

## AMPLIFICATION

# CFX96 Touch™ and CFX96 Touch Deep Well™ Real-Time PCR Detection Systems Installation Quick Guide

### Unpacking the Instruments

The CFX96™ or CFX96 Deep Well™ optical reaction module and the C1000 Touch™ thermal cycler chassis are shipped in separate containers. Unpack each box carefully. The included power cable, USB cable, and CFX Manager™ software CD are required for installation. The CFX96 or CFX96 Deep Well optical reaction module may also be placed on a previously purchased C1000 Touch thermal cycler for a quick upgrade to a real-time PCR detection system.

**Important:** Carefully read the safety information and instrument operating specifications provided in the CFX96 Touch™, CFX96 Touch Deep Well™, CFX Connect™, and CFX384 Touch™ Real-Time PCR Detection Systems Instruction Manual before using the system.

### Setting Up the CFX96 Touch or CFX96 Touch Deep Well Real-Time PCR Detection System

The CFX96 Touch or CFX96 Touch Deep Well real-time PCR detection system should be installed on a clean, dry, level surface with sufficient cool airflow to run properly.

To insert the CFX96 or CFX96 Deep Well optical reaction module into the reaction module bay of the C1000 Touch chassis:

1. Place the C1000 Touch chassis in a suitable location with the locking bar down.
2. Remove the instructions overlay from the C1000 Touch chassis. Lift the CFX96 or CFX96 Deep Well module using the handle indents above the side air vents, as shown in Figure 1.
3. Position the CFX96 or CFX96 Deep Well module in the reaction module bay of the C1000 Touch chassis, leaving about 2 cm of space in the front.
4. Reach around the thermal cycler and pull up the locking bar (Figure 2) until it is flush with the sides of the module bay. This action moves the reaction module forward, locking it into place (Figure 3).
5. Use the supplied power cord to plug the chassis into an appropriate electrical outlet.
6. Turn on the CFX96 Touch or CFX96 Touch Deep Well system using the power switch on the back of the chassis.

### Removing the Red Shipping Screw

The CFX96 and CFX96 Deep Well optical reaction modules are shipped with a red screw in place in the inner lid in the hole corresponding to well A1 (see Figure 4). Follow the instructions in the C1000 Touch screen to remove this shipping screw before beginning operation.

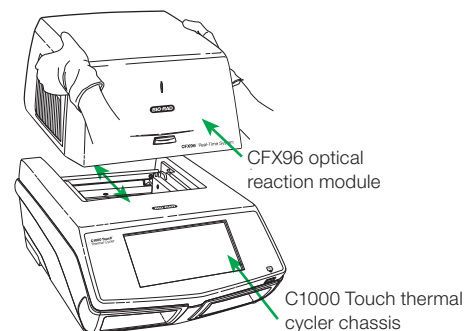


Fig. 1. Lifting the CFX96 optical reaction module onto the C1000 Touch thermal cycler chassis.

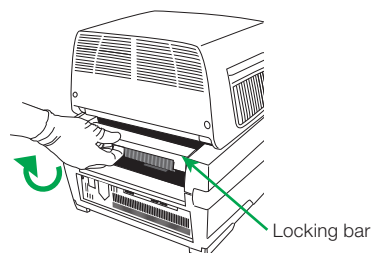


Fig. 2. Locking the CFX96 module into place.

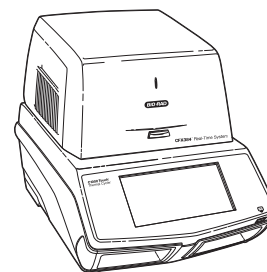


Fig. 3. The CFX96 module positioned on the C1000 Touch chassis.

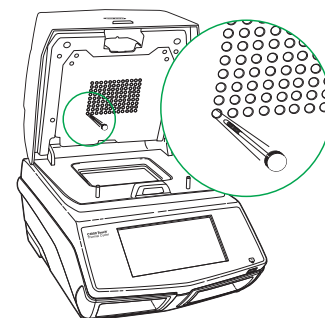


Fig. 4. Red shipping screw included with the CFX96 optical reaction module.

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# Operating under Software Control

## Installing CFX Manager Software

A computer with the Windows XP, Windows Vista, or Windows 7 operating system is required to run the software. Minimum computer specifications are listed in the CFX96 Touch, CFX96 Touch Deep Well, CFX Connect, and CFX384 Touch systems instruction manual. The software must be installed on the computer by a user with administrative privileges. To install CFX Manager software:

1. Disconnect any real-time instruments from the computer.
2. Place the CFX Manager software CD in the computer's CD drive. The software launch page should appear automatically.
3. Double click **Install Software** on the software launch page.
4. Follow the instructions onscreen to complete installation.
5. If the launch page does not appear automatically, double click **(CD drive):\Bio-Rad CFX**, then open and follow instructions in the Readme.txt file.

## Installing the Drivers

With the instrument powered off, plug the supplied USB cable into the USB B port (Figure 5) located on the back of the C1000 Touch chassis and into a USB 2.0 A port on the computer. Turn on the CFX96 Touch or CFX96 Touch Deep Well system using the power switch on the back of the chassis.

- If you are using a Windows Vista or Windows 7 operating system, the drivers will be automatically installed
- If you are using a Windows XP operating system, follow the default options in the Found New Hardware Wizard that launches after the instrument is first detected by the computer



After installation — open CFX Manager software by double clicking the Shortcut icon located on the Windows desktop.

The CFX96 Touch or CFX96 Touch Deep Well system that is connected to the computer will appear in the Detected Instrument(s) pane of the main CFX Manager software window. If a system does not appear in this pane, confirm proper USB connection and then reinstall the drivers by selecting

**Tools > Reinstall Instrument Drivers** from the main software window menu items.

## Starting and Analyzing a Run

The Run Setup window provides quick access to the files and settings needed to set up and start a run. To open the Run Setup window, follow one of these options:

- Click the **User-defined** or **PrimePCR** button in the Run Setup tab of the Startup Wizard
- Click the **User-defined Run Setup** or **PrimePCR Run Setup** button in the main software toolbar
- Select **File > New > User-defined Run** or **PrimePCR Run** from the main software window menu options

The Run Setup window includes three tabs (Figure 6):

- Click the **Protocol** tab to select an existing protocol to run or edit, or to create a new protocol in the Protocol Editor window
- Click the **Plate** tab to select an existing plate to run or edit, or to create a new plate in the Plate Editor window
- Click the **Start Run** tab to check run settings, select one or more instrument blocks, and begin a run

For PrimePCR™ runs, the PrimePCR protocol and a default plate layout will be selected based on the instrument selected in the Run Setup screen. The PrimePCR protocol includes a melt step by default. To reduce total run time, select the **Protocol** tab and uncheck the melt step box.

CFX Manager software automatically processes real-time PCR data at the end of each run and opens the Data Analysis window. The data file can be analyzed or saved to the folder of your choice, and it can be emailed from the software. (Refer to the CFX96 Touch, CFX96 Touch Deep Well, CFX Connect, and CFX384 Touch systems instruction manual for detailed information about run setup and data analysis.)

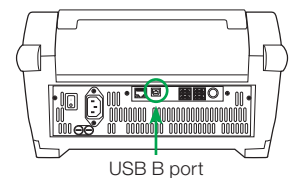


Fig. 5. USB B port on the back of the C1000 Touch chassis.

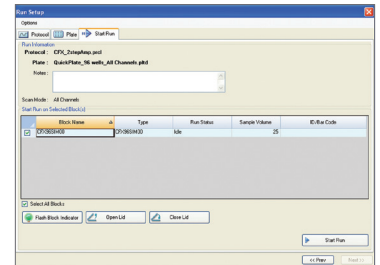


Fig. 6. Run Setup window, including the Protocol, Plate, and Start Run tabs.

# Stand-Alone Operation

The CFX96 Touch and CFX96 Touch Deep Well systems can also be operated as stand-alone instruments that can run a real-time PCR protocol without a computer attached. However, data analysis requires the use of CFX Manager software installed on a PC.

## Creating a Protocol

- To create a new run, touch **New Protocol** in the home screen to open a New Protocol template (Figure 7); touch the **Name** field, then enter a protocol name to save
- To edit an existing protocol, touch **Saved Files** to open the file library and select a protocol to edit
- For more information about creating, editing, and running protocols, refer to the CFX96 Touch, CFX96 Touch Deep Well, CFX Connect, and CFX384 Touch systems instruction manual

## Exporting Data

When a run is finished, the fluorescence data need to be transferred to a computer running CFX Manager software for analysis. At the end of a run, the data file is automatically saved to the Real-Time Data folder located in the Real-Time Data directory (Figure 8). Up to 100 real-time PCR runs are stored in this folder.

### Exporting Data Using a USB Flash Drive

- If a USB flash drive is present in a USB port on the C1000 Touch chassis at the end of a run, the data file (.zpcr) will automatically be saved to the Real-Time Data folder, which will be created on the USB flash drive
- If a USB flash drive has not been inserted into a USB port, insert one and follow these instructions to transfer a data file to the USB flash drive:
  1. Touch **Saved Files** in the home screen to access the Files folders.
  2. In the Locations pane, select **Real-Time Data**.
  3. Select the file to export from the Files pane. Information about the selected file will be displayed in the Preview pane.
  4. To export the file, touch the **File Options** button.
  5. Touch the **OK** button to save the file to the attached USB flash drive.

### Exporting Data Using Email

You can choose to email your data from the C1000 Touch chassis after configuring your email settings (see the Setting Up Email on the C1000 Touch Chassis section in this quick guide).

To send an email with an attached data file (.zpcr) from the C1000 Touch chassis at the end of a run, enter an email address in the Additional Settings window prior to the run start (Figure 9).

**Note:** When users are logged in, they can specify that a notification and an attachment be sent to a particular email address at the completion of each run.

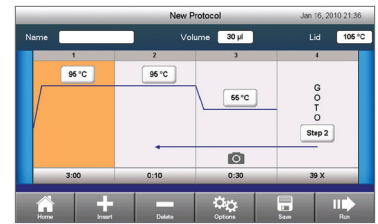


Fig. 7. Default real-time PCR protocol.

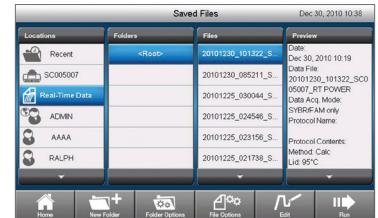


Fig. 8. Real-Time Data folder stores real-time PCR runs.

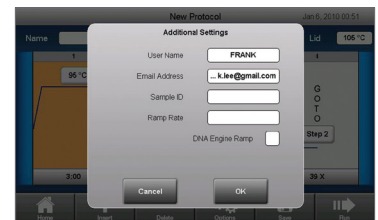


Fig. 9. Selecting email notification.

# Analyzing a Data File

A stand-alone run data file (.zpcr) must be converted into a data analysis file (.pcrd) by CFX Manager software in order to be analyzed. Create a data analysis file from a stand-alone run using one of the following options:

- Click and drag the .zpcr file over the main software window
- Select **File > Open > Stand-alone Run** from the main software window menu options

The software will select a default plate that matches the scan mode and plate size and apply it to the stand-alone run data file to create a CFX Manager software data file (.pcrd). The file will then open in the Data Analysis window and any plate layout edits can be made by selecting the **Plate Setup** button in the toolbar. Refer to the CFX96 Touch, CFX96 Touch Deep Well, CFX Connect, and CFX384 Touch systems instruction manual for detailed information about data analysis.

# Setting Up Email on the C1000 Touch Chassis

To configure the outgoing email from the C1000 Touch chassis, follow these instructions:

1. If you have not already done so, in the home screen, select **Tools**, then touch the **Admin** button to log in as the administrator. If no password has been set, the Admin tools list appears without a log-in prompt.
2. In the Admin tools list, select **Email Settings** (Figure 10).
3. Select a mail server from the dropdown menu in the Outgoing Mail (SMTP) Server Settings window or create a new one by touching the **New Server** button (Figure 11). Make this server the default by touching the **Set As Default** box.
4. To create a new mail server, enter the mail server address and mail server port in the appropriate fields. A network administrator may need to be contacted to obtain this information.
5. Enter the user name and password for the selected mail server.
6. To verify that the Outgoing Mail (SMTP) Server Settings are correct, a test email can be sent by touching the **Test Email** button.
7. Enter the email address and an attachment size, then touch **Send Email** (Figure 12).

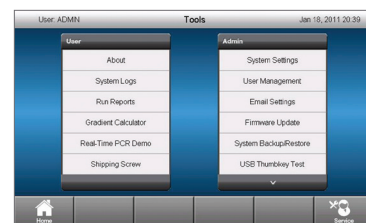


Fig. 10. Tools window following Admin log-in.



Fig. 11. Outgoing Mail (SMTP) Server Settings window.

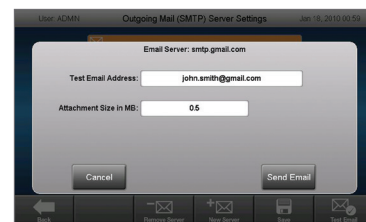


Fig. 12. Test Email window.

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Notice regarding Bio-Rad thermal cyclers and real-time systems:

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and for use in human in vitro diagnostics and all other applied fields under U.S. Patent Number 5,475,610 (Claims 1, 44, 158, 160-163, and 167 only), or corresponding claims in its non-U.S. counterpart, owned by Applera Corporation. No right is conveyed expressly, by implication, or by estoppel under any other patent claim, such as claims to apparatus, reagents, kits, or methods such as 5' nuclease methods. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Bio-Rad's real-time thermal cyclers are licensed real-time thermal cyclers under Applera's U.S. Patent Number 6,814,934 B1 for use in research, human in vitro diagnostics, and all other fields except veterinary diagnostics.

Bio-Rad's real-time thermal cyclers are covered by one or more of the following U.S. patents or their foreign counterparts owned by Eppendorf AG: U.S. Patent Numbers 6,767,512 and 7,074,367.



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