

User Bulletin

ABI PRISM® 7700 Sequence Detection System

July 6, 2000

SUBJECT: Sequence Detection System Software Version 1.7 Update (Revised)

Overview Version 1.7 of the Sequence Detection System (SDS) software is now available for download from the Applied Biosystems Web site. In addition to increased stability, the new release features several improvements over the previous version including:

- ◆ Improved algorithms
- ◆ Support for TaqMan® MGB Probes
- ◆ Ability to do programmed temperature ramps
- ◆ Enhanced SYBR® Green Analysis
- ◆ Updated Instrument Firmware

IMPORTANT Once an instrument has been upgraded to version 1.7, a service call is required to downgrade the SDS software to an earlier version. The upgrade introduces several changes to the instrument firmware that do not work with earlier versions of the SDS software.

IMPORTANT The SDS software version 1.7 upgrade is not validation compliant. Customers requiring validation compliance must continue to use SDS version 1.6.3 until the next validation compliant version is released toward the end of this calendar year.

Note Version 1.7 no longer supports the 7200 plate reader instrument, which is now discontinued.

In This User Bulletin This user bulletin contains information on the following topics:

Topic	See Page
What You Need to Know About the Update ^a	2
How to Get the Update	3
Installing the Software	4
New Features and Modifications	5
Bug Fixes	10
Outstanding Issues	10
Troubleshooting	11
Technical Support	13

a. Before upgrading your ABI PRISM 7700 instrument, read the information in this section carefully to ensure that your system meets all of the minimum requirements.

What You Need to Know About the Update

Important Considerations Before Upgrading

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

The following list of bullet points discusses the important factors that may help you decide whether to upgrade your instrument to version 1.7 and the changes you can expect to see in the new version of the software.

- ◆ The SDS software version 1.7 upgrade is not validation compliant. Customers requiring validation compliance must continue to use SDS version 1.6.3 until the next validation compliant version is released toward the end of this calendar year.
- ◆ To upgrade your instrument to SDS version 1.7, it must first be running SDS version 1.6.3. The version 1.7 upgrade is not compatible with earlier versions of the SDS software.
- ◆ Once upgraded to version 1.7, you will not be able to downgrade the software to an earlier version without the assistance of an Applied Biosystems service engineer. The upgrade introduces several changes to the instrument firmware that do not work with earlier versions of the SDS software.
- ◆ After the installation, you must reconfigure your SDS software preferences. During the upgrade, the installation program discards the existing SDS Preferences file.
- ◆ In contrast to previous versions of the SDS software, when the “Not In Use” sample type acronym is applied to a well in SDS version 1.7, the function affects all dye layers. See “Not In Use’ Function” on page 10 for more information.
- ◆ Improvements to the multicomponent algorithm may produce differences in SYBR Green assay C_T values generated using SDS version 1.7. See “Enhanced SYBR Green Assay Analysis” on page 9 for more information.

Version 1.7 System Requirements

CAUTION Installing version 1.7 of the SDS software to a computer running a Macintosh® Operating System version earlier than 7.6.1 may render the computer inoperable. The SDS software Version 1.7 upgrade does not support versions of the Macintosh OS earlier than 7.6.1.

Your Macintosh computer must meet the minimum following hardware and software requirements to install version 1.7 of the Sequence Detection System software:

Macintosh Model	7200 ^{a,b}	4400	G3	G4
Macintosh OS Versions	7.6.1	7.6.1	8.5.1/8.6	9.0
Memory Configuration	32 MB	32 MB	64 MB	64 MB
Virtual Memory Configuration	OFF			
Storage Requirements	100 MB			

a. Macintosh 7200 computers must run OS 7.6.1 to upgrade to SDS 1.7. If another operating system is present, the version 1.7 upgrade may render the Macintosh inoperable.

b. Macintosh 7200 computers running 1.7 should not be upgraded to OS 8.0 or later. The increased memory requirements of Macintosh OS 8.x may cause the SDS software to crash.

How to Get the Update

Obtaining the Software from the Internet

The SDS software version 1.7 is available from the Applied Biosystems Web site (<http://www.pebio.com/techsupp/swpps/7700sw.html>). Before downloading the update, make sure that your computer meets or exceeds the minimum requirements specified on page 2.

Note You must have Aladdin Stuffit Expander™ to install the SDS 1.7 software update. The latest version of Stuffit Expander is free and available on the Aladdin Systems, Inc. Web site (<http://www.aladdinsys.com>).

Downloading the Software to a Macintosh

To obtain the update package, click the SDS 1.7 hyperlink from the Applied Biosystems Web site and your Macintosh will download the compressed SDS 1.7 .hqx file. To extract the installer, drag and drop the icon for the downloaded SDS 1.7 .hqx file onto the icon for the Aladdin Stuffit Expander program, and the Macintosh will extract the SDS v 1.7 Installer file. If the installation fails, download a later version of Stuffit Expander from the Aladdin Systems, Inc. Web site (<http://www.aladdinsys.com>) and re-attempt the installation.

Note If unable to find the compressed SDS 1.7 .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 1.7 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.

To obtain the update package:

Step	Action
1	Click the SDS Software Version 1.7 hyperlink from the Applied Biosystems Web site. The internet browser prompts you with options for downloading the software.
2	Follow the instructions for downloading the software. The computer downloads the compressed SDS 1.7 .hqx file from the Web site.
3	Transfer the compressed SDS 1.7 .hqx file to the desktop of the Macintosh computer to which you wish to install the software. Note If unable to find the compressed SDS 1.7 .hqx file once downloaded, you can locate it using the Find utility from the Start menu.
4	Drag and drop the compressed SDS 1.7 .hqx file onto the Aladdin Stuffit Expander™ software icon. Note If the installation fails, download a later version of Stuffit Expander from the Aladdin Systems, Inc. Web site (http://www.aladdinsys.com) and re-attempt the installation. The Stuffit Expander extracts the compressed SDS v 1.7 Installer file.

Upgrading During a Service Visit

Applied Biosystems service personnel can upgrade your instrument software during a routine maintenance visit. Before requesting the upgrade, make sure that your computer meets the minimum requirements specified on page 2.


Installing the Software

What Occurs During the Installation

During the installation, the SDS v 1.7 Installer program will selectively replace and modify the program files for the existing version of the SDS software. The update is completely automated and does not require you to make any modifications to the existing Background Component or Pure Dye files.

Performing the Version 1.7 Update

After reading the topics discussed on the previous page and verifying that your system meets the minimum requirements for SDS version 1.7, follow the instructions below to install the software to your ABI PRISM 7700 instrument.

Step	Action
1	Verify that your instrument is running the correct version of the SDS software. 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 software before installing version 1.7.
2	If necessary, download the SDS v 1.7 Installer program to your desktop (see "Obtaining the Software from the Internet" on page 3).
3	Double-click the SDS v 1.7 Installer installer icon and follow the instructions given by the installer software. The software installs the SDS software version 1.7 to your computer, and prompts you to Continue or Quit the installation.
4	Click Quit .
5	Open SDS software version 1.7.
6	Reconfigure the SDS software preferences as follows: a. From the Edit menu, select Preferences . The Preferences dialog box appears. b. Reconfigure the Preferences as needed, and click OK . c. Open a document, and click Show Analysis . d. From the Analysis menu, select Options . The Analysis Options dialog box appears. e. Reconfigure the Analysis Options as needed, and click OK . f. From the Instrument menu, scroll to the Diagnostics submenu, and select Advanced Options . The Advanced Options dialog box appears. g. Reconfigure the Advanced Options as needed, and click OK . The software displays a warning message requesting you to quit and relaunch the application. Note It is not necessary to quit and relaunch the SDS software at this time.

New Features and Modifications

Feature Summary Version 1.7 of the SDS software features the following improvements and modifications:

Feature	See Page
Improved Algorithms	5
Support for TaqMan MGB Probes	6
Data Collection on Programmed Ramps	6
Enhanced SYBR Green Assay Analysis	9

Improved Algorithms

Improved Allelic Discrimination

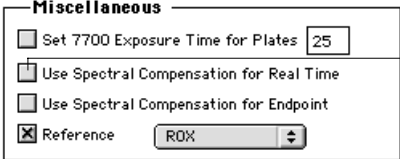
The allelic discrimination algorithm is now more reliable. Under certain assay conditions, the allelic discrimination algorithm would generate unscored wells. The improved algorithm reduces the number of unscored wells and consequently reduces the number of samples that must be reanalyzed.

Enhanced Spectral Compensation

SDS 1.7 features an enhanced version of the spectral compensation algorithm. The recommended usage is as follows:

- ◆ For all multi-reporter real-time and end-point runs (including Allelic Discrimination), spectral compensation should be activated for the post run analysis. Activating spectral compensation improves dye spectral resolution.
- ◆ For all single reporter real-time runs (including SYBR Green), spectral compensation is not required and should be deactivated for the post run analysis to ensure the most precise results.

To adjust the spectral compensation feature immediately after a real-time run:

Step	Action
1	If not within the Analysis view, click Show Analysis .
2	From the Diagnostics submenu in the Instrument menu, select Advanced Options . The Advanced Options dialog box opens.
3	Click the Use Spectral Compensation for Real Time checkbox within the Miscellaneous group box. 
4	Click OK . The software displays a warning message requesting you to quit and relaunch the application. Note It is not necessary to quit and relaunch the SDS software at this time.

Support for TaqMan MGB Probes

Version 1.7 of the SDS software supports the non-fluorescent quenchers of TaqMan MGB Probes used for allelic discrimination assays. In previous versions of the software, TAMRA™ was hardcoded as the only quencher for allelic discrimination probes. With the introduction of non-fluorescent quenchers, the software was modified to permit the use of probes that employ other quenchers. See the *Primer Express Version 1.5 and TaqMan MGB Probes User Bulletin* (P/N 4317594) for more information on the design and use of TaqMan MGB Probes in allelic discrimination assays.

Note Real-time runs are not affected by this modification and were always able to support analysis of probes with non-fluorescent quenchers.

Data Collection on Programmed Ramps

Note This feature was included in the SDS software version 1.7 to support the use of the ABI PRISM™ Dissociation Curve Analysis software, which will be available free-of-charge from the Applied Biosystems Web site.

SDS software version 1.7 supports data collection on programmed ramps (up to 19:59 minutes). The ramping feature can be employed at any PCR stage by selecting the desired stage from the thermal cycler profile and clicking the “Set Ramp Time” button. Data collected using this feature can be exported as a multicomponent file and analyzed using the ABI PRISM™ Dissociation Curve Analysis software.

Guideline for Programming Temperature Ramps

Applied Biosystems recommends programming ramps so that they span the longest possible time (up to 19:59 minutes). Longer programmed ramps provide the greatest separation of the derivative peaks during the analysis, and therefore the maximum resolution for the run.

The following procedure demonstrates how to configure the recommended programmed ramp on the 7700 instrument for a SYBR Green assay.

To program the ABI PRISM 7700 instrument for a ramp:

Step	Action								
1	Choose New Plate from the File menu. The New Plate dialog box appears.								
2	Configure the New Plate dialog box as follows: a. Select the following options from the pop-up menus. <table border="1" data-bbox="571 1451 1075 1612"><thead><tr><th>Pop-up Menu</th><th>Choose...</th></tr></thead><tbody><tr><td>Plate Type</td><td>Single Reporter</td></tr><tr><td>Plate Format</td><td>Standard Plate</td></tr><tr><td>Run</td><td>Real Time</td></tr></tbody></table> b. Click OK . The software creates a plate document with the specified characteristics.	Pop-up Menu	Choose...	Plate Type	Single Reporter	Plate Format	Standard Plate	Run	Real Time
Pop-up Menu	Choose...								
Plate Type	Single Reporter								
Plate Format	Standard Plate								
Run	Real Time								

To program the ABI PRISM 7700 instrument for a ramp: *(continued)*

Step	Action
3	<p>Disable the quencher dye for the SYBR Green assay.</p> <p>a. From the Sample Type Palette submenu in the Setup menu, select Sample Type Setup.</p> <p>The Sample Type Setup dialog box appears.</p> <p>b. Click the Quencher checkbox to remove the check mark from the option.</p> <p>c. Click OK.</p>
4	<p>Choose Thermal Cycler Conditions (36-T) from the Setup menu.</p> <p>The Thermal Cycler Conditions dialog box appears.</p>
5	<p>Configure the Thermal Cycler Conditions profile with two holds for the maximum and minimum temperatures of the ramp.</p> <div data-bbox="586 667 1065 1129" style="border: 1px solid black; padding: 5px;"> </div> <p>Maximum ramp temperature</p> <p>Minimum ramp temperature</p>
6	<p>Click or select the second stage of the ramp.</p> <p>The software will highlight the selected stage in red.</p>
7	<p>Click Set Ramp Time.</p> <p>The Ramp Time dialog box appears.</p>

To program the ABI PRISM 7700 instrument for a ramp: *(continued)*

Step	Action
8	<p>Set the elapsed time for the ramp:</p> <p>a. Click the arrow buttons on either side of the display to set the ramp time.</p> <div data-bbox="586 369 1159 552"> </div> <p>Note The total elapsed time for the ramp cannot exceed 19:59 minutes.</p> <p>b. Click OK.</p> <p>The software displays the elapsed time for the ramp in the diagonal line connecting the two stages.</p> <div data-bbox="586 758 1118 898"> </div>
9	<p>Click Show Data Collection.</p> <p>The Thermal Cycler Conditions dialog box displays the Data Collection options for the experiment.</p>
10	<p>Configure the Data Collection options as follows:</p> <p>a. If absent, add a data collection icon to the ramp by clicking on the slope.</p> <p>IMPORTANT Data collection must be turned on for all programmed ramps, otherwise the SDS software will not collect data during the ramp.</p> <div data-bbox="586 1192 1360 1549"> </div> <p>b. Click OK.</p>
11	<p>Configure the plate document with the sample and dye information.</p>
12	<p>Load the samples into the ABI PRISM 7700 Sequence Detection System.</p>
13	<p>Click Run to begin the ramp.</p> <p>IMPORTANT Deactivate spectral compensation for the post-run analysis of real-time and dissociation curve runs using the SYBR Green dye. See page 5 for more information on the spectral compensation feature.</p>

**Enhanced SYBR
Green Assay
Analysis**

IMPORTANT SDS version 1.7 requires that the SYBR Green entry in the Pure Dye Setup be abbreviated "SYBR". The software will not operate properly if another abbreviation is used or if any of the letters in the entry are lowercase.

The improvements made to the multicomponent algorithm also increase the precision and reproducibility of SYBR assays. Consequently, C_T values generated for a SYBR assay using version 1.7 may be slightly different than those generated with an earlier version of SDS software. The plots in Figures 1 and 2 illustrate the difference in analyzed SYBR Green data.

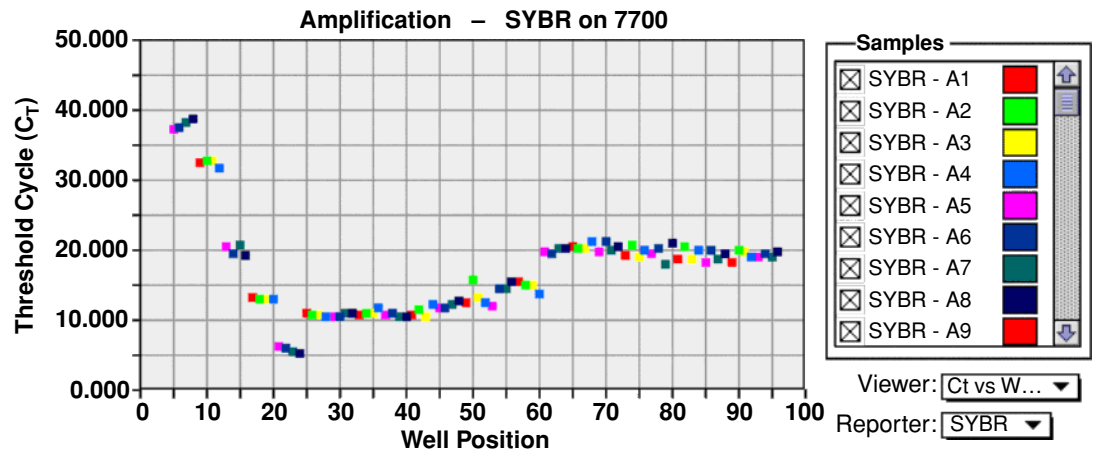


Figure 1 SDS Software Version 1.6.3 Analysis

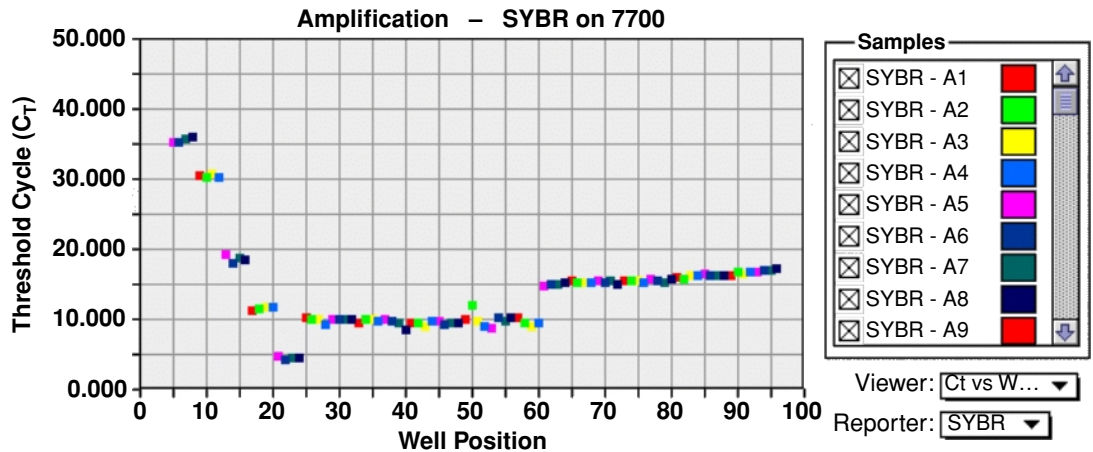


Figure 2 SDS Software Version 1.7 Analysis

Bug Fixes

“Save As” Errors In previous versions of the SDS software, data was occasionally lost when the “Save As” function was used before or after a run. This problem has been corrected in SDS version 1.7, so the function performs as expected.

“Not In Use” Function **IMPORTANT** If a well is set to “Not In Use” prior to a run, SDS 1.7 will not collect data for the well in any dye layer.

Unlike previous versions of the software, when the “Not In Use” sample type is applied to a well in SDS version 1.7, the software applies the label to the well in all dye layers, regardless of which dye layer the selection is made. The “Not In Use” function allows you to remove a well from analysis so that the software analyzes only wells that contain useful data.

Outstanding Issues

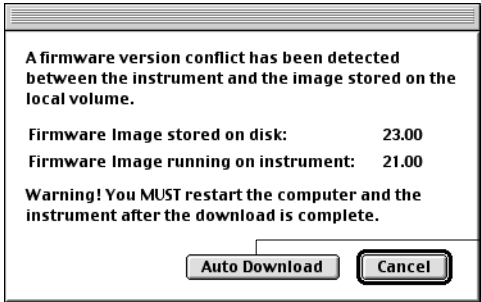

Macintosh Operating System Incompatibility Because of problems acknowledged by Apple regarding the Macintosh Operating System version 8.1, Applied Biosystems does not support Mac OS 8.1 for any model Macintosh computer.

Quantity Values Reported for Wells with C_T s of 40 When a threshold has been adjusted for a real-time run, the SDS software fails to update the quantities for those wells that achieve C_T s of 40 (no amplification) as a result of the adjustment. Upon analysis, the SDS software estimates an initial threshold setting for the run and presents the results in the Amplification Plot window. If the threshold is adjusted, the recalculation may cause some wells to reach C_T s of 40 (i.e., no amplification). Although the software should report the new quantities of the wells as zero, it does not reset the previous values for the wells.

This bug does not adversely affect the reporting of real data, however it does impact wells that should not have measurable amplification signal. Therefore, Applied Biosystems recommends that you disregard the reported quantity of any well with a C_T of 40.

Troubleshooting

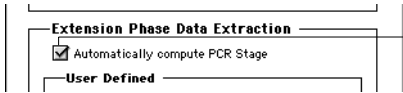
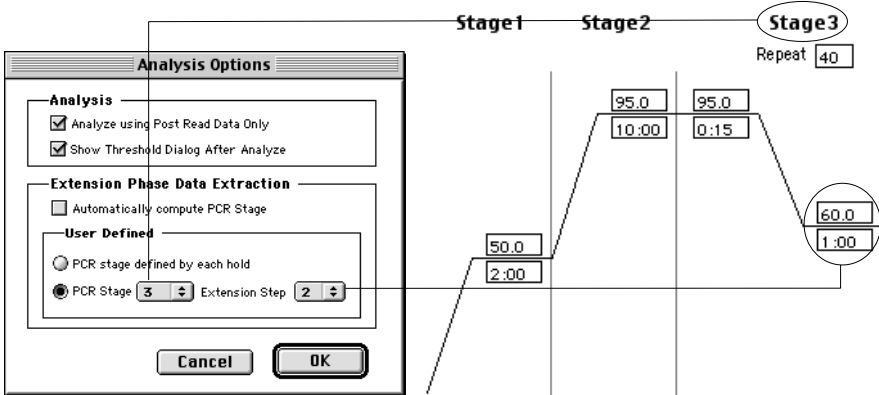
Troubleshooting SDS version 1.7

Observation	Possible Cause	Recommended Action
SYBR data analyzed in 1.7 varies from how it was analyzed in 1.6.3.	Improvements to the multicomponent algorithm produce differences in SYBR assay C _T values generated using SDS version 1.7. See "Enhanced SYBR Green Assay Analysis" on page 9 for more information.	No corrective action is warranted.
After adjusting the threshold, the software displays a quantity of product for wells with a C _T of 40 (no amplification).	This is a recognized bug in the SDS software. See "Quantity Values Reported for Wells with C _T s of 40" on page 10 for a full explanation.	Disregard any quantity value reported for a well with a C _T of 40. They are considered anomalous and invalid. The C _T values reported for other wells are accurate.
<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 of time. ◆ The lithium 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"> a. Click Auto Download. <p>The software downloads the correct firmware from the Preferences folder.</p> <ol style="list-style-type: none"> b. Quit the SDS software. c. Restart the Macintosh computer and the ABI PRISM 7700 Instrument. d. After the re-initialization is complete, run the SDS software. e. Re-configure a plate document with the settings for your run. f. Click Run. <p>The instrument begins the run.</p> <p>To prevent this problem, do not deactivate your 7700 instrument for extended periods of time.</p>
Wells selected as Not In Use are disabled in all dye layers instead of one as in previous versions of SDS.	The Not In Use function is a fixed feature of version 1.7. See page 10 for a full explanation.	No corrective action is warranted.
SDS application quits when you click on the Analysis menu.	The SDS program file is probably corrupt.	<p>Delete the SDS software program file located in the SDS folder and reinstall the software from the original CD.</p>  <p>Sequence Detector v1.7</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.	Your Macintosh is running OS 8.0 or 8.1 which are not compatible with SDS version 1.7.	Using the compatibility table on page 2, determine the correct operating system to use with your model Macintosh. Update your computer to a compliant version.

Observation	Possible Cause	Recommended Action
<ul style="list-style-type: none"> ◆ Data is absent in the amplification plot, but visible in the plate view. ◆ The X-axis of the amplification plot displays a range of 0–1 cycles. ◆ Closing the dialog box may be impossible. <p>IMPORTANT Do not force quit (option+⌘+esc) the application.</p>	<ul style="list-style-type: none"> ◆ The plate does not contain amplification data. ◆ The auto-compute feature of the SDS software is unable to detect the PCR stage and extension step for your run. 	<p>To exit the analysis dialog box:</p> <ol style="list-style-type: none"> a. Enter “0” in the Use Threshold, Baseline Start, and Baseline Stop text boxes. b. Click Update Calculations. c. Click OK. <p>To correct the problem, manually assign the PCR stage for the SDS software analysis as shown in the procedure below.</p>

Manually Configuring the PCR Stage

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

Step	Action
1	<p>From the Analysis menu, select Options.</p> <p>The Analysis Options dialog box appears.</p>
2	<p>From the Extension Phase Data Extraction group box, click the Automatically compute PCR Stage checkbox to remove the check.</p>  <p>The software activates the User Defined options box.</p>
3	<p>Configure the manual settings for the PCR Stage and Extension Step:</p> <ol style="list-style-type: none"> a. Click the second 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.  <p>Note The software will now analyze only the stage and step you assigned.</p>
4	Click OK .
5	From the Analysis menu, select Analyze .

Technical Support

Reaching Us on the Web

Applied Biosystems Web site address is:

<http://www.pebiosystems.com/techsupport>

We strongly encourage you to visit our web site for answers to frequently asked questions, and to learn more about our products. You can also order technical documents and/or an index of available documents and have them faxed or e-mailed to you through our site (see the "Documents on Demand" section below).

Reaching Us by E-Mail

Contact technical support by e-mail for help in the following product areas.

For this product area	Use this e-mail address
Chemiluminescence	info@tropix.com
Genetic Analysis	galab@pebio.com
LC/MS	apisupport@sciex.com
PCR and Sequence Detection	pclab@pebio.com
Protein Sequencing, Peptide and DNA Synthesis	corelab@pebio.com

Documents on Demand

Free 24-hour access to Applied Biosystems technical documents, including MSDSs, is available by fax or e-mail.

You can access Documents on Demand through the internet or by telephone:

To order...	Then...
through the internet	Use http://www.pebiosystems.com/techsupport You can search for documents to order using keywords. Up to five documents can be faxed or e-mailed to you by title.
by phone from the United States or Canada	a. Call 1-800-487-6809 from a touch-tone phone. Have your fax number ready. b. Press 1 to order an index of available documents and have it faxed to you. Each document in the index has an ID number. (Use this as your order number in step "d" below.) c. Call 1-800-487-6809 from a touch-tone phone a second time. d. Press 2 to order up to five documents and have them faxed to you.
by phone from outside the United States and Canada	a. Dial your international access code, then 1-858-712-0317 from a touch-tone phone. Have your complete fax number and country code ready (011 precedes the country code). b. Press 1 to order an index of available documents and have it faxed to you. Each document in the index has an ID number. (Use this as your order number in step "d" below.) c. Call 1-858-712-0317 from a touch-tone phone a second time. d. Press 2 to order up to five documents and have them faxed to you.

**Hours for Telephone
Technical Support**

In the United States and Canada, technical support is available at the following times.

Product	Hours
Chemiluminescence	9:00 a.m. to 5:00 p.m. Eastern Time
LC/MS	9:00 a.m. to 5:00 p.m. Pacific Time
All Other Products	5:30 a.m. to 5:00 p.m. Pacific Time

See the "Regional Offices Sales and Service" section below for how to contact local service representatives outside of the United States and Canada.

**Reaching Us by
Telephone or Fax in
North America**

Call Technical Support at 1-800-831-6844, and select the appropriate option (below) for support on the product of your choice at any time during the call. (To open a service call for other support needs, or in case of an emergency, press **1** after dialing 1-800-831-6844.)

For Support On This Product	Dial 1-800-831-6844, and...	
ABI PRISM® 3700 DNA Analyzer	Press	FAX
	8	650-638-5891
BioInformatics (includes BioLIMS™, BioMerge™, and SQL GT™ applications)	Press	FAX
	25	505-982-7690
DNA Synthesis	Press	FAX
	21	650-638-5981
Fluorescent DNA Sequencing	Press	FAX
	22	650-638-5891
Fluorescent Fragment Analysis (includes GeneScan® applications)	Press	FAX
	23	650-638-5891
Integrated Thermal Cyclers	Press	FAX
	24	650-638-5891
PCR and Sequence Detection	Press	FAX
	5 , or call 1-800-762-4001, and press 1 for PCR, or 2 for Sequence Detection	240-453-4613
Peptide and Organic Synthesis	Press	FAX
	31	650-638-5981
Protein Sequencing	Press	FAX
	32	650-638-5981

For Support On This Product	Dial 1-800-831-6844, and...					
Chemiluminescence	<table border="1"> <thead> <tr> <th>Telephone</th> <th>FAX</th> </tr> </thead> <tbody> <tr> <td>1-800-542-2369 (U.S. only), or 1-781-271-0045 (Tropix)</td> <td>781-275-8581 (Tropix) 9:00 a.m. to 5:00 p.m. ET</td> </tr> </tbody> </table>	Telephone	FAX	1-800-542-2369 (U.S. only), or 1-781-271-0045 (Tropix)	781-275-8581 (Tropix) 9:00 a.m. to 5:00 p.m. ET	
Telephone	FAX					
1-800-542-2369 (U.S. only), or 1-781-271-0045 (Tropix)	781-275-8581 (Tropix) 9:00 a.m. to 5:00 p.m. ET					
LC/MS	<table border="1"> <thead> <tr> <th>Telephone</th> <th>FAX</th> </tr> </thead> <tbody> <tr> <td>1-800-952-4716</td> <td>650-638-6223 9:00 a.m. to 5:00 p.m. PT</td> </tr> </tbody> </table>	Telephone	FAX	1-800-952-4716	650-638-6223 9:00 a.m. to 5:00 p.m. PT	
Telephone	FAX					
1-800-952-4716	650-638-6223 9:00 a.m. to 5:00 p.m. PT					

**Regional Offices
Sales and Service**

If you are outside the United States and Canada, you should contact your local Applied Biosystems service representative.

The Americas	
United States Applied Biosystems 850 Lincoln Centre Drive Foster City, California 94404 Tel: (650) 570-6667 (800) 345-5224 Fax: (650) 572-2743	Canada (Mississauga, Ontario) Tel: (905) 821-8183 (800) 668-6913 Fax: (905) 821-8246 Latin America (Del.A. Obregon, Mexico) Tel: (305) 670-5310 Fax: (305) 670-4349

Europe	
Austria (Wien) Tel: 43 01 867 35750 Fax: 43 01 867 357511	Hungary (Budapest) Tel: 36 1 270 8398 Fax: 36 1 370 8288
Benelux (Nieuwerkerk a/d IJssel, Netherlands) Tel: 31(0) 180 392355 Fax: 31(0) 180 392359	Italy (Milano) Tel: 39 (0)39 83891 Fax: 39 (0)39 8389492
Chekia Rep. (Praha) Tel: 420 2 4143 0534 Fax: 420 2 4143 0535	Norway (Oslo) Tel: 47 23 12 06 05 Fax: 47 23 12 05 75
Denmark (Allerød) Tel: 45 45 58 60 00 Fax: 45 45 58 60 01	Poland (Warszawa) Tel: 48 22 866 40 10 Fax: 48 22 866 40 20
Finland (Espoo) Tel: 358 (0)9 251 24 250 Fax: 358 (0)9 251 24 243	Portugal (Lisboa) Tel: 351 (0) 605 33 14 Fax: 351 (0) 605 33 15
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Europe (continued)	
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Japan
Japan (Hatchobori, Chuo-Ku, Tokyo) Tel: 81 3 5566 6100 Fax: 81 3 5566 6501

Eastern Asia, China, Oceania	
Australia (Scoresby, Victoria) Tel: (03) 9730 8600/1 800 033 747 Fax: (03) 9730 8799	Malaysia (Kuala Lumpur) Tel: 60 3 758 1118 Fax: 60 3 758 5688
China (Beijing) Tel: 86 10 6238 1135 Fax:	Singapore Tel: 65 896 2118 Fax: 65 896 2147
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P/N 4317584, Rev. B, Stock No. 117UB03-01