

SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0

Catalog Numbers A50369 and A50370

Pub. No. 100104690 Rev. A

Note: For safety and biohazard guidelines, see the “Safety” appendix in the *SeqStudio™ Flex Series Genetic Analyzer Instrument and Software User Guide* (Pub. No. 100104689). Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

This Quick Reference assumes that a technical representative has installed the instrument, that spatial and spectral calibrations have been run, and that an install check for your application has been run. This Quick Reference contains brief procedures. It assumes that you have read and are familiar with the complete procedures in the user guide.

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Product description

The SeqStudio™ 8 Flex Genetic Analyzer and the SeqStudio™ 24 Flex Genetic Analyzer are fluorescence-based DNA analysis instruments using capillary electrophoresis technology with 8 or 24 capillaries.



The instrument is a stand-alone instrument, but can be used with the Plate Manager software. The Plate Manager software makes it easier to create plate files..

The instrument can also be linked to the Thermo Fisher™ Connect Platform to access these additional functions:

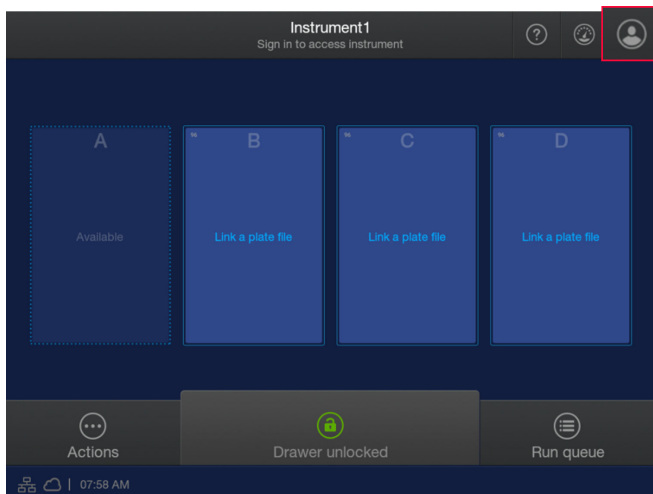
- Use the Plate Manager software (cloud)
- Save results and other files to the cloud
- Set up plate files to perform automated cloud analysis
- Monitor instrument runs remotely from a computer or from a smart device
- Use voice commands to control certain functions in the instrument software
- Request assistance using **Smart Help**

An automated barcode workflow is also available.


For information on using the instrument with the automated barcode workflow or with the Thermo Fisher™ Connect Platform, see the *SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide*.

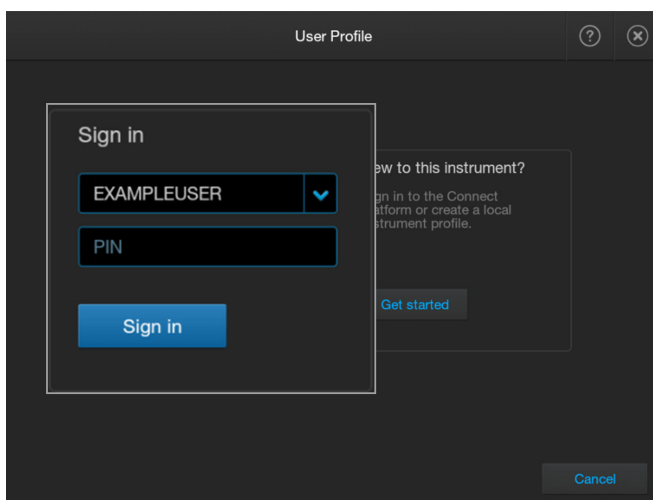
Sign in to the instrument

1. In the home screen, tap  (**Profile**).





2. In the **User Profile** screen, tap the down arrow under **Sign in**, then select your profile.

Note: If you do not have a profile, tap  (**help**) for information on how to create a profile.






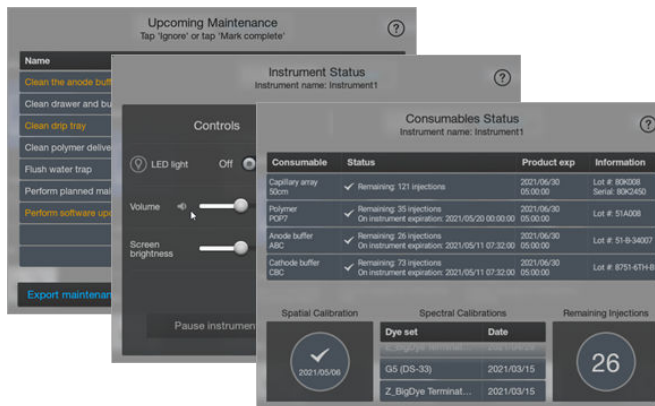
3. Tap the **PIN** field, enter your PIN, then tap **Sign in**.

The home screen is displayed with your user initials (for example, ) in place of  (**Profile**). See Figure 1 on page 3.

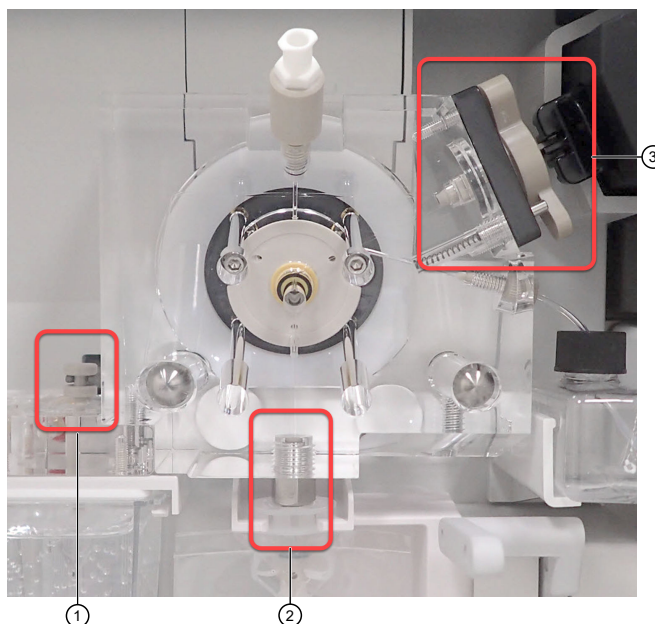
Prepare the instrument

Before running a plate on the instrument, perform the following tasks.

- At the top right of the home screen, tap  (**Dashboard**). Tap  or  to display different dashboard screens.



- Check for upcoming maintenance tasks, then perform the maintenance before continuing. Also see “Daily instrument maintenance tasks” on page 11.
 - Check consumables status and replenish consumables as needed. Ensure that the septa on the cathode buffer container (CBC) are properly installed.
 - Check instrument status. If the oven is off, tap **Preheat oven**.
- Check inside the instrument pump compartment for leaks and spills.



- ① Buffer-pin valve
- ② CV (check valve) fitting
- ③ Array port lock

Parts of the home screen



Figure 1 Home screen

- ① Position A in the instrument drawer. When a plate is running, it shows the number of the current and total injections, the time remaining until all injections are complete, and the sample QC for the completed injections (see below). "Link a plate file" indicates a plate position in the drawer contains a plate. "Available" indicates a plate position is empty.
- ② On-screen help. Tap **?** (**help**) to display step-by-step instructions to use the instrument, perform instrument maintenance, and other useful information.
- ③ **Dashboard**. Tap to display consumables status, instrument status, and maintenance reminders.
- ④ Initials of the currently signed in user. Tap to switch users or sign out. If no user is signed in, **(Profile)** is displayed.
- ⑤ **Actions**. Tap to access functions for creating a plate file, libraries, run history, instrument settings, and other functions.
- ⑥ Drawer status. The drawer can be opened to insert plates any time that the drawer status is unlocked.
- ⑦ **Run queue**. Tap to display the injection list, change the order of injections, pause a run, and other functions.

Many screens in the software include a **(home)** icon at the top right that allows you to return to the home screen.

Sample QC color code	Description
● (green, good)	All QC thresholds passed.
● (yellow, caution)	At least 1 caution quality alert was triggered.
● (red, error)	At least 1 error quality alert was triggered.

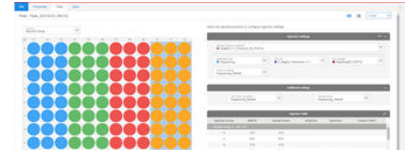
Workflow

For information on how to link the instrument to Thermo Fisher™ Connect Platform, see the *SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide*.

Create a plate file, prepare the instrument, link the plate file to a drawer position, start and monitor a run, then view results

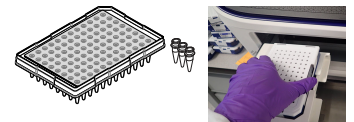
Create

Create a plate file in the Plate Manager software and print the plate layout. Alternatively, create a plate file in the instrument software.



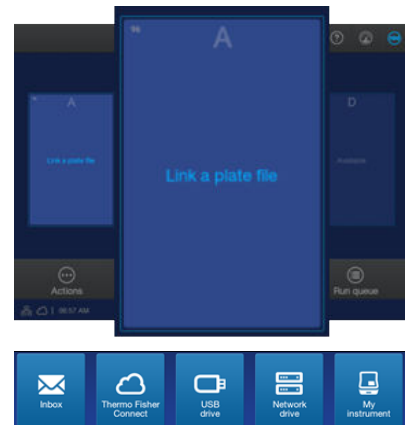
Prepare

Prepare the instrument, prepare the samples and the plate, then load the plate into the instrument.



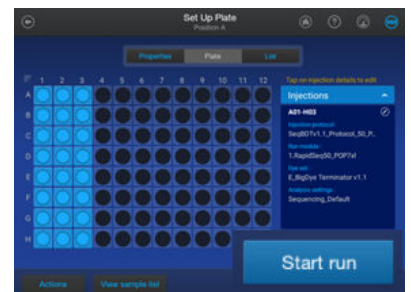
Link

Link to the plate file you created earlier.



Start

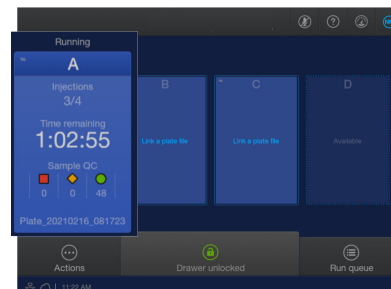
Set injection properties if needed, then start the run.



Create a plate file, prepare the instrument, link the plate file to a drawer position, start and monitor a run, then view results

Monitor


Monitor the run in the home screen by viewing the information for a plate position, or by tapping a plate position to view the plate layout and run progress.



Monitor the run in the **Run Queue** screen by tapping  **Run queue** in the home screen.



View and analyze results in any of the following locations:

- In the home screen, tap the plate position.
- In the **Run Queue** screen, tap an injection.
- In the home screen, select  **Actions** ▶ **Run history**.



Prepare the samples, plate, and plate assembly


For detailed instructions, see the *SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide*.

1. Prepare the samples according to the sample preparation guidelines listed in the user guide.
2. Add samples to the plate according to the plate layout for the plate and your instrument type.
3. Prepare the plate assembly.

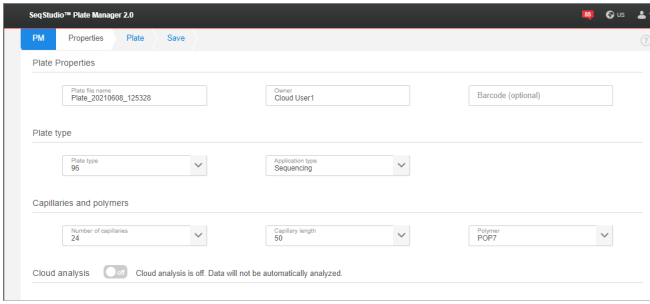
IMPORTANT! Make sure to use the plate base and retainer sets that are designed for the SeqStudio™ Flex instrument. For catalog numbers, see *SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide*.

Create a plate file in the Plate Manager software (desktop)

Note: If you do not have the Plate Manager software, proceed to “Create a plate file on the instrument” on page 6.

1. In the Windows™ desktop, click , type **Plate Manager**, then select **Plate Manager** from the start menu.
2. (First use only) In the **Select an instrument** screen, select **SeqStudio Flex**.
3. Click **Create a plate file**.

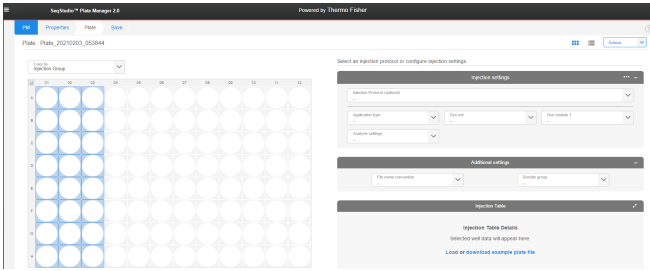
- Enter the appropriate settings in the **Properties** tab, then click **Next**.



Note: For the automated barcode workflow, you can scan or manually enter the barcode of the plate.

- In the **Plate** tab, select one or more injection groups: Click a well to select one injection group; control+click or click-drag to select multiple injection groups; or click **(Select/deselect)** to select all injection groups.

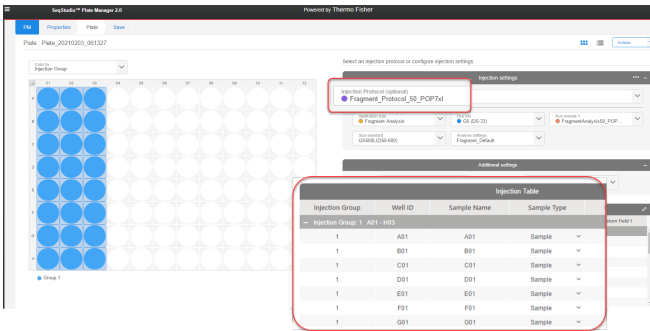
Note: *Injection group* refers to each set of 8 or 24 wells on the plate, based on instrument configuration.



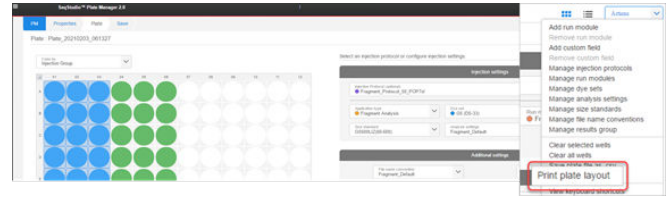
- In the **Injection protocol** field, select a protocol.

An injection protocol specifies the settings that are used to run and analyze the sample.

Instead of selecting an injection protocol, you can select the individual elements of the protocol: **Dye set**, **Run module**, **Analysis settings**, and **Size standard** (fragment analysis only).



- Click **Actions** ▶ **Print plate layout**.



A PDF file of the plate layout is downloaded.

- Click **Next**, then click **Save**.

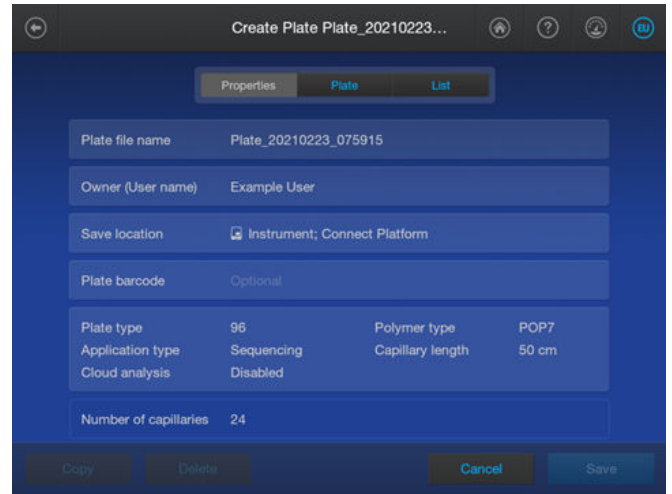
Save the plate file to a USB drive or to a network.

Proceed to “Load a plate into the instrument” on page 8.

For information on how to set the Plate Manager software (desktop) to send a plate file to the **Inbox** on an instrument, tap **(help)** in the top right of the Plate Manager software, or see the *SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide*.

Create a plate file on the instrument

- At the bottom left of the home screen, tap **Actions** ▶ **Create plate file**.



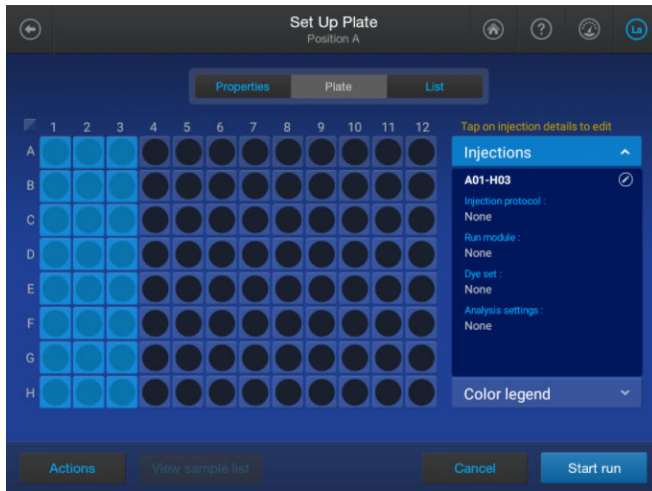
- Tap a section on the **Create Plate** screen, then enter the appropriate settings in the **Properties** tab.

Note: For the automated barcode workflow, you can scan or manually enter the barcode of the plate.

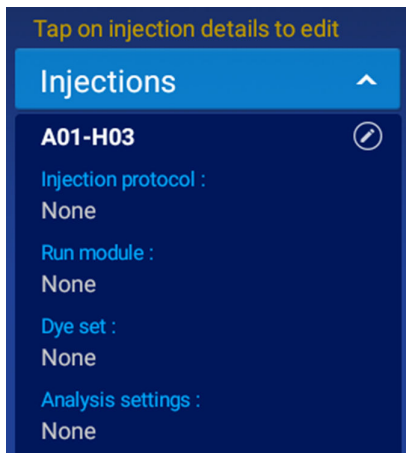
3. Tap the **Plate** tab at the top of the screen.

The plate view is displayed with the first injection group selected.

Note: *Injection group* refers to each set of 8 or 24 wells on the plate, based on instrument configuration.



4. Tap the injection pane on the right of the screen to display the **Edit Injection Properties** screen.

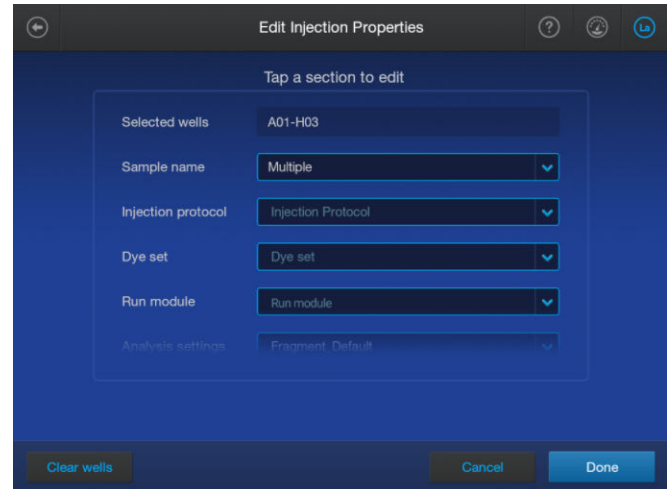


5. In the **Edit Injection Properties** screen, tap the **Injection protocol** field, then select a protocol.

An injection protocol specifies the settings that are used to run and analyze the sample.

Instead of selecting an injection protocol, you can select the individual elements of the protocol: **Dye set**, **Run module**,

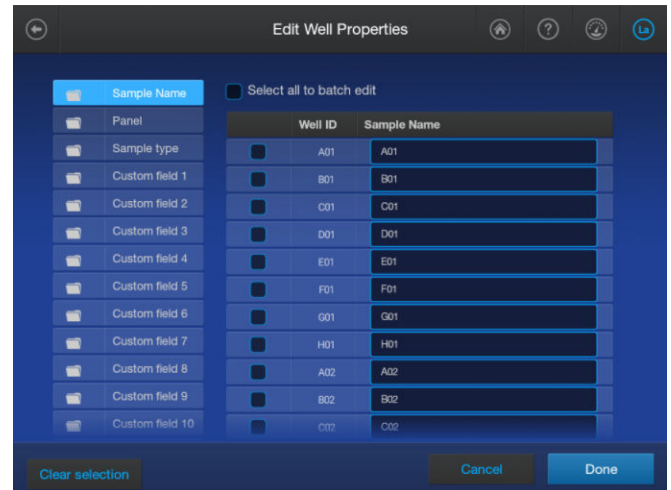
Analysis settings, and **Size standard** (fragment analysis only).



Note: If you want to use the default settings for sample names (well ID), Sample type (sample), or amplicon or specimen (blank) and do not need to add special fields, you can tap **Done**, tap **Save**, then skip to “Load a plate into the instrument” on page 8.

6. Tap the **Sample name** field.

The **Edit Well Properties** screen is displayed.

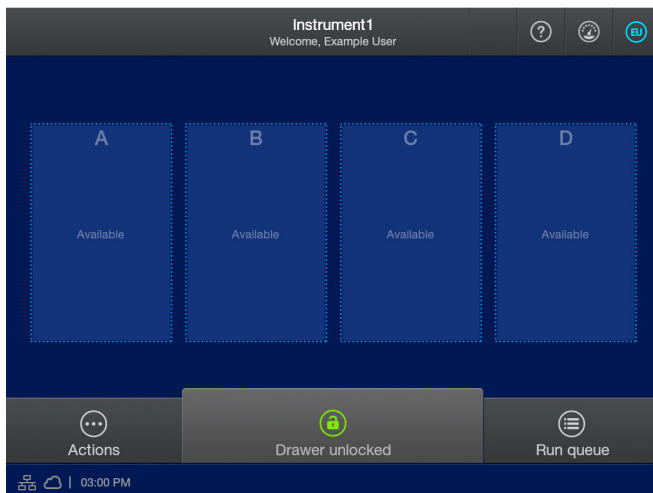


7. In the **Edit Well Properties** screen, tap **Sample name** in the left column.
8. Tap the entry field for sample name, the enter the sample name, then tap **Enter**.
9. Tap **Done** to close the **Edit Well Properties** screen, then tap **Done** again to close the **Edit Injection Properties** screen.
10. Tap **Save**.

Load a plate into the instrument

1. Ensure that the **Drawer unlocked** status is displayed in the home screen.

Positions in the drawer that are empty are marked as **Available**.

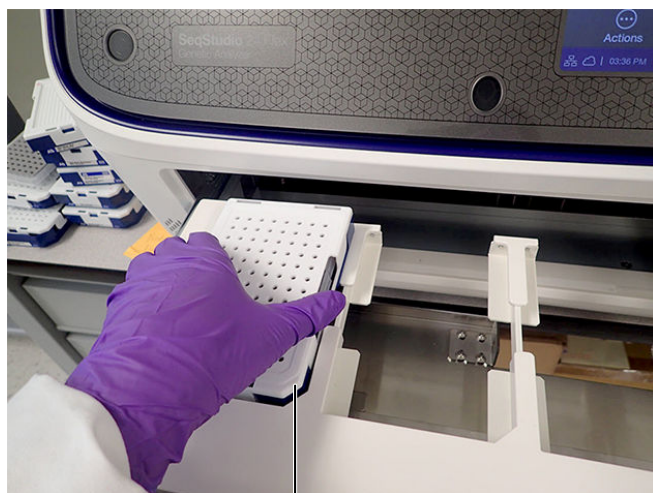


2. Pull the drawer open.

IMPORTANT! Do not open and close the drawer rapidly. Doing so can cause vibration and disruption of the samples in the plates. Results may be adversely affected.

IMPORTANT! To avoid injury, do not place your hands into any empty spaces in the drawer.

3. Ensure that the plate retainer is firmly snapped in place on top of the plate, then place the new plate into an empty position. Align the notched corner of the plate with the notched corner of the plate holder.



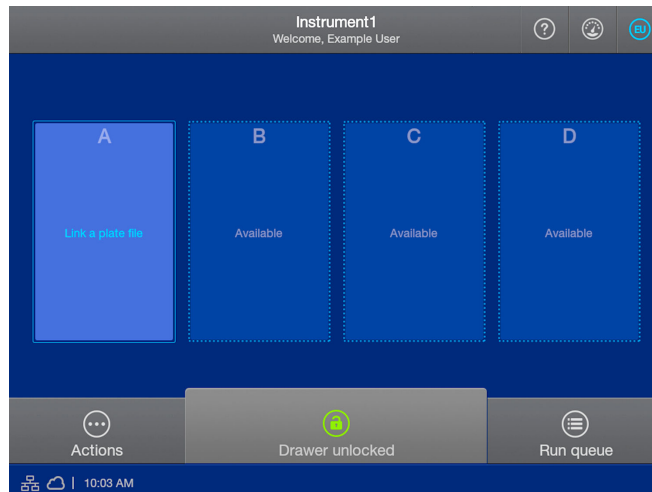
- ① Notched corner of plate and plate holder in instrument
The position status in the home screen changes to **Link plate file**.

4. Push the drawer closed.

IMPORTANT! To avoid injury, keep your hands away from any empty spaces in the drawer when you push the drawer closed.

Link a plate file and start a run

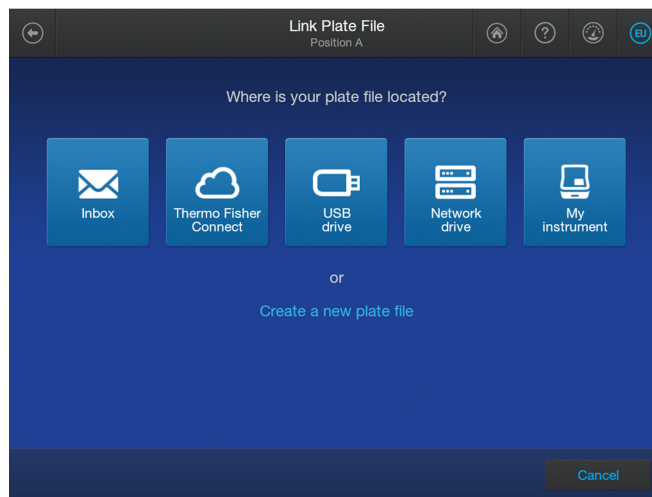
1. In the home screen, tap **Link a plate file** in the plate position for the loaded plate.



2. In the **Link Plate File** screen, tap an option, then select the plate file you created earlier.

If you created the plate file in the Plate Manager software, tap **USB drive** or **Network drive**.

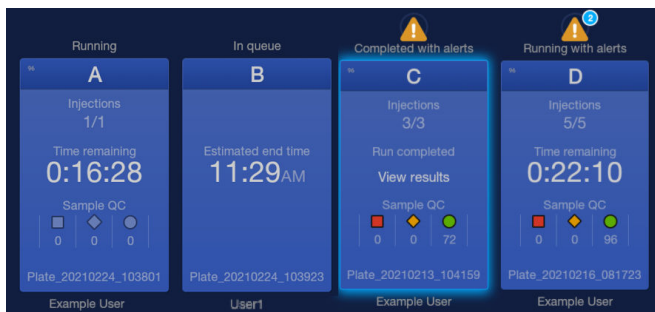
If you created the plate file on the instrument, tap **My instrument**.



3. Tap **Start run**.

Monitor a run in the home screen

1. In the home screen, tap a running plate position.



The plate view is displayed.



- 1 Completed injection
- 2 Running injection
- 3 In queue injection
- 4 Tap to display the plate legend

2. (Optional) Tap the **Injections** tab.



3. Tap an injection to display the electropherogram screen.

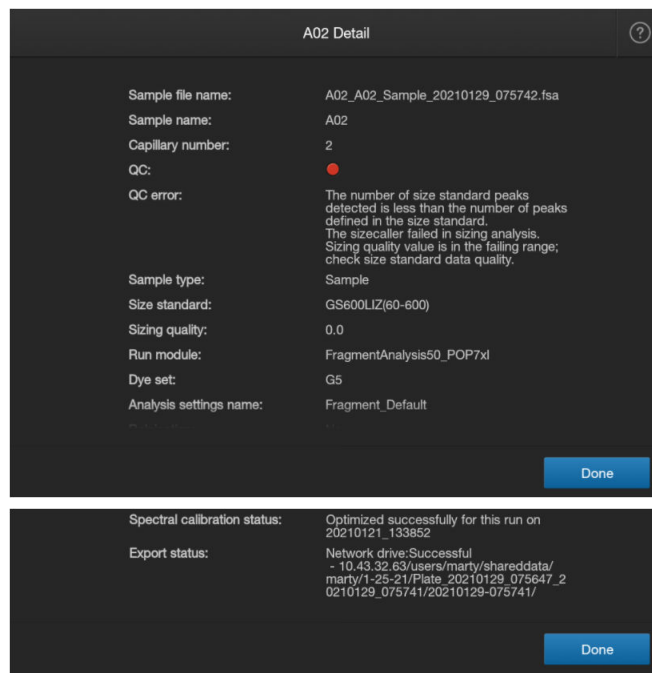
4. Tap **Done** in the electropherogram screen, then tap the **Wells** tab.

If needed, swipe up to view all wells.




5. Tap **i (Information)** to display the details for the well.

If needed, swipe up to view all wells.





Monitor the run in the Run queue screen

1. In the home screen, tap  **Run queue**.
2. In the **Run Queue** screen, select an injection or a completed plate with one injection only, then tap **View Plate**.

The **Run Details** electropherogram view or the plate view is displayed.



3. Do any of the following as needed.
 - Tap a well, then tap **View** to view the raw, EPT, or analyzed electropherogram for a well.
 - Tap  (**Information**) to display the details for the well.
 - Tap  (**Filter**), then enter a keyword such as the well number to filter the results (by **Well ID** and **Sample name** attributes) that are listed.
 - Tap the **Result group** tab to list the wells by results group.
 - Tap a well, then tap **Actions**, then select an option to export the results or the run log.

View results for a completed run (Run history)









1. In the home screen, tap  **Actions** ▶ **Run history**.

Plate name	App type	Run date	Run by
Plate_20210129_075647	Fragment analysis	2021/01/29 07:57:41	LAMartyLocaA...
Plate_20210125_150347	Fragment analysis	2021/01/26 09:18:07	LAMartyLocaA...
Plate_20210125_163443	Fragment analysis	2021/01/25 16:36:59	LAMartyLocaA...
Plate_20210125_144524	Sequencing	2021/01/25 14:50:07	LAMartyLocaA...
Plate_20210125_124920	Fragment analysis	2021/01/25 13:01:35	LAMartyLocaA...
Plate_20210125_083215	Sequencing	2021/01/25 09:50:46	LAMartyLocaA...
Plate_20210122_142744	Sequencing	2021/01/22 14:43:23	LAMartyLocaA...
Plate_20210122_121225	Fragment analysis	2021/01/22 14:08:29	LAMartyLocaA...
Plate_20210121_133821	Sequencing	2021/01/21 13:43:55	LAMartyLocaA...
Plate_20210121_133447	Fragment analysis	2021/01/21 13:35:33	LSMartyLocaSt

2. Tap a plate, then tap **View**.

The results for the plate are displayed.

Well ID	Sample name	QC	CRL	Exported	Info
A01	A01		549	Yes	
A02	A02		544	Yes	

Well ID	Sample name	QC	SQ	Exported	Info
A01	A01		1.0	Yes	
A02	A02		1.0	Yes	

Daily instrument maintenance tasks

For details and additional maintenance information, refer to the user guide.

Frequency	Task
Daily	Clean the instrument surfaces of dried residue, spilled buffer, or dirt.
	Check for leaks and dried residue around the buffer-pin valve, check valve, and array port lock. If leaks persist, contact Technical Support.
	If you use custom run modules that specify an oven temperature that is below the ambient temperature, empty the oven condensation reservoir.
Daily or before each run	Check for bubbles in the pump block and channels. If you observe bubbles, use the Remove Bubbles wizard to remove bubbles. Note: A polymer pouch includes a small reserve volume that is used for the Remove Bubbles maintenance wizard, which consumes ~350 µL of polymer. The reserve volume is sufficient to run the wizard ~4 times (including the remove bubbles step during other maintenance wizards). If you manually run the Remove Bubbles maintenance wizard >4 times, the volume of polymer that is available for samples may be depleted.
	Visually inspect the capillary tips to ensure that none are crushed or damaged.
Before each run	Check consumables status to see the status for anode buffer container, cathode buffer container, polymer, and capillary array.
	Visually inspect the level of fluid inside the anode buffer container and the cathode buffer container. The fluid must line up with the fill line.
	Ensure that the anode buffer container and the cathode buffer container are properly installed.
	Ensure that the array port lock on the capillary array is secured.
	Ensure that the CBC septa are properly seated on the container.
	Ensure that the plate assemblies are properly assembled. Align the holes in the plate retainer with the holes in the septum to avoid damaging capillary tips. Ensure that the plate retainer is firmly snapped in place on top of the plate.
	Ensure that the plate assemblies are properly positioned in the drawer. Plates should sit securely in the drawer with the notched corner of the plate positioned in the notched corner of the plate holder.
	Ensure that each plate corresponds to the plate file that is linked to the position.

Monthly instrument maintenance tasks

Task
Clean the anode buffer pin-valve assembly with a moistened, lint-free lab wipe.
Clean the drawer and buffer autosampler (CBC holder on the buffer autosampler).
Clean the drip tray.
Clean the polymer delivery pump. Note: If the polymer type was changed within the month, this procedure can be skipped. The wizard that is used to change the polymer type automatically performs the wash pump and channels procedure.
Flush the water trap.

Related documentation

Document	Publication number
Software help that is accessible in all applications	NA
<i>SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 User Guide</i>	100104689
<i>SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 Quick Reference</i>	100104690
<i>SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0 Site Prep Guide</i>	100104691
<i>SAE Administrator Console v2.1 User Guide for Capillary Electrophoresis Products</i>	MAN0025849
<i>DNA Fragment Analysis by Capillary Electrophoresis User Guide</i>	4474504
<i>DNA Sequencing by Capillary Electrophoresis Chemistry Guide Second Edition</i>	4305080
<i>DNA Sequencing by Capillary Electrophoresis Chemistry Guide Third Edition</i>	COL02120 0716 thermofisher.com/sangerhandbook

Limited product warranty

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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

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Revision history: Pub. No. 100104690

Revision	Date	Description
A	28 March 2022	New document for SeqStudio™ Flex Series Genetic Analyzer with Instrument Software v1.0.

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