

FCC BT TEST REPORT

No. 150704-BT

For

ZTE CORPORATION

WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone

Model Name: ZTE Blade C340/ ZTE T220/

ZTE V812/ ZTE Blade Q2 3G/ZTE Open C2

Trade Name: ZTE

Issued Date: 2015-07-14

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of GCCT.

To verify test report authenticity, send full test report to Email: dr_xywen@126.com

Test Laboratory:

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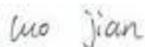
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GENERAL SUMMARY

Product Name	WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
Model Name	ZTE Blade C340/ ZTE T220/ ZTE V812/ ZTE Blade Q2 3G/ZTE Open C2
Applicant	ZTE CORPORATION
Manufacturer	ZTE CORPORATION
Test Laboratory	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
Reference Standards	FCC CFR 47 Part 15C(2014-1-10):“Radio Frequency Devices Sub-Part C: intentional Radiators” ANSI C63.10(2013): “American National Standard for Testing Unlicensed Wireless Devices”
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:



Luo Jian
Manager

Reviewed by:



Wen Xiaoyong
Deputy Manager

Tested by:



Gao Xiaoqing
Test Engineer

1. Test Laboratory

1.1 Testing Location

Company Name	GCCT, Guangdong Telecommunications Terminal Products Quality Supervision and Testing Center
Address	Technology Road, High-tech Zone, Heyuan, Guangdong Province, PR.China
CNAS Registration No.	L4992
FCC Registration No.	303878
Postal Code	517001
Telephone	+86-762-3607221
Fax	+86-762-3603336

1.2 Testing Environment

Environment Data	Temperature(°C)	Humidity(%)
Maximum Ambient	25.8	54
Minimum Ambient	17.4	48

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

2.1 Applicant 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

2.2 Manufacturer Information

Company Name:	ZTE CORPORATION
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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)

3.1 About EUT

Model Name	ZTE Blade C340/ ZTE T220/ ZTE V812/ ZTE Blade Q2 3G/ZTE Open C2
FCC ID	SRQ-ZTEBLADEC340
Tx Frequency	GSM850:824~848 MHz UMTS Band V : 826~846MHz PCS1900 : 1850~1909MHz UMTS Band II : 1852~1907MHz Bluetooth: 2402 ~ 2480 MHz WIFI(802.11b/g/n-20): 2412 ~ 2462 MHz WIFI(n-40): 2422 ~ 2452 MHz
Rx Frequency	GSM850:869~893 MHz UMTS Band V : 871~891 MHz PCS1900 : 1930~1989 MHz UMTS Band II : 1932~1987 MHz Bluetooth: 2402 ~ 2480 MHz WIFI(802.11b/g/n-20): 2412 ~ 2462 MHz WIFI(n-40): 2422 ~ 2452 MHz
Number of Channels	GSM850&WCDMA Band V:25 PCS1900&WCDMA Band II: 60 Bluetooth:79 WIFI(802.11b/g/n-20):11 WIFI(n-40):7
Modulation	GSM&DCS:GMSK WCDMA:BPSK/QPSK Bluetooth: GFSK& $\pi/4$ -DQPSK&8DPSK WIFI:CCK/OFDM
Normal Voltage	3.7V
Extreme Low Voltage	3.5V
Extreme High Voltage	4.2V
Extreme Low Temperature	-10°C
Extreme High Temperature	55°C

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

3.2 Internal Identification of EUT

EUT ID *	IMEI	HW Version	SW Version
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150704-M01	/	W59_MB_B	ZTE_CN_QD_P172R12V1.0.0
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3.3 Internal Identification of AE

AE ID *	Description	Type	SN
150704-C01	Charger	STC-A220501500USBA-2	/
150704-B01	Battery	Li3714T42P3h765039	/

4. Test Results

4.1 Summary of Test Results

No	Test cases	Verdict
1	Maximum transmit power	NA
2	20dB Bandwidth	NA
3	Band Edge Compliance	NA
4	Carrier Frequency Separation	NA
5	Time Of Occupancy (Dwell Time)	NA
6	Number Of Channel Hopping	NA
7	Conducted Spurious Emissions	NA
8	AC Conducted Emission	Pass
9	Radiated Emissions	Pass
10	Antenna Requirements	NA

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

4.2 Statements

GCCT has evaluated the test cases requested by the applicant/manufacture 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 Equipment Utilized

Table 1. Measurement Equipment

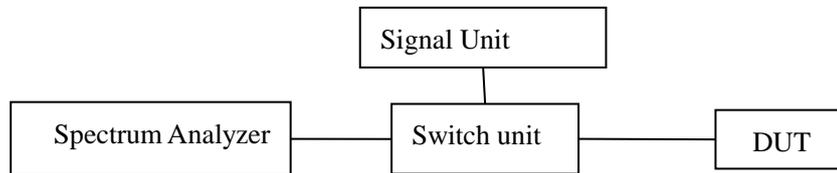
Hardware						
No.	Name	Model	SN	Manufacture	Cal. Date	Cal. Due Date
1	Signal Tester	MT8852B	1307002	Anritsu	2014.08.15	2015.08.15
2	Spectrum Analyzer	N9020A	MY52091261	Agilent	2014.08.15	2015.08.15
3	Switch Unit	/	E0112	/	2014.08.15	2015.08.15
Software						
Tech BT			v1.0.3			

Table 2. Radiated emission test system

No.	Name	Model	SN	Manufacture	Cal. date	Cal. Due Date
1	Spectrum Analyzer	E4440A	MY48250641	Agilent	2014.08.15	2015.08.15
2	BiCoNilog Antenna	3142E	00142015	ETS-Lindgren	2013-10-25	2015-10-25
3	Horn Antenna	3117	129169	ETS-Lindgren	2013-10-25	2015-10-25
4	Signal Generator	N5183A-532	MY49060563	Agilent	2014.08.15	2015.08.15
5	Universal Radio Communication Tester	E5515C	MY48367105	Agilent	2014.08.15	2015.08.15
6	RF Preselector	N9039A	MY48260024	Agilent	/	/
7	Loop Antenna	HFH2	860015/00	R&S	2014.08.15	2015.08.15

ANNEX A: Detailed Test Results

The radiated test setup is shown in each radiated test case section. The conducted test setup is shown as following:



All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.

A.1 Maximum Transmit Power

A.1.1 Description

According to §15.247(b)(1),

The maximum Peak Output power shall be equal to or less than $125\text{mW} \approx 21\text{dBm}$

A.1.2 Test Results

NA

A.2 20dB Bandwidth

A.2.1 Description

According to §15.247(a)(1)(iii)

The bandwidth at 20 dBm down from the highest in-band spectral density is measured with a spectrum analyzer connected to the receiver antenna while the EUT is operating in transmission mode at the appropriate frequencies.

A.2.2 Test Results

NA

A.3 Band Edge Compliance

A.3.1 Description

According to §15.247(d), the Band Edges Compliance shall be equal to or less than -20 dB.

A.3.3 Test Results

NA

A.4 Carrier Frequency Separation

A.4.1 Description

According to §15.247(a)(1), Carrier Frequency Separation should be more than two-thirds of the 20 dB

bandwidth of the hopping channel

A.4.2 Test Results

NA

A.5 Time Of Occupancy (Dwell Time)

A.5.1 Description

According to §15.247(a)(1)(iii)

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.

A.5.2 Test Results

NA

A.6 Number of Channel Hopping

A.6.1 Description

According to §15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

A.6.2 Test Results

NA

A.7 Conducted Spurious Emissions

A.7.1 Description

According to §15.247(d),

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

A.7.2 Test Result

NA

A.8 AC Conducted Emission

A.8.1 Description

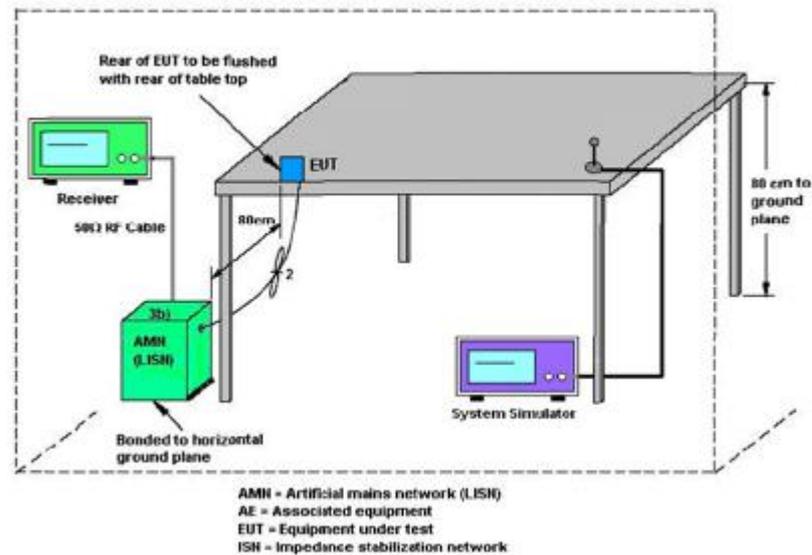
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits

A.8.2 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.

4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

A.8.4 Test Setup



A.8.5 Test Results

Limit

Frequency of Emission(MHz)	Conducted Limit(dB μ V)	
	Quasi -Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with logarithm of the frequency		

Line L

Scan Settings (1 Range)

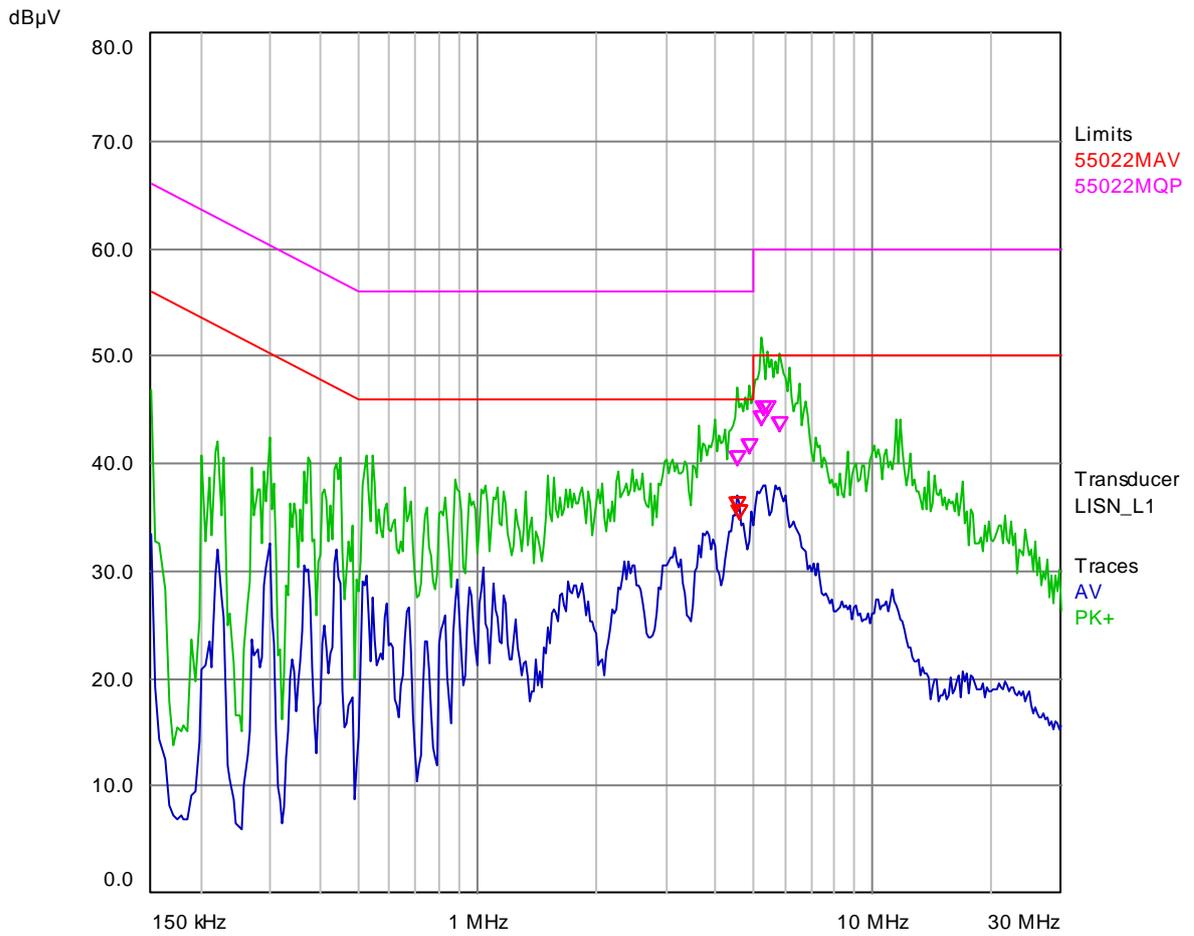
Frequencies			Receiver Settings			
Start	Stop	Step	Res BW	M-Time	Atten	Preamp
150 kHz	30 MHz	4 kHz	9 kHz (6dB)	5 ms	Auto	Off

Final Measurement

Detectors: AV, QP
Peaks: 6

Meas Time: 5 s
Acc. Margin: 10 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Delta Limit (dB)	Delta Ref (dB)	Comment
1 AV	4.53	35.58	46.00	-10.42		L1 / on
2 QP	4.554	39.82	56.00	-16.18		L1 / on
1 AV	4.602	34.88	46.00	-11.12		L1 / on
2 QP	4.858	40.92	56.00	-15.08		L1 / on
2 QP	5.254	43.57	60.00	-16.43		L1 / on
2 QP	5.27	44.54	60.00	-15.46		L1 / on
2 QP	5.414	44.53	60.00	-15.47		L1 / on
2 QP	5.838	42.92	60.00	-17.08		L1 / on

* = limit exceeded

Line N

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	Res BW	M-Time	Atten	Preamp
150 kHz	30 MHz	4.5 kHz	9 kHz (6dB)	5 ms	Auto	Off

Final Measurement

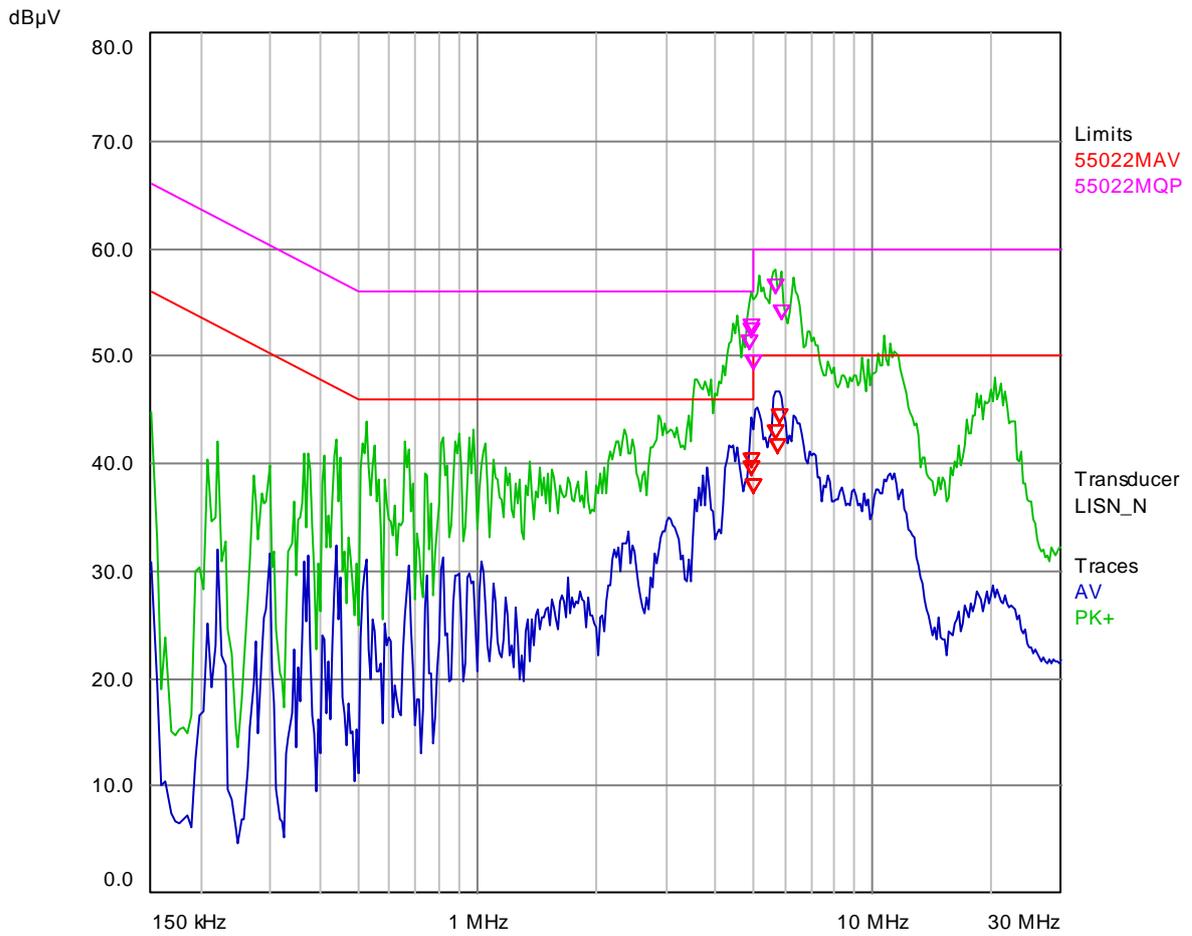
Detectors: AV, QP

Meas Time: 2 s

Peaks: 6

Acc. Margin: 10 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Delta Limit (dB)	Delta Ref (dB)	Comment
2 QP	4.866	50.66	56.00	-5.34		N / on
1 AV	4.9425	39.62	46.00	-6.38		N / on
2 QP	4.9425	52.18	56.00	-3.82		N / on
1 AV	4.956	38.95	46.00	-7.05		N / on
2 QP	4.956	51.78	56.00	-4.22		N / on
1 AV	4.9875	37.26	46.00	-8.74		N / on
2 QP	4.9875	48.71	56.00	-7.29		N / on
1 AV	5.6985	42.32	50.00	-7.68		N / on
2 QP	5.703	55.83	60.00	-4.17		N / on
1 AV	5.766	40.84	50.00	-9.16		N / on
1 AV	5.7795	43.76	50.00	-6.24		N / on
2 QP	5.883	53.42	60.00	-6.58		N / on

* = limit exceeded

A.9 Radiated Emission

A.9.1 Limit of Radiated Emission

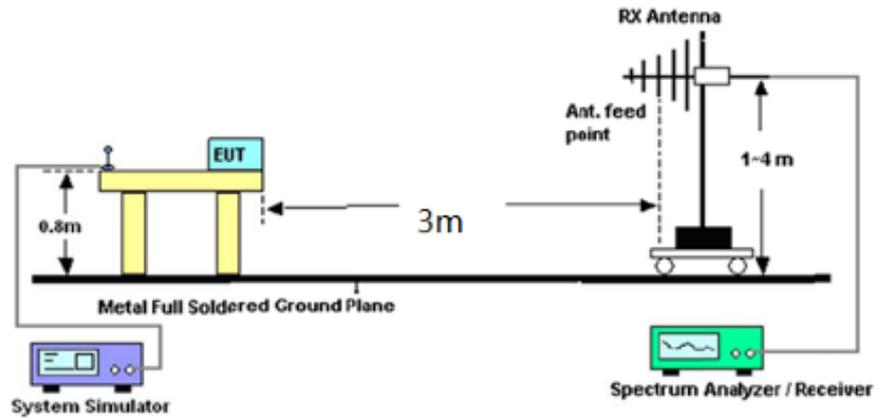
In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below

Frequency(MHz)	Field Strength(microvolts/meters)	Measurement Distance(Meters)
0.009-0.490	2400/F(kHz)	3000
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
above 960	500	3

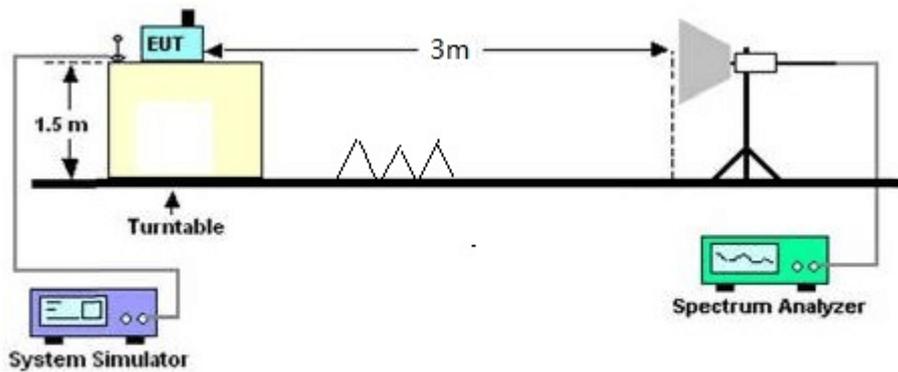
A.9.2 Test Setup

Frequency Band(MHz)	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	Peak	100kHz	100kHz
Above 1000	Peak	1MHz	1MHz
	Average	1MHz	10Hz

Radiated Emissions Frequency: Below 1GHz



Radiated Emissions Frequency: above 1GHz



A.9.3 Test Results

The low frequency, which started from 9kHz to 30MHz and the high frequency, which started from 18GHz to 26GHz, were pre-scanned and which was 20dB lower than limit line per 15.31(0) were not reported.

Worst case data rate: 1M

Test Mode: Traffic

Verdict: Pass

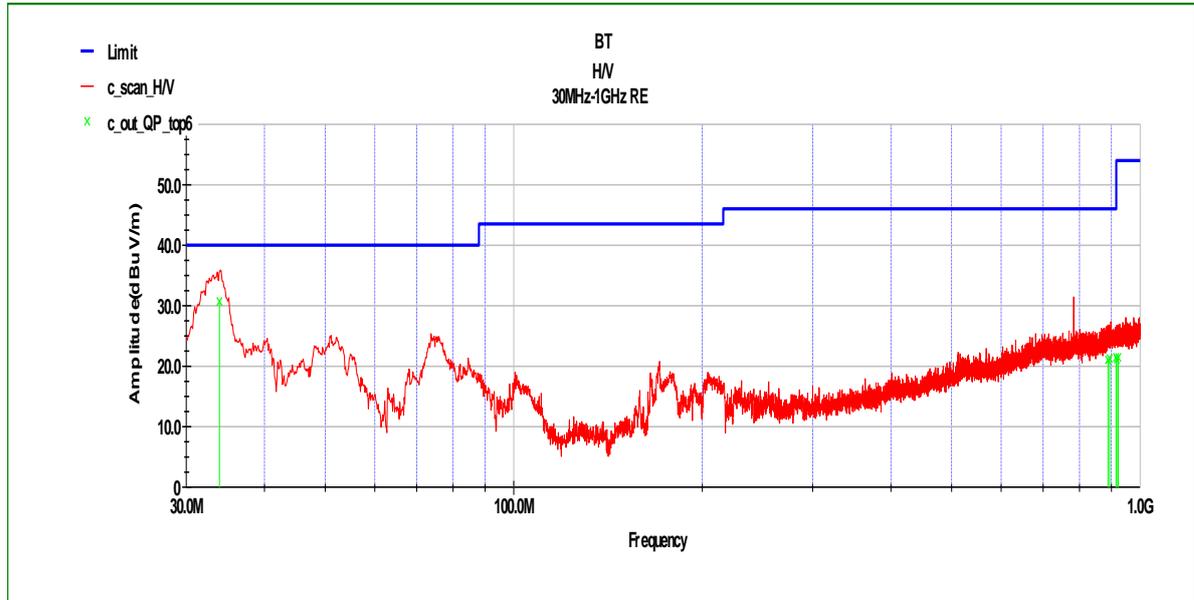


Fig.1 Radiated Emission of channel 0 in 30MHz-1GHz

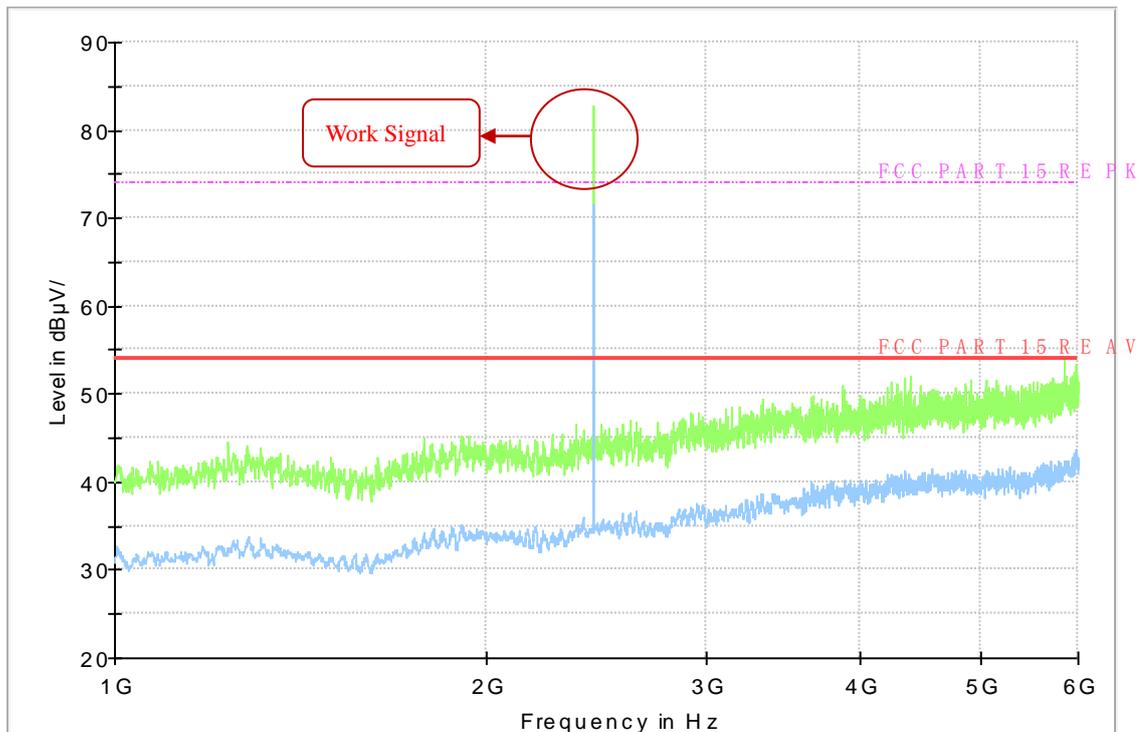


Fig.2 Radiated Emission of channel 0 in 1GHz-6GHz

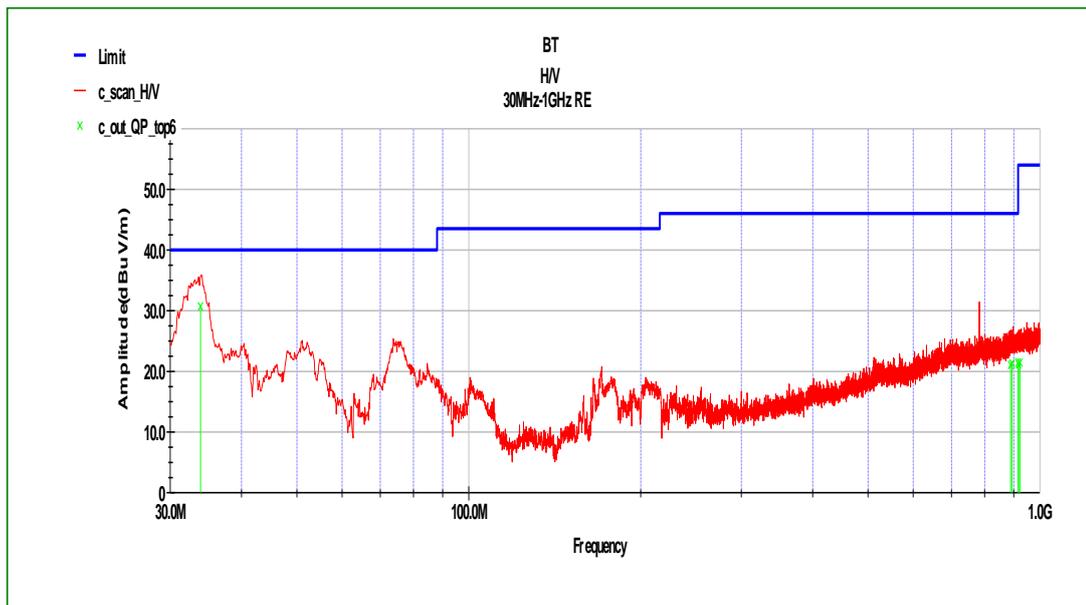


Fig.3 Radiated Emission of channel 39 in 30MHz-1GHz

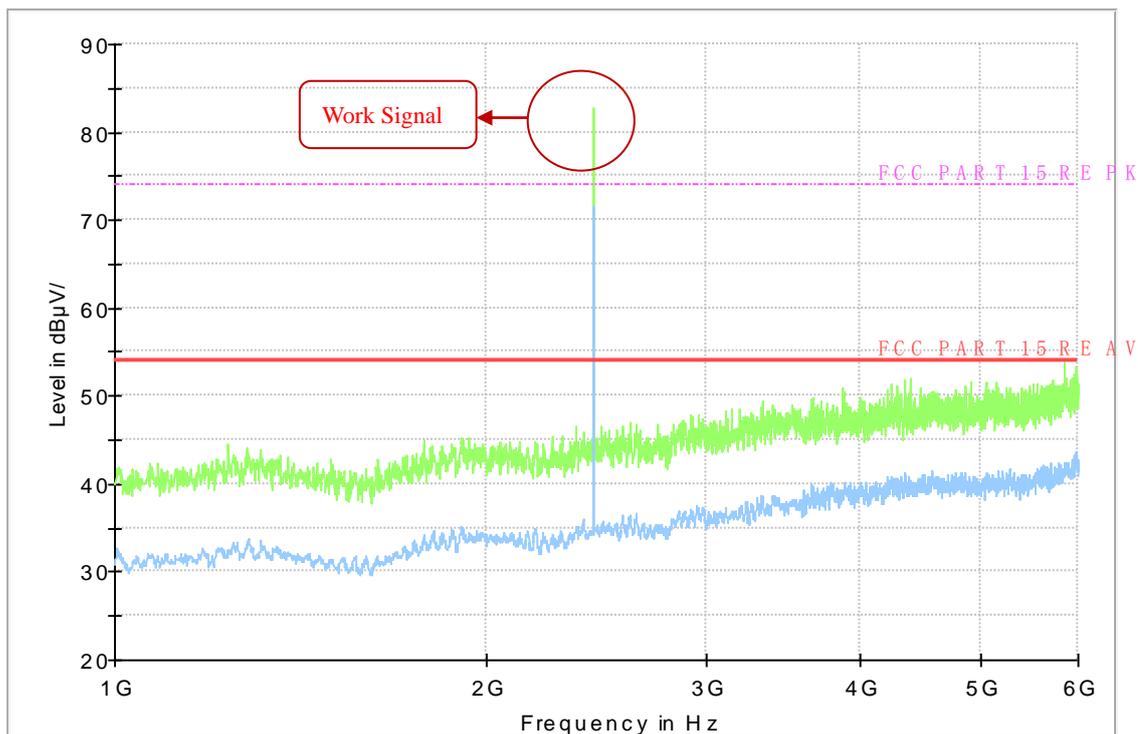


Fig.4 Radiated Emission of channel 39 in 1GHz-6GHz

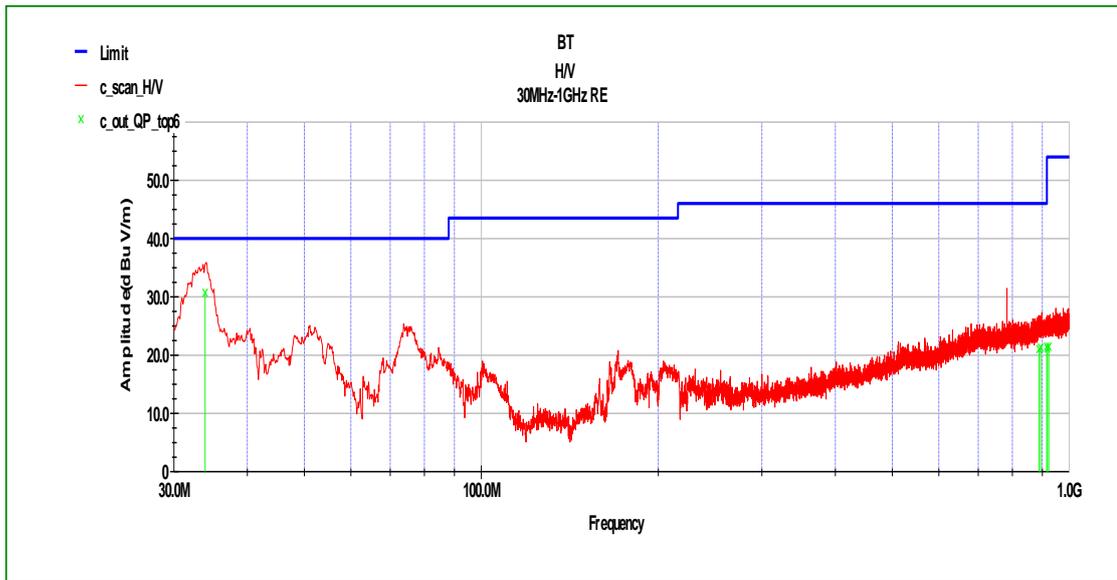


Fig.5 Radiated Emission of channel 78 in 30MHz-1GHz

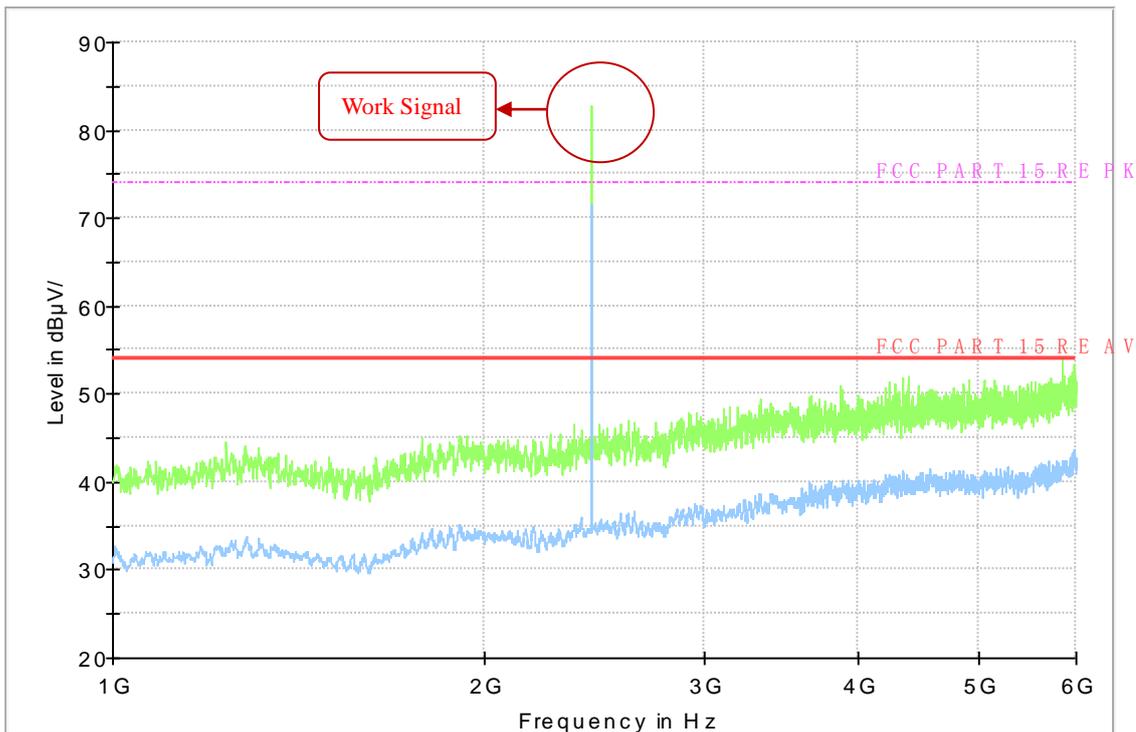


Fig.6 Radiated Emission of channel 78 in 1GHz-6GHz

A.10 Antenna Requirements

A.10.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with

the FCC rule.

A.10.2 Antenna Connected construction

The Antenna type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

A.10.3 Antenna Gain

NA

ANNEX B: Report Revision History

Report NO.	Report version	Description	Issue Date
150704-BT	NONE	Original	2015.07.17

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