

FCC RF Test Report

APPLICANT	: Shenzhen Gongjin Electronics Co.,Ltd.
EQUIPMENT	: Nokia Smart Node
BRAND NAME	: Nokia
MODEL NAME	: Nokia Multi-Standard Smart Node B2B14B66 (SN4IBN)
FCC ID	: V4V1SN4IBN
STANDARD	: 47 CFR Part 2, 90(R)
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Sep. 21, 2023 ~ Nov. 03, 2023

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26 and shown 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 Inc. (Kunshan), the test report shall not be reproduced except in full.

JasonJia

Approved by: Jason Jia



Sporton International Inc. (Kunshan) No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China





TABLE OF CONTENTS

RE	VISIO	N HISTORY	3
SU	MMAF	RY OF TEST RESULT	4
1	GEN	ERAL DESCRIPTION	5
	1.1 1.2 1.3 1.4 1.5 1.6 1.7	Applicant Manufacturer Feature of Equipment Under Test Maximum ERP Power Testing Site Test Software Applied Standards	5 6 6 6
2	TEST	CONFIGURATION OF EQUIPMENT UNDER TEST	7
	2.1 2.2 2.3 2.4	Test Mode Connection Diagram of Test System Support Unit used in test configuration and system Measurement Results Explanation Example	8 8
3	CON	DUCTED TEST ITEMS	9
	3.1 3.2 3.3 3.4 3.5	Measuring Instruments Conducted Output Power and ERP Conducted Band Edge Measurement Emission Mask Conducted Spurious Emission Measurement	10 11 12
4	RAD	ATED TEST ITEMS	14
	4.1	Measuring Instruments	11
	4.2 4.3 4.4	Test Setup Test Result of Radiated Test Radiated Spurious Emission Measurement	14 15
5	4.2 4.3 4.4	Test Setup Test Result of Radiated Test	14 15 16
5 6	4.2 4.3 4.4 LIST	Test Setup Test Result of Radiated Test Radiated Spurious Emission Measurement	14 15 16 17

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG151309-02B	Rev. 01	Initial issue of report	Nov. 30, 2023



Report Section	FCC Rule	Description	Limit	Result	Remark
§2.1046		Conducted Output Power	_	Reporting only	-
3.2	§90.542 (a)(7)	Effective Radiated Power	ERP < 1000Watt	PASS	-
3.5	§2.1053 §90.543 (e)(2)(3)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.6	§2.1051 §90.210(n)	Emission Mask	Mask B	PASS	-
3.7	§2.1053 §90.543 (e)(3)	Conducted Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	-
\$2.1053 4.4 \$90.543 (e)(3) §90.543 (f)		Radiated Spurious Emission	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 46.34 dB at 3156.000 MHz

SUMMARY OF TEST RESULT

Note: This is a variant report. The change note could be referred to Nokia Multi-Standard Smart Node B2B14B66 (SN4IBN)_ Class II Permissive Change letter which is exhibit separately. According to the change, only the worst case of Conducted Power, Band Edge, CSE, Mask and RSE from original test report (Sporton Report Number FG151309B) were verified for the differences.

Conformity Assessment Condition:

- 1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- 2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1 General Description

1.1 Applicant

Shenzhen Gongjin Electronics Co.,Ltd.

No.2 Danzi North Road, Kengzi Street, Pingshan District, Shenzhen, Guangdong, 518122, P.R. China

1.2 Manufacturer

Shenzhen Gongjin Electronics Co.,Ltd.

No.2 Danzi North Road, Kengzi Street, Pingshan District, Shenzhen, Guangdong, 518122, P.R. China

1.3 Feature of Equipment Under Test

Product Feature						
Equipment	Nokia Smart Node					
Brand Name	Nokia					
Model Name	Nokia Multi-Standard Smart Node B2B14B66 (SN4IBN)					
FCC ID	V4V1SN4IBN					
Tx Frequency	LTE Band 14: 758 MHz ~ 768 MHz					
Rx Frequency	LTE Band 14: 788 MHz ~ 798 MHz					
Bandwidth	5MHz / 10MHz					
Maximum Quitaut Dawar to Antonno	<mimo 3+4="" ant.=""></mimo>					
Maximum Output Power to Antenna	LTE Band 14 : 23.32 dBm					
Antonno Coin	<mimo 3+4="" ant.=""></mimo>					
Antenna Gain	LTE Band 14 : 4.21 dBi					
Type of Modulation	QPSK / 16QAM / 64QAM					
HW Version	V03					
SW Version	56850					
EUT Stage	Production Unit					

Note:

- 1. For SISO & MIMO mode, the RSE testing has assessed only MIMO mode by referring to their higher conducted power.
- 2. The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP is shown on the report for MIMO mode.
- **3.** LTE Tx is non-signaling mode.
- **4.** LTE only support full RB mode.
- 5. MIMO Gain = SISO Gain + Array Gain(10log 2)



1.4 Maximum ERP Power

	LTE Band 14	QPSK
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)
10	763	0.3451

1.5 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)						
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158						
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.				
	03CH04-KS TH01-KS	CN1257	314309				

1.6 Test Software

ſ	ltem	Site	Manufacture	Name	Version	
	1.	03CH04-KS	AUDIX	E3	210616	

1.7 Applied Standards

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

- 47 CFR Part 2, Part 90(R)
- ANSI C63.26
- KDB 971168 D01 Power Meas License Digital Systems v03r01
- KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- **2.** This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

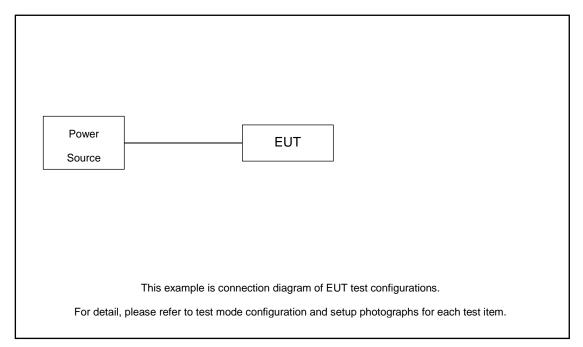
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power. The WWAN Tx mode was pre-scanned for harmonics in three orthogonal panels (Y, Z and X planes) for both horizontal and vertical polarizations, and then the worst mode(X planes) was performed the full test and recorded in this report.

Conducted	Dand		В	andwi	dth (MH	łz)			Modulatio	n		RB #		Tes	t Char	nel
Test Cases	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	н
Max. Output Power	14	-	-		v	-	-	v			-	-	v		v	
Conducted Band Edge	14	-	-	v		-	-	V			-	-	v	v		v
Emission Mask	14	-	-	v		-	-	v			-	-	v	v		
LIIIISSIOII MASK	14	-	-		v	-	-	v			-	-	v		v	
Conducted Spurious	14	-	-	v		-	-	v			-	-	v	v		
Emission	14	-	-		v	-	-	v			-	-	v		v	
E.R.P	14	-	-		v	-	-	v			-	-	v		v	
Radiated Spurious Emission	14	-	-		v	-	-	v			-	-	v		v	
Note	 The mark "v " means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 															



2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Iten	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord	
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m	

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 7.81 dB and 20dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 7.81 + 20 = 27.81 (dB)



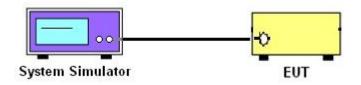
3 Conducted Test Items

3.1 Measuring Instruments

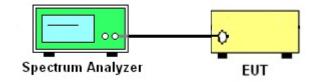
See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Conducted Band-Edge, Emission Mask, and Conducted Spurious Emission



3.1.4 Test Result of Conducted Test

Please refer to Appendix A.



3.2 Conducted Output Power and ERP

3.2.1 Description of the Conducted Output Power Measurement and ERP

§90.542 (a)(3)Fixed and base stations transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section

According to KDB 412172 D01 Power Approach,

 $EIRP = P_T + G_T - L_C$, ERP = EIRP - 2.15, where

 P_T = transmitter output power in dBm

 G_T = gain of the transmitting antenna in dBi

 L_{C} = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

- 1. The testing follows ANSI C63.26 Section 5.2
- 2. The transmitter output port was connected to the power meter.
- 3. Set EUT at maximum power perform non-signaling mode.
- 4. Select lowest, middle, and highest channels for each band and different modulation.
- 5. Measure and record the power level from the power meter.



3.3 Conducted Band Edge Measurement

3.3.1 Description of Conducted Band Edge Measurement

For operations in the 758-768 MHz and the 788-798 MHz bands

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log
- (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log

(P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

3.3.2 Test Procedures

- 1. The testing follows ANSI C63.26 section 5.7
- 2. The EUT was connected to spectrum analyzer and perform non-signaling mode.
- 3. The band edges of low and high channels for the highest RF powers were measured.
- 4. Set spectrum analyzer with RMS detector.
- 5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 6. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

= P(W)- [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.



3.4 Emission Mask

3.4.1 Description of Emission Mask

<Emission Mask B>.

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

3.4.2 Test Procedures

- 1. The testing follows ANSI C63.26 section 5.7
- 2. The EUT was connected to spectrum analyzer and perform non-signaling mode.
- The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
- 5. Set spectrum analyzer with RMS detector.
- 6. Taking the record of maximum spurious emission.
- 7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
 - = P(W) [43 + 10log(P)] (dB)
 - = [30 + 10log(P)] (dBm) [43 + 10log(P)] (dB)
 - = -13dBm.



3.5 Conducted Spurious Emission Measurement

3.5.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30MHz up to a frequency including its 10th harmonic.

3.5.2 Test Procedures

- 1. The testing follows ANSI C63.26 section 5.7
- 2. The EUT was connected to spectrum analyzer and perform non-signaling mode.
- The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 4. The middle channel for the highest RF power within the transmitting frequency was measured.
- 5. The conducted spurious emission for the whole frequency range was taken.
- Make the measurement with the spectrum analyzer's, for under 1GHz RBW = 100kHz, VBW = 300kHz and for above 1GHz RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 7. Set spectrum analyzer with RMS detector.
- 8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 9. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
 = P(W)- [43 + 10log(P)] (dB)
 - = [30 + 10log(P)] (dBm) [43 + 10log(P)] (dB)
 - = -13dBm.



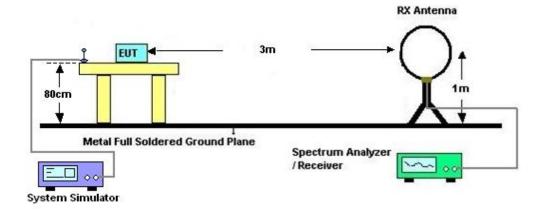
4 Radiated Test Items

4.1 Measuring Instruments

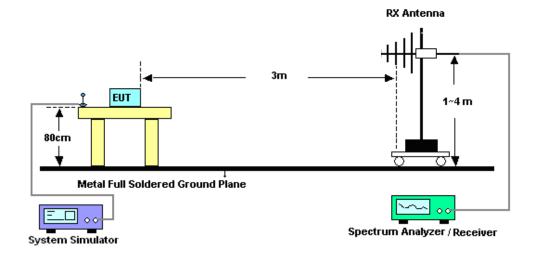
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test below 30MHz

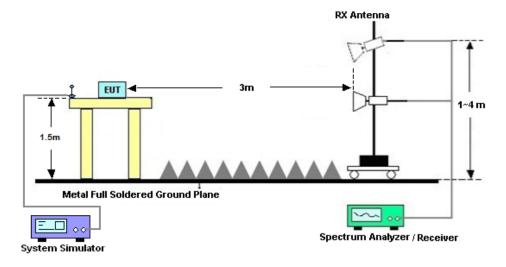


4.2.2 For radiated test from 30MHz to 1GHz





4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.



4.4 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

4.4.2 Test Procedures

- 1. The testing follows ANSI C63.26 Section 5.5
- 2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
- 3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
- 4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
- 6. During the measurement, set to force the EUT transmitting at maximum output power.
- 7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 10. EIRP (dBm) = S.G. Power Tx Cable Loss + Tx Antenna Gain
- 11. ERP (dBm) = EIRP 2.15
- 12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

= P(W)- [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

= -13dBm.



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	Oct. 12, 2022	Oct. 09, 2023~	Oct. 11, 2023	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Nov. 03, 2023	Oct. 10, 2024	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2023	Oct. 09, 2023~ Nov. 03, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2023	Oct. 09, 2023~ Nov. 03, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Oct. 09, 2023~ Nov. 03, 2023	Jul. 05, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Sep. 21, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11 2023	Sep. 21, 2023	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	Sep. 21, 2023	Apr. 08, 2024	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	Sep. 21, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Sep. 21, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul 06, 2023	Sep. 21, 2023	Jul 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2023	Sep. 21, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 12, 2022	Sep. 21, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Sep. 21, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Sep. 21, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Sep. 21, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Sep. 21, 2023	NCR	Radiation (03CH04-KS)
High Pass Filter	Wainwright Instruments Gmbh	WHKX12-28 05-3000-180 00-40ST	2	3G High Pass	Jun. 29, 2023	Sep. 21, 2023	Jun. 28, 2024	Radiation (03CH04-KS)
High Pass Filter	Wainwright Instruments Gmbh	WHKX12-93 5-1000-1500 0-40ST	2	1G High Pass	Jun. 29, 2023	Sep. 21, 2023	Jun. 28, 2024	Radiation (03CH04-KS)

NCR: No Calibration Required



6 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty			
Conducted Power	±0.46 dB			
Conducted Emissions	±2.26 dB			

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.82dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of	3.56dB
Confidence of 95% (U = 2Uc(y))	5.500B

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of	3.54dB
Confidence of 95% (U = 2Uc(y))	0.0448

----- THE END ------



Appendix A. Test Results of Conducted Test

Toot Engineer	Simle Wang	Temperature :	22~23°C	
Test Engineer :		Relative Humidity :	40~42%	

Conducted Output Power(Average power) and ERP

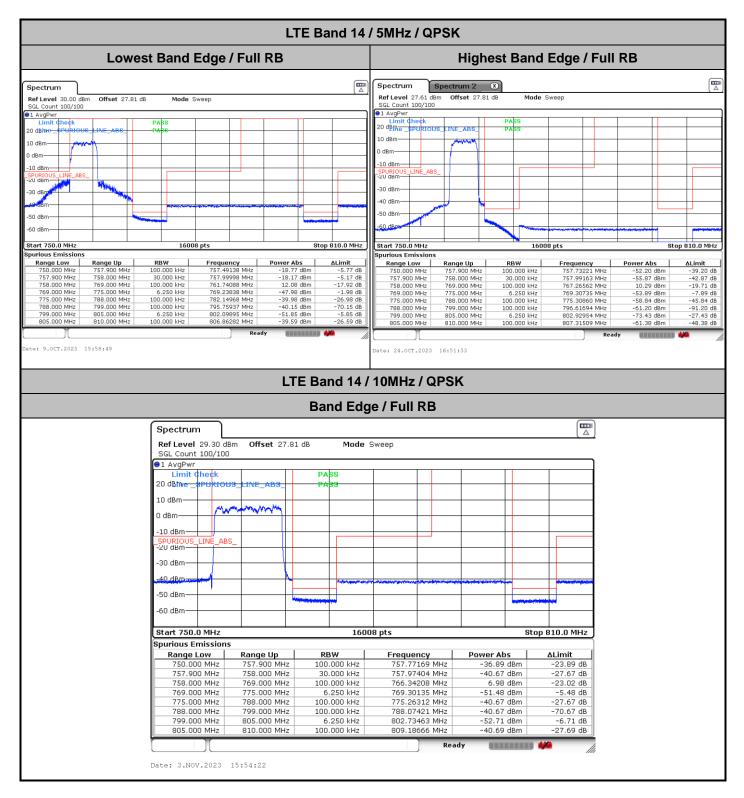
For MIMO Antenna 3+4

Ant.	BW	Modulation	Channel	Frequency (MHz)	Gain (dB)	Power (dBm)	ERP (dbm)	ERP power (W)
3+4	10M	QPSK	5330	763	4.21	23.32	25.38	0.3451



LTE Band 14 MIMO Ant. 3

Conducted Band Edge



Sporton International Inc. (Kunshan) TEL : +86-512-57900158 FCC ID: V4V1SN4IBN



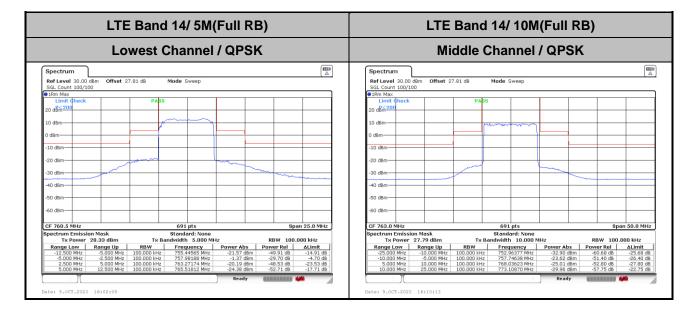
Conducted Spurious Emission

LTE Band 14 / 5MHz			LTE Band ²	14 / 10MHz		
Lowest Channel / QPS	к	N	liddle Char	nnel / QPSK	ζ.	
Spectrum Ref Level 30.00 dBm Offset 27.81 dB Mode Auto Sweep SGL Count 100/100 INPERATOR PASS 01 AvgPwr Limit Check PASS 20 dBm PASS PASS 10 dBm 0 dBm PASS -10 dBm		Spectrum Ref Level 30.00 dBm Offset 27. SGL Count 100/100 Diffset 27. J AvgPwr Limit check Limit check LINE_ABS 10 dBm 0 dBm -10 dBm SPURIOUS_LINE_ABS_ -20 dBm -30 dBm -30 dBm -50 dBm	PABS PABS	uto Sweep		
-60 dBm		-60 dBm	18004	1 pts		Stop 8.0 GHz
Spurious Emissions	S	Spurious Emissions				
Range Low Range Up RBW Frequency 30.000 MHz 758.000 MHz 100.000 kHz 757.81809 MHz 805.000 MHz 1.000 GHz 100.000 kHz 919.06672 MHz 1.000 GHz 3.000 GHz 1.000 GHz 2.63484 GHz 3.000 GHz 8.000 GHz 3.000 MHz 6.99935 GHz Read Read Read Read		Range Low Range Up 30.000 MHz 758.000 MHz 805.000 MHz 1.000 GHz 1.000 GHz 3.000 GHz 30.000 GHz 8.000 GHz	100.000 kHz 1.000 MHz	Frequency 757.81809 MHz 875.01874 MHz 2.65584 GHz 6.99885 GHz Ready	Power Abs -27.19 dBm -39.50 dBm -29.62 dBm -20.06 dBm	△Limit -14.19 dB -26.50 dB -16.62 dB -7.06 dB
Date: 9.0CT.2023 15:57:23	Da	ate: 9.0CT.2023 16:11:31				





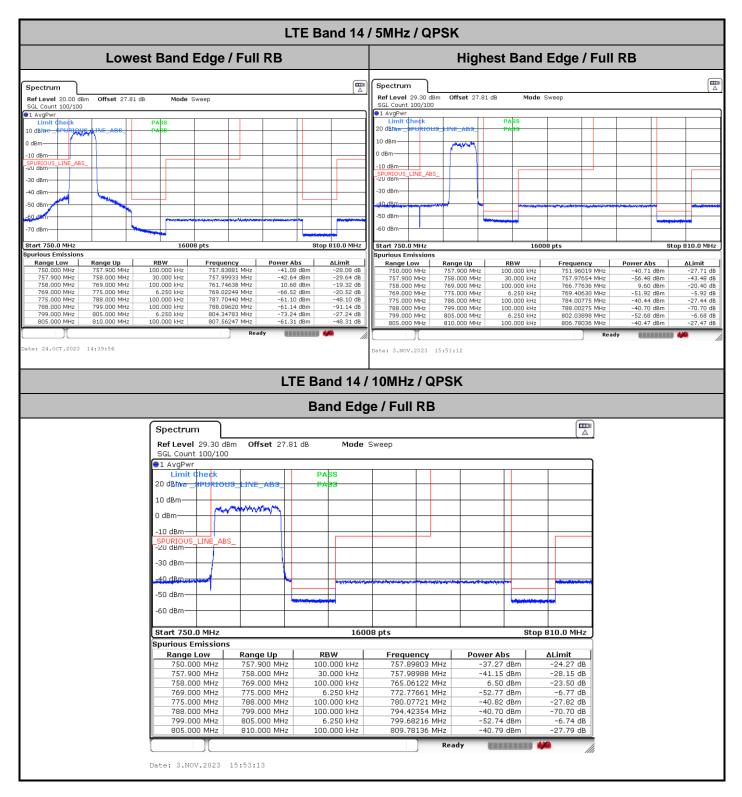
Emission Mask





LTE Band 14 MIMO Ant. 4

Conducted Band Edge



Sporton International Inc. (Kunshan) TEL : +86-512-57900158 FCC ID: V4V1SN4IBN



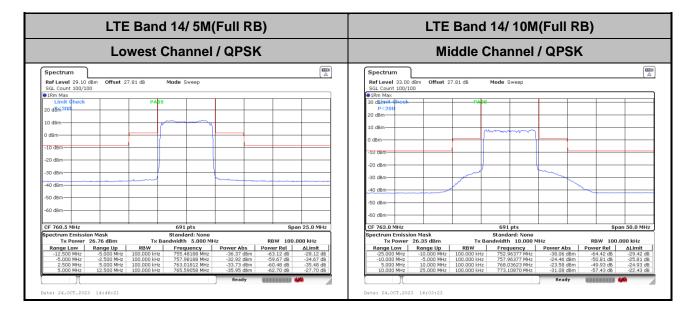
Conducted Spurious Emission

LTE Band 14 / 5M	Hz	LTE Band 14 / 10MHz					
Lowest Channel / Q	PSK		Mi	ddle Cha	nnel / QPSI	ĸ	
Spectrum Ref Level 29.10 dBm Offset 27.81 dB Mode Auto Sweep SGL Count 100/100		Spectrum Ref Level 29.10 dBm SGL Count 100/100	Offset 27.81	dB Mode	Auto Sweep		
1 AvgPwr Limit dheck PABS 20 dbine 20 dbine 10 dBm		AvgPwr Limit check 20 dbine SPURIOUS	LINE_ABS	PASS PASS			
0 dBm		0 dBm -10 dBm 					
-20 dbm		-20 dBm					`
-50 dBm		-50 dBm					
Start 30.0 MHz 18004 pts	Stop 8.0 GHz	Start 30.0 MHz		1800	04 pts		Stop 8.0 GHz
Spurious Emissions Range Up RBW Frequency 30.000 MHz 758.000 MHz 100.000 kHz 757.91809	Power Abs ΔLimit	Spurious Emissions Range Low 30.000 MHz	Range Up	RBW 100.000 kHz	Frequency 757.45427 MHz	Power Abs -29.61 dBm	∆Limit -16.61 dB
30.000 MHz 7.56.000 MHz 100.000 KHz 7.57.6100 MI 805.000 MHz 1.000 GHz 1.000 GHz 878.6130 MI 1.000 GHz 3.000 GHz 1.000 MHz 2.50387 3.000 GHz 8.000 GHz 3.000 MHz 6.91486	MHz -40.54 dBm -27.54 dB GHz -30.16 dBm -17.16 dB	805.000 MHz 805.000 MHz 1.000 GHz 3.000 GHz	1.000 GHz 3.000 GHz 8.000 GHz	100.000 kHz 100.000 kHz 1.000 MHz 3.000 MHz	860.79085 MHz 2.51487 GHz 6.91336 GHz	-40.32 dBm -30.14 dBm -21.42 dBm	-10.01 dB -27.32 dB -17.14 dB -8.42 dB
Date: 24.0CT.2023 14:42:58	Ready 🧰 🥼	Date: 24.0CT.2023	5:53:19		Rea	dy (1111111)	





Emission Mask





Appendix B. Test Results of Radiated Test

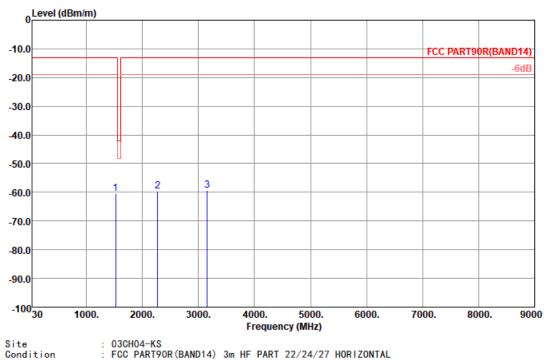
Field Strength of Spurious Radiated

Test Engineer :		Corl Ni	ICarl Ni		Temperature : Relative Humidity :			22~23°C		
		Carrin						41~42%		
	LTE Band 14 / 10MHz / QPSK / full RB									
Bandwidth	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	:	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	
	1522	-60.46	-13	-47.46	6	-63.09	1.09	5.87	Н	
	2276	-59.48	-13	-46.48	8	-61.88	1.37	5.92	Н	
10MHz	3156	-59.34	-13	-46.34	4	-63.23	1.64	7.68	Н	
	1522	-60.05	-13	-47.0	5	-62.68	1.09	5.87	V	
	2276	-60.27	-13	-47.27	7	-62.67	1.37	5.92	V	
	3156	-59.51	-13	-46.5	1	-63.40	1.64	7.68	V	
Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								/ limit line.		
		Test Result						PASS		



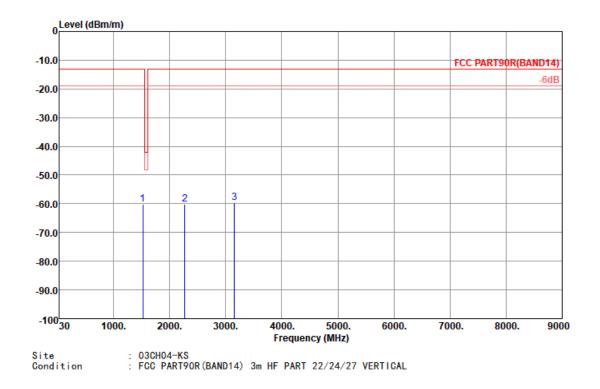
Worst test plots





	Freq	Level		Limit Line		Pol/Phase
	MHz	dBm/m	dB	dBm/m	dBm	
1 2						HOR I ZONTAL HOR I ZONTAL
3	3156.00	-59.34	-46.34	-13.00	-73.13	HORIZONTAL





	Freq	Level		Limit Line		Pol/Phase
	MHz	dBm/m	dB	dBm/m	dBm	
1 2 3	2276.00	-60.27	-47.27	-13.00	-73.22	VERTICAL VERTICAL VERTICAL