



C1000-CFX 96 Firmware Update Procedure		
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1. Purpose

The purpose of this document is to provide instruction on how to update the firmware contained in the CFX 96 instrument. The CFX 96 instrument consists of the C1000 thermal cycler base unit coupled with the 96 well Optical Reaction Module containing a total of five user accessible firmware installations.

2. Scope

The scope of this document includes the updating of the C1000 PXA270 processor firmware and the C1000 HC12 thermal control firmware. This procedure assumes that the C1000 has PXA270 version 1.0.229.1114 installed. See Note [1].

3. Items Required

- 3.1. CFX Manager Software Installation CD.
- 3.2. USB Flash Drive (Thumb drive). See Note [2]

4. Procedure

4.1. Prepare Thumb Drive for Update

- 4.1.1. Place the CFX Manager Software Installation CD in the computer CD drive.
- 4.1.2. From the installation main screen, select the Firmware button. This will open File Explorer at the location containing the firmware update files.
- 4.1.3. Alternatively, from File Explorer go to the \Firmware directory.
- 4.1.4. Copy the following files to the root directory of the thumb drive:
NKUPDATE.BIN
UPDATE.S19
- 4.1.5. Exit the CFX Manager Software Installation main screen.

Note: update the C1000 PXA270 firmware first, then the HC12 as follows:

4.2. Update C1000 PXA270 Firmware

- 4.2.1. Insert the thumb drive, with the necessary update files installed, into an available USB port.
- 4.2.2. Power up the instrument.
- 4.2.3. When the C1000 has fully booted and is in the Main Menu form, log in as follows:
 - 4.2.3.1. Press the Log In (F1) softkey.
 - 4.2.3.2. Select ADMIN user, press Enter. The cursor will move to the Password field. If the default (empty) password is still in place, leave the password field blank

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and press Enter a second time. Otherwise, enter the admin password and press Enter.

- 4.2.3.3. Current User in the title bar of the form will indicate ADMIN.
- 4.2.3.4. Return to the Main Menu form by pressing the Main Menu (F4) softkey.
- 4.2.4. Open the Utilities form by pressing the Utilities (F3) softkey.
- 4.2.5. Open the Administrator Settings menu by pressing the "5" key.
- 4.2.6. Select option 8 "PXA270 Updater" and press Enter.
- 4.2.7. The Update form will appear with the currently installed firmware update file version displayed (this version number is different from the installed firmware version).
- 4.2.8. When ready, press Enter. The system will scan the thumb drive for the necessary file (NKUPDATE.BIN). If found, the system will copy the update file to memory and then scan the file. When done, both the current and new firmware update file versions will be displayed. See Note [3] for error messages.
- 4.2.9. Press Enter to start the update process. Do Not turn off power or remove any devices during this process. The system will erase the old image from the C1000 flash memory and then program the new image into flash memory. This process will take 5 - 6 minutes to complete.
- 4.2.10. When the update has completed the system will indicate "Update Complete! Please Reboot ALL Systems." Power off the instrument, then power it back on. See Note [4].
- 4.2.11. Go to the Utilities form by pressing the Utilities (F3) softkey and select the About option. The newly installed PXA270 firmware version will be listed at the top of the form next to "Firmware Version". Verify the version is 1.1.286.108.
- 4.2.12. Proceed to the next section and update the HC12 firmware.

4.3. Update C1000 HC12 Firmware

- 4.3.1. Press the Main Menu (F4) softkey to return to the Main Menu form, log in again as follows:
 - 4.3.1.1. Press the Log In (F1) softkey.
 - 4.3.1.2. Select ADMIN user, press Enter. The cursor will move to the Password field. If the default (empty) password is still in place, leave the password field blank and press Enter a second time. Otherwise, enter the admin password and press Enter.
 - 4.3.1.3. Current User in the title bar of the form will indicate ADMIN.
 - 4.3.1.4. Return to the Main Menu form by pressing the Main Menu (F4) softkey.
- 4.3.2. Open the Utilities form by pressing the Utilities (F3) softkey.
- 4.3.3. Open the Administrator Settings menu by pressing the "5" key.
- 4.3.4. Open the Update System menu by pressing the "7" key.

- 4.3.5. From the Update menu, select option 1 “HC12 Updater” and press Enter. See Note [5].
- 4.3.6. The Update form will appear with all attached devices shown. See Note [6].
- 4.3.7. The form will appear with all attached devices enabled for Update. If any are to be excluded from the update, press the softkey under the desired device to Toggle it to the “Don’t Update” state.
- 4.3.8. When ready, press Enter. The system will scan the thumb drive for the necessary file (UPDATE.S19). If found, the message “Please press ENTER to begin update” will be presented. Press Enter to proceed. See Note [3] for error messages.
- 4.3.9. The update process will start. Do Not turn off power or remove any devices during this process. The progress bar will indicate the state of the update. This process will take 2 – 3 minutes to complete.
- 4.3.10. When the update has completed the system will indicate “Update Complete! Please Reboot ALL Systems.” Power off all instruments, then power them back on. See Note [4].
- 4.3.11. Go to the Utilities form by pressing the Utilities (F3) softkey and select the About option. The newly installed HC12 firmware version will be shown next to “HC12” in the list.

5. Notes

- [1] Go to the Utilities form by pressing the Utilities (F3) softkey and select the About option. The installed PXA270 firmware version will be listed at the top of the form next to “Firmware Version”.
- [2] Not all thumb drives are compatible with the C1000 thermal cycler. Use the thumb drive provided by Bio-Rad with the C1000 (a SanDisk brand drive is also recommended).
- [3] If the thumb drive is not found, a message “Thumb Drive Not Found – Please plug in thumb drive” will appear (see Note [2] above). If the file is not found a “Please check firmware location” message will appear. Use the keypad right arrow and select the Cancel button on the message dialog. Press Enter to clear the dialog, correct the problem and try again. Otherwise, see Note [4] below to exit the update form.
- [4] You must power the system off/on to leave the update form and restart the firmware on the C1000.
- [5] The HC12 Updater option is already selected when entering this form. If the Enter key is pressed immediately the menu will wait for acknowledgement of the message displayed at the bottom of the form. Press Enter again to proceed.
- [6] The internal S1000 will be listed first on the left of the form with the Serial Number (or Name) followed by the current firmware version and “Update”. Any other attached S1000 devices will be listed to the right of this for a maximum of four devices.