

eGalaxTouchManager

Auto Tuning Quick Guide

For EXC31xx Series



eGalax_eMPIA Technology Inc.

EETI CONFIDENTIAL

For Release Only Under Non-Disclosure Agreement (NDA)
For EETI Internal Use Only

Trademark Acknowledgments:

EETI and EETI logo  and eGalaxTouch® logo  *eGalaxTouch*

and eGalaxTouchManager® logo  *eGalaxTouchManager* are trademarks of eGalax_eMPIA Technology Inc.

(C) Copyright by EETI 2000, 2018. All rights reserved.

Printed in Taiwan.

EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE AGREEMENT (NDA)
FOR EETI INTERNAL USE ONLY



eGalax_eMPIA Technology Inc.

11F, No 302, Rueiguang Road, Nei Hu District,

Taipei 114, TAIWAN

T: +886 2 8751 5191

F: +886 2 2797 8808

URL: www.eeti.com

Sales : touch_sales@eeti.com

FAE : touch_fae@eeti.com

Revision History

Document ID	Date	Revision Description
EUG-030-180807-1	2018/08/07	Update EETI document form.

EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE AGREEMENT (NDA)
FOR EETI INTERNAL USE ONLY

Index

1	Setup Hardware	5
2	Auto Tuning Process	7
2.1	Touchscreen I/O Check.....	9
2.2	System Environment Analysis	10
2.3	Touchscreen Signal Analysis (Signal Collecting).....	11
2.4	Touchscreen Signal Analysis (Touch Signal Calibration)	12
2.5	Touchscreen Sensitivity Adjustment	13
2.6	Touchscreen Direction Correction.....	14
2.7	Save Calibration Data	15
2.8	Touch Performance Validation	16
3	Troubleshooting	17
3.1	Touch Accuracy Issue	17
3.2	Can't Draw to Edge	18
3.3	Touch Sensitivity Adjustment.....	19
3.4	System Response Is Slow	21
3.5	Touchscreen I/O Check Fail	22
3.6	Others.....	23

1 Setup Hardware

eGalaxTouch solution needs to work with stable capacitance. In order to minimize the variation, all conductive mechanical parts must not be floating. Any floating part may cause abnormal touch function. Please make sure GND1, GND2, and GND3 (Figer 1-1) are all connected together before tuning.

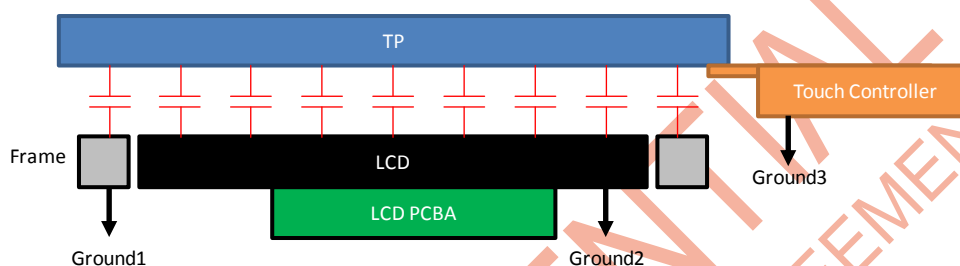


Figure 1-1. GND1, GND2 and GND3 should be connected together to have the same ground

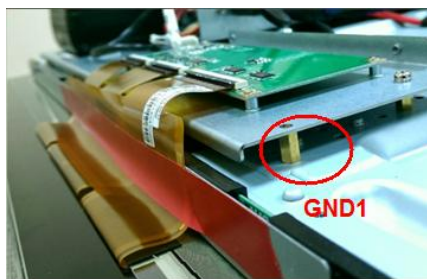


Figure 1-2. GND1 (GND of case)



Figure 1-3. GND2 (GND of LCD panel)

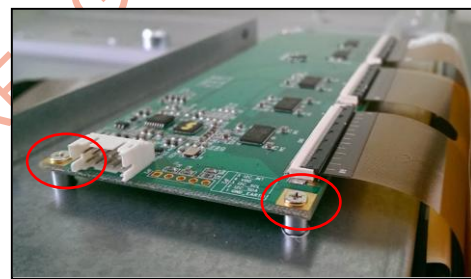


Figure 1-4. GND3 (GND of Touch Controller)

Below shows 4 way to connect all the GND, 1 is the best, 4 is the worst.

1. Screws.
2. Conductive Tape
3. By USB cable.
4. No connection.(not recommend)

Please make sure Tx/ Rx FPC tail have been properly fixed, the unstable FPC may cause unexpected signal interference.

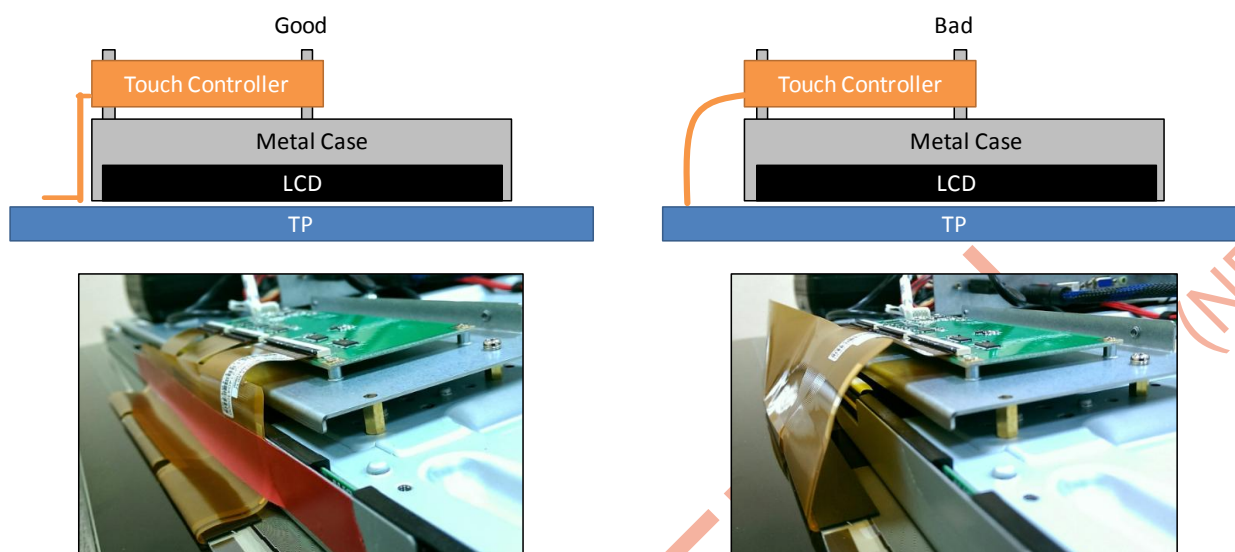


Figure 1-5. FPC Tail should be properly fixed.

Please arrange Tx/ Rx FPC tail tidy, if it is intended to overlap Tx/ Rx tail by some mechanical / interference purpose, please overlap them in a right angle, other angle may cause signal interference between Tx and Rx FPC tail.

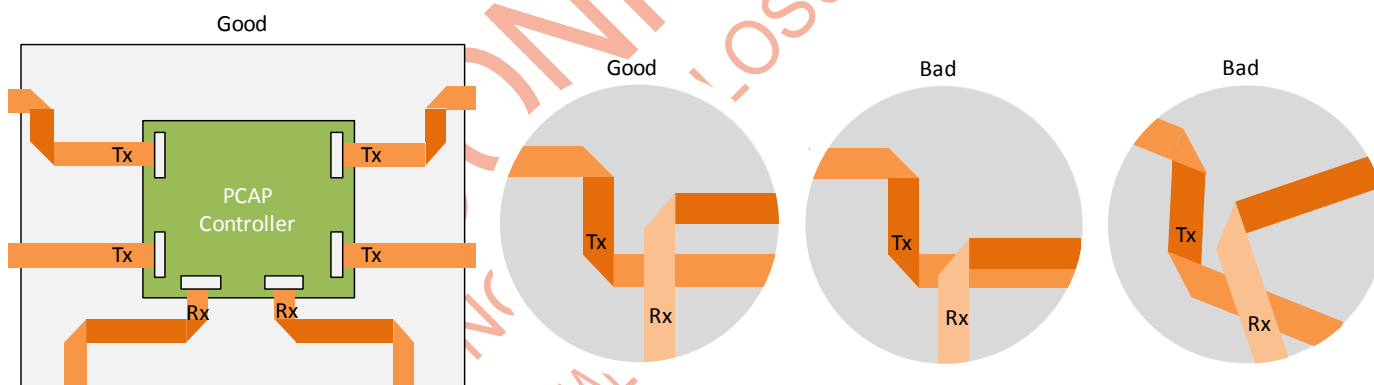


Figure 1-6. Tx/ Rx FPC tail overlap condition.

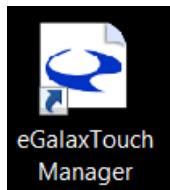
2 Auto Tuning Process

!!! Important !!!

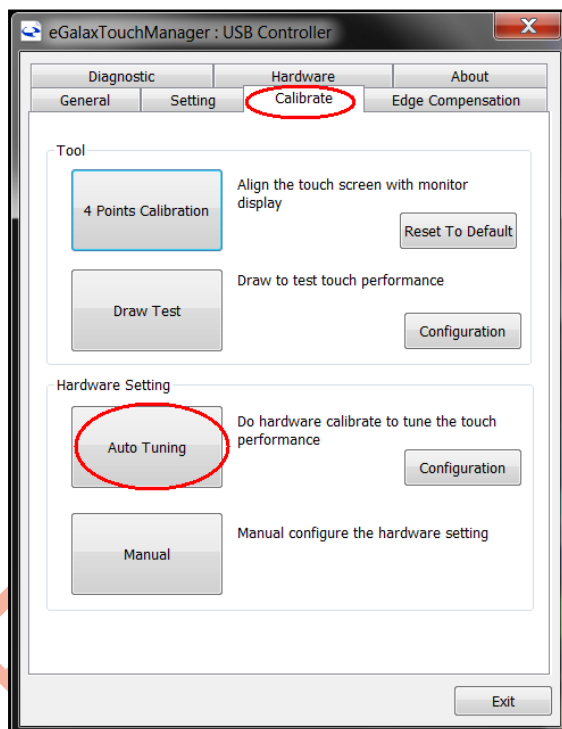
Please make sure the touch panel surface is **“Clean”**.

Any liquid or item on the surface is not allowed while tuning process.

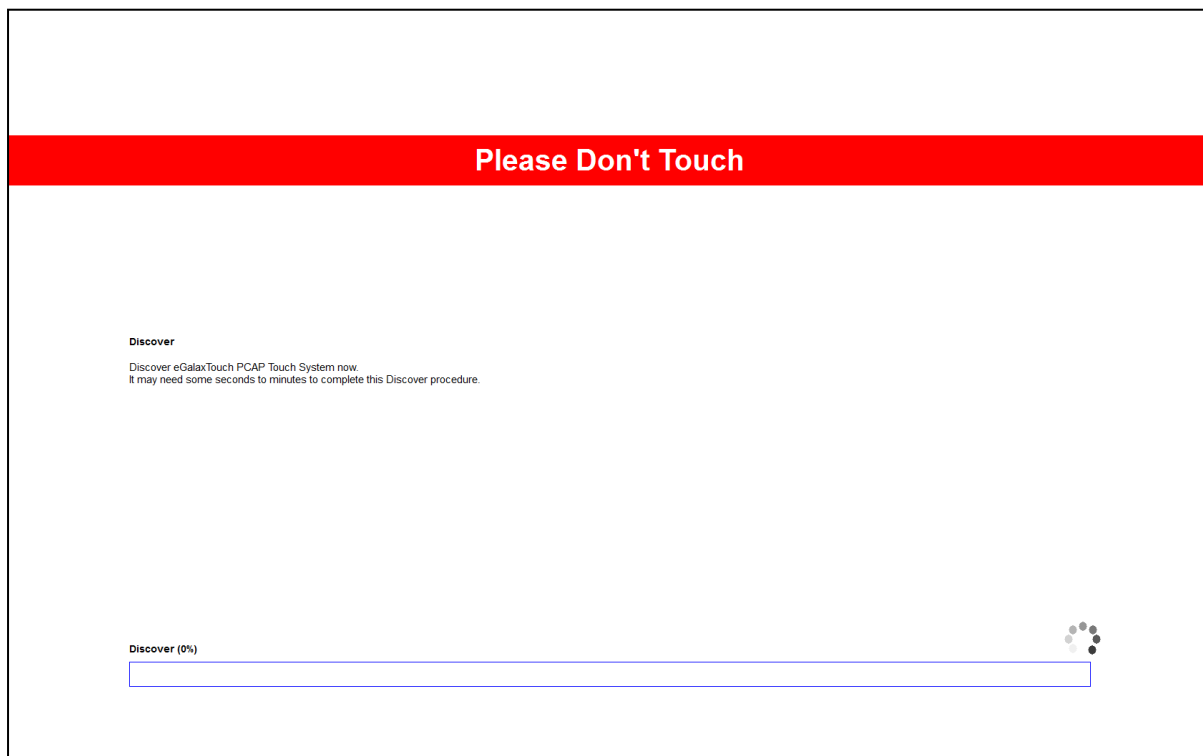
Execute eGalaxTouchManager.



Select “Calibrate” Page >> Click “Auto Tuning” button.



In default setting, there are total 8 steps while auto tuning.



When starting process, TouchManager will check the FW kernel. If the kernel in the controller is old, TouchManager will automatically update the F/W kernel to the latest version.

2.1 Touchscreen I/O Check

Check the Tx/Rx channel setting, click "Correct" if it is correct.

Please select "Correct" or "Fail"

Check IO Map
Check IO map informations , and click on the "Correct" or "Fail".

Tx Channels : 46
Rx Channels : 61

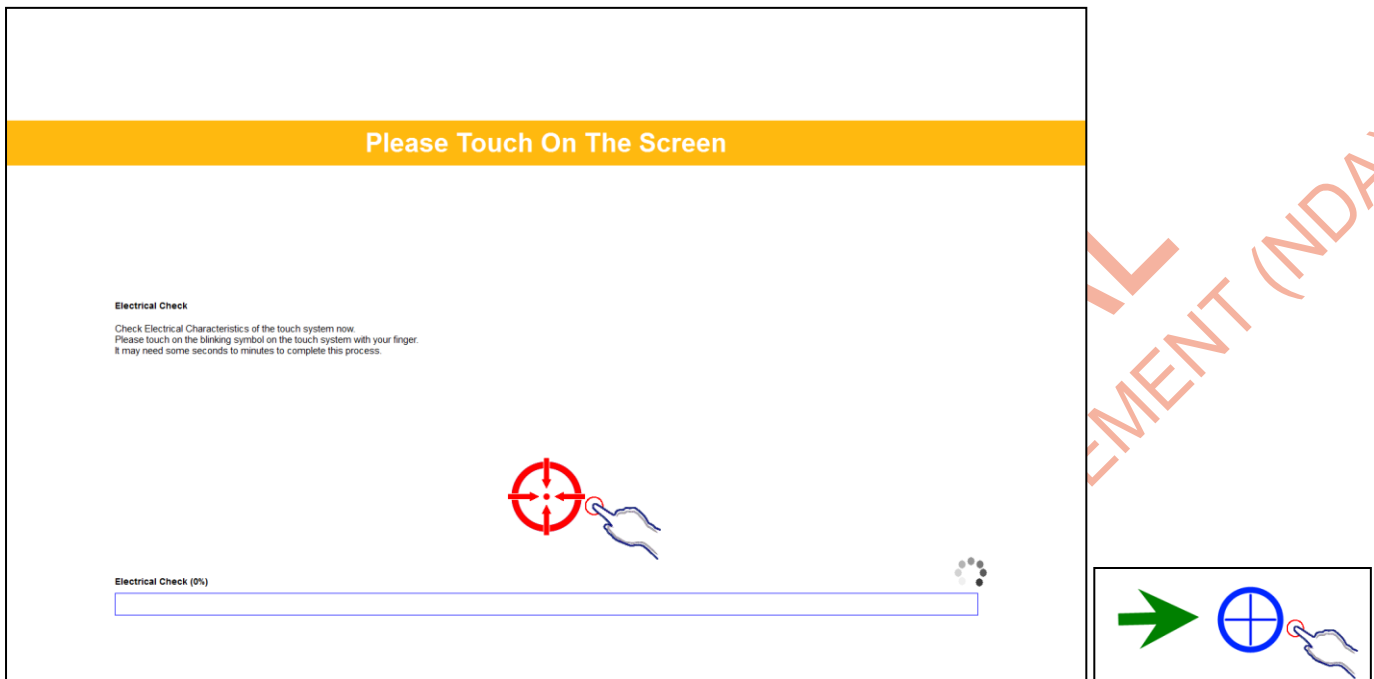
Fail

Correct

EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE
FOR EETI INTERNAL USE ONLY

2.2 System Environment Analysis

Please touch the target till 100%



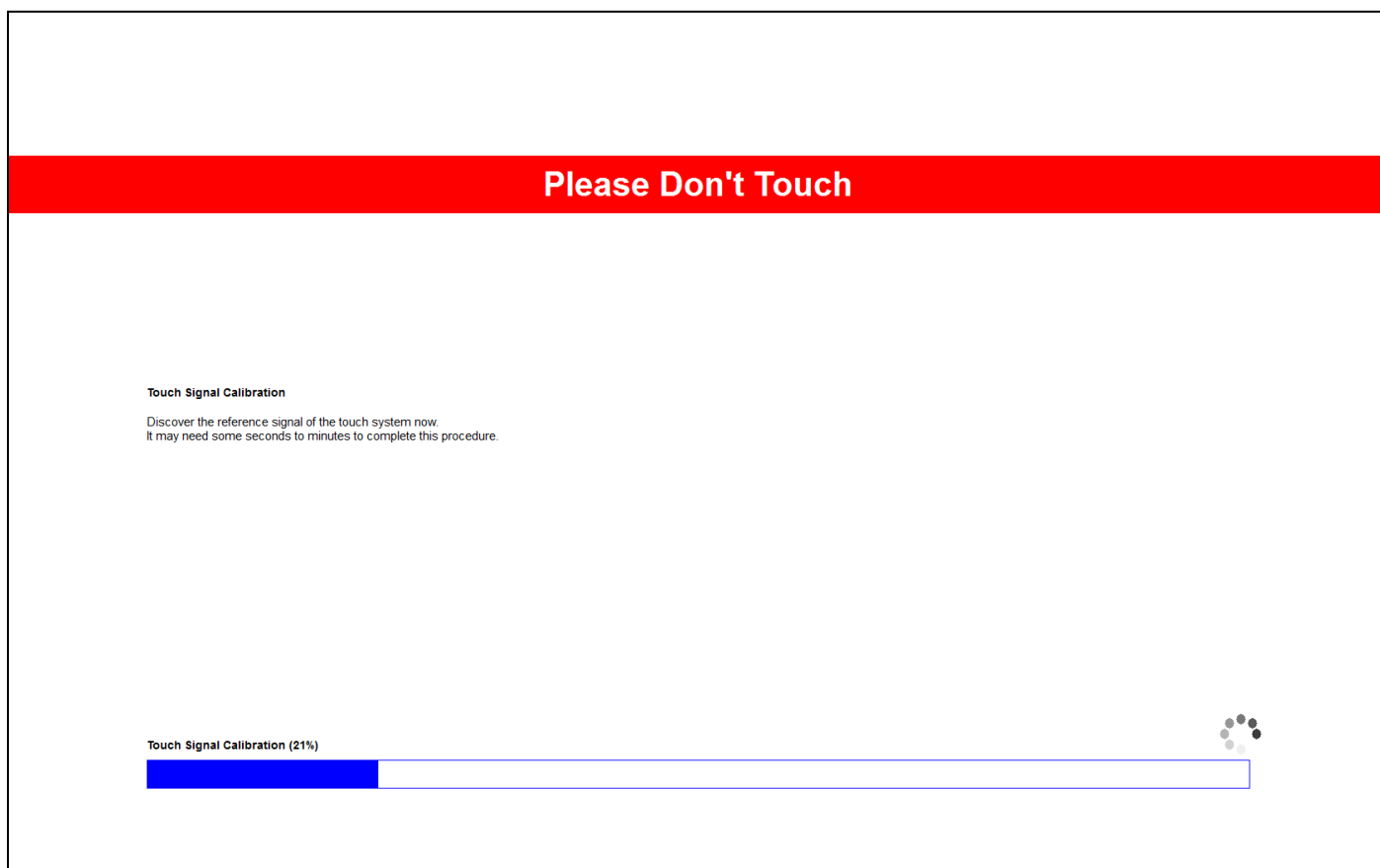
EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE
FOR EETI INTERNAL USE ONLY

2.3 Touchscreen Signal Analysis (Signal Collecting)



EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE AGREEMENT
FOR EETI INTERNAL USE ONLY

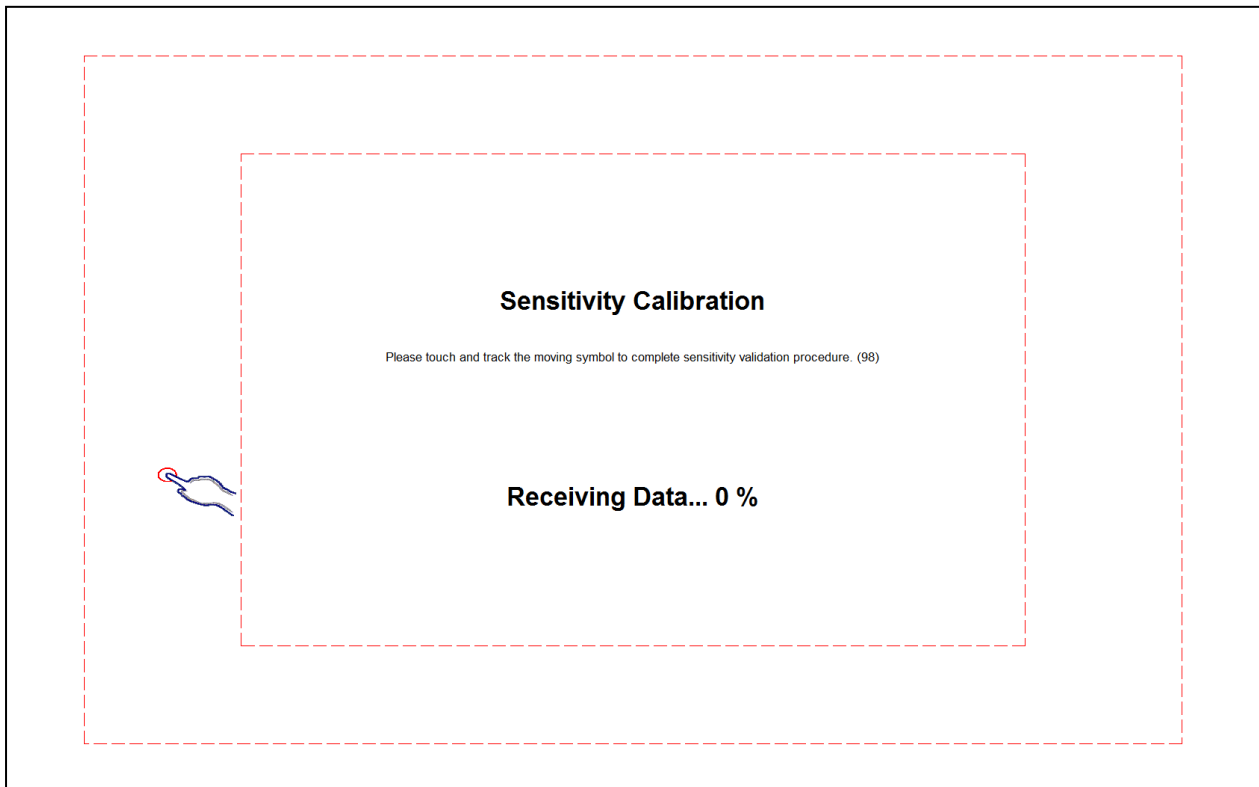
2.4 Touchscreen Signal Analysis (Touch Signal Calibration)



EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE AGREEMENT
FOR EETI INTERNAL USE ONLY

2.5 Touchscreen Sensitivity Adjustment

Follow the guide line to touch till 100%.



EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE
FOR EETI INTERNAL USE ONLY

2.6 Touchscreen Direction Correction

- a. (Upper-Left) Touch the Target till it shows "OK".
- b. (Upper-Right) Touch the Target till it shows "OK".
- c. (lower-Left) Touch the Target till it shows "OK".
- d. (lower-Right) Touch the Target till it shows "OK".



Tool will be closed after 116 second(s)

EETI
RELEASE UNDER NO
FOR EETI INTERNAL USE

2.7 Save Calibration Data

(Warning) !!!! Do not touch the screen or put any conductive item on the screen !!!



EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE
FOR EETI INTERNAL USE ONLY

2.8 Touch Performance Validation

“Keep Changes”: Keep the tuning result

“Revert”: Ignore tuning result and revert back to the previous parameters.

(Warning) If “Keep Changes” button is not clicked in 40 sec, TouchManager will automatically “Revert”.

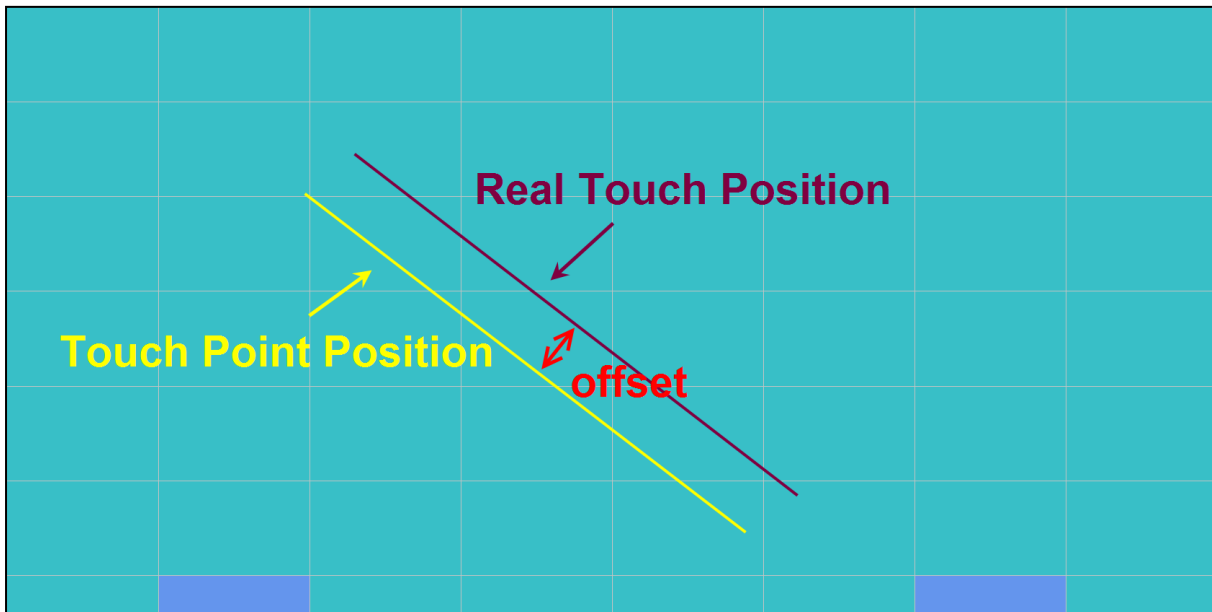


EETI CONFIDENTIAL
RELEASE UNDER NON-DISCLOSURE AGREEMENT
FOR EETI INTERNAL USE ONLY

3 Troubleshooting

3.1 Touch Accuracy Issue

Accuracy problem means there's always an offset between Real Touch Position and Touch Point Position.



After AutoTune the touch panel will use the default accuracy parameter if it has accuracy problem, please follow below steps to calibrate accuracy.

1-1. Click "4 Points Calibration" button.

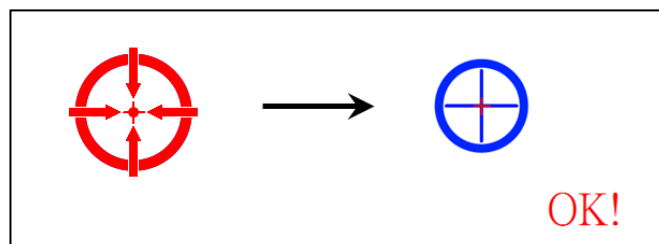
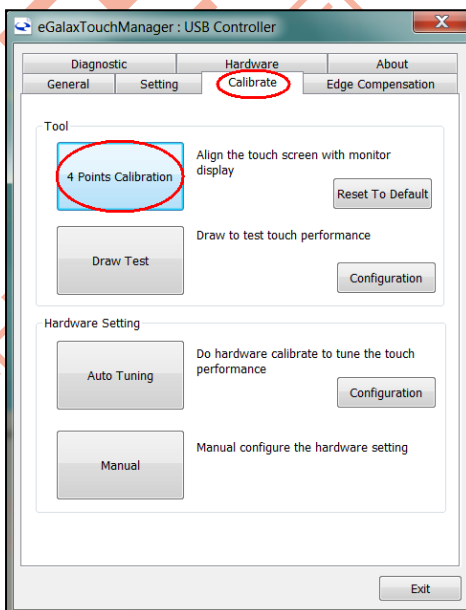
1-2. Touch the target till 100% than release.

(top-left / top-right / bottom-left / bottom-right)

Note:

- Touch panel with screen is required, there's no way to calibrate accuracy without the display.
- Please touch the target with great precision, if not, the accuracy may get worse.

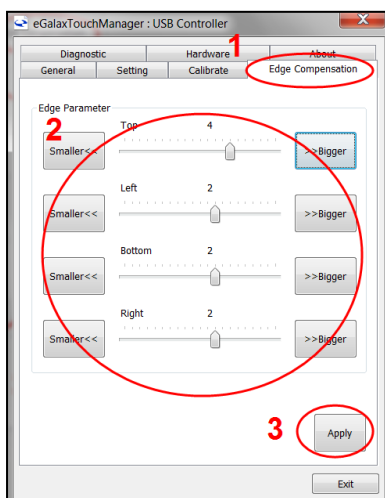
(you can also click "Reset To Default" to recover the default parameter.)



3.2 Can't Draw to Edge

If touch point can't draw to the edge, follow below steps:

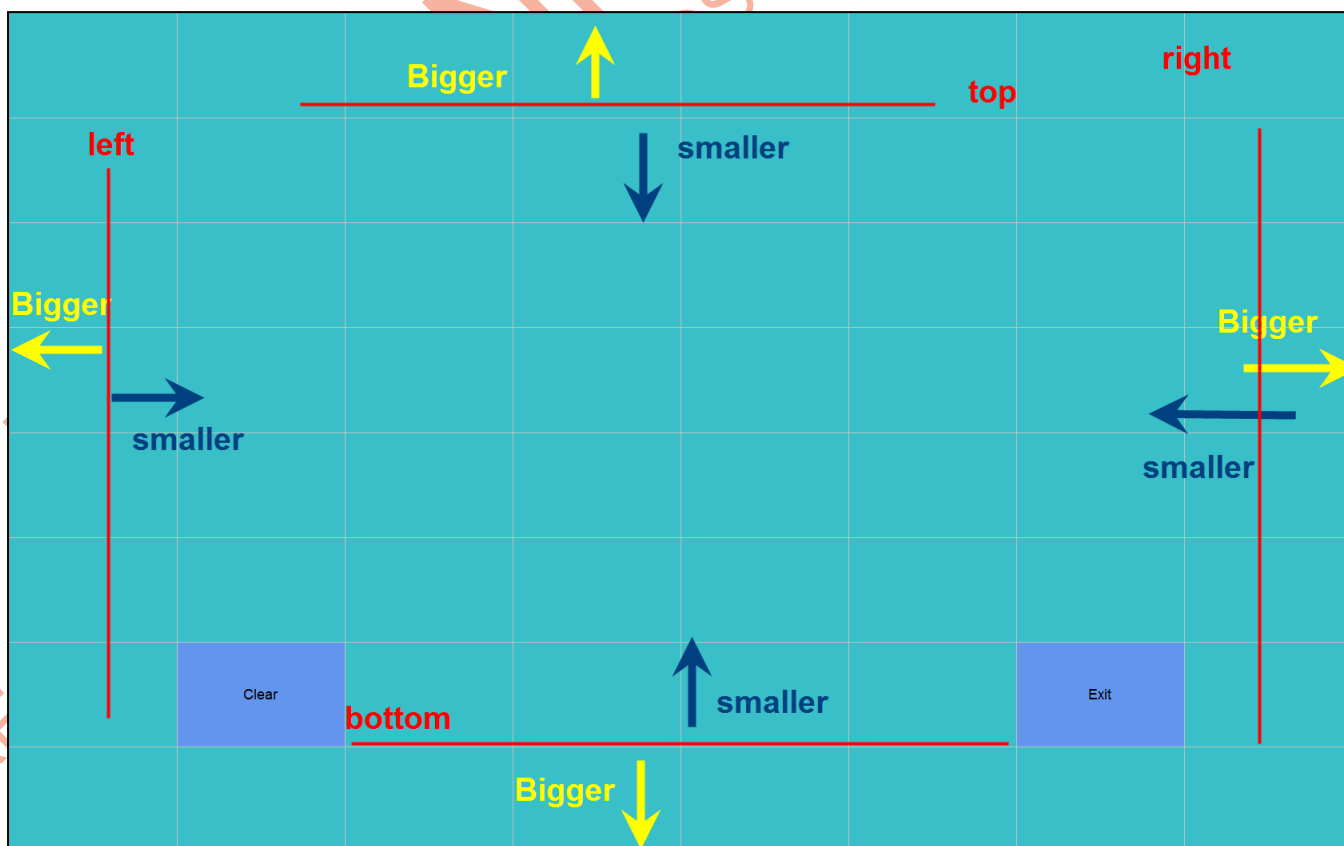
"Edge compensation" page >> Adjust "slidebar" >> click "Apply"



Below picture shows how to adjust. The bigger the compensation is, touch point will close to the edge more.

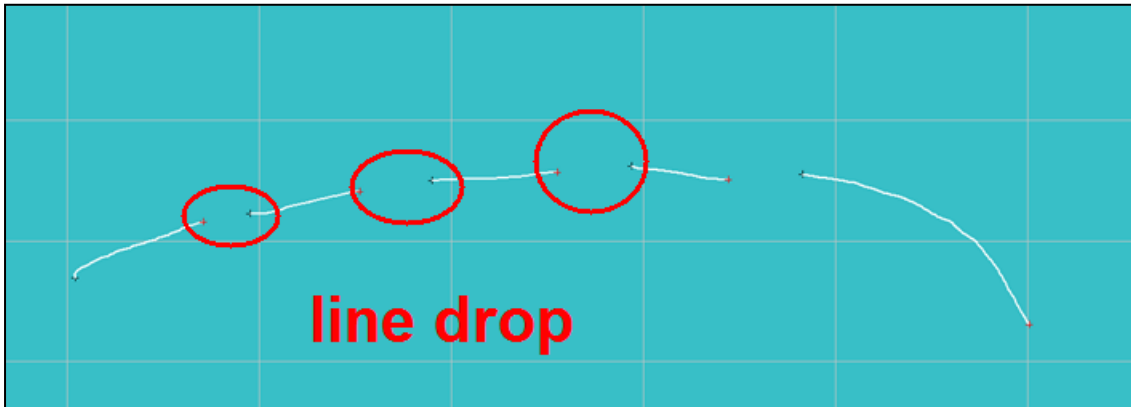
Note:

Over compensation may cause edge accuracy problem.



3.3 Touch Sensitivity Adjustment

Touch panel doesn't response well to the real touch. (ex: line drop / touch no response)

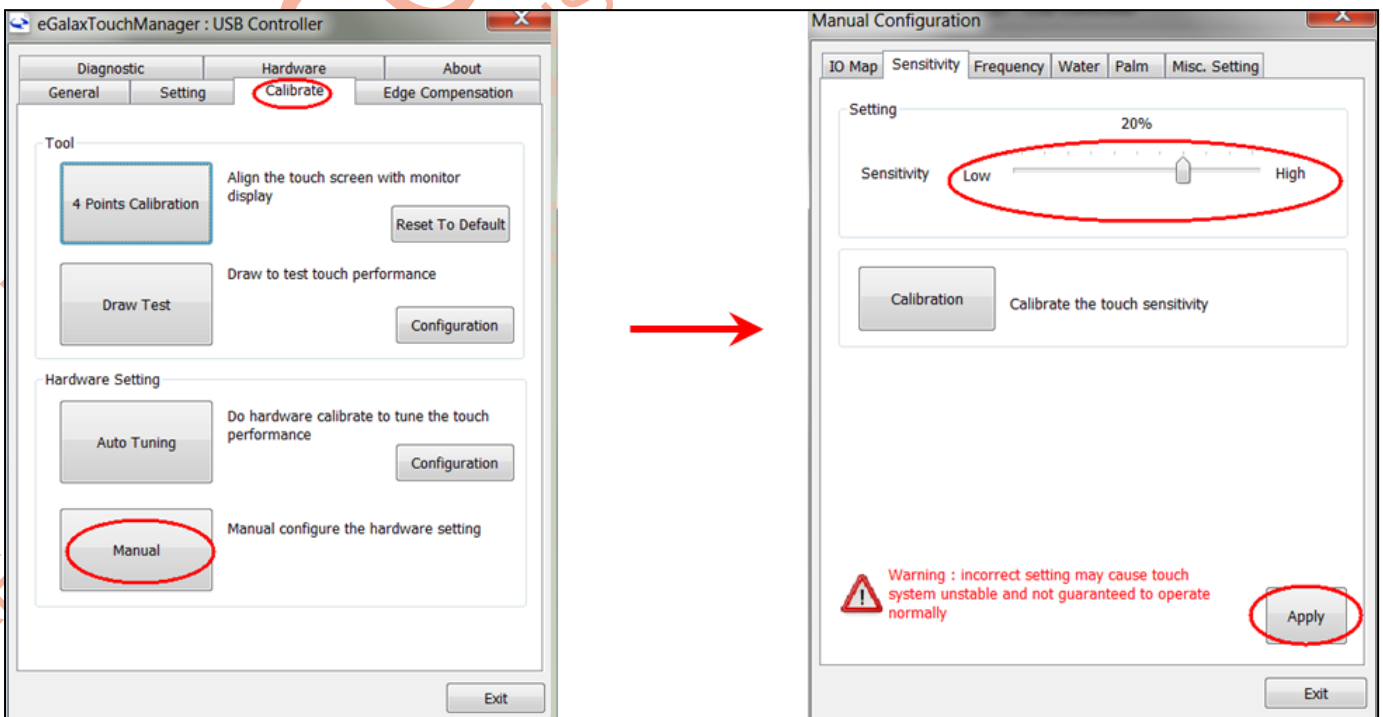


3.3-A. To adjust touch sensitivity, follow below steps:

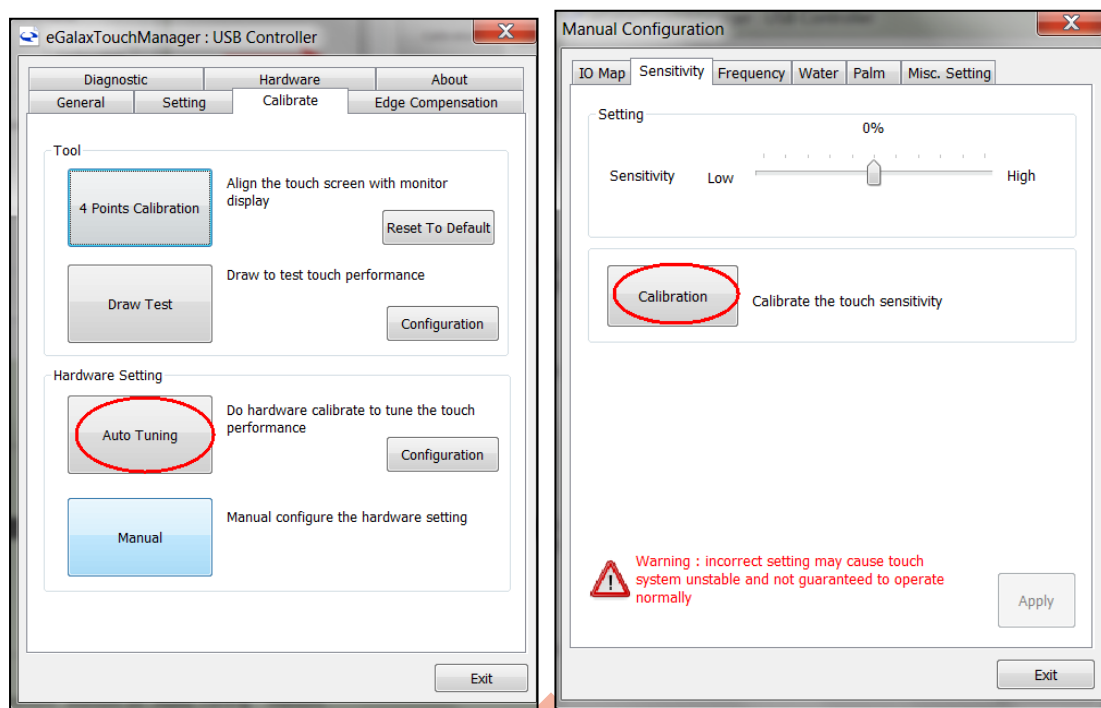
- 3.3-A-1. Click "Manual" button.
- 3.3-A-2. Adjust "Sensitivity SlideBar".
 - High: increase sensitivity
 - Low: decrease sensitivity.
- 3.3-A-3. Click "Apply".

Note:

If the sensitivity is too high, may cause ghost point or can't quick click problem.



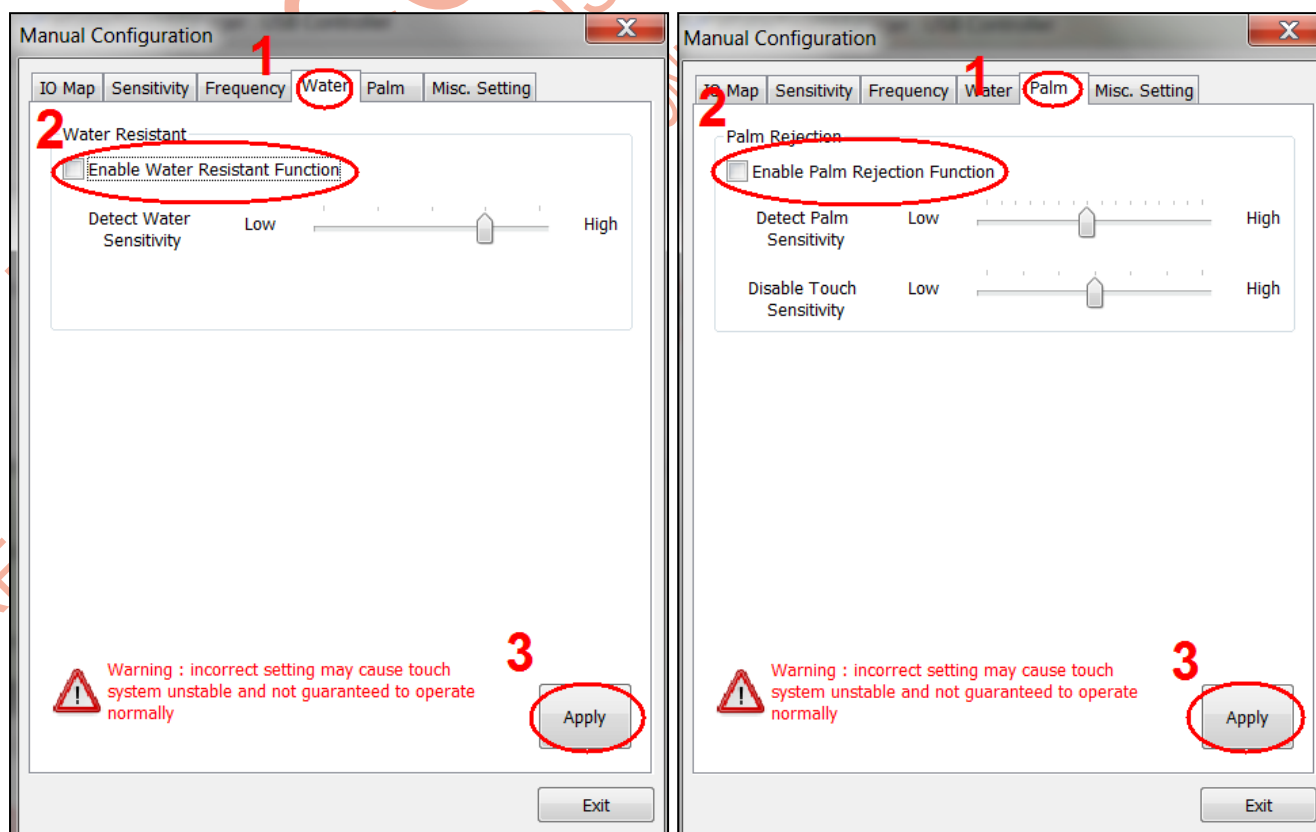
3.3-B. If A doesn't help, try "calibration" button or "Auto Tuning" button



3.3-C. If B still not works, try to disable palm & water function

Disable water function: Unselect "enable water resistant Func" then click "Apply".

Disable palm function: Unselect "Enable Palm Rejection Function" then click "Apply".

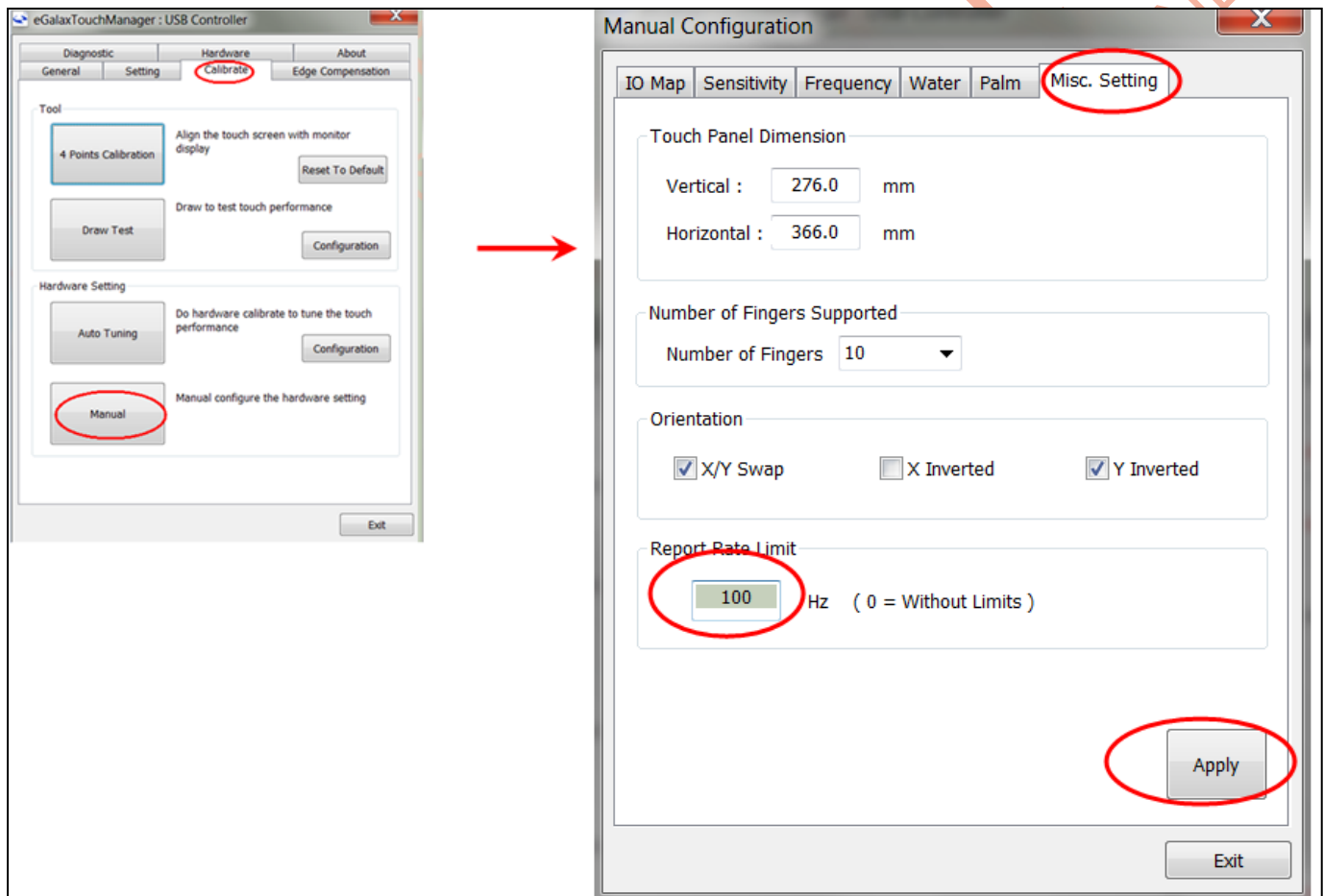


3.4 System Response Is Slow

Some system may be response slowly while the touch point report rate is too high, decrease the report rate will be help.
(Suggest range: 150~60Hz)

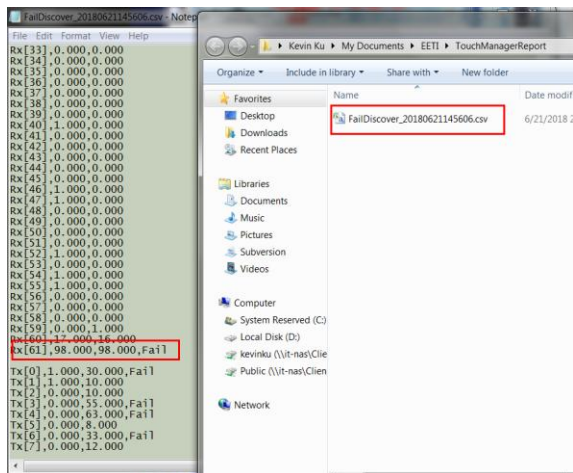
Note:

Decrease the report rate will also decrease the touch performance.



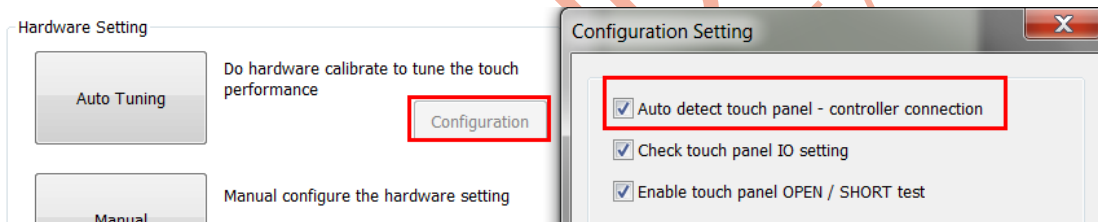
3.5 Touchscreen I/O Check Fail

Touchscreen I/O check fail will cause autotuning process fail and an FailDiscover report will show up automatically, this may caused by below issues:

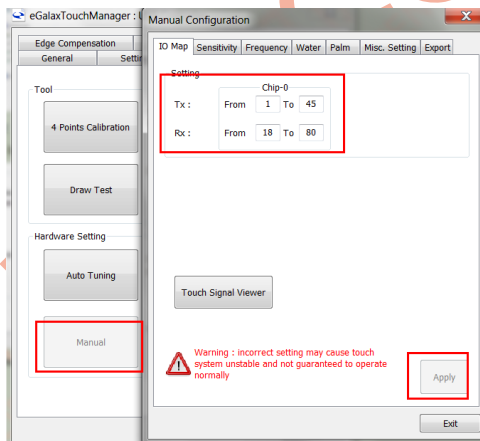


3.5.1 Incorrect I/O Map setting

a. Use auto setting (Enable below config)



b. If a is not workable, try manual setting.



3.5.2 Touch Panel Hardware Defect

If the I/O map setting is correct and shows open/short failure, it may caused by touch panel hardware defect.

Please try another touch panel or contact TP maker for further analysis.

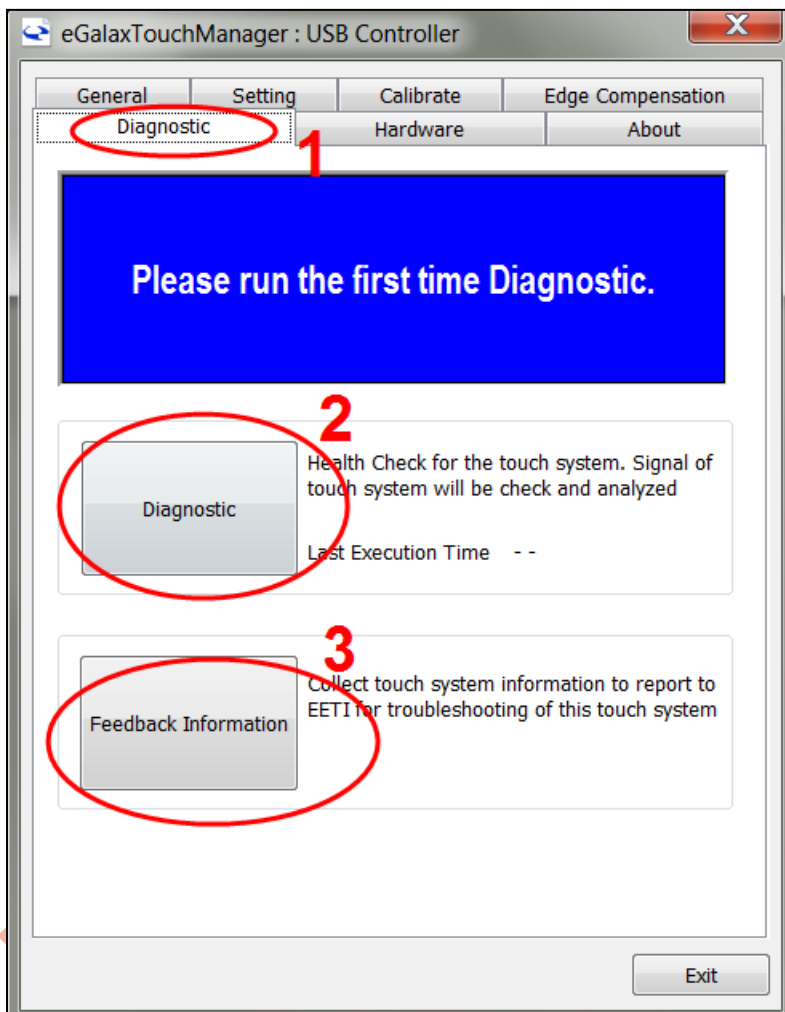
3.6 Others

If the problem is not on this guide, please follow below steps to contact EETI for further support.

3.6-1 Describe the problem as detail as possible.

3.6-2 Take pictures / video.

3.6-3 Diagnostic & Feedback Information.





eGalax_eMPIA Technology Inc.

Headquarters

11F, No 302, Rueiguang Road, Nei Hu District,

Taipei 114, TAIWAN

T: +886 2 8751 5191

F: +886 2 2797 8808



eGalaxTouch

Product ContactWeb Site: www.eeti.comSales: touch_sales@eeti.comFAE: touch_fae@eeti.com

EETI (eGalax_eMPIA Technology Inc.) reserves the right to modify revise or amended this document and/or the content, material, or specification of product at any time without prior notice. EETI takes no responsibility for, and will not be liable for, this document or related information about the suitability or availability being use to the non-EETI's product and using the EETI's product will involve the EETI's software license which including but not limited to source code, program or firmware and is authorized for EETI's product only.

Disclaimer:

UNLESS HAVE THE PRIOR NOTICE BY EETI, EETI DOES NOT RECOMMEND THE USE OF ANY OF ITS PRODUCTS IN MEDICINE, MAINTAIN IN HEALTH, EMERGENCY OR OTHER LIFE SUPPORT APPLICATIONS WHERE THE FAILURE OR MALFUNCTION OF THE PRODUCT CAN REASONABLY BE EXPECTED TO CAUSE FAILURE OF A LIFE-SUPPORT SYSTEM OR TO SIGNIFICANTLY AFFECT ITS SAFETY OR EFFECTIVENESS. EETI Products are not authorized for use in such applications as above, so anyone who violates this will bear strictly at your own risk and make representations of this.