

Agilent OpenLAB

Agilent Instrument Controller Installation and Configuration Guide



Agilent Technologies

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1 Using This Guide

Introduction

This guide describes how to install the Agilent Instrument Controller (AIC) for use with Agilent OpenLAB. The Agilent Instrument Controller is a network appliance that controls instruments and acquires data digitally. Each Agilent Instrument Controller can control and acquire digital data from up to 4 GC or LC instruments, or up to 16 analog channels of data (SS420x required), up to 2 photodiode array detectors (PDA) or combinations of the above.

Separate sections in this guide discuss how to install each of the three versions of the Agilent Instrument Controller: AIC 5000, Rev A, and Rev B. The AIC 5000 is black in color and has “AIC 5000 Instrument Controller” stenciled on the front of the unit. Rev A is black in color and is marked with a “Rev A” sticker on the rear or has no sticker. Rev B is silver in color and is marked with a “Rev B” sticker on the rear.

Who Should Read This Guide?

This document is designed for the system administrator who will install the Agilent Instrument Controller.

How This Guide is Organized

In this chapter	You will find
1 – Using This Guide	Overview of the document
2 – Before You Start	Notes to review before you install your AIC.
3 - Installing AIC 5000 for Agilent OpenLAB	Installation and configuration of the AIC 5000 model.

4 - Reset the AIC 5000 to Factory Default	How to reset the AIC 5000 to its factory default settings.
5 - Replacing an AIC Rev A or B	How to replace an AIC Rev A or B with an AIC 5000.
6 - AIC 5000 Specifications	Specifications for the AIC 5000
7 - Installing AIC Rev B for Agilent OpenLAB	Installation and configuration instructions for the AIC Rev B (Silver) model.
8 - Updating an AIC Rev B (Silver)	Instructions for updating the software image on an AIC Rev B to a new revision.
9 - Installing AIC Rev A for Agilent OpenLAB	Installation and configuration instructions for the AIC Rev A (Black) model.
10 - Updating an AIC Rev A	Instructions for updating the software image on an AIC Rev A to a new revision.
11 - Using the Reset to Factory Adapter for AIC Rev A/B	Instructions for using the Reset to Factory Adapter for resetting AIC Rev A or B to factory defaults.
12 - Notes	Additional notes for use of the AIC Rev A and B.
13 - Specifications for AIC Rev A and B	Specifications list for the AIC Rev A and Rev B models.

2 Before You Start

In order to configure the Agilent Instrument Controller device, you will need a computer with Microsoft Internet Explorer and .NET Framework 1.1 or 2.0 installed. You will also need the network crossover cable provided with the Agilent Instrument Controller.



Note

Place the AIC 5000 on a flat, stable surface. You can position the unit in the upright position using the included stand, or in the horizontal position.

Always place AIC Rev A and Rev B units in the upright position, using the included stand.



Note

The AIC 5000 is shipped with a USB flash drive, which is required in case a Reset to Factory Settings is necessary. Please keep this in a safe place for future use.

3 Installing AIC 5000 for Agilent OpenLAB

Use this procedure for installing and configuring the Agilent Instrument Controller AIC 5000. The AIC 5000 is black in color and has “Instrument Controller 5000” stenciled on the front of the unit.



Install the Agilent Instrument Controller Network Appliance

1. Before installing or configuring an Agilent Instrument Controller, make sure all OpenLAB ECM and ICM components are installed.
2. Verify which version of the Agilent Instrument Controller you have. Installation of the AIC 5000 version is described in this section. See later sections in this guide for instructions on using the other two versions, Rev B and Rev A.
3. Create an “AIC User” account. (See “Add a New User” in the online help for how to do this.) This should be a unique user with full administrator rights (call this user “aicuser” for example).
4. From the **Administration** tab, click **Global Administration**, and then right click **Agilent Instrument Controller**. In the **General** tab of the **Properties** dialog box, type the AIC user account name and password, along with the account and domain for the user. This will be used by the AICs to communicate with the OpenLAB server. Click **OK** to close the dialog box.

5. Disconnect the computer from the network and change the TCP/IP settings to use the static IP address 192.168.1.2. Contact a network administrator if you need assistance doing this.
6. Connect one end of the supplied network crossover cable (Part Number G4690-60000) to the computer and the other end to the AIC network port shown in Figure 1. Be sure to use the network port indicated in Figure 1 – The PCI network interface card installed in the AIC 5000 is reserved exclusively for connecting instruments to the unit.
7. Verify that the 115V/220V voltage selector is set correctly for your location. (See Figure 1.)
8. Connect the AIC 5000 to a properly grounded AC outlet using the supplied power cable. (See Figure 1.)

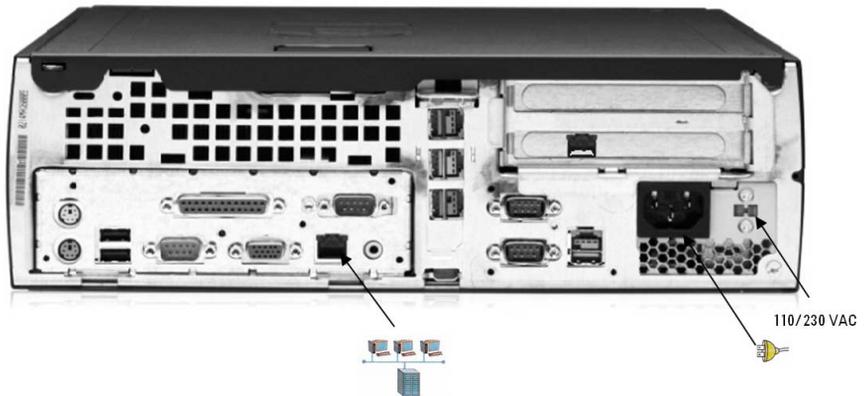


Figure 1. AIC 5000 Connections

9. Power on the AIC 5000 and wait for initialization. The AIC 5000 produces a two-tone beep when initialization is complete.

Configure the Agilent Instrument Controller Device

1. From the configuration computer (see “Before You Start” section), open Internet Explorer and go to the address **http://192.168.1.1/iconsetup/login.aspx**. If you have a proxy server configured in Internet Explorer, you will need to disable it.
2. Log in as **Admin** with no password. (Admin is case-sensitive.)
3. On the General tab, enter the following information:

Name: Enter a name for addressing the Agilent Instrument Controller on the network

Location: Designate the physical location where the Agilent Instrument Controller will operate.

Comment: Add any additional comment you want to make.

OpenLAB server URL: Enter the OpenLAB server URL; for example http://aspen. Be sure to use a fully-qualified host name or address.

4. Click **Submit**.
5. On the **Hardware** tab, click **Configure** to the right of Intel® PRO/100 VE Network, and make the following selections:
Obtain an IP address automatically
Obtain DNS server address automatically
6. Click **Submit**.



Note

Static IPs and DNS are also supported. If these are used, they must be within the same subnet range as the web server. See **Configure an Agilent Instrument Controller** in the online help for details.

7. From the **Advanced** tab on the computer, click **Initialize**.

8. Click **Yes** to confirm you want to initialize the Agilent Instrument Controller. You may need to scroll down to see this button. A dialog box appears asking you if you want to close the window. Click **Yes**.
9. Immediately disconnect the crossover cable from the Agilent Instrument Controller and connect the laboratory network. The AIC gives a short two-tone beep when initialization is complete. If initialization fails, the AIC gives one or more single longer beeps.
10. To verify the initialization was completed, log into OpenLAB as a user with administrator privileges. From the **Administration** tab, click **Global Administration** followed by **Agilent Instrument Controller**.
11. Verify that the AIC appears. If it does not appear, wait 5 minutes, click on another node/tab (such as Account Administration), and then click **Agilent Instrument Controller** again. If the AIC still does not appear, there are several possibilities, given below. Once you have resolved the problem, go back to the beginning of this section and repeat the steps to set up the AIC.
 - The address for the OpenLAB server was entered incorrectly. On some networks, it may be necessary to enter a fully-qualified name (for example <http://aspen.agilent.com>).
 - The laboratory network cable was not connected soon enough after clicking **Initialize** (see step 7-9, above).

Install the SS420x

If your instrument provides an analog detector signal, you must use the SS420x analog to digital converter box. If you are using a digital instrument, you do not need an SS420x.

Connect the SS420x interface to the Agilent Instrument Controller using the serial communications cable provided. Connect one end of the cable to the serial port on the back of the SS420x. Connect the other end of the cable to any serial port on the Agilent Instrument Controller (see Figure 2.) Make sure each connector is tightened.

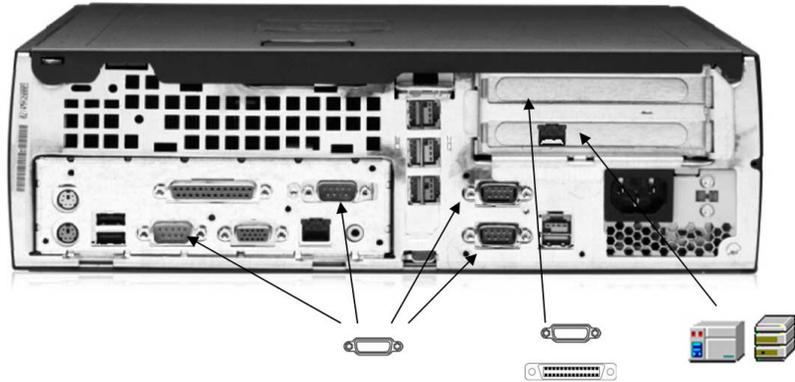


Figure 2. AIC 5000 Instrument and SS420x Connections

Plug the SS420x power supply into an appropriate electrical outlet. Connect the power cord from the power supply into the receptacle on the rear of the SS420x.

The red power LED should light. The four (4) green channel indicator LEDs sequentially light up during the power-up test. When the test is complete, the green LEDs will go off and the interface is ready to use. If this sequence does not successfully complete, the SS420x must be powered off and then on again.

Connect the Instruments

Connect the instruments you will be using with the Agilent Instrument Controller. If you are using a digital instrument, connect it to the Agilent Instrument Controller using the appropriate connector on the back of the Agilent Instrument Controller (see Figure 2). If your AIC 5000 includes an optional RS-232, SCSI, or GPIB interface card, it is installed in the upper PCI slot. The network interface card is installed in the lower PCI slot.



Note

If you are using a SCSI instrument, it must be powered ON prior to connecting it to the Agilent Instrument Controller.

If you are using an instrument with an analog signal, you need to connect it to an SS420x attached to the Agilent Instrument Controller using the connectors on the rear of the SS420x. For details on how to connect an instrument to the SS420x, see the documentation provided with the SS420x.

If you are connecting an instrument to the AIC 5000 through the optional GPIB interface card, you must use the included GPIB port extender (Part Number 10834A).

If you are connecting an instrument to the AIC using Ethernet, you must use the instrument network connector indicated in Figure 2.



Note

Use only the Agilent-supplied network interface card in the AIC 5000.

Select Components

Before you can use the Agilent Instrument Controller, you must tell it what instrument components will be in use, so the Agilent Instrument Controller can communicate with them. The following steps are used to select the components.

1. From OpenLAB, select the **Administration** tab and then click Global Administration, followed by **Agilent Instrument Controller**. Wait until you see a “Ready” status for the AIC before proceeding.
2. Double-click the name of the Agilent Instrument Controller where the instruments are connected and then select the **Components** tab.
3. Select each hardware component for this Agilent Instrument Controller by clicking the box adjacent to the component name. You may select as many components as you wish. If you are using analog acquisition with an SS420x, select **Generic System**.
4. Press the **Submit** button to finish. If this is the first installation, after selecting the components and clicking **Submit**, click the **Install Now** button. You will be prompted to confirm the installation. If this is not the first installation,

go to the **Advanced** tab and click **Restart**. The system will display the “Installing” message. The AIC will “beep” when the installation is complete. Wait until the “Ready” message is displayed to continue.

Configure the SS420x

If you will be using an SS420x attached to the Agilent Instrument Controller (required for analog acquisition), it will need to be configured using the OpenLAB software, as described below. If you are not using an SS420x, you may skip this section.

1. From OpenLAB, select the **Administration** tab and then click **Global Administration** followed by **Agilent Instrument Controller**.
2. Double-click the name of the Agilent Instrument Controller where the SS420x is connected and then select the **Hardware** tab.
3. Locate SS420x under **Boards** and then click **Configure**.
4. From the SS420x configuration dialog, select the Serial port to which the SS420x is connected and then check the **Installed** box to enable the configuration of the interface. Then proceed to select the appropriate settings for the interface.

Baud Rate

The communication baud rate is displayed. To change the baud rate, click **Set Baud Rate**.

Base Frequency

Select the base frequency. The default setting for the SS420x is 10 Hz, which gives optimal signal to noise, and can be used in countries using either 50Hz or 60Hz. The base frequencies available will depend on the baud rate chosen. If the baud rate is less than 38400bps, the base frequencies 100 and 120 will not be available. If you choose a higher base frequency, you must select a base frequency that can be evenly divided into your line frequency (i.e. 30 for 60Hz countries and 25 for 50Hz countries). If selected incorrectly, you may see line frequency noise on your chromatogram. For best

performance, select a base frequency close to the maximum sampling frequency you will be using to acquire data.

Sampling frequencies available in the Acquisition Setup portion of the method will reflect the Base Frequency selected.

Range

For each channel used, select the button next to the signal range for the detector connected to that channel.

Information

This area is for information only. It contains manufacturing information about the interface box that may be required in service situations. If the box is not recognized, the “Connection Status” field will display “Not Connected”.

5. After you complete the dialog, click **Submit**. To read the current settings for the SS420x, click **Read SS420x Settings**. To abort the operation without changing any settings, click **Cancel**.

Configure Instruments

Before you can use the Agilent Instrument Controller to acquire data, each instrument must be configured using the Agilent OpenLAB software. See the Agilent OpenLAB help for instructions on how to configure instruments.

4 Reset the AIC 5000 to Factory Defaults

The AIC 5000 is shipped with a USB flash drive that is used to reset the AIC settings to the factory defaults.

To load the factory default on the USB flash drive,

1. Connect the blank flash drive to an available USB port on a PC with a USB port and a CD ROM drive.

2. Browse the Agilent OpenLAB software CD for the **\Addon\AIC Reset to Factory Adapter\SSIconfig** folder, and copy this folder to the root of the flash drive.
3. Verify the presence of the file **{37F06863-452F-4002-AB6C-8D48B175FA82}** (no file extension) in the **\SSIconfig** folder of the flash drive. DO NOT test the flash drive on a configured AIC, as this will cause a reset to factory settings.

To reset an AIC to factory defaults,

1. Turn on AIC. The AIC produces two short beeps when initialization is complete.
2. AFTER power up is completed, plug the Reset to Factory adapter into any USB port on the AIC.
3. The reset to factory will start.
4. The AIC will start beeping.
5. Remove the Reset to Factory adapter. You may remove it as soon as the beeping starts. The adapter must be removed before the AIC restarts itself.
6. The AIC will restart automatically and then proceed with the rest of the reset to factory.

Important notes for the Reset to Factory Adapter

- The Reset to Factory Adapter will cause a reset to factory defaults on any AIC, not just the one it was delivered with.
- It can be reused any number of times.
- Plug the Reset to Factory Adapter in AFTER the AIC is powered on. Don't plug it in before turning on the AIC.
- The Reset to Factory Adapter must be connected to start the reset to factory, but it must not be connected for the restarts of the AIC that are involved in the automatic reset to factory procedure.
- After a reset to factory, the IP address of the AIC will be reset to 192.168.1.1.

5 Replacing an AIC Rev A or B

If you are replacing an AIC Rev A or Rev B with an AIC 5000, install the AIC 5000 by following the instructions in “Installing the AIC 5000 for Agilent OpenLAB”, above.

6 AIC 5000 Specifications

Dimensions

Height	3.95 inches	10.3 cm
Width	13.3 inches	33.78 cm
Depth	15.1 inches	38.35 cm
Approximate Weight	21 lb	9.53 kg

Temperature Range

Operating	50° to 95° F	10° to 35° C
Nonoperating	-22° to 140° F	-30° to 60° C

Relative Humidity (noncondensing)

Operating	10–90%	10–90%
Nonoperating (38.7° C max wet bulb)	5–95%	5–95%

Maximum Altitude (unpressurized)

Operating	10,000 ft	3048 m
Nonoperating	30,000 ft	9144 m



Note

Operating temperature is derated 1.0° C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10° C/Hr. The upper limit may be limited by the type and number of options installed.

Power Supply

	115 V	230 V
Operating Voltage Range	90–132 VAC	180–264 VAC
Rated Voltage Range	100–127 VAC	200–240 VAC
Rated Line Frequency	50–60 Hz	50–60 Hz

Power Output

	185 W	185 W
Rated Input Current (maximum)	5 A @ 100 VAC	2.5 A @ 200 VAC
Heat Dissipation		
Maximum	971 BTU/hr	245 kg-cal/hr
Typical (idle)	256 BTU/hr	65 kg-cal/hr



Note

This system utilizes a passive power factor corrected power supply when used in the 230V mode. This allows the system to pass the CE mark requirements for use in the countries of the European Union.

7 Installing AIC Rev B for Agilent OpenLAB

Use this procedure for the Agilent Instrument Controller Rev B. Rev B of the AIC is silver in color and is marked with a “Rev B” sticker on the rear.

Install the Agilent Instrument Controller Network Appliance

1. Before installing or configuring an Agilent Instrument Controller, make sure all OpenLAB ECM and ICM components are installed.
2. Verify which revision of the Agilent Instrument Controller you have. Installation of Rev B (silver in color) is described in this section. Instructions on using Rev A (black in color) is described later in this guide.
3. Create an “AIC User” account. (See **Add a New User** in the online help for how to do this.) This should be a unique user with full administrator rights (call this user “aicuser” for example).
4. From the **Administration** tab, click **Global Administration**, and then right click **Agilent Instrument Controller**. In the **General** tab of the **Properties** dialog box, enter the AIC user account name and password, along with the account and domain for the user. This will be used by the AICs to communicate with the OpenLAB server. Click **OK** to close the dialog box.
5. Disconnect the computer from the network and change the TCP/IP settings to use the static IP address 192.168.1.2. Contact a network administrator if you need assistance doing this.
6. Connect one end of the network crossover cable (Part Number G4690-60000) to the computer and the other end to the main network port of the Agilent Instrument Controller if more than one network port is available. (See Figure 1.)

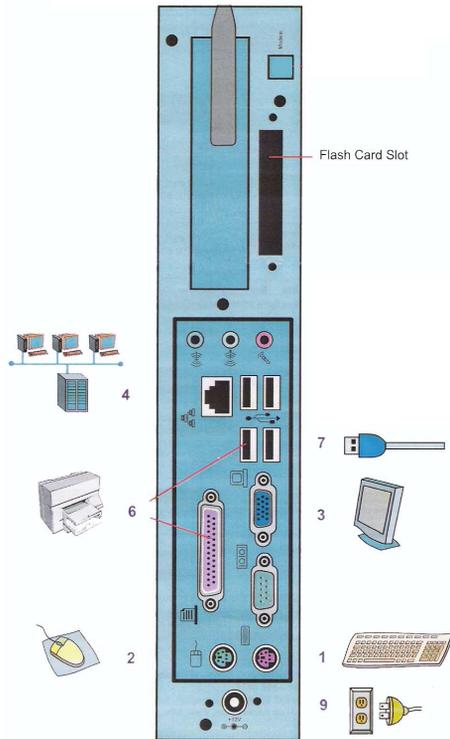


Figure 1. AIC Connectors for Rev B

7. Power on the Agilent Instrument Controller and wait 5 minutes for initialization. The AIC will “beep” when initialization is complete.

Configure the Agilent Instrument Controller Device

1. From the configuration computer (see Before You Start section), open Internet Explorer and go to the address **<http://192.168.1.1/iconsetup/login.aspx>**. If you have a proxy server configured in Internet Explorer, you will need to disable it.

2. Log in as **Admin** with no password. (Admin is case-sensitive.)
 3. On the General tab, enter the following information:
 - Name:* Enter a name for addressing the Agilent Instrument Controller on the network.
 - Location:* Enter the physical location where the Agilent Instrument Controller will operate.
 - Comment:* Type any additional comment you want to make.
 - OpenLAB server URL:* Designate the URL for the server; for example http://aspen.
 4. On the **Hardware** tab, click the **Configure** link and make the following selections:
 - Obtain an IP address automatically
 - Obtain DNS server address automatically
-



Note

Static IPs and DNS are also supported. If these are used, they must be within the same subnet range as the web server. See the **Configure an Agilent Instrument Controller** topic in online help for details.

5. From the **Advanced** tab on the computer, click **Initialize** and confirm you want to initialize the Agilent Instrument Controller.
6. Immediately disconnect the crossover cable from the Agilent Instrument Controller and connect the laboratory network. The AIC will give two short “beeps” when initialization is complete. If initialization fails, the AIC will give a single longer “beep”.
7. To verify the initialization was completed, log into OpenLAB as a user with administrator privileges. From the **Administration** tab, click **Global Administration** followed by **Agilent Instrument Controller**.
8. Verify that the AIC appears. If it does not appear, wait 5 minutes, click on another node (such as Account

Administration), and then click the **Agilent Instrument Controller** again. If the AIC still does not appear, there are several possibilities, given below. Once you have resolved the problem, go back to the beginning of this section and repeat the steps to set up the AIC.

- The address for the OpenLAB server was entered incorrectly. On some networks, it may be necessary to enter a fully-qualified name (for example <http://aspen.agilent.com>).
- The laboratory network cable was not connected soon enough after clicking **Initialize** (see steps 5-6, above).

Install the SS420x

If your instrument provides an analog detector signal, you must use the SS420x analog to digital converter box. If you are using a digital instrument, you do not need an SS420x.

Connect the SS420x interface to the Agilent Instrument Controller using the serial communications cable provided. Connect one end of the cable to the serial port on the back of the SS420x. Connect the other end of the cable to the serial port on the Agilent Instrument Controller (see Figure 1.) Make sure each connector is tightened.

Plug the SS420x power supply into an appropriate electrical outlet. Connect the power cord from the power supply into the receptacle on the rear of the SS420x.

The red power LED should light. The four (4) green channel indicator LED's will sequentially light up during the power-up test. When the test is complete, the green LED's will go off and the interface is ready to use. If this sequence does not successfully complete, the SS420x must be powered off and then on again.

Connect the Instruments

Connect the instruments you will be using with the Agilent Instrument Controller. If you are using a digital instrument, connect it to the Agilent Instrument Controller using the appropriate

connector on the back of the Agilent Instrument Controller (see Figure 1.)



Note

If you are using a SCSI instrument, it must be powered ON prior to connecting it to the Agilent Instrument Controller.

If you are using an instrument with an analog signal, you need to connect it to an SS420x attached to the Agilent Instrument Controller using the connectors on the rear of the SS420x. For details on how to connect an instrument to the SS420x, see the documentation provided with the SS420x.

Select Components

Before you can use the Agilent Instrument Controller, you must tell it what instrument components will be in use, so the Agilent Instrument Controller can communicate with them. The following steps are used to select the components.

1. From OpenLAB, select the **Administration** tab and then click Global Administration, followed by **Agilent Instrument Controller**. Wait until you see a “Ready” status for the AIC before proceeding.
2. Double-click the name of the Agilent Instrument Controller where the instruments are connected and then select the **Components** tab.
3. Select each hardware component for this Agilent Instrument Controller by clicking the box adjacent to the component name. You may select as many components as you wish. If you are using analog acquisition with an SS420x, select **Generic System**.
4. Press the **Submit** button to finish. If this is the first installation, after selecting the components and clicking **Submit**, click the **Install Now** button. You will be prompted to confirm the installation. If this is not the first installation, go to the **Advanced** tab and click **Restart**. The system will display the “Installing” message. The AIC will “beep” when the installation is complete. Wait until the “Ready” message is displayed to continue.

Configure the SS420x

If you will be using an SS420x attached to the Agilent Instrument Controller (required for analog acquisition), it will need to be configured using the OpenLAB software, as described below. If you are not using an SS420x, you may skip this section.

1. From OpenLAB, select the Administration tab and then click **Global Administration** followed by **Agilent Instrument Controller**.
2. Double-click the name of the Agilent Instrument Controller where the SS420x is connected and then select the **Hardware** tab.
3. Locate SS420x under **Boards** and then click **Configure**.
4. From the SS420x configuration dialog, select the Serial port to which the SS420x is connected and then check the **Installed** box to enable the configuration of the interface. Then proceed to select the appropriate settings for the interface.

Baud Rate

The communication baud rate is displayed. To change the baud rate, click **Set Baud Rate**.

Base Frequency

Select the base frequency. The default setting for the SS420x is 10 Hz, which gives optimal signal to noise, and can be used in countries using either 50Hz or 60Hz. The base frequencies available will depend on the baud rate chosen. If the baud rate is less than 38400bps, the base frequencies 100 and 120 will not be available. If you choose a higher base frequency, you must select a base frequency that can be evenly divided into your line frequency (i.e. 30 for 60Hz countries and 25 for 50Hz countries). If selected incorrectly, you may see line frequency noise on your chromatogram. For best performance, select a base frequency close to the maximum sampling frequency you will be using to acquire data.

Sampling frequencies available in the Acquisition Setup portion of the method will reflect the Base Frequency selected.

Range

For each channel used, select the button next to the signal range for the detector connected to that channel.

Information

This area is for information only. It contains manufacturing information about the interface box that may be required in service situations. If the box is not recognized, the “Connection Status” field will display “Not Connected”.

5. When the dialog is completed, click **Submit**. To read the current settings for the SS420x, click the **Read SS420x Settings** button. To abort the operation without changing any settings, click **Cancel**.

Configure Instruments

Before you can use the Agilent Instrument Controller to acquire data, each instrument must be configured using the OpenLAB software. See the OpenLAB help for instructions on how to configure instruments.

8 Upgrading an AIC Rev. B (Silver)

The upgrade procedure for an AIC Rev B can be done on any Windows XP computer with a DVD drive, USB port and the supplied USB flash drive.



Note

Configuration information will be saved when upgrading an AIC Rev. B unit. There is no need to reconfigure the AIC after the upgrade is complete.

There are two main steps involved in updating an AIC Rev B unit:

1. The USB flash drive provided must be made bootable and have the upgrade image copied to it.
2. The AIC Rev B unit must be booted using the USB flash drive to actually upgrade the image on the AIC.

These steps are described below.

Create the Bootable USB Flash Drive

1. Insert the USB flash drive into any Windows XP computer via a USB port.
2. Insert the DVD into the drive. The DVD will autorun and display a menu of options.
3. Select the **Upgrade AIC Rev B** option.
4. A DOS window will appear, prompting you to **enter the letter of the drive** that holds your **USB flash drive**. Then press **ENTER** to continue.

5. You will then be asked to verify your selection. Type the letter **y** or **n** and press **ENTER** to continue.
6. At the Menu of Options screen, type the number **1** to create a flash drive for upgrading an AIC Rev B. Then press **ENTER** to continue.
7. The USB flash drive will now be formatted, made bootable, and the upgrade files will be copied over to it. The DOS window will close automatically. At this point you can remove the USB flash drive from the computer.



Note

Once you have created the bootable flash drive, you may use the flash drive on any number of AIC Rev. B units.

Upgrade the AIC Image

1. Verify the AIC Rev. B has its BIOS correctly set. To enter the BIOS, press the **DELETE** key immediately after turning on the AIC. You will find the boot settings in the **Advanced BIOS Features** screen. Use the + and – keys to change the settings if required. The correct setting is to have the **First Boot Device** set to boot to a **USB-FDD**. The **Second Boot Device** should be set to **USB-HDD** and the **Third Boot Device** should be set to **HDD-0**. Save the BIOS settings and then turn off the AIC.
2. Insert the Bootable USB flash drive created in the previous section into a USB port on the AIC.
3. Turn on the AIC.
4. After approximately **20 to 25 minutes** the AIC will begin **beeping**. At this point, **turn OFF** the unit by holding down the power button until the unit turns off.
5. Remove the USB flash drive from the unit.
6. Turn on the unit.

7. Wait for the two-tone beep. The upgrade is now complete.

9 Installing AIC Rev A for Agilent OpenLAB

Use this procedure to install Rev A of the Agilent Instrument Controller. Rev A is black in color and is marked with a “Rev A” sticker on the rear or has no sticker.

Install the Agilent Instrument Controller Network Appliance

1. Before installing or configuring an Agilent Instrument Controller, make sure all OpenLAB ECM and ICM components are installed.
2. Create an “AIC User” account. (See **Add a New User** in the online help for how to do this.) This should be a unique user with full administrator rights (call this user “aicuser” for example).
3. From the **Administration** tab, click **Global Administration**, and then do a right mouse click on **Agilent Instrument Controller**. In the **General** tab of the **Properties** dialog box, enter the AIC user account name and password, along with the account and domain for the user. This will be used by the AICs to communicate with the OpenLAB server. Click **OK** to close the dialog box.
4. Disconnect the computer from the network and change the TCP/IP settings to use the static IP address 192.168.1.2. Contact a network administrator if you need assistance doing this.
5. Connect one end of the network crossover cable (Part Number G4690-60000) to the computer and the other end to the main network port of the Agilent Instrument Controller if more than one network port is available. (See Figure 1.)

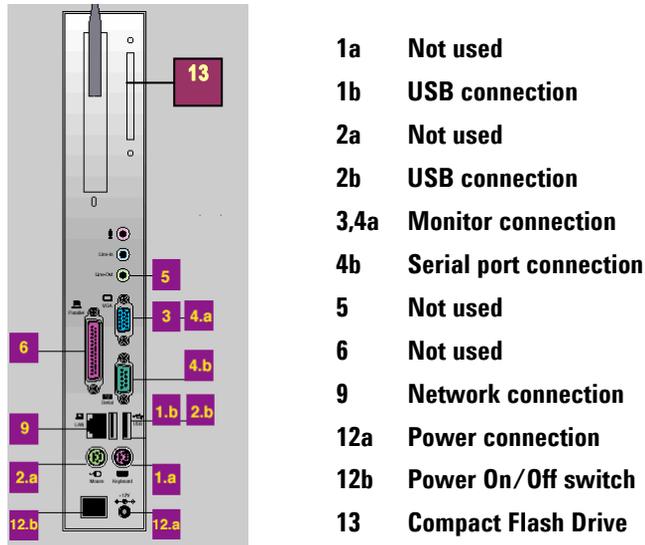


Figure 1

6. Power on the Agilent Instrument Controller and wait 5 minutes for initialization. The AIC will “beep” when initialization is complete.

Configure the Agilent Instrument Controller Device

1. From the configuration computer (see Before You Start section), open Internet Explorer and go to the address **<http://192.168.1.1/iconsetup/login.aspx>**. If you have a proxy server configured in Internet Explorer, you will need to disable it.
2. Log in as **Admin** with no password. (Admin is case-sensitive.)
3. On the General tab, enter the following information:

Name: Enter a name for addressing the Agilent Instrument Controller on the network.

Location: Enter the physical location where the Agilent Instrument Controller will operate.

Comment: Type any additional comment you want to make.

OpenLAB server URL: Designate the URL for the server; for example `http://aspen`.

4. On the **Hardware** tab, click the **Configure** link and make the following selections:
Obtain an IP address automatically
Obtain DNS server address automatically



Note

Static IPs and DNS are also supported. If these are used, they must be within the same subnet range as the web server. See the **Configure an Agilent Instrument Controller** topic in online help for details.

-
5. From the **Advanced** tab on the computer, click **Initialize** and confirm you want to initialize the Agilent Instrument Controller.
 6. Immediately disconnect the crossover cable from the Agilent Instrument Controller and connect the laboratory network. The AIC will give two short “beeps” when initialization is complete. If initialization fails, the AIC will give a single longer “beep”.
 7. To verify the initialization was completed, log into OpenLAB as a user with administrator privileges. From the **Administration** tab, click **Global Administration** followed by **Agilent Instrument Controller**.
 8. Verify that the AIC appears. If it does not appear, wait 5 minutes, click on another node (such as Account Administration), and then click the **Agilent Instrument Controller** again. If the AIC still does not appear, there are several possibilities, given below. Once you have resolved the problem, go back to the beginning of this section and repeat the steps to set up the AIC.
 - The address for the OpenLAB server was entered incorrectly. On some networks, it may be necessary to enter a fully-qualified name (for example `http://aspen.agilent.com`).

- The laboratory network cable was not connected soon enough after clicking **Initialize** (see steps 5-6, above).

Install the SS420x

If your instrument provides an analog detector signal, you must use the SS420x analog to digital converter box. If you are using a digital instrument, you do not need an SS420x.

Connect the SS420x interface to the Agilent Instrument Controller using the serial communications cable provided. Connect one end of the cable to the serial port on the back of the SS420x. Connect the other end of the cable to the serial port on the Agilent Instrument Controller (see Figure 1.) Make sure each connector is tightened.

Plug the SS420x power supply into an appropriate electrical outlet. Connect the power cord from the power supply into the receptacle on the rear of the SS420x.

The red power LED should light. The four (4) green channel indicator LED's will sequentially light up during the power-up test. When the test is complete, the green LED's will go off and the interface is ready to use. If this sequence does not successfully complete, the SS420x must be powered off and then on again.

Connect the Instruments

Connect the instruments you will be using with the Agilent Instrument Controller. If you are using a digital instrument, connect it to the Agilent Instrument Controller using the appropriate connector on the back of the Agilent Instrument Controller (see Figure 1.)



Note

If you are using a SCSI instrument, it must be powered ON prior to connecting it to the Agilent Instrument Controller.

If you are using an instrument with an analog signal, you need to connect it to an SS420x attached to the Agilent Instrument Controller using the connectors on the rear of the SS420x. For

details on how to connect an instrument to the SS420x, see the documentation provided with the SS420x.

Select Components

Before you can use the Agilent Instrument Controller, you must tell it what instrument components will be in use, so the Agilent Instrument Controller can communicate with them. The following steps are used to select the components.

1. From OpenLAB, select the **Administration** tab and then click **Global Administration**, followed by **Agilent Instrument Controller**. Wait until you see a “Ready” status for the AIC before proceeding.
2. Double-click the name of the Agilent Instrument Controller where the instruments are connected and then select the **Components** tab.
3. Select each hardware component for this Agilent Instrument Controller by clicking the box adjacent to the component name. You may select as many components as you wish. If you are using analog acquisition with an SS420x, select **Generic System**.
4. Press the **Submit** button to finish. If this is the first installation, after selecting the components and clicking **Submit**, click the **Install Now** button. You will be prompted to confirm the installation. If this is not the first installation, go to the **Advanced** tab and click **Restart**. The system will display the “Installing” message. The AIC will “beep” when the installation is complete. Wait until the “Ready” message is displayed to continue.

Configure the SS420x

If you will be using an SS420x attached to the Agilent Instrument Controller (required for analog acquisition), it will need to be configured using the OpenLAB software, as described below. If you are not using an SS420x, you may skip this section.

1. From OpenLAB, select the **Administration** tab and then click **Global Administration** followed by **Agilent Instrument Controller**.

2. Double-click the name of the Agilent Instrument Controller where the SS420x is connected and then select the **Hardware** tab.
3. Locate SS420x under **Boards** and then click **Configure**.
4. From the SS420x configuration dialog, select the Serial port to which the SS420x is connected and then check the **Installed** box to enable the configuration of the interface. Then proceed to select the appropriate settings for the interface.

Baud Rate

The communication baud rate is displayed. To change the baud rate, click the **Set Baud Rate** button.

Base Frequency

Select the base frequency. The default setting for the SS420x is 10 Hz, which gives optimal signal to noise, and can be used in countries using either 50Hz or 60Hz. The base frequencies available will depend on the baud rate chosen. If the baud rate is less than 38400bps, the base frequencies 100 and 120 will not be available. If you choose a higher base frequency, you must select a base frequency that can be evenly divided into your line frequency (i.e. 30 for 60Hz countries and 25 for 50Hz countries). If selected incorrectly, you may see line frequency noise on your chromatogram. For best performance, select a base frequency close to the maximum sampling frequency you will be using to acquire data.

Sampling frequencies available in the Acquisition Setup portion of the method will reflect the Base Frequency selected.

Range

For each channel used, select the button next to the signal range for the detector connected to that channel.

Information

This area is for information only. It contains manufacturing information about the interface box that may be required in service situations. If the box is not recognized, the “Connection Status” field will display “Not Connected”.

5. When the dialog is completed, click **Submit**. To read the current settings for the SS420x, click the **Read SS420x Settings** button. To abort the operation without changing any settings, click **Cancel**.

Configure Instruments

Before you can use the Agilent Instrument Controller to acquire data, each instrument must be configured using the OpenLAB software. See the OpenLAB help for instructions on how to configure instruments.

10 Upgrading an AIC Rev A

The upgrade procedure for an AIC Rev. A (black units) can be done on any Windows XP computer with a DVD drive and USB port. Microsoft .NET Framework 1.1 must be installed on the computer. You will also need the original Compact Flash card and the supplied USB Compact Flash Reader.



Note

Configuration information will NOT be saved when upgrading an AIC Rev A. The AIC will need to be configured after the upgrade is complete.

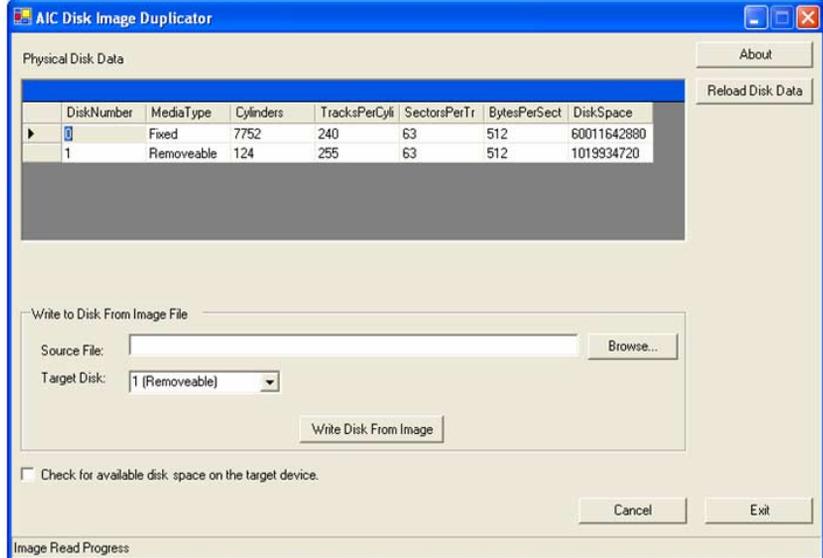


Note

The upgrade utility requires Microsoft .NET framework 1.1 or later to be installed on the computer being used to do the upgrade.

Upgrade Instructions for an AIC Rev A

1. Make sure the AIC is turned **off** and remove the Compact Flash card.
2. Insert the Compact Flash card into the supplied Compact Flash card reader.
3. Insert the USB Compact Flash Card Reader into any Windows XP computer via a USB port.
4. Insert the DVD into the drive. The DVD will autorun and display a menu of options.
5. Select the **Upgrade AIC Rev A** option.
6. The **AIC Disk Image Duplicator** tool will automatically launch.



7. Click on the **Browse..** button.
8. Select the **8300_ol_net20_52x1gb_31189_MASTER.agi** file which is located on the DVD in the **Upgrades\aicupdate 8300\agi** folder.
9. On the **Target Disk:** dropdown, make sure the Compact Flash disk is selected. It should be listed as a **Removeable** disk.
10. Click the **Write Disk from Image** button.
 - a. After a few seconds the following dialog box will appear:



- b. **Unplug** the **Compact Flash Card Reader** from the computer (leave the Compact Flash card in the reader).
 - c. Wait for a few seconds (10 seconds is enough).
 - d. **Plug** the **Compact Flash Card Reader** back into the computer.
 - e. Wait for a few seconds (10 seconds is enough).
 - f. Click the **OK** button to dismiss the dialog box.
11. When the duplicator is finished, a dialog box will appear:



12. Click the OK button.
13. Close the AIC Disk Image Duplicator program by clicking on the **Exit** button.
14. Unplug the Compact Flash Card Reader from the computer.
15. Carefully remove the Compact Flash card from the reader.
16. Insert the Compact Flash Card into the AIC Rev A unit.
17. Turn on the AIC.
18. Configure the AIC as usual.

11 Using the Reset to Factory Adapter for AIC Rev A/B

The Agilent Instrument Controller (AIC) (Rev A and B only) is shipped with a USB flash drive that, when connected to an AIC, will reset the AIC settings to the factory defaults. To reset an AIC to factory defaults,

1. Turn on AIC. The AIC produces two short beeps when initialization is complete.
2. When power up is done, plug the Reset to Factory adapter into any USB port on the AIC.
3. The reset to factory will start.
4. The AIC will start beeping.
5. Remove the Reset to Factory adapter. You may remove it as soon as the beeping starts.
6. The AIC will restart automatically and then proceed with the rest of the reset to factory.

Important Notes for the Reset to Factory Adapter

- The Reset to Factory Adapter will cause a reset to factory defaults on any AIC, not just the one it was delivered with.
- It can be reused any number of times.
- Plug the Reset to Factory Adapter in AFTER the AIC is powered on. Don't plug it in before turning on the AIC.
- The Reset to Factory Adapter must be connected to start the reset to factory, but it must not be connected for the restarts of the AIC that are involved in the automatic reset to factory procedure.
- After a reset to factory, the IP address of the AIC will be reset to 192.168.1.1.

- If you remove the special file on the Reset to Factory Adapter or rename it, then the device will no longer cause a reset to factory. Don't use the device for anything other than resetting an AIC to factory defaults

12 Notes

Please review the following notes regarding use of the Agilent Instrument Controller.

- Before the addition or removal of a USB component, please turn off the AIC, unless instructed otherwise.

13 Specifications for AIC Rev A and B

Agilent Instrument Controller Revisions A and B

Environment	Operating temperature: 0°C to 40°C (32°F to 104°F) Nonoperating temperature: -10°C to 60°C (-14°F to 140°F) Humidity: 0% to 90%
Power Switch	1 momentary "soft" power switch
Power Supply	External 40 watt auto-switching power adapter Input: AC 100V-140V and 200V-260V, 45Hz~65Hz Output: DC 12V 40 watt

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