# **FCC Test Report**

APPLICANT : FIH International Co., Ltd.

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

BRAND NAME : Nokia

MODEL NAME : TA-1071

FCC ID : 2AJOTTA-1071

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was completed on Nov. 14, 2017 and testing was completed on Feb. 01, 2018. 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.



Approved by: James Huang / Manager



## Sporton International (Kunshan) Inc.

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Sporton International (Kunshan) Inc.

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**Report No. : FC7N1101-03** 

## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC7N1101-03	Rev. 01	Initial issue of report	Feb. 14, 2018

Sporton International (Kunshan) Inc.

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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	8.02 dB at
					0.201 MHz
					Under limit
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	9.20 dB at
					599.60 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-1071
FCC ID	2AJOTTA-1071
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+ (16QAM uplink is not supported)/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	HW0241
SW Version	0.1803.11.03
EUT Stage	Identical Prototype

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#### Remark:

- 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- 2. This is a variant report for TA-1071, the difference between TA-1048(FCC ID: 2AJOTTA-1048) and TA-1071(FCC ID: 2AJOTTA-1071) is change dual SIM card to single SIM card. According to the change, only the worst cases were verified, all the other test results were leveraged from original report which can be referred to Sporton Report Number FC7N1101-02 for model TA-1048.

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## 1.4. Product Specification of Equipment Under Test

Other deads related Bandont Once (Cont.)					
Standards	-related Product Specification				
	WCDMA Band V: 826.4 MHz ~ 846.6 MHz				
	LTE Band 5 : 824.7 MHz ~ 848.3 MHz				
Tx Frequency	LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz				
	802.11b/g/n: 2412 MHz ~ 2462 MHz				
	Bluetooth: 2402 MHz ~ 2480 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	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)				
	HSPA: QPSK (Uplink)				
	HSPA+: 16QAM (16QAM uplink is not supported)				
	DC-HSDPA: 64QAM				
Type of Modulation	LTE: QPSK / 16QAM				
Type of Modulation	802.11b: DSSS (DBPSK / DQPSK / CCK)				
	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
	Bluetooth LE: GFSK				
	Bluetooth (1Mbps) : GFSK				
	Bluetooth (2Mbps) : GFSK Bluetooth (2Mbps) : \pi /4-DQPSK				
	Bluetooth (3Mbps) : % /4-DQFSK				
	GPS: BPSK				
	GPS . BPSK				
	ΓIVI				

### 1.5. Modification of EUT

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

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#### 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.

Test Site	Sporton International (F	Sporton International (Kunshan) Inc.					
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL: +86-512-57900158						
	FAX: +86-512-579009	58					
	Sportor	n Site No.	FCC Test Firm				
Test Site No.	Sportor	i Site No.	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.

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: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 1 + Camera <fig. 1=""></fig.>
	Mode 2: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 2 + MPEG4 <fig. 1=""></fig.>
AC Conducted	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 1 + GPS Rx <fig. 2=""></fig.>
Emission	Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Data Link with Notebook) <fig. 3=""></fig.>
	Mode 5: Earphone + Adapter 1 + FM(88MHz) RX + Battery <fig. 4=""></fig.>
	Mode 6: Earphone + Adapter 1 + FM(98MHz) RX + Battery <fig. 4=""></fig.>
	Mode 7 : Earphone + Adapter 1 + FM(108MHz) RX + Battery <fig. 4=""></fig.>
	Mode 1: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 1 + Camera <fig. 1=""></fig.>
	Mode 2: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 2 + MPEG4 <fig. 1=""></fig.>
Radiated	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Adapter 1 + GPS Rx <fig. 2=""></fig.>
Emissions	Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Data Link with Notebook) <fig. 3=""></fig.>
	Mode 5: Earphone + Adapter 1 + FM(88MHz) RX + Battery <fig. 4=""></fig.>
	Mode 6: Earphone + Adapter 1 + FM(98MHz) RX + Battery <fig. 4=""></fig.>
	Mode 7: Earphone + Adapter 1 + FM(108MHz) RX + Battery <fig. 4=""></fig.>
Radiated Emissions ≥ 1GHz	Mode 1: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Cable(Data Link with Notebook) <fig. 3=""></fig.>

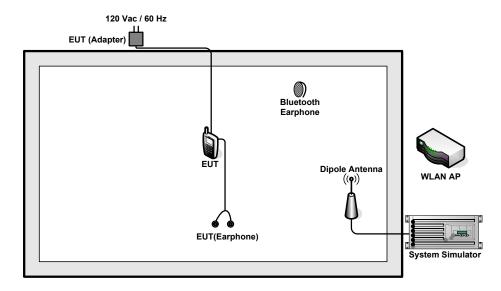
#### Remark:

- 1. The worst case of AC is mode 5; and USB Link is mode 4, the test data of these modes were reported.
- 2. The worst case of RE is mode 4, only the test data of this mode was reported.
- 3. Data Link with Notebook means data application transferred mode between EUT and Notebook.

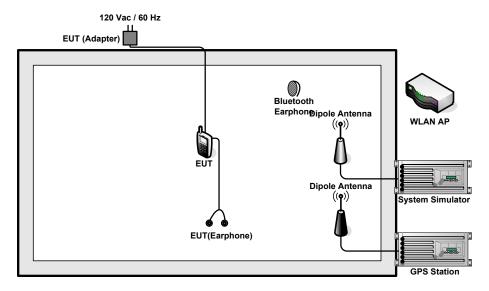
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## 2.2. Connection Diagram of Test System



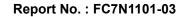
<Fig. 1>

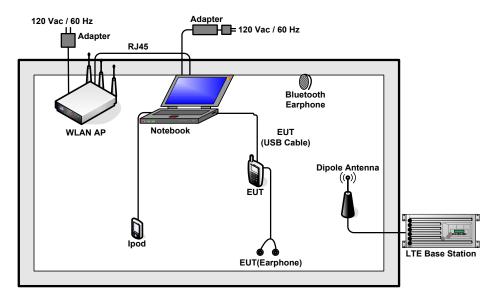


<Fig. 2>

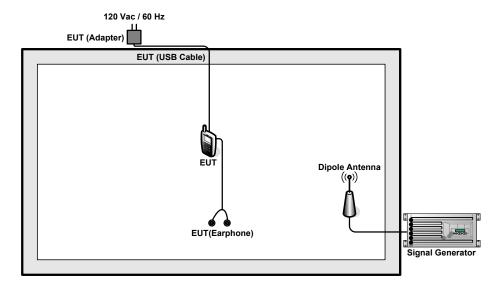
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<Fig. 3>



<Fig. 4>

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### 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	D-link	DIR-855	KA2DIR855A2	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.

- 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.

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

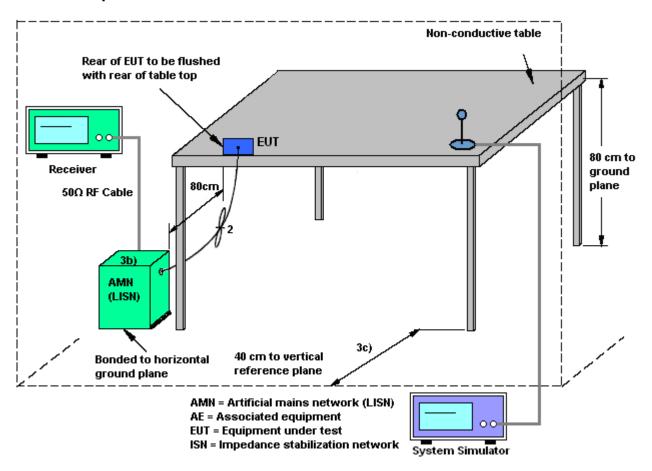
- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other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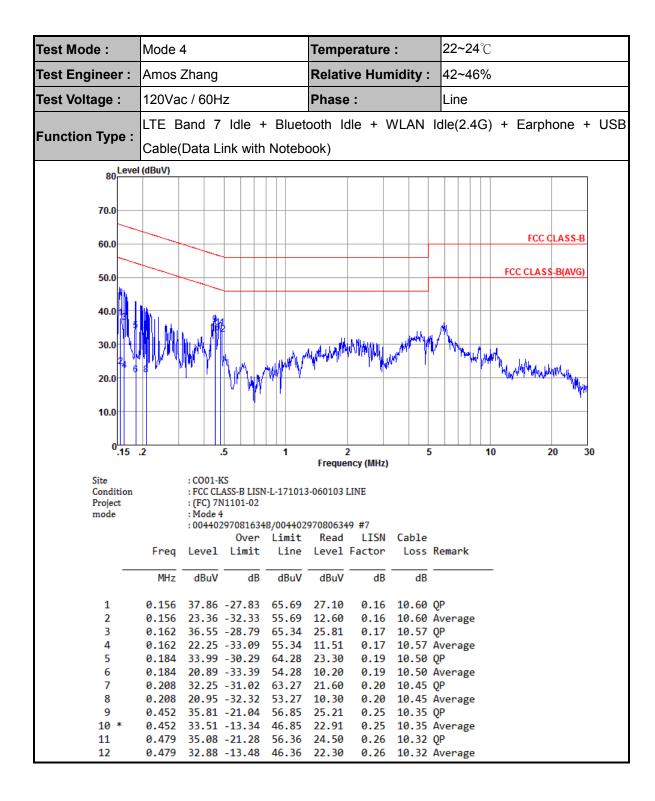
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#### 3.1.4 Test Setup



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#### 3.1.5 Test Result of AC Conducted Emission



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**22~24**℃ Test Mode: Mode 4 Temperature: Test Engineer: Amos Zhang **Relative Humidity:** 42~45% 120Vac / 60Hz Phase: Test Voltage: Neutral LTE Band 7 Idle + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + USB Function Type: Cable(Data Link with Notebook) 80 Level (dBuV) 70.0 FCC CLASS-B 60.0 FCC CLASS-B(AVG) 50.0 40.0 and the first for the second of 30. 20.0 10.0 20 .15 30 2 Frequency (MHz) : CO01-KS Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL Project : (FC) 7N1101-02 mode : Mode 4 :004402970816348/004402970806349 #7 Over Limit Read LISN Cable Line Level Factor Freq Level Limit Loss Remark MHz dBuV dB dBuV dBuV dB dB 0.155 37.68 -28.06 65.74 26.80 1 0.28 10.60 QP 0.155 25.18 -30.56 55.74 14.30 0.28 10.60 Average 3 0.165 37.04 -28.17 65.21 26.20 0.28 10.56 QP 4 0.165 24.04 -31.17 55.21 13.20 0.28 10.56 Average 0.171 35.43 -29.47 5 64.90 24.60 0.28 10.55 OP 22.43 -32.47 54.90 11.60 0.28 10.55 Average 6 0.171 7 0.185 33.68 -30.56 64.24 22.90 0.28 10.50 QP 10.50 Average 8 0.185 21.98 -32.26 54.24 11.20 0.28 9 0.484 35.51 -20.76 56.27 24.90 0.29 10.32 QP 10 0.484 25.21 -21.06 46.27 14.60 0.29 10.32 Average 4.874 28.76 -27.24 56.00 18.19 0.34 10.23 QP 11 12 4.874 20.86 -25.14 46.00 10.29 0.34 10.23 Average

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**22~24**℃ Test Mode: Mode 5 Temperature: Test Engineer: Amos Zhang **Relative Humidity:** 42~45% 120Vac / 60Hz Phase: Test Voltage: Line Earphone + Adapter 1 + FM(88MHz) RX + Battery **Function Type:** 80 Level (dBuV) 70.0 FCC CLASS-B 60.0 FCC CLASS-B(AVG) 50.0 40.0 30.0 20.0 10.0 Frequency (MHz) Site : CO01-KS : FCC CLASS-B LISN-L-171013-060103 LINE Condition Project : (FC) 7N1101-02 mode : Mode 5 :004402970816348/004402970806349 #7 Over Limit Read LISN Cable Line Level Factor Freq Level Limit Loss Remark MHz dBuV dBuV dBuV dB dB dB 1 0.156 57.06 -8.63 65.69 46.30 0.16 10.60 QP 2 0.156 39.56 -16.13 55.69 28.80 0.16 10.60 Average 3 0.201 55.56 -8.02 63.58 44.91 0.20 10.45 QP -9.72 53.58 33.21 4 0.201 43.86 0.20 10.45 Average 5 0.220 52.86 -9.97 62.83 42.20 0.21 10.45 OP 6 0.220 34.26 -18.57 52.83 23.60 0.21 10.45 Average 7 0.21 10.45 QP 52.45 -10.07 62.52 41.79 0.228 8 0.228 37.25 -15.27 52.52 26.59 0.21 10.45 Average 0.237 48.85 -13.37 62.22 38.20 9 0.21 10.44 OP 0.237 32.15 -20.07 52.22 21.50 0.21 10.44 Average 10 11 0.300 48.15 -12.09 60.24 37.49 0.23 10.43 QP 12 0.300 31.85 -18.39 50.24 21.19 0.23 10.43 Average 13 0.365 44.25 -14.36 58.61 33.60 0.24 10.41 QP 14 0.365 28.85 -19.76 48.61 18.20 0.24 10.41 Average

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**22~24**℃ Test Mode: Mode 5 Temperature: Test Engineer: Amos Zhang **Relative Humidity:** 42~45% Test Voltage: 120Vac / 60Hz Phase: Neutral Function Type: Earphone + Adapter 1 + FM(88MHz) RX + Battery 80 Level (dBuV) 70.0 FCC CLASS-B 60.0 FCC CLASS-B(AVG) 50.0 40.0 30.0 20.0 10.0 .5 20 30 Frequency (MHz) : CO01-KS Site Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL Project : (FC) 7N1101-02 mode : Mode 5 :004402970816348/004402970806349 #7 Over Limit Read LISN Cable Line Level Factor Freq Level Limit Loss Remark MHz dBuV dB dBuV dBuV dB dB 1 \* 0.159 53.07 -12.45 65.52 42.20 0.28 10.59 QP 0.159 38.47 -17.05 55.52 27.60 0.28 10.59 Average 0.201 50.34 -13.24 63.58 39.61 3 0.28 10.45 QP 4 0.201 39.64 -13.94 53.58 28.91 0.28 10.45 Average 5 0.209 48.93 -14.30 63.23 38.20 0.28 10.45 QP 6 0.209 31.33 -21.90 53.23 20.60 0.28 10.45 Average 0.233 48.93 -13.42 62.35 38.21 0.28 10.44 QP 7 0.233 33.03 -19.32 52.35 22.31 0.28 10.44 Average 8 9 0.282 43.22 -17.54 60.76 32.51 0.28 10.43 QP 10 0.282 25.92 -24.84 50.76 15.21 0.28 10.43 Average 11 0.348 40.30 -18.70 59.00 29.59 0.29 10.42 QP

12

0.348 24.90 -24.10 49.00 14.19

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0.29 10.42 Average

#### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

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

Frequency	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.
- 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.
- 5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (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

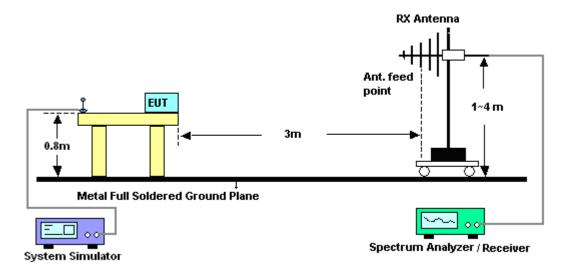
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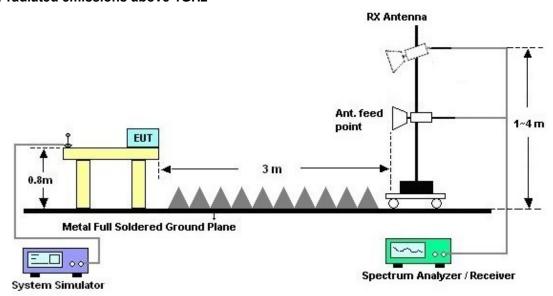
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### 3.2.4. Test Setup of Radiated Emission

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

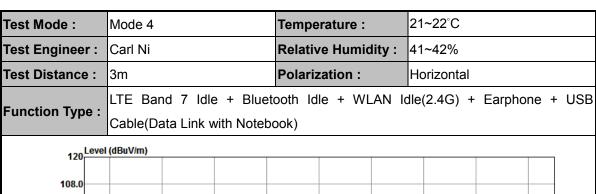


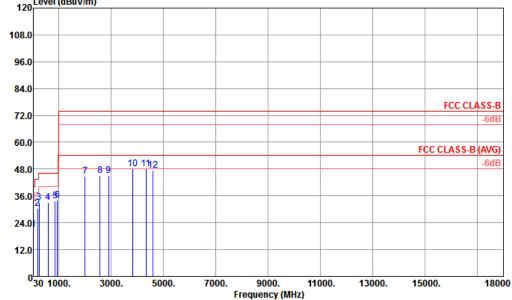
#### For radiated emissions above 1GHz



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#### 3.2.5. Test Result of Radiated Emission





Site : 03CH02-KS

Condition : FCC CLASS-B 3m LF 47610 HORIZONTAL

Project : (FC)7N1101-02 Mode : 4

IMEI : 004402970816348 004402970806349 #7

			0ver	Limit	Read/	Antenna	Cable	Preamp	A/Pos	T/Pos	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor			Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	20.95	-19.05	40.00	27.41	25.00	0.57	32.03			Peak
2	200.10	30.45	-13.05	43.50	45.27	15.40	1.45	31.67			Peak
3	250.05	33.09	-12.91	46.00	44.49	18.40	1.75	31.55			Peak
4	599.60	33.10	-12.90	46.00	35.54	24.61	2.62	29.67			Peak
5	862.10	33.66	-12.34	46.00	32.04	26.38	3.06	27.82			Peak
6	949.60	34.24	-11.76	46.00	31.28	26.90	3.20	27.14	100	0	Peak
7	2014.00	44.77	-29.23	74.00	43.00	30.36	4.63	33.22			Peak
8	2580.00	44.98	-29.02	74.00	38.65	31.62	5.34	30.63			Peak
9	2908.00	45.09	-28.91	74.00	36.85	32.30	5.91	29.97			Peak
10	3837.00	48.12	-25.88	74.00	36.75	34.84	6.64	30.11			Peak
11	4335.00	48.07	-25.93	74.00	35.37	35.64	7.19	30.13			Peak
12	4605.00	47.51	-26.49	74.00	34.93	35.82	7.64	30.88			Peak

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Test Mode :	Mode 4			empe	rature	:	21~	21~22°C			
Test Engineer :	Carl Ni		F	Relativ	e Hun	nidity :	41~	41~42%			
Test Distance :	3m		P	Polariz	ation	:	Vertical				
F	LTE Band	7 Idle +	Blueto	oth Idl	e + \	NLAN	Idle(2	2.4G)	+ Earpho	one + US	
Function Type :	Cable(Data	a Link with	Noteboo	ok)							
420 Level	(dBuV/m)										
120											
108.0											
96.0											
94.0											
84.0									FCC CI	ASS-B	
72.0										-6dB	
60.0									FCC CLASS-	R (AVG)	
48.0	7 89	10112							TCC CEASS-	-6dB	
r 5 -											
36.0											
24.0											
12.0											
030 10	000. 3000	. 5000.	7000.	900 Frequence		11000.	1300	0. 1	15000.	18000	
Site	: 03CH02										
Condition Project	: (FC)7N1	ASS-B 3m LF 4 L101-02	7610 VERT	ICAL							
Mode IMEI	: 4 : 0044029	970816348 004	402970806	349 #7							
	Freq Level	Over Limi Limit Lin	t ReadA e Level			Preamp Factor	A/Pos		Remark		
1	ried reser				LUJJ	· ucco.					
	MHz dBuV/m	dB dBuV/		dB/m	dB	dB	cm	deg			
	MHz dBuV/m 30.00 21.97	-18.03 40.0	dBuV 0 28.43	25.00	dB		cm	_	Peak		
2	MHz dBuV/m 30.00 21.97 39.45 23.06	-18.03 40.0 -16.94 40.0	dBuV 0 28.43 0 35.26	25.00 19.20	dB 0.57 0.64	dB - 32.03 32.04			Peak		
2 3 1	MHz dBuV/m 30.00 21.97	-18.03 40.0 -16.94 40.0 -23.01 43.5	dBuV 0 28.43 0 35.26 0 33.52	25.00 19.20 17.65	dB 0.57 0.64 1.19	dB -					
2 3 1 4 2 5 5	MHz dBuV/m 30.00 21.97 39.45 23.06 35.03 20.49 00.10 26.38 99.60 36.80	-18.03 40.0 -16.94 40.0 -23.01 43.5 -17.12 43.5 -9.20 46.0	dBuV  0 28.43  0 35.26  0 33.52  0 41.20  0 39.24	25.00 19.20 17.65 15.40 24.61	dB 0.57 0.64 1.19 1.45 2.62	dB 32.03 32.04 31.87 31.67 29.67	100		Peak Peak Peak Peak		
2 3 1 4 2 5 5 6 8	MHz dBuV/m  30.00 21.97  39.45 23.06  35.03 20.49  00.10 26.38  99.60 36.80  50.20 34.08	-18.03 40.0 -16.94 40.0 -23.01 43.5 -17.12 43.5 -9.20 46.0 -11.92 46.0	dBuV  28.43 0 35.26 0 33.52 0 41.20 0 39.24 0 32.63	25.00 19.20 17.65 15.40 24.61 26.31	dB 0.57 0.64 1.19 1.45 2.62 3.05	dB 32.03 32.04 31.87 31.67 29.67 27.91	  100	   0	Peak Peak Peak Peak Peak		
2 3 1 4 2 5 5 6 8 7 20	MHz dBuV/m 30.00 21.97 39.45 23.06 35.03 20.49 00.10 26.38 99.60 36.80	-18.03 40.0 -16.94 40.0 -23.01 43.5 -17.12 43.5 -9.20 46.0 -11.92 46.0 -29.07 74.0	dBuV  0 28.43 0 35.26 0 33.52 0 41.20 0 39.24 0 32.63 0 42.44	25.00 19.20 17.65 15.40 24.61 26.31	dB 0.57 0.64 1.19 1.45 2.62 3.05 4.75	dB 32.03 32.04 31.87 31.67 29.67	100	  0	Peak Peak Peak Peak		
2 3 1 4 2: 5 5 6 8 7 20 8 25 9 26	MHz dBuV/m  30.00 21.97 39.45 23.06 35.03 20.49 00.10 26.38 99.60 36.80 80.00 44.93 34.00 45.93 78.00 45.59	-18.03 40.0 -16.94 40.0 -23.01 43.5 -17.12 43.5 -9.20 46.0 -21.92 46.0 -29.07 74.0 -28.07 74.0	dBuV  0 28.43 0 35.26 0 33.52 0 41.20 0 39.24 0 32.63 0 42.44 0 39.89 0 38.60	25.00 19.20 17.65 15.40 24.61 26.31 30.59 31.53 31.79	dB 0.57 0.64 1.19 1.45 2.62 3.05 4.75 5.29 5.54	dB 32.03 32.04 31.87 31.67 29.67 27.91 32.85 30.78 30.34	100	  0 	Peak Peak Peak Peak Peak Peak Peak Peak		
2 3 1 4 2: 5 5: 6 8 7 7 20 8 25 9 26 10 39	MHz dBuV/m  30.00 21.97 39.45 23.06 35.03 20.49 00.10 26.38 99.60 36.80 99.60 34.08 80.00 44.93 34.00 45.93	-18.03 40.0 -16.94 40.0 -23.01 43.5 -17.12 43.5 -9.20 46.0 -11.92 46.0 -29.07 74.0 -28.07 74.0 -28.41 74.0 -26.66 74.0	dBuV  0 28.43 0 35.26 0 33.52 0 41.20 0 39.24 0 32.63 0 42.44 0 39.89 0 38.60 0 35.72	25.00 19.20 17.65 15.40 24.61 26.31 30.59 31.53 31.79 35.04	dB 0.57 0.64 1.19 1.45 2.62 3.05 4.75 5.29 5.54 6.69	dB 32.03 32.04 31.87 31.67 29.67 27.91 32.85 30.78	100	  0 	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	Jan. 11, 2018	Apr. 19, 2018	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2017	Jan. 11, 2018	Oct. 12, 2018	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2017	Jan. 11, 2018	Oct. 12, 2018	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2017	Jan. 11, 2018	Oct. 11, 2018	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 08, 2017	Feb. 01, 2018	Aug. 07, 2018	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz, MAX 30dB	Apr. 18, 2017	Feb. 01, 2018	Apr. 17, 2018	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	30MHz~2GHz	Nov. 29, 2017	Feb. 01, 2018	Nov. 28, 2018	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 21, 2017	Feb. 01, 2018	Oct. 20, 2018	Radiation (03CH02-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 15, 2017	Feb. 01, 2018	Feb. 14, 2018	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Aug. 07, 2017	Feb. 01, 2018	Aug. 06, 2018	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 12, 2017	Feb. 01, 2018	Oct. 11, 2018	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	Feb. 01, 2018	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Feb. 01, 2018	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Feb. 01, 2018	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required

Sporton International (Kunshan) Inc.

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## 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))	2.305	

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

Measuring Uncertainty for a Level of	A EAD
Confidence of 95% (U = 2Uc(y))	4.5dB

#### <u>Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)</u>

Measuring Uncertainty for a Level of	4.2dB	
Confidence of 95% (U = 2Uc(y))	4.2UB	

Sporton International (Kunshan) Inc.

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