FCC RF Test Report

APPLICANT	:	TCL Communication Ltd.
EQUIPMENT	:	HSDPA/HSUPA/HSPA+/UMTS quad band / GSM quad band/LTE 6 band mobile phone
BRAND NAME	:	ALCATEL
MODEL NAME	:	6070O
FCC ID	:	2ACCJN008
STANDARD	:	FCC Part 15 Subpart C §15.225
CLASSIFICATION	:	(DXX) Low Power Communication Device Transmitter

The product was received on May 20, 2016 and testing was completed on Jul. 06, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

SPORTON INTERNATIONAL (KUNSHAN) INC.

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR652006D	Rev. 01	Initial issue of report	Jul. 08, 2016

SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**FCC Rule**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	AC Power Line Conducted Emissions	Complies	9.50 dB at 24.140MHz
3.2	15.225(a)(b)(c)	Field Strength of Fundamental Emissions	Complies	67.72 dB at 13.560 MHz
3.3	2.1049	20dB Spectrum Bandwidth	Complies	-
3.3	-	99% OBW Spectrum Bandwidth	Complies	-
3.4	15.225(d) 15.209	Radiated Emissions	Complies	6.96 dB at 33.880 MHz
3.5	15.225(e)	Frequency Stability	Complies	-
3.6	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±5.0dB	Confidence levels of 95%
Radiated Emissions (1GHz ~ 18GHz)	±4.8dB	Confidence levels of 95%
Radiated Emissions (18GHz ~ 40GHz)	±5.0dB	Confidence levels of 95%

1. GENERAL INFORMATION

1.1 Applicant

TCL Communication Ltd.

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

1.2 Manufacturer

TCL Communication Ltd.

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

1.3 Product Details

Items	Description
Tx/Rx Frequency Range	13.553 ~ 13.567MHz
Channel Number	1
20dBW	2.64KHz
99%OBW	2.24 KHz
Antenna Type	Loop Antenna
Type of Modulation	ASK

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 Specification of Accessory

Specification of Accessory				
AC Adapter	**Brand Name**	ALCATEL onetouch	**Model Name**	QC10US
	Power Rating	I/P: 100-240Vac, 50/60Hz, 500mA, O/P: 5.0Vdc, 2A, / 9.0Vdc, 1.67A		
	Manufacturer	BYD	**P/N**	CBA0060AG0C1
Battery	**Brand Name**	ALCATEL onetouch	**Model Name**	TLp030F2
	Power Rating	3.84Vdc, 3000mAh		
	Manufacturer	SCUD	**S/N**	C3000022C2
USB Cable 1	**Brand Name**	N/A	**Model Name**	CDA0000043C8
	Signal Line Type	1.00m shielded without core		
	Manufacturer	PUAN	**P/N**	N/A
USB Cable 2	**Brand Name**	N/A	**Model Name**	CDA0000043C2
	Signal Line Type	1.00m shielded without core		
	Manufacturer	Shenghua	**P/N**	N/A
Earphone	**Brand Name**	N/A	**Model Name**	CCB0047A10CC CCB0047B10CC
	Signal Line Type	1.38m non-shielded without core		
	Manufacturer	Harman	**P/N**	N/A

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.	
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	**Sporton Site No.**	
	TH01-KS	CO01-KS
Test Engineer	Ivan Wang	Amos Zhang
Temperature	24~25℃	22~24℃
Relative Humidity	54~55%	44~46%

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. China TEL: +86-755- 3320-2398	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	03CH03-SZ	565805
Test Engineer	Jack Tian	
Temperature	23~25℃	
Relative Humidity	48~52%	

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

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

- FCC Part 15 Subpart C §15.225
- ANSI C63.10-2013

1.8 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.

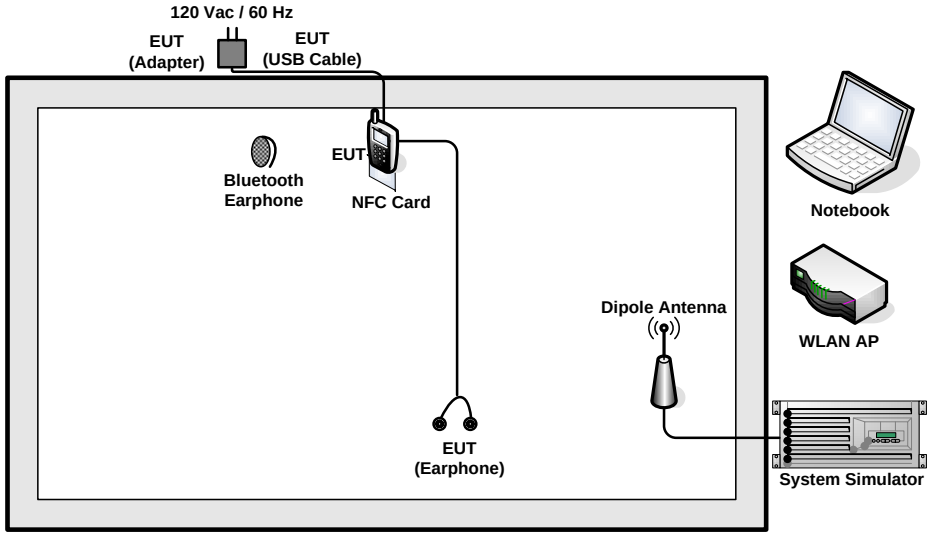
Test Items	
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions
20dB Spectrum Bandwidth	Frequency Stability
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz

Note:

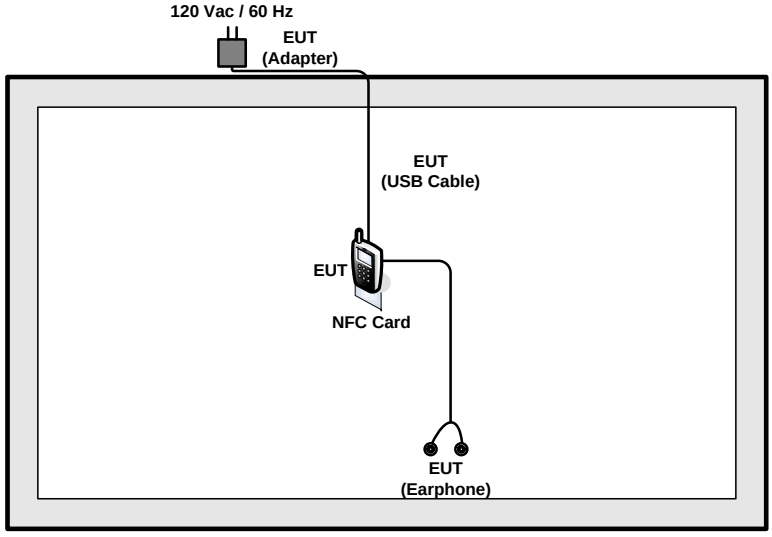
1. The EUT was programmed to be in continuously transmitting mode.
2. The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT.

1.9 Test Configurations

<AC Conducted Emissions>



< For Fundamental Emissions and Mask and Radiated Emissions Measurement >



1.10 Table for Supporting Units

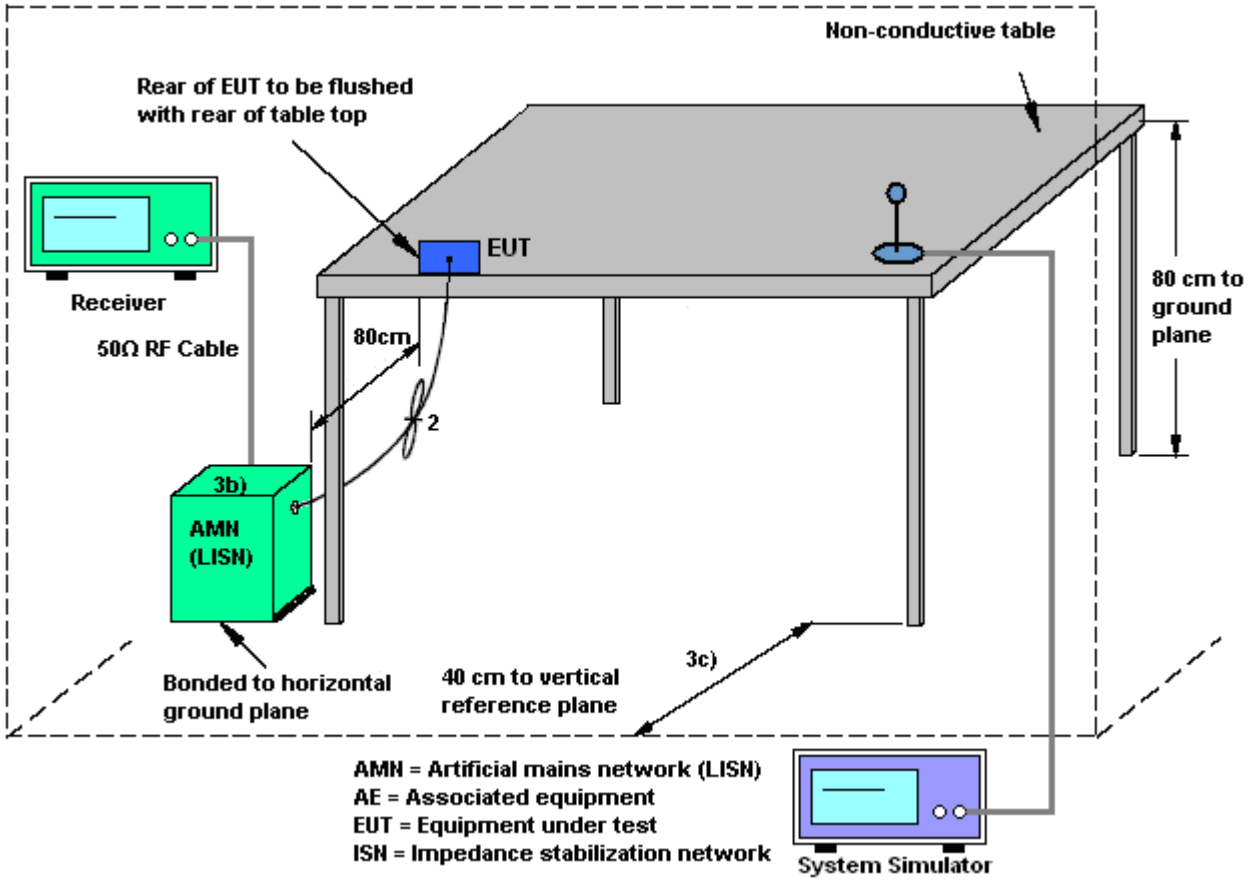
Support Unit	Manufacturer	Model	FCC ID
System Simulator	R&S	CMU 200	N/A
Bluetooth Earphone	Nokia	BH-106	QTLBH-106
WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11
Notebook	Lenovo	G480	N/A
NFC Card	N/A	N/A	N/A

2. CONDUCTED EMISSION TEST

2.1 Measuring Instruments

See list of measuring instruments of this test report.

2.2 Test setup



2.3 Test Result of Conducted Emission Test

Please refer to Appendix A.

2.4 AC Power Line Conducted Emissions Measurement

2.4.1 Limit

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 (dBμV)	
	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.

2.4.2 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it 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 (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

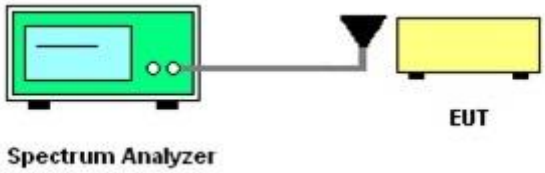
3. CONDUCTED TEST ITEMS

3.1 Measuring Instruments

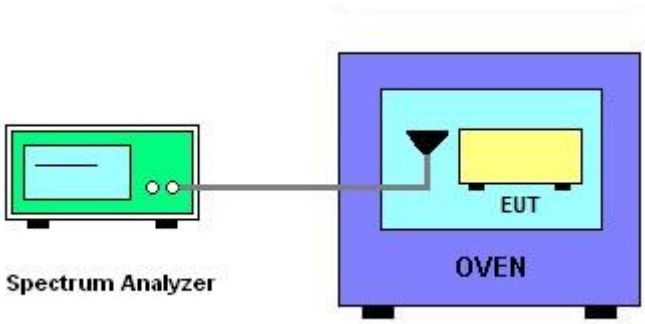
See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 20dB and 99% OBW Spectrum Bandwidth



3.2.2 Frequency Stability



3.3 Test Result of Conducted Test Items

Please refer to Appendix B.

3.4 20dB and 99% OBW Spectrum Bandwidth Measurement

3.4.1 Limit

Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 13.553~13.567MHz.

3.4.2 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.
4. Measured the 99% OBW.

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 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT.
2. EUT have transmitted signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
5. The 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.

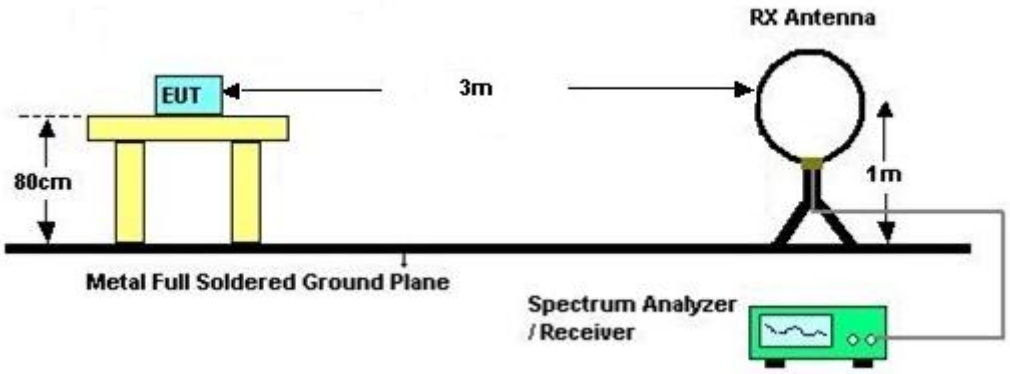
4. RADIATED TEST ITEMS

4.1 Measuring Instruments

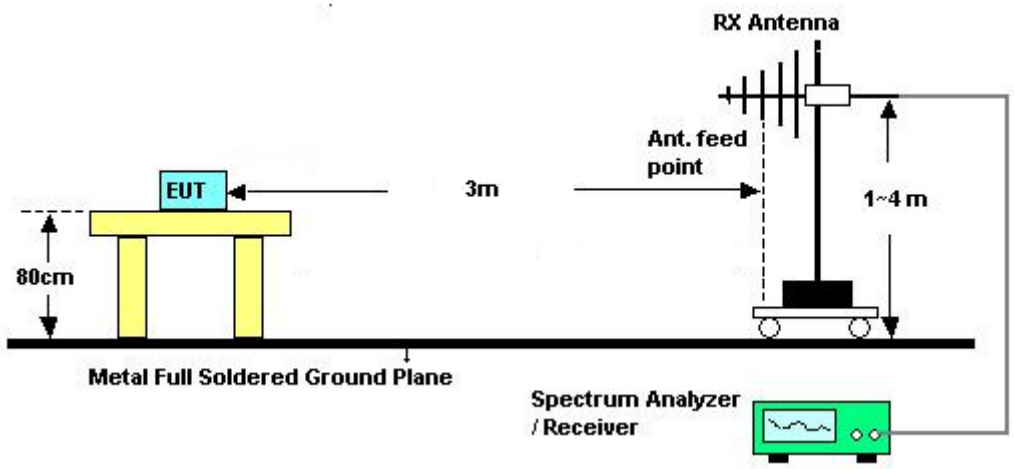
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated emissions below 30MHz



4.2.2 For radiated emissions above 30MHz



4.3 Test Result of Radiated Test Items

Please refer to Appendix C.

4.4 Field Strength of Fundamental Emissions and Mask Measurement

4.4.1 Limit

Rules and specifications	FCC CFR 47 Part 15 section 15.225 IC RSS-210 A2.6			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Freq. of Emission (MHz)	Field Strength (μV/m) at 30m	Field Strength (dBμV/m) at 30m	Field Strength (dBμV/m) at 10m	Field Strength (dBμV/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

4.4.2 Test Procedures

1. Configure the EUT according to ANSI C63.10. 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 with RBW set to 9kHz.

Note: Emission level (dBμV/m) = 20 log Emission level (μV/m).

4.5 Radiated Emissions Measurement

4.5.1 Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength (μV/m)	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

4.5.2 Measuring Instrument Setting

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

4.5.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. 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. Antenna Requirements

4.5.4 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.

4.5.5 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

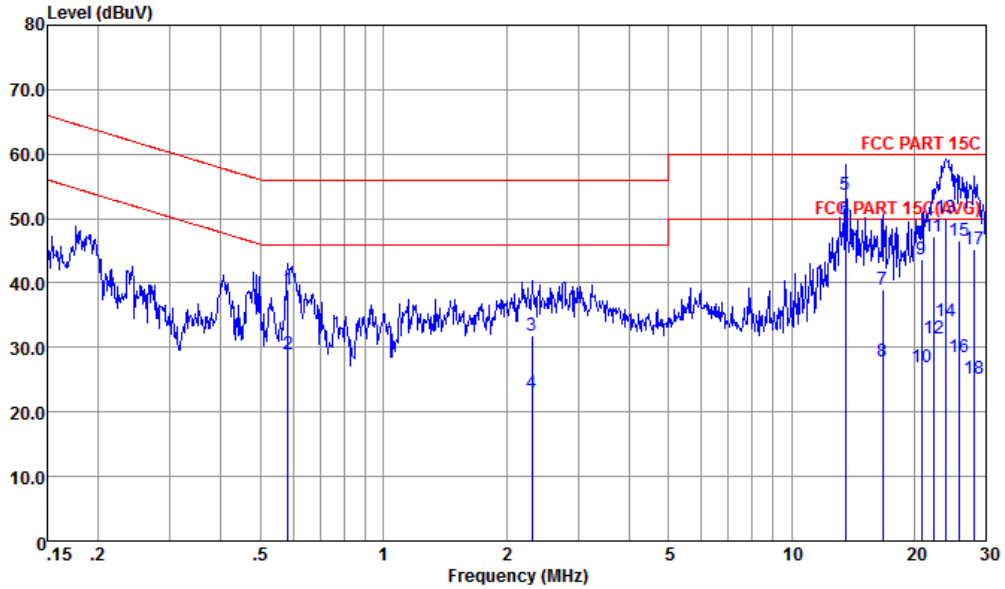
5. LIST OF MEASURING EQUIPMENT

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Sep. 10, 2015	Jul. 06, 2016	Sep. 09, 2016	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 24, 2015	Jul. 06, 2016	Oct. 23, 2016	Conducted (TH01-KS)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Jul. 04, 2016	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	Jul. 04, 2016	May 06, 2017	Radiation (03CH03-SZ
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	Jul. 04, 2016	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	May 21, 2016	Jul. 04, 2016	May 20, 2017	Radiation (03CH03-SZ)
Amplifier	PREAMPLIFIER	BPA-530	102210	0.01Hz ~3000MHz	Oct. 20, 2015	Jul. 04, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jul. 04, 2016	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 04, 2016	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 04, 2016	NCR	Radiation (03CH03-SZ)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 29, 2016	Jul. 01, 2016	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Jul. 01, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Jul. 01, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Jul. 01, 2016	Oct. 23, 2016	Conduction (CO01-KS)

NCR: No Calibration Required

Appendix A. Test Results of Conducted Emission Test

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



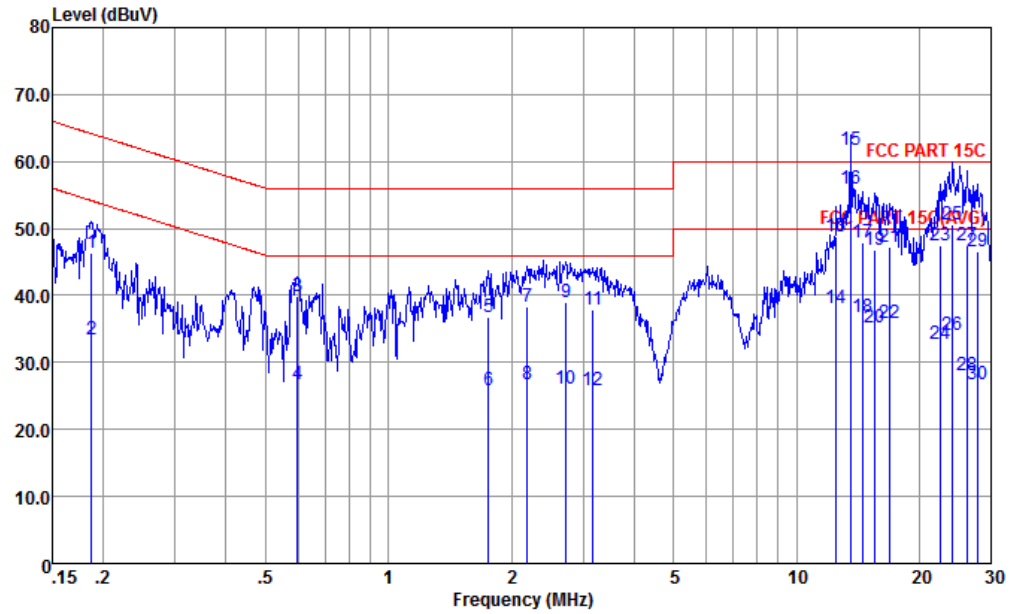
Site : CO01-KS
Condition : FCC PART 15C LISN-L-20151024 LINE

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.58	38.99	-17.01	56.00	28.60	0.23	10.16	QP
2		0.58	28.99	-17.01	46.00	18.60	0.23	10.16	Average
3		2.31	31.93	-24.07	56.00	21.60	0.18	10.15	QP
4		2.31	22.93	-23.07	46.00	12.60	0.18	10.15	Average
5		13.56	53.81	-6.19	60.00	43.20	0.26	10.35	QP
6	*	13.56	49.91	-0.09	50.00	39.30	0.26	10.35	Average
7		16.75	39.00	-21.00	60.00	28.30	0.26	10.44	QP
8		16.75	27.80	-22.20	50.00	17.10	0.26	10.44	Average
9		20.81	43.72	-16.28	60.00	32.90	0.26	10.56	QP
10		20.81	27.02	-22.98	50.00	16.20	0.26	10.56	Average
11		22.30	47.15	-12.85	60.00	36.29	0.25	10.61	QP
12		22.30	31.45	-18.55	50.00	20.59	0.25	10.61	Average
13		23.89	50.18	-9.82	60.00	39.30	0.23	10.65	QP
14		23.89	34.08	-15.92	50.00	23.20	0.23	10.65	Average
15		25.73	46.53	-13.47	60.00	35.60	0.22	10.71	QP
16		25.73	28.43	-21.57	50.00	17.50	0.22	10.71	Average
17		28.15	45.23	-14.77	60.00	34.20	0.23	10.80	QP
18		28.15	25.23	-24.77	50.00	14.20	0.23	10.80	Average

(1) The EUT is with NFC antenna during testing..

Remark: 13.56MHz is the NFC RF fundamental signal.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



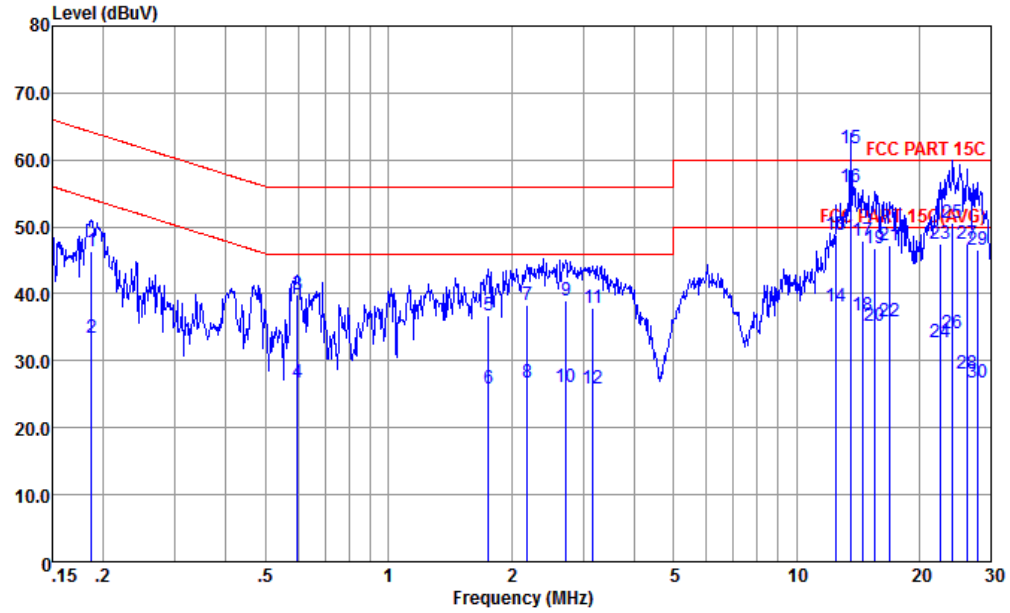
Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.19	46.33	-17.82	64.15	35.90	0.31	10.12	QP
2		0.19	33.33	-20.82	54.15	22.90	0.31	10.12	Average
3		0.60	39.79	-16.21	56.00	29.30	0.33	10.16	QP
4		0.60	26.69	-19.31	46.00	16.20	0.33	10.16	Average
5		1.76	36.82	-19.18	56.00	26.30	0.38	10.14	QP
6		1.76	25.82	-20.18	46.00	15.30	0.38	10.14	Average
7		2.19	38.42	-17.58	56.00	27.90	0.38	10.14	QP
8		2.19	26.82	-19.18	46.00	16.30	0.38	10.14	Average
9		2.72	39.02	-16.98	56.00	28.50	0.37	10.15	QP
10		2.72	26.12	-19.88	46.00	15.60	0.37	10.15	Average
11		3.17	37.83	-18.17	56.00	27.30	0.37	10.16	QP
12		3.17	25.83	-20.17	46.00	15.30	0.37	10.16	Average
13		12.52	48.90	-11.10	60.00	38.30	0.27	10.33	QP
14		12.52	38.20	-11.80	50.00	27.60	0.27	10.33	Average
15	*	13.56	61.72	1.72	60.00	51.10	0.27	10.35	QP
16	*	13.56	55.92	5.92	50.00	45.30	0.27	10.35	Average
17		14.52	47.95	-12.05	60.00	37.31	0.27	10.37	QP

(1) The EUT is with NFC antenna during testing..

Remark: 13.56MHz is the NFC RF fundamental signal.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



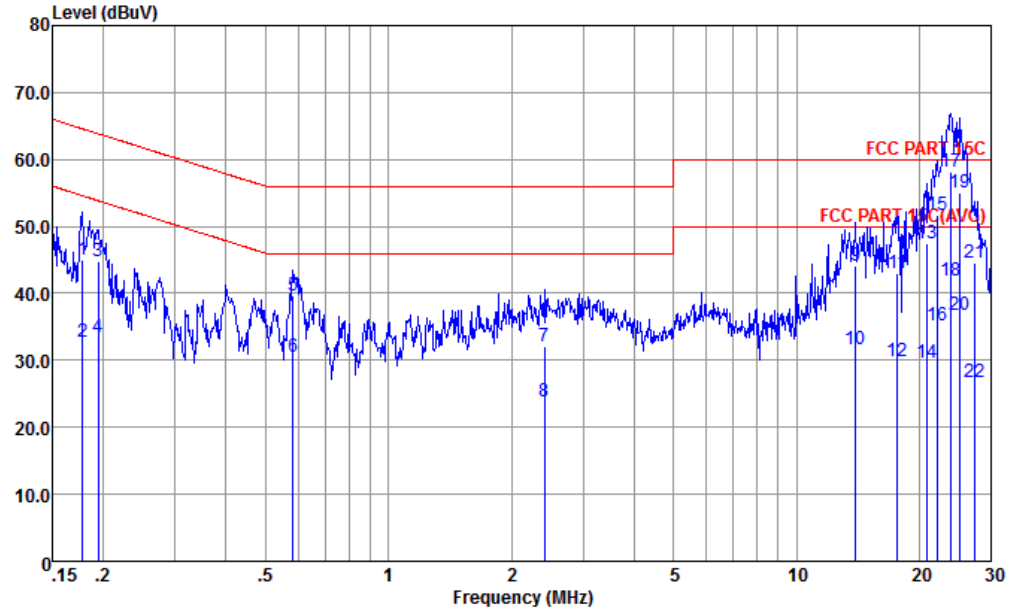
Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	14.52	36.85	-13.15	50.00	26.21	0.27	10.37	Average
19	15.55	46.87	-13.13	60.00	36.20	0.27	10.40	QP
20	15.55	35.27	-14.73	50.00	24.60	0.27	10.40	Average
21	16.93	47.31	-12.69	60.00	36.61	0.26	10.44	QP
22	16.93	35.81	-14.19	50.00	25.11	0.26	10.44	Average
23	22.54	47.46	-12.54	60.00	36.61	0.24	10.61	QP
24	22.54	32.76	-17.24	50.00	21.91	0.24	10.61	Average
25	24.14	50.50	-9.50	60.00	39.60	0.24	10.66	QP
26	24.14	34.20	-15.80	50.00	23.30	0.24	10.66	Average
27	26.14	47.57	-12.43	60.00	36.60	0.24	10.73	QP
28	26.14	28.07	-21.93	50.00	17.10	0.24	10.73	Average
29	27.71	46.52	-13.48	60.00	35.50	0.24	10.78	QP
30	27.71	26.82	-23.18	50.00	15.80	0.24	10.78	Average

(1) The EUT is with NFC antenna during testing..

Remark: 13.56MHz is the NFC RF fundamental signal.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



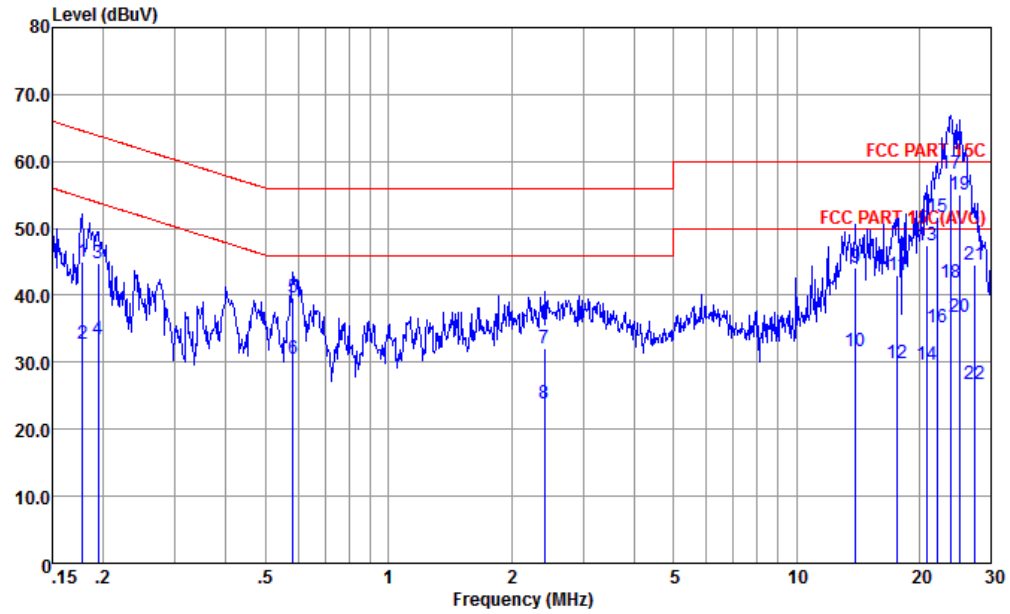
Site : CO01-KS
Condition : FCC PART 15C LISN-L-20151024 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	44.96	-19.63	64.59	34.50	0.34	10.12	QP
2	0.18	32.76	-21.83	54.59	22.30	0.34	10.12	Average
3	0.19	44.87	-18.97	63.84	34.50	0.25	10.12	QP
4	0.19	33.47	-20.37	53.84	23.10	0.25	10.12	Average
5	0.58	39.69	-16.31	56.00	29.30	0.23	10.16	QP
6	0.58	30.49	-15.51	46.00	20.10	0.23	10.16	Average
7	2.41	32.13	-23.87	56.00	21.80	0.18	10.15	QP
8	2.41	23.93	-22.07	46.00	13.60	0.18	10.15	Average
9	13.99	44.22	-15.78	60.00	33.60	0.26	10.36	QP
10	13.99	31.72	-18.28	50.00	21.10	0.26	10.36	Average
11	17.66	43.03	-16.97	60.00	32.29	0.27	10.47	QP
12	17.66	29.93	-20.07	50.00	19.19	0.27	10.47	Average
13	20.81	47.42	-12.58	60.00	36.60	0.26	10.56	QP
14	20.81	29.72	-20.28	50.00	18.90	0.26	10.56	Average
15	22.06	51.75	-8.25	60.00	40.90	0.25	10.60	QP
16	22.06	35.15	-14.85	50.00	24.30	0.25	10.60	Average
17 *	23.89	58.08	-1.92	60.00	47.20	0.23	10.65	QP

(1) with dummy load

Remark: Only the fundamental NFC signal needs to be retested per C63.4.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



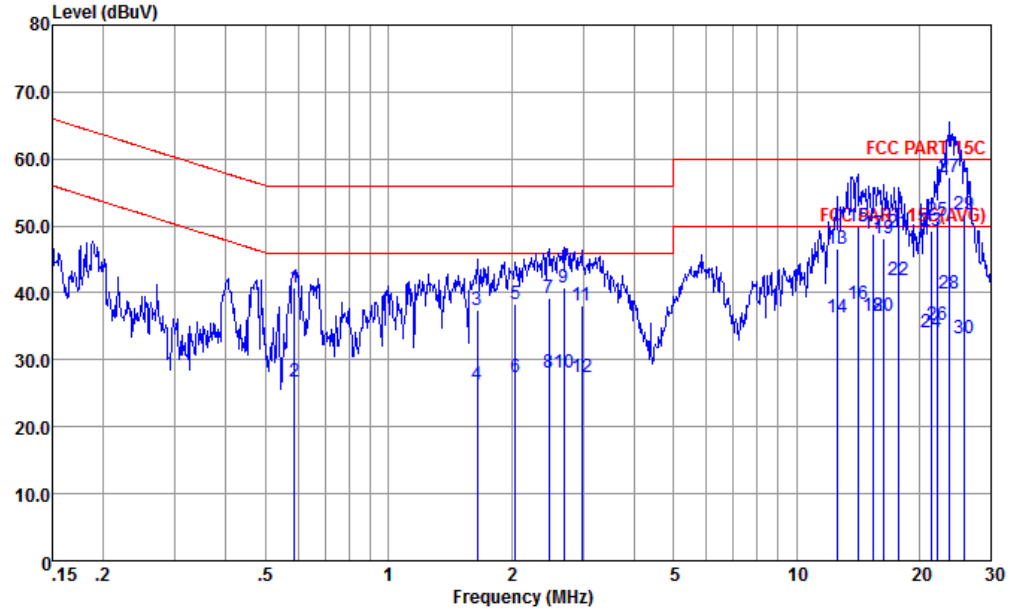
Site : CO01-KS
Condition : FCC PART 15C LISN-L-20151024 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	23.89	41.98	-8.02	50.00	31.10	0.23	10.65	Average
19	25.19	55.11	-4.89	60.00	44.20	0.22	10.69	QP
20	25.19	36.81	-13.19	50.00	25.90	0.22	10.69	Average
21	27.42	44.60	-15.40	60.00	33.61	0.22	10.77	QP
22	27.42	26.80	-23.20	50.00	15.81	0.22	10.77	Average

(1) with dummy load

Remark: Only the fundamental NFC signal needs to be retested per C63.4.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



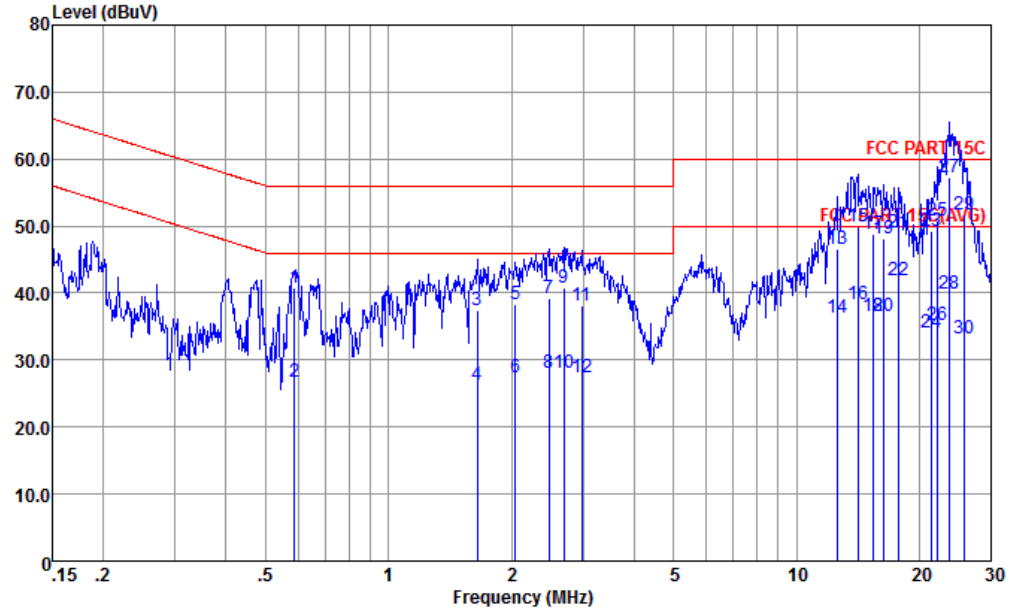
Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.59	40.69	-15.31	56.00	30.20	0.33	10.16	QP
2	0.59	26.79	-19.21	46.00	16.30	0.33	10.16	Average
3	1.65	37.42	-18.58	56.00	26.90	0.38	10.14	QP
4	1.65	26.32	-19.68	46.00	15.80	0.38	10.14	Average
5	2.04	38.42	-17.58	56.00	27.90	0.38	10.14	QP
6	2.04	27.32	-18.68	46.00	16.80	0.38	10.14	Average
7	2.47	39.12	-16.88	56.00	28.59	0.38	10.15	QP
8	2.47	28.12	-17.88	46.00	17.59	0.38	10.15	Average
9	2.69	40.82	-15.18	56.00	30.30	0.37	10.15	QP
10	2.69	28.12	-17.88	46.00	17.60	0.37	10.15	Average
11	2.98	38.13	-17.87	56.00	27.61	0.37	10.15	QP
12	2.98	27.33	-18.67	46.00	16.81	0.37	10.15	Average
13	12.58	46.50	-13.50	60.00	35.90	0.27	10.33	QP
14	12.58	36.40	-13.60	50.00	25.80	0.27	10.33	Average
15	14.14	49.94	-10.06	60.00	39.30	0.27	10.37	QP
16	14.14	38.24	-11.76	50.00	27.60	0.27	10.37	Average
17	15.47	48.87	-11.13	60.00	38.20	0.27	10.40	QP

(1) with dummy load

Remark: Only the fundamental NFC signal needs to be retested per C63.4.

Test Mode :	NFC Tx	Test Voltage :	120Vac / 60Hz
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link(2.4G) + USB Cable 2(Charging from Adapter) + Earphone + NFC Tx		



Site : CO01-KS
Condition : FCC PART 15C LISN-N-20151024 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	15.47	36.47	-13.53	50.00	25.80	0.27	10.40	Average
19	16.40	48.19	-11.81	60.00	37.50	0.26	10.43	QP
20	16.40	36.49	-13.51	50.00	25.80	0.26	10.43	Average
21	17.85	49.03	-10.97	60.00	38.30	0.26	10.47	QP
22	17.85	41.93	-8.07	50.00	31.20	0.26	10.47	Average
23	21.37	49.22	-10.78	60.00	38.39	0.25	10.58	QP
24	21.37	34.12	-15.88	50.00	23.29	0.25	10.58	Average
25	22.18	50.75	-9.25	60.00	39.90	0.25	10.60	QP
26	22.18	35.15	-14.85	50.00	24.30	0.25	10.60	Average
27 *	23.76	57.19	-2.81	60.00	46.30	0.24	10.65	QP
28	23.76	39.99	-10.01	50.00	29.10	0.24	10.65	Average
29	25.73	51.75	-8.25	60.00	40.80	0.24	10.71	QP
30	25.73	33.25	-16.75	50.00	22.30	0.24	10.71	Average

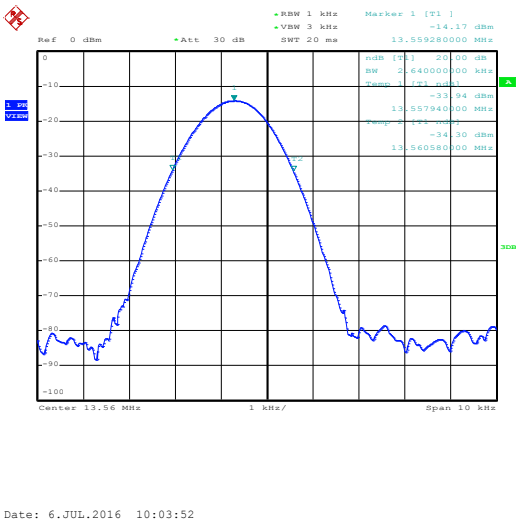
(1) with dummy load

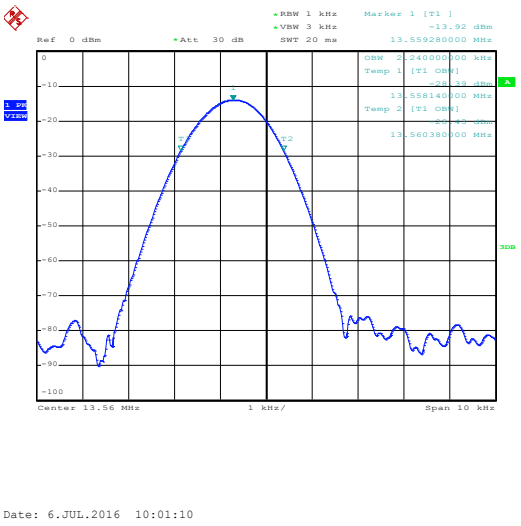
Remark: Only the fundamental NFC signal needs to be retested per C63.4.

Appendix B. Test Results of Conducted Test Items

B.1 Test Result of 20dB Spectrum Bandwidth

Test mode	NFC Tx	Test Frequency (MHz)	13.56





20dB Bandwidth (kHz)	2.64	**99% OccupiedBW(kHz)**	2.24
Frequency range (MHz)	**f_L > 13.553**	13.55794	**Test Result**
	f_H < 13.567	13.56058	**Complies**

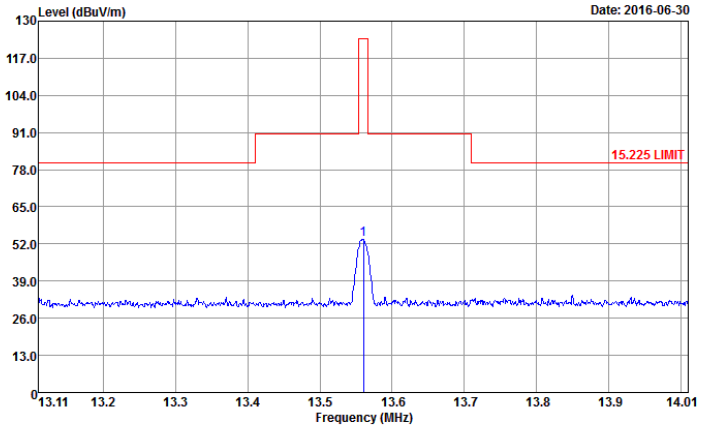
B.2 Test Result of Frequency Stability

Voltage vs. Frequency Stability		Temperature vs. Frequency Stability	
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (℃)	Measurement Frequency (MHz)
120	13.559250	-20	13.559360
102	13.559250	-10	13.559340
138	13.559240	0	13.559340
-	-	10	13.559340
-	-	20	13.559240
-	-	30	13.559300
-	-	40	13.559280
-	-	50	13.559240
Max.Deviation (MHz)	-0.000760	**Max.Deviation (MHz)**	-0.000760
Max.Deviation (ppm)	-56.0472	**Max.Deviation (ppm)**	-56.0472
Limit	**FS < ±100 ppm**	**Limit**	**FS < ±100 ppm**
Test Result	**PASS**	**Test Result**	**PASS**

Appendix C. Test Results of Radiated Test Items

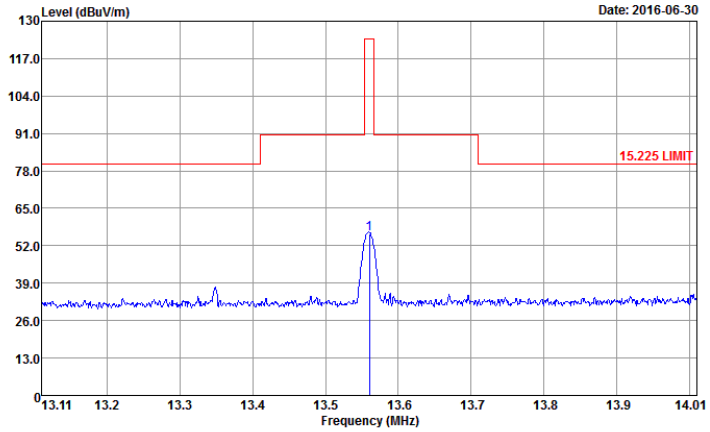
C.1 Test Result of Field Strength of Fundamental Emissions

Test Mode :	NFC Tx	Test Frequency (MHz)	13.56



Site : 03CH03-SZ
Condition : 15.225 LIMIT 3m LOOP ANT_160507 HORIZONTAL
Detector : Peak

	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	53.66	-70.34	124.00	32.84	20.40	0.42	0.00	---	---	QP



Site : 03CH03-SZ
Condition : 15.225 LIMIT 3m LOOP ANT_160507 VERTICAL
Detector : Peak

	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	56.28	-67.72	124.00	35.46	20.40	0.42	0.00	---	---	QP

Note: All NFC's spurious emissions are below 20dB of limits.

C.2 Results of Radiated Emissions (9 kHz~30MHz)

Test Mode :	NFC Tx	Polarization :	Horizontal

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.02007	49.26	-72.3	121.56	28.11	21	0.15	-	-	Average
0.07614	50	-59.97	109.97	28.75	21.1	0.15	-	-	Average
0.09819	51.27	-56.49	107.76	29.92	21.2	0.15	-	-	QP
0.12771	46.65	-58.83	105.48	25.4	21.1	0.15	-	-	Average
0.61805	41.17	-30.61	71.78	20.43	20.56	0.18	-	-	QP
3.668	34.9	-35.1	70	14.07	20.6	0.23	-	-	QP
9.616	34.53	-35.47	70	13.66	20.52	0.35	-	-	QP
19.987	34.58	-35.42	70	13.78	20.3	0.5	-	-	QP
26.4	34.65	-35.35	70	13.51	20.56	0.58	-	-	QP

Test Mode :	NFC Tx	Polarization :	Vertical

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.02007	51.02	-70.54	121.56	29.87	21	0.15	-	-	Average
0.07089	45.15	-65.44	110.59	23.9	21.1	0.15	-	-	Average
0.0969	43.24	-64.64	107.88	21.89	21.2	0.15	-	-	QP
0.12387	41.17	-64.57	105.74	19.92	21.1	0.15	-	-	Average
0.2906	40.23	-58.11	98.34	19.21	20.86	0.16	-	-	Average
3.914	34.83	-35.17	70	13.99	20.6	0.24	-	-	QP
9.736	34.4	-35.6	70	13.54	20.51	0.35	-	-	QP
17.782	37.73	-32.27	70	17.04	20.21	0.48	-	-	QP
26.595	36.61	-33.39	70	15.5	20.52	0.59	-	-	QP

Note:

1. 13.56 MHz is fundamental signal which can be ignored.
2. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
4. Limit line = specific limits (dBμV) + distance extrapolation factor.

C.3 Results of Radiated Emissions (30MHz~1GHz)

Test Mode :	NFC Tx	Polarization :	Horizontal

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.94	29.38	-10.62	40	37.4	23.14	0.62	31.78	-	-	Peak
140.58	22.8	-20.7	43.5	35.7	17.4	1.15	31.45	-	-	Peak
358.83	27.25	-18.75	46	35.42	21.4	1.71	31.28	-	-	Peak
450.98	30.75	-15.25	46	36.74	23.21	1.99	31.19	-	-	Peak
611.03	32.71	-13.29	46	36.78	24.87	2.3	31.24	-	-	Peak
806.97	36.12	-9.88	46	38.51	26.26	2.59	31.24	100	200	Peak

Test Mode :	NFC Tx	Polarization :	Vertical

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.88	33.04	-6.96	40	42.12	22.08	0.62	31.78	100	200	Peak
99.84	23.67	-19.83	43.5	35.96	18.3	0.99	31.58	-	-	Peak
335.55	26.16	-19.84	46	34.98	20.77	1.71	31.3	-	-	Peak
470.38	30.87	-15.13	46	36.58	23.48	1.99	31.18	-	-	Peak
674.08	33.89	-12.11	46	37.43	25.32	2.37	31.23	-	-	Peak
830.25	36.35	-9.65	46	38.48	26.47	2.65	31.25	-	-	Peak

Note:

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.