MPE TEST REPORT

Applicant	Nokia ShangHai Bell Co., Ltd.
FCC ID	2ADZRG2425GB1
Product	7368 ISAM ONT
Brand	NOKIA
Model	G-2425G-B
Report No.	R2002B0017-M1V5
Issue Date	November 9, 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.

Fangying Wei Guangchang Fan

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Version	Revision description	Issue Date
Rev.0	/	June 11, 2020
Rev.1	Update Information of Configuration	September 15, 2020
Rev.2	Update Information of Configuration	September 29, 2020
Rev.3	Update information in Page 6 and Page 7.	August 18, 2021
Rev.4	Update information in Page 6 and Page 7.	August 19, 2021
Rev.5	Add FCC ID	November 9, 2021
Note This revised report (Report No.: R2002B0017-M1V5) supersedes and replaces the previously issued report (Report No.: R2002B0017-M1V4). 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 electromagnetic emissions 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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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	TAICANG T&W ELECTRONICS CO., LTD
Manufacturer address	89# Jiang Nan RD, Lu Du TownTaicang, Jiangsu, China

General Technologies

Model	G-2425G-B
SN	1#
Hardware Version	PEM2
Software Version	/
Date of Testing:	April 17, 2020 ~ April 26, 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-G-2425G-B	3FE48296XXXX (X can be A-Z or blank)	PEM2	PEM
2	Power adapter	SUN-1200300	A/0	-
3	Power adapter	MSS-V3000WR120-042A0-US	A/0	-
4	Power adapter	SOY-1200300EU	A/0	-
5	Power adapter	UES36WV-120300SPA	A/0	-
6	Power adapter	SOY-1200300-3014-II	A/0	-
7	Power adapter	NBS40C120300M2	A/0	-

ONT Mnemonic	Kit Code	EMA Code	Part Description	Power Adapter and UPS
G-2425G-B	3FE48293XXXX (X can be A-Z or blank)	3FE48296XXXX (X can be A-Z or blank)	Wi-Fi GPON RGW,2xPOTS,4x GE, 4x4 11n + 4x4 11ac	SOY:SUN-1200300 MOSO:MSS-V3000WR120-042A 0-US SOY: SOY-1200300EU FUHUA:UES36WV-120300SPA SOY: SOY-1200300-3014-II Masspower: NBS40C120300M2

Auxiliary equipment details:

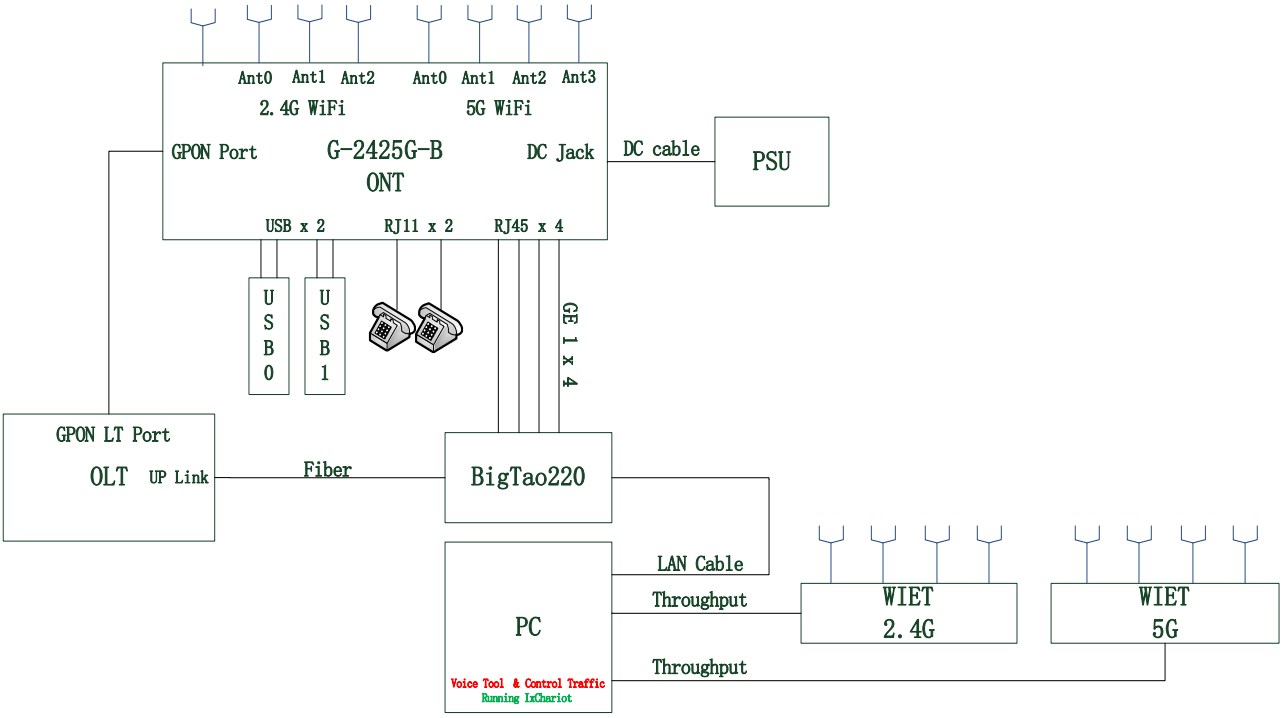
No.	Name	Brand name	Model	ASB code	Valid Until
1	BIGTAO	Xinertel	N.A	--	No Cal. Required
2	MiniOLT	Nokia	N.A	--	No Cal. Required
3	PC	DELL	N.A	--	No Cal. Required

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	POTS	2	Unshielded	--	--
4	USB	2	Shielded	--	--

Description: G-2425G-B is a GPON ONT which has 2 POTs, 4 GE ports, 2 USB ports, 2.4G Wi-Fi and 5G Wi-Fi.

The basic functional test in normal room conditions consists of the traffic test and POTs connection test. G-2425G-B runs 4 traffics on each line with BIGTAO, the each upstream of GE is 200Mbps, and downstream is 800Mbps. The POTs keep connecting though OFLT program.



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 (dBm)		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
WI-FI 2.4G	27.50	562.341	3.0	1.995
WI-FI 5G	29.93	984.011	3.0	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:

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

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/cm2)	Limit Value (mW/cm^2)	The MPE ratio	Conclusion
Wi-Fi 2.4G	1122.018	0.223	1.000	0.223	PASS
Wi-Fi 5G	1963.360	0.391	1.000	0.391	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 =0.223 +0.391=0.614 <1

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