

RF Exposure Report

Report No.: SA200513C20

FCC ID: H8NSFE3056

Test Model: SS2FII Femtocell Multi-band SOHO

Received Date: May 13, 2020

Test Date: Jun. 02 ~ Jul. 15, 2020 & Aug. 12, 2020

Issued Date: Aug. 13, 2020

Applicant: ASKEY COMPUTER CORP.

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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA200513C20	Original release	Aug. 13, 2020

1 Certificate of Conformity

Product: Femtocell

Brand: Nokia

Test Model: SS2FII Femtocell Multi-band SOHO

Sample Status: Engineering sample

Applicant: ASKEY COMPUTER CORP.

Test Date: Jun. 02 ~ Jul. 15, 2020 & Aug. 12, 2020

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

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Approved by : Bruce Chen , **Date:** Aug. 13, 2020
Bruce Chen / Senior Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (P_{out} * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Mode	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Single Mode				
WCDMA Band 2	24.7	20	0.059	1
LTE Band 2	25.6	20	0.072	1
LTE Band 4	27.7	20	0.117	1
LTE Band 4 NB-IoT Guard band	28.0	20	0.126	1
CA Mode				
LTE Band 2 (Channel Bandwidth: 5MHz) + LTE Band 4 (Channel Bandwidth: 5MHz)				
LTE Band 2	25.1	20	0.064	1
LTE Band 4	25.2	20	0.066	1
LTE Band 2 (Channel Bandwidth: 10MHz) + LTE Band 4 (Channel Bandwidth: 10MHz)				
LTE Band 2	25.5	20	0.071	1
LTE Band 4	25.1	20	0.064	1
LTE Band 2 (Channel Bandwidth: 20MHz) + LTE Band 4 (Channel Bandwidth: 20MHz)				
LTE Band 2	25.3	20	0.067	1
LTE Band 4	25.6	20	0.072	1

*The NB-IoT and other bands cannot transmit simultaneously.

CONCLUSION:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Single Mode:

$$\text{WCDMA Band 2} + \text{LTE Band 4 (Channel Bandwidth: 20MHz)} = 0.059 / 1 + 0.117 / 1 = 0.176$$

$$\text{LTE Band 2 (Channel Bandwidth: 20MHz)} + \text{LTE Band 4 (Channel Bandwidth: 20MHz)} \\ = 0.072 / 1 + 0.117 / 1 = 0.189$$

CA Mode:

$$\text{LTE Band 2 (Channel Bandwidth: 5MHz)} + \text{LTE Band 4 (Channel Bandwidth: 5MHz)} \\ = 0.064 / 1 + 0.066 / 1 = 0.130$$

$$\text{LTE Band 2 (Channel Bandwidth: 10MHz)} + \text{LTE Band 4 (Channel Bandwidth: 10MHz)} \\ = 0.071 / 1 + 0.064 / 1 = 0.135$$

$$\text{LTE Band 2 (Channel Bandwidth: 20MHz)} + \text{LTE Band 4 (Channel Bandwidth: 20MHz)} \\ = 0.067 / 1 + 0.072 / 1 = 0.139$$

Therefore, the maximum calculation of this situation is 0.189, which is less than the "1" limit.

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