

Hardware Setup

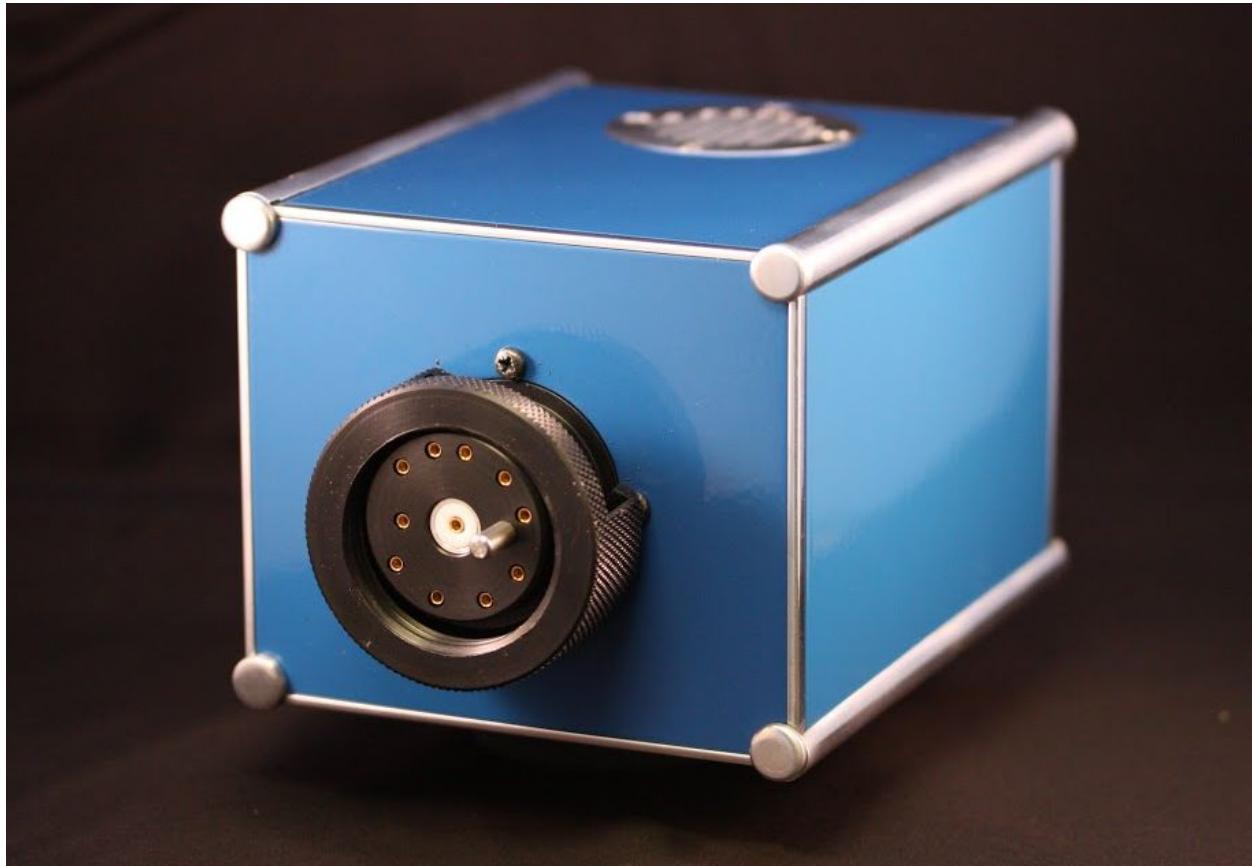
Iota has an integrated Lantronix XPort device which relays serial communication via ethernet. Users should connect Iota to the local network using the supplied ethernet cable and the ethernet connector visible on the photo below.



The Iota power cable is pushed into place until it locks (it needs first to be rotated until the keys align). Below is a picture of an Iota front panel showing the power connector(s) and the ethernet port. When powered, ensure that the fan outlet is not blocked (on underside).

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The photo below shows the quadrupole electronics connector.



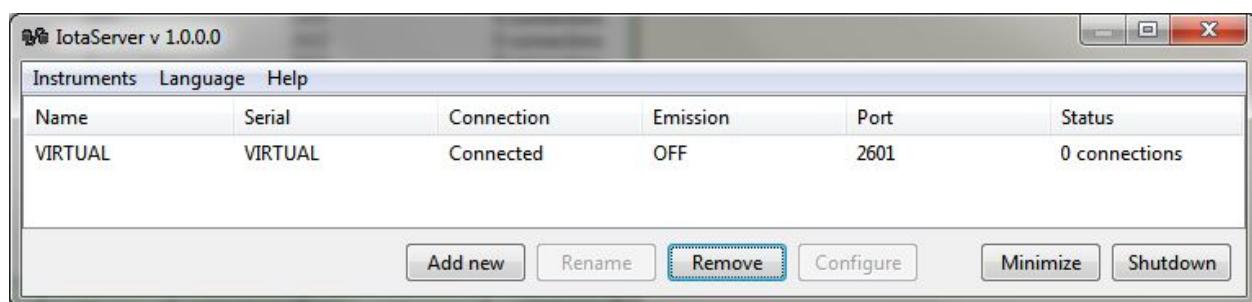
Software Setup

Iota Server connects directly to the electronics of one or more *Iota* RGAs and then provides access to applications that perform data acquisition, such as *Fragment Studio*.

Iota Server Configuration

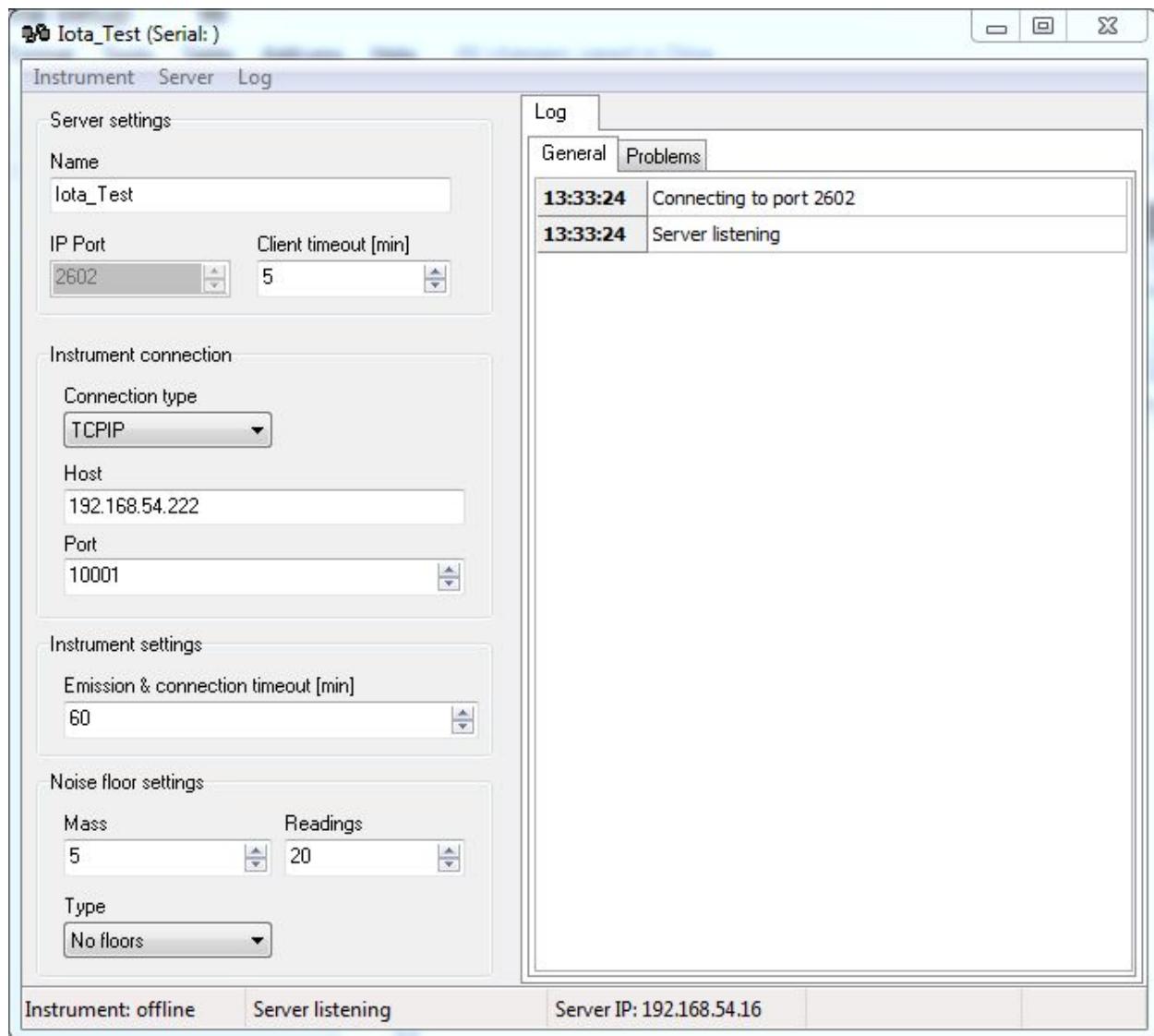
Iota Server can be installed on any computer that has access to the local network. To install *Iota* Server, use the supplied installer or download latest version from http://cyionics.com/files/IotaServer_Setup.zip

The program's main window will look like this:



Initially it only has the configuration of a virtual instrument used for testing purposes. In order to configure the connection to the actual *Iota*, the user needs to click the "Add new" button.

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On this window the connection to the instrument is configured:

- Name can be anything you like and should uniquely describe the instrument, eg "Main Lab Chamber 1"
- IP Port defaults to 2602 and should be changed only if there are other applications using it already. In such cases error messages in the log will indicate that the port is already in use, when the user starts the server.
- Connection type should be TCPIP. The host field indicates the network address of the device. Finding this address is explained in the next chapter.

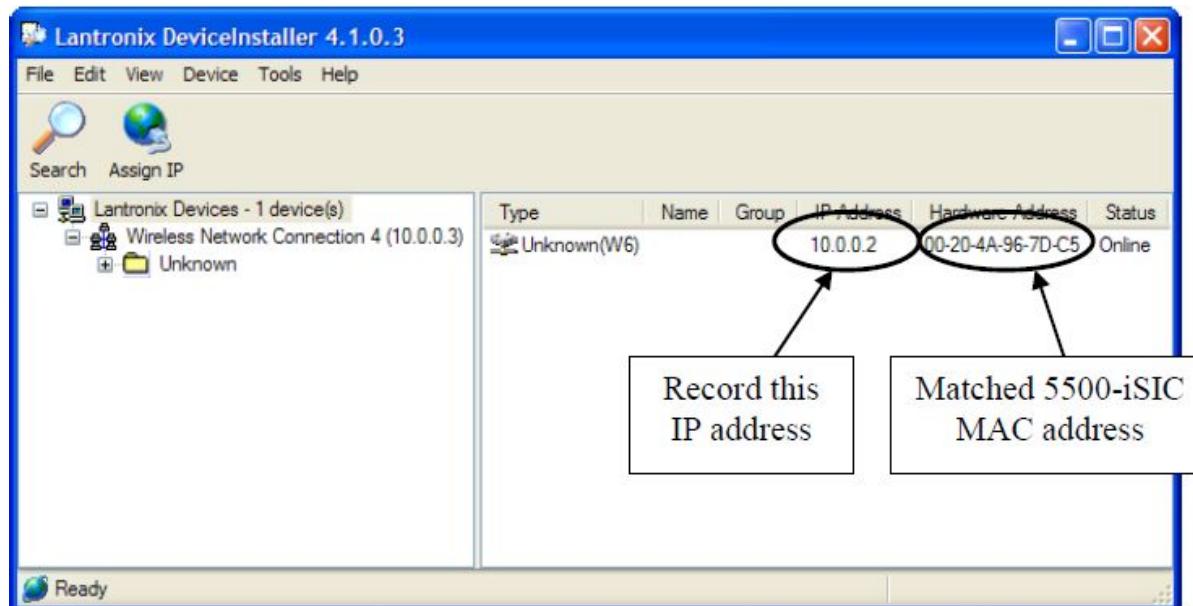
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Finding Out or Assigning IP Address to XPort

Iota is connected to a local network using Lantronix XPort device which relays serial communication via ethernet. XPort needs an IP address in order to be accessible via network. In order to find out (or change) the IP address of the XPort device, users must use the Lantronix DeviceInstaller application. If this application is not yet installed, it can be downloaded from the following web address:

<http://www.lantronix.com/products/deviceinstaller/>

After the DeviceInstaller application is launched, users can use the search button to find all (most likely just one) XPort devices on the network. In most cases, local networks have a DHCP server that allows new devices to be connected and assigns them IP addresses automatically. If so, the device will already have an IP address assigned. Otherwise, it will be displayed in red and will need the IP address set manually. To do that, the device needs to be selected in the list and “Assign IP” button needs to be pressed. User will be prompted to enter IP address, subnet mask and default gateway. Users may need to contact the local network administrator to obtain this information - the subnet mask and gateway would be identical to those set in the user’s PC’s network settings, while IP address needs to be an available one.



An example screenshot of XPort
(matching the hardware address to the supplied one is needed if there are more XPort devices present)

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Back in Iota Server, after the host address has been entered, the remaining settings should be left to default values. Users can now try connecting to the instrument using the Instrument/Connect menu. If the connection works, the server can be started using menu Server/Start Server (server is not started automatically for new instrument configurations). After this, data acquisition software such as Fragment Studio should be able to connect.

Iota server starts during windows boot if the corresponding option was selected in the installer. Once running, it sits in the system tray using this icon:



Once Iota Server is configured, it should not require any changes or maintenance.

Iota Server comes with a help file providing more information. To open the help file, press F1 when the program is active.

Fragment Studio Configuration

Fragment studio can be installed on any PC that can access the Iota Server application via local network or Internet. For the sake of simplicity we will discuss the scenario where all the software runs on the same computer.

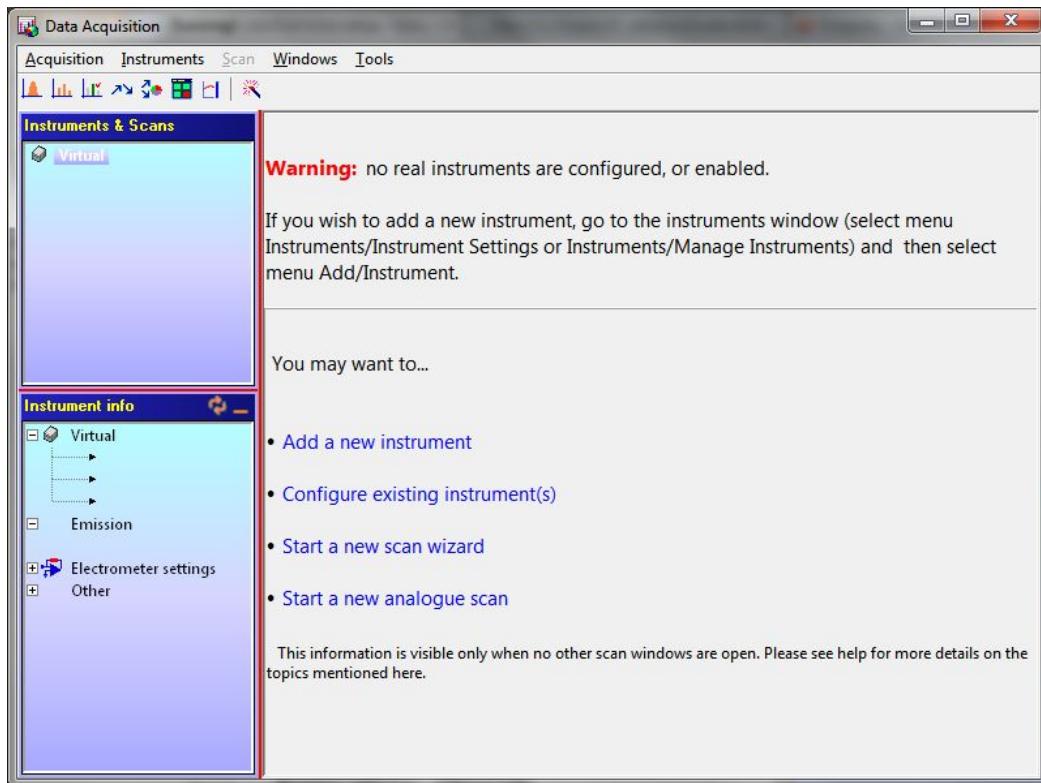
Install Fragment Studio from the supplied installer and start it. If needed, enter the licence information to obtain registration keys.

In order to configure an instrument, “Advanced Mode” must be activated in Studio - using the **Tools/Activate Advanced Mode** menu on the main window. The required password is “studio_master”.

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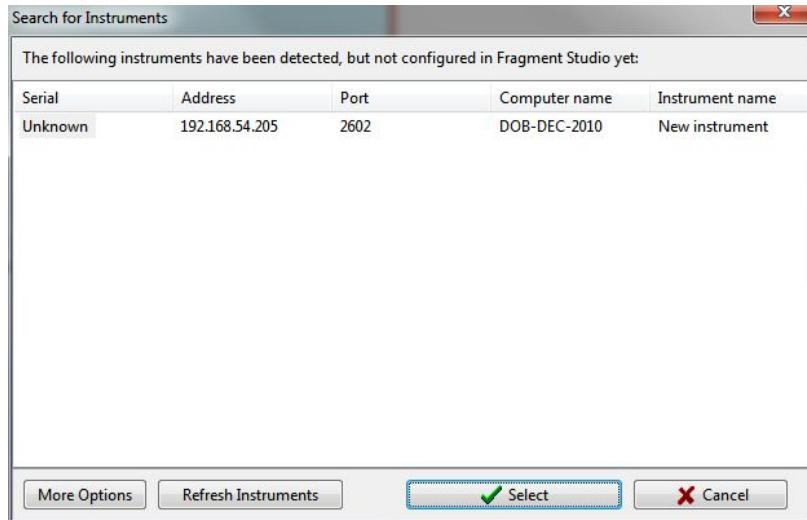
Next, open the the acquisition window.

The program will offer the option to configure an instrument:



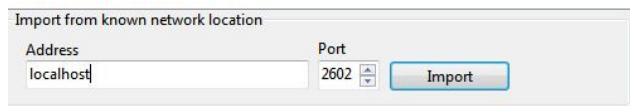
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After clicking the “Add a new instrument” link a window will pop up with a list of instruments that are available. This list should include the instrument setup in Iota Server as explained in the previous paragraph.



Selecting the instrument will make Studio connect to it, import the settings stored on the head and complete the configuration.

If for some reason the instrument does not appear on the list, user can manually configure it by clicking the “More Options” button and using the “Import from known network location” option by entering “localhost” for address and “2602” for port, then clicking the Import button.

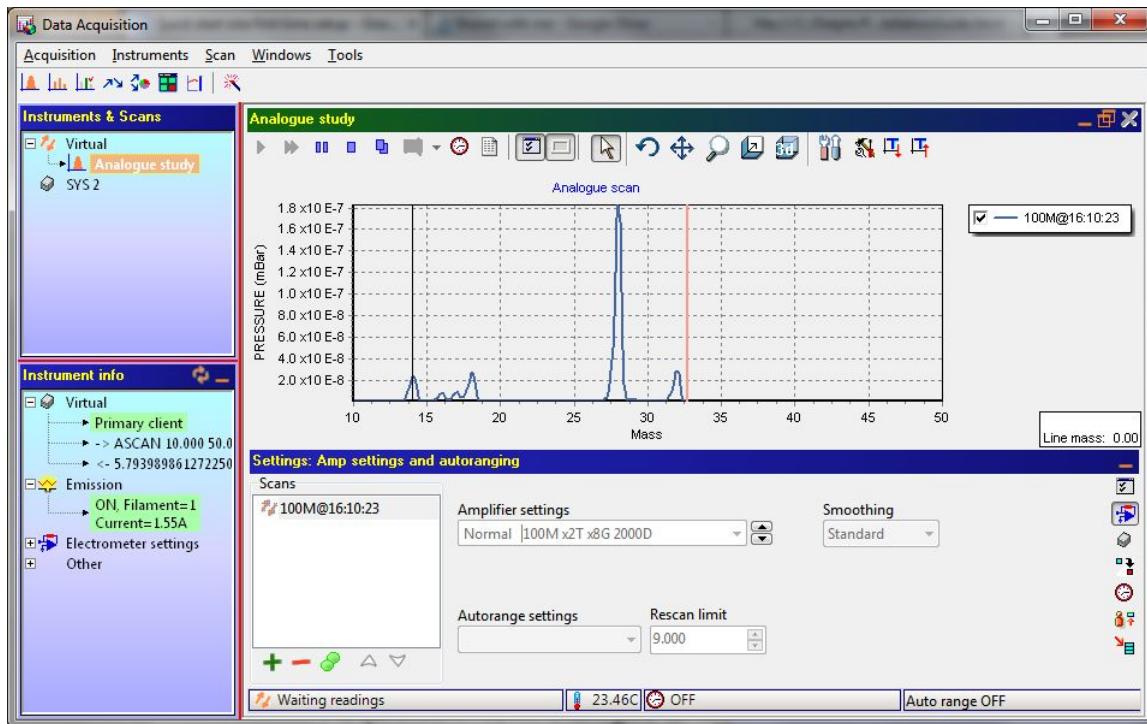


This would, as in the previous case, import the settings directly from the instrument’s head. There is also a third option to import the settings from a supplied file in XML format. In this case, the IP address and port in the instrument settings will have to be entered manually after importing.

Once configured, the instrument will become visible and selectable on the Acquisition window. At that point double clicking it will establish a connection to the instrument and any type of acquisition scan can be started.

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A simple test to see if everything is ok would be to select the instrument, then menu **Acquisition/New/Analogue** and run the scan.



(screenshot shows virtual scan)

The supplied Fragment Studio help file contains much more information on these and other topics. Simply pressing F1 when Studio is active will present the user with the relevant help topic.

Notes on network setup

(when Fragment Studio and Iota Server are not on the same PC):

- When configuring Studio's connection to an instrument, instead of "localhost" the address must point to the computer that is hosting the Iota Server application, either a local IP such as 192.168.54.155 or a global internet public IP or a domain name.
- The firewall must be configured in such a way that Iota Server is allowed to accept incoming traffic on all the ports it is configured to use. This should be simple in a local network environment while for public access users should consult their IT department on which ports can be made available for this purpose.

Other information

Please check the following web page for additional downloadable content:

<http://cyionics.com/downloads.php>

Web Update is a program that can be used to update Cyionics software to latest versions.

Easy Scan is a limited and simplified data acquisition program that can be used freely and without the need for Iota Server to be installed.

Revision History

1.3	7th Feb 2013	Modified to reflect ver 1.3 studio release / minor changes
1.4.	3rd August 2015.	Ethernet information added.
1.5	16th March 2020	Windows 8 notes deleted, other minor changes