

FCC Test Report

APPLICANT : TCT Mobile Limited
EQUIPMENT : Tablet PC
BRAND NAME : ALCATEL
MODEL NAME : ONE TOUCH EVO 7HD / ONE TOUCH E710
Module: one touch M600Y
FCC ID : RAD402
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was installed into Tablet PC (Brand Name: ALCATEL, Model Name: one touch M600Y, FCC ID: RAD383) during test.

The product was received on Apr. 22, 2013 and completely tested on Jun. 07, 2013. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



Testing Laboratory
2353

SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC342211-01	Rev. 01	Initial issue of report	Jun. 21, 2013



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 14.90 dB at 0.160 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 10.67 dB at 207.510 MHz for Quasi-Peak

1. General Description

1.1. Applicant

TCT Mobile Limited

5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203

1.2. Manufacturer

TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED

70 Huifeng 4rd, ZhongKai Hi-tech Development District, Huizhou, Guangdong 516006 P.R.China (TCL Mobile Communication Co., LTD. Huizhou)

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Tablet PC
Brand Name	ALCATEL
Model Name	ONE TOUCH EVO 7HD / ONE TOUCH E710 Module: one touch M600Y
FCC ID	RAD402
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/ WLAN 11bgn / Bluetooth EDR
HW Version	JUPITER_MAIN_V6.0
SW Version	UPDATA_111_104
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4. Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency Range	GPRS850: 824.2 MHz ~ 848.8 MHz GPRS1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency Range	GPRS850: 869.2 MHz ~ 893.8 MHz GPRS1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz
Antenna Type	WWAN : Monopole Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna
Type of Modulation	GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only) 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth BDR (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK GPS : BPSK

1.5. Test Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.		
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755- 3320-2398		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO01-SZ	03CH01-SZ	831040/4086F-1

1.6. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 KHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	☒	☒	Note 1
2.	Data application transferred mode (EUT with PC)	☒	☒	☒

Abbreviations:

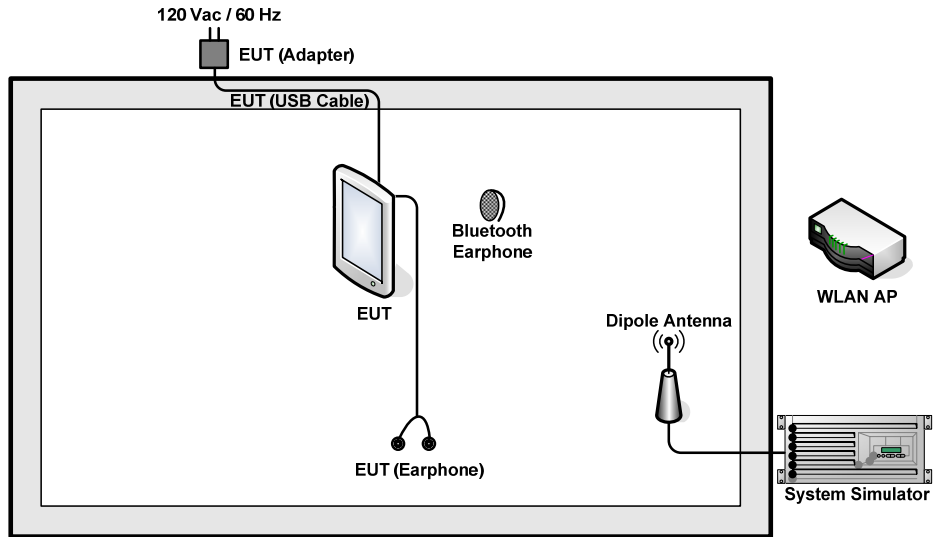
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Note 1: Testing for this mode is not required or not the worst case.

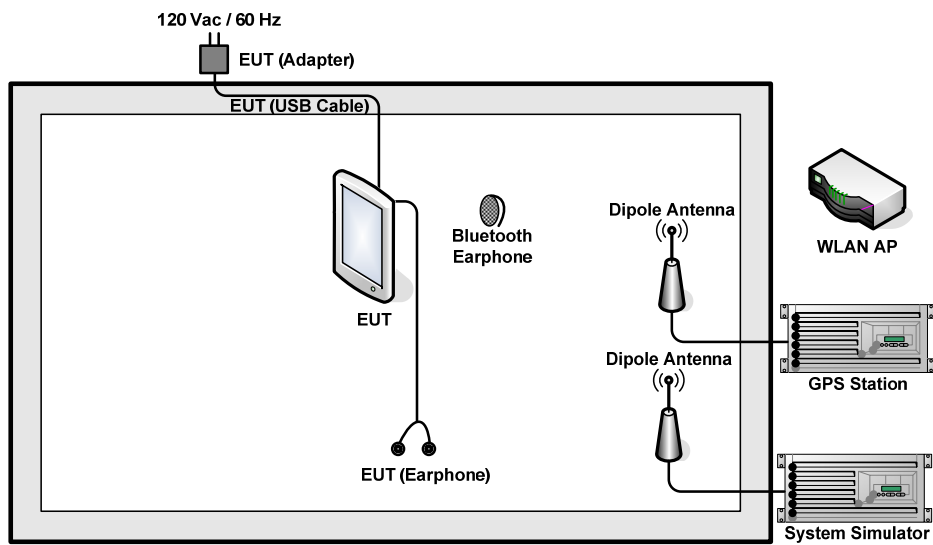
Remark: For signal above 1GHz, the worst case was test item 2.

Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	<p>Mode 1: GPRS850 Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera <Fig. 1></p> <p>Mode 2: GPRS1900 Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4<Fig. 1></p> <p>Mode 3: WCDMA Band V Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + GPS Rx <Fig. 2></p> <p>Mode 4: WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone <Fig. 3></p>
Radiated Emissions < 1GHz	1/2	<p>Mode 1: GPRS850 Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + Camera <Fig. 1></p> <p>Mode 2: GPRS1900 Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <Fig. 1></p> <p>Mode 3: WCDMA Band V Idle + WLAN Idle + Bluetooth Idle + USB Cable (Charging from Adapter) + Earphone + GPS Rx <Fig. 2></p> <p>Mode 4: WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone <Fig. 3></p>
Radiated Emissions ≥ 1GHz	2	<p>Mode 1: WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone <Fig. 3></p>
<p>Remark:</p> <ol style="list-style-type: none"> The worst case of AC Conducted Emission is mode 4; only the test data of this mode was reported. The worst case of Radiated Emissions is mode 4; only the test data of this mode was reported. Link with PC means data application transferred mode between EUT and PC. 		

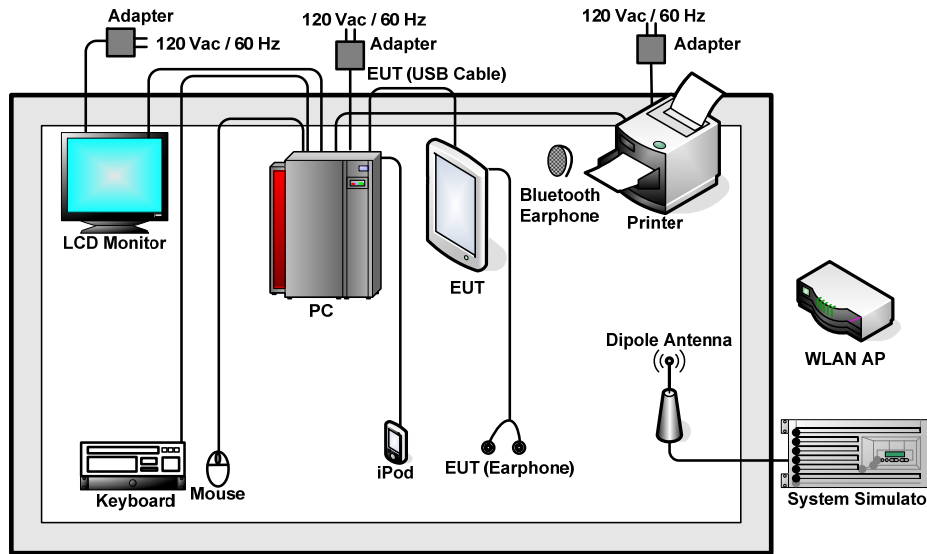
2.2. Connection Diagram of Test System



<Fig. 1>



<Fig. 2>



<Fig. 3>

2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Agilent	E5515C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	PC	Dell	OPTIPLEX 390	FCC DoC	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-link	NW615	N/A	N/A	Unshielded, 1.8 m
5.	WLAN AP	D-link	NW612	N/A	N/A	Unshielded, 1.8 m
6.	Monitor	DELL	IN1940MWB	FCC DoC	Shielded, 1.2 m	Unshielded, 1.8 m
7.	(USB) Mouse	Dell	MS111-L	FCC DoC	Shielded, 1.8 m	N/A
8.	(USB) Keyboard	Dell	SK212-B	N/A	N/A	Unshielded, 1.8 m
9.	Bluetooth Earphone	Nokia	BH-108	N/A	N/A	N/A
10.	Printer	SAMSUNG	ML-1620	N/A	Shielded, 1.8 m	Unshielded, 1.8 m
11.	Printer	HP	Laser Jet 1018	FCC DoC	Shielded, 1.8 m	Unshielded, 1.8 m
12.	iPod	Apple	MC525 AP/A	FCC DoC	Shielded, 1.0 m	N/A

2.4. Test Software

The EUT was in GPRS or WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute the program, "Winthrax" under WIN7 installed in PC for files transfer with EUT via USB cable.
2. Turn on GPS function to make the EUT receive continuous signals from GPS station.
3. Execute "Video player" to play MPEG4 files.
4. Turn on camera to capture images.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

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 in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

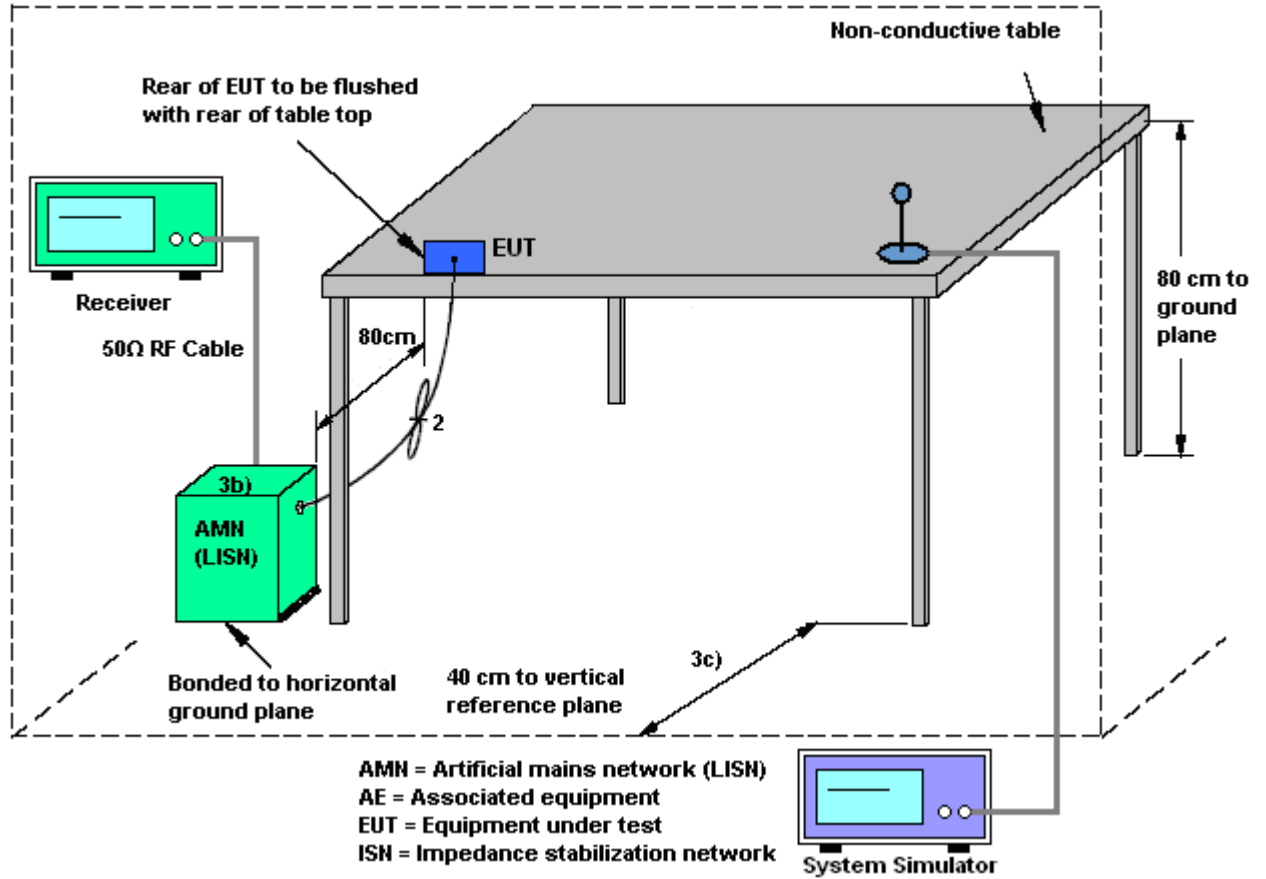
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedure

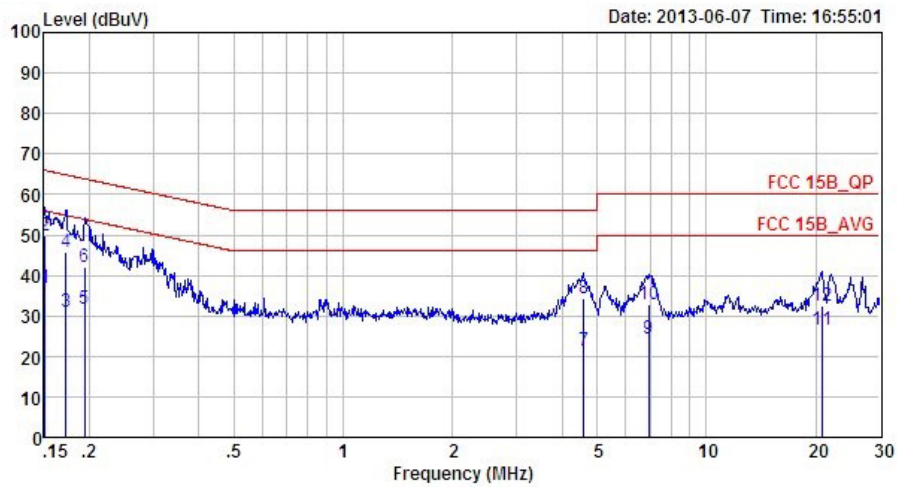
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 4	Temperature :	24~25°C
Test Engineer :	Leo Liao	Relative Humidity :	48~49%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

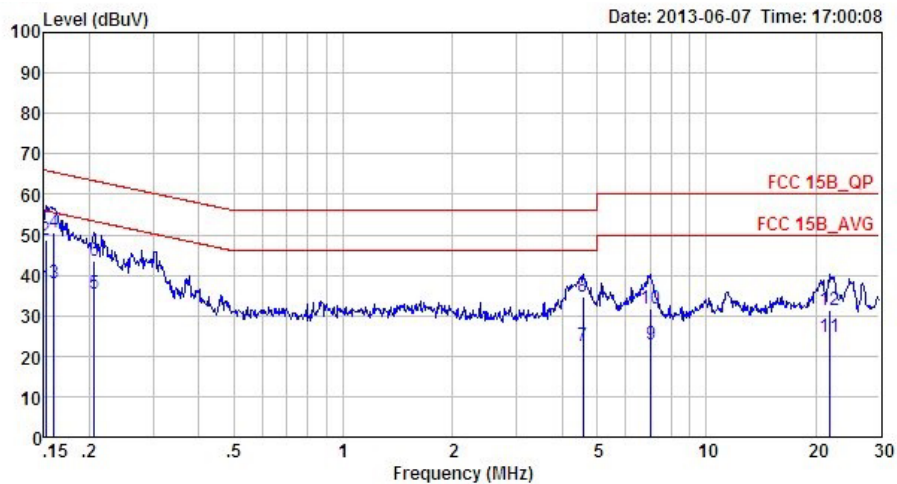


Site : CO01-SZ
 Condition: FCC 15B_QP LISN_L_2000601 LINE
 Project : (FC) 342211-01
 Mode : Mode 4

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	37.08	-18.88	55.96	27.00	0.03	10.05	Average
2 *	0.15	49.78	-16.18	65.96	39.70	0.03	10.05	QP
3	0.17	31.08	-23.78	54.86	21.00	0.03	10.05	Average
4	0.17	45.88	-18.98	64.86	35.80	0.03	10.05	QP
5	0.19	31.88	-21.96	53.84	21.80	0.03	10.05	Average
6	0.19	42.08	-21.76	63.84	32.00	0.03	10.05	QP
7	4.60	21.26	-24.74	46.00	11.00	0.07	10.19	Average
8	4.60	34.26	-21.74	56.00	24.00	0.07	10.19	QP
9	6.95	24.40	-25.60	50.00	14.10	0.10	10.20	Average
10	6.95	32.70	-27.30	60.00	22.40	0.10	10.20	QP
11	20.81	26.42	-23.58	50.00	15.50	0.37	10.55	Average
12	20.81	32.62	-27.38	60.00	21.70	0.37	10.55	QP



Test Mode :	Mode 4	Temperature :	24~25°C
Test Engineer :	Leo Liao	Relative Humidity :	48~49%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
 Condition: FCC 15B_QP LISN_N_2000601 NEUTRAL
 Project : (FC) 342211-01
 Mode : Mode 4

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	36.77	-19.14	55.91	26.70	0.02	10.05	Average
2	0.15	48.67	-17.24	65.91	38.60	0.02	10.05	QP
3	0.16	38.07	-17.40	55.47	28.00	0.02	10.05	Average
4 *	0.16	50.57	-14.90	65.47	40.50	0.02	10.05	QP
5	0.21	35.57	-17.79	53.36	25.49	0.02	10.06	Average
6	0.21	43.37	-19.99	63.36	33.29	0.02	10.06	QP
7	4.57	22.36	-23.64	46.00	12.10	0.07	10.19	Average
8	4.57	34.86	-21.14	56.00	24.60	0.07	10.19	QP
9	7.02	22.83	-27.17	50.00	12.50	0.13	10.20	Average
10	7.02	31.63	-28.37	60.00	21.30	0.13	10.20	QP
11	21.83	24.89	-25.11	50.00	13.81	0.60	10.48	Average
12	21.83	31.29	-28.71	60.00	20.21	0.60	10.48	QP

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

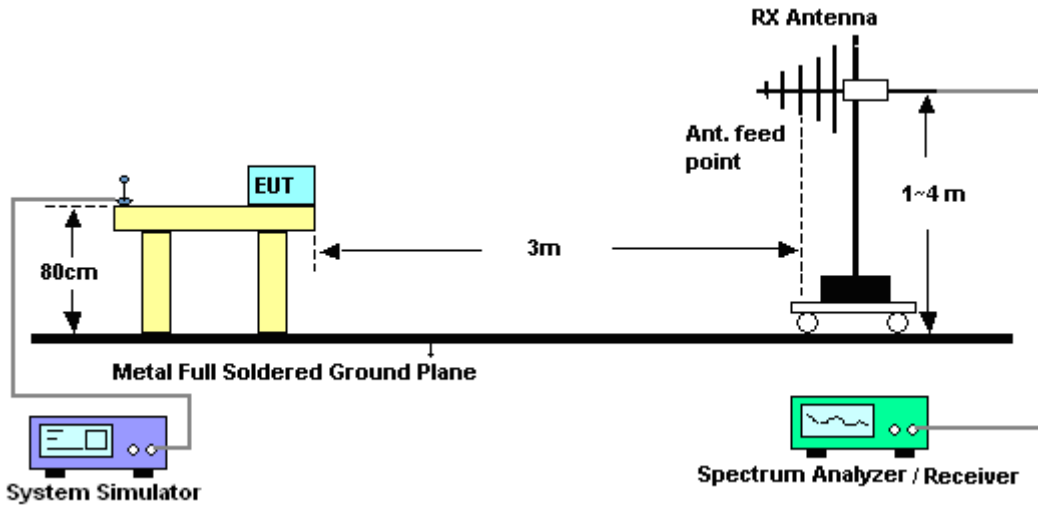
See list of measuring instruments of this test report.

3.2.3. Test Procedures

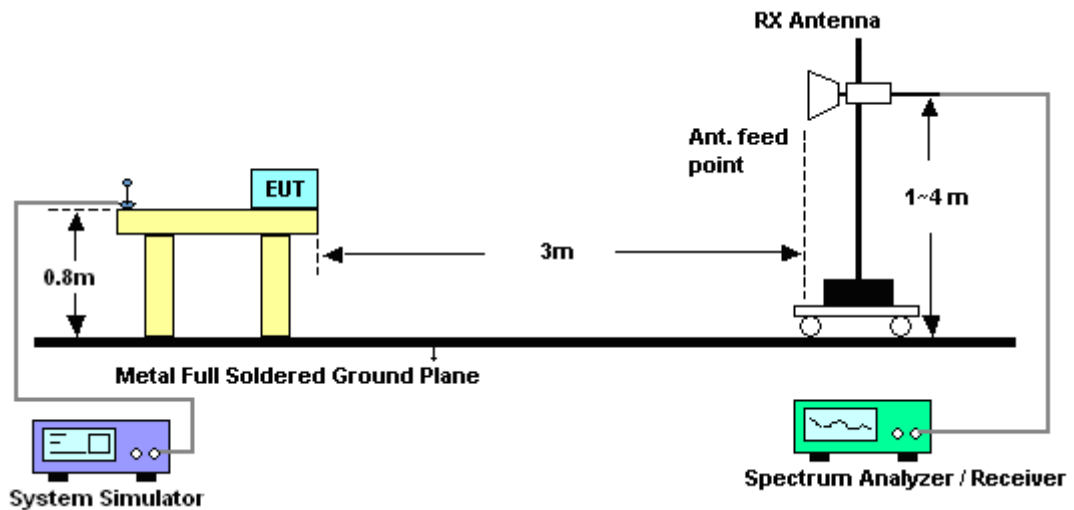
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

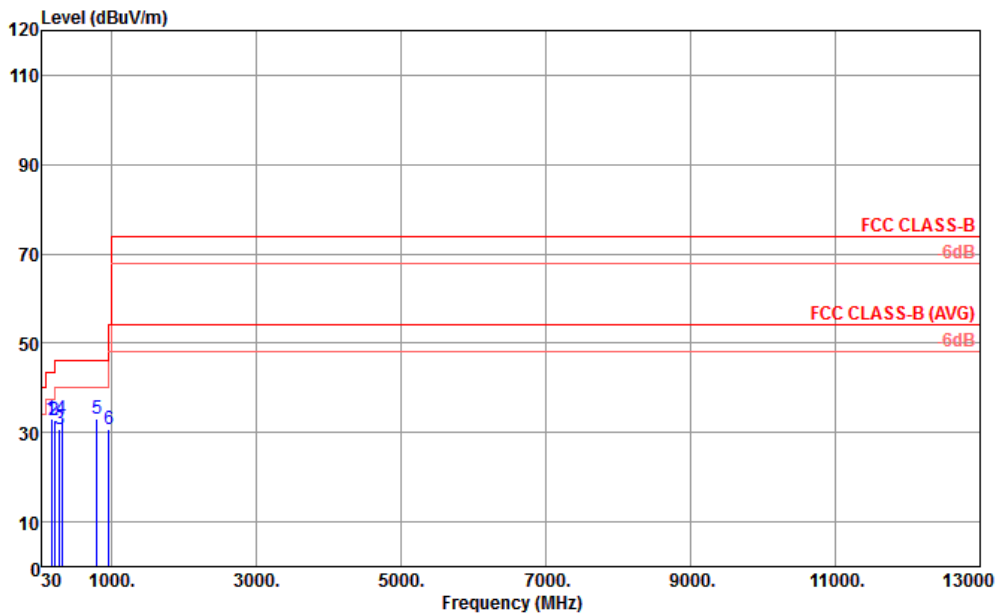


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 4	Temperature :	24~25°C
Test Engineer :	Robin Luo	Relative Humidity :	54~55%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone		

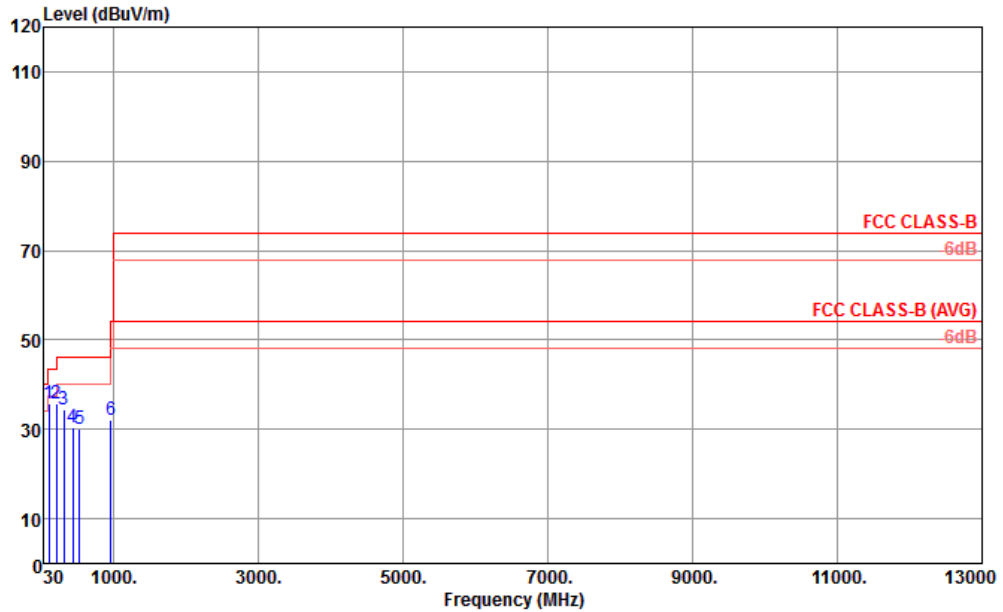


Site : 03CH01-SZ
 Condition : FCC CLASS-B 3m LF_ANT_121103 HORIZONTAL
 Project : (FC) 342211-01
 Mode : Mode 4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 P	165.80	32.93	-10.57	43.50	52.21	9.90	1.27	30.45	---	---	Peak
2 Q	207.51	32.83	-10.67	43.50	52.30	9.35	1.49	30.31	100	320	QP
3	278.32	30.82	-15.18	46.00	46.27	12.93	1.69	30.07	---	---	Peak
4	314.21	32.93	-13.07	46.00	47.61	13.54	1.73	29.95	---	---	Peak
5	795.33	32.93	-13.07	46.00	38.82	20.44	2.61	28.94	---	---	Peak
6	960.23	30.66	-23.34	54.00	34.77	21.80	2.81	28.72	---	---	Peak



Test Mode :	Mode 4	Temperature :	24~25°C
Test Engineer :	Robin Luo	Relative Humidity :	54~55%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band II Idle + WLAN Idle + Bluetooth Idle + USB Cable (Data Link with PC) + Earphone		



Site : 03CH01-SZ
 Condition : FCC CLASS-B 3m LF_ANT_121103 VERTICAL
 Project : (FC) 342211-01
 Mode : Mode 4

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	105.66	35.81	-7.69	43.50	53.48	11.80	1.18	30.65	---	---	Peak
2 P	209.45	35.87	-7.63	43.50	55.27	9.40	1.50	30.30	100	360	Peak
3	311.30	34.56	-11.44	46.00	49.48	13.32	1.72	29.96	---	---	Peak
4	433.52	30.42	-15.58	46.00	41.23	16.78	1.96	29.55	---	---	Peak
5	530.52	30.10	-15.90	46.00	39.10	18.10	2.19	29.29	---	---	Peak
6	960.23	31.94	-22.06	54.00	36.05	21.80	2.81	28.72	---	---	Peak



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC LISN	ETS-LINDGREN	3816/2SH	00103912	0.1MHz~108MHz	Feb. 28, 2013	Jun. 07, 2013	Feb. 27, 2014	Conduction (CO01-SZ)
AC LISN	ETS-LINDGREN	3816/2SH	00103892	0.1MHz~108MHz	Feb. 28, 2013	Jun. 07, 2013	Feb. 27, 2014	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	1142.8007.03	100724	9K-3GHz	Mar. 08, 2013	Jun. 07, 2013	Mar. 07, 2014	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1N/A	N/A	Oct. 12, 2012	Jun. 07, 2013	Oct. 11, 2013	Conduction (CO01-SZ)
ESCI TEST Receiver	R&S	ESCI	100724	9K-3GHz	Mar. 28, 2013	Jun. 07, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSP30	101362	9kHz~30GHz	Oct. 11, 2012	Jun. 07, 2013	Oct. 10, 2013	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 12, 2012	Jun. 07, 2013	Oct. 11, 2013	Radiation (03CH01-SZ)
Bilog Antenna	SCHAFFNER	CBL6112B	2614	30Mhz~2Ghz	Nov. 03, 2012	Jun. 07, 2013	Nov. 02, 2013	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9K-3000MHz GAIN 30db	Mar. 28, 2013	Jun. 07, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	Mar. 28, 2013	Jun. 07, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
System Simulator	Agilent	E5515C	MY50264168	GSM/WCDMA /CDMA2000	Oct. 09, 2012	Jun. 07, 2013	Oct. 08, 2013	-
GPS Station	T&E	GS50	536468	GPS	Oct. 11, 2012	Jun. 07, 2013	Oct. 10, 2013	-

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP342211-01 as below.