MPE TEST REPORT

Applicant	Nokia Shanghai Bell Co., Ltd.
FCC ID	2ADZRXS2426GA
Product	Nokia ONT
Model	XS-2426G-A
Report No.	R2011B0188-M1
Issue Date	January 21, 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.

Yu Wang

Prepared by: Yu Wang

Guangchang Fan

Approved by: Guangchang Fan

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

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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
Contact:	Fan Guangchang
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
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	T&W
Manufacturer address	89# Jiang Nan Road, Loudong Street,Taicang , Shanghai, China

General Technologies

Model	XS-2426G-A
SN	1#
Hardware Version	PEM2
Software Version	FJH.L48p139
Date of Testing:	November 6, 2020~December 9, 2020
Date of Sample Received	November 5, 2020
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-XS-2426G-A	3FE49348AA	PEM2	PEM
2	Power adapter	FUHUA: UES36WU-120300SPA	A/0	--
3	Power adapter	SOY: SOY-1200300US-050	A/0	--

ONT Mnemonic	Kit Code	EMA Code	Part Description	Power Adaptor and UPS
XS-2426G-A	3FE49351AA	3FE49348AA	XS-2426G-A, XGS-PON ONT, 2 POTS, 4xGE, 2x2 11n + 2x2 11ax.1 USB 3.0, US	FUHUA:UES36WU-12030 SPA SOY:SOY-1200300US-050

Auxiliary equipment details:

No.	Name	Brand name	Model	NSB code	Valid Until
1	Test Center	Spirent	DE48E0	DC2228	No Cal. Required
2	PC	Lenovo	T61	7661MC4L3KW965	No Cal. Required
3	PC	Lenovo	T61	7661MC4L3KW959	No Cal. Required
4	OLT	NOKIA	7360	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	4	Unshielded	--	--
3	USB	1	shielded	--	--
4	POTS	2	Unshielded	--	--

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		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
Wi-Fi 2.4G	25.140	326.588	3.000	1.995
Wi-Fi 5G	29.340	859.014	3.000	1.995

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 1500~100,000MHz is 1.0.So

Band	The maximum permissible exposure
Wi-Fi 2.4G	1.0mW/cm^2
Wi-Fi 5G	1.0mW/cm^2

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	PG (mW)	Test Result (mW/cm^2)	Limit Value (mW/cm^2)	The MPE ratio	Conclusion
Wi-Fi 2.4G	651.628	0.130	1.000	0.130	Pass
Wi-Fi 5G	1713.957	0.341	1.000	0.341	Pass
Note: **R** = 20cm ∏= 3.1416 The MPE ratio = Mac Test Result÷Limit Value					

So the simultaneous transmitting antenna pairs as below:

∑of MPE ratios=WiFi 2.4G + WiFi 5G =0.130+0.341=0.471 <1

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

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

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.