Test Report No:
23C0907R-RFUSV17S-A

RF EXPOSURE EVALUATION DECLARATION

Product Name	M2M DATA MODULE
Brand Name	Wistron NeWeb Corporation
Model No.	M18QF
FCC ID	NKRM18QF
Applicant´s Name / Address	Wistron NeWeb Corporation 20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Manufacturer's Name / Address	Wistron NeWeb Corporation 20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Test Method Requested, Standard	FCC CFR Title 47 Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.
Verdict Summary	IN COMPLIANCE
Documented By	Amelia Wu
Approved By	Rueyyan Lin
Date of Receipt	Dec. 28, 2023
Date of Issue	Apr. 11, 2024
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

General Conditions

1. The test results relate only to the samples tested.
2. 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.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. 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.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Apr. 11, 2024

Permissive Change

Permissive Change	Modifications
Class II Permissive Change (C2PC)	1. Additional platform added (Product: Vehicle Gateway, Brand: Samsara, Model: 010-00006, FCC ID: 2AIHD-0055). 2. Add two antennas. 3. Disable LTE band 14 through software. After evaluating, it was calculated for the test result of RF exposure evaluation and record in the report.

1. General Information

1.1. EUT Description

RF General Information				
Evaluation Mode	Band	Uplink Frequency Range (MHz)	Downlink Frequency Range (MHz)	Modulation Type
WWAN WCDMA	WCDMA Band 2	1850~1910	1930~1990	BPSK
	WCDMA Band 5	824~849	869~894	
WWAN LTE	LTE Band 2	1850~1910	1930~1990	QPSK / 16QAM
	LTE Band 4	1710~1755	2110~2155	
	LTE Band 5	824 ~ 849	869 ~ 894	
	LTE Band 12	699~716	729~746	
	LTE Band 13	777~787	746~756	

Note 1: The above EUT information is declared by the manufacturer.

Note 2: The EUT was installed to the host (brand name: Samsara, model: 010-00006, FCC ID: 2AIHD-0055) to collated for the test result of RF exposure evaluation, and the host has Wi-Fi 2.4GHz and Bluetooth as below.

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
WiFi 2.4 GHz	2400 ~ 2483.5	2412 ~ 2462	802.11b: DSSS 802.11g/n: OFDM
Bluetooth	2400 ~ 2483.5	2402 ~ 2480	LE: GFSK

1.2. Testing Location Information

Testing Location Information		
Test Laboratory：DEKRA Testing and Certification Co., Ltd.		
	1 (TAF: 3024)	ADD: No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958 Test site Designation No. TW3024 with FCC. Conformity Assessment Body Identifier (CABID) TW3024 with ISED.
	2 (TAF: 3024)	ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958 Test site Designation No. TW3024 with FCC. Conformity Assessment Body Identifier (CABID) TW3024 with ISED.
Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.		

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
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
300-1500	-	-	f/300	<6
1500-100,000	-	-	5	<6

(B) Test Limit for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	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
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

Note: f = frequency in MHz; *Plane-wave equivalent power density

Power Density (S) is calculated by the following formula:

$$S=(P*G)/4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm^2)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

π = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Test Result (PASS/FAIL)
WCDMA Band 2	27.200	524.807	0.104	1.000	PASS
WCDMA Band 5	26.900	489.779	0.097	0.549	PASS
LTE Band 2	27.200	524.807	0.104	1.000	PASS
LTE Band 4	27.300	537.032	0.107	1.000	PASS
LTE Band 5	26.900	489.779	0.097	0.549	PASS
LTE Band 12	26.600	457.088	0.091	0.466	PASS
LTE Band 13	27.100	512.861	0.102	0.518	PASS
WiFi 2.4 GHz	21.400	138.038	0.027	1.000	PASS
Bluetooth LE	23.400	218.776	0.044	1.000	PASS

Distance (cm): 20 for Maximum Permissible Exposure.

Co-location
Conclusion: The formula of calculated the MPE is: **CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1** **CPD = Calculation power density** **LPD = Limit of power density** WCDMA + WiFi 2.4GHz + BLE =0.177+0.044+0.027=0.248,, therefore the maximum calculations of above situations are less than the “1” limit. LTE + WiFi 2.4GHz + BLE =0.197+0.044+0.027=0.268, therefore the maximum calculations of above situations are less than the “1” limit.

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are based on the maximum power.