

MRT Technology (Taiwan) Co., Ltd Phone: +886-3-3288388 Fax: +886-3-3288918 Web: <u>www.mrt-cert.com</u> Report No.: 2301TWE903-U2 Report Version: 1.0 Issue Date: 2023-01-31

RF Exposure Evaluation

- FCC ID: I4L- GH20WD
- APPLICANT: Micro-Star Int'l Co.,Ltd.

Application Type:	Certification
Product:	2.4GHz Dongle
Model No.:	GH20WD
Brand Name:	msi
FCC Rule Part(s):	Part 2.1093 (Portable)
Received Date:	January 04 ,2022
Test Date:	2023, January 31

Tested By: Fran ChenReviewed By: Paddy Chen
(Paddy Chen)Approved By: Amy hen

The test results relate only to the samples tested.

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

(Chenz Ker)

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Revision History

Report No.	Version	Description	Issue Date	Note
2301TWE903-U2	1.0	Original Report	2023-01-31	



1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	2.4GHz Dongle				
Model No.	H20WD				
Brand Name	nsi				
Specification	SRD 2.4GHz				
Operating Frequency	2405.889~2477.569MHz				
Accessories					
Wireless Headset	Brand: msi				
	Model No: 8ZC7				

1.2. Antenna Description

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	somic	GH20WD 2.4G	РСВ	-1.2dBi



2. RF Exposure Evaluation

2.1. FCC Limits

According to FCC KDB 447498 D04V01 - SAR-Based Exemption

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula .

$$P_{\rm th} (\rm mW) = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \le 20 \text{ cm} \\ \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \le 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20} \operatorname{cm}\sqrt{f}}\right)$$

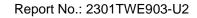
and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula.

$$P_{\text{th}} (\text{mW}) = ERP_{20 \text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \le f < 1.5 \text{ GHz} \\ \\ 3060 & 1.5 \text{ GHz} \le f \le 6 \text{ GHz} \end{cases}$$

The example values shown as below are for illustration only.

	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
	300	39	65	88	110	129	148	166	184	201	217
(MHz)	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
Frequency	1900	3	12	26	44	66	92	122	157	195	236
nbə	2450	3	10	22	38	59	83	111	143	179	219
Fr	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

Example Power Thresholds (mW)





2.2. Test Result of RF Exposure Evaluation

Mode	Frequency Band (MHz)	Average Output Power (dBm)	Output Power (mW)	FCC SAR Test Exclusion Threshold (mW)	
2.4G	2405.889~2477.569	3.62	2.30	3	

So, this device can complies the SAR test exclusion.

------ The End