*spark live

  - innovation for live events

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If you wish to use the OSC network mode of the *spark d-fuser, this document will show you how. The controller will read and write the crossfade and fade to black state. The controller sends and receives OSC with the message **/dvimxr/xFadeFadeUp** with typetag **ff**, ie. two floats. The controller can also receive **/dvimxr/xFade** typetag **f** and **/dvimxr/fadeUp** typetag **f**.

The network settings are set from the .ini configuration file, by default the controller has a manual IP address, receiving on 10.0.0.1 port 10000 and broadcasting to the network on port 10000. The exact settings as shipped are:

```
DHCP = No; ControllerAddress = 10.0.0.02; ControllerPort = 10000;
ControllerSubnetMask = 255.255.255.0; ControllerGateway = 10.0.0.1
ControllerDNS = 10.0.0.1; SendAddress = 255.255.255.255; SendPort = 10000
```

Configuring the controller via the .ini configuration file is detailed in a separate document available at http://sparklive.net/dfuser/support.

Document v1.1, Controller Firmware v29
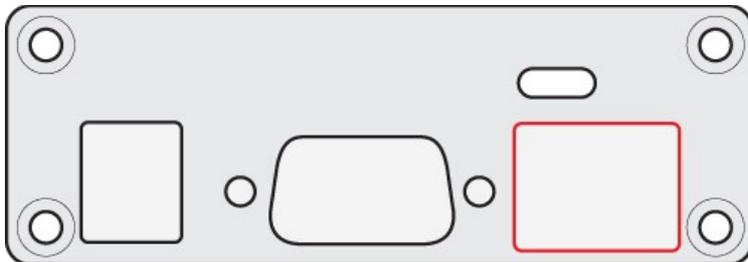
1. Ensure Ethernet

The RJ45 socket on the controller can be wired for either Ethernet or DMX. There is a switch to change between these two circuits, and the menu will only give you the networking options appropriate to what the socket is switched to.

Select the 'Network Mode' menu on the controller. On entering the mode, it will display whether Ethernet or DMX is engaged in the menu title line. If the line says "Network Mode [Ethernet]", you can proceed to the next section. Photo'd here, however, we see DMX is engaged, so we need to switch the controller to Ethernet to use OSC.

To switch between Ethernet and DMX, a mechanical switch recessed inside the controller needs to be toggled one way or the other. This switch is accessed through the slot above the RJ45 socket.
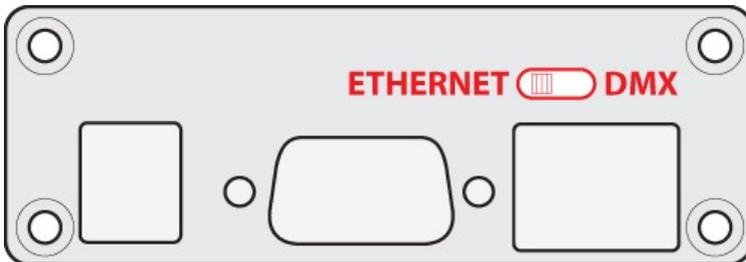
The switch is a slide toggle, located 2cm deep into the case. Switched towards the middle of the controller, Ethernet is engaged. Towards the outside, DMX.

Use a match-stick or similar non-scratching, insulating rod to push the slide switch towards the middle of the controller.

This is best done for the first time with the power disconnected, you will get a feel for the mechanical action. If done with a match-stick, there should however be no problem with doing this with the power on, at which point you will see the menu title change with the switch's action.

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2. Turn on OSC

Spin the menu control to the **OSC** option and click to select. You should see the network status line change to
OSC: In 10.0.0.2:10000.
This shows you the IP address and port the controller is listening on, especially useful if the controller is set to pick up an IP address via DHCP.
[note - old message in shown photo]

Like the other Network modes, the crossfade and fade to black knob are what is communicated. OSC is a two-way protocol, so messages can be sent and received. Here, we have moved the crossfade and the network status line has updated to show
OSC Out: xF 0.80 FUP 1.00
This tells us it has sent an OSC message with crossfade float value of 0.8 and a fade up float value of 1.

The actual OSC message sent would be
/dvimxr/xFadeFadeUp 0.80123 1.0000
to the broadcast IP address, port 10000

Note while the knob is called fade to black, the value used computationally is fade UP, so 0 = black and 1 = fully faded up.

3. To connect to a computer

Connect the controller to a computer using a standard network patch cable.
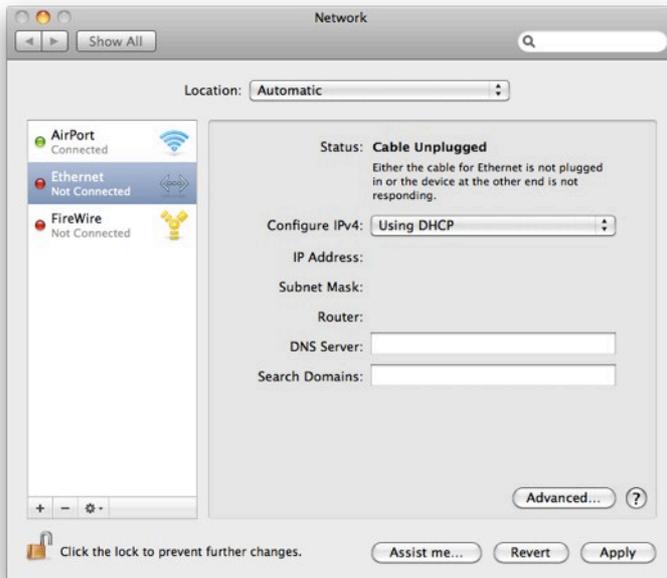
The computer's ethernet connection needs to be set to a manual network address of 10.0.0.1.

We'll use Mac OSX to demonstrate. Shown is the Network System Preference pane of a default OSX install. It's connected to a WiFi network, so we'll be able to use the internet through WiFi as well as OSC over the ethernet cable.

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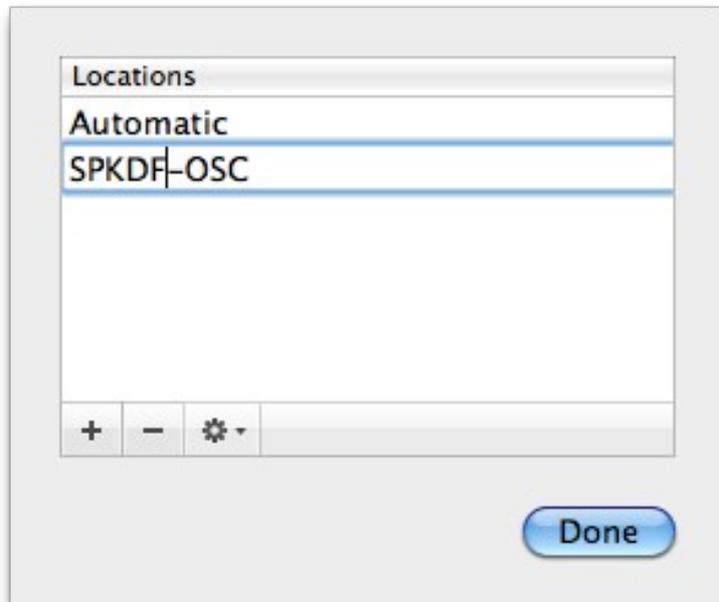
We should leave the automatic network settings alone, so our Mac behaves as we expect it when we plug into conventional networks. We can set up a separate 'Location' for OSC use, which we can switch to when we want to change the ethernet connection from one that automatically picks up an internet connection to one that will work for our OSC use.

Click on the 'Location' pop-up menu, and then select 'Edit Locations...'. You should see the following window, which will allow you to add a new location.
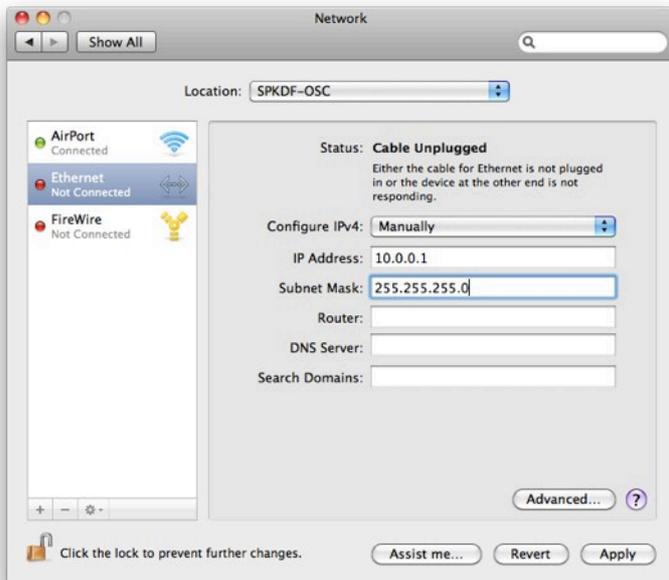
Now with your OSC location selected, enter the following IP Address and Subnet Mask, and hit 'Apply'.

10.0.0.1

255.255.255.0
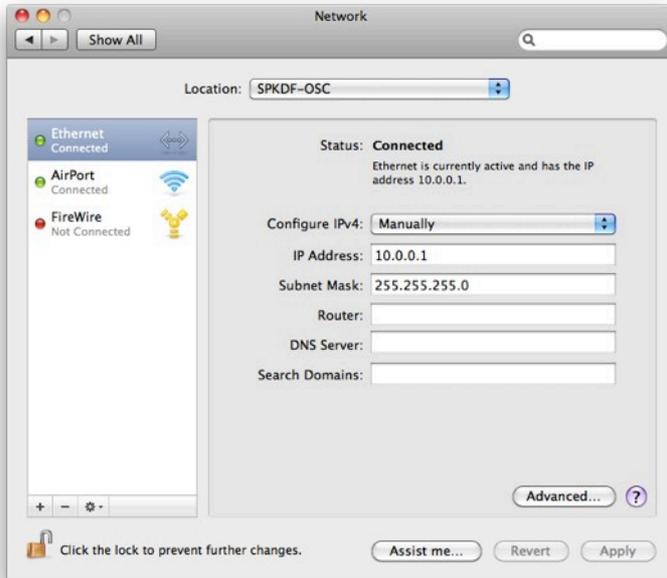
The Ethernet connection now showing green and saying connected means any software on your computer should now be able to send and receive OSC with the controller.
Set your software to send to 10.0.0.2:10000 and to listen on port 10000.