MPE Report

According to

FCC CFR Title 47 Part 15 Subpart E (15.407)

Applicant	:	**Elo Touch Solutions, Inc**
Address	:	**670 N. McCarthy Blvd., Suite 100, Milpitas, CA95035**
Manufacturer	:	**Elo Touch Solutions, Inc.**
Address	:	**670 N. McCarthy Blvd., Suite 100, Milpitas, CA95035**
Equipment	:	**Touch All in one Computer**
Model No.	:	**ESY15I1B, ESY15I1C**
FCC ID	:	**RBWESY15I1B**
IC ID	:	**10757B-ESY15I1B**
Test Period	:	**Sept.03,2017~ Sept.18, 2017**

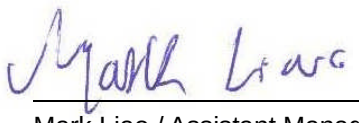
■The test result refers exclusively to the test presented test model / sample.

■Without written approval of ***Cerpass Technology Corporation Test Laboratory.*** the test report shall not be reproduced exc- ept in full.

■The test report must not be used by the clients to claim product certification approval by any agency of the Government.

I HEREBY CERTIFY THAT :
The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10 – 2013&RSS-247,Issue 2&RSS-Gen&FCC Part15.407**and the energy emitted by this equipment was ***passed.***

Approved by:



Mark Liao / Assistant Manager

Laboratory Accreditation:

☒ Cerpass Technology Corporation Test Laboratory

TAF LAB Code:	**1439**

Radio Frequency Exposure

LIMIT

For 2.4G Band: 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.

For 5.0G Band: 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).

EUT Specification

EUT	Touch All in one Computer		
Frequency band (Operating)	☒ WLAN: 2.412GHz ~ 2.462GHz ☒ WLAN: 5.150GHz ~ 5.250GHz ☒ WLAN: 5.745GHz ~ 5.825GHz		
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)		
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)		
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity		
Max. output power for 2.4G Band	Mode	Power (dBm)	Power (mW)
	IEEE802.11b	19.11	81.470
	IEEE802.11g	22.72	187.068
	IEEE802.11n(20MHz)	22.47	176.604
	IEEE802.11n(40MHz)	23.01	199.986
Max. output power for 5.150-5.250GHz	IEEE802.11a	11.98	15.776
	IEEE802.11n(20MHz)	11.89	15.453
	IEEE802.11n(40MHz)	8.98	7.907
	IEEE802.11ac(80MHz)	8.04	6.368
Max. output power for 5.745-5.850GHz	IEEE802.11a	10.98	12.531
	IEEE802.11n(20MHz)	10.86	12.190
	IEEE802.11n(40MHz)	9.99	9.977
	IEEE802.11ac(80MHz)	7.28	5.346
Antenna gain (Max)	2.92dBi for 2.4G Band		
	5.2G: 2.67dBi ,5.8G: 2.64dBi		
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		

Remark:

1. *The maximum output power is 23.01dBm (0.20W) at 2412MHz (with numeric 4.093antenna gain.) for2.4G band*
   The maximum output power is 11.98dBm (0.0158W) at 5240MHz (with numeric 1.919antenna gain.)
   The maximum output power is 10.98dBm (0.0125W) at 5825MHz (with numeric 2.065antenna gain.)
2. *DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.*
3. *For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.*

**Note: Simultaneous transmission is not applicable for this EUT.*

TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

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:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and
d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ ***Equation 1***

Where *d = Distance in cm*
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
IEEE802.11b	2412-2462	19.11	2.92	20	0.0317	1
IEEE802.11g	2412-2462	22.72	2.92	20	0.0729	1
IEEE802.11n20	2412-2462	22.47	2.92	20	0.0688	1
IEEE802.11n40	2422-2452	23.01	2.92	20	0.0779	1

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
IEEE802.11a	5180-5240	11.98	2.67	20	0.0058	1
IEEE802.11n(20MHz)	5180-5240	11.89	2.67	20	0.0057	1
IEEE802.11n(40MHz)	5190-5230	8.98	2.67	20	0.0029	1
IEEE802.11ac(80MHz)	5210	8.04	2.67	20	0.0023	1

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
IEEE802.11a	5745-5825	10.98	2.64	20	0.0046	1
IEEE802.11n(20MHz)	5745-5825	10.86	2.64	20	0.0045	1
IEEE802.11n(40MHz)	5755-5795	9.99	2.64	20	0.0036	1
IEEE802.11ac(80MHz)	5775	7.28	2.64	20	0.0020	1

Note: The 2.4GHz & 5GHz can not transmit at same time.