



GalvanoPlot

Quick Guide for GalvanoPlot TOUCH



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General Information

Application for Android Mobile Devices: GalvanoPlot TOUCH

Android OS application turns your mobile device to an on-site analysis platform. Supports multiple equipment control over Bluetooth and USB combined, as well as a simple mode for direct analyte concentration display.

Specifications

Specification for the GalvanoPlot TOUCH:

Operating System Compatibility

Android OS6+

Multiple Device Control

8 Bluetooth instruments + 1 USB

Advanced Analysis

Filtering, Auto peaks and Simple Mode

Connectivity

USB OTG and Bluetooth LE devices

Data Push

Cloud services

Installation

Download the GalvanoPlot TOUCH software:

<https://galvanoplot.com/galvanoplot-touch/>



https://play.google.com/store/apps/details?id=org.galvanoplot.touch&hl=en_SG&gl=US&pli=1

Registration

Key Usage in GalvanoPlot Devices

Every GalvanoPlot device comes with a limited number of trial experiments out of the box. Without registering it to GalvanoPlot TOUCH application, the device becomes disabled after exhausting all trials. To enable the device or save remaining trials, registration is required. Note that for a new android device, the registration key must be submitted again.

- First, connect your GalvanoPlot to android device.
- Then, navigate to settings as shown as below.

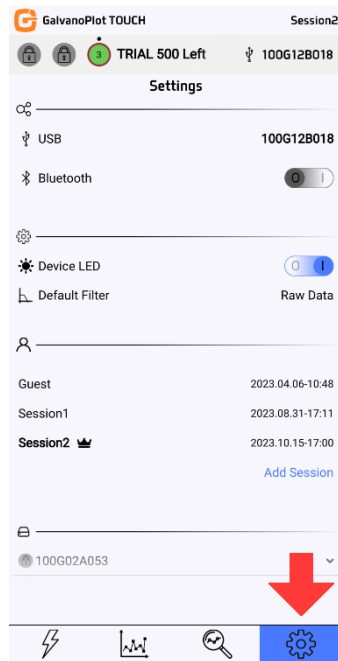


Figure 1: Step 1, Navigate to Settings

- Find your device in the list.

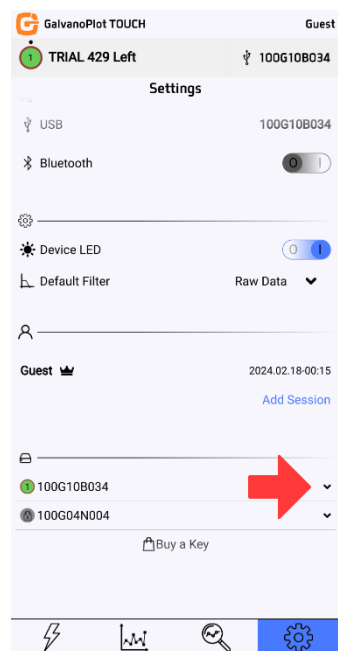


Figure 2: Step 2, Find device in the list.

- To register a device to GalvanoPlot TOUCH.
- Fetch the key or enter it manually, then click "Submit".

The figure displays two sequential screenshots of the GalvanoPlot TOUCH registration interface. Both screenshots show a device ID '100G10B034' with a green circle containing the number '1' to its left and an upward arrow to its right. Below the device ID, the 'Register Status:' is shown. In the top screenshot, the status is 'Unregistered and 429 trial left' in red text. Below this, there is a 'Register Key:' label followed by a greyed-out input field. At the bottom of the top screenshot are two buttons: 'Fetch' with a circular arrow icon and 'Submit' with a left-pointing arrow icon. The bottom screenshot shows the same interface but with the 'Register Status:' changed to 'Registered' in green text, and the 'Fetch' and 'Submit' buttons are no longer visible.

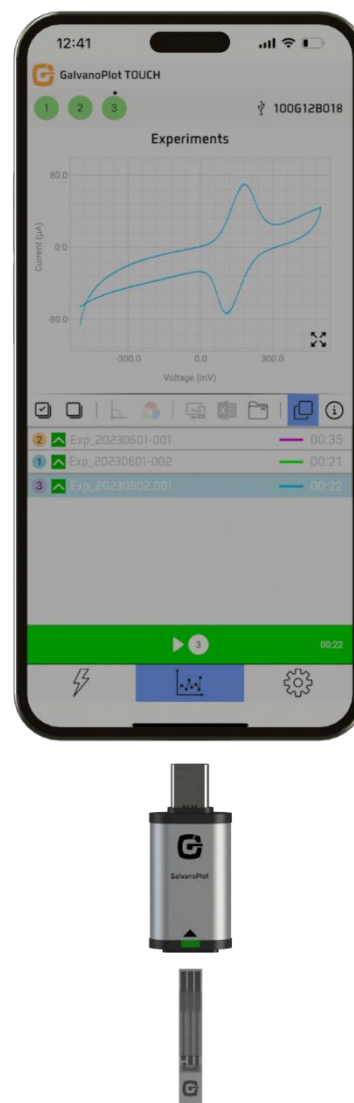
Figure 3: Step 3, Fetch or enter it manually the key.

All GalvanoPlot equipment needs to be registered in the Galvanoplot TOUCH Application. There is no limitation in the number of devices that any equipment will be registered. Registering is one time and only necessary when you first installed a new version of GalvanoPlot TOUCH.

If you do not have a *Register Key*, please contact us: support@galvanoplot.com

Operating GalvanoPlot

Power on GalvanoPlot device. Device LED will blink. Open GalvanoPlot TOUCH Application. Connection will be automatic and Solid Green LED indicates a successful connection. GalvanoPlot's status of device LED shown on Table 1.



Basics of Application

Setup Menu

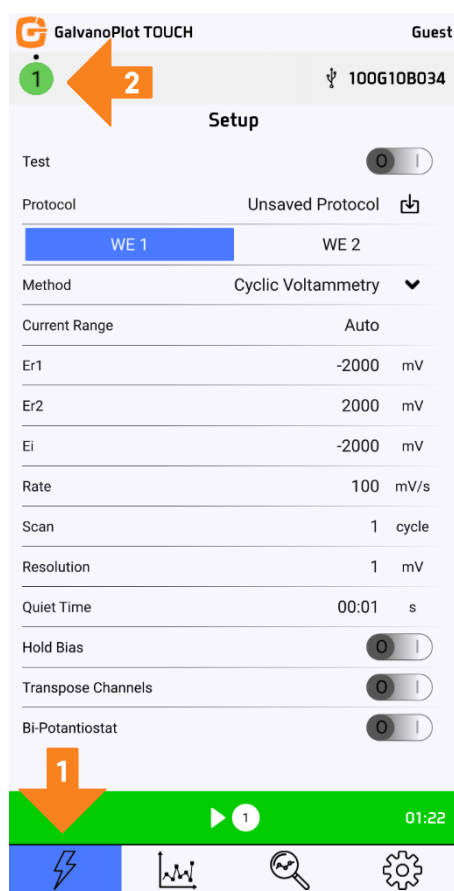


Figure 4: Setup Menu of the GalvanoPlot TOUCH

Setup Menu (1) : You can set the electrochemical methods and protocol parameters for the active GalvanoPlot device.

Devices (2) : GalvanoPlot TOUCH can control multiple GalvanoPlot equipments at the same time. All connected and disconnected GalvanoPlot devices in the session are listed in this group. A coloured circle with a number represents a connected device and the circle with dot over it is the active one.

- Colour of the circle shows the status of the corresponding equipment.
 - Green:** Connected and ready.
 - Red:** Connected but inactive by user.
 - Gray:** Previously in the session but now Disconnected. Also, a Gray HDD icon appears as a circle, if an experiment that is saved to HDD and not anymore related with a specific device is present in the Experiments List.

GalvanoPlot ID : Serial Number of the selected equipment is displayed.

WE1/WE2 : If the equipment supports bi-potentiostat mode, buttons to toggle on and off each channel will appear. If a channel is active, it is highlighted in blue.

Protocol : Current parameters can be saved as a protocol to recall later.

Parameters : Each method has a variety of parameters that can be adjusted. If method is changed, parameters can be lost. It is recommended to save the parameters in a Protocol File (.gppj). Double click on the name to rename.

- A Method contains all measurements parameters like which Technique (Linear Sweep Voltammetry, Square Wave Voltammetry, Electrochemical Impedance Spectroscopy, etc.) is used and information about post-measurement actions like data smoothing and peak searching. All these parameters can be edited in the Method Editor.
- The following electrochemical techniques are supported by the GalvanoPlot devices.

Linear Sweep Voltammetry	LSV
Cyclic Voltammetry	CV
Square Wave Voltammetry	SWV
Differential Pulse Voltammetry	DPV
Normal Pulse Voltammetry	NPV
Chronoamperometry	CA
Multi Step Amperometry	MSA
Electrochemical Impedance Spectroscopy	EIS
Open Circuit Potential	OCP

Run : The bottom buttons with play icons are experiment Run buttons. The wider button can start all connected devices at once. The upper small button starts only the active GalvanoPlot device.

Experiment Menu

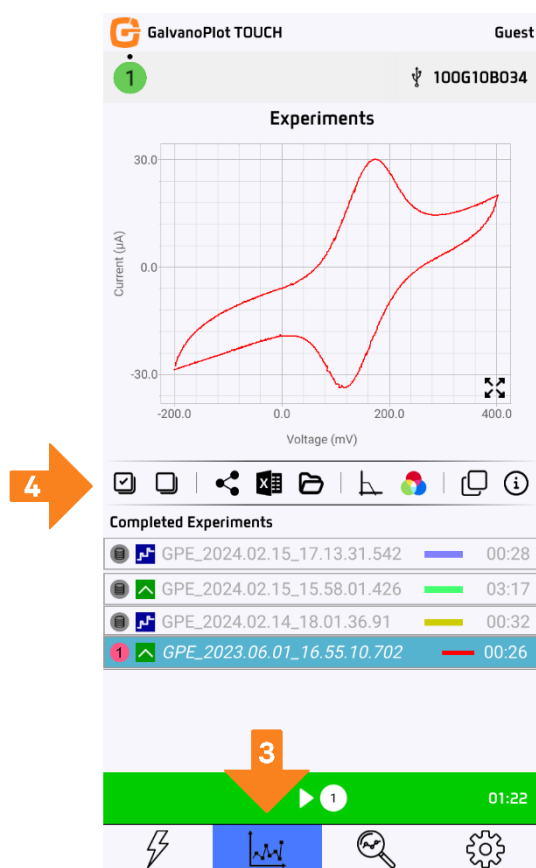


Figure 5: Experiment Tab of the GalvanoPlot TOUCH

Experiments Menu (3) : All completed experiments in the session are listed here, as well the active running experiments that are shown as the top rows. When an active experiment is finished, it moves to the list for completed ones.

- The highlighted line shows active experiment, and it can be only single one at a time. Activation is used for visualizing the details and make *Analysis* on it.

Tools for Experiments (4): This group is for experiments; *Select all*, *Unselect all*, *Share Files*, *Export as xlsx*, *Manage Files*, *Filter*, *Colour*, *Overlay*, *Details* buttons for corresponding functions can be performed here.

Filter : Filter is for low-pass digital filter cut-off settings (also to turn off filter for plotting the Raw Data).

Note! To change the default settings for filter cut-off, please go to *Settings Menu*.

Overlay : Overlays multiple experiments. This button also turns on and off the *Multiple Selection Mode*.

Manage Files : This section contains operations that you can perform on saved experiments, including *Explore Files*, *Load Experiments*, *Share Experiments*, and *Delete Experiments* buttons.

Details : The details of the active experiment are shown in the screen.

Experiments List

All available experiment data shows on Experiment List which is on the right-hand side of the GalvanoPlot TOUCH.

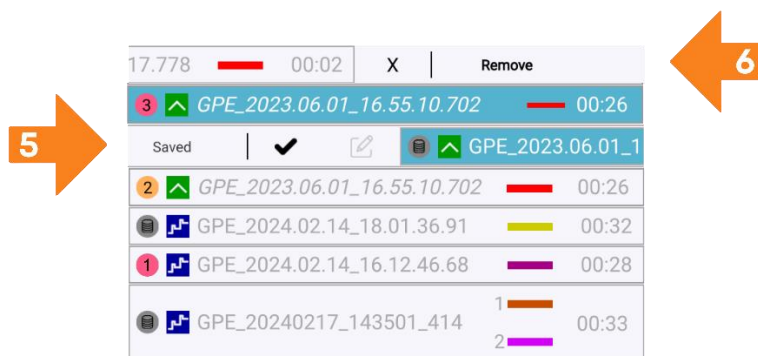


Figure 6: Experiment List of the GalvanoPlot TOUCH

Experiment Bars: The Experiments represented as individual Experiment Bars to navigate in the experiment list. From Left to Right, the icons represent:

GalvanoPlot Circle: A coloured circle shows that the experiment belongs to the active session and not yet saved to HDD. The number in circle shows in which equipment the experiment was performed in. Saved experiments are represented with grey HDD icon.

Method Icon : Each type of electrochemical method has a unique colour and icon.

Experiment Name (5): Shows the experiment name. Automatically rennumbers the name, depending on the Auto-number Setting in Settings menu. Right-slide to rename the Experiment name.

Channels : If the experiment was performed in bi-potentiostat mode, each channel data is shown as 1 and 2. toggle on and off the show and hide the corresponding channel data.

Experiment Duration: Shows the duration of the experiment in minutes: seconds.

Close (6) : Removes the experiment from the list. No prompt is asked to remove. It only hides it from the list, but it does not remove the file from the session directory if it is already saved. Unsaved file data can be recovered from the temp file directory or from the recycle bin (if this option is not disabled by the user in the *Setting Menu*).

Analysis Menu

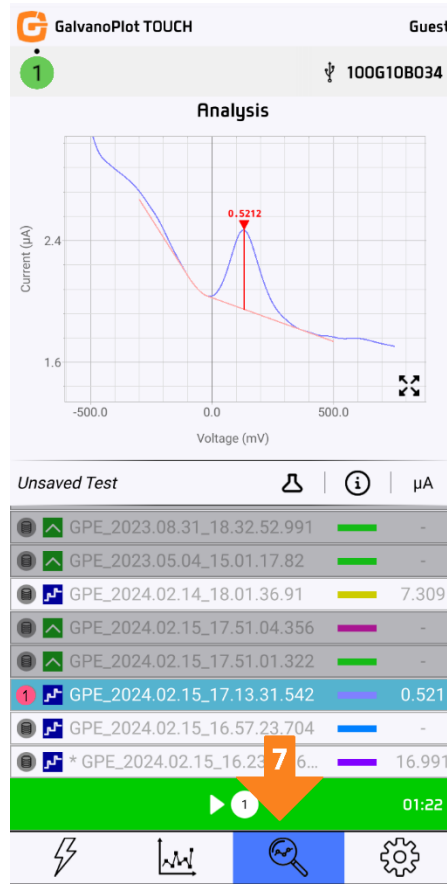


Figure 7: Analysis Menu of the GalvanoPlot TOUCH

Analysis Menu (7) : The analysis screen appears when pressed on the button. Please check Google Play Store for updates.

Analiz menüsündeki butonlar ise şu şekildedir.

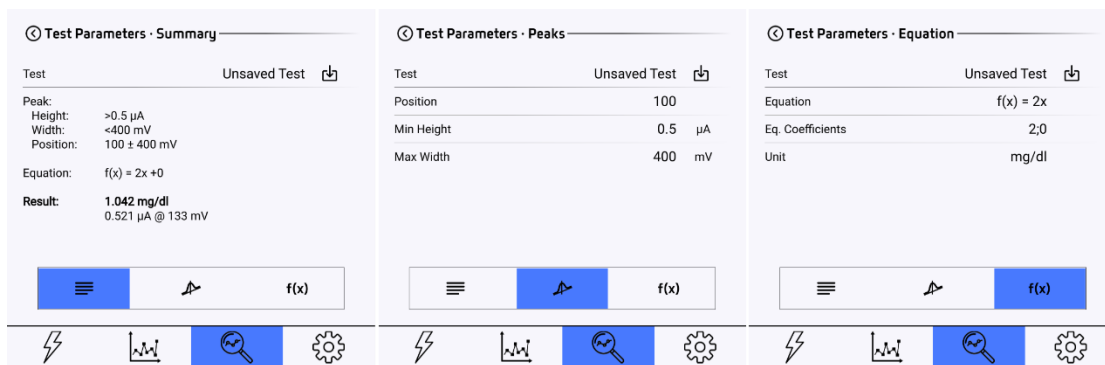


Figure 8: The test parameters of the single-channel experiment in the Analysis menu.

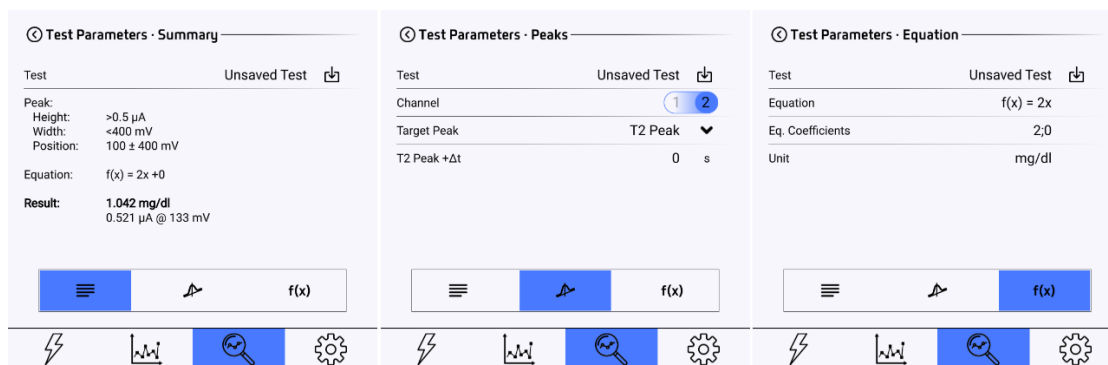


Figure 9: The test parameters of the dual-channel experiment in the Analysis menu.

Setting Menu

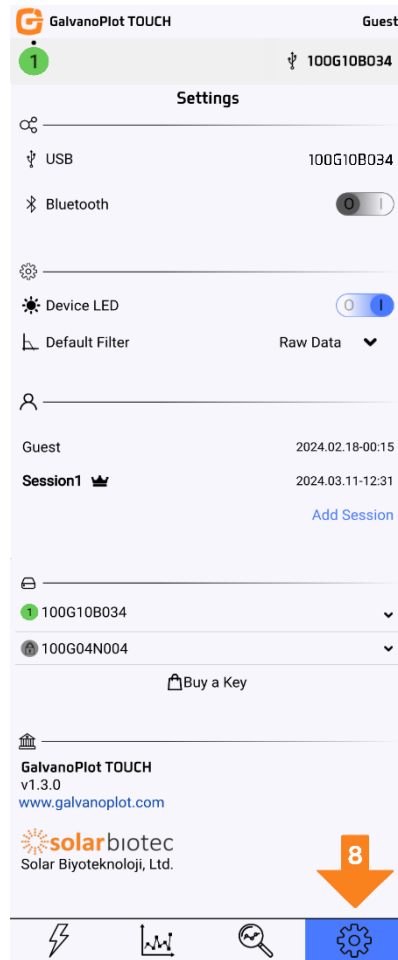


Figure 10: Settings Menu of the GalvanoPlot TOUCH

Settings (8) : The default settings can be changed here.

Device LED : Turns on and off the Status LED on the equipment. May be preferred for energy saving or experiments affected by the light.

support@galvanoplot.com

If you have any questions or recommendations
with the GalvanoPlot products, please contact us.



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