RF MPE REPORT

Report No.:	20240417G06070X-W9
Product Name:	AI Safety System
Model No.:	Mobile360 M500-T
FCC ID:	NCI-M360-M500-T
Applicant:	VIA Technologies, Inc
Address:	8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI CITY 23148, TAIWAN
Dates of Testing:	04/12/2024 - 06/04/2024
Issued by:	CCIC Southern Testing Co., Ltd.
Lab Location:	Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China. **Tel**：86 755 26627338 **E-Mail**：manager@ccic-set.com

This test report consists of 10 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CCIC-SET. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CCIC-SET within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.

Test Report

Product.....:	AI Safety System
Brand Name..... :	VIA
Trade Name ..... :	VIA
Applicant.....:	VIA Technologies, Inc
Applicant Address.....:	8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI CITY 23148, TAIWAN
Manufacturer.....:	VIA Technologies, Inc
Manufacturer Address.....:	8F., NO. 535, ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI CITY 23148, TAIWAN
Test Standards..... :	47 CFR Part 2.1091
Test Result.....:	Pass
Tested by .....:	Chuiwang Zhang 2024.06.04 Chuiwang Zhang, Test Engineer
Reviewed by.....:	Sun Jiaohui 2024.06.04 Sun Jiaohui, Senior Engineer
Approved by..... :	Chris You 2024.06.04 Chris You, Manager

Table of Contents

1. GENERAL INFORMATION 5
1.1. EUT Description 5
1.2. EUT Description 7
1.3. Laboratory Facilities 7
1.4. Laboratory Location 7
2. TECHNICAL REQUIREMENTS SPECIFICATION IN CFR TITLE 47 PART 2.1091 8
2.1. Exposure Limits 8
2.2. Predication of MPE limit at a given distance 8
2.3. Evaluation Results 9
2.4. Conclusion 10

Change History		
Issue	Date	Reason for change
1.0	2024.06.04	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	AI Safety System	
Model No.	Mobile360 M500-T	
Hardware Version	RA	
Software Version	v0.6.1	
EUT supports Radios application	WCDMA Band 2/4/5 LTE Band 2/4/5/7/12/13/26/38/41/66 BT/BLE/2.4G WIFI/5G WIFI	
Frequency Range(Tx)	WCDMA 850: 824MHz~849MHz WCDMA 1700: 1710MHz~1755MHz WCDMA 1900: 1850MHz~1910MHz	
	LTE Band 2: 1850MHz~1910MHz LTE Band 4: 1710MHz~1755MHz LTE Band 5: 824MHz~849MHz LTE Band 12: 699MHz~716MHz LTE Band 13: 777MHz~787MHz LTE Band 26: 814MHz~849MHz LTE Band 38: 2570MHz~2620MHz LTE Band 41: 2535MHz~2655MHz LTE Band 66: 1710MHz~1780MHz	
	BT/BLE: 2.402GHz ~ 2.480GHz	
	2.4G WIFI: 2.412GHz ~ 2.462GHz	
	5.2G WIFI: 5.15GHz ~ 5.25GHz 5.8G WIFI: 5.725GHz ~ 5.85GHz	
Bandwidth	WCDMA B2/4/5:	5MHz
	LTE Band 2/4/66:	1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz
	LTE Band 5/12:	1.4MHz/3MHz/5MHz/10MHz
	LTE Band 13/14:	5MHz/10MHz
	LTE Band 71:	5MHz/10MHz/15MHz/20MHz
	BT	1/2Mbps
	BLE	1/2/3Mbps
	2.4G WIFI:	802.11b/g/n-HT20: 20MHz 802.11n-HT40: 40MHz
	5.0G WIFI:	802.11a: 20MHz 802.11n: 20MHz/40MHz 802.11ac: 20MHz/40MHz/80MHz

Modulation Type	WCDMA	WCDMA: QPSK(Uplink) HSDPA: QPSK(Uplink) HSUPA: QPSK(Uplink)
	LTE	QPSK/16QAM/64QAM(downlink only)
	BT	GFSK, π/4-DQPSK, 8DPSK
	BLE	GFSK
	2.4G WIFI	DSSS (802.11b), OFDM (802.11g/n)
	5G WIFI	OFDM (802.11a/n/ac)
Antenna gain	WCDMA 850: -1.22 dBi WCDMA 1700: 1.12 dBi	WCDMA 1900: 2.62 dBi,
	LTE Band 2: 2.62dBi LTE Band 4: 1.12dBi LTE Band 5: -1.22dBi LTE Band 7: 1.92dBi LTE Band 12: -3.10dBi	LTE Band 13: -2.25dBi LTE Band 26: -1.22dBi LTE Band 38: 1.61dBi LTE Band 41: 2.48dBi LTE Band 66: 1.12dBi
	BT/BLE/2.4G WIFI: 3.01dBi	
	5G WIFI: 0.93dBi	
Antenna Type	External Antenna	

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

1.2. EUT Description

EUT has been tested according to the following standards.

No.	Identity	Document Title
1	47 CFR Part 1	Practice and Procedure
2	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
3	KDB 447498 D01 General RF Exposure Guidance v06	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
4	OET Bulletin 65 Edition 97-01	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

1.3. Laboratory Facilities

FCC-Registration No.: 406086

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until Jun. 30th, 2025.

ISED Registration: 11185A

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

CAB number: CN0064

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.4. Laboratory Location

Company Name:	CCIC Southern Testing Co., Ltd.
Address:	Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

2. Technical Requirements Specification in CFR Title 47 Part 2.1091

2.1. Exposure Limits

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).

Table 1 to § 1.1310(e)(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)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	< 6
3.0-30	1824/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
(ii) Limits for General Population/Uncontrolled Exposure				
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.				

2.2. Predication of MPE limit at a given distance

Refer to formulas on page 19 of OET Bulletin 65, Edition 97-01.

$$S = \frac{PG}{4\pi R^2}$$

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 = numeric gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the centre of radiation of the antenna (appropriate units, e.g., cm)

2.3. Evaluation Results

Worst-Case mode Conducted Output Power Results for BT

Band	Mode	Frequency (MHz)	Maximum Output Power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
BT	GFSK	2480	4.96	4±1	3.16

Worst-Case mode Conducted Output Power Results for BLE

Band	Mode	Frequency (MHz)	Maximum Output Power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
BLE-2M	GFSK	2480	3.717	3±1	2.51

Worst-Case mode Conducted Output Power Results for 2.4G WLAN

Band	Mode	Frequency (MHz)	Maximum Output Power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
2.4G WIFI	802.11n20	2462	15.83	15±1	39.81

Worst-Case mode Conducted Output Power Results for 5G WLAN

Band	Mode	Frequency (MHz)	Maximum Output Power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
5G WIFI	802.11a	5745	15.84	15±1	39.81

Worst-Case mode Conducted Output Power Results for WWAN

Band	Frequency (MHz)	Maximum Output power(dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
WCDMA 850	846.6	24.53	24±1	316.23
WCDMA 1700	1732.6	24.15	24±1	316.23
WCDMA 1900	1880.0	24.52	24±1	316.23
LTE Band 2	1880.0	23.67	23±1	251.19
LTE Band 4	1754.3	23.16	23±1	251.19
LTE Band 5	836.5	23.58	23±1	251.19
LTE Band 7	2535.0	23.15	23±1	251.19
LTE Band 12	699.7	23.93	23±1	251.19
LTE Band 13	782.0	23.39	23±1	251.19
LTE Band 26 (Part 90)	815.5	23.40	23±1	251.19
LTE Band 26 (Part 22)	831.5	23.44	23±1	251.19
LTE Band 38	2595.0	23.19	23±1	251.19
LTE Band 41	2545.0	23.56	23±1	251.19
LTE Band 66	1745.0	23.66	23±1	251.19

Calculation results: Worst-Case mode

Band	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm2)	Power Density (mW/cm2)	Ratio
BT	3.01	2.00	20	0.001	1.00	0.001
BLE	3.01	2.00	20	0.001	1.00	**0.001**
2.4G WIFI	3.01	2.00	20	0.016	1.00	**0.016**
5G WIFI	0.93	1.24	20	0.010	1.00	**0.010**
WCDMA 850	-1.22	0.76	20	0.048	0.56	0.084
WCDMA 1700	1.12	1.29	20	0.081	1.00	0.081
WCDMA 1900	2.62	1.83	20	0.115	1.00	**0.115**
LTE Band 2	2.62	1.83	20	0.091	1.00	0.091
LTE Band 4	1.12	1.29	20	0.065	1.00	0.065
LTE Band 5	-1.22	0.76	20	0.038	0.56	0.068
LTE Band 7	1.92	1.56	20	0.078	1.00	0.078
LTE Band 12	-3.10	0.49	20	0.024	0.47	0.052
LTE Band 13	-2.25	0.60	20	0.030	0.52	0.057
LTE Band 26 (Part 90)	-1.22	0.76	20	0.038	0.54	0.069
LTE Band 26 (Part 22)	-1.22	0.76	20	0.038	0.55	0.068
LTE Band 38	1.61	1.45	20	0.072	1.00	0.072
LTE Band 41	2.48	1.77	20	0.088	1.00	0.088
LTE Band 66	1.12	1.29	20	0.065	1.00	0.065

Simultaneous Transmission Calculation (Worst-case mode)

No.	Transmitter Combinations	Scenario Supported or not
1	WWAN + BT + 2.4G WLAN	Yes
2	WWAN + BT + 5G WLAN	Yes

Max Simultaneous Transmission Calculation (Worst-case mode)

No.	Worst Mode	MPE Ratio	Limit	Results
1	WCDMA 1900 + BT + 2.4G WIFI	0.132	≤ 1.0	Pass

Note: MPE Ratio = 0.115 + 0.001 + 0.016 = 0.132.

2.4. Conclusion

According to the KDB 447498 D01 General RF Exposure Guidance v06 section 7.2 determine the device is exclusion from SAR test.

** END OF REPORT **