

Quick Reference Cards | CG000543 | Rev A

Visium CytAssist

for Instrument Operation

For use with:

Visium CytAssist & Accessory Kit, 12-Month Warranty, PN-1000441

Visium CytAssist Instrument Accessory Kit, PN-1000433

Visium CytAssist & Accessory Kit, 24-Month Warranty, PN-1000442

Visium CytAssist Instrument Accessory Kit, PN-1000433



Visium CytAssist

Document Revision Summary



Document Number

CG000543 | Rev A

Title

Visium CytAssist Quick Reference Cards – for Instrument Operation

Revision

Rev A

Revision Date

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Specific Changes

N/A

General Changes

N/A

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Visium CytAssist

Step 1: Installation

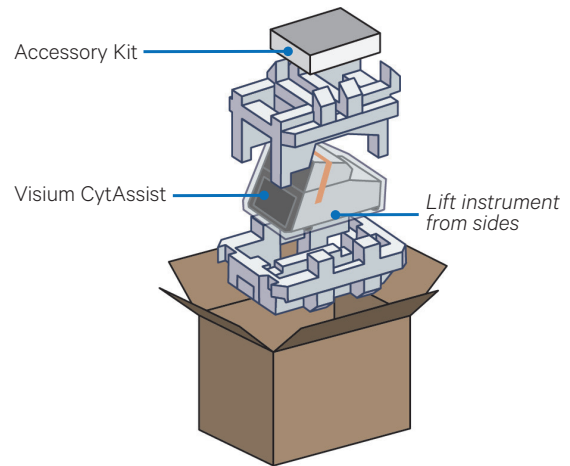
Before unboxing the instrument, choose a location that:

- Is not in direct sunlight.
- Includes a level sturdy laboratory bench that is not subject to movement or vibration.
- Provides maximum bench space (front to back).
- Allows access to the wall plug and to the detachable power cord at the rear.
- Provides a minimum of 4" (10 cm) clearance around unit to allow free air circulation.

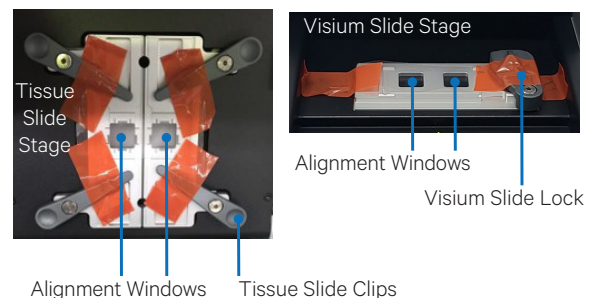
Unbox

- Open box according to box label "this side up."**
Carefully cut or remove the tape on the top of the box and open the top flaps. Ensure that cut is not too deep as it may damage the Instrument Accessory Kit box.
- Remove the Instrument Accessory Kit box, documents, and packaging material.**
- Lift the instrument from the sides. Place on bench top. Carefully remove all packaging materials/tape from the exterior of the instrument. Retain all packaging materials in the event that the instrument needs to be moved.**
- Remove Shipping Bolt from the back of the instrument. Retain for future use.**
- Open the lid. Carefully remove tape from the four Tissue Slide Clips and the Visium Slide Lock.**
- Remove glass protective films from the alignment windows on both stages. Close lid (clicking sound indicates closure).**
- Within Instrument Accessory Kit, locate the universal power cord and plug adaptors. Attach the correct country adaptor to the universal adaptor.**
- Plug the Visium CytAssist into a properly grounded outlet of proper voltage. If using an Ethernet cable (not provided), connect cable directly to the instrument.**

DO NOT POWER ON until ready for **First-Time Use setup**



Remove shipping tape and then glass protective films



DO NOT power on yet.



Ensure power source is reliably grounded

Visium CytAssist

Step 2: First Time Use

The instrument will walk through a first-time setup protocol. Setup requires the following:

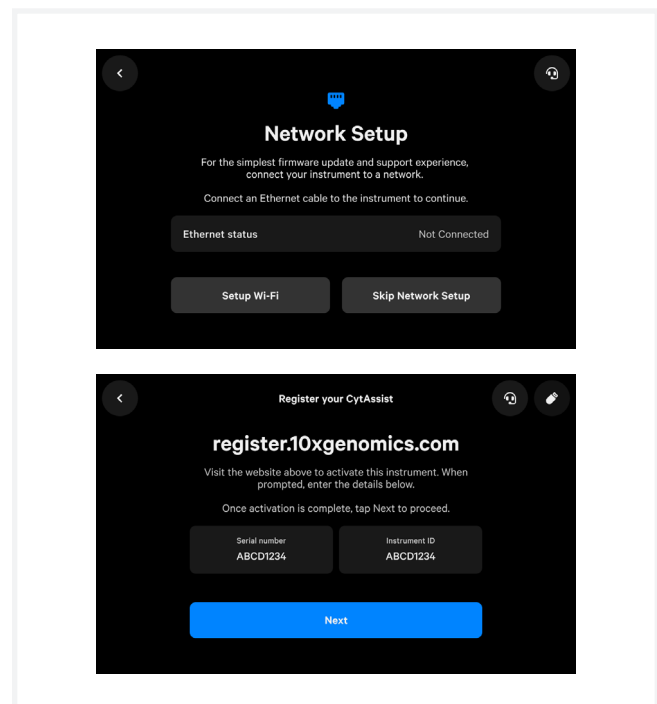
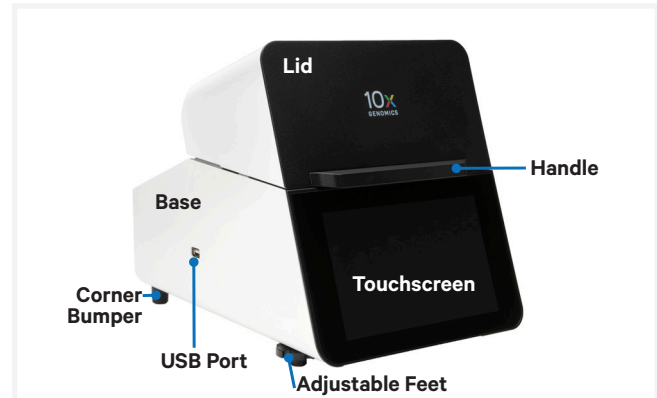
- **10x Genomics Account**
Onscreen instruction will guide account setup. Alternatively, visit cloud.10xgenomics.com to create an account beforehand.
- **Instrument serial number and instrument ID**
Located onscreen during setup, and also on the label at the back of the instrument
- **Network settings**
- **A computer with Internet access**
- **Internet connection is highly recommended.**
Note that Wi-Fi configuration may not be available in your region. Ethernet is recommended for optimal performance.

Turn on the System

- a.** Power on the instrument using the power switch at the back of the unit.
If using Ethernet, connect the cable to the instrument Ethernet port.
- b.** Follow onscreen instruction for Network Setup (via ethernet or Wi-Fi), Date and Time Configuration, and Cloud Registration.
- c.** On a networked device, login to your 10x Genomics account at register.10xgenomics.com and register the instrument. Enter the serial number + instrument ID. Read and accept the legal agreement.
- d.** Update the firmware.

Internet connection: After registration, the instrument will automatically search for the latest firmware update. Confirm data transmission settings for automatic upload/download.

No Internet connection: Download the latest firmware update from your 10x Genomics account to the USB provided in the Accessory Kit. Insert USB into the back of the instrument. See the Firmware Update Procedure section for more details.



- e.** To level the instrument, turn the adjustable feet at the front of the instrument.
Turn feet clockwise for decreasing and counterclockwise for increasing height. The feet will come off the instrument if continued to be turned counterclockwise.

Acceptable leveling ranges are $\pm 3.0^\circ$ from left to right and $\pm 1^\circ$ from front to back.

See Troubleshooting section of the [Visium CytAssist Instrument User Guide \(CG000542\)](#) if an error occurs during the first-time setup protocol.

Visium CytAssist

Step 3: Readiness Test

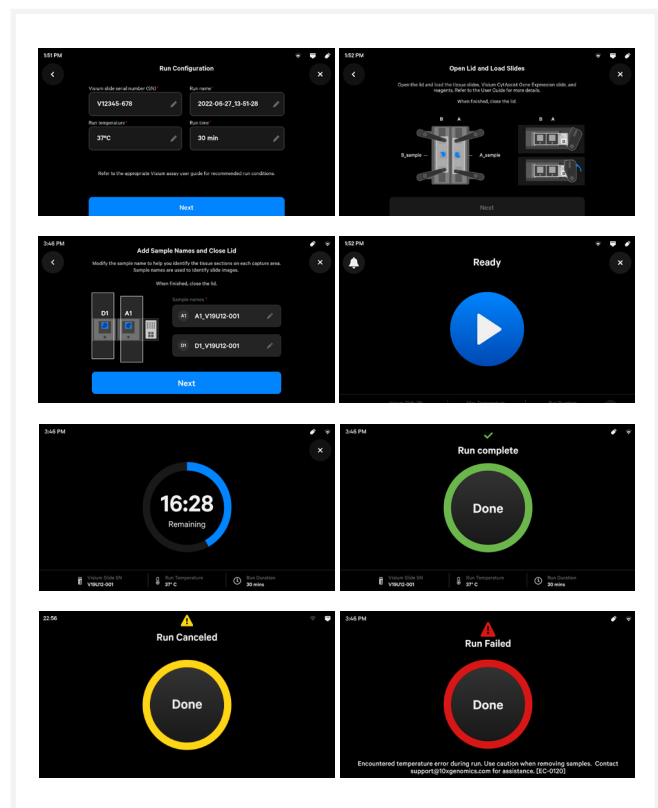
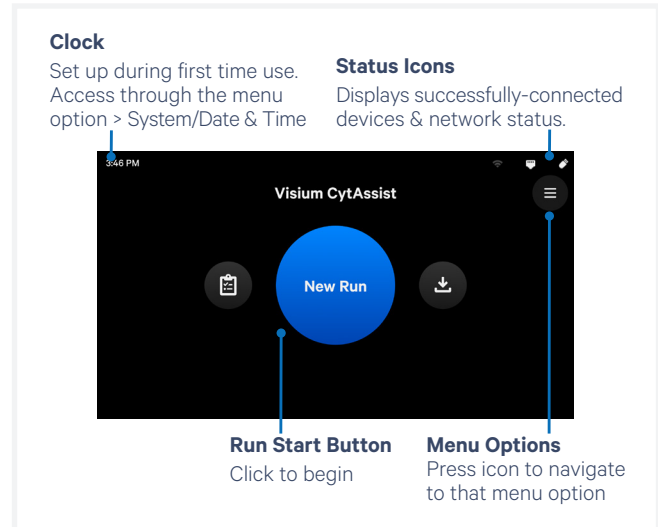
The Readiness Test calibrates the imaging parameters and verifies that all systems are working optimally. No reagents are used. Wear gloves.

- During first-time setup, follow onscreen instruction to launch the Readiness Test (~40 min).
To initiate a Readiness Test at any other time, navigate through the menu to System > Alternate Modes > Readiness Test.
OR press the blue Run Start Button on the touchscreen to initiate a run. Enter the Readiness Test serial number (located on the Calibration Slide label).
- Locate two blank slides and the Visium CytAssist Calibration Slide in the Instrument Accessory Kit. Clean with compressed air.
- Enter the serial number on the calibration slide (using a different serial number could result in poor calibration).
- Open Lid.
- Follow onscreen instruction to load slides.
- Press the blue play button to start the test.
- A successful Readiness Test marks the end of setup. Follow onscreen instruction in the event of a failed or incomplete test.
- Upon test completion, follow onscreen instruction to unload slides.
- Store the Calibration Slide away from sunlight and extreme temperature, in the original packaging bag. Retain for future use.
- Wipe down the Tissue Slide Stage and the Visium Slide Stage with ethanol and laboratory wipes. Use compressed air to dry & remove debris as needed.
- Close lid. Wipe down the base and lid of the instrument.

For optimal performance, tests are recommended during first-time use, after any update, and after moving the instrument.

Operation Screens

After the Readiness Test, the instrument is ready for use. Representative instrument operation screens are shown below.



The instrument requires a **~20 min cool down** between runs.

Visium CytAssist

Step 4: Main Operation

Main Operation Overview

This section is meant as a general overview of instrument operation and its placement within the steps of the Visium CytAssist Spatial Gene Expression assay. When performing the protocol, follow the steps listed in the appropriate assay kit user guide and use this section only as a reference.

Before proceeding with the appropriate Visium CytAssist Spatial Gene Expression assay:

Select two tissue slides containing sections of interest, and verify that the tissue section is located in an area that results in successful analyte transfer and imaging. Overlay the slides on the diagrams in the Visium CytAssist Quick Reference Cards – for Accessory Kit Instruction (CG000548), located in the Instrument Accessory Kit.

If only one tissue on one slide will be loaded, use a blank slide for the second position on the Tissue Slide Stage.

Follow the protocol in the appropriate assay kit user guide for preliminary steps and preparation prior to using the Visium CytAssist instrument.

- a. Gather two tissue slides, a Visium CytAssist Spatial Gene Expression slide and reagents as listed in the appropriate assay kit user guide.
- b. Enter new run information, including:
 - Visium CytAssist Slide serial number
 - Custom run name, temperature and time (37 °C for 30 min is recommended for most applications)
 - Sample names; the 6.5 mm capture areas are designated **A1** and **D1**. The 11 mm capture areas are designated **A** and **B**.
- c. Open the lid.
- d. Follow onscreen instruction and load the blank slides and Calibration Slide onto the instrument. See [Load Slides](#) section for details.

- e. Load reagents to each spacer when instructed in the appropriate assay kit user guide (be mindful of time-sensitive reagents).
- f. Close the lid.
- g. The home screen will now display a play symbol and run information along the bottom of the screen. (Use button in upper right corner of the screen to abort).
- h. Press the play button to start the run.
- i. At the end of a run, the button will display “Done” and a “Run Info” tab at the bottom of the screen.
 - Green: a successfully completed run
 - Red: a failed run/error
 - Yellow: a canceled run
- j. Click the “Done” button and open the lid. DO NOT power off the instrument at this time, as it needs to process Support Data.
- k. **IMMEDIATELY** remove the Visium CytAssist slide from the instrument, and proceed with the protocol workflow as specified in the appropriate assay kit user guide (save cleanup for later).

During next stopping point in the workflow:

- l. Clean the instrument after every run.
- m. Export the Run Data via USB.
- n. View and verify the tissue samples were accurately aligned within the Visium CytAssist Slide fiducial frame.

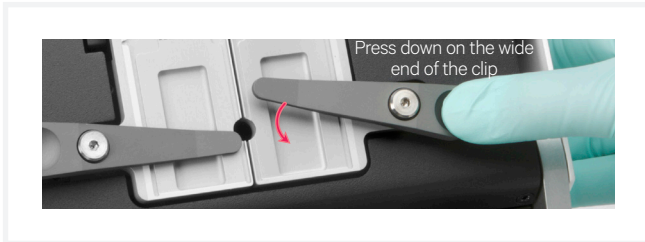
 The instrument requires a **~20 min cool down** between runs.

Visium CytAssist

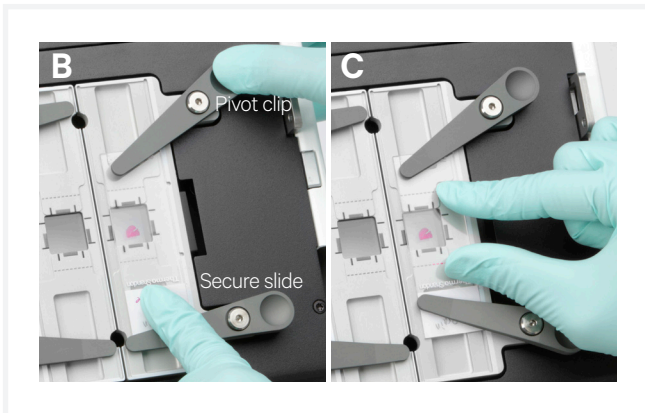
Load Slides onto Slide Stage

Load Tissue Slides onto Tissue Slide Stage

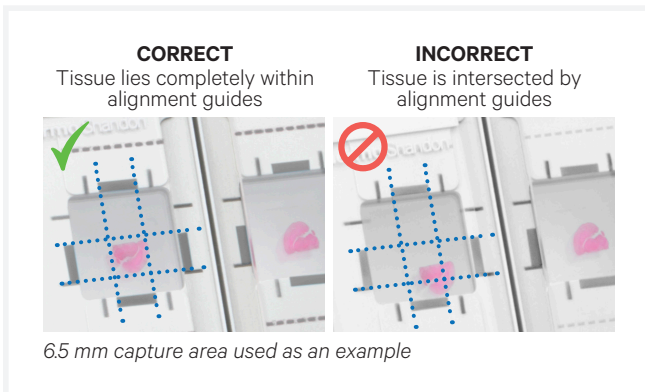
- a. Press down on the wide end of clip to lift and pivot the narrow end of the clip. Pivot the clips to their outermost position.



- b. Lay the tissue slide flat against the stage surface. Both hands needed: use one hand to hold the slide in place and the other to pivot the clips and overlap the slide.
- c. Use fingers to finely adjust the position of the tissue/sample within the alignment guides.



- d. If only one tissue on one slide will be loaded, use a blank slide for the second position on the Tissue Slide Stage.



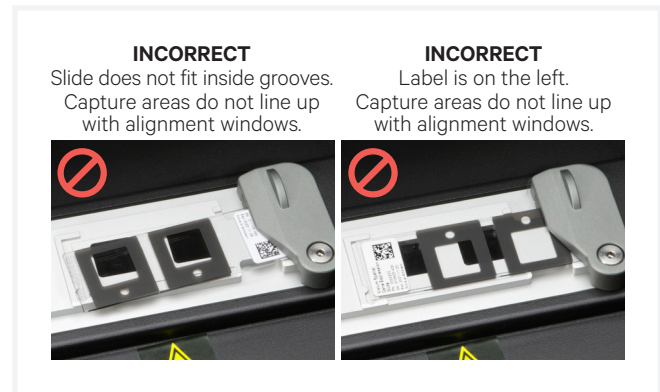
Visium Slides

The Visium Slide Stage holds one of the following at a time:

- Visium CytAssist Spatial Gene Expression Slide v2, 6.5 mm or 11 mm
- Visium CytAssist Training Slide
- Visium CytAssist Calibration Slide

Load Tissue Slides onto Visium Slide Stage

- a. Inspect the Visium Slide Stage for dust/debris.
- b. Open the Visium Slide Lock by using one finger to pivot.
- c. Line up the slide with the label face up and oriented to the right.
- d. Fit the slide within the raised grooves on the left, top and bottom.
- e. Secure the slide by pivoting the Visium Slide Lock gently to the left. The lock will partially obscure the slide label when correctly secured.



Visium CytAssist

Firmware Update Procedure

Step 1: Download and install the update

Procedure with a network connection, auto-download enabled:

- a. A pop-up on the home screen will alert the user of available updates.
- b. Open pop-up and click to install.

Procedure with a network connection, auto-download disabled:

- a. A pop-up on the home screen will alert the user of available updates.
- b. Open pop-up and click to download.
- c. Click to install.

Procedure with no network connection:

- a. Visit cloud.10xgenomics.com to view firmware updates.
- b. Download the desired updates onto a USB.
The Visium CytAssist instrument is compatible with VFAT and exFAT formatted USBs.
- c. Insert USB into the back of the instrument.
- d. Onscreen, navigate through the menu to System > Firmware Update > Update via USB.
- e. Click on “Firmware update available.”
- f. Click to download the update to the instrument.
- g. Click to install.
- h. After installation is complete, remove USB from instrument.

Step 2: Reinitialize the instrument

After installing an update, run a Readiness Test.

- a. To initiate a Readiness Test, navigate through the menu to System > Alternate Modes > Readiness Test. OR press the blue Run Start Button on the touchscreen.
Enter the serial number located on the Visium CytAssist Calibration Slide label.
- b. Locate two blank slides and the Visium CytAssist Calibration Slide in the accessory kit. Clean with compressed air.
- c. Follow onscreen instruction to load the blank slides and calibration slide onto the instrument.
- d. Press the blue play button to start the test.
- e. Upon test completion, follow onscreen instruction to unload slides. Follow onscreen instruction in the event of a failed or incomplete test.
- f. Store the slides in their original packaging, away from sunlight and extreme temperature. Retain for future use.
- g. Wipe down the Tissue Slide Stage and the Visium Slide Stage with 70% ethanol or 70% isopropanol and laboratory wipes. Use compressed air dry and remove debris as necessary. Clean glass windows with dry polyester swabs (such as Texwipe TX714A Cleanroom Swab, 0.5”L - EW-33677-62 from Cole-Parmer or equivalent) and compressed air. Use a bright light (e.g. flashlight) to inspect the glass windows for any smudges and remove them as described above.
- h. Close the lid (clicking sound indicates closure). Wipe down the base and lid of the instrument.
- i. The instrument is now ready for use.

Refer to the Visium CytAssist Instrument User Guide (CG000542) for detailed information