

## Change History

Version	Date	Change Description
1.0	01/17/2020	<ul style="list-style-type: none"> <li>Initial release</li> </ul>
1.1	07/14/2020	<ul style="list-style-type: none"> <li>Add TCx800 10.1" Additional Display in 2.5.3 TCxDisplay 6149-Bxx/Wxx or 10.1" Additional Display Attached</li> <li>Add 1.5 Customize your Touch Screen</li> <li>Add a reference to the OnOffTchBeep utility - <b>OnOffTchBeep.exe</b> in 1.4 Beeper Setting</li> </ul>
1.2	03/08/2021	<ul style="list-style-type: none"> <li>Add automatic monitor mapping utility in the package</li> </ul>
1.3	03/12/2021	<ul style="list-style-type: none"> <li>Add handwriting suggestion section</li> </ul>
1.4	03/15/2021	<ul style="list-style-type: none"> <li>Fix the change history word defect</li> </ul>
1.5	03/23/2021	<ul style="list-style-type: none"> <li>Edit some wordings</li> </ul>
1.6	04/06/2021	<ul style="list-style-type: none"> <li>Add simultaneously touch in multi-monitor scenario</li> </ul>
1.7	04/26/2021	<ul style="list-style-type: none"> <li>Correct the BeepMode setting in 2.2.1 Driver Package</li> </ul>
1.8	07/26/2021	<ul style="list-style-type: none"> <li>Correct the mouse mode to 'Click on Release' per the implementation in 2.2.1 Driver Package</li> </ul>
1.9	08/03/2021	<ul style="list-style-type: none"> <li>Add more information for up to 3 screens scenario</li> </ul>
2.0	08/06/2021	<ul style="list-style-type: none"> <li>Add limitation while attaching 4820/TCxDisplay 6149-5xx to a higher resolution AIO system or Display (TCx810) in 2.3 Dual Monitor Scenarios</li> </ul>
2.1	09/09/2021	<ul style="list-style-type: none"> <li>Update the native resolution table in Table 1 Touch Screen Characteristics</li> </ul>
2.2	10/11/2022	<ul style="list-style-type: none"> <li>Remove Confidential information which is not required</li> <li>Update the Toshiba logo per the marketing requirement</li> </ul>
2.3	06/07/2023	<ul style="list-style-type: none"> <li>Add more details on how to do the calibration in many cases</li> </ul>
2.4	08/09/2023	<ul style="list-style-type: none"> <li>Update uninstallation file name</li> </ul>
2.5	11/23/2023	<ul style="list-style-type: none"> <li>Update the table of contents</li> </ul>

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## 1.0 Introduction

This product from Toshiba Global Commerce Solutions (TGCS) has a touch screen using a PCAP multi-touch technology for Windows 10 operating systems (OS) supported or may be used as a single-touch input for legacy type applications. In its default multi-touch mode, up to ten distinct and independent touches may be detected. When used with Windows 10 native driver, a broad range of gestures may be employed. For classical single touch applications, you will have to install the eGalaxTouch driver (OEM Driver), which offers some enhanced performance and flexibility to be covered in later sections. The following table summarizes the relevant touch characteristics.

**Table 1 Touch Screen Characteristics**

Model	Size	Aspect Ratio	Native Resolution*	Windows 10 Driver Max Touches	OEM Driver	OEM Driver Max Touch
6200-x0x	15.0"	4:3	1024 x 768	10	eGalaxTouch	1
6200-x1x	15.6"	16:9	1366 x 768	10	eGalaxTouch	1
6200-x3x	18.5"	16:9	1366 x 768	10	eGalaxTouch	1
4828-x2x	15"	4:3	1024 x 768	10	eGalaxTouch	1
6201-x5x	15"	4:3	1024 x 768	10	eGalaxTouch	1
6201-x6x	15.6"	16:9	1920 x 1080	10	eGalaxTouch	1
6201-x9x	19.5"	16:9	1920 x 1080	10	eGalaxTouch	1
6149-x0x	15.0"	4:3	1024 x 768	10	eGalaxTouch	1
6149-x1x	15.6"	16:9	1366 x 768	10	eGalaxTouch	1

\*No resolution above the native is supported and if not using the native resolution, Windows native OS driver will be required

In addition to the performance characteristics similar to popular notepads and tablets, the screens do not normally need calibration (they come from the factory calibrated and do not need periodic recalibration). They also have edge to edge glass, making cleaning easier and providing the popular bezel-less look.

When a touch monitor is attached to All-in-One product, All-in-One product should always be treated as the primary monitor. Using the attached monitor as the primary monitor is not supported and may not associate properly.

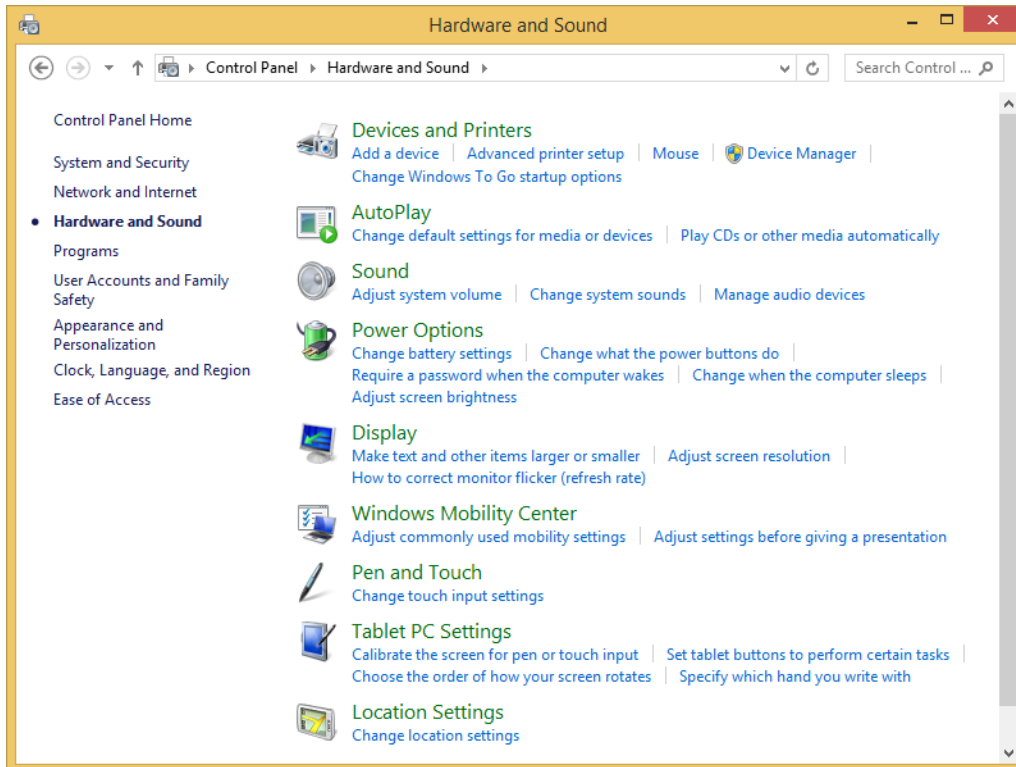
## 1.1 Default Multi-Touch

The default touch configuration of the product is a HID Pointer interface, which Windows 10 may employ for gestures (flicks and pinches), in addition to legacy style single touch operations. If gestures are required by the application, the OEM driver should not be installed as Windows 10 has all the necessary drivers embedded in the OS. You may refer to <https://www.tenforums.com/tutorials/4202-touch-gestures-windows-10-a.html> to learn all the gestures Microsoft defined for Windows 10. Microsoft has defined a different user experiences between previous generation Windows (such as Windows 7) that some gestures will not be inherited from Windows7 such as press and tap. (You can refer to <https://support.microsoft.com/en-us/products/windows?os=windows-7> for gestures supported by Windows 7.)

The features of the touch may be configured using the OS **Hardware Control Panel** in Windows, using the **Pen and Touch** (see Figure 2 Pen and Touch) and **Tablet PC Settings**, as shown in Figure 4 - Tablet PC Settings.

**Note:** If you install the OEM driver, both the **Pen and Touch** and **Tablet PC Setting** will disappear. The setting may vary from versions to versions by Microsoft and you may search from Microsoft websites.

The OS's come with default settings to meet most user needs. However, for some legacy single touch applications or some features required such as touch beep options, it is suggested that the OEM driver be installed. The OEM driver will force the touch screen to be seen to the OS as a single touch device, as the legacy application originally expected. If you still need multi-touch and eGalaxTouch utility features, you will need to check the advanced settings 2.2.6 below.



**Figure 1 Hardware Control Panel**

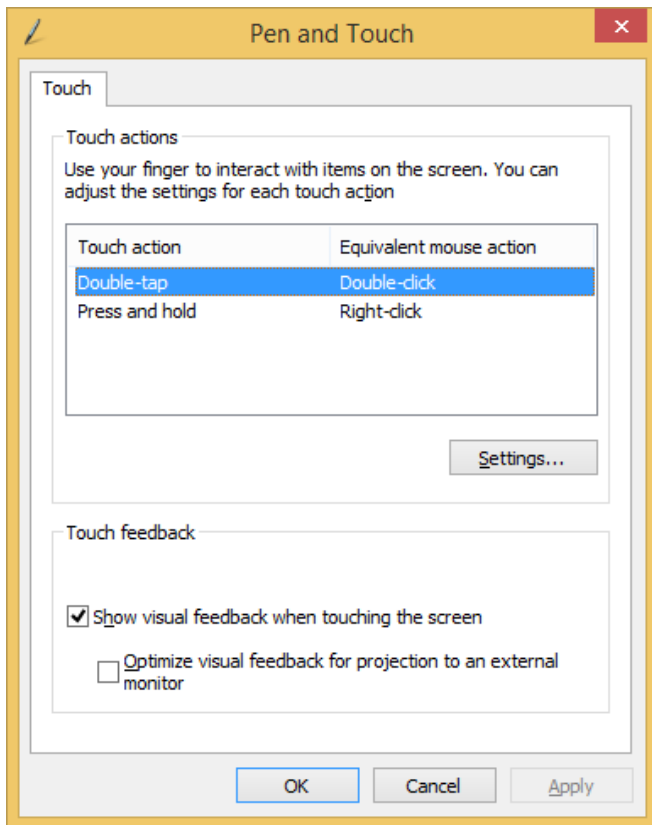


Figure 2 Pen and Touch

## 1.2 Single Touch Application

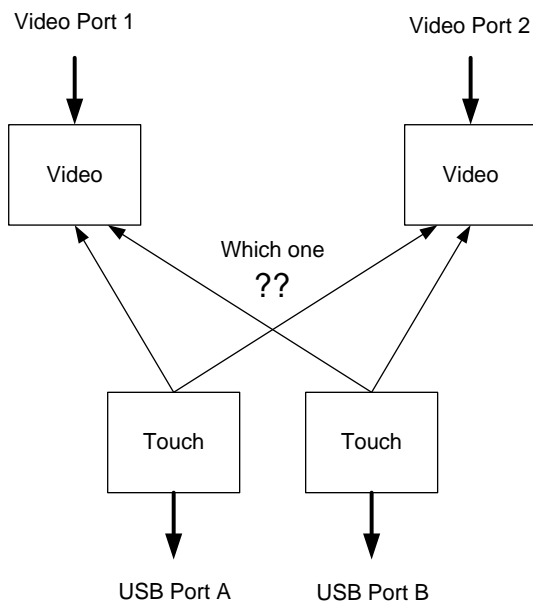
Although the touch screen is configured for multi-touch like operations, single touch icon applications may also be used with the native embedded OS drivers. If one encounters issues with the OS trying to act on gestures, then installing the OEM driver could be an option. Note that the Windows native OS driver causes mouse button type behavior similar to a standard mouse, but the button click is only when the touch is released. Drag operations are similar to a standard mouse.

In some legacy applications one may encounter some potential issues with icon touch speed when using Windows 10 native driver. It is gesture based and are always having to determine the intention of the touch (simple touch or is it a gesture?). That requires more processing time to determine what to do with a touch to the screen and in many cases may interpret an intended click action erroneously as a drag or flick. In many cases this may not be an issue, but if issues are observed (missing touches/drag), it's also suggested to use the OEM driver. If an older legacy application works better with a single touch HID pointer/mouse interface (such as requiring an immediate button-click upon touching the screen), then the OEM touch screen driver may be loaded to force the pointer/mouse type single touch interface (see 2.2 Windows OEM Touch Screen Driver ) with options to configure the mouse button event. The OEM driver also provides an audible system beep feedback option.

## 1.3 Dual Monitor Setup

When a solitary touch screen unit is used, the setup is straight forward. If more than one touch screen unit is installed on the same system in the extended monitor mode, then there is the need to associate the touch screen to the correct video unit. The ambiguity is caused by the video and touch interfaces being physically independent of each other. In the case of two touch screen units installed, the system will see two video ports and two touch ports with no logical tie between them. So, without some help, the system does not know which goes with which (see Figure 3 Ambiguous association between touch screens and video screens). If the displays are cloned, then the coordinates of the two are the same and it does not matter what the association is between the videos and touch screens. But if the second display is an extension of the desktop, then the coordinates of the desktop image is extended onto the second display. In this case, the touch coordinates of the corresponding touch screen needs to be extended as well, but which touch screen? This is resolved through an association process built in Windows 10 or the OEM driver.

**Note:** If you installed the OEM driver, **Tablet PC Settings** will disappear.



**Figure 3 Ambiguous association between touch screens and video screens**

### Windows Native Driver

For Windows 10 native driver user, the **Setup** button in the **Tablet PC Settings** (see Figure 4 - Tablet PC Settings)<sup>1</sup> control panel may be used. When you click on the **Setup** button, it will trigger “Digitizer to Monitor mapping Tool” and a “touch this screen” image appears on one of the monitors, as shown in Figure 5 – Touch this screen.

<sup>1</sup> If my Tablet PC settings is missing please use below steps

1. Go to the **Desktop**.
2. **Right click** on the Desktop and select **New/Shortcut**.
3. In the **Type the location of the item** window, **Copy/Paste** the following `%windir%\explorer.exe shell:::{80F3F1D5-FECA-45F3-BC32-752C152E456E}`
4. Click the **Next** button and type the name **Tablet PC Settings**.
5. Click the **Finish** button.

Touch that screen to associate that touch screen to that display and then “Enter” for moving to next. **Note that if the attached monitor is a SurePoint model (IR touch), a ELO driver is needed for it.**



Figure 4 - Tablet PC Settings

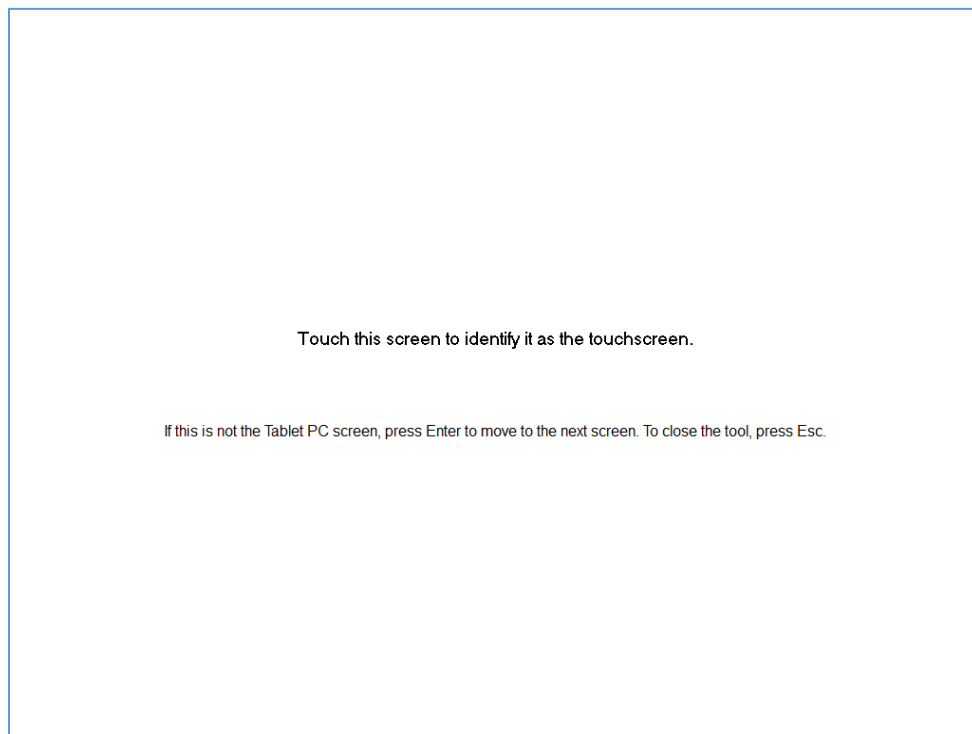


Figure 5 – Touch this screen



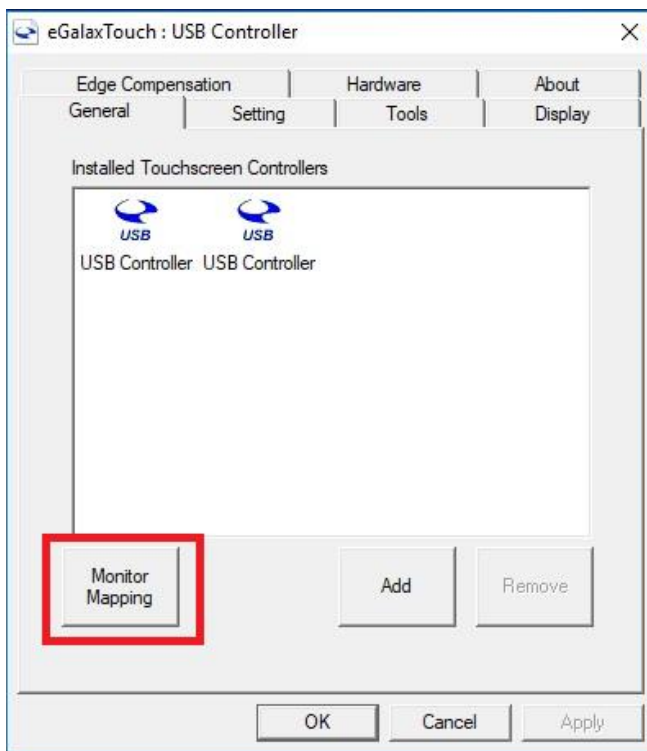
## OEM Touch Driver Installed

If the OEM touch screen driver is installed, the association is initiated by clicking on the **Monitor Mapping** as shown in Figure 6 Monitor Mapping. It will request the end user to click the screen for the touch driver to identify which touch controller matches the touch monitor in the user scenario.

Any time you uninstall/install the OEM driver or plug/unplug the unit, you will need to re-map your touch screen by this step. You might need an additional input device to help the mapping.

Any time the screen resolution is changed (on either screen), a re-association will be necessary if the OEM driver is installed.

There is a new TGCS utility to help the monitor association inside the driver package (called **MonitorMapping.exe**). It provides an automatic way for mapping your monitor on TGCS provided 2<sup>nd</sup> generation Touch Controller Solutions unattended and please ensure you have the OEM touch driver installed and run it with the administrator privilege. If you need a CMI (command line interface) utility for individual mapping usage or silent mode monitor mapping, please contact service people for the CMI (Command Line Interface) version of the utility (**MonitorMapping** utility).



**Figure 6 Monitor Mapping in the driver control panel menu**

Below is the table that describe the relationship between the display modes, as mentioned above.

**Table 2 Relationship to the Video Mode**

Display Mode	Win10 Native Driver	eGalaxTouch OEM Driver
Single (integrated panel)	Support	Support

Twin <sup>2</sup>	Support	Support
Clone <sup>3</sup>	Support	Support
Dual Independent Head (DIH or Extended Mode)	Support (through <b>Tablet PC Settings</b> )	Support (through <b>Monitor Mapping</b> manually or automatically)
Collage <sup>4</sup>	Not Support	Not Support

### 1.4 Beeper Setting

The OEM driver does provide the software beeper function either by the system speaker or system beeper support. (please refer to Microsoft <https://docs.microsoft.com/zh-tw/dotnet/api/system.media.systemsounds.beep?view=netframework-4.8>) They are all software driven beep sound either by the hardware speaker located in your host system or beeper by the hardware buzzer located in your host system. This feature is usually available for the host system product such as TCx800 or any other All-in-One product. There is a hardware benefit supported by TCxDisplay which it can provide the touch beep by an integrated hardware solution inside the TCxDisplay monitors. You will have to control the setting though the utility TGCS provided such as TGCS Diagnostic or TCxDisplay Configuration Utility (please refer to the user manual of TCxDisplay).

In those cases, the beeper inside the TCxDisplay can beep itself no matter the OEM driver is installed or not.

It will become very complicated if you want to enable/disable the Beep On Touch. Please see below table for a better understanding.

	Windows Native Driver Only	OEM Touch Driver Installed		TCxDisplay Configuration Utility
TCxDisplay 6149	No Software Beep	Beep from Sound Card	Beep from System Beep	Hardware Beep Setting
TCx800/810	No Software Beep	Beep from Sound Card	Beep from System Beep	No Hardware Beep Support

<sup>2</sup> Twin Mode: Twin utilizes one of the display pipes to drive the same content at the same resolution, color depth, and refresh rates on each display.

<sup>3</sup> Clone Mode: Clone is used to drive multiple displays with the same content. Each display device can be configured independently. Each can have a different refresh rate, color depth, and resolution for optimum display on each device.

<sup>4</sup> Collage Mode: Collage Display is a feature that enables you to share one image across multiple independent displays, regardless of the panel or monitor type. The number of supported displays depends on the capabilities of your computer or motherboard.

If you want to enable/disable the Beep On Touch, you may check both paths (OEM Touch Driver Control Panel and TCxDisplay hardware setting). There is an unattended utility provided for Windows environment (**OnOffTchBeep.exe**) that help you to enable/disable hardware/software Beep On Touch at the same time. Please reach TGCS service team for the utility.

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## 1.5 Handwriting Use Case (Signature)

In case of the handwriting user scenario, to use the Windows Native Driver is suggested. The Windows Native Driver will work in digitizer mode instead of mouse mode in OEM Touch Driver. It will detect the handwriting more precisely and support the finger usage as well. If you need to use any passive capacitive stylus or rubber tips. It is suggested to make sure to have a larger than 8mm diameter pen or tip. In some cases, you may want to adjust the sensitivity on a specific unit, you may contact TGCS service team to get a utility for either GUI (Graphic User Interface) or unattended mode usage.

For some reasons, you may want to use the Digitizer mode with Touch Mode (Click on Touch or Click on Release) and Touch Beep setting to be available. Please also contact the TGCS service focal to get the HID Digitizer OEM Touch Driver.

The active pen could provide a better accuracy but would require a customized firmware and customized active pen. The active pen would require the power to provide some signals to interact with the touch controller. It may be powered by battery or USB wire connecting to the active pen. Please reach TGCS service for the details.

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## 1.6 Customize your Touch Screen

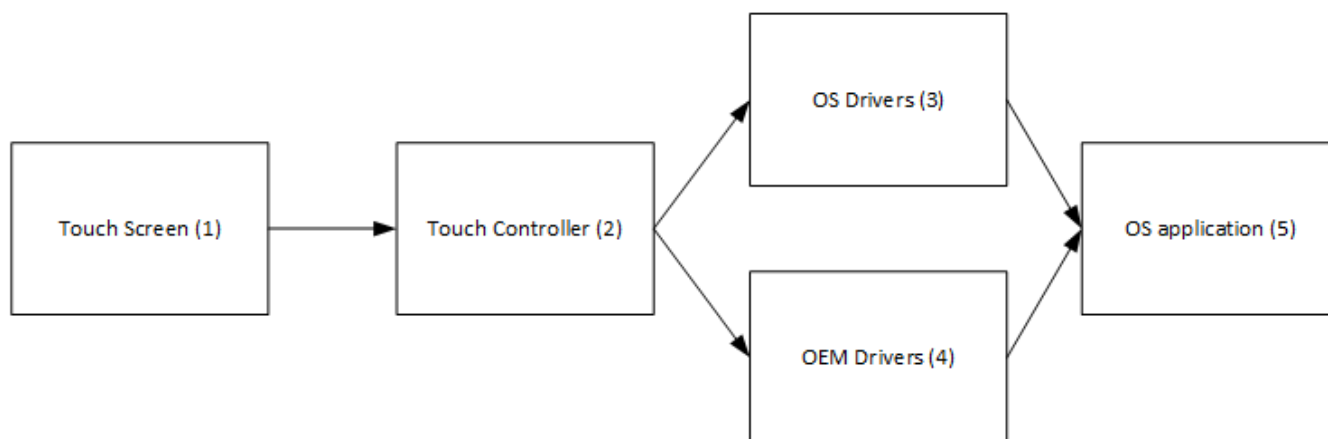
There may be some scenarios that you need to customize the touch screen parameters such as Beep on Touch on the primary screen and disable the beep on the secondary screen. There are several options for you as below,

- By eGalaxTouch Utility – as described in the driver package in 2.2.1 Driver Package, there is a control panel provided by the OEM Touch Driver and you can change the settings in the control panel. See **UserGuide.chm** as described in the same section for details. A reminder that each monitor can set individually by selecting the appropriate touch controller from the 'General' tab. (see Figure 6 Monitor Mapping that you can select the controller to do the following customization)
- By modifying the INI file before the driver installation. In some cases, you already know your preference settings before the installation and you can build the OS image by installing the predefined value in **eGalaxTouch\_reg.ini** as described in 2.2.1 Driver Package. If it's a dual monitor scenario, the settings will apply to both monitors and will require additional changes after your driver installation. It will be better to finalize the parameters setup before you clone the OS image.
- By unattended utility, if you want to change the settings in the store unattended, please reach TGCS focal for additional support such as On/Off Beep on Touch, On/Off Touch Screen, Adjust Touch Sensitivity, MonitorMapping...etc.

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## 1.7 Calibration

The screens do not normally need calibration (they come from the factory calibrated and do not need periodic recalibration). But there are a few of the factors might bring a shift of the cursor location, here provides a few of the guidance for re-calibration. Below is the flow chart to tell how the cursor reporting from Touch Screen to the application, and any of the component may bring the cursor shift issue.



**Figure 7 Cursor Reporting Flow**

There are several tools that can help the calibration and here are a table for reference

Name	Operating System	Description
Windows Control Panel	Windows	See 2.1.1 Windows Calibration and stored in the OS application (5) of above Reporting Flow
Calibration.zip	Windows	It will store in the (2) Touch Controller of above Reporting Flow
OEM Driver Calibration	Windows	See 2.2.6 eGalaxTouch Utility and User Manual and Figure 21 eGalaxTouch Calibration gray-out It will store in the (4) OEM Driver of above Reporting Flow
ecalib	Linux	Please refer to the 2.3 Linux OEM Touch Driver and the user guide will guide you how to use it in Linux environment. It will store into (2) Touch Controller of above Reporting Flow

In most cases, the calibration is not required but given a long reporting flow, any component may encounter any issue in a long period of time. It could be recovered mostly by 'reset' of (5) OS application mentioned above and some cases, you may need to reset the value inside the controller. Please go to TGCS service team to get the Calibration.zip if it's windows environment or you can use 'ecalib' tool in Linux environment.

## 1.8 Summary

The touch screen is optimized for windows 10 which has the ability to respond the gestures in addition to classical single icon touches. If gestures are required, the embedded OS drivers should be used (no OEM driver installed). An OEM driver is provided for legacy applications that require a HID pointer/mouse interface or audible beeper. Available monitor association utilities are available in the OS control panel and the OEM driver for dual monitor setups.


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## 2.0 Appendix

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### 2.1 Windows 10 Control Panel Touch Settings Options

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For Windows 10 native driver, select the **search** from the taskbar beside of **Start**  button (refer to <https://support.microsoft.com/en-us/help/17190/windows-10-search-for-anything>), then type **Control Panel**, you will be able to see the traditional **Control Panel** (see Figure 1 Hardware Control Panel) and select **Hardware and Sound** and use **Pen and Touch** (see Figure 2 Pen and Touch) and **Tablet PC Settings**, as shown in Figure 4 - Tablet PC Settings. You will be able to configure the touch operations there.

**Note:** If you installed the OEM driver, **Tablet PC Setting** will not be present.

On the **Display** tab (see Figure 4 - Tablet PC Settings) you may associate two monitors to their respective touch panels by clicking on the **Setup** button. That will bring up the “Touch...screen” image (as shown in Figure 5 – Touch this screen). Touch that panel to associate the touch screen with that video and the image will pass to the next monitor where you touch to do that association.

#### 2.1.1 Windows Calibration

Normally calibration is not required, as the PCAP solution come from the factory already calibrated and generally never need recalibration. But if there is a need to refine the calibration for a specific application, the Windows calibration feature is provided by Microsoft. To invoke a calibration, first select the screen from the pull-down list and click on **Calibrate**, (see Figure 10 Calibrate and Reset Button) which will cause the screen as shown in Figure 8 Calibrate Screen.

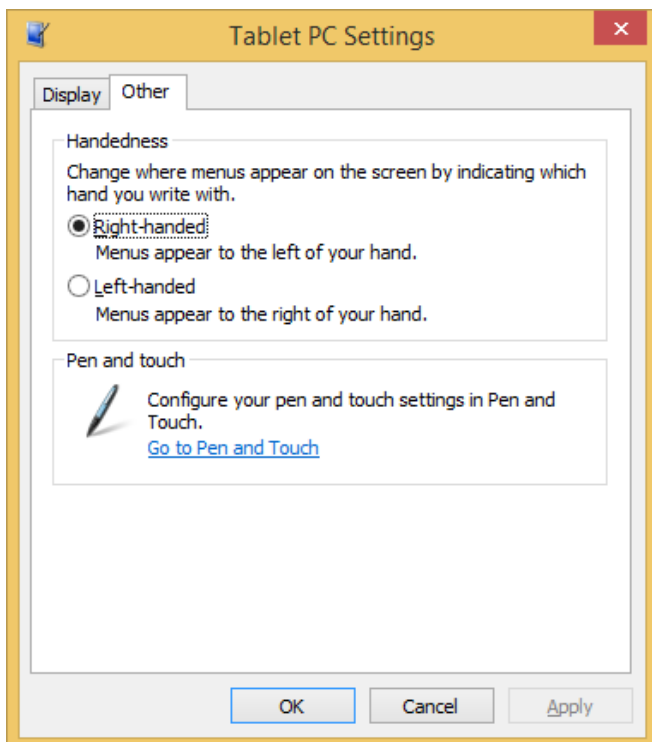
Touch the crosshair as it moves from position to position. There are up to 16 different positions (4 in each corner) that need to be accurately touched. For good success, you need to align your stylus up on each crosshair before touching and do not linger on the point. The method is somewhat tedious, but can give good results with practice. If the results are not acceptable, you may click on the **Reset** button (see Figure 10 Calibrate and Reset Button) to return to factory calibration.

Again, the factory calibration is generally quite good for most POS applications, and it is not recommended that the calibration routine be exercised unless it is really necessary.

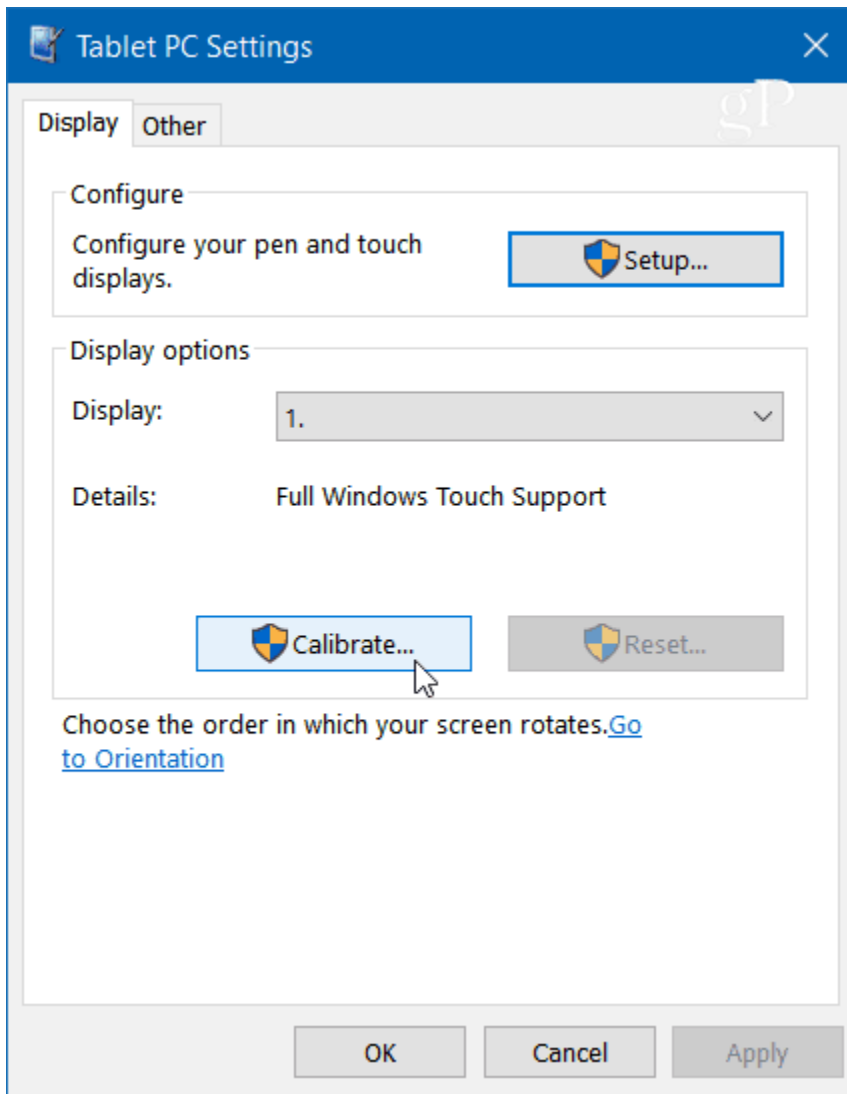


**Figure 8 Calibrate Screen**

The **Other** tab basically allows setup of left-handed users, as shown in Figure 9 Other tab.



**Figure 9 Other tab**



**Figure 10 Calibrate and Reset Button**

## 2.2 Windows OEM Touch Screen Driver

A Windows touch screen OEM driver is provided for those single touch applications where button click configuration is required and/or system audible beep is required. It is also an alternative to resolving rapid single touch performance issues, plus adding features. It is intended to emulate the popular configurations found on older touch solutions, such as the button click configuration, double-click speed/area settings and a momentary right click option. The list below summarizes the benefits of using the driver.

- Classical pointer/mouse operation/performance (faster input speeds for single touch applications)
- Different mouse button modes (click-on-touch, click-on-release, normal mode-mouse/drag mode)
- System beeper
- Edge compensation
- Define active area

**Note:** Before installing the OEM driver, any driver that was previously used must be uninstalled completely before installing the new driver. Reboot the system after uninstalling all previous drivers to clear out any residual files or registry entries. Also, you will lose the gestures Windows supported if using the OEM driver.

**Warning:** If you install the OEM touch driver, both the **Pen and Touch** and **Tablet PC Setting** will disappear. It also means the windows will recognize your touch panel as a mouse (no longer a digitizer), all the tablet user experiences will be lost. If you are using the On-Screen Keyboard as your input device, it will turn on automatically in digitizer mode (tablet mode) in windows native driver but you will need to turn on it yourself.

### 2.2.1 Driver Package

The eGalaxTouch driver provided by TGCS is to act as a HID pointer/mouse and is a full featured driver with button configuration options, double-click settings, and system beeper...etc.

The driver package contains several files (below is an example only, it might be different from version to version)

Name	Ext	Size	↓Date	Attr
[..]		<DIR>	08/09/2023 10:38	----
[global]		<DIR>	08/09/2023 10:33	----
[x64]		<DIR>	08/09/2023 10:33	----
[x86]		<DIR>	08/09/2023 10:33	----
setup	log	173	08/09/2023 11:35	-a--
uninstall	iss	520	08/09/2023 10:49	-a--
SilentUnDrv	exe	1,036,568	08/09/2023 10:28	-a--
setup	iss	1,075	08/09/2023 09:56	-a--
MonitorMapping	exe	7,425,536	08/08/2023 22:04	-a--
setup	ini	3,164	08/08/2023 22:01	-a--
Touch Screen UserGuide V2.4	pdf	1,149,150	06/07/2023 16:01	-a--
setup	exe	813,960	08/05/2022 16:04	-a--
data1	cab	803,919	08/05/2022 15:25	-a--
data1	hdr	15,888	08/05/2022 15:25	-a--
data2	cab	512	08/05/2022 15:25	-a--
layout	bin	550	08/05/2022 15:25	-a--
setup	inx	284,073	05/25/2022 14:28	-a--
SilentInstall	bat	291	06/29/2021 13:36	-a--
Declaration	txt	4,130	02/12/2020 14:42	-a--
ISSetup	dll	581,120	08/21/2011 23:08	-a--
0x0409	ini	22,492	03/23/2010 16:44	-a--

**Figure 11 Driver Package**

Below is an introduction to those files

- **Touch Screen UserGuide V2.4.pdf**– this is the user guide from TGCS for a general overview to the touch screen (version will be updated)
- **Setup.exe** – key installation file
- **SilentUnDrv.exe** – silent uninstallation file for silent uninstallation in widows
- **SilentInstall.bat** - silent install batch file
- **MontiroMapping.exe** – automatic monitor mapping after the driver is installed and rebooted

There are some key files In the **global** folder

- **UserGuide.chm** – this is the detail user guide for eGalaxTouch driver and utilities. You can see much more detail setting explanations here.



- **eGalaxTouch\_reg.ini** – key default parameters for installation. (see Table 3 Configuration Table)

**Table 3 Configuration Table**

Name	Value	Description
BeepMode	0x00000000	Beep Off
	0x00000001	Beep when touched <b>(Default)</b> , Beep On Touch
	0x00000002	Beep when released, Beep On Release
BeepFrequency	0x00000064 ~ 0x00000FA0	Beep Frequency <b>(Default 0x00000320)</b> <sup>5</sup>
BeepDuration	0x00000019 ~ 0x000001F4	Beep Duration <b>(Default 0x00000064)</b> <sup>6</sup>
MouseMode	0xxxxx0001	Set to 'Click on Touch' <sup>7</sup>
	0xxxxx0002	Set to 'Click on Release' <sup>8</sup> <b>(Default)</b>
	0xxxxx0003	Set to 'Click on Release without moving cursor' <sup>9</sup>
	0xxxxx0004	Set to 'Click on Touch without moving cursor' <sup>10</sup>
	0xxxxx0005	Set to 'Desktop mode' <sup>11</sup>
	0x4000xxxx	Enable auto right button feature (Default)
	0x0000xxxx	Disable auto right button feature
	0x2000xxxx	Disable Touch
BeepSource	0x00000000	No Beep

<sup>5</sup> Beep Frequency unit is Hertz and default value is 800Hz which is 0x00000320. The range is 100Hz to 4000Hz

<sup>6</sup> Beep Duration unit is millisecond and default value is 100ms which is 0x00000064. The range is 25ms to 500ms

<sup>7</sup> **Click on Touch** – button click (button down followed by an immediate button up) at the moment of touch

<sup>8</sup> **Click on Release** – button click only when the touch is release. If you migrated from the predecessor ELO Touch solution (TGCS 4820, TCxWave or TCxDisplay machine type), it can be acted the same as 'Click on Release' setting from ELO Touch Driver.

<sup>9</sup> **Click on Release without moving cursor** – Same button click position as Click on Release but the cursor movement prior to the touch release will not be reported.

<sup>10</sup> **Click on Touch without moving cursor** – Same button click position as Click on Touch but the following cursor movement before the touch release will not be reported. If you migrated from the predecessor ELO Touch solution (TGCS 4820, TCxWave or TCxDisplay machine type), it can be acted the same as 'Click on Touch' setting from ELO Touch Driver.

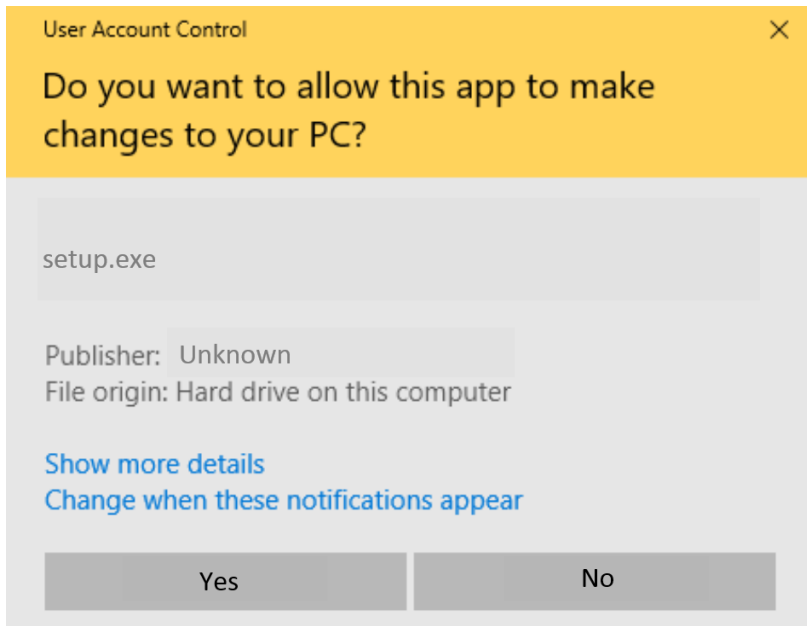
<sup>11</sup> **Desktop mode** – With this mode, it behaves similar to Normal Mode but mouse button down will be delayed for a few milliseconds which bring the touch more stable.

Name	Value	Description
	0x00000001	Beep from system beep <b>(Default)</b>
	0x00000010	Beep from sound card
DBCLICKSPEED	300~900	Set double click speed <b>(Default 600)</b> <sup>12</sup>
DBCLICKSIZE	8~128	Set double click area <b>(Default 100)</b>

**Caution: Please backup files before your modification and DO NOT edit any other parameters. Any wrong parameter modification will bring the severe problems.**

## 2.2.2 Manual Installation

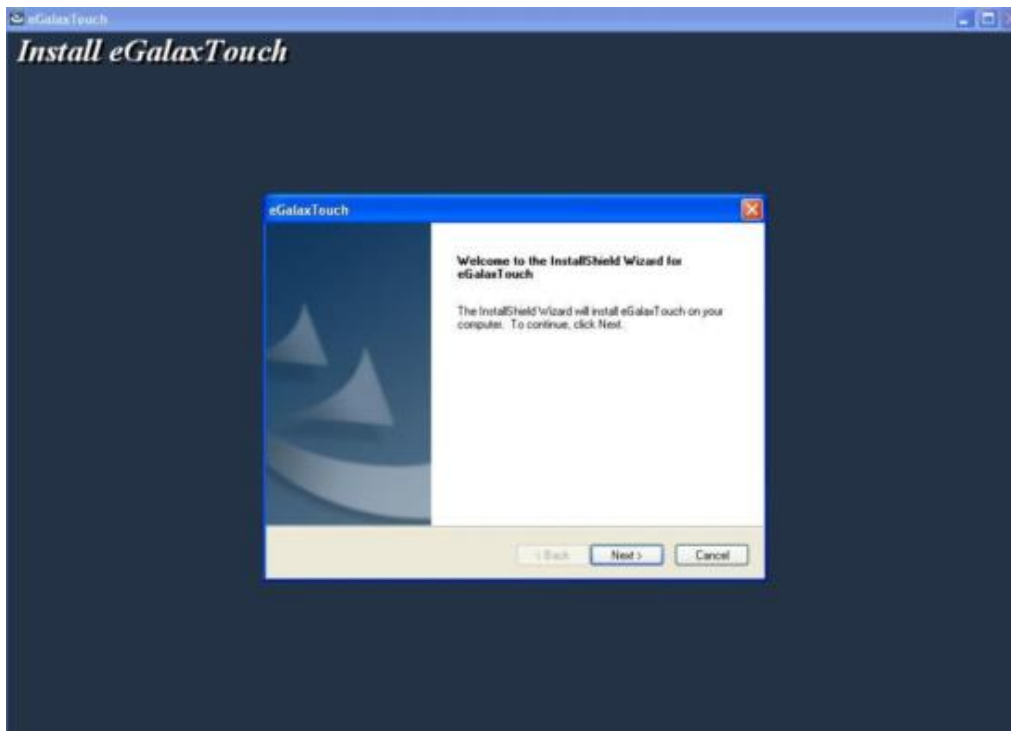
Double click **setup.exe** in the driver package (mentioned in above section). After giving the administrative privilege (or press Yes in User Account Control as below)



**Figure 12 User Account Control**

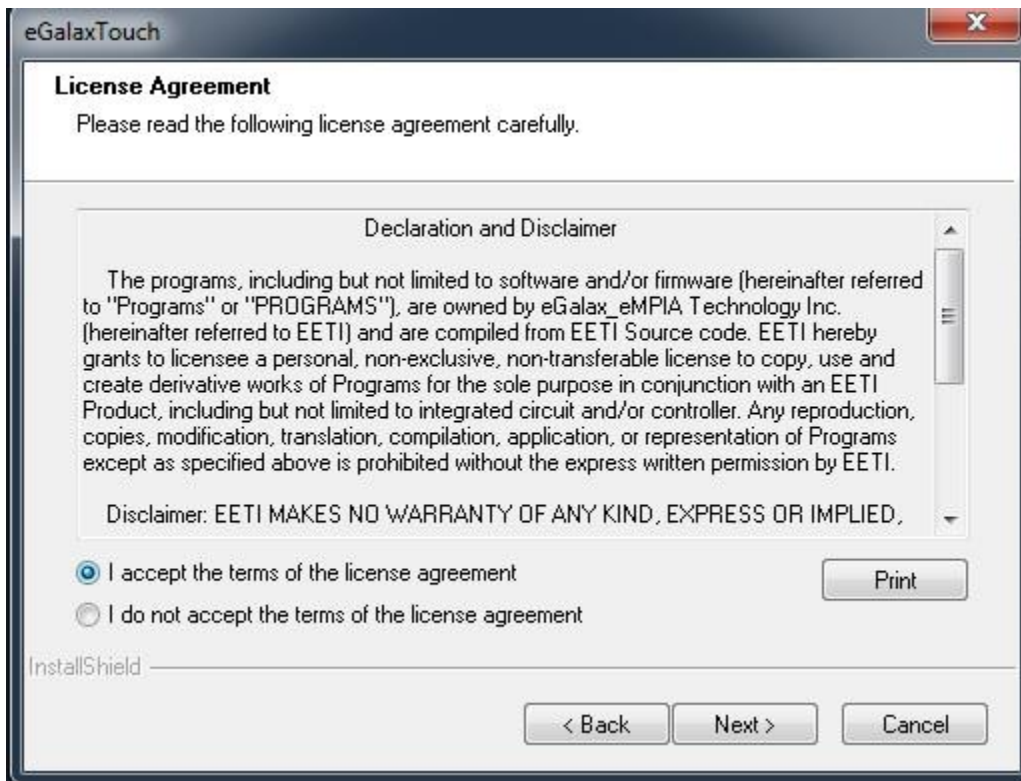
Follow the instruction below to finish the installation

<sup>12</sup> Windows default settings are probably 500ms per the MSDN [https://msdn.microsoft.com/en-us/library/windows/desktop/bb760404\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/bb760404(v=vs.85).aspx), and max might be 5000ms per SPI\_SETDOUBLECLICKTIME in [https://msdn.microsoft.com/zh-tw/library/windows/desktop/ms724947\(v=vs.85\).aspx](https://msdn.microsoft.com/zh-tw/library/windows/desktop/ms724947(v=vs.85).aspx), the settings here are relative value stored in the Windows 10 mouse settings.



**Figure 13 Startup window.**

Press 'Next' to continue the installation



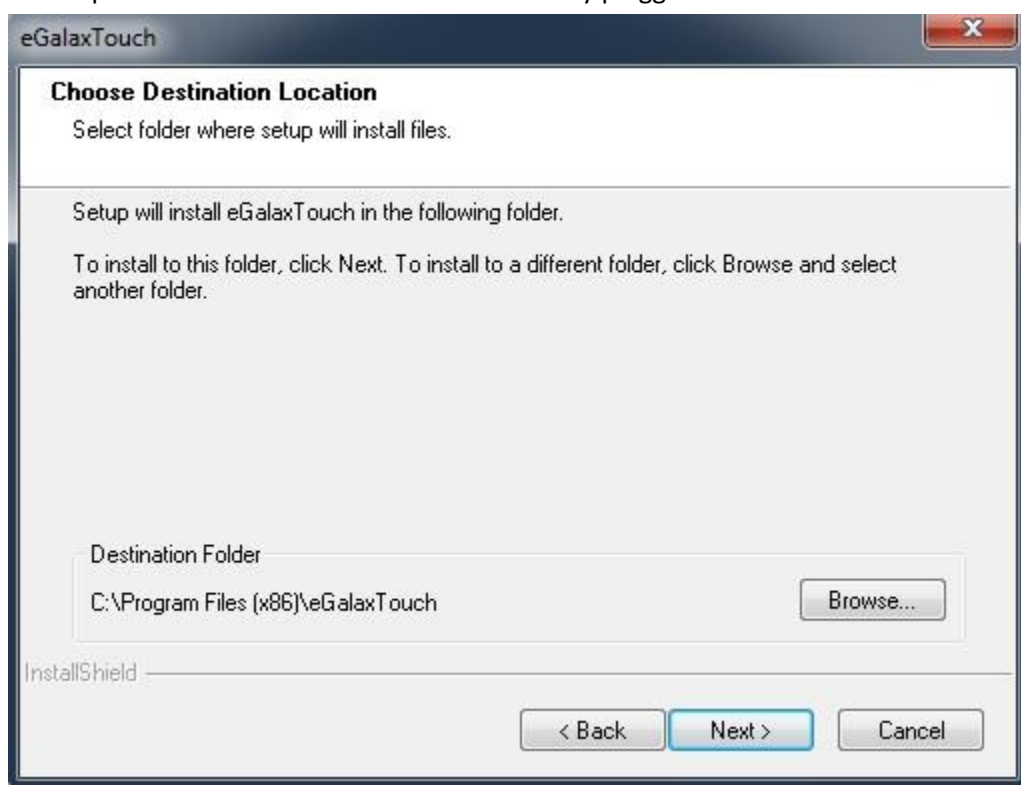
**Figure 14 License Agreement**

Check 'I accept the terms of the license agreement' and 'Next'



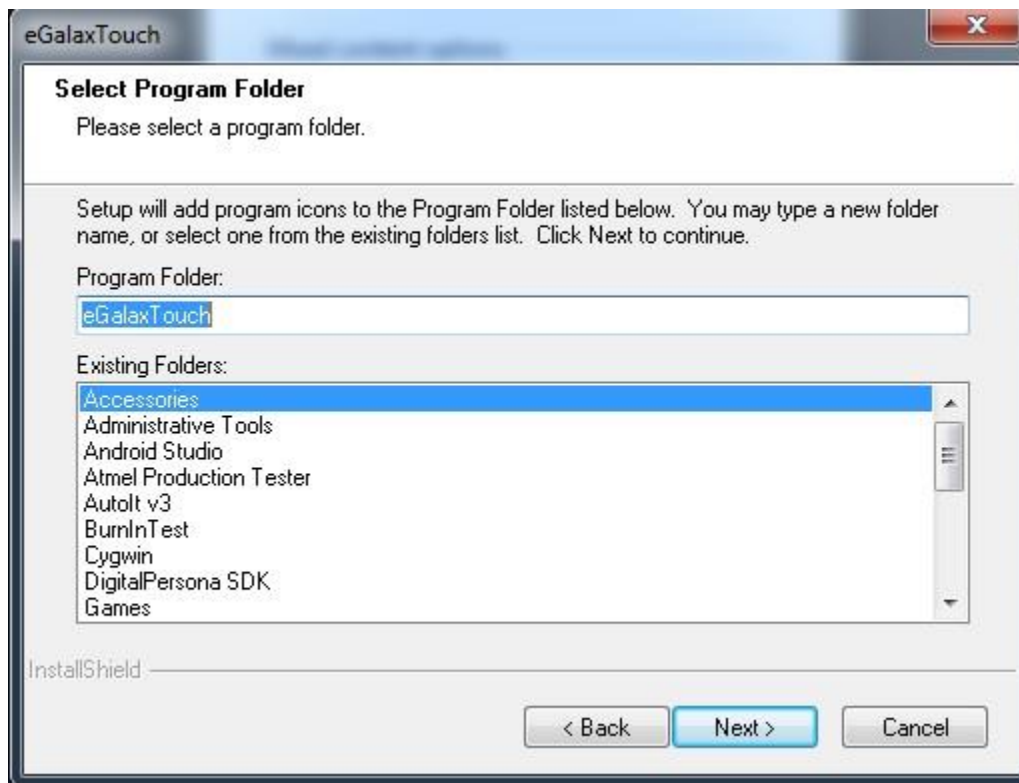
**Figure 15 Reminder**

Please press 'OK' if the touch monitor is naturally plugged.



**Figure 16 Choose Location**

Default destination folder is suggested here and press 'Next' again



**Figure 17 Select Program Folder**

eGalaxTouch folder is suggested, press 'Next'



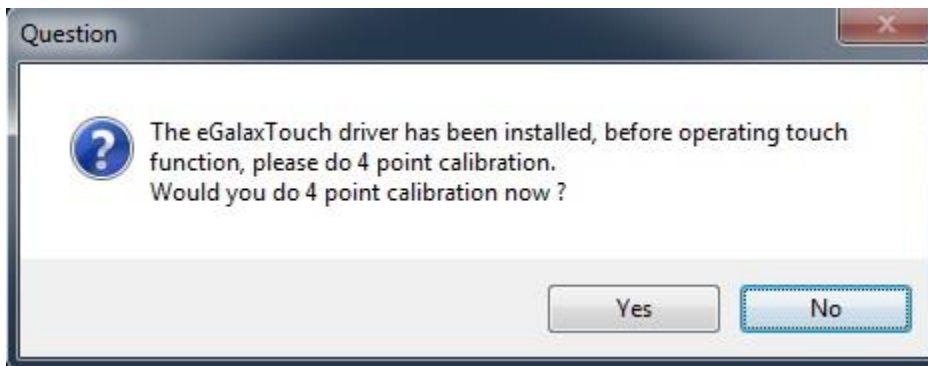
**Figure 18 Create shortcut**

Check or uncheck for the shortcut creation and press 'Next'



**Figure 19 Shortcut for the utility**

Check or uncheck the utility shortcut creation and press 'Next'



**Figure 20 Calibration**

Press '**No**' and it will automatically finish the installation. You will be able to see the driver/utility installed and shortcut created if you checked.

### 2.2.3 Silent Installation

To install the driver with no user interaction, run the **SilentInstall.bat** in the driver package folder using administration privileges. A CMD window will appear that the process will take about a minute to complete. After the installation is complete, the CMD window will be closed.

## 2.2.4 Uninstalling Driver

To uninstall the driver, open the Microsoft **Settings/Apps & features** then select the **eGalaxTouch** driver and choosing **uninstall** or **remove**. When finished, it is required to do a reboot to remove any residual files or registry entries before starting the install process on the new driver. But at this stage, you will be unable to click the button of Finish, you already uninstall the driver and you will have to use some other input devices to click 'Finish' such as an additional mouse plugged.

To silent uninstall the driver, run the **SilentUnDrv.exe** in the driver package folder by using administration privileges. A CMD window will appear that the process will take about a minute to complete. After the uninstallation is complete, the CMD window will be closed **and a reboot will be triggered automatically without any prompt. After your uninstallation, you might need to map your touch through another input device (additional mouse attached) in Tablet PC Settings.** It is because the Windows native driver need to take the control and required to remap the displays.


## 2.2.5 Language Support

The drivers supports the following languages for the messages

- Chinese Simplified
- Chinese Traditional
- English
- French
- German
- Italian
- Japanese
- Korean
- Dutch
- Russian
- Spanish

For those systems that installed another language pack, you might not be able to see the proper language (such as ???) shown if you don't have a right setting, please type **Control Panel** in search tab and press Enter. In the new window, select the **Clock, Language and Region**, click the **Region**, then under **Administrative -> Language for non-Unicode programs**, click **Change system locale**, then select the language to map the language pack you installed. (refer to Microsoft community <https://answers.microsoft.com/en-us/surface/forum/surfbook-surfaccess/how-to-change-system-locale-in-windows-10-the/d7826ef0-13cd-43ea-8e01-2846d813dfed>)

## 2.2.6 eGalaxTouch Utility and User Manual

There is one user guide after you installed the OEM driver. Select **Start**  button, and you will see **eGalaxTouch** from the program list, select **Document**, you will be able to invoke the user guide **UserGuide.chm** as we described in section 2.2.1 Driver Package. It contains the details of eGalaxTouch General information, eGalaxTouch Tools, eGalaxTouch setting, eGalaxTouch multi-monitor configuration, eGalaxTouch edge compensation.

The calibration function (as shown in Figure 21 eGalaxTouch Calibration gray-out) is not required for PCAP touch which TGCS (Toshiba Global Commerce Solution) used and calibration functions are all gray-out as expected. (They are reserved for Resistive Touch.)

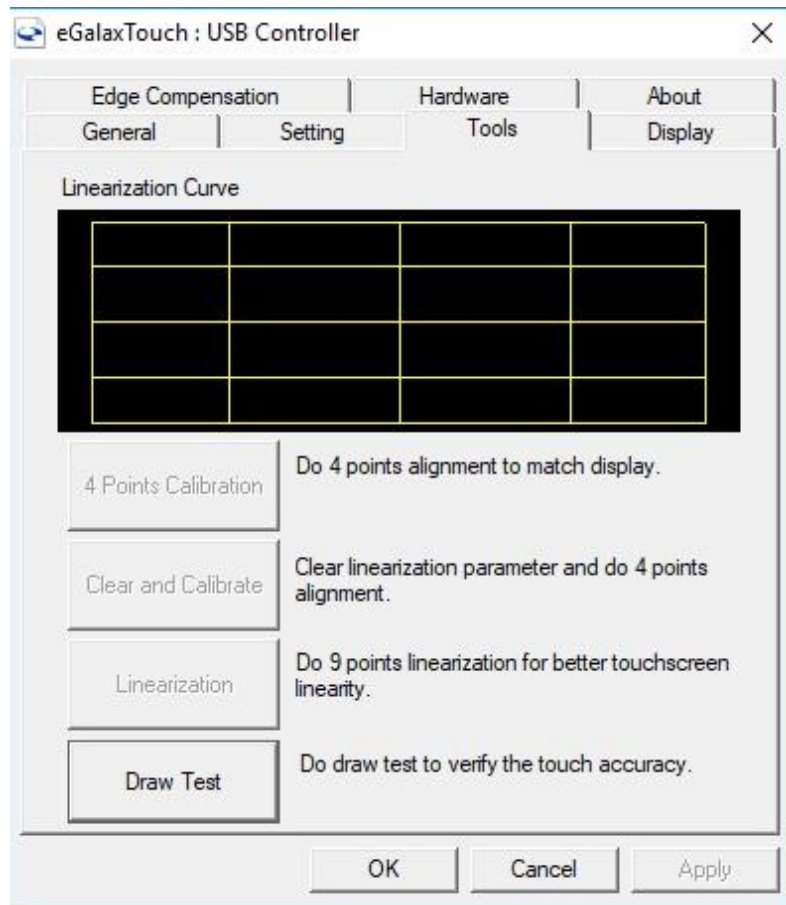



Figure 21 eGalaxTouch Calibration gray-out

## 2.2.7 Windows On-Screen Keyboard

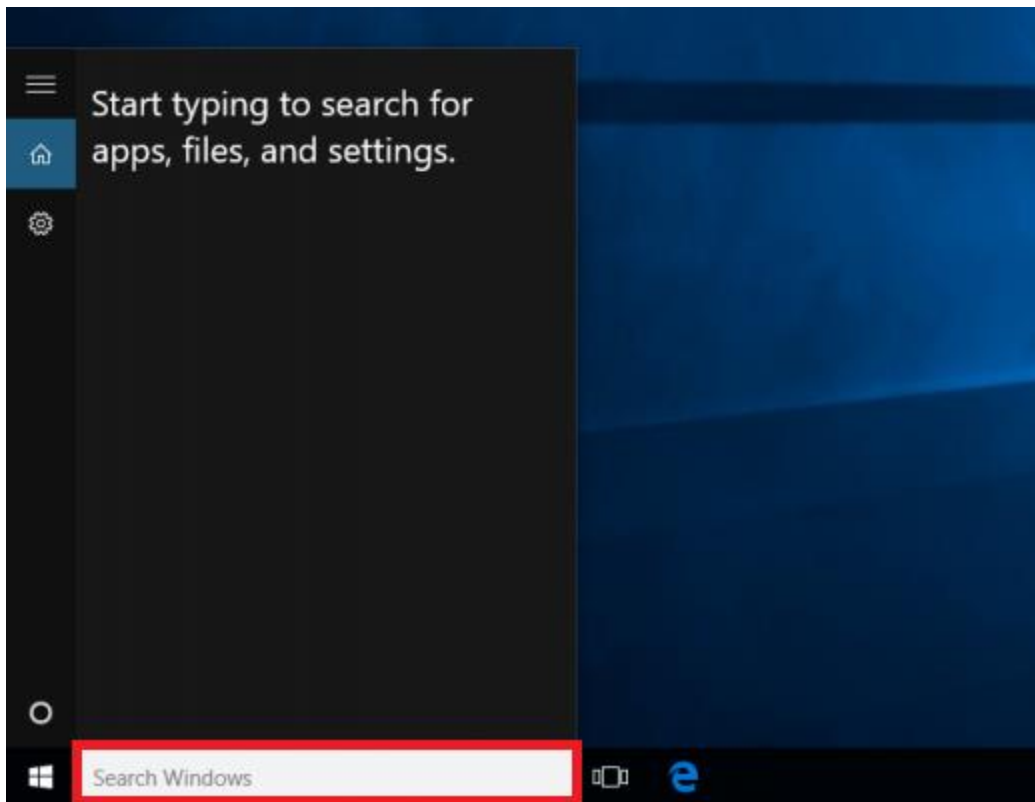
There is one feature provided by Microsoft Windows, On-Screen Keyboard which will be disabled automatically if there is no digitizer (come with windows native touch driver). If you still want to use this feature in OEM driver installed condition, you will need to start it by yourself and through the setting to turn on it automatically.

Please follow the steps mentioned below and see if it helps.

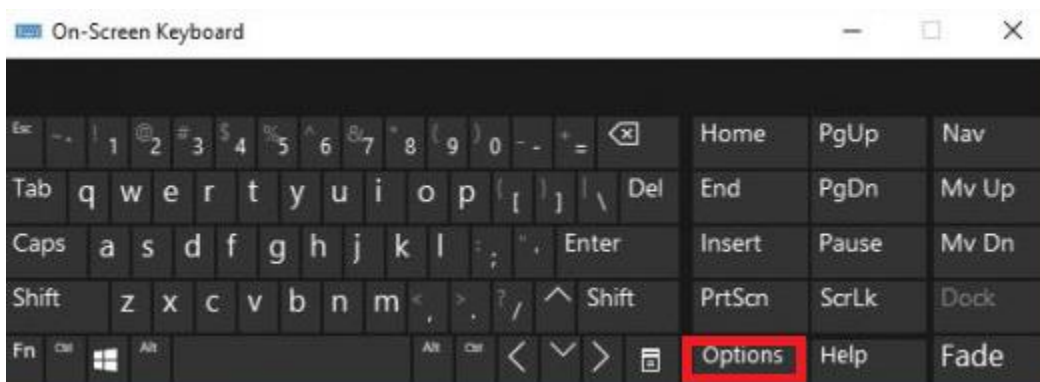
Select the **search** from the taskbar (see below Figure 22 Search Window) beside of Start  button (refer to <https://support.microsoft.com/en-us/help/17190/windows-10-search-for-anything>), then type **OSK**, On-Screen Keyboard will pop up. Click the On-Screen Keyboard and click **Options** on the Keyboard (see below Figure 23 Options in On-Screen Keyboard ).

Then click the '**Control whether the On-Screen Keyboard starts when I sign in**' on the bottom popup window shown as Figure 24 Control in Options of On-Screen Keyboard. Click 'Use On-Screen Keyboard' shown as Figure 25 Use On-Screen Keyboard. In most cases, you may **Fade** it that it will not block your normal screen.





**Figure 22 Search Window**



**Figure 23 Options in On-Screen Keyboard**

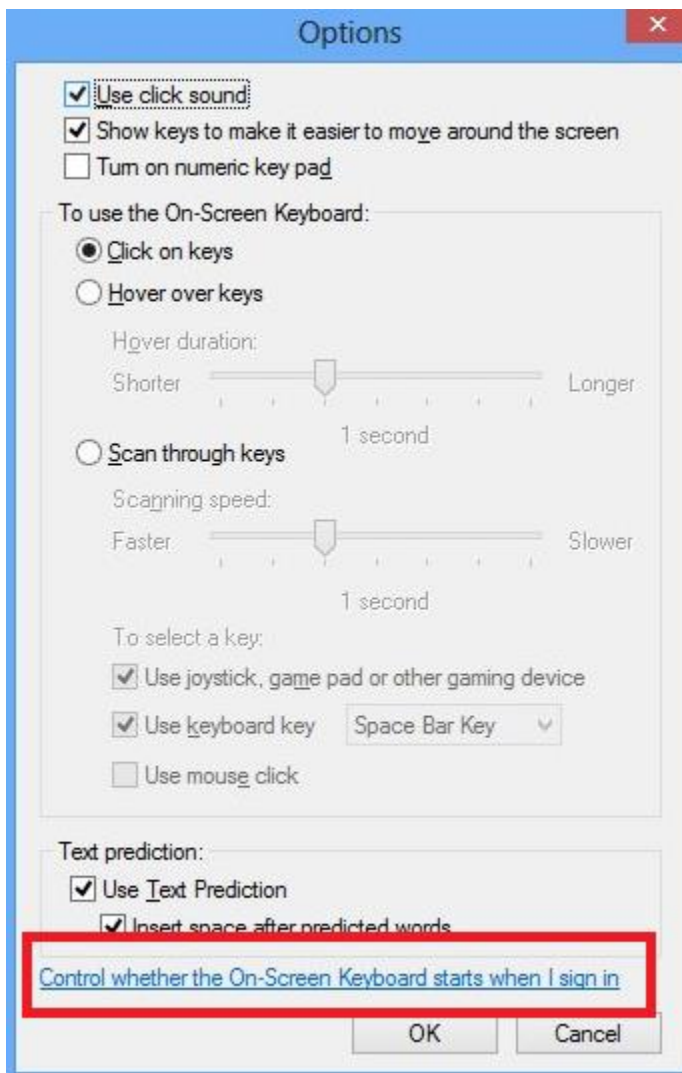


Figure 24 Control in Options of On-Screen Keyboard

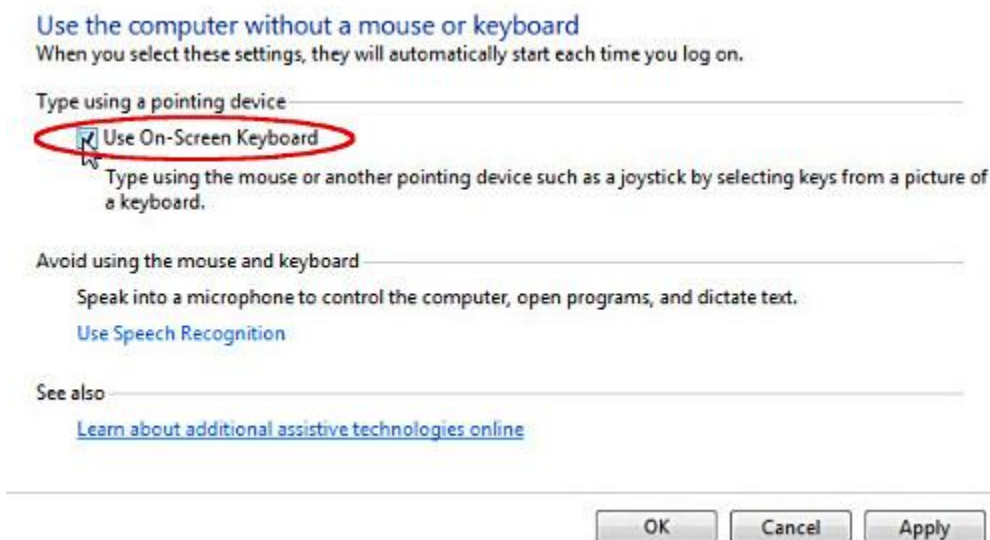


Figure 25 Use On-Screen Keyboard

### 2.2.8 Multi-Point touch under OEM driver installed

Please contact TGCS for further information (eGalaxTouch\_API\_5.13.0.140331.zip) of how to use multi-touch under OEM driver (eGalaxTouch) installed.

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## 2.3 Linux OEM Touch Driver

Please go to [https://www.eeti.com/drivers\\_Linux.html](https://www.eeti.com/drivers_Linux.html) to get the latest Linux driver and it contains two user guides

- eGTouch\_Utility\_Guide\_for\_Linux\_vxxx.pdf, it provides a guidance of Linux driver utility which is similar to the same graphic user interface as windows
- EETI\_eGTouch\_Linux\_Programming\_Guide\_vxxxx.pdf, it provides more guidance how you install the linux driver in several ways and kernel version details. It also tells several utilities offered in Linux environment

If you encounter any problem, the touch controller will support through emailing to [touch\\_fae@eeti.com](mailto:touch_fae@eeti.com) directly.

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## 2.4 Android OEM touch Driver

Please go to [https://www.eeti.com/drivers\\_android.html](https://www.eeti.com/drivers_android.html) to get the latest driver and the Touch Controller vendor will do the support directly if you encounter any problem by emailing to [touch\\_fae@eeti.com](mailto:touch_fae@eeti.com).

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## 2.5 Dual Monitor Scenarios

There are a number of dual touch screen display combinations. Each touch solution has its own controller type and any specific utilities for that controller type will only apply to like controllers. If any secondary display attached no matter it is a touch monitor or a non-touch monitor, a calibration is required. (please see section 2.1 Windows 10 Control Panel Touch Settings Options and 2.2 Windows OEM Touch Screen Driver for details) For association processes, the one provided by Microsoft is controller agnostic, but if there is an OEM driver loaded, its association process may only work with like controllers. So, if the touch screens are using the embedded Microsoft drivers (no OEM driver installed), then the operating system will acknowledge the screen automatically in most of the time. If you see a problem of the screen association, you may try to run **Display Settings** to change the association. However, if the OEM drivers are installed, the association process may get a little more complicated if the touch screens have dissimilar touch controllers.

The association method varies depending on whether the attached display is in Clone mode or Extended mode, whether it is a TCx Display/TCx800/TCx810 Additional Display (PCAP touch) or a SurePoint monitor (IR touch) and whether an associated TCx800/810 has an OEM driver loaded or not.

**Note:** If the SurePoint monitor is attached, an ELO driver will also need to be installed to work as the extended touch monitor.

A summary is shown in the following table. Each scenario is described in more detail in subsections below. It is not recommended that only eGalaxTouch driver be installed for **Extended Mode**; the ELO touch driver is recommended if you want an OEM driver replacing the Windows 10 Native Driver while in **Extended Display Mode**. Both drivers installed is also an alternative solution.

**Table 4 Dual monitor scenarios (supported) for the All-in-One Product**

Primary Screen	Secondary Screen	OEM Driver	Clone	Extended Mode Association
All-in-One (such as TCx800 / 810)	TCx Display	None (Win 10)	No action	Run <b>Display Settings</b>
		ELO Driver*	No action	Run <b>Calibrate</b> (ELO)** Run <b>Setup</b> (Tablet PC Settings)***
		eGalaxTouch & ELO Driver	No action	Run <b>Calibrate</b> (ELO)** Run <b>Monitor Mapping</b> (eGalaxTouch)
	SurePoint 2xx/5xx	None (Win 10)	No action	Not support
		ELO Driver*	No action	Run <b>Calibrate</b> (ELO)** Run <b>Setup</b> (Tablet PC Settings)***
		eGalaxTouch & ELO Driver	No action	Run <b>Calibrate</b> (ELO)** Run <b>Monitor Mapping</b> (eGalaxTouch)
	10.1" Additional Display	None (Win 10)	No action	Run <b>Display Settings</b>
		eGalaxTouch	No action	Run <b>Monitor Mapping</b> (eGalaxTouch)

\* Only ELO driver installed for the 2<sup>nd</sup> display. The primary display is supported by Windows 10 Native Driver.

\*\* You will need to tap on the TCxDisplay or SurePoint Display while running ELO **Calibrate**.

MontiroMapping.exe is not supported for SurePoint Display or 1<sup>st</sup> generation touch controller solution (TCxDisplay with ELO Driver Solution)

\*\*\* You will need to associate the TCx800/810 by Windows **Display Settings**

## 2.5.1 TCxDisplay 6149-5xx Attached to an All-in-One (TCx800/810) System

The All-in-One Product may not use the same touch controller type as the TCxDisplay 6149-5xx

### Win10, no OEM touch driver

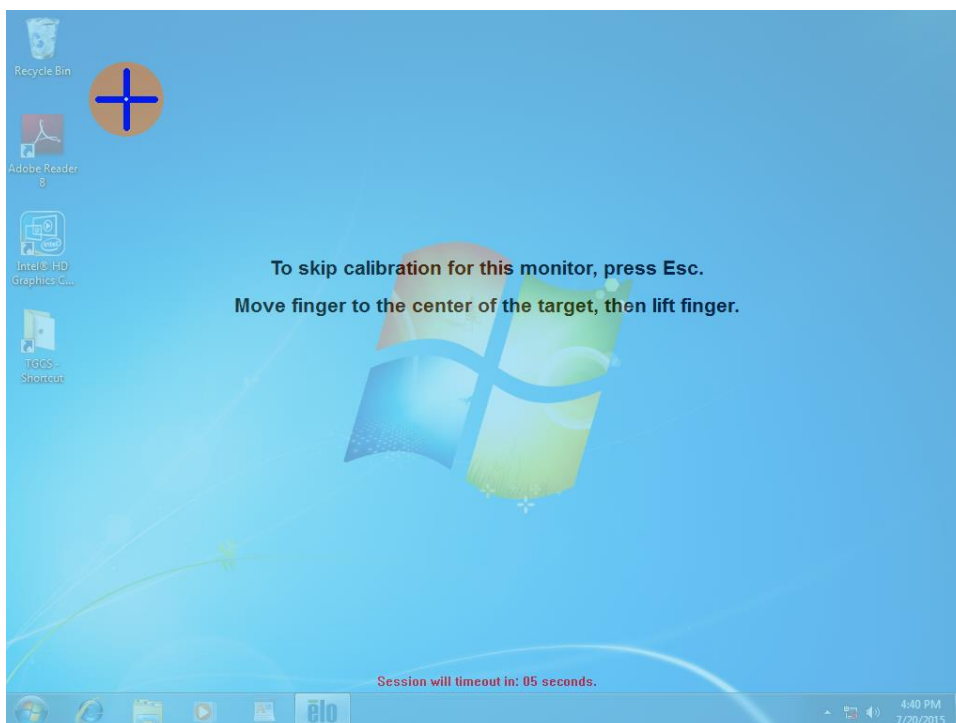
If there is no OEM driver installed, where touch is controlled by the Windows native drivers, then any association of touch screens to monitors is done by invoking **Setup** in the **Tablet PC Settings** control panel (see Figure 4 - Tablet PC Settings) or by searching **Display Settings**. Simply touch the screen that has the "Touch this screen..." image, in succession as it moves from monitor to monitor. For the clone mode, no action is required.

## ELO Driver for the TCxDisplay 6149-5xx

With the ELO driver installed for the TCxDisplay 6149-5xx<sup>13</sup>, the touch-to-monitor association is accomplished by opening the **EloConfig** utility and clicking on the **Calibrate** button. A calibration target (see Figure 26 Calibrate/Associate target) will appear on the primary monitor, which should be All-in-One Product (such as TCx800/810). Since All-in-One Product will not respond to touch in this case, from a keyboard click ESC to proceed to the next screen (such as TCxDisplay 6149-5xx). Touch the target and a confirmation button (see Figure 27 Confirmation calibration screen) will appear which should be clicked. One limitation is the ELO driver only works with the primary resolution lower than 1366x768, and if you use a higher resolution on the primary screen such as 1920x1080 on TCx810, it will not work unless you switch the primary screen to lower or equal to 1377x768.

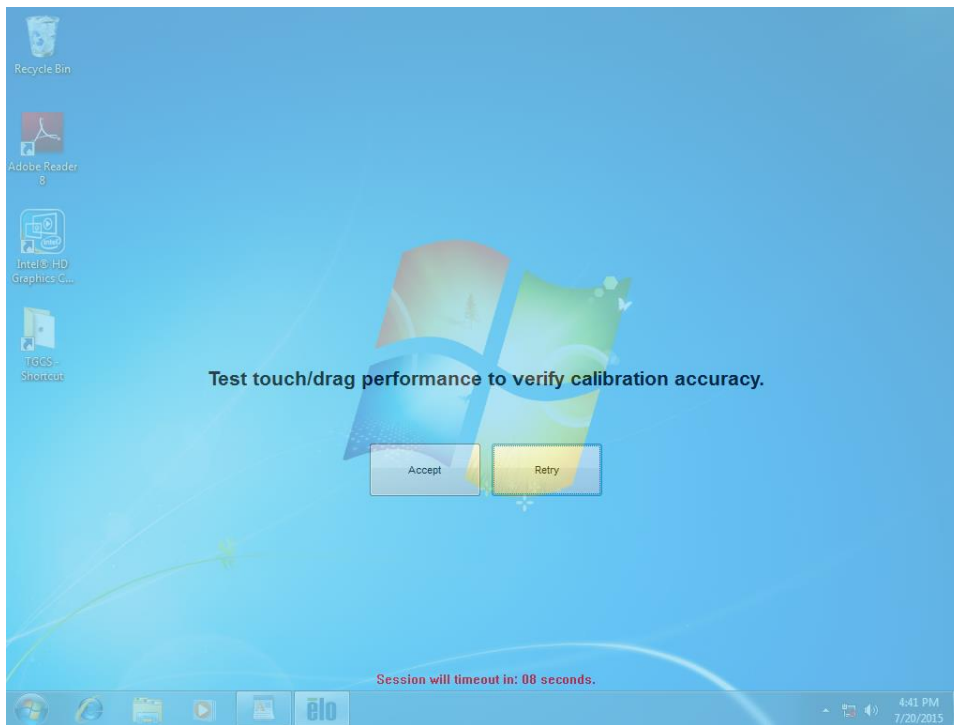
For All-in-One Product primary display, it is driven by Windows native driver, use **Setup** in the **Tablet PC Settings** control panel (see Figure 4 - Tablet PC Settings) for association mentioned above.

For the clone mode, no action is required.



**Figure 26 Calibrate/Associate target**

<sup>13</sup> Please check Toshiba Global Commerce Solution website for the TCxDisplay Touch Driver. You can check the link below (it might be moved to another location and please go to TCxDisplay Support website)  
<https://www.toshibacommerce.com/?urile=wcm:path:/en/home/support/product-support/support-hardware/support-displays-sitearea/support-display?mapping=GenericDetail>.



**Figure 27 Confirmation calibration screen**

## eGalaxTouch & ELO Drivers Installed

With the eGalaxTouch installed for All-in-One Product and ELO driver installed for TCxDisplay 6149-5xx, you will see the association will be triggered while installing ELO driver and once you correctly clicked the TCxDisplay while ELO driver calibration screen showed (see Figure 26 Calibrate/Associate target and accepted as Figure 27 Confirmation calibration screen), you've done for TCxDisplay and you will need to run **Monitor Mapping** for TCx800/810 (primary display, see Figure 6 Monitor Mapping), then the touch-to-monitor should be finished without any problem. For clone mode, no action is required.

### 2.5.2 SurePoint 2xx/5xx Attached

The SurePoint 2xx/5xx display uses an Elo IR touch solution. For clone mode situations, no driver is required and no action is required for USB versions. But for the extended mode, an Elo driver must be loaded. To associate the touch to the monitor, click on **Calibrate** in the main menu of the **EloConfig** utility. A calibration target will appear on the primary monitor, which should be touched. A confirmation button will appear which should be clicked. One limitation is the ELO driver only works with the primary resolution lower than 1366x768, and if you use a higher resolution on the primary screen such as 1920x1080 on TCx810, it will not work unless you switch the primary screen to lower or equal to 1377x768.

For TCx800/810 touch association, you will use the corresponding driver similar to the TCxDisplay. For example, **Setup** in the **Tablet PC Settings** control panel (see Figure 4 - Tablet PC Settings) for Windows Native driver condition and **Monitor Mapping** for TCx800/810 (primary display, see Figure 6 Monitor Mapping) for eGalaxTouch driver installed.

### 2.5.3 TCxDisplay 6149-Bxx/Wxx or 10.1" Additional Display Attached

The TCxDisplay-Bxx/Wxx or TCx800 10.1" Additional Display are using the same touch controller as TCx800/810 All in One systems. If you are using the Windows native driver, it will be mapped correctly in most cases. If you use OEM Touch driver, try **Monitor Mapping** (see Figure 6 Monitor Mapping) for eGalaxTouch driver installed.

---

## 2.6 Triple Monitor Scenarios

It is more complicate to support triple monitor scenario and the first step is to ensure it is supported by the host systems. The 2<sup>nd</sup> step is to ensure that it's eGalax Touch Controller (such as **TCx800, TCx810, and TCxDisplay 6149-Bxx/Wxx**). The touch controller implemented in **SurePoint 2xx/5xx and TCxDisplay 6149-5xx** is **not supported** which means none of them should not be attached in any triple monitor scenario.

Same as above dual monitor scenario, if you are using native Windows driver, please run **Display Settings** mentioned in section 1.3 Dual Monitor Setup.

If you are using OEM touch driver (eGalaxDriver), please run **MonitorMapping** as mentioned in 1.3 Dual Monitor Setup.

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## 2.7 Touch Mode Settings

The OEM drivers have settings to define when the equivalent mouse button actions will occur. By default the setting is for Click-on-Release, where "click" means a button down, followed immediately by a button up action. The "Click-on-Release" means that when one touches the screen, one may move the cursor, but no button action occurs until the finger is released from the screen, and at that very moment a button-down followed by a button-up action occurs.

The "Click-on-Release" permits the user to correct for any finger location before any button action takes place. This is convenient for getting the finger on the correct button before committing any action. Generally this is considered the most secure use of the touch screen for icon touch actions.

However, for rapid touch inputs, the "Click-on-Touch" option may be considered. When making rapid entries, one's finger may slip off the icon before lifting, which means a "Click-on-Release" would miss that attempted touch. To correct for that scenario, the "Click-on-Touch" option may be selected. In this case the button-down with an immediate button-up (click) would occur at the very first contact point. Any movement after the first contact point and before release will be ignored.

Of course, if the icon is not touched on first contact, the entry will be missed for the "Click-on-Touch" option, just as the sliding off case with "Click-on-Release". So, it will be up to the user to decide on is the preferred click option.

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## 2.8 Resolution Settings

For Display Port connections, the Intel Graphics engine may allow to be set to many resolutions which are not fully supported. If one of the unsupported resolutions are chosen, the touch driver may not provide good alignment. In some cases, changing the scaling may help. Please refer to the product user guide for the supported resolutions or see Table 1 Touch Screen Characteristics for a brief.

Using other resolutions may display OK, but the touch alignment may be offset. The recommended resolution is the native resolution of each model. It is not recommended to use any resolution above the recommended.

### Scaling Options for Lower Resolutions

If the application has a 4:3 aspect ratio and used on a model with 16:9 native aspect ratio, for example a 1024 x 768 resolution, then the normal touch alignment will only hold for the following scaling options:

- Maintain display scaling



- Scale full screen

If other options are used (ex: maintain aspect ratio, or center image), the touch alignment may be offset. To work around this, you should use Windows native OS drivers and perform a manual calibration as described in section 2.1 Windows 10 Control Panel Touch Settings Options

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## 2.9 Known Limitations

### 2.9.1 Beep On Touch inactive while inserting USB devices

While you enabled the Beep On Touch function, the beep sounds actually initialized by Microsoft USB driver and once you attach or detach the USB devices, you will notice the beep on touch will be disappeared for a few while and it returns right after the USB driver handle the attachment routine. The similar behavior appears not only the USB devices attach/detach and due to the performance issue, once you launch the application that requires the processing power being focus or the storage devices being stressed, you will notice the beep sound disappeared for a while.

This symptom may also be discovered by another sound is activating that the windows will bring another music up front instead of the beep on touch.

This behavior will not bother normal situation if the system is running normal conditions.

### 2.9.2 Can I use the touch simultaneous touch in dual monitor scenario?

Generally, only one input device will be activated at one time.

There will be two different scenarios

- If you have two application windows showing up each monitor (one on primary screen and the other one on the secondary screen), you will discover the one cursor located will be the active window and if you click on the other screen, the 1<sup>st</sup> touch will not bring the cursor there but it will turn the 2<sup>nd</sup> window as active. You will have to touch the screen again to see the cursor movement.
- If you extend the application window on both screens, you don't need to switch the active window. But the cursor will be reported on one screen still.

None of above scenarios support touch simultaneously and you may design your application well based on the operating system limitation. Such as for some reasons, you will need the customer to input by the secondary touch screen unit. You may design the application to wait for their input and it can help ensuring there is no simultaneous touch condition.

The information from Microsoft (<https://docs.microsoft.com/zh-tw/windows-hardware/design/component-guidelines/simultaneous-pen-and-touch-validation>). There is one utility (digiinfo) may support to check the touch event (WM\_TOUCH) or pointer event (WM\_POINTERDATE). With the pointer event, you will be able to detect both touch screens in a single application (same scenario as 2<sup>nd</sup> case above). It will be able to track two different touch controllers simultaneously.

There are also a few of alternative solutions such as Microsoft MultiPoint Service (<https://docs.microsoft.com/en-us/windows-server/remote/multipoint-services/multipoint-services>) which requires some additional hardware devices to support "simultaneous touch" in windows. (Similar to Linux Multi-Seat)



