



MPE TEST REPORT

Applicant Nokia Shanghai Bell Co., Ltd.
FCC ID 2ADZRBEACONG6
Product Wifi router
Brand Nokia
Model Nokia WiFi Beacon G6
Report No. R2203A0277-M1V1
Issue Date June 1, 2022

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	May 25, 2022
Rev.1	Update information in Page 6.	June 1, 2022

Note: This revised report (Report No. R2203A0277-M1V1) supersedes and replaces the previously issued report (Report No. R2203A0277-M1). Please discard or destroy the previously issued report and dispose of it accordingly.

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment under Test

Client Information

Applicant	Nokia Shanghai Bell Co., Ltd.
Applicant address	No.388, Ningqiao Rd, Pilot Free Trade Zone, Shanghai, 201206 P.R. China
Manufacturer	Nokia of America Corporation.
Manufacturer address	2301 Sugar Bush Road, Raleigh, North Carolina, 27612, United States of America
Factory	CIG Shanghai Co., Ltd. Shanghai Branch.
Factory address	F/2, 3 Building 1, No. 505 Jiangyue Road, MINHANG DISTRICT Shanghai, CHINA

General Technologies

Model	Nokia WiFi Beacon G6
Lab internal SN	R2109A0800/S01
Hardware Version	3FE49949
Software Version	3FE49996
Date of Testing:	September 25, 2021 ~ November 30, 2021
<p>Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.</p> <p>2. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.</p>	

Nokia WiFi Beacon G6 (Report No.: R2203A0277-M1V1) is a variant model of XS-2426G-B (Report No.: R2109A0800-M1V1). Test values duplicated from Original for variant. There is no test for variant in this report. The detailed product change description please refers to the Difference Declaration Letter.

Information of Configuration:

No.	Name	Model/Code No.	Edition	Serial No. or Quantity
1	EMA-Beacon G6	3FE49949XXXX	PEM2	PEM 1

ONT Mnemonic	Kit Code	EMA Code	Part Description
Beacon G6	3FE49882XXXX	3FE49949XXXX	Beacon G6,US Plug,2.5G WAN, 2x1GE+1x2.5GE LAN,4x4 + 4x4 11ax

Auxiliary equipment details

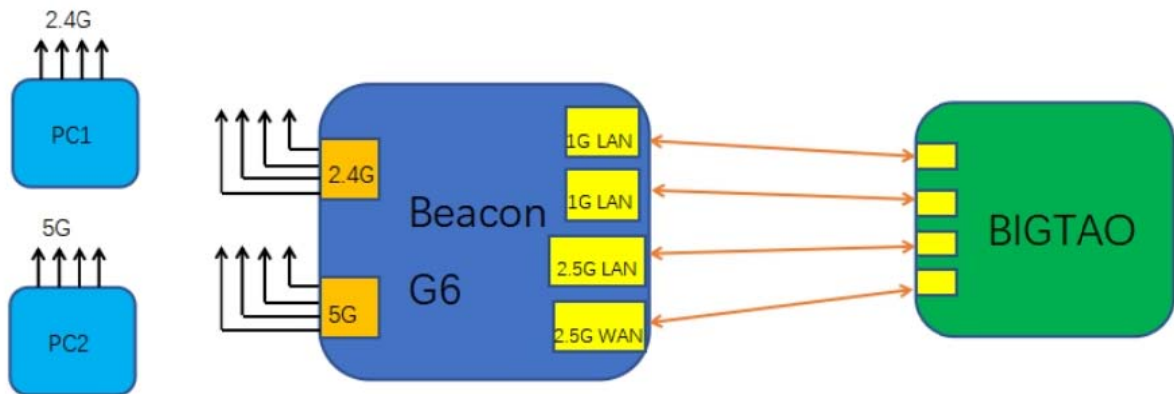
No.	Name	Brand name	Model	ASB code	Valid Until
1	BIGTAO	Xinertel	N.A	-	No Cal. Required
2	PC	HP	N.A	-	No Cal. Required
3	PC	Thinkpad	N.A	-	No Cal. Required

Information of Ports

No.	Port name	Number	Shielded or unshielded	Cable type (optic, twisted pair, etc.)	Max. Cable length
1	AC port	1	Unshielded	/	/
2	GE	2	Unshielded	/	/
3	2.5GE	2	Unshielded	/	/

Description: The Beacon G6 is a HGU which has 2 GE LAN ports, 1 2.5GE LAN port, 1 2.5GE WAN port. It supports 2.4G&5G wi-fi.

The basic functional test in normal room conditions as below. Beacon G6 runs 4 traffics on 2 2.5G ports and 2 1GE ports with BIGTAO, the traffics are about 90% of line speed. PC1 and PC2 run traffic over 2.4G WIFI and 5G WIFI, the traffics are higher than 200Mbps.





3 Maximum conducted output power (measured) and antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by

Numeric gain (G)= $10^{(\text{antenna gain}/10)}$

Band	Maximum conducted output power		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
Wi-Fi 2.4G	29.92	981.748	3.3	2.138
Wi-Fi 5G	29.97	993.116	3.4	2.188

4 Test Result

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following

TABLE 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)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500 .....	.....	.....	f/300	6
1500-100,000 .....	.....	.....	5	6
(B) 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

Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.



The maximum permissible exposure for 1500~100,000MHz is 1.0.So

Band	The maximum permissible exposure (mW/cm ²)
Wi-Fi 2.4GHz	1.000
Wi-Fi 5GHz	1.000

**RF Exposure Calculations:**

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

$$S = PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	Antenna Gain (dBi)	Maximum conducted output power	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm ²)	Limit Value (mW/cm ²)	The MPE ratio
Wi-Fi 2.4GHz	3.30	29.92	33.220	2098.940	0.418	1.000	0.418
Wi-Fi 5GHz	3.40	29.97	33.370	2172.701	0.432	1.000	0.432
Note: R = 20cm $\pi = 3.1416$ The MPE ratio = Mac Test Result ÷ Limit Value							

So the simultaneous transmitting antenna pairs as below:

$$\Sigma \text{of MPE ratios} = \text{Wi-Fi 2.4GHz} + \text{Wi-Fi 5GHz} = 0.418 + 0.432 = 0.850 < 1$$

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



ANNEX B: Product Change Description

The Product Change Description are submitted separately.