



MPE TEST REPORT

Applicant	Nokia ShangHai Bell Co., Ltd.
FCC ID	2ADZRG2426GB
Product	Nokia ONT
Brand	NOKIA
Model	G-2426G-B
Report No.	R2103A0256-MV1
Issue Date	July 7, 2021

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.

Handwritten signature of Yu Wang in black ink.

Prepared by: Yu Wang

Handwritten signature of Guangchang Fan in black ink.

Approved by: Guangchang Fan

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	June 16, 2021
Rev.1	Update data.	July 7, 2021
Note: This revised report (Report No. R2103A0256-M1V1) supersedes and replaces the previously issued report (Report No. R2103A0256-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
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E-mail: fanguangchang@ta-shanghai.com

1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
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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 Road, Pudong Jinqiao, Shanghai, 201206 CHINA
Manufacturer	Nokia ShangHai Bell Co., Ltd.
Manufacturer address	No.388 Ningqiao Road, Pudong Jinqiao, Shanghai, 201206 CHINA

General Technologies

Model	G-2426G-B
SN	ALCLB3FC2AEA
Hardware Version	PEM2
Software Version	Null
Date of Testing:	April 15, 2021 ~ April 22, 2021
Date of Sample Received:	April 14, 2021

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.

**Information of Configuration:**

No.	Name	Model/Code No.	Edition	Serial No. or Quantity
1	EMA-G-2426G-B NAR	3FE49509AAXX	PEM2	1pc
2	EMA-G-2426G-B	3FE49509ABXX	PEM2	1pc
3	Power adapter	FUHUA: UES36WU-120300SPA/UE201222GWZF2RI	A/0	1pc
4	Power adapter	FUHUA: UES36WU-120300SPA/UE191205GWZF2RI	A/0	1pc
5	Power adapter	HONOR: ADS-40FKJ-12N 12036EPCU/9040108111201201R	A/0	1pc
6	Power adapter	HONOR: ADS-40FKJ-12N 12036EPCU/9040108111201202R	A/0	1pc
7	Power adapter	CyberPower: DTC36U12V3-G	--	1pc
8	Power adapter	PSI: PS36L-P7	--	1pc

Note: X can be replaced by alphanumeric characters A-Z/0-9 or blank.

Mnemonic	Kit Code	EMA Code	Part Description	Power Adapter	
G-242 6G-B	3FE4944 1AAXX	3FE4950 9AAXX	G-2426G-B, GPON ONT, NAR, US Plug, 1xUSB, 2xPOTS, 4xGE, 4x4 2.4G Wi-Fi 6, 4x4 5G Wi-Fi 6.	UES36WU-12030 0SPA/UE201222G WZF2RI	ADS-40FKJ-12N 12036EPCU/9040 108111201201R
				DTC36U12V3-G	PS36L-P7
G-242 6G-B	3FE4944 1ABXX	3FE4950 9ABXX	G-2426G-B, GPON ONT, US Plug, 1xUSB, 2xPOTS, 4xGE, 4x4 2.4G Wi-Fi 6, 4x4 5G Wi-Fi 6.	UES36WU-12030 0SPA/UE191205G WZF2RI	ADS-40FKJ-12N 12036EPCU/9040 108111201202R

Note: X can be replaced by alphanumeric characters A-Z/0-9 or blank.

Auxiliary equipment details

No.	Name	Brand name	Model	NSB code	Valid Until
1	BIGTAO	Xinertel	N.A	-	No Cal. Required
2	Mini-OLT	Nokia	N.A	-	No Cal. Required
3	PC	Thinkpad	N.A	-	No Cal. Required

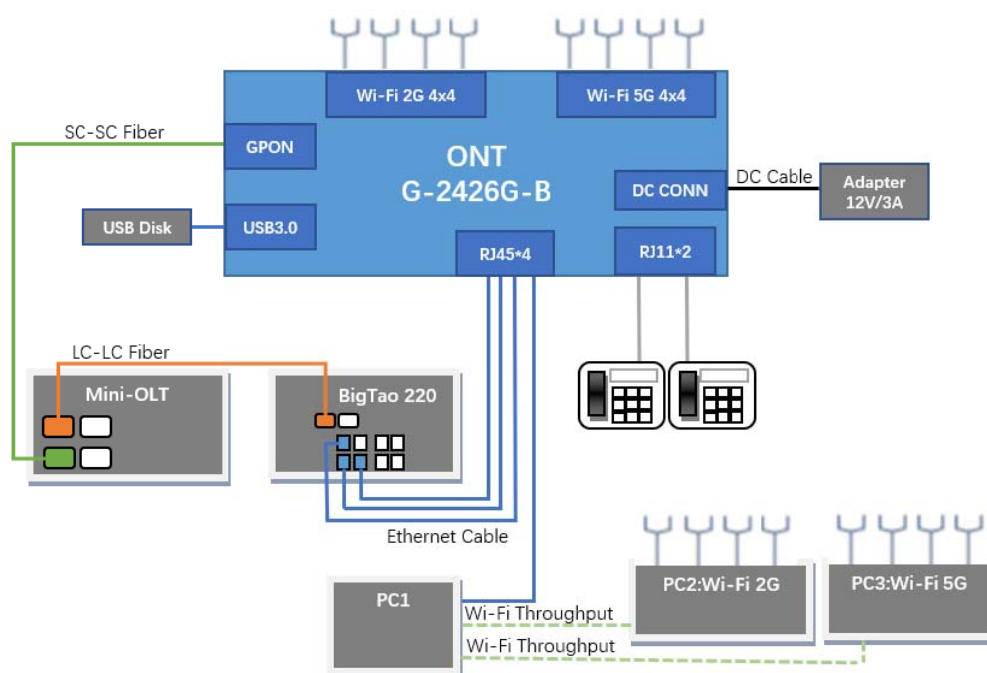
Information of Ports

No.	Port name	Number	Shielded or unshielded	Cable type (optic, twisted pair, etc.)	Max. Cable length
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1	POWER	1	Unshielded	Power cord	1.2m
2	POTS	1	Unshielded	RJ11 twisted pair	1.5m
3	LAN	4	Unshielded	RJ45 twisted pair	100m
4	GPON	1	Unshielded	Optic fiber	10Km

Description: The G-2426G-B is a GPON ONT which has 1x GPON port, 4x GE ports, 2x POTS, 1x USB, supports 4x4 2.4G Wi-Fi 6 and 4x4 5G Wi-Fi 6.

The G-2426G-B basic functional test in normal room conditions consists of GPON-LAN traffic test, POTS connection test, Wi-Fi connection test, and USB read/write test. GPON linked with Mini-OLT, and traffic downstream should up to 1Gpbs. GE ports linked with BigTao in 1000Mbps mode, and the traffic upstream each line should up to 300Mbps. Traffic frame loss ratio less than 10^{-7} . Wi-Fi connection, POTS connection test should not be broken during and after test.



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 (dBm)		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
Wi-Fi 2.4G	29.29	849.180	2.94	1.968
Wi-Fi 5G	29.95	988.553	2.98	1.986

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	PG (mW)	Test Result (mW/cm ²)	Limit Value (mW/cm ²)	The EMF ratio	Conclusion
Wi-Fi 2.4GHz	1671.091	0.332	1.000	0.332	Pass
Wi-Fi 5GHz	1963.360	0.391	1.000	0.391	Pass
Note: R = 20cm $\pi = 3.1416$ The EMF ratio = Mac Test Result ÷ Limit Value					

So the simultaneous transmitting antenna pairs as below:

$\sum$ of EMF ratios = Wi-Fi 2.4G + Wi-Fi 5G = 0.332 + 0.391 = 0.723 < 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.