



# Getting Started with EC-Lab<sup>®</sup>: Connection to the instrument(s) & Channel(s) selection

V1

Getting Started EC-Lab: Connection

March 2024



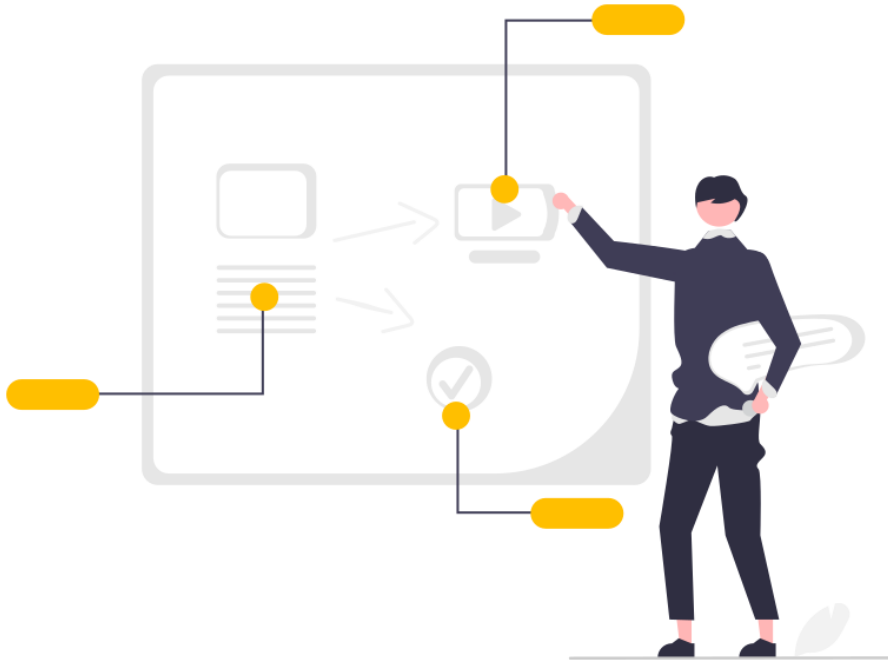
# Overview and quick access

## ■ Procedure

- Step 0: Physically connect instrument and computer
- Step 1: Switch on the instrument
- Step 2: Launch EC-Lab<sup>®</sup> software
- Step 3: Add an instrument
- Step 4: Select the instrument
- Step 5: Select the channel
- Step 6: Set the experiment

## ■ Find out more

- [For supplementary information](#)
- [Need help?](#)
- [FAQ](#)

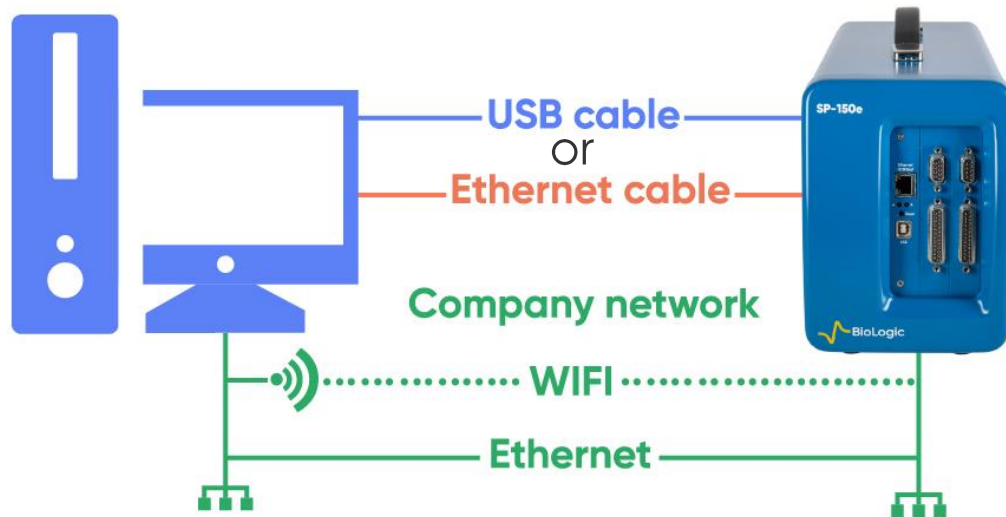


# Procedure





# Step 0 : Physically connect instrument and computer



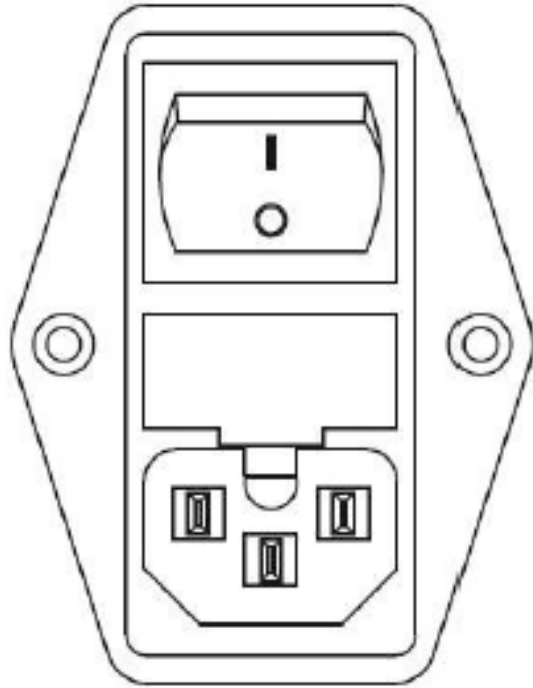
- It is assumed that the computer and instrument are physically connected by one of the following means:
  - USB cable
  - Ethernet cable
  - Company network (LAN)



We recommend Ethernet connection, especially for multi-channel instruments. It is by far more reliable and faster in terms of data transfer speeds.



# Step 1 : Switch on the instrument



- Turn on the instrument using the switch on the rear panel. Then wait for a few seconds
- Instrument will emit two beep sounds when it's ready to connect



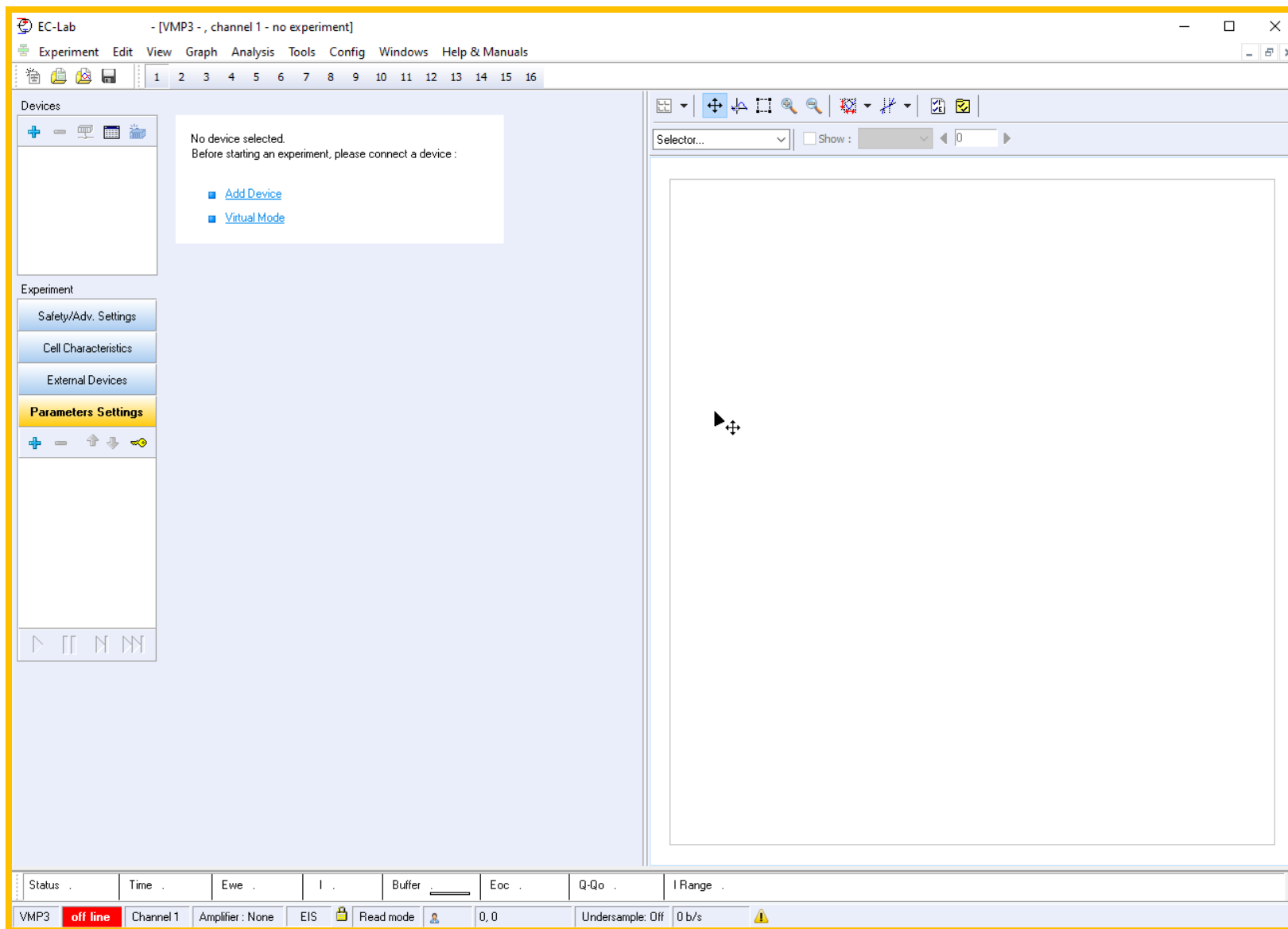
We recommend to wait for additional 30 minutes before starting any measurement. During the first 30 minutes, the instrument is warming up.



# Step 2 : Launch EC-Lab<sup>®</sup> software



- Click on the EC-Lab<sup>®</sup> icon created on the desktop
- The main window is displayed





# Step 2 : Launch EC-Lab<sup>®</sup> software

Empty window:  
no instrument is connected

EC-Lab - [VMP3 -, channel 1 - no experiment]

Experiment Edit View Graph Analysis Tools Config Windows Help & Manuals

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Devices

No device selected.  
Before starting an experiment, please connect a device :

- Add Device
- Virtual Mode

Experiment

Safety/Adv. Settings

Cell Characteristics

External Devices

Parameters Settings

INPUT:  
The info to set the experiment  
(connection and experiment settings)

OUTPUT:  
the graphic of the data and analysis

Status . Time . Ewe . I . Buffer . Eoc . Q-Qo . I Range .

VMP3 **off line** Channel 1 Amplifier : None EIS Read mode 0,0 Undersample: Off 0 b/s

Status offline:  
no instrument is connected



# Step 3 : Add an instrument

- Click on the + button to add a device to the list

The screenshot shows the EC-Lab software interface. The main window title is "EC-Lab [VMP3 -, channel 1 - no experiment]". The menu bar includes "Experiment", "Edit", "View", "Graph", "Analysis", "Tools", "Config", "Windows", and "Help & Manuals". The toolbar contains various icons for file operations and device management. The "Devices" panel is highlighted with a yellow box, and a callout box points to the "+" button with the text "Add/remove a device". The "Parameters Settings" panel is also visible on the left side of the interface.





# Step 4 : Select the instrument

- Select the instrument of interest
- Click on the Select button

The screenshot shows the EC-Lab software interface. A 'New Device' dialog box is open, highlighting the 'On-line' option. The dialog contains a table with the following data:

| Comm     | Device | Address     | Serial number |
|----------|--------|-------------|---------------|
| Ethernet | VMP-3e | 10.11.1.106 | .000101       |

Below the table, there is a 'Custom IP address' field with the value '192.168.0.1' and buttons for 'Refresh' and 'Modify...'. At the bottom of the dialog, there is a checked checkbox for 'Connect automatically at start time' and two buttons: 'Select' (highlighted with a yellow box) and 'Cancel'.

Note: Only one instrument can be selected at a time



# Step 4 : Select the instrument

By clicking on **Modify**, you can change the IP address of the instrument (for ethernet or LAN connection)

If checked, the next time EC-Lab is opened, reconnection will be performed automatically

The screenshot shows the EC-Lab software interface with the 'New Device' dialog box open. The 'On-line' radio button is selected. A table lists available devices:

| Comm     | Device | Address     | Serial |
|----------|--------|-------------|--------|
| Ethernet | VMP-3e | 10.11.1.106 | .00010 |

Below the table, the 'Custom IP address' field is set to 192.168.0.1. The 'Connect automatically at start time' checkbox is checked. The 'Advanced ethernet settings' sub-dialog is also open, showing the following details:

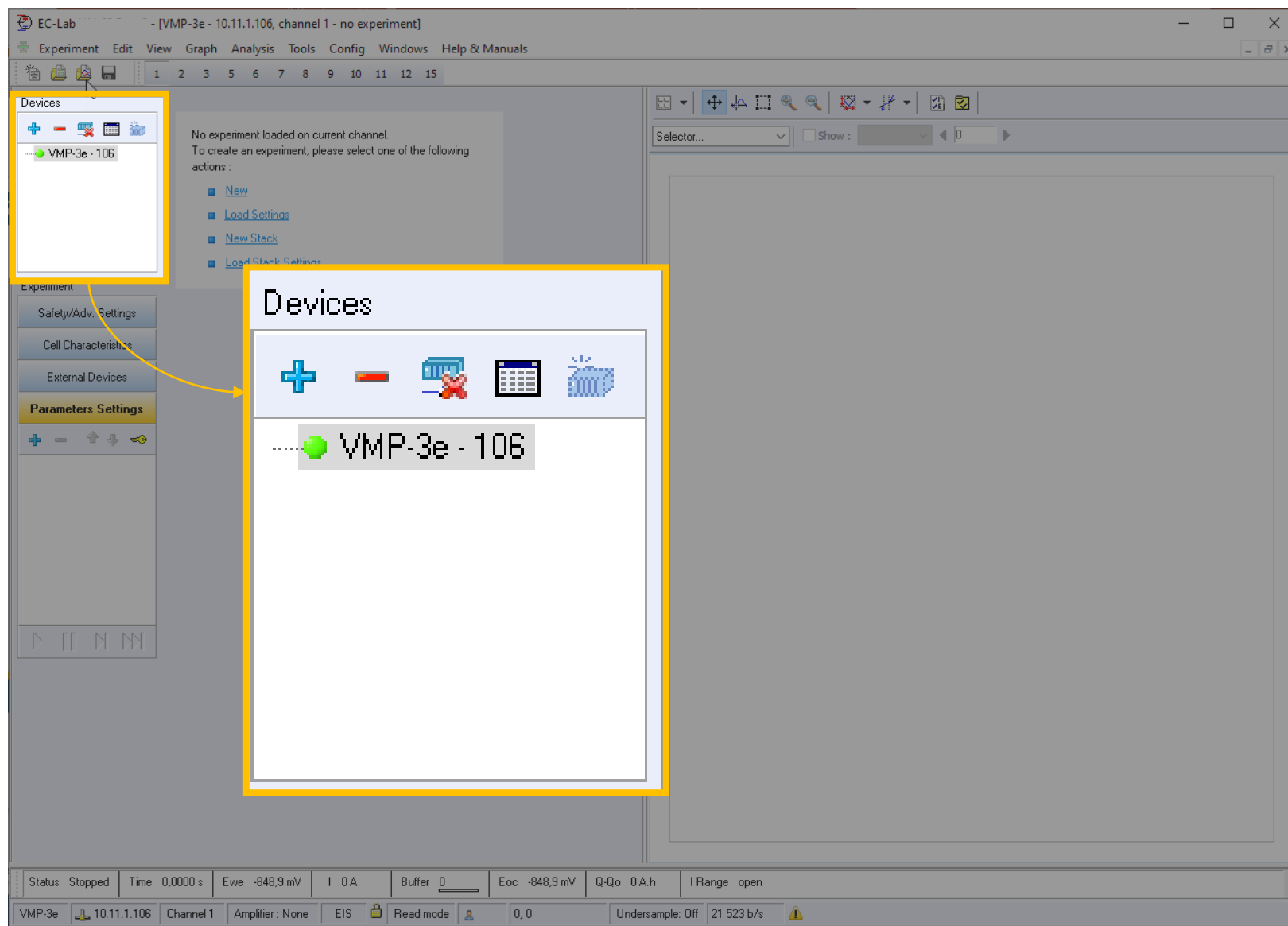
- Device: VMP-3e #.000101
- MAC address: 00.14.D8.01.24.71
- IP address: 10.11.1.106
- Netmask: 255.255.255.0
- Gateway: 10.11.1.106

The 'Modify device' button in the sub-dialog and the 'Modify...' button in the main dialog are highlighted in red. The 'Select' button is also visible.



# Step 4 : Select the instrument

- The instrument now appears in the list





# Step 4 : Select the instrument

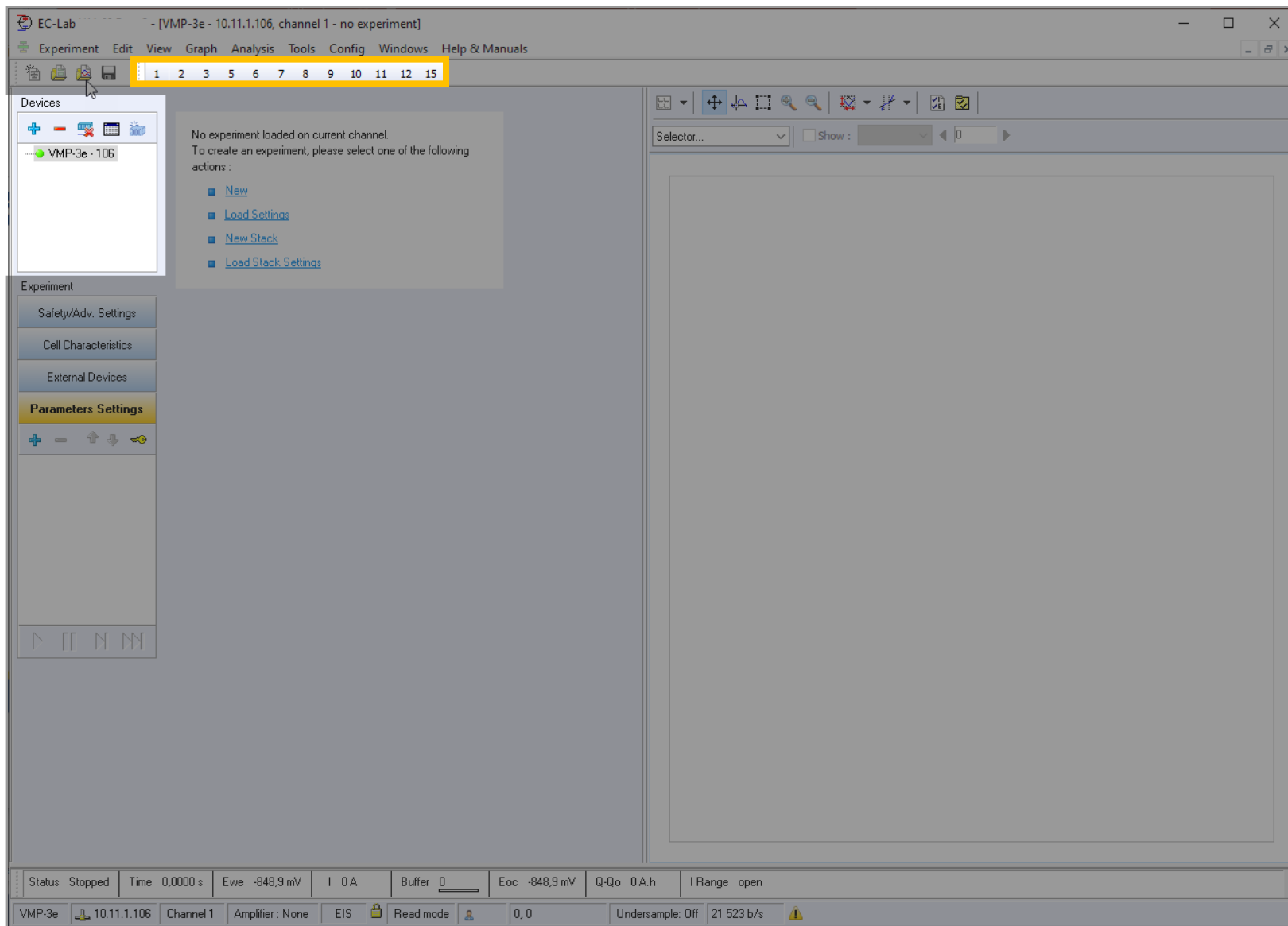
The screenshot displays the EC-Lab software interface. The main window title is "[VMP-3e - 10.11.1.106, channel 1 - no experiment]". The menu bar includes Experiment, Edit, View, Graph, Analysis, Tools, Config, Windows, and Help & Manuals. The toolbar shows various icons for file operations and analysis. The main area contains a message: "No experiment loaded on current channel. To create an experiment, please select one of the following actions: New, Load Settings, New Stack, Load Stack Settings." The left sidebar has sections for Experiment, Safety/Adv. Settings, Cell Characteristics, External Devices, and Parameters Settings. A "Devices" panel is open, showing a list of devices with a green dot next to "VMP-3e - 106". A callout box titled "Connect/disconnect device" shows a legend: a green dot for "VMP-3e - 106" labeled "Connected" and a red dot for "VMP-3e - 106" labeled "Disconnected". Another callout box at the bottom shows a device icon, the name "VMP-3e", and the IP address "10.11.1.106". The status bar at the bottom displays various parameters: Eoc -848,9 mV, Q-Qo 0 A.h, I Range open, Channel 1, Amplifier: None, EIS, Read mode, 0,0, Undersample: Off, 21 523 b/s.

For the Ethernet connection, the IP address is indicated in the list of devices and at the bottom of the window



# Step 5 : Select the channel

- Select the channel of interest in the tool bar



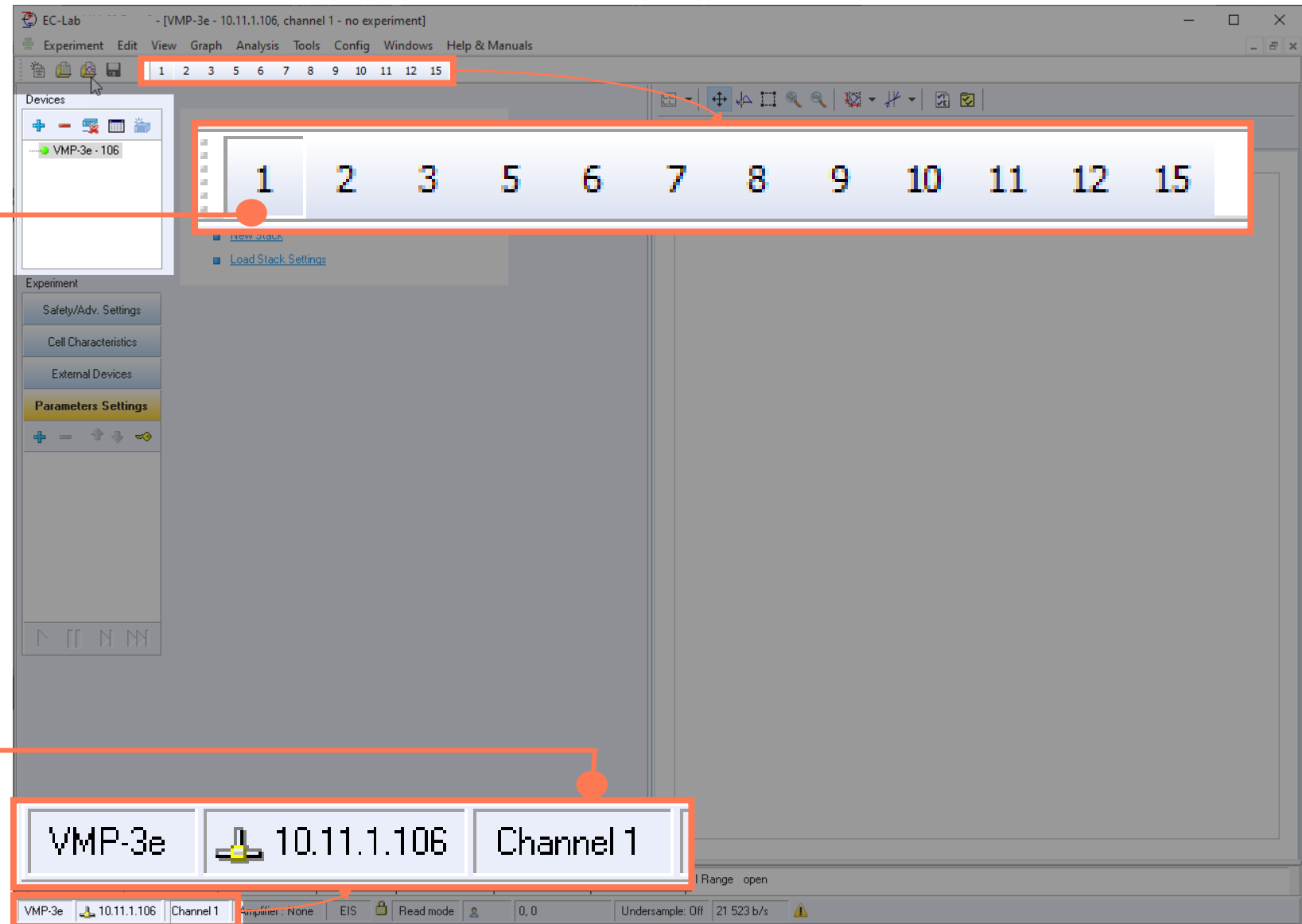
Note: You can also select a channel from the [global view](#)



# Step 5 : Select the channel

In this example, channel 1 is selected

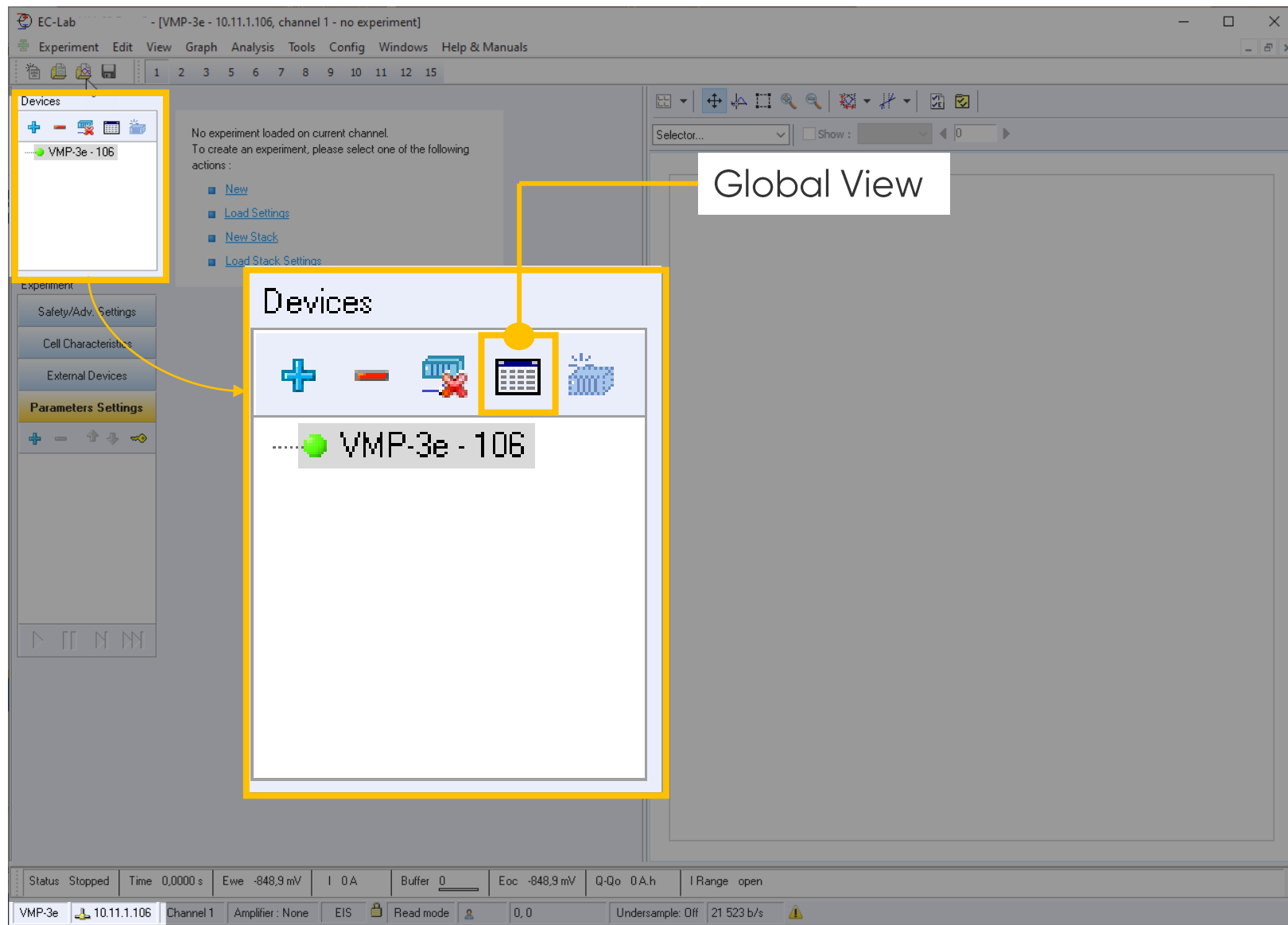
The instrument and the channel numbers are indicated on the bottom of the window





# Step 5 : Select the channel

- Another way to select the channel is to click on Global View





# Step 5 : Select the channel

- Select the channel of interest in the Global View

EC-Lab - [VMP-3e - 10.11.1.106, channel 1 - no experiment]

Experiment Edit View Graph Analysis Tools Config Windows Help & Manuals

1 2 3 5 6 7 8 9 10 11 12 15

Devices

- VMP-3e - 106

No experiment loaded on current channel.  
To create an experiment, please select one of the following actions:

- New
- Load Settings
- New Stack
- Load Stack Settings

Experiment

- Safety/Adv. Settings
- Cell Characteristics
- External Devices
- Parameters Settings

Global View

|                   | 1 Z       | 2 Z       | 3 Z       | 5 Z       | 6 Z      | 7 Z      | 8         | 9         | 10 Z     | 11 Z    | 12 Z      | 15 Z    |
|-------------------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|----------|---------|-----------|---------|
| user tech. status | Stopped   | Stopped   | Stopped   | Stopped   | Stopped  | Stopped  | Stopped   | Stopped   | Stopped  | Stopped | Stopped   | Stopped |
| amplifier I       | 0 A       | 0 A       | 0 A       | 0 A       | 0 A      | 0 A      | 0 A       | 0 A       | 0 A      | 0 A     | 0 A       | 0 A     |
| Ewe               | -903,6 mV | -34,53 mV | -33,98 mV | -36,14 mV | -3,571 V | -12,4 mV | -10,31 mV | -47,46 mV | -3,914 V | 6,744 V | -30,15 mV | 13,88 V |
| buffer            | 0%        | 0%        | 0%        | 0%        | 0%       | 0%       | 0%        | 0%        | 0%       | 0%      | 0%        | 0%      |

Show window at startup

Close

Status Stopped Time 0,0000 s Ewe -848,9 mV I 0 A Buffer 0 Eoc -848,9 mV Q-Qo 0 A.h I Range open

VMP-3e 10.11.1.106 Channel 1 Amplifier : None EIS Read mode 0,0 Undersample: Off 21 523 b/s





# Step 6 : Set the experiment

- When the instrument and channel are selected, the user can set the experiment

EC-Lab - [VMP-3e - 10.11.1.106, channel 1 - no experiment]

Experiment Edit View Graph Analysis Tools Config Windows Help & Manuals

1 2 3 5 6 7 8 9 10 11 12 15

Devices

VMP-3e - 106

No experiment loaded on current channel.  
To create an experiment, please select one of the following actions:

- New
- Load Settings
- New Stack
- Load Stack Settings

Experiment

- Safety/Adv. Settings
- Cell Characteristics
- External Devices
- Parameters Settings**

Check out our Getting Started with EC-Lab<sup>®</sup> tutorials dedicated to specific experiments. CV, EIS, CCCV, Tafel Plot techniques are available.

Status: Stopped Time: 0:00:00 LVC: 0.403 mV I: 0.000 mA Bias: 0.000 V EIS: 0.403 mV 0.400 V/AH Change: open

VMP-3e 10.11.1.106 Channel 1 Amplifier: None EIS Read mode 0, 0 Undersample: Off 21 523 b/s



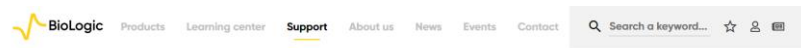
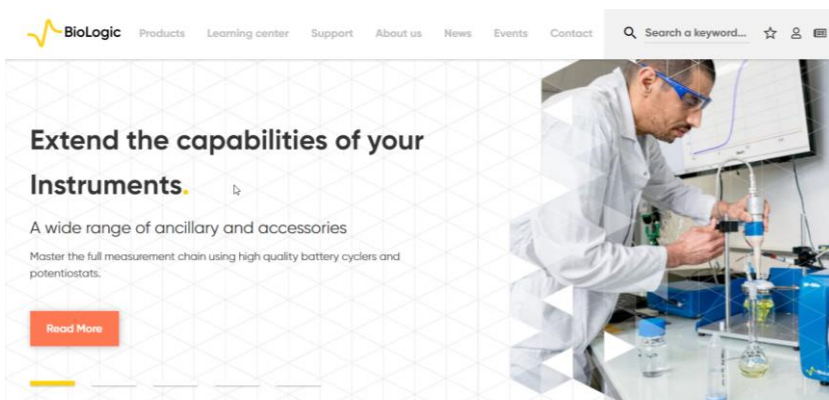


**Find out more**



# For supplementary information

## Visit our website!



Documentation

### Documentation.

A wide range of support material to help you get the best out of your equipment

BioLogic has prepared a wide variety of supporting documentation to help you better understand your instrument as well as application-oriented communications relevant to your project. In this section, you will find application notes, technical notes, white papers and other documents. Additionally, you will find multimedia communications such as online tutorials and self-help videos in this section. We regularly add new support documents to this website so don't forget to check back regularly. You may also want to subscribe to our newsletter to receive all the latest articles and videos published by BioLogic.



[Application notes](#) | [Brochures](#) | [Catalogs](#) | [Citations](#) | [Support Videos](#) | [Technical notes](#) | [Tutorials](#) | [User manuals](#) | [White papers](#)

[www.biologic.net](http://www.biologic.net)

- Documentation list
  - Computer to instrument connection – EC-Lab (videos)
  - Communicate with the instruments (Technical Note 03)
  - Installation and Configuration Manual (Manual)



Did you know? Free update of EC-Lab® are available on our website.



# Need help?

## Contact us!



- Helpful information to provide when contacting support center:
  - Serial number of the instrument (located on the rear panel of the device)
  - Software and hardware version you are currently using (on the Help menu, About on EC-Lab)
  - Operating system on the connected computer
  - Connection mode (Ethernet, LAN, USB) between computer and instrument



- [Should I use Ethernet or USB?](#)
- [How do I connect with Ethernet?](#)
- [How can I register my product?](#)
- [How can I validate that my potentiostat is working properly?](#)



# Should I use Ethernet or USB?

|               | Ethernet  | USB                           |
|---------------|---|-------------------------------|
| Connection    | Network parameters of PC to set                   | Plug and play                 |
| Instrument    | Multi-channel, single-channel                     | Single-channel                |
| Communication | Fast transfer, reliable                           | Time out issue                |
| User profile  | Multi-user, long experiment, large number of data | Single user, short experiment |



We recommend the use of an aftermarket USB hub (connected between computer and BioLogic device) to increase reliability of USB communication.



- Set computer's Ethernet circuit to a static IP address (IPv4) that correspond to instrument's IP address.
  - The factory default instrument's IP address is 192.109.209.128.
  - In IPv4 "use the following IP address", set:
    - IP address: 192.109.209.XXX
    - Subnet mask: 255.255.255.X (X = 0 or 1)

NB: Once Ethernet communication is established, then the IP Address of the instrument may then be changed to then operate on a LAN if that is so desired.



To choose an appropriate IP address, check with your IT service.



# How do I connect with Ethernet?

2/2

**1** Centre Réseau et partage Network and Sharing Center

Panneau de configuration > Réseau et Internet > Centre Réseau et partage

Afficher les informations de base de votre réseau et configurer des connexions

Afficher vos réseaux actifs

bio-logic.loc  
Réseau avec domaine

Type d'accès : Internet

Connexions : Ethernet 6

**2** État de Ethernet 6

Général

Connexion

|                     |                    |
|---------------------|--------------------|
| Connectivité IPv4 : | Internet           |
| Connectivité IPv6 : | Pas d'accès réseau |
| État du média :     | Activé             |
| Durée :             | 01:19:28           |
| Vitesse :           | 1,0 Gbits/s        |

Détails...

Activité

|                     |             |
|---------------------|-------------|
| Envoyés             | Reçus       |
| Octets : 74 065 378 | 110 396 847 |

Propriétés

**3**

**4** Propriétés de Ethernet 6

Gestion de réseau | Authentification | Partage

Connexion en utilisant : Realtek USB GbE Family Controller

Cette connexion utilise les éléments suivants :

- Client pour les réseaux Microsoft
- Partage de fichiers et imprimantes Réseaux Microsoft
- Planificateur de paquets QoS
- FortiClient NDIS 6.3 Packet Filter Driver
- Protocole Internet version 4 (TCP/IPv4)**
- Protocole de multiplexage de carte réseau Microsoft
- Pilote de protocole LLDP Microsoft

**5** Propriétés de : Protocole Internet version 4 (TCP/IPv4)

Général | Configuration alternative

Les paramètres IP peuvent être déterminés automatiquement si votre réseau le permet. Sinon, vous devez demander les paramètres IP appropriés à votre administrateur réseau.

Obtenir une adresse IP automatiquement

Utiliser l'adresse IP suivante :

Adresse IP : . . . .

Masque de sous-réseau : . . . .

Passerelle par défaut : . . . .

Obtenir les adresses des serveurs DNS automatiquement

Utiliser l'adresse de serveur DNS suivante :

Serveur DNS préféré : . . . .

Serveur DNS auxiliaire : . . . .

Valider les paramètres en quittant

Avancé...

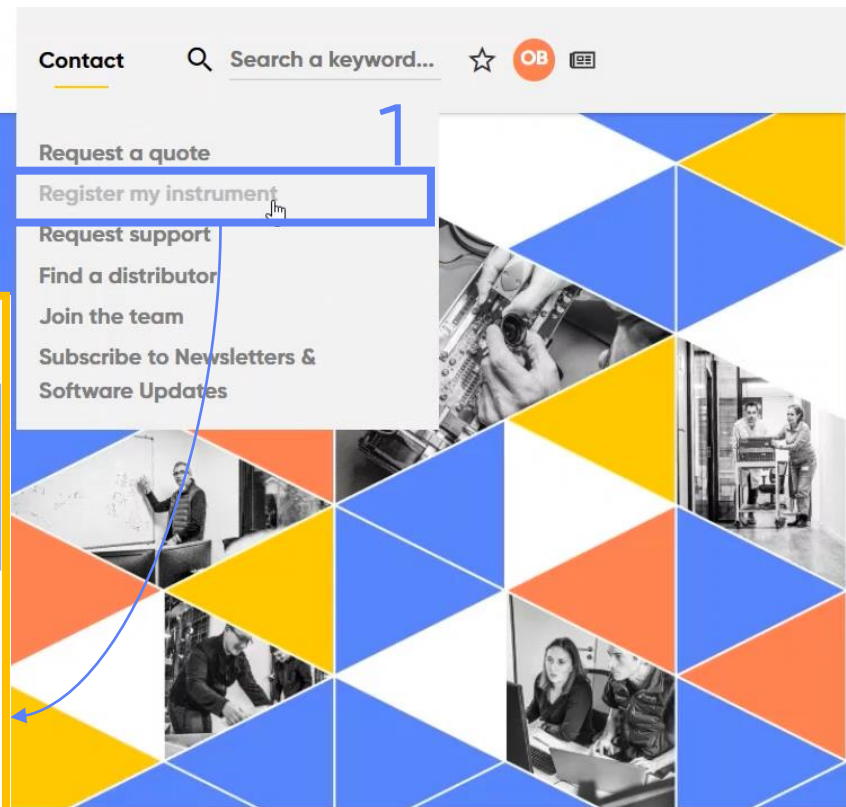
OK | Annuler





# How can I register my product?

The screenshot shows the BioLogic website's registration process. At the top, the navigation bar includes 'BioLogic', 'Products', 'Learning center', 'Support', 'About us', 'News', and 'Events'. A 'Contact' dropdown menu is open, showing options like 'Request a quote', 'Register my instrument', 'Request support', 'Find a distributor', 'Join the team', and 'Subscribe to Newsletters & Software Updates'. The 'Register my instrument' option is highlighted with a blue box and a '1' next to it. Below this, the registration form is shown in two steps. Step 1, 'Request type.', has a dropdown menu set to 'Register an instrument'. Step 2, 'Please enter your instrument details.', includes a dropdown for 'Instrument\*' (set to 'Select an instrument'), a text input for 'Serial number\*', and a larger text area for 'Hello, I would like...'. A 'Send' button is at the bottom. A blue box and a '2' highlight the registration form area.



3 We will get back to you with an access code to access your personal space which includes support information about your instrument not available on the public site.



# How can I validate that my potentiostat is working properly?

- Calibrate channel(s). Refer to "Installation & configuration manual" and Technical Note #18.

Note: If a further check is needed, it is possible to validate the boards thanks to the dummy cells provided with the board(s). Refer to Technical Note #36.

The screenshot shows the EC-Lab software interface. The main window title is "EC-Lab - [VSP-300 - 10.11.1.105] channel 3 - no experiment". The menu bar includes "Experiment", "Edit", "View", "Graph", "Analysis", "Tools", "Config", "Windows", and "Help & Manuals". The "Tools" menu is open, showing options like "Modify Cell Characteristics...", "Extract Cycles/Loops...", "Split file...", "Append files...", "Under Sampling...", "Channel Calibration...", "Firmware Upgrade / Downgrade...", "Retrieve Data From The Instrument Ctrl+B", "Batch Mode", "Repair File...", "Repair Channel...", "Connected PC...", "Tera Term Pro", "Calculator", "Notepad", and "Connect TCU". The "Channel Calibration" option is highlighted with a blue box and a yellow number "2".

The "Channel calibration" dialog box is open, showing a table of parameters for Channel 3. The table is divided into "Standard board", "Analogic", "Digital", and "Low Current" sections. The "Standard board" section includes Board code, Serial number, Utilisation version, Fabrication index, Xilinx version, Calibration version, and Cable. The "Analogic" section includes Board code, Serial number, Utilisation version, Fabrication index, Fab. cal. board SN, and User cal. board SN. The "Digital" section includes Board code, Serial number, Utilisation version, Fabrication index, Xilinx version, Version, and Gain REF21. The "Low Current" section includes Board code, Serial number, Utilisation version, Fabrication index, Fab. cal. board SN, and User cal. board SN. The "Gains and Offsets" section includes Offset ADC A, Offset ADC B, Offset BUF A, Offset BUF B, Gain ADC A, Gain ADC B, Attenuation 1.0 A, Attenuation 2.1 A, Attenuation 4.2 A, Attenuation 1.0 B, Offset I F50kHz G1000, Offset I F1kHz G1, Offset I F1kHz G10, Offset I F1kHz G100, Offset I F1kHz G1000, Offset I F1Hz G1, Offset I F1Hz G10, Offset I F1Hz G100, Offset I F1Hz G1000, and Gain REF21. The dialog box has buttons for "Display", "Calibrate", "Copy", "Save", and "Close". A yellow number "3" is placed next to the dialog box.



[www.biologic.net](http://www.biologic.net)



[contact@biologic.net](mailto:contact@biologic.net)



BioLogic



Thank you  
for choosing us!