# **FCC Test Report**

APPLICANT : FIH International Co., Ltd.

**EQUIPMENT**: GSM/WCDMA/LTE Mobile Phone

BRAND NAME : Nokia

MODEL NAME : TA-1060

FCC ID : 2AJOTTA-1060

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on Oct. 26, 2017 and testing was completed on Dec. 01, 2017. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 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.

James Huang

Approved by: James Huang / Manager

TESTING NVLAP LAB CODE 600155-0

Report No.: FC7O2602-01

### Sporton International (Kunshan) Inc.

No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China

Sporton International (Kunshan) Inc.

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## **REVISION HISTORY**

Report No. : FC7O2602-01

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC7O2602-01	Rev. 01	Initial issue of report	Dec. 13, 2017

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## **SUMMARY OF TEST RESULT**

Report Section	FCC Rule	Description	Limit	Result	Remark
					Under limit
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	16.12 dB at
					0.447 MHz
					Under limit
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	7.18 dB at
					480.080 MHz

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## 1. General Description

## 1.1. Applicant

FIH International Co., Ltd.

No.18, Tongji zhonglu, Beijing Economic&Technological Development Area

### 1.2. Manufacturer

**HMD Global Oy** 

Karaportti 2 02610 Espoo FINLAND

## 1.3. Product Feature of Equipment Under Test

	Product Feature				
Equipment	GSM/WCDMA/LTE Mobile Phone				
Brand Name	Nokia				
Model Name	TA-1060				
FCC ID	2AJOTTA-1060				
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/HSPA+/ LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v2.1 + EDR/Bluetooth v4.2 LE				
IMEI Code	Conduction/Radiation: 004402970622811				
HW Version	HW0241				
SW Version	000C_0_14A				
EUT Stage	Identical Prototype				

Remark:

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

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## 1.4. Product Specification of Equipment Under Test

Standards	-related Product Specification
Standards	
	GSM850: 824.2 MHz ~ 848.8 MHz
	GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz
	LTE Band 5: 824.7 MHz ~ 848.3 MHz
Tx Frequency	LTE Band 5 : 624.7 MHZ ~ 646.3 MHZ LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz
	LTE Band 7 : 2502.5 MHz ~ 2507.5 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz
	802.11b/g/n: 2412 MHz ~ 2462 MHz
	Bluetooth: 2402 MHz ~ 2480 MHz
	GSM850: 869.2 MHz ~ 893.8 MHz
	GSM1900: 1930.2 MHz ~ 1989.8 MHz
	WCDMA Band V: 871.4 MHz ~ 891.6 MHz
	LTE Band 5 : 869.7 MHz ~ 893.3 MHz
	LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz
Rx Frequency	LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz
	802.11b/g/n: 2412 MHz ~ 2462 MHz
	Bluetooth: 2402 MHz ~ 2480 MHz
	GPS: 1.57542 GHz
	FM : 88 MHz ~ 108 MHz
	WWAN: PIFA Antenna
	WLAN: PIFA Antenna
Antenna Type	Bluetooth: PIFA Antenna
	GPS: PIFA Antenna
	FM: External headset Antenna
	GSM: GMSK
	GPRS: GMSK
	EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK
	WCDMA: BPSK (Uplink)
	HSDPA/DC-HSDPA: QPSK (Uplink)
	HSUPA: QPSK (Uplink)
	HSPA+: 16QAM
	DC-HSDPA: 64QAM
Type of Modulation	LTE: QPSK / 16QAM
	802.11b : DSSS (DBPSK / DQPSK / CCK)
	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
	Bluetooth LE: GFSK
	Bluetooth (1Mbps) : GFSK
	Bluetooth (2Mbps) : 7/4-DQPSK
	Bluetooth (3Mbps) : 8-DPSK
	GPS: BPSK
	FM

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#### 1.5. Modification of EUT

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

#### 1.6. Test Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

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Test Site	Sporton International (F	Sporton International (Kunshan) Inc.						
Test Site Location	Province 215335 China TEL: +86-512-579001	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL: +86-512-57900158 FAX: +86-512-57900958						
Test Site No.	Sportor	FCC Test Firm Registration No.						
	CO01-KS	03CH02-KS	630927					

**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 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014

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

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## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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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).

Test Items	Function Type
	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + Camera(Rear) <fig. 1=""></fig.>
	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + Camera(Front) <fig. 1=""></fig.>
AC Conducted	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + MPEG4 <fig. 1=""></fig.>
Emission	Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Data Link with Notebook) + GPS RX <fig. 2=""></fig.>
	Mode 5 : Earphone + USB Cable(Charging from Adapter) + FM(88MHz) RX <fig. 3=""></fig.>
	Mode 6: Earphone + USB Cable(Charging from Adapter) + FM(98MHz) RX <fig. 3=""></fig.>
	Mode 7: Earphone + USB Cable(Charging from Adapter) + FM(108MHz) RX <fig. 3=""></fig.>
	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + Camera(Rear) <fig. 1=""></fig.>
	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + Camera(Front) <fig. 1=""></fig.>
Radiated	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Charging from Adapter) + MPEG4 <fig. 1=""></fig.>
Emissions	Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Data Link with Notebook) + GPS RX <fig. 2=""></fig.>
	Mode 5: Earphone + USB Cable(Charging from Adapter) + FM(88MHz) RX <fig. 3=""></fig.>
	Mode 6: Earphone + USB Cable(Charging from Adapter) + FM(98MHz) RX <fig. 3=""></fig.>
	Mode 7: Earphone + USB Cable(Charging from Adapter) + FM(108MHz) RX <fig. 3=""></fig.>

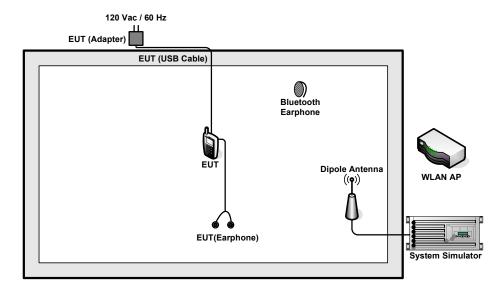
#### Remark:

- 1. The worst case of AC is mode 4; only the test data of this mode was reported.
- The worst case of RE is mode 4, only the test data of this mode was reported.
- Data Link with Notebook means data application transferred mode between EUT and Notebook.

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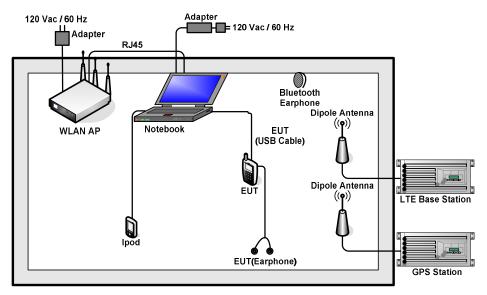
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## 2.2. Connection Diagram of Test System



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<Fig. 1>

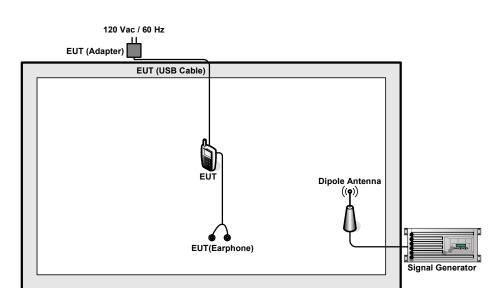


<Fig. 2>

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<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.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded,1.8 m
4.	Signal Generator	R&S	SMBV100A	N/A	N/A	Unshielded,1.8 m
5.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded,1.8m
6.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded,1.8m
7.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
8.	Notebook	DELL	Latitude3440	N/A	N/A	AC I/P : Unshielded, 1.8m DC O/P : Shielded, 1.8m
9.	Notebook	Lenovo	G480	N/A	N/A	AC I/P : Unshielded, 1.8m DC O/P : Shielded, 1.8m
10.	SD Card	Kingston	8GB	N/A	N/A	N/A
11.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
12.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2m	N/A

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### 2.4. EUT Operation Test Setup

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.

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- 1. Data application is transferred between Notebook and EUT via USB cable.
- 2. Execute "GPS Test" 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.
- 5. Turn on FM Rx function.

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### 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.

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

<sup>\*</sup>Decreases with the logarithm of the frequency.

#### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 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 (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

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### 3.1.4 Test Setup



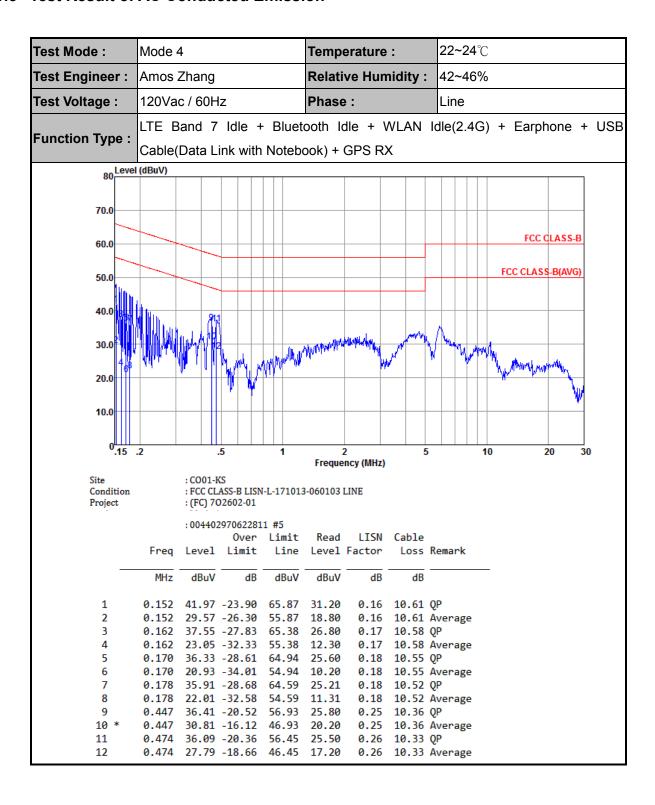
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#### 3.1.5 Test Result of AC Conducted Emission



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22~24°C Test Mode: Mode 4 Temperature: Test Engineer: Amos Zhang **Relative Humidity:** 42~46% Test Voltage: 120Vac / 60Hz Phase: Neutral LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB **Function Type:** Cable(Data Link with Notebook) + GPS RX 80 Level (dBuV) 70.0 FCC CLASS-B 60.0 FCC CLASS-B(AVG) 50.0 40.0 20.0 10.0 10 .15 .5 2 5 20 30 Frequency (MHz) Site : CO01-KS Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL Project : (FC) 702602-01 :004402970622811 #5 LISN Cable Over Limit Read Freq Level Limit Line Level Factor Loss Remark MHz dBuV dBuV dB dBuV dB 1 0.152 43.09 -22.82 65.91 32.20 0.28 10.61 QP 0.152 31.19 -24.72 55.91 20.30 0.28 10.61 Average 3 0.161 37.46 -27.97 65.43 26.60 0.28 10.58 QP 4 0.161 25.36 -30.07 55.43 14.50 0.28 10.58 Average 5 0.180 35.00 -29.50 64.50 24.20 0.28 10.52 QP 0.28 10.52 Average 0.180 23.10 -31.40 54.50 12.30 6 0.193 33.05 -30.84 63.89 22.30 0.28 10.47 QP 0.28 10.47 Average 8 0.193 22.95 -30.94 53.89 12.20 9 0.471 36.22 -20.27 56.49 25.60 0.29 10.33 QP 10 0.471 24.72 -21.77 46.49 14.10 0.29 10.33 Average 33.15 -22.85 56.00 22.60 0.34 10.21 QP 11 4.622 4.622 23.85 -22.15 46.00 13.30 0.34 10.21 Average

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#### 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:

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

#### 3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 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 is a Bi-Log antenna and its 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.
- 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 (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
- 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 (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

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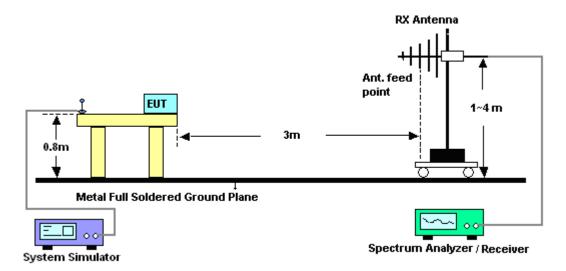
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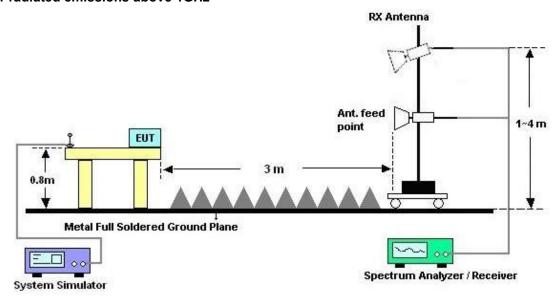
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## 3.2.4. Test Setup of Radiated Emission

#### For radiated emissions from 30MHz to 1GHz



#### For radiated emissions above 1GHz



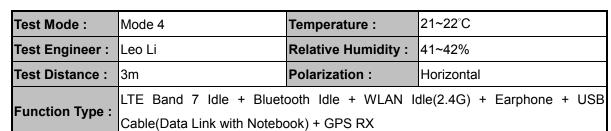
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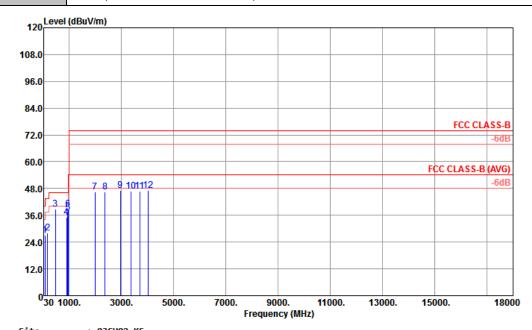
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#### 3.2.5. Test Result of Radiated Emission



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Site : 03CH02-KS Condition

: FCC CLASS-B 3m 02 LF ANT HORIZONTAL

: (FC)702602-01 Project IMEI : 004402970622811 #5

	Freq	Level	Over Limit			Antenna Factor			A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	84.32	27.03	-12.97	40.00	42.43	15.70	0.95	32.05			Peak
2	184.23	28.04	-15.46	43.50	42.03	16.34	1.39	31.72			Peak
3	480.08	38.82	-7.18	46.00	43.30	23.62	2.30	30.40	100	0	Peak
4	902.03	35.13	-10.87	46.00	31.99	27.54	3.10	27.50			Peak
5	948.59	37.26	-8.74	46.00	32.75	28.46	3.20	27.15			Peak
6	959.90	38.76	-7.24	46.00	33.93	28.70	3.21	27.08			Peak
7	1990.00	46.61	-27.39	74.00	44.43	30.19	4.61	32.62			Peak
8	2380.00	46.56	-27.44	74.00	41.33	31.27	5.14	31.18			Peak
9	2972.00	47.18	-26.82	74.00	37.78	32.50	5.94	29.04			Peak
10	3369.00	46.82	-27.18	74.00	37.56	33.33	6.27	30.34			Peak
11	3708.00	46.73	-27.27	74.00	35.92	34.37	6.55	30.11			Peak
12	4041.00	47.04	-26.96	74.00	35.68	35.18	6.86	30.68			Peak

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Test Mode :	Mod	Mode 4					Temperature : Relative Humidity :			21~	21~22°C 41~42%			
Test Engineer :	Leo Li				F	: 41~								
Test Distance :	3m					F	Polarization :				tical			
	ITE	LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + US												
Function Type	:						ok) + G			(				
120 <u>Le</u> v	vel (dBuV	/m)												
108.0														
20.0														
96.0														
84.0														
72.0												FCC	-6dB	
60.0														
		7 n 9	10111	2								FCC CLASS	-6dB	
48.0	-6		11											
36.0	4		+											
24.0			+											
12.0														
الله والمراجعة		Щ	Щ								_			
-30	1000.	300	10.	50	000.	7000.	900 Frequen		11000.	1300	0.	15000.	18000	
Site Conditi		03CH0		.R 3m	02 LF	ANT VE	<b>ΣΤΤ</b> ΕΔΙ							
Project		(FC)7			OZ LI	ANT VE	TICAL							
IMEI	:	00440	29706	2281	1 #5									
	Freq	Leve		)ver imit	Limit Line		Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark		
_		Leve:	l Li	mit						A/Pos	T/Pos	Remark	-	
1	MHz 44.55	dBuV/1	l Li m —	dB	Line dBuV/m 40.00	dBuV 35.85	Factor dB/m 20.57	dB 0.66	Factor dB 32.11	cm	deg	Peak	-	
1 2 3	MHz 44.55 182.29	dBuV/i	1 Li m -15 2 -16	dB 5.03	Line dBuV/m 40.00 43.50	dBuV 35.85 40.76	Factor dB/m	dB 0.66 1.38	dB 32.11 31.73	cm	deg		-	
2 3 4	MHz 44.55 182.29 480.08 811.82	dBuV/s 24.9 26.8 38.7 30.5	7 -15 2 -16 4 -7 0 -15	dB 5.03 5.68 7.26 5.50	Hine dBuV/m 40.00 43.50 46.00 46.00	dBuV 35.85 40.76 43.22 29.35	AB/m  20.57 16.41 23.62 26.64	dB 0.66 1.38 2.30 2.74	32.11 31.73 30.40 28.23	cm  100	deg  0	Peak Peak Peak Peak	-	
2 3 4 5	MHz 44.55 182.29 480.08 811.82 902.03	dBuV/s 24.93 26.83 38.74 30.56 34.03	7 -15 2 -16 4 -7 0 -15 2 -11	dB 5.03 5.68 7.26 5.50	Hine dBuV/m 40.00 43.50 46.00 46.00 46.00	dBuV 35.85 40.76 43.22 29.35 30.88	20.57 16.41 23.62 26.64 27.54	dB 0.66 1.38 2.30 2.74 3.10	32.11 31.73 30.40 28.23 27.50	cm  100 	deg  0 	Peak Peak Peak Peak Peak	-	
2 3 4 5 6	MHz 44.55 182.29 480.08 811.82 902.03 959.90	dBuV/1 24.9 26.8 38.7 30.5 34.0 38.4	7 -15 2 -16 4 -7 0 -15 2 -11 3 -7	dB 5.03 5.68 7.26 5.50 1.98 7.57	Here dBuV/m 40.00 43.50 46.00 46.00 46.00 46.00	dBuV 35.85 40.76 43.22 29.35 30.88 33.60	20.57 16.41 23.62 26.64 27.54 28.70	0.66 1.38 2.30 2.74 3.10 3.21	32.11 31.73 30.40 28.23 27.50 27.08	Cm  100 	deg  0 	Peak Peak Peak Peak Peak Peak	-	
2 3 4 5 6 7	MHz 44.55 182.29 480.08 811.82 902.03	24.93 26.83 38.74 30.56 34.03 38.43 46.10	7 -15 2 -16 4 -7 0 -15 2 -11 3 -7 6 -27	dB 5.03 5.68 7.26 5.50 1.98 7.57	Hine dBuV/m 40.00 43.50 46.00 46.00 46.00 74.00	dBuV 35.85 40.76 43.22 29.35 30.88 33.60 44.20	20.57 16.41 23.62 26.64 27.54	0.66 1.38 2.30 2.74 3.10 3.21 4.61	32.11 31.73 30.40 28.23 27.50	cm  100 	deg	Peak Peak Peak Peak Peak	-	
2 3 4 5 6 7 8	MHz 44.55 182.29 480.08 811.82 902.03 959.90 1978.00 2310.00 2658.00	dBuV/s 24.9 26.8 38.7 30.5 34.0 38.4 46.1 45.5 46.2	7 -15 2 -16 4 -7 0 -15 2 -11 3 -7 6 -27 6 -28 7 -27	dB 5.03 5.68 7.26 5.50 1.98 7.57 7.84 8.44 7.73	dBuV/m  40.00 43.50 46.00 46.00 46.00 74.00 74.00 74.00	dBuV 35.85 40.76 43.22 29.35 30.88 33.60 44.20 41.58 39.48	20.57 16.41 23.62 26.64 27.54 28.70 30.19 31.16 31.76	dB 0.66 1.38 2.30 2.74 3.10 3.21 4.61 5.07 5.48	32.11 31.73 30.40 28.23 27.50 27.08 32.84 32.25 30.45	 100	deg	Peak Peak Peak Peak Peak Peak Peak Peak	-	
2 3 4 5 6 7 8 9	MHz 44.55 182.29 480.08 811.82 902.03 959.90 1978.00 2310.00	dBuV/s 24.9 26.8 38.7 30.5 34.0 38.4 46.1 45.5 46.2 46.5	7 -15 2 -16 4 -7 0 -15 2 -11 3 -7 6 -27 6 -28 7 -27	dB 5.03 5.68 7.26 5.50 1.98 7.57 7.84 8.44 7.73 7.50	40.00 43.50 46.00 46.00 46.00 74.00 74.00 74.00	35.85 40.76 43.22 29.35 30.88 33.60 44.20 41.58 39.48 37.42	20.57 16.41 23.62 26.64 27.54 28.70 30.19 31.16 31.76	dB 0.66 1.38 2.30 2.74 3.10 4.61 5.07 5.48 6.25	32.11 31.73 30.40 28.23 27.50 27.08 32.84 32.25	 100 	deg	Peak Peak Peak Peak Peak Peak Peak Peak	-	

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## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 20, 2017	Dec. 01, 2017	Apr. 19, 2018	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2017	Dec. 01, 2017	Oct. 12, 2018	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2017	Dec. 01, 2017	Oct. 12, 2018	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2017	Dec. 01, 2017	Oct. 11, 2018	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 08, 2017	Nov. 30, 2017	Aug. 07, 2018	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz, MAX 30dB	Apr. 18, 2017	Nov. 30, 2017	Apr. 17, 2018	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	30MHz~2GHz	Jan. 22, 2017	Nov. 30, 2017	Jan. 21, 2018	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 21, 2017	Nov. 30, 2017	Oct. 20, 2018	Radiation (03CH02-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 15, 2017	Nov. 30, 2017	Feb. 14, 2018	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Aug. 07, 2017	Nov. 30, 2017	Aug. 06, 2018	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 12, 2017	Nov. 30, 2017	Oct. 11, 2018	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	Nov. 30, 2017	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Nov. 30, 2017	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Nov. 30, 2017	NCR	Radiation (03CH02-KS)

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NCR: No Calibration Required

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 : Rev. 01

## 5. Uncertainty of Evaluation

#### **Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)**

Measuring Uncertainty for a Level of	2.3dB
Confidence of 95% (U = 2Uc(y))	2.3ub

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#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Magazzina Ungortainty for a Loyal of	
Measuring Uncertainty for a Level of	5.2dB
Confidence of 95% (U = 2Uc(y))	0.200

#### **Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)**

Measuring Uncertainty for a Level of	4.7dB	
Confidence of 95% (U = 2Uc(y))	4.7ub	

#### **Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)**

Measuring Uncertainty for a Level of	5.3dB
Confidence of 95% (U = 2Uc(y))	

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