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RF Exposure Evaluation Report

Report No. :	CQASZ20200500012EX-02
Applicant:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address of Applicant:	Room 501, Building 1, No. 7, Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province ,China.
Equipment Under Test (EUT):	
Product:	Star Projector Light
Model No.:	A5426
Brand Name:	N/A
FCC ID:	2A5WY-A5426
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	June.06.2022 to June.14.2022
Date of Issue:	June 16.2022
Test Result :	**PASS***

Tested By： Tom Chen.

(Tom Chen)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD. CQA 华夏准测 APPROVED

* In the configuration tested, the EUT complied with the standards specified above.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200500012EX-02	Rev.01	Initial report	2022-06-16

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3 General Information

3.1 Client Information

Applicant:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address of Applicant:	Room 501, Building 1, No. 7, Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province ,China.
Manufacturer:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address of Manufacturer:	Room 501, Building 1, No. 7, Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province ,China.
Factory:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address of Factory:	Room 501, Building 1, No. 7, Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province ,China.

3.2 General Description of EUT

Characteristics	Description
Product	Star Projector Light
Model Number	A5426
Modulation:	GFSK, π/4DQPSK,8DPSK
Operating Frequency Range(s):	2402-2480MHz
Number of Channels:	79 channels
Antenna Type	Internal Antenna
Antenna Gain	0 dBi
Power supply	☒DC supply: DC 5V From USB Charging DC 3.7V From Battery

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

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
3.0–30	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

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 Calculated Result and Limit

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power（dBm）	Maximum tune-up Power (mW)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
						(dBi)	(Linear)			
GFSK	2402	-3.523	1.398	-3.0±1	0.631	0	1.00	**0.00012**	1	Complies
	2441	-0.337	1.188	0±1	1.259	0	1.00	**0.00025**	1	Complies
	2480	-1.409	0.924	-1.0±1	1.000	0	1.00	**0.00020**	1	Complies
8-DPSK	2402	-3.438	1.108	-3.0±1	0.631	0	1.00	**0.00012**	1	Complies
	2441	-0.154	0.946	0±1	1.259	0	1.00	**0.00025**	1	Complies
	2480	-1.204	0.716	-1.0±1	1.000	0	1.00	**0.00020**	1	Complies

The Maxinum power is less than the limit, complies with the exemption requirements, SAR is exempted.