

“Single cable” kit for the FCB1010 and TinyBox[4Kemper]

1. What is it ?

With this kit, you can turn your FCB1010 into a phantom powered floorboard, which can do 2-way MIDI communication over one single cable. After installing the kit, it is no longer necessary to plug in a power cable for your FCB1010, so no power outlet is required at your feet. When using both MIDI IN and MIDI OUT, it is no longer necessary to run 2 MIDI cables to the floorboard. One single cable can carry power, MIDI IN and MIDI OUT communication. The kit is designed to provide an optimal connection between FCB1010 and the TinyBox or TinyBox4Kemper.



2. What does it look like ?

After upgrading, the 2 MIDI connectors of your FCB1010 are replaced with one single 7-pin DIN connector and one low voltage power switch. A single 7-lead MIDI cable is all you need to connect the TinyBox or TinyBox4Kemper to your floorboard.



3. I have no electronics skills. Can I do the upgrade myself?

Sure! All you need to do is replace the original connector board with a new one, and plug in some connectors. Connecting phantom power to the FCB1010 electronics requires cutting the 2 existing low-voltage power leads and connecting them to 2 wires coming from the new connector board. While it might be best to solder them in order to obtain the most solid interconnection, using a small screw terminal can also be an easy and safe solution.

4. Prerequisites

Before doing this upgrade, it is very important to fully test your FCB1010 + TinyBox/TinyBox4Kemper setup. Make sure you test communication in both directions up front. The upgrade kit simply does some rewiring, so troubleshooting is as easy as double checking all connections. However finding the cause of a non-working MIDI controlled rig is much harder to do, since it can be caused by many things: failing FCB1010 hardware or firmware, incorrect FCB1010 setup, failing hardware or firmware or incorrect setup of the controlled device. The upgrade kit just adds some more variables to this, therefore one important rule: first test, then upgrade!

5. Required tools



Phillips screw driver



Cutter



or



Wire stripper or cutter



or



Screw terminal or *optionally* a soldering iron

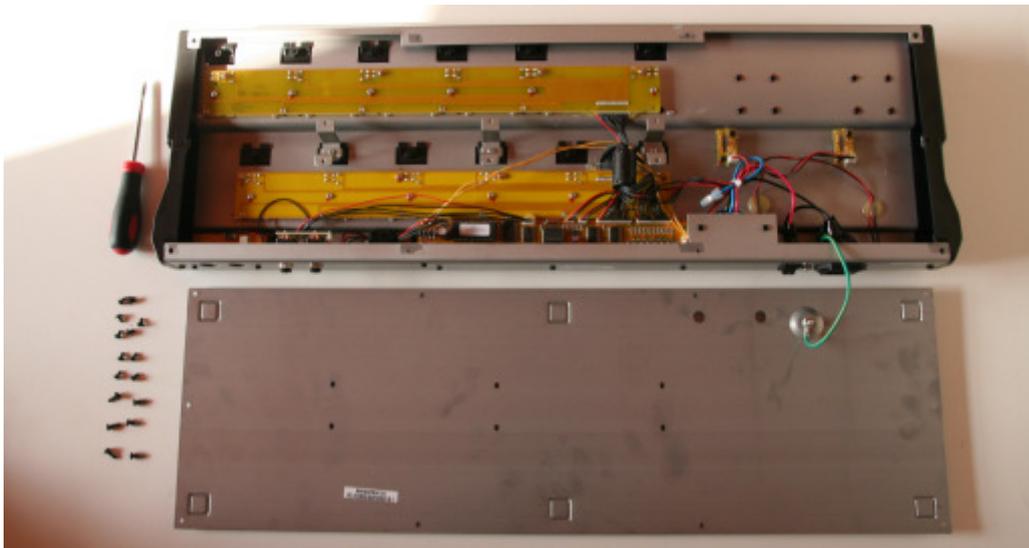
6. Doing the upgrade

Step 1: open the FCB1010 housing

Unscrew 16 screws in order to remove the bottom plate (don't remove the 3 screws indicated on the picture below).

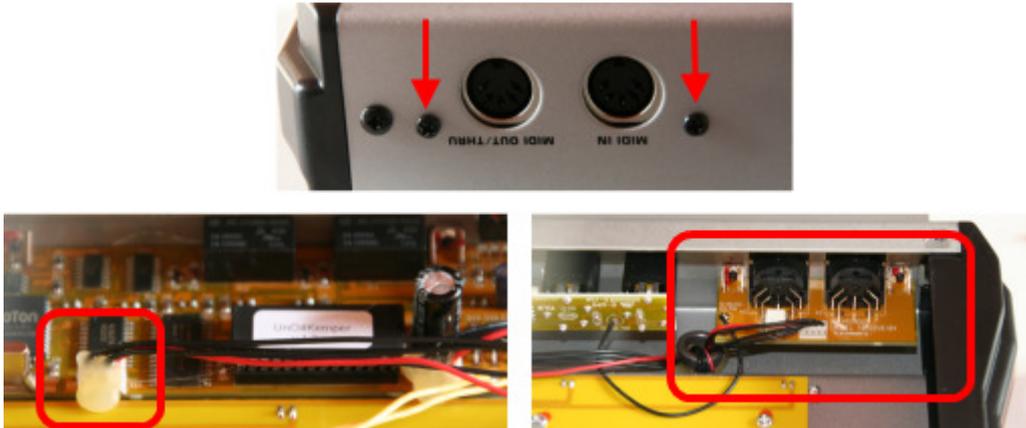


Attention: a ground lead attaches the bottom plate to the FCB1010 chassis. It is not necessary to remove this connection, just lay down the bottom plate close to the chassis while doing the upgrade.

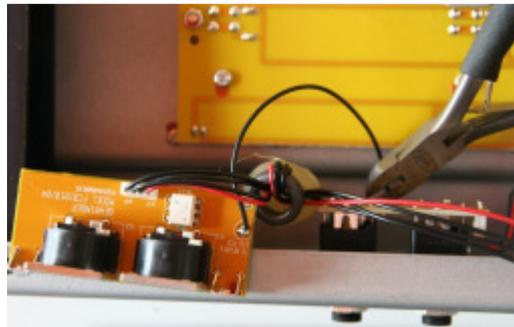


Step 2. Remove the original MIDI connector board

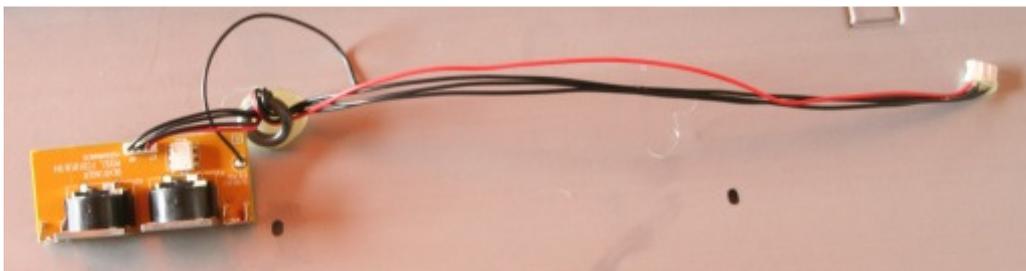
Remove 2 screws which attach the MIDI connector board to the housing. Keep the screws aside, you will need them later! Unplug the small 4-pin connector from the FCB1010 main board. Hot glue may be used to secure the connection and wire. In that case first remove the glue carefully with a screwdriver or knife. Pay attention not to scratch or damage the electronics board while doing so.



A small ground wire runs from MIDI connector board to jack board. You can just cut this wire close to the jack board.

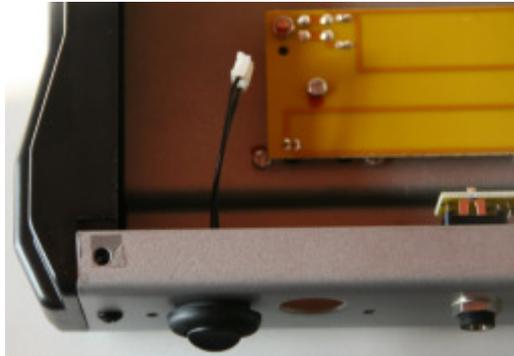


Store the original board on a safe place, just in case you want to revert the upgrade on a later moment.

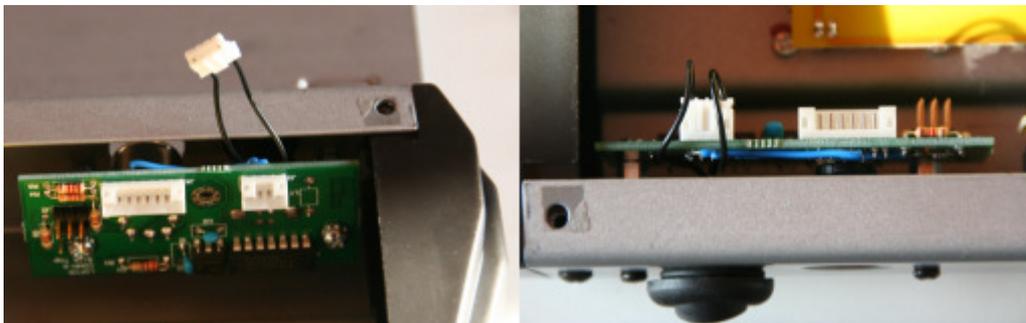


Step 3. Install the new MIDI connector board

First install the phantom power switch. Simply click the switch from the outside into the outer most mounting hole of the FCB1010 housing. A rubber ring between switch and housing gives the necessary tension to keep the switch in place, while you will still be able to rotate the switch to the desired orientation later on, when you power the floorboard for the first time.



Now install the new connector board, using the same 2 screws which held the original board. While doing so, push the dangling power switch cable up, so it will be close to the matching jack on the connector board. After installing the connector board you can plug in the power switch cable, as shown below.

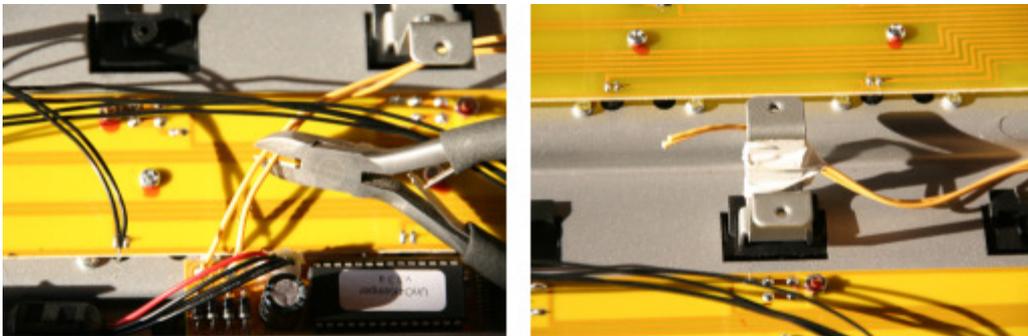


Finally install the wire unit, which runs from the 8-pin connector on the new board to the 4-pin connector of the FCB1010 main electronics board (the one which was used by the original MIDI connector board too). The 2 dangling wires on the wire unit will be connected in the next step.

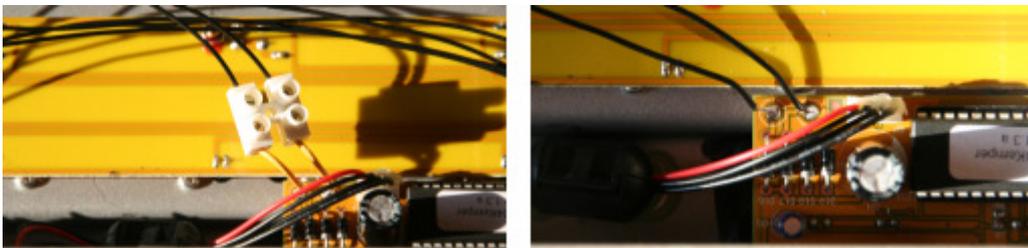


Step 4. Connect phantom power

Cut the two yellow wires running from the low voltage side of the FCB1010 transfo to the main electronics board. If you won't use any soldering iron, leave 1 or 2 inches of wire connected to the main electronics board and strip them. If you will be soldering the power connection, you can simply desolder the yellow wires from the board instead of cutting them. Secure the 2 dangling wires coming from the transfo with some tape, so they can't introduce a short on any of the electronics. Since you no longer will connect a power cord to the FCB1010, these wires won't carry any voltage. If by mistake you would try to power the upgraded FCB1010 the regular way, nothing will happen. There will simply be 10VAC available on the 2 disconnected yellow wires.



Now take the 2 stripped wires of the cable unit which connects MIDI connector board and main electronics board, and connect them to the 2 pieces of yellow wire you left on the main electronics board. In case you have a soldering iron, you can directly solder the 2 black wires to the electronics board instead. It is NOT important which wire is connected to which terminal, a rectifier circuit will always create the correct polarity on the main board.



That's it, you're all done! Time to test the result...

7. Testing the upgrade

Connect the long 7-pin MIDI cable to the 7-pin connector of your upgraded FCB1010. Connect the other side of the cable to the 7-pin connector of the TinyBox or TinyBox4Kemper. Connect the power adapter to the TinyBox and plug it into a power outlet. Watch what happens.



If the FCB1010 doesn't power up, toggle the new power switch next to the 7-pin connector. Now the floorboard should start up, using phantom power through the MIDI cable. Now that you know the ON and OFF position of the phantom power switch, you can gently adapt the orientation of the switch in the mounting hole to your liking.



Last thing to test is the 2-way communication. Connect the short red MIDI cable from TinyBox MIDI OUT to controlled device MIDI IN, and the blue MIDI cable from controlled device MIDI OUT to TinyBox MIDI IN. Now check that everything works exactly as before the upgrade, only without the cable mess at the floorboard side... Congrats!

