



The Silicon Horizon Inc

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Quick start guide for:

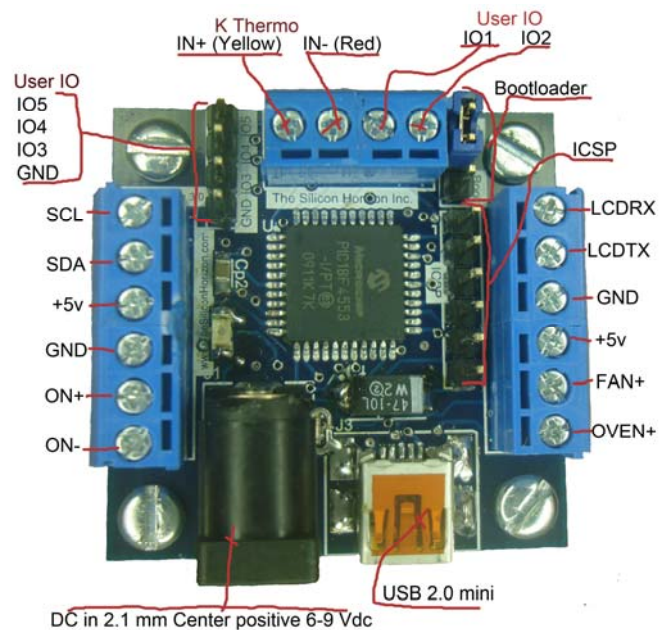
TechFX Reflow 3.0 Controller

TechFX Reflow Tools

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Installing techFX Reflow controller software in Windows XP and Vista 32

1. Put a jumper wire or SPST switch (rated as 6 to 9 Vdc) between ON+ and ON- terminals.
2. Connect DC wall adapter with 6 to 9 Volts output to controller.
3. Observe LED light that controller is on.
4. Connect mini-USB cable to controller and a free USB port on your computer.
5. You should get a "new hardware found" box.
6. Insert techFX reflow CDROM into drive.
7. Select "choose my own driver" or browse to the CDROM "\\driver" directory.
8. Once driver setup is complete, with the controller still on and plugged into USB; Go to **Control panel \ system \ hardware devices \ other devices (?) \ Pic18f4550 family device** and right click and go to properties.
9. Go to the last tab which is power management. Uncheck the "allow my computer to turn this device off" as this will interfere with proper device operation.
10. Now go to **CDROM\techFX reflow tools 4.0** directory and double click on "setup" to begin installation.
11. (WINXP only) Once installation is complete, you are ready to run techFX tools and the controller should appear in the bottom status line "techFX in normal mode" or "techFX in boot mode" depending on the boot jumper setting on your controller. You are now ready to start using techFX Reflow tools software. If you are using a different firmware than "No LCD", install it now.

Additional steps for Windows Vista 32 installations

12. Browse to the installation directory by clicking on my computer, then **c:** drive and go through the folders.
c:\Program files\The Silicon Horizon Inc\TechFX Reflow tools 3.0
13. Once there, right click on "techFXcontroller.exe" file and goto properties.
14. You must check the boxes "Run as administrator" and "winXPSP2 compatibility mode" for the device to operate properly.
15. Click apply and ok.
16. You are now ready to run techFX reflow tools and use the software.
17. You should verify functionality by seeing the "techFX in normal mode" (set when shipped) in the status bar. If you are using a different firmware than "No LCD" option, then install it now.

Firmware choices for your controller

NOTE: the default firmware installed on the controller is the "No LCD" firmware. If using a different firmware or Matrix Orbital LCD firmware you must install that using the boot loader. Refer to the Manual for installation instructions. The Matrix Orbital and other firmware are located on the CDROM in the \firmware directory.

Hardware installation quick start

Computer operation (No Matrix Orbital LCD and Keypad)

It is assumed that you have already hacked your toaster oven to run 100% all the time when plugging it into the wall (no switches or anything). This hacking method is left up to the user. Please follow all safety precautions and consult with an electrician or someone experienced if you are not sure of what you are doing. Please read our liability statement in the manual, and when starting techFX Reflow Tools.

1. Install electronics in a protected enclosure away from Oven, heat sources, and electrical interference sources. Make sure parts are securely mounted.
2. Install safety devices such as ground circuit interrupters and circuit breakers / fuses to protect short circuits and over amperage situations. It is suggested you use multiple safety devices and not just your house circuit breaker. These safety devices will prevent injury and loss of life / property.
3. Connect SSR or other circuitry to control oven to Oven+ terminal.
4. Connect optional Fan circuitry to Fan+ terminal.
5. Connect ON+ and ON- to a SPST toggle switch rated at 6-9 Vdc (Required to function)
6. Connect Grounds of DC side of relays or other control circuitry to GND terminals.
7. Connect your thermocouple to Red (negative) and Yellow (positive) terminals. If it is a K type thermocouple it should use those colors. If your colors are different, then consult your thermocouple datasheet. Only K type thermocouples are supported at this time.
8. Connect your wall adapter 2.1 mm Center Positive (6-9 Vdc) to DC power jack.
9. Connect your mini-USB cable to mini-USB port.
10. Turning on power, you should observe the LED light up.
11. You are now ready to proceed with software installation if you have not already done that.

Installation steps for Matrix Orbital LK204-25 LCD and Keypad

1. Complete steps 1-7 under “Computer operation” installation instructions.
2. Consult Matrix Orbital LK204-25 manual to change the LCD to I2C mode, this involves removing 2 zero value resistors and connecting two solder joints on the LCD. Once that is done, no further LCD hardware changes are required. You need the Matrix Orbital breadboard cable to bring its I2C connector out to 4 bare wires.
3. Using the above mentioned breadboard cable, connect the red wire to the +5v terminal of the reflow controller.
4. Connect the ground to GND terminal of reflow controller.
5. Connect the SDA (may be yellow) to the SDA terminal of the reflow controller.
6. Connect the SCL (may be green) to the SCL terminal of the reflow controller.
7. Plug your keypad into the keypad header on the Matrix Orbital LCD centering it on the header.
8. Connect your wall adapter 2.1 mm CP to DC power jack.
9. Connect your mini-USB cable to mini-USB port.
10. Turning on power, you should observe the Red LED light up.
11. You are now ready to proceed with software installation if you have not already done that.
12. Proceed with software installation steps above.
13. Once in techFX Reflow Tools, verify your controller is recognized in the status bar such as “techFX in normal mode”. If it is in boot mode, you must move the boot jumper and cycle power switch.
14. Go to the “tools” menu and click on “setup keypad”.
15. Select the “setup keypad” menu item.
16. Pressing each keypad number once and watching screen for instructions, continue this process until it shows NO ERRORS. Once you have completed the sequence successfully, go to menu item “program keypad”.
17. The LCD should be showing the Main Menu, and pressing keypad numbers should navigate that menu if you have completed these steps successfully. Note that reversing the keypad cable will necessitate you having to run the keypad setup tool again.
18. You are now ready to use techFX Reflow tools and your techFX reflow controller. Please consult the Manual for additional instructions.