






RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2501000026MD
Applicant: Maxphotonics Co., Ltd.
Address of Applicant: Maxphotonics Industrial Park, Third Furong Road Furong Industrial Area, Shajing Town, BaoAn District Shenzhen, Guangdong, China.
Manufacturer: Maxphotonics Co., Ltd.
Address of Manufacturer: Maxphotonics Industrial Park, Third Furong Road Furong Industrial Area, Shajing Town, BaoAn District Shenzhen, Guangdong, China.
Factory:
 1. Maxphotonics Co., Ltd.
 2. Suzhou Maxphotonics Co., Ltd
 3. Shenzhen Maxphotonics Co., Ltd
Address of Factory:
 1. Maxphotonics Industrial Park, Third Furong Road Furong Industrial Area, Shajing Town, BaoAn District Shenzhen, Guangdong, China.
 2. No. 88, Changtai Road, Huangdai Town, Xiangcheng District, Suzhou City, P.R. China
 3. Building A, No. 84 Xinyu Road, Xinqiao Street, Baoan District, Shenzhen City, P.R. China
Product Name: MFSC-12000M-ELW (6.1) CW Fiber Laser Series
Model No.: MFSC-####*-**W*.*, MFSC-12000M-ELW 6.1
 ('####'=2000, 3000, 4000, 6000, 12000; first'*'= H, M, X, W, W_Pro, Plus; the second'*'= (W), (C), (HMB) or Blank space; the third'*'= A, B, C, D, E, F, G, H; the fourth'*'= A, B, C, D, E, F, G, H, I, J, K, L, M, X; the fifth'*'=1-99; the sixth=0-99; the seventh'*'=C or Blank space) ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Trade Mark:
 ,  ,  , 

Standard(s) : KDB 447498 D01 V06
 47 CFR Part 1.1310
Date of Receipt: 2025-01-03
Date of Evaluation: 2025-02-06
Date of Issue: 2025-03-03

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.

Ricky Liu

Ricky Liu
Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing & Calibration Laboratory

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Revision Record			
Version	Report No.	Date	Remark
01	GZCR250100002603	2025-03-03	Original

Authorized for issue by:			
		Luke Lin	
		Luke Lin/Project Engineer	
		Vico Cui	
		Vico Cui/Reviewer	



2 Evaluation Summary

Item	Standard	Method	Requirement	Result
RF Exposure	KDB 447498 D01 V06	KDB 447498 D01 V06	47 CFR Part 1.1310	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ Declaration of EUT Family Grouping:

Model No.: MFSC-####*-**W*.**, MFSC-12000M-ELW 6.1

('####'=2000, 3000, 4000, 6000, 12000; first '**'= H, M, X, W, W_Pro, Plus; the second '**'= (W), (C), (HMB) or Blank space; the third '**'= A, B, C, D, E, F, G, H; the fourth '**'= A, B, C, D, E, F, G, H, I, J, K, L, M, X; the fifth '**'=1-99; the sixth=0-99; the seventh '**'=C or Blank space)

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the model name, details are shown in the table below.

Therefore, only one model MFSC-12000M-ELW 6.1 was tested in this report.





SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

EMC-TRF-03 Rev 1.1

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Model:		MFSC-####*											
		MFSC-####*-*W*.*											
1	2	3	4	5	6	7	8	9	10	11	12		
M	F	SC	-	####	*	*	-	*	*	W	*	*	
Company	Fiber Laser	Code	/	Power	Characteristic	Application direction	/	Output type	Cable Length	Cooling	Optical path design and software operation, etc.	Changes in appearance, color, handle, etc.	Version

Code	Kind
F	Fiber laser

Code	Application
SC	Single-module CW

Code	Power (W)	Current(A)
2000	2000	12
3000	3000	16
4000	4000	21
6000	6000	31
12000	12000	59

Code	Characteristic
H	Characteristic
M	
X	
W	
W_Pro	
Plus	

Code	Application direction
(W)	Application direction
(C)	
(HMB)	
	Blank space

Code	Output type
A	Collimator Isolator
B	QBH
C	QCS
D	SMA-905
E	LOE
F	QD
G	Bare fiber
H	D80

Code	Cable Length
A	1.5M
B	1.9M
C	2.0M
D	2.5M
E	3.0M
F	4.0M
G	5.0M
H	10M
I	12M
J	15M
K	20M
L	25M
M	30M
X	Other

Code	Cooling
W	Water-cooling

Code	Kind
1	Optical path design and software operation, etc.
2	
3	
4	
5	
-	
97	
98	
99	

Code	Kind
0	Changes in appearance, color, handle, etc.
1	
2	
3	
4	
-	
97	
98	
99	

Code	Kind
	Blank space
C	Customized



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 400V 50/60Hz
 Cable(s): about 4m 4-wires AC mains cable
 about 4m signal cable
 about 10m network cable (debug use)
 Operation Frequency: 2402MHz to 2480MHz
 Modulation Type: GFSK
 Number of Channels: 40
 Channel Spacing: 2MHz
 Antenna Type: Dedicated Antenna
 Antenna Gain: 2.03dBi according to antenna specification
 Antenna Number: 1

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
 No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,
 Guangdong, China 510663

Tel: +86 20 82155555

No tests were sub-contracted.



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4.3 Facility

The facility is recognized, certified, or accredited by the following organizations:

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Technical Requirements Specification

5.1 General Description of Applied Standards

KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.2 RF Exposure Evaluation

5.2.1 Limit & Test Method

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: $P_d = (P_{out} * G) / (4 * P_i * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

P_i = 3.1416

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

P_d is 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.



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5.2.2 Conclusion

Normal use condition for Distance
between antenna and body: 20cm declared by applicant

For Bluetooth BLE

Antenna Gain:

2.03 dBi

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S)	Test Result
					(mW/cm ²)	
2402	1.595879147	-3.29	0.47	0.00015	1	Complies
2440	1.595879147	-4.58	0.35	0.00011	1	Complies
2480	1.595879147	-5.78	0.26	0.00008	1	Complies

So SAR report is not required.

Note: Refer to report No. GZCR250100002602 for EUT test Max Conducted Peak Output Power value.



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6 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2501000026MD

- End of the Report -



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