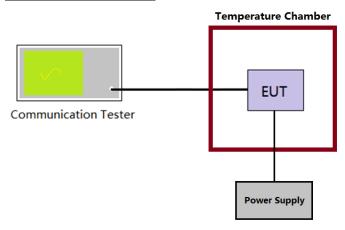
Report No.: TRE1807009502 Page: 15 of 24 Issued: 2017-07-30

5.6. Frequency stability VS Temperature measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber.
- 4. Turn EUT off and set the chamber temperature to −30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
- 5. Repeat step 4 measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix F on the section 8 appendix report

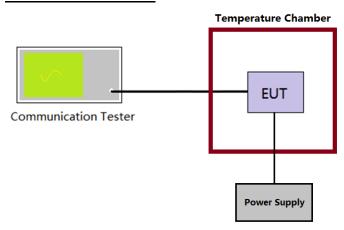
Report No.: TRE1807009502 Page: 16 of 24 Issued: 2017-07-30

5.7. Frequency stability VS Voltage measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber at 25°C
- 4. The power supply voltage to the EUT was varied ±15% of the nominal value measured at the input to the EUT
- 5. Record the maximum frequency change.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

Refer to appendix F on the section 8 appendix report

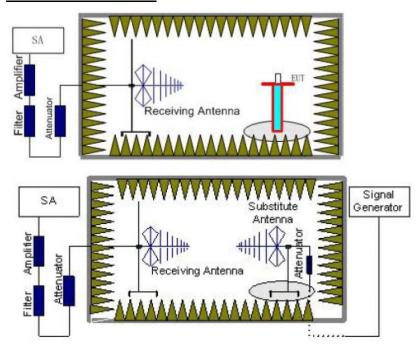
Report No.: TRE1807009502 Page: 17 of 24 Issued: 2017-07-30

5.8. ERP and EIRP

LIMIT

WCDMA Band V: 7W (38.45dBm) ERP WCDMA Band II: 2W (33dBm) EIRP

TEST CONFIGURATION



TEST PROCEDURE

- 1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz,, And the maximum value of the receiver should be recorded as (Pr).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (PcI) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

Report No.: TRE1807009502 Page: 18 of 24 Issued: 2017-07-30

- 6. The measurement results are obtained as described below:
 - Power(EIRP)=PMea- PAg Pcl + Ga
 - We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:

Power(EIRP)=PMea- Pcl + Ga

- 7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
 - ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

⊠ Passed	☐ Not Applicable
----------	------------------

Report No.: TRE1807009502 Page: 19 of 24 Issued: 2017-07-30

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
WCDMA Band II	9262	V	20.27	<33.00	Pass
		Н	21.62		
	9400	V	20.42		
		Н	21.49		
	9538	V	20.56		
		Н	21.52		

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
WCDMA Band V 41	4132	V	20.93	<38.45	Pass
	4132	Н	15.76		
	4183	V	20.90		
		Н	15.60		
	4233	V	21.40		
		Н	15.58		

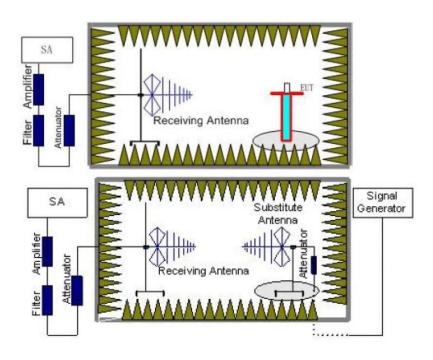
Report No.: TRE1807009502 Page: 20 of 24 Issued: 2017-07-30

5.9. Radiated Spurious Emission

LIMIT

-13dBm

TEST CONFIGURATION



TEST RESULTS

- 1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (PcI) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

Report No.: TRE1807009502 Page: 21 of 24 Issued: 2017-07-30

6. The measurement results are obtained as described below:

Power(EIRP)=PMea- PAg - Pcl + Ga

- We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below: Power(EIRP)=PMea- Pcl + Ga
- 7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
 - ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

⊠ Passed	☐ Not Applicable
----------	------------------

Note: Worst case at WCDMA Band II/ WCDMA Band V

Report No.: TRE1807009502 22 of 24 Issued: 2017-07-30 Page:

WCDMA Band II					
Channel	Frequency	Spurious Emission		Limit (dPm)	Popult
Channel	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	204.63	Vertical	-57.40		Pass
	319.84	V	-55.57		
	1262.26	V	-51.06	<-13.00	
	1598.57	V	-49.28	<-13.00	
	3007.40	V	-54.80		
9262	3558.38	V	-57.50		
9202	184.14	Horizontal	-55.02		
	266.39	Н	-53.11		
	1290.30	Н	-54.41	<-13.00	Pass
	2580.81	Н	-47.30	<-13.00	Pass
	5158.11	Н	-53.63		
	8507.17	Н	-44.84		
	266.39	Vertical	-56.22		
	600.20	V	-56.35		
	1462.46	V	-54.04	40.00	Pass
	1960.99	V	-49.20	<-13.00	
	4917.07	V	-55.28		
0.400	6282.74	V	-51.31		
9400	184.14	Horizontal	-57.10		
	266.39	Н	-58.45		Pass
	1259.49	Н	-52.17	. 12.00	
	1449.66	Н	-51.32	<-13.00	
	3759.98	Н	-57.47		
	5434.57	Н	-52.43		
	184.14	Vertical	-53.55		Pass
	600.20	V	-55.55	<-13.00	
	1987.01	V	-47.54		
	2519.18	V	-46.57		
	4101.82	V	-56.53		
0529	7509.64	V	-48.53		
9538	184.14	Horizontal	-52.95		
	266.39	Н	-53.64	<-13.00 Pass	
	1197.42	Н	-51.99		Doca
	1448.07	Н	-50.58		rass
	3809.38	Н	-56.44		
	5069.12	Н	-54.64		

Remark:

- 1.
- The emission behaviour belongs to narrowband spurious emission.

 The emission levels of not record in the report are very lower than the limit and not show in test report. 2.

Report No.: TRE1807009502 23 of 24 Issued: 2017-07-30 Page:

		WCDM	IA Band V		
Channal	Channel Frequency Spurious Emission		Limit (dPm)	Popult	
	(MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
	266.39	Vertical	-52.64		
	600.20	V	-54.47		Pass
	1653.95	V	-48.11	<-13.00	
	2580.81	V	-47.20		
	3309.48	V	-56.01		
4132	4137.66	V	-54.09		
4132	184.14	Horizontal	-58.18		
	266.39	Н	-58.54		
	1653.95	Н	-47.84	40.00	D
	2327.59	Н	-44.09	<-13.00	Pass
	3299.90	Н	-56.37		
	4125.68	Н	-53.36		
	184.14	Vertical	-53.81		Pass
	600.20	V	-55.04		
	1692.55	V	-51.48	40.00	
	2577.97	V	-46.01	<-13.00	
	3348.10	V	-55.69		
4400	4066.28	V	-55.70		
4183	184.14	Horizontal	-52.68	<-13.00	Pass
	266.39	Н	-53.64		
	1672.22	Н	-52.30		
	2519.18	Н	-47.32		
	3348.10	Н	-56.69		
	6210.26	Н	-51.22		
	266.39	Vertical	-52.30		Pass
	600.20	V	-55.28		
	1692.55	V	-50.49		
	2519.18	V	-48.29	<-13.00	
	3387.17	V	-51.41	-	
4000	4234.80	V	-53.93		
4233	184.14	Horizontal	-53.89	<-13.00 Pas	_
	600.20	Н	-60.48		
	1690.69	Н	-49.49		
	2519.18	Н	-46.59		Pass
	3382.26	Н	-51.30		
	4228.66	Н	-54.91		

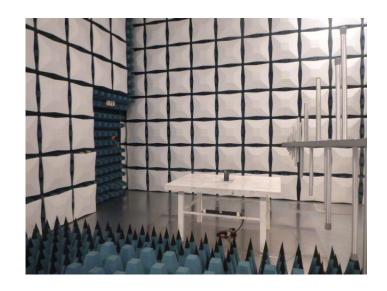
Remark:

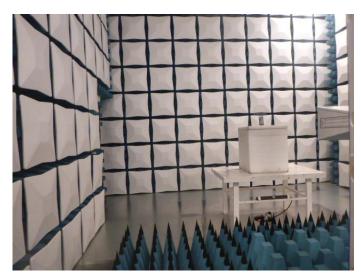
- The emission behaviour belongs to narrowband spurious emission.

 The emission levels of not record in the report are very lower than the limit and not show in test report. 2.

Report No.: TRE1807009502 Page: 24 of 24 Issued: 2017-07-30

6. TEST SETUP PHOTOS OF THE EUT





7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Refere to the test report No.: TRE1807009501

8. APPENDIX REPORT