

# Wino user manual

# Contents

Introduction: what is Wino ? .....	2
Important prerequisites ! .....	2
The Wino package .....	3
Getting started .....	4
1. Open up the FCB1010.....	4
2. Install the Wino firmware chip.....	5
3. Install the Wino WIFI module.....	6
4. Test the FCB1010 and close the housing .....	8
5. Calibrate the expression pedals .....	8
6. Connect to the FCB1010 through WIFI .....	9
7. Open the embedded web application.....	10
The web application .....	11
1. The status screen.....	11
2. Changing the embedded access point SSID or password.....	12
3. Connecting to the FCB1010 using your home WIFI access point.....	13
4. Sending MIDI over WIFI.....	16
5. Enabling MIDI THRU .....	16
6. Uploading setups to the FCB1010 .....	17
APPENDIX : self-test, pedal calibration, WIFI reset.....	18

## Document versions

Version 1.0    31/03/2024    Initial release

## Introduction: what is Wino ?

In short : *Wino* is the acronym for “*WIFI-enabled UnO*”

Over the past 15 years we have been releasing alternative firmware for the Behringer FCB1010. We named it “UnO firmware”, as in “UnOfficial firmware”, since we are not affiliated with Behringer and therefore this firmware is not an official Behringer offering.

As many users will testify, the UnO firmware has brought several enhancements to the original FCB1010. Apart from some bugfixes (like correcting errors in the MIDI merge functionality) we added a few highly requested features, like a “real stompbox mode”.

Next to the firmware upgrades, we also released the FCB/UnO ControlCenter software, a Mac/Windows editor which makes programming the FCB1010 much easier. Next to specifying the content of each preset, the editor allows you to give the presets a name, which makes it easier to remember what each of the FCB1010 switches actually does. Of course, these preset names cannot be displayed on the FCB1010, which only has a very basic 7-segment display to show the current bank number.

A major issue with using a PC editor, is that you need a MIDI-USB interface to transfer the setup from PC to FCB1010. Many cheap interfaces are on the market today, unfortunately those interfaces don't work well for the large FCB1010 patchdumps.

The Wino module was designed to solve some of those problems. The module makes your FCB1010 WIFI enabled. This allows you to wirelessly connect your PC to the FCB1010, and send a setup, created with FCB/UnO ControlCenter, without the need for a MIDI-USB interface. The additional setup storage even allows to store multiple setups inside the FCB1010, and easily switch between those setups.

The Wino module actually contains a fullblown webserver, which not only lets you upload setups to the FCB1010: it also allows you to view live status info of your MIDI controller using the browser of your iPad or laptop. You can see the name of the currently selected preset, which effects are activated, etc. You can even use the touch screen of your iPad to “click” the FCB1010 buttons remotely!

On top of that, the module also makes it possible to send or receive MIDI to or from your laptop or iPad over WIFI, using a protocol called “RTP MIDI” or “AppleMIDI”.

Read on to learn all details about Wino.

## Important prerequisites !

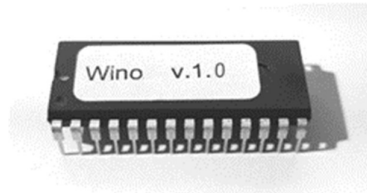
2 things you need to know before considering the Wino module :

- The module works with setup files created with FCB/UnO ControlCenter, so you need to have a license for that application. This is not included in the Wino package as many already use this editor today.
- The Wino status page is (currently) not compatible with “Direct Select” mode (the specific mode which doesn't use setup banks, but requires 2 switch clicks to enter a preset number between 00 and 99). If you use that mode, Wino is not suitable for you.

## The Wino package

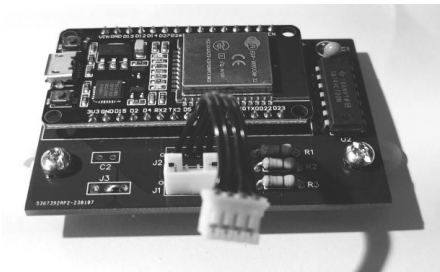
The Wino package contains 2 parts :

- A firmware chip.



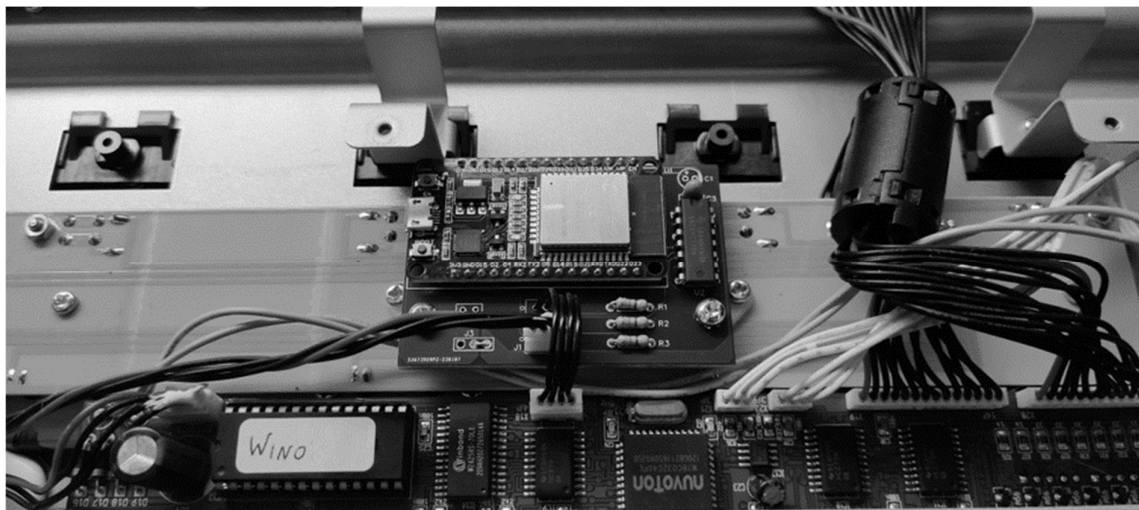
This chip replaces the original Behringer firmware of the FCB1010, and offers exactly the same functionality as the latest UnO chip. Additionally it sends live status info to the WIFI module below. This allows you to view the current status of your FCB1010 on your laptop or iPad.

- A WIFI module.



The wireless connection provided by this module replaces the 2-way MIDI connection required so far to program the FCB1010.

Installing the module is very simple. No soldering required, all you need is a screwdriver!



## Getting started

1. Open up the FCB1010



Turn the FCB1010 upside down, remove 16 screws to open the housing, lay the bottom plate next to the housing (leave the ground wire connected)





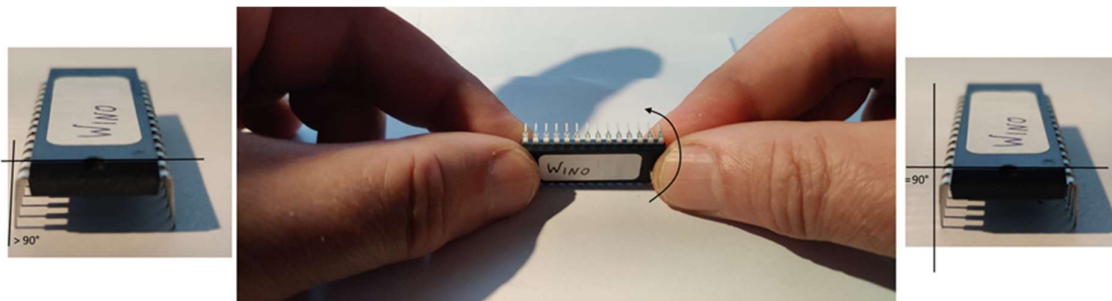
## 2. Install the Wino firmware chip

Remove the original firmware chip from the socket on the main board. If necessary remove all hot melt adhesive which might be applied to the chip. You can use a small screwdriver to lift the chip out of the socket without bending the chip legs.



Store the original chip in a safe place, you might want to have it available if you would ever sell your FCB1010.

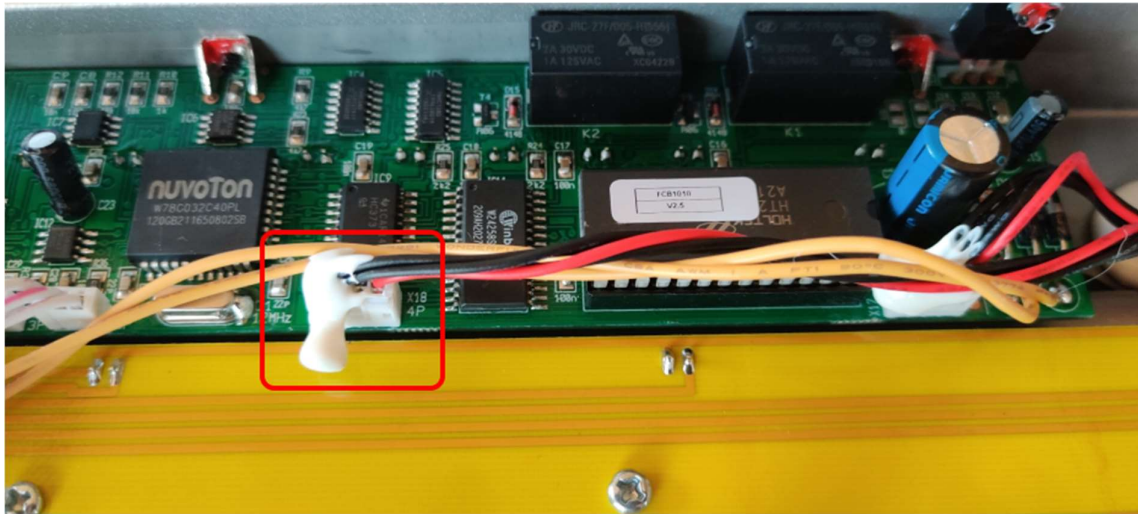
Before inserting the Wino chip, make sure the chip legs are perfectly perpendicular to the chip body. You can do that by slightly rotating the chip on a flat surface as follows :



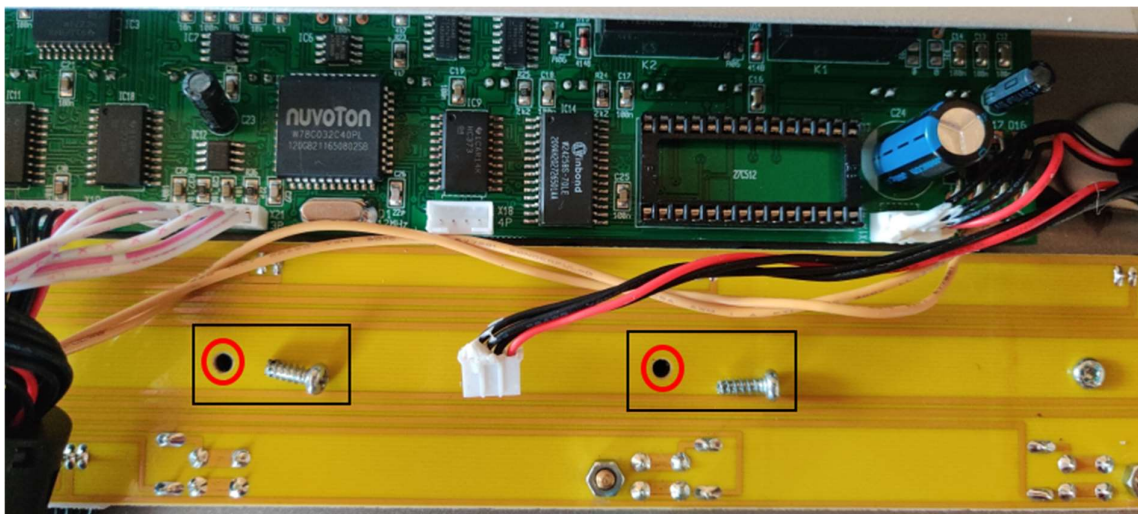
Place the Wino chip in the socket using the same orientation: the notch on one side of the EPROM must match the notch on the EPROM socket. Be careful not to press too hard, and pay attention not to bend any of the EPROM pins during insertion.

### 3. Install the Wino WiFi module

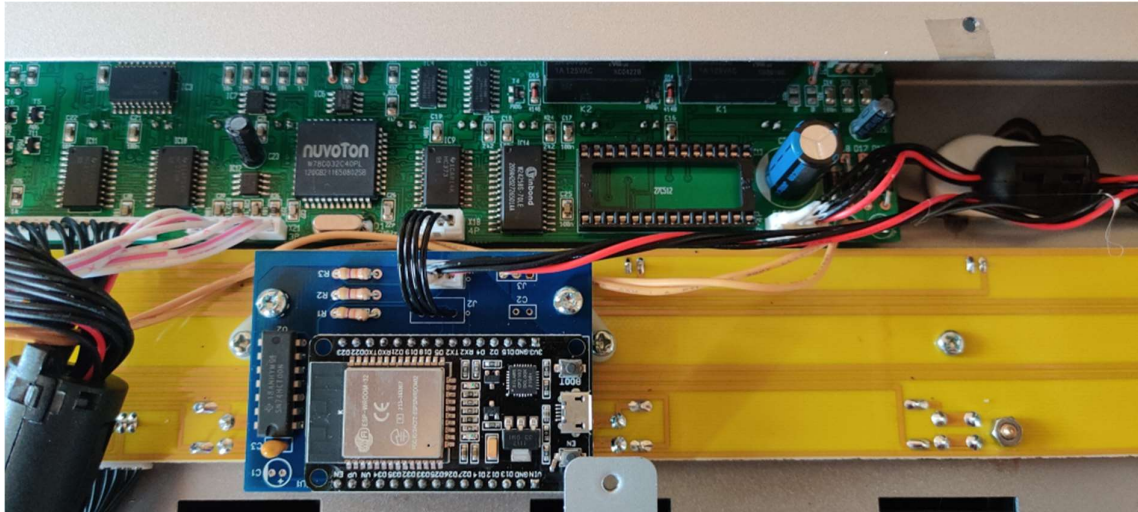
On the FCB1010 main board, unplug the red/black wire unit with 4 leads, which is running from the small MIDI connector board to the main board. Before you can do so it may be necessary to (carefully!) remove applied hot melt adhesive. Never pull the wires, you might pull them out of the connector housing. Instead remove all hot glue and wiggle the connector itself until it loosens from the main board.



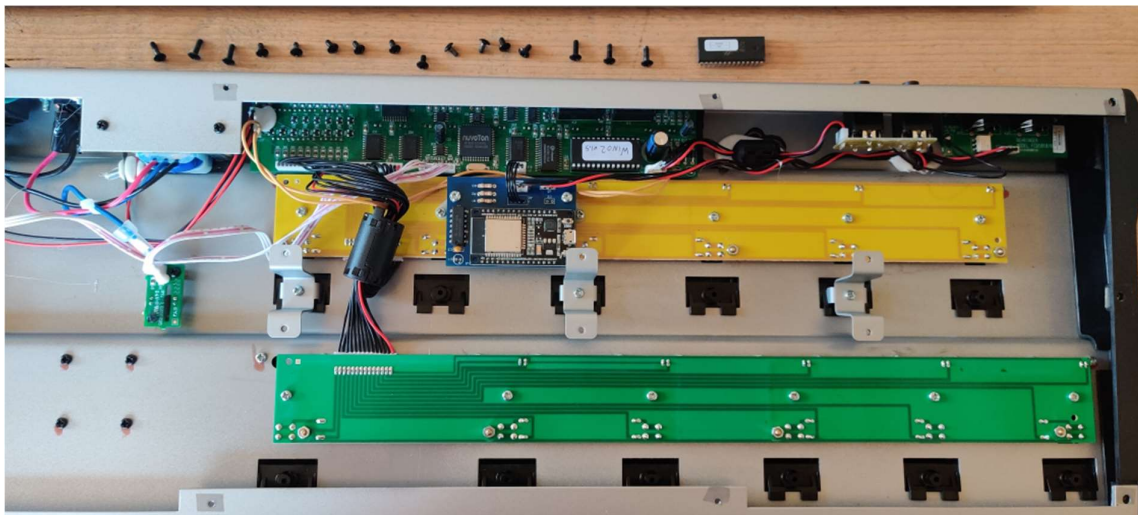
Remove following 2 screws which hold the FCB1010 switch board :



Reuse the 2 screws to mount the WIFI module. The module orientation is so that the 4-pins connector is close to the now empty 4-pins connector on the FCB1010 main board. Plug the large red/black wire into the connector of the WIFI module, and plug the short wire unit of the WIFI module into the 4-pins connector of the main board :



The FCB1010 inside now looks like this :





#### 4. Test the FCB1010 and close the housing

Before closing the FCB1010 housing using the 16 screws, you can check if the modification was done correctly. Power up the FCB1010. The display first shows nothing but a dot, after a few seconds the display shows the current bank number, which is "00" :

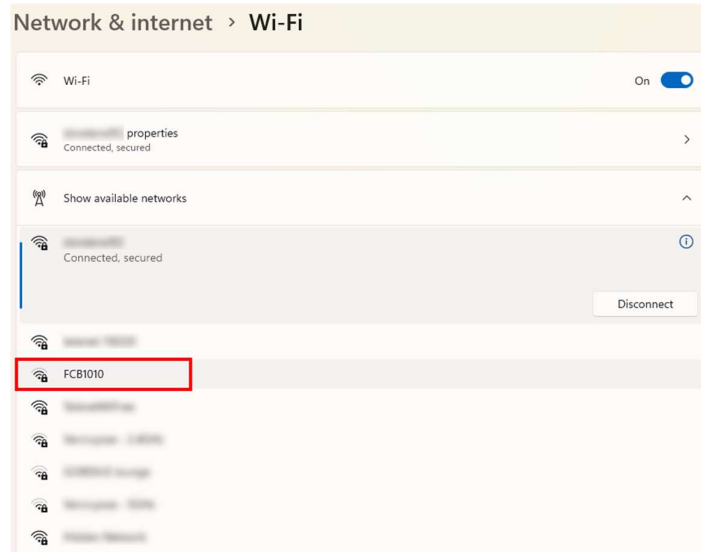


#### 5. Calibrate the expression pedals

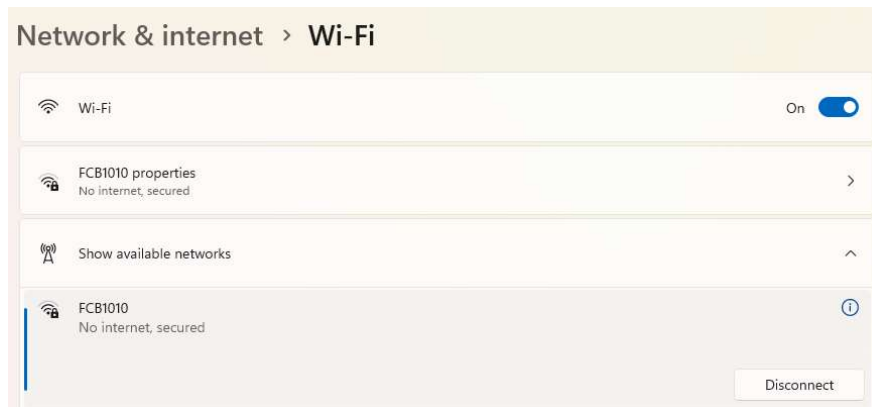
If not done already, don't forget to calibrate the FCB1010 expression pedals. Failing to do so is the most common cause for non-working expression pedals. Calibration instructions can be found in the Behringer manual or by googling "FCB1010 calibration". Keeping the 1+3 switches pressed during power-up initiates the calibration procedure. Keeping the 1+5 switches pressed during power-up initiates a full test procedure of all FCB1010 hardware components, followed by the pedal calibration.

## 6. Connect to the FCB1010 through WIFI

Use your laptop or iPad to connect to the WIFI accesspoint which is now embedded in the FCB1010. The SSID "FCB1010" should appear in your list of available WIFI networks (sample screenshots taken from a Windows computer) :



Select the access point with SSID **FCB1010** , and fill in the password, which is **FCB\_Wino**



### *Remark :*

Further on in this manual you will learn an alternative way of connecting to the FCB1010, using your home router instead of the embedded access point. That has the advantage of retaining your internet connection while being connected to the FCB1010. As you can see in the screenshot above no internet is available while using the embedded Wino access point.

## 7. Open the embedded web application

With your laptop wirelessly connected to the FCB1010 access point, you can open the embedded web application by surfing to IP address **192.168.4.1**. Preferably use Google Chrome (or a recent MS Edge browser on Windows), although Safari should also work correctly on MacOS.

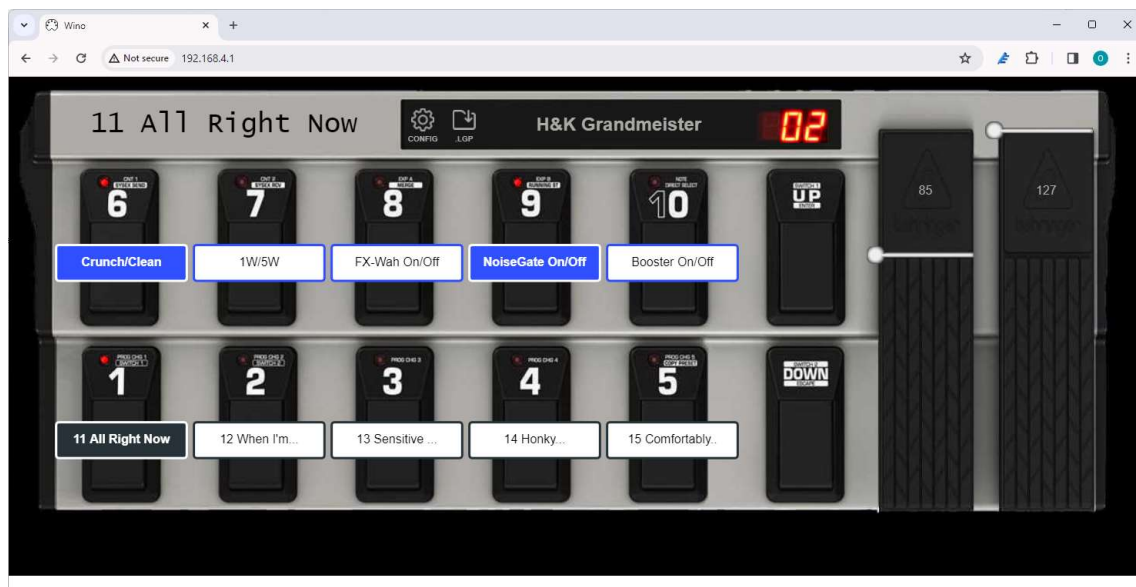


That's it, you are ready to rock and roll! Detailed info about the embedded web application can be found the next chapter.

## The web application

### 1. The status screen

The main screen of the web application, which you opened in the previous topic, speaks for itself. While initially it will show an FCB1010 image with nothing but white rectangles on each switch, this screen will show more info once you have uploaded a setup to the FCB1010 using the web application. While receiving the setup and forwarding it to the FCB1010 setup chip, the web application extracts all preset names along with some global configuration info. This info allows the application to show the current status of the FCB1010 at all time:



Whenever you click an FCB1010 switch, the display will update and show the currently selected preset, the active stompboxes, etc. When you scroll through the banks, the preset names in each bank are shown – very helpful.

You can also use this status screen to remotely control your FCB1010! Tap or click a “virtual” switch on the image, and the FCB1010 will follow. Keyboard players might find this a handy alternative to foot control...



## 2. Changing the embedded access point SSID or password

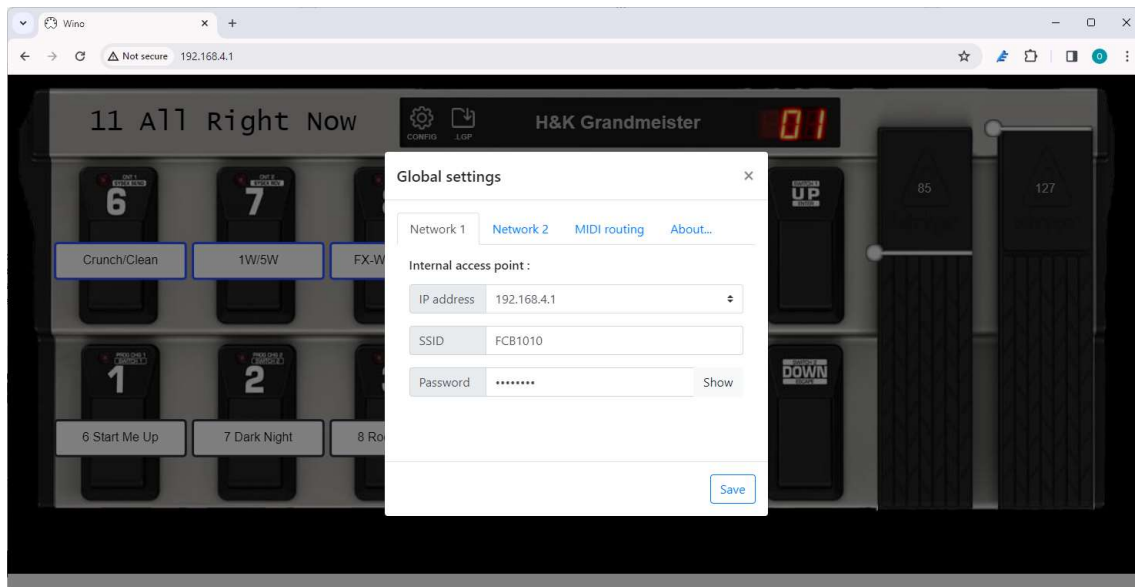
Click the cog icon in the top section of the FCB1010 image to open the global settings popup.

The first tab of the global settings screen lets you modify the IP address of the Wino module (actually there is little reason to do so, but you can...) or the SSID and password of the Wino access point.

*Attention* : the password needs to be 8 characters minimum!

These settings can be reset at all time (for instance in case you would forget the modified password) by keeping the FCB1010 1+2 footswitches pressed during powerup. This reverts all access point settings to the defaults, which are :

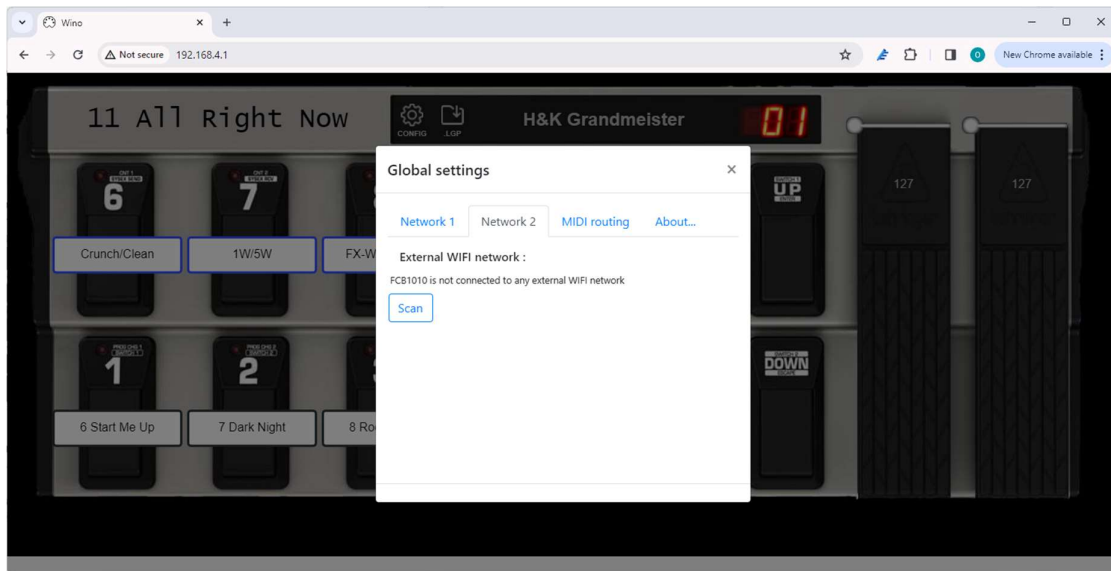
```
IP       : 192.168.4.1
SSID    : FCB1010
Password : FCB_Wino
```



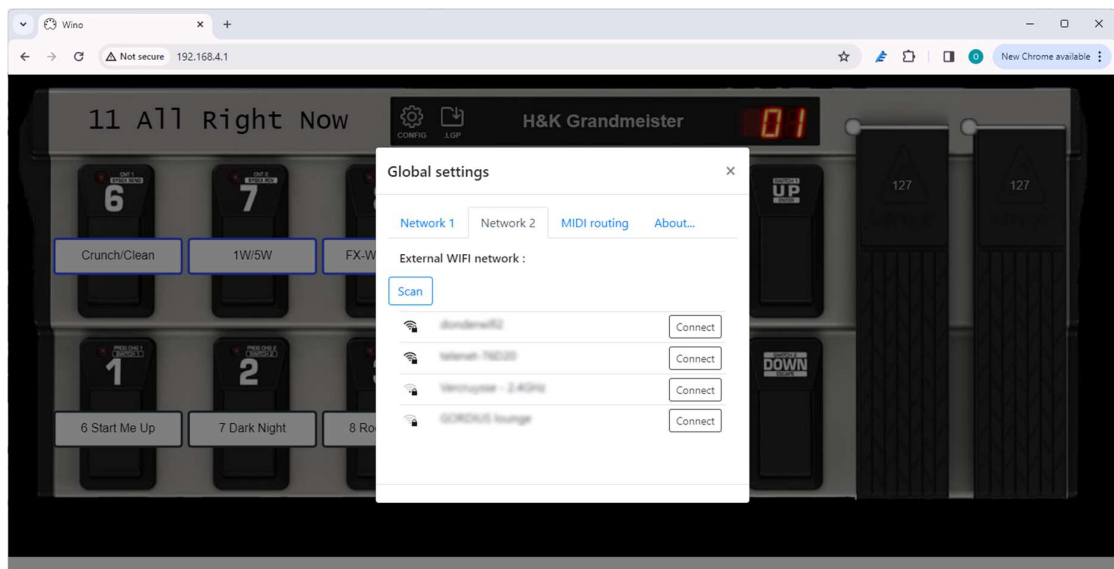
### 3. Connecting to the FCB1010 using your home WIFI access point

The Wino module has an interesting extra WIFI option: next to the built-in access point, which we used so far, you can also let the Wino module itself connect to your regular WIFI access point at home. This way both your FCB1010 and your laptop can connect to the same access point, and you can reach the FCB1010 by surfing to its newly assigned IP address (see below). The major advantage of this is that your laptop doesn't lose its internet connectivity this way (provided that your WIFI access point is connected to the internet through your home router of course)

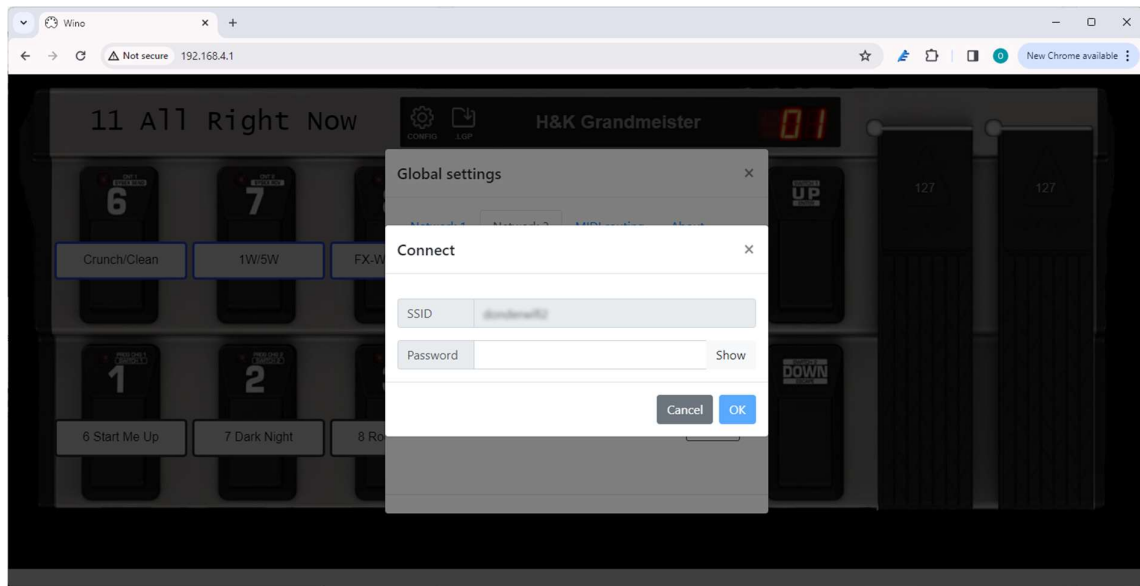
While currently still connected to the Wino embedded access point, click the second tab of the global settings menu, labeled "Network 2" :



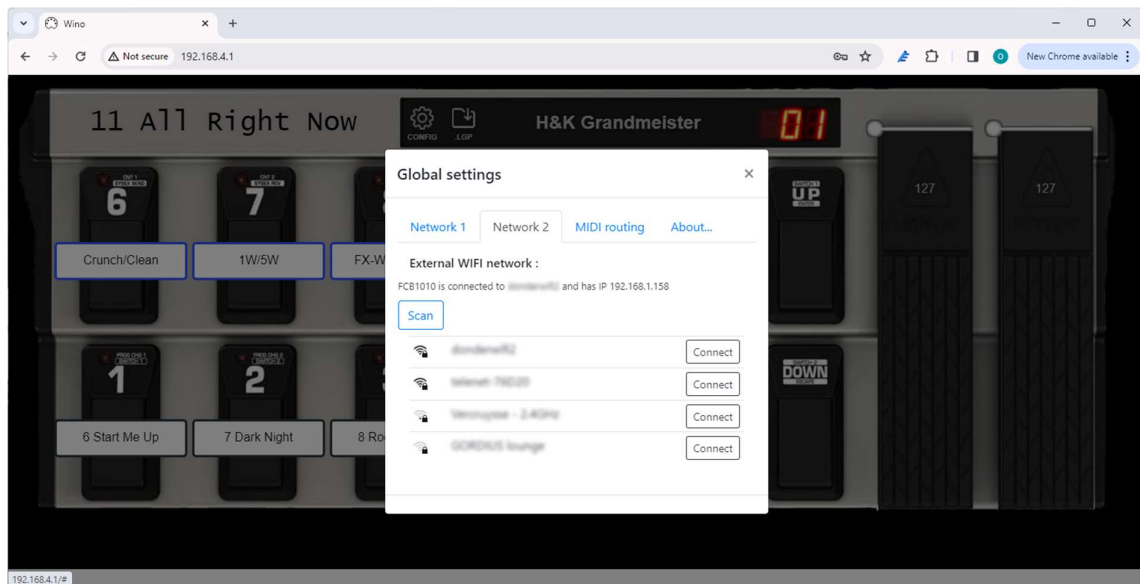
Click the "Scan" button to search for nearby WIFI access points :



Then click the “Connect” button of the preferred access point, and (if required) enter its password :

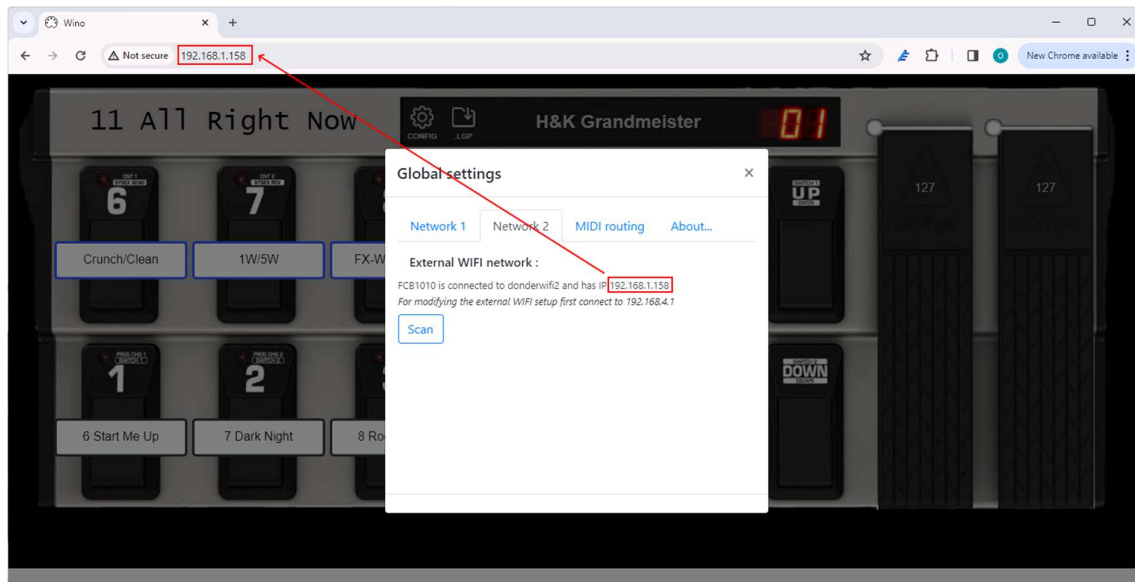


When connection succeeds, the access point will supply an IP address to the FCB1010. It is mentioned in the setup menu :



With this configuration now stored in the Wino module, you can disconnect your laptop from the Wino embedded access point, and connect to your regular home access point again. Now open your browser, and instead of entering the default Wino IP address 192.168.4.1, enter the IP address which was mentioned in the setup menu above. Your laptop will again connect wirelessly to the FCB1010, while now maintaining its internet connection through your home router.

Pay attention to the modified IP address typed in the browser address bar in screenshot below:



For creating or editing your Wino setup, you will prefer to use this new WIFI configuration. It allows you to reach your FCB1010 by surfing to its assigned IP address, without changing any of your original laptop WIFI settings. On the other hand, while at a gig, you can have a live status view of your FCB1010 by connecting your iPad to the embedded Wino access point and surfing to 192.168.4.1. Indeed, you would not want to rely on any public access point for viewing status info during a gig.

Both connection methods (through embedded access point or via an external access point) remain simultaneously available, so after returning from a gig you can again connect through your home router without any reconfiguration required.



## 4. Sending MIDI over WIFI

Having WIFI connectivity available allows the FCB1010 to send wireless MIDI to a laptop, or receive wireless MIDI from a laptop and forward it to other MIDI devices through its MIDI OUT connector. No more need for an extra “WIDI” dongle!

The Wino module uses the “RTP-MIDI” technology for this. More info about this MIDI standard can be found on following links :

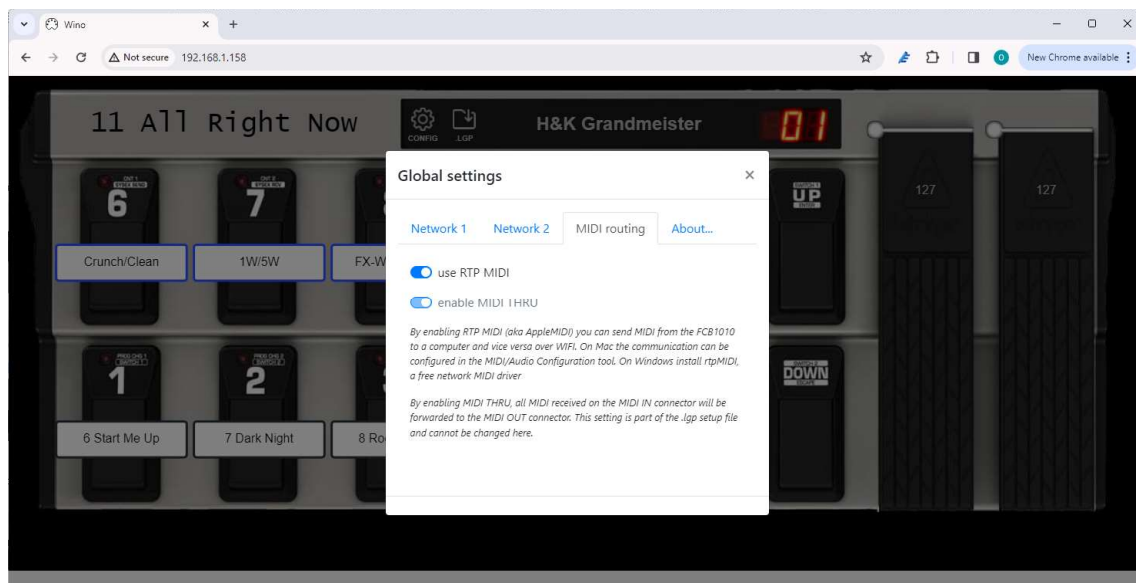
- <https://www.midi.org/midi-articles/rtp-midi-or-midi-over-networks>
- <https://en.wikipedia.org/wiki/RTP-MIDI>

On macOS and iOS, RTP-MIDI (there also called AppleMIDI) is supported out of the box.

On Windows, a free RTP-MIDI driver can be installed. More info about that in the links above.

On Android, an app called MIDI Connector adds support for the RTP-MIDI protocol.

You can enable RTP-MIDI in the “MIDI routing” tab of the setup screen :



## 5. Enabling MIDI THRU

The same “MIDI routing” tab above also shows a (disabled) checkbox “enable MIDI THRU”. When this setting is enabled, all MIDI sent to the FCB1010 through its MIDI IN connector will be forwarded to the MIDI OUT connector. However, this setting is already part of the FCB1010 setup created in FCB/UnO ControlCenter. You can modify it over there, and the change will be reflected in the screen above.

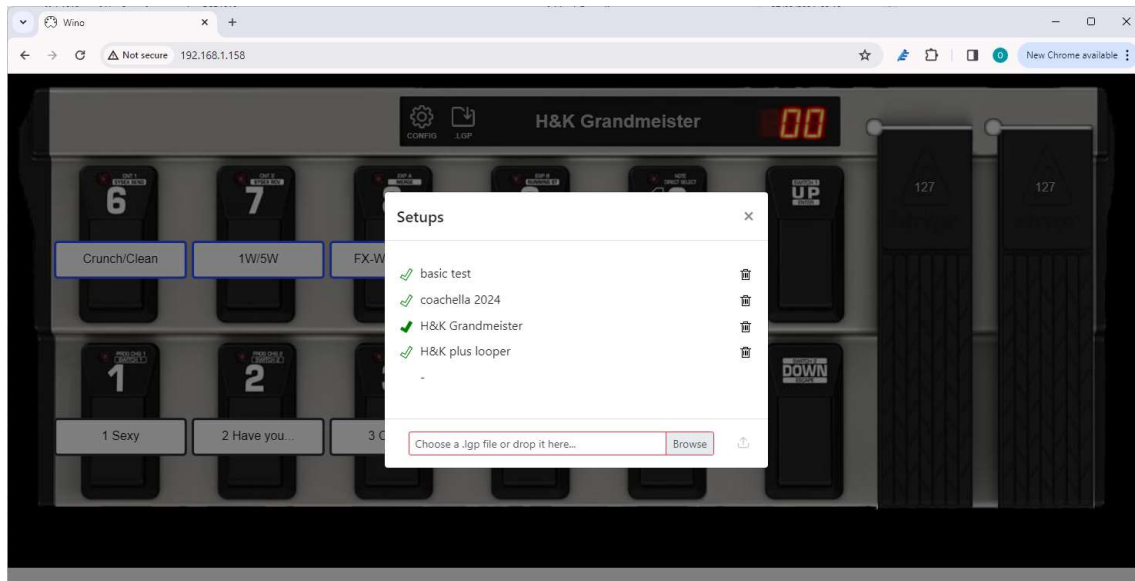
## 6. Uploading setups to the FCB1010

For uploading a setup to the FCB1010, you no longer need to use a MIDI-USB interface to connect your FCB1010 with your laptop. It's a well known issue that many cheaper interfaces don't work well to transfer the FCB1010 setups as a large MIDI SysEx message. We can now use the WIFI connection instead.

You first use FCB/UnO ControlCenter to create and save your setup. Then you use the Wino web application to upload the saved .lgp file to the embedded Wino web server. While the MIDI SysEx messages used before only contain the content of all presets, the .lgp file also contains the preset names, which are not stored in the FCB1010 setup chip. Instead, those names are stored in the permanent memory of the Wino module, so that the web server can show them on the live status page.

On top of that, the Wino module contains enough permanent memory to store up to 5 different setups. This allows you to easily switch between different setups through the web page, even during a gig.

On the main status webpage, click the folder icon with ".LGP" label to open the setup list :



Drag and drop an .lgp file into the file selector field at the bottom of the dialog, or click the “Browse” button to select the setup file. Uploading the file will forward the file content to the FCB1010 setup chip, store the preset names in the Wino module, and adapt the status page accordingly.

When you have uploaded multiple setups, you can switch between them by clicking the checkbox next to the setup name. The name of the currently active setup is also shown in the top center of the status screen.

## APPENDIX : self-test, pedal calibration, WIFI reset

Just like the UnO firmware, also the Wino firmware retained the same self-test and expression pedal calibration procedures as the original Behringer firmware. Therefore calibration instructions can be found in the Behringer manual or online by googling for “FCB1010 calibration”.

- Self test : keep footswitches 1+3 pressed during startup
- Calibration : keep footswitches 1+5 pressed during startup

One additional procedure which can be triggered during start-up is the “WIFI reset” procedure :

- WIFI reset : keep footswitches 1+2 pressed during startup

In case you would have forgotten the modified password for the internal WIFI accesspoint of the Wino module, the WIFI reset procedure reverts the access point settings to the defaults, which are :

```
IP      : 192.168.4.1
SSID    : FCB1010
Password : FCB_Wino
```