

# OPTILAB<sup>®</sup> REX<sup>™</sup>

## Version 5.1.1.6

December 18, 2009

**PLEASE READ THIS DOCUMENT  
BEFORE USING THIS SOFTWARE**

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**ATTENTION:** You **MUST** be running Firmware **5.0.3.3** or greater to install this update.

Although this product has been tested, there remains the possibility of undiscovered fatal errors. Known deficiencies and limitations are listed below.

Please tell us about any defects or anomalies you discover (check the list of known defects below before you call). We may already be aware of a defect, but if we're not, your phone call will alert us to a problem and will improve the quality of the software for all users, including you. When you do have to make a report please include as much information about the steps leading up to the problem and any messages displayed by the application or Windows (i.e. General Protection Faults (GPF) location and module information).

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## SYSTEM REQUIREMENTS

- Windows 2000/XP computer with networking

## HARDWARE REQUIREMENTS

- Wyatt Optilab rEX

## INSTALLATION INSTRUCTIONS

1. Establish a network connection from the computer to the Optilab rEX using one of the following:
  - Ethernet crossover cable
  - Local area network
2. Place the CD in your CD drive.
3. If your system is not equipped with AutoStart:
  - Go to Windows Start Menu
  - Choose Run
  - Press the Browse Button
  - Select your CD Drive and then select Autorun.exe.

4. The Autorun menu will be displayed.
5. Select Upgrade Wyatt Optilab rEX and the Setup program will lead you through the installation. When the installation is complete, you will be returned to the Autorun menu.

## LICENSE INFORMATION REGARDING BUNDLED THIRD-PARTY BINARIES

The following third-party binaries are distributed with this instrument and are provided under other licenses.

Binary	License
dnssd.dll	Apache License 2.0 ( <a href="http://www.apache.org/licenses/LICENSE-2.0.html">http://www.apache.org/licenses/LICENSE-2.0.html</a> )
iconv.dll	GNU Lesser General Public License ( <a href="http://www.gnu.org/licenses/lgpl.html">http://www.gnu.org/licenses/lgpl.html</a> )
intl.dll	GNU Lesser General Public License ( <a href="http://www.gnu.org/licenses/lgpl.html">http://www.gnu.org/licenses/lgpl.html</a> )
libglib-2.0-0.dll	GNU Lesser General Public License ( <a href="http://www.gnu.org/licenses/lgpl.html">http://www.gnu.org/licenses/lgpl.html</a> )
mDNSResponder.exe	Apache License 2.0 ( <a href="http://www.apache.org/licenses/LICENSE-2.0.html">http://www.apache.org/licenses/LICENSE-2.0.html</a> )

## REVISION HISTORY

- 5.1.1.6 December 18, 2009
- 5.1.1.5 January 7, 2009
- 5.1.1.4 April 29, 2008
- 5.1.1.3 March 21, 2008
- 5.1.1.2 January 11, 2008
- 5.1.1.1 June 7, 2007
- 5.1.1.0 April 3, 2007
- 5.1.0.2 March 6, 2007
- 5.1.0.1 December 28, 2006
- 5.0.4.1 February 2, 2006
- 5.0.3.3 January 4, 2005
- 5.0.0.5 May 28, 2004
- 5.0.0.4 January 27, 2004
- 5.0.0.3 December 30, 2003
- 5.0.0.2 December 10, 2003
- 5.0.0.1 November 28, 2003 (initial release)

## CHANGE HISTORY

### 5.1.1.6

- Improved Firmware Updater and Firmware Installer.
- Improved corrupt configuration file recovery
- Enhanced configuration file handling to prevent corruption.
- Improved temperature control parameters validation.
- Fixed Network Time Protocol's failure recovery parameters.

- Time Service automatically gets restarted when it quits unexpectedly.
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#### **5.1.1.5**

- Enhanced temperature control algorithm to improve temperature stability.
  - Improved configuration file handling.
  - Added support for new instrument model.
  - Implemented "GetModelNumber" and "SetModelNumber" commands.
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#### **5.1.1.4**

- Changed the Auto Inject marker color to green, which appears on the instrument's Front Panel when an Auto Inject signal is received.
  - Revised the Auto Inject behavior to only trigger collections on the rising edge of the signal.
  - Recycle valve is always set to the RECYCLE position at instrument startup.
  - Changed version number label to state "Firmware version".
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#### **5.1.1.3**

- Reversed polarity of the Recycle output line to match Orbit requirements.
  - Revised the Waste/Recycle user interface to clarify valve operation, display "Recycle" when valve is in recycle state, and display "Waste" when valve is in waste state.
  - Recycle and Purge states are now persistent across reboots.
  - Fixed Network Time Protocol issue that can cause a delay at the start of ASTRA's data collection with some instruments.
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#### **5.1.1.2**

- Added support for new front panel single board computer.
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#### **5.1.1.1**

- Improved photodiode saturation avoidance algorithm.
  - Improved the reliability of configuration files.
  - Added system logging for diagnostics purposes.
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#### **5.1.1.0**

- Communication page modified to improve user interface.
  - Instrument IP configuration is more reliable.
  - DRI and Auxiliary Time Constants are synchronized with the Time Interval.
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#### **5.1.0.2**

- Added redistribution requirements for third-party binaries.
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#### **5.1.0.1**

- Instrument initialization and communication was made more robust.
  - Auxiliary channel data can now be displayed on the front panel.
  - Temperature control modified to handle "cold room" conditions correctly.
  - The 'Escape' key on the front panel now moves the focus to the tab bar.
  - The exponent of the DRI measurement is now retained after changing graph views.
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#### **5.0.4.1**

- Instrument initialization and communication was made more robust.
- Fix was applied to avoid photodiode saturation.
- A bug that could result in a "low virtual memory" condition was resolved.

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#### 5.0.3.3

- Introduced modifiable data interval
- Improved LED Optimize function
- Added Zero Upon Autoinject option
- Removed USB Virtual Network from front panel interface
- Fixed Aux In zeros in data stream
- Fixed Autoinject signals not always producing a red mark in the Main menu dRI strip chart.

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#### 5.0.0.5

- Fixed measurement time constant decrementing by approx 0.1 sec upon every start-up.
- Improved LED Optimize function
- Fixed Autoinject signals not producing a red mark in the Main menu dRI strip chart.
- Fixed time shown on front panel program incrementing by 1 hour upon every start-up.
- Allow USB Virtual Ethernet to be set to a static IP address.

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#### 5.0.0.4

- Fixed firmware failing after several days of continuous operation.

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#### 5.0.0.3

- Fixed hardware clock advancing by approximately 2 hours every few days.

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#### 5.0.0.2

- Corrected critical errors on firmware exit which prevented a proper shutdown of the instrument. Non-critical errors are occasionally displayed on exit.

## KNOWN DEFICIENCIES

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#### 5.0.3.3

- Firmware occasionally displays non-critical errors on exit.

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#### 5.0.0.5

- Firmware occasionally displays non-critical errors on exit.
- The Aux In data stream has zeroes mixed in with valid data.
- LED Optimize function has been seen to fail (rare event).
- Autoinject signals do not always produce a red mark in the Main menu dRI strip chart.

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#### 5.0.0.4

- Firmware occasionally displays non-critical errors on exit.
- Measurement time constant decrements by approx 0.1 sec upon every start-up.
- LED Optimize function fails for bright light sources.
- Autoinject signals do not produce a red mark in the Main menu dRI strip chart.
- Time shown on front panel program increments by 1 hour upon every start-up.
- USB Virtual Ethernet cannot be set to a static IP address.

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#### 5.0.0.3

- Firmware occasionally displays non-critical errors on exit.
- Firmware fails after several days of continuous operation.

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**5.0.0.2**

- Firmware occasionally displays non-critical errors on exit.
- Firmware fails after several days of continuous operation.
- Graphical and numeric views may display a gap in time for data collected digitally due to the hardware clock occasionally (every few days) advancing by approximately 2 hours.
- Temperature control instability for approximately 20 minutes due to the hardware clock occasionally (every few days) advancing by approximately 2 hours.

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**5.0.0.1**

- Firmware occasionally displays critical errors on exit, which prevents a proper shutdown of the instrument. An improper shutdown can prevent a successful firmware upgrade.
- Graphical and numeric views may display a gap in time for data collected digitally due to the hardware clock occasionally (every few days) advancing by approximately 2 hours.
- Temperature control instability for approximately 20 minutes due to the hardware clock occasionally (every few days) advancing by approximately 2 hours.