User Manual
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General Information

Quidel Contact Information
Contact Quidel Technical Support from 7:00 a.m. to 5:00 p.m. Pacific Time

Tel: 800.874.1517 (in the U.S.);
     858.552.1100 (outside the U.S.)
Fax: 858.552.7905
Email: technicalsupport@quidel.com or contact your local distributor
Website: quidel.com
Main Menu Structure
## Labels and Symbols

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<th>Description</th>
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<td>Prescription use only</td>
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<td>Export, Import, Delete</td>
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Brief Warnings, Precautions and Limitations

- Always operate Sofia 2 on a surface that is level, dry, and not in direct sunlight.
- The Sofia 2 Calibration Cassette is sensitive to light. Store it in the opaque sleeve whenever it is not being used.
- Do not write on the barcode or surface of the cassette.
- Never move Sofia 2 or open drawer while there is a test in progress.
- Use only the Power Adapter that was provided with Sofia 2.
- Do not drop Sofia 2 as it could damage the unit.
- To avoid damaging Sofia 2, do not place objects on top of it.
- Contact Technical Support if the instrument is damaged.
- Sofia 2 has been designed to CISPR 11 Class A. In a domestic environment, it may cause radio interference, in which case you may need to take measures to mitigate the interference.

Safety Precautions

Sofia 2 is designed to provide safe and reliable operation when used according to this User Manual. If Sofia 2 is used in a manner not specified in the User Manual, the protection provided by the equipment may be impaired.

All warnings and precautions should be followed in order to avoid unsafe actions that could potentially result in personal injury or damage to the device.

![Warning!]

To reduce the risk of electrical shock:
- Unplug Sofia 2 before cleaning.
- Plug the device into an approved receptacle.
- Do not immerse in water or cleaning solutions.
- Do not attempt to open the enclosure.

![Ultraviolet Radiation!]

To reduce the risk of UV Exposure:
- Do not attempt to open or disassemble Sofia 2.
- Do not attempt to look inside Sofia 2 while operating.

Failure to follow these warnings will invalidate the warranty.
Potential Biohazard!

To reduce the risk of biohazard:
- Dispose of used specimens in accordance with Federal, State and Local requirements.
- Treat specimens and patient samples as potentially biohazardous material.
- Ensure Sofia 2 is cleaned per the Maintenance and Cleaning section.
- Seek specific training or guidance if you are not experienced with specimen collection and handling procedures.
- Use of Nitrile, Latex, or other gloves is recommended when handling patient samples.

Caution!

To reduce the risk of incorrect results:
- Sofia 2 should only be used by trained operators.
- Do not use if Sofia 2 is reporting an error condition that cannot be corrected.
- To obtain accurate results, refer to the assay-specific Package Insert for details on specific tests.
- Use the test kit within the expiration date.

To reduce the risk of Sofia 2 damage:
- Sofia 2 is designed for counter top operation.
- Sofia 2 is not designed to withstand moisture, extreme humidity, or extreme temperatures.
- Sofia 2 is not designed to withstand severe shock or vibration.
- Do not open or disassemble the device.

Failure to follow the precautions mentioned above will invalidate the warranty.

To reduce the risk of environmental contamination:
- Contact Quidel Technical Support at 800.874.1517 for return or disposal of Sofia 2. See page 3 for additional contact information.
- Clean Sofia 2 per the Maintenance and Cleaning section of this User Manual prior to return or disposal.
- Sofia 2 must be disposed of in a safe and compliant manner. Applicable Federal, State and Local regulatory requirements shall be followed to ensure Sofia 2 is not disposed of as municipal waste. If you are unsure on the proper methods for disposal, contact a certified waste broker for guidance.

Note: Medical equipment that may have come into contact with potentially infectious materials (e.g., patient samples, blood, serum, etc.) must be properly decontaminated prior to disposal or recycling.
Introduction

Intended Use

Sofia 2 is a bench top analyzer intended to be used with Cassette-based immunofluorescent in vitro diagnostic assays manufactured by Quidel Corporation. Sofia 2 is intended for professional and laboratory use.

After the patient sample has been added to the Test Cassette, depending upon the User’s choice, the Test Cassette is either placed inside of Sofia 2 for automatically timed development (WALK AWAY Mode) or placed on the counter or bench top for a manually timed development and then placed into Sofia 2 to be read (READ NOW Mode). Sofia 2 will read the test strip and measure the fluorescent signal by processing the results using method-specific algorithms. Sofia 2 will display the test results.

Refer to assay-specific Package Insert for details on specific tests.

Product Description

Sofia 2 uses a fluorescent tag that is illuminated by an Ultraviolet (UV) light source to generate specific results.

In each test, an internal procedural control line is also read. This ensures that sample flow has occurred within the Test Cassette to permit an accurate reading.

Sofia 2 then displays the test results to the User on the screen and automatically saves them on the device. If configured, the results may also be sent to an attached printer or stored in the cloud using Virena.

Calibration Check and Quality Control (QC)

Sofia 2 Calibration Check and External Quality Control Tests must be performed on a periodic basis.

- **Sofia 2 Calibration Check**: Calibration Check is a required function that checks the internal Sofia 2 optics and systems. A Calibration Check must be performed every 30 days or less. A special Calibration Cassette is provided with Sofia 2. For replacement Calibration Cassettes, contact Quidel Technical Support.

- **External Quality Controls**: Refer to assay-specific Package Insert for details on specific tests.

Instructions are provided in the Run Calibration and Run QC sections.
Development Modes

When a patient sample is added to the Test Cassette, it begins to flow through the test strip. The development time required varies by test type. Refer to the assay-specific Package Insert to determine the required development time of each test, and the required storage conditions of the test and external controls.

The correct development time is required to get accurate results.

Sofia 2 has been designed to operate in different development modes. The Supervisor and User can identify the mode that works best with their workflow and testing volume.

**WALK AWAY Mode** may be the most convenient for reading a single patient sample, as the User can walk away during the development period. In this mode, the User dispenses the patient sample into the Test Cassette and then immediately inserts the Test Cassette into Sofia 2. Sofia 2 will automatically allow the Test Cassette to develop for the required time period (pre-programmed for each test), read the Test Cassette, analyze and interpret the data, and automatically and objectively display the test result. Depending on the test, Sofia 2 may also read the Test Cassette periodically during the development time and display a positive result prior to the final test time.

**READ NOW Mode** may be most convenient for high volume situations as Sofia 2 can quickly read multiple patient samples sequentially. The User dispenses the patient sample into the Test Cassette. The User then manually times the development period outside of Sofia 2. This can be done on the counter or bench top using a timer. Refer to the assay-specific Package Insert for the required development time. Once the development time is complete, the User inserts the Test Cassette into Sofia 2. Sofia 2 will immediately read and display the test result within 1 minute.

System Components

The following system components are supplied with Sofia 2:

**Sofia 2**
- Sofia 2 with Rechargeable Battery
- Power Adapter
- QuickStart Guide
- Calibration Cassette

**Additional Ancillaries (optional)**
- Dymo Label Printer
- Dymo Vinyl Label Roll
- Dymo Paper Roll
- Replacement Battery

Contact Quidel Technical Support for additional supplies at 800.874.1517 (in the U.S.). See page 3 for additional contact information.
Sofia 2 consumable test kits, including Test Cassettes and External Quality Control materials, are supplied separately.

Consult your Quidel representative for a listing of approved Sofia 2 assays.

**User Types**

**Users** without Supervisor authorization have access to the following functions:

- Power on Sofia 2
- Perform Calibration
- Run QC (External Controls)
- Run Test with Patient Samples
- Review Data (Patient, Calibration and QC)

Users with **Supervisor** authorization access can perform all of the following functions:

- Add or Delete Users
- Export and Import Settings
- Export Test Records
- Update Sofia 2 Firmware
- View Message Logs
- Review Statistics
- Change Settings
System Display

Sofia 2 contains a 4-inch color LCD display for interacting with the user interface (Figure 1).

Figure 1

Installation, Setup and Operation

Sofia 2 Setup

- Place Sofia 2 on the bench top. The unit is portable and can be moved to a suitable location for testing. Ensure counter top is stable, level, dry and free of obstructions. Avoid direct sunlight.

- Ensure the bench provides adequate space for Sofia 2. There must be space to open/close the Sofia 2 drawer and access the connection ports on the back of the unit.

- Plug the Power Adapter into the power port on the back of Sofia 2. Then plug the Adapter into an available electrical outlet.

- If using the optional Dymo Label Printer, connect to Sofia 2 by plugging into a USB port on the back of the instrument (Figure 2).
**Power Up**

Turn Sofia 2 on using the power switch located on the rear panel (Figure 2).

*Sofia 2 will display the Power On progress screen and complete a Power On Self-Test. Once the Power On is complete, Sofia 2 will display the Run Test screen (Figure 3) and it is ready for use.*

*Figure 2*

When turning on Sofia 2 for the first time, a calibration check will be required (Figure 4). A calibration check must be performed before using it for the first time. **The default Supervisor ID (1234) will be used for the calibration check.**
Figure 4

Supervisor Menu

Logging in as Supervisor

The **Supervisor Menu** allows the Supervisor to access additional functionality and security options depending on the work environment and the location of Sofia 2.

**Settings**

Entry to the **Settings** menu is accomplished by logging in as the Supervisor. Sofia 2 comes from the manufacturer with a default Supervisor login ID which should be changed when Sofia 2 is initially installed at the customer site. **The default Supervisor ID is 1234.**

**Note:** If the factory default ID is deleted and all other Supervisor codes have been misplaced or forgotten, please call Quidel Technical Support for a 1-day temporary Supervisor ID code that will allow the User to create a new Supervisor ID code. Contact Quidel Technical Support for assistance at 800.874.1517 (in the U.S.). See page 3 for additional contact information.
**Calibration and QC**

**Calibration Reminder**
Using the touchscreen, enter the number of days for the *Calibration reminder interval* from 2-30. When the selected number of days remain until required calibration, the reminder 🕒 will appear next to the menu icon on the Run Test screen. Press ✔️ to confirm when changes are complete to return to the Run Test screen.

**Data Security**
The Data Security screen allows the Supervisor to select the number of patient results that remain stored on Sofia 2. The Supervisor may also choose whether patient data is saved along with test data to an attached USB flash drive.

In the **Stored patient data** field, use the touchscreen to enter the number of patient results saved on the device from 1-1000.

In the **Save patient data to USB** field, select *On* or *Off*. If set to *On*, patient data will be saved along with test records when exporting to an attached USB flash drive. Press ✔️ to confirm when changes are complete to return to the Run Test screen.

**Other Settings**

**Set Site Name**
The Site Name setting sets the name of the clinic, hospital, lab or physician’s office where Sofia 2 is being used.

In the field for **Site Name**, use the touchscreen to enter the location name up to 20 characters, and/or spaces.

To delete a letter, press 🖊 on the keypad.

Pressing ✕ at any time cancels the changes and returns the Site Name to the previous setting.

The Supervisor may also enter the 5-digit ZIP code using the touchscreen keypad.

When the Site Name and ZIP code are complete, continue to set Sound using ➤.

**Set Sound**
Setting the Sound on Sofia 2 will allow the Supervisor to turn on 🔊 or off 🔊 the beep sound for notifications or when a barcode is scanned.

When the Sound is set, continue to set Time and Date using ➤.

**Set Time and Date**
The Time option allows for two different time formats to suit specific country requirements.

The User can change the displayed time format to 12h or 24h format.
In the ☀️ field, select either **12h** or **24h**. Use the on-screen keypad to enter the correct time.

When the 12h format is selected, also select **AM** or **PM**. When the 24h format is selected, the **AM/PM** buttons are non-functional. If an invalid time is added, the field will highlight in red and the confirm button will not be available.

The Date option allows for two different date formats to suit specific country requirements.

In the 🔴 field, the User can select the date format as either **mm/dd/yy** or **dd/mm/yy** format. Use the on-screen keypad to enter the correct date. If an invalid date is added, the field will highlight in red and the confirm button will not be available.

Press ✔️ to confirm when changes are complete to return to the Run Test screen.

**Network Settings**

![Network Settings](image)

**Virena Settings**

To configure Virena, **Virena Domain Name** is pre-populated and no additional user input is needed (Figure 5).

**Figure 5**

![Virena Domain Name](image)
Press > to continue to the next screen. For **Auto Send**, select either **On** or **Off**. For **Queue Results**, select either **On** or **Off** (Figure 6). Both settings must be set to **On** to send results to the Virena cloud daily. Upon activation of Sofia 2’s network capabilities, Sofia 2 will transmit data, de-identified in accordance with 45 C.F.R. § 164.514(b)(1), from the customer’s Sofia 2 to Quidel’s network of secured, third-party remote hosted servers.

**Figure 6**

![Auto Send and Queue Results Settings](image)

Press > to continue to the next screen. For **Transmit Patient ID**, select either **On** or **Off**. For **Transmit Order Number**, select either **On** or **Off** (Figure 7).

**Figure 7**

![Transmit Patient ID and Order Number Settings](image)

Press > to continue to the next screen. For **Age Required**, select either **On** or **Off** (Figure 8). If set to **On**, the User will need to enter the patient’s age prior to running each test.
Select ✔️ to confirm configuration and return to the Run Test screen.

**Test Virena Connection**

The final step of Virena configuration is to test the connection. This is accessed through the Export, Import, Delete screen in the Supervisor Menu. To test the connection, use ‹ or › in the first field to select Test Connection. Then ensure that ✔️ is selected and press ✔️ to begin the connection test (Figure 9). If successful, the on-screen pop-up will display Test connection success. If unsuccessful, the on-screen pop-up will display Test connection error. If the connection test is unsuccessful after a second attempt, please contact Quidel Technical Support.
Statistics

View Analyzer Info
The first screen of View Analyzer Info displays the **Firmware Version**, **Hardware Version**, **No. of scans**, and **Serial Number** (Figure 10).

Select ➤ to continue to the next screen or  to return to the Run Test screen.

Figure 10

The second screen of View Analyzer Info displays the **Ethernet MAC**, **WiFi MAC**, **Cellular firmware version**, **IMEI**, and **ICCID** (Figure 11).

Select  to return to the Run Test screen.
**Figure 11**

![View Message Log](image1.png)

**View Message Log**

View Message Log displays the Error Code, Date and Time (Figure 12).

Select 🏡 to return to the Run Test screen.

**Figure 12**

![Error Code Table](image2.png)

**Managing Users**

![Menu](image3.png)
**Add User**

To add a User, Select ✖ on the Add User screen (Figure 13).

Use the on-screen keypad or barcode scanner to enter the User ID. User ID must be at least 4 digits.

Then choose User Type by selecting Operator or Supervisor.

Enter the name for the new user using the on-screen keypad.

To delete a letter, press ◀ on the keypad.

Pressing ✗ at any time cancels all previous changes and returns the Name to the previous setting.

When the name is complete, press ✔.

**Figure 13**

---

**Edit User**

Select a User by touching anywhere within the row, then select ✔. Use the on-screen keypad to edit the User information (Figure 14).
Figure 14

When the information is complete, press ✅.

**Delete User**

Select a User by touching anywhere within the row, then select ✗ to delete User (Figure 15). This action cannot be undone. If a User is deleted by mistake, re-add the User as described above.

Figure 15

**Note:** Maximum number of Users is 100.
Export, Import, Delete

Export, Import, or Delete Data Types
Supervisors may export, import, or delete data to/from either a USB flash drive or the device (Figure 16). Most standard USB flash drives may be used with Sofia 2.

Figure 16

Export Settings to USB Flash Drive
Supervisors may export the settings of one Sofia 2 to import to another Sofia 2.

Use the < or > in the first field to select Export.

In the next field, use < or > to select Settings.
Insert a USB flash drive and select <, then select > to export Sofia 2 settings data. Once complete, it is safe to remove the USB flash drive.

When cloning Sofia 2, all settings including Test Type Files will transfer over. User history, lot status, QC and test data will not transfer over.
**Import Settings from USB Flash Drive**

To import the settings of one Sofia 2 onto another Sofia 2, insert the USB flash drive from the “Master” Sofia 2 that has the settings you wish to duplicate.

Use ← or → in the first field to select Import.

In the next field, use ← or → to select Settings.

Select ⬅️, then select ✓️ to import Sofia 2 settings data. Once complete, it is safe to remove the USB flash drive.

**Note:** When importing settings from one Sofia 2 to another, patient and QC results on the incoming Sofia 2 will be deleted.

**Export Test Records & Logs to USB Flash Drive**

Test records may be exported to a desktop computer for back up or analysis.

Use ← or → in the first field to select Export.

In the next field, use ← or → to select Test Records or Logs.

Insert a USB flash drive and select ←, then select ✓️ to export Sofia 2 test records data. Once complete, it is safe to remove the USB flash drive.

Three “csv” files will be created, one each for patient, QC and Calibration. Each time a patient, QC or Calibration Cassette is run, the result will be appended to the appropriate file on the USB flash drive.

**Note:** Official records of all test results are displayed. Saved data (test results) are for convenience only and are to be managed by the Supervisor.

**Sofia 2 Firmware**

Occasionally, Quidel may release firmware updates to improve functionality of Sofia 2. Users can ensure that their Sofia 2 has the most current firmware by enrolling for an account and registering their Sofia 2 at myquidel.com. By following the instructions on the site, Supervisors may install updates from a USB flash drive. Additional detail can be found at myquidel.com.

**Import Firmware from USB Flash Drive**

Insert USB flash drive with the firmware to install.

Use ← or → in the first field to select Import.

In the next field, use ← or → to select Firmware.
Select **, then select ✔ to import Sofia 2 firmware. Sofia 2 will complete a self-installation and then power up in the normal startup screen. Once complete, it is safe to remove the USB flash drive.

**Run Test (Patient Specimens)**

The Run Test screen can also be accessed by selecting ** on most screens.

*Enter the User ID*

User ID can be entered using the barcode scanner or manually using the on-screen keypad.

Select the **User ID** field on the Run Test screen. Use the barcode scanner (Figure 17) to scan the barcode from a User’s ID Card or manually enter the data using the on-screen keypad on Sofia 2.

*Enter the Patient ID*

Patient ID can be entered using the barcode or manually using the on-screen keypad.

Select the **Patient ID** field on the Run Test screen. Use the barcode scanner (Figure 17) to scan a Patient ID barcode from a patient chart or other source or manually enter the data using the on-screen keypad on Sofia 2.

*Figure 17*
**Enter the Order Number, if applicable**

Order Number can be entered using the barcode or manually using the on-screen keypad.

Select the **Order Number** field on the Run Test screen. Use the barcode scanner to scan an order number barcode from a patient test requisition or other source or manually enter the data using the on-screen keypad on Sofia 2.

**Change Development Mode**

Select the desired Development mode: **WALK AWAY** or **READ NOW** (See description of the WALK AWAY and READ NOW development modes on page 11).

**IMPORTANT:** Refer to the assay-specific Package Insert for each specific test for instructions on preparing Test Cassettes with patient samples.

The current development mode will be highlighted below the Order Number field (Figure 18). If the highlighted mode is the desired mode, no changes are required.

**Figure 18**

![Sofia 2 Run Test Screen](image)

**Test Procedure**

In the **WALK AWAY** development mode, proceed directly to the next steps as soon as the patient specimen has been processed and added to the Test Cassette. Do not let the Test Cassette develop outside Sofia 2.

In the **READ NOW** development mode, remember to first manually time the test development of the patient specimen Test Cassette outside of Sofia 2 at room temperature for the required period of time (as defined in the assay-specific Package Insert) **before** proceeding to the next step.

To access additional detail on the two development modes from the Run Test screen select 🔍. To return to the Run Test screen from the pop-up, select ✔️.

**Press ▶️**

After ID information and development mode are entered, press ▶️ to advance to the next screen.
If Virena has been configured, the User will advance to the patient information screen where additional patient information may be entered.

If Age Required has been set to On, the User will be asked to enter the patient’s age before advancing. Refer to the Virena Settings section on page 19 for more information.

Press ➤ to advance to the next screen and gently pull open the Sofia 2 drawer.

**Note:** If Virena is not configured, the User will advance directly to the insert cassette screen after pressing ➤.

Insert the Test Cassette into the drawer and gently close the drawer (Figure 19).

**Figure 19**

Upon closing the drawer, Sofia 2 will start automatically and display the progress on the screen.

**Patient Test Results**

When the test is complete, the results for both the patient specimen test(s) and for the internal procedural control will be displayed on the Sofia 2 screen and automatically saved on the device.

If configured, results may also be stored in the cloud using Virena.

The results may be also be printed on an attached printer by selecting □.

Refer to the assay-specific Package Insert for details on how to interpret results for specific tests.

**Note:** Once results have been generated for an individual Test Cassette, Sofia 2 will no longer accept that Cassette a second time.
If the procedural control is \( \times \), repeat the test with a new patient sample and a new Test Cassette. To run another patient specimen, select \( \text{🏠} \) to return to the Run Test screen.

**Review Data**

In any list of Patient Results, you may show the detailed results by selecting the result to view (Figure 20).

**Review Patient Results**

Patient Results include the records for previously run patient tests.

**Review QC Results**

QC Results include the records for previously run QC (Positive and Negative Control) tests.

The operator is able to locate QC result details in the same manner as Patient Test Results (Figure 21).
Figure 21

Select the home icon to return to the Run Test screen.

**Review Calibration Results**

Sofia 2 Calibration Results include the records for previously run Calibration tests.

A list of the calibrations performed will be displayed (Figure 22).

Figure 22

Select the home icon to return to the Run Test screen.

**View Lot Status**

**QC Lot Status**

QC Lot Status displays the QC Kit/Lots of assays and their expiration dates. This information is captured by Sofia 2 when Quality Controls are run.

A list of the Kit/Lots that have been processed by the QC procedure will be displayed along with the expiration date.

Select the home icon to return to the Run Test screen.

**View Test Types**

A list of the installed Test Types and Version number loaded is displayed.
Select 🏛️ to return to the Run Test screen.

**Run QC**

External Quality Control (QC) may be tested to demonstrate that the assay-specific reagents, Test Cassettes and assay procedures are performing properly.

To run the External Controls, refer to the assay-specific Package Insert for each specific test for step-by-step instructions.

**Note:** When running Positive and Negative controls with a qualitative test, the Positive Control must be tested first before the Negative Control.

**QC Results**

Once the QC run is complete, the system will display either a valid result, ✔️, or an invalid result, ❌.

Select 🏛️ to complete the QC process and return to the Run Test screen.

If the QC controls do not pass, repeat the external control testing process or contact the Supervisor or Quidel Technical Support at 800.874.1517 (in the U.S.) for assistance before testing patient specimens. See page 3 for additional contact information.

**Run Calibration**
Calibration Check is a required function that ensures optimal performance by checking the internal Sofia 2 optics and functions.

**IMPORTANT:** Calibration Check must be performed within 30 days, prior to testing any patient sample.

Refer to the assay-specific Package Insert for Calibration Check frequency.

**Perform Sofia 2 Calibration Check**

Use the specific Calibration Cassette included with Sofia 2 for the Calibration Check. For replacement Calibration Cassettes, please contact Quidel Technical Support.

Following the prompts, insert the Calibration Cassette into Sofia 2 and gently close the drawer. Sofia 2 will perform the Calibration Check automatically.

Select 🏡 to return to the Main Menu after calibration is completed.

**Caution:** Store the Calibration Cassette in the provided storage pouch at room temperature (15°C to 30°C) between uses. Improper storage could damage the Calibration Cassette, which may lead to failed Sofia 2 Calibration Check. Do not touch the read window of the Calibration Cassette as this may impact the results.

**Calibration Results**

Sofia 2 displays results as either ✅ or ⌚️ indicating that Calibration Check is completed.

The calibration results are stored and can be recalled with the **Review Calibration Results** function of Sofia 2 from the **Review Data** menu (page 30).

**Note:** If Calibration Check does not complete successfully, notify the on-site Supervisor or contact Quidel Technical Support for assistance at 800.874.1517 (in the U.S.). See page 3 for additional contact information.

**Shutdown**

Turn off the unit by holding the power switch in the rear of the unit. Shutdown is complete when the screen goes dark.

**Maintenance and Cleaning**

**Maintenance**

**Note:** Sofia 2 must be sent to Quidel if maintenance is required. The User should not attempt any maintenance except for changing the battery and cleaning the external surfaces and Cassette drawer.
**Battery Power**

**Battery Intended Use**
Sofia 2 includes a rechargeable battery. The battery will automatically charge while plugged into AC power. Sofia 2 will automatically switch to battery power when AC power is not available.

**Battery Replacement**
Sofia 2 is shipped with an internal LiPo rechargeable battery with an expected life of approximately three years.

Use only a Quidel-supplied Sofia 2 replacement battery.

To optimize instrument performance and charging, it is recommended that the battery remain installed in the instrument.

Prior to replacing the battery, ensure that there is no cassette in Sofia 2. Then power down and unplug Sofia 2. Remove the battery cover on the rear of the instrument. Disconnect the battery cable and carefully slide out the battery (Figure 23).

Attach the new battery and replace the battery cover. Recycle or dispose of the lithium battery in accordance with all Federal, State and Local laws. To avoid fire and explosion hazard, do not burn or incinerate the battery. Batteries shall not be disposed of with municipal waste.

**Figure 23**

![Figure 23](image)

**Cleaning**

⚠️ **To reduce the risk of electrical shock:**

- Do not disassemble Sofia 2. Sofia 2 contains no user serviceable components.
- Possible electrical shock: Turn off and unplug Sofia 2 prior to cleaning. Do not clean the ports on the back of the instrument.
- Do not immerse or spray Sofia 2 in liquid.
- Do not clean the underside of the instrument.

Turn off and unplug Sofia 2 before cleaning. Use a soft cloth with 70% alcohol or 0.6% bleach solution to clean exterior of Sofia 2. Do not use soap or other solutions except those noted below. Wipe the external surfaces and cassette drawer only.

**Note:** The following disinfectants identified in EPA’s list of disinfectants for use against Ebola virus have been found by Quidel to be compatible for use with Sofia 2:

- Clorox Healthcare; Bleach Germicidal Cleaner (EPA Reg #: 56392-7)
- Clorox Commercial Solutions; Clean-Up Disinfectant Cleaner with Bleach 1 (EPA Reg #: 67619-17)
- Clorox Healthcare; Bleach Germicidal Wipes (EPA Reg #: 67619-12)

**Removing the Drawer for Cleaning**
Ensure that there is no cassette in the drawer and unplug Sofia 2. Gently pull drawer out until it stops, then lift up Sofia 2 and press the button as shown (Figure 24). The drawer can then be removed.

**Note:** If resistance is met, do not force. Apply slightly more pressure to release the catch.

**Figure 24**

![Image of Sofia 2 drawer removal](image)

Use a soft cloth with 70% alcohol or 0.6% bleach solution to clean the drawer only. **Do NOT** clean the interior of Sofia 2. **Do NOT** submerge drawer in cleaning solution.

After cleaning the drawer, insert it carefully aligning the rails of the drawer into the tracks of Sofia 2 (Figure 25).
Gently slide the drawer until it is latched closed. If resistance is met or the drawer does not slide easily, check the alignment of the rails in the track. Go to the Main Menu and perform Calibration.
## Appendices

### Appendix A Technical Specifications

**Sofia 2**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>22 cm deep x 12 cm wide x 12 cm high</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2 lbs (1 kg)</td>
</tr>
<tr>
<td><strong>Power Supply Input</strong></td>
<td>100-240 VAC, 50/60 Hz, self-switching (U.S./International), 2.93 Amp maximum</td>
</tr>
<tr>
<td><strong>Sofia 2 Input</strong></td>
<td>7.5V DC 2.5A</td>
</tr>
<tr>
<td><strong>Replaceable Batteries</strong></td>
<td>LiPo rechargeable battery</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>4-inch color LCD touchscreen</td>
</tr>
<tr>
<td><strong>LAN Interface</strong></td>
<td>RJ45 connector</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>15°C to 30°C / 59°F to 86°F</td>
</tr>
<tr>
<td><strong>Operating Humidity</strong></td>
<td>20% to 85% RH non condensing</td>
</tr>
<tr>
<td><strong>Operating Altitude</strong></td>
<td>2000 m maximum</td>
</tr>
<tr>
<td><strong>Shipping and Storage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>–20°C to 55°C</td>
</tr>
<tr>
<td><strong>Shipping and Storage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>20% to 85% RH non condensing</td>
</tr>
<tr>
<td><strong>Patient Test Result Storage</strong></td>
<td>1,000 tests maximum</td>
</tr>
<tr>
<td><strong>QC Results Storage</strong></td>
<td>200 results maximum</td>
</tr>
<tr>
<td><strong>Calibration Results Storage</strong></td>
<td>200 results maximum</td>
</tr>
</tbody>
</table>
The following barcodes have been configured at time of shipment:

**1D Barcodes:**
- UPC-A
- UPC-E
- EAN – 13 WITH EXTENDED COUPON CODE
- CODABAR
- INTERLEAVED 2 OF 5
- IATA CODE 2 OF 5
- CODE 11
- CODE 39
- CODE 93 AND 93i
- CODE 128
- GS1 DATABAR
- CODABAR
- CODE 128
- INTERLEAVED 2 OF 5
- GS1 DATABAR
- MSI

**2D Barcodes:**
- DATA MATRIX
- AZTEC CODE
- QR CODE

### Appendix B System Troubleshooting

**Error Messages**

**Note:** The chart below describes the error messages that may be displayed while using Sofia 2. If unable to resolve the problem after troubleshooting, please record the error message and contact Quidel Technical Support. The error message will help Technical Support diagnose the problem.

<table>
<thead>
<tr>
<th>Error</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNKNOWN_ERROR</td>
<td>Unexpected error.</td>
<td>Contact Technical Support.</td>
</tr>
<tr>
<td>USER_ID_MUST_BE_ENTERED</td>
<td>User ID must be entered.</td>
<td>Enter a valid User ID to proceed.</td>
</tr>
<tr>
<td>PATIENT_ID_MUST_BE_ENTERED</td>
<td>Patient ID must be entered.</td>
<td>Enter a Patient ID to proceed.</td>
</tr>
<tr>
<td>INVALID_USER_ID</td>
<td>Invalid User ID.</td>
<td>Enter a valid User ID to proceed.</td>
</tr>
<tr>
<td>NO_REMOVABLE_STORAGE</td>
<td>Removable storage is missing or unwritable.</td>
<td>Install a USB flash drive.</td>
</tr>
<tr>
<td>KIT_LOT_ID_MUST_BE_ENTERED</td>
<td>Kit Lot ID must be entered.</td>
<td>Enter the Kit Lot number.</td>
</tr>
<tr>
<td>WRITE_FAILED</td>
<td>File write failed.</td>
<td>Replace USB flash drive.</td>
</tr>
<tr>
<td>TEMPERATURE_OUT_OF_RANGE</td>
<td>Current temperature out of range of assay or system.</td>
<td>Temperature range allowed is 15°C to 30°C / 59°F to 86°F.</td>
</tr>
<tr>
<td>PRINTING_ERROR</td>
<td>Printing failed.</td>
<td>Check connection to printer.</td>
</tr>
<tr>
<td>Error</td>
<td>Description</td>
<td>Action</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>INVALID_QC_CARD_BARCODE</td>
<td>Invalid QC Card Barcode.</td>
<td>Check or rescan QC Card.</td>
</tr>
<tr>
<td>PRINTER_NOT_FOUND</td>
<td>Printer not found.</td>
<td>Check connection to printer.</td>
</tr>
<tr>
<td>UNREADABLE_CASSETTE</td>
<td>Unreadable cassette barcode.</td>
<td>Ensure Cassette is inserted properly and there are no markings on the barcode.</td>
</tr>
<tr>
<td>CASSETTE_NOT_VALID_FOR_CURRENT_TEST</td>
<td>Cassette type not valid for current test.</td>
<td>Retest using a Cassette of the correct device type.</td>
</tr>
<tr>
<td>MISSING_ASSAY_METHOD</td>
<td>Method file unavailable for supplied assay type.</td>
<td>Only test with approved Sofia 2 assays.</td>
</tr>
<tr>
<td>CASSETTE_PREVIOUSLY_USED</td>
<td>Cassette has previously been used.</td>
<td>Use a Test Cassette that has not been previously run.</td>
</tr>
<tr>
<td>DRAWER_OPEN</td>
<td>Cassette drawer is open, unable to read barcode.</td>
<td>Close drawer to proceed with test.</td>
</tr>
<tr>
<td>SCANNING_BARCODE</td>
<td>Barcode scanning in progress, cassette availability pending.</td>
<td>Wait until barcode scan is complete.</td>
</tr>
<tr>
<td>EXPIRED_BARCODE</td>
<td>Supplied cassette has expired.</td>
<td>Retest with a non-expired Cassette.</td>
</tr>
<tr>
<td>CALIBRATION_OVERDUE</td>
<td>The calibration period has expired and the instrument is locked until calibration has been successfully completed.</td>
<td>Calibrate Sofia 2.</td>
</tr>
<tr>
<td>CASSETTE_ERROR</td>
<td>The cassette barcode is invalid, missing or unreadable.</td>
<td>Retest using a Cassette with a valid barcode.</td>
</tr>
<tr>
<td>DATA_EXPORT_ERROR</td>
<td>Data could not be successfully exported.</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>DATA_IMPORT_ERROR</td>
<td>Data could not be successfully imported.</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>DUPLICATE_USER_ID_ERROR</td>
<td>The User ID already exists.</td>
<td>Choose another User ID.</td>
</tr>
<tr>
<td>EXPIRED_QC_CARD</td>
<td>The QC Card is past the expiration date.</td>
<td>Retest with a non-expired QC Card.</td>
</tr>
<tr>
<td>FIRMWARE_UPGRADE_ERROR</td>
<td>USB Flash Drive not found or has wrong format.</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>INVALID_USER_NAME</td>
<td>The User Name contains invalid characters.</td>
<td>Enter a User Name containing 20 characters or less.</td>
</tr>
<tr>
<td>Error</td>
<td>Description</td>
<td>Action</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LOG_FILE_EXPORT_ERROR</td>
<td>Log file could not be successfully exported.</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>LOW_BATTERY_WARNING</td>
<td>Battery is low.</td>
<td>Connect Sofia 2 to AC power or charge battery before running another test.</td>
</tr>
<tr>
<td>CALIBRATION_ERROR</td>
<td>Calibration Failed.</td>
<td>Contact Technical Support.</td>
</tr>
<tr>
<td>POST_ERROR</td>
<td>Power On Self Test Error.</td>
<td>Clean the drawer, including the two chips located on either side of the drawer, re-boot instrument and retry. If not corrected, discontinue use and contact Technical Support.</td>
</tr>
<tr>
<td>SUPERVISOR_ID_ERROR</td>
<td>The supervisor ID should have between 4-12 characters.</td>
<td>Check Supervisor ID and re-enter.</td>
</tr>
<tr>
<td>LAST_SUPERVISOR_ERROR</td>
<td>The last supervisor cannot be changed.</td>
<td>Create a replacement Supervisor or set a new default Supervisor before changing User status.</td>
</tr>
<tr>
<td>WRONG_VALUE_MEASURED</td>
<td>Stray light or wrong calibration.</td>
<td>Restart Sofia 2 and if issue continues, contact Technical Support.</td>
</tr>
<tr>
<td>INVALID_OPERATOR_NUMBER</td>
<td>The operator number is either a duplicate (i.e. another user has the same operator number) or is longer than 20 digits.</td>
<td>Enter a valid Operator number.</td>
</tr>
<tr>
<td>CANNOT_DELETE_LOGGED_IN_USER</td>
<td>The logged-in user has attempted to delete themselves.</td>
<td>Log out User and log in as another User before deleting.</td>
</tr>
<tr>
<td>CANNOT_DEMOTE_LOGGED_IN_USER</td>
<td>The logged-in user has attempted to demote themselves to an operator.</td>
<td>Log out User before changing User status.</td>
</tr>
<tr>
<td>FIRMWARE_UPGRADE_NO MAINS</td>
<td>No mains power present when performing the upgrade.</td>
<td>Connect Sofia 2 to AC power before upgrading firmware.</td>
</tr>
<tr>
<td>FIRMWARE_UPGRADE_NO_FILES</td>
<td>Could not find a valid upgrade file on the USB media.</td>
<td>Ensure that correct firmware upgrade file has been downloaded from myquidel.com.</td>
</tr>
<tr>
<td>FIRMWARE_UPGRADE_FAILED</td>
<td>There was an error during the upgrade (e.g. failed to write upgrade).</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>Error</td>
<td>Description</td>
<td>Action</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FIRMWARE_UPGRADE_NO_REMOVABLE_STORAGE</td>
<td>No USB media was present when starting the upgrade process.</td>
<td>Confirm correct USB flash drive was used and inserted correctly.</td>
</tr>
<tr>
<td>MATCHING_PIN_AND_OPERATOR_NUMBER</td>
<td>The user has the same value for their PIN and operator number.</td>
<td>Enter a PIN that is different from the operator number.</td>
</tr>
<tr>
<td>INSUFFICIENT_USER_RIGHTS</td>
<td>User rights are insufficient to access a function.</td>
<td>Log in as a Supervisor to access this function.</td>
</tr>
<tr>
<td>SURVEILLANCE_CONNECTION_ERROR</td>
<td>Surveillance connection failed due to failure of connection to Cellular network or Digi cloud.</td>
<td>Contact Technical Support.</td>
</tr>
<tr>
<td>INVALID AGE</td>
<td>The user has entered an invalid age.</td>
<td>Enter an age between 1-129.</td>
</tr>
<tr>
<td>TEST_CONNECTION_ERROR</td>
<td>Test connection error.</td>
<td>Contact Technical Support.</td>
</tr>
<tr>
<td>RESET_DEVICE_OR_CONTACT_QUIDEL</td>
<td>Please reset device or contact Quidel Technical Support.</td>
<td>Restart Sofia 2 and if issue continues, contact Technical Support.</td>
</tr>
</tbody>
</table>

20299 – Sofia 2

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