



**ScanArray[®]G_x/ProScanArray[®]
Microarray Scanner**

Installation Manual

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1.1 Overview

The ScanArray[®]G_x and ProScanArray[®] Microarray Analysis systems are designed to be installed by the user. Installation of the system consists of two parts, installation of the ScanArray instrument and installation of the ScanArray Express/ProScanArray Express application software on a Windows[®] 2000 or Windows[®] XP workstation.

This chapter describes:

- site requirements
- workstation requirements
- where to get help

1.2 Site Requirements

Review this section for environmental, space and power requirements.

1.2.1 Environmental Requirements

The ScanArray G_x/ProScanArray instrument should be installed in a facility that meets the following environmental requirements:

Environmental Requirements

Temperature Range	15-30°C (59-86°F)
Humidity Range	20 to 80% Relative Humidity
Allowable Temperature Change	3°C/hr (5.6°F/hr)

Install the instrument away from windows, ventilation ducts or any other devices that may cause significant changes in temperature.

The instrument should be installed in an area that is free of dust, strong magnetic fields or ionizing radiation.

1.2.2 Space Requirements

The ScanArray G_x/ProScanArray instrument should be placed on a bench where there is adequate room to insert samples into the front of the instrument. Instrument dimensions are:

Instrument	Length	Width	Height	Weight
ScanArray G _x	76 cm (30 inches)	41 cm (16 inches)	41 cm (16 inches)	33 kg (72 lbs)
ProScanArray	76 cm (30 inches)	41 cm (16 inches)	41 cm (16 inches)	33 kg (72 lbs)
ProScanArray HT	97 cm (38 inches)	41 cm (16 inches)	41 cm (16 inches)	36 kg (80 lbs)

- There should be a minimum of 10 cm (4 in.) between the instrument and the workstation.
- The distance between the instrument and the walls should be a minimum of 5 cm (2 in.); a distance of 15 cm (6 in.) is preferable. This will provide suitable ventilation and allow easy access when connecting cables. An island type laboratory table is best if one is available, as it provides ready access to all sides of the instrument.

1.2.3 Power Requirements

	Volts AC	Amperes	Hertz
Instrument	100-240 VAC (auto-ranging), +6%/-10%	3.5 A	50/60 Hz

1.3 Workstation Requirements

To install the ScanArray Express/ProScanArray Express application on your workstation, your workstation must meet the following minimum requirements:

Minimum Workstation Requirements (See Note 1 below)

Processor	1GHz Pentium III
RAM	512 MB or higher
Virtual Memory	300 MB
Hard Disk	40 GB (See Note 2 below)
CD-ROM Drive	24X (See Note 3 below)
Network Connectivity	10 MB Ethernet network interface card (NIC) and TCP/IP protocol installed
Monitor	17" Color Display 1024 x 768 x 32 bit - True Color
Operating System	Windows 2000 with Service Pack 4, or Windows XP Professional with Service Pack 1a

Notes: The following are notes about the minimum workstation requirements.

1. These values represent the minimum system configuration except where specific versions are noted.
2. Hard Disk Space Requirements:
A 4 scan acquisition at a resolution of 5um requires approximately 500mb of disk space.
3. Backup devices:
PerkinElmer recommends using a CD-RW or Zip 250 drive for backup and archive.

1.4 Where To Get Help

If you need help installing or operating your ScanArray G_x or ProScanArray system, you can contact PerkinElmer Life and Analytical Sciences in the following ways:

- Web Site - <http://www.perkinelmer.com/microarray>
- Technical Support by telephone - 800-762-4000 (US and Canada)
or (+1) 203-925-4602
- Technical Support by e-mail - info@perkinelmer.com
- Fax: (+1) 203-944-4904
- Worldwide:
Techsupport@perkinelmer.com
Techsupport.europe@perkinelmer.com

Please be prepared with the following when calling:

- serial number of your instrument
- version number of the application software
- nature of the problem
- steps you have taken
- access to your instrument
- your phone number, fax number and e-mail address

Additional information about the instrument can be found in the following:

- ScanArray G_x / ProScanArray User Manual
- documentation provided with the workstation and its operating software
- documentation provided by manufacturers of the fluorophores used

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2.1 Overview

When the instrument arrives at your laboratory, carefully unpack the shipment and verify receipt of all components. The number of cartons is indicated on the packing list and is dependent on the components that have been ordered with the system.

This chapter describes:

- Initial Inspection
- Unpacking the Instrument
- Return Materials Procedure

2.2 Initial Inspection

Visually inspect the cartons upon receipt. If external damage is noted, indicate the damage on the shipping receipt when you sign for the product. If internal or concealed damage is noted once the carton is opened, contact both the shipping agent and PerkinElmer Life and Analytical Sciences immediately. A written claim should be filed against the shipping agency as soon as the damage is noted.



Warning: If there is any apparent damage to the instrument, do not plug the unit into the power line. Contact PerkinElmer Life and Analytical Sciences for assistance. See [Where To Get Help](#) on page 1-4.

2.3 Unpacking the Instrument



Caution: Care should be taken when unpacking the instrument or placing it on the laboratory bench. Severe shock may damage or misalign optical components within the instrument. It is recommended that two people lift the instrument out of the shipping carton.

The ScanArray G_x/ProScanArray Microarray Analysis System includes the following items:

- ScanArray G_x/ProScanArray Instrument
- Instrument Power Cord
- ScanArray Express/ProScanArray Software (CD-ROM)
- ScanArray G_x/ProScanArray Installation Guide
- Quick Reference Guide
- ScanArray G_x/ProScanArray User Manual
- Test Sample Slides (16-Dye Standard Sensitivity Sample and Geometric Test Sample)
- Workstation/Instrument Private-Network Interface Cable (10BaseT crossover cable)
- Software Registration Card
- Warranty Registration Card
- Extended Warranty Brochure
- Return Materials Authorization Form (RMA Form)

Retain all packaging materials. Additional shipping charges will be assessed if packaging is not available for instrument warranty service.

2.4 Return Materials Procedure

Carefully examine the shipment as soon as possible. If any problems are noted, they must be reported to PerkinElmer Life and Analytical Sciences and the shipping agent within 10 days of receipt of the instrument.

In the unlikely event that it is necessary to return the instrument, obtain the packing list or invoice and contact PerkinElmer. See [Where To Get Help](#) on page 1-4. to obtain a Return Materials Authorization (RMA) number.

Write the RMA number on the Return Materials Authorization Form (which is shipped with the instrument), and attach the form to the outside of the box containing the returned items. This number is used to track the returned instrument and enables us to expedite its processing at our facility.

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3.1 Overview

The ScanArray G_x or ProScanArray instrument should be installed in an area prepared according to Site Requirements on page 1-1.

This chapter contains:

- LED, Connector and Switch Descriptions
- Setting up the Hardware

3.2 LED, Connector, and Switch Descriptions

3.2.1 ScanArray G_x and ProScanArray Front Panel LEDs

ScanArray G_x and ProScanArray instruments without the HT option have the following LEDs:

LED Location	G _x or Without HT	Status	Description
Upper	POWER LED	OFF	No Power
		Green	Power (System ON)
Lower	READY LED	OFF	Initializing Controller (or abnormal state)
		Steady Green	Ready
		Uniform blink (1-1) Green	Acquiring (Scan, Focus, Sensitivity)
		Steady Yellow	Not ready (Initializing Instrument)
		Uniform blink (1-1) Yellow	Error
		Bobbing blink (1-1-3) Yellow	Broken Interlock

3.2.2 ProScanArray HT Front Panel LEDs

ProScanArray instruments with the HT option have the following LEDs:

LED Location	With HT	Status	Description
Upper	POWER LED	OFF	No Power
		Green	Power (System ON)
Middle	READY LED	OFF	Initializing Controller (or abnormal state)
		Steady Green	Ready
		Uniform blink (1-1) Green	Acquiring (Scan, Focus, Sensitivity)
		Steady Yellow	Not ready (Initializing Instrument)
		Uniform blink (1-1) Yellow	Error
		Bobbing blink (1-1-3) Yellow	Broken Interlock
Lower	BUSY LED	OFF	OK to open HT door
		Uniform blink (1-1) Yellow	Slide loaded
		Bobbing blink (1-1-3) Yellow	Manual slide purge needed

3.2.3 ScanArray G_x/ProScanArray Rear Panel Connections

Connector	Description
Power Cord Connection	This connection is for the AC power input required to operate the instrument.
10/100 BaseT Ethernet Connector	This is the network communication and control connection for the instrument. In normal operation, all commands and data pass through this port.
Keyboard and PS2 Mouse Connector	This is a keyboard/mouse input that allows service personnel to perform operating system level processes.
CRT Connector	This is a VGA output that displays the instrument operating system on an external monitor for ScanArray configuration and service.

3.2.4 ScanArray G_x / ProScanArray Side Panel

The instrument side panel contains the following:

Switch	Description
Power Switch	This switch is used to turn the AC power to the instrument ON or OFF.

3.3 Setting up the Hardware

Once the instrument is unpacked, it can be connected to the workstation and/or facility network.

3.3.1 Removing the Shipping Restraint

To remove the shipping restraint from the x-y stage assembly

1. Remove the front cover from the ScanArray G_x, ProScanArray, or ProScanArray HT instrument.
2. Locate the shipping restraint screw. The screw is located in the right-front corner of the x-y stage assembly base.
3. Loosen the screw until the base of the x-y stage assembly moves freely in the vertical direction. Do not remove the screw from the assembly.

To remove the shipping restraint from the autoloader feeder assembly (ProScanArray HT instrument only)

1. Remove the front cover from the ProScanArray HT instrument.
2. Loosen the four feeder guide screws that secure the shipping restraint. Remove the shipping restraint and tighten the feeder guide screws.

3.3.2 Connecting the Network Communications Cables

The ScanArray system uses TCP/IP networking to connect workstations to instruments. There are three approaches to connecting the system:

- If your facility has an existing network to which your workstation is already connected, you can connect the instrument directly to the workstation. Your workstation must have two network interface cards (NICs) to create a “private” network between your workstation and the instrument. See [Connecting the Instrument to a Workstation on the Network](#) on page 3-5.

Most systems are shipped this way because it is easiest to install, can be installed without a network administrator, and can be changed to a “direct-networked” approach later (described in the next section).

- If your facility has an existing network to which your workstation is already connected, and if you prefer, you can connect the instrument directly to your facility network. See [Connecting the Instrument Directly to the Network](#) on page 3-5.

To connect the instrument in this network configuration, you should have provided PerkinElmer with the desired IP address on the installation checklist that was faxed to PerkinElmer before the instrument was shipped. If this information was not provided to PerkinElmer before the instrument was shipped, the instrument will arrive with an IP address of 10.0.0.1, and the instrument must first be connected to the workstation directly. See [Connecting the Instrument to a Workstation on the Network](#) on page 3-5. The instrument network settings may then be changed using the client application. See the ScanArray Express/ProScanArray Express user manual for details.



Note: Before delivery of the ScanArray G_x/ProScanArray system, an order request should have been made to pre-configure the instrument for this network configuration. If the instrument has been pre-configured with a fixed IP address, that address is used in the client application. If the instrument is pre-configured for DHCP, the instrument name is used in the client application.

If the instrument has not been pre-configured for the facility network, the instrument must first be connected to the workstation directly and then have its network settings configured for the facility network. See the ScanArray G_x/ProScanArray user manual.

- If your facility does not have an existing network, or your workstation is not connected to an existing network, you must connect the instrument directly to the workstation. See [Connecting the Instrument Directly to the Workstation](#) on page 3-6.

These approaches are discussed in detail in the appropriate sections below. Select the approach best suited to your site.

3.3.2.1 Connecting the Instrument to a Workstation on the Network

To connect the instrument with a separate connection

1. Make sure two network interface cards (NICs) are installed in the workstation.
2. Connect a 10BaseT crossover cable from the one of the workstation's NICs to the instrument.
3. Connect a 10BaseT straight-through cable from the workstation's other NIC to the facility's network connector, if it is not already connected.



Note: The two NICs will have different IP Addresses. You must set the IP Address of the NIC that is connected to the instrument to be compatible with the instrument.

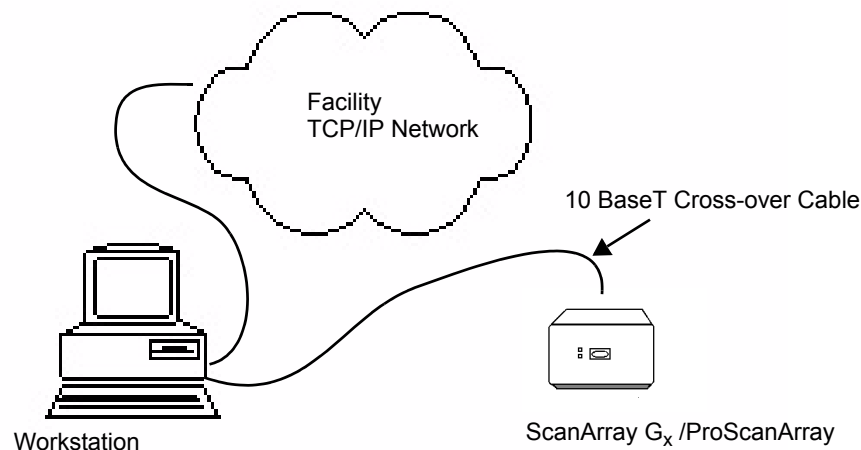


Figure 3–1 Private Network Between the Workstation and Instrument

4. By default, the instrument is configured with the private IP address 10.0.0.1. The workstation NIC must use a compatible network settings to communicate with the instrument.

Typically, for an instrument configured with an IP address of 10.0.0.1, the workstation NIC would be configured with an IP address of 10.0.0.2, a subnet mask of 255.0.0.0 and default gateway of 10.0.0.10, although the default gateway may be left empty.

3.3.2.2 Connecting the Instrument Directly to the Network

To connect the instrument with a separate connection

1. Connect a 10BaseT straight-through cable from the instrument to the facility's network connector.

2. Connect a 10BaseT straight-through cable from the workstation's NIC to the facility's network connector, if not already connected.

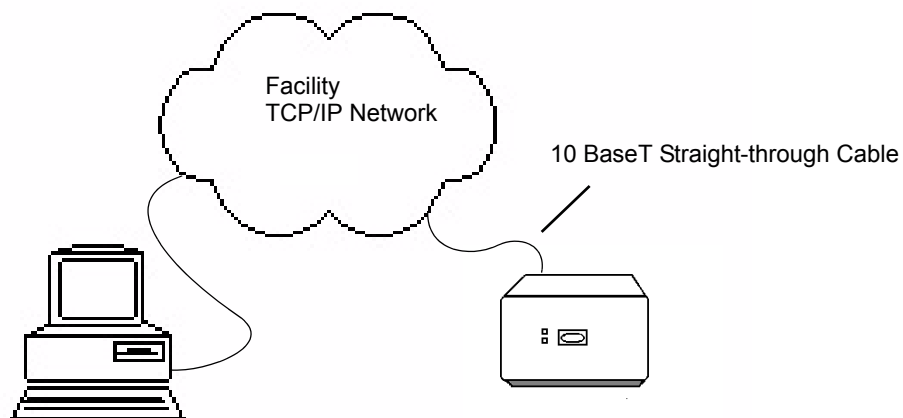


Figure 3–2 The Instrument Connected Directly to the Facility Network

3.3.2.3 Connecting the Instrument Directly to the Workstation

To connect the workstation to the Instrument

1. Connect a 10BaseT crossover cable from the workstation to the instrument.

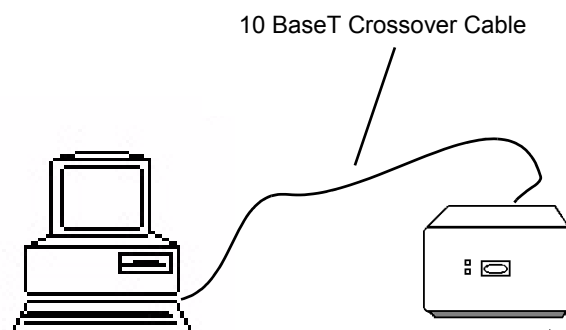


Figure 3–3 Private Network Between the Workstation and the Instrument

2. In this configuration, there is no connection to the facility's network. By default, the instrument is configured with the private network IP address 10.0.0.1. The workstation must use compatible network settings to communicate with the instrument. For example, for compatible settings, the workstation NIC would be configured with an IP address of 10.0.0.2, a subnet mask of 255.0.0.0 and default gateway of 10.0.0.10, although the default gateway may be left empty.

3.3.3 Connecting the Power Cord

Connect the power cords to the instrument, and to the power source. The instrument will automatically configure itself to the line voltage/frequency.

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4.1 Overview

The ScanArray Express or ProScanArray Express application software must be installed on each workstation from which you wish to control your instrument. The versions of the application software and internal instrument software must be the same. This chapter explains how to initially install the application, and/or upgrade the instrument’s internal software.

The ScanArray Express/ProScanArray Express application software is designed to be installed by the user. However, we recommend that someone familiar with Windows 2000/XP administration install the ScanArray Express application software onto the workstation.

4.2 Installing the Application Software

4.2.1 Installation Requirements

The following is a list of items required to install the ScanArray Express/ProScanArray Express application software onto your workstation:

Requirements	Description
Workstation Hardware	See Workstation Requirements on page 1-3.

Requirements	Description
Microsoft Windows Windows® 2000 and Service Pack 4 or Windows® XP and Service Pack 1a	Pre-loaded on the workstation To check the version installed: 1. Log in as a user with administrator privileges. 2. Click Start/Programs/Administrative Tools (Common)/2000 Diagnostics/Version. 3. If the correct version is not installed, it can be purchased from Microsoft. If Service Pack 4 is not installed, it can be downloaded at no charge from the Microsoft website (http://www.microsoft.com/ntworkstation/default.asp).
Ethernet Network Adapter (NIC)	Installed on the workstation with the TCP/IP protocol installed. To check that the TCP/IP protocol is installed: 1. Click Start/Settings/Control Panel/Network. 2. Click on the Protocols tab and verify that the TCP/IP protocol is installed. 3. If it is not, click Add and install it.
Application Software	This software is available on the CD-ROM delivered with your instrument.
The IP address of your Instrument	The IP address is found on the label inside the instrument's front cover.

4.2.2 Installing the Application Software on Your Workstation

Follow this procedure for initial installation of ScanArray Express or ProScanArray Express application software on your workstation.

To install the application software

1. Close all programs running on your workstation.
2. Restart the computer and log on as a user with **Administrator Privileges**.
3. Insert the ScanArray Express/ProScanArray Express Microarray Analysis Software Version 3.0 CD-ROM into the CD-ROM drive of your computer.
4. If the installation does not start automatically, use Explorer or the **My Computer** icon to find the **CD-ROM** drive. Click on the **CD-ROM** drive and find the program **Setup.exe**. Double-click on the program name or icon.
5. You will be prompted to accept the license agreement.
6. Select the installation location. We recommend installing the application software in the largest hardware partition on your workstation.

7. Enter the IP address or instrument name for your ScanArray G_x/ProScanArray instrument when prompted. The instrument name will appear in the application settings of the ScanArray client software.

Installation of the Express application software is complete.

4.2.2.1 Setting the IP Address of the Instrument

If you have provided PerkinElmer with the desired IP address via the installation checklist form that was faxed to PerkinElmer before the system was shipped, that address has been used in the instrument. The address can be found on a label under the front panel of the instrument.

If you have not provided an address, the address is set as 10.0.0.1. If you want to change the IP address, see the ScanArray G_x/ProScanArray user manual.

4.2.2.2 Setting up Batch E-mail Notification

If you wish to use the e-mail notification feature of batch set processing on a ProScanArray HT, perform the procedure in Appendix A.

4.3 Upgrading the ScanArray Express Software

Follow the instructions in this section if you are upgrading from ScanArray Express version 2.x to version 3.0.

To upgrade to Version 3.0

1. Verify that the current application is running and communicating with the instrument.
2. Stop the ScanArray Express application.
3. Insert the ScanArray Express/ProScanArray Express software CD into the CD-ROM drive. If the Setup program starts automatically, go to step 5.
4. Start Windows Explorer and find the Setup.exe file in the main folder on the CD drive. Start Setup by double clicking on **Setup.exe**.
5. Select the **Repair** option on first screen.
6. After completing the client installation, start Windows Explorer and find the Instrument folder under the main CD folder. There will be a Setup.exe in this folder also. Start this Setup by double clicking **Setup.exe**.
7. The setup for the instrument only requires the instrument name or IP address. If the setup program finds this information on the client, you will only have to verify the name or IP address. If this information is not found or is incorrect, you will need to enter the instrument name or IP address.

8. The setup will display DOS windows as it communicates with the instrument and exit when complete.
9. Start the ScanArray Express/ProScanArray Express application.

Chapter Summary

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Testing the System 5-1

5.1 Overview

These tests should be performed when the ScanArray G_x /ProScanArray Microarray Analysis System is installed for the first time, whenever you move the instrument, and whenever you upgrade the application software. These test procedures verify that all components are functioning properly and ensure that the system collects, displays and stores data accurately.

5.2 Testing the System

Before running any tests, make sure that all cables are connected properly.

5.2.1 High Throughput (HT Autoloader) Test

To test the HT Autoloader

1. Load the High Throughput (HT) cassette with 20 slides supplied from the customer that conform to the HT slide specification.
2. Align the slides in the cassette by placing the cassette on a flat surface, with the arrow on the top of the cassette pointing up. Manually push the ends of the slides down until they are fully seated in the cassette.
3. Lift the instrument cassette door and insert the cassette into the elevator assembly. The arrow on the cassette should be pointing to the back of the instrument. Close the cassette door. Listen for the elevator to reset and wait for the *Busy* LED on the front panel to stop blinking.
4. On the ProScanArray Express *Main Window*, click **Configure** in the *Configure & File* group. In the *Configure* menu that opens, click **Service Features**, then **Calibrate**. Enter the service password.

5. On the autoloader tab, enter “2” for the number of burn-in cycles. Click **Start** to start the process.
6. The instrument must load and unload the 2 cassettes without any failures to pass this test. Ensure that the slides are not hitting the sample holder rails as they enter the sample holder.

5.2.2 Sample Tests

Two test samples are provided with the system:

Test Samples	Use
16DyesStd Sample	Used for verifying sensitivity and spectral performance
Geometric Sample	Used to verify scan geometry

To start the ScanArray G_x/ProScanArray

1. Turn on the instrument. The *Power* LED (top LED on the front panel) should be green. The *Ready* LED (next lower LED on the front panel) will be off, then turn yellow during initialization. When the initialization is successful, the *Ready* LED will be a steady green. This process takes approximately two (2) minutes.
 - If the *Ready* LED is yellow, not illuminated or steadily flashes on and off, turn the power off and back on again.
 - If the *Ready* LED flashes yellow in a cycle of two (2) short signals followed by a long signal, the front cover is not seated properly. Remove and replace the front cover.

If the instrument includes the HT option, the third LED, called the *Busy* LED, flashes during the initialization period. See [ProScanArray HT Front Panel LEDs](#) on page 3-2.

2. On the workstation, click the ScanArray Express icon to open the application.
3. When the connection is made to the instrument, the *Instrument Status* button on the *Main Window* displays bright green and says connected. Click the *Diagnostics* tab and ensure that all tests passed successfully.

5.2.2.1 16DyesStd Sample Test

Use this test to verify sensitivity and spectral performance.

To run the 16DyesStd test

1. Place the **16DyesStd slide** sample into the slide holder of the ScanArray G_x or ProScanArray instrument, or into slot 1 of the ProScanArray HT autoloader cassette and insert the cassette into the autoloader.
2. Click **Scan** on the *Main Window*.

3. Select **Run a scan protocol** for the ScanArray G_x or ProScanArray, or **Run a batch set** for the ProScanArray HT.
4. Click the button under scan protocol to open the *Select a Protocol* window, or click a button under the batch set to open the *Select a Batch Set* window.
5. Select **16DyesStd**, the protocol/batch set to be used in this test, and click **OK**.
6. Click **Start** to start scanning the image. One image window is displayed for each laser in the system. Use the rainbow palette when viewing the images. White denotes saturation in the palette used in Figure 5-1.

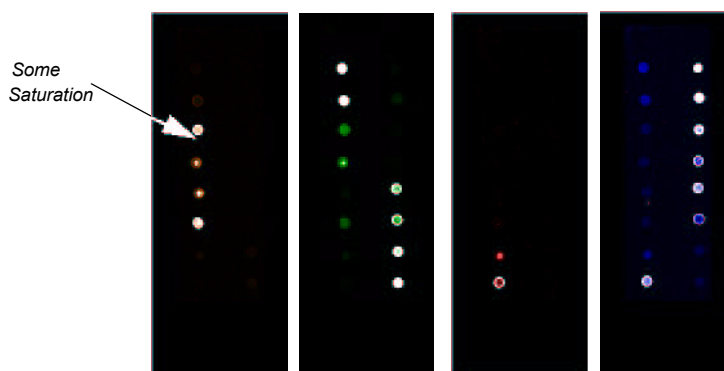


Figure 5-1 16DyesStd Sample - Four Color Test Images

7. The following are problems that may occur during the test and the actions to take should they occur:

Problem	Action
No data present in the image	Contact PerkinElmer Life and Analytical Sciences Customer Service. See Where To Get Help on page 1-4.
An image is present, but the signals are not sufficiently strong.	Focus the instrument on one spot. Change the focus settings for all fluorophores to match that one.
An image does not exist for each laser.	The protocol may not include a fluorophore for each laser. Modify the protocol, adding the appropriate fluorophores. Contact PerkinElmer Life and Analytical Sciences to obtain the correct fluorophores. See Where To Get Help on page 1-4.

5.2.2.2 Geometric Sample Test

This sample includes resolution bar targets, four fields of 1024 spots with 100 μm diameter on 200 μm spacing, and geometry targets to verify image size and spatial linearity. It is also used to create full field images using each of the installed lasers in the instrument.

To run the Geometric slide test

1. Place the **Geometric slide** sample into the slide holder of the ScanArray G_x or ProScanArray instrument, or into slot 1 of the ProScanArray HT autoloader cassette and insert the cassette into the autoloader.
2. Click **Scan** on the *Main Window*.
3. Select **Run a scan protocol** for the ScanArray G_x or ProScanArray, or **Run a batch set** for the ProScanArray HT.
4. Click the button under scan protocol to open the *Select a Protocol* window, or click a button under the batch set to open the *Select a Batch Set* window.
5. Select **geometric**, the protocol/batch set to be used in this test, and click **OK**.
6. Click **Start** to start scanning the image.
7. Verify that you see a single line on both the left and right borders of the slide as well as a single line across the top border of the slide. Verify the acquired image is square to the acquisition window.
8. Look closely at the four sections of dot arrays. Examine the dots for the absence of stretching or the compressing of dot image spacing.
9. Ensure you are still viewing the composite image and zoom fully.
10. Look closely at the array of dots sections and verify that channel to channel registration (dot overlay) is less than one pixel at 10 μm .

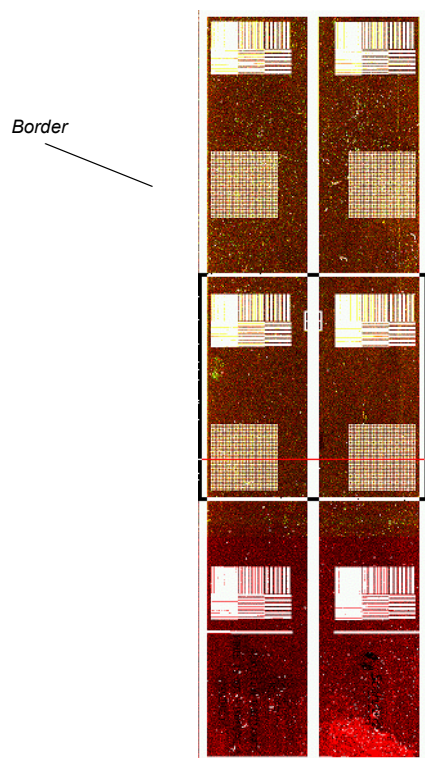


Figure 5-2 Geometric Sample Test Pattern

Problem	Action
A border is not present around the perimeter of the sample.	The image is not centered on the screen. Refer to the ScanArray G _x /ProScanArray User Manual or contact PerkinElmer Life and Analytical Sciences. See Where To Get Help on page 1-4.
Bi-directional jitter is greater than ± 1.5 pixels.	Contact PerkinElmer Life and Analytical Sciences. See Where To Get Help on page 1-4.
Channel to channel registration < ± 1 pixel	Contact PerkinElmer Life and Analytical Sciences. See Where To Get Help on page 1-4.

A.1 Overview

E-mail setup is available only on ProScanArray HT systems. If you have an HT, but do not have a facility network connection (see section 3.3.2 on page 3-4) you do not need to review this appendix.

You must have an outgoing mail server defined in order for ProScanArray Express to send e-mail notifications when a batch set completes.

To define a server

1. Start *Outlook Express* either from its desktop icon or by clicking **Start/Programs/Outlook Express**.
2. Click **Tools/Accounts** to set up the new account.
3. Select the **Mail** tab.
4. Click **Add/Mail** and follow the directions in the wizard that opens.
5. On the first page, enter your **Name** and click **Next**.
6. On the next page, select **I already have an email address that I'd like to use**. Enter an email address for this PC and click **Next**.

Note: You must enter something here, even if this PC does not get incoming mail.

7. On the next page, select **IMAP** where it says **My incoming mail server is an IMAP Server**. Set **Incoming mail (Pop3, IMAP, or HTTP) server** to your server name. Set **Outgoing Mail (SMTP) server** to your server name.

Note: you must enter something for incoming server even though the application software does not require it.

Click **Next**.

8. On the next page, enter your **Account Name** and **Password**. Click **Next**.
9. Click **Finish**.

Glossary

Term (Page)	Definition
Administrator	The person in your organization that manages the facility network and/or sets up your Windows 2000 or Windows XP Professional workstation.
Application Software	Software designed to perform a specific function directly for the user. The ScanArray Express application software communicates with the embedded instrument software.
Bi-directional Jitter	Jitter is the deviation in or displacement of some aspect of the pulses in a high-frequency digital signal. The deviation can be expressed in terms of amplitude, phase timing or the width of the signal pulse. When the lines and dots in a scanned image appear jagged there is bi-directional jitter. The amount of allowable jitter is less than ± 1 pixel. To adjust jitter, contact PerkinElmer Life and Analytical Sciences Support.
Crossover Cable	Cable used to directly connect the instrument and workstation through two Network Interface Cards (NICs). NICs have dedicated send and receive lines. A crossover cable connects from the send line of one NIC to the receive line of the other NIC.
Ethernet	Ethernet is the most widely installed Local Area Network (LAN). A LAN is a network of interconnected workstations sharing the resources of a single processor or server within a relatively small geographic area (i.e. an office building). Ethernet is a set of hardware and signaling standards used for LANs. The most commonly installed systems are 10/100 BaseT.
Facility Network	A facility network links all of the workstations and hubs together, allowing them to communicate and transfer data.
Gateway Address	A gateway is a network point that acts as an entrance to another network. It is used to control traffic on your facility's network. A gateway address is the address of a particular gateway on a network.
Geometric Sample Slide	A test sample made of photoresist printed on glass, it is supplied with a new system. When scanned, it displays geometric images on your workstation monitor. It is used to test image geometry, jitter, and basic function.
Instrument Software	This is the internal instrument software necessary to operate the instrument.
IP Address	Network address of a workstation or network. IP Addresses are always in the form of 4 number fields separated by dots. Each number field represents 1 byte. Values can be in the range of 0-255. The numbers on the left of the string define the network, the numbers on the right define the individual workstation or Network Interface Card (NIC).

Term (Page)	Definition
NIC - Network Interface Card	A network interface card (NIC) is a computer/workstation circuit board or card that is installed in a computer so that it can be connected to a network. Workstations on local area networks (LANs) typically contain a network interface card specifically designed for the LAN transmission technology, such as Ethernet.
Pixel	Images are made up of a 2-dimensional array of numbers called picture elements, or pixels. The resolution of an image is determined by the size of pixels. For example, 5µm pixels is higher resolution than 10µm.
PMT (Photomultiplier Tube) Board	The PMT absorbs low level fluorescence light and converts it to an electrical signal. The signal is amplified, filtered, and converted to a digital value for each pixel.
Regedit	In Microsoft Windows 95, Windows 98, Windows 2000, and Windows XP operating systems, the Registry is a single place for keeping information such as: what hardware is attached, what system options have been selected, how computer memory is set up, and what application programs are to be present when the operating system is started. Regedit is an editing program used to update installed and uninstalled application programs. It is also used to update the Registry file. Always back up the Registry before using Regedit.
Saturation	A fluorescence signal that is strong enough to drive the PMT detector to its full-scale maximum voltage and output signal is said to cause saturation. Lowering the PMT Gain or Laser Power setting will avoid this.
Subnet Mask	Also called sub-networks, they are used to partition network addresses for efficiency and security. Subnet masks work by “masking” some number of the less significant address bits on all of the workstations in the subnetwork.
TCP/IP	Transmission Control Protocol/Internet Protocol is the basic communication language or protocol of the internet. It is also used in private networks called intranets and extranets. TCP manages the disassembling of a message or file into smaller packets that are transmitted over the internet and received by a TCP layer that reassembles the packets to the original message. The IP layer handles the address part of each packet so that it gets to the right destination.

Term (Page)**Definition**

Virtual Memory

The concept of using hard disk space to extend the amount of RAM available to a program. Windows 2000 and Windows XP support virtual memory and allows you to specify the amount of hard disk space to use as virtual memory. Windows 2000/XP also manages the swapping of data from RAM and the hard disk space so that it appears to your application program(s) as though the virtual memory is RAM. This reduces the amount of physical RAM required.

ScanArray Express/ProScanArray Express uses RAM to save image data. The following chart provides a guide for the amount of additional virtual memory to allocate on your workstation when running other applications concurrently with ScanArray Express/ProScanArray Express.

#Scans/ Acquisition	Scan Resolution	Additional Virtual Memory Required
1	5 microns	185 MB
1	10 microns	45 MB
2	5 microns	245 MB
2	10 microns	60 MB
3	5 microns	305 MB
3	10 microns	75MB
4	5 microns	365 MB
4	10 microns	90 MB
5	5 microns	425 MB
5	10 microns	105 MB

To change Virtual Memory:

1. Login as Administrator.
 2. Select Start/Settings/System.
 3. Select the Performance tab.
 4. Click the Virtual Memory **Change** button.
-

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