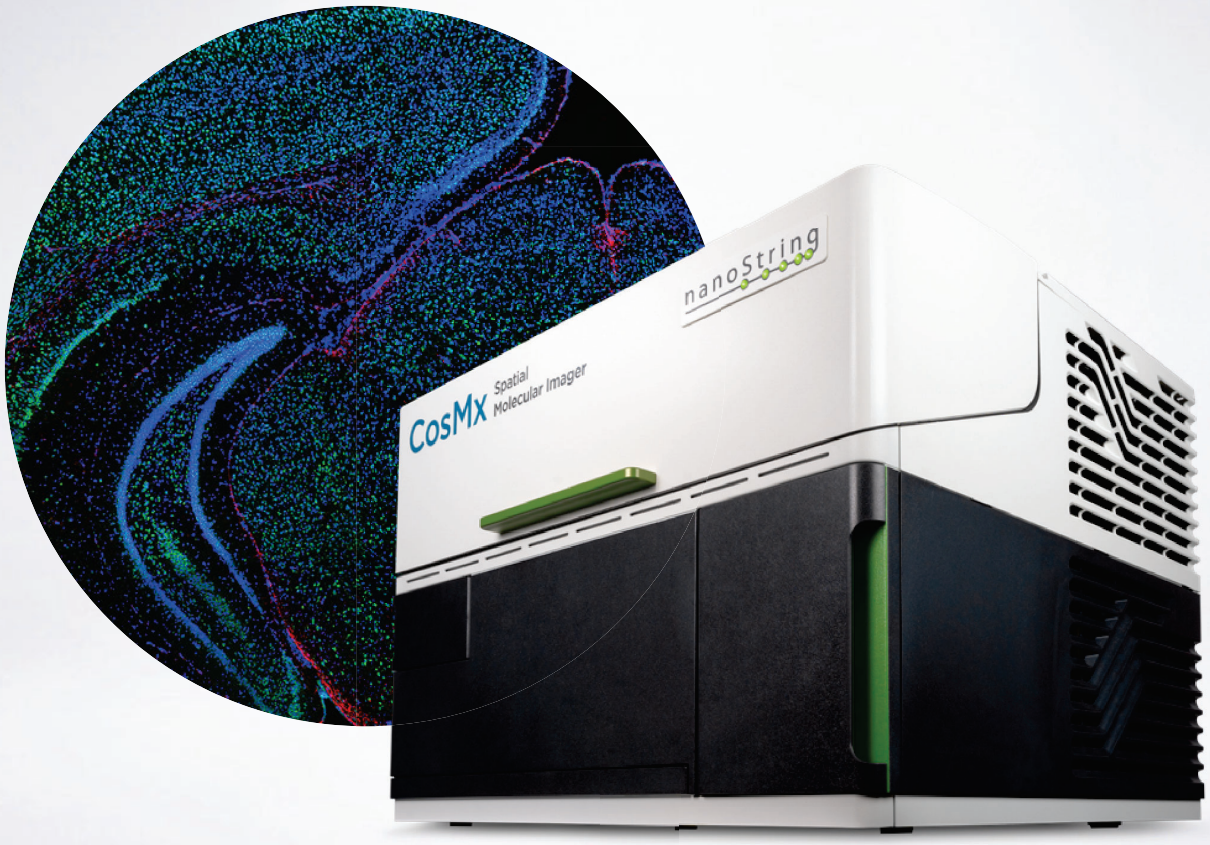


MANUAL

CosMx® SMI Instrument

MAN-10161-08

Software v1.4.1

FOR RESEARCH USE ONLY. Not for use in diagnostic procedures.

Innovation with Integrity

CosMx®
Spatial Molecular Imager

10x Genomics EX2061
Bruker v. Harvard
IPR2024-00526

Bruker Spatial Biology, Inc.
530 Fairview Ave N
Seattle, Washington 98109

www.nanostring.com

Tel: 888.358.6266
Fax: 206.378.6288
Technical Support: support.spatial@bruker.com
Customer Service: customerservice.spatial@bruker.com

Sales Contacts
North America: nasales.bsb@bruker.com
EMEA: emeasales.bsb@bruker.com
APAC: apacsales.bsb@bruker.com
All other regions: globalsales.bsb@bruker.com

EC REP

EMERGO EUROPE
Westervoortsedijk 60
6827 AT Arnhem
The Netherlands

Rights, License, and Trademarks

Use

For Research Use Only. Not for use in diagnostic procedures.

Intellectual Property Rights

This CosMx® Spatial Molecular Imager (SMI) User Manual and its contents are the property of Bruker Spatial Biology, Inc. ("Bruker"), and are intended solely for use by Bruker customers, for the purpose of operating the CosMx SMI System. The CosMx SMI System (including both its software and hardware components), this User Manual, and any other documentation provided to you by Bruker in connection therewith, are subject to patents, copyright, trade secret rights and other intellectual property rights owned by, or licensed to, Bruker. No part of the software or hardware may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into other languages without the prior written consent of Bruker. For a list of patents, see www.nanostring.com/company/patents.

Limited License

Subject to the terms and conditions of the CosMx SMI System contained in the product quotation, Bruker grants you a limited, non-exclusive, non-transferable, non-sublicensable, research use only license to use the proprietary CosMx SMI System only in accordance with the manual and other written instructions provided by Bruker. Except as expressly set forth in the terms and conditions, no right or license, whether express, implied or statutory, is granted by Bruker under any intellectual property right owned by, or licensed to, Bruker by virtue of the supply of the proprietary CosMx SMI System. Without limiting the foregoing, no right or license, whether express, implied or statutory, is granted by Bruker to use the CosMx SMI System with any third party product not supplied or licensed to you by Bruker or recommended for use by Bruker in a manual or other written instruction provided by Bruker.

Trademarks

Bruker, Bruker Spatial Biology, the NanoString logo, CosMx, AtoMx, GeoMx, and nCounter are trademarks or registered trademarks of Bruker Spatial Biology, Inc., in the United States and/or other countries. All other trademarks and/or service marks not owned by Bruker Spatial Biology, Inc. that appear in this document are the property of their respective owners.

Open Source Software Licenses

Visit http://nanostring.com/cosmx-oss and http://nanostring.com/atomx-oss for a list of open source software licenses used in CosMx Spatial Molecular Imaging.

Copyright

©2022-2024 Bruker Spatial Biology, Inc. All rights reserved.

Table of Contents

CosMx SMI Instrument User Manual ... **1**
Contacts ... **2**
Rights, License, and Trademarks ... **3**
Table of Contents ... **4**
Changes in this Revision ... **6**
Conventions ... **7**
CosMx SMI User Manuals and Resources ... **8**
CosMx SMI Instrument Introduction ... **9**
CosMx SMI Workflow Overview ... 10
Instrument Components ... 11
Instrument Specifications ... 14
Fluorescence Channel Specifications ... 14
Instrument LED Indicator Lights ... 15
Installing and Moving ... 16
Disposal of Electronic Equipment ... 17
Instrument Safety Information ... 18
Consignes de Sécurité (Français) ... 19
Initial Setup ... **21**
Logging into CosMx Control Center ... 21
Verify Registration to AtoMx ... 23
Enable Performance Monitoring ... 25
Software Update ... 27
CosMx SMI Control Center ... **28**
CosMx SMI Run ... **29**
Reagents and Consumables ... 29
Start a New Run (Acquisition) ... 32
Flow Cell Configuration ... 36

Load Instrument 46
Scan Flow Cells 55
Post-run Clean 69
Instrument Cleaning and Maintenance 71
Manual Cleaning 71
Decontamination Guidelines 74
Instrument Shut Down 75
CosMx SMI Turnaround Time Estimation (v1.4.1) 76
CosMx Symbols and Definitions 77
Final Page 78

Changes in this Revision

Changes in this manual revision include:

- Updated the Turnaround Time Estimation Table for software v1.4.1 on page 76

.

Conventions

The following conventions are used throughout this manual and are described for your reference.

Bold text is typically used to highlight a specific button, keystroke, or menu option. It may also be used to highlight important text or terms.

Blue underlined text is typically used to highlight links and/or references to other sections of the manual. It may also be used to highlight references to other manuals and/or instructional material.

The gray box indicates general information that may be useful for improving assay performance. The notes may clarify other instructions or provide guidance to improve the efficiency of the assay workflow.

⚠ **WARNING**: This symbol indicates the potential for bodily injury or damage to the instrument if the instructions are not followed correctly. Always carefully read and follow the instructions accompanied by this symbol to avoid potential hazards.

ⓘ **IMPORTANT**: This symbol indicates important information that is critical to ensure a successful assay. Following these instructions may help improve the quality of your data.

CosMx SMI User Manuals and Resources

The CosMx SMI workflow is divided into the following user manuals:

Workflow Step 1	CosMx SMI Manual Slide Preparation for RNA Assays MAN-10184 CosMx SMI Manual Slide Preparation for Protein Assays MAN-10185	CosMx SMI Semi-Automated Slide Preparation for RNA Assays MAN-10186 CosMx SMI Semi-Automated Slide Preparation for Protein Assays MAN-10187
Workflow Step 2	CosMx SMI Instrument User Manual MAN-10161	
Workflow Step 3	CosMx SMI Data Analysis User Manual MAN-10162	

User manuals and other documents can be found online in the NanoString University Document Library at https://university.nanostring.com.

Instrument and workflow training courses are also available in NanoString University.

For information about the AtoMx™ Spatial Informatics Platform, please refer to the AtoMx SIP Platform Administration Manual (MAN-10170).

Additional data analysis support and resources can be found at https://github.com/Nanostring-Biostats.

CosMx SMI Instrument Introduction



Figure 1: CosMx SMI Instrument

The CosMx Spatial Molecular Imager (SMI) (Figure 1) is a benchtop instrument designed to provide multiomic data for any sample type at cellular and subcellular resolution. The CosMx SMI instrument is intended for Research Use Only. This **CosMx SMI Instrument Manual** is concerned exclusively with the operation of the CosMx Spatial Molecular Imager. It is important that you read and understand the provided information. Please use training resources in NanoString University at https://university.nanostring.com and contact Support at support.spatial@bruker.com to address any questions or concerns.

Separate user manuals provide information on slide preparation (manual and semi-automated) and data analysis. See CosMx SMI User Manuals and Resources on page 8.

CosMx SMI Workflow Overview

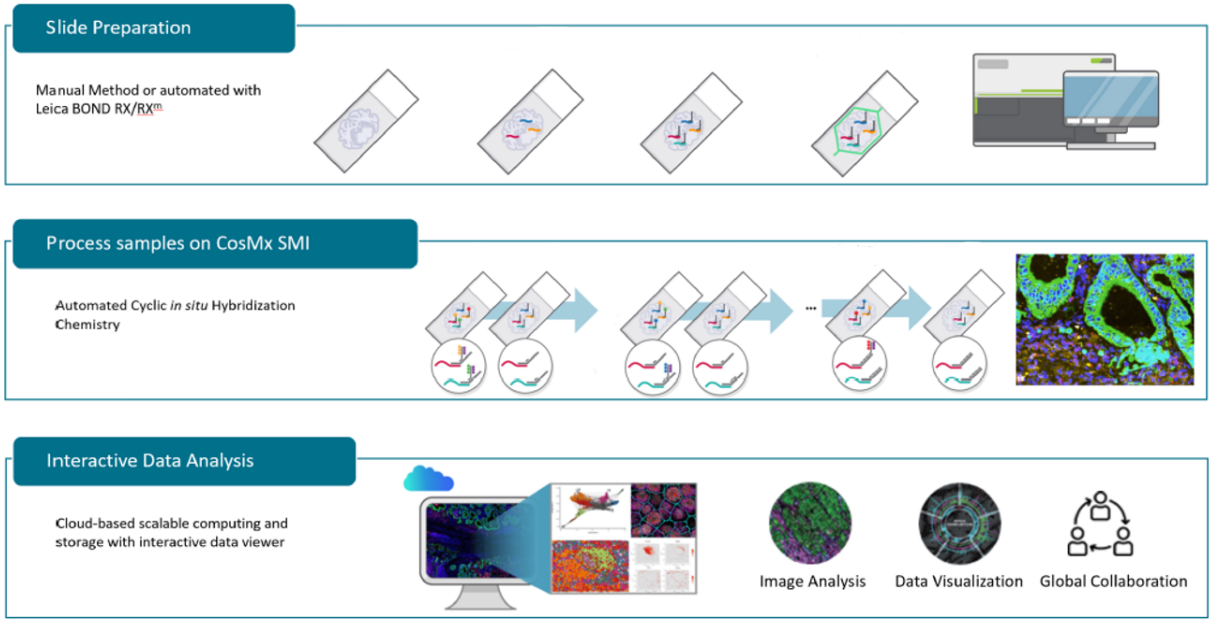


Figure 2: CosMx SMI workflow overview

Day 1: Slide Preparation. Prepare slides manually or using the BOND RX/RX^m fully automated IHC/ISH stainer from Leica Biosystems (BOND RX/RX^m).

Day 2: Process Slides on CosMx SMI. Complete assay and assemble the flow cells. Load assembled flow cells into the CosMx SMI instrument and enter flow cell/study information. Tissue is scanned to capture RNA or Protein readout and morphology imaging within user-designated fields of view (FOVs).

After run completion: Create a **Data Analysis** study in the AtoMx Spatial Informatics Platform (SIP) and perform quality-control checks, data analysis, and generate analysis plots.

Instrument Components

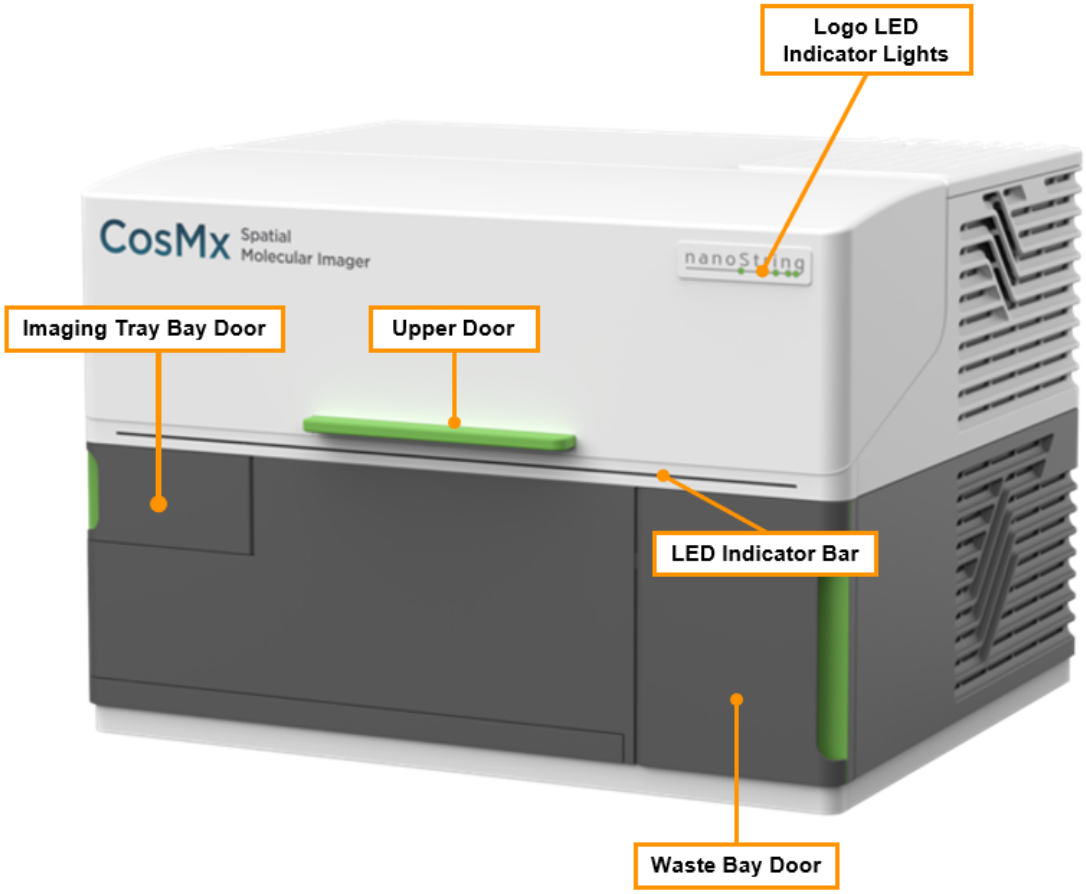


Figure 3: CosMx SMI instrument exterior diagram

The CosMx SMI instrument is a benchtop instrument and comes equipped with a 27" color UHD monitor, as well as a mouse and keyboard (Figure 3).

The instrument upper door opens to the CosMx SMI flow cell nest, barcode scanner bay, and buffer bottles (Figure 4). The imaging tray bay door opens to load and unload the imaging tray or cleaning tray. The waste bay door provides access to the waste container.



Figure 4: CosMx SMI Instrument Interior

To access the CosMx SMI Barcode Scanner Bay, Flow Cell Nest, and Buffers (Figure 4), open the upper door.

⚠ **WARNING**: The instrument upper door can only be open when prompted by the software during run setup. Do not attempt to open the upper door while the instrument is running. The door is locked unless the instrument is in an idle state. Any attempt to bypass the main door lock will damage the instrument.

Up to 4 flow cells can be loaded into the flow cell nest. The flow cells are secured into place by the flow cell nest clamp.

The CosMx SMI instrument requires the following single-use bulk reagent bottles to be loaded before starting a run (Figure 4). The waste bottle and colored reagent bottle caps are included with each instrument. **Do not dispose of the waste container or the provided colored caps.** All other consumables and reagents are **single-use and must be purchased separately**.

- Buffer 1: 500 mL bottle in reagent slot 1 (Purple)
- Buffer 2: 1 L bottle in reagent slot 2 (Orange)
- Buffer 3: 2 L bottle in reagent slot 3 (Magenta)
- Buffer 4: 250 mL bottle in reagent slot 4 (Blue)

⚠ **WARNING**: Read the Safety Data Sheets (SDSs) and follow the handling instructions when handling bulk reagents and waste. Wear appropriate protective eye wear, clothing, and gloves. Safety Data Sheets (SDSs) are available from https://nanostring.com/resources/safety-data-sheets.

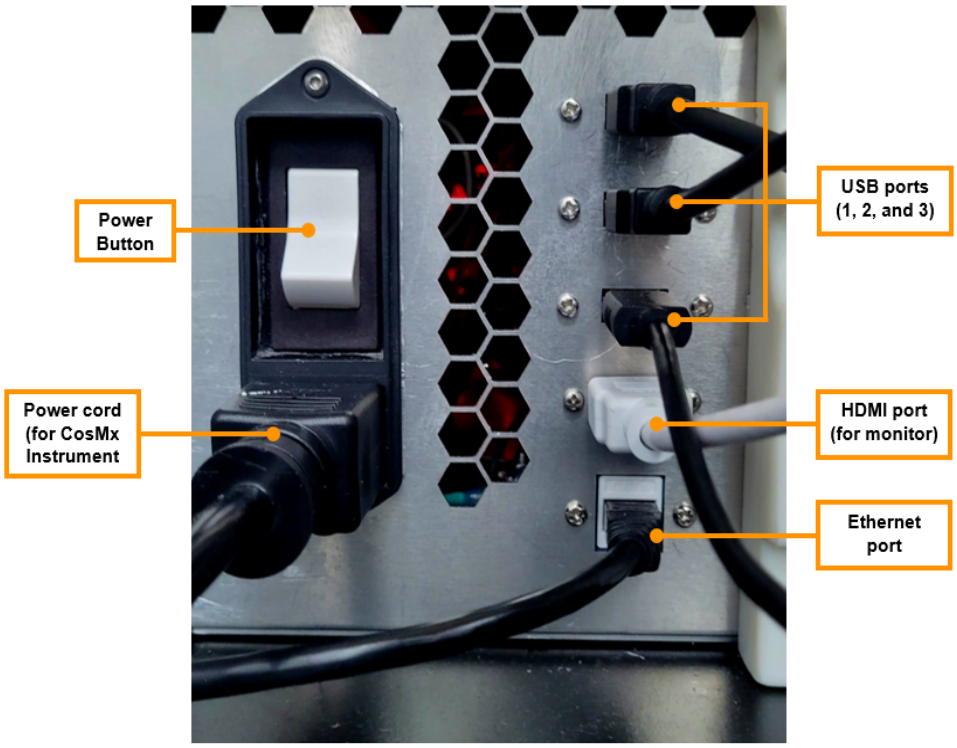


Figure 5: CosMx SMI instrument side panel diagram

The side panel of the CosMx SMI instrument (Figure 5) has the following ports:

- An ethernet connection: Network Port with RJ45 connector. Bruker recommends using an ethernet cable with a rating of CAT6A or higher.
- Three USB connections: USB-A 3.0.
- A power input for the instrument: Power in 100 – 240 VAC, 50/60 Hz, connector C14.
- An HDMI port for the monitor.

Instrument Specifications

The CosMx SMI system is a stand-alone instrument, intended for Research Use Only. Instrument specifications are listed below (Table 1).

Table 1: CosMx instrument specifications

Slides per Run	Up to four (4) slides per run
Weight	280 lbs (127 kg)
Dimensions (W x D x H)	35 in x 29 in x 24 in (89 cm x 74 cm x 61 cm)
Power Requirements	880 VA, 100-240 VAC, 50/60 Hz
Room Temperature	18-28 °C
Room Humidity	10- 70% relative humidity, non- condensing Preferred range is a relative humidity between 20–60%.

Fluorescence Channel Specifications

The wavelengths and excitation and emission information are listed below for each of the CosMx SMI channels (Table 2).

Table 2: CosMx fluorescence channel specifications

Channel		Excitation (peak/wavelength)	Emission (peak/wavelength)
Blue		488 nm	512 nm
Green		530 nm	553 nm
Yellow		590 nm	630 nm
Red		656 nm	684 nm
UV		385 nm	-

Instrument LED Indicator Lights

The CosMx SMI Instrument is equipped with 2 different indicator lights: the Logo LED indicator lights, located on the top right of the instrument, and the LED Indicator bar (Figure 6). These lights are used to indicate the current status of the instrument. The indication and required action for each color can be found in Table 3.

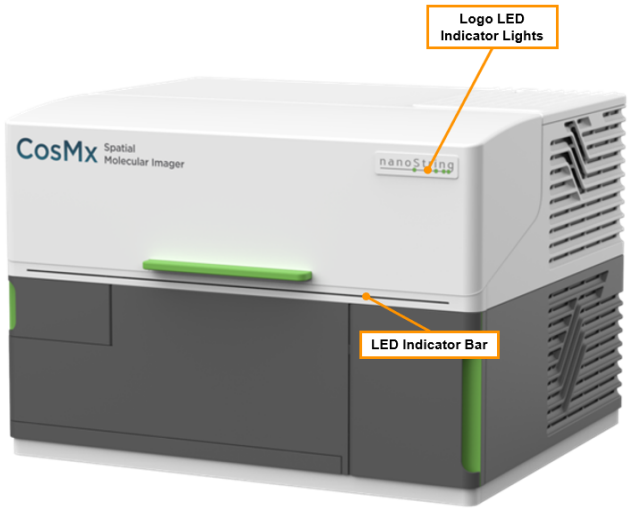


Figure 6: System Indicator Lights

Table 3: CosMx SMI Indicator Lights

Logo Indicator Light		Indicator Bar		Indication	Required Action
	static green		static green	system is idle	no action is required
	static green		loops purple and white	system is idle and uploading data to AtoMx	no action is required
	static green		loops green and white	instrument is running and run is proceeding normally	no action is required
	static blue		pulsing sequence of blue	user interaction is required	return to the instrument, user interaction is required
	static red		pulsing sequence of red	critical error	contact Support support.spatial@bruker.com

Installing and Moving

- Refer to the CosMx SMI Site Preparation Guide (MAN-10171) and the AtoMx SIP Platform Administration Manual (MAN-10170) for detailed site and network requirements that must be met prior to the installation of the CosMx SMI instrument.
- Indoor use only. Avoid placing the instrument in a location with direct sunlight.
- The CosMx SMI instrument may only be installed or moved by appropriately trained personnel. Contact Bruker for installation or relocation of the instrument. See Instrument Safety Information on page 18.
- Place the instrument on a flat, stable surface with access to a dedicated power supply.
- Ensure adequate clearance on the backside of the instrument in order to access power controls and allow at least 3 inches for ventilation. **Unrestricted access to the instrument's rear panel is required for instrument service**.
- Ensure adequate clearance on the front of the instrument to allow for opening the waste and imaging tray compartments and to provide general lab access for movement of personnel around the lab.
- Avoid locating near other equipment that may cause vibration, or near large electrical equipment that may cause interference from noise and/or voltage fluctuation.
- Consult your laboratory guidelines and local regulations for information on reducing hazards associated with the transport, disposal, or removal of an instrument from use. There are no hazards unique to the CosMx SMI instrument that require additional instruction in this manual, however, some general safety guidelines are provided in Instrument Safety Information on page 18 and in Disposal of Electronic Equipment on page 17.

Product Use Limitations

The CosMx SMI system is intended for research use only. Not for use in diagnostic procedures.

Disposal of Electronic Equipment



Review and follow all laws regarding the safe and proper disposal of electrical instrumentation. The symbol of a crossed out, wheeled bin on the product is required in accordance with the Waste Electrical and Electronic Equipment (WEEE Directive of the European Union). The presence of this marking on the product indicates that:

- The device was put on the European Market after August 13, 2005.
- The device is not to be disposed via the municipal waste collection system of any member state of the European Union.

For products under the requirement of the WEEE Directive, please contact your dealer or local Bruker office for the proper decontamination information and take-back program, which facilitates the proper collection, treatment, recovery, recycling, and safe disposal of the device.

Instrument Safety Information

The CosMx SMI instrument may only be operated by appropriately trained, professional users for Research Use Only. Bruker recommends that all users read and understand this manual prior to attempting to operate the system. Keep this manual in close proximity to the instrument for easy access to instructions and safety information.

If the CosMx SMI instrument is used in a manner not specified by Bruker, the protection provided by the equipment may be impaired. Failure to comply with the instructions in this manual may pose a dangerous risk to the operator and void the manufacturer's warranty.

Do not attempt to disassemble the equipment. The CosMx SMI instrument contains no user-serviceable parts. Service personnel trained by the manufacturer must perform repairs. Do not modify any part of the equipment as this may cause fire or malfunction, and voids the manufacturer's warranty. Do not replace detachable main supply cords with inadequately rated cords.

⚠ **WARNING**: Do not attempt to install, move, or perform maintenance on the instrument. Always contact Bruker for instruction before installing or moving the instrument. If it is necessary to move equipment, use extreme caution when lifting items that weigh more than 50 pounds. When lifting a load heavier than 50 pounds (such as the CosMx SMI instrument), use two or more people to lift the load.

⚠ **WARNING**: Do not use this device in close proximity to sources of strong electromagnetic radiation or vibration, as these may interfere with proper operation.

⚠ **WARNING**: Operate the system using only Bruker reagents in accordance with their indications for use. Ensure that all consumables are properly inserted prior to starting a run.

⚠ **WARNING**: Connect the instrument power supply to a properly grounded receptacle with adequate voltage and current (see Instrument Specifications on page 14).

Caution Symbols

ELECTRICAL HAZARD: Do not attempt to disassemble the instrument at any time. An electrical shock can occur if the instrument is operated without its outer case.

LASER WARNING: The CosMx Spatial Molecular Imager is a CLASS 1 LASER PRODUCT which includes lasers of a higher class whose beams are confined within a suitable enclosure so that access to laser radiation is physically prevented allowing safe operation at all times when operated per the user manual. Operating the instrument with damaged or defeated door sensors, interlock circuits, or enclosure panels may expose the user to hazardous laser radiation.

Consignes de Sécurité (Français)

Le CosMx SMI instrument ne peut être utilisé que par une personne ayant reçu une formation professionnelle appropriée. Bruker recommande que tous les utilisateurs lisent et comprennent ce manuel avant de tenter de faire fonctionner le système. Conservez ce manuel à proximité de l'instrument pour faciliter l'accès aux instructions et consignes de sécurité.

Si le CosMx instrument n'est pas utilisé de la façon spécifiée par Bruker, la protection fournie par l'équipement pourrait être altérée. Le non-respect des instructions de ce manuel peut présenter un risque dangereux pour l'opérateur et peut annuler la garantie du fabricant.

Ne pas tenter de démonter l'équipement. Le CosMx SMI instrument contient des pièces non réparables par l'utilisateur. Un réparateur agrée par le fabricant doit faire les réparations. Ne pas modifier les pièces sous peine de provoquer un incendie ou un mauvais fonctionnement, de plus cela annulera la garantie du fabricant. Ne pas remplacer les cordons d'alimentation amovibles par des cordons insuffisamment évalués.

ATTENTION: Ne pas tenter d'installer, de déplacer ou d'effectuer l'entretien de l'instrument. Toujours contacter Bruker pour instruction avant d'installer ou le déplacer l'instrument. S'il est nécessaire dedéplacer l'instrument, utiliser une extrême prudence pour soulever des objets pesant plus de 23 kilogrammes. Pour soulever une charge plus lourde que 23 kilogrammes (comme pour l'instrument CosMx SMI), utiliser au moins deux personnes pour soulever la charge.

ATTENTION: Ne pas utiliser cet appareil à proximité de sources à fortes radiations électromagnétiques ou vibrations, car elles peuvent interférer avec le bon fonctionnement de l'appareil

⚠ **ATTENTION**: Faire fonctionner le système en utilisant uniquement des réactifs Bruker conformément à leurs guides d'utilisation. Assurez-vous que tous les consommables soient correctement insérés avant de commencer une opérat.

⚠**ATTENTION**:Branchez l'alimentation de l'appareil électrique à une prise correctement mise à la terre avec une tension et un courant adéquat (voir les spécifications de l'instrument).

Symboles d'avertissement

RISQUE ÉLECTRIQUE: Ne jamais tenter de démonter l'appareil. Un choc électrique peut se produire si l'appareil est utilisé sans son enveloppe extérieure. Débranchez l'appareil de la source d'alimentation avant de remplacer le fi ltre du ventilateur.

AVERTISSEMENT LASER: L'imageur moléculaire spatial CosMx est un PRODUIT LASER DE CLASSE 1 qui comprend des lasers d'une classe supérieure dont les faisceaux sont confinés dans une enceinte appropriée afin que l'accès au rayonnement laser soit physiquement empêché, permettant un fonctionnement sûr à tout moment lorsqu'il est utilisé conformément au manuel d'utilisation. L'utilisation de l'instrument avec des capteurs de porte, des circuits de verrouillage ou des panneaux de boîtier endommagés ou défectueux peut exposer l'utilisateur à des rayonnements laser dangereux.

Initial Setup

Prior to the instrument's first use, ensure that all installation requirements have been met (see the CosMx SMI Site Preparation Guide (MAN-10171)) and that the system has been registered to the AtoMx Spatial Informatics Platform.

ⓘ **IMPORTANT**: Do not store anything on the instrument's D drive. This space is reserved for run data.

Logging into CosMx Control Center

1. When logging in for the first time, enter the Bruker-provided Username and Password.

ⓘ **IMPORTANT**: Following installation, default administrative credentials and "limited access" credentials are provided (see table below). Administrative credentials are required for software updates. **It is advised to immediately sign in to both accounts and change and record your passwords**.

	Admin Account	Limited Access Account
Username	CustAdmin	CosMxUser
Password	ABCabc123onetwo!!	ABCabc123onetwo!!

NOTE: If unable to login with default credentials, the password may have been changed. Contact the system administrator or site IT.

2. If not automatically directed to the CosMx SMI Control Center login screen, select the **SMI Control Center** desktop icon to open the SMI Control Center in the Google Chrome browser.
3. If prompted, **select Login** to continue to the Control Center Sign In page (Figure 7).

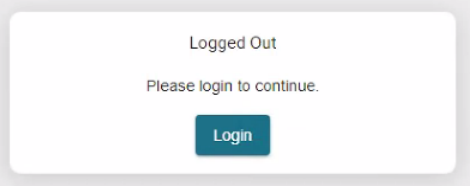


Figure 7: Select Login to Continue

4. Enter the **AtoMx Organizational Admin Username and Password** created during account set-up to sign in with Okta (Figure 8).
   - The Username and Password are user-specific and should have been set up during site preparation. For guidance to establish an Okta account with Bruker, see the AtoMx SIP Platform Administration Manual (MAN-10170).

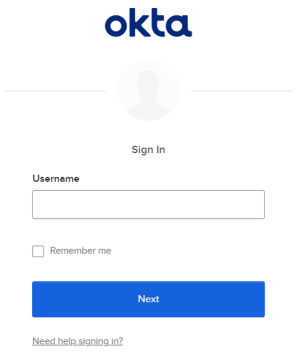


Figure 8: Sign in to Control Center

IMPORTANT: If it is the first time logging in with Okta credentials, a message pops up asking to link the login with your Windows. **Link Account** must be selected to continue.

5. **Select Next** to continue to the CosMx SMI Control Center Home Screen (Figure 9).



Figure 9: Control Center Home Screen

Navigating the Control Center Home Screen:

- **New Acquisition**: Navigates to the flow cell configuration screen to begin a new run.
- **User Guide**: Directs the user to NanoString University, which is a repository of User Manuals and CosMx SMI trainings that can be accessed after signing in with NanoString University credentials.
- **Admin Settings**: Available for instrument administrative users.

Verify Registration to AtoMx

1. From the Control Center Home Screen, select **Admin Settings** (Figure 10).

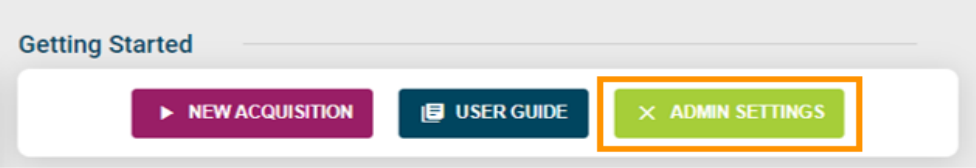


Figure 10: Select Admin Settings

2. Once in the Admin Settings Menu, Select **AtoMx SIP Registration** from the Administration Menu (Figure 11).

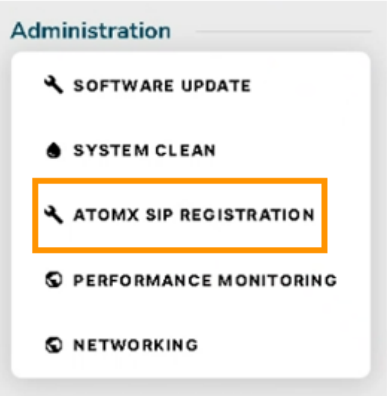


Figure 11: Select ATOMX SIP

3. If the account has been properly registered, the Device Serial Number should auto-populate and a green check mark is present (Figure 12). If the CosMx has been properly registered, no further action is needed.

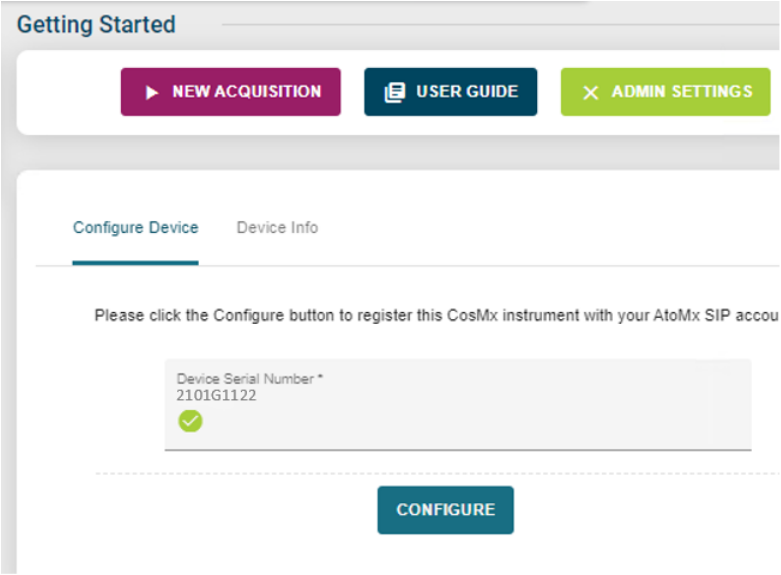


Figure 12: CosMx Registered to AtoMx

4. If the device has not yet been registered, click **Configure**.
5. The Configure page refreshes with **Device Software Version**, **Tenant ID**, etc. (Figure 13).

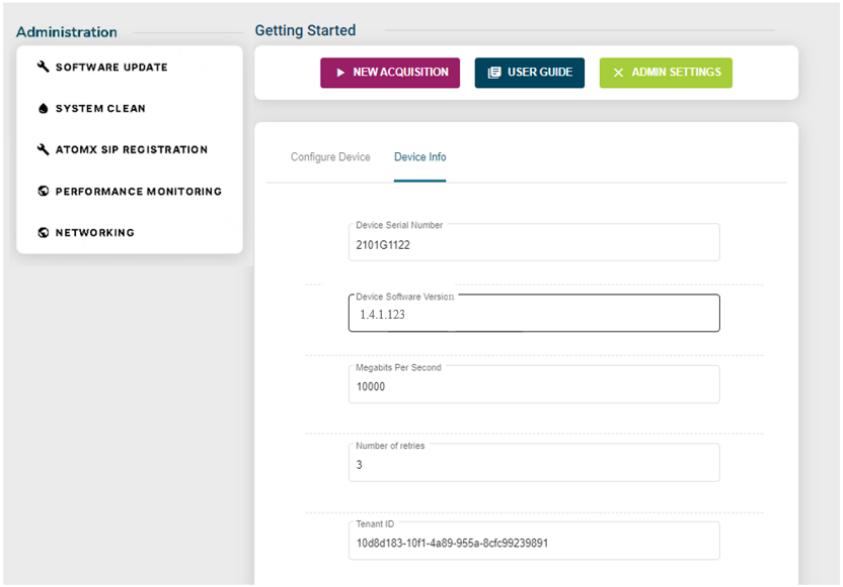


Figure 13: Device Info Screen

FOR RESEARCH USE ONLY. Not for use in diagnostic procedures.

Confirm the CosMx-AtoMx Connection:

1. Select **New Acquisition** in the Getting Started section.
2. If an AtoMx registration or connection error message appears (Figure 14), Repeat Verify Registration to AtoMx on page 23 to complete AtoMx configuration.

Unable to start a new acquisition for the following reasons(s)

AtoMx registration incomplete. Click the CONFIGURE button of the AtoMx SIP administration menu to complete.

Error: 102436 Unable to connect to AtoMx.

Figure 14: AtoMx registration error

Enable Performance Monitoring

Performance monitoring allows critical information regarding health and performance of the system to be shared in realtime to Bruker. This service allows for a quicker response from Support in troubleshooting and resolving any issues encountered.

By default, performance monitoring is disabled. **To enable this feature**, complete the following steps while logged in to the Control Center with the **Organizational Admin User account.**

1. From the Control Center Home screen, select **Admin Settings.**
2. From the left menu bar, select **Performance Monitoring** (Figure 15)**.**

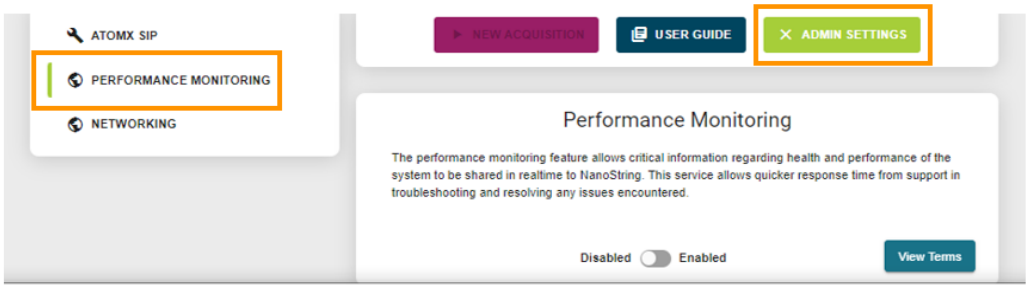


Figure 15: Performance Monitoring

Review the performance monitoring terms by selecting the **View Terms button**. The terms are also included here:

Telemetry Opt In terms and conditions:

The CosMx Instrument Performance Monitoring Program (the "CIPM Program") securely and remotely collects instrument performance information to enable efficient support and proactive actions. Our Service and Support team can automatically access logs and troubleshoot as needed. Additionally, our team will analyze the data, understand trends, and proactively make improvements. By connecting your instrument to the CIPM Program, the following agreement terms will apply as follows:

You, on behalf of the organization that owns this CosMx™ Spatial Molecular Imager (SMI) instrument, are opting into the CosMx Instrument Performance Monitoring Program and are consenting to the following provisions. Under the CIPM Program, CosMx SMI log file data, as further described below (the "Data"), will be transmitted via an encrypted SSL connection to a third party data aggregation service, Splunk. The Data will be streamed continuously in near real time as generated on your CosMx SMI. The Data will be used by NanoString to provide enhanced support to you and your organization, in particular in the event that your organization contacts NanoString for a customer support issue relating to your CosMx instrument. NanoString may also use the Data to identify errors or other problems for which NanoString may be able to offer proactive support; for example, if NanoString identifies trends on the instrument that indicate it is in need of service. In addition, the Data may be used by NanoString to incorporate fixes into future software releases for the CosMx SMI instrument. The Data will be stored by Splunk on behalf of NanoString for an indefinite period and may be accessed by NanoString personnel and contractors as reasonably needed for the purposes mentioned above. The Data to be transmitted to NanoString is comprised of the following categories of data and information from the log files on your CosMx instrument: (a) instrument health, connectivity, and availability, (b) instrument and application security, (c) instrument configuration, status, and activity information, and (d) user workflow information. A complete listing of all instrument log files transmitted under the CIPM Program is available upon request to NanoString. It is intended that there will be no personal information included in the Data, provided, however, that users of your instrument may have stored the following personally-identifiable information, which could be transmitted: user names, email addresses, and phone numbers. NanoString will safeguard the Data and will not disclose it in any manner to a third party that could be used to identify the source of the Data. You and your organization are entitled to revoke the consent you are providing here and to opt out of the CIPM Program at any time through this feature or correspondence with NanoString Support. You may contact NanoString's CosMx Customer Support Team at Support@nanostring.com for any assistance with this functionality. You may also request via that same email address that any Data previously collected from your CosMx instrument be deleted. NanoString does not guarantee that a copy of all Data that has been collected under the CIPM Program will be made available to you, should that be requested. You and your organization are responsible for ensuring that you maintain back-up copies of any data desired to be retained from your CosMx instrument.

Additionally, up to the previous 90 days of telemetry will be submitted upon agreement to these terms.

3. After reading the terms, use the toggle button to **Enable Performance Monitoring**. The change may take up to 2 minutes to apply.

Software Update

To perform a software update, the **user must be logged in to the system using the Admin Account credentials**.

1. Select the **Software Update** icon from the Administration menu (Figure 16).

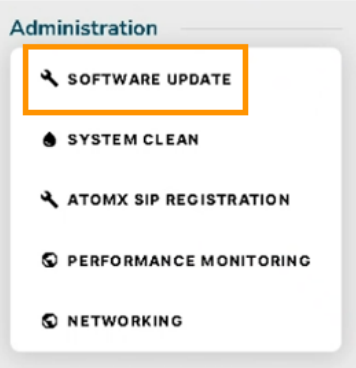


Figure 16: Select Software Update

2. Once open, the system displays the current software version (Figure 17).



Figure 17: Software Update Screen

3. To check for any available updates, select the **Check for Updates** button.
4. If an update is available, the new version displays in the **Latest Version** field and the button changes to **Download**.
5. Select the **Download** button to initiate the software update.
    - The update package downloads through the web browser.
    - Once the download is complete, select **Run** to open the downloaded file.
    - The built-in installer opens and completes the upgrade. Follow any on-screen instructions.
6. Once software is updated, **verify and configure the AtoMx registration**. See Verify Registration to AtoMx on page 23 for configuration instructions.

CosMx SMI Control Center

The CosMx SMI Control Center is the main interface for the CosMx SMI instrument (Figure 18).

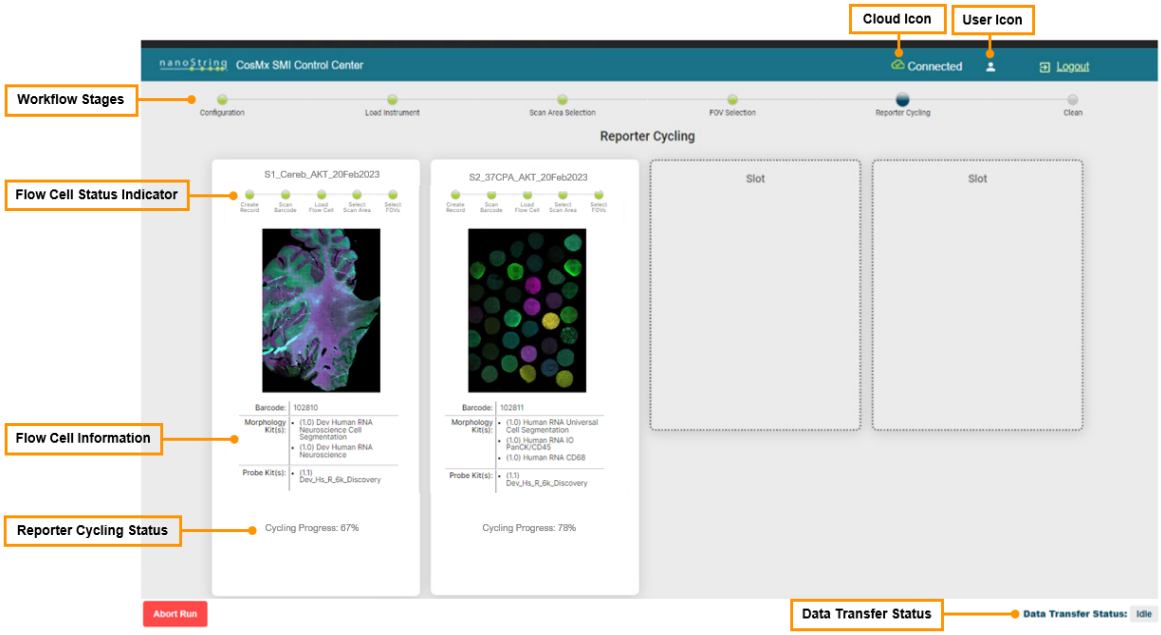


Figure 18: CosMx SMI Control Center

The **Workflow Stages** provide the user with a visual orientation to the total workflow progress.

The **Flow Cell Status Indicator** indicates the current status of each flow cell during run setup.

The **Flow Cell Information** includes the Cell Segmentation and Marker Kit(s) and Probe Kit(s) selected during slide set-up.

Data Transfer Status shows the current data transfer status of the run data to AtoMx.

The **User Icon** displays the user name of the current user. The **Cloud Icon** monitors the instrument's ability to communicate with AtoMx. If the icon shows Disconnected (Figure 19), check network connectivity and firewall settings. If the issue persists, contact internal IT Support. If additional help is needed, contact Support at support.spatial@bruker.com.

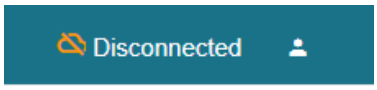


Figure 19: Cloud Services Disconnected

See Start a New Run (Acquisition) on page 32 for additional information on navigating through the CosMx SMI Control Center and setting up a CosMx SMI run.

CosMx SMI Run

Reagents and Consumables

IMPORTANT: Upon receipt of Bruker-supplied reagents and consumables, **open all packaging, verify reagents, and visually inspect the Imaging and Cleanings Tray for damage** that may have occurred during shipping. Once inspected, **return trays to their original packaging for storage**. Do not stack trays if not in original boxes, as the foil cover may be compromised, resulting in evaporation and contamination.

CosMx SMI Instrument Buffer Kit (Room Temperature)

Table 4: CosMx SMI Instrument Buffer Kit Components

Small RNA Buffer Kit	Medium RNA Buffer Kit	Protein Buffer Kit
Compatible with 1000-plex 2 slide or 100-plex 2 or 4 slide configurations	Compatible with 1000-plex 4 slide or 6K-plex 2 slide configurations	Compatible with all configurations
CosMx Buffer 1	CosMx Buffer 1	CosMx Buffer 1
CosMx Buffer 2	CosMx Buffer 2	CosMx Buffer 2
CosMx Buffer 3, Small (550 mL)	CosMx Buffer 3, Medium (1100 mL)	CosMx Buffer 3, Small (550 mL)
CosMx Buffer 4, Small (58 mL)	CosMx Buffer 4, Medium (90 mL)	CosMx Buffer 4, Small (58 mL)
Catalase, Small (4°C)	Catalase, Medium (4°C)	Catalase, Small (4°C)
Pyranose Oxidase, Small (4°C)	Pyranose Oxidase, Medium (4°C)	Pyranose Oxidase, Small (4°C)



Figure 20: CosMx SMI Instrument Buffer Kit

CosMx Imaging Tray (4°C)

IMPORTANT: The CosMx SMI Imaging Tray is analyte, plexity, and slide dependent. Check the tray label before use to ensure the correct Imaging Tray has been selected.

Table 5: CosMx Imaging Tray Options

RNA 100-plex		RNA 1000-plex		RNA 6K-plex	Protein 64+ plex	
2 slides	**4 slides**	**2 slides**	**4 slides**	**2 slides**	**2 slides**	**4 slides**
RNA Imaging Tray (100 Plex, 2 Slide Run)	RNA Imaging Tray (100 Plex, 4 Slide Run)	RNA Imaging Tray (1000 Plex, 2 Slide Run)	RNA Imaging Tray (1000 Plex, 4 Slide Run)	RNA Imaging Tray (6K Plex, 2 Slide Run)	Protein Imaging Tray (2 Slide Run)	Protein Imaging Tray (4 Slide Run)
*CosMx RNase Inhibitor (2 Slide Run)	*CosMx RNase Inhibitor (4 Slide Run)	*CosMx RNase Inhibitor (2 Slide Run)	*CosMx RNase Inhibitor (4 Slide Run)	*CosMx RNase Inhibitor (2 Slide Run)	†Custom Reporter 1 and 2 (if applicable)	†Custom Reporter 1 and 2 (if applicable)
*RNase Inhibitor is sold separately and stored at -20°C. It is used in RNA slide preparation overnight hybridization and instrument loading.					† Custom reporters are required only for custom assays.	

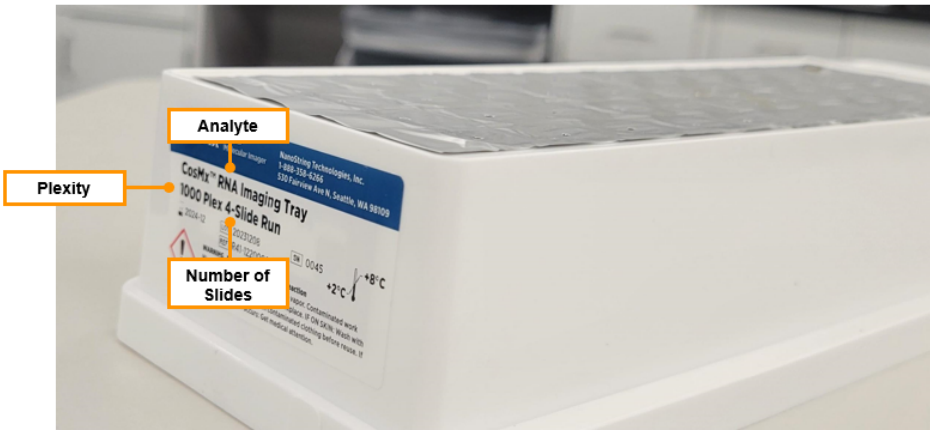


Figure 21: CosMx SMI Imaging Tray

CosMx Cleaning Tray (Room Temperature)



Figure 22: CosMx Cleaning Tray

The Bruker supplied Cleaning Tray is blue in color and labeled as CosMx Cleaning Tray. Unlike the Imaging tray, the Cleaning Tray is not assay, plexity, or analyte dependent.

The CosMx Cleaning Tray is used for post-run and manual cleaning.

Start a New Run (Acquisition)

It is recommended that SMI Control Center access is limited to only one user at a time. The ability to remotely access the instrument is limited by IT requirements and policies. If an error occurs while remotely accessing the instrument, press F5 or refresh to resolve.

If not already done, add enzymes to Buffer 4 before continuing. If this step was completed during Day 1 slide preparation, continue to Login to Control Center on page 33.

Adding enzymes Catalase and Pyranose Oxidase to Buffer 4 one day prior to loading the instrument reduces oxidative damage to tissue, reduces fluorescence, and improves overall run quality.

1. Remove lyophilized **Catalase** and **Pyranose Oxidase (P2OX)** from 4°C. Centrifuge the lyophilized vials and resuspend enzymes in DEPC-treated water:
    - For **Small RNA Buffer Kit or Protein Buffer Kit,** add 250 µL of DEPC-water to each enzyme. Vortex and centrifuge each tube**.**
    - For **Medium RNA Buffer Kit**, add 400 µL of DEPC-water to each enzyme. Vortex and centrifuge each tube.
2. **Add Catalase** to Buffer 4**:**
    - **Pipette out 250 µL** (for Small RNA Buffer Kit or Protein Buffer Kit) or **400 µL** (for Medium RNA Buffer Kit) from Catalase tube. Inspect the aliquot for any sign of precipitate and, if free of precipitate, add enzyme to **Buffer 4**.
3. **Add Pyranose Oxidase (P2OX)** to Buffer 4:
    - Due to the increased risk of precipitate in the P2OX enzyme, ensure the reconstituted enzyme has been vortexed and centrifuged, and any precipitate has been pelleted at the bottom of the tube.
    - Being careful to avoid the pellet, **pipette out 125 µL** (for Small RNA Buffer Kit or Protein Buffer Kit) or **200 µL** (for Medium RNA Buffer Kit) from the P2OX tube. Inspect the aliquot for any sign of precipitate and, if free of precipitate, add enzyme to **Buffer 4**.

IMPORTANT: Precipitate in Buffer 4 could clog the instrument fluidic lines and cause run failure.

4. **Mark Buffer 4 bottle** after enzymes have been added and dispose of excess P2OX according to laboratory guidelines.
5. Leave Buffer 4 sealed on the bench until ready to load onto instrument.

Login to Control Center

1. Login to the computer by entering the Username and Password. Press **Enter**.
2. If not automatically directed to the CosMx SMI Control Center login screen, select the **SMI Control Center** desktop icon to open the SMI Control Center within the Google Chrome browser.
3. If prompted, select **Login** to continue to the Control Center Sign In page (Figure 23).

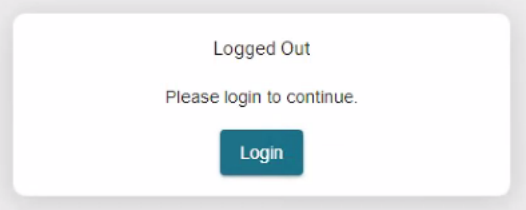


Figure 23: Select Login to Continue

4. Enter the AtoMx Username and Password created during account set-up, or any AtoMx paid account registered to the instrument, to sign in with Okta (Figure 24).
   - The Username and Password are user-specific and should have been set up during site preparation. For guidance on how to establish an Okta account with Bruker, see the AtoMx SIP Platform Administration Manual (MAN-10170).

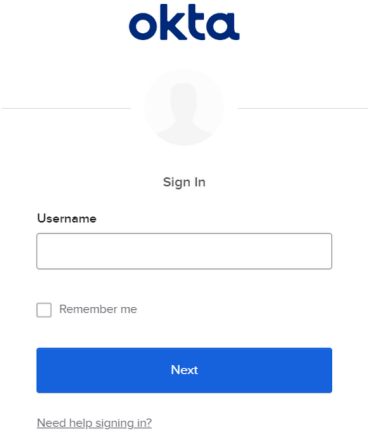


Figure 24: Sign in to Control Center

5. **Select Next** to continue to the CosMx SMI Control Center Home Screen (Figure 25).



Figure 25: Control Center Home Screen

- **New Acquisition**: Navigates to the flow cell configuration screen to begin a new run.
- **User Guide**: Directs the user to NanoString University, which is a repository of User Manuals and CosMx SMI trainings that can be accessed by users after signing in with NanoString University credentials.
- **Admin Settings**: Available for instrument administrative users.

If during run set-up the workflow does not progress as expected (e.g. a Continue button changing to blue), the browser can be refreshed by clicking the browser's refresh icon or pressing F5 on the keyboard.

NOTE: Refreshing the browser may clear fields that have not yet been saved.

6. **Select New Acquisition** to continue with run set-up.
7. **Remove the Imaging Tray from 4°C** and leave at room temperature for a minimum of 1 hour.

IMPORTANT: Do not remove the foil seal from the Imaging Tray. This could lead to cross-contamination between wells and affect experiment data.

8. **For RNA runs, confirm that RNase Inhibitor is on hand** (stored at -20°C) and keep at -20°C until loading the new imaging tray (see Load the New Imaging Tray on page 46).

9. **For Protein runs**, remove any **custom reporters from 4°C** (if applicable) and keep on ice until the step Load the New Imaging Tray on page 46.

> **IMPORTANT**: To run the custom protein workflow, the instrument must be running software version 1.2 or later. To determine the software version, navigate to the **AtoMx SIP** option in **Admin Settings** and select **Device Info**. Verify the Device Software Version is 1.2 or later. See Initial Setup on page 21 for additional information.

> **IMPORTANT**: If running the **6K Human Discovery Panel**, **up to 2 slides** can be loaded per run. Attempting to run more than 2 slides will result in run failure.

Flow Cell Configuration

A new flow cell record must be created for each flow cell. Each flow cell record can be set up differently depending on project needs. However, all flow cells run together must measure the same analyte (RNA or protein).

1. From the Flow Cell Configuration screen, select **Create Flow Cell** (Figure 26).

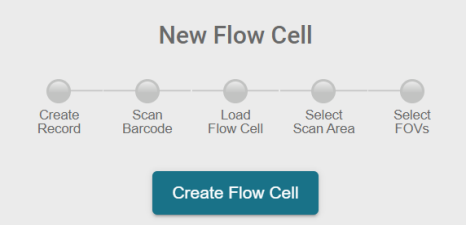


Figure 26: Select Create Flow Cell

2. Create a **New Flow Cell Record** (fields marked with an asterisk (*) are required and cannot be left blank)(Figure 27).

> Clicking outside of the Create Flow Cell window will close the window and any information that has been input will not be saved. Be sure to save all work before clicking outside of the window, refreshing, or closing the Control Center browser.

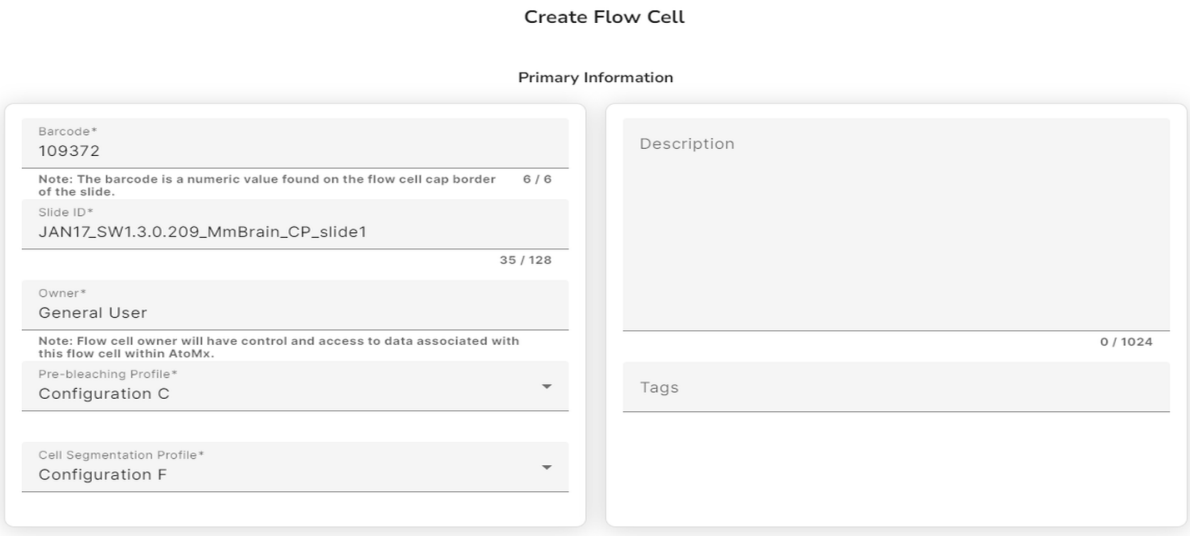


Figure 27: Create a New Flow Cell Record

- **Barcode**: The barcode is the 6 digit numeric value found on the flow cell. The barcode is flow cell specific and cannot be used again once it has been scanned and loaded into the instrument. Record the barcode for each flow cell before loading.
- **Slide ID**: Create a unique identifier for each flow cell.
- **Owner**: Select the project / flow cell owner from the dropdown menu.
- **Pre-bleaching Profile**: Use the table below (Table 6) to select the appropriate Pre-bleaching Profile. Tissue type assumes FFPE tissue unless otherwise noted. Select **None** if no pre-bleaching is required.

  Deviating from the recommended Pre-bleaching Profile may negatively impact data quality. If desired tissue type is not listed, use default Condition C. Tissues with known high auto-fluorescence require longer pre-bleaching time. **If running normal and malignant tissue on the same slide**, it is advised to use the longest duration. Pre-bleaching times for each configuration are listed in the footnote of Table 6.

Table 6: Pre-bleaching Profile

Tissue Type*	RNA	RNA	Protein
	Normal	Malignant	
Human Neural	Configuration B	Configuration B	Configuration C
Skin	Configuration C	Configuration C	Configuration C
Lung	Configuration C	Configuration C	Configuration C
Breast	Configuration C	Configuration C	Configuration C
Liver	Configuration B	Configuration C	Configuration C
Colorectal	Configuration C	Configuration C	Configuration C
Tonsil	Configuration C	Configuration C	Configuration C
Pancreas	Configuration C	Configuration C	Configuration C
Kidney	Configuration B	Configuration B	Configuration C
Mouse Neural	Configuration C	Configuration C	Configuration C
CPA	Configuration A	Configuration A	Configuration A

*The pre-bleaching profile is tissue-type dependent and is the same for both FFPE and Fresh Frozen.

Configuration A: 30 seconds, Configuration B: 90 seconds; Configuration C: 60 seconds

- **Cell Segmentation Profile**: use the descriptions and images below to select the appropriate cell segmentation profile.

CosMx saves 2D Max Intensity projection images. These can be used for independent image analysis (e.g. cell segmentation). 3D z-stack morphology images are not saved.

Deviating from the recommended Cell Segmentation Profile will negatively impact data quality. Some tissue types, including malignant tissue, may require additional optimization.

Cell Segmentation Profiles are based on 3 parameters: cell dilation, cell diameter, and nucleus diameter (described in Table 7). See Table 8 for the configuration of each profile and an example image.

Table 7: Basic parameters in cell segmentation.

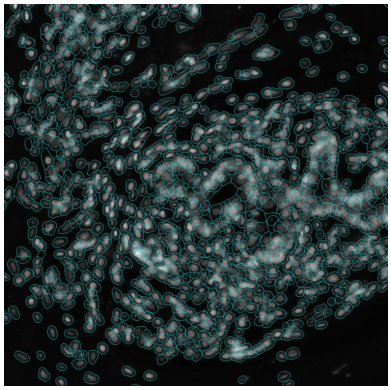
Basic Parameter	Description
Cell Dilation (µm)	Adjusts the size of the cell mask, e.g. to include or exclude more transcripts that are located at the edges (that is, on top of the cell membrane). Increase the value from the default to include more area; decrease to reduce the included area. Dilation will automatically stop at boundaries between cells.
Cell Diameter (µm)	Aids the Cellpose algorithm in resizing the image before segmentation is run or re-run. Enter a value that represents the average cell diameter in this sample or region of sample, or iterate based on previous segmentation results (if cells appear over-split, increase cell diameter; if cells appear over-merged, decrease cell diameter). For more information, refer to Cellpose documentation (https://cellpose.readthedocs.io/en/latest/index.html).
Nucleus Diameter (µm)	How the cell mask is adjusted to accommodate nuclei of different sizes. Increase the value from the default to include more area; decrease to reduce the included area.

Table 8: Cell Segmentation Profiles

Configuration A

Default choice for most applications. Designed for human tissue including colon, breast, lung, kidney, etc.

Cell Dilation (µm)	2.16
Cell Diameter (µm)	8.28
Nuclear Diameter (µm)	7.2

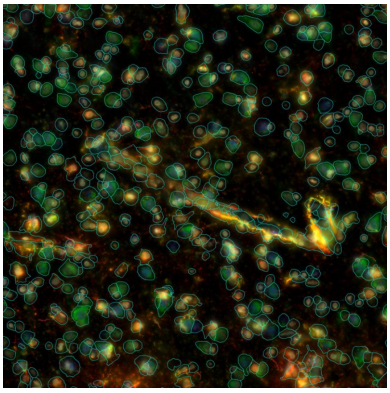


Human Breast Tissue

Configuration B

Designed for human and mouse neural tissue with **RNA assays**

Cell Dilation (µm)	0.72
Cell Diameter (µm)	14.4
Nuclear Diameter (µm)	10.8

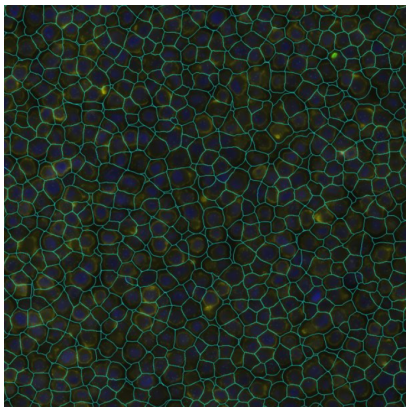


Human Neural Tissue

Configuration C

Accommodates nuclei/cells slightly larger than regular human cells but smaller than large tumor cells (e.g. cell pellet arrays and some cultured cells)

Cell Dilation (µm)	4.32
Cell Diameter (µm)	14.4
Nuclear Diameter (µm)	10.8

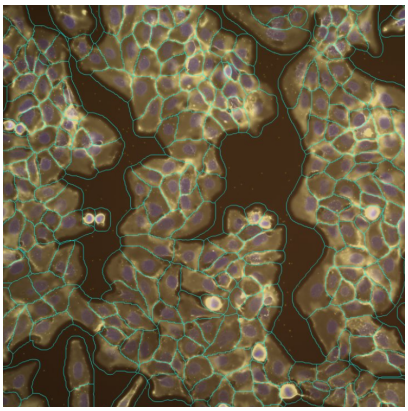


Cell Pellet Array

Configuration D

For tissue containing large cell types (e.g. osteosarcoma or megakaryocytes)

Cell Dilation (µm)	4.32
Cell Diameter (µm)	36
Nuclear Diameter (µm)	18

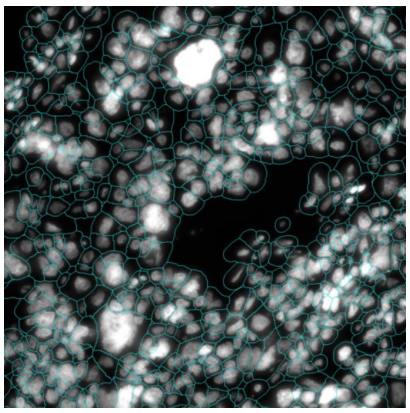


Human Osteosarcoma

Configuration E

Designed primarily for liver - accounts for large cells (hepatocytes) mixed with smaller immune cells

Cell Dilation (µm)	4.32
Cell Diameter (µm)	29.28
Nuclear Diameter (µm)	5.2

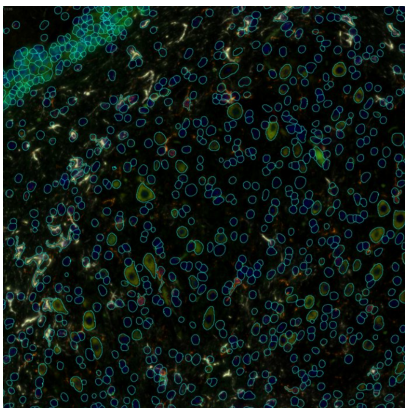


Human Liver Tissue

Configuration F

Designed for mouse neural tissue with **protein assays**

Cell Dilation (µm)	0
Cell Diameter (µm)	16.56
Nuclear Diameter (µm)	7.2



Mouse Neural Tissue (Protein assay)

- **Description**: The description section can be used as needed to include any project, flow cell and/or tissue-specific information.
- **Tags**: Tags can be used to organize flow cell record data in AtoMx Spatial Informatics Platform based on specific user-input key words. Flow cell tags could include labels such as "kidney", "Project 16", "training", etc.

- **Marker Kits Configuration:** Using the dropdown list (Figure 28), select the **Cell Segmentation Kit, Supplemental Marker Kit**, and **À La Carte Marker** (when applicable) used during slide preparation (refer to the CosMx SMI Slide Preparation User Manuals).

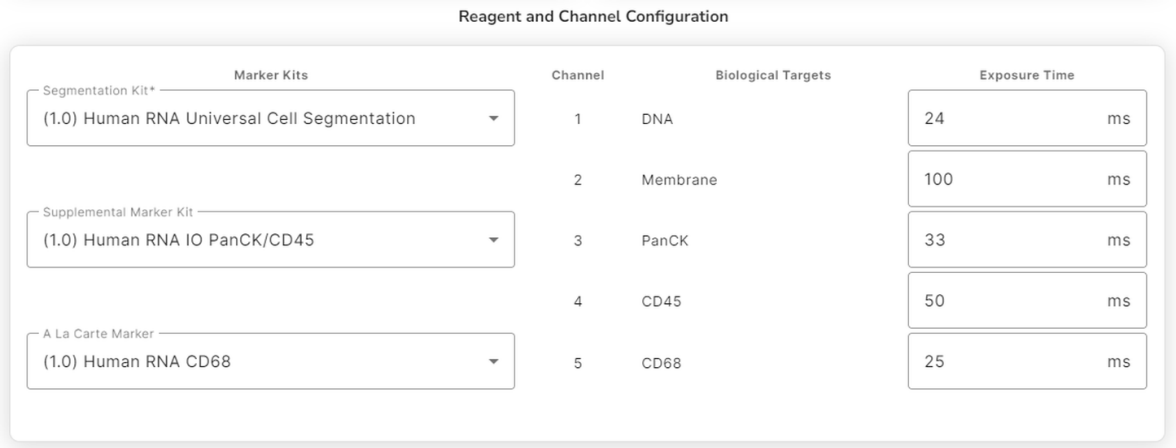


Figure 28: Marker Selection and Configuration

Once the Cell Segmentation and Supplemental Marker Kit selections are made, the **Channel, Biological Targets,** and **Exposure Time** fields are automatically populated.

If the Kit for your custom panel does not appear in the dropdown list, email AtoMx.KitAdmin@Bruker.com. **It is the user's responsibility to request the kit's addition to the CosMx SMI Control Center at least one business day prior to the run,** as described in the CosMx SMI Slide Preparation User Manuals.

IMPORTANT: The exposure time fields are editable, however, **it is not recommended to change these values** unless advised to do so by Bruker. Changing these values manually will affect run performance and data acquisition.

- Complete the **Reagent Configuration** field by selecting the Core Probe Panel and Add-ons (where applicable) (Figure 29). If the correct Add-on is not listed, contact Support at support.spatial@bruker.com.

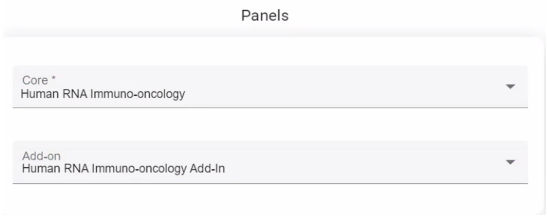


Figure 29: Reagent Configuration

- If running a protein assay and using a Custom Add-On, a Custom Add- On Panel Confirmation window pops up once the custom Add-On panel has been selected (Figure 30). Ensure the selected panel matched the instructions in the pop-up. Do not add the reporters until immediately before loading the imaging tray into the instrument. See Load the New Imaging Tray on page 46 for guidance.

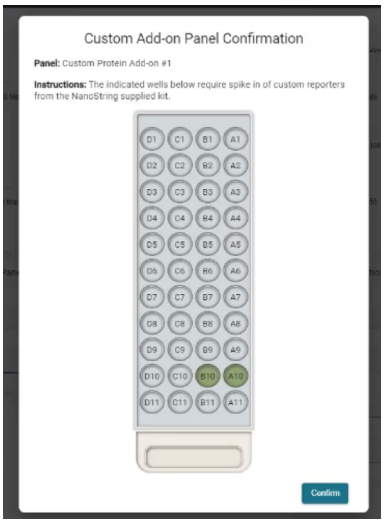


Figure 30: Custom Add-On Panel Confirmation (Protein Assay)

- Select **Confirm** to continue.

IMPORTANT: Ensure that the correct panel configuration is selected for each slide as this directly impacts the genes analyzed from the assay. The RNA Immuno-oncology Core Panel is the 100-plex RNA panel. The Universal Cell Characterization Panel is the 1000-plex RNA panel. Add-On probes supplied with the Core Panels must also be selected from the Add-On dropdown menu.

IMPORTANT: Flow cells in the same run must measure the same analyte (RNA or protein). The analyte-specific probe kit chose to configure each flow cell must be compatible with the probe kits entered for every flow cell within the same run. The user cannot continue run set-up if conflicting analyte probe kits are selected.

- Fill in the **Tissue Information**. Fields marked with an asterisk (*) are required (Figure 31).

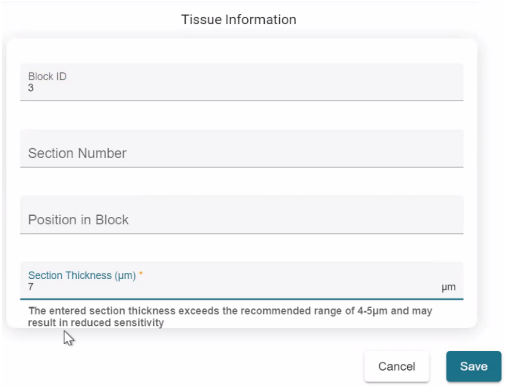


Figure 31: Tissue Information

  - **Block ID**: Enter the block ID from the FFPE or Fresh Frozen block from which the tissue was sectioned.
  - **Section Number**: if known.
  - **Position in Block**: if known.
  - **Section Thickness (µm)**: enter the tissue section thickness. Five (5) µm is recommended for FFPE tissues. Fresh Frozen tissue should be 5-10 µm thick.

The tissue section thickness must be between 5 and 10 µm. Tissue sections outside of that range may result in run failures including auto-focus errors and fluidics errors. An error message occurs if the entered value is out of the acceptable range.

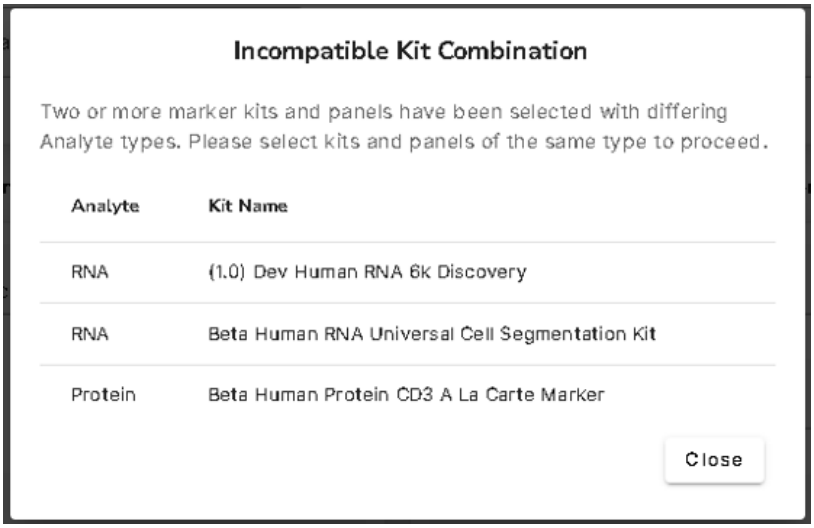
Once all fields have been completed, select **Save**.

The system confirms that all required information is completed and no incompatible selections were made. If no supplemental marker kits were selected, the following message appears:



If no supplemental markers were used, select **Confirm Save** to continue. If markers need to be added, select **Go Back** and select all markers.

If incompatible marker kits or panels were selected (e.g. an RNA panel and Protein Marker), the following message appears:



Select **Close** to return to the Flow Cell Configuration screen and correct the error. **The run cannot proceed if incompatible kits have been selected.**

Once the flow cell record has been saved, the user is directed back to the **Flow Cell Configuration Screen** (Figure 32).

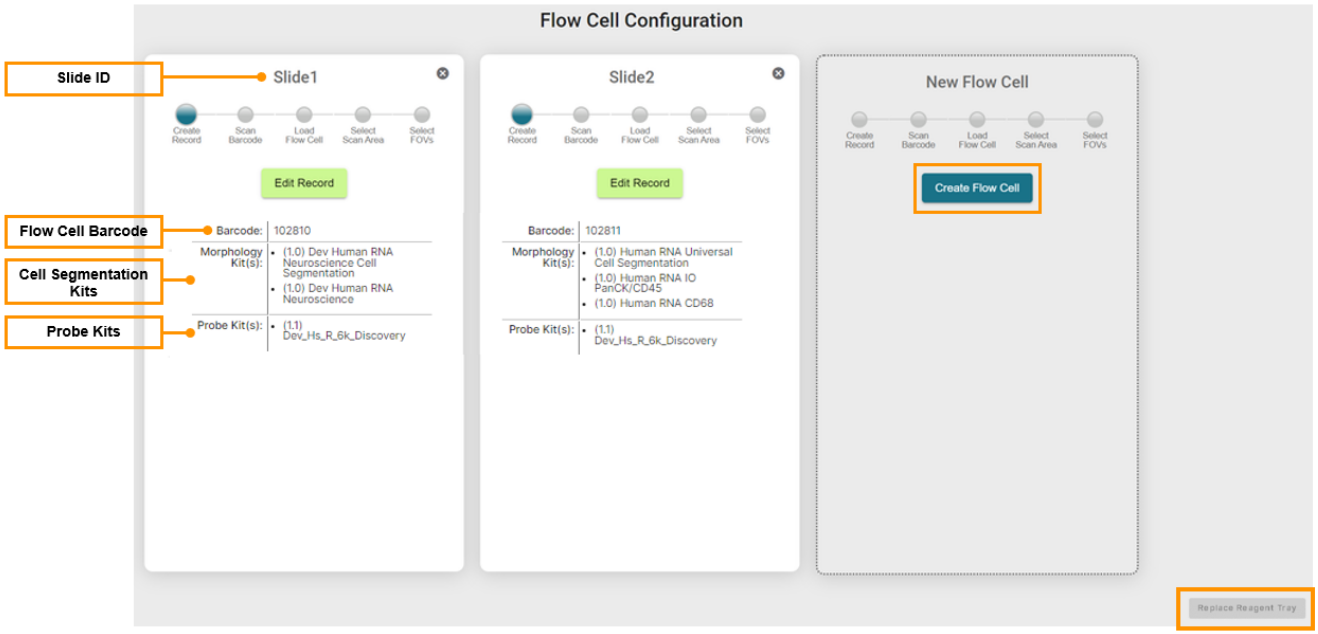


Figure 32: Flow Cell Configuration Screen

3. On the Flow Cell Configuration Screen, **ensure that all of the flow cell information is correct**. If changes need to be made, select the **Edit Record** button.
4. To add more flow cells to the run, select **Create Flow Cell** in the New Flow Cell card.
5. **Repeat steps 1 through 4 until all flow cells have been entered.**
6. Once all flow cells have been entered, select **Replace Reagent Tray** to continue.
7. A pop-up message asks to confirm that all flow cell information is complete. **Verify flow cell information and click Proceed to continue.**

Continue to Load Instrument on page 46.

Load Instrument

During instrument loading, **wait until prompted to load each reagent and the Imaging Tray**. The instrument checks each container as it is loaded and move to the next prompt.

If running RNA samples, **remove RNase Inhibitor from the -20°C** freezer and leave on ice.

Load the New Imaging Tray

Before continuing, **ensure that the correct Imaging Tray is being used and that the Imaging Tray has acclimated to room temperature.** Using an incompatible tray will result in a critical error during loading.

Verify analyte, plextity, and number of slides. See Reagents and Consumables on page 29.

ⓘ **IMPORTANT**: Do not remove the foil seal from the Imaging Tray. This could lead to cross-contamination between wells and affect user data.

1. **If running an RNA Assay**, immediately before loading the Imaging Tray, **add RNase Inhibitor** to the well marked with the ⊕ symbol (well A11).
    - **Puncture the foil** of the marked well using a clean pipette tip.
    - **With a new pipette tip, add RNase Inhibitor** into the marked well.
        - For a **2-slide run, add 4 µL of RNase Inhibitor** into the marked well.
        - For a **4-slide run, add 8 µL of RNase Inhibitor** into the marked well.
2. **If running a Protein Assay and using Custom Barcoded Antibodies**, custom reporters must be added to the Imaging Tray. Custom reporters are added to well A10, B10, or both depending on the custom antibodies being added. Each custom antibody stock vial will indicate which reporter it is associated with.
    - **Puncture the foil** of the marked well using a clean pipette tip.
    - **With a new pipette tip,** add the volume indicated for either **Custom Reporter A10 or Custom Reporter B10** into the respective well(s).
        - For a **2-slide run, add 700 µL** into the designated well(s): A10, B10, or both.
        - For a **4-slide run, add 900 µL** into the designated well(s): A10, B10, or both.

NOTE: If the custom reporter was loaded into the incorrect well, contact Support at support.spatial@bruker.com for instructions on how to proceed.

3. Open the Imaging Tray Bay door and **remove the used tray**.
4. **Without removing the foil seal** from the Imaging Tray, load the new tray into the Imaging Bay ensuring the orientation is correct (Figure 33).

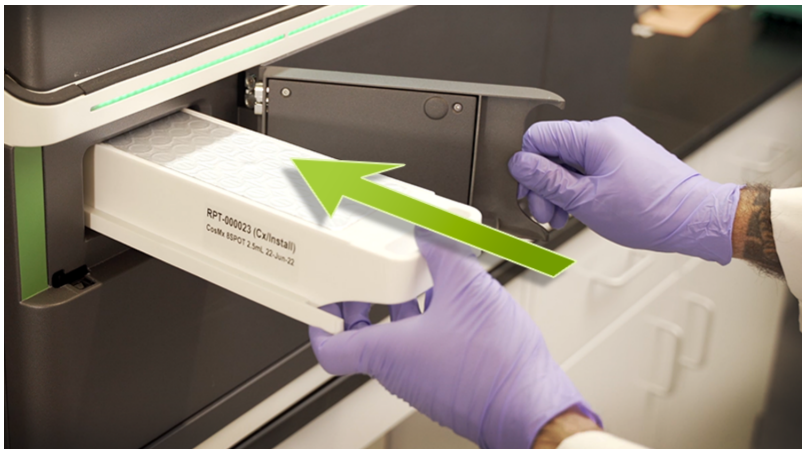


Figure 33: Load Imaging Tray

- Using the handle of the tray, load the tray, label side first, into the instrument (Figure 33).
- Ensure that the Imaging Tray is properly loaded. When loading, slight resistance will be felt; continue pushing until tray is fully inserted. Tray is fully inserted when Imaging Tray legs line up with the internal grooves found in the Imaging Tray bay (Figure 34).

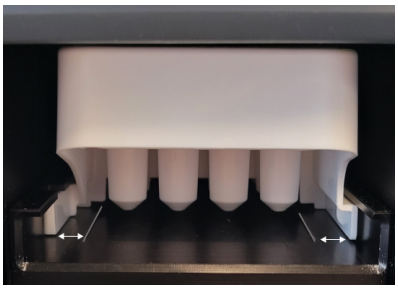


Figure 34: Ensure Imaging Tray is properly loaded

- Do not force the tray if it is not sliding into the Imaging Tray bay. Instead, remove the tray and try inserting again until the tray slides into place.

5. Once the tray is loaded, **close the Imaging Tray Bay Door**.

Scan and Load the Flow Cells

Flow cells should be fully assembled following the instructions found in the CosMx SMI Slide Preparation User Manuals. Prior to loading flow cells, if an adhesive slide label was used, ensure the slide label is not folded over and is properly affixed to the slide.

Follow the CosMx SMI Control Center on-screen prompts to scan and load the flow cells into the instrument (Figure 35).

1. Open the **Upper Door**.
2. Open the **Flow Cell Nest Lid**.

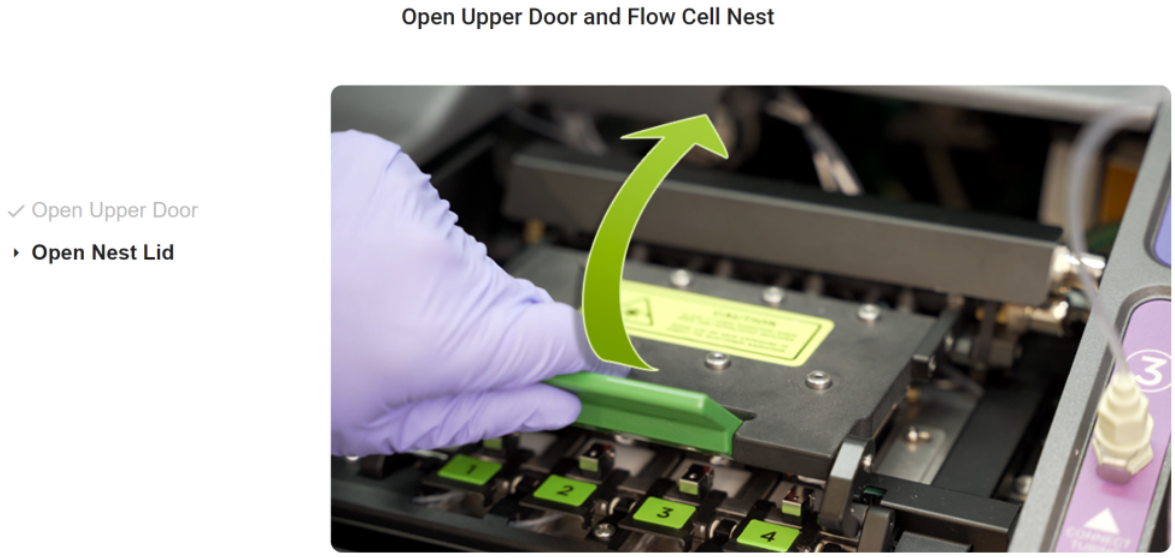


Figure 35: Open the Upper Door and Flow Cell Nest

3. Remove any used flow cells from the flow cell nest and dispose of, or store, according to laboratory guidelines.
4. When prompted, **open the barcode scanner bay door** on the left side of the instrument deck.
5. Hold the flow cell face down over the scanner until the flow cell's QR code is registered. A beep sounds once complete.

If the flow cell does not scan, or an error is generated, check the flow cell label to ensure that a sample or slide barcode is not interfering with the flow cell barcode (e.g. for a Leica generated label, the Leica barcode must be covered or blacked out before loading the slide onto the instrument).

6. Once the barcode has been captured, move the flow cell from the barcode scanner and **place the flow cell coverslip side down, label side facing out, into any available slot** in the flow cell nest (Figure 36).

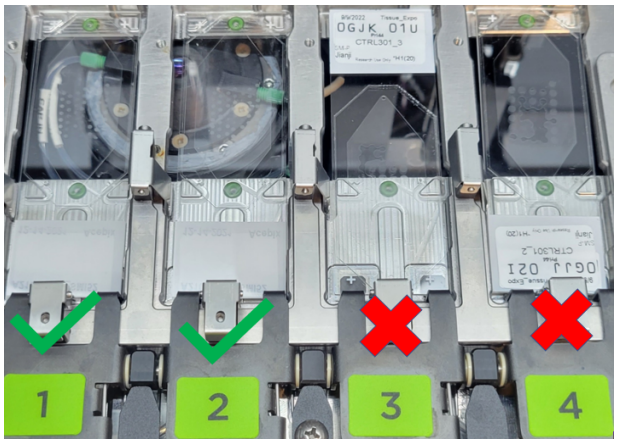


Figure 36: Load flow cells into nest. Flow cells in slot 1 and 2 are loaded correctly; flow cells in slot 3 and 4 are loaded incorrectly.

7. **Repeat** until all flow cells have been scanned and loaded.
   - Flow cells that still need to be scanned and loaded are listed in the top right of the screen in the **Remaining Flow Cells to Load** column (Figure 37).
   - As flow cells are scanned and loaded, the flow cell record information is loaded into the appropriate slot.
   - Once all slides are loaded, **verify that all of the slide record information is correct** and that the slot location on the screen corresponds to the physical location of the flow cell in the flow cell nest.

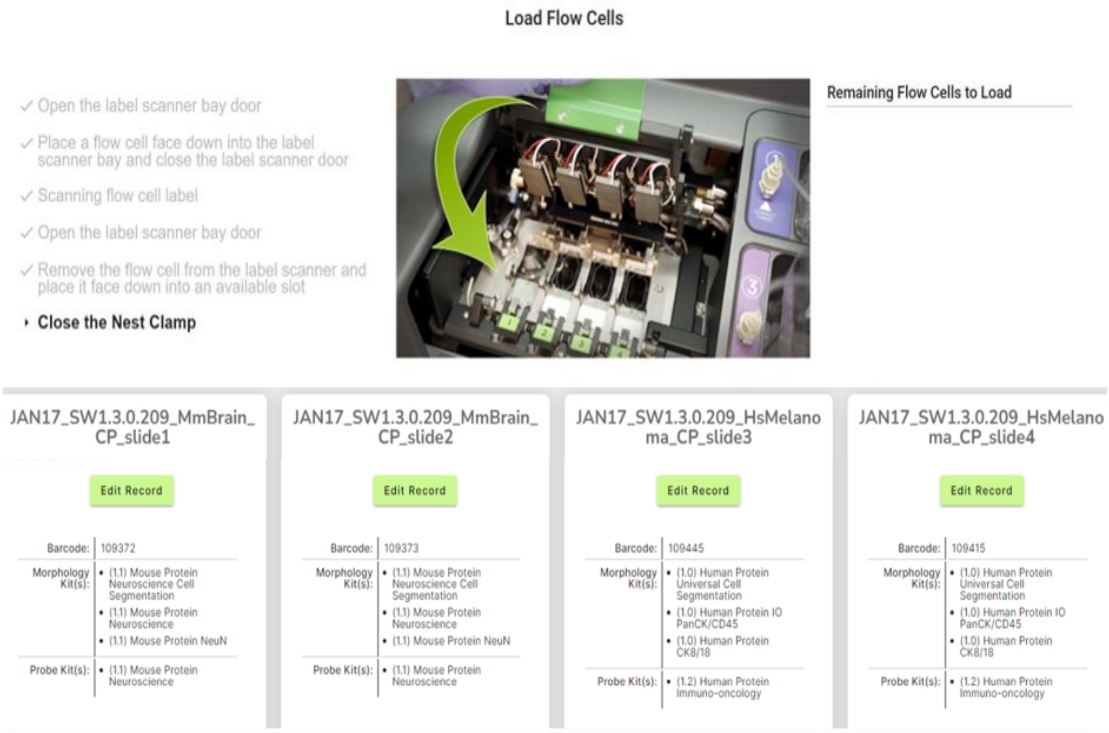


Figure 37: Load Flow Cells

IMPORTANT: Once the flow cells have been scanned and placed into the nest, do not remove the flow cells or transfer to a different slot. If a flow cell needs to be moved or removed, click **Cancel** and follow the on-screen prompts to reload the flow cells.

8. **Close the flow cell nest lid and scanner bay door.**

IMPORTANT: Ensure that the nest lid is completely closed before continuing.

Load Bulk Reagent Bottles

The CosMx SMI instrument requires **new bulk reagents** to be loaded into the instrument at the start of each run. These reagents are **single-use only**.

Load Reagent Bottles:

Bulk reagent bottles are labeled 1-4 and color coordinated to indicate correct placement in the instrument (see Reagents and Consumables on page 29).

Follow the on-screen prompts to remove used reagent bottles and load new bulk reagents. Bottles can be exchanged in any order.

1. **Remove the fitting from each bottle cap** by pinching the dark gray button on the quick-disconnect with thumb and forefinger (Figure 38).

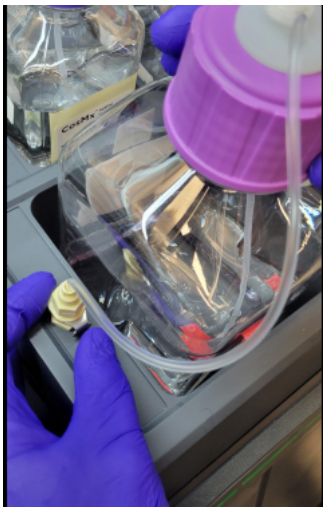


Figure 38: Disconnect Reagent Bottle

2. Remove all used bottles from the instrument and **transfer the bottle cap assembly with the colored cap from each used bottle to the new reagent bottle**. All four reagent bottles must be replaced to begin a new run. Ensure the correct cap is used for each reagent.

IMPORTANT: Do not throw away the colored cap. It considered part of the instrument and other caps cannot be used.

3. Place the new reagent bottle, **label facing forward**, into the appropriate slot (Figure 39).

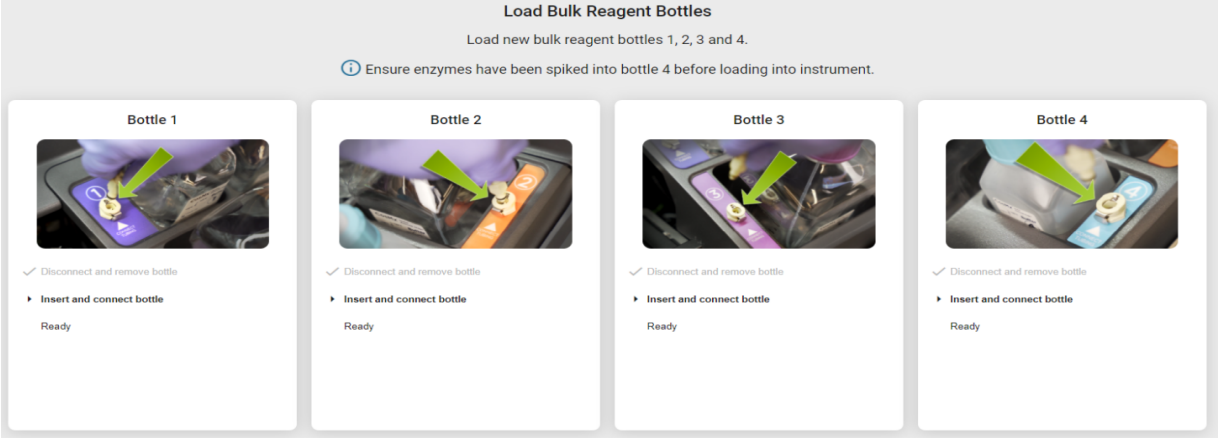


Figure 39: Load Bulk Reagent Bottles

4. **Reattach the cap fitting**, continuing to press even after the first 'click' to ensure that the fitting is secure. The gray button pops out when the bottle is secure.
5. **Once all 4 bottles have been changed**, all bottle status cards show as **ready**.
6. Following the on-screen prompts, **close the nest lid** and **the barcode scanner door** (if not already closed), and **close the upper door.**
7. Once the door is closed, **confirm run parameters** for all flow cells and select **Empty and Replace Waste** (Figure 40).

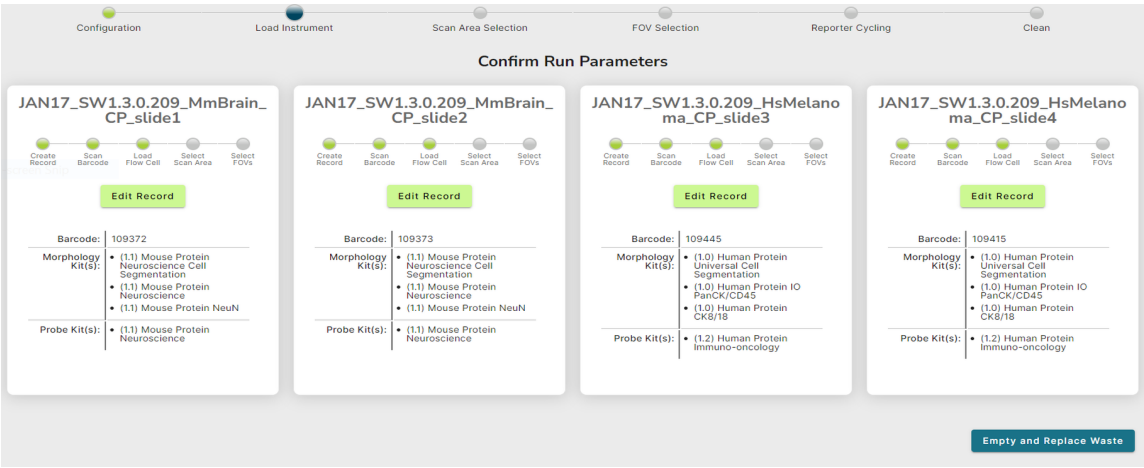


Figure 40: Confirm Run Parameters

FOR RESEARCH USE ONLY. Not for use in diagnostic procedures.

8. Once Empty and Approve Waste is selected, a prompt asks to "**Mark Flow Cells as Used?**" This is the final opportunity to review slide record and run information (Figure 41).
    - To go back and review or edit run information, select **Close**.

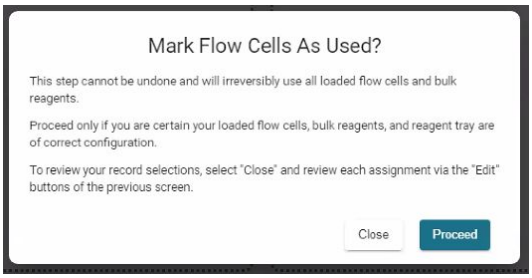


Figure 41: Mark Flow Cells as Used

    - To continue with the run, select **Proceed**.
    - Dispose of used reagents following laboratory guidelines.

Empty Waste

When prompted, **empty and replace the waste container**.

1. **Release the quick-disconnect from the instrument** by pinching the gray button on the quick-disconnect with thumb and forefinger (Figure 42). The waste container cannot be removed from the bay until the quick-disconnect has been released.



Figure 42: Disconnect Waste Container

2. **Unscrew the cap** from the waste bottle and remove it.
3. **Dispose of the waste** according to laboratory waste disposal guidelines. Ensure the bottle is completely empty before continuing.

⚠ **WARNING**: Instrument waste contains Proclin™ which is considered hazardous. Be sure to follow all waste disposal guidelines when emptying liquid waste.

4. **Screw the waste cap back on and load container back into waste bay.**

ⓘ **IMPORTANT**: When reinserting the waste container into the waste bay, ensure the bottle is loaded all the way to the back of the bay.

5. **Reattach the quick-disconnect**, continuing to press even after the first 'click' to ensure that the fitting is secure. The gray button pops out when the bottle is secure.
6. Verify that tubing flowing into waste container has no kinks or obstructions and **close the waste bay door**.
7. Once loaded, the system verifies the connections and waste container status. This may take up to **5 minutes**.

After confirming the waste container status, the instrument automatically begins deck validation. The upper door is locked and the instrument checks the connections and barcodes for the reagent bottles and verifies the barcodes for each flow cell. Once the reagent and flow cell barcodes have been verified, they are marked as used and cannot be used again for future runs. **Deck validation takes up to 30 minutes.** After deck validation, the instrument runs the Instrument Preparation step. During this step, all fluidics lines are tested and primed and the flow cell is imaged**. This process takes up to 1.5 hours.**

ⓘ **IMPORTANT**After the flow cells have been marked as used, the **Cancel** button changes to **Abort**. Pressing **Abort** exits the run set-up, marks all flow cells and reagents as used and either returns the user to the Control Center Home Screen or prompts the user to begin a Post-Run Clean. The abort process takes up to 10 minutes. If not prompted to start a Post-Run clean, the system must be cleaned manually. See Manual Cleaning on page 71.

Scan Flow Cells

Once deck validation and instrument verification are complete, the user is directed to **select the scan area** (Figure 43). The defined scan area is the basis for FOV selection. The total allowable scan area per flow cell is 300 mm^2.

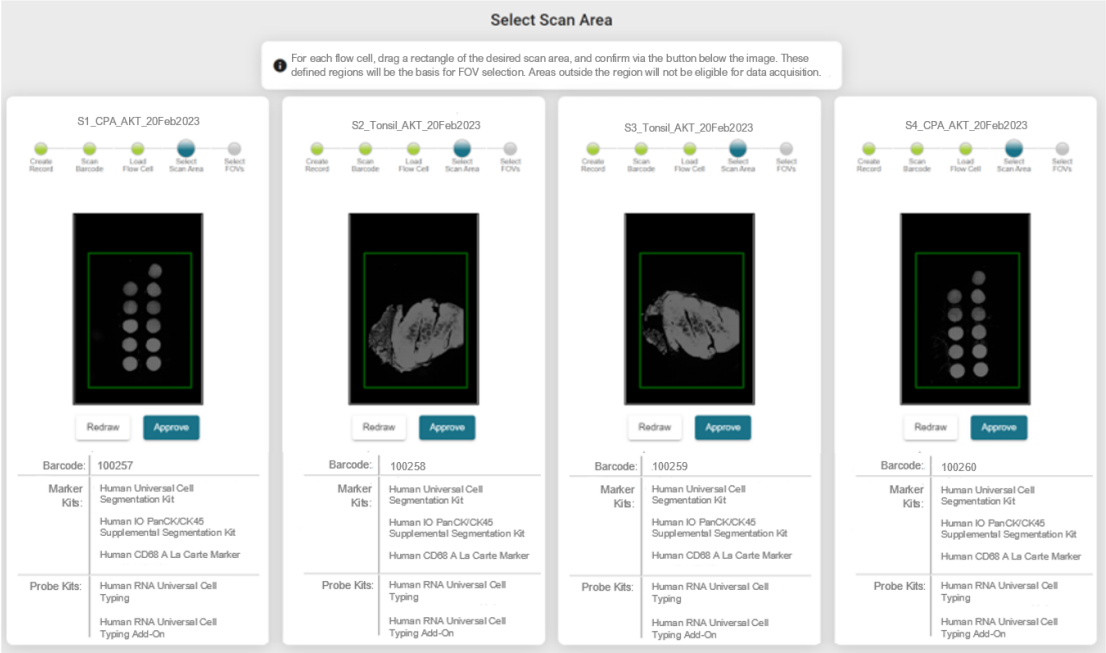


Figure 43: Select Scan Area

Define the Scan Area

The Tissue Find Scan result is displayed for each flow cell (Figure 43). The CosMx SMI Instrument automatically detects tissue and sets an optimal scan area, requiring only approval of each flow cell before proceeding. If needed, the scan area can be adjusted following the instructions below.

1. Using the computer mouse, click on the top-most corner of the desired scan area and **drag a rectangle around the tissue scan area**. If the rectangle does not persist, it may be outside of the scan area. Redraw the rectangle closer to the displayed tissue.

> **IMPORTANT:** To reduce scan time, when defining the scan area, try to get as close to the tissue as possible without cutting off tissue. However, for tissues only 1-2 FOVs in size, additional scan area may be needed to ensure the entire tissue area is captured.

2. Once tissue scan area is selected, press **Approve**.
3. To change the tissue scan area, select **Re-draw** and draw a new rectangle around the desired area.

4. Once scan area is confirmed, select **Begin Scanning** to start the preview scan. The preview scan may take **up to 1.25 hours**.

> Once **Begin Scanning** has been selected, the Begin Scanning button is grayed out and a "please wait while scanning" message appears. Once the scan is complete, the instrument advances to the FOV Selection screen.

Field of View (FOV) Selection Workspace

The FOV Selection Workspace (Figure 44) allows the user to position FOVs on the preview scan. Once FOVs are selected and saved, the CosMx SMI instrument begins Reporter Cycling and Data Acquisition.

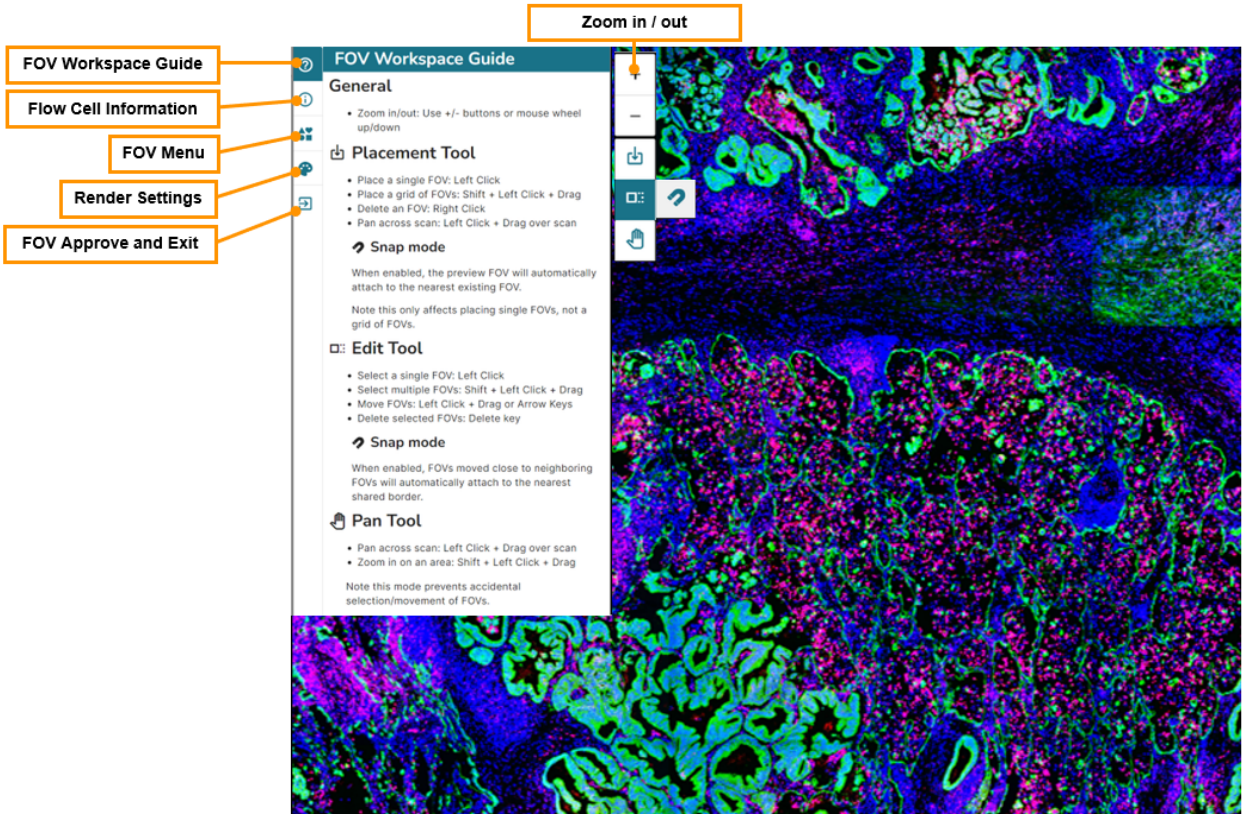


Figure 44: FOV Selection Workspace

Open the **FOV Selection Workspace:**

- From the FOV Scan Selection window, select **Edit FOVs** (Figure 45).

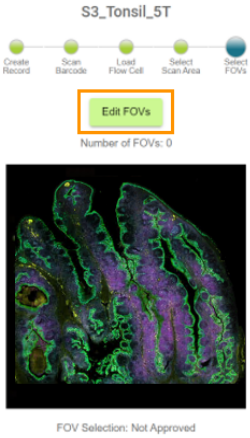


Figure 45: FOV Selection Window

Inspect the Image

- Use the image below to determine **tissue orientation** (Figure 46).

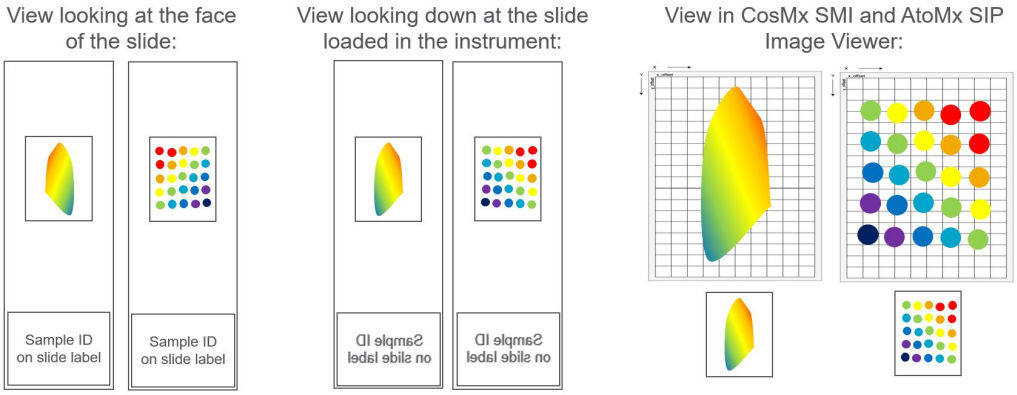


Figure 46: Tissue orientation

- Ensure that the scan quality is acceptable for the designation of FOVs and segments. Do not proceed with collection from out of focus images as it can cause poor or inaccurate results during data acquisition.
- Note that red blood cell autofluorescence is very common in FFPE tissues; be careful to differentiate nucleated cells from red blood cells (which do not contain nuclei).
- Open the **Flow Cell Information** menu (ⓘ) to review scan parameters, date created, and other details.

- Zoom in and out using the **Zoom In / Out** control. The scroll wheel on the computer mouse can also be used to zoom in and out.
- Open **Render Settings** (Figure 47). Here, you can:
    - Change the colors used to represent the different channels on the scan.
    - Adjust the intensity of each channel, either with the slider bar or by adjusting the values in the editable Min and Max boxes.

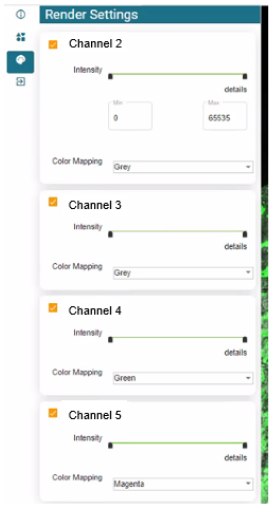


Figure 47: Render Settings Menu

Note: The number of channels that appear in the Render Settings menu is dependent on the marker kit (s) selected during Flow Cell Configuration on page 36. Channel 1 is DAPI nuclear stain and is not available during FOV selection.

Table 9: Channel Information

Channel Number	Channel Color	
Channel 2		Red
Channel 3		Green
Channel 4		Magenta
Channel 5		Cyan

See Instrument Specifications on page 14 for additional channel specifications.

Reference the **Slide Preparation User Manual** (manual or semi-automated) **section on CosMx SMI Cell Segmentation and Supplemental Marker Selection** for marker specific channel information.

Place FOVs

FOVs are placed in areas of interest using the **FOV Placement Tool**. The area for each FOV is 0.5 x 0.5 mm. Increasing the number of FOVs increases instrument run time. Bruker recommends a run time of no more than 14 days. Exceeding the recommended run time can affect data quality.

IMPORTANT: Do not place FOVs in areas of the scan with poor focus or poor tissue quality as this can cause instrument damage and will affect data quality.

The **FOV Workspace Guide** provides detailed instructions for placing, editing, and deleting FOVs (Figure 44). To open the FOV Workspace Guide, select the Help (?) Icon.

Estimated Cycling Time

A cycle time estimate is displayed in the FOV Selection Workspace (Figure 48) as well as the Edit FOV screen to allow the user to monitor the estimated cycling time as FOVs are placed. Bruker recommends a cycling time of no longer than 10 days. See the CosMx SMI Turnaround Time Estimation (v1.4.1) on page 76 for more information.

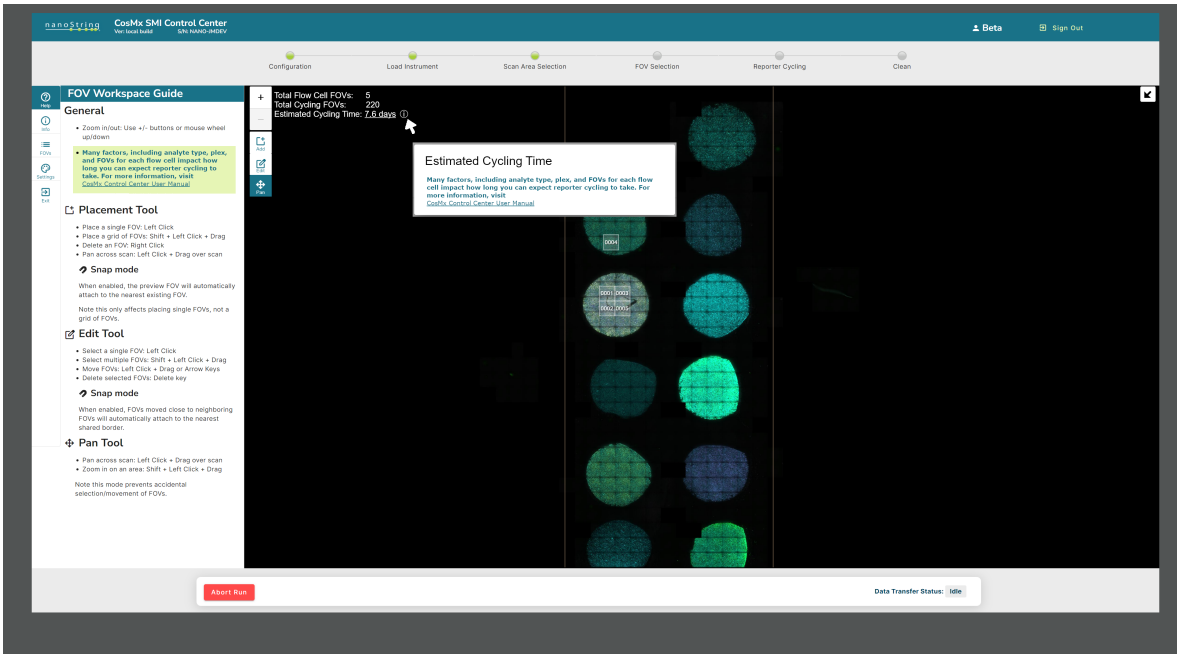


Figure 48: Estimated Cycling Time in the FOV Selection Workspace

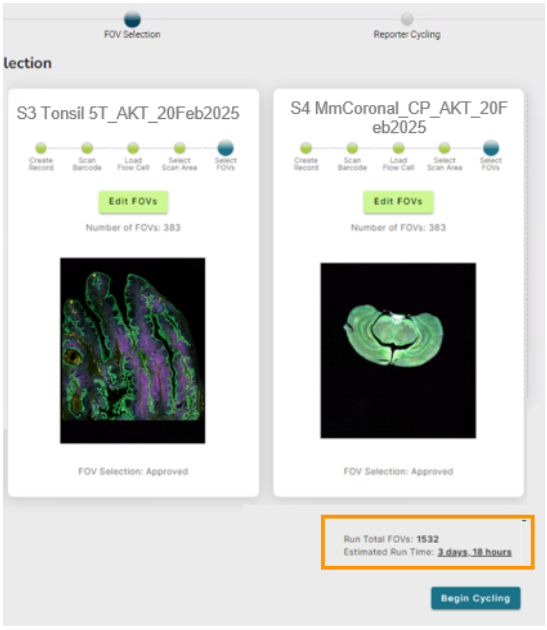


Figure 49: Estimated Run (Cycle) Time in the Edit FOV screen

FOV Placement Tool

Single FOV Placement

1. Select the **FOV Placement Tool** icon from the FOV Selection Workspace and left click in the **center of the area** to add a single FOV (Figure 50).

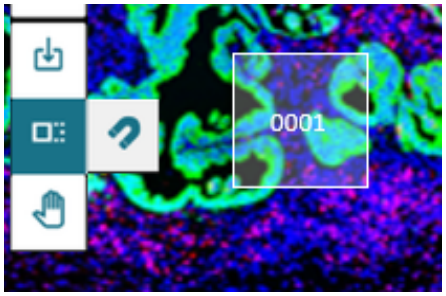


Figure 50: Single FOV Placement

2. Click again to continue placing FOVs.

Snap Mode : when placing **single FOVs with snap mode enabled**, the new FOV automatically attaches to the nearest existing FOV (Figure 51). Once the FOV is placed, it snaps into place and autonumbers.

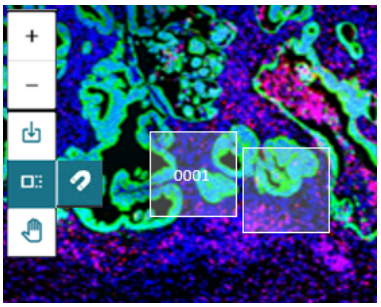


Figure 51: Snap mode

Grid FOV Placement

1. Select the **Add Icon** from the FOV Selection Workspace. Press **Shift** and left click on the **top left corner** of the desired grid location. Drag the mouse down and right to create the grid. A grid preview is displayed (Figure 52).

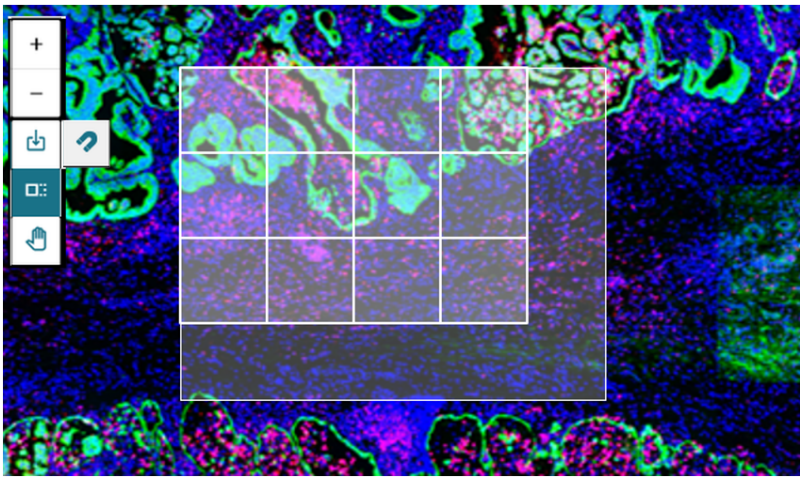


Figure 52: Grid Preview

2. Continue dragging until entire area of interest has the grid preview. Once desired area has been covered, **release the Shift key and the mouse to place the grid**. Once placed, FOVs within the grid are autonumbered (Figure 53).

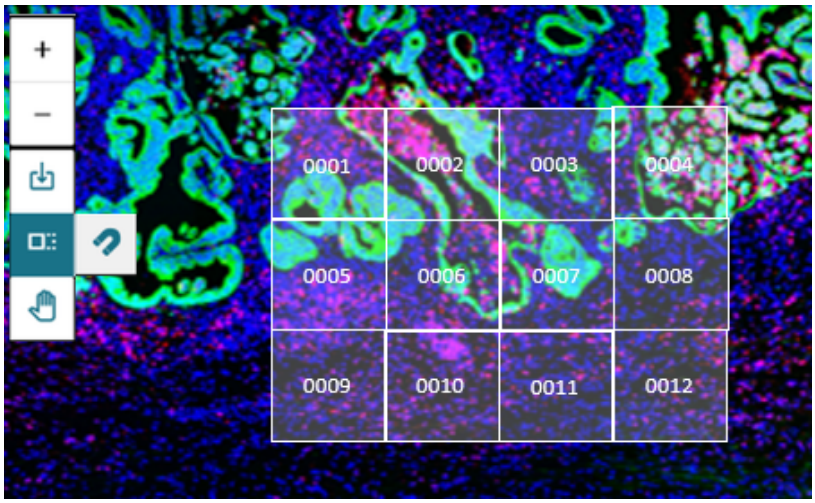
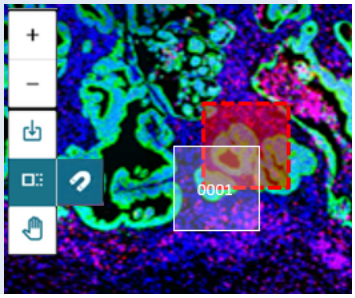


Figure 53: Grid FOV Placement

3. Repeat step 1-2 until all FOVs have been placed.

ⓘ **IMPORTANT**: When placing FOVs, the FOV outline turns red if attempting to place an FOV in an invalid location, such as overlapping other FOVs or placement outside of the scan area. Move the mouse to a different location before placing the FOV. The FOVs cannot be approved if any invalid placements occur.



Edit FOV Placement and Delete FOVs with the Edit Tool

1. Select the **Edit** icon in the FOV Workspace.
2. **Select the FOV(s)** to be edited. Once selected, the FOV(s) becomes grey with a yellow border. To select a **single FOV**, left click on the FOV to be edited. To select **multiple FOVs**:
    - ***Shift + Left Click + Drag*** selects multiple FOVs within a group by dragging across all of the FOVs to be edited.

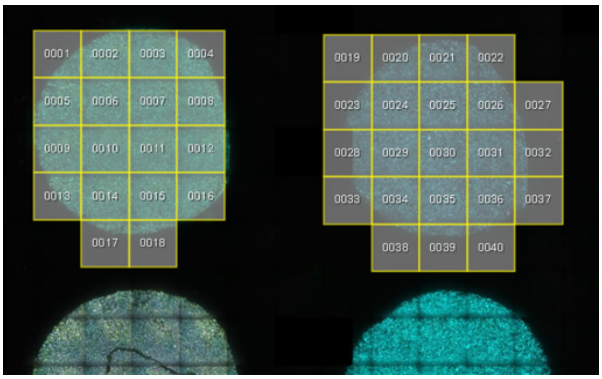


Figure 54: Select multiple FOVs by dragging to select

- ***Hold Ctrl + Left Click*** to select multiple FOVs not located next to each other.

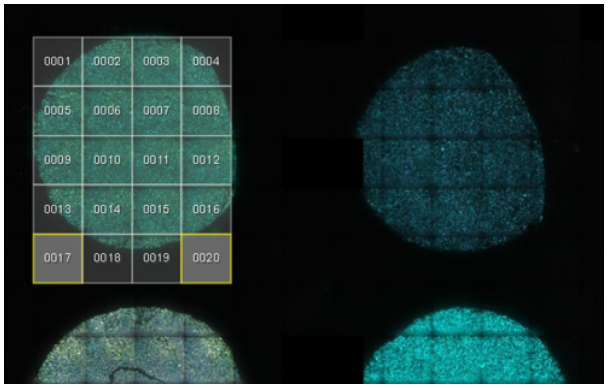


Figure 55: Select multiple FOVs one-at-a-time

3. To **delete** the selected FOVs, press the **Del** (delete) key on the keyboard.
4. To **move** the selected FOVs, **Left Click + Drag** or use the keyboard arrow keys. All of the selected FOVs move together.

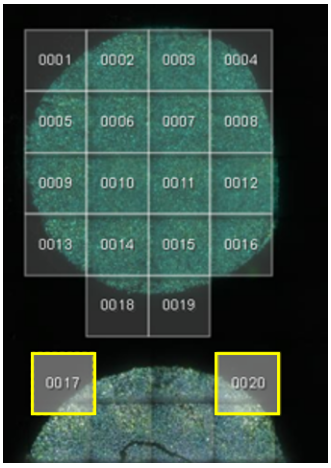


Figure 56: Selected FOVs move together

Snap Mode can be enabled when moving FOVs by selecting the Snap icon ( ) beside the Edit icon. When Snap Mode is enabled, the FOV border of the FOV is a dotted yellow line and FOVs moved close to neighboring FOVs automatically attach to the nearest shared border.

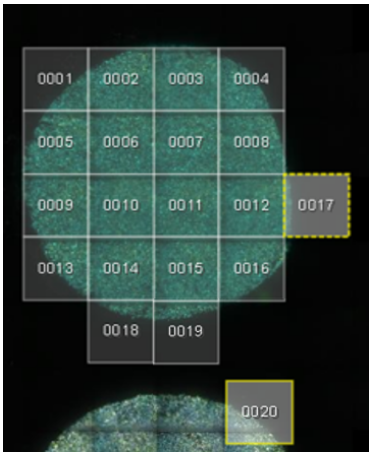
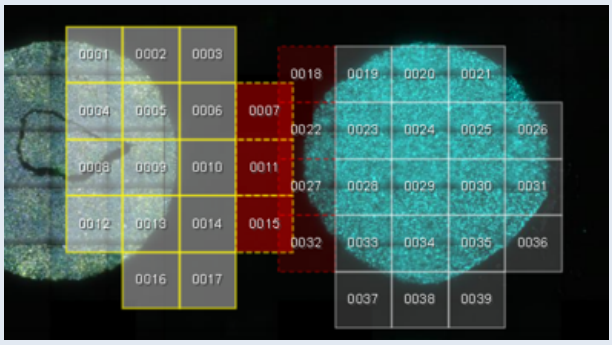


Figure 57: Snap Mode in Edit FOV

IMPORTANT: While in Edit mode, invalid FOV placement can be made. The invalid FOVs are shown on the screen as red and have an error icon next to each affected FOV in the FOV Menu. These errors must be corrected before FOVs can be approved. This can be done by deleting or moving the FOVs within the Workspace.



Review and Approve FOVs

Review FOV placement prior to approving and exiting the FOV Workspace.

To review FOV placement on the tissue within the scannable area, the **Pan Tool** ( ) can be used.

- The Pan Tool allows the user to pan around the scan without risk of accidentally moving or deleting FOVs.

FOV Placement can also be reviewed in the **FOV List Pane**, accessed through the **FOV Menu** (Figure 58).

- The FOV list pane shows details on the **X,Y axis location** of the FOV for each flow cell as well as displays a **reviewable error icon** next to invalidly placed FOVs.
    - To review the error, **hover over the error icon**.
- To highlight the invalid FOV(s) within the Workspace, **select the errored FOV(s)** within the FOV list pane. The selected FOV(s) is highlighted in the Workspace and can be edited or deleted (Figure 58).

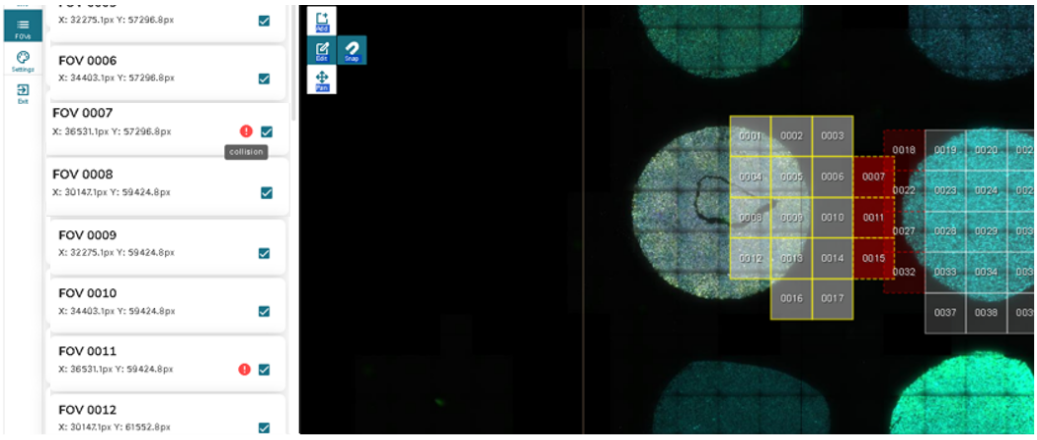


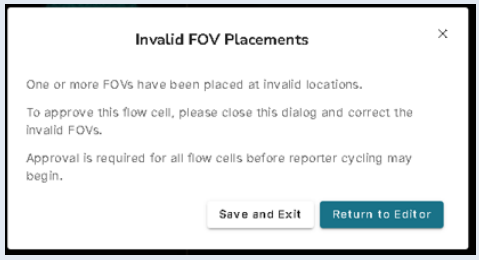
Figure 58: FOV List Pane with invalid FOV errors

Approve FOVs

1. After all FOVs have been placed and reviewed, select the **Exit** icon from the menu ( ).
2. Two options are available from the **Exit** menu:
    - **Save and Exit**: This option allows the user to save FOV placement but does not approve FOVs for acquisition.

- **Approve and Exit**: Approving FOVs changes the FOV status to Approved on the FOV selection menu. **All flow cells must have a status of FOV Selection Approved before reporter cycling can begin.**

IMPORTANT: The system warns the user if no FOVs were placed or if there are invalid FOVs (overlapping or outside of the scan area). Correct any errors before continuing. Once errors are corrected, continue to Approve and Exit.



3. Once all flow cells have been approved, the Begin Cycling button turns blue and is active (Figure 59).
4. **Click Begin Cycling** to start the run and begin reporter cycling.

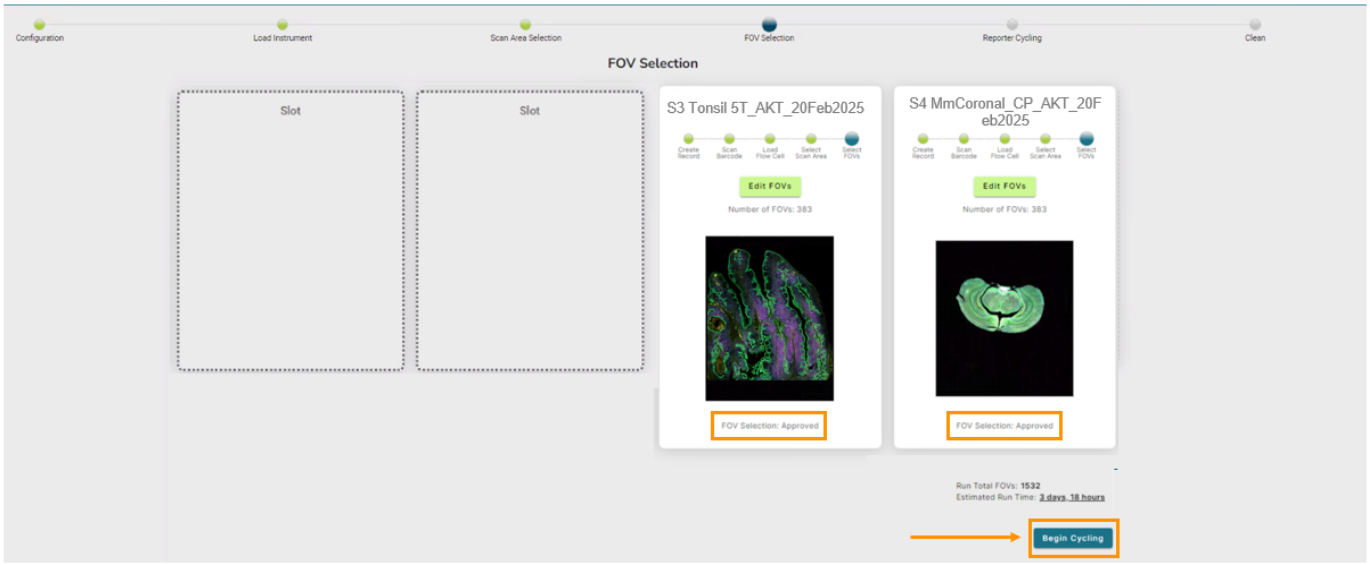


Figure 59: Begin Reporter Cycle

Reporter Cycling

Once **Begin Cycling** is selected, reporter cycling begins. The Reporter Cycling screen shows **Cycling Progress** and the **Data Transfer Status** changes to **In Progress** (Figure 60).

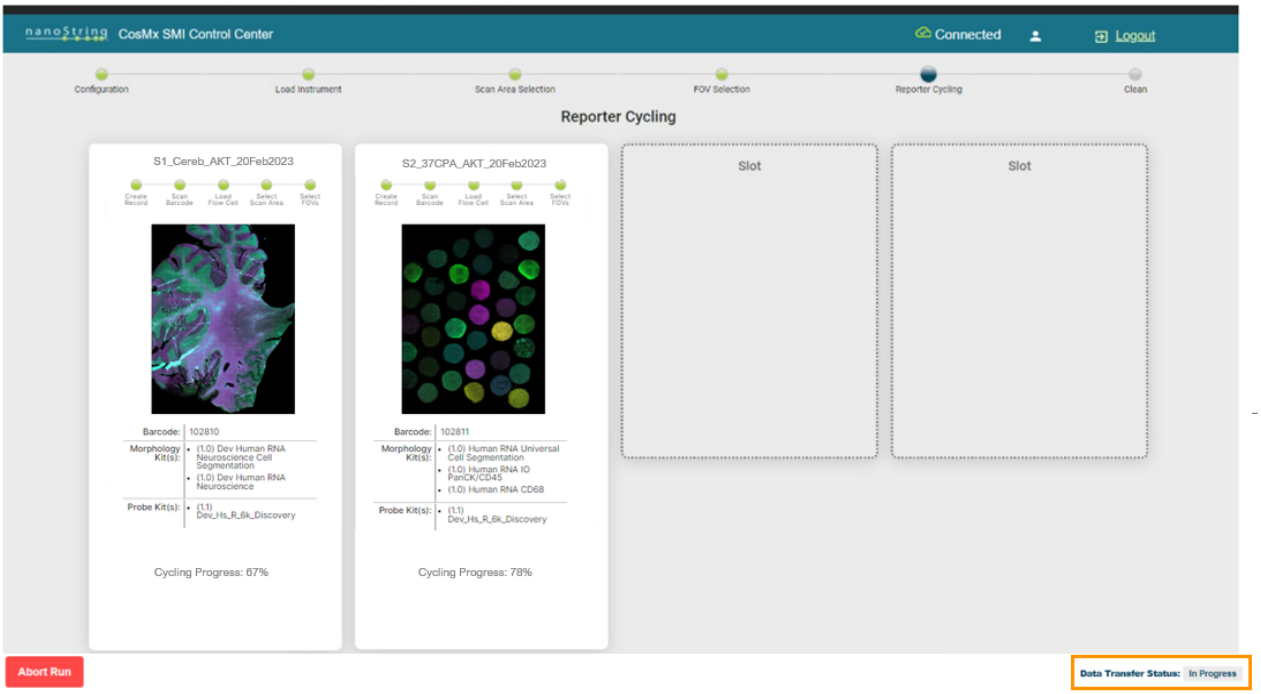


Figure 60: Reporter Cycling

The run time depends on the analyte, panel, and number of FOVs selected. Use the Cycling Progress indicator to monitor the run time and estimate run completion time.

If at any point during run set-up or reporter cycling the following error appears (Figure 61), select **Resume** to continue the run. If the run does not resume within 2 minutes, refresh the browser. If the issue persists, contact Support at support.spatial@bruker.com.

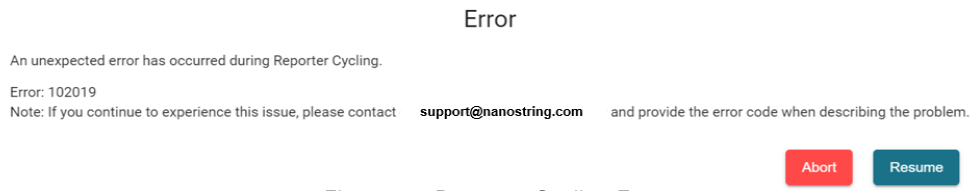


Figure 61: Reporter Cycling Error

Once reporter cycling has completed, the instrument prompts to initiate a **post-run clean** (see Post-run Clean on page 69). The post-run clean should be started **within 48 hours of run completion**. Failure to start the post-run clean can result in instrument damage.

During the run, the run Transfer Status should say **In Progress**. However, if during the upload to AtoMx, one or more flow cells encounters an issue, the upload status indicator changes from **In progress** to **Error** (Figure 62).



Figure 62: Data Transfer Error

To resolve the data transfer error:

- Expand the status indicator by clicking on the **expand arrows** to view the impacted flow cells.
- The data transfer status window opens and shows the status of each flow cell within the run (Figure 63).
- To re-upload failed portions of the flow cell data to AtoMx, select the **Retry** button.

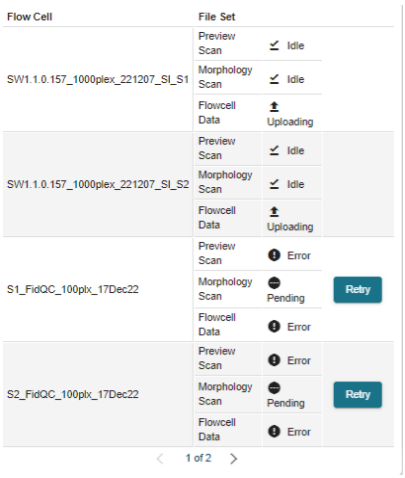


Figure 63: Data Transfer Status Window

Allow **30 seconds** between the time the button is pressed to the time the status updates from "Error" to "Uploading". If, after selecting Retry, the upload immediately fails again, wait **30 minutes** before reattempting. If the upload fails again, contact Support at support.spatial@bruker.com.

NOTE: In cases of intermittent connectivity issues with AtoMx, data transfer may be interrupted multiple times during the course of a flow cell's upload. If you encounter what you believe to be an excessive number of returns to the error state, ensure networking conditions are stable and meet the IT requirements found in the Site Preparation Guide (MAN-10171), and that you are able to directly log into the AtoMx SIP. If you still encounter what you believe to be an excessive amount of error states during an upload, contact Support at support.spatial@bruker.com.

Post-run Clean

Once reporter cycling has completed, a post-run clean is required. Once available, select the **Unload Reagent Tray** button at the bottom right of the screen and follow the on-screen prompts. The post-run clean should be started **within 48 hours of run completion**. Failure to start the post-run clean can result in instrument damage.

1. When instructed, open the Imaging Tray bay door and **remove the Imaging Tray**.

NOTE: It may take about 10 minutes after run completion for this prompt to appear. Do not attempt to open instrument doors until prompted. If the prompt does not appear after 10 minutes, refresh the browser.

2. **Insert the blue pre-filled cleaning tray** and close the Imaging Tray bay door.
3. The instrument runs a cleaning cycle; this takes about 1 hour. **Do not attempt to open the instrument** while the cleaning cycle is running.
4. When the cleaning cycle has completed, follow the instrument prompts to **empty and replace the waste container**.

    - **Remove the quick-disconnect from the instrument** by pinching the gray button on the quick-disconnect with thumb and forefinger (Figure 64). The waste container cannot be removed from the bay until the quick-disconnect fitting has been released.



Figure 64: Disconnect Waste Container

    - **Unscrew the cap** from the used bottle and remove it.
    - **Dispose of the waste** according to laboratory waste disposal guidelines.

⚠**WARNING**: Instrument waste contains Proclin™ which is considered hazardous. Be sure to follow all waste disposal guidelines when emptying liquid waste.

- Screw the waste cap back on and load the container back into the waste bay.

IMPORTANT: When reinserting the waste container into the waste bay, ensure the bottle is loaded all the way to the back of the bay.

- Reattach the quick-disconnect, continuing to press even after the first 'click' to ensure that the quick-disconnect is secure. The gray button pops out when the bottle is secure. Close the waste bay door and wait for about 5 minutes while the system checks the waste bottle connection.

5. Follow on screen prompts to **unload the used flow cells**.

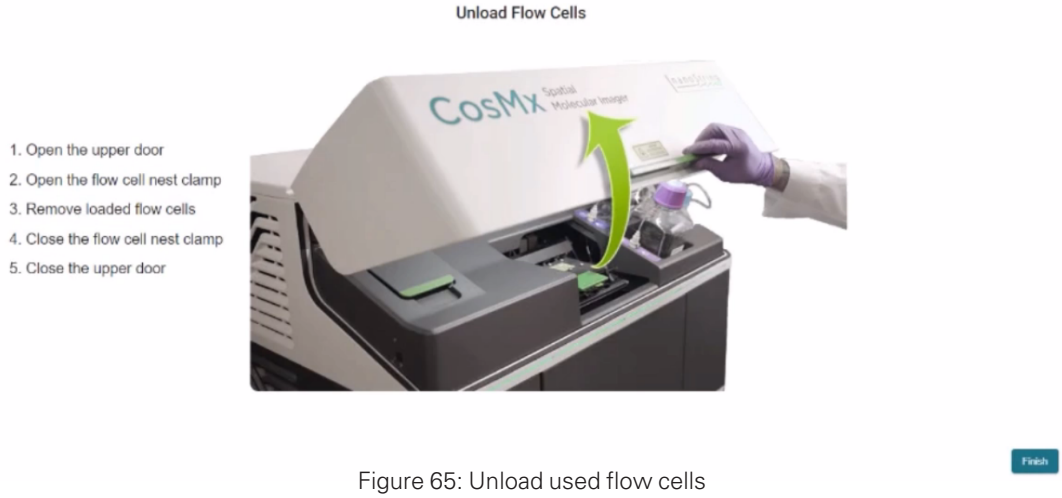


Figure 65: Unload used flow cells

- **Open** the upper door.
- **Open** the flow cell nest lid.
- **Remove** used flow cells and close the flow cell nest lid. **Do not remove bulk reagent bottles.**
- If a more thorough cleaning is needed, continue to Instrument Cleaning and Maintenance on page 71 for the instrument cleaning and decontamination procedure.
- **Close** the upper door.
- Dispose of or store flow cells according to laboratory glass disposal guidelines.

The instrument will return to the Control Center home screen.

Instrument Cleaning and Maintenance

Follow all safety and operating instructions provided in this manual. Use safe laboratory operating precautions, including use of personal protective equipment such as safety glasses and gloves.

Manual Cleaning

To perform a manual system clean, 4 cleaning flow cells are required. Cleaning flow cells are assembled with the Flow Cell Assembly Tool using blank, empty slides and flow cell coverslips. In addition, a new cleaning tray is also required. If more flow cell coverslips or a new cleaning tray is needed, reach out to your sales representative to order.

To begin the manual system clean:

1. Navigate to the CosMx SMI **Control Center Home** screen (Figure 66).



Figure 66: Control Center Home

2. Click on **Admin Settings** and then select **System Clean** from the Administration menu (Figure 67).

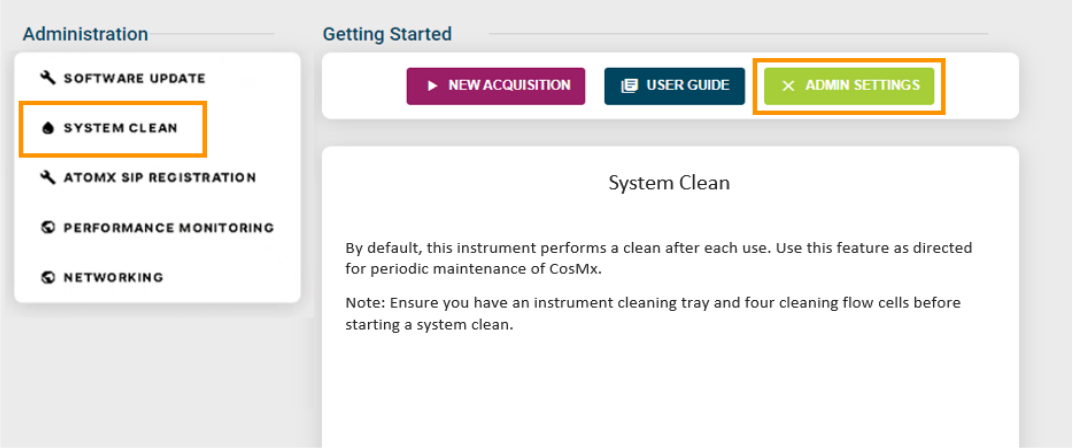


Figure 67: System Clean

3. Select **Initiate Cleaning** to begin the system clean.
4. Follow the system prompts to **open the upper door** and the **flow cell nest clamp**.
5. Remove any loaded flow cells and **insert a cleaning flow cell into each of the positions of the nest.**
6. Close the flow cell nest clamp and the upper door.

A cleaning flow cell must be loaded into each of the 4 slotted positions of the nest. Failure to do so will result in an error and the cleaning will not move forward. Ensure the nest is securly clamped before continuing.

7. When prompted, **open the reagent bay door** and remove the existing tray (Figure 68).
8. **Insert a new cleaning tray** and close the reagent bay door.



Figure 68: Load Cleaning Tray

9. Select **Next** to continue.
10. Open the waste bin door and **disconnect the waste bottle via the quick disconnect** (Figure 69).



Figure 69: Disconnect Waste Bottle

11. Remove the container and **empty any liquid waste**.
12. Insert the bin back into position and **close the waste bay door**.
13. Select **Next** to begin the system clean.
14. Cleaning takes approximately **1 hour**. Do not attempt to open any doors during the system clean.

Decontamination Guidelines

An EPA-registered disinfectant such as DNAZap™ from ThermoFisher Scientific shall be used to clean the equipment. If an off-the-shelf disinfectant is not available, freshly prepared 70% ethanol or 70% isopropanol can be used.

⚠ **WARNING**: Do not apply bleach at any concentration to the instrument interior. Bleach will discolor the flow cell nest and may damage instrument components such as the barcode scanner.

1. Apply disinfectant to all exterior surfaces of equipment. If contamination is present, apply enough disinfectant to saturate the contamination. Let stand for the manufacturers indicated contact time before wiping down. An appropriate contact time of 70% ethanol or isopropanol solution is **20 minutes** in order to disinfect.
2. Apply disinfectant to all reachable internal surfaces with a lint-free cloth keeping in mind to avoid any electrical components. Let stand for the indicated contact time before wiping down.

⚠ **WARNING**: Do not apply excessive cleaning agents to instrument internals. Cleaning agents dripped into the instrument can cause damage.

⚠ **WARNING**: When cleaning the flow cell nest, use extra caution to not touch the objective or to allow disinfectant to drip onto the objective.

3. Repeat steps 1-2 with deionized water to remove any residual disinfectant.
4. Discard contents of waste container. Rinse container with 10% bleach solution and wait for 10 minutes then discard and rinse with deionized water.
5. **Close** the upper door.
6. Dispose of or store flow cells according to laboratory glass disposal guidelines.

The instrument will return to the Control Center home screen.

Instrument Shut Down

Although not required, the CosMx SMI Instrument can be powered off using the power button on the side of the instrument. **Before powering off the instrument, ensure data acquisition and data transfer is complete**. The Instrument Control Center should be on the home screen or flow cell configuration screen and the **Data Transfer Status must be Idle** (Figure 70). Close the browser window and, if needed, login to the system using Admin credentials. Shut down the computer by navigating to the **Windows/Start** button on the PC, selecting **Power**, then **Shut Down**. Once the computer is shut down, the instrument can be powered off using the power button on the side of the instrument.



Figure 70: Data Transfer Status must be Idle

The cleaning tray and bulk reagents remain in the instrument until the next run to prevent salt build-up in the fluidics lines and contamination.

CosMx SMI Turnaround Time Estimation (v1.4.1)

Analyte	Plex	No. of Slides	Total Number of FOVs per Run					
			100	200	400	800	1200	1500
RNA	1K	2 slides	2.8	3.2	4.0	5.9	8.2	10.0
		4 slides	3.3	3.7	4.5	6.7	9.5	NR
	6K	2 slides	4.5	5.0	6.2	8.9	12.7	NR
Protein	64	2 slides	0.8	1.1	1.6	2.6	3.7	4.5
		4 slides	0.8	1.1	1.6	2.6	3.7	4.5
			Turnaround Time (Days)					

NR = Not Recommended

Turnaround estimates are designed as experimental guidance and may change slightly from run-to-run.

If using a smaller or custom panel, expect a turnaround time at or below estimated value in table.

To estimate the number of FOVs based on your tissue size, see Table 10.

Table 10: Number of FOVs per mm2

Area	FOVs
16 mm^2	62
50 mm^2	193
100 mm^2	386
200 mm^2	772
300 mm^2	1158

Symbols and Definitions



Manufacturer



Authorized Representative in the European Community (Safety)



Safety CE Mark



Safety UK Conformity Assessed Mark



Korea Certification Mark
Radio Research Agency (Korea)
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

English translation of the notice above: This device has been tested for conformity assessment for use in a work environment. In a domestic environment, radio interference may be caused.



Catalogue or Reference Number



Batch code / Lot number



Serial number



Temperature range storage conditions



Lower limit of temperature storage conditions



Upper limit of temperature storage conditions



For Use by / Expiry Date



Date of Manufacture (DOM)

Regulatory Disclaimer

For applications for which approval/clearance is not required and for **Research Use Only**.

Bruker Spatial Biology, Inc.
530 Fairview Ave North
Seattle, Washington 98109

nanostring.com

FOR RESEARCH USE ONLY.
Not for use in diagnostic procedures.

Contact Us

Tel: 888.358.6266
Fax: 206.378.6288

Technical Support
support.spatial@bruker.com

Customer Service
customerservice.spatial@bruker.com

Sales Contacts

North America: nasales.bsb@bruker.com
EMEA: emeasales.bsb@bruker.com
APAC: apacsales.bsb@bruker.com
All other regions: globalsales.bsb@bruker.com