



Project No: TM-2404000279P FCC ID: SW8NDW6020Z1 Page 1 / 13 Report No.: TMWK2404001249KS 00 Rev.:

RF Exposure Evaluation Report

FCC 47 CFR § 2.1091

for

Wireless Display RX Dongle

Model Name.: NDW6020Z1

Prepared for:

Good Way Technology Co., Ltd. 3F, No. 135, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, **Taiwan**

Prepared by

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Issue Date: July 12, 2024

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Report No.: TMWK2404001249KS

Page 2/13 Rev.: 00

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By	
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Report No.: TMWK2404001249KS

Page 3/13 Rev.: 00

Table of Contents

1	AT1	FESTATION OF TEST RESULTS	4
2		ST SPECIFICATION, METHODS AND PROCEDURES	
3		VICE UNDER TEST (DUT) INFORMATION	
		DUT DESCRIPTION	
	3.2	WIRELESS TECHNOLOGIES	7
4	MA	XIMUM PERMISSIBLE EXPOSURE	8
	4.1	LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)	8
	4.2	MPE CALCULATION METHOD	9
	4.3	MPE EXEMPTION	10
	4.4	MULTIPLE RF SOURCES	11
5	MP	E EXEMPTION OPTION B	12
6	FAC	CILITIES	13



Report No.: TMWK2404001249KS

Page 4/13 Rev.: 00

1 Attestation of Test Results

Applicant Name	Good Way Technology Co., Ltd.
Model Name	NDW6020Z1
Applicable Standards	FCC 47 CFR § 2.1091 FCC 47 CFR § 1.1307 FCC 47 CFR § 1.1310 Published RF exposure KDB procedures
Receive EUT Date:	April 23, 2024

Compliance Certification Services Inc., tested the above equipment in accordance with the requirements set forth in the above standards. Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainy. All indications of Pass/Fail in this report are opinions expressed by Compliance Certification Services Inc, based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved & Released By:

Sky Zhou

Asst. Supervisor

Compliance Certification Services Inc.



Page 5 / 13

Report No.: TMWK2404001249KS Rev.: 00

2 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1091, the following FCC Published RF exposure KDB procedures:

- o 447498 D04 Interim General RF Exposure Guidance v01
- o 865664 D02 RF Exposure Reporting v01r02



Page 6 / 13

Report No.: TMWK2404001249KS Rev.: 00

3 Device Under Test (DUT) Information

3.1 **DUT Description**

0.1 20. 2000				
Product	Wireless Display RX Dongle			
Trade Name	GOOD WAY			
Model No.	NDW6020Z1			
Model Discrepancy	N/A			
Hardware Version	V3.21			
Software Version	22495041			
Sample Stage	Identical prototype			



Page 7 / 13

Report No.: TMWK2404001249KS Rev.: 00

3.2 Wireless Technologies

3.2 Wireless	rechnologies					
	Bluetooth: 2402 MHz~2480 MHz					
	☐ 802.11b/g/n HT20: 2412 MHz~2462 MHz					
	☐ 802.11n HT40: 2422 MHz~2452 MHz					
	□ 802.11ac VHT20: 5180MHz ~ 5240MHz / 5260MHz ~ 5320MHz /					
F	5500MHz ~ 5720MHz / 5745MHz ~ 5825MHz 802.11n HT40: 5190MHz ~ 5230MHz / 5270MHz ~ 5310MHz /					
Frequency bands	5510MHz ~ 5710MHz / 5755MHz ~ 5795MHz					
Danus	35 TOMH2 ~ 37 TOMH2 / 37 35MH2 ~ 37 95MH2 / 802.11ac VHT40: 5190MHz ~ 5230MHz / 5270MHz ~ 5310MHz /					
	5510MHz ~ 5710MHz / 5755MHz ~ 5795MHz					
	802.11ac VHT80: 5210MHz / 5290MHz / 5530MHz ~ 5690MHz /					
	5775MHz					
	☐ 802.11ac VHT160/ax HE160: 5250 MHz / 5570 MHz					
	Others					
Evnesure						
Exposure classification	 ☐ Occupational/Controlled exposure ☐ General Population/Uncontrolled exposure 					
Old Colline at 1011	General Population/Oncontrolled exposure					
	Turney DOD Automore					
Antenna	Type: PCB Antenna Brand / Model: RedbirdTek / ANT000087					
Specification	Antenna Gain:					
opoomounom	WIFI 5.2GHz (U-NII 1) 2.00 dBi (Numeric gain: 1.58) Worst					
	(12.11.11.11.11.11.11.11.11.11.11.11.11.1					
Maximum						
Measurement	WIFI 5.2GHz (U-NII 1)					
Average	IEEE 802.11a 19.77 dBm (94.842 mW)					
Power	IEEE 802.11n HT 20 19.82 dBm (95.940 mW)					
Maximum	WIFI 5.2GHz (U-NII 1)					
tune up	IEEE 802.11a 20.00 dBm (100.000 mW)					
power	IEEE 802.11n HT 20 20.00 dBm (100.000 mW)					

Notes:

- 1. For more details, please refer to the User's manual of the EUT.
- Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
- 3. The tune up power referred the AVG power of the test report TMWK2404001248KR for RF Exposure assessment purpose.



Page 8 / 13

Report No.: TMWK2404001249KS Rev.: 00

4 Maximum Permissible Exposure

4.1 Limits for Maximum Permissible Exposure (MPE)

Table 1 - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)	
(A) Limits for Occupational/Controlled Exposure					
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	
300-1,500			f/300	6	
1,500-100,000			5	6	
(B) Limits for General Population/Uncontrolled Exposure					
0.3-1.34	614	1.63	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	
300-1,500			f/1500	30	
<u>1,500-100,000</u>			1.0	30	



Page 9 / 13

Report No.: TMWK2404001249KS Rev.: 00

4.2 MPE Calculation Method

<u>Calculation</u>

Given

$$E = \frac{\sqrt{30 \times P \times G}}{d} \& S = \frac{E^2}{377}$$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P(mW) = P(W) / 1000 \text{ and}$$

$$d(cm) = d(m) / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$
 Equation 1

Where

d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

If, Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$



Page 10 / 13

Report No.: TMWK2404001249KS Rev.: 00

4.3 MPE EXEMPTION

- (A) The available maximum time-averaged power is no more than 1 mW
- (B) The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold *Pth* (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). *Pth* is given by:

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

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20~cm}\sqrt{f}}\right)$$
 and f is in GHz;

and

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

d =the separation distance (cm);

(C) Using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Single RF Sources Subject to Routine Environmental Evaluation					
RF Source frequency (MHz)	Threshold ERP (watts)				
0.3-1.34	1,920 R².				
1.34-30	3,450 R ² /f ² .				
30-300	3.83 R ² .				
300-1,500	0.0128 R²f.				
1,500-100,000	19.2R ² .				
Note: R is in meters, f is in MHz.					



Page 11 / 13
Report No.: TMWK2404001249KS Rev.: 00

4.4 Multiple RF sources

In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation),

$$\sum_{i=1}^{a} \frac{P_i}{P_{\text{th},i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{\text{th},j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$



Page 12 / 13
Report No.: TMWK2404001249KS Rev.: 00

5 MPE Exemption Option B

WIFI 5.2GHz (U-NII 1)

Mode	Frequency (MHz)	R(m)	Max Tune-up power (dBm)	G(dBi)	Max Tune-up EIRP (dBm)	Max Tune-up ERP (dBm)	Max Tune-up ERP (mW)	ERP Threshold (mW)	MPE Exemption
IEEE 802.11a	5240.00	0.2	20.0	2.00	22.00	19.85	96.605	3060	Complies
IEEE 802.11n HT 20	5240.00	0.2	20.0	2.00	22.00	19.85	96.605	3060	Complies



Page 13 / 13

Report No.: TMWK2404001249KS Rev.: 00

6 Facilities

All measurement facilities used to collect the measurement data are located at \boxtimes No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

 $\hfill \square$ No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan.

-- End of Test Report--