RF Exposure Evaluation Declaration

FCC ID:	YIY-ASMB0878
Applicant:	Industrea Mining Technology Pty Ltd
Product:	MINI RF TOF MODULE NANOPAN
Model No.:	ASMB0878
Trading Name:	T/A Digital Mining Technology
FCC Rule Part(s):	FCC Part 2 (Section 2.1091)
Test Date:	November 14 ~ December 27, 2021

Reviewed By: Sunny Sun

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2110RSU055-U2	Rev. 01	Initial Report	02-25-2022	Valid

CONTENTS

1. General Information

1.1. Applicant

Industrea Mining Technology Pty Ltd

T/A Digital Mining Technology

3 Co-Wyn Close, Fountaindale, NSW 2258, Australia

1.2. Manufacturer

Industrea Mining Technology Pty Ltd

T/A Digital Mining Technology

3 Co-Wyn Close, Fountaindale, NSW 2258, Australia

1.3. Test Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product	MINI RF TOF MODULE NANOPAN
Model No.	ASMB0878
Frequency Range	2400 ~ 2483.5MHz
Operating Temp.	-40 ~ 75°C
Power Supply	3.3 Vdc
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification

Frequency Range	2400 ~ 2483.5MHz
Channel Number	2
Modulation	CSS
Antenna Type	External antenna
Antenna Gain	8 dBi

1.6. Applied Standards

KDB 447498 D01v06

2. RF Exposure Evaluation

2.1. Test Limit

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = 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

Pd is the limit of MPE, $1mW/cm^2$. 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.

2.2. Test Result

Product	MINI RF TOF MODULE NANOPAN
Test Item	RF Exposure Evaluation

Frequency Band (MHz)	Conducted Power (dBm)	Max. Antenna Gain (dBi)	Max. EIRP (dBm)	Compliance Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2400 ~ 2483.5	9.08	8.0	17.08	20	0.0102	1

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

CONCLUSION:

So the compliance distance is 20cm for device installed without any other radio equipment.

The End