



Radio Frequency Exposure

Applicant : Micro-Star Int'l Co.,Ltd.

Address : No.69, Lide St., Zhonghe Dist. New Taipei City 235
Taiwan

Equipment : Wireless Mouse

Model No. : MS-8ZBG

Trade Name : msi

FCC ID : I4L-MS-8ZBG

I HEREBY CERTIFY THAT :

The sample was received on Jun. 16, 2025 and the testing was completed on Jun. 25, 2025 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory





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History of this test report

Report No.	Issued Date	Description
25060278-TRFCC02	Jul. 16, 2025	Original



1. Summary of Test Procedure and Test Results

1.1. Applicable Standards

FCC Rules and Regulations Part 2.1091

FCC Rule	Description of Test	Result
2.1091	Radio Frequency Exposure	PASS

*The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement, measurement uncertainty evaluation is not considered.



2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

Operation Frequency Range	2400-2483.5MHz
Center Frequency Range	2408-2474MHz
Modulation Type	GFSK
Modulation Technology	DTS
Data Rate	1Mbps
Antenna Type	PCB Antenna
Antenna Gain	2.08 dBi

Note: For more details, please refer to the User's manual of the EUT.



2.2. General Information of Test

Organization	Cerpass Technology Corp.		
☒ Test Site	Cerpass Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel: +886-3-3226-888 Fax: +886-3-3226-881		
	FCC	TW1439, TW1079	
	IC	4934E-1, 4934E-2	
Frequency Range Investigated	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 40,000MHz		
Test Distance	The test distance of radiated emission from antenna to EUT is 3 M.		

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2025/06/25	26.3°C / 48%	Leon Huang
Radiated Emissions	3M03-NK	2025/06/20	21.6°C / 57%	Leon Huang
Radiated Emissions	3M03-NK	2025/06/23	23.1°C / 58%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2025/06/20	21.5°C / 56%	Leon Huang



2.3. Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±3.2dB
Radiated Spurious Emission(9KHz~30MHz)	±3.5dB
Radiated Spurious Emission(30MHz~1GHz)	±5.1dB
Radiated Spurious Emission(1GHz~40GHz)	±5.2dB
Conducted Spurious Emission	±2.1dB
6dB Bandwidth	±5.4%
20dB Bandwidth	±4.4%
Occupied Bandwidth	±4.5%
Peak Output Power(Conducted Power Meter)	±1.1dB
Dwell Time / Deactivation Time	±7.6%
Power Spectral Density	±2.0dB
Duty Cycle	±3.5%



3. Test Equipment and Ancillaries Used for Tests

Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room (3M03-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Sunol	JB1	A020514-2	2024/07/09	2025/07/08
Active Loop Antenna	EMCO	6507	00040855	2025/04/28	2026/04/27
Horn Antenna	EMCO	3116	31974	2024/10/18	2025/10/17
Double Ridged Guide Horn Antenna	RF SPAN	DRH18-E	210309A18-ES	2024/08/28	2025/08/27
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	102151	2024/08/22	2025/08/21
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2024/07/16	2025/07/15
Preamplifier	EMC INSTRUMENTS	EMC0518A45SE	981069	2024/12/17	2025/12/16
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2024/10/15	2025/10/14
Preamplifier	EM Electronics corp.	EM330	60611	2025/03/28	2026/03/27
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2024/08/08	2025/08/07
Cable-8m(10M-26.5G)	HUBER SUHNER	SF126E	587396/126E	2024/10/14	2025/10/13
Cable-3m(10M-26.5G)	HUBER SUHNER	SF126E	587399/126E	2024/10/14	2025/10/13
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804398/2	2024/10/14	2025/10/13
Cable-1m(1G-26.5G)	HUBER SUHNER	SF126E	589848/126E	2024/10/14	2025/10/13
Cable-4m(30M-1G)	HUBER SUHNER	RG-214	02953M	2024/09/04	2025/09/03
Cable-1m(30M-1G)	HUBER SUHNER	RG-214	05094M	2024/09/04	2025/09/03
Cable-9m(30M-1G)	HUBER SUHNER	RG-214	00402M	2024/09/04	2025/09/03
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA
High Pass Filter	Warison	WFIL-H3000-18000F-03	WRJ5CFWC2J1	2024/07/03	2025/07/02
Highpass Filter	WOKEN	WFIL-H7000-18000F-01	WR377WC2B2	2024/10/15	2025/10/14

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100047	2025/03/03	2026/03/02
Attenuator	KEYSIGHT	8491B	MY39250703	2025/02/12	2026/02/11
Cable-0.5m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	28420/2	2024/10/24	2025/10/23
Power Meter	Anritsu	ML2495A	1224005	2025/02/12	2026/02/11
Power Sensor	Anritsu	MA2411B	1207295	2025/02/12	2026/02/11
Switch Box	Theda	1-4	TW5451159	NA	NA

Test Item	AC Power Line Conducted Emission				
Test Site	CON02-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2024/07/16	2025/07/15
Two-Line V-Network	ROHDE & SCHWARZ	ENV216	102185	2024/08/27	2025/08/26
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2024/08/08	2025/08/07
E3	AUDIX	v8.2014-8-6	RK-000536	NA	NA



4. Radio Frequency Exposure

4.1. Applicable Standards

§1.1307(b)(3)(i)(A)	The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.																																																	
§1.1307(b)(3)(i)(c)	ERP is below a threshold calculated based on the distance , R between the person and t antenna / radiating structure, where $R > \lambda / 2 \pi$. TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION <table><tr><th colspan="3">RF Source Frequency</th><th colspan="3">Minimum Distance</th><th>Threshold ERP</th></tr><tr><th>f_L MHz</th><th></th><th>f_H MHz</th><th>$\lambda_L / 2\pi$</th><th></th><th>$\lambda_H / 2\pi$</th><th>W</th></tr><tr><td>0.3</td><td>–</td><td>1.34</td><td>159 m</td><td>–</td><td>35.6 m</td><td>1,920 R²</td></tr><tr><td>1.34</td><td>–</td><td>30</td><td>35.6 m</td><td>–</td><td>1.6 m</td><td>3,450 R²/<i>f</i>²</td></tr><tr><td>30</td><td>–</td><td>300</td><td>1.6 m</td><td>–</td><td>159 mm</td><td>3.83 R²</td></tr><tr><td>300</td><td>–</td><td>1,500</td><td>159 mm</td><td>–</td><td>31.8 mm</td><td>0.0128 R²<i>f</i></td></tr><tr><td>1,500</td><td>–</td><td>100,000</td><td>31.8 mm</td><td>–</td><td>0.5 mm</td><td>19.2R²</td></tr></table> Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.	RF Source Frequency			Minimum Distance			Threshold ERP	f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W	0.3	–	1.34	159 m	–	35.6 m	1,920 R ²	1.34	–	30	35.6 m	–	1.6 m	3,450 R ² / <i>f</i> ²	30	–	300	1.6 m	–	159 mm	3.83 R ²	300	–	1,500	159 mm	–	31.8 mm	0.0128 R ² <i>f</i>	1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R ²
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§ 1.1307(b)(3)(i)(B).	Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$ $P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$ Where $x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$ and $ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$ d = the separation distance (cm);																																																	



4.2. EUT Specification

Frequency band (Operating)	☒ SRD: 2408MHz-2474MHz
Device category	☒ Portable (<20cm separation) ☐ Mobile (>20cm separation)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Evaluation applied	☐ Blanket 1 mW Blanket Exemption ☐ MPE-based Exemption ☒ SAR-based Exemption
Remark: The maximum conducted output power is <u>-0.10dBm (0.977mW)</u> at <u>2474MHz</u> (with <u>2.08dBi</u> antenna gain.)	

4.3. Result

GFSK(1Mbps)

Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Max. Tune up power (mW)	Antenna Gain(dBi)	Max.Tune up e.i.r.p. Power (dBm)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Distance (mm)	SAR test exclusion thresholds (mW)
2408-2474	-0.10	0.40	1.10	2.08	2.48	0.33	1.08	5	2.72

No non-compliance noted.

-----THE END OF REPORT-----