FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.225

Equipment	:	**UMTS Quad band / GSM Quad band mobile phone**
Brand Name	:	**ALCATEL**
Model No.	:	**Flame**
Filing Type	:	**New Application**
Applicant	:	**TCT Mobile Limited** 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
FCC ID	:	**RAD481**
Manufacturer		**TCT Mobile Limited** 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
Received Date	:	Mar. 26, 2014
Final Test Date	:	Apr. 11, 2014

Statement

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International (KUNSHAN) Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
2627

SPORTON INTERNATIONAL (KUNSHAN) INC.

No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR432602D	Rev. 01	Initial issue of report	May 22, 2014

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.225

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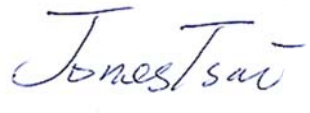
Applicant	:	**TCT Mobile Limited** 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Mar. 26, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

1. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C					
Part	**FCC Rule**	**IC Rule**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	Gen 7.2.2	AC Power Line Conducted Emissions	Complies	9.81dB at 1.790MHz
3.2	15.225(a)(b)(c)	A2.6	Field Strength of Fundamental Emissions	Complies	64.83dB at 13.560MHz
3.3	2.1049	-	20dB Spectrum Bandwidth	Complies	-
3.4	15.225(d) 15.209	A2.6	Radiated Emissions	Complies	4.23dB at 46.490MHz
3.5	15.225(e)	A2.6	Frequency Stability	Complies	-
3.6	15.203	-	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.26dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±2.54dB	Confidence levels of 95%

2. GENERAL INFORMATION

2.1 Product Details

For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description
Power Type	5Vdc from Adapter 3.8Vdc from Li-ion Battery
Modulation	ASK
Channel Number	1
Channel Band Width (99%)	2.260kHz
Max. Field Strength	59.17dBuV/m
Test Freq. Range	13.553 ~ 13.567MHz
Carrier Frequencies	13.56 MHz (Ch. 1)
Protocol Type supported by the device (ISO/IEC 14443)	Type A/B
Antenna	Loop Antenna

2.2 Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Channel
AC Power Line Conducted Emissions	CTX	-
Field Strength of Fundamental Emissions	CTX	1
20dB Spectrum Bandwidth	CTX	1
Radiated Emissions 9kHz~30MHz	CTX	1
Radiated Emissions 9kHz~10th Harmonic Band Edge Emissions	CTX	1
Frequency Stability	Modulation	1

Note:

1, CTX=continuously transmitting.

2, The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT.

2.3 Table for Testing Locations

Test Site No.	Site Category	Location
CO01-KS	Conduction	KUNSHAN
TH01-KS	OVEN Room	KUNSHAN
03CH01-KS	SAC	KUNSHAN

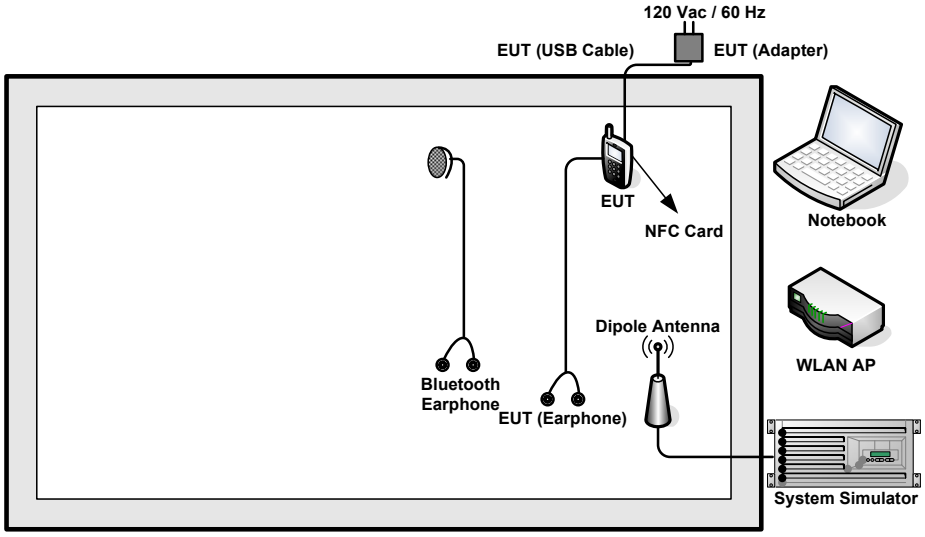
Semi Anechoic Chamber (SAC).

2.4 Table for Supporting Units

Support Unit	Manufacturer	Model	FCC ID
System Simulator	R&S	CMU 200	N/A
DC Power Supply	GW INSTEK	GPS-3030D	N/A
WLAN AP	D-Link	DIR-855	KA2DIR855A2
Bluetooth Earphone	Nokia	BH-106	QTLBH-106
Notebook	Lenovo	G480	PRC4
NFC Card	N/A	N/A	N/A

2.5 Test Configurations

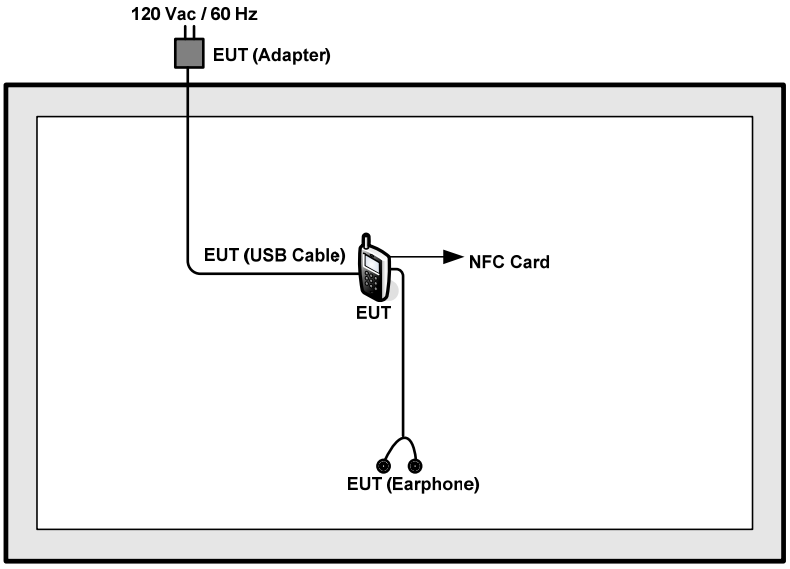
<AC Conducted Emissions>



Fundamental Emissions and Mask Measurement

For radiated emissions 9kHz~30MHz/

For radiated emissions 30MHz~1GHz



3. TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 Limit

For a Low-power Radio-frequency device which is designed to be connected to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2 Measuring Instruments and Setting

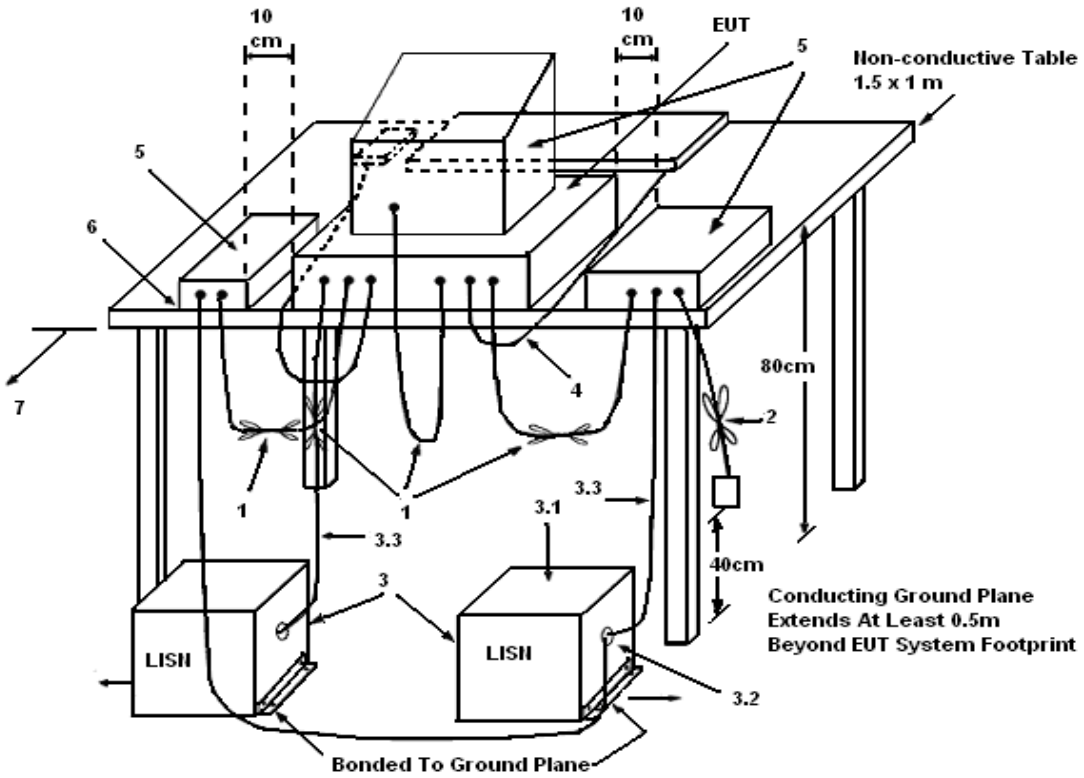
Please refer to section 4 of equipment list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.1.3 Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

3.1.4 Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5 Test Deviation

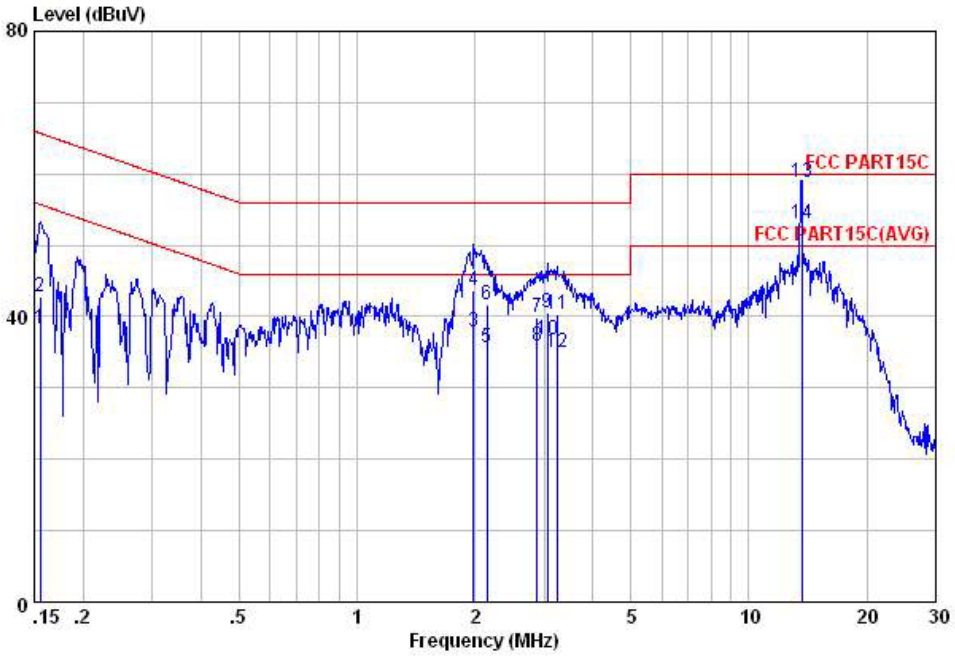
There is no deviation with the original standard.

3.1.6 EUT Operation during Test

The EUT was placed on the test table and programmed in transmitting function.

3.1.7 Results of AC Power Line Conducted Emissions Measurement

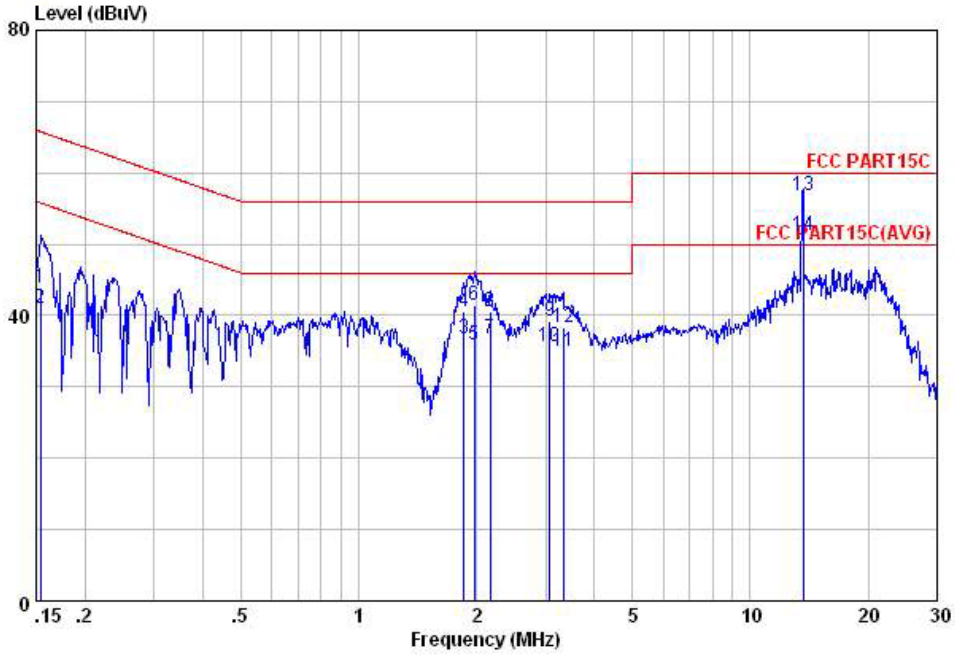
Final Test Date	Mar. 31, 2014	Test Site No.	CO01-KS
Temperature	21~23℃	Humidity	37~39%
Test Engineer	Eligah Wang	Configuration	Transmitting Mode (13.56MHz)
Test Status	With Antenna	Phase	Line
Mode	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + NFC Tx		
Remark	13.56 MHz is the NFC RF fundamental signal.		



Site : CO01-KS
Condition: FCC PART15C LISN-L20130306 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	38.35	-17.34	55.69	25.80	1.86	10.69	Average
2	0.16	42.85	-22.84	65.69	30.30	1.86	10.69	QP
3	1.98	37.89	-8.11	46.00	27.60	0.10	10.19	Average
4	1.98	43.59	-12.41	56.00	33.30	0.10	10.19	QP
5	2.14	35.60	-10.40	46.00	25.31	0.10	10.19	Average
6	2.14	41.60	-14.40	56.00	31.31	0.10	10.19	QP
7	2.88	39.95	-16.05	56.00	29.60	0.13	10.22	QP
8	2.88	35.95	-10.05	46.00	25.60	0.13	10.22	Average
9	3.06	40.46	-15.54	56.00	30.10	0.14	10.22	QP
10	3.06	36.66	-9.34	46.00	26.30	0.14	10.22	Average
11	3.24	40.28	-15.72	56.00	29.89	0.16	10.23	QP
12	3.24	34.88	-11.12	46.00	24.49	0.16	10.23	Average
13	13.62	58.84	-1.16	60.00	48.30	0.20	10.34	QP
14 X	13.62	53.04	3.04	50.00	42.50	0.20	10.34	Average

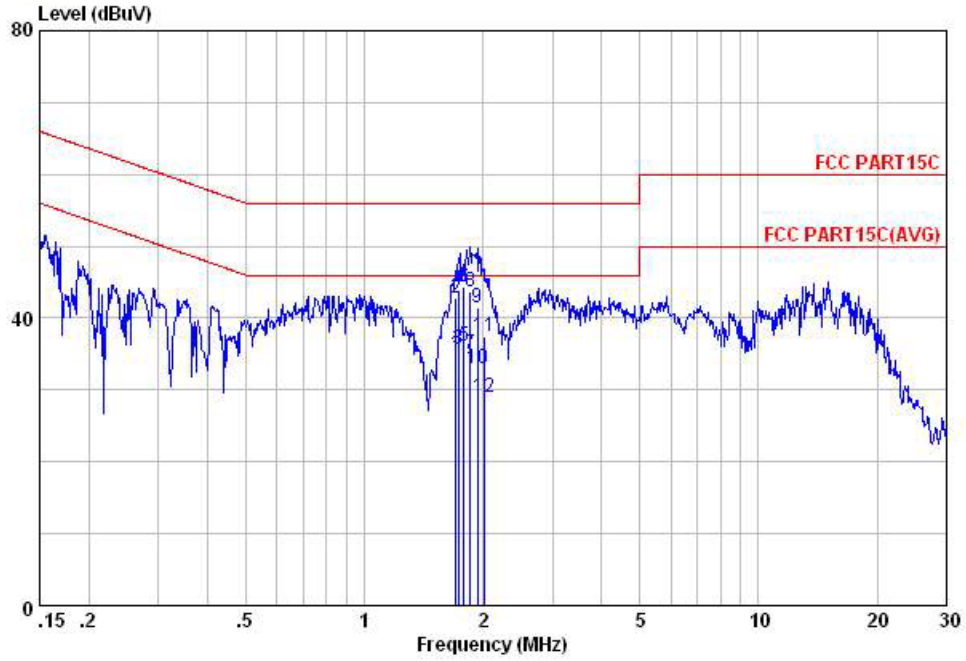
Final Test Date	Mar. 31, 2014	Test Site No.	CO01-KS
Temperature	21~23℃	Humidity	37~39%
Test Engineer	Eligah Wang	Configuration	Transmitting Mode (13.56MHz)
Test Status	With Antenna	Phase	Neutral
Mode	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + NFC Tx		
Remark	13.56 MHz is the NFC RF fundamental signal.		



Site : CO01-KS
Condition: FCC PART15C LISN-N20130306 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	43.84	-21.94	65.78	31.30	1.84	10.70	QP
2	0.15	41.04	-14.74	55.78	28.50	1.84	10.70	Average
3	1.86	36.79	-9.21	46.00	26.50	0.10	10.19	Average
4	1.86	40.59	-15.41	56.00	30.30	0.10	10.19	QP
5	1.97	35.79	-10.21	46.00	25.50	0.10	10.19	Average
6	1.97	41.39	-14.61	56.00	31.10	0.10	10.19	QP
7	2.17	36.80	-9.20	46.00	26.51	0.10	10.19	Average
8	2.17	40.60	-15.40	56.00	30.31	0.10	10.19	QP
9	3.07	39.27	-16.73	56.00	28.91	0.14	10.22	QP
10	3.07	35.77	-10.23	46.00	25.41	0.14	10.22	Average
11	3.33	34.99	-11.01	46.00	24.60	0.16	10.23	Average
12	3.33	38.29	-17.71	56.00	27.90	0.16	10.23	QP
13	13.62	56.73	-3.27	60.00	46.11	0.28	10.34	QP
14 X	13.62	51.23	1.23	50.00	40.61	0.28	10.34	Average

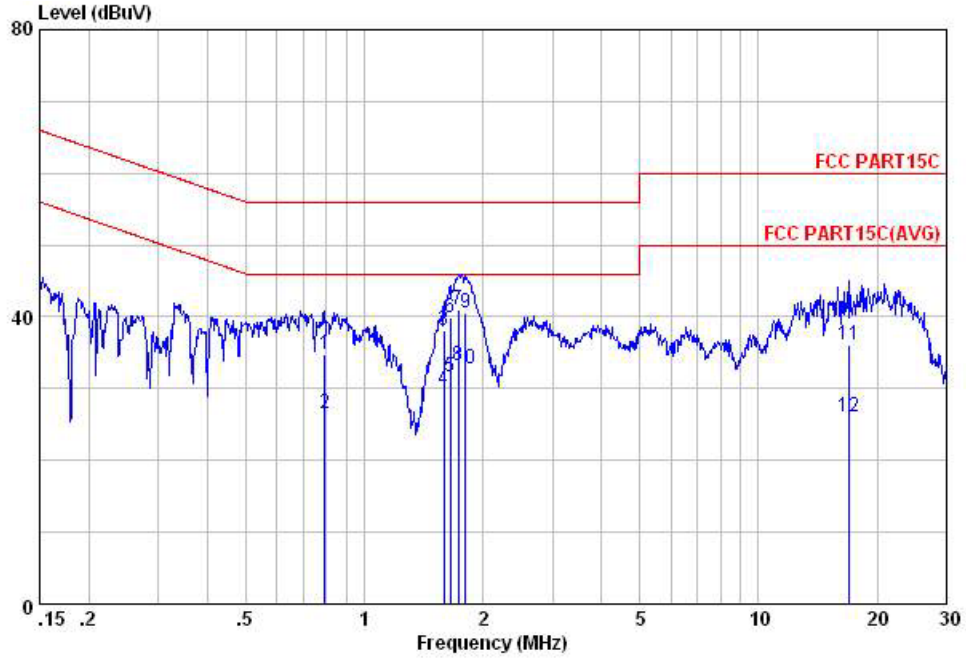
Final Test Date	Mar. 31, 2014	Test Site No.	CO01-KS
Temperature	21~23℃	Humidity	37~39%
Test Engineer	Eligah Wang	Configuration	Transmitting Mode (13.56MHz)
Test Status	With Dummy Load	Phase	Line
Mode	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + NFC Tx		
Remark	Only the fundamental NFC signal needs to be retested per C63.4.		



Site : CO01-KS
Condition: FCC PART15C LISN-L20130306 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.71	34.89	-11.11	46.00	24.60	0.10	10.19	Average
2	1.71	42.69	-13.31	56.00	32.40	0.10	10.19	QP
3	1.73	35.69	-10.31	46.00	25.40	0.10	10.19	Average
4	1.73	43.99	-12.01	56.00	33.70	0.10	10.19	QP
5	1.79	36.19	-9.81	46.00	25.90	0.10	10.19	Average
6	1.79	44.39	-11.61	56.00	34.10	0.10	10.19	QP
7	1.86	35.09	-10.91	46.00	24.80	0.10	10.19	Average
8	1.86	43.69	-12.31	56.00	33.40	0.10	10.19	QP
9	1.94	41.39	-14.61	56.00	31.10	0.10	10.19	QP
10	1.94	32.89	-13.11	46.00	22.60	0.10	10.19	Average
11	2.01	37.39	-18.61	56.00	27.10	0.10	10.19	QP
12	2.01	28.99	-17.01	46.00	18.70	0.10	10.19	Average

Final Test Date	Mar. 31, 2014	Test Site No.	CO01-KS
Temperature	21~23℃	Humidity	37~39%
Test Engineer	Eligah Wang	Configuration	Transmitting Mode (13.56MHz)
Test Status	With Dummy Load	Phase	Neutral
Mode	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone + NFC Tx		
Remark	Only the fundamental NFC signal needs to be retested per C63.4.		



Site : CO01-KS
Condition: FCC PART15C LISN-N20130306 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.79	34.87	-21.13	56.00	24.50	0.17	10.20	QP
2	0.79	26.47	-19.53	46.00	16.10	0.17	10.20	Average
3	1.59	38.19	-17.81	56.00	27.90	0.10	10.19	QP
4	1.59	29.79	-16.21	46.00	19.50	0.10	10.19	Average
5	1.65	31.59	-14.41	46.00	21.30	0.10	10.19	Average
6	1.65	39.79	-16.21	56.00	29.50	0.10	10.19	QP
7	1.73	41.09	-14.91	56.00	30.80	0.10	10.19	QP
8	1.73	33.19	-12.81	46.00	22.90	0.10	10.19	Average
9	1.81	40.59	-15.41	56.00	30.30	0.10	10.19	QP
10	1.81	32.69	-13.31	46.00	22.40	0.10	10.19	Average
11	16.93	36.17	-23.83	60.00	25.60	0.26	10.31	QP
12	16.93	26.07	-23.93	50.00	15.50	0.26	10.31	Average

3.2 Field Strength of Fundamental Emissions and Mask Measurement

3.2.1 Limit

Field strength of fundamental emissions limit:

The field strength of fundamental emissions shall not exceed 15848 microvolts/meter at 30 meters. The emissions limit in this paragraph is based on measurement instrumentation employing a QP detector.

Frequencies (MHz)	Field Strength (microvolts/meter)	Field Strength (dBμV/m) at 10m	Field Strength (dBμV/m) at 3m
13.553 ~ 13.567MHz	15848 at 30m	103.08 (QP)	124 (QP)

Mask limit:

Rules and specifications	CFR 47 Part 15 section 15.225(a)-(d)				
Description	Compliance with the spectrum mask is tested using a spectrum analyzer with RB set to a 1kHz for the band 13.553~13.567MHz				
Limit	Freq. of Emission (MHz)	Field Strength (uV/m) at 30m	Field Strength (dBuV/m) at 30m	Field Strength (dBuV/m) at 10m	Field Strength (dBuV/m) at 3m
	1.705~13.110	30	29.5	48.58	69.5
	13.110~13.410	106	40.5	59.58	80.5
	13.410~13.553	334	50.5	69.58	90.5
	13.553~13.567	15848	84.0	103.08	124.0
	13.567~13.710	334	50.5	69.58	90.5
	13.710~14.010	106	40.5	59.58	80.5
	14.010~30.000	30	29.5	48.58	69.5

3.2.2 Measuring Instruments and Setting

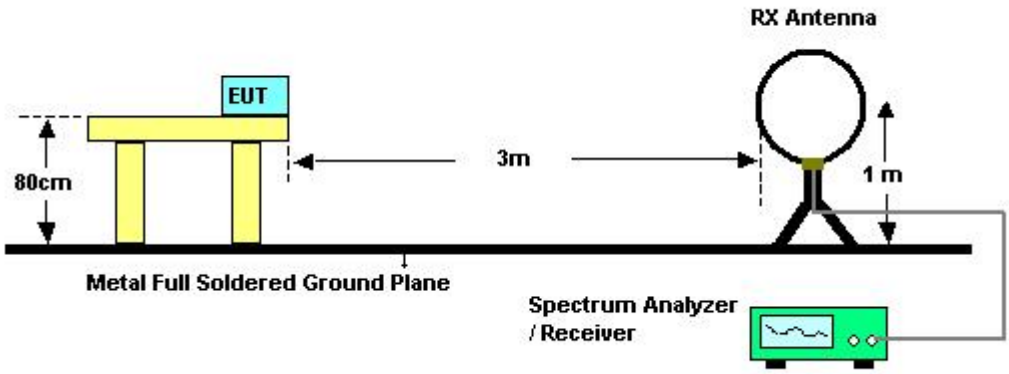
Please refer to section 4 of equipment list in this report. The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	Auto
Center Frequency	Fundamental Frequency
RB	9 kHz
Detector	QP

3.2.3 Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
4. For Fundamental emissions, use the receiver to measure QP reading.
5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
6. Compliance with the spectrum mask is tested using a spectrum analyzer with RB set to a 1kHz for the band 13.553~13.567MHz.

3.2.4 Test Setup Layout



3.2.5 Test Deviation

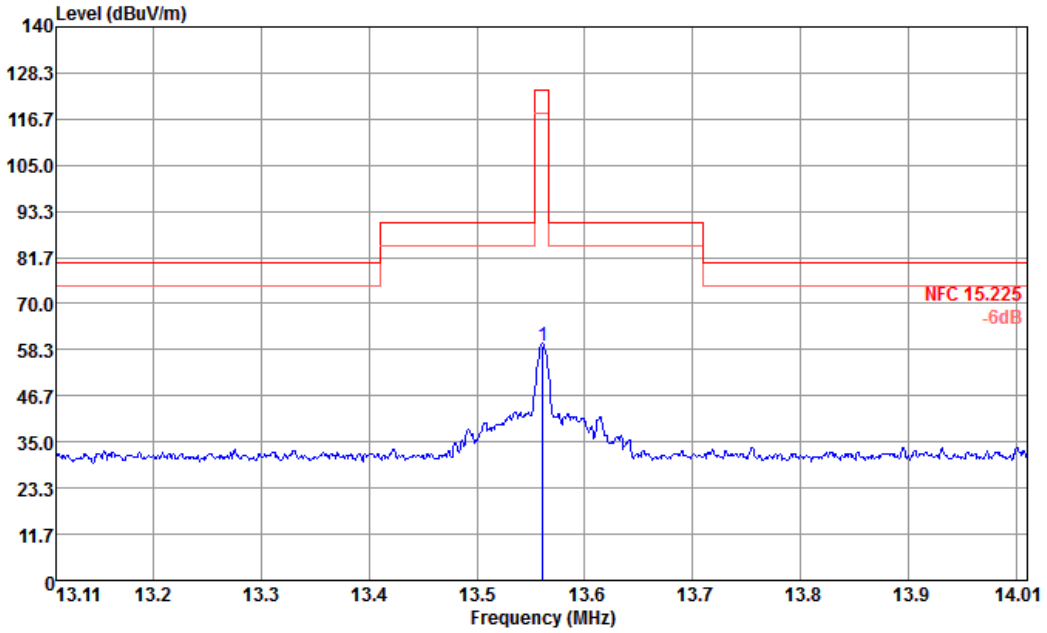
There is no deviation with the original standard.

3.2.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

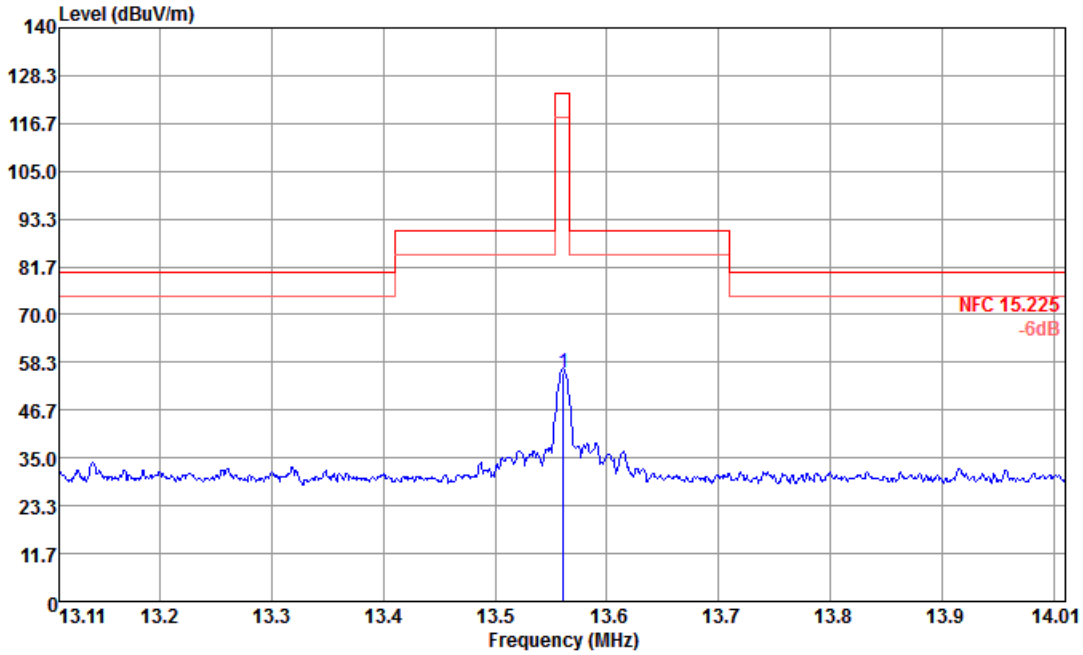
3.2.7 Test Result of Field Strength of Fundamental Emissions

Final Test Date	Apr. 09, 2014	Test Site No.	03CH01-KS
Temperature	22~23°C	Humidity	42~43%
Test Engineer	Leo Liao	Configurations	Ch. 1



Site : 03CH01-KS
Condition : NFC 15.225 3m LF LOOP ANT_121026 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read 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	13.56	59.17	-64.83	124.00	38.90	20.00	0.27	0.00	---	---	QP



Site : 03CH01-KS
Condition : NFC 15.225 3m LF_LOOP ANT_121026 VERTICAL

	Freq	Level	Over Limit	Limit Line	Read 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	13.56	55.87	-68.13	124.00	35.60	20.00	0.27	0.00	---	---	QP

Note:

1. Emission level (dBμV/m) = 20 log Emission level (μV/m).
2. Measured distance is 3m.
3. All emissions emit form non-NFC function of digital unintentional emissions. All NFC's spurious emissions are below 20dB of limits.

3.3 20dB Spectrum Bandwidth Measurement

3.3.1 Limit

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553 ~ 13.567MHz).

3.3.2 Measuring Instruments and Setting

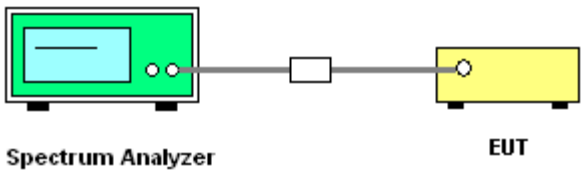
Please refer to section 4 of equipment list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 20dB Bandwidth
RB	1 kHz
VB	3 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.3.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 1 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.

3.3.4 Test Setup Layout



3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

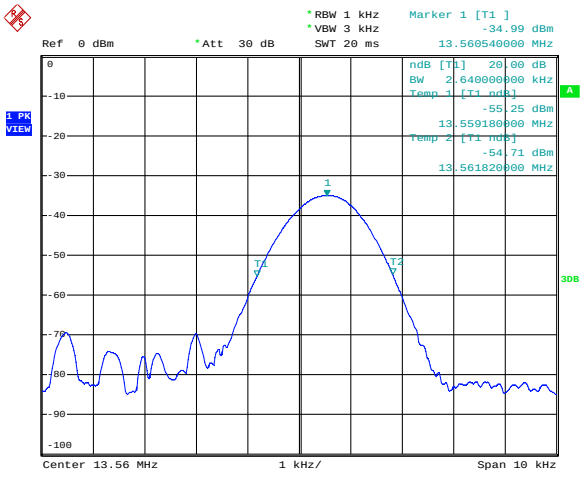
The EUT was programmed to be in continuously transmitting mode.

3.3.7 Test Result of 20dB Spectrum Bandwidth

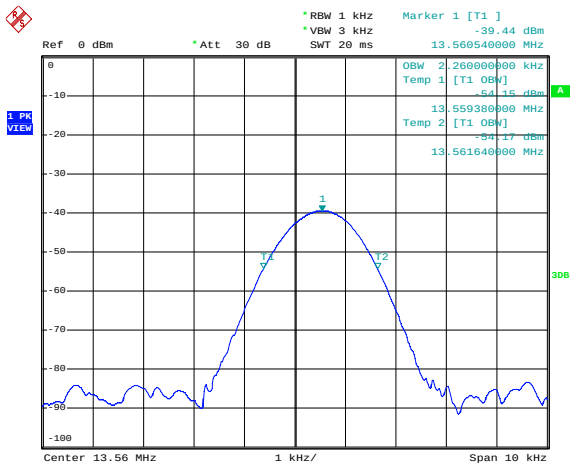
Final Test Date	Apr. 11, 2014	Test Site No.	TH01-KS
Temperature	23~24°C	Humidity	47~48%
Test Engineer	Adonis Li	Configurations	Ch. 1

Frequency	20dB BW (kHz)	99% OBW (kHz)	Frequency range (MHz) f_L > 13.553MHz	Frequency range (MHz) f_H < 13.567MHz	Test Result
13.56 MHz	2.640	2.260	13.55918	13.56182	**Complies**

20 dB / 99% Bandwidth Plot on 13.56 MHz



Date: 11.APR.2014 20:36:19



Date: 11.APR.2014 20:36:53

3.4 Radiated Emissions Measurement

3.4.1 Limit

The field strength of any emissions which appear outside of 13.553 ~ 13.567MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
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

3.4.2 Measuring Instruments and Setting

Please refer to section 4 of equipment list in this report. The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for Peak

3.4.3 Test Procedures

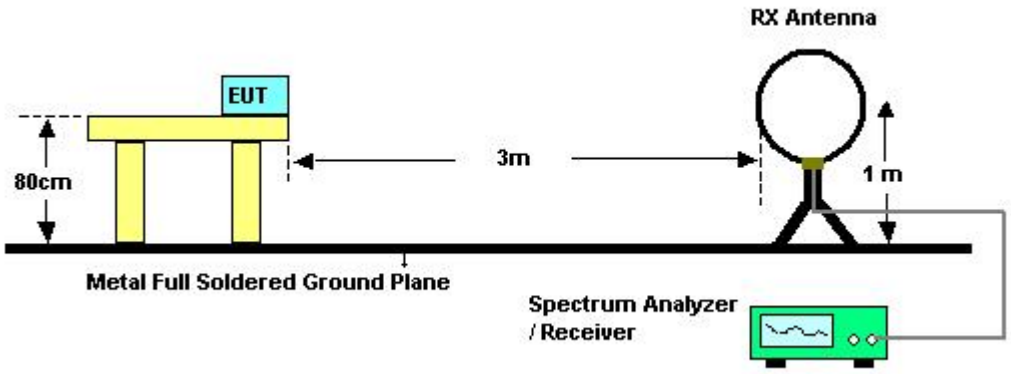
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions,

and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

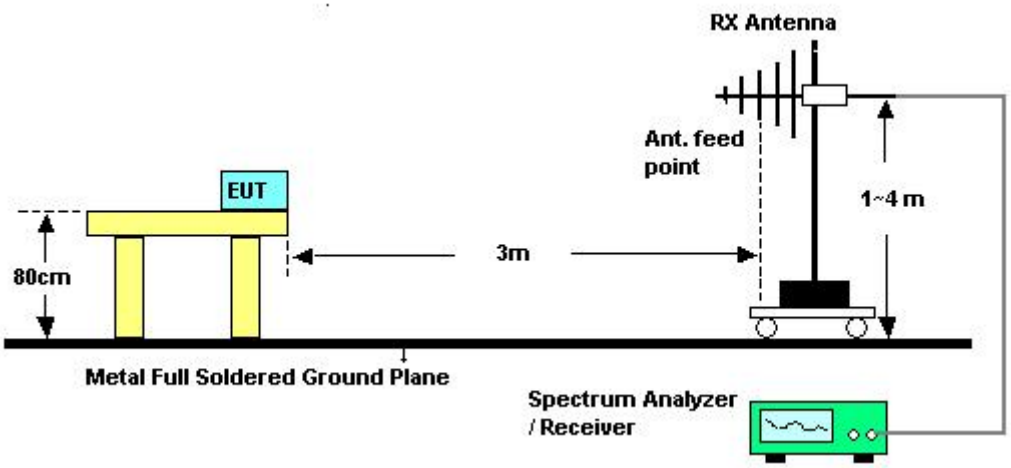
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

3.4.4 Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



3.4.5 Test Deviation

There is no deviation with the original standard.

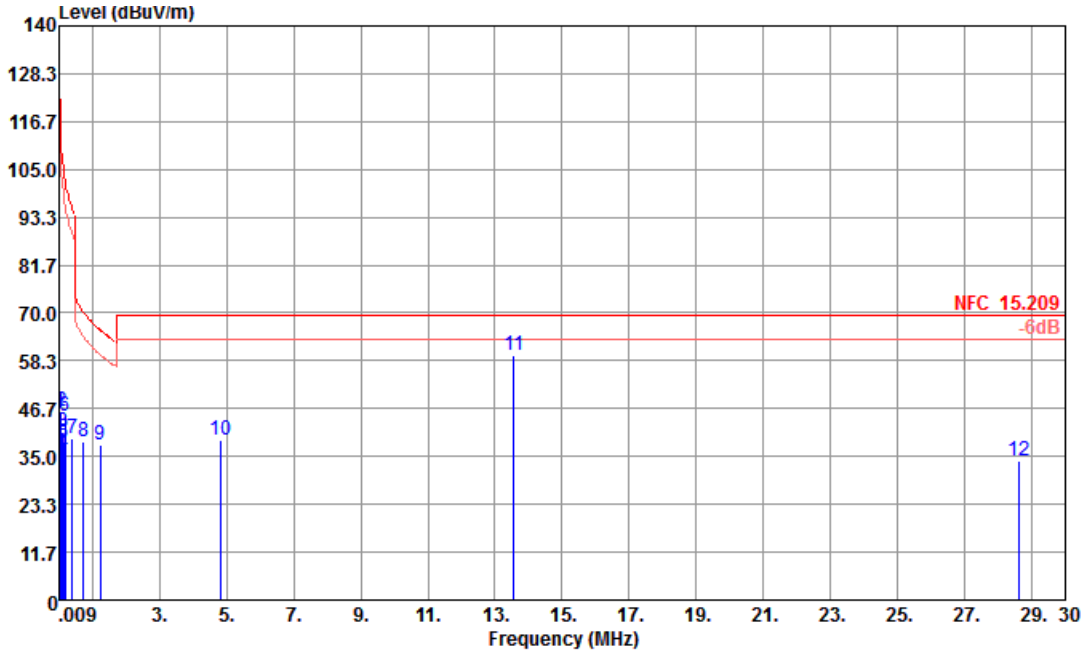
3.4.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.4.7 Results of Radiated Emissions (9 kHz~30MHz)

Final Test Date	Apr. 09, 2014	Test Site No.	03CH01-KS
Temperature	22~23°C	Humidity	42~43%
Test Engineer	Leo Liao	Configurations	Ch. 1

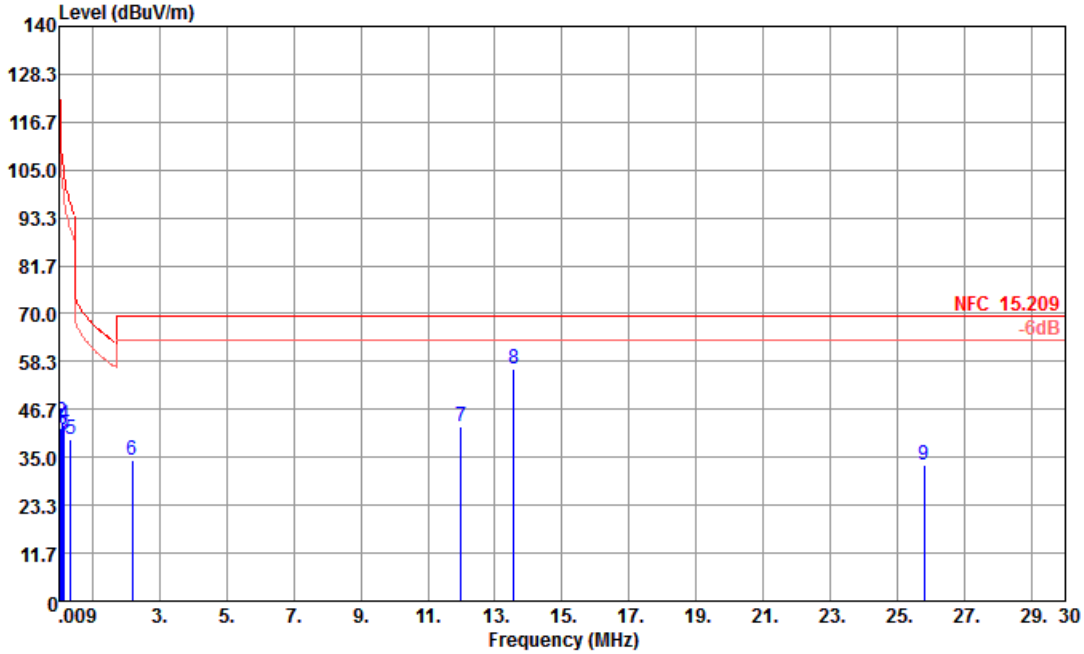
Horizontal



Site : 03CH01-KS
Condition : NFC 15.209 3m LF LOOP ANT_121026 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read 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	0.04	45.48	-71.04	116.52	25.47	20.00	0.01	0.00	---	---	Peak
2	0.07	46.17	-64.26	110.43	26.16	20.00	0.01	0.00	---	---	Peak
3	0.11	40.78	-66.14	106.92	20.77	20.00	0.01	0.00	---	---	Peak
4	0.13	35.77	-69.41	105.18	15.76	20.00	0.01	0.00	---	---	Peak
5	0.14	38.08	-66.33	104.41	18.07	20.00	0.01	0.00	---	---	Peak
6	0.18	44.84	-57.66	102.50	24.83	20.00	0.01	0.00	---	---	Peak
7	0.40	39.27	-56.36	95.63	19.26	20.00	0.01	0.00	---	---	Peak
8	0.74	38.69	-31.49	70.18	18.66	20.00	0.03	0.00	---	---	Peak
9	1.23	37.94	-27.86	65.80	17.89	20.00	0.05	0.00	---	---	Peak
10	4.80	38.91	-30.63	69.54	18.76	20.00	0.15	0.00	---	---	Peak
11	13.56	59.74			39.47	20.00	0.27	0.00	---	---	Peak
12	28.64	33.79	-35.75	69.54	13.45	20.00	0.34	0.00	---	---	Peak

Vertical



Site : 03CH01-KS
Condition : NFC 15.209 3m LF LOOP ANT_121026 VERTICAL

	Freq	Level	Over Limit	Limit Line	Read 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	0.04	42.24	-73.34	115.58	22.23	20.00	0.01	0.00	---	---	Peak
2	0.10	43.55	-64.01	107.56	23.54	20.00	0.01	0.00	---	---	Peak
3	0.12	40.20	-65.79	105.99	20.19	20.00	0.01	0.00	---	---	Peak
4	0.16	42.74	-60.81	103.55	22.73	20.00	0.01	0.00	---	---	Peak
5	0.37	39.39	-56.92	96.31	19.38	20.00	0.01	0.00	---	---	Peak
6	2.19	34.49	-35.05	69.54	14.43	20.00	0.06	0.00	---	---	Peak
7	12.00	42.32	-27.22	69.54	22.09	20.00	0.23	0.00	---	---	Peak
8	13.56	56.45			36.18	20.00	0.27	0.00	---	---	Peak
9	25.79	33.10	-36.44	69.54	12.79	20.00	0.31	0.00	---	---	Peak

Note:

1. Remark 11 of horizontal plot and remark 8 of vertical plot are transmitter's fundamental signals.
2. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

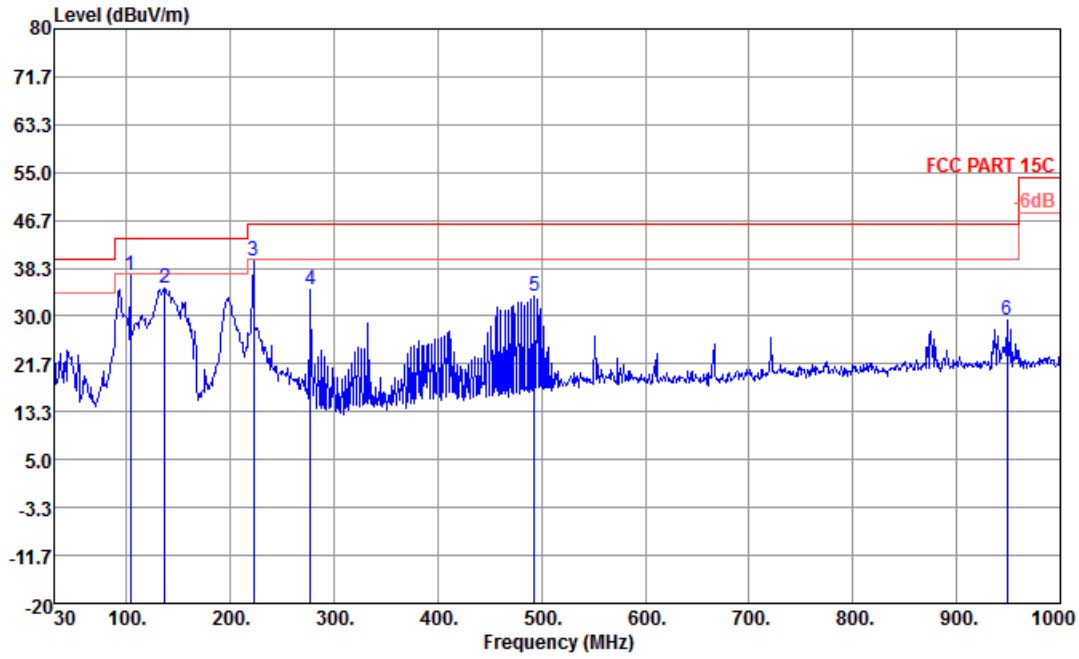
   Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

   Limit line = specific limits (dBuV) + distance extrapolation factor.

3.4.8 Results for Radiated Emissions (30MHz~1GHz)

Final Test Date	Apr. 09, 2014	Test Site No.	03CH01-KS
Temperature	22~23°C	Humidity	42~43%
Test Engineer	Leo Liao	Configurations	Ch. 1

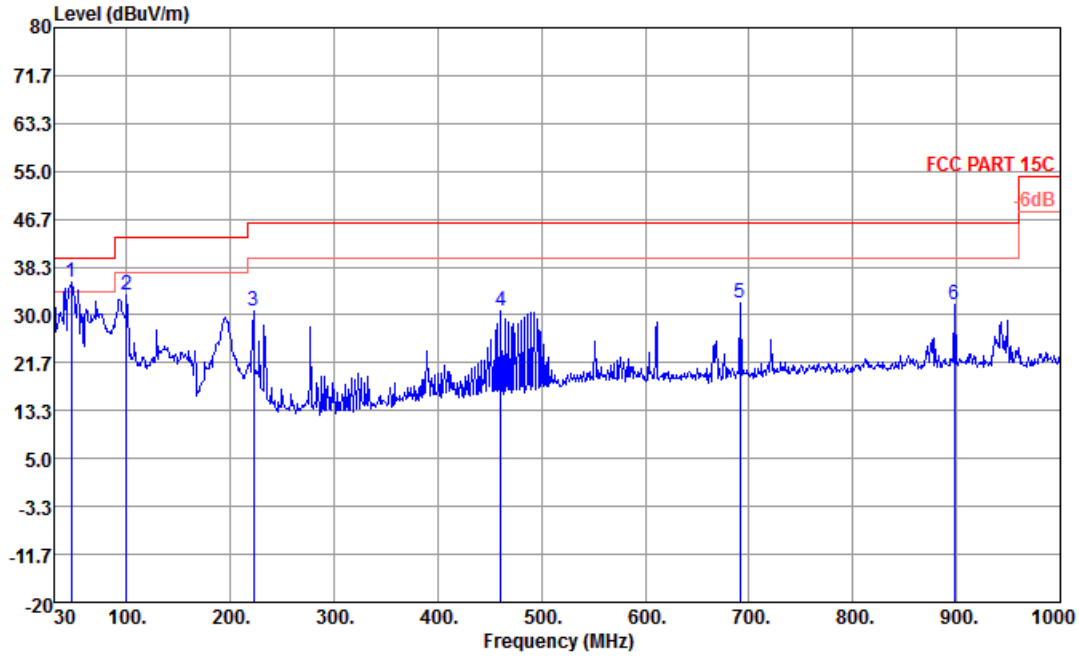
Horizontal



Site : 03CH01-KS
Condition : FCC PART 15C 3m LF_ANT_100803 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read 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	103.72	37.20	-6.30	43.50	58.86	11.01	0.94	33.61	200	0	Peak
2	136.70	34.92	-8.58	43.50	56.31	11.13	1.07	33.59	---	---	Peak
3	222.06	39.56	-6.44	46.00	61.45	10.25	1.37	33.51	---	---	Peak
4	277.35	34.54	-11.46	46.00	53.81	12.58	1.55	33.40	---	---	Peak
5	492.69	33.49	-12.51	46.00	47.52	17.10	2.01	33.14	---	---	Peak
6	948.59	29.25	-16.75	46.00	38.15	20.73	2.81	32.44	---	---	Peak

Vertical



Site : 03CH01-KS
Condition : FCC PART 15C 3m LF_ANT_100803 VERTICAL

	Freq	Level	Over Limit	Limit Line	Read 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 !	46.49	35.77	-4.23	40.00	59.86	8.88	0.64	33.61	100	0	Peak
2	99.84	33.60	-9.90	43.50	55.80	10.50	0.92	33.62	---	---	Peak
3	222.06	30.64	-15.36	46.00	52.53	10.25	1.37	33.51	---	---	Peak
4	460.68	30.79	-15.21	46.00	45.57	16.45	1.96	33.19	---	---	Peak
5	691.54	32.15	-13.85	46.00	43.42	19.25	2.37	32.89	---	---	Peak
6	898.15	31.75	-14.25	46.00	41.02	20.45	2.71	32.43	---	---	Peak

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.

3.5 Frequency Stability Measurement

3.5.1 Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

3.5.2 Measuring Instruments and Setting

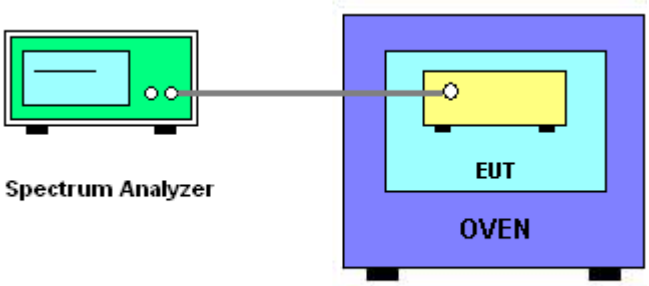
Please refer to section 4 of equipment list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	1 kHz
VB	3 kHz
Sweep Time	Auto

3.5.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 1 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±100ppm.
6. Extreme temperature rule is -20°C~50°C.

3.5.4 Test Setup Layout



3.5.5 Test Deviation

There is no deviation with the original standard.

3.5.6 EUT Operation during Test

The EUT was programmed to be in continuously modulation transmitting mode.

3.5.7 Test Result of Frequency Stability

Final Test Date	Apr. 11, 2014	Test Site No.	TH01-KS
Temperature	23~24°C	Humidity	47~48%
Test Engineer	Adonis Li	Configurations	Ch. 1

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency (MHz)
4.35	13.56054
3.8	13.56054
3.5	13.56054
Max. Deviation (MHz)	0.00054
Max. Deviation (ppm)	39.823

Temperature vs. Frequency Stability

Temperature (℃)	Measurement Frequency (MHz)
-20	13.56054
-10	13.56054
0	13.56054
10	13.56054
20	13.56054
30	13.56054
40	13.56054
50	13.56054
Max. Deviation (MHz)	0.00054
Max. Deviation (ppm)	39.82301

3.6 Antenna Requirements

3.6.1 Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

3.6.2 Antenna Connector Construction

Enbedded in Antenna.

4. LIST OF MEASURING EQUIPMENT

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 28, 2013	Apr. 11, 2014	Dec. 27, 2014	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	(-40~+150)	Dec. 10, 2013	Apr. 11, 2014	Dec. 09, 2014	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	Apr. 09, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 23, 2013	Apr. 09, 2014	May 22, 2014	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 09, 2013	Apr. 09, 2014	Oct. 08, 2014	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	Apr. 09, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	May 23, 2013	Apr. 09, 2014	May 22, 2014	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Apr. 09, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Apr. 09, 2014	NCR	Radiation (03CH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	May 23, 2013	Mar. 31, 2014	May 22, 2014	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 10, 2013	Mar. 31, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Dec. 10, 2013	Mar. 31, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Nov. 12, 2013	Mar. 31, 2014	Nov. 11, 2014	Conduction (CO01-KS)

5. TEST LOCATION

KUNSHAN	ADD	: No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.
	TEL	: +86-0512-5790-0158
	FAX	: +86-0512-5790-0958

6. TAF CERTIFICATE OF ACCREDITATION

Certificate No. : L2627-130423

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International INC.(KunShan)
Mobile Communications Laboratory
No.3-2, Pingxiang Road, Kunshan, Jiangsu Province, R.P.C

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025:2005
Accreditation Number	:	2627
Originally Accredited	:	July 30, 2012
Effective Period	:	July 30, 2012 to July 29, 2015
Accredited Scope	:	Testing Field, see described in the Appendix

Jay-San Chen
President, Taiwan Accreditation Foundation
Date:April 23, 2013

P1, total 10 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix