IEEE C95.1
KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

57 Inch TFT-LCD Display

Model: P650IVF01.0

Trade Name: AUO

Issued to

VIA Technologies, Inc.
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Issued By
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Report No.: T180801N06-MF

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 20, 2018	Initial Issue	ALL	Gina Lin

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Jeter Wu
Assistant Manager

Reviewed by:

Eric Huang
Section Manager

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

EUT	57 Inch TFT-LCD Display
Model	P650IVF01.0
Trade Name	AUO
Model Discrepancy	N/A
Frequency band (Operating)	☒ 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz 802.11n HT40: 2.422GHz ~ 2.452GHz ☒ 802.11a, 802.11n HT20 : 5180MHz ~ 5240MHz; 5745 ~ 5825MHz 802.11n HT40 : 5190MHz ~ 5230MHz; 5755 ~ 5795MHz 802.11ac VHT80 : 5210MHz; 5755MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna Specification	Antenna (1TX1RX), 2pcs Manufacturer: WIFI-Link Technologies Inc. Type: PCB Mode: WLDF-5024-07-07 Gain：5dBi (2.4G) / 7dBi (5G) Antenna Gain 2.4GHz 5.00 dBi (Numeric gain: 3.16) worst Antenna Gain 5GHz 7.00 dBi (Numeric gain: 5.01) worst
Maximum Average output power	IEEE 802.11b Mode : 18.01 dBm (63.241 mW) IEEE 802.11g Mode : 13.02 dBm (20.045 mW) IEEE 802.11n HT20 Mode : 12.39 dBm (17.338 mW) IEEE 802.11n HT40 Mode : 12.15 dBm (16.406 mW) IEEE 802.11a Mode : 13.29 dBm (21.330 mW) IEEE 802.11n HT20 Mode: 13.63 dBm (23.067 mW) IEEE 802.11n HT40 Mode: 12.55 dBm (17.989 mW) IEEE 802.11AC HT80 Mode: 12.12 dBm (16.293 mW)

Maximum Tune up Power	IEEE 802.11b Mode :	18.50 dBm	(70.795 mW)
	IEEE 802.11g Mode :	13.50 dBm	(22.387 mW)
	IEEE 802.11n HT20 Mode :	12.50 dBm	(17.783 mW)
	IEEE 802.11n HT40 Mode :	12.50 dBm	(17.783 mW)
	IEEE 802.11a Mode :	13.50 dBm	(22.387 mW)
	IEEE 802.11n HT20 Mode:	14.50 dBm	(28.184 mW)
	IEEE 802.11n HT40 Mode:	13.50 dBm	(22.387 mW)
	IEEE 802.11AC HT80 Mode:	12.50 dBm	(17.783 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		

Notes: For 2.4GHz and 5GHz could not be use as transmit/receive at the same time.

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4. TEST RESULTS

No non-compliance noted.

Calculation

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 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

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5. MAXIMUM PERMISSIBLE EXPOSURE

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

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

Where *P = Power in mW*

G = Numeric antenna gain

S = Power density in mW / cm²

IEEE 802.11b Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Low	2412	70.795	3.16	20	0.0445	1	Pass

IEEE 802.11g Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Mid	2437	22.387	3.16	20	0.0141	1	Pass

IEEE 802.11n HT 20 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Mid	2437	17.783	3.16	20	0.0112	1	Pass

IEEE 802.11n HT 40 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Mid	2437	17.783	3.16	20	0.0112	1	Pass

IEEE 802.11a Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Mid	5785	22.387	5.01	20	0.0223	1	Pass

IEEE 802.11n HT20 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
High	5825	28.184	5.01	20	0.0281	1	Pass

IEEE 802.11n HT40 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
High	5795	22.387	5.01	20	0.0223	1	Pass

IEEE 802.11AC HT80 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)	Result
Mid	5775	17.783	5.01	20	0.0177	1	Pass