

User Bulletin

ABI PRISM® 7700 Sequence Detection System

November 5, 2002

SUBJECT: Sequence Detection System (SDS) Software Version 1.9.1 Update

This user bulletin describes:

- How to upgrade to Sequence Detection System (SDS) Software Version 1.9.1 from Versions 1.6.3, 1.7, and 1.9
- Features new to SDS versions after 1.7
- Bug fixes to SDS versions after 1.7
- Troubleshooting outstanding issues

Important Note Sequence Detection System (SDS) software version 1.9.1 resolves the following issue:

When a threshold has been adjusted manually for a real-time run, previous versions of the SDS software fail to update the quantities for those wells that achieve C_t s of 40 (no amplification).

The versions 1.9 and 1.9.1 are identical except for the bug fix.

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Overview The Sequence Detection System (SDS) software version 1.9.1 is now available for download from the Applied Biosystems Web site at:

<http://www.appliedbiosystems.com/support/software/7700/updates.cfm>

The new release features several improvements over the previous version including:

- Stricter quality checks on calibration procedures
- Fixes for a number of bugs
- Validation compliance

IMPORTANT! Once an instrument has been upgraded to SDS software version 1.9.1 and you decide to revert back to version 1.6.3, a service call is required to downgrade the SDS software to SDS software version 1.6.3. The upgrade introduces several changes to the instrument firmware that do not work with SDS software version 1.6.3. No service call is required when downgrading to SDS software version 1.7.

Note: SDS versions 1.7 and 1.7a are functionally identical. SDS software version 1.7a was implemented to reflect the Applied Biosystems company name change.

What You Need to Know About the Update

Important Considerations Before Upgrading

IMPORTANT! Before upgrading your 7700 system, read the information in this section carefully to ensure that your system meets all of the minimum requirements.

The following items may help you decide whether to upgrade your instrument to SDS software version 1.9.1 and the changes you can expect to see in the new version of the software.

- This upgrade introduces a minor change to the instrument firmware that does not work with software versions earlier than SDS software version 1.7. Once the firmware is upgraded, you cannot downgrade the software to a version earlier than SDS software version 1.7 without assistance of an Applied Biosystems service engineer. If upgrading from version 1.6.3, follow the instructions on page 5, “Performing the version 1.9.1 Update,” to invoke proper firmware changes.
- After the installation, you must reconfigure your SDS software preferences. During installation, the software creates a new preference file specific to SDS software version 1.9.1.
- When the “Not In Use” sample type acronym is applied to a well in SDS software version 1.9.1, the function affects all dye layers.
- Improvements to the multicomponent algorithm may produce differences in SYBR[®] Green assay C_T values generated using SDS software version 1.9.1, compared to SDS software version 1.6.3.

Upgrade Information

The download places version 1.9.1 onto the system as soon as the extraction is complete. SDS software version 1.9.1 is now the default program for instrument operation and data analysis.

**SDS Software
Version 1.9.1
System
Requirements**



CAUTION

The SDS software version 1.9.1 upgrade does not support versions of the Macintosh OS earlier than 7.6.1. Installing SDS software version 1.9.1 to a computer running a Macintosh® Operating System version earlier than 7.6.1 may render the computer inoperable.

Macintosh 7200 computers must be running Mac OS 7.6.1 to upgrade to SDS software version 1.9.1. If another operating system is present, the upgrade may render the Macintosh inoperable. In particular, Macintosh 7200 computers should not be upgraded to Mac OS 8.0 or later, because the increased memory requirements of Macintosh OS 8.x may cause the SDS software to operate unreliably.

SDS software version 1.9.1 has not been tested and is not supported on operating systems later than OS 9.2.2. SDS software version 1.9.1 may not be compatible with Mac OS X.

To upgrade your instrument to SDS software version 1.9.1, you must have already upgraded to SDS software version 1.6.3 or later.

Note: You must have Aladdin Stuffit Expander™ to install the SDS software version 1.9.1 update. The latest version of Stuffit Expander is free and available on the Aladdin Systems, Inc. Web site (<http://www.aladdinsys.com>).

**Macintosh
Computer
Configurations**

The version 1.9.1 Sequence Detection System software has been tested and is fully supported on the following computer configurations (stand alone for data analysis or connected to the instrument).

Computer		OS	RAM	Virtual Memory	Hard Drive Space
G4 Power PC	800 MHz	OS 9.2.2	256 MB	Off	All computers listed in this table must have at least 100 MB of free hard drive space
G4 Power PC	867 MHz	OS 9.2.1	128 MB	Off	
G4 Power PC	533 MHz	OS 9.1	128 MB	Off	
G4 Power PC	500 MHz	OS 9.0.4	128 MB	Off	
G4 Power PC	450 MHz Dual Processor	OS 9.0.4	128 MB	Off	
G4 Power PC	450 MHz	OS 9.0.4	128 MB	Off	
G4 Power PC	500 MHz	OS 9.0.4	128 MB	Off	
G3 Power PC (blue and white)	350 MHz	OS 8.6	64 MB	Off	
G3 Power PC Desktop	233 MHz	OS 8.5.1	32 MB	Off	
7200	90 MHz	OS 7.6.1	24 MB	Off	
4400	200 MHz	OS 8.0	32 MB	Off	

How to Get the Update

Obtaining the Software from the Internet

SDS software version 1.9.1 is available from the Applied Biosystems Web site at:

<http://www.appliedbiosystems.com/support/software/7700/updates.cfm>

Before downloading the update, make sure that your computer meets the requirements specified on page 3.

Downloading the Software to an Internet-connected Macintosh

To obtain the update package, click the SDS software version 1.9.1 hyperlink from the Applied Biosystems Web site using either Netscape or Internet Explorer (version 4.0 or later) and your Macintosh downloads the compressed SDS v1.9.1.sit.hqx file. To extract the program, drag and drop the icon for the downloaded SDS v1.9.1.sit.hqx file onto the icon for the Aladdin Stuffit Expander program, and the Macintosh extracts the SDS software version 1.9.1 application. If the extraction fails, download a later version of Stuffit Expander from the Aladdin Systems, Inc. Web site (<http://www.aladdinsys.com>) and re-attempt the extraction.

Note: If unable to find the compressed SDS v1.9.1.sit.hqx file once downloaded, you can locate it using the Find (⌘-F) command from the File menu.

Downloading the Software to a Windows-Compatible Computer

If necessary, the SDS software version 1.9.1 update can be downloaded from the Applied Biosystems Web site to a Windows[®]-compatible computer, then transferred to a Macintosh computer and extracted for use. Use only Internet Explorer 4.0 or later (not Netscape) to do this.

To obtain the update package:

1. Right-click the SDS Software version 1.9.1 icon and select **Save Target as**.
The internet browser prompts you with options for downloading the software.
2. A file dialog box displays. It prompts you to choose where you want to save the file. Navigate to the desired destination (usually a PC-formatted Zip disk) and save the file as SDS v1.9.1.sit.hqx.
3. After transferring the file via the Zip disk to a Macintosh computer, drag and drop the compressed SDS 1.9.1.sit.hqx file onto the Aladdin Stuffit Expander™ software icon. This extracts the SDS software version 1.9.1 application.


Note: If the extraction fails, download a later version of Stuffit Expander from the Aladdin Systems, Inc. Web site (<http://www.aladdinsys.com>) and re-attempt the extraction.

Installing the Software

Performing the Version 1.9.1 Update

After reading the topics discussed on the previous page and verifying that your system meets the requirements for SDS software version 1.9.1, follow the instructions below to install the software to your 7700 system.

To install the software:

1. Verify your version number.
 - a. Open the existing SDS software on your instrument.
 - b. From the  menu, select About Sequence Detector.
 - c. Check the version number.

If the SDS version is less than 1.6.3, arrange for a Applied Biosystems service engineer to update your instrument before installing SDS software version 1.9.1.

2. If necessary, download the SDS version 1.9.1 program to your desktop (see “Obtaining the Software from the Internet” on page 4).

Upgrading From Version 1.6.3

After the SDS software 1.9.1.sea.hqx file has been decompressed, these two icons display on your desktop:

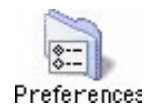


To upgrade from version 1.6.3:

1. Drag the SDS 1.9.1 application into the SDS Applications folder on your hard drive.



2. Open the System folder on your hard drive and locate the Preferences folder.



3. Drag the SDS Firmware image into the Preferences folder.
4. Restart the computer to use the new software.
5. Open SDS software version 1.9.1.

6. Reconfigure the SDS software preferences:
 - a. Click **Edit > Preferences**.
 - b. Reconfigure the preferences as needed, and click **OK**.
 - c. Open a document, and click **Show Analysis**.
 - d. Click **Analysis > Options**.
 - e. Reconfigure the analysis options as needed, and click **OK**.
 - f. Click **Instrument > Diagnostics > Advanced Options**.
 - g. Reconfigure the advanced options as needed, and click **OK**.

The software displays a message requesting you to quit and relaunch the application.

Note: It is not necessary to quit and relaunch the SDS software at this time.

IMPORTANT! The update does not require you to make any modifications to the existing Background Component or Pure Dye files.

Upgrading From Version 1.7

After the SDS software 1.9.1.sea.hqx file has been decompressed, these two icons display on your desktop:



To upgrade from version 1.7:

1. Drag the SDS 1.9.1 application into the SDS Applications folder on your hard drive.



2. Restart the computer to use the new software.
3. Open SDS software version 1.9.1.
4. Reconfigure the SDS software preferences:
 - a. Click **Edit > Preferences**.
 - b. Reconfigure the preferences as needed, and click **OK**.
 - c. Open a document, and click **Show Analysis**.
 - d. Click **Analysis > Options**.
 - e. Reconfigure the analysis options as needed, and click **OK**.
 - f. Click **Instrument > Diagnostics > Advanced Options**.
 - g. Reconfigure the advanced options as needed, and click **OK**.

The software displays a message requesting you to quit and relaunch the application.

Note: It is not necessary to quit and relaunch the SDS software at this time.

IMPORTANT! The update does not require you to make any modifications to the existing Background Component or Pure Dye files.

New Features and Modifications

- Upgrade for All Versions** SDS software version 1.9.1 is intended to be an upgrade for all versions (version 1.6.3, version 1.7, and version 1.7a).
- Note:** SDS software version 1.9.1 is not compatible with the TaqMan® Human Cytokine card. Customers using the card should continue to use either SDS software version 1.7.1 or SDS software version 1.7.1a.
- Spectral Calibration** Two additional checks have been added to the Spectral Calibration function in order to insure more reliable calibration of the instrument.
- A pure Spectra calibration should always be preceded by a Background Spectra calibration. Therefore, the software now checks the background spectra date-time stamp when running a Pure Spectra calibration; if the background spectra are older than one day, the user is not allowed to perform a pure spectra calibration until the background spectra have been updated.
- During a Pure Spectra calibration, the software also verifies that the background and pure spectra were acquired with the same exposure times.
- Export Results** As with SDS software version 1.7, there is an option in the Export Results dialog box to request export of full-precision data (in SDS software version 1.6.3, the data was truncated to 2 or 3 digits). An extra column has been added to the exported data to indicate the Sample Name.
- Validation Compliant** SDS software version 1.9.1 is validation compliant.

Bug Fixes

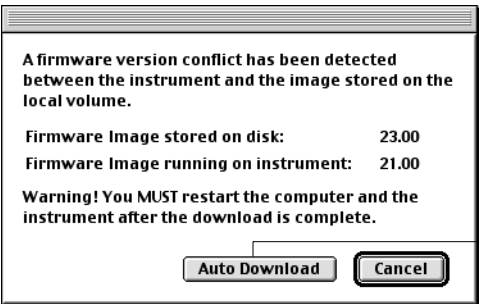
- | | |
|---|---|
| Amplification Plot Lock-up | Previously, in rare cases anomalous data from the thermal cycler or a complete lack of target amplification can cause the Amplification Plot to lock up the application during data analysis. In SDS version.1.9.1, some of these conditions have been fixed. Also, the Analysis Options allows the user to bypass the automatic display of the Amplification Plot during analysis. |
| AD Report Label Changes | On the Allelic Discrimination report, the labels FAM and TET have been changed to AL2 and AL1, respectively. |
| Save as...Cancel | In previous versions of software, selecting Save As and clicking on the Cancel button leads to file corruption. This has been fixed in SDS software version 1.9.1. |
| Saving a Document Multiple Times | When previous versions of software are installed on computers running Mac OS 9.1 or higher, the user can save an SDS document only once. This problem has been addressed in SDS software version 1.9.1. |
| View Background Component | Selecting View Background Component under Calibrate in the Instrument menu used to cause an application crash in previous versions of software. This has been fixed. |
| A1 Well Not In Use | When the A1 well is designated as Not In Use, previous versions of software displays an empty Amplification Plot graph. This has been corrected in SDS software version 1.9.1. |

Outstanding Issues

Macintosh OS Incompatibility	Due to compatibility problems Applied Biosystems does not support this software on the Mac OS 8.1 or Mac OS X.
Opening the Heated Cover Interlock	Do not open the heated cover while the system is running as this causes the shutter to close. The system continues to run but no fluorescence data is acquired.
Incorrect Error Message	When adding more characters than the field can accept, this error message displays: "A graph plot range failure has occurred in SetDataPoint."
Aborting Runs	When aborting a run, the system may become unstable and freeze. You may do a hard reset by quitting the application and restarting the computer.
Event Log	The text in the event-log can be edited and deleted.
Importing Labview Format Raw Data	When you import the LabView Format Raw Data into an allelic discrimination document, data inconsistencies appear. To avoid inconsistencies, save data immediately following the plate read.

Troubleshooting

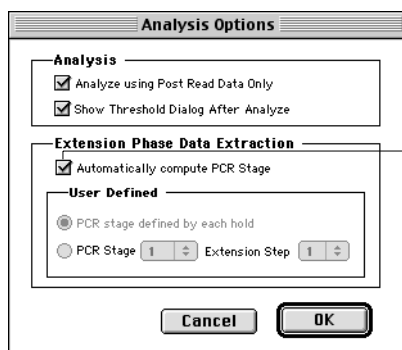
Troubleshooting Table The following table describes some issues, possible causes, and recommended actions when troubleshooting the instrument and software.

Observation	Possible Cause	Recommended Action
<p>The following error box appears when you attempt to begin a run.</p> 	<ul style="list-style-type: none"> The instrument was inactive for an extended period. The NiCad batteries in some older instruments have reached their life expectancies and do not permit the instruments to retain the new version of the instrument firmware. 	<ol style="list-style-type: none"> Click Auto Download. The software downloads the correct firmware from the Preferences folder. Quit the SDS software. Restart the Macintosh computer and the 7700 system. After the re-initialization is complete, run the SDS software. Re-configure a plate document with the settings for your run. Click Run. The instrument begins the run. <p>To prevent this problem, do not deactivate your 7700 system for extended periods.</p>
<p>When printing an SDS dialog box, the buttons in the printout do not contain the correct text. Instead, they display letters in the boxes next to the wells.</p>	<p>Your Macintosh is running OS 8.0 or 8.1 which are not compatible with SDS version 1.9.1.</p>	<p>Using the Macintosh Computer Configurations table on page 3, determine the correct operating system to use with your model Macintosh. Update your computer to a compliant version.</p>
<ul style="list-style-type: none"> Data is absent in the amplification plot, but visible in the plate view. and The X-axis of the amplification plot displays a range of 0–1 cycles. 	<ul style="list-style-type: none"> The plate does not contain amplification data. and/or The auto-compute feature of the SDS software is unable to detect the PCR stage and extension step for your run. 	<p>To correct the problem, manually assign the PCR stage for the SDS software analysis as shown in “Manually Configuring the PCR Stage.” If you are unable to exit the analysis dialog box:</p> <ol style="list-style-type: none"> Enter 0 in the Use Threshold, Baseline Start, and Baseline Stop text boxes. Click Update Calculation. Click OK.

Manually Configuring the PCR Stage

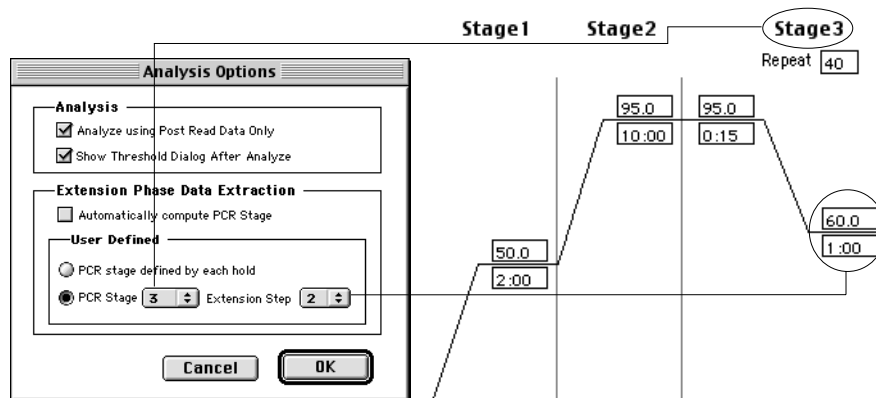
To manually set the PCR stage and extension step in the Analysis Options:

1. Click **Analysis > Options**.
The Analysis Options dialog box displays.
2. From the Extension Phase Data Extraction group box, click the **Automatically compute PCR Stage** check box to remove the check. The software activates the User Defined options box.



Click here to disable the auto-compute feature

3. Configure the manual settings for the PCR Stage and Extension Step:
 - a. Click the PCR Stage radio button within the User Defined group box.
 - b. From the Stage menu, select the PCR stage of your thermal profile.
 - c. From the Extension Step menu, select the extension step of your PCR stage. See the example below.



The software now analyzes only the stage and step you assigned.

- d. Click **OK**.
- e. Click **Analysis > Analyze**.

Technical Support

Service and Support

For service and support, access the Applied Biosystems Web site:

<http://www.appliedbiosystems.com>

At the Applied Biosystems Web site, you can:

- Search through frequently asked questions (FAQs)
- Submit a question directly to Technical Support
- Order Applied Biosystems user documents, MSDSs, certificates of analysis, and other related documents
- Download PDF documents
- Obtain information about customer training
- Download software updates and patches

In addition, the Applied Biosystems Web site provides a list of Technical Support telephone and fax numbers.

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