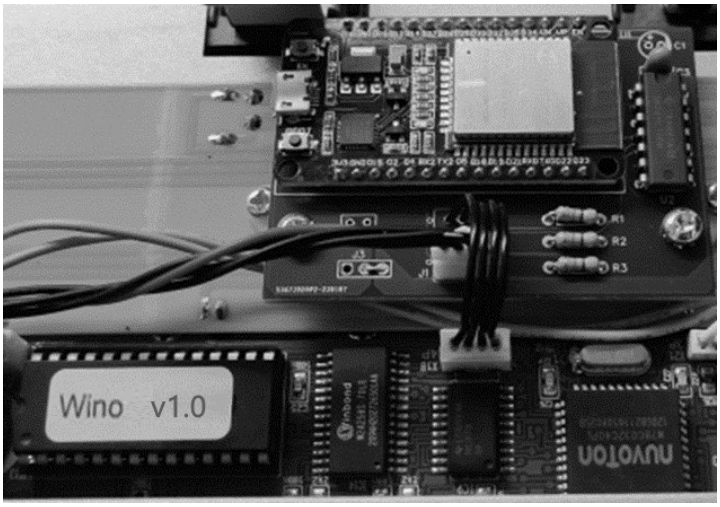

Wino user manual

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Document versions

Version 1.0	31/03/2024	Initial release
Version 1.1	30/09/2024	Release of extended Wino version (including embedded editor)

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) a few highly requested features were added, 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 also offers a built-in browser based setup editor. Next to uploading setups created with FCB/UnO ControlCenter, you can also create a setup from scratch by browsing to the Wino web server with your laptop or iPad. As with FCB/UnO ControlCenter, the graphical user interface of the built-in editor makes programming so much easier than the original "tapdancing" method using the FCB1010 footswitches.

Another major add-on that the Wino webserver provides, is a live status view of your MIDI controller. 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!

Finally, the Wino 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.

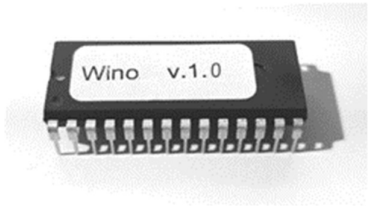
Attention !

The Wino status page is not compatible with "Direct Select" mode (the specific mode which doesn't use setup banks, but lets you select a preset number between 00 and 99 with 2 switch clicks). If you use that mode, Wino is not suitable for you.

The Wino package

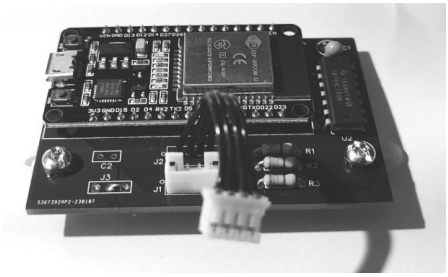
The Wino package contains 2 parts :

- A firmware chip.



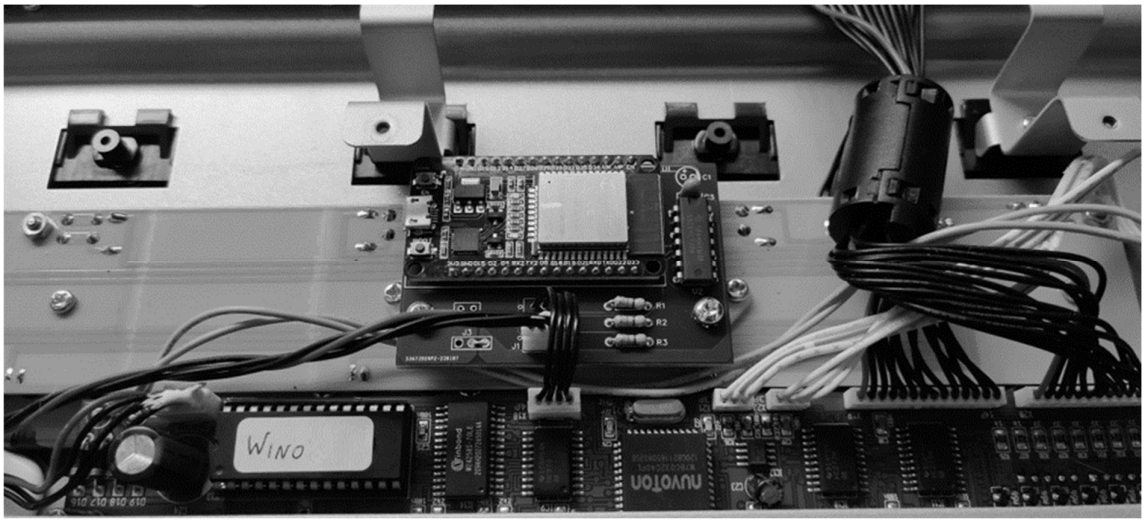
This chip replaces the original Behringer firmware of the FCB1010, and offers exactly the same functionality as the latest UnO chip. Additionally it sends live status info to the WIFI module below.

- A WIFI module.



The wireless connection provided by this module replaces the 2-way MIDI connection which was required so far to program the FCB1010. The embedded web server allows you to view the current status of your FCB1010 on your laptop or iPad and also hosts a graphical setup editor for UnO setups.

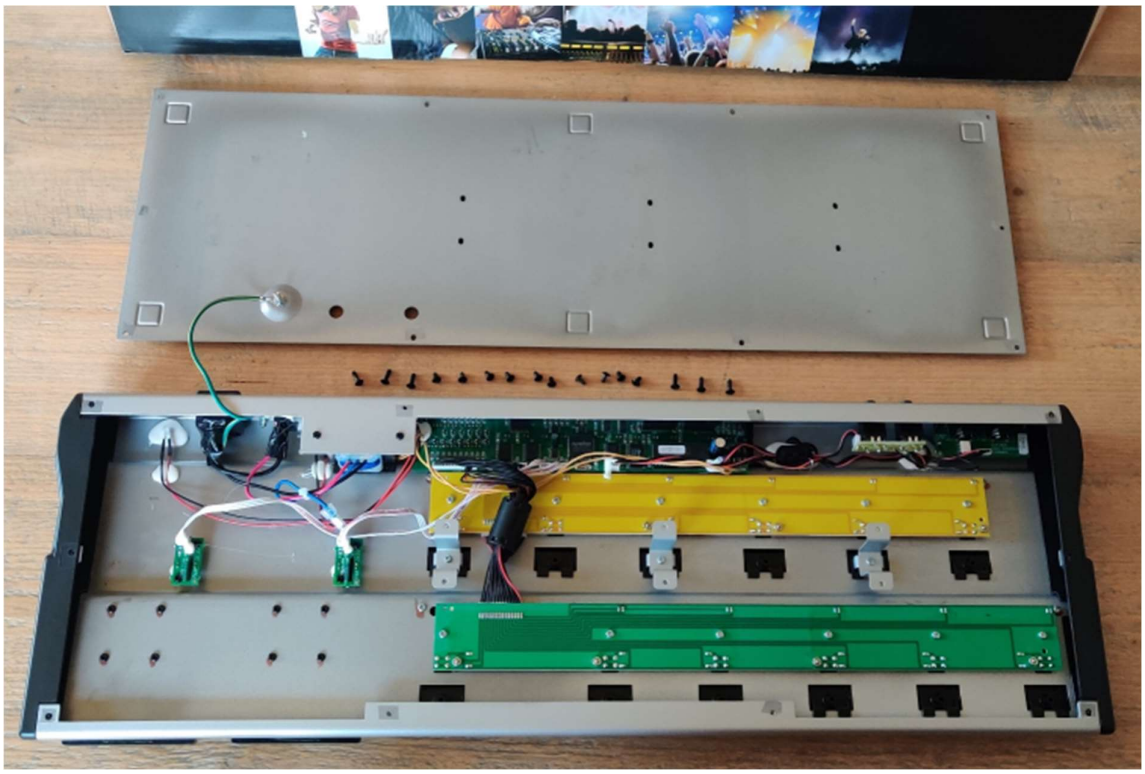
Installing the module is very simple. No soldering required, all you need is a screwdriver!



Getting started

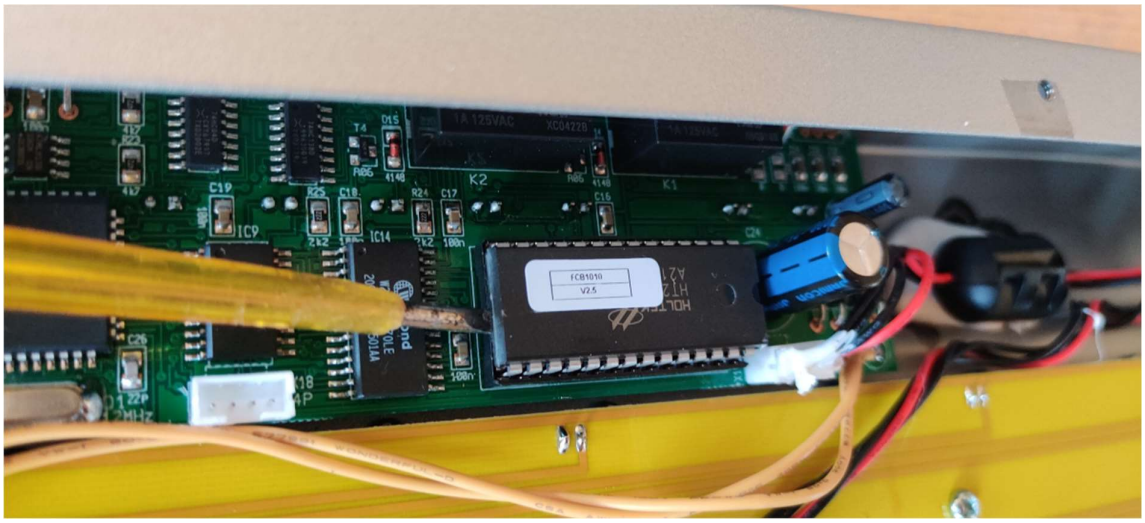
1. Open up the FCB1010

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)



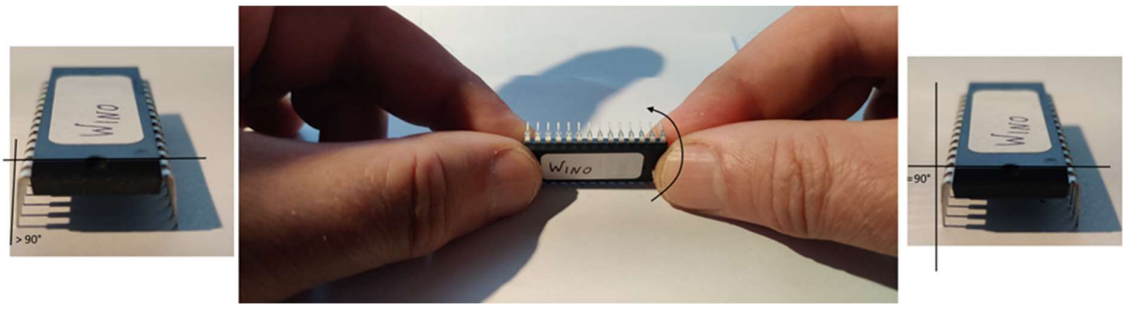
2. Install the Wino firmware chip

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.

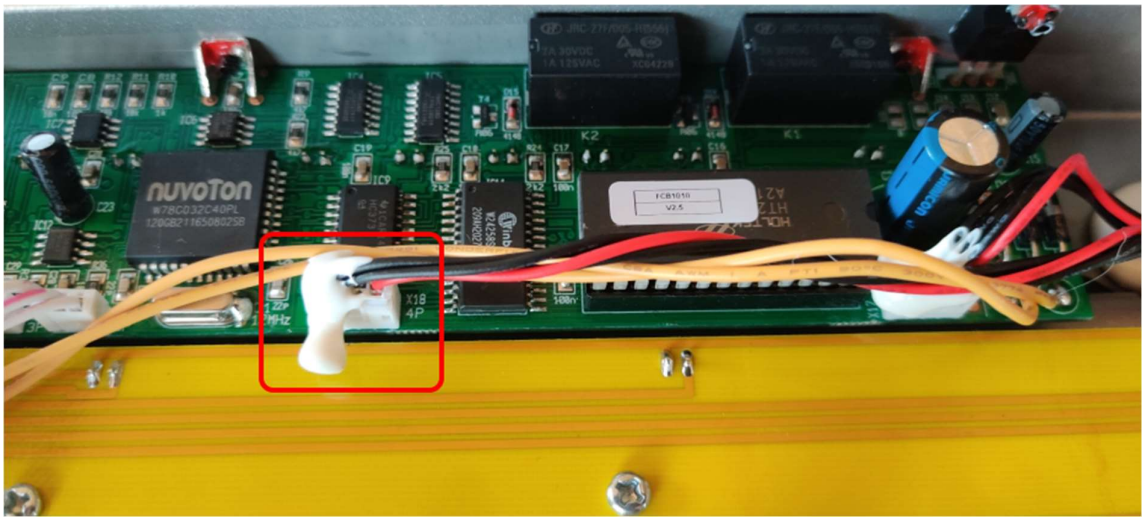
Before inserting the Wino chip, make sure the chip legs are perfectly perpendicular to the chip body. You can do that by slightly rotating the chip on a flat surface as follows :



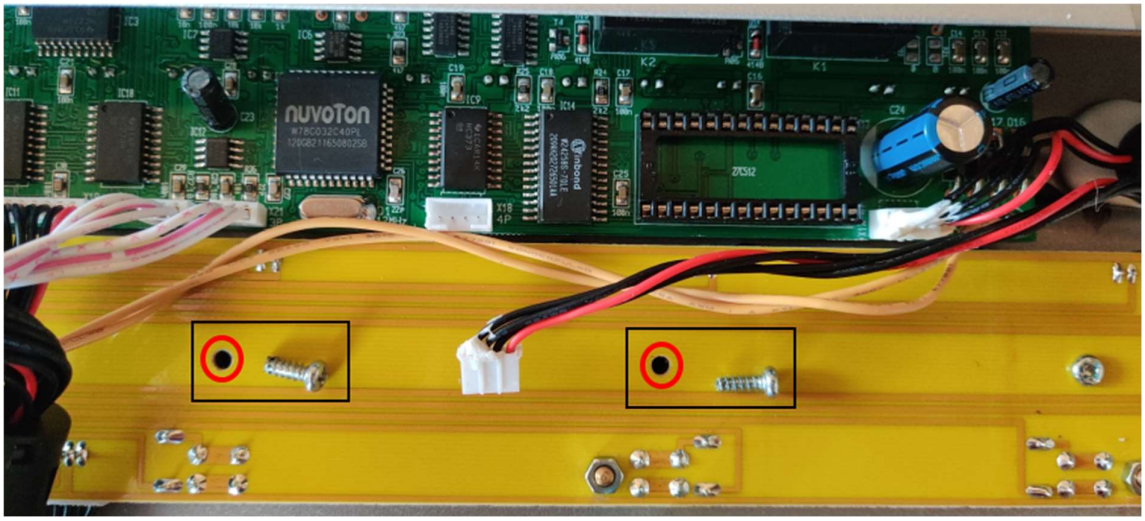
Place the Wino chip in the socket using the same orientation as the original chip: the notch on one side of the EPROM must match the notch on the EPROM socket. Be careful not to press too hard, and pay attention not to bend any of the EPROM pins during insertion.

3. Install the Wino WIFI module

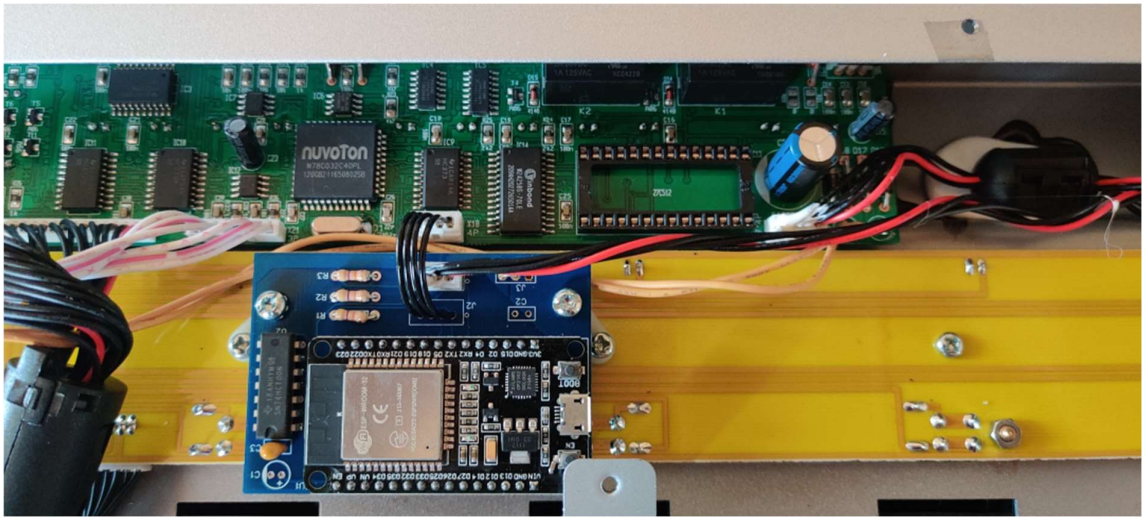
On the FCB1010 main board, unplug the red/black wire unit with 4 leads, which is running from the small MIDI connector board to the main board. Before you can do so it may be necessary to (carefully!) remove applied hot melt adhesive. Never pull the wires, you might pull them out of the connector housing.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



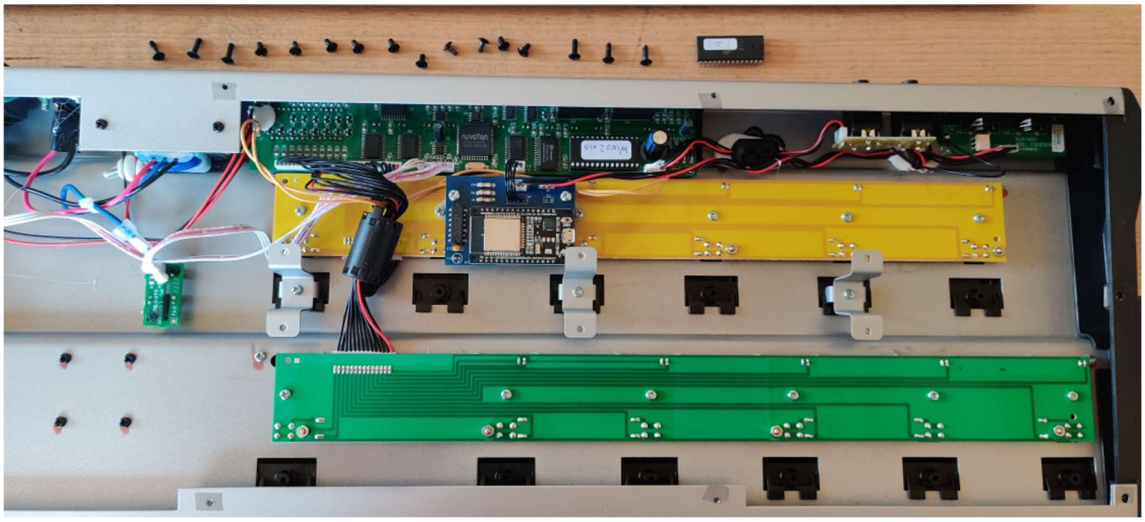
Remove following 2 screws which hold the FCB1010 switch board :



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

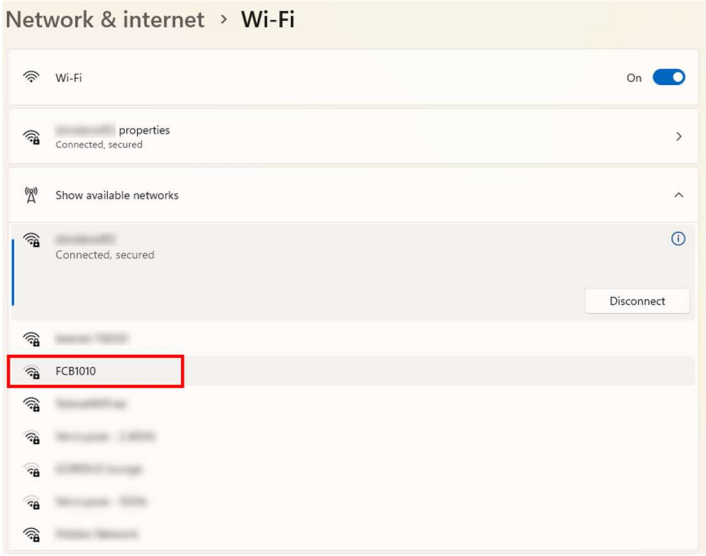
Before closing the FCB1010 housing using the 16 screws, you can check if the modification was done correctly. Power up the FCB1010. The display first shows nothing but a dot, after a few seconds the display shows the current bank number, which is “00” :

5. Calibrate the expression pedals

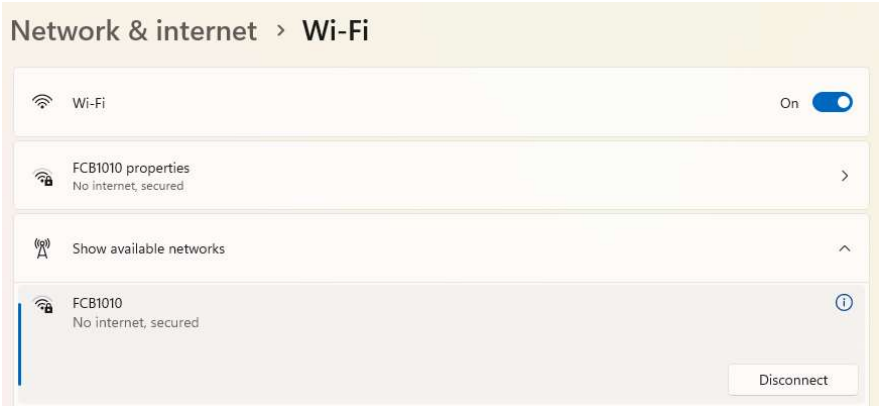
If not done already, don’t forget to calibrate the FCB1010 expression pedals. Failing to do so is the most common cause for non-working expression pedals. Calibration instructions can be found in the Behringer manual or by googling “FCB1010 calibration”. Keeping the 1+3 switches pressed during power-up 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**

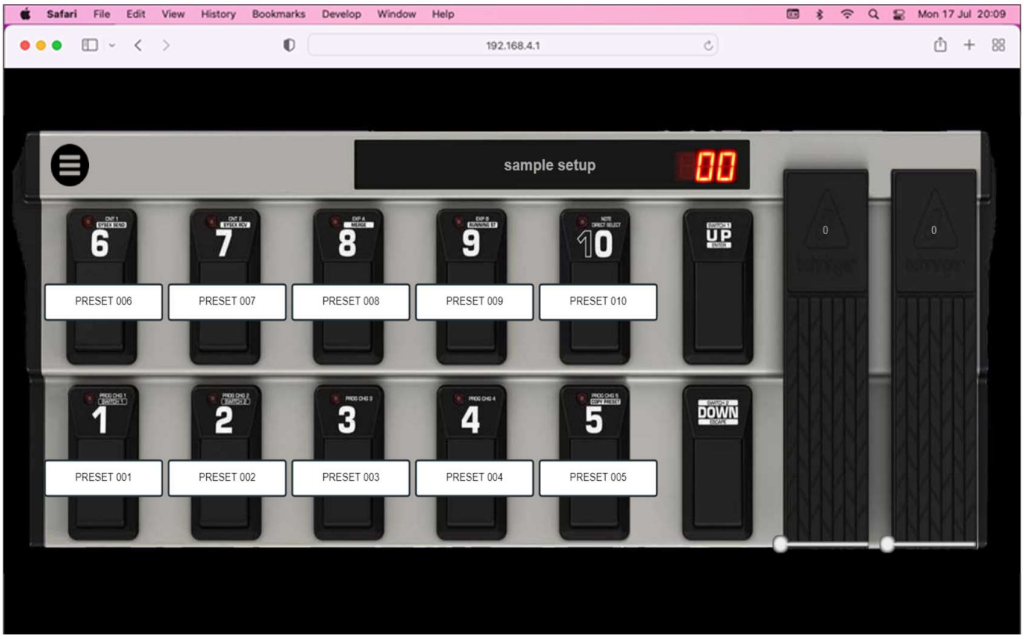


Remark :

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 and iPad.



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

The Wino web application

1. Introduction

When surfing to the Wino web application, as described in previous topic, you see a large representation of your FCB1010, showing its current status. This status screen is explained in detail in section 5 of this chapter.

When clicking the large menu icon on the top left of the FCB1010 picture, the different menu options appear :

- The “NETWORK” icon opens the Wino network setup dialog
- The “SETUPS” icon allows you to upload or create setups, or to store them on your PC
- The “EDIT” icon switches the application to EDIT mode for modifying the current setup

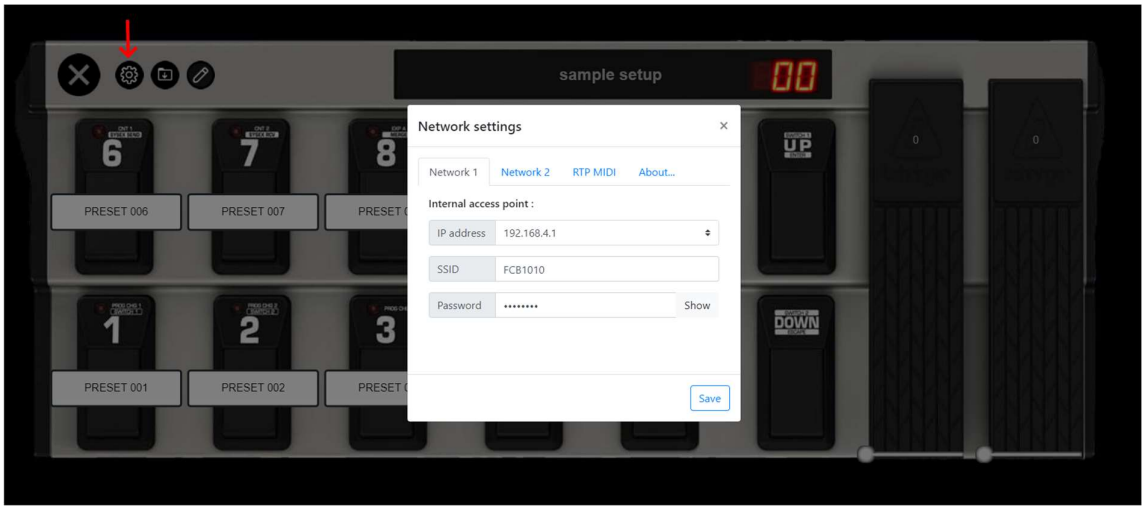
The next sections of this chapter cover each of these three topics in detail.

Attention !

It is possible that the freshly installed Wino module already contains a few sample setups, which are used during module testing. These setups can help you trying out your upgraded FCB1010. Just be aware that right after installation none of these setups is already loaded in your FCB1010 setup memory. Therefore the status screen will not yet reflect the actual current status of your FCB1010. More info on how to load a setup in your FCB1010 in section 3 of this chapter.

2. The Wino network setup

Click the cog icon to open the network setup dialog :



a. Changing the embedded access point SSID or password

The first tab, labeled “Network 1”, 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!

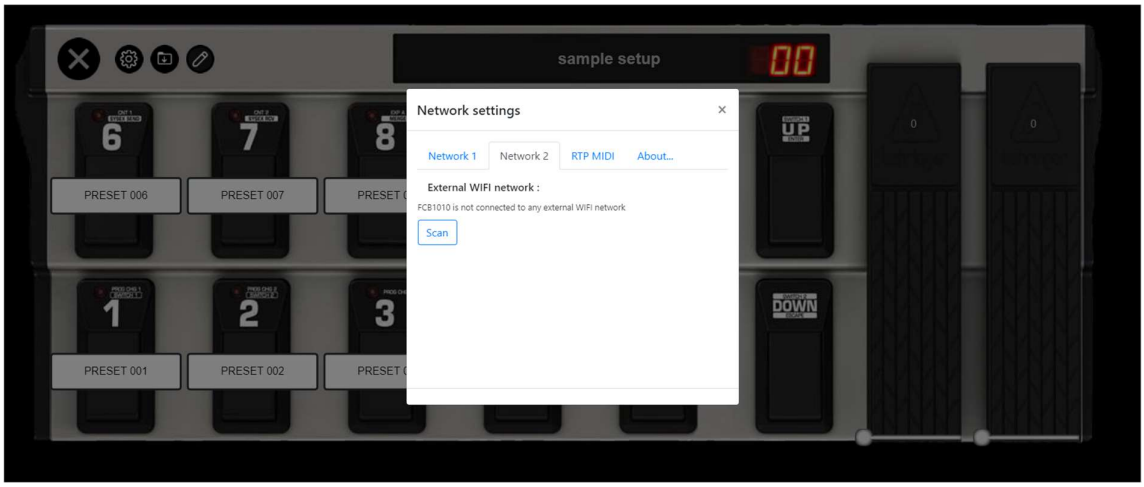
These settings can be reset at all time (for instance in case you would forget the modified password) by keeping the FCB1010 1+2 footswitches pressed during powerup. This reverts all access point settings to the defaults, which are :

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

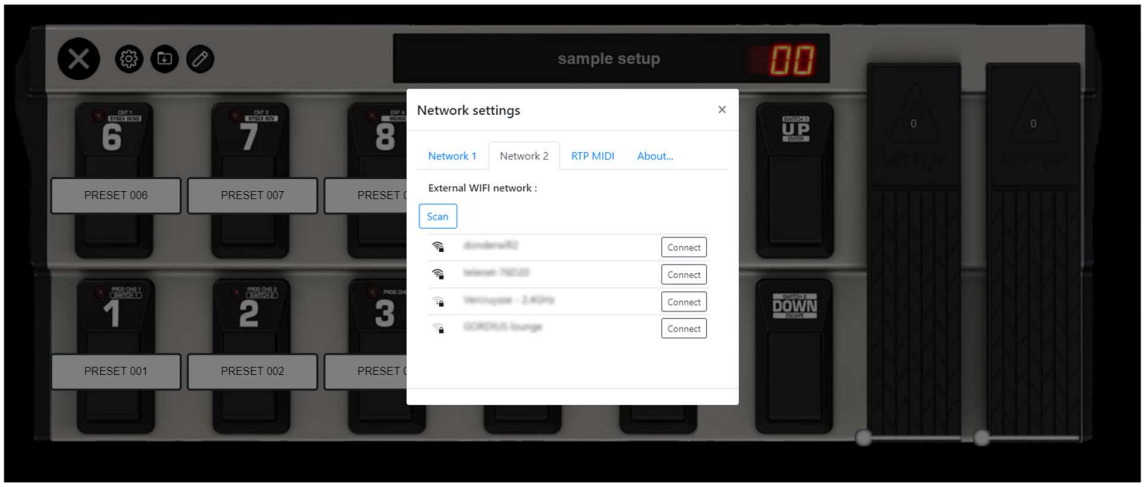
b. Connecting to the FCB1010 using your home WIFI access point

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 network settings menu, labeled "Network 2" :

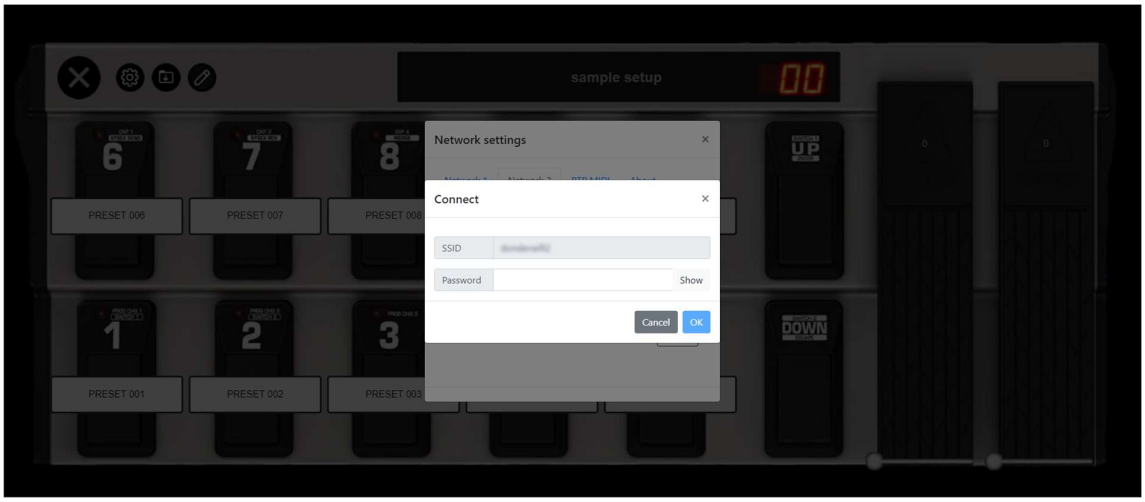


Click the "Scan" button to search for nearby WIFI access points :

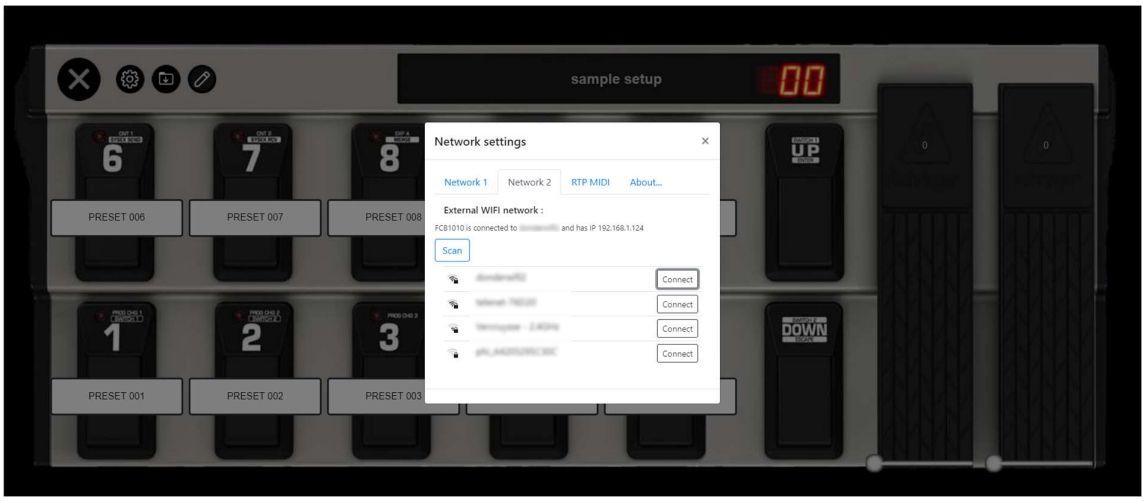


:

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

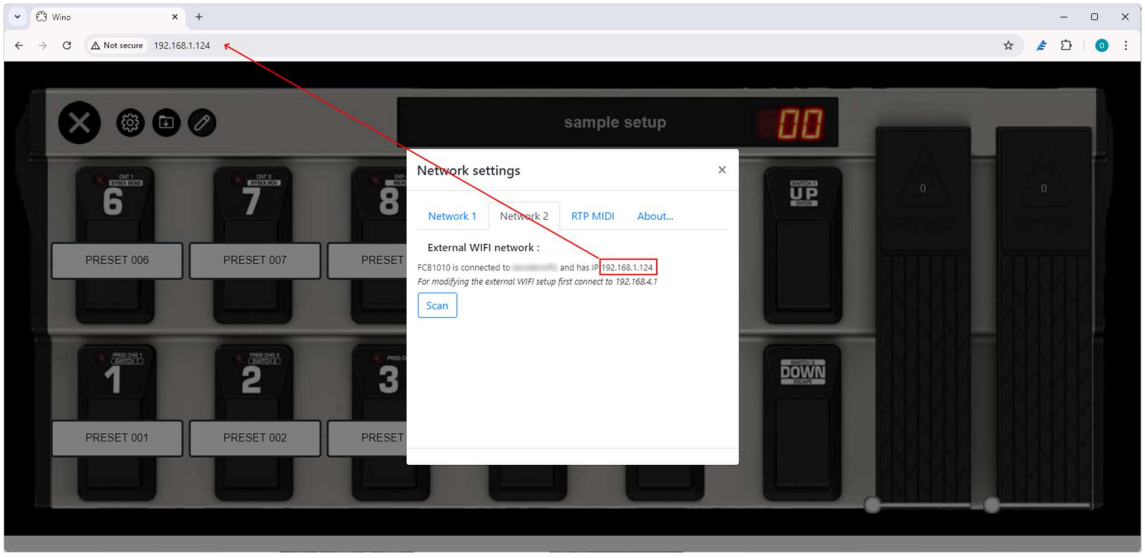


When connection succeeds, the access point will supply an IP address to the FCB1010. It is mentioned in the setup menu :



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.

Notice 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.

c. 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 :

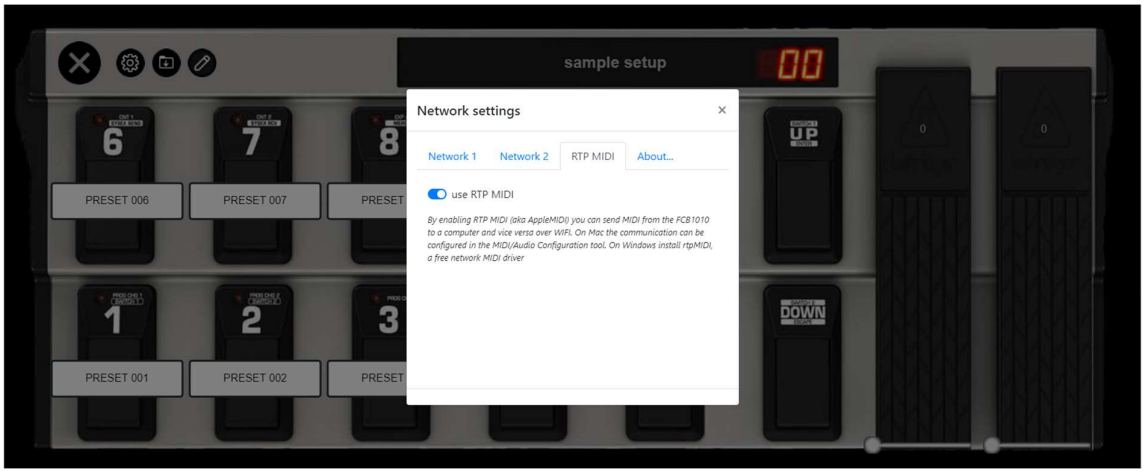
- https://www.midi.org/midi-articles/rtp-midi-or-midi-over-networks
- https://en.wikipedia.org/wiki/RTP-MIDI

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.

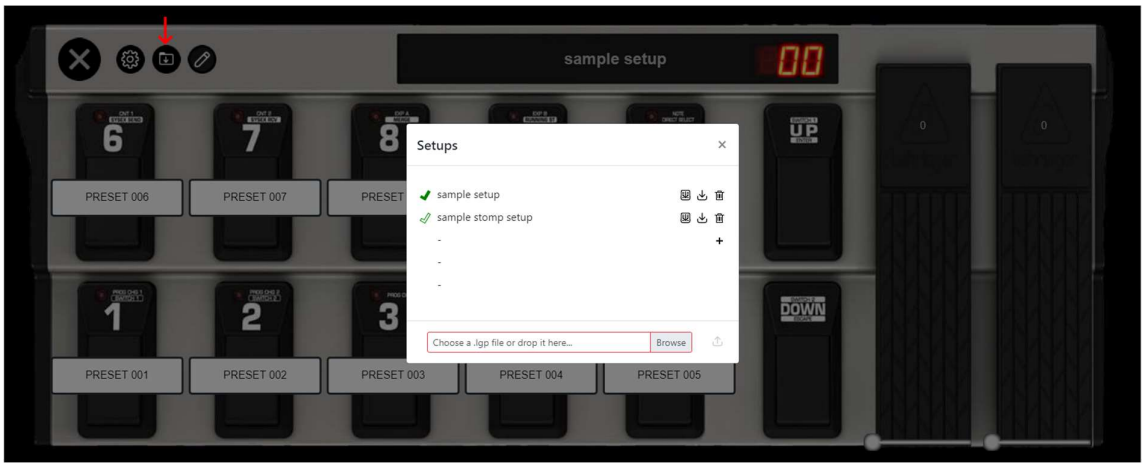
On Android, an app called MIDI Connector adds support for the RTP-MIDI protocol.

You can enable RTP-MIDI in the according tab of the network settings dialog :



3. Managing FCB1010 UnO setups

Click the folder icon to open the setup management dialog :



a. Activating a setup

The “Setups” dialog shows a list of up to 5 FCB1010 setups. Indeed, 5 different setups can be uploaded and stored in the Wino module. However, you will understand that the FCB1010 itself can only store (and use) 1 single setup in its limited setup memory. The currently active setup is indicated by the bold green checkmark icon on the left of the setup name. You can activate another setup by clicking the (hollow) checkmark icon next to it. This downloads the setup from the Wino module to the FCB1010 main board, just like when you would use FCB/UnO ControlCenter to download a setup from PC directly to a (non-Wino) FCB1010. During download, the FCB1010 display will momentarily freeze or become blank. The name of the currently active setup is also shown in the top center of the status screen.

Thanks to this functionality you can configure your FCB1010 for multiple different rigs or bands, and switch from one to the other with a simple click, without the need for a laptop running FCB/UnO ControlCenter.

Remark :

As mentioned before, the Wino module may initially already contain 2 sample setups, as shown in the screenshot above. In order to actually use one of these setups, you need to download it to the FCB1010 setup memory by clicking the checkmark icon. As the first setup may already show as “activated” on initial install of the module, you will need to click the checkmark of the second setup first, and then that of the first setup again, in order to have it fully activated.

b. Uploading UnO setups from PC or laptop

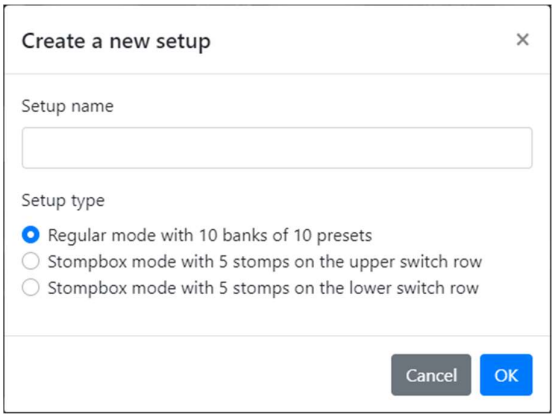
When you have used the UnO firmware prior to upgrading to Wino, you will probably have your current setup available as .lgp file, created with FCB/UnO ControlCenter. In that case you can upload this setup to the Wino module after upgrade, and get up and running in no time. With the Wino module installed you no longer need to connect your PC to the FCB1010 using a MIDI-USB interface. 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. You can now upload the .lgp file using the WIFI connection instead.

While the SysEx message used for patchdumps through MIDI only contains the content of all presets, the .lgp file uploaded to the Wino module also contains the preset and effect names defined in ControlCenter. Those are stored in the permanent memory of the Wino module, which allows the embedded web server to show them on the live status page.

Drag and drop an .lgp file into the file selector field at the bottom of the "Setups" dialog, or click the "Browse" button to select the setup file. Uploading the file to the Wino module will also "activate" this setup (that is : forward the setup content to the FCB1010 main board) and adapt the status page accordingly.

c. Creating a new UnO setup from scratch

Don't worry if you don't have FCB/UnO ControlCenter available and therefore don't have any .lgp file to upload. The Wino module comes with its own embedded editor, so you can also create your setups from scratch without uploading them from PC. To create a new setup, simply click the "+" icon on the first free line in the setup list. This opens following popup to enter some basic info:



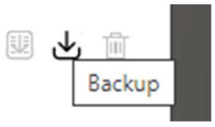
Clicking OK creates and activates a new setup with 10 banks of 10 presets, or with 19 banks of 5 presets plus 5 global effect stompboxes. For now the presets are all empty, you will specify the MIDI messages they have to send in the edit mode which is explained in a next section of this chapter.

d. Removing a setup

Removing a setup from the setup list is easy. There's a Delete icon next to each setup.

e. Storing a backup of your setups

Once your setups are fully functional, you may want to keep a backup on your laptop. Clicking the Backup icon will download a setup and store it as an .lgp file on your laptop.



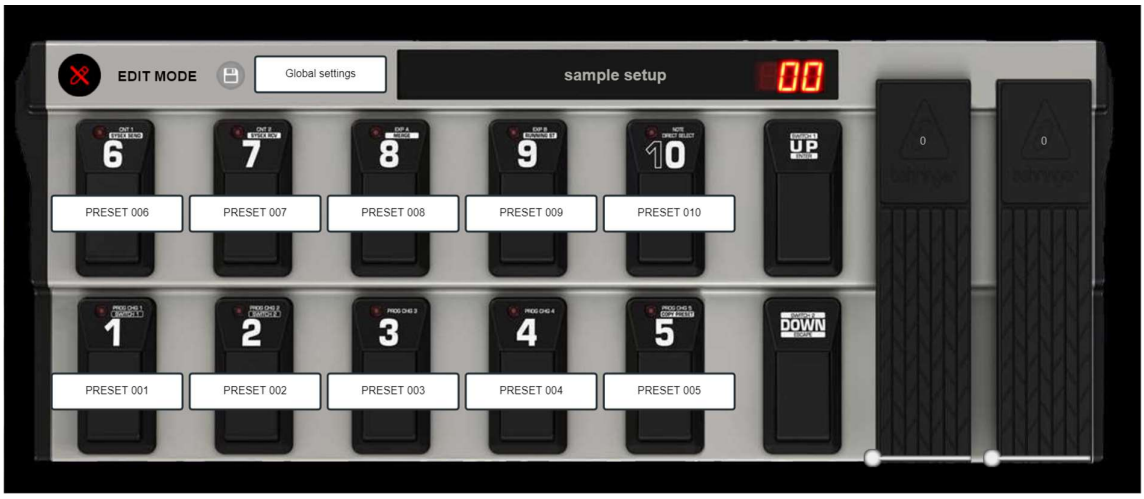
f. Exporting a setup overview

The Export icon downloads a text file describing your setup. It gives you a good overview of both the global settings and the content of each of the presets. The next section about the embedded editor explains each of the elements of this setup overview in detail.

4. Editing a setup

Whether you current setup is an empty setup which was just created from scratch (as described in section c above), or whether it was uploaded from your laptop (as described in section b above), you can always specify or alter its content by switching the web application to “edit mode”.

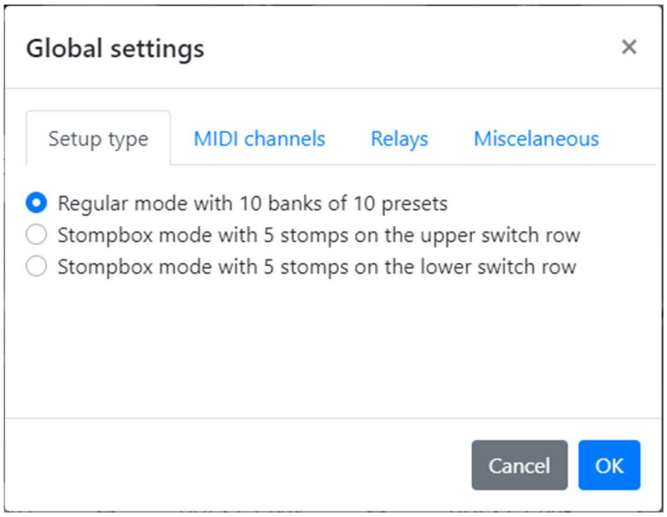
This results in the screenshot below. With the large leftside button you can leave edit mode. Before doing so, click the Save button to save all setup changes. This button remains grayed out until you actually change any setting in your setup.



As you will read in the next section, in “normal” mode you can remotely control your FCB1010 from the status screen by clicking the large white rectangles with preset names, and by clicking the FCB1010 up/down buttons.

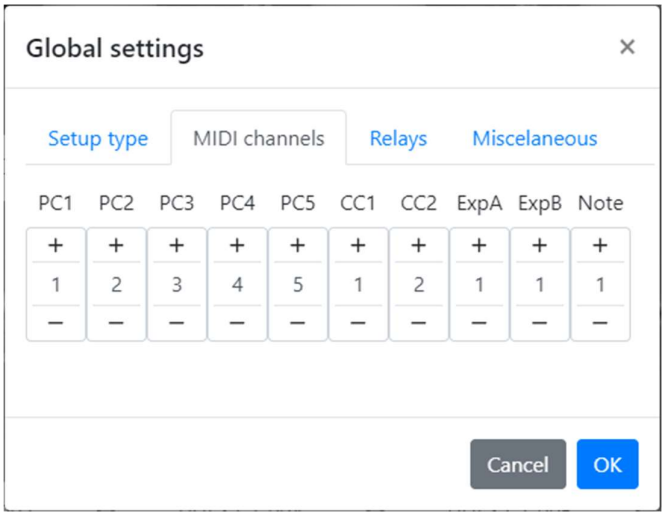
In edit mode however, clicking a preset name opens a dialog to edit the preset content, and clicking the up/down buttons scrolls through the preset banks of the editor in order to access all 100 presets. A similar “white rectangle” button is shown in the top region, left of the FCB1010 display. As the name suggests, this “Global settings” button opens another dialog to edit any of the global settings of your setup.

a. Global settings



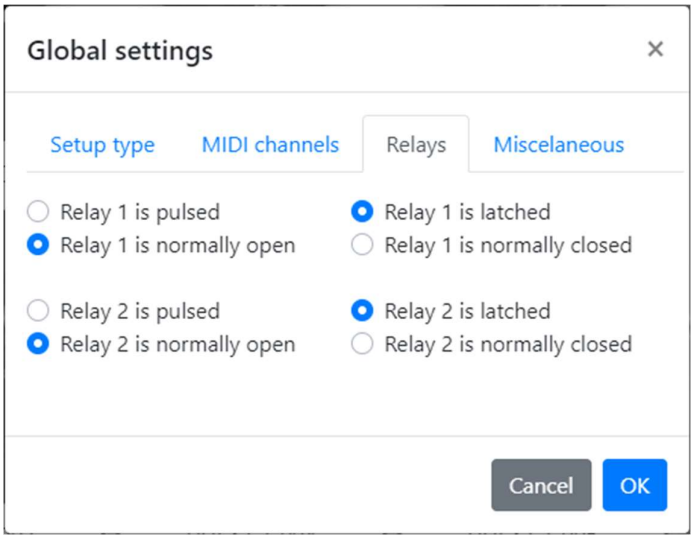
The “Setup type” tab lets you choose between 2 major modes :

- In regular mode you have 10 banks of 10 presets available
- In the UnO-specific stompbox mode 1 row of 5 footswitches (you can choose upper row or lower row) is used to activate or deactivate 5 effects. The other row contains 19 banks of 5 presets



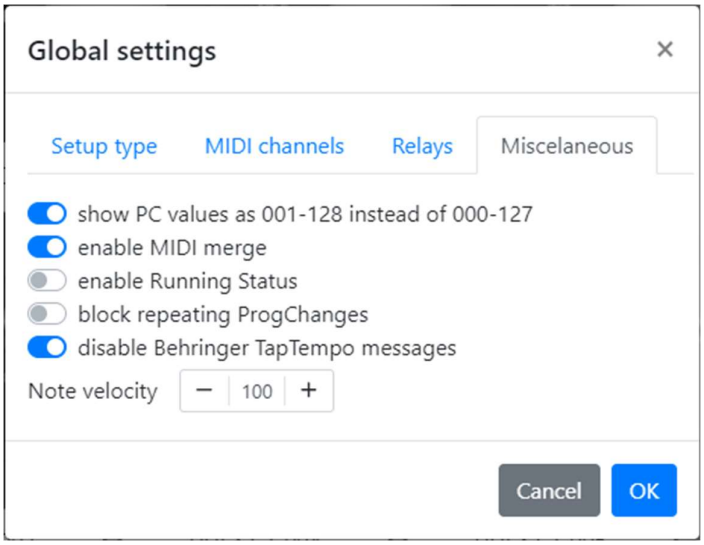
The “MIDI channels” tab lets you specify the MIDI channel used for each of the 5 message types which a preset can send.

ATTENTION : MIDI channel 13 cannot be used, as this channel is reserved for communication between the FCB1010 main board and the Wino WIFI module !



In the “Relays” tab you can specify the behavior of the 2 relays, which are controlled from the 2 jack sockets on the FCB1010.

- You can choose between “pulsed” or “latched” behavior. “Pulsed” means that the relay is activated as long as you press a footswitch. “Latched” means that the relay toggles between open or closed on each foot click.
- You can choose between “normally open” or “normally closed”. With pulsed behavior this specifies the relay state when it is not activated. With latched behavior it specifies the initial relay state after power on.



The last Global settings tab contains a few miscelaneous settings.

- show PC values as 001-128 instead of 000-127

The first option is actually not part of the setup which you are currently editing. It is a global setting for the editor. MIDI values are always in the range 0 – 127. However, many manufacturers prefer to number the presets of their products starting with preset 1 up to preset 128. Therefore you might find it less confusing to show the values of MIDI ProgramChange messages (which are used to select those presets) in this same range of 1 – 128 (although the actual transmitted MIDI values will always be 1 less than the programmed values in this case)

- enable MIDI merge

With MIDI merge enabled, you can connect the MIDI OUT of any device to the MIDI IN of the FCB1010, and all MIDI from that device will be "merged" with the FCB1010 MIDI messages and forwarded to the MIDI OUT connector of the FCB1010.

- enable Running Status

"Running status" is a specific mode in which 3-byte MIDI messages are actually sent as 2-byte messages as long as the first byte remains unchanged. This may have been relevant in the eighties, when coping with the speed of MIDI streams was critical, but nowadays it's no longer useful to enable this.

- block repeating ProgChanges

Clicking the same FCB1010 switch several times will normally resend the ProgChange message for that preset each time. On some devices this may result in an audible preset reinitialization, which you can avoid with this setting

- disable Behringer TapTempo messages

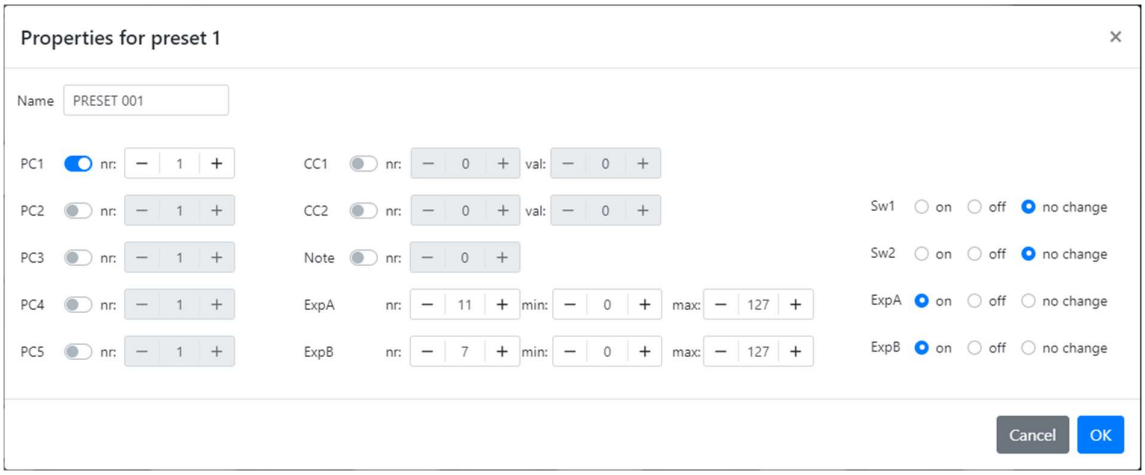
If your presets send MIDI Note messages, you might notice unwanted ControlChange messages being sent each second switch click. Those are Behringer specific "TapTempo" messages which you can disable here.

- Note velocity

Here you can specify the velocity of the NoteOn messages which the FCB1010 presets can send.

b. Preset settings

When clicking an FCB1010 switch on the editor screen, the preset settings dialog will open for that preset in the current bank. You can scroll through all banks (10 in regular mode, 19 in stompbox mode) by clicking the up or down switch of the FCB1010 picture in the editor screen.



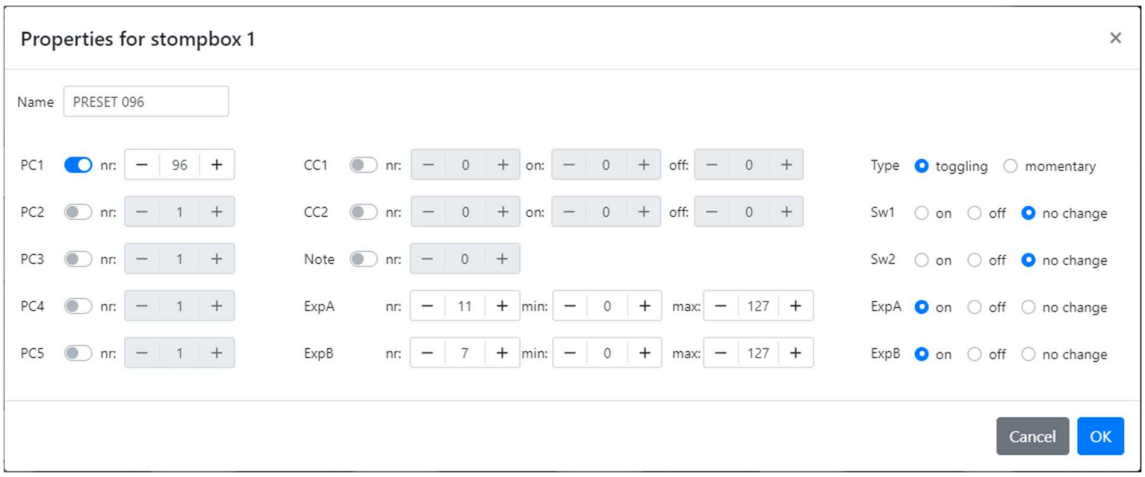
In this dialog you can specify a preset name, and indicate which of the 8 available messages will actually be sent, with which MIDI values.

You can also specify whether each of the expression pedals needs to be enabled or disabled, or whether the pedals remain in their enabled or disabled state when selecting this preset.

When enabled, you can specify the ControlChange number and range which the pedals emit.

Similarly, you can specify for each of the 2 relays whether they are activated, deactivated, or remain unchanged.

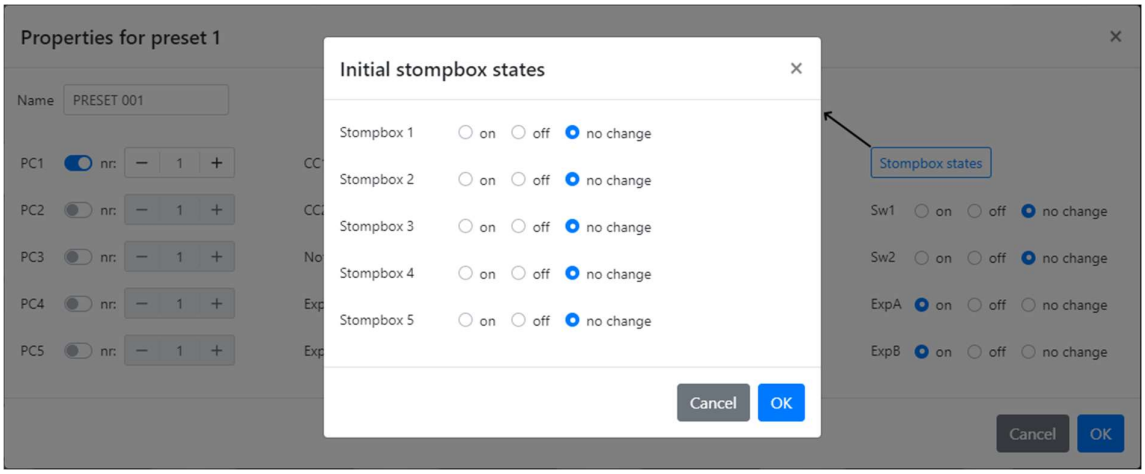
When using stompbox mode, the settings dialog for the 5 stompboxes contains some slight changes :



First of all you can specify if the stompbox is “toggling” (that is : toggling between an ON and OFF state on each switch click) or “momentary” (that is : activated as long as the switch is being pressed)

Since a stompbox has 2 states (ON/OFF, or PRESSED/RELEASED in case of momentary effects) you can specify a ControlChange value for each of those 2 states.

In the settings dialog for presets you will also see an add-on when using stompbox mode : a “stompbox states” button allows you to specify the behavior of each of the stompboxes when this preset is activated :



Again the choice is to switch the effect on or off, or to keep its state unchanged, as is the case when using a pedalboard with “real” stompboxes.

5. The FCB1010 status screen

After leaving the “edit mode” discussed in previous section, the main screen of the web application turns into a status screen. Once you have actually activated a non-empty setup, the behavior of this screen speaks for itself. It shows the current status of your FCB1010 at all time:

Whenever you click an FCB1010 switch (a real switch on your FCB1010 footcontroller this time), the display will update and show the currently selected preset, the active stompboxes, etc. When you scroll through the banks with the (real) FCB1010 up/down switches, the preset names in each bank are shown – very helpful.

On the other hand, 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 (pun intended...) alternative to foot control, since in most cases they don’t have a good view on what’s laying on the floor. In this case the FCB1010 is used to turn an iPad into a versatile MIDI controller, with foot control as backup.

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
```