

*** NOTE *** -- If you purchase the all in one kit, I will send you all the software in an easy to install kit so you can bypass the majority of these instructions, this is for information on how to do the complete installation from scratch.

1. Plug in the control board into your USB Port and ensure windows is able to recognize it. Windows 10 should have the drivers pre-installed but some older machines will need to install the driver, which can be found here:
https://www.ftdichip.com/Drivers/CDM/CDM21228_Setup.zip
2. Go here and download and install the latest MSI: [DOF R3 & LEDWIZ.DLL Updates \(mjrnet.org\)](http://mjrnet.org)
3. In your C:/DirectOutput/Config section, drop these files in there:
https://drive.google.com/drive/folders/1yITh1DpACw_M-glqgCXescw404Yj56h?usp=sharing
4. Update the cabinet.xml file with you serial number of your unit (It is provided with a new purchase) It goes in the line that looks like this:
<SerialNumber>AL03MDJT</SerialNumber>
5. Go to [DOF Configtool \(vpuniverse.com\)](http://vpuniverse.com), setup a user for yourself and click on Port Assignments and configure similar to the following (For setups with fewer than 8 solenoids, see appendix):

The screenshot shows the DOF Configtool interface. At the top, the device is set to 'SainSmart 1 - directoutputconfigini40'. Below this are buttons for 'Save Config', 'Generate Config', and 'Clear Fields'. The main configuration area is divided into several sections: 'Shaker Motor' (Min Intensity: 48, Max Intensity: 48), 'Fan' (Min Intensity: 48, Max Intensity: 48), 'Toy Durations in ms' (Chime: 60, Knocker: 60, Bell: 60), 'Custom Brightness' (Strobe: 48, PF Strobe MX: F4, Flasher: F4, Ledstrip Flasher: F4), and 'Contactor variables'. A table of port assignments is highlighted with a red box:

Port	Assignment
Port 1	Flipper Left
Port 2	Slingshot Left
Port 3	8 Bumper Left
Port 4	8 Bumper Center
Port 5	Flipper Right
Port 6	Slingshot Right
Port 7	8 Bumper Right
Port 8	8 Bumper Back

Below the port assignments are sections for 'Targets' (Duration: 60, Intensity: 48) and 'Drop Targets' (Duration: 60, Intensity: 48). At the bottom, there are 'Ledstrip variables' including 'Revert Default', 'Check here for explanation of the positioning parameters', and various settings like 'Strobe MX Left', 'AH: 30', 'AL: 0', 'AT: 0', 'AW: 9', 'Color: White', 'SHP', and 'Circle3'.

6. Click the Generate Config button (It can take a minute to download) and move the contents of the zip file that is downloaded into C:\DirectOutput
7. In your DirectOutput folder, run the program file GlobalConfigEditor.exe by double-clicking it
 - a. On the menu at the top of the window, select File > Load
 - b. Navigate to your C:\DirectOutput\config folder and select GlobalConfig_B2SServer.xml
 - c. Click on the Cabinet Config tab at the top
 - d. Click Select File
 - e. Navigate to your C:\DirectOutput\config folder and select Cabinet.xml

- If you already have plugins enabled (like puppacks configured) then you should be good to go, otherwise Start visual pinball, right click on the backglass and enable plugins. You should see DOF enabled in there the next time you start up visual pinball

Adding a motor/Combining toys for fewer than 8 solenoid versions:

- In DOF config, click on the “Combine Toys” section and configure 1 or more combinations to map to the solenoids you have.
 - For a 4 solenoid setup, you should keep the flippers by themselves. Combine the 8 bumper right, 8 bumper back and the right slingshot to the right solenoid. Combine the 8 bumper left, 8 bumper center and the left slingshot to the left solenoid.
 - For a 6 solenoid setup, you should keep the flippers and the slingshots by themselves. Combine the 8 bumper right, 8 bumper back to the right back solenoid. Combine the 8 bumper left, 8 bumper center to the left back solenoid.
 - For the 7 solenoid setup, combine the 8 bumper back and 8 bumper right together.

Toy Combo Management						
Combo ID	Option	Toy Category	Toy 1	Toy 2	Toy 3	Toy 4
Combo1	Delete	Mono	8 Bumper Right	8 Bumper Back		
Combo2	Delete	Mono	8 Bumper Center	8 Bumper Left		
Combo3	Delete	Mono	8 Bumper Center	8 Bumper Left	Slingshot Left	
Combo4	Delete	Mono	8 Bumper Right	8 Bumper Back	Slingshot Right	
New	Add	Mono				

- If you get a setup with fewer than 8 solenoids, you will have some additional outputs available on the relay board. This will allow you to connect a shaker motor or other toys to the outputs. The power supply should be able to handle most 12V toys you would like to hook up to it. Below is an example of the 6 solenoid setup with some additional toys added:

Device: SainSmart 1 - directoutputconfigini40 ▾

Save Config

Generate Config

Shaker Motor

Min Intensity: 48 ▾ Max Intensity: 48 ▾

Fan

Min Intensity: 48 ▾ Max Intensity: 48 ▾

Toy Durations in ms

Chime : 60 ▾ Kocker : 60 ▾ Bell : 60 ▾

Custom Brightness

Strobe 48 ▾ PF Strobe MX F4 ▾ Flasher F4 ▾ Ledstrip Flasher F4 ▾

Contactor variables

Set Intensity and Duration to 0 if you don't want feedback to these events

Targets

Duration: 60 ▾ Intensity: 48 ▾

Ledstrip variables

Revert Default

[Check here for explanati](#)

- Port 1 Flipper Left ▾
- Port 2 Slingshot Left ▾
- Port 3 Combo2 ▾
- Port 4 Kocker ▾
- Port 5 Flipper Right ▾
- Port 6 Slingshot Right ▾
- Port 7 Combo1 ▾
- Port 8 Shaker ▾