

# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240200056001

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## TEST REPORT

**Application No.:** SZCR2402000560AT  
**Applicant:** SHENZHEN MINEWSEMI CO., LTD  
**Address of Applicant:** 3rd Floor,I Building, Gangzhilong Science Park, NO.6, Qinglong Road, Longhua District, Shenzhen, China  
**Manufacturer:** SHENZHEN MINEWSEMI CO., LTD  
**Address of Manufacturer:** 3rd Floor,I Building, Gangzhilong Science Park, NO.6, Qinglong Road, Longhua District, Shenzhen, China  
**EUT Description:** Radio Module(60GHZ Millimeter wave radar)  
**Model No.:** MS72SF11  
**Trade Mark:** MINEWSEMI  
**FCC ID:** 2BDJ6-MS72SF11  
**Standards:** 47 CFR Part 2.1091  
FCC KDB 447498 D01 v06  
**Date of Receipt:** 2024-02-22  
**Date of Test:** 2024-03-14 to 2024-03-18  
**Date of Issue:** 2024-04-24

<b>Test Result:</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above

Keny Xu  
EMC Laboratory Manager





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# 1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-04-24		Original

<b>Authorized for issue by:</b>			
			
		_____ <b>Leo Lai/Project Engineer</b>	
			
		_____ <b>Eric Fu/Reviewer</b>	



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### 3 General Information

#### 3.1 General Description of E.U.T.

Product Type:	<input type="checkbox"/> Portable device
	<input checked="" type="checkbox"/> Mobile device
	<input type="checkbox"/> Fixed device

#### 3.2 Details of E.U.T.

Power supply:	DC 3.3V
Operation Frequency:	57GHz-64GHz
Modulation Type:	FMCW
Antenna Type:	Integrated Patch Antenna
Antenna Gain:	5dBi

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.

#### 3.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	

#### 3.4 Test Location

All tests were performed at:  
 SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch  
 No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.  
 Tel: +86 755 2601 2053 Fax: +86 755 2671 0594  
 No tests were sub-contracted.



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### 3.5 Test Facility

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

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI (Member No. 1937)**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1336**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

### 3.6 Deviation from Standards

None

### 3.7 Abnormalities from Standard Conditions

None



## 4 RF Exposure Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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  
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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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**4.1.2 Test Procedure**

Software provided by client enabled the EUT to transmit data.

**4.1.3 EUT RF Exposure Evaluation**

Output Power into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device complies with MPE limit.

Test mode	Frequency (GHz)	Antenna	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	conclusion
mmWave	58.500	1	5.00	5.34	3.421	0.0006805	1.0000	Pass

---End of Report---



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