Maxwell® RSC 48 Instrument Operating Manual

Instructions for Use of Catalog Number AS8500

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All technical literature is available at: **www.promega.com/protocols/**

Visit the website to verify that you are using the most current version of this Technical Manual.

E-mail Promega Technical Services if you have questions on use of this system: **techserv@promega.com**

1 Introduction

1.1 Maxwell® RSC 48 Instrument Extraction Procedure

The Maxwell® Rapid Sample Concentrator 48 (RSC 48) Instrument[a] provides automated nucleic acid extraction for a range of research sample types. The Maxwell® RSC 48 Instrument is designed for use by laboratory professionals. The extraction methods use sample lysis and binding to paramagnetic particles as the primary separation principle. Up to 48 samples can be prepared in a single run.

The automated extraction performed by the Maxwell® RSC 48 Instrument include:

- Lysing sample in the presence of a specially formulated Lysis Buffer
- Binding nucleic acids to paramagnetic particles
- Washing the bound target molecules away from other cellular components
- Eluting the product

The instrument is controlled through a graphical user interface running on a Tablet PC. The Maxwell® RSC 48 Instrument has the ability to record and report sample tracking and method run data. The included Bar Code Reader can be used with the Maxwell® RSC 48 Instrument to start method runs and capture bar code information for samples and reagents. The Maxwell® RSC 48 Instrument provides reports of the data gathered for instrument operations; reports can be printed and exported to a storage location or a USB drive for transfer to a separate computer. To start a run, select the appropriate method or scan the bar code of the reagent kit to be processed. After entering the sample tracking information, follow the recommended method for the Maxwell® RSC reagent kit and prepare the deck trays of the instrument as instructed. Place the deck trays containing prepared cartridges into the instrument, and the method will run automatically. Using the instrument does not require any special training; however, training is available as part of Operational Qualification (OQ) (see Section 10.2).

1.2 Product Use

The Maxwell® RSC 48 Instrument is exclusively designed to be used with Maxwell® RSC reagent kits to perform automated isolation of nucleic acids.

The Maxwell® RSC 48 Instrument is for research use only.

1.3 Product Use Limitations

The Maxwell® RSC 48 Instrument is not intended for use with reagent kits other than Maxwell® RSC or Maxwell® FSC reagent kits or with samples other than those defined within the product limitations of the specific Maxwell® reagent kit being used.

1.4 Maxwell® RSC 48 Instrument Features

- Easy-to-use and easy-to-maintain system operation

- Standardized sample preparation workflow

- System controlled via Tablet PC

- Reporting functionality

- Preprogrammed methods for nucleic acid purification

- Included Bar Code Reader

- UV lamp to aid in decontamination of instrument

- Integrated Vision system for confirming proper deck tray preparation

- Integral USB hub for easy connection to accessory devices

- Optional integration with the Quantus™ Fluorometer

- Comprehensive technical support

1.5   Maxwell® RSC 48 Instrument Specifications

Processing Time	30–70 minutes (depending on sample type and method)
Number of Samples	Up to 48
Weight	<60lb (<27kg)
Dimensions (W × D × H)	21 × 21 × 14 inches (533.4 × 533.4 × 355.6mm)
Power Requirements	100–240VAC, 50/60Hz, 4A
Fuse	250VAC, 4A, low breaking capacity, time-lag fuse (AC250V, T4AL, 5 × 20mm)
UV Bulb	Average lifetime approximately 9,000 hours, length 212.1mm, diameter 16mm, 6W, 0.17A current, 42V, spectral peak F 253.7, UV output 1.7W
Installation Category II	
Pollution Degree 2	

1.6   Product Components

PRODUCT	CAT.#
Maxwell® RSC 48 Instrument	AS8500

Includes:

- 1   Tablet PC preloaded with Maxwell® RSC 48 Application Software
- 1   USB Cable for connection of the Maxwell® RSC 48 Instrument to the Tablet PC
- 1   Power Cable for Maxwell® RSC 48 Instrument
- 1   Power Cord for Tablet PC
- 1   Power Adapter for Tablet PC
- 1   Maxwell® RSC 48 Deck Tray (Front)
- 1   Maxwell® RSC 48 Deck Tray (Back)
- 1   UV Bulb (installed)
- 1   Bar Code Reader
- 1   Tablet Mount Attachment Pieces
- 1   2.5mm Hex Wrench
- 1   Quick Start Guide
- 1   Setup Guide

1.7   Inspection

Upon receiving your Maxwell® RSC 48 Instrument, please inspect the package carefully to make sure all components are present and that the instrument has not been damaged in shipping. If any item is damaged, contact Promega Technical Services (e-mail: **techserv@promega.com**). Included components are shown in Figure 1.

Figure 1. Maxwell® RSC 48 Instrument. Components shown include: Deck Tray (Front), Deck Tray (Back), USB Cable, Tablet PC, Tablet PC Power Adapter, Bar Code Reader and communication cable for the Bar Code Reader.

1.8   Precautions

(!) **Important Safety Instructions. Save these instructions.**

- Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- This equipment has been designed and tested to CISPR 11 Class A. It may cause radio interference, in which case you may need to take measures to mitigate the interference.

- Do not use this device in proximity to sources of strong electromagnetic radiation (e.g., unshielded intentional RF sources) because these may interfere with the proper operation.

- Do not use this instrument for anything other than its designed purpose.

- Always disconnect the power to the instrument and the Tablet PC before cleaning or performing routine maintenance.

- Do not disassemble unit.

- Ensure cartridges, elution tubes and plungers have been securely inserted in their correct positions and orientation. Failure to do so may result in damage to the instrument.

- Use only Promega Maxwell® RSC or Maxwell® FSC branded and supplied cartridges, plungers and elution tubes.

- Do not reuse cartridges, plungers or elution tubes.

- If the equipment is used in a manner other than that specified by Promega, the protection provided by the equipment may be impaired.

- Keep hands clear of instrument platform as it moves in and out of the instrument.

- During elution, the heated elution blocks at the front and middle of the platform become hot. Do not touch.

- To avoid muscle strain or back injury, use lifting aids and proper lifting techniques when removing or replacing the instrument.

- Instrument door should be opened and closed only by using the Maxwell® RSC 48 software. Do not manually pry the door open or override the door sensor during operation because it will result in the method being aborted.

- This instrument can be used with potentially biohazardous materials. Use appropriate personal protective equipment (gloves, safety goggles, lab coat, etc.) for handling and disposing of biohazardous materials.

- Do not load any additional software programs on the Tablet PC supplied with the Maxwell® RSC 48 Instrument. Additional programs may cause the application to slow down.

1.9   Safety Symbols and Markings

Important Safety Instructions. Save these instructions.

Safety Symbols and Markings		
	Danger. Hazardous voltage. Risk of electrical shock.	Danger. Tension dangereuse. Risque de choc électrique.
	Warning. Risk of personal injury to the operator or a safety hazard to the instrument or surrounding area.	Avertissement. Risque de préjudice corporel pour l'opérateur ou risque de danger pour l'appareil ou la zone environnante.
	Warning. Pinch point hazard.	Avertissement. Risque de pincement.
	Warning. Hot surface. Burn hazard.	Avertissement. Surface chaude. Risque de brûlure.
	Warning. Biohazard.	Avertissement. Risque biologique.
	Warning. UV light hazard. Do not look directly at the UV light.	Avertissement. Risque de lampe UV. Ne regardez pas directement en direction de la lampe UV.

Symbols	Explanation
REF	Catalog Number
SN	Serial Number
(Manufacturer symbol)	Manufacturer
(Crossed-out wheeled bin symbol)	It is important to understand and follow all laws regarding the safe and proper disposal of electrical instrumentation. Please consult your local Promega representative regarding instrument disposal.
$C\epsilon$	CE Compliance Marked
LOT	Lot Number
(!)	Important Information

1.10 Environmental Requirements (Operating, Shipping and Storage Conditions)

Power Requirements:	100–240VAC, 50/60Hz, 4A
Temperature:	4–50°C (shipping/storage), 15–25°C (operation)
Humidity:	Up to 80% relative humidity, non-condensing
Operating Altitude:	<2000 meters

The Maxwell® RSC 48 Instrument is intended for indoor use only. Wipe up spills immediately. To avoid shortening the expected lifespan of the instrument, install in a location that meets the following criteria:

- Locate on a sturdy, level surface.

- Avoid dusty areas.

- Choose a location that has good air circulation and is not exposed to direct sunlight.

- Avoid electrically noisy power sources (e.g., power generators).

- Do not install in a location where there is large temperature variability or high humidity.

- Do not position the instrument so that it is difficult to unplug from the power source.

- Do not place next to heat sources.

- Do not use near flammable gases or liquids.

- Do not place near other electrically sensitive instruments.

- Connect the Maxwell® RSC 48 Instrument and Tablet PC to a power outlet. We recommend that you plug the instrument and Tablet PC into an uninterruptible power supply.

2 Hardware Overview

Figure 2. Front of the Maxwell® RSC 48 Instrument.
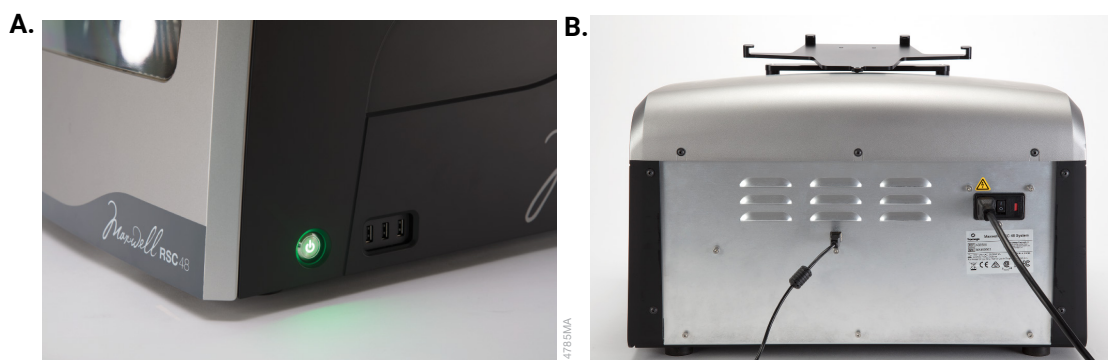
Figure 3. Side and Rear views of the Maxwell® RSC 48 Instrument. Panel A. The side of the instrument showing the On/Off switch and the three-port USB hub for accessories such as the Bar Code Reader. **Panel B.** The rear of the instrument showing the power cable connector and USB communication port for the Tablet PC.
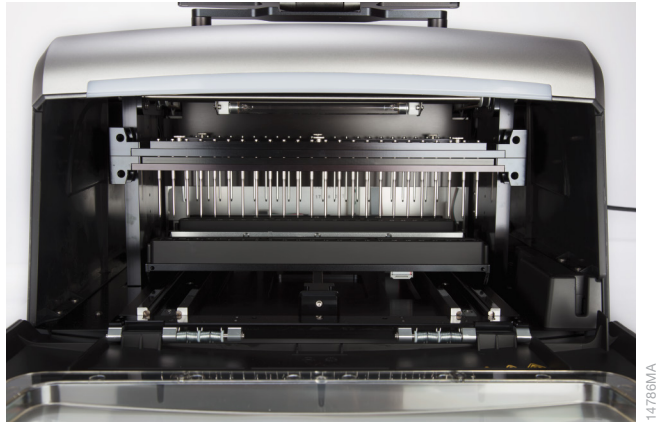
Figure 4. Magnetic assembly components and platform. The hardware components inside the Maxwell® RSC 48 Instrument. The magnet and plunger bars, which are used for sample processing, and the platform, which holds the deck trays, are evident.

3 Unpacking the Maxwell® RSC 48 Instrument

Allow 10 minutes to unpack and set up the instrument. Choose a location with sufficient space to be able to see the components and screen.

Follow These Steps

1. Cut off the straps from shipping box.

2. Cut the tape on the flaps of the box to open the shipping box.

3. Open the flaps and remove the accessories box from the packaging (Figure 5).

Figure 5. The accessories box.

Save the packaging material in case the instrument needs to be returned for service or repair.

4. Remove the four plastic clips from around the base of the shipping container. To do this, pinch the inner plastic pieces of the clip and pivot the inner portion of the clip vertically; then pull the entire plastic clip out from the base of the box. Slide the top portion of the shipping box off the base. Remove the side foam pieces from the instrument. Carefully remove the instrument from the box (Figure 6).

Figure 6. Remove the upper packing material.

5. Place the instrument on a flat stable surface. Leave at least 7.5 inches (19cm) of clearance in front of the instrument to allow the instrument door to open without hindrance.

6. Remove the plastic bag from around the instrument.

3.1   Setting Up the Maxwell® RSC 48 Instrument

1. Manually open the instrument door and carefully remove the foam piece from the inside front of the instrument (Figure 7, Panel A). The Maxwell® RSC 48 Instrument door is spring-loaded and will close itself automatically.

2. Unscrew the four shipping screws from the sides of the front magnet and plunger bar (Figure 7, Panel B).

3. Slide the magnet and plunger bars downward, and remove the top foam piece from the instrument (Figure 8).

A.

B.

Figure 7. Removing the two foam pieces from inside the instrument. Panel A. Remove the front foam piece **Panel B.** Remove the four shipping screws from the sides of the front magnet and plunger bars.
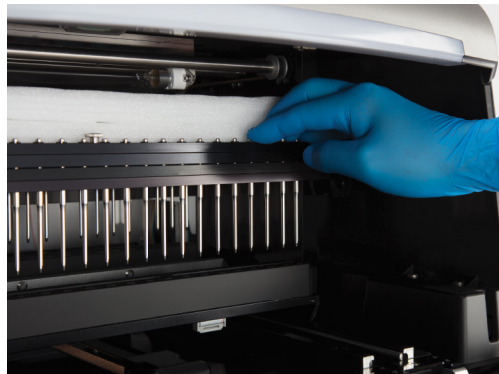
Figure 8. Removing the top foam from the instrument. Move the magnet and plunger bars downward to remove the top foam piece.

Optional: For integrated quantitation using the Quantus™ Fluorometer, unpack the Quantus™ Fluorometer as described in the instructions in the *Quantus™ Fluorometer Operating Manual* #TM396, and then connect the USB cable to a USB port on the right front side of the Maxwell® RSC 48 Instrument.

4 Preparing the Maxwell® RSC 48 Instrument for Use

4.1 Setting Up the Tablet PC

1. Remove the Tablet PC from the accessories box.

2. Raise the tablet holder as shown in Figure 9.

Figure 9. Tablet PC Holder.

3. Using the 2.5mm Hex Wrench, remove the Tablet Mount Attachment Piece from the top of the tablet holder. Slide the Tablet PC into the tablet holder. Secure the Tablet PC in the tablet holder by using the 2.5mm Hex Wrench to screw the Tablet Mount Attachment Piece into place at the top of the tablet holder.

4. Connect the Tablet PC Power Cable to the Tablet PC. Plug the other end of the Tablet PC power cable into a power outlet. We recommend connecting the Tablet PC to an uninterruptible power supply.

5. Connect the USB Cable to the Tablet PC and plug the other end of the USB Cable to the back of the Maxwell® RSC 48 Instrument (Figure 10).

Figure 10. Connecting the Tablet PC to the back of the Maxwell® RSC 48 Instrument.

6. Connect the Maxwell® RSC 48 Power Cable to the back of the Maxwell® RSC 48 Instrument. Connect the Bar Code Reader to a USB port on the right front side of the Maxwell® RSC 48 Instrument (Figure 11).

    Note: The USB port location and type on the Tablet PC, and the USB Cable type that you receive with your Maxwell® RSC 48 instrument may be different than what is shown in Figure 11. Follow the instructions as described. The USB Cable you receive will be appropriate for your Tablet PC.

    Optional: To connect the Maxwell® RSC 48 to an internal network, plug a USB to Ethernet Adapter (Cat.# AS8403) into a USB port on the right front side of the Maxwell® RSC 48 Instrument. Connect an ethernet cable (not included) to the USB to Ethernet Adapter and an ethernet port.

Figure 11. Maxwell® RSC 48 Instrument with the Tablet PC and Bar Code Reader installed.

7. The Maxwell® RSC 48 Instrument is now ready to use.

4.2   Switching On the Maxwell® RSC 48 Instrument

Following the unpacking and installation described in Section 4.1, you can connect the Maxwell® RSC 48 Instrument to a power outlet. The instrument has two power switches: a rocker switch that is located next to the power cable connection on the back of the instrument (Figure 12, Panel A), and a power button located on the right front side of the instrument (Figure 12, Panel B). Ensure that the rocker switch on the back of the instrument is in the "Off" position. Plug the Maxwell® RSC 48 power cable into a wall outlet. See Section 1.5 for power requirements. We recommend connecting the Maxwell® RSC 48 Instrument to an uninterruptible power supply. Switch the rocker switch on the back of the instrument to the "On" position.

Press the power button on the right front side of the Maxwell® RSC 48 instrument to turn on the instrument. Press the Tablet PC power switch located on the top of the Tablet PC to turn on the Tablet PC. Start the Maxwell® RSC 48 Application Software. Every time the instrument application software is started, the Maxwell® RSC 48 will perform a self-diagnostic test. The deck, plunger bar and magnetic rod assembly are moved to check operation, and the heater performance is evaluated.

A.

B.
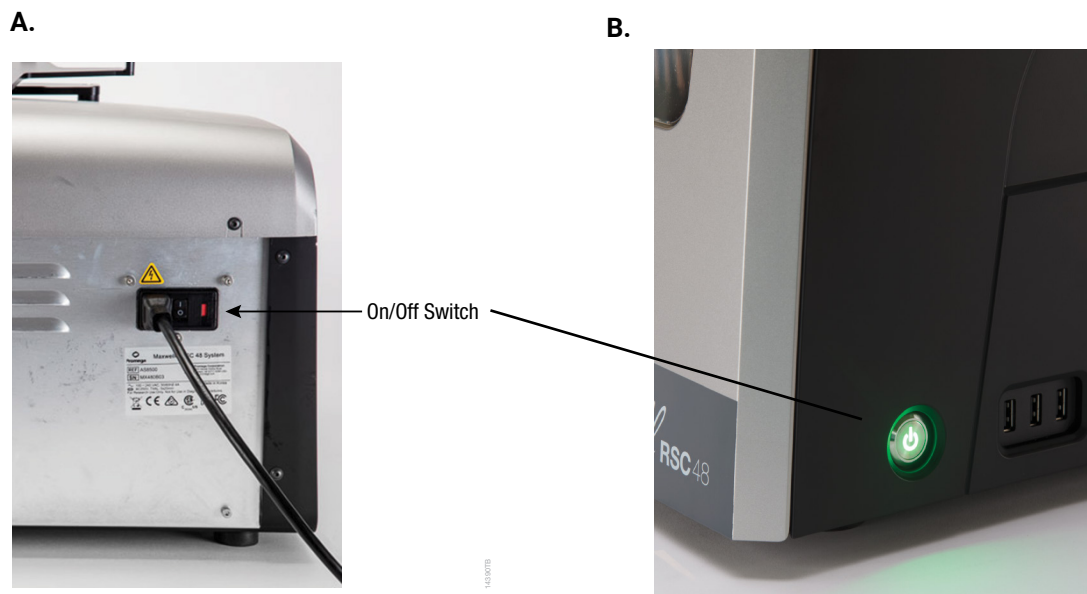
On/Off Switch

Figure 12. Instrument power switch and power button. Panel A. Rocker On/Off power switch on the back of the instrument. **Panel B.** Power button on the right side of the instrument.

4.3　Shutting Down the Maxwell® RSC 48 Instrument

4.3.1　Shutting Down the Instrument

1. Shut down the software by pressing the **X** in the upper left corner of the 'Home' screen. From any other screen in the software, touch the **Home** button at the upper left corner of the screen to return to the 'Home' screen.

2. Turn the Maxwell® RSC 48 instrument off by pressing and holding the power button on the right front side of the instrument for 3 seconds. Switch the rocker switch on the back of the instrument to the off position. Unplug the instrument. If you need to store the instrument, after following the steps above, store in a place that meets the environmental requirements described in Section 1.10.

3. Shut down the Tablet PC using the Windows® 10 shut-down procedure: touch the Windows® icon in the lower left corner of the screen, touch the power icon on the left side of the Windows® menu, choose **Shut Down**.

4.3.2　Storing the Tablet PC

When not in use for a prolonged period of time, the Tablet PC should be unplugged.

4.4　Configuring the Tablet PC

Your IT department or site Administrator should configure the Tablet PC according to the IT rules and procedures pertinent to your site.

The Maxwell® RSC 48 Instrument is controlled by Maxwell® RSC 48 software running on a Tablet PC. The Tablet PC should be configured to meet the needs of your site, including setting date and time, adding users, specifying access levels for users, connecting to a network and adding network printers. Instructions for configuring the Tablet PC can be found in the Appendix of this user manual.

5 Maxwell® RSC 48 User Interface

5.1 'Home' Screen

The 'Home' screen is the main launching pad for interaction with the functionalities built into the Maxwell® RSC 48 User Interface. The 'Home' screen (Figure 13) contains four buttons:

START	Pressing the **Start** button on the Maxwell® RSC 48 'Home' screen will begin the process of preparing an extraction method run on the Maxwell® RSC 48 Instrument. See Section 6.2, Starting a Method.
RESULTS	The **Results** button takes users to the 'Results' screen where it is possible to review, print and export any of the local run reports from previous chemistry and service processes. See Section 6.5, Reports, and Section 6.6, Running Reports.
SANITIZE	Pressing the **Sanitize** button activates the UV light in the Maxwell® RSC 48 Instrument for the time specified in the administrator settings (see Section 5.3.2, Sanitization Settings). During the sanitization procedure it is possible to access reports, settings, and even start the procedure of setting up a new extraction method run as long as these functions do not proceed to an interruption of the sanitization procedure. Functions that are not allowed during sanitization include opening the door, instrument self test, instrument clean up, and proceeding past bar code entry for an extraction method run. See Section 6.7, Sanitizing.
SETTINGS	The **Settings** button accesses the 'Settings' screen, which includes functions to: view **Instrument Info**, perform an instrument **Self Test,** remove plungers with **Clean Up**, export all log files with **Export Logs** and change instrument settings with **Administrator** (only available to users with Administrator level access to the Maxwell® RSC 48 software). See Section 5.2, User Interface Settings, and Section 5.3, Administrator Settings.

Figure 13. Maxwell® RSC 48 software 'Home' screen. The Instrument name appears in the title bar of the user interface.

The following navigation and informational buttons are displayed in the title bar at the top of the user interface screen:

	Home	From any screen other than the 'Home' screen, touch this icon to return to the 'Home' screen.
	Exit	From the 'Home' screen, pressing this icon will close the Maxwell® RSC 48 User Interface software and return to the Windows® Operating System.
	Back	When active, pressing the **Back** button will return the interface to the screen accessed prior to the current screen.
	Running	When visible, this icon indicates that the instrument is currently performing a process (e.g., system protocol, extraction method run). The time to completion of the current process is indicated in the center of the icon.
	Sanitization Done	After UV sanitization is complete, this icon will be displayed in the title bar. Touch the icon to view the sanitization report.
	Sanitization Error	This icon indicates that there was an error during UV sanitization. Touch the icon to view the sanitization report, which will indicate the error state that was encountered.
	Portal	When visible, the Portal icon indicates that the Maxwell® RSC 48 software is connected to the Portal software.

	Portal Error	When visible, the Portal icon with a red circle containing an exclamation point indicates that the connection to the Portal software has been lost. Results from the last run will be exported to the Portal software when the connection is restored. Disable Portal sample tracking to run methods until connection is returned, and then reactivate Portal sample tracking.
	Quantus	When visible, the Quantus icon indicates that a Quantus™ Fluorometer is connected to the instrument and can be used for quantitation of eluted nucleic acids.
	Door	This icon toggles the open/closed state of the door on the Maxwell® RSC 48 Instrument.
	Help	Pressing this icon will activate the context-sensitive help for the current screen of the Maxwell® RSC 48 User Interface.

5.2   User Interface Settings

Within the software for the Maxwell® RSC 48 Instrument, all users can access instrument-specific information and functions. In addition, users with Administrator-level access to the Maxwell® RSC 48 software can modify software options to tailor the behavior of the software to the needs of their laboratory. Below are sections that describe the functionalities that are accessible from the **Settings** button on the 'Home' screen of the Maxwell® RSC 48 software.

Figure 14 displays the 'Settings' screen for the Maxwell® RSC 48 software. This screen is accessed by touching the **Settings** button on the 'Home' Screen (Figure 13). The appearance of the 'Settings' screen is tailored to the Maxwell® RSC 48 software access level assigned to the Windows® user account (see Section 12, Appendix). A Windows® user account with user-level access to the Maxwell® RSC 48 software will see the following buttons: **Instrument Info**, **Self Test**, **Clean Up**, and **Export Logs**. A Windows user account with administrator-level access to the Maxwell® RSC 48 software will additionally see an **Adminstrator** button. From this screen the operator can access the instrument functionalities described below.
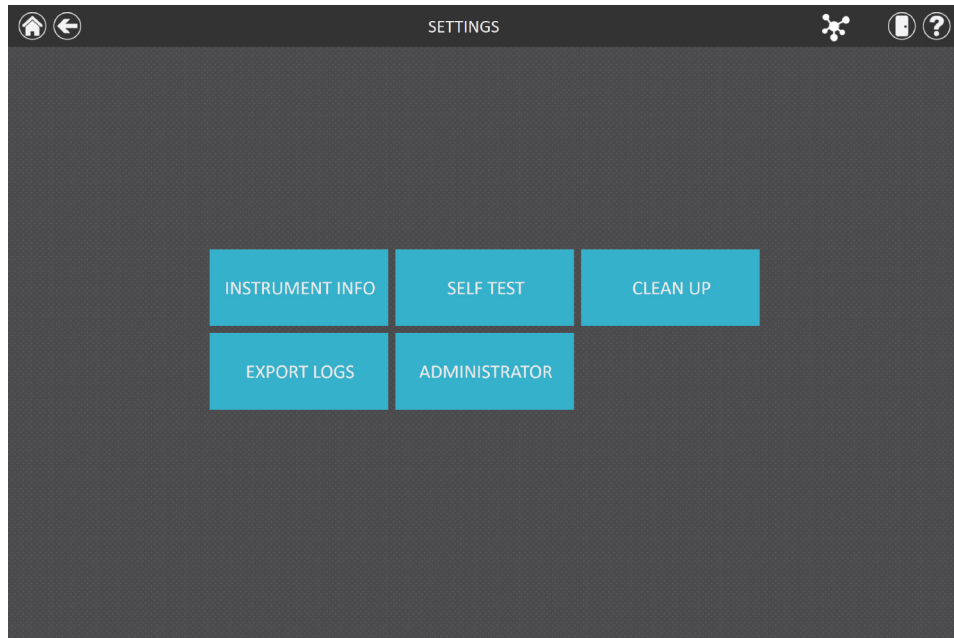
Figure 14. Maxwell® RSC 48 'Settings' screen. From this screen, various instrument-specific functions can be accessed. The Administrator button will be displayed only for Windows® user accounts with administrator-level access to the Maxwell® RSC 48 software.

5.2.1   Instrument Info

Touch the **Instrument Info** button to display software, firmware, calibration and other instrument-specific information for this Maxwell® RSC 48 instrument on an 'About Maxwell® RSC 48' screen (Figure 15). The information shown on this screen includes:

- **Software Version:** the current software version that is installed on the Tablet PC

- **Software Revision:** the revision number of the software version installed on the Tablet PC

- **Instrument Name:** the name that an administrator has assigned to this instrument

- **Serial Number:** the serial number of the Maxwell® RSC 48 Instrument connected to the Tablet PC

- **Firmware ID:** the current firmware version installed on this Maxwell® RSC 48 Instrument

- **Firmware Revision:** the revision number of the firmware version installed on the Maxwell® RSC 48 Instrument

- **FPGA ID:** the current FPGA version installed on this Maxwell® RSC 48 Instrument

- **FPGA Revision:** the revision number of the FPGA version installed on the Maxwell® RSC 48 Instrument

- **Tray Calibration Value**: the calibration value for the tray axis on the Maxwell® RSC 48 Instrument

- **Plunger Calibration Value:** the calibration value for the plunger bar axis on the Maxwell® RSC 48 Instrument

- **Magnet Calibration Value**: the calibration value for the magnet bar axis on the Maxwell® RSC 48 Instrument

Figure 15. 'About Maxwell® RSC 48' screen. Instrument- and software-specific information is displayed on the 'About Maxwell® RSC 48' screen.

5.2.2   Self Test

You can perform a check of instrument functions by touching the **Self Test** button from the Maxwell® RSC 48 'Settings' screen (Figure 16). On touching the **Self Test** button, the Maxwell® RSC 48 Instrument will perform a routine test to confirm that instrument functions including initialization of the deck tray, plunger bar and magnet bar, motion of these systems, and the instrument heater are operating within acceptable performance ranges. Performing the Self Test will result in the generation of a system report that details the Pass/Fail status of the tests that are performed. Following the Self Test, the software automatically opens this report.
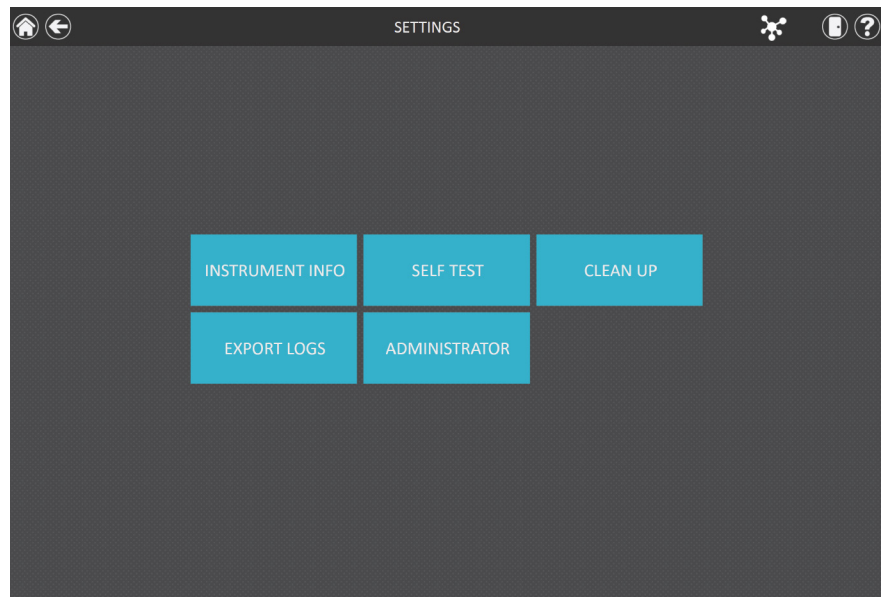
Figure 16. Maxwell® RSC 48 'Settings' screen. From this screen, you can perform a Self Test for the Maxwell® RSC 48 Instrument.

5.2.3   Clean Up

Clean Up attempts to unload plungers from the instrument plunger bar if any have not been appropriately unloaded after a method run. If your method run was aborted or had issues with plunger loading or unloading, the Clean Up procedure should be run. Clean Up does not clean the instrument and should not be confused with the Sanitization method.

You can run a Clean Up by touching the **Clean Up** button from the Maxwell® RSC 48 'Settings' screen (Figure 17; from the 'Home' screen touch the **Settings** button to access the 'Settings' screen). **Plungers can only be unloaded from the plunger bar if a cartridge is present beneath the plunger to be unloaded.** Place a cartridge (without a plunger) at each position on the deck tray that did not unload a plunger properly during the run. On touching the **Clean Up** button, you will be presented with a 'Clean Up Checklist' screen (Figure 18).

This screen presents you with a checklist of items that must be performed before attempting to unload plungers.

• Cartridges are present at positions for which plungers are still present on the plunger bar

• Plungers are not present in any cartridges in the deck tray

• Deck tray has been placed in the instrument

After you confirm that each of the checklist items has been performed, touch the **Start** button to start the cleanup process. The Maxwell® RSC 48 Instrument will perform the Clean Up process and will generate and display the system report from the Clean Up process. If plungers are not ejected after several cleanup attempts, the operator should contact Promega Technical Services (**techserv@promega.com**; 1-800-356-9526) to determine the appropriate next steps.
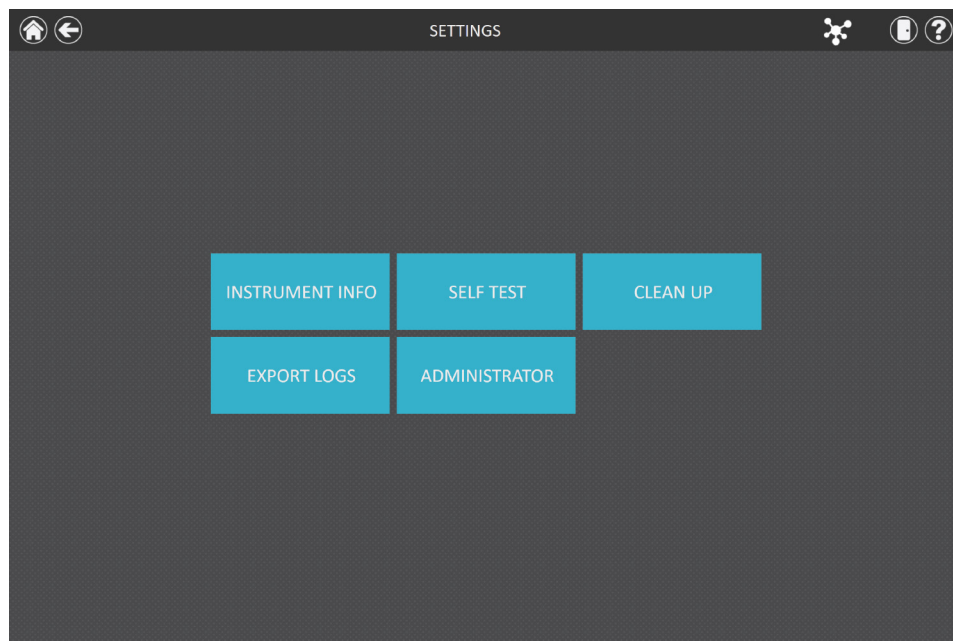
Figure 17. Maxwell® RSC 48 'Settings' screen. From this screen, you can touch **Clean Up** to unload any plungers left on the plunger bar after an unsuccessful method run.
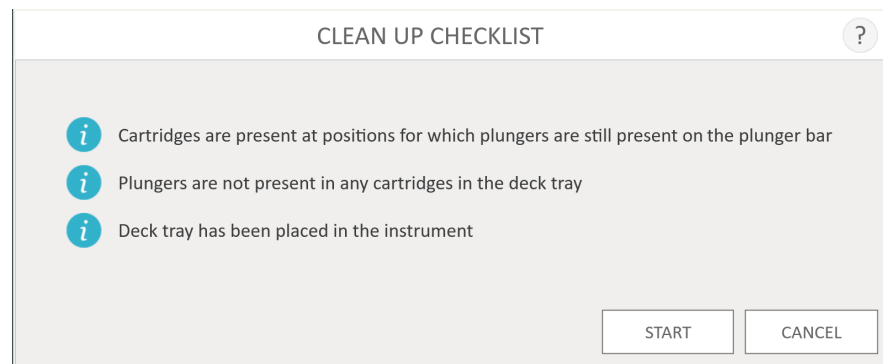

Figure 18. 'Clean Up Checklist' screen. This screen presents you with a checklist of items that must be performed before attempting to unload plungers.

5.2.4   Export Logs

The **Export Logs** button will export instrument logs for troubleshooting purposes. If in the course of troubleshooting an instrument problem you are directed to export logs to send to Promega Technical Services, touch this button to generate instrument-specific log files.

1. Touch the **Export Logs** button to display the 'Export Folder' screen (Figure 19, Panel A). This screen allows the operator to select the path to which the instrument logs should be exported.

2. Using the Yellow and Red rectangle buttons you can select the folder location where the instrument logs will be saved. The current path is indicated by the yellow rectangles at the top of the 'Export Folder' screen. Any folders present within the selected directory are displayed as red rectangles in the main portion of the screen. Touch the **Drive** button to navigate to the drive location of the desired folder. Touch red folder buttons to navigate to the desired folder location.

3. Once a path has been defined, touch the **Save** button to export logs to the specified path, or touch **Cancel** to return to the 'Settings' screen without exporting logs.

4. After touching **Save**, the 'Export' screen will be displayed, indicating that the log files were successfully exported to the path that was specified (Figure 19, Panel B).

5. On the 'Export' screen you can touch **Open** to open a Windows File Browser showing the folder location of the exported files. Touch **Done** to close the 'Export' screen and return to the 'Settings' screen.

Instrument logs will be exported as a zip file to the path that was specified by the operator. The zip file of the logs should be retrieved from the specified location and sent to a Promega Technical Services representative for further troubleshooting.

A.

B.
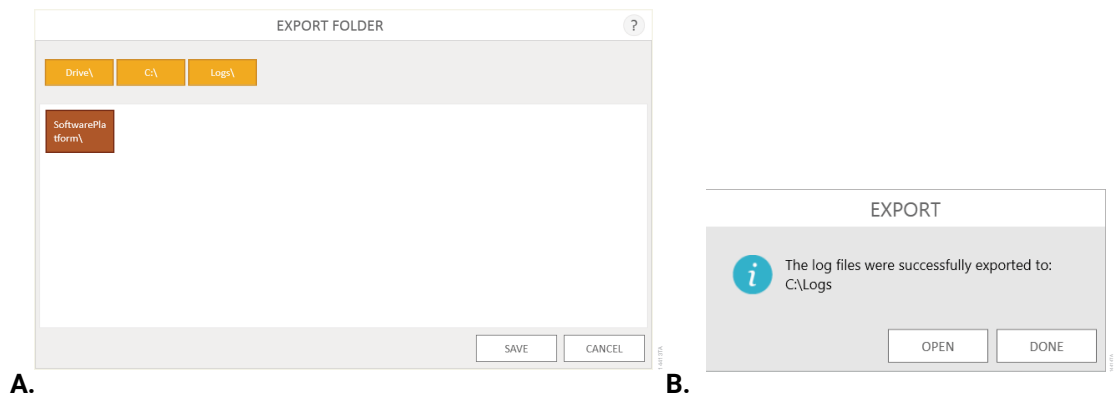
Figure 19. Export Logs. Panel A. The 'Export Folder' screen is displayed after touching the **Export Logs** button. Specify a path to which the instrument log files should be exported. Touch **Save** to export instrument logs to the specified location or **Cancel** to return to the 'Settings' screen without exporting logs. **Panel B.** After instrument log files are exported, the 'Export' screen is displayed, indicating that logs have been saved to the specified path. Touch **Open** to view the folder location of the exported instrument log files. Touch **Done** to exit the 'Export' screen and return to the 'Settings' screen.

5.3   Administrator Settings

Software settings for the Maxwell® RSC 48 software can be accessed by Windows® user accounts with administrator-level access to the Maxwell® RSC 48 software using the **Administrator** button on the 'Settings' screen. From the 'Settings' screen touch the **Administrator** button to open the 'Administrator Page' screen.

The functions available from the 'Administrator Page' screen allow users with administrator-level access to the Maxwell® RSC 48 software to customize the behavior of the Maxwell® RSC 48 software to the needs of their laboratory. Buttons on the 'Administrator Page' screen allow the administrator to: set Sample Entry bar code tracking requirements, configure Sanitization Settings for UV light treatment, manage Methods installed in the software, configure Preferences for the Maxwell® RSC 48 software, view user-readable Audit Records and define an Instrument Name for this Maxwell® RSC 48 Instrument. The behavior of each button on the 'Administrator Page' screen is detailed below. Follow the instructions to adapt the behavior of the Maxwell® RSC 48 software to the needs of the laboratory, or refer to any individual subsection to address a specific setting.

1. To return to the 'Home' screen from any other screen, touch the **Home** button in the upper left corner of the screen. From the 'Home' screen of the Maxwell® RSC 48 User Interface (Figure 20), touch the **Settings** button.

Figure 20. Maxwell® RSC 48 'Home' screen. Selecting Settings opens the Maxwell® RSC 48 'Settings' screen.

2. If the current operator logged into the Tablet PC has administrator access rights within the Maxwell® RSC 48 software, the 'Settings' screen (Figure 21) will display an **Administrator** button. On the 'Settings' screen, touch the **Administrator** button to proceed to the 'Administrator Page' screen (Figure 22).

Note: If the **Administrator** button is not visible, log out of the Windows® operating system with this user and log in with user credentials that have administrator access rights within the Maxwell® RSC 48 software.
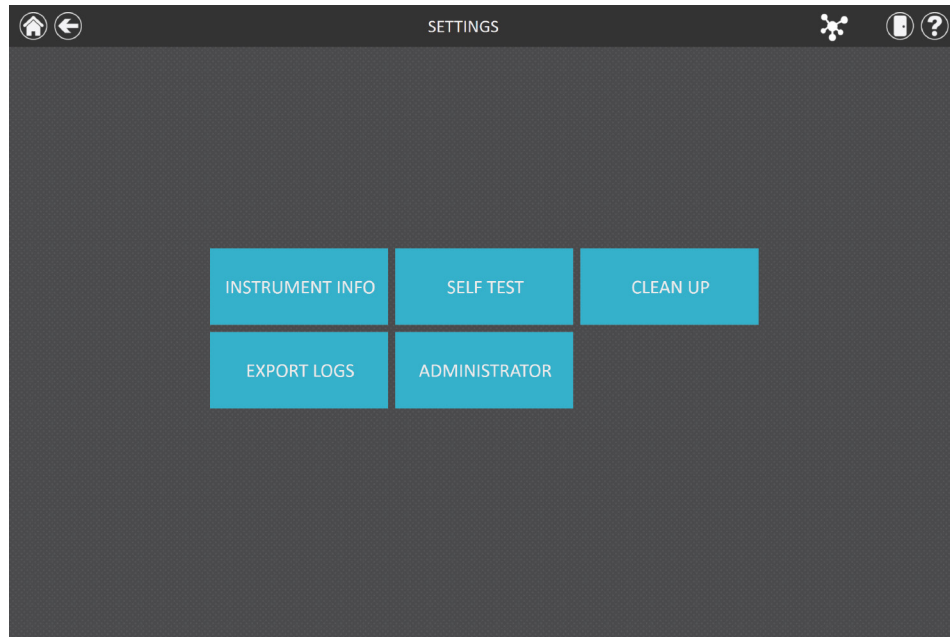
Figure 21. Maxwell® RSC 48 'Settings' screen. The Administrator button will only be visible if the currently logged in operator has administrator-level rights within the Maxwell® RSC 48 software.
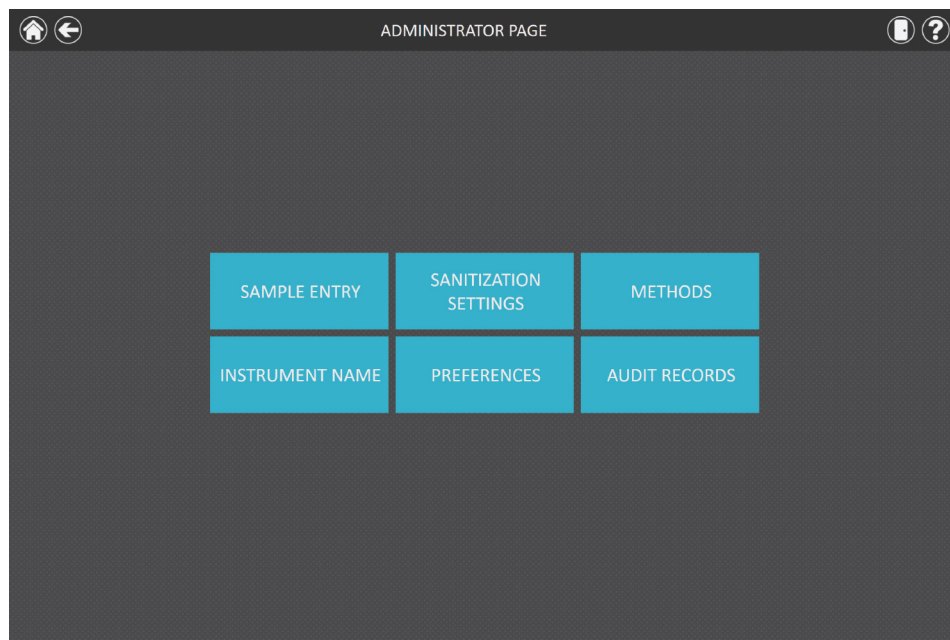
Figure 22. Maxwell® RSC 48 'Administrator Page' screen. The 'Administrator Page' screen is only visible to administrators and gives access to customize the behavior of several aspects of the Maxwell® RSC 48 System.

5.3.1   Sample Entry

Maxwell® RSC 48 has two modes for sample tracking: Portal sample tracking and local sample tracking. In Portal mode (see Section 5.3.5, Preferences), all sample tracking information is reported locally in individual run reports in the software, and to the Portal software for tracking of samples between instrument modules. When Portal mode is activated (see Section 5.3.5), entering sample identifiers is required, while collecting other sample tracking information is optional. If Portal mode is turned off, the Maxwell® RSC 48 software will only report sample tracking information locally to run reports in the Maxwell® RSC 48 software.

The 'Sample Entry' screen allows the administrator to define the required bar code values that need to be entered by any operator when running a Maxwell® RSC 48 method. Sample tracking fields that can be required by the administrator include: Kit Lot Number, Sample ID, Cartridge ID, Elution Tube ID and two additional administrator-defined bar code fields. A check box next to each of these fields can be used to specify whether the bar codes entered for any of these fields is required to match the Sample ID bar code for a given cartridge position. In addition, the software can be set to warn operators if duplicate sample identifiers have been entered for a run by checking the box next to "Warn on duplicates". If duplicate bar codes are detected within a run, the software will display a warning message before starting the extraction of samples.

Note: When the Maxwell® RSC 48 software is connected to the Portal software (see Preferences in Section 5.3.5) the "Sample ID" field is required.

To configure the bar code entry options for the software, perform the following steps:

1. From the Maxwell® RSC 48 software 'Administrator Page' screen (Figure 22), touch the **Sample Entry** button.

2. The 'Sample Entry' screen is shown in Figure 23. Choose whether to require the entry of Kit Lot Number, Sample ID, Cartridge ID (bar code added to the sample processing cartridge by the user) and Elution Tube ID (bar code of the elution tube). You can define and label up to two custom bar code entry fields. Enable any of these fields by touching the box to the left of the specified field name. Once enabled the box will contain a check mark.

    When the check box next to the Sample ID field is checked, the "Warn on duplicates" check box becomes active. Check the box next to the "Warn on duplicates" field to warn users that the deck trays contain identical Sample ID information for two or more samples within a run. Enabling this option will not prevent a run from proceeding because of duplicate Sample IDs; it will simply result in a warning before extraction begins for informational purposes.

    If any option other than Sample ID and Kit Lot Number is enabled, you can choose whether the bar codes scanned for the indicated fields are required to match the Sample ID. This is useful for ensuring that all bar code values match for any given sample processing position on the instrument deck tray. Enable the bar code matching option for any of these additional enabled bar code fields by touching the box to the left of the "Must Match Sample ID" text for that field. Once enabled the box will contain a check mark.

Figure 23. Maxwell® RSC 48 'Sample Entry' screen. Use this screen to configure the bar code information that must be entered for each sample prior to performing an extraction method. When Portal software is enabled, Sample ID is a required bar code entry field. Use the "Warn on duplicates" option to display a warning when multiple cartridges within a run have identical Sample ID information. For any of the optional fields, you can specify whether the bar code information entered is required to match the Sample ID for each processing position on the instrument.

3. After the Sample Entry settings are configured as desired, touch the **Save** button to save these settings and return to the 'Administrator Page' screen.

5.3.2 Sanitization Settings

The Maxwell® RSC 48 Instrument contains a UV light that can help aid in sanitization of the instrument. It is possible to specify the duration of the UV treatment and when UV light treatment of the instrument should be performed.

1. From the 'Administrator Page' screen, touch the **Sanitization Settings** button to open the 'Sanitization Settings' screen.

2. Three sanitization settings are present on the 'Sanitization Settings' screen (Figure 24). These are described below:

   a. Default sanitization duration: This setting defines the duration of the UV treatment (in minutes) performed when the Sanitization button on the 'Home' screen is touched.

   b Sanitize after extraction for (optional): This setting defines the duration of UV treatment (in minutes) that will be automatically performed after completion of an extraction method run.

   c. Sanitize on software start-up for (optional): This setting defines the duration of UV treatment (in minutes) that will be automatically performed when the Maxwell® RSC 48 software is started.

3. Touch the text box next to "Default sanitization duration:" to open the on-screen number pad. Enter the number of minutes to be used for UV sanitization when the **Sanitization** button on the 'Home' screen is touched. Touch the **OK** button on the on-screen number pad to accept the duration value or touch the **Cancel** button on the on-screen number pad to discard changes.

4. To enable either of the additional UV sanitization options, touch the check box next to the desired option. A check mark will be visible in the check box next to the enabled option, and the text box associated with the option will become active. Touch the text box associated with the desired option to open the on-screen number pad. Enter the number of minutes of UV sanitization to be performed for the desired option. Touch the **OK** button on the on-screen number pad to accept the duration value, or touch the **Cancel** button on the on-screen number pad to discard changes.

5. Once all UV sanitization options have been set, touch the **Save** button to accept and save the settings. To discard any changes to the UV sanitization options, touch the **Cancel** button. Touching either button will result in a return to the 'Administrator Page' screen.

Figure 24. The 'Sanitization Settings' screen.

5.3.3 Methods

The 'Methods' screen displays a list of the currently installed methods in the user interface including the name, version number and catalog number for each method. From the 'Methods' screen, the administrator can view, import and delete methods from the Maxwell® RSC 48 software (Figure 25).

1. If you wish to view the methods currently installed in the Maxwell® RSC 48 software, touch the **Methods** button from the 'Administrator Page' screen.

2. Touch the **Back** icon in the upper left corner of the screen to return to the 'Administrator Page' screen.

NAME	VERSION	CATALOG NUMBER	
simplyRNA Tissue	v1.0.0	AS1340	✕
RNA FFPE	v1.0.0	AS1440	✕
ccfDNA Plasma	v1.0.0	AS1480	✕
DNA FFPE	v1.0.0	AS1450	✕
miRNA Tissue	v1.0.0	AS1460	✕
Viral Total Nucleic Acid	v1.0.0	AS1330	✕
simplyRNA Cells	v1.0.0	AS1390	✕
simplyRNA Blood	v1.0.0	AS1380	✕
Whole Blood DNA	v1.0.0	AS1520	✕
Blood DNA	v1.0.0	AS1400	✕

Figure 25. 'Methods' screen. This screen displays a list of the methods currently installed in the Maxwell® RSC 48 software. For each method you can view the name of the method, the version number of the method, and the catalog number of the chemistry kit for this method. Methods can be deleted from the software by touching the **X** on the right side of the method list item. Import new methods using the **Select Import Package** button.

5.3.4 Importing and Deleting Methods

As Promega provides new nucleic acid purification kits for use with the Maxwell® RSC 48 instrument, new extraction methods can be added to the Maxwell® RSC 48 software. Occasionally, an existing extraction method may have to be updated. Only administrators can add new extraction methods or delete or update existing methods. Administrators can download new extraction methods for new nucleic acid purification kits or updated existing extraction methods for existing nucleic acid purification kits at: **www.promega.com/resources/software-firmware/maxwell-maxprep/maxwell-rsc48-methods/**

Methods are provided as files with a .package extension. Follow the instructions below to import a method into the Maxwell® RSC 48 software.

1. Save the method (.package) file on the Tablet PC attached to the Maxwell® RSC 48.

2. If not already running, start the Maxwell® RSC 48 software by double-touching the software icon on the desktop.

3. Navigate to the 'Methods' screen (Home → **Settings** → **Administrator** → **Methods**).

4. Touch the **Select Import Package** button on the bottom left side of the screen to open the 'Select File' browser screen.

5. Within the 'Select File' screen, navigate to the location at which you saved the method (.package) file. The current path will be shown in yellow boxes along the top of the window. Touch any aspect of the path to navigate to the desired folder. Touch the **Drive** button to select the drive in which to search. Folders within the current path are shown as red rectangles on the left side of the screen. Valid method (.package) files will be shown as blue rectangles (yellow when selected) on the right side of the screen.

6. Click the blue rectangle(s) corresponding to the desired (.package) file(s) to highlight it, then touch the **OK** button.

7. A pop-up window will indicate successful import of the method(s) into the software. If import was successful, the new method file(s) will appear in the list of method files on the 'Methods' screen.

To delete a method from the Maxwell® RSC 48 software, touch the **X** on the right side of the method list entry to delete it. A 'Warning' screen will be shown asking whether the file should be permanently deleted. Select **Delete** to permanently remove the file from the Maxwell® RSC 48 software or **Cancel** to return to the 'Methods' screen without deleting the method.

5.3.5   Preferences

Administrators can view preferences available in the Maxwell® RSC 48 software by touching the **Preferences** button on the 'Administrator Page' screen. The 'Preferences' screen displays a set of four tabs that can be used by the administrator to adapt the functionality of the software to the needs of the laboratory (Figure 26).

Below are listed the tabs and associated preferences that can be set and a description of their functions.

'Common Settings' Tab
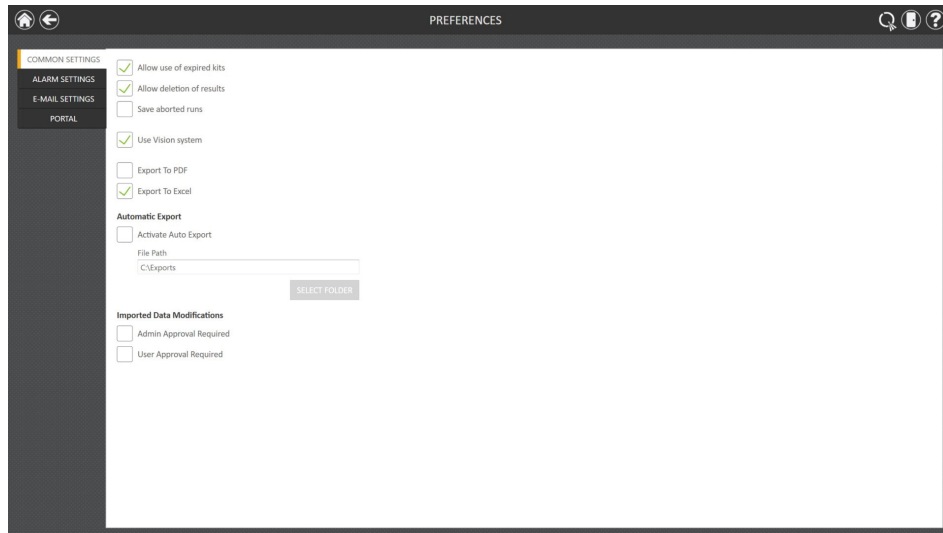
Figure 26. 'Common Settings' tab on the 'Preferences' screen. From the 'Common Settings' tab, the administrator can specify software and export behaviors as well as use of the Vision system camera. Additionally, you can set the approvals required to make changes to sample deck tray layouts retrieved from the Portal software or the Sample Data Import function.

The 'Common Settings' tab on the 'Preferences' screen (Figure 26) provides administrators the ability to specify the following options:

- **Allow use of expired kits:** Checking this box allows users to run methods with kits that have passed their expiration date. When this box is unchecked the software will not allow expired kits to be used for any extraction runs.

- **Allow deletion of results:** When checked, this box will allow administrators to delete extraction report files from the local database of run reports.

- **Save aborted runs:** When this box is checked, the software will save local run reports for all instrument functions regardless of why they were aborted. If left unchecked, any instrument functions that have been aborted will not generate a local run report

- **Use Vision system:** The Maxwell® RSC 48 contains a Vision system camera that provides a check of sample number, cartridge position and deck tray setup. Turning off the camera will remove this functionality, relying solely on the user to manually specify number of cartridges, cartridge positions and appropriateness of the deck tray setup (presence of cartridges at specified deck tray positions, presence of plungers in cartridge well #8, presence of open elution tubes). In the checked state, the Vision system camera function is on, while in the unchecked state the camera is turned off.

- **Export to PDF:** Checking this box will create a PDF version of exported results in addition to the tab-delimited text file version of the results.

- **Export to Excel:** Checking this box will create an Excel® version of exported results in addition to the tab-delimited text file version of the results.

- **Auto Export:** Report files can be automatically exported to an administrator-defined location at the end of instrument runs. Check the "Auto Export" box to enable this function, and then touch the text box below this option to specify the path to which exported results files should be saved. An 'Export Folder' screen will open with the current path specified in yellow rectangles. Touch any aspect of the path to navigate to the desired folder. Touch the **Drive** button to select the drive in which to search. Folders within the current path will be shown as red rectangles in the main area of the screen. Results will be exported as tab-delimited text files. If the options for Export to PDF and/or Export to Excel have been enabled, reports will also be exported in the selected format(s) to the specified drive location.

- **Imported Data Modifications:** Beneath this header are check boxes to specify whether approvals are required to make changes to the imported sample tracking information. The options available are:

   "Admin Approval Required": Check this box if modifications or removals of samples to the imported tracking information require entry of credentials by an operator with administrator-level rights to the Maxwell® RSC 48 software.

   "User Approval Required": Check this box if modifications or removals of samples to the imported tracking information require entry of credentials of the current operator logged into the Tablet PC.

When navigating away from the 'Preferences' screen, a prompt is displayed allowing the administrator to save any changes that have been made. Touch the **Save** button to save any changes and navigate away from the 'Preferences' screen. To leave the 'Preferences' screen without saving changes touch the **Don't Save** button. Touch the **Cancel** button to return to the 'Preferences' screen without saving changes.

'Alarm Settings' Tab
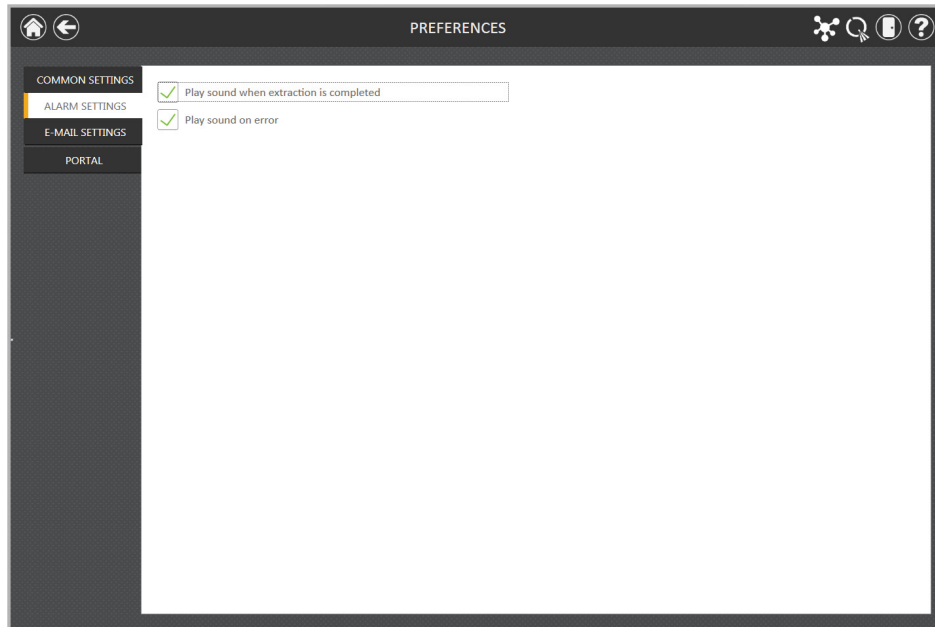
Figure 27. 'Alarm Settings' tab on the 'Preferences' screen. From the 'Alarm Settings' tab, the administrator can specify whether audible alarms should be played on completion of an extraction run or on error.

The 'Alarm Settings' tab on the 'Preferences' screen (Figure 27) provides administrators the ability to specify whether the software will provide audible alarms for completed extraction method runs and error states. Available options are:

- **Play sound when extraction is completed:** Check this box to have the Tablet PC generate a sound when an extraction method run is completed. Use the increase/decrease volume rocker switch on the edge of the tablet to adjust the Tablet PC volume.

- **Play sound on error:** Check this box to have the Tablet PC generate a sound if an error occurs during an extraction method run on the instrument. Use the increase/decrease volume rocker switch on the edge of the tablet to adjust the Tablet PC volume.

When navigating away from the 'Preferences' screen, a prompt is displayed allowing the administrator to save any changes that have been made. Touch the **Save** button to save any changes and navigate away from the 'Preferences' screen. To leave the 'Preferences' screen without saving changes touch the **Don't Save** button. Touch the **Cancel** button to return to the 'Preferences' screen without saving changes.

'E-mail Settings' Tab

Figure 28. 'E-mail Settings' tab on the 'Preferences' screen. From the 'E-mail Settings' tab, the administrator can specify e-mail server settings, under what conditions e-mail notifications should be sent, and the distribution list to which e-mails should be sent. Use the **Test Connection** button to check the settings entered on this screen.

The 'E-mail Settings' tab on the 'Preferences' screen (Figure 28) is where e-mail server details are specified and where administrators can determine when and to whom e-mail notifications will be sent. You need to fill out the user and server information on the 'E-mail Settings' tab, and that the Tablet PC has network access to the e-mail server to use e-mail notifications. Required e-mail server information on the left side of the screen includes:

- **User Name:** The name of the user for the e-mail account from which e-mail notifications will be sent

- **E-mail:** The e-mail account from which e-mail notifications will be sent

- **Password:** The password for the e-mail account from which e-mail notifications will be sent

- **SMTP Server:** The SMTP server address for the e-mail account

- **Port:** The port that should be used for the SMTP server

- **SSL Encrypted Connection:** Check box indicating whether the e-mail account uses an SSL Encrypted connection

Note: Contact your IT department to provide the information required to complete e-mail settings.

On the right side of the screen the administrator can specify under what conditions and to whom e-mail notifications will be sent. Options include:

- **Send mail when extraction is completed:** Check this box to have e-mails automatically sent to the specified e-mail addresses when an extraction run has been completed.

- **Send mail on error:** Check this box to have e-mails automatically sent to the specified e-mail addresses if an error state occurs during an extraction run.

- **E-mail Recipients:** Enter the e-mail address(es) separated by a space that will act as the distribution list for e-mail notifications under the conditions that have been selected.

Upon completing the entries for e-mail settings you can test the validity of the settings by touching the **Test Connection** button. Touching this button will attempt to send a test e-mail to the e-mail account and e-mail recipients designated by the settings on this page.

When navigating away from the 'Preferences' screen, a prompt is displayed allowing the administrator to save any changes that have been made. Touch the **Save** button to save any changes and navigate away from the 'Preferences' screen. To leave the 'Preferences' screen without saving changes, touch the **Don't Save** button. Touch the **Cancel** button to return to the 'Preferences' screen without saving changes.
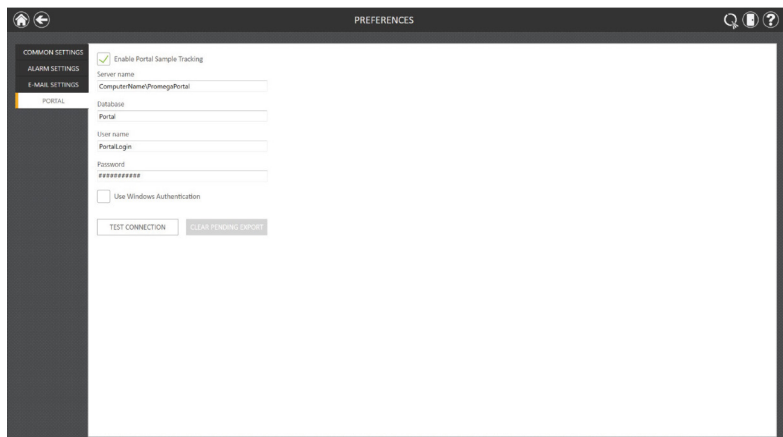
'Portal' Tab

Note: Contact Promega Technical Services (**techserv@ promega.com**) for information on using Portal when no Maxprep® Liquid Handler is available.

The 'Portal' tab (Figure 29) presents settings for use of the Portal software to connect multiple instrument modules for the purposes of sample tracking and data sharing. Information on this tab will determine whether your system communicates with the Portal software and define the server information necessary to connect to the Portal software. Modifications to sample tracking information retrieved from the Portal software (additions or removals of samples to be processed) can be set to require User or Administrator approvals in the 'Common Settings' tab.

Figure 29. 'Portal' tab on the 'Preferences' screen. The information entered on the 'Portal' tab determines whether Portal Sample Tracking is enabled on your system and allows entry of the communications settings necessary to connect to the Portal software.

If you wish to share sample tracking and other method-specific data between multiple modules, check the **Enable Portal Sample Tracking** check box on this tab. By default the Portal software is installed on the PC connected to a Maxprep® Liquid Handler (Cat.# AS9105 and AS9205). For your system to communicate with Portal software, enter the following software information:
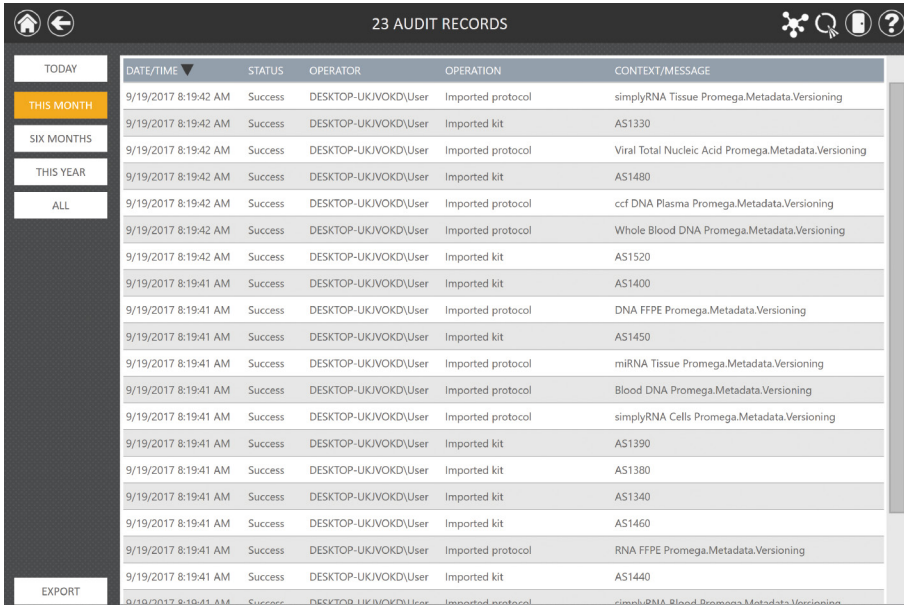
- **Server name:** Name of the server hosting the Portal software (Default = Computer Name\ PromegaPortal)

- **Database:** Name of the SQL database containing Portal information (Default = Portal)

- **User name:** User name necessary to access the Portal software (Default = PortalLogin)

- **Password:** Password necessary to access the Portal software (Default = PortalLogin)

- **Use Windows Authentication:** A check box that when checked, uses the Windows® login information for the User name and Password to access the Portal software (Default = unchecked).

Once the software-specific information has been entered, touch the **Test Connection** button to determine whether the Maxwell® RSC 48 software can successfully connect to the Portal software using the information supplied. A message will be displayed indicating whether the connection was successful. If unsuccessful, confirm that the connection information was correctly entered and try again.

When navigating away from the 'Preferences' screen, a prompt is displayed allowing the administrator to save any changes that have been made. Touch the **Save** button to save any changes and navigate away from the 'Preferences' screen. To leave the 'Preferences' screen without saving changes, touch the **Don't Save** button. Touch the **Cancel** button to return to the 'Preferences' screen without saving changes.
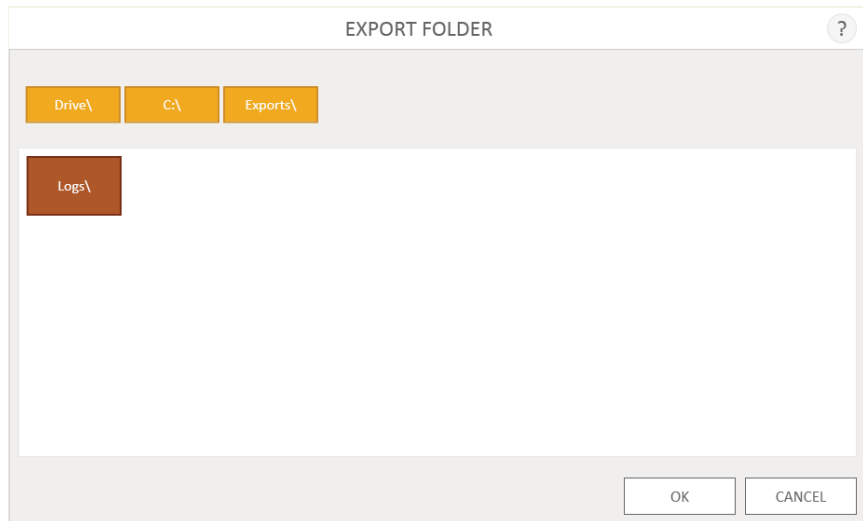
5.3.6   Audit Records

The Maxwell® RSC 48 software contains an audit trail of functions that have been performed. Administrators have access to view and export the Audit Records from the instrument through the **Audit Records** button on the 'Administrator Page' screen. The 'Audit Records' screen displays a listing of functions that have been performed in the software (Figure 30). You can filter the audit records by touching the buttons on the left side to view records from today, this month, the past 6 months, this year or all functions performed over the life of the instrument. Touch the column headers to sort the records based on column contents. Touch the desired row to see the audit message from that particular record. Administrators can export all audit records for the selected date range by touching the **Export** button at the bottom left corner of the screen and specifying a location to which the exported information should be saved.

Figure 30. 'Audit Records' screen. A user-readable record of events that have occurred in the Maxwell® RSC 48 software can be viewed by the administrator and exported to a specified drive location from the 'Audit Records' screen.

1. Touch the **Export** button on the 'Audit Records' screen.

2. Using the Yellow and Red rectangle buttons you can select the folder location (Figure 31) where the method run reports will be saved. The current path is indicated by the yellow rectangles at the top of the 'Export Folder' screen. Any folders present within the selected directory are displayed as red rectangles in the main portion of the screen. Touch the **Drive** button to navigate to the drive location of the desired folder. Touch red folder buttons to navigate to the specified folder location.

Figure 31. 'Export Folder' screen. From the 'Export Folder' screen, you can set the folder location to which all displayed audit records will be exported.

3. Once the desired file path has been specified, touch the **OK** button to save the new export folder setting or touch the **Cancel** button to cancel any changes. After touching either **OK** or **Cancel** you will be returned to the 'Audit Records' screen.

5.3.7   Instrument Name

You can define a unique identifying name for the Maxwell® RSC 48 Instrument. This name will be shown on the title bar of the Maxwell® RSC 48 software 'Home' screen and will be recorded in method run reports.

Note: Saving an instrument name will force a restart of the Windows® Operating System.

1. From the 'Administrator Page' screen, touch the **Instrument Name** button to open the 'Instrument Name' screen (Figure 32).

2. On the 'Instrument Name' screen, touch the text box to enable the on-screen keyboard.

3. Use the on-screen keyboard to manually enter the desired name for this instrument. The instrument name should be entered following the procedures and rules at your site.

4. Once the desired name has been entered, touch the **OK** or the **Enter** button on the on-screen keyboard to return to the 'Instrument Name' screen.

5. Touch the **Save** button to save the instrument name you have entered. Saving the instrument name will enforce a restart of the Windows® Operating System. After saving, an informational screen will be displayed indicating that "Windows will now restart". Touch the **OK** button to restart the operating system.

6. If you do not wish to save any changes to the instrument name, touch the **Cancel** button to return to the 'Administrator Page' screen.

Saving the instrument name will enforce a restart of the Windows® Operating System.
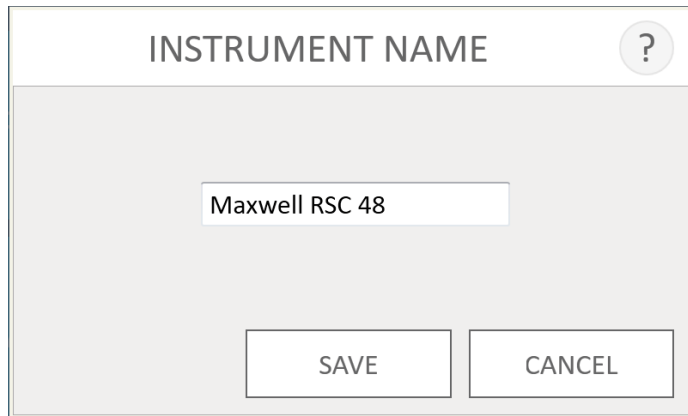
Figure 32. 'Instrument Name' screen. Use this screen to manually enter a name for this Maxwell® RSC 48 Instrument.

6 Operating the Maxwell® RSC 48 Instrument

6.1 Preprogrammed Methods

The preprogrammed methods available for the Maxwell® RSC 48 Instrument can be used to perform extractions for a variety of sample types. The sample type and type of molecule extracted are determined by the Maxwell® RSC or Maxwell® FSC reagent kit used. Please refer to your specific Maxwell® reagent kit Technical Manual for information on sample preparation and handling. Three mechanisms for selecting a method to run are enabled in the Maxwell® RSC 48 software:

- Manual selection from the list of installed methods corresponding to Maxwell® reagent kits can be used for method selection as well as confirmation.

- Scanning the bar code on a Maxwell® RSC or Maxwell® FSC reagent kit box will select and highlight the appropriate installed method for that kit with subsequent confirmation by the user.

- When in Portal mode, scanning the bar codes on the top of the deck trays will retrieve information from the Portal software to automatically select and highlight the appropriate installed method based on the preprocessing method that was run on a Maxprep® Liquid Handler with subsequent confirmation by the user.

Based on the administrator settings in the user interface the user may be required to enter sample ID information prior to initiating sample processing. If you are using sample identifiers on cartridges, elution tubes or additional labware, we recommend that you enter or scan the optional user-supplied bar codes for each one immediately before placing it in the deck tray.

6.2 Starting a Method

1. Either manually or using the Maxprep® Liquid Handler, prepare samples for extraction following the instructions provided in the Technical Manual for the specific Maxwell® RSC or Maxwell® FSC reagent kit. From the 'Home' screen (Figure 33), touch the **Start** button to begin the process of running an extraction method.

Figure 33. Maxwell® RSC 48 'Home' screen. Selecting the **Start** button begins the process of running an extraction method on the Maxwell® RSC 48 Instrument.
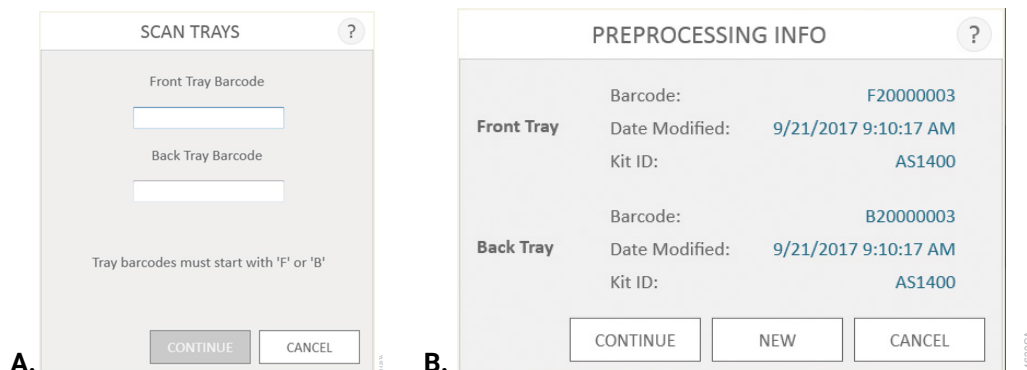
6.2.1   Portal Mode

If the instrument is in Portal mode, the 'Scan Trays' screen will be displayed (Figure 34, Panel A). Touch the appropriate text box and scan the bar code on the top of the specified deck tray. After entering the bar code information for the deck trays, touch the **Continue** button to query the Portal software for Maxprep® Liquid Handler preprocessing information associated with these deck trays (Figure 34, Panel B).

Note: If the preprocessing information retrieved from the Portal software is over 24 hours old, the date modified will be shown in red text. The laboratory should decide whether it is appropriate to extract samples that were preprocessed more than a day earlier.

If there is information associated with these deck trays from a prior Maxprep® Liquid Handler preprocessing method, the sample identifiers and kit information from that preprocessing method will be imported into the Maxwell® RSC 48 software. The 'Methods' screen will be displayed, and the list will be filtered to include only the appropriate extraction method(s) that match the preprocessing method. Touch the method entry and then the **Proceed** button to open the 'Cartridge Setup' screen. All sample identifier information entered during the preprocessing method run on the Maxprep® Liquid Handler will be displayed for each cartridge.

If there is no information associated with these deck trays, the 'Preprocessing Info' screen will be displayed indicating that no information was found (Figure 34, Panel B). To start a new extraction run, or to discard any preprocessing information associated with the scanned deck tray, touch the **New** button to open the 'Methods' screen, or touch the **Cancel** button to return to the 'Home' screen.

When starting a new method follow the instructions below for Local Mode to select a method. All kit lot and sample tracking information will have to be entered on the 'Cartridge Setup' screen for this run.


Figure 34. Portal mode requires scanning of deck tray bar codes. Panel A. When starting a run in Portal mode, scan the bar codes on the front and back deck trays to retrieve information about any prior preprocessing method performed on a Maxprep® Liquid Handler. **Panel B**. To proceed with the preprocessing information retrieved from the Portal software, touch the **Continue** button. If no preprocessing information is found, or if you wish to discard any preprocessing information associated with the scanned deck tray, touch the **New** button to start an extraction run with these deck trays. All kit lot and sample identifier information will have to be entered for the extraction run.

6.2.2   Local Mode

On the 'Methods' screen, select the method from the list that matches the kit name and workflow or catalog number. Alternatively, you can scan the bar code on the Maxwell® RSC or Maxwell® FSC reagent kit box indicated by the 'Scan Here' label (Figure 35), or touch the text box at the top of the screen (Figure 36) to manually enter the bar code information using the keyboard. Maxwell® software requires manual entry of bar codes in the following format: Product Catalog Number, Kit Lot Number, Expiration Date in year-month format (example: AS13303221872018-05, where the product catalog number is AS1330, the kit lot number is 322187 and the expiration date is 2018-05). Only if the bar code entered has this format will the corresponding extraction method be filtered, selected and the **Proceed** button on the right side of the method become active. If a kit has multiple method workflows, the bar code will filter all of the applicable methods. Select the desired workflow and the **Proceed** button on the right side of the method will become active.

Once the bar code is correctly entered, touch the **Proceed** button to access the 'Cartridge Setup' screen. Scanning or entering the bar code information from a kit will select the method to be run (assuming it is installed in the software) and will also record kit lot and expiration date information for the extraction run report.
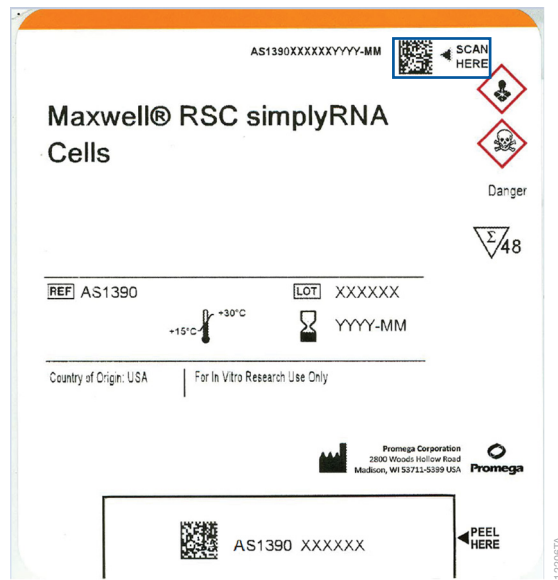
Figure 35. Kit label indicating bar code to scan. Scan the bar code, shown in the upper right of the kit label inside the blue box, to start an extraction run.
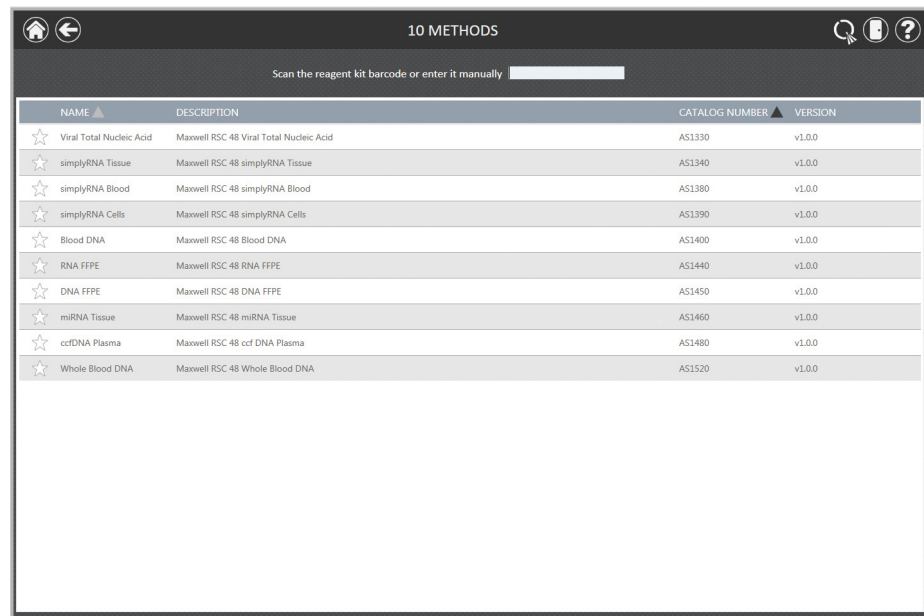
Figure 36. Selecting a method. Pressing the method line selects the extraction method on the Maxwell® RSC 48 Instrument. Alternatively a Maxwell® RSC or Maxwell® FSC reagent kit bar code can be scanned or manually entered to filter and select the method corresponding to that kit. When running in Portal mode, information retrieved from the Portal software (if any) will automatically filter the list to include only the appropriate extraction method for the preprocessing method that was performed on the Maxprep® Liquid Handler.

2. There are two potential error modes that can occur when using Portal or the Maxwell® RSC reagent kit bar code information to select a method:

   a. If the kit lot has passed the specified expiration date, a user prompt will appear explaining that the kit has passed its expiration date and cannot be run. This kit should not be used, and the user should select another kit that is within its specified expiration date to use for the run. An administrator option can be set to allow the use of expired reagent kits on the system (see Section 5.3.5, Preferences). If the administrator has allowed the use of expired kits, a user prompt will appear indicating that the kit has passed the expiration date but the method will be allowed to continue.

   b. If the product catalog number does not have an extraction method associated with it on this instrument, a user prompt will appear indicating that the software does not have a method for this catalog number. Upon touching the **OK** button on the user prompt, the software will return to the 'Home' screen. Please contact Promega Technical Services (techserv@promega.com) to get the most up-to-date information on the available methods.

After a method has been selected, one of two screens will appear. If sample tracking of the kit lot and expiration date is required and you are running in Local Mode, the 'Scan Barcode' screen (Figure 37) is displayed. Scan or enter the bar code information for a kit within expiration date. Maxwell® software requires manual entry of bar codes in the following format: Product Catalog Number, Kit Lot Number, Expiration Date in year-month format (Example: AS13303221872018-05, where the product catalog number is AS1330, the kit lot number is 322187 and the expiration date is 2018-05). The **OK** button will only become active if the bar code has been entered in this format. If bar code information from a Maxwell® RSC or Maxwell® FSC reagent kit was scanned or manually entered to select a method, or if you are running in Portal Mode and this information was entered during preprocessing, this information will be automatically recorded and this screen will not be displayed. If sample tracking of kit information is not required, the 'Cartridge Setup' screen is displayed.
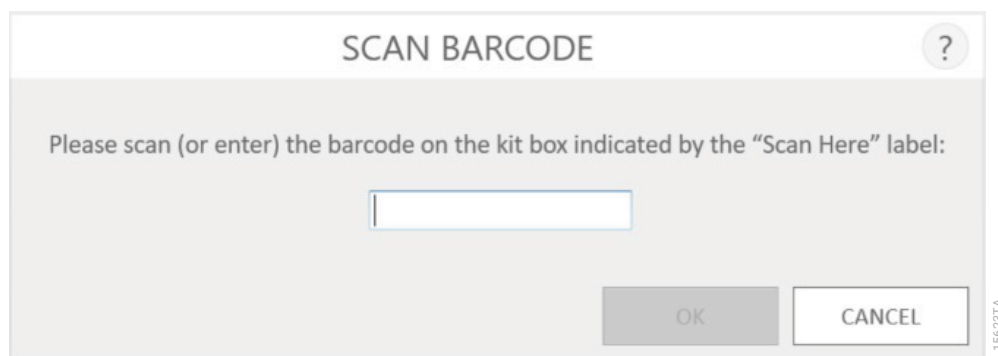
Figure 37. 'Scan Barcode' screen. When sample tracking of the lot and expiration date of the Maxwell® RSC or Maxwell® FSC reagent kit is required, this screen will be presented so that the information can be manually entered after a method is selected. If a kit bar code was scanned to select a method, or if you are running in Portal Mode, this information will automatically be recorded and this screen will not be displayed.

3. After selecting an extraction method, you will be presented with the 'Cartridge Setup' screen (Figure 38) on which you specify the positions on the Maxwell® RSC 48 deck trays that will be occupied by cartridges and enter sample tracking information for each sample. Each deck tray of 24 samples will be displayed on a separate screen for sample entry. Toggle between the front (positions 1–24) and back (positions 25–48) deck trays using the **Front** and **Back** buttons in the lower left area of the screen.

    Note: If running in local mode with the Vision system enabled and no sample tracking options selected, no cartridge positions will need to be selected. You will be prompted to open the door of the instrument. Proceed to Step 5.

    When running in Portal mode, cartridge positions will be automatically selected and sample tracking information associated with the scanned deck trays will be automatically populated at each cartridge position based on the information that was entered during preprocessing on a Maxprep® Liquid Handler. The 'Cartridge Setup' screen will be locked for editing and provides the user a chance to review existing sample tracking data. Touch the **Enable Editing** button to edit or remove cartridge information retrieved from the Portal software. Cartridge positions can be added to the deck trays without touching the **Enable Editing** button. Based on administrator settings (see Section 5.3.5, Preferences), you may need to enter user or administrator credentials to proceed if Portal data has been edited.

    When running in local mode, cartridge positions and identification information can be entered manually (option 1) or by using the sample data import function (option 2).

    Option 1: Manual Entry

    a. Select cartridge positions by touching the long rectangle for each position that will be used. If the Vision system is activated on your system (see Section 5.3.5), the processing positions specified on the deck trays as well as the correct setup of the deck trays are confirmed by the system. If the Vision system is deactivated, the processing positions specified on the deck trays are only used for reporting purposes to indicate how many samples were processed and in which positions they were processed on the instrument.

    b. Once cartridge positions are selected, you must enter all administrator-specified sample tracking information to proceed (Figure 40). Administrators may configure sample tracking information of sample identifiers such as Sample ID, Kit Lot Number, cartridge ID, elution ID and other information required by two additional administrator-defined fields. All of the required information must be entered for all selected cartridge positions before the **Proceed** button becomes active.

    c. Touch the black box below a cartridge position to enter sample identifier information for the selected position. If cartridge and elution tube bar codes are required, we recommend that these be entered immediately before placing the cartridge or elution tube in the deck tray.

    d. Touch the **Sample ID** and additional required sample tracking information text boxes to enter or scan the sample information manually. After a bar code is scanned, the software will automatically move the the next empty bar code field for a position. Once all sample identifier information for a cartridge is entered, the software will automatically move to the next cartridge with empty bar code fields.

Option 2: Sample Import

a. To import sample bar code information from an external file, touch the **Import** button. This will bring up the 'File' tab of the 'Sample Data Import' screen (Figure 39, Panel A).

b. From the 'File' tab of this screen, a file filter can be applied to display .xlsx files, or .csv, .txt, .tsv files, or .xls files, or any file format. This tab then allows the operator to select the path where the sample information file is located.

c. Using the yellow and red rectangle buttons, you can select the folder location where the import file is located. The current path is indicated by the yellow rectangles at the top of 'Sample Data Import' screen. Any folders present within the selected directory are displayed as red rectangles in the main portion of the screen. Touch the **Drive** button to navigate to the drive location of the desired folder. Touch the red buttons to navigate to the desired folder location.

d. Once a path has been defined, select the desired file, and touch the **Open** button to automatically move to the 'Data' tab on the 'Sample Data Import' screen (Figure 39, Panel B).

e. The 'Data' tab on this screen allows the user to identify the information present in each column of the file. A table displaying the columns of data found in the import file is shown in the main portion of the screen. Select the type of data present in each column of the file using the drop-down menu at the top of each column. The Cartridge position is minimally required, however other categories can be the Sample ID bar code, Cartridge ID bar code, Elution Tube ID bar code and up to two administrator-defined fields. To utilize these categories, they must be checked in the Sample Entry section of the software. See Section 5.3.1, Sample Entry, for more information. For columns that should be ignored during import, select **X** from the drop-down menu.

If your import file has a header row that provides titles for the information in each column, check the "Header" box on the right side of the table to ignore the Header row during import. When the "Header" box is checked, the first row of the table will be shaded light blue.

All selections made on the 'Data' tab are saved and become the default values selected the next time you import sample data.

f. Once all data fields are identified, touch the **Accept** button to perform the import of data from the file. An 'Import' screen will be displayed summarizing the results of the sample import including the number of samples that were present in the file and the data source for the import file. Touch **OK** to dismiss the 'Import' screen.

g. Touch **OK** to dismiss the 'Sample Data Import' screen and apply the imported information to the 'Cartridge Setup' screen.

h. At the 'Cartridge Setup' screen, the imported sample information is present. The screen will be locked for editing. If sample information must be edited manually, touch the **Enable Editing** button, and confirm by touching **Continue**. See Option 1 for manual entry instructions.

If sample bar code information is required by the Administrator, but was not present in the imported file, a red exclamation point will be displayed at the top of the cartridge positions missing the required bar code information. The missing information can be entered manually or by importing from an external file containing all of the required sample bar code information.

Note: Positions with incomplete information will display a red circle with an exclamation point at the top of the gray rectangle. Touch the red circle with an exclamation point to display a message indicating the required information that is missing for that position. The **Proceed** button will be gray and inactive while required information is missing. If information is missing after sample import, touch the **Enable Editing** button and acknowledge the action by touching the **Continue** button.

Multiple kit lots can be entered for a run by swiping across multiple black box positions and touching the Kit Lot Number text box to display a 'Scan Barcode' screen. Scan or enter the bar code information for the kit lot that is being used for the selected cartridge positions. When entering multiple kit lot numbers manually, the bar code needs to conform to the format: Product Catalog Number, Kit Lot Number, Expiration Date in year-month format (example: AS13303221872018-05 where the product catalog number is AS1330, the kit lot number is 322187 and the expiration date is 2018-05).

Important: There are two bar codes on the kit label. When entering optional product and lot information, use the data contained in the bar code at the top of the label. You will receive an error message if you enter data from the wrong kit.
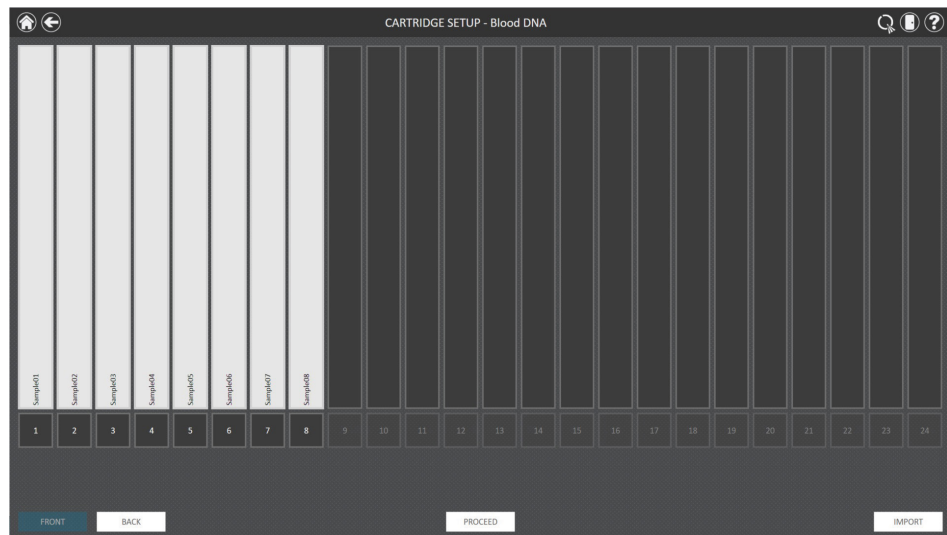
Figure 38. 'Cartridge Setup' screen. At the top of this screen the selected method is indicated. This screen allows the user to select which cartridge positions will be processed. To select/deselect a cartridge position touch the long rectangle for any given position. Use the **Front** and **Back** buttons to toggle between views of the front (positions 1–24) and back (positions 25–48) deck trays. Touch the **Import** button to open the 'Sample Data Import' screen and import the deck tray layout from an external file.
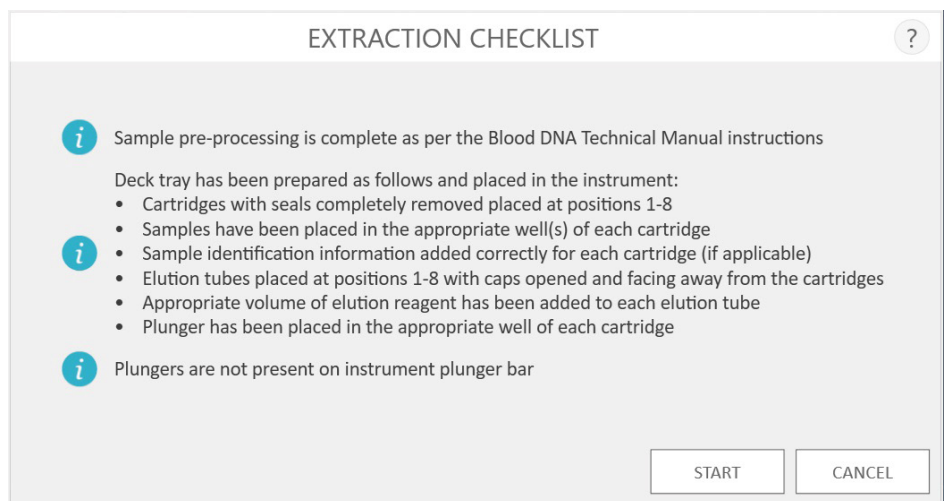
A.

B.
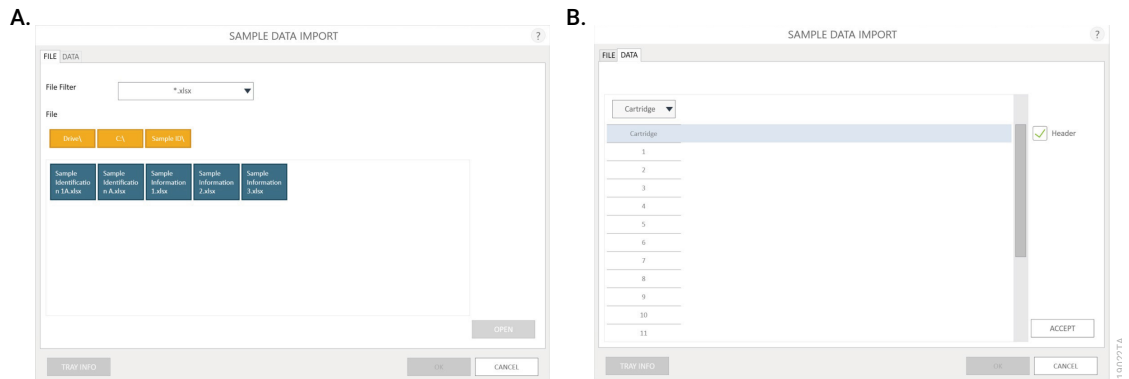
Figure 39. Sample Data Import. Panel A. The 'File' tab is displayed after touching the **Import** button. Select the file filter and navigate to the file location where the sample import file is located. Touch the desired blue box file and touch the **Open** button to open up the 'Data' tab and view the sample ID information in the file or **Cancel** to return to the 'Cartridge Setup' screen. **Panel B.** The 'Data' tab is displayed after the Open button is touched. Select the Sample ID categories for the imported data, as well as check if a Header row is present. If data is present that should not be imported, select **X** for the column category. When finished, touch the **Accept** button to apply the information to the 'Cartridge Setup' screen.
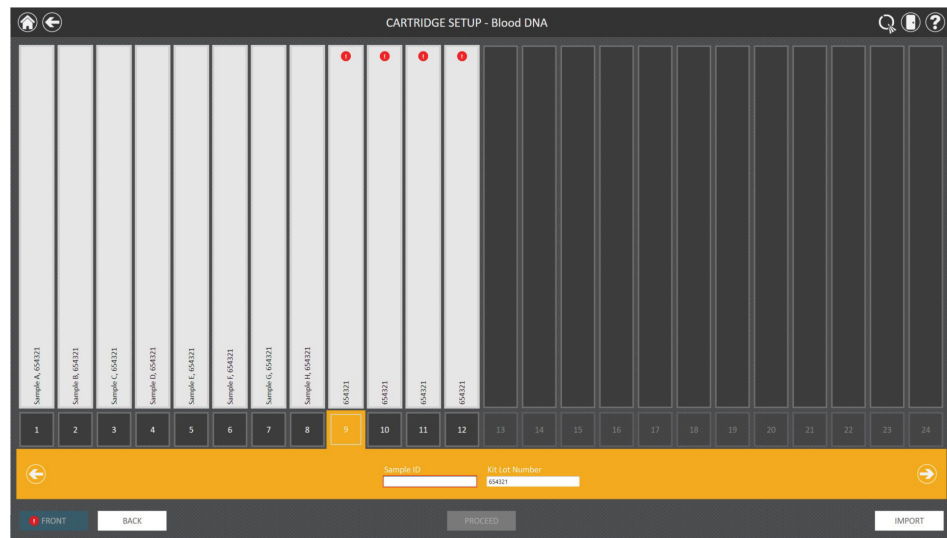
Figure 40. Sample tracking entry. The sample tracking entry fields on the 'Cartridge Setup' screen are administrator-configurable. If your administrator has activated sample tracking (example above is for Sample ID and Kit Lot Number), select the black box at the bottom of any cartridge position and enter the Sample ID and kit lot information for that position. Touching the arrow on the right side of the entry area will move to the next available cartridge position. Select multiple positions (by swiping across the positions to be selected) to enter kit lot information for multiple cartridge positions. If sample tracking has been enabled, all required values must be entered (using the on-screen keyboard or via optional bar code reader) prior to proceeding. Positions with incomplete information will display a red circle with an exclamation point at the top of the gray rectangle. Touch the red circle with an exclamation point to display a message indicating the required information that is missing for that position.

4. After all required information has been entered, touch the **Proceed** button to display the 'Door' prompt. Touch the **OK** button to open the Maxwell® RSC 48 Instrument door.

5. You will be presented with an 'Extraction Checklist' screen (Figure 41). Confirm that the deck trays and instrument have been prepared as indicated on the 'Extraction Checklist' screen. The steps necessary for setting up the instrument are:

•   Sample preprocessing is complete. Sample preprocessing, if required, is described in the Technical Manual for the specific Maxwell® RSC reagent kit. Preprocessing can be performed manually or using the Maxprep® Liquid Handler.

•   Place cartridges at the selected positions in the deck trays (Figure 42). Press down firmly to snap the cartridges in place at both ends. There should be an audible click.

EXTRACTION CHECKLIST   ?

ⓘ   Sample pre-processing is complete as per the Blood DNA Technical Manual instructions

    Deck tray has been prepared as follows and placed in the instrument:
    • Cartridges with seals completely removed placed at positions 1-8
    • Samples have been placed in the appropriate well(s) of each cartridge
ⓘ   • Sample identification information added correctly for each cartridge (if applicable)
    • Elution tubes placed at positions 1-8 with caps opened and facing away from the cartridges
    • Appropriate volume of elution reagent has been added to each elution tube
    • Plunger has been placed in the appropriate well of each cartridge

ⓘ   Plungers are not present on instrument plunger bar

                                                    START   CANCEL

Figure 41. 'Extraction Checklist' screen. This screen indicates the steps that must be performed to prepare the deck trays prior to processing the selected samples. Individual preprocessing steps are not indicated on the Extraction Checklist and should be performed prior to this stage according to the technical manual for the kit being processed.

Figure 42. Placing the cartridges in the Deck Tray and pressing firmly to snap them in place.

- Completely remove seals from all cartridges.

- Place elution tubes at the selected positions in the deck trays.

- Add the appropriate volume of elution buffer to each elution tube (see the Maxwell® RSC or Maxwell® FSC reagent kit Technical Manual for the correct volume to use). Leave the elution tube lids open.

- Add preprocessed sample to the appropriate well(s) of the cartridge.

- Confirm the sample identification information for each cartridge (if applicable).

- Ensure no plungers from the previous run(s) are present on the plunger bar inside the instrument. If there are plungers present, go to Clean Up in Section 5.2, User Interface Settings, for instructions for plunger removal.

- Place a plunger in the last well (closest to the elution tube) of each cartridge.

- Place the deck trays in the instrument with the **Back** tray on the back deck position and **Front** tray on the front deck position as shown in Figure 43. The deck trays for the instrument are keyed so that they will only fit in their appropriate deck position within the instrument. Hold the deck tray by the sides to avoid dislodging cartridges from the deck tray. Ensure that the deck tray is placed in the Maxwell® Instrument with the elution tubes closest to the door. Angle the back of the deck tray downward and place into the instrument so that the back of the deck tray is against the back of the instrument platform. Press down on the front of the deck tray to firmly seat the deck tray on the instrument platform. If you have difficulty fitting the deck tray on the platform, check that the deck tray is in the correct orientation. Ensure the deck tray is level on the instrument platform and fully seated. After all of these steps have been performed, touch the **Start** button to begin the extraction, or touch the **Cancel** button to return to the previous screen.

Important: The reagent cartridges are designed to be used with potentially infectious substances. Wear the appropriate protection (i.e., gloves, safety glasses, etc.) when handling infectious substances, and adhere to your institutional guidelines for the handling and disposal of all infectious substances used with this system.

Figure 43. Placing the deck tray in the instrument.

Important: The plungers must be placed in the well closest to the elution tubes. If the instrument goes through a run with the magnetic rods unprotected, the magnetic rod assembly must be thoroughly cleaned (see Section 7.2, Cleaning the Hardware), and the samples will be lost.

6. If the Vision system is active on your system, when the deck tray is retracted after touching **Start**, the Vision system will scan the deck trays to confirm deck tray setup. The Vision system will check that cartridges are present at all active cartridge positions, plungers are present at well #8 in the cartridges, elution tubes are present and open for every cartridge position. If there are any discrepancies in deck tray setup, a 'Machine Vision Error' screen is displayed indicating that errors need to be resolved before the extraction run can proceed. Touch the **Door Open** button to extend the deck tray and return to the 'Cartridge Setup' screen, or touch **Cancel** to return to the 'Cartridge Setup' screen without extending the deck tray. On the 'Cartridge Setup' screen any positions of concern will be noted with an exclamation mark in a red circle. The **Front** and **Back** buttons on the screen will also display the exclamation mark in a red circle to indicate if there are issues on either deck tray. Touch the exclamation mark in the red circle at any cartridge position to display a message indicating the issues that were observed by the Vision system.

Resolve all issues with the cartridge setup on the deck trays. After all issues have been resolved, touch the **Proceed** button to rescan the deck trays and start the run.

7. While the extraction method runs, you will see the 'Running' screen (Figure 44). The title bar of the 'Running' screen indicates the method currently being run. This screen displays:

   • The name of the user who started the method run.

   • An estimate of the time remaining until the end of the run.

   • A description of the current step being performed.

   • A progress bar showing the percent completion of the method.

You can perform some instrument functions (e.g., viewing reports, associating quantitation data with reports using an optional integrated Quantus™ Fluorometer) during an extraction run by touching the **Home** button and selecting a function. Touch the rotating timer icon in the title bar from any other screen to return to the 'Running' screen while a method is running. If you wish to abort the current run, touch the **Abort** button in the lower right corner of the screen.
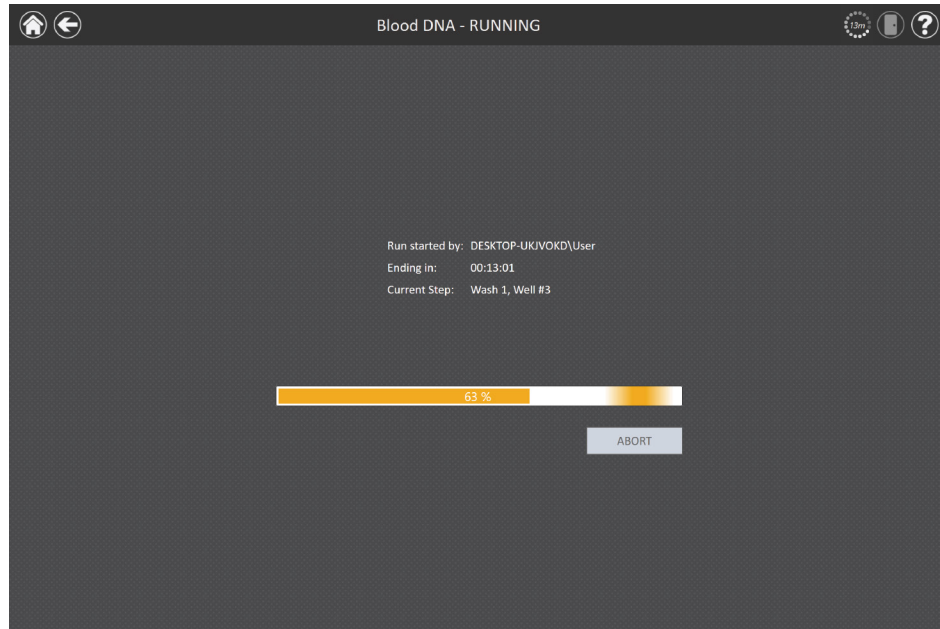
Figure 44. Method 'Running' screen. The method 'Running' screen is displayed during an extraction method run. This screen indicates what method is currently being run at the top of the screen. Also indicated on this screen are the user who started the run, an approximate indication of when the run will end, a description of the current method step and a progress bar showing the percent completion of the method. If you wish to abort the current run, touch the **Abort** button.

Note: Any samples being processed will be lost if a run is aborted.

8. Method runs can end through one of three mechanisms:

    •   The method completes successfully.

    •   The method is aborted by the user.

    •   An instrument error occurs.

6.2.3   Method Completes Successfully

When the method completes successfully the method 'Running' screen will indicate that the extraction method has been completed (Figure 45). After a method is complete, the Current Step will be listed as "Completed". Touch the **Open Door** button to open the door of the Maxwell® RSC 48 Instrument.
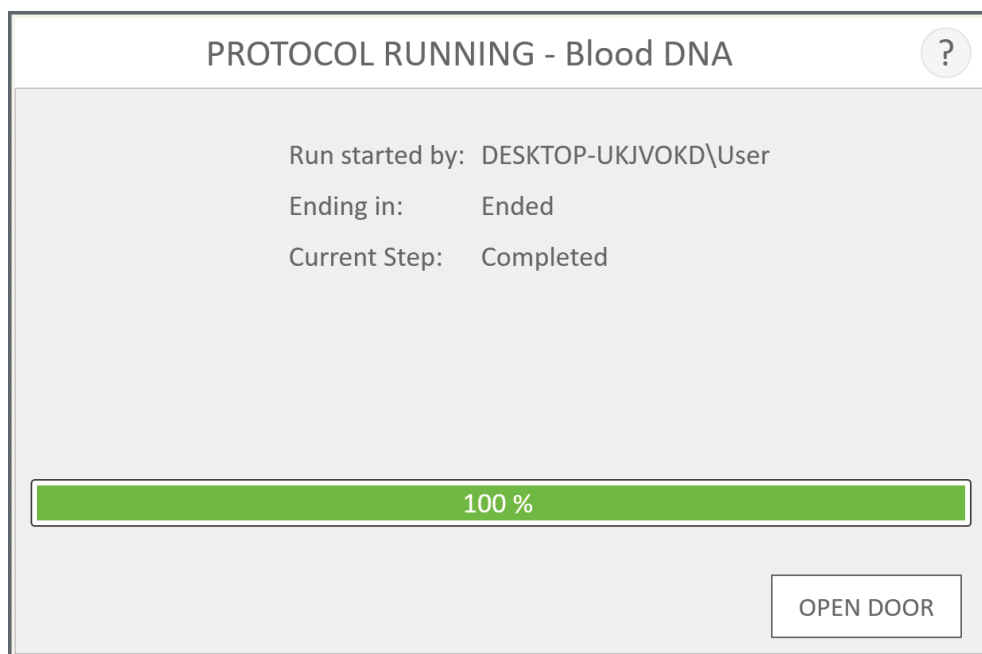
Figure 45. 'Protocol Running' screen after method completion. Upon completion of the currently running extraction method, the progress bar will show 100% completion. The Current Step changes to Completed after a run is finished. After a method is completed you can touch the **Open Door** button to open the door of the Maxwell® RSC 48 Instrument and remove the deck trays.

Close the caps of the elution tubes, and remove the tubes from the deck trays (Figure 46). Verify that all the cartridges have a plunger in well #8. Remove the deck trays by gripping them firmly by the elution tube position, lifting up and pulling each tray out (see Figure 47). The deck trays may be warm to the touch after a run is completed. Exercise caution while removing the deck trays. If there were cartridges missing plungers, proceed to Section 6.3 to remove them by running the Clean Up method. The extracted material is present in the elution tubes. If the method being run is a sequential protocol, follow the on-screen instructions to continue the run. If the method is not a sequential protocol, remove the cartridges and plungers from the Maxwell® RSC 48 deck trays.

Important: Used cartridges and plungers should be disposed of appropriately according to your institution's procedures for hazardous and biohazardous waste. Do not reuse reagent cartridges, plungers or elution tubes.

Figure 46. Closing the elution tube caps.
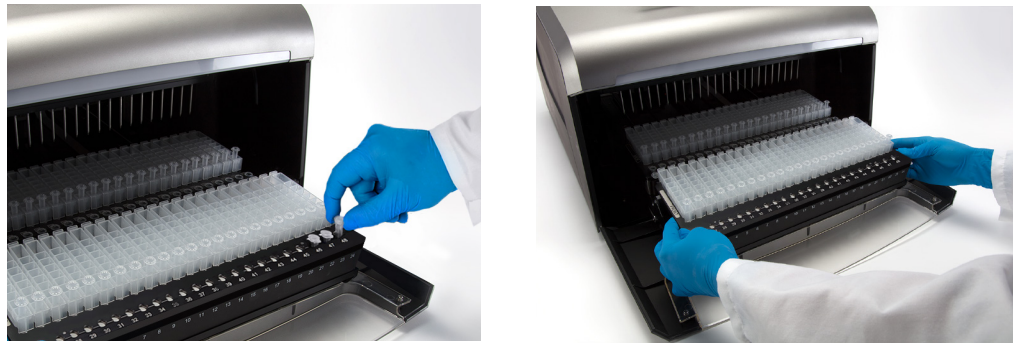
Figure 47. Removing the elution tubes and deck trays.

After the door is opened, the 'Report View' screen (Figure 48) will be presented. If the administrator has required that UV sanitization be performed after an extraction run, the user will be prompted to confirm that no samples or eluates are present in the instrument prior to the UV sanitization (see Section 6.7, Sanitizing).

Figure 48. 'Report View' screen. A run report is displayed after the completion of an extraction run.

6.2.4   User Aborts Method

If the method is aborted by the user, the 'Protocol Running' screen will indicate that the method has been aborted (Figure 49). After a method is aborted, the Current Step will be listed as Aborted by user. After aborting the method, press the **Open Door** button. The Vision system (if enabled) will determine whether plungers have been unloaded successfully, and if not, will attempt to unload them. Otherwise the 'Clean Up' screen (Figure 50) will be displayed.

An aborted run (due to power failure or other unexpected error) may result in the loss of all samples. While original performance expectations cannot be guaranteed, a partial recovery of the sample(s) may be possible. Contact Promega Technical Services before attempting to repurify samples.

PROTOCOL RUNNING - Blood DNA   ?

Run started by: DESKTOP-UKJVOKD\User

Ending in: Ended

Current Step: Aborted by user

100 %
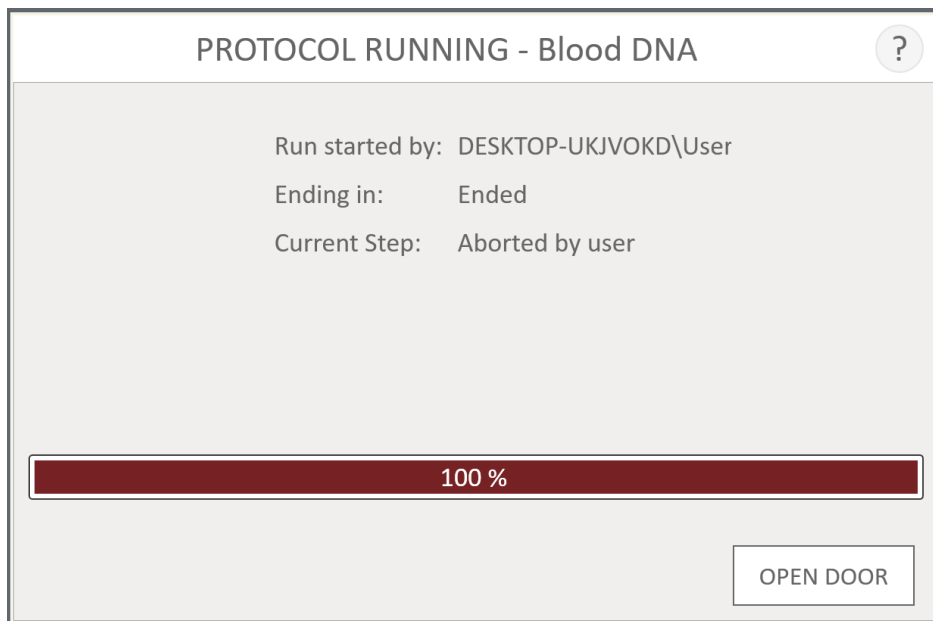
OPEN DOOR

Figure 49. 'Protocol Running' screen after abort by the user. If a method is aborted by the user, the 'Protocol Running' screen will display a progress bar of 100%, and Current Step is shown as Aborted by user. After a method is aborted, touch the **Open Door** button.

6.2.5   Instrument Error

If the method is aborted due to instrument error, the 'Protocol Running' screen will change to indicate that the method has been aborted and will display an error message.

After a method is aborted, the Current Step will list the reason for aborting the method.

6.3   Clean Up

⊘

An aborted run (due to power failure or other unexpected error) may result in the loss of all samples. While original performance expectations cannot be guaranteed, a partial recovery of the sample(s) may be possible. Contact Promega Technical Services before attempting to repurify samples.

If a method has been aborted, press the **Open Door** button. The Vision system (if enabled) will determine whether plungers have been unloaded successfully, and if not, will attempt to unload them. Otherwise the 'Clean Up' screen (Figure 49) will be displayed.

The 'Clean Up' screen requests the user check if plungers are still engaged on either the front or back plunger bar. If the plungers are not engaged, remove the deck trays from the instrument and touch the **Skip Clean Up** button to continue. On pressing the **Skip Clean Up** button, you will be presented with the extraction report (Figure 62).
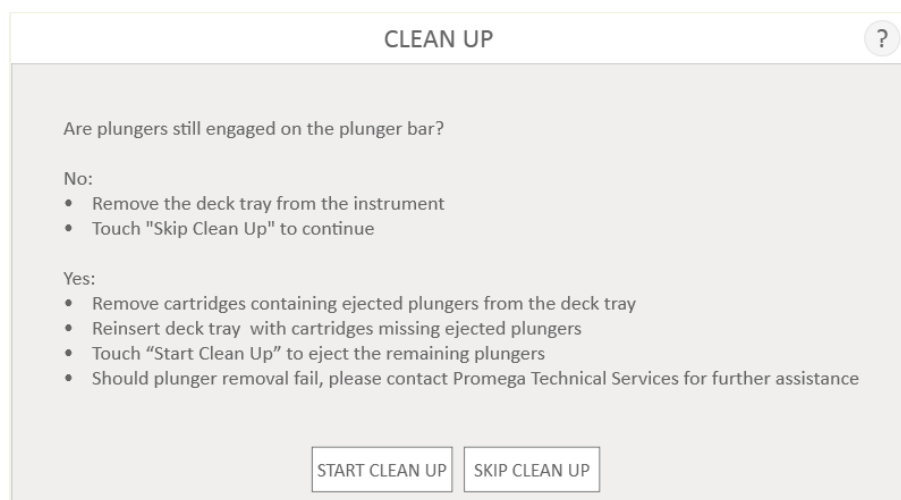
Figure 50. 'Clean Up' screen after abort/instrument error. If an extraction method is aborted by the user or due to an instrument error and the Vision system has been disabled, the 'Clean Up' screen is displayed and asks you to Start Clean Up or Skip Clean Up, depending on whether the plungers are still engaged on the plunger bar.

If some or all of the plungers are still engaged on the front or back plunger bar, you must perform the following steps to remove the plungers before another extraction run can be performed:

• Remove cartridges containing ejected plungers from the deck trays.

• Reinsert the deck trays with the remaining cartridges (those missing plungers).

• Touch the **Start Clean Up** button to eject the remaining plungers.

After the Clean Up is successful, you can press the **Open Door** button and remove the deck tray.

If the plunger Clean Up fails, you should contact Promega Technical Services for further assistance.

6.4   Quantitating with Optional Quantus™ Fluorometer

If an optional Quantus™ Fluorometer is attached to the instrument, results from the Quantus™ Fluorometer can be appended to completed run reports on the Maxwell® RSC 48 Instrument.

Setting up the optional Quantus™ Flurorometer is covered in Section 3.1.

Refer to the *Quantus™ Fluorometer Operating Manual* #TM396 for the operating instructions. To quantitate nucleic acids and generate results that can be added to the run report, the Quantus™ Fluorometer must be calibrated and used with an appropriate fluorescent dye.

If the Quantus™ Fluorometer is correctly connected and ready to run, the "Q" logo will be displayed in the upper right corner of the title bar (Figure 51), and the display on the Quantus™ Fluorometer will be active.

Figure 51. Maxwell® RSC 48 'Home' screen. When the Quantus™ Fluorometer is correctly connected to the Maxwell® RSC 48, the "Q" logo is displayed in the upper right corner of the title bar. Prior to quantification, verify the Quantus™ Fluorometer has the appropriate protocol selected. If the Quantus™ Fluorometer needs calibration or the mode needs to be changed, consult the *Quantus™ Fluorometer Operating Manual* #TM396.

1. Upon completing a Maxwell® RSC 48 run, the run report will be displayed (Figure 52). To append quantitation data to an existing Maxwell® RSC 48 run report, select **Results** from the 'Home' screen. On the 'Results' screen, select the run report to which quantitation data should be added.

Figure 52. 'Report View' screen. Touch the **Quantitate** button in lower left corner of a run report to associate quantitation values read by an optional Quantus™ Fluorometer with samples from this run.

2. Select **Quantitate** on the lower left corner of the screen to display the 'Quantus Measurement' screen (Figure 53).

3. The 'Measure Sample Selection' screen will display on the Quantus™ Fluorometer.

4. Select the sample you wish to quantitate by tapping the sample number that represents the elution position on the Maxwell® RSC 48 Software. You can toggle between samples on the front and back deck trays using the **Front** and **Back** buttons on the lower left corner of the screen.
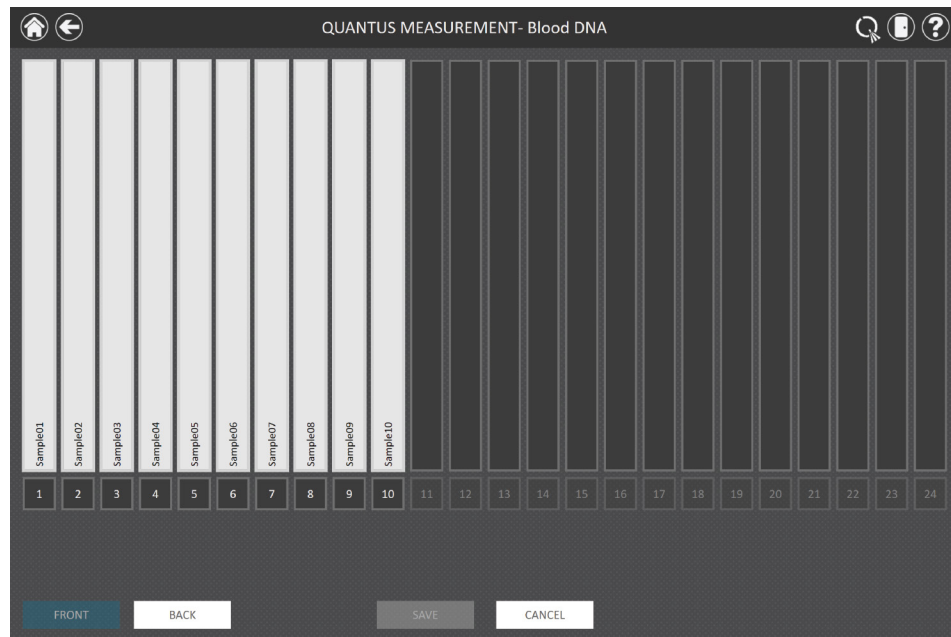
Figure 53. Optional Quantus measurement. From this screen, select the sample position (black square below the cartridge) for which you would like to quantitate the sample with an optional Quantus™ Fluorometer. Toggle between front and back deck trays using the **Front** and **Back** buttons in the lower left corner of the screen.
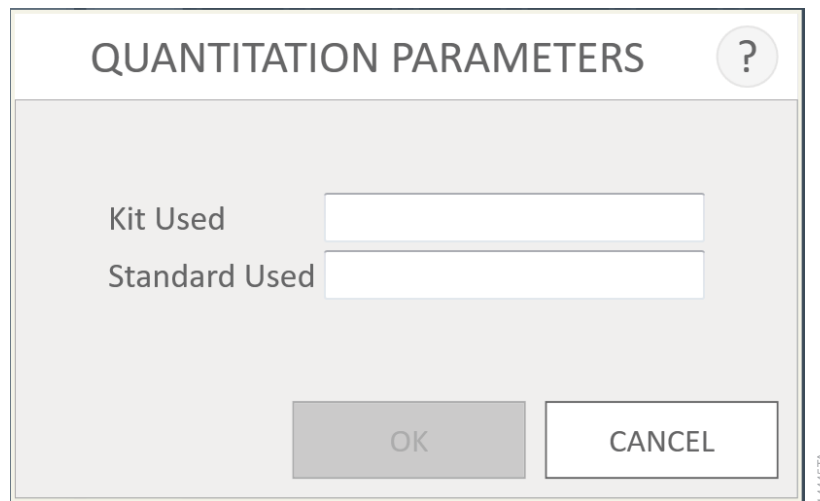
5. Open the Quantus™ Fluorometer lid by pressing down on the lower right corner of the sample lid.

6. Place the sample to be quantitated (consult the *Quantus™ Fluorometer Operating Manual* #TM396 for instructions on adding sample to dye) into the Quantus™ Fluorometer, and close the lid.

7. After quantitation is complete, a result will be displayed to the right of the sample identifier on the 'Quantus Measurement' screen (Figure 54).
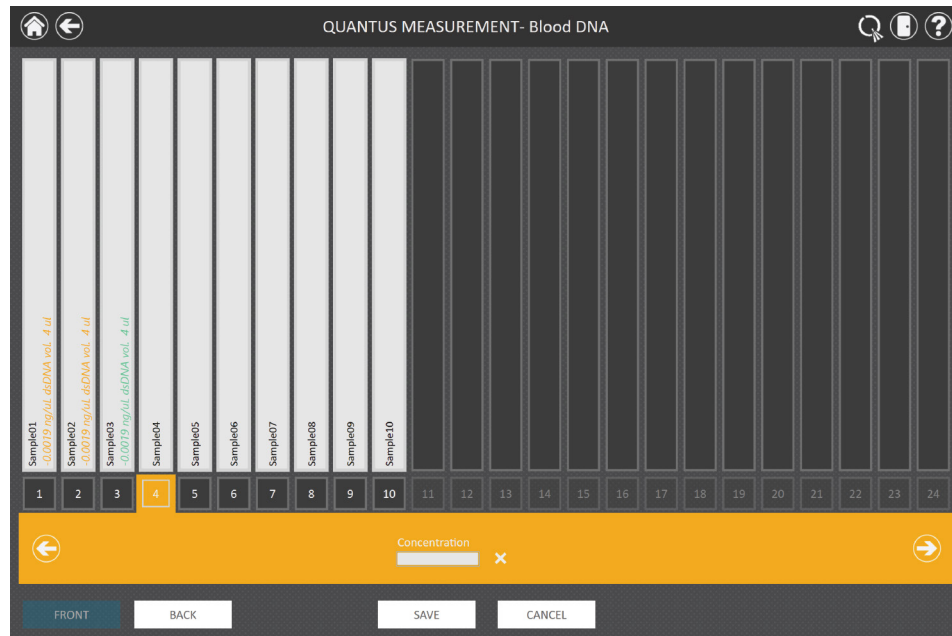
Figure 54. 'Quantus Measurement' screen. After making a quantitation measurement with the Quantus™ Fluorometer, the quantitation value is displayed to the right of the sample identifier.

8. Press down on the lower right corner of the Quantus™ Fluorometer lid to open the Quantus™ Fluorometer and remove the quantitated sample.

9. Discard the sample per your institutional disposal regulations.

10. After a sample has been quantitated, the selection will shift to the next sample. To manually move between samples, either press the arrow buttons on the lower right or left of the 'Quantus Measurement' screen or touch the sample number.

11. Insert the next sample into the Quantus™ Fluorometer as in Step 6 and repeat Steps 6–10 until all the samples are quantitated.

12. When all samples have been quantitated, select the **Save** button in the center bottom of the 'Quantus Measurement' screen. To discard quantitation data and return to the 'Report View' screen, press the **Cancel** button.

13. A dialog box for the quantitation parameters will display (Figure 55). Enter the name of the kit used to quantitate the sample and a description of the standard used for calibration.

14. After entering the information, touch the **OK** button or **Cancel** to return to the 'Quantus Measurement' screen.

15. The quantitation data will be stored, and the run report will be displayed.

Figure 55. 'Quantitation Parameters' screen. Enter the name of the kit used to quantitate the sample and a description of the standard used for calibration.

6.5   Reports

The 'Report View' screen is displayed after the **Open Door** button is pressed (Figure 56). Run reports can be accessed later by selecting the **Results** button on the Maxwell® RSC 48 'Home' screen.

This screen displays the sample tracking and method-specific information for the current instrument run. Included in this report are the sample tracking information recorded prior to starting the method, the final status of the method (Completed or Aborted), the time the method run was started, the length of time the method took to process, the operator ID and the Maxwell® RSC 48 Instrument details (software version, firmware version, instrument name, serial number, etc.).

Figure 56. 'Report View' screen. The 'Report View' screen displays the sample tracking and method-specific information for the current instrument run. Included in this report are the sample tracking information recorded prior to starting the method, the final status of the method (Completed or Aborted), the time the method run was started, the length of time the method took to process, the operator ID and additional instrument information. Buttons are present on the left side of the screen to **Print** and **Export** report information, or **Quantitate** to associate quantitation data with the report.

Sample quantitation results can be added to a report using an optional integrated Quantus™ Fluorometer by selecting **Quantitate** in the bottom left of the screen. See previous section for Quantus™ Fluorometer operation.

Quantitation results can be reviewed (if collected and saved) by touching the 'Quantitation' tab (Figure 57) on the bottom of the Run report.

Figure 57. Quantitation report tab. The quantitation report tab shows sample quantitation data gathered using the Quantus™ Fluorometer.

Using the buttons on the left side of the 'Report View' screen, you can:

Print reports to a printer that can be accessed by the Tablet PC.

Export reports in tab-delimited text file format as well as Microsoft Excel® format and/or PDF format depending on administrator settings (Figure 58).

Quantitate samples (optional) and associate the results with this report. This choice will only be displayed if a Quantus™ Fluorometer is plugged into one of the USB ports on the side of the Maxwell® RSC 48 Instrument.
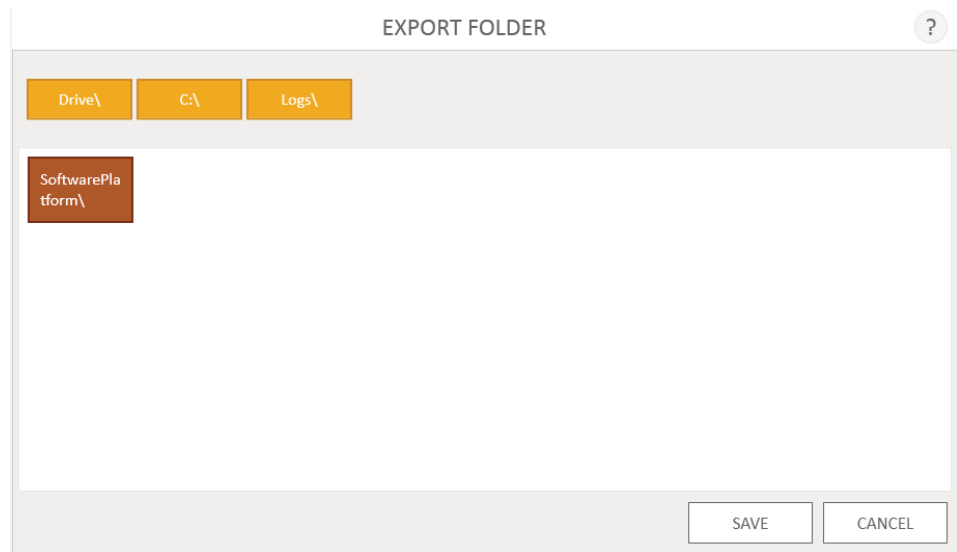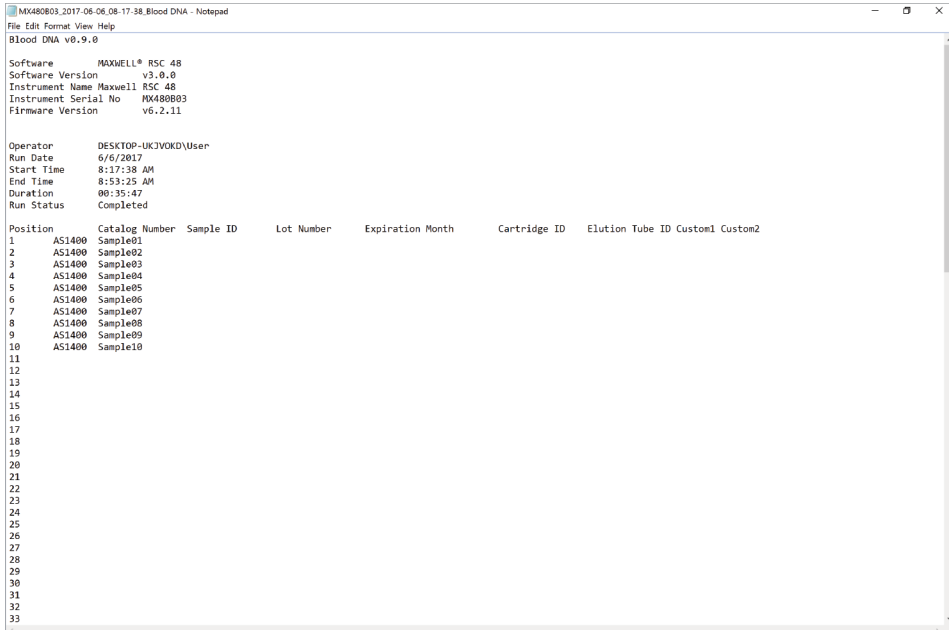
Figure 58. 'Export Folder' screen. When the **Export** button is touched, the user will be asked to navigate to the file location where report files should be saved.

Touch the **Export** button to navigate to the folder location where the report should be exported, and then touch the **Save** button. Using the Yellow and Red rectangle buttons you can select the folder location where the reports will be saved. The current path is indicated by the yellow rectangles at the top of the 'Export Folder' screen. Any folders present within the selected directory are displayed as red rectangles in the main portion of the screen. Touch the **Drive** button to navigate to the drive location of the desired folder. Touch red folder buttons to navigate to the specified folder location.

The Maxwell® RSC 48 Instrument exports reports in tab-separated text format, as well as .xls and .pdf, depending on administrator settings. You can use the Excel® viewer or PDF viewer to view the report.

You can use the tab-separated format file (*.txt) with Laboratory Information Management Systems (i.e., LIMS). An example of the tab-separated format file is shown in Figure 59.

Figure 59. Example of an exported text file in the tab-separated format.

6.6   Running Reports

From the 'Home' screen (Figure 60) of the user interface, it is possible to view sample tracking reports and service reports on the instrument by pressing the **Results** button. The 'Results' screen displays a listing of the extraction reports for the methods that have been run (Figure 61). Use the **Today**, **This Month**, **Six Months**, **This Year** or **All** buttons on the left side of the screen to filter the list of displayed reports by time period. Use the **Extraction, System** and **All Types** buttons on the left side of the screen to filter the displayed reports by report type. Touch the column headers to sort the reports based on column contents. Touch the desired row to see a detailed view of the report data from that method run (Figure 62). Records can be deleted from the software by touching the **X** icon to the right of the desired report row, assuming this has been allowed by the administrator (Section 5.3). To export a selection of extraction reports to a user-specified drive location, touch the check box next to the desired extraction report(s), and then touch the **Export** button in the lower left corner of the screen. To export a selection of extraction reports to a user-specified drive location, touch the check box next to the desired extraction report(s), and then touch the **Export** button in the lower left corner of the screen. The **Export All** button in the lower left corner of the screen will export all displayed results to a drive location specified by the user.

Figure 60. Maxwell® RSC 48 'Home' screen. Selecting Results opens the Maxwell® RSC 48 'Results' screen from which extraction reports from all method runs can be viewed.
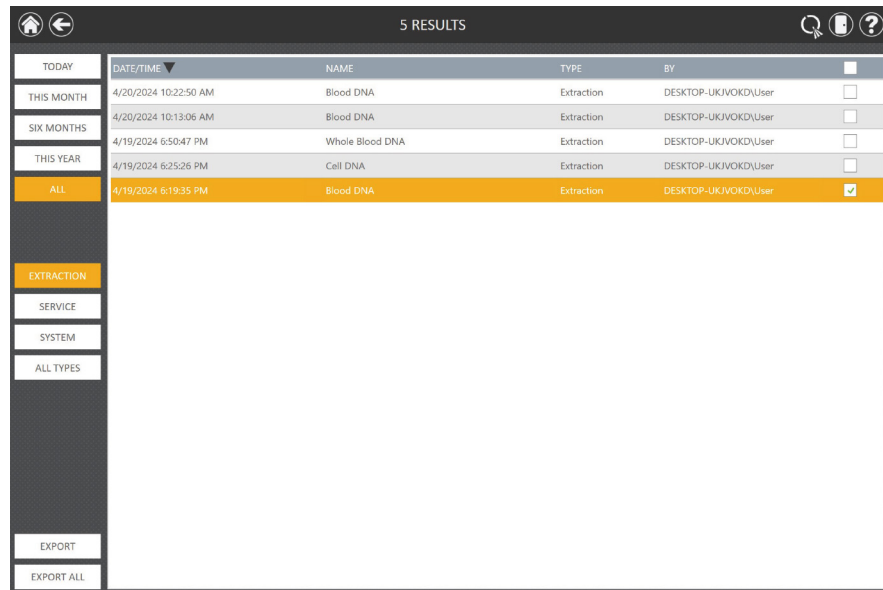
Figure 61. 'Results' screen. The 'Results' screen lists the reports from all of the methods that have been run. Touch any report listing to see a detailed view of the report data from that method run. Filter the displayed results using the **Extraction**, **System**, or **All Types** buttons on the left side of the screen. Selecting a date range button on the left side of the screen will filter the reports displayed based on their date. To export a selection of reports to a user-specified drive location, touch the check box next to the method runs of interest and th touch the **Export** button. Touch the **Export All** button to export all displayed reports to a user-specified drive location.

Figure 62. Extraction report. An example of the sample tracking information present in an extraction report.

6.7   Sanitizing

Touch the **Sanitize** button on the 'Home' screen (Figure 63) to perform a UV sanitization of the instrument. Make sure all samples have been removed from the instrument prior to initiating the UV sanitization protocol. You will be presented with a sanitization checklist (Figure 64) that informs you on how long the UV sanitization will take. It will also ask you to confirm that no samples or eluates are present in the instrument prior to running Sanitization. Touch the **Start** button to Start UV sanitization.

Figure 63. 'Home' screen. Selecting the **Sanitize** button begins the process for UV treatment of the Maxwell® RSC 48 Instrument.
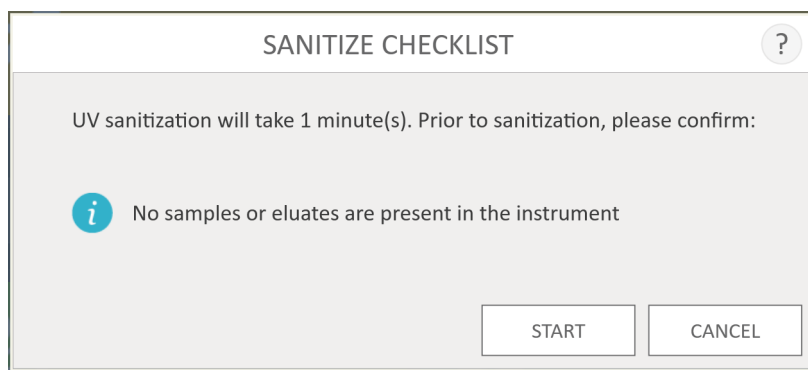
Figure 64. 'Sanitize Checklist' screen. The sanitization checklist indicates how long the UV sanitization will take. Confirm that no samples or eluates are present in the instrument prior to running Sanitization.

After Sanitization is completed, you will see one of the following icons in the title bar:

	Sanitization completed successfully. Touch the icon to view the Sanitization report (Figure 64).
	An error occurred during sanitization. Touch the icon to view the Sanitization report.

Note: UV radiation is useful in decontamination due to its ability to inactivate biological molecules. UV treatment is not a substitute for cleaning. Using the UV Sanitization protocol alone may not provide sufficient decontamination. Follow the cleaning guidelines in Section 7.
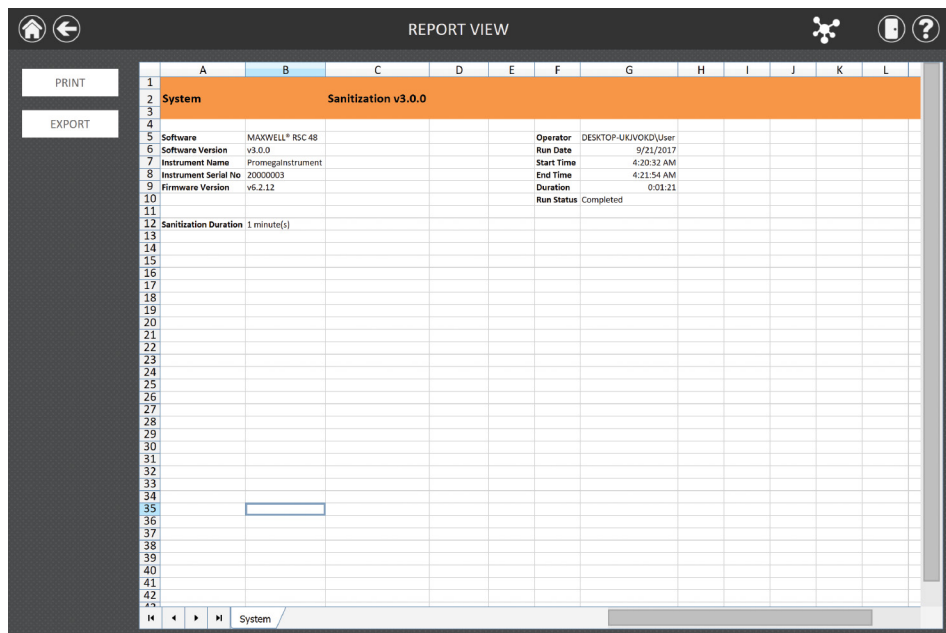
Figure 65. Example Sanitization Report. The sanitization report will be displayed after completion of sanitization.

7 Cleaning and Maintenance

The Maxwell® RSC 48 Instrument has no user-serviceable parts and is designed to require minimal maintenance. However, it is important to clean the instrument after every use. If samples or reagents have been spilled, immediately clean the instrument to avoid damage or sample contamination.

Most parts of the Maxwell® RSC 48 Instrument have an anodized coating, which forms a durable, easily cleaned barrier on the metal. Always turn off and unplug the instrument before cleaning.

7.1   General Care

Important. Wear gloves and appropriate personal protective equipment. If the instrument is used with biohazardous materials, dispose of any cleaning materials used in accordance with your institutional guidelines.

Wipe up any spills immediately. After each use, wipe off the magnetic rod assembly, plunger bar, inside platform, and the outside of the instrument using cloths dampened with 70% ethanol. Do not use other solvents or abrasive cleaners.

- Clean the Maxwell® RSC 48 Instrument after every use.
- Keep the vents in the back of the machine clear of dust.
- Do not remove the Maxwell® RSC 48 Instrument case for cleaning. This will void the warranty.
- Do not use a spray bottle to soak instrument surfaces with large volumes of liquid.
- Never allow liquids to remain on instrument surfaces for extended periods of time.
- Keep all moisture away from the heated elution tube slots to prevent damaging the heating elements.
- Store the Maxwell® RSC 48 Instrument away from direct sunlight.

7.2　Cleaning the Hardware

If the plungers are inadvertently omitted during a run or placed in the wrong starting position, the machine may go through a run with the magnetic rods unprotected. If this happens, the magnetic rod assemblies need to be cleaned.

1. To clean the back magnetic rods, we recommend removing the front magnetic rod assembly.

2. Open the instrument door by touching the **Door** icon in the title bar of the software. Remove deck trays from the instrument.

3. Turn off the instrument by pressing and holding the power button on the right side of the instrument for three seconds.

4. Unscrew the three knob screws on the top of the front magnetic rod assembly (the screws cannot be fully removed from the magnet bar). Slide the magnet bar downward toward the deck of the instrument.

5. Pull the magnetic rod assembly upward while angling the assembly toward the front of the instrument (Figure 66) to remove the magnet bar. Slide the magnet and plunger bar upward so that you have access to the back magnet rod assembly.

6. To clean the magnetic rod assemblies, wipe with a soft cloth dampened with 70% ethanol. Removal of paramagnetic particles from the magnetic rod assembly will require multiple wipes. The damp cloth may be wrapped around a magnet to facilitate removal of magnetic particles.

7. If the magnetic rod assemblies cannot be cleaned, please contact Promega Technical Services for assistance.

8. After cleaning the magnetic rod assemblies, replace the front magnetic rod by angling the magnetic rod assembly into the front magnet bar and reattaching the three knob screws.

9. Turn the instrument back on by pressing the power button on the right side of the instrument.
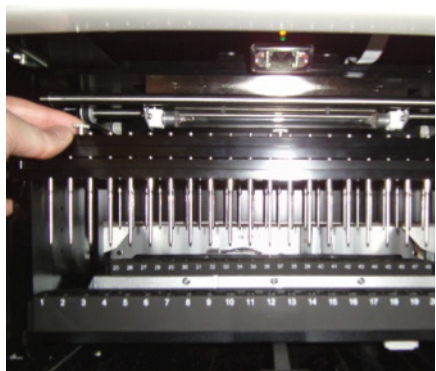
A.　　　　　　　　　　　　　　　　　　**B.**

Figure 66. Removing the front magnetic rod assembly. Panel A. Loosen the three thumbscrews that hold the magnetic rod assembly on the magnet bar. **Panel B.** Move the deck forward and slide the magnet bar down. Slide the magnetic rod assembly up and forward to remove it from the magnet bar.

7.3   Dealing with Spills

Important.
Bleach reacts with guanidine thiocyanate, which may be used in Maxwell® RSC reagent cartridges, and should not be added to any sample waste containing lysis solutions. Bleach should not be used to clean Maxwell® RSC reagent spills.

Wipe up any spills immediately. If any material spills in the instrument, wipe up the material using a cloth dampened with 70% ethanol. Note that the reagents contain hazardous materials; therefore dispose of the cleaning materials according to your institutional guidelines. Wipe well once visible material is removed. In case of spills in the instrument where there is a potential biohazard, wipe up the spill with paper towels and wash the spill area with a detergent solution such as Steris LpH® following the manufacturer's instructions. Dispose of towels used according to your institutional guidelines for biohazardous waste.

8   Troubleshooting

For questions not addressed here, please contact your local Promega Branch Office or Distributor. Contact information available at: **www.promega.com**. E-mail: **techserv@promega.com**

Symptoms	Causes and Comments
Clean Up function does not unload the plunger	If plungers are still engaged on the plunger bars, perform the following steps: • Remove any cartridges containing the ejected plungers from the deck trays • Reinsert the deck trays with cartridges that do not have ejected plungers. • Touch the **Start** button to eject the remaining plungers. If the plunger clean up fails, contact Promega Technical Services for further assistance.
Tablet PC touch screen does not appear to be working	Verify that the power supply is securely connected to the Tablet PC. Restart the Tablet PC and launch Maxwell® RSC 48 software. If the issue is not resolved, contact Promega Technical Services for further assistance.
Cannot change the sanitization time or import new methods	Only operators with administrator-level access to the Maxwell® RSC 48 software have the ability to change certain functions. If you do not have administrator-level access, contact your site administrator.
Power failure during a run	In the event of a power failure, turn off the instrument (using the rocker switch on the back of the instrument) and the Tablet PC. When power has returned, turn the instrument and Tablet PC back on. Check to see whether plungers are loaded on the plunger bar. If so, run **Clean Up** from the 'Settings' Menu and follow prompts to safely remove the plungers. After plungers have been unloaded, remove the deck tray from the instrument if it is still present. **An aborted run (due to power failure or other unexpected error) may result in the loss of all samples. While original performance expectations cannot be guaranteed, a partial recovery of the sample(s) may be possible. Contact Promega Technical Services for troubleshooting guidance before attempting to repurify samples.**

Error Warnings

Error	Explanation
Initialization Failure: Access Denied, not a valid Promega User, Please contact your system administrator	Promega User not set up correctly in Windows® Operating System. Consult the Appendix of this Operating Manual and/or contact your administrator/IT personnel to resolve this issue.
USB Device is not found; is it turned off or disconnected?	Tablet PC is not connected to the instrument, Tablet PC is off or the instrument is off. Check to see if the Tablet PC is connected to the instrument. Turn on the Tablet PC and turn on the instrument. If the Tablet PC and instrument are powered on, connected by the USB cable and this problem persists, cycle power on the instrument and reboot the Tablet PC. If error persists, contact Promega Technical Services.
Open door detected during operation	Open door was detected during operation. The run will be aborted and samples will be lost. If error persists, contact Promega Technical Services.
Protocol: Aborted By User	User aborted the method. **An aborted run (due to power failure or other unexpected error) may result in the loss of all the samples. While original performance expectations cannot be guaranteed, a partial recovery of the sample(s) may be possible. Contact Promega Technical Services for troubleshooting guidance before attempting to repurify samples.**
An error occurred during cartridge placement verification. Ensure cartridges are fully seated	Instrument detected cartridges were not fully seated in the tray. Reseat the cartridges in the tray. If error persists, contact Promega Technical Services.
Door sensor tripped	Door sensor trip detected. Contact Promega Technical Services.
Door failed to open successfully	Door failed to open. Contact Promega Technical Services.
A previous instrument task is still active. Please try again later.	User tried to do something while previous run was active. Wait for the current process to complete. If error persists, contact your IT administrator or Promega Technical Services.
Previous session has timed-out, device disconnected?	Connection was lost during previous instrument operation or USB was unplugged during a run and then plugged back in. Check to see that the USB cable is connected to the instrument or that no one unplugged the USB cable while the instrument operation was running. If error persists, contact Promega Technical Services.
Warning: Failed to Start Extraction: Self-Test has not passed	Instrument self-initialization has not passed. Contact Promega Technical Services.
Warning: Startup Diagnostics: Abort of previous run detected	Instrument detected that previous run was aborted. Check to see whether plungers are loaded on the plunger bar. If so, run **Clean Up** from the 'Settings' Menu and follow prompts to safely remove them. After plungers have been unloaded, remove the deck tray from the instrument.
Warning: Startup Diagnostics: Firmware version change detected	User warning informing user that a firmware version change has been detected. Contact Promega Technical Services.

8.1 Use of a USB Flash Drive

- When using a USB flash drive, insert it before running any method and do not remove it until the method is finished.

- Do not insert or remove a USB flash drive while instrument is running.

- Because USB flash drives may vary from vendor to vendor or from type to type, incompatibilities can occur. If your USB flash drive is not detected after a few seconds or if you encounter any issues with the USB flash drive, shut down and restart the tablet and the instrument, and try a different brand of USB flash drive.

- If the tablet controller becomes unresponsive after inserting a USB flash drive, shut down and restart the tablet and the instrument.

9   Instrument Service

9.1   Service

We recommend that the Maxwell® RSC 48 Instrument receive a yearly preventive maintenance service.

9.2   Returning the Maxwell® RSC 48 Instrument for Service

The Maxwell® RSC 48 Instrument is designed to provide years of consistent performance with little maintenance. If a problem arises with your instrument, please contact Promega or your local Promega representative for support. Visit the Promega website at **www.promega.com** for the contact information for the Promega branch or distributor nearest you. If further action is required, repair options will be presented and a return authorization number assigned if necessary. Promega is not responsible for instrumentation returned without an authorization number. When you ship the instrument for service, please remember to:

- Obtain return authorization from Promega.

- Decontaminate the instrument (see Section 11 for decontamination instructions).

- Include a signed and dated Certificate of Decontamination inside the package in which the instrument is returned (see Section 11). Failure to complete and attach the Certificate of Decontamination will result in a decontamination charge.

- Use the original packaging to ensure that no damage will occur to the instrument during shipping.

- Any damage will incur additional charges. Return all of the accessories with the instrument, including the bar code scanner and Tablet PC.

Note: If the original packaging is lost or damaged, contact Promega or your local Promega representative for replacement packaging.

9.3   Repacking the Maxwell® RSC 48 Instrument

9.3.1   Preparing the Maxwell® RSC 48 Instrument Prior to Repacking

- Ensure that the cartridges and elution tubes have been removed from the instrument platform.

- Turn off the instrument by pressing and holding the power button on the side of the instrument for three seconds. Switch the rocker switch on the back of the instrument to the Off position and unplug the instrument. Shut down the Tablet PC, and ensure that Tablet PC and bar code reader are disconnected.

9.3.2   Repacking the Maxwell® RSC 48 Instrument

Note: If you do not have the original Maxwell® RSC 48 Instrument packaging, please contact Promega Technical Services or your local Promega representative to order Maxwell® RSC 48 Instrument packaging.

Ship the Maxwell® RSC 48 Instrument only with Promega packaging to avoid any damages.

1. Turn the instrument off and unplug it from the outlet.

2. Open the instrument door and manually push the deck to the back of the instrument.

3. Manually slide the plunger bar and magnet bar (Figure 67) down to insert the upper die-cut foam.
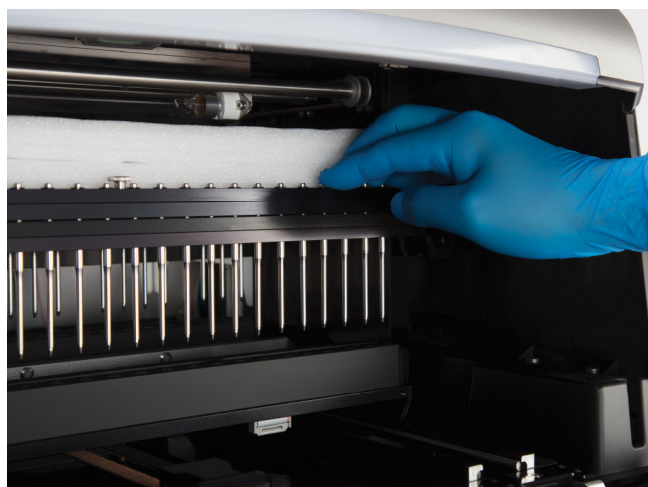
Figure 67. Slide Plunger and Magnet Bars down, and insert upper die-cut foam.

4. Place the upper die-cut foam as shown in Figure 68.

Figure 68. Placement of upper die-cut foam.

5. Manually move the plunger bar and magnet bar (Figure 69) up to attach the shipping screws.

Figure 69. Placement of plastic stoppers. Move the magnet and plunger bars up, and secure the four shipping screws on both sides of the magnet and plunger bars.

6. Secure the four shipping screws by screwing them in on both sides of the magnet and plunger bars as shown in Figure 69.

7. Insert the front die cut foam into the instrument so that the serrated edge covers the magnet rods (Figure 70).

Figure 70. Insert the front die-cut foam. Make sure the serrated edge covers the magnet rods.

8. Place the instrument in the plastic bag.

9. Place the instrument in the bottom foam packaging material. The instrument will only fit properly into the bottom foam piece in one orientation (Figure 71).

Figure 71. Maxwell® RSC 48 Instrument in correct orientation in the box.

10. Place the side foam pieces on either side of the instrument. Slide the box around the instrument and secure with the four plastic clips. Insert the clips into the holes at the base of the box, and then press the tab into the clip to secure it (Figure 72).

Figure 72. Placement of the four plastic clips around the base of the shipping box.

11. Place the accessories box on top of the packing foam (Figure 73). Affix the Certificate of Decontamination on top of the accessories box.

Figure 73. Maxwell® RSC 48 Instrument repackaged in the shipping box.

12. Close the flaps on the shipping container top, and secure them with packing tape.

13. Write the return authorization number provided to you by Promega or your local Promega representative on the outside of the shipping box.

9.4   Instrument Disposal

Contact your local Promega Representative for disposal of the instrument. Please follow your institutional and country-specific requirements to handle the disposal of accessories. Instrument must be decontaminated prior to disposal.

10 Warranties, Service Agreements and Related Products

10.1   Warranty

Upon purchase of the Maxwell® RSC 48 Instrument, the instrument will be covered by a one-year Standard Warranty. The Standard Warranty covers all parts, labor and shipping to and from our depot repair location as well as your choice of a loaner (where available). We will repair your instrument and return it to you performing to original factory specifications.

10.2   Warranty and Service Agreement Options

Maxwell® RSC 48 Premier Warranty Upgrade Cat.# SA1351

The Premier Warranty Upgrade includes all parts, labor and shipping to and from our depot repair location as well as your choice of a loaner instrument within 1 business day (where available) or on-site service visit by a factory-trained service technician within 2 business days (where available). Additionally, it includes one annual Preventive Maintenance (PM) visit per year, which can be performed by returning the instrument to an authorized service center or by an on-site visit by a service technician. Additional PM visits are available separately.

Maxwell® RSC 48 Standard Service Agreement

The Standard Service Agreement covers all parts, labor and shipping to and from our depot repair location as well as a loaner instrument upon request. The Standard Service Agreement is available in 1-Year, 2-Year or 3-Year coverage periods. If your Maxwell® RSC 48 needs repair, we will provide a box for shipment of the instrument back to our service facility. We will repair it and return it performing to original factory specifications. PM visits are available separately.

Different options for the Maxwell® RSC 48 Standard Service Agreement are available as shown below.

Product Name	Cat.#
1-Year Maxwell® RSC 48 Standard Service Agreement	SA1352
2-Year Maxwell® RSC 48 Standard Service Agreement	SA1366
3-Year Maxwell® RSC 48 Standard Service Agreement	SA1367

Maxwell® RSC 48 Premier Service Agreement

The Premier Service Agreement includes all parts, labor and shipping to and from our depot repair location as well as your choice of a loaner instrument within 1 business day (where available) or on-site service visit by a factory-trained service technician within 2 business days (where available). The Premier Service Agreement is available in 1-Year, 2-Year, or 3-Year coverage periods. Additionally, it includes one annual Preventive Maintenance (PM) visit per year, which can be performed by returning the instrument to an authorized service center or by an on-site visit by a service technician. Additional PM visits are available separately.

Different options for the Maxwell® RSC 48 Premier Service Agreement are available as shown below.

Product Name	Cat.#
1-Year Maxwell® RSC 48 Premier Service Agreement	SA1353
2-Year Maxwell® RSC 48 Premier Service Agreement	SA1368
3-Year Maxwell® RSC 48 Premier Service Agreement	SA1369

Maxwell® RSC 48 Preventive Maintenance Cat.# SA1356

In order to keep the system operation at peak performance, Promega recommends that Maxwell® RSC 48 instruments receive a Preventive Maintenance check after 12 months of use. During this procedure, our qualified service personnel test the instrument, check parts for wear and replace them as needed. Additionally, the system is aligned and functionality is verified. Documentation for your files is provided. The preventive maintenance service is performed by returning the instrument to an authorized service center.

Maxwell® RSC 48 Installation Qualification and Operational Qualification

Product Name	Cat.#
Maxwell® RSC 48 Installation Qualification	SA1357
Maxwell® RSC 48 Operational Qualification	SA1358
Maxwell® RSC 48 Installation Qualification/Operational Qualification	SA1359

The Installation Qualification service product includes a series of formal instrument checks, delivers written documentation of instrument functionality, and demonstrates that everything ordered with the instrument is supplied and installed at the customer's laboratory. This service product must be delivered by a Promega representative who is certified to perform the Installation Qualification. The service product involves a site visit to perform:

•   Installation by qualified Promega personnel

•   Inspection of shipping containers, instrument, and accessories

•   Comparison of items received vs. items on purchase order

•   Inspection of laboratory conditions

•   Review of all hazards and precautions with users

•   Confirmation/installation of correct firmware version

•   Testing of instrument run

•   Recording and documenting installation and actions

The Operational Qualification service product demonstrates that the instrument functions according to its operational specifications. This service product must be delivered by a Promega representative who is certified to perform the Operational Qualification. The service product involves a site visit to perform:

•   Running operational verification tests

•   Documenting all calibration and test results

•   Training customer(s) to operate the instrument

•   Training customer(s) to use the log book

•   Completing customer-specific log book, instrument sticker and OQ documentation

10.2.1   Limited Warranty and Service Guidelines

Pursuant to this Warranty, Promega warrants to the original purchaser of the Promega Maxwell® RSC 48 Instrument that Promega will provide the parts and labor required for service and repair of the instrument for 1 year from the date of purchase. Your Warranty includes depot repair with a loaner instrument (where available) to be used during your instrument's repair. The instrument is to be safely packed and shipped to Promega at Promega's expense. Promega will return the repaired or replaced unit to you at Promega's expense within 3 business days after the repair is complete. Instrument coverage and protection may be renewed through one-, two-, or three-year service agreements provided the renewal is requested prior to the expiration of the current Warranty or Service Agreement.

Promega agrees, as its sole responsibility under this Warranty, and upon prompt notice of a defect, to repair or replace (at Promega's discretion) any instrument discovered to be defective within the term of this Warranty. This Warranty does not include repair or replacement necessitated by accident, neglect, misuse, unauthorized repair or modification of the instrument.

This Warranty and the remedies set forth herein are exclusive and in lieu of all other express or implied warranties (including implied warranties of merchantability, fitness for a particular purpose and noninfringement), and no other warranties shall be binding upon Promega. In no event, shall Promega be liable for any special, incidental or consequential damages resulting from the use or malfunction of this instrument or the system with which it is used.

The instrument may not be returned without a proper Return Authorization Number from Promega and Certificate of Decontamination, as described in this manual.

10.2.2   Out of Warranty Service

Contact Promega or your local Promega representative. We will be happy to assist you by telephone at no charge. Repair service will be quoted prior to any work being performed.

10.3   Related Products

PRODUCT	SIZE	CAT.#
Bar Code Reader, Maxwell® Systems	1 each	AS3200
Maxwell® RSC/CSC 48 Front Deck Tray	1 each	AS8401
Maxwell® RSC/CSC 48 Back Deck Tray	1 each	AS8402
Maxprep® Liquid Handler, RSC 48 Carriers	1 each	AS9205
USB Ethernet Adapter	1 each	AS8403
Maxwell® Elution Magnet, 24-Position	1 each	AS4018
Quantus™ Fluorometer	1 each	E6150

11 Certificate of Decontamination

Disinfection and decontamination are required prior to shipping the instrument and accessories for repair. Returned Instruments must be accompanied by a signed and dated Certificate of Decontamination, which must be attached to the accessories box inside the instrument packaging.

To disinfect and decontaminate: Wipe off the magnetic rod assembly, plunger bar, inside platform, and inside and outside surfaces using a cloth dampened with 70% ethanol. Follow immediately with a cloth dampened with deionized water. Repeat the procedure as many times as required to effectively disinfect and decontaminate the instrument.

Failure to follow these decontamination guidelines, sign and return the Decontamination Form will result in decontamination charges before the instrument will be serviced.

Select either (A) or (B):

☐ A. I confirm that the returned items have not been contaminated by body fluids or by toxic, carcinogenic, radioactive, or other hazardous materials.

☐ B. I confirm that the returned items have been decontaminated and can be handled without exposing personnel to health hazards.

Select the type of material used in the instrument:

☐ Chemical Biological

☐ Radioactive**

Briefly describe the decontamination procedure performed:

Date: _____

Place:_____

Signature:_____

Name (block capital letters): _____

** The signature of a Radiation Safety Officer is also required if the instrument was used with radioactive materials.

This instrument is certified by the undersigned to be free of radioactive contamination.

Date: _____

Place:_____

Signature:_____

Name (block capital letters): _____

Title:_____

12 Appendix: Configuring the Tablet PC

For use with Windows® 10 Tablet PC

12.1   Maxwell® RSC 48 Instrument and Tablet PC

The Maxwell® RSC 48 Instrument is controlled by Maxwell® RSC 48 software on a touch screen Tablet PC that is provided with the system. This document describes the setup and configuration options for the Tablet PC provided with the Maxwell® RSC 48 System.

Depending on your institution's IT policy, you may or may not be able to configure or change the settings for the Tablet PC if it is connected to your site network domain. Do not load other programs on the tablet as these may interfere with instrument operation.

The first time you use the Maxwell® RSC 48 Instrument and Tablet PC, you should check the configuration of the following options. Settings can be changed later if required by following these instructions again.

Information provided in this document is not meant to be a single instruction set for installing and configuring the Tablet PC. Rather, the instructions provided herein are intended to be used as individual descriptions of how to configure various options within the Tablet PC environment. Perform the instruction sets that are applicable to your particular site.

Important. Your IT department or site Administrator should configure the Tablet PC according to the IT rules and IT procedures pertinent to your site. The following is a set of guidelines for your IT personnel or site.

12.2   Glossary

For users who are unfamiliar with the Windows® 10 Operating System, this section describes terms and actions common to this operating system.

'Lock' Screen: Once local Windows® user accounts with password protection or network domain user accounts are configured on the Tablet PC, it is necessary for users to log in to the Tablet PC to access the Maxwell® RSC 48 software. When the tablet is started, restarted, or in a locked state, the 'Lock' screen will be displayed. Swipe upward from the bottom of the 'Lock' screen to access the currently configured Windows® user accounts on the system, and select one to log in.

Scroll: To scroll an area, place your finger on the screen in the area you wish to scroll and move your finger in the direction you want to shift the items on the screen.

Touch: Touching an item is equivalent to performing a left-mouse click on a standard PC. When prompted to touch an item, gently tap the item with your finger and remove your finger immediately.

Double-Touch: Double-touching an item is equivalent to performing a double click on a standard PC. When prompted to double-touch an item, gently and rapidly tap the item twice with your finger and remove your finger immediately.

Touch and Hold: Touching and holding on an item is equivalent to performing a right-mouse click on a standard PC. When prompted to touch and hold an item, place your finger on the item and leave it there for approximately 2 seconds. After 2 seconds, a square will form around the item and the right-click menu for that item will be displayed.

Stylus: Your Maxwell® RSC 48 System is provided with a pen-like stylus. This device can be used to perform any of the touch and swipe actions described in the manual. The stylus is convenient for interacting with screens that present small check boxes and other fine features on the touch screen tablet.

'Desktop' Screen: The 'Desktop' screen (Figure 74) is the starting point for the instructions provided in this document. At the bottom of the 'Desktop' screen is the task bar. The task bar displays icons that provide access to the various functions described in this document. On the left side of the task bar are the **Windows® Start** button and the **Search** button. On the right side of the task bar are the **Wi-Fi**, **Speaker** button and the **Keyboard** button. These buttons will be referenced throughout this document.

Figure 74. The 'Desktop' Screen. At the bottom of the 'Desktop' screen is the task bar. Access to the options and settings referenced in this document is provided by the Windows® Start, Search, Speaker, Wi-Fi and Keyboard buttons in the task bar.

Windows® Start Menu: The Start menu (Figure 74) is the major access point for settings and functions on the Tablet PC. The left side of the Windows® Start menu contains buttons for **Accounts**, **Settings** and **Power**.
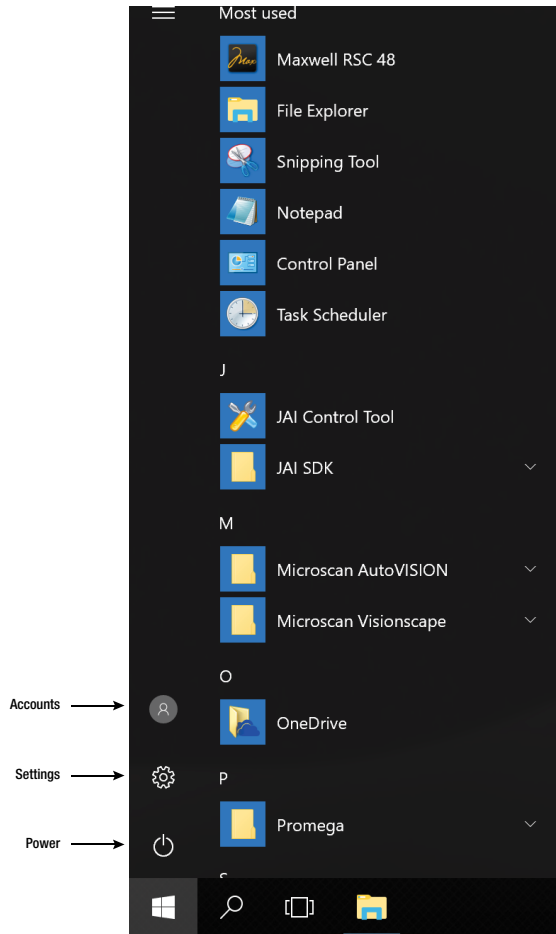
Figure 75. The Windows® Start menu. The left side of the start menu displays buttons for Accounts, Settings and Power.

12.3 Adjusting Volume Settings

Volume settings on the Tablet PC can be adjusted through one of two means.

1. Touch the **+/−** rocker switch next to the power button on top of the tablet to increase or decrease the volume of the speaker on the Tablet PC.

2. Swipe up from the bottom of the tablet screen to expose the task bar. Touch the **Speaker** icon on the right side of the task bar to open a volume slider. Use the slider to increase, decrease or mute the speaker on the Tablet PC.

12.4 Configuring Date and Time Settings

The date and time set on the Tablet PC are used for instrument reports and the instrument run log to indicate when a function was performed on the Maxwell® RSC 48 Instrument. These instructions are intended to be used when the Maxwell® RSC 48 system is run as a stand-alone device (i.e., not connected to a network domain). To connect to your site internet domain, consult with your IT department and follow the instructions in Section 12.9. When connected to a network domain, the Tablet PC will assume the date and time settings specified by the domain.

Note: If the tablet is connected to your site internet domain, your IT department should be consulted on date and time settings. Do not use these instructions if the Tablet PC is connected to your site network domain.

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. From the 'Desktop' screen, touch the **Windows® Start** button on the left side of the task bar. Touch the **Settings** button to open the 'Windows® Settings' screen (Figure 76).
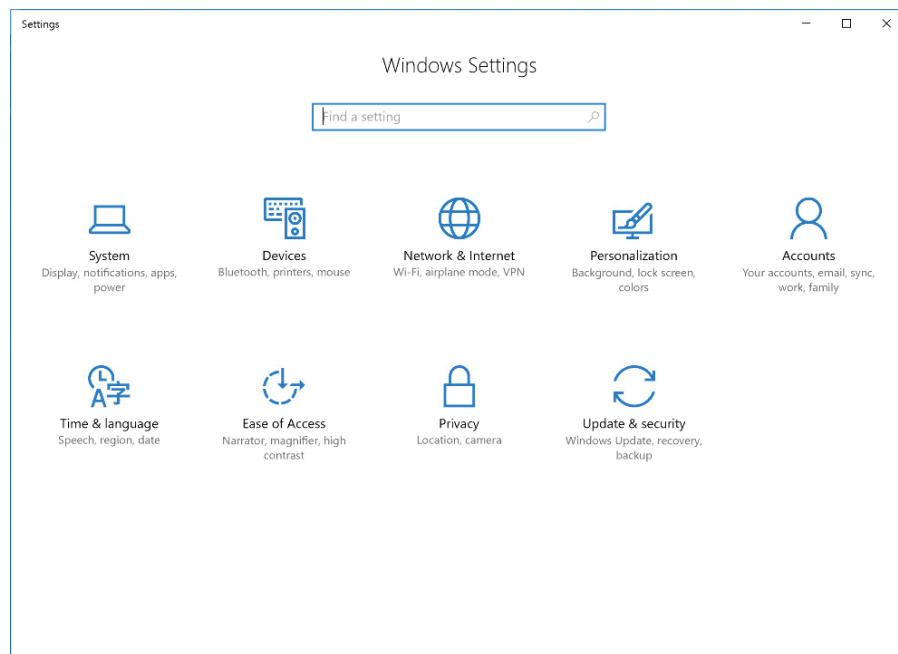
Figure 76. The 'Windows® Settings' screen. The 'Windows® Settings' screen provides access to multiple functions that can be used to configure options and settings for the Tablet PC.

3. Touch the Time & language button on the 'Windows® Settings' screen to open the 'Time & language' screen (Figure 77).
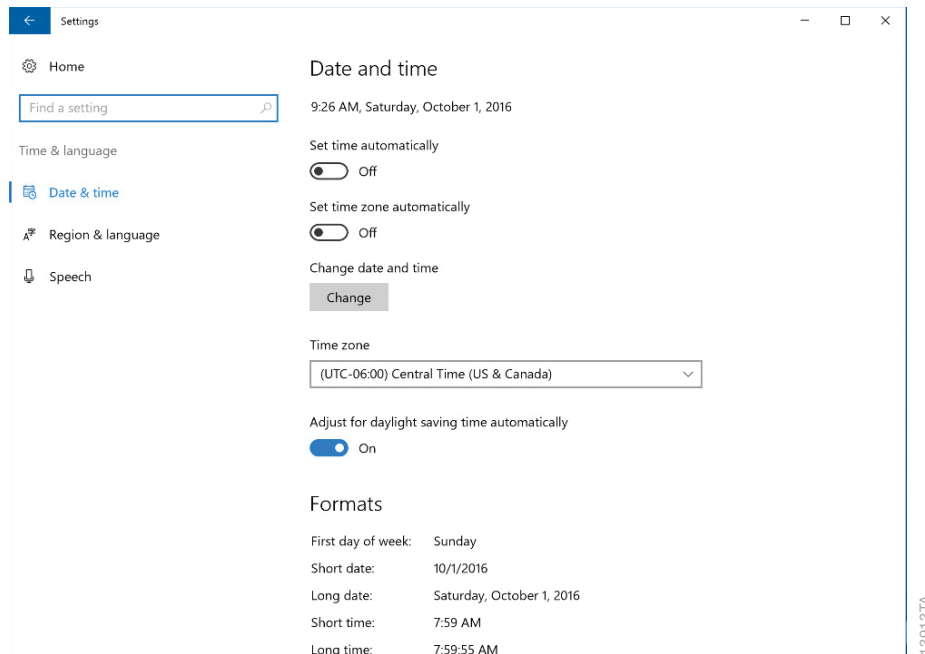
Figure 77. 'Time & language' screen. Settings for date and time can be modified from this screen.

4. The 'Date and time' screen displays the current date, time, time zone and daylight saving time settings on the Tablet PC. Check to see whether these match the current date, time, time zone and daylight saving time for your location.

Changing the Time Zone and Daylight Saving Time Settings

5. Use the drop-down menu under the **Time Zone** heading to select the time zone appropriate for your location.

6. Below the drop-down box for setting the time zone is the **Adjust for daylight saving time automatically** switch. Make sure this switch is in the **On** position if your location observes daylight savings time during the summer hours; otherwise make sure the switch is in the Off position.

Setting Date and Time

7. If the date and time shown on the 'Time & language' screen still do not accurately reflect the date and time in your location, touch the **Change** button below the Change date and time heading.

8. On the 'Change date and time' screen (Figure 78), use the drop-down boxes to select the appropriate date and time for your location.
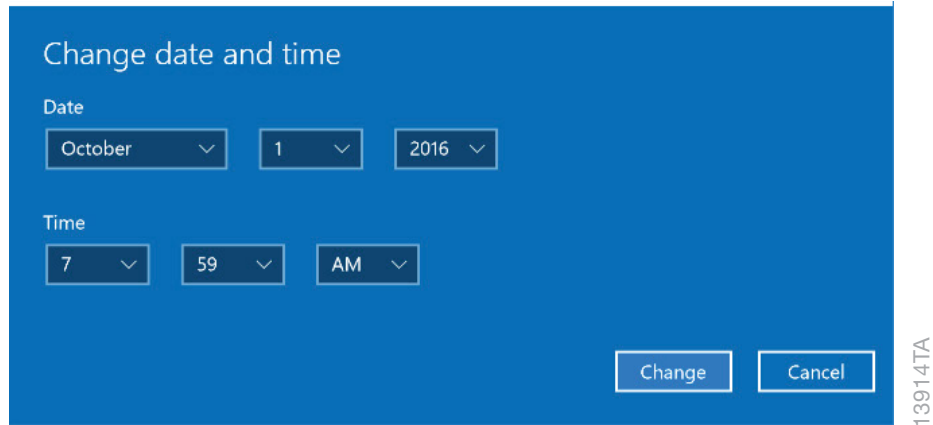
Figure 78. Adjusting date and time. Use the drop-down menus on the 'Change date and time' screen to adjust the displayed date and time on the Tablet PC.

9. Once you are satisfied with the date and time settings, touch the **Change** button to save the date and time settings. If you wish to discard your changes touch the **Cancel** button.

10. You will be returned to the 'Date and time' screen. Touch the **X** button in the upper right corner of the screen to return to the 'Desktop' screen.

12.5   Managing Local Windows® User Accounts

Note: If the tablet is connected to your site internet domain, your IT department should be consulted on date and time settings. Do not use these instructions if the Tablet PC is connected to your site network domain.

Operator credentials and access levels for the Maxwell® RSC 48 software are controlled through assigning accounts in the Windows operating system to one of two Promega access-level groups. The sections below detail the process of adding and removing local Windows® user accounts that can be assigned to the access-level groups for the Maxwell® RSC 48 software. The instructions for adding and removing local Windows® user accounts are intended to be used when the Maxwell® RSC 48 system is run as a stand-alone device (i.e., not connected to a network domain). To connect to your site internet domain, consult with your IT department and follow the instructions in Section 12.9.

When your Maxwell® RSC 48 System arrives, the Tablet PC will be configured with a Windows® user account called User. This account is not password-protected and is configured to have Windows® administrator access rights as well as Maxwell® RSC 48 software administrator access rights.

12.5.1   Creating Local Windows User Accounts

If the Maxwell® RSC 48 system is run as a stand-alone device (i.e., not connected to your site domain), you can create local Windows user accounts on the Tablet PC for each user of the system. To create a new user in the Maxwell® RSC 48 software you will first have to create a new account in Windows® 10 and then assign this account to one of the Maxwell® RSC 48 access-level groups. Below are instructions for creating a new, local account in the Windows® 10 Operating System.

Note: If the tablet is connected to your site internet domain, your IT department should be consulted on how to add users to the domain that can be used on the Tablet PC. Do not use these instructions to create a new local account on the Tablet PC if accounts on your company domain are used to access the Tablet PC.

Note: Only a Windows® user account with administrator-level access in Windows® can create new local accounts in the Windows® Operating System.

1.   Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2.   From the 'Desktop' screen, touch the **Windows® Start** button on the left side of the task bar. Choose the **Settings** icon to open the 'Windows Settings' screen (Figure 79).
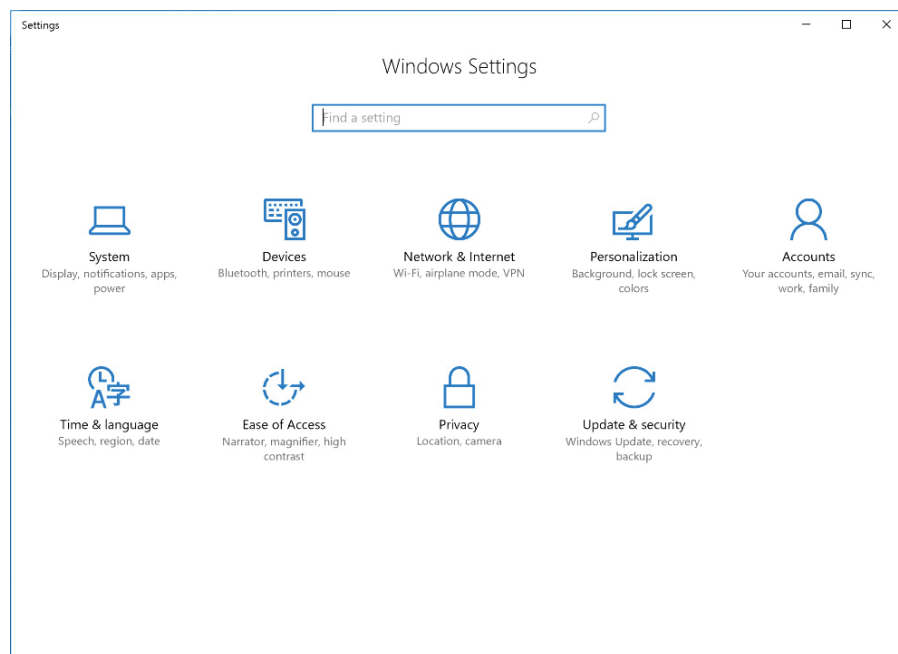

Figure 79. The 'Windows® Settings' screen. The 'Windows® Settings' screen provides access to multiple functions that can be used to configure options and settings for the Tablet PC.

3. Touch the **Accounts** button on the 'Windows® Settings' screen to open the 'Accounts' screen (Figure 80).
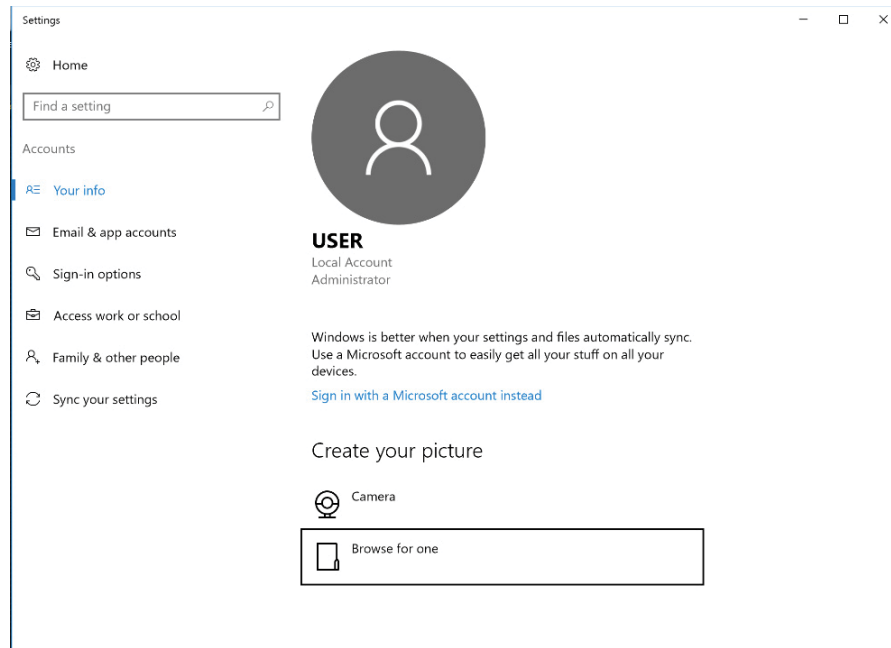

Figure 80. 'Accounts' screen. Settings related to Windows® user accounts can be managed from the 'Accounts' screen.

4. From the list on the left side of the screen, touch the **Family & Other People** button to display account settings for this PC (Figure 81).
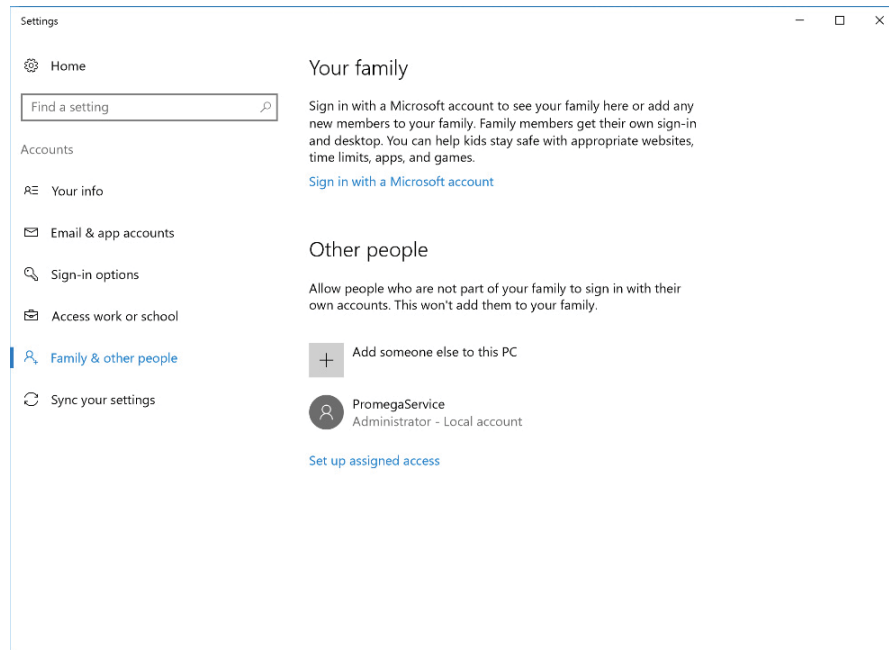
Figure 81. Managing accounts. Windows® user accounts can be created, removed and managed from the 'Family & Other People' tab of the 'Accounts' screen.

5. To add a new user account touch the **+** sign next to the "Add someone else to this PC" heading. This will open the 'Create an account for this PC' screen (Figure 82).
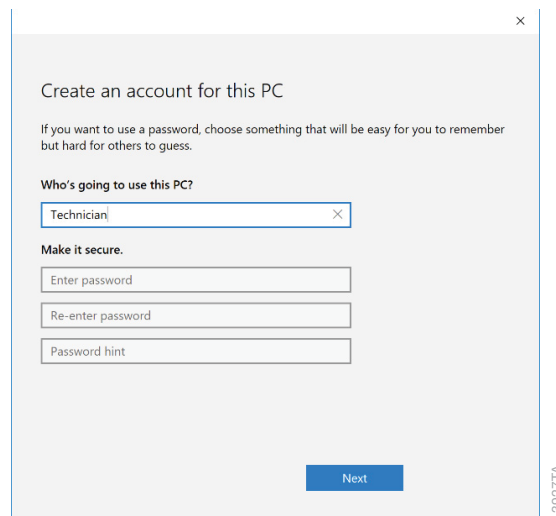

Figure 82. Creating a new account. Enter name and password information to define the sign-in settings for a new Windows® user account on the 'Create an account for this PC' screen.

6. On the 'Create an account for this PC' screen enter the username, password and password hint for the new local user account where indicated. Then touch **Next** to create the new user account and return to the 'Accounts' screen.

   Note: Touch the **Keyboard** icon at the bottom right side of the screen to open the on-screen keyboard for typing information into text boxes. Touch the **X** in the upper right corner of the on-screen keyboard to close the keyboard.

7. The new user account should now be listed under the Other people heading on the 'Accounts' screen.

8. By default, the new user account will have user access level rights within the Windows® 10 operating system. If you desire the new user account to have administrator rights, touch the user account under the Other people heading to open options for that user (Figure 83).
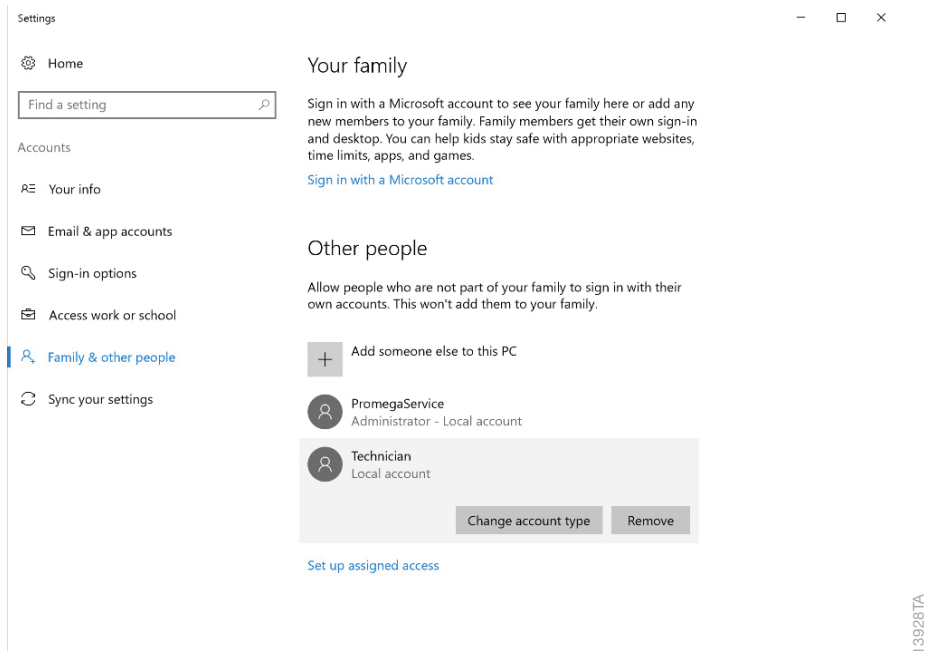
Figure 83. Assigning account options. Touch any of the listed Windows® user accounts to access options for changing the account type.

9. Touch the **Change Account Type** button to open the 'Change account type' screen (Figure 84). Using the drop-down menu under the Account type heading, choose whether this user should have Administrator or Standard User access rights within the Windows® 10 operating system. Touch **OK** to save these changes or **Cancel** to discard the changes for this user and return to the 'Change account type' screen.

   Note: Changing the account type for a user only affects the access level in the Windows® 10 operating system, not in the Maxwell® RSC 48 software. Follow the instructions in Section 12.6 to change access level rights within the Maxwell® RSC 48 software.
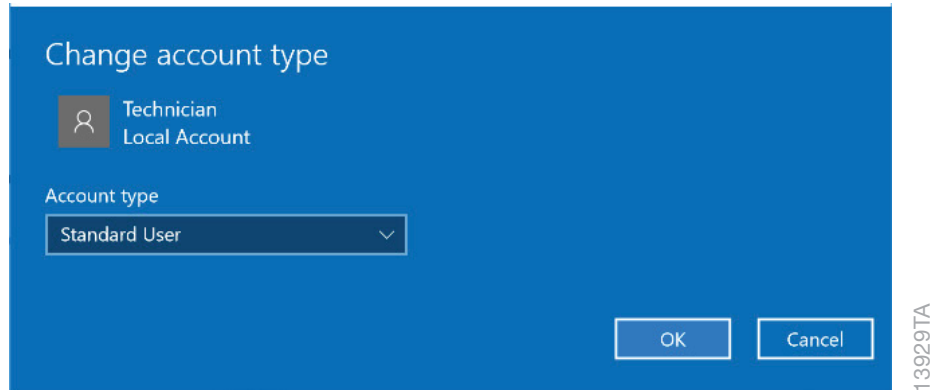
Figure 84. Changing account type. Use the drop-down menu on the 'Change account type' screen to assign the selected Windows® user account Standard User or Administrator access rights in the Windows® operating system.

10. You have now added a new account to Windows® 10. Touch the **X** in the upper right corner of the 'Accounts' screen to close the screen. Proceed to Section 12.6 to assign access levels for the Maxwell® RSC 48 software to this new account, or repeat these steps to create additional accounts.

12.5.2 Removing a Local Windows® User Account

If the Maxwell® RSC 48 system is run as a stand-alone device (i.e., not connected to your site domain), you can remove local Windows® accounts on the Tablet PC that are no longer necessary. Below are instructions for removing a local Windows® user account in the Windows® 10 Operating System.

Note: Only a Windows® user account with administrator-level access in the Windows® operating system can remove accounts.

Note: If the tablet is connected to your company internet domain, your IT department should be consulted on how to limit access to the Tablet PC. It is important to note that domain users logged into the Tablet PC will not have access to run the Maxwell® RSC 48 software unless they have been added to one of the Promega access groups. Do not use these instructions to remove an account on the Tablet PC if accounts on your company domain are used to access the Tablet PC.

Note: Make sure the local Windows® user account to be deleted is signed out of the Tablet PC (see Section 12.7).

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. Confirm that the Windows user account to be removed is not signed into Windows. From the 'Desktop' screen, touch the **Windows® Start** button on the left side of the task bar. Choose the **Accounts** icon from the left side of the 'Windows® Start' menu to open the Account information popup (Figure 85). Other user accounts will be listed and indicated as signed in if the account is currently signed in on the Tablet PC.
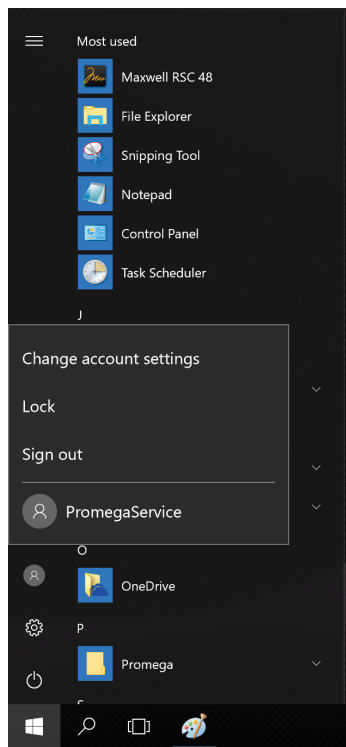
Figure 85. Account information popup. Accessed from the Windows® Start menu, the Account information popup displays the Windows user accounts on the Tablet PC and indicates whether they are signed in or not.

3. If the account to be removed is signed in on the Tablet PC, touch that account name in the Account information popup to shift to that account. Once you have changed to the account to be removed, from the 'Desktop' screen, touch the **Windows® Start** button in the lower left corner of the screen. Choose the **Accounts** icon from the left side of the 'Start' menu to open the Account information popup. Touch **Sign Out** to sign out of the account that will be removed.

4.   After signing out, sign back into an account with administrator-level access in Windows.

5.   From the 'Desktop' screen, touch the **Windows® Start** button on the left side of the task bar. Choose the **Settings** icon to open the 'Windows Settings' screen (Figure 86).
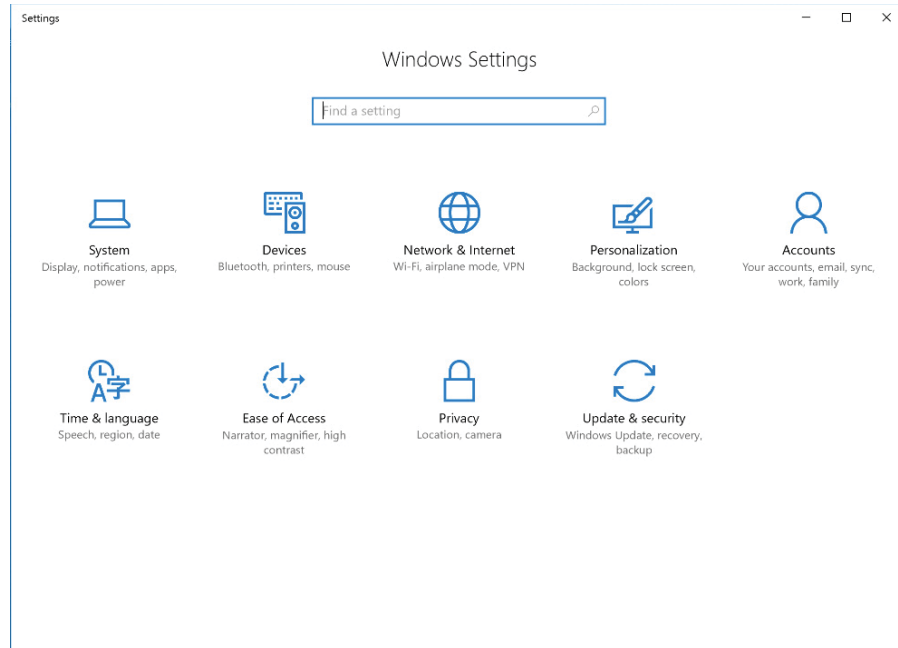
Figure 86. The 'Windows Settings' screen. The 'Windows Settings' screen provides access to multiple functions that can be used to configure options and settings for the Tablet PC.

6. Touch the **Accounts** button on the 'Windows Settings' screen to open the 'Accounts' screen (Figure 87).
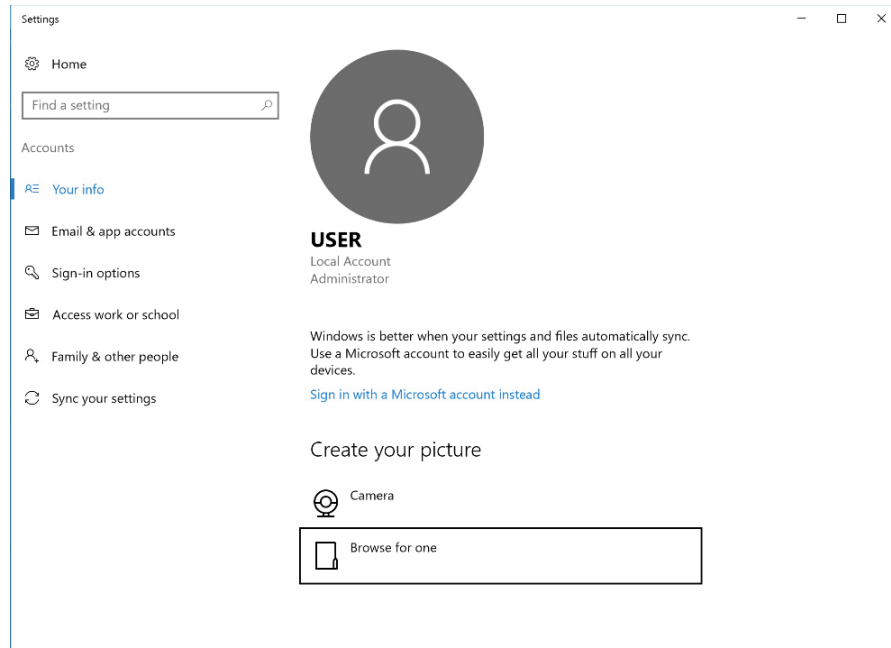
Figure 87. 'Accounts' screen. Settings related to Windows® user accounts can be managed from the 'Accounts' screen.

7. From the list on the left side of the screen, touch the **Family & other people** button to display account settings for this PC.

8. Under the Other people heading, touch the user account you wish to remove under the Other people heading to open options for that user (Figure 87).
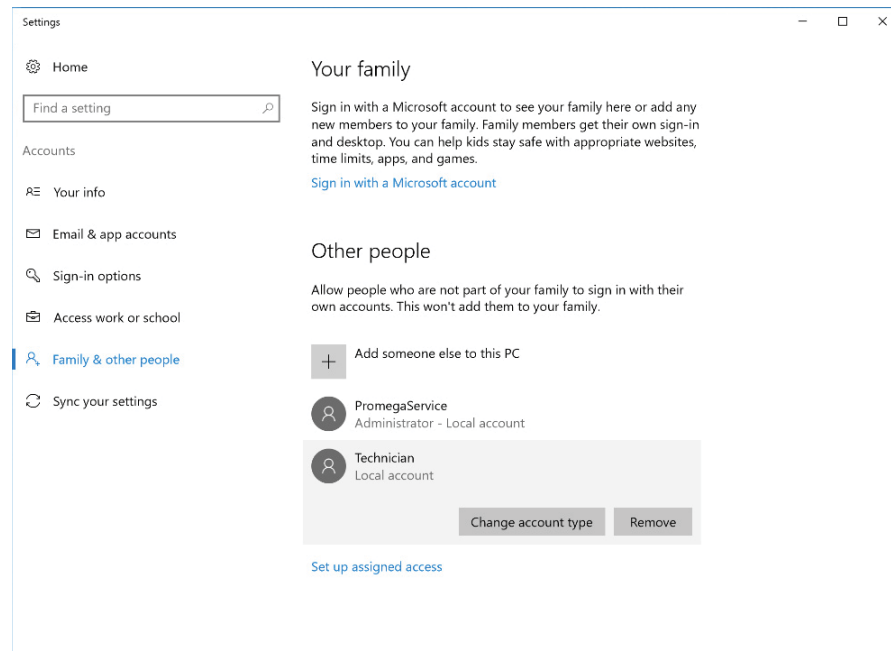
Figure 88. Removing an account. Touch any of the listed Windows® user accounts to access the ability to remove an account.

Note: Removing a Windows user account will only remove data in Windows® for this user account; it will not affect any of the data generated by this user in the Maxwell® RSC 48 software.

9. Touch the **Remove** button to open the 'Delete account and data?' screen. There will be an indication that removing a user account will remove all of the user's data from the PC. Touch **Delete account and data** to remove the selected account or **Cancel** to retain the account and return to the 'Accounts' screen.

10. If you touched **Delete account and data**, you have now removed a local Windows® user account from Windows® 10 and that account should no longer show up in the list of accounts shown under the Other people heading on the 'Accounts' screen. Touch the **X** in the upper right corner of the 'Accounts' screen to close the screen.

12.5.3 Changing the Appearance of the 'Desktop' Screen for New Windows® User Accounts

The first time a new account logs in, there will be a few seconds delay while Windows® prepares the new user account, and then the user will be presented with the Windows® 'Desktop' screen. The Maxwell® RSC 48 software icon will not appear on the 'Desktop' screen. The following instructions describe how to add the Maxwell® RSC 48 software icon to the Windows® 'Desktop' screen.

12.5.4   Getting to the Maxwell® RSC 48 Software

1. If you do not add the Maxwell® RSC 48 software icon to the Windows® 'Desktop' screen, you will have to access the Windows® Start menu to open the Maxwell® RSC 48 software.

2. Touch the **Windows® Start** button on the left side of the task bar.

3. From the installed programs in the main part of the Windows® Start menu, scroll down to see the Promega folder. Touch the **Promega** folder to expand the items within the folder.

4. Touch and hold the **Maxwell RSC 48** item for two seconds, and then release to open the options popup. Touch the **Pin to Start** item (Figure 89, Panel A). This will create a Maxwell® RSC 48 icon on the right side of the 'Start' menu (Figure 89, Panel B).

A.   **B.**
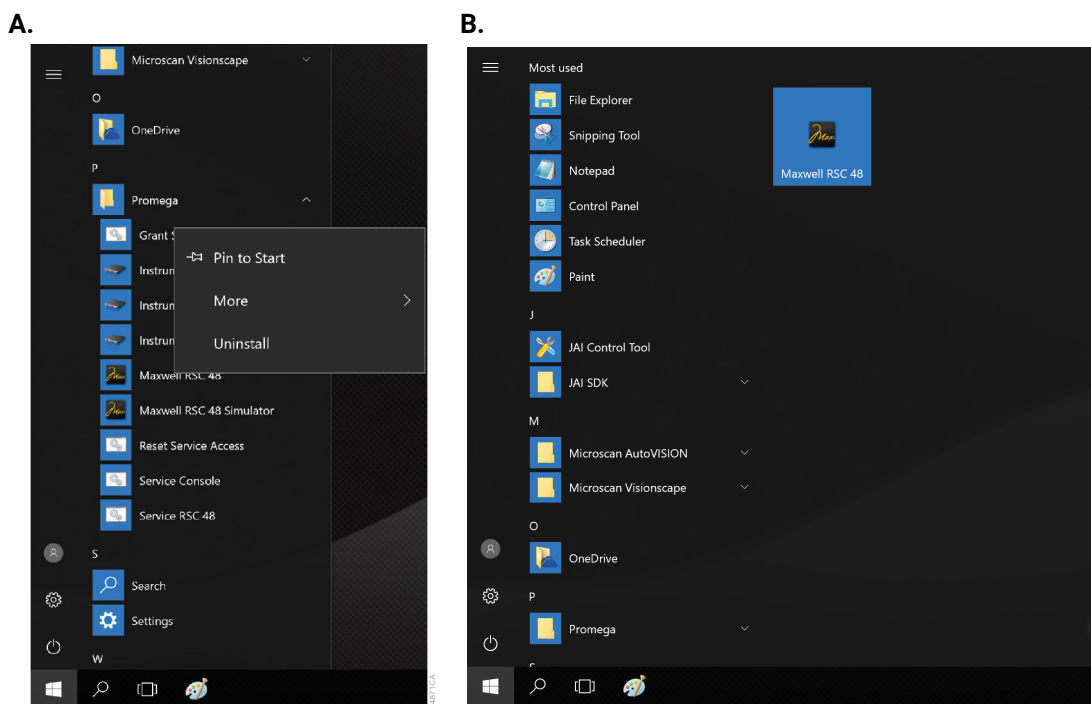
Figure 89. Creating a Maxwell® RSC 48 software icon. Panel A. Identify the Maxwell® RSC 48 icon in the Promega folder shown in the list of installed items on the Tablet PC. Touch and hold the **Maxwell RSC 48** icon to open the options popup. **Panel B.** After touching **Pin to Start** the Maxwell® RSC 48 icon will appear to the right of the installed items in the Windows® Start menu.

5. To add the Maxwell® RSC 48 icon to the Desktop, touch and hold the **Maxwell® RSC 48** icon on the right side of the Windows® Start menu until you see the Name group header displayed. Now touch and drag the **Maxwell RSC 48** icon onto the 'Desktop' screen.

6. The Maxwell® RSC 48 software icon will appear on the desktop. Double-touch the **Maxwell RSC 48** software icon to open the Maxwell® RSC 48 software. Alternatively, you can touch the **Windows® Start** button and touch the **Maxwell RSC 48** icon on the right side of the Windows® Start menu to open the Maxwell® RSC 48 software.

12.6 Managing Maxwell® RSC 48 Access Levels for a Windows® User Account

Access levels within the Maxwell® RSC 48 software are controlled by assigning a Windows® user account to a Promega access-level group. The Maxwell® RSC 48 software supports the following user roles.

PromegaUser: PromegaUsers have the following capabilities:

1. Select and run preloaded methods
2. View and export results

PromegaAdministrator: PromegaAdministrators have the following capabilities:

1. All PromegaUser capabilities
2. Import/Delete purification methods
3. Specify sample tracking requirements
4. Set software options
5. Determine UV sanitization options

When your Maxwell® RSC 48 System arrives, the Tablet PC will be configured with a Windows® user account called User. This account is not password-protected and is configured to have both Windows® administrator access rights and administrator-level access rights to the Maxwell® RSC 48 software.

12.6.1 Assigning an Account to a Promega Access-Level Group

The instructions below detail the steps involved in adding a Windows® user account (whether local or domain) to one of the Promega access-level groups on the Tablet PC. All Windows® user accounts that will have access to the Maxwell® RSC 48 software must be added to either the PromegaUsers or PromegaAdministrators groups.

Note: It may be easiest to perform the following steps with the stylus.

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.
2. Touch the **Search** icon on the left side of the task bar.
3. Touch the '**Search**' text box, and then touch the **Keyboard** icon on the on the right side of the task bar to open the on-screen keyboard and enter the text "lusrmgr.msc" (Figure 90, Panel A). Touch the **X** on the on-screen keyboard to close the keyboard. Under the Best match header an item called "lusrmgr.msc" should appear; touch this item to open the 'Local Users and Groups (Local)' screen (Figure 90, Panel B).
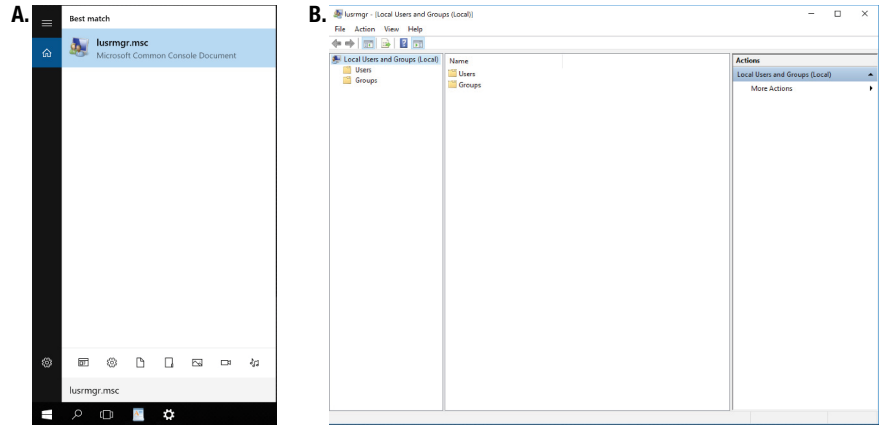
Figure 90. Accessing Users and Groups. Panel A. Touch the **Search** button in the task bar and enter lusrmgr.msc into the search text box to bring up the lusrmgr.msc item. **Panel B.** Touching the lusrmgr.msc item from the search list opens the 'Local Users and Groups (Local)' screen.

4. Double-touch the **Groups** folder in the center part of the screen to open the folder (Figure 91).
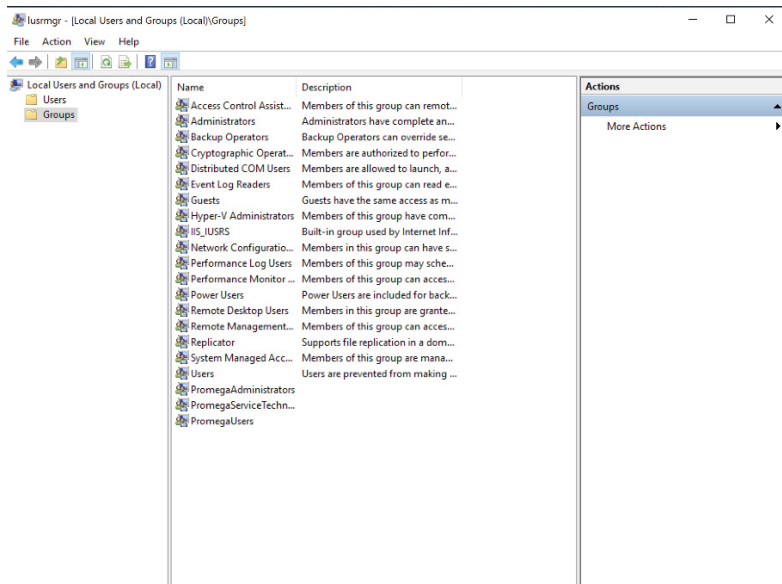
Figure 91. Groups folder. Access the PromegaAdministrators and PromegaUsers groups from the Groups folder on the 'Local Users and Groups (Local)' screen.

5. There will be a list of groups shown in the center part of the screen. Near the bottom of this list, you will see two groups (PromegaAdministrators and PromegaUsers) that are used to assign access level rights for the Maxwell® RSC 48 software to Windows® user accounts.

6. Depending on the access level you wish to enable for a particular user account, double-touch either the **PromegaAdministrators** or the **PromegaUsers** list item.

7. This will open the 'PromegaAdministrators Properties' or the 'PromegaUsers Properties' screen (Figure 92, Panel A). Under the 'Members:' section of the screen, touch the **Add…** button.

8. Now you will see the 'Select Users' screen (Figure 92, Panel B). In the section of the screen titled Enter the object names to select: you should type the username(s) of the account(s) that you wish to add to the selected group.

   Note: Touch the **Keyboard** icon on the right side of the Task bar to open the on-screen keyboard for typing information into text boxes. Touch the **X** in the upper right corner of the on-screen keyboard to close the keyboard.
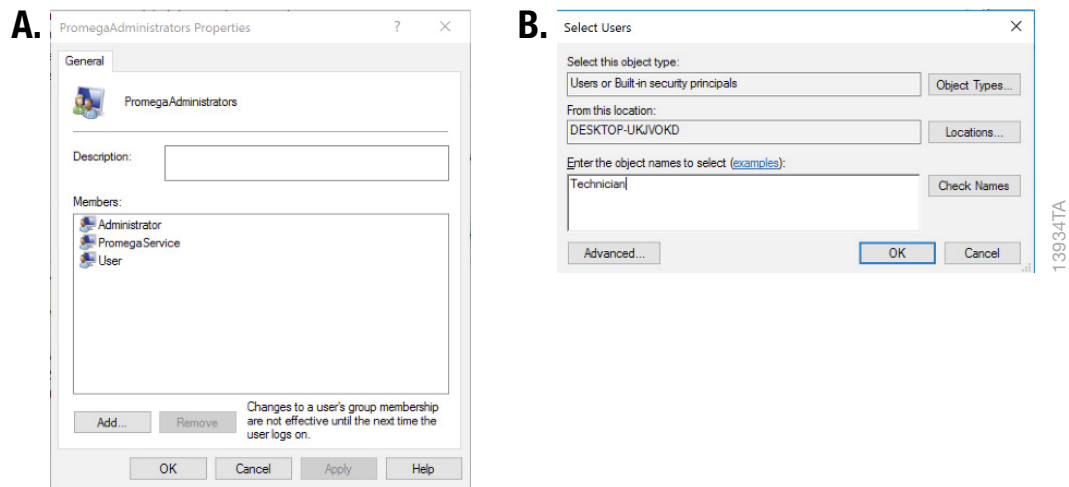
Figure 92. Adding users to a Promega group. Panel A. The 'PromegaAdministrators Properties' or 'PromegaUsers Properties' screen lists the Windows® user accounts currently assigned to the specified group. Touch **Add…** to add a new Windows® user account to the group. **Panel B.** On the 'Select Users' screen enter the Windows® user account(s) names to be added to the selected group in the text box.

9. To check that the username you have entered is recognized by Windows, touch the **Check Names** button. If the username is not recognized, a 'Name Not Found' screen will open. Double-check the spelling of the username, and enter it again.

10. Touch **OK** to accept the username(s) that you have assigned to this group, and then touch **OK** in the 'Properties' screen to close the 'Local Users and Groups (Local)' screen.

11. The username(s) that you have assigned to the specified group should now be capable of running the Maxwell® RSC 48 software with the specified access level.

12. Restart the tablet for new account access levels to take effect. To do this, touch the **Windows® Start** button in the lower left corner of the screen, and then touch the **Power** icon and select the **Restart** item (Figure 93).
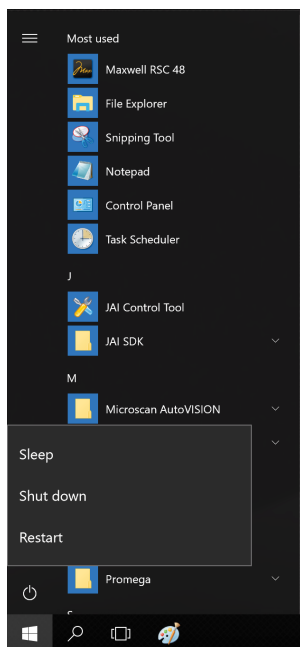
Figure 93. Power options popup. Touching the **Power** button from the 'Windows® Start' menu opens the Power options popup. This popup presents options for managing the Tablet PC power state.

13. To check the appropriate access level for the account, sign in to the tablet as that account (see Section 12.7, Managing the Current Active Account) and open the Maxwell® RSC 48 software.

14. Touch the **Settings** button on the 'Home' screen of the Maxwell® RSC 48 software. If the account has Administrator-level access to the Maxwell® RSC 48 software, the Administrator button will appear on the 'Settings' screen (Figure 94). If the account has only User-level access to the Maxwell® RSC 48 software, the Administrator button will not appear on the 'Settings' screen.-
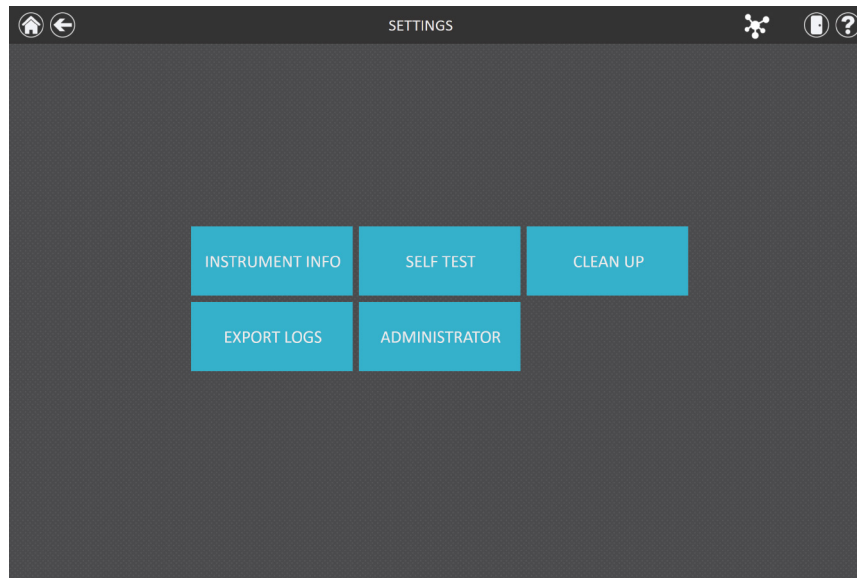
Figure 94. Maxwell® RSC 48 Software 'Settings' screen. Windows® user accounts that have been added to the PromegaAdministrators group will be able to see the Administrator button on the Maxwell® RSC 48 software 'Settings' screen.

12.6.2 Removing an Account from a Promega Access-Level Group

Access levels within the Maxwell® RSC 48 software are controlled by assigning a Windows® user account to a Promega access-level group. The instructions below detail the steps involved in removing a Windows® user account from one of the Promega access-level groups. Once removed from Promega access-level groups, the specified Windows® user account will no longer have access to the Maxwell® RSC 48 software.

**Note:** It may be easiest to perform the following steps with the stylus.

1. Close the Maxwell® RSC 48 software if it is open. If not, at the 'Home' screen touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. Touch the **Search** icon on the left side of the Task bar.

3. Touch the '**Search**' text box, and then touch the **Keyboard** icon on the right side of the Task bar to open the on-screen keyboard and enter the text lusrmgr.msc (Figure 95, Panel A). Touch the **X** on the on-screen keyboard to close the keyboard. Under the Best match header an item called "lusrmgr.msc" should appear, touch this item to open the 'Local Users and Groups (Local)' screen (Figure 95, Panel B).
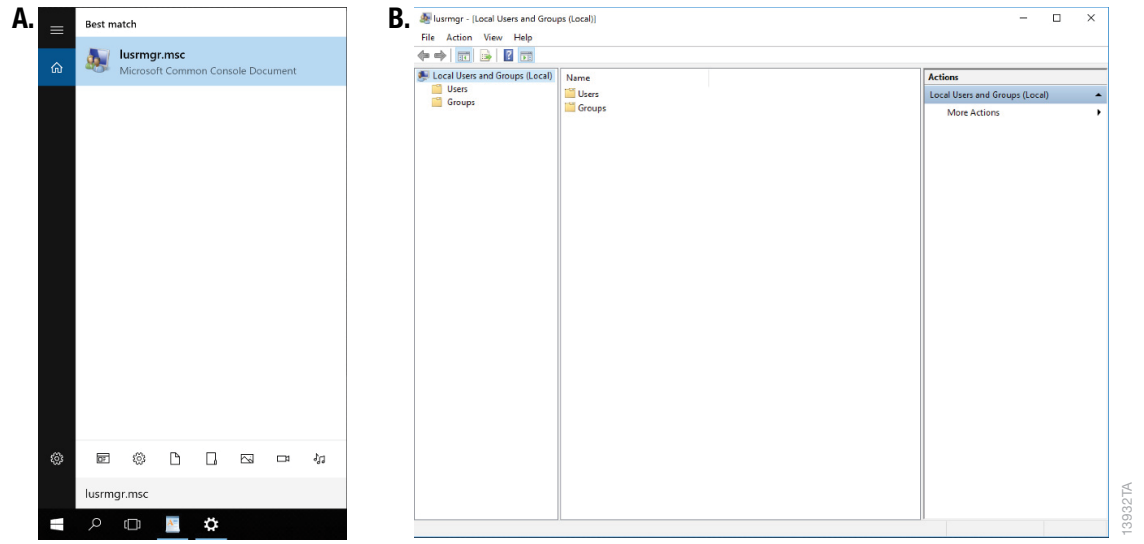
Figure 95. Accessing Users and Groups. Panel A. Touch the **Search** button in the task bar and enter "lusrmgr.msc" into the search text box to bring up the lusrmgr.msc item. **Panel B.** Touching the lusrmgr.msc item from the search list opens the 'Local Users and Groups (Local)' screen.

4. Double-touch the **Groups** folder in the center part of the screen to open the folder (Figure 96).
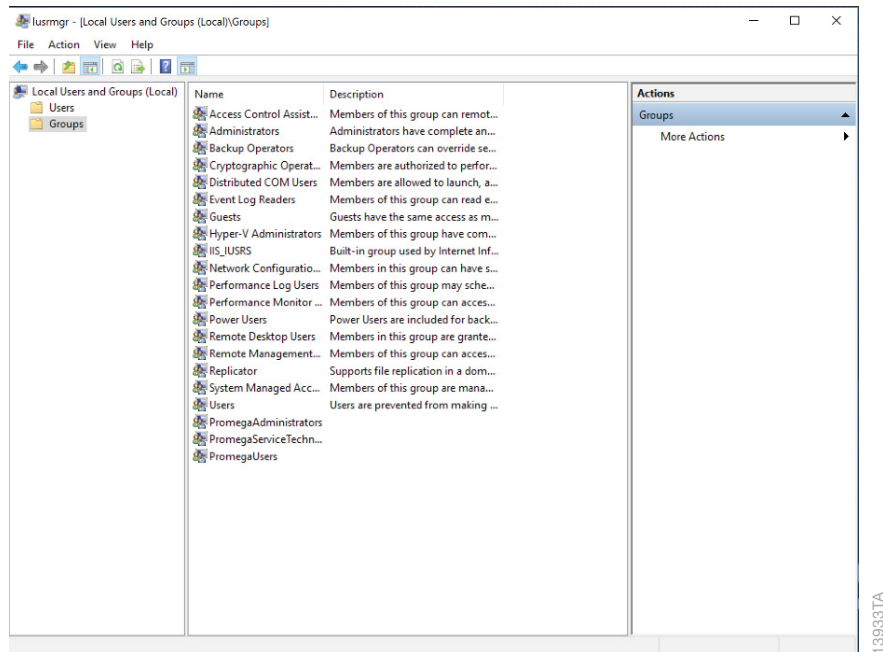

Figure 96. Groups folder. Access the PromegaAdministrators and PromegaUsers groups from the Groups folder on the 'Local Users and Groups (Local)' screen.

5. There will be a list of groups shown in the center part of the screen. Near the bottom of this list you will see two groups (PromegaAdministrators and PromegaUsers) that are used to assign access level rights for the Maxwell® RSC 48 software to Windows® user accounts.

6. Depending on the access level from which you wish to remove a particular user, double-touch either the **PromegaAdministrators** or the **PromegaUsers** list item.

7. This will open the 'PromegaAdministrators Properties' or the 'PromegaUsers Properties' screen. Under the Members: section of the screen, touch the name of the user you wish to remove from this Promega access group (Figure 97).
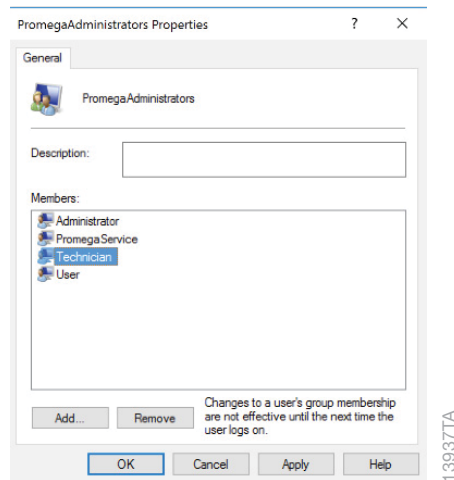
Figure 97. Removing a Windows® user account from a Promega access-level group. Touch the Windows® user account you wish to remove from the selected Promega access-level group, and then touch the **Remove** button.

8. Touch the **Remove** button to remove this user from this Promega access group.

9. Touch **OK** on the 'Properties' screen to accept the changes, or touch **Cancel** to discard the changes. Either selection will return you to the 'Local Users and Groups (Local)' screen.

10. Close the 'Local Users and Groups (Local)' screen by touching the **X** in the upper right corner of the screen.

11. Restart the tablet for new account access levels to take effect. To do this, touch the **Windows® Start** button in the lower left corner of the screen, and then touch the **Power** icon and select the **Restart** item (Figure 98).
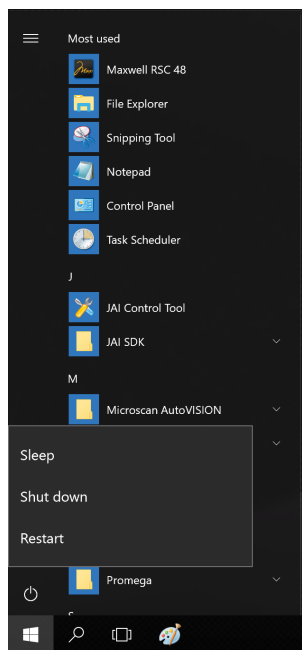
Figure 98. Power options popup. Touching the **Power** button from the 'Windows® Start' menu opens the Power options popup. This popup presents options for managing the Tablet PC power state.

12.7   Managing the Current Active Account

To correctly annotate functions in the Maxwell® RSC 48 software with the user that performed the function, Windows® users must switch to their account between sessions on the Maxwell® RSC 48 software. Upon creating local Windows® user accounts that are password protected or when connected to a network domain to use domain accounts, operators will need to sign in to the Windows® operating system. Use the following steps to switch users or sign out.

12.7.1   When Starting from a Currently Signed-In Account

1.   Touch the **Windows® Start** button on the left side of the task bar.

2.   Touch the **Accounts** icon to open the Account options popup (Figure 99).
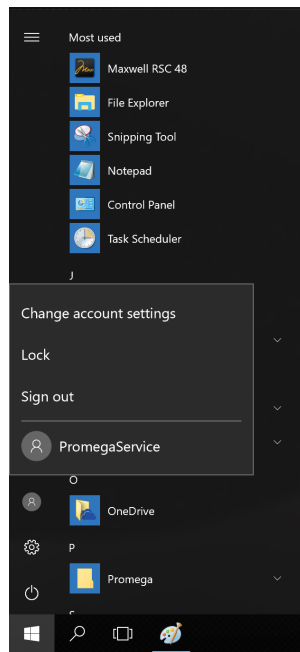
Figure 99. Account information popup. Accessed from the 'Windows® Start' menu, the Account information popup displays the Windows® user accounts on the Tablet PC and enables the current user to Sign out of the Windows® operating system.

3. If you wish to sign out of the tablet, touch the **Sign out** item from the list. This will sign the current user off of the tablet and return to the tablet 'Lock' screen.

4. If you wish to remain signed in to the tablet but wish to switch the current user to another account, touch the username for the account you wish to open from the list of users. If the account is currently signed in, the tablet will simply open to that account. If the account is not signed in, password entry may be required prior to opening to that account. If required, enter the account password to proceed.

12.7.2 When Starting from the Tablet 'Lock' Screen

1. From the Tablet PC 'Lock' screen, swipe up from the bottom of the tablet to view the list of accounts on the Tablet PC.

2. Touch the username of the desired account to open and then touch the **Sign In** button.

3. You may need to enter a password for the account to unlock the Tablet PC.

12.8   Shutting Down and Restarting

Occasionally you will need to shut down or restart the Tablet PC. The instructions below detail the process of shutting down or restarting the Tablet PC.

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. Touch the Windows® **Start** button on the left side of the task bar.

3. Touch the **Power** icon to open the 'Power' menu (Figure 100).
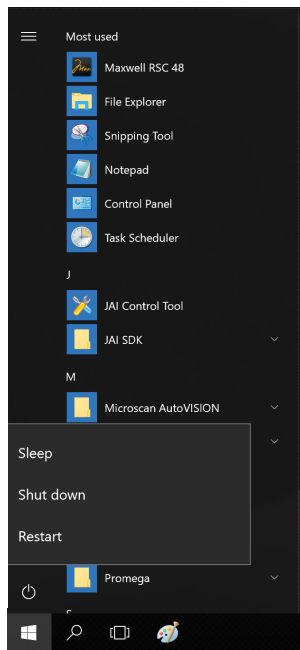
Figure 100. Power options popup. Touching the **Power** button from the 'Windows® Start' menu opens the Power options popup. This popup presents options for managing the Tablet PC power state.

4. If you wish to shut down the Tablet PC, touch the **Shut down** item in the 'Power' menu.

5. If you wish to restart the Tablet PC, touch the **Restart** item in the 'Power' menu.

6. The Tablet PC will perform the selected item comand, and either shut down or restart.

12.9   Connecting to a Network

The Maxwell® RSC 48 Tablet PC can connect to local networks through a Wi-Fi connection. If it is desired to connect the Tablet PC to a site network, follow the instructions below. Alternatively, an Ethernet Adapter (Cat.# AS8403) is available to directly connect to an ethernet port for access to a network.

Note: Consult your site IT department when connecting to a network printer.

Note: Consult your site IT department when connecting to the network so that the rules and regulations regarding network access for your site are followed.

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. Touch the **Wi-Fi** button on the right side of the Task bar to open the Wi-Fi menu (Figure 101).
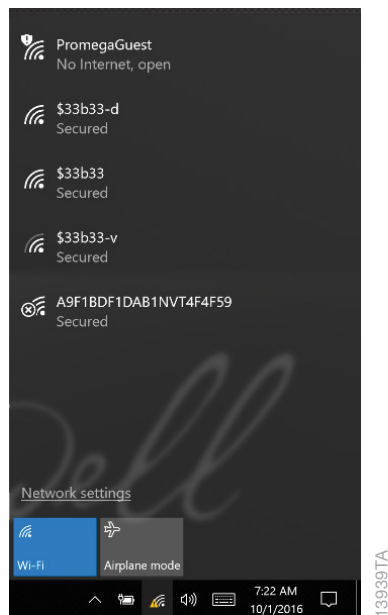

Figure 101. Wi-Fi menu. The Wi-Fi menu indicates the status of the wireless network connectivity of the Tablet PC. Touch the **Wi-Fi** button to turn the Tablet PC Wi-Fi connection on or off. Touch any displayed network to attempt a connection to that network.

3. If the Wi-Fi is currently on, you will see a listing of the available networks at the top of the Wi-Fi menu. If the Wi-Fi is currently off, touch the **Wi-Fi** button to turn on the Wi-Fi. Once Wi-Fi is turned on, the available networks will be displayed at the top of the Wi-Fi menu.

4. Select one of the available networks to attempt a network connection.

5. Enter any user name and password information if requested for connection to this network. Consult with your site IT department when connecting to your site network.

6. Touch the **Connect** button, and the Tablet PC will attempt to connect to the specified network.

## 12.10 Adding a Network Printer

From the Maxwell® RSC 48 software, you can print reports using a network printer. The printer you wish to use with the Maxwell® RSC 48 software needs to be located on your network and the Tablet PC connected to your network.

1. Close the Maxwell® RSC 48 software if it is open. If not at the 'Home' screen, touch the **Home** button in the upper left corner of the user interface. Touch the **X** in the upper left corner of the screen, and then confirm that you want to exit.

2. Touch the **Windows® Start** button on the left side of the task bar.

3. Touch the **Windows® Settings** button to open the 'Windows Settings' screen (Figure 102).
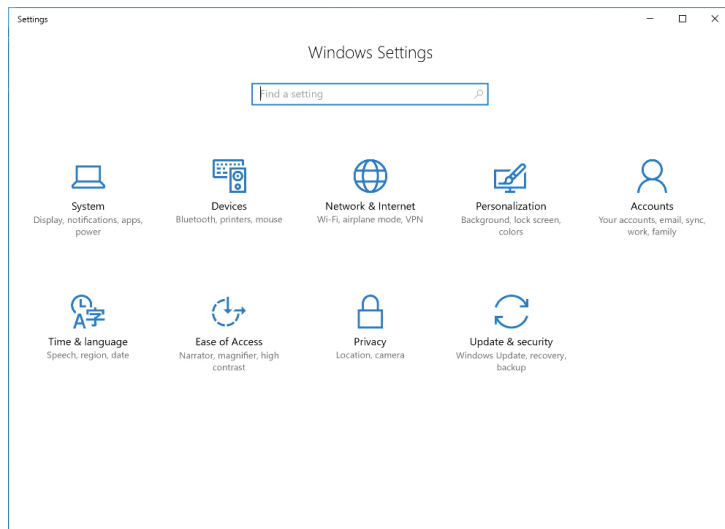
Figure 102. The 'Windows Settings' screen. The 'Windows Settings' screen provides access to multiple functions that can be used to configure options and settings for the Tablet PC.

4. Touch the **Devices** button on the 'Windows Settings' screen to open the 'Devices' screen (Figure 103).
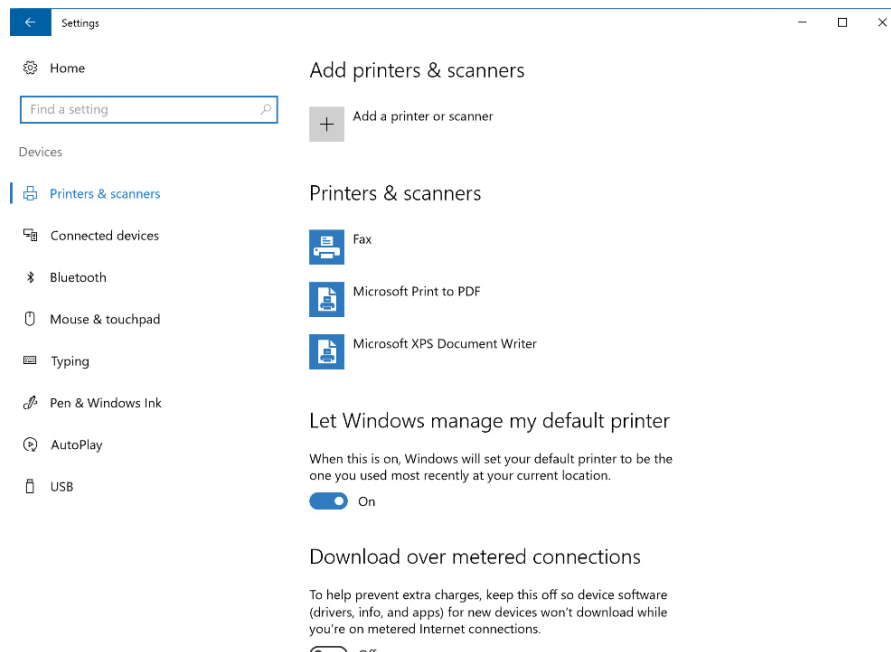
Figure 103. 'Devices' screen. Connecting to a network printer can be performed from the 'Devices' screen. The Tablet PC must be connected to a network to access network printers.

5. Touch the **+** button next to the Add a printer or scanner heading. The Tablet PC will automatically search the network for available printers that can be selected. This may take awhile.

6. Once available printers are found, select the desired printer from the list and touch the **Next** button. If the desired printer was not found on the network, consult with your IT department to resolve the issue.

7. Follow on-screen instructions for adding this printer to the Tablet PC.

13 Summary of Changes

The following changes were made to the 10/24 revision of this document:

1. Updated Sections 1.1, 1.4, 5.3, 6.2, 10.2 and 10.3.

2. Revised Figures 26, 29, 37, 38, 39, 40 and 41.

3. Made general text and formatting edits.

Promega