FCC RADIO TESTREPOR

No. 150703-RF

for

ZTE CORPORATION

LTE/WCDMA/GSM（GPRS）Multi-Mode Digital Mobile Phone

Model: Blade S6 Lite

Trade Name: ZTE

Issued Date: 2015-07-14

Test Laboratory:

GCCT, *Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center*

Technology Road, High-tech Zone, He Yuan, Guang Dong, PR China 517001

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GENERAL SUMMARY

Product Name	LTE/WCDMA/GSM（GPRS）Multi-Mode Digital Mobile Phone
Model Name	Blade S6 Lite
Applicant	ZTE CORPORATION
Manufacturer	ZTE CORPORATION
Test Laboratory	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
Reference Standards	FCC CFR 47 Part 22(2014-1-10):"Public Mobile Services" FCC CFR 47 Part 24(2014-1-10):"PERSONALCOMMUNICATIONS SERVICES" ANSI-TIA-603-C(2004)："Land Mobile FM or PM-Communication Equipment-Measurement and Performance Standards"
Test Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in annex B of this test report are below limits specified in the relevant standards. General Judgment: **Pass** Date of issue:2015.07.14
Comment	The test results in this report apply only to the tested sample of the stated device/equipment.

Approved by:	*Reviewed by:*	*Tested by：*
LuoJian	Wen Xiaoyong	Wu Xuan
Manager	Deputy Manager	Test Engineer

1.Test Laboratory

1.1 Testing Location

Company Name:	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
FCC Registration No.	303878
CNAS Registration No.	L4992
Address:	Technology Road, High-tech Zone, Heyuan, Guangdong Province, PR.China
Postal Code:	517001
Telephone:	+86-762-3607181
Fax:	+86-762-3603336

1.2Testing Environment

Environment Data	Temperature(℃)	Humidity(%)
Maximum Ambient	25.9	45
Minimum Ambient	22.1	41

EUT is under testing environment.

1.3.Project Data

Project Leader:	Wen Xiaoyong
Testing Start Date:	2015-07-07
Testing End Date:	2015-07-14

2.Client Information

2.1Applicant Information

Company Name:	ZTE CORPORATION
Address:	ZTE Plaza, Keji Road South, Shenzhen, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	+86 18616587757
Fax:	+86 021 50801070

2.2Manufacturer Information

Company Name:	ZTE CORPORATION
Address:	ZTE Plaza, Keji Road South, Shenzhen, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	+86 18616587757
Fax:	+86 021 50801070

3.Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1About EUT

Model Name	Blade S6 Lite
FCC ID	SRQ-BLADES6
Tx Frequency	GSM850:824.2～848.8 MHz UMTS Band V : 826.4~846.6MHz PCS1900 : 1850.2~1909.8MHz UMTS Band II : 1852.4~1907.6MHz
Rx Frequency	GSM850:869.2~893.8 MHz UMTS Band V : 871.4~891.6 MHz PCS1900 : 1930.2~1989.8 MHz UMTS Band II : 1932.4~1987.6 MHz
Number of Channels	GSM850&WCDMA Band V:25 PCS1900&WCDMA Band II: 60
Modulation	GSM&DCS:GMSK WCDMA:BPSK/QPSK
Antenna Type	PIFA(GSM/DCS/WCDMA)
Normal Voltage	3.7V
Extreme Low Voltage	3.5V
Extreme High Voltage	4.2V
Extreme Low Temperature	-10℃
Extreme High Temperature	55℃

Note: Photographs of EUT are shown in ANNEX A of this test report.

Note: high and low voltage values in extreme condition test are given by manufacturer

3.2Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version
150703-M01	/	wrbA	Blade_S_EIYV1.0.0B01

3.3Internal Identification of AE

AE ID*	Description	Type	SN
150703-C01	Charger	STC-A51-C	/
150703-B01	Battery	Li3824T43P6hA54236-H	/

4.Test Results

4.1Summary of Test Results

Items	List	Clause in FCC	Verdict
1	Output Power	22.913(a)/24.232(b)	Pass
2	Frequency Stability	22.355/24.235	N/A
3	Occupied Bandwidth	22.917(a)/24.238(b)	N/A
4	Emission Limit	22.917(b)/ 24.238(b)	Pass
5	Band Edge Compliance	22.917(b)/ 24.238	N/A
6	Conducted Spurious Emission	22.917(a)/24.238(a)	N/A
7	Peak-to-average ratio	24.232(d))	N/A

Note: please refer to Annex B in this test report for the detailed test results.

4.2Statements

GCCT has evaluated the test cases requested by the applicant/manufacturer as listed in section 4.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in general summary.

5.Test Equipments Utilized

5.1List of Measuring Equipment

Table 1.RF Test Equipments

No.	Name	Type	SN	Manufacturer	Cal Date	Cal Due Date
1	Signaling Tester	E5515E	E0111-8	Agilent	2014.08.13	2015.08.13
2	Spectrum Analyzer	N9020A	E0111-9	Agilent	2014.08.13	2015.08.13
3	Switching Unit	/	E0112	/	/	

Table 2. EMC Test Equipments

Hardware						
No.	**Name**	**Type**	**SN**	**Manufacturer**	**Cal Date**	**Cal Due Date**
1	Spectrum	E4440A	MY48250641	Agilent	2014.08.13	2015.08.13
2	RF Preselector	N9039A	MY48260024	Agilent	2014.08.13	2015.08.13
3	BiCoNilog	3142E	00142015	ETS-Lindgren	2014.08.13	2015.08.13
4	Horn Antenna	3117	00129169	ETS-Lindgren	2014.08.13	2015.08.13
5	RF Notch filter	/	/	ETS-Lindgren	2014.08.13	2015.08.13
6	Power Meter	N1913A	MY50000213	Agilent	2014.08.13	2015.08.13
7	Universal Radio Communication Tester	8960	MY48367105	Agilent	2014.08.13	2015.08.13
Software						
1	Software	TILE4.5	/	ETS-Lindgren	/	

Table 3. OTA Test Equipments

Hardware						
No.	**Name**	**Type**	**SN**	**Manufacturer**	**Cal Date**	**Cal Due Date**
1	Spectrum	N9020A	MY49101012	Agilent	2014.08.13	2015.08.13
2	Universal Radio	E5515C	MY48367103	Agilent	2014.08.13	2015.08.13
3	Switch/Control Mainframe	3499C	MY42000534	Agilent	2014.08.13	2015.08.13
4	Positioning	2090	00119389	ETS-Lindgren	2014.08.13	2015.08.13

Software					
1	Software	EMQuest™	/	ETS-Lindgren	/
2	Software	EMQ-108	/	ETS-Lindgren	/

5.2Climate Chamber

No.	Name	Type	SN	Manufacturer	Cal Date	Cal Due Date
1	Climate Chamber	MW3030	09114081	ESPEC	2014.08.13	2015.08.13

ANNEX A: Detailed Test Results

A.1 Output Power(22.913(a)/24.232(b))

A.1.1 Conducted Output Power Measurement

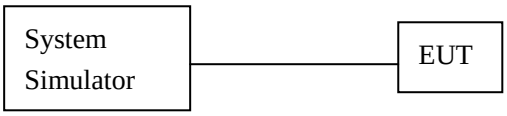
A.1.1.1 Description

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

A. 1.1.2 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT as maximum power through base station.
3. There measurements were done at 3 frequencies,824.2MHz, 836.6MHz and 848.8MHz for GSM850 band;1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900 band.

A.1.1.3 Test Setup



A.1.1.4 Test Results

N/A

A.1.2 Radiated Power

A.1.2.1 Description

This is the test for the maximum radiated power from the EUT. Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak powerand 24.232(c) specifies that "Peak transmit power must be measured over any interval ofcontinuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."Rule Part 22.913(a) specifies ”Maximum ERP. The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmittersand auxiliary test transmitters must not exceed 7 Watts.”

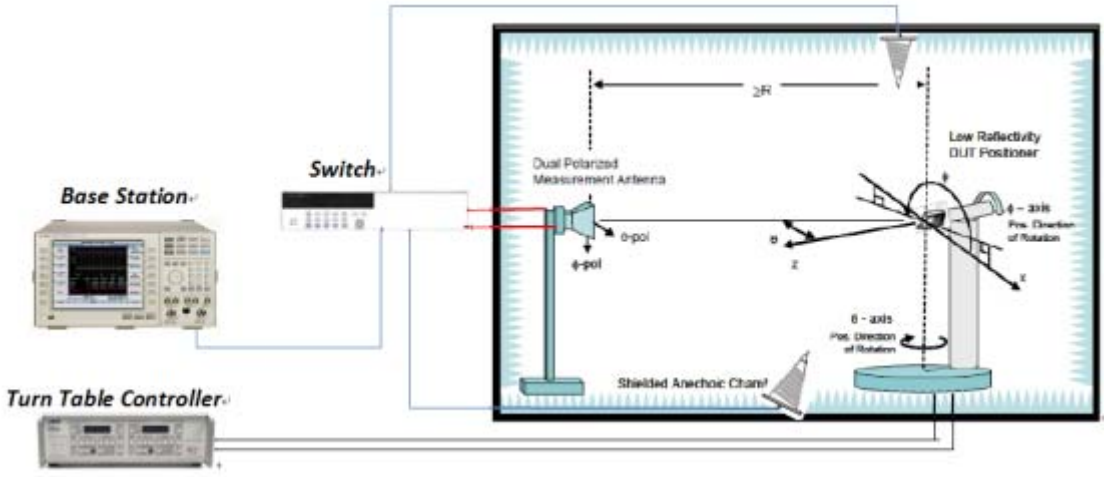
A.1.2.2 Test Procedures

1. In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for thefrequency band of interest is connected to the dipole with a cable that has been constructed tonot interfere with the radiation pattern of the antenna. A known (measured) power (Pin) isapplied to the input of the dipole, and the power received (Pr) at the chamber's probe antennais recorded.
2. A "reference path loss" is established as Pin + 2.15 - Pr.
3. The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.
4. From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.
5. The EUT is then put into pulse mode at its maximum power level (Power Step 0 for PCS1900,5 for GSM 850).
6. "Gated mode" power measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 24.232 (b) and

(c). The "reference path loss" from Step1 is added to this result.

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

A.1.2.3 Test Setup



A.1.2.4 Test Result of ERP

GSM850

Frequency(MHz)	Channel No.	Power Step	ERP(dBm)	Verdict
824.2	128	5	29.19	Pass
836.6	190	5	29.49	Pass
848.8	251	5	29.79	Pass

WCDMA Band V

Frequency(MHz)	Channel No.	Power Step	ERP(dBm)	Verdict
826.6	4133	3	21.05	Pass
835	4175	3	20.89	Pass
846.4	4232	3	20.99	Pass

A1.2.4 Test Result of EIRP

GSM1900

Frequency(MHz)	Channel	Power Step	EIRP(dBm)	Verdict
1850.2	512	0	29.85	Pass
1880.0	661	0	30.45	Pass
1909.8	810	0	30.35	Pass

WCDMA Band II

Frequency(MHz)	Channel	Power Class	EIRP(dBm)	Verdict
1852.6	9263	3	22.02	Pass
1880.0	9400	3	22.11	Pass
1907.6	9538	3	22.09	Pass

A.2 Frequency Stability(22.355/24.235)

A.2.1 Description

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that fundamental emission stays within the authorized frequency block. The frequency stability of transmitter shall be maintained within ±0.00023% (±2.5ppm) of the center frequency.

A.2.2 Test Procedure for Temperature Variation

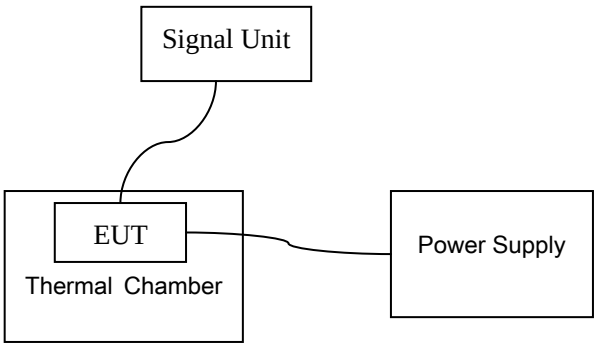
1. The EUT was set up in the thermal chamber and connected with the base station.

2. With power OFF, the temperature was decreased to -20℃ and the EUT was stabilized for three hours. Power was applied and maximum change in frequency was recorded within one minute.

3. With power OFF, the temperature was raised in 10℃ step to 50℃. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

4. if the EUT cannot be turned on at -30℃, the testing lowest temperature will be raised in 10℃ step until the EUT can be turned on.

A.2.2.1 Test Setup



A.2.2.2 Test Results

N/A

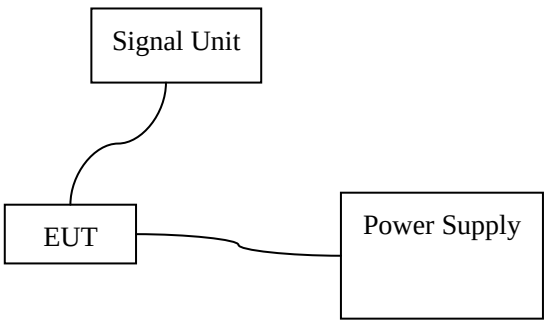
A.2.3 Test Procedure for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5℃ and connected with the base station.

2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.

3. The variation in frequency was measured.

A.2.3.1 Test Setup



A.2.3.2 Test Results:

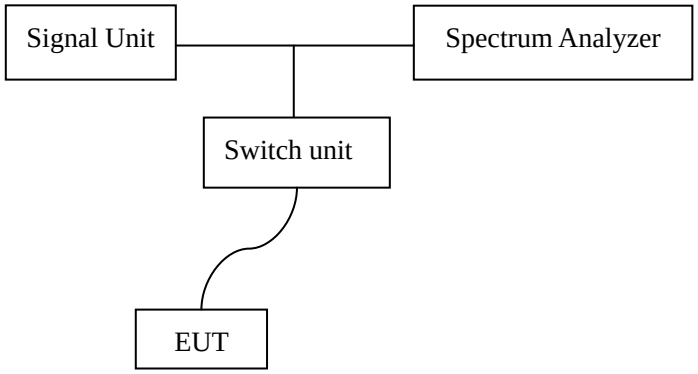
N/A

A.3 Occupied Bandwidth(22.917(a)/24.238(b))

A.3.1 Description

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of the USPCS frequency band. The table below lists the measured -20dBc BW(99%).Spectrum analyzer plots are included on the following pages.

A.3.2 Test Setup



A.3.3 Test Results

N/A

A.4 Emission Limit(22.917(b)/ 24.238(b))

A.4.1 Description

The radiated spurious emission was measured by substitution method according to TIA-603C-2004.This method does not require calibration of all measuring components. Instead, the spurious output power is recorded from measuring device. Then this power level is matched by a signal from a calibrated signal generator which is substituted for the EUT. The power supplied by the generator is then equal to the power of the spurious domain emission. The power of any emission outside of the authorized operating frequency ranges must be lower than transmitter power by a factor of at least 43+10log(P) dB. The spectrum is scanned from 30MHz up to a frequency including its 10th harmonic...

A.4.2Test Procedure

1.All possible modes of operation were investigated. Only the 6 worst case emissions measured using the correct CISPR detectors, are reported. All other emission were relatively insignificant.

2.A"-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.

3.Radiated Emissions Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%(in the case where distributions are normal),with a coverage factor of 2,in the range 1GHz-40GH is ±6.0dB(for EUTs<0.5m X 0.5m X 0.5m)

4.The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

5.The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

6.Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution.

7.Sample Calculation:

EUT Field Strength(dBm)=Reading(Signal generator)+Antenna Gain(substitution antenna)-Cable loss(From Signal Generator to substitution antenna)

8.The limit is derived from 43+10log(p)dB below transmitter power P(Watts)

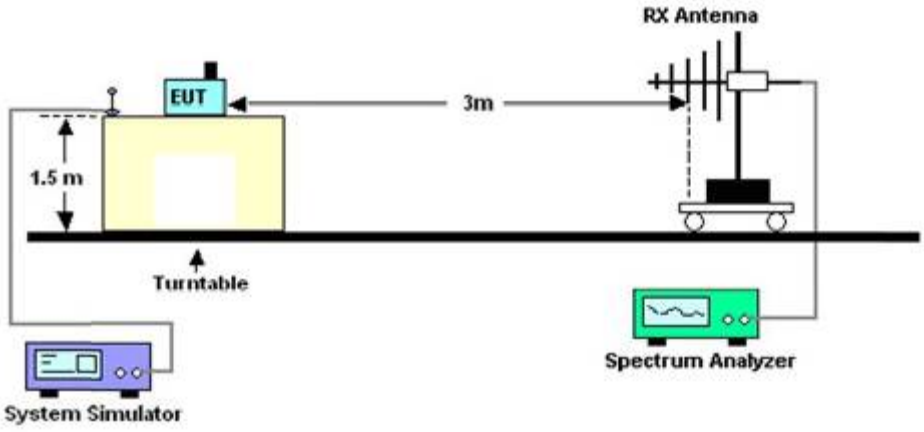
=p(w)-[43+10log(p)](dB)

=[30+10 log(p)] (dBm)- [43+10 log(p)] (dB)

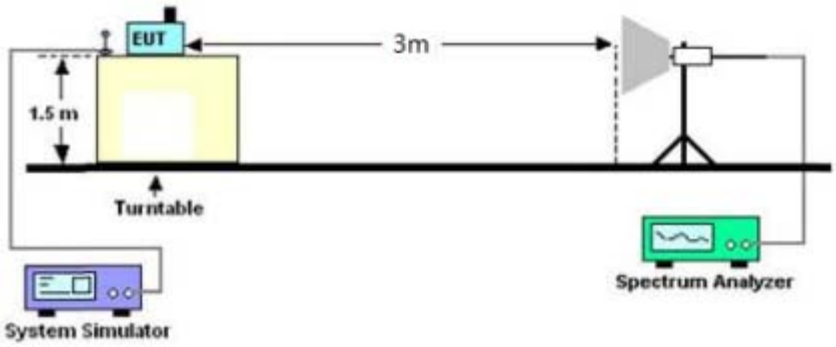
=-13dBm

A.4.3 Test Setup

<Below 1GHz>



<Above 1GHz>



B.4.4Test Results

Band	CH	Frequency(MHz)	Result	Verdict

GSM850	189	836.6	Fig.1	Pass
			Fig.2	Pass
GSM1900	661	1880.0	Fig.3	Pass
			Fig.4	Pass
WCDMA Band V	4175	835	Fig.5	Pass
			Fig.6	Pass
WCDMA Band II	9400	1880.0	Fig.7	Pass
			Fig.8	Pass

Fig.1 GSM850 on Channel 189 30MHz~3GHz

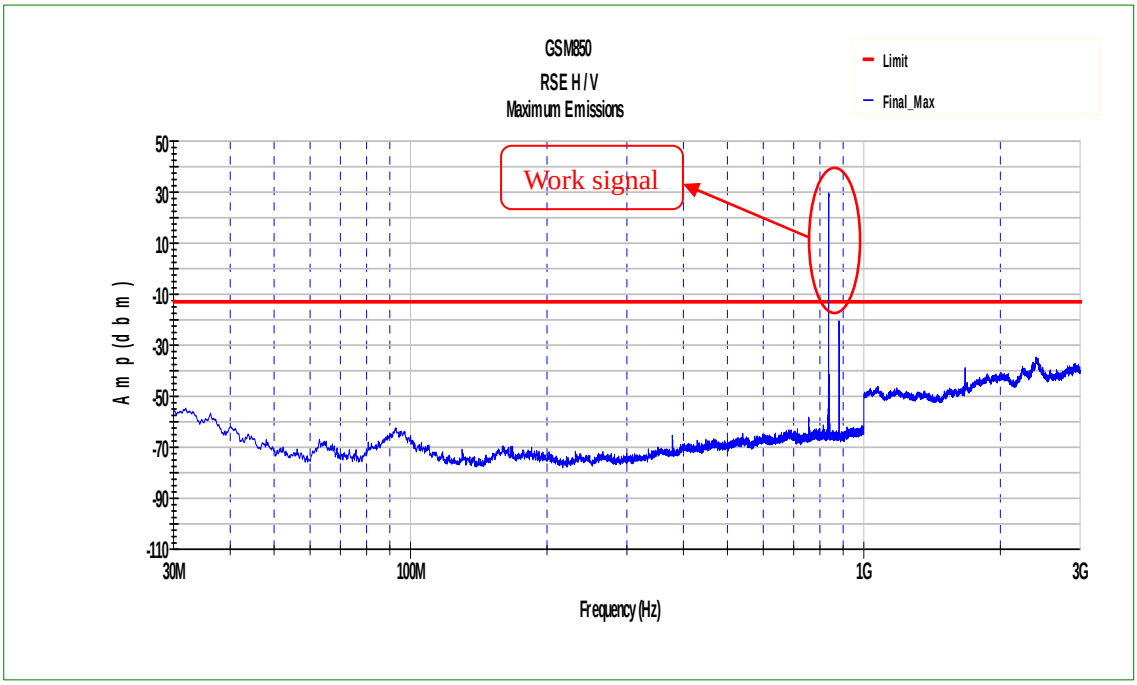


Fig.2GSM850 on Channel 189 3GHz~9GHz

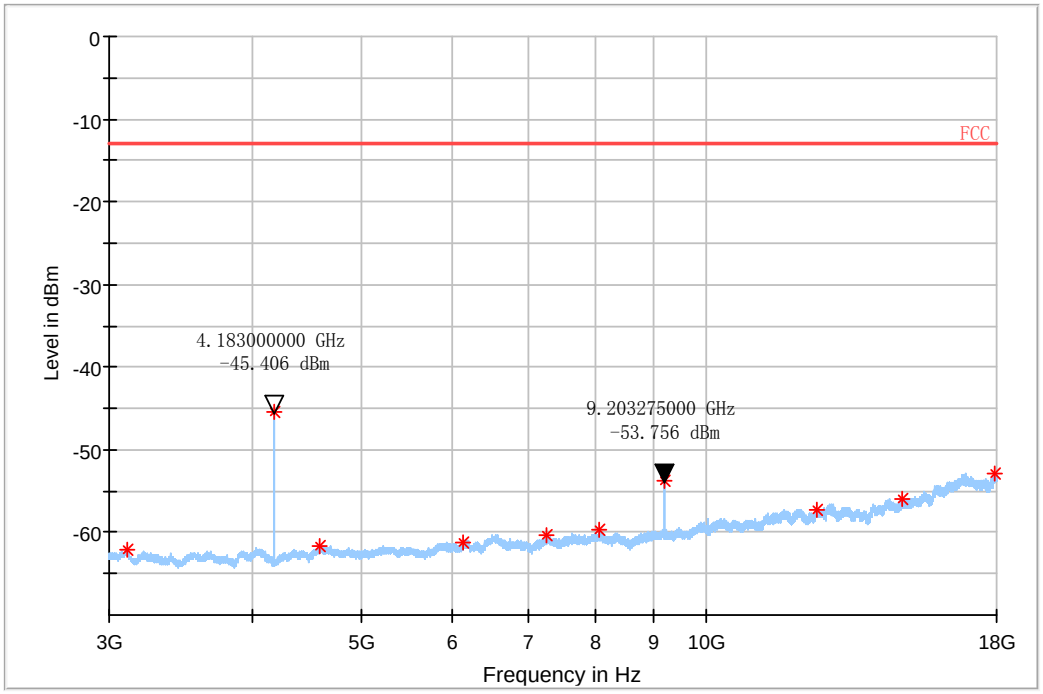


Fig.3 GSM1900 on Channel 661 30MHz~3GHz

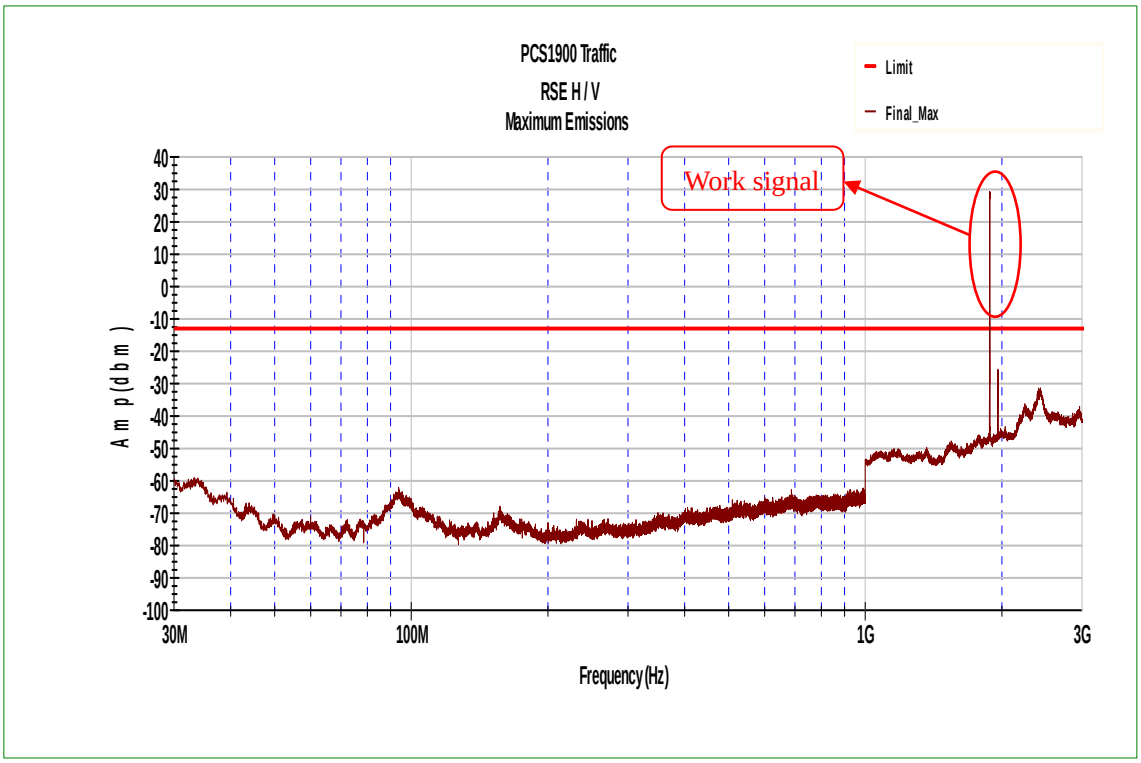
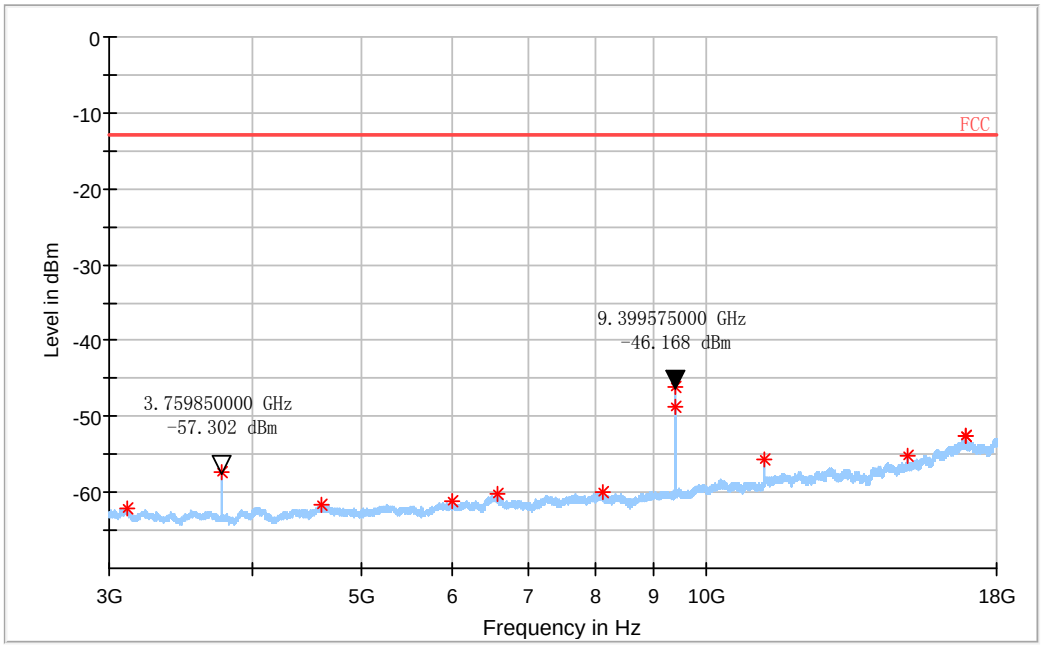


Fig.4 GSM1900 on Channel 661 3GHz~19.1GHz



PCS 1900

Fig.5 WCDMA Band V on Channel 4175 30MHz~3GHz

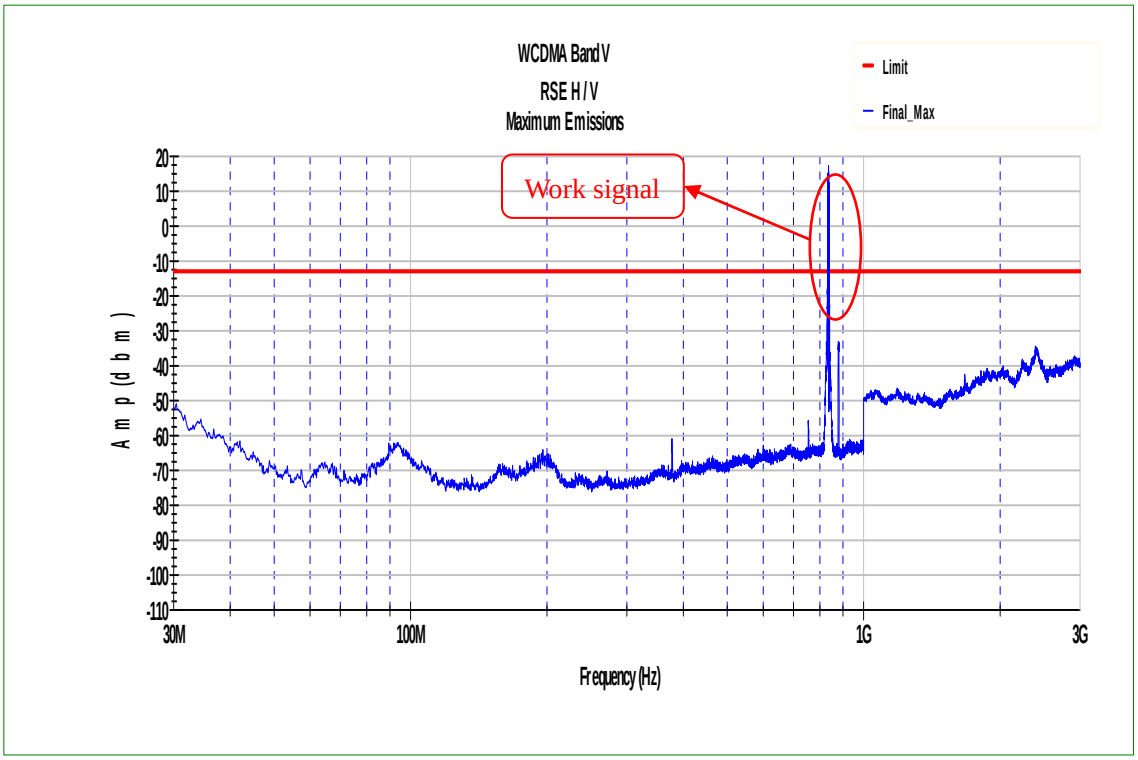
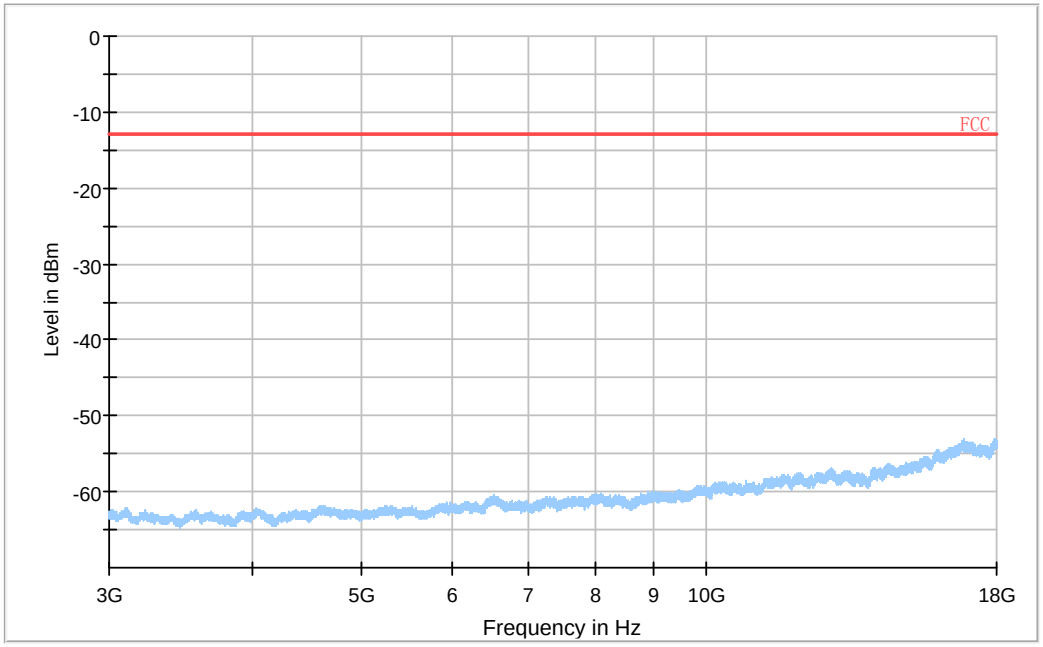


Fig.6 WCDMA Band V on Channel 4175 3GHz~9GHz



WCDMA B5

Fig.7 WCDMA Band II Channel 9400 30MHz~3GHz

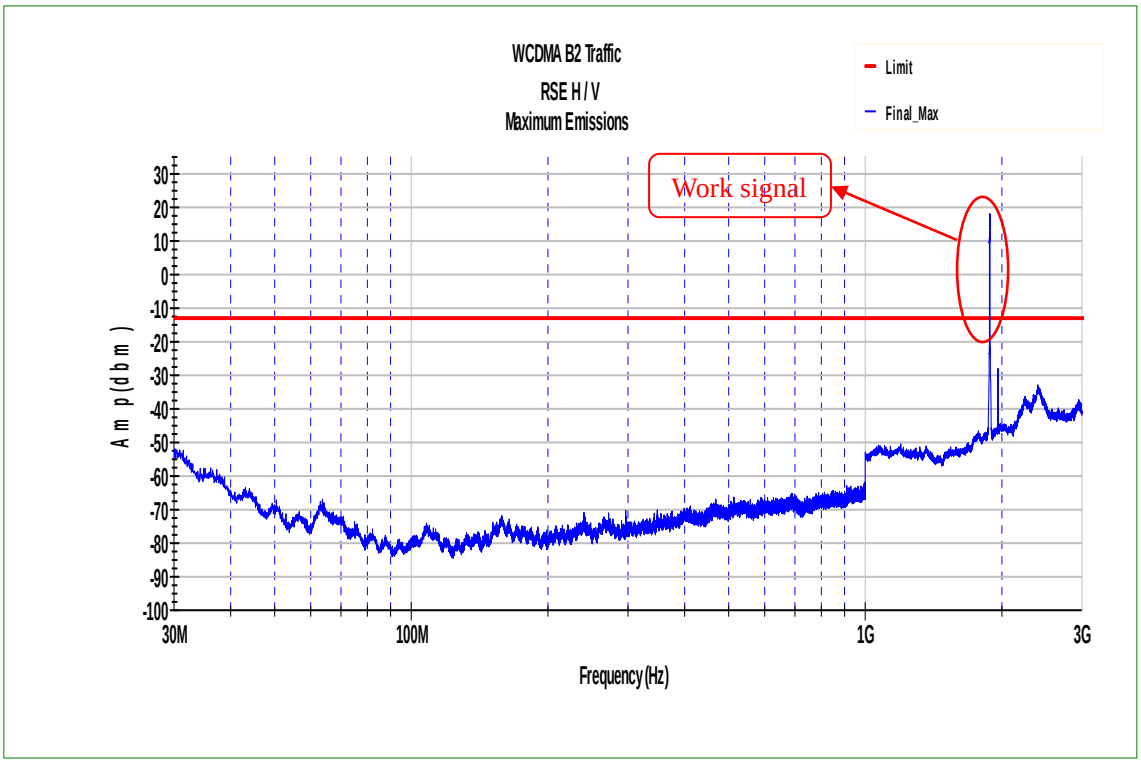
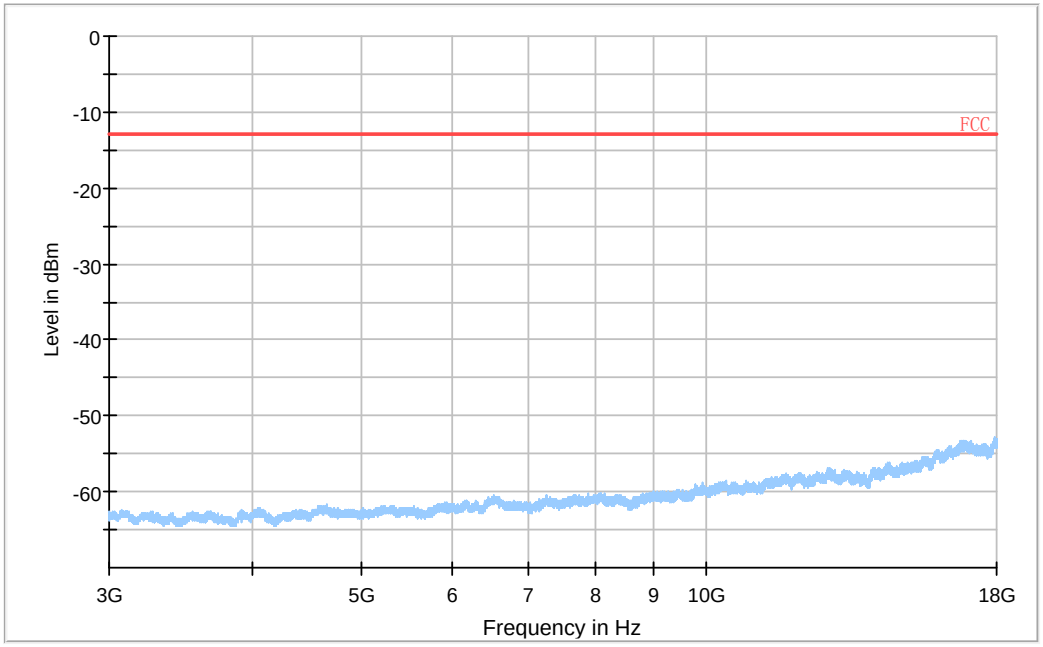


Fig.8 WCDMA Band II Channel 9400 3GHz~19.1GHz



WCDMA B2

A.5 Band Edge Compliance(22.917(b)/ 24.238)

A.5.1 Description

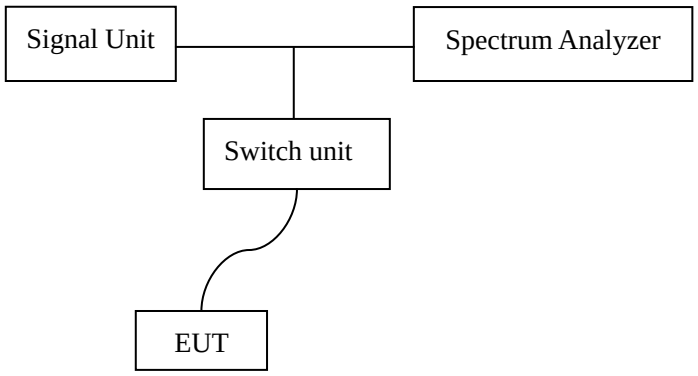
The power of any emission outside of the authorized operating frequency ranges must be lower than transmitter power by a factor of at least 43+10log(P) dB.

A.5.2 Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station.

2. The band edge of low and high channel for maximum RF power was measured. Setting RBW is as roughly BW/100.

A.5.3 Test Setup



A.5.4 Test Results

N/A

A.6 Conducted Spurious Emission(22.917(a)/24.238(a))

A.6.1 Description

The power of any emission outside of the authorized operating frequency ranges must be lower than transmitter power by a factor of at least 43+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm. It is measured by means of spectrum analyzer and scanned from 30MHz up to a frequency including its 10^{th} harmonic.

For the equipment of PCS1900 band, this equates to a frequency range of 30MHz to 19.1GHz, data is taken from 30 MHz to 20 GHz. For GSM 850, data is taken from 30 MHz to 9 GHz.

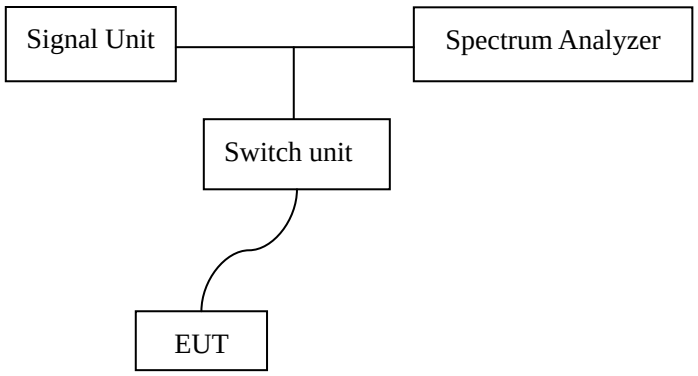
A.6.2 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station.

2. The middle channel for maximum RF power within the transmitting frequency was measured.

3. The conducted spurious emission for the whole frequency range was taken.

A.6.3 Test Setup



A.6.4 Test Results

N/A

A.7 Peak-to-average ratio(24.232(d))

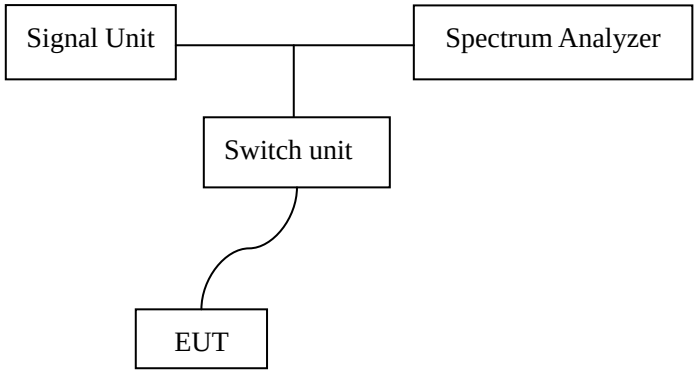
A.8.1 Description

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks f a digitally modulated signal on a statistical basic. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level.

A.8.2 Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station.
2. The CCDF of middle channel for the highest powers were measured.

A.8.3 Test Setup



A.7.4 Test Results

N/A

ANNEX B: Report Revision History

Report No.	Report Version	Description	Issue Date
150701-GRF	None	Original	2015.07.10

***** END OF REPORT*****