

Release Notes

Bio-Plex Manager™ Software

Version 4.1

August 2005

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1. About Bio-Plex Manager 4.1

Bio-Plex Manager 4.0 has been updated to operate using the latest LXR library from Luminex Corporation. The benefits include automatic port detection, ability to cancel any fluidic operation, sample timeout, choice of bead maps (25, 50 or 100 regions), control of the filling function of the HTF, and compatibility with hyperthreading computer systems (a feature found on newer computers with processor speeds \geq 3GHz).

2. Installation of Bio-Plex Manager 4.1 Software

2.1 Anti-virus detection software

It is highly recommended that you turn off all anti-virus protection software prior to installation. Failure to do so will result in an extended period of time required for completion of installation. If you are unable to turn off your anti-virus detection software, allow 15 minutes for the installation procedure to complete. If no activity appears on the monitor, listen to the hard drive of the computer. If you hear the hard drive of the computer working during this time, the installation is still in progress; do not cancel the installation.

2.2 Upgrading Bio-Plex Manager from a previous version

If you are upgrading Bio-Plex Manager from a previous version (e.g., Bio-Plex Manager 4.0 or 3.0), we recommend uninstalling the current version before proceeding with installation. This is not a requirement for successful operation of Bio-Plex Manager 4.1; however, Bio-Plex Manager 3.0 or 4.0 Workstation versions can not be used once instrument firmware is upgraded for Bio-Plex Manager 4.1. The calibration database will be preserved when an uninstall is performed.

2.3 Calibration database

The calibration database from the previous version of Bio-Plex Manager will be preserved during the installation procedure. Once the new version of Bio-Plex Manager has been installed, select View/Calibration Log to access historical calibration data. If the database installation directory has changed from the previous installation, the previous database will be copied to the new location.

2.4 User access

Under Windows 2000 and XP Professional, you must be a member of the Administrators group to install Bio-Plex Manager on a computer.

2.5 Installation instructions

Insert the Bio-Plex Manager CD-ROM into the CD-ROM drive on your computer. If you have AutoRun enabled, the CD will begin running automatically. If AutoRun is not enabled, use Windows Explorer to open the root directory of the CD and double-click on CDBrowser.exe to run the installer.

In the CD installer window, follow the on-screen instructions for completing the installation. See the User Guide or on-line Help for more details on software installation and startup.

3. Upgrade Procedure for Bio-Plex Manager 3.0 and 4.0 Workstation Users

3.1 Overview

Bio-Plex Manager (BPM) 4.1 operates using the latest LXR library from Luminex Corporation. As such, the firmware for all units (reader, XYP, and HTF) must be upgraded at installation. Once the firmware is upgraded you will not be able to operate earlier versions of BPM without first downgrading the firmware. Two new cables are used for BPM 4.1, a USB cable for the connection between the reader and the PC, and a second cable for a new connection between the reader and the HTF. Do not install these cables until directed to do so in the following instructions. Whenever the firmware is upgraded or downgraded serial cables must be used to connect a component to the computer. The following instructions only outline the procedure for performing the upgrade. For complete details, refer to the installation instructions provide with the upgrade kit or contact Bio-Rad's technical support group.

3.2 Uninstall Previous Version of LXR Library

Use the Windows "Add/Remove Programs" utility to remove the LXR Library. Note that you must be a system administrator to perform this operation.

3.3 Install Bio-Plex Manager 4.1 Software

All upgrades first require installation of Bio-Plex Manager 4.1 software. Software installation instructions can be found in the "Installation of Bio-Plex Manager 4.1 Software" section above.

3.4 Upgrade Array Reader, Microplate Platform, and HTS Firmware

Firmware upgrades are performed using the LxFirmware.exe application which is installed during Bio-Plex Manager 4.1 software installation. A shortcut to launch the firmware upgrade tool is also created in the Luminex LXR program group. Bio-Plex Manager 4.1 requires reader firmware 2.0.682, microplate platform firmware 2.1.15, and HTS firmware 2.0.5 for optimal performance. Use the firmware upgrade tool to upgrade firmware to the required versions. Make sure to cycle the reader, microplate platform and HTS instrument power after the firmware upgrade.

3.5 Reset Instrument Pressure Settings

When upgrading from Bio-Plex Manager 4.0 or earlier, it's necessary to perform a "one time" reset of instrument pressure setting to insure proper instrument performance. Run the "Reset Instrument Pressure Settings" to setup the system to perform a pressure settings reset at the next startup of Bio-Plex Manager. A shortcut to the utility is located in the Bio-Plex Manager 4.1 Utilities program group. Just prior to launching Bio-Plex Manager 4.1 which initiates the pressure settings reset operation, cycle the reader power. This is necessary for successful completion of the pressure settings reset operation.

4. Upgrade Procedure for Luminex IS 2.3 Users

4.1 Overview

Bio-Plex Manager (BPM) 4.1 operates using the latest LXR library from Luminex Corporation. As such, the firmware for BPM 4.1 and Luminex IS 2.3 software are the same. No firmware upgrade should be required.

4.2 Install Bio-Plex Manager 4.1 Software

All upgrades first require installation of Bio-Plex Manager 4.1 software. Software installation instructions can be found in the “Installation of Bio-Plex Manager 4.1 Software” section above.

4.3 Check for Correct Array Reader, Microplate Platform, and HTS Firmware

Instrument firmware versions can be checked using the firmware upgrade tool, LxFirmware which is installed during Bio-Plex Manager 4.1 software installation. A shortcut to launch the firmware upgrade tool is also created in the Luminex LXR program group. Bio-Plex Manager 4.1 requires reader firmware 2.0.682, microplate platform firmware 2.1.15, and HTS firmware 2.0.5 for optimal performance. Use the firmware upgrade tool to check for the correct firmware versions. If firmware upgrading is required, refer to the instructions in section 2.3, “Upgrade Array Reader, Microplate Platform, and HTF Firmware”.

5. Security Edition

Bio-Plex Manager 4.1 has a Security Edition, which provides a secure environment for the maintenance, verification, and tracking of all electronic records generated by Bio-Plex Manager. These records include Protocol and Results files, and the Calibration, Validation, and Instrument Operations Logs. The Security Edition of the software enables compliance with FDA 21 CFR Part 11 regulations.

When Security Mode is enabled, only an authenticated user can access the software. Different levels of users have access to different features and functions of the software.

The Security Edition is controlled by a special coded hardware protection key (HPK).

6. Workstation Version

Bio-Plex Manager Workstation is designed to collect, analyze and output data from the Bio-Plex system. It runs as a Windows 2000 or XP application on a computer that is directly connected to the array reader and microplate platform.

An HPK is included with Bio-Plex Manager Workstation. You must attach the HPK to your computer before you can run the software.

Before installing the HPK, turn off your computer. The HPK attaches to a USB port on your PC.

The HPK has a driver that is automatically installed when you install Bio-Plex Manager.

7. Desktop Version

Bio-Plex Manager Desktop allows you to analyze your Bio-Plex data files on any computer configured with Windows 2000 or Windows XP. You can analyze data using all of the features available in Bio-Plex

Manager Workstation; however, Bio-Plex Manager Desktop is not designed to control the Bio-Plex system.

An HPK is included with Bio-Plex Manager Desktop. You must attach the HPK to your computer before you can run the software.

Before installing the HPK, turn off your computer. The HPK attaches to a USB on your PC.

The HPK has a driver that is automatically installed when you install Bio-Plex Manager.

8. Network Desktop Version

Bio-Plex Manager Network Desktop Version is a version of Bio-Plex Manager Desktop that uses a single hardware protection key installed on a network file server to provide multiple licenses to network users. The network key can be configured to support 5, 10 or 20 users, depending on the type of license purchased.

Bio-Plex Manager Network Desktop allows you to analyze data files on any computer configured with Windows 2000 or XP and linked to the server. You can analyze your data using all of the features available in Bio-Plex Manager Workstation; however, Bio-Plex Manager Network Desktop is not designed to control the Bio-Plex system.

See the Bio-Plex Manager Network Desktop Installation Guide for instructions on installing the HPK on a file server.

9. Reporting Feature Requests to Bio-Rad

The installer for Bio-Plex Manager also installs Solobug (BPM) in a Bug Reporter subfolder within your Bio-Plex Manager folder. We would like you to use this program to request features, request design changes, or report non-critical Bio-Plex Manager problems.

To use Solobug, click on your Windows Start button, select the Bio-Plex Manager folder from your Programs list, and open Solobug from within this folder. Alternatively, you can select the Solobug icon on the desktop. In Solobug, enter your information and a description of the request, and click on Save. This will create a report that you can attach to an e-mail and send to Bio-Rad.

Please email your Solobug files to **LSG.TechServ.US@Bio-Rad.com** from within the US and **LSG.TechServ.Intl@Bio-Rad.com** outside the US.

10. Bio-Plex Manager 4.1 Frequently Asked Questions

Will BPM 4.1 run on my Luminex IS 2.3 system?

Yes. BPM 4.1 runs with the same firmware and library as the IS 2.3 system.

Does BPM 4.1 offer the Security Edition?

Yes. All of the features that were included in BPM 4.0 are still present in 4.1 plus several additional tracking features including Bead Map and Sample Timeout.

Is my Bio-Plex system upgradeable to BPM 4.1?

If your reader was purchased prior to October 2000 it cannot be upgraded to 4.1. If your XY platform was purchased prior to August 2001 it may not be upgradeable.

I am trying to upgrade to BPM 4.1, but the LxFirmware wizard isn't detecting all of the firmware versions. What's wrong?

The firmware wizard will only upgrade or downgrade the firmware when using the serial cables. Be sure you have not prematurely connected the USB cable. If the problem is detecting the HTF firmware be sure you are using the correct cable. You must reconnect the platform serial cable to the HTF. Be sure you are not using the CAN BUS cable that is supplied to connect the reader to the HTF.

I upgraded to BPM 4.1 and installed the new USB cable and now the system will not connect. What's wrong?

Keep trying to connect. This could take a couple of minutes due to the automatic port detection feature of BPM 4.1. If you still cannot connect after at least 3 minutes go to the Device Manager in the Control Panel and see if there is a menu item listed for "Luminex Devices". If not, go to 'Actions' and select scan for new hardware and see if the "Luminex Devices" item is created. If so, try to connect again. If you still cannot connect replace the USB cable with the serial cable that was previously installed. Try connecting. If the system connects you can run the system with the serial cable until field service can be notified.

I had attempted to upgrade to BPM 4.1, but encountered a problem. I need to reinstall BPM 4.0 to do my work, but I get "Error 1722" when I begin the installation. What do I do?

Do the install again, but use the "Custom" installation method and do not install the "Hasp support" portion of the installer. Even though you had uninstalled BPM 4.1 it doesn't uninstall the hasp key and the different hasp keys in the 2 versions conflict. BPM 4.0 will operate normally using the BPM 4.1 hasp.

I have IS 2.2 on my Luminex and purchased BPM 4.1. BPM 4.1 runs fine, but I can't run IS 2.2 any more. I thought I could run both?

You can. But, you must turn off LxService before running IS 2.2. Go to the Utilities folder found in the Bio-Plex Manager 4.1 folder and click on "Stop LxService". This will turn off the service and allow you to launch IS 2.2. Each time you launch BPM 4.1 it will restart the service, so every time you go back to run IS 2.2 you'll need to use this utility.

I have BPM 4.1 on my system and keep getting a message during my runs stating "the sheath pressure limit was triggered during the acquisition". Why?

The system pressure settings are not correct. Go to the folder 'Bio-Plex Manager 4.1' and open the folder 'Utilities'. Double click on the file RIPS.exe. In the dialog that comes up select 'Proceed'. Cycle the power on the instrument and launch BPM 4.1. The system settings will be automatically set. Follow the instructions then try running samples again. If the error message continues you have a leak in the system.

I have purchased BPM 4.1 for my system, but also have applications for which I must use IS 2.3 software. My data is not very good after I switch applications, what gives?

Be sure to calibrate any time that you change applications as calibration settings don't carryover between the applications. Run only one application at a time.

The same error message continually comes up during a run. I know this problem will not hurt my data, but I must baby sit the instrument to keep it running. Can I turn off the message?

Yes. If the run is in progress stop your run and go to the Utilities folder in the Bio-Plex Manager 4.1 folder and double click on the BWMM.exe file (Bio-Plex Warning Message Manager). Click the

option to “Hide” the warning messages. Restart your run using Rerun/Recovery mode. The message you were getting will no longer stop the run. But, beware that you have turned off ALL error messages. As soon as your instrument problem is fixed be sure to return to BWMM.exe and click the “Show” option to re-enable the messages.

What’s the purpose of Sample Timeout?

This allows you to set the acquisition time of the samples you are running to a value less than the default time. Default times are based on sample volume, so for a 50 µl sample volume the default sample timeout is about 80 seconds. For a 100 µl volume it is about 150 seconds, etc. There is no reason to allow longer times because the sample will have completely run through the system by the default time. But, shorter times might be used to speed up the run especially if you are running a plate in which all the wells don't have the same bead regions present as might be encountered in some phosphoprotein assay runs.

My run is taking a long time on each sample because I neglected to add one of my beads. Can I set Sample Timeout in the middle of a run and is it tracked?

Yes. You can stop a run and set or change the Sample Timeout time and restart the run using Rerun/Recovery. The Sample Timeout time is tracked in the raw data table for each sample.

When would I use a 25 or 50 region map instead of the 100 region map?

The regions in the 25 region map are larger and will provide better classification efficiency if using Bio-Rad's magnetic beads which are larger (8 µm) than the non-magnetic beads (5.6 µm). The 50 region map may be useful if an assay is demonstrating excessive scatter causing misclassification of beads. This can happen due to bead degradation or assay effects. The 100 and 25 region maps will be most used.

Can I change bead region maps during a run and, if I do, will the region used in each sample be identifiable?

Yes. You can stop a run and change the bead map then restart the run using Rerun/Recovery. It will be tracked in the raw data table for each well.

I need to run another application on my Bio-Plex computer and need to use hyper-threading. Hyper-threading is disabled on my PC; can I turn it on without harming the Bio-Plex system or software?

Yes. BPM 4.1 is compatible with hyper-threading enabled computers.

Can my BPM 3.0 or 4.0 files be opened on BPM 4.1?

Yes. They can be opened and used.

Can BPM 4.1 files be opened on BPM 4.0 or earlier versions?

No. BPM 4.1 generated files cannot be opened on earlier versions of BPM.