

# Quick Start Guide

## Version 1.1

# mRS Device Manager Software

The official software platform  
distributed to make use of mRS devices

## Requirements

To run mRS Device Manager the following elements are required:

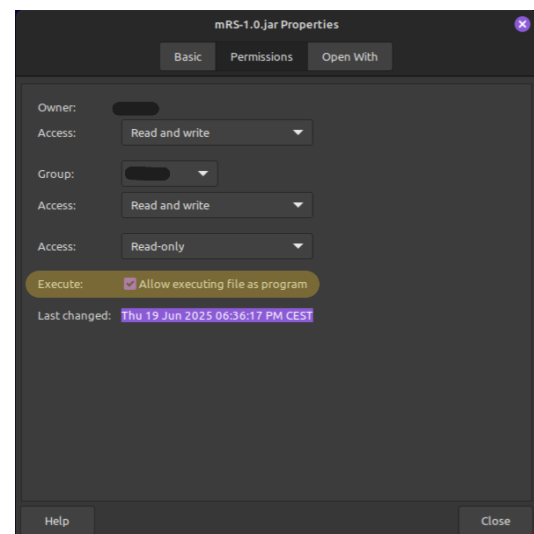
- A computer with an x86 or x64 CPU (ARM is currently unsupported, meaning devices such as Apple Macs with newer M CPUs or Raspberry Pi computers), support on macOS has been implemented but it's in an experimental state at the moment.
- A functioning installation of Java 21 or newer (recommended version is Java 25). Found on <https://www.oracle.com/java/technologies/downloads>.
- It's recommended to install the virtual COM port drivers from FTDI: Found on <https://ftdichip.com/drivers/vcp-drivers>.

Once the requirements are satisfied, the software can be downloaded through the mRS Website at [mrsinstruments.com/software](https://mrsinstruments.com/software).

### NOTE for Linux installations:

Since the software is distributed as a packaged java archive (.jar) file, on most linux distributions it is required to allow executing the file as a program before being able to run it, otherwise the operating system will just see it as a regular archive.

Enabling execution can be done through the GUI on some Desktop Environments, by right-clicking and going to the file's properties, under the Permissions tab, a check should appear, as seen in the image.



## 2

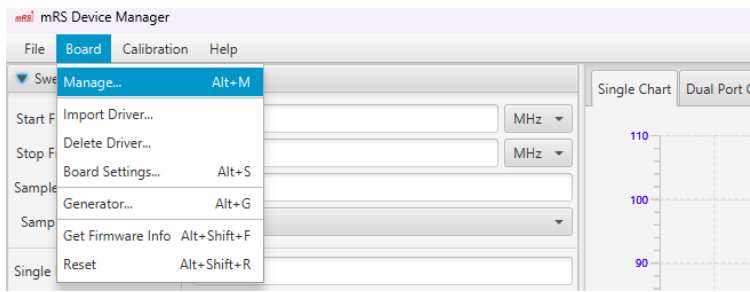
In distributions where these operations aren't available, file execution permissions can be enabled through the terminal, by navigating to the `.jar` file's folder and running the following command:

```
$ chmod +x mRS-1.1.jar
```

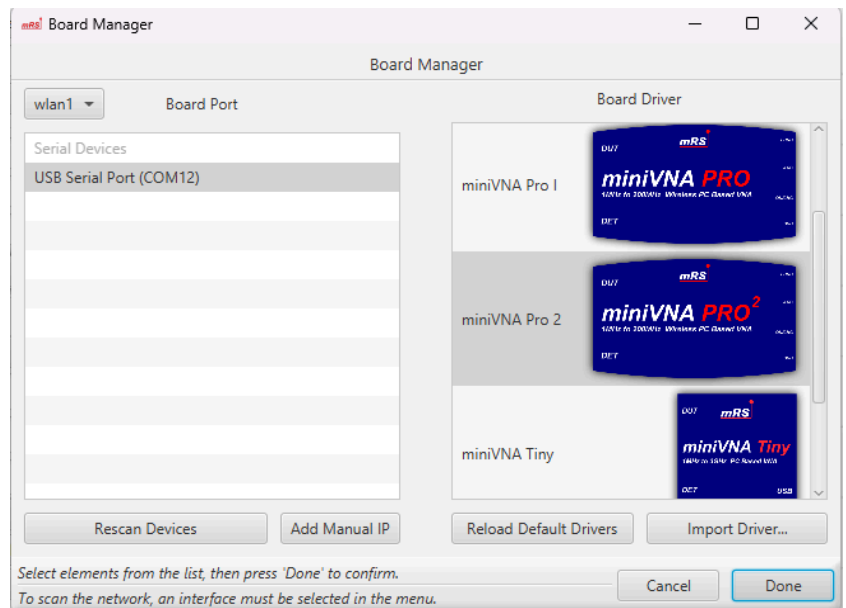
Where `mRS-1.1.jar` is the name of the `.jar` executable.

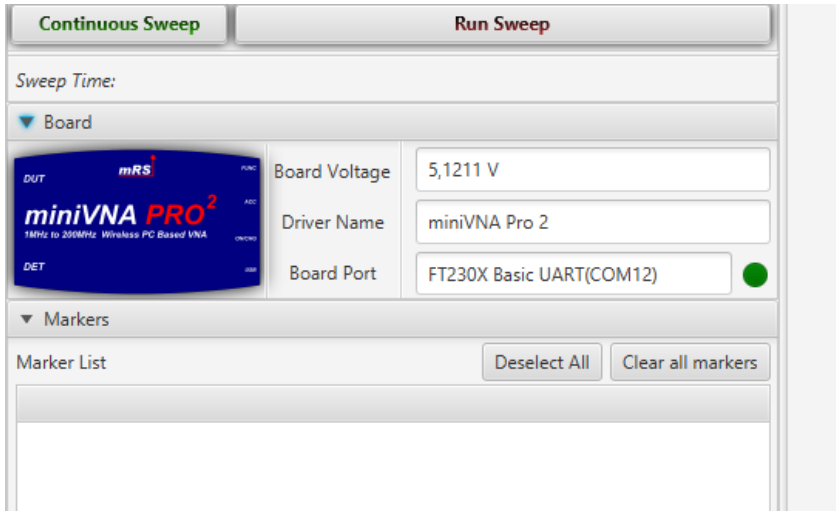
## How to set up

To initialise the communication between the software and the board, first open the **Board Manager**, by opening the menu in the top and selecting `Board -> Manage` or by pressing `ALT + M`:



Once in the board manager, select the right board from the available devices shown in the list and the correct driver for the model of the connected board, then press `Done`:

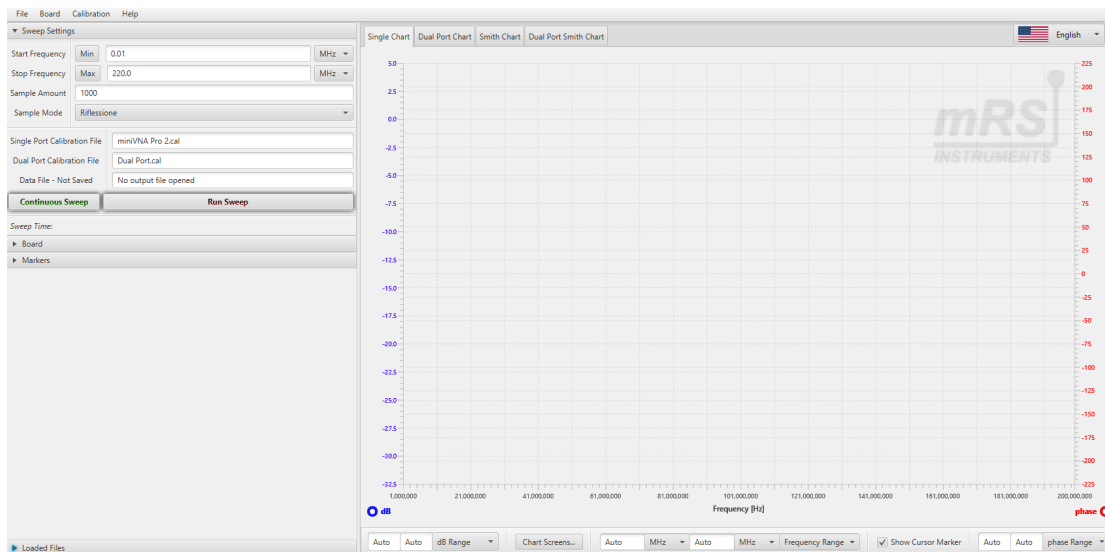




Now the board is connected and ready to be used, as shown in the **Board** Submenu in the main window's sidebar

## Main Features

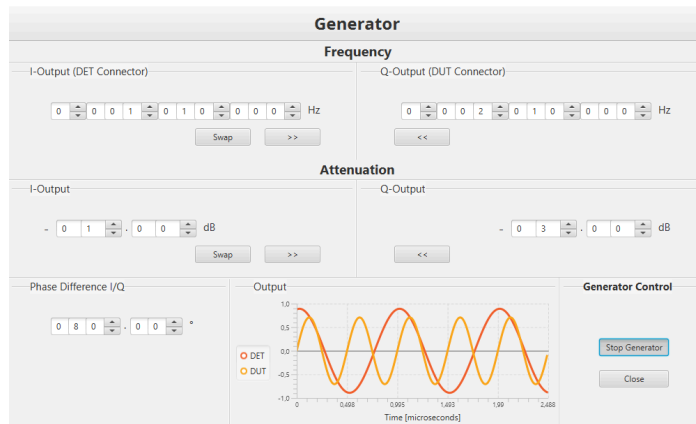
1. **Device Scan:** The software can execute a scan with a specified frequency range, sample amount and scan mode (referring to either transmission or reflection). Single port and dual port devices are both supported. As well as wireless boards, connected through the computer's network interface.



Main software window showing the Sweep Settings to change the indicated scan parameters and the Run Sweep buttons.

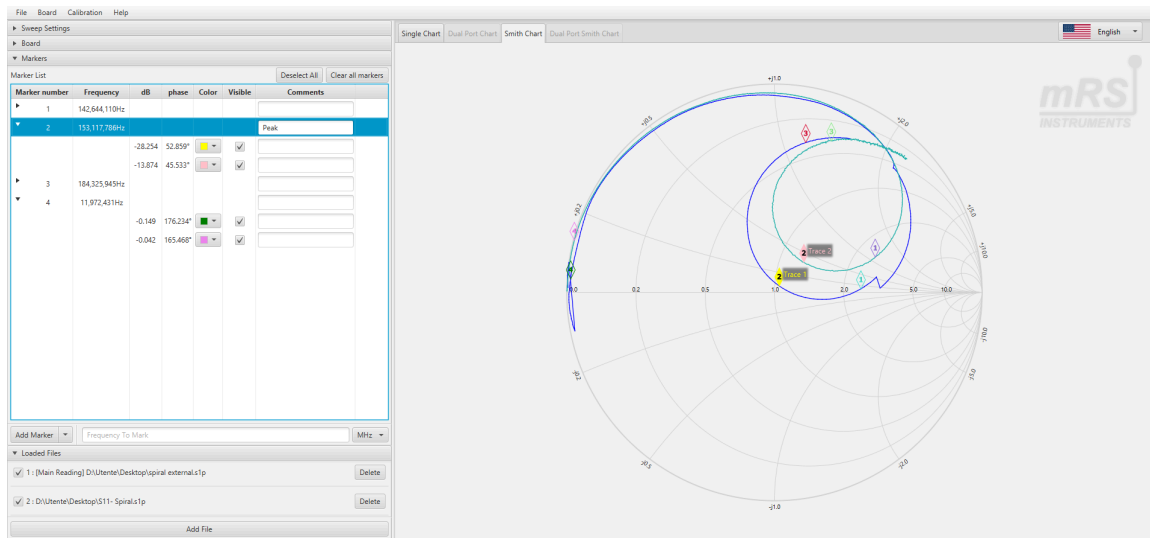
2. **Board Generator:** The software is able to make use of the board as a generator, for supported boards, two generator outputs are supported, one for each board's BNC connector.

Each generator output can be configured to have a specific frequency and amplitude. If the board supports both, the two generator outputs can be configured to be out of phase between each other by a specified amount of degrees.



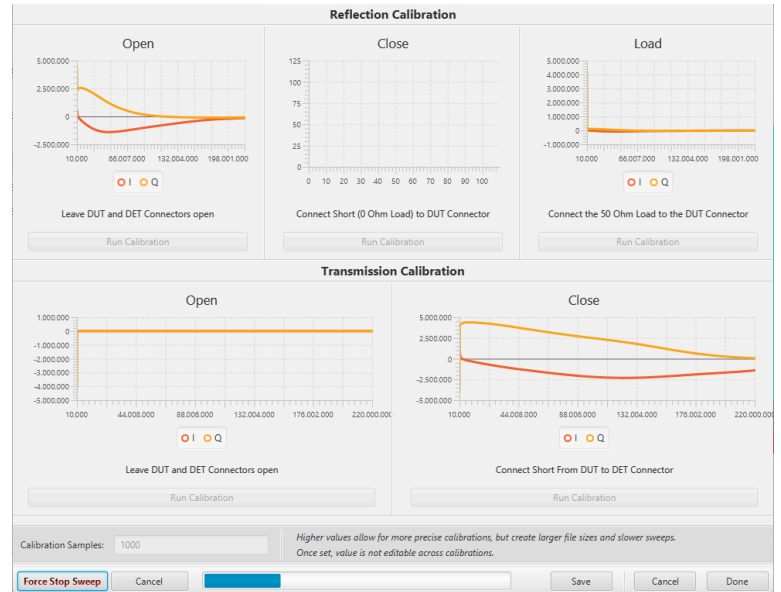
Screen of the generator creating two output sine waves shown in the chart on the bottom with the specified parameters.

3. **Multiple Files:** The application is able to load multiple file readings in a single chart, to allow for comparison between them. No limit is set on the amount of individual files that can be loaded on a single chart. Markers can be set to indicate the parameters of all these readings at a specific frequency, showing the results on a table called **Marker List**.



Sample of the smith chart being used to compare two readings.

4. **Calibration Manager:** A calibration manager is available to allow the user to calibrate its board once and have the calibration saved for that board internally, allowing the user to quickly find and load the calibration file again if more than a single hardware is being used.



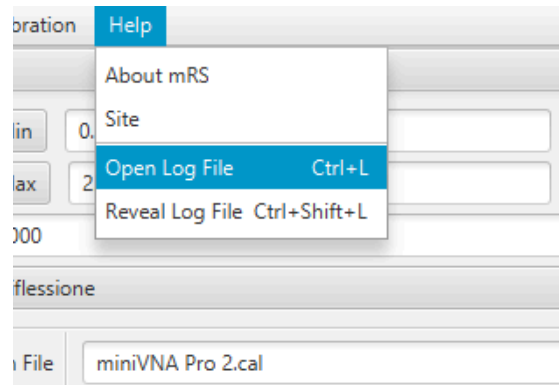
Sample of the manager being used to calibrate a single port board.

## Log Files

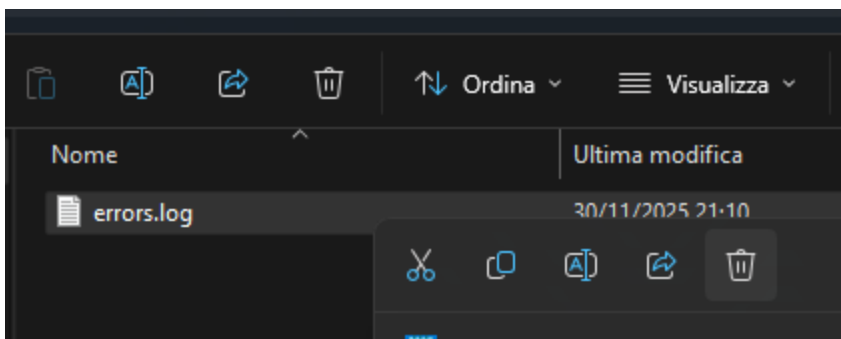
If any error is encountered during the execution of the program, its detailed developer information is saved inside an error log file, which is accessible through the Help menu in the main window's menu bar.

The file can be opened by selecting `Help -> Open Log File` or it can be revealed in its folder by selecting `Help -> Reveal Log File`.

**Any** text present in it may indicate an error that has been encountered in the software, so it's recommended to share it in the forum so it can be fixed, unless it's specifically stated as a "WARNING" and not an error.



Keep in mind that errors might be encountered without the user noticing, either because they are small unnoticeable graphical errors or specific errors in functions of the program which the user never made use of. Some errors might be simple warnings happening during the software startup for example when it tries to connect to the latest plugged in board which might not be present.



Once the log has been shared with the community, the file can be safely deleted to clear it from any old logs which aren't useful anymore, by selecting `Help -> Reveal Log File` and deleting the `errors.log` file.