

RF Exposure Evaluation Report

Product Name : MSI PEN
Model No. : MS-1P14
FCC ID : I4L-ONE-MSI-PEN

Applicant : MICRO-STAR INTERNATIONAL CO., LTD.

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

Date of Receipt : Oct. 23, 2020
Date of Declaration : Dec. 11, 2020
Report No. : 20A0653R-E3082100014
Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Dec. 11, 2020

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Product Name	MSI PEN	
Applicant	MICRO-STAR INTERNATIONAL CO., LTD.	
Address	No. 69, Lide St., Zhonghe Dist, New Taipei City 235 Taiwan	
Manufacturer	Dexin Electronics Co.,Ltd.	
Model No.	MS-1P14	
FCC ID.	I4L-ONE-MSI-PEN	
Trade Name	msi	
Applicable Standard	KDB 447498 D01 v06	<input type="checkbox"/> Minimum test separation distance \geq 20 cm <input checked="" type="checkbox"/> For low power devices
Test Result	Complied	

Documented By : Anita Chou

(Senior Engineering Adm. Specialist / Anita Chou)

Tested By : wen Lee

(Engineer / Wen Lee)

Approved By : Vincent Lin

(Director / Vincent Lin)

Revision History

Report No.	Version	Description	Issued Date
20A0653R-E3082100014	V1.0	Initial issue of report.	2020-12-11

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	MSI PEN
Trade Name	msi
Model No.	MS-1P14
FCC ID.	I4L-ONE-MSI-PEN
Frequency Range	2402-2480MHz
Channel Number	Bluetooth V5.0: 40CH
Type of Modulation	Bluetooth V5.0: GFSK
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table "Antenna List"

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Magic	E05001311-IPCA	Chip Antenna	3.2dBi for 2.4 GHz

2. RF Exposure Evaluation

2.1. Standard Applicable

According to 1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

2.2. Measurement Result:

According to KDB Publication 447498 D01, section 4.3.1, per the calculations of item 1 ($\text{Power(mW)}/\text{separation (mm)} \cdot \sqrt{f(\text{GHz})} \leq 3.0$), SAR is required as shown in the table below where calculated values are greater than 3.0:

Operation frequency = 2450MHz and antenna separation distance = 5mm

Body SAR Test Exclusion Threshold = 10mW

Frequency Band (MHz)	Maximum peak output power Peak Gain: 3.2dBi			SAR Test Exclusion Threshold	Calculated Threshold Value (≤ 3.0 SAR is not required)
	conducted (dBm)	EIRP (dBm)	EIRP (mW)	(mW)	
2402	4.58	7.78	6.00	10	1.859

Note1: The SAR/MPE measurement is not necessary.

Note2: The maximum peak output power is refer to report No.: 20A0653R-E3032110108 from the DEKRA.