MPE TEST REPORT

Applicant	Nokia ShangHai Bell Co., Ltd.
FCC ID	2ADZRG1425GB
Product	Nokia ONT
Brand	NOKIA
Model	G-1425G-B
Report No.	R2111A0997-M1V1
Issue Date	June 6, 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.

Fangying Wei　　Guangchang Fan

Prepared by: Fangying Wei　　Approved by: Guangchang Fan

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	April 27, 2022
Rev.1	Update information.	June 6, 2022
Note: This revised report (Report No. R2111A0997-M1V1) supersedes and replaces the previously issued report (Report No. R2111A0997-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
Post code:	201201
Country:	P. R. China
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Website:	http://www.ta-shanghai.com
E-mail:	fanguangchang@ta-shanghai.com

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, China
Manufacturer 1	TAICANG T&W ELECTRONICS CO., LTD
Manufacturer address 1	89# Jiang Nan RD, Lu Du TownTaicang, Jiangsu, China
Manufacturer 2	Shenzhen Twowing Technologies CO., LTD
Manufacturer address 2	Nangang industrial building, No.3 Industrial Zone, Tangtou village, Shiyan Town, Bao'an District,Shenzhen City,Guangdong Province,China

General Technologies

Model	G-1425G-B
SN	ALCLFC238479
Hardware Version	PEM1
Software Version	3FE49568HJJI31
Date of Testing:	January 3, 2022 ~ January 14, 2022
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 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.	

Configure		**Configure 1**	**Configure 2**
Item		G-1425G-B	G-1425G-B 2nd
DDR	MPN	NT5CC256M16ER-EK	K4B4G1646E-BYMA
	Vendor	Nanya	Samsung
Flash	MPN	MT29F2G01ABAGDWB-IT:G	TC58CVG1S3HRAIJ
	Vendor	Micron	Kioxia
PCB	Vendor	JIANGMEN BENLIDA PRINTED CIRCUIT CO.,LTD	Mei Zhou Dingtai Circait Board Co,.Ltd
schematic		The same	
The difference between the two configures is only the DDR, Flash and PCB. There are more than one Configure, each one should be applied throughout the compliance test respectively, however, only the worst case (Configure 1) will be recorded in this report.			

The detailed product change description please refers to the Difference Declaration Letter.

Information of Configuration:

ONT Mnemonic	Kit Code	EMA Code	Part Description
G-1425G-B	3FE49881XXXX (X can be A-Z or blank)	3FE49937XXXX (X can be A-Z or blank)	GPON ONT,1xPOTS,4xGE UNI, WIFI 5, 2x2 11n + 2x2 11ac

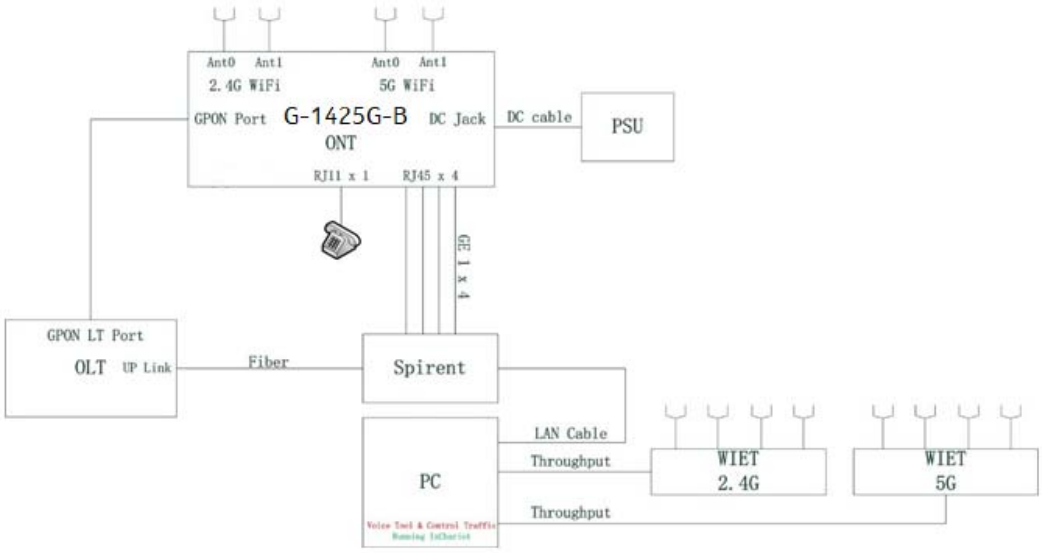
No.	Name	Model/Code No.	Edition	Serial No. or Quantity
1.1	EMA-G-1425G-B	3FE49937XXXX (X can be A-Z or blank)	PEM2	-
2.1	Power adapter	MSA-C1500CS12.0-18J-US	/	PEM
2.2	Power adapter	UES24WU-120200SPA	/	PEM
2.3	Power adapter	UES18LU-120150SPA	/	PEM
2.4	Power adapter	RD1201500-C55-153MG	/	PEM
2.5	Power adapter	RD1201500-C55-153YG	/	PEM
2.6	Power adapter	UES18LB-120150SPA	/	PEM
2.7	Power adapter	SOY-1200300-3014-II	/	PEM
2.8	Power adapter	NBS40C120300M2	/	PEM
2.9	Power adapter	RD1201500-C55-198MG	/	PEM
2.10	Power adapter	RD1201500-C55-198OG	/	PEM
2.11	Power adapter	RD1201500-C55-198YG	/	PEM
2.12	Power adapter	SOY-1200150AR	/	PEM

Auxiliary equipment details

No.	Name	Brand name	Model	NSB code	Valid Until
1	Test Center	Spirent	DE48E0	DC2228	2012.12.20
2	PC	Lenovo	T61	7661MC4L3KW965	No Cal. Required
3	OLT	Nokia	N.A	--	No Cal. Required
4	Phone	N.A	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	LAN1	/	Unshielded	CAT5E	/
2	LAN2	/	Unshielded	CAT5E	/
3	LAN3	/	Unshielded	CAT5E	/
4	LAN4	/	Unshielded	CAT5E	/
5	TEL1	/	Unshielded	twisted pair	/



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^(antenna gain/10)

Band	Maximum conducted output power (measured)		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
Wi-Fi 2.4G	23.52	224.905	4.61	2.891
Wi-Fi 5G	26.78	476.431	5.00	3.162

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 MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	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/f2)	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/f2)	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 300~1500 MHz is f/1500, 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/cm^2)

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 (measured) (dBm)	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm^2)	Limit Value (mW/cm^2)	The MPE ratio
Wi-Fi 2.4GHz	4.61	23.52	28.13	650.130	0.129	1.000	**0.129**
Wi-Fi 5GHz	5.00	26.78	31.78	1506.607	0.300	1.000	**0.300**
Note: **R** = 20cm **π**= 3.1416 The MPE ratio = Mac Test Result÷Limit Value							

So the simultaneous transmitting antenna pairs as below:

∑of MPE ratios= Wi-Fi2.4G Antenna + Wi-Fi5G Antenna =0.129 + 0.300 = 0.429 <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.