SeqStudio™ Genetic Analyzer
GETTING STARTED GUIDE

Create and run plate setups, monitor runs, and view results

for use with:
SeqStudio™ Data Collection Software v1.1.4
SeqStudio™ Genetic Analyzer Cartridge (Cat. No. A33671)
SeqStudio™ Genetic Analyzer Cartridge v2 (Cat. No. A41331)
SeqStudio™ Plate Manager
SeqStudio™ Remote Monitoring App

Publication Number MAN0017464
Revision B.0
Manufacturer: Life Technologies Holdings Pte Ltd | Block 33 | Marsiling Industrial Estate Road 3 | #07-06, Singapore 739256

Products:
- SeqStudio™ Genetic Analyzer
- SeqStudio™ Data Collection Software
- SeqStudio™ Plate Manager (desktop)
- SeqStudio™ Genetic Analyzer Cartridge
- SeqStudio™ Genetic Analyzer Cartridge v2

Manufacturer: Life Technologies Corporation | 200 Oyster Point Blvd | South San Francisco, CA 94080 | USA

Products:
- SeqStudio™ Remote Monitoring App

Manufacturer: Life Technologies Corporation | 35 Wiggins Avenue | Bedford, MA 01730

Products:
- SeqStudio™ Genetic Analyzer Cathode Buffer Container

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Revision history: Pub. No. MAN0017464

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<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
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</table>
| B.0      | 9 May 2019 | - Added expiration information for the SeqStudio™ Genetic Analyzer Cartridge v2.  
- Added information on Quality Values (QVs).  
- Updated the manufacturer of record.  
- Changed "Thermo Fisher Cloud" to "Connect cloud-based platform".  
- Added the Microsatellite Analysis Software to the list of secondary analysis software apps. |

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Product description

The Applied Biosystems™ SeqStudio™ Genetic Analyzer with SeqStudio™ Data Collection Software is a fluorescent dye-labeled genetic analysis system using capillary electrophoresis technology. It enables both sequencing and fragment analysis applications without the need to switch polymer type or capillary array length.

You can use the data collection software on the instrument to create and run plate setups, monitor runs, and view results. You can also use the optional SeqStudio™ Plate Manager and Remote Monitoring App to perform some of these functions.

For complete information on using the instrument and software, see SeqStudio™ Genetic Analyzer Instrument and Software User Guide (Pub. No. MAN0016138).
Workflow

Prepare the samples and the instrument

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Prepare the instrument
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Prepare and load the plate or tubes
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Create a plate setup

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<thead>
<tr>
<th>SeqStudio™ Plate Manager</th>
<th>SeqStudio™ Genetic Analyzer</th>
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</thead>
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<tr>
<td>Access the Plate Manager</td>
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<tr>
<td>Create or open a plate setup PSM file</td>
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<td></td>
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<tr>
<td>Enter plate properties</td>
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<td>page 17</td>
<td></td>
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<td>▼</td>
<td></td>
</tr>
<tr>
<td>Assign wells: Sample and run information</td>
<td></td>
</tr>
<tr>
<td>page 18</td>
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<tr>
<td>▼</td>
<td></td>
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<tr>
<td>Save a plate setup in the Plate Manager</td>
<td></td>
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<td>▼</td>
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<tr>
<td>Sign in</td>
<td></td>
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<td>page 19</td>
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<td>▼</td>
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</tr>
<tr>
<td>Create or import a plate setup</td>
<td></td>
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<tr>
<td>page 21</td>
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<td>▼</td>
<td></td>
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<tr>
<td>Enter plate properties</td>
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<tr>
<td>page 21</td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td></td>
</tr>
<tr>
<td>Assign wells: run module, size standard, and dye set</td>
<td></td>
</tr>
<tr>
<td>page 22</td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td></td>
</tr>
<tr>
<td>Assign wells: sample name, sample type, and custom fields</td>
<td></td>
</tr>
<tr>
<td>page 23</td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td></td>
</tr>
<tr>
<td>Save and/or run a plate setup</td>
<td></td>
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<tr>
<td>page 23</td>
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<td>▼</td>
<td></td>
</tr>
<tr>
<td>(Optional) Set up for auto export of sample data files (AB1 and FSA)</td>
<td></td>
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<tr>
<td>page 20</td>
<td></td>
</tr>
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</table>
Start a run

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▼

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Monitor a run

**Connect cloud-based platform**  
(formerly Thermo Fisher Cloud)

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**SeqStudio™ Genetic Analyzer**

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Prepare the samples

Sample preparation guidelines

<table>
<thead>
<tr>
<th>Item</th>
<th>Guidelines</th>
</tr>
</thead>
</table>
| Plates and tubes | • Use MicroAmp™ Optical 96-Well Reaction Plate or MicroAmp™ Reaction Tubes with a tray and retainer set.  
                  |   IMPORTANT! Fast plates are not compatible with the SeqStudio™ Genetic Analyzer. Fast plates will damage the cartridge.  
                  |   • Use the appropriate septa for plates and tubes.  
### Fragment analysis sample preparation

<table>
<thead>
<tr>
<th>Item</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prepare the samples as recommended by the kit for fragment analysis.</td>
<td></td>
</tr>
<tr>
<td>• Use a 10–20 µL sample volume.</td>
<td></td>
</tr>
<tr>
<td>• Ensure that Hi-Di™ Formamide is fresh.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Hi-Di™ Formamide should not undergo more than two freeze-thaw cycles (one to aliquot and one for use).</td>
</tr>
<tr>
<td></td>
<td>– Use the same day after thawing.</td>
</tr>
<tr>
<td>• For more information, see DNA Fragment Analysis by Capillary Electrophoresis User Guide (Pub. No. 4474504).</td>
<td></td>
</tr>
</tbody>
</table>

### Sequence analysis sample preparation

<table>
<thead>
<tr>
<th>Item</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prepare sequencing reactions according to kit instructions, and purify the extension products with ethanol precipitation, spin columns, or the BigDye X Terminator™ Purification Kit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– If ethanol precipitation or spin columns are used, dry the samples in a vacuum centrifuge without heat or at low heat for 10–15 minutes or until dry.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Do not over dry the samples.</td>
</tr>
<tr>
<td></td>
<td>– Resuspend in 10–20 µL of Hi-Di™ Formamide.</td>
</tr>
<tr>
<td>• Use a 65 µL or 130 µL sample volume for samples that are prepared with the BigDye X Terminator™ Purification Kit. See BigDye X Terminator™ Purification Kit Protocol (Pub. No. 4374408).</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>IMPORTANT!</strong> Use the appropriate run modules for samples prepared with BigDye X Terminator™ Purification Kit.</td>
</tr>
<tr>
<td>• Use a 10–20 µL sample volume for samples that are prepared with Hi-Di™ Formamide.</td>
<td></td>
</tr>
<tr>
<td>• Ensure that Hi-Di™ Formamide is fresh.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Hi-Di™ Formamide should not undergo more than two freeze-thaw cycles (one to aliquot and one for use).</td>
</tr>
<tr>
<td></td>
<td>– Use the same day after thawing.</td>
</tr>
<tr>
<td>• Do not resuspend samples in water, which can decrease sample stability.</td>
<td></td>
</tr>
<tr>
<td>• For more information, see DNA Sequencing by Capillary Electrophoresis Chemistry Guide Second Edition (Pub. No. 4305080).</td>
<td></td>
</tr>
</tbody>
</table>
Plate layout and loading guidelines

- Samples are stable for 16–24 hours on the instrument.
- Load a maximum of 48 samples per plate if you use a long run module (Long Seq, Long Seq BDX, and Long Frag Analysis). The long fragment analysis run modules can take >24 hours to run an entire 96-well plate.
- Add samples to plates in columns. The default injection order is: A1–D1, E1–H1, A2–D2, E2–H2,...A12–D12, E12–H12.

![](image)

1. Injection group 1, wells A1–D1
2. Injection group 2, wells E1–H1
3. Injection group 3, wells A2–D2
4. Injection group 4, wells E2–H2

Prepare the instrument

Power on the instrument

**IMPORTANT!** Do not power on the instrument until it has been installed and set up by a Thermo Fisher Scientific representative.

Press the On/Off switch on the rear panel.

Check the consumables status

1. Touch **Settings** > **Consumable status**.
2. Ensure that:
   - Sufficient consumables are installed for the run.
   - Installed consumables have not exceeded their expiry date.

<table>
<thead>
<tr>
<th>Display</th>
<th>Cartridge</th>
<th>Cathode buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Not installed on the instrument.</td>
<td>Not installed on the instrument.</td>
</tr>
<tr>
<td>White</td>
<td>OK for use.</td>
<td>OK for use.</td>
</tr>
</tbody>
</table>
| Yellow  | OK for use, but:
- It will exceed the manufacturer’s expiry date within 2 weeks* or
- It will exceed the maximum number of days allowed on the instrument within 2 weeks\(^{[1]}\) | OK for use, but:
- It will exceed the manufacturer’s expiry date within 2 days* or
- It will exceed the maximum number of days allowed on the instrument (14 days) within 2 days |
Chapter 2 Prepare the samples and the instrument

Prepare the instrument

### Display

<table>
<thead>
<tr>
<th>Display</th>
<th>Cartridge</th>
<th>Cathode buffer</th>
</tr>
</thead>
</table>
| Red     | Expired because either of the following conditions have occurred:  
- It has exceeded the manufacturer’s expiry date or  
- It has exceeded the maximum number of days allowed on the instrument[^1] | The cartridge is expired.  
- It has exceeded the manufacturer’s expiry date  
- It has been installed on the instrument for >14 days |

[^1]: The maximum number of days allowed on the instrument is 120 days for the SeqStudio™ Genetic Analyzer Cartridge (Cat. No. A33671) and 180 days for the SeqStudio™ Genetic Analyzer Cartridge v2 (Cat. No. A41331). For more information, see SeqStudio™ Genetic Analyzer Instrument and Software User Guide.

3. **Touch Close**, then touch 🌒.

**Load the CBC, the sample plate, and the cartridge**

The **Eject plate** command is disabled for a few minutes after you insert a cartridge. If you are loading the CBC, sample plate, and cartridge at the same time, you can save time by loading the CBC and sample plate before you insert the cartridge.

For information on loading the individual components, see:
- “Prepare and load the plate or tubes” on page 13
- *SeqStudio™ Genetic Analyzer Instrument and Software User Guide*

In the home screen:

1. **Touch 🌒**, touch 📦 **Eject plate**, then open the instrument door when prompted.

2. Press the release button on the autosampler to open the lid, then remove the CBC.

![Diagram](image)

1. Release button
2. Location of CBC

3. Check the buffer fill level:
   a. Remove the CBC.
b. Ensure that the level of buffer is above the fill line.
   If the buffer is at or below the fill line, see SeqStudio™ Genetic Analyzer Instrument and Software User Guide.
   If the buffer is above the fill line, reinsert the CBC.

4. Place the plate or tube assembly firmly in the autosampler.

5. Close the autosampler lid: Press down on the center of the lid or press down on both sides of the lid with equal pressure until the lid clicks shut.

6. Touch Retract plate, then close the instrument door.

7. Touch Eject cartridge, then open the instrument door when prompted.

8. Hold the cartridge at the hand hold above the capillaries, then pull to remove it from the instrument.


10. Close the instrument door.

Prepare and load the plate or tubes

Prepare the plate  On a clean and level surface:

1. Pipet the sample into the plate.

2. Place a septum onto the plate.
   a. Align the holes of the septa with the wells.
   b. Press gently until the septum is inserted into position in each well.

3. Centrifuge the plate assembly briefly to collect the contents at the bottom of each well.
   Centrifuge the plate assembly again if the contents are not at the bottom of the wells.
Load the plate onto the instrument immediately or keep the plate on ice and protected from light until it is loaded onto the instrument.

**Prepare the tubes**

On a clean and level surface:

1. Place the tubes in the MicroAmp™ 96-well tray, then place the tray retainer over the tubes.

2. Pipet the sample into the tubes.

3. Place a septum on the tubes.
   
   a. Align the holes of the septa with the tubes.
   
   b. Press gently until the septum are inserted into position in each tube.

4. Centrifuge the tube assembly briefly to collect the contents at the bottom of each tube.
   
   Centrifuge the tube assembly again if the contents are not at the bottom of the tubes.

Load the tube assembly onto the instrument immediately or keep the tubes on ice and protected from light until they are loaded onto the instrument.

**Load the plate or the tube assembly**

In the home screen:

1. Touch 🔄, touch ✅ Eject plate, then open the instrument door when prompted.

2. Press the release button on the autosampler to open the lid.

3. Place the plate or tube assembly firmly in the autosampler.

4. Check the buffer fill level:
   
   a. Remove the CBC.

   b. Ensure that the level of buffer is above the fill line.
   
   If the buffer is at or below the fill line, see *SeqStudio™ Genetic Analyzer Instrument and Software User Guide*.
   
   If the buffer is above the fill line, reinsert the CBC.

5. Place the plate or tube assembly firmly in the autosampler.
6. Close the autosampler lid: Press down on the center of the lid or press down on both sides of the lid with equal pressure until the lid clicks shut.

7. Touch Retract plate, then close the instrument door.

Unload the plate or the tube assembly

When the run is complete:

1. Touch \( \text{Open} \), touch \( \rightarrow \) Eject plate, then open the instrument door when prompted.

2. Press the release button on the autosampler to open the lid.

3. Remove the plate or tube assembly.

4. Close the autosampler lid: Press down on the center of the lid or press down on both sides of the lid with equal pressure until the lid clicks shut.

5. Touch Retract plate, then close the instrument door.
Set up a plate using default settings
(Plate Manager)

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Access the Plate Manager

- To access the Plate Manager from your Connect cloud-based platform account:
  a. Sign in to thermofisher.com/connect.
  b. In the My apps list, select SeqStudio™ Plate Manager.
     If SeqStudio™ Plate Manager is not listed under My apps, scroll down in the All apps list.

- To access the Plate Manager from the desktop:
  a. Select Start › All Programs › Applied Biosystems › Plate Manager › Plate Manager.
Create or open a plate setup PSM file

1. Click to display the home screen.

2. In the Plate setup screen, create or open a plate setup:
   If you are running the Plate Manager on the Connect cloud-based platform:

<table>
<thead>
<tr>
<th>Click...</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Create a new plate setup or to create a plate setup from a template.</td>
</tr>
<tr>
<td>Open from cloud</td>
<td>Open a plate setup that you created in Plate Manager on your Connect cloud-based platform account.</td>
</tr>
<tr>
<td>Open from local drive</td>
<td>Open a plate setup that you created in Plate Manager on your computer (PSM file) or in another application (CSV file).</td>
</tr>
</tbody>
</table>

   If you are running the Plate Manager on the desktop:

<table>
<thead>
<tr>
<th>Click...</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Create a new plate setup or to create a plate setup from a template.</td>
</tr>
<tr>
<td>Open</td>
<td>Open a plate setup that you created in Plate Manager (PSM file) or in another application (CSV file).</td>
</tr>
</tbody>
</table>

Enter plate properties

In the Properties tab:

1. (Optional) Edit the Plate name, Barcode, or Owner.

2. Select an option in the Plate setup security field.
   - **Hidden** — Prevents other users from using or accessing the plate on the instrument. The last settings specified by the signed-in user are applied when a Hidden plate setup is opened or imported on the instrument.
   - **Shared** — Allows other users to access and edit the plate on the instrument. Analysis settings saved in the plate setup.

3. Select the Application type: Sequencing, Fragment analysis, or Mixed plate (sequencing & fragment).
   A mixed plate allows you to specify fragment analysis and sequence analysis settings on the same plate.

4. (Optional for Sequencing or Mixed plate) Select the I am analyzing my data with Sanger variant analysis software checkbox.
   The amplicon and specimen fields are added to the Plate view, and the attributes are automatically added to the default file name conventions (see the software help for more information).
This feature is useful in secondary analysis software applications that organize files based on amplicon and specimen information (Connect cloud-based platform applications: Variant Analysis (VA) module, Next-generation Confirmation (NGC) module; desktop applications: SeqScape™ Software, Variant Reporter™ Software, Minor Variant Finder Software).

5. Click Next.

**Assign wells: Sample and run information**

1. In the Plate screen, click a well to select an injection group, or Shift+click to select multiple injection groups. Each set of 4 wells on the plate is referred to as an injection group. The default injection order is: A1-D1, E1-H1, A2-D2, E2-H2....A12-D12, E12-H12.

2. If you are creating a mixed plate, select the Application type for the selected injection groups.

3. *(Fragment analysis only)* Select the Sample type for each well: Allelic ladder, Negative control, Positive control, or Sample.

4. *(Fragment analysis only)* Select a size standard for the selected injection groups.

5. Select a Dye set for the selected injection groups.

6. Select a Run module for the selected injection groups.

7. Click Next and proceed to “Save a plate setup in the Plate Manager” on page 18.

**Save a plate setup in the Plate Manager**

After you assign wells to a plate setup:

1. In the Save the plate setup dialog box, modify any settings as needed.

2. Click Save.

**Note:** The Monitor my run button is available only in the Connect cloud-based platform app.

<table>
<thead>
<tr>
<th>If you are running the Plate Manager on the...</th>
<th>The plate setup is saved as a...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect cloud-based platform</td>
<td>Plate setup that you can open from the Connect cloud-based platform and run on the instrument.</td>
</tr>
<tr>
<td>Desktop</td>
<td>PSM file that you can open from a network drive or a USB and run on the instrument.</td>
</tr>
</tbody>
</table>
Set up a plate using default settings (instrument)

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- Enter plate properties .............................................. 21
- Assign wells: run module, size standard, and dye set ...................... 22
- Assign wells: sample name, sample type, and custom fields .............. 23
- Save and/or run a plate setup ........................................ 23

Sign in

1. If another user is signed in, touch 🫒 in the home screen, then touch Sign out.
2. In the Sign in screen, touch Sign In, then select your instrument profile and enter your PIN.
**Optional** Set up for auto export of sample data files (AB1 and FSA)

By default, sample data files (AB1 and FSA) are saved to the instrument. When you create a plate setup, you can also set the **Save location** to Cloud, Network Drive, and/or USB.

![Save location](image)

When the plate is run, the instrument automatically exports the sample data files to the save locations.

Before you can select these save locations, set up the instrument:

- Appendix A, “Link the instrument to your Connect cloud-based platform account —detailed instructions”
- Connect to a network drive (see *SeqStudio™ Genetic Analyzer Instrument and Software User Guide*)
- Insert a USB into the USB port on the front of the instrument
Create or import a plate setup

In the home screen:

1. Touch **Set up run**.

2. Create, open, or import a plate setup:

<table>
<thead>
<tr>
<th>To</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a new plate setup</td>
<td>1. Touch <strong>Create new plate setup</strong>.  2. See “Enter plate properties” on page 21.</td>
</tr>
<tr>
<td>Open an existing plate setup on the instrument</td>
<td>1. Touch <strong>My Instrument</strong>.  2. Touch:  • <strong>My plates</strong> folder to select hidden plates that you have created.  • <strong>Public</strong> folder to select (1) shared plates that were created by any user or (2) any plates that were created by a Guest user.</td>
</tr>
<tr>
<td>Import a plate setup</td>
<td>1. Touch <strong>Cloud</strong>, <strong>USB</strong>, or <strong>Network Drive</strong>.  2. Select:  • <strong>PSM</strong> file  • <strong>CSV</strong> file</td>
</tr>
</tbody>
</table>

Export or delete a plate setup (PSM file)

1. Touch **Set up run**, then touch **My instrument**.

2. Touch **Manage** at the bottom left of the screen.

3. Touch a plate, then touch **Export** or **Delete**.

4. If you touched:  • **Export**, select a storage location, then touch **Export**.  • **Delete**, then touch **Yes** to delete the plate setup.

Enter plate properties

In the **Plate properties** screen:

1. Touch the **Plate name** field, then enter the plate name.

2. Touch **Applications**, then select **Sequencing**, **Fragment analysis**, or **Mixed plate** (allows you to specify fragment analysis and sequence analysis settings on the same plate).

3. *(Optional)* Touch the **Barcode** field, then use a scanner to scan the barcode.

4. *(Optional)* Touch the **Owner** field, then enter the plate owner name.
5. *(Optional)* Touch **More options** to check the **Plate setup security**, **Analysis settings**, and **File name convention**.

6. If you want to save the plate to a location in addition to the instrument, touch **Save location**, then select a location for the run results.
   The plate setup is always saved to the instrument. In addition, you can save the plate to the Connect cloud-based platform, a network, or a USB, which will auto export the sample data files.

   **IMPORTANT!** To view analyzed data in the Remote Monitoring App on the Connect cloud-based platform, you must save the plate setup to the Connect cloud-based platform.

   **Note:** If you save a plate setup to the Connect cloud-based platform, a network, or a USB, then access the plate setup at a later time when the instrument is not linked to the Connect cloud-based platform, a network, or a USB, the save location is displayed with strikethrough text.

7. *(Optional for Sequencing or Mixed plate)* Touch the **I am analyzing my data with Sanger variant analysis software** checkbox.
   The amplicon and specimen fields are added to the **Plate view**, and the attributes are automatically added to the default file name conventions (see the software help for more information). This feature is useful in secondary analysis software applications that organize files based on amplicon and specimen information (Connect cloud-based platform applications: Variant Analysis (VA) module, Next-generation Confirmation (NGC) module; desktop applications: SeqScape™ Software, Variant Reporter™ Software, Minor Variant Finder Software).

---

**Assign wells: run module, size standard, and dye set**

In the **Plate properties** screen:

1. At the top-right of the screen, touch **Plate**.
   Each set of 4 wells on the plate is referred to as an injection group.
   An injection group is identified by the first well in the set of 4 (for example, Injection Group A1 contains wells A1–D1).
   The default injection order is: A1-D1, E1-H1, A2-D2, E2-H2....A12-D12, E12-H12.

2. Select injection groups, then touch **Edit**.
   - Touch a well to select a single injection group.
   - Touch and drag to select multiple injection groups or the entire plate.

3. If you are creating a mixed plate, select the **Application type** for the wells.

4. Touch **Run modules**, then select a run module.
5. *(Fragment analysis only)* Touch **Size standard**, then select a size standard for the injection group.

6. Swipe up to display the rest of the screen.

7. Touch **Dye set**, then select a dye set for the injection group.

8. Touch **Done**.

**Assign wells: sample name, sample type, and custom fields**

In the **Edit plate** screen:

1. Touch **Sample name** to display the well attributes fields.

2. Touch a setting, then enter the definition for the selected wells:
   - *(Fragment analysis only)* **Sample type** — Sample, Positive Control, Negative Control, or Allelic Ladder.
   - **Custom fields** — Text fields to include additional sample attributes or identifiers that can be used by secondary analysis applications.
   - *(Sequencing only)* **Amplicon and Specimen** — Amplicon and Specimen names for Sanger Sequence analysis, if you selected the option in the **Plate Properties** screen.

3. Touch **Done** to close the screen then **Done** to close the **Edit Plate** screen.

4. Touch **Save** to save the plate to run at a later time, or touch **Start Run**.

**Save and/or run a plate setup**

After you assign wells, you can:

- Touch **Save** to save the plate setup to run or edit later. When you touch save, the **Set up run** screen is displayed.
- Load the plate in the instrument, then touch **Start run** to run the plate setup.
Start and monitor a run

- Load the plate or the tube assembly .................................................. 24
- Select a plate setup and start a run ................................................... 25
- Start a run on the instrument .............................................................. 25
- Monitor a run from the Connect cloud-based platform ......................... 26
- Monitor a run from a mobile device .................................................... 31
- Monitor a run from the instrument ..................................................... 34

Load the plate or the tube assembly

In the home screen:

1. Touch 
   , touch 
   Eject plate, then open the instrument door when prompted.

2. Press the release button on the autosampler to open the lid.

3. Place the plate or tube assembly firmly in the autosampler.

4. Check the buffer fill level:
   a. Remove the CBC.

   b. Ensure that the level of buffer is above the fill line.
      If the buffer is at or below the fill line, see SeqStudio™ Genetic Analyzer Instrument and Software User Guide.
      If the buffer is above the fill line, reinsert the CBC.

5. Place the plate or tube assembly firmly in the autosampler.

6. Close the autosampler lid: Press down on the center of the lid or press down on both sides of the lid with equal pressure until the lid clicks shut.

7. Touch Retract plate, then close the instrument door.
Select a plate setup and start a run

After you load the plate in the instrument (see “Load the plate or the tube assembly” on page 14):

1. In the instrument home screen, touch **Setup run**.
2. Select the location of your plate setup, then select the plate setup.
3. Verify that settings are as needed.
4. Touch **Start run**.

When the run starts, the instrument automatically:

- Performs an optical alignment each time a cartridge is inserted.
- Performs an automatic spectral calibration adjustment (auto calibration) for each sample to correct for spectral overlap.

During a run, an administrator can lock the touchscreen to prevent other users from using the instrument. Only the user who started the run or an administrator can sign in to the instrument if the touchscreen is locked.

Proceed to:
- “Monitor a run from the instrument” on page 34

Start a run on the instrument

1. Sign in to the instrument.
2. In the home screen, touch **Set up run**, touch the location of a saved plate setup, then open a plate setup.
3. Load the plate in the instrument.
4. Touch **Start run**.
Chapter 5 Start and monitor a run
Monitor a run from the Connect cloud-based platform

Monitor a run from the Connect cloud-based platform

A run is accessible from InstrumentConnect for 24 hours after the run is complete, or until another run is started.

1. Sign in to thermofisher.com/connect.

2. Click to access InstrumentConnect.

3. Click the run status dial to display the Remote Monitoring App.
1. In any screen in the Connect cloud-based platform, click ![Remote Monitoring App](image)

2. Click a notification, then click **Dismiss** or **Dismiss all** to dismiss the notification.

Select:
- **Actions → Pause plate** to pause the run after the current injection is complete.
- **Actions → Stop current injection** to immediately stop the injection.
View results in the Remote Monitoring App on the Connect cloud-based platform

1. Open the Remote Monitoring App (see “Open the Remote Monitoring App from Instrument Connect App” on page 26).

2. Click an injection group in the injection list or the plate view.
   The status dials are color-coded for quality alerts:
   - Green — All QC tests passed.
   - Yellow — At least 1 warning quality alert was triggered.
   - Red — At least 1 failing quality alert was triggered.

   ![Remote Monitoring App screenshot](image)

   **Note:** The Analyzed tab is disabled if the Save location for the plate setup is not set to Cloud or if the injection group has not finished running.

3. In the Quality alerts screen, click the Raw, EPT, or Analyzed tab to view data.

4. As needed, select Actions › Re-inject group, select the Run module and settings, then click Inject.
Remote Monitoring App raw trace

![Remote Monitoring App raw trace](image)

Figure 2  Fragment analysis raw trace

1. Zoom in/out.
2. Raw trace.
3. Thumbnail trace—Click-drag to view another region of the trace.
4. Lock/unlock trace zooming for all traces in the injection group.
5. View Options—Select the dye color to display; set vertical scaling.
6. Cursor position indicator (red line).

Figure 3  Sequence analysis raw trace

1. Zoom in/out.
2. Raw trace.
3. Lock/unlock trace zooming for all traces in the injection group.
4. View Options—Select the basecalls to display; set vertical scaling.
Remote Monitoring App EPT trace

The EPT view (ElectroPhoresis Telemetry) shows instrument data conditions (currents, temperatures, electrophoresis voltage) as a function of time.

Remote Monitoring App analyzed trace

Figure 4  Fragment analysis analyzed trace

1. Lock/unlock trace zooming for all traces in the injection group.
2. Zoom in/out.
3. Analyzed trace.
4. Thumbnail trace—Click-drag to view another region of the trace.
5. View Options—Select the dye colors to display; set vertical scaling.
6. Cursor position indicator [red vertical and horizontal tick marks outside trace].
7. Size standard curve [red line].
8. Actions—Select commands to pause and cancel injections.
Monitor a run from a mobile device

Before you begin, see “Link the instrument from a mobile device” on page 47.

1. On your mobile device, launch InstrumentConnect.

2. Touch the instrument to monitor.
3. Swipe left to view consumable status.

4. Touch the status dial to view the injection list.
5. Touch an injection group to display quality alerts, then touch **View raw plot** to view the data.

- Swipe left to view the entire trace.
- Pinch-zoom to expand the trace.
Monitor a run from the instrument

View the run status

In the home screen:

View the run time information and the status dial for each capillary.

![Status Dials Image]

The status dials are color-coded for quality alerts:

- Green — All QC tests passed.
- Yellow — At least 1 warning quality alert was triggered.
- Red — At least 1 failing quality alert was triggered.

If an injection group is set to re-inject, the number of the current injection is displayed on the status dials.

View real-time results

During a run, in the home screen:

Touch one of the injection dials to display the trace for the selected capillary.

See “Fragment analysis trace” on page 39 or “Sequence analysis trace” on page 40 for information.
In the **home** screen:

1. **Touch** \( \text{Actions} \).

2. **Manage the plate or injections:**

<table>
<thead>
<tr>
<th>Touch</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>View results</td>
<td>View the list of injections and status.</td>
</tr>
<tr>
<td>Edit plate</td>
<td>For injections that have not yet been run, edit <strong>Sample Name</strong>,</td>
</tr>
<tr>
<td></td>
<td><strong>Run Module</strong>, <strong>Dye Set</strong>, <strong>Size Standard</strong>, <strong>Sample Type</strong>, and</td>
</tr>
<tr>
<td></td>
<td>custom fields.</td>
</tr>
<tr>
<td>Pause plate</td>
<td>Stop the run after the current injection is complete.</td>
</tr>
<tr>
<td></td>
<td>Touch <strong>Resume</strong> to continue the run.</td>
</tr>
<tr>
<td>Stop current injection</td>
<td>Stop the current injection immediately.</td>
</tr>
<tr>
<td></td>
<td>Touch <strong>Resume</strong> to continue the run.</td>
</tr>
<tr>
<td>Cancel remaining injections</td>
<td>Specify whether to cancel the run immediately or after the current</td>
</tr>
<tr>
<td></td>
<td>injection is complete.</td>
</tr>
<tr>
<td>Injection options</td>
<td>Move an injection to the top of the injection list, edit run</td>
</tr>
<tr>
<td></td>
<td>module information, and/or reinject samples.</td>
</tr>
</tbody>
</table>

When a run is complete, in the **home** screen:

1. **Touch** **View Results**.

2. **Touch** **List view**.
   - Each injection group displays a QC color for each capillary:
     - ● — All QC tests passed.
     - ○ — At least 1 warning quality alert was triggered.
     - ● — At least 1 failing quality alert was triggered.

3. **Touch** an injection group.

4. **View** the results in the **Run Result Details** screen, or **touch** \( \text{¶} \) for well details.

5. **Touch** a sample file name.

6. **Touch** and **drag** the thumbnail view of the analyzed trace (below the trace) to scroll left or right.

7. *(Optional)* Adjust the graphical view (see “Adjust the trace display” on page 42).

8. **Touch** \( \triangleright \) or \( \triangleleft \) to scroll to the raw data or **EPT Plot** (ElectroPhoresis Telemetry).
In the Plate properties screen:

1. Touch **Injection options**.

2. Touch an injection group, then configure the injection list:
   - Touch and drag an injection group to a new location in the injection list.
   - Touch **Inject first**—Moves the selected injection group to the top of the injection list.
   - Touch **Edit and re-inject**—Adds replicates or re-injections to the injection list.
     You can also modify **Run module**, **Injection time**, **Injection voltage**, **Run time**, or **Run voltage** for these injections.

   **Note:** Changes to **Injection time**, **Injection voltage**, **Run time**, or **Run voltage** are not saved to the plate setup and will be used during the current plate run only.

3. Touch **Done**.
View and analyze results

- View results in the Remote Monitoring App on the Connect cloud-based platform ....................................................... 37
- View results on the instrument ......................................... 38
- Export results from the instrument (sample data files and QC reports) ....... 43
- Analyze data .................................................................. 44

**View results in the Remote Monitoring App on the Connect cloud-based platform**

1. Open the Remote Monitoring App (see “Open the Remote Monitoring App from Instrument Connect App” on page 26).

2. Click an injection group in the injection list or the plate view.

   The status dials are color-coded for quality alerts:
   - ⚫️ — All QC tests passed.
   - 🟠 — At least 1 warning quality alert was triggered.
   - 🔴 — At least 1 failing quality alert was triggered.

Note: The **Analyzed** tab is disabled if the **Save location** for the plate setup is not set to **Cloud** or if the injection group has not finished running.

3. In the **Quality alerts** screen, click the **Raw**, **EPT**, or **Analyzed** tab to view data.

4. As needed, select **Actions ▶️ Re-inject group**, select the **Run module** and settings, then click **Inject**.

"SeqStudio™ Genetic Analyzer Instrument and Software Getting Started Guide"
View results on the instrument

When a run is complete, in the home screen:

1. Touch View Results.

2. Touch List view.
   Each injection group displays a QC color for each capillary:
   - Green — All QC tests passed.
   - Yellow — At least 1 warning quality alert was triggered.
   - Red — At least 1 failing quality alert was triggered.

3. Touch an injection group.

4. View the results in the Run Result Details screen, or touch for well details.

5. Touch a sample file name.

6. Touch and drag the thumbnail view of the analyzed trace (below the trace) to scroll left or right.

7. (Optional) Adjust the graphical view (see “Adjust the trace display” on page 42).

8. Touch or to scroll to the raw data or EPT Plot (Electrophoresis Telemetry).
### Fragment analysis trace

1. **Trace color hide/show**—Touch to open, then touch a color to hide or show.
2. **Analyzed trace**
3. **Size standard curve (red line)**
4. **Thumbnail trace**—Drag the center of the pane in the thumbnail trace to display another trace area in the top pane. Drag the right or left handle of the pane to zoom horizontally.
5. **Basepair or scan display selection.**
6. **Zoom tools**—Touch to open.
7. **Next trace tool**—Touch to view the raw trace or EPT for the well.
Sequence analysis trace

1. Quality Value bars and values:
   - Pure base with QV ≥20
   - Pure base with QV 15–19
   - Pure base with QV <15
   - Mixed base

2. Bases—Mixed basecalls are highlighted in red if they exceed the **Mixed base threshold** specified in analysis settings; see *SeqStudio™ Genetic Analyzer Instrument and Software User Guide*.

3. Trace color hide/show—Touch to open, then touch a color to hide or show.

4. Analyzed trace

5. Thumbnail trace—Drag the center of the pane in the thumbnail trace to display another trace area in the top pane. Drag the right or left handle of the pane to zoom horizontally.

6. Zoom tools—Touch to open.

7. Next trace tool—Touch to view the raw trace or EPT for the well.
EPT plot

The EPT view (ElectroPhoresis Telemetry) shows instrument data conditions (currents, temperatures, electrophoresis voltage) as a function of time.

Touch on the left border of the plot to display the legend.
Adjust the trace display

See “View results for the current plate” on page 35 to access results.

- Drag one finger to pan to the left or right.
- Zoom in and out by pinching and expanding with two fingers.
- Touch on the left border of the trace, then touch a dye to deselect.
- Touch on the right border of the trace, then touch Zoom In, Zoom Out, or Fit to screen to adjust the display.
- Drag the center of the pane in thumbnail view to scroll left or right.

• Drag the right or left handle of the pane to zoom horizontally.

In the home screen:

1. Touch Settings Run history.
2. Touch a plate name, then touch View.
   If you select more than one plate name, the View button is dimmed.
3. Touch a sample file name.
4. View the results in the Run history screen, or touch to view well details.
5. Touch a sample file name, then touch View.
   If you select more than one sample file name, the View button is dimmed.
6. Touch and drag the thumbnail view of the analyzed trace (below the trace) to scroll left or right.
7. Touch or to scroll to the raw data or EPT Plot.
You can edit injection parameters and re-inject samples during a run or after a run is complete.

1. Access **Injection options**.
   - During a run—Touch **Actions** ➔ **Edit plate**.
   - After a run—Touch **Results**.

2. Touch an injection group, then configure the injection list:
   - Touch and drag an injection group to a new location in the injection list.
   - Touch **Inject first**—Moves the selected injection group to the top of the injection list.
   - Touch **Edit and re-inject**—Adds replicates or re-injections to the injection list.
     You can also modify **Run module**, **Injection time**, **Injection voltage**, **Run time**, or **Run voltage** for these injections.

3. Touch **Done**.
   **Note:** The changes are not applied until you touch **Done**.

This function allows you to export a QC report for the current plate. To export a QC report for a previously run plate, export a run history (see “Export results from the instrument (sample data files and QC reports)” on page 43).

When a run is complete, in the home screen:

1. Touch **Results**.

2. Touch **Export report**.

3. Select a storage location.

4. Navigate to, then select a location, then touch **Export**.

The following data is exported for the plate:
- Fragment analysis—FSA file for each sample.
- Sequencing—ABI file for each sample.
- Plate QC report in CSV and PDF format.
Note: If you select a plate, select View, then select Export, only an FSA or AB1 file for each analyzed sample is exported.

Analyze data

1. Export results (see “Export results from the instrument (sample data files and QC reports)” on page 43) or use auto exported data.

2. Use an appropriate fragment analysis or sequencing application to analyze the data.

Note: Data from the SeqStudio™ Genetic Analyzer may be labeled as "3200" in secondary analysis software.

Secondary analysis software

Secondary analysis software is available for desktop computers and on your Connect cloud-based platform account.

Visit thermofisher.com/connect for the latest available secondary analysis applications.

Note: Data from the SeqStudio™ Genetic Analyzer may be labeled as "3200" in secondary analysis software.

Secondary analysis apps on the Connect cloud-based platform

<table>
<thead>
<tr>
<th>Analysis</th>
<th>App</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequencing</td>
<td>Quality Check (QC) module</td>
<td>• Automatically checks sequence trace quality.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provides a results summary that is based on quality parameter settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Auto-flags lower-quality traces for further inspection.</td>
</tr>
<tr>
<td></td>
<td>Variant Analysis (VA) module</td>
<td>• Finds variants in samples that are sequenced on Applied Biosystems™ genetic analyzers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reports variants at genomic coordinates.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Allows export of variant calls in standard Variant Call Format.</td>
</tr>
<tr>
<td></td>
<td>Next-generation Confirmation (NGC) module</td>
<td>• Confirms next-generation sequencing (NGS) variants using CE technology.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Allows visualization of the variants that are detected by both NGS and CE platforms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Allows export of confirmed variants in standard Variant Call Format.</td>
</tr>
<tr>
<td>Fragment analysis</td>
<td>Sizing Analysis Module Peak Scanner™ Software</td>
<td>Performs peak sizing.</td>
</tr>
</tbody>
</table>

SeqStudio™ Genetic Analyzer Instrument and Software Getting Started Guide
<table>
<thead>
<tr>
<th>Analysis</th>
<th>App</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fragment analysis</td>
<td>Microsatellite Analysis</td>
<td>Analyzes a mixture of DNA fragments, separated by size, on supported capillary electrophoresis systems.</td>
</tr>
<tr>
<td></td>
<td>Software</td>
<td></td>
</tr>
</tbody>
</table>

**Desktop secondary analysis software**

**IMPORTANT!** Older versions of the desktop secondary analysis software cannot analyze data files generated by the *SeqStudio™ Genetic Analyzer*. Contact Support for information on obtaining the latest versions of software.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Software</th>
<th>Minimum version required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequencing</td>
<td>Sequencing Analysis Software</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td><em>SeqScape™</em> Software</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Variant Reporter™ Software</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Minor Variant Finder Software</td>
<td>1.2</td>
</tr>
<tr>
<td>Fragment analysis</td>
<td>GeneMapper™ Software</td>
<td>5.1</td>
</tr>
</tbody>
</table>
Link the instrument to your Connect cloud-based platform account—detailed instructions

- Workflow: Set up the instrument for access to the Connect cloud-based platform ....................................................... 46
- Register and obtain a Connect cloud-based platform account ............................................. 47
- Link the instrument from a mobile device .......................................................... 47
- Link the instrument using a link code ................................................................. 49
- Link the instrument using your Connect cloud-based platform account ........... 52

Workflow: Set up the instrument for access to the Connect cloud-based platform

Register and obtain a Connect cloud-based platform account
(page 47)

▼

Link the instrument to your Connect cloud-based platform account in any of the following ways:

- Link the instrument from a mobile device
  (page 47)
- Link the instrument using a link code
  (page 49)
- Link the instrument using your Connect cloud-based platform account
  (page 52)
Register and obtain a Connect cloud-based platform account

2. On the home page, select Sign In › Register.
3. Fill in all information, then click Create account.

Link the instrument from a mobile device

Create a Connect cloud-based platform PIN and generate the QR code on the instrument

1. Sign in to thermofisher.com/connect.
2. Click to access InstrumentConnect.
3. If you have not previously set up a PIN, click Update PIN, then enter a PIN that you will use to sign in to the instrument.
4. From the instrument Sign In screen, navigate to the Connect to the Thermo Fisher Cloud screen:

<table>
<thead>
<tr>
<th>Do you have a local instrument profile?</th>
<th>Description</th>
</tr>
</thead>
</table>
| Yes                                    | 1. Touch Sign in, then enter your PIN.  
2. In the home screen, touch Setup run.  
3. In the Setup run screen, touch Cloud. |
| No                                     | Touch Get started › Connect. |
5. Touch **Mobile devices**.

![QR code display](image)

The QR code is displayed.

![QR code capture](image)

### Register the instrument with the Instrument Connect App

1. On your mobile device, download the InstrumentConnect from the Apple Store or from Google™ Play.

2. Launch, then sign in to the mobile app on your mobile device.

3. Register the instrument:
   
   a. Touch ☰, then touch **Register Instrument**.

   b. Touch **QR code** on your mobile device.

   c. With your mobile device, scan the QR code displayed in the instrument touchscreen.
Link the instrument using a link code

1. From the instrument **Sign In** screen, navigate to the **Connect to the Thermo Fisher Cloud** screen:

<table>
<thead>
<tr>
<th>Do you have a local instrument profile?</th>
<th>Description</th>
</tr>
</thead>
</table>
| Yes                                    | 1. Touch **Sign in**, then enter your PIN.  
                                         | 2. In the home screen, touch **Setup run**.  
                                         | 3. In the **Setup run** screen, touch **Cloud**. |
| No                                     | Touch **Get started » Connect**. |

2. Touch **PC**.

A unique link code is displayed.
Appendix A Link the instrument to your Connect cloud-based platform account—detailed instructions

Link the instrument using a link code

3. Sign into your Connect cloud-based platform account on a separate computer. Go to thermofisher.com/connect.

4. Click , then click Add an Instrument.

5. Select SeqStudio™, then click Next.
6. Enter the link code from the instrument touchscreen (from step 2), then click **Send**.

![Linking instrument screenshot](image1)

7. If you have not previously set up a PIN, enter a PIN to use when you sign in to an instrument, then click **Send**.

![Set your pin to proceed screenshot](image2)

A start linking message is displayed.

A confirmation message is displayed on the instrument touchscreen when the instrument is linked and connected to your Connect cloud-based platform account.

The first time the instrument is linked, the software automatically:

- Creates a Connect cloud-based platform instrument profile with the First Name and Last Name from your Connect cloud-based platform account.
- Registers the instrument in the InstrumentConnect software.
Link the instrument using your Connect cloud-based platform account

1. From the instrument Sign In screen, navigate to the Connect to the Thermo Fisher Cloud screen:

<table>
<thead>
<tr>
<th>Do you have a local instrument profile?</th>
<th>Description</th>
</tr>
</thead>
</table>
| Yes                                    | 1. Touch Sign in, then enter your PIN.  
2. In the home screen, touch Setup run.  
3. In the Setup run screen, touch Cloud. |
| No                                     | Touch Get started ➔ Connect. |

2. Touch Instrument.
3. Enter your Connect cloud-based platform account username (email address) and password, then touch **Link account**.

![Link account](image)

4. If you have not previously set up a PIN, enter a PIN to use when you sign in to an instrument, then touch **Done**.

![Enter PIN](image)

A confirmation message is displayed when the instrument is linked and connected to your Connect cloud-based platform account.

The first time the instrument is linked, the software automatically:

- Creates a Connect cloud-based platform instrument profile with the First Name and Last Name from your Connect cloud-based platform account.
- Registers the instrument in the InstrumentConnect software.
### Keyboard shortcuts for the sample table

<table>
<thead>
<tr>
<th>Keys</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
<td></td>
</tr>
<tr>
<td>Arrow keys</td>
<td>Move to the cell above, below, to the right, or to the left of the current cell.</td>
</tr>
<tr>
<td>Tab</td>
<td>Move to the cell to the right of the current cell.</td>
</tr>
<tr>
<td>Shift+Tab</td>
<td>Move to the cell to the left of the current cell.</td>
</tr>
<tr>
<td>Home</td>
<td>Move to the first cell in the row.</td>
</tr>
<tr>
<td>End</td>
<td>Move to the last cell in the row.</td>
</tr>
<tr>
<td>Ctrl+Home</td>
<td>Move to the first cell in the column.</td>
</tr>
<tr>
<td>Ctrl+End</td>
<td>Move to the last cell in the column.</td>
</tr>
<tr>
<td><strong>Selection</strong></td>
<td></td>
</tr>
<tr>
<td>Ctrl+A</td>
<td>Select all.</td>
</tr>
<tr>
<td>Shift+Arrow keys</td>
<td>Extend the selection of the cell above, below, to the right, or to the left of the current cell.</td>
</tr>
<tr>
<td>Shift+Home</td>
<td>Select all cells in the row to the right including the current cell.</td>
</tr>
<tr>
<td>Shift+End</td>
<td>Select all cells in the row to the left including the current cell.</td>
</tr>
<tr>
<td>Ctrl+Shift+Home</td>
<td>Select all cells in the column to the top cell including the current cell.</td>
</tr>
<tr>
<td>Ctrl+Shift+End</td>
<td>Select all cells in the column to the bottom cell including the current cell.</td>
</tr>
<tr>
<td><strong>Editor</strong></td>
<td></td>
</tr>
<tr>
<td>Enter</td>
<td>Open and close the cell editor.</td>
</tr>
<tr>
<td>F2</td>
<td>Clear the cell contents and open the cell editor.</td>
</tr>
<tr>
<td>Esc</td>
<td>Cancel editing and close the cell editor.</td>
</tr>
<tr>
<td>Backspace</td>
<td>Delete.</td>
</tr>
<tr>
<td>Delete</td>
<td>Clear the cell contents.</td>
</tr>
<tr>
<td>Ctrl+C</td>
<td>Copy.</td>
</tr>
<tr>
<td>Keys</td>
<td>Action</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ctrl+X</td>
<td>Cut.</td>
</tr>
<tr>
<td>Ctrl+V</td>
<td>Paste.</td>
</tr>
<tr>
<td>Ctrl+Enter</td>
<td>Fill all selected cells with edited cell’s value: Select a range of cells, then press F2 to edit the first cell in the selection. Type a value, then press Ctrl+Enter to fill all selected cells with the value.</td>
</tr>
<tr>
<td>Ctrl+Z</td>
<td>Undo.</td>
</tr>
<tr>
<td>Ctrl+Y</td>
<td>Redo.</td>
</tr>
</tbody>
</table>
Related documentation

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SeqStudio™ Genetic Analyzer Instrument and Software User Guide</td>
<td>MAN0016138</td>
</tr>
<tr>
<td>SeqStudio™ Genetic Analyzer Instrument and Software Getting Started Guide</td>
<td>MAN0017464</td>
</tr>
<tr>
<td>DNA Fragment Analysis by Capillary Electrophoresis User Guide</td>
<td>4474504</td>
</tr>
<tr>
<td>DNA Sequencing by Capillary Electrophoresis Chemistry Guide Second Edition</td>
<td>4305080</td>
</tr>
<tr>
<td>Troubleshooting Sanger sequencing data</td>
<td>MAN0014435</td>
</tr>
<tr>
<td>SeqStudio™ Genetic Analyzer Site Preparation Guide</td>
<td>MAN0016143</td>
</tr>
</tbody>
</table>

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