

## Edison Robots Helpful Tips and Tricks

This document is a great place to start if you ever experience any trouble with the Edison robots. Edison robots are used in different programs we offer such as the Coding Edison Robots Series and Ready, Set, Move!

Please note: Some of the information may not be relevant to you (i.e., Ready, Set, Move! Presenters can ignore the EdBlocks/EdScratch information).

### Each kit with Edison robots should have:

- Spare parts - this contains extra sensors, wheels and other parts for the Edisons. If you do not have one in your kit, please order one!
- Calibration barcodes - this page contains Drive calibration and Obstacle calibration codes and instructions. This has been helpful for Edisons acting up during the line detection activity. Again, if you do not have these codes in your kit, please order one!

### Tips and tricks for Line Tracking:

- Always start the robot on the white/light background, not on the line. It must first detect the light background before "finding" the dark line to follow.
- Set the Edison to the LEFT of the line - Edisons tend to search to the right, or circle to the right when they are searching.
- Ensure the line is dark enough - you need the contrast between the light paper and dark line for Edison to sense a difference. If the marker is drying out, the line may not be dark enough.
- Only use non-glossy paper - students can remove the sheets from the page protectors in their duotangs (Edison Robotics kits) to get a better reading on the barcodes or for using the line detection circle provided. There does not seem to be any issues with the barcodes on the keyring.
- Avoid running the line tracking programs in very bright light, such as direct sunlight, as this can negatively affect the program.
- Check that there is still a line tracking sensor on the bottom of the robot - if not, add one from your spare parts bag.
- Check that the sensor on the bottom is not "scuffed up" - this may negatively impact how well the sensor works, making it difficult for the Edison to sense the line.
- If you are running an EdBlocks or EdScratch field trip, you will also need to check the code to ensure you have the line tracking sensor turned on!



## EdBlocks & EdScratch Connectivity Troubleshooting

Depending on the type of programming devices you are using and your network, there are a few things you will need to do to troubleshoot your devices and get them working with the EdBlocks and EdScratch apps.

### Troubleshooting 1: Check the connectivity status

If you see the *'There seems to be a network issue accessing the compiler'* warning message after pressing the 'Program Edison' button in the EdBlocks or EdScratch app, or if the program failed to download successfully, you will need to check the app's connectivity status.

To work, the EdBlocks and EdScratch apps need to access the compiler (which is what converts the programs you see on the screen into a format that can be sent to the Edison robot). Inside the app (EdScratch at [www.edscratchapp.com](http://www.edscratchapp.com) and EdBlocks at [www.edblocksapp.com](http://www.edblocksapp.com)) open 'Menu' in the upper left-hand corner and select 'Help'. This will open a pop-up which includes the option to 'Run the connection checker'. Click this button to check your connection.

If the connection test result shows 'NO SERVER FOUND' then you may be behind a firewall, common at schools, which is blocking access to the compiler. You will need the network administrator to unblock ports 80, 8080, 443 and 8443 and white list these addresses:

- <https://www.edscratchapp.com>
- <https://www.edblocksapp.com>
- <https://api.edisonrobotics.net>
- 52.8.213.196
- 13.210.175.93
- 52.52.166.106
- 52.79.71.19

**SUCCESS:** Once the connection checker shows you are connected, try downloading and running a test program again. If the program downloads and runs successfully in the Edison robot, your programming device is ready to use! There's nothing further you need to do to set-up your device.

**FAIL:** If the connection checker shows you are connected, but you are still not able to program Edison, move on to 'Troubleshooting 2: Switch the compiler output type'.



## **Troubleshooting 2: Switch the compiler output type**

To be sent to the Edison robot, your program must be compiled by the Edison compiler. The Edison compiler can create two types of outputs and automatically chooses which type to create for you based on the type of device it detects you are using (such as an Apple tablet or a Windows laptop).

If your programs are not downloading successfully, you can manually switch the compiler output type. Inside the app (EdScratch at [www.edscratchapp.com](http://www.edscratchapp.com) and EdBlocks at [www.edblocksapp.com](http://www.edblocksapp.com)) open 'Menu' in the upper left-hand corner and select 'Help'. This will open a pop-up which includes the option to 'Change the compiler output type'. Click this button to check what device and settings are being detected.

If the device being detected is not accurate, or if your programs are not downloading successfully, you can manually switch the compiler output type. Use the following information to select the output best suited to your device:

### **Long pulse compiler output**

This output type works well on devices with low output volume, including some tablets. If you are using a Mac computer, an iPad tablet or a Windows or Android tablet, the long pulse compiler output should work best for your device.

### **Short pulse compiler output**

This output type works well on devices with sound enhancement software, including most Windows desktop and laptop computers. If you are using a Windows desktop or laptop computer, the short pulse compiler output should work best for your device.

**SUCCESS:** Once you have changed the compiler output, try downloading and running a test program again. If the program downloads and runs successfully in the Edison robot, your programming device is ready to use! There's nothing further you need to do to set-up your device.

**FAIL:** If you are still not able to program Edison after changing the compiler output type, check the device-specific troubleshooting advice that follows.



## Windows Computers

If you are running a laptop or desktop with a Windows operating system and are still unable to program Edison after running the set-up steps above, try these additional troubleshooting steps.

### Check for a volume 'hard lock'

Some devices have a hard lock on volume whenever an audio device is detected. This means that the device is 'locked' to only deliver a maximum volume of approximately 75% of the device max volume when an audio device is detected. To correct this, go into the device's settings and disable the hard lock to enable the device to emit true full volume, even with an audio device plugged in.

### Disable sound enhancements

If you are using desktops or laptops running Windows operating systems and both the short pulse (recommended) and long pulse compiler output types are failing, you will need to disable sound enhancements. Steps:

- Open Control Panel
  - Hardware and Sound
  - Sound
  - Plug in EdComm cable to determine which device is being used for output (green checkmark)
  - Headphone option (usual default device)
    - Properties Button
    - Advanced Tab
    - Click box to unselect "Enable Audio Enhancements"
    - Apply button (to apply changes)
    - OK button

Once you have sound enhancements disabled, use the long pulse compiler output option.

### Disable sound enhancements DELL AUDIO (Dell Computers)

If you are using Dell laptops or Chromebooks you may need to disable sound enhancements.

Please go to <https://meetedison.com/edison-robot-support/troubleshooting/#soundenhancements> to find step-by-step video guides showing you how to disable sound enhancements for Dell computers.

Steps:

- Open Control Panel
  - Hardware and Sound
  - Dell Audio
  - Main Tab (at top)
    - Under Speakers and Headphones (Maxxaudio Pro)
    - Turn off (click) Speaker Enhancement
  - Speaker/Headphone Tab (at top)
    - Turn off (click) enhanced audio
- Close out of window, changes should be saved

*Please Note:* In some Dell machines the buttons stay "stuck" in an ON position. If this is the case you need to uninstall Dell Audio drivers on the machine.



## **Chromebooks – troubleshooting**

If you are running a Chromebook and still unable to program Edison after running the set-up steps above, try this additional troubleshooting step.

### **Disable sound enhancements**

Some Chromebooks, including some Dell Chromebooks, have low audio output but also have sound enhancements. If you are using a Chromebook and both the short pulse (recommended) and long pulse compiler output types are failing, you will need to disable sound enhancements.

Steps:

- Open Control Panel
  - Hardware and Sound
  - Sound
  - Speakers / Hi-Def Audio / Realtek Audio
    - Properties Button
    - Enhancements Tab
    - Click box “Disable All Enhancements”
    - OK button
  - OK button (to save changes)

Once you have sound enhancements disabled, use the long pulse compiler output option.

## **Mac computers – troubleshooting**

If you are running a Mac laptop or desktop and are still unable to program Edison after running the set-up steps above, try this additional troubleshooting step.

### **Check the volume settings**

Some Macs experience audio clipping errors when attempting to program Edison. If you experience these issues, please try dropping your volume from 100% to between 50% and 90% instead.

## **Tablets – troubleshooting**

If you are running an Apple, Android or Windows tablet and are still unable to program Edison after running the set-up steps above, try this additional troubleshooting step.

### **Check the volume settings**

Many devices have built-in safety settings that reduce the volume when an audio device is connected using the headphone jack. Please check that your volume is turned all the way up to 100% after plugging in the EdComm programming cable to your device.

Some devices have a hard lock on volume whenever an audio device is detected. This means that the device is ‘locked’ to only deliver a maximum volume of approximately 75% of the device max volume when an audio device is detected. To correct this, go into the device’s settings and disable the hard lock, to enable the device to emit true full volume, even with an audio device plugged in.



*Please Note:* most mobile phones do not have the audio output to program Edison using EdBlocks or EdScratch. We do not recommend using mobile phones as programming devices with Edison.

There are step-by-step video guides showing you how to disable sound enhancements for all of the above options, as well as the most common third-party software programs, on the Edison website at <https://meet Edison.com/edison-robot-support/troubleshooting/#soundenhancements>

There are lots of resources for both V.2 and V.3 Edison robots, as well as EdBlocks and EdScratch, on the Meet Edison website - <https://meet Edison.com/edison-robot-support/>.

You can also check out their tips and troubleshooting information for reference.

We hope this helps, and if you have any other issues or questions, please ask our office!

