SPECTRA T50e
LIBRARY CONTROL MODULE
REPLACEMENT INSTRUCTIONS
Notices  
Except as expressly stated herein, Spectra Logic Corporation makes its products and associated documentation on an “AS IS” BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, BOTH OF WHICH ARE EXPRESSLY DISCLAIMED. In no event shall Spectra Logic be liable for any loss of profits, loss of business, loss of use or data, interruption of business, or for indirect, special, incidental or consequential damages of any kind, even if Spectra Logic has been advised of the possibility of such damages arising from any defect or error.

Information furnished in this manual is believed to be accurate and reliable. However, no responsibility is assumed by Spectra Logic for its use. Due to continuing research and development, Spectra Logic may revise this publication from time to time without notice, and reserves the right to change any product specification at any time without notice.

If you do not agree to the above, do not use this Spectra library; instead, promptly contact Spectra Logic for instructions on how to return the library for a refund.

Copyright © 2009 Spectra Logic Corporation. All rights reserved.

Part Number  
90970024 Revision B

Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>August 2008</td>
<td>Initial release</td>
</tr>
<tr>
<td>B</td>
<td>January 2009</td>
<td>Added step to copy the Hardware ID to new component.</td>
</tr>
</tbody>
</table>

Contacting Spectra Logic

To obtain general information

Spectra Logic Web Site: www.spectralogic.com

United States Headquarters

Spectra Logic Corporation  
1700 North 55th Street  
Boulder, CO 80301  
USA

Phone: 1.800.833.1132 or 1.303.449.400  
International: 1.303.449.6400  
Fax: 1.303.939.8844

European Office

Spectra Logic Europe Ltd.  
Magdalen Centre  
Robert Robinson Avenue  
Oxford Science Park  
OXFORD  
OX4 4GA  
United Kingdom

Phone: 44 (0) 870.112.2150  
Fax: 44 (0) 870.112.2175

SpectraGuard Technical Support

Web Site: www.spectralogic.com/support  
Knowledge Base: www.spectralogic.com/knowledgebase

United States and Canada  
Phone: 1.800.833.1132 or 1.303.449.400  
Toll free US and Canada: 1.800.227.4637  
International: 1.303.449.0160  
Email: support@spectralogic.com

European, Middle East, Africa  
Phone: 44 (0) 870.112.2185  
Email: support@spectralogic.com  
Deutsch sprechende Kunden  
Phone: 49 (0) 6028.9796.507  
Email: spectralogic@stortrec.de

Mexico, Central and South America, Asia, Australia, and New Zealand  
Phone: 1.303.449.0160  
Email: support@spectralogic.com
Contents

Before You Begin ......................................................... 5
  Gathering Tools and Supplies ........................................ 6
  Continuing Backups .................................................... 6
  Preparing for Replacement ............................................ 6
Replace the LCM .......................................................... 16
  Removing the LCM ..................................................... 16
  Installing the LCM .................................................... 17
Restore the Library Configuration ...................................... 19
  Restoring the Configuration via USB ................................ 19
  Restoring the Configuration via the RLC .......................... 19
  Restoring the Configuration via Gathered Information ....... 21
  Restarting Backups .................................................... 21
Store Configuration Changes ........................................... 21
Return a Malfunctioning Component ................................ 22
  Packaging the Component for Shipment ............................ 22
  Shipping an RMA Return ............................................. 23
Replacing the Library Control Module

These instructions describe how to replace the T50e Library Control Module (LCM).

The library contains a single LCM, which provides the logic and circuitry to control the robotics and display the user interface on the library’s touch screen. The LCM includes an embedded web server to provide remote access to the user interface through the Remote Library Controller (RLC) using a standard web browser. It also houses the flash card. Figure 1 shows the available connections on the LCM.

**Note:** Depending on the ASM service level you purchased, the LCM may not be included in your on-site LCM kit.

![Figure 1 Connections to the LCM.](image)

**BEFORE YOU BEGIN**

- **Ensure that the work area is free from conditions that could cause electrostatic discharge (ESD).** Discharge static electricity from your body by touching a known grounded surface, such as a computer’s metal chassis.
- **Ensure that you have saved a backup copy of your library’s configuration**—see Preparing for Replacement on page 6.  

5
Gathering Tools and Supplies

- A new Spectra T50e LCM module
- A #2 Phillips screwdriver

Continuing Backups

If the LCM is malfunctioning, you have no control of the library through the Library Controller (LC) on the front panel or through the Remote Library Controller (RLC). A malfunctioning LCM can also affect robotics and tape drives. Backups are interrupted if the robotics or tape drives are affected and cannot be restarted until after the LCM is replaced.

Preparing for Replacement

**You have a Valid Backup Library Configuration**  Whenever you modify the configuration of the library or a partition, you have the option of saving the configuration to a USB storage device, as described in the *Spectra T50e Library User Guide*. The saved configuration can be used to restore a lost configuration.

If you previously saved the library configuration on a USB storage device or uploaded it to a file on your computer, locate the most current configuration file before beginning the replacement procedure. You can use this saved configuration to restore the library configuration after you replace the LCM.

If you have a valid saved configuration, continue with Replace the LCM on page 16.

---

**Caution**

Do not attempt to save the library configuration if the LCM is malfunctioning. Any information saved at this point may be corrupted.

**You do not have a Valid Backup Library Configuration**  If do not have a valid backup library configuration, or are unable to locate it, you may need to reconfigure your library manually after replacing the LCM.

In this case, it is important to write down the following library information before continuing. The items to write down are listed here and described below:

- Option keys
- Encryption keys
- Partition information
- Network information
- Email Users and SMTP IP Address
- AutoSupport Log Profile information for each profile
- General settings
- Library Logon Users and Passwords
- Auto Support Log file

**Option Keys**

1. Select **Configuration > Option Keys**. The Option Keys screen appears.

![Option Keys Screen]

2. Write down all of the 15-character alphanumeric keys.

**Encryption Keys**

This information is only needed if you have enabled encryption in a partition in the library.

1. Select **Security > Encryption**. The Encryption configuration screen appears.

![Encryption Configuration Screen]

2. Follow these steps for each encryption key.
a. Select Export.

b. Decide whether to save the key to a USB device, or to mail it to a previously defined email recipient.

Spectra Logic recommends saving the key to a USB device as it allows the library to verify that the save completed successfully by using the Check Key Files option. If you plan to save the key to a USB device, plug the USB device into the LCM before proceeding (see Figure 1).

**Note:** Do not use the default autosupport@spectralogic.com email recipient. Spectra Logic does not save emailed configuration files.

c. Enter a password, which is used to encrypt the key itself, select Next.

d. Make a record of the password, which you will need to import the key. Without it, you cannot import the key, and the data which was encrypted using the key will be inaccessible.

e. Confirm that the encrypted key copied correctly by using one of these methods:

- **USB device**—Select the Check Key Files button.

  If the confirmation indicates the key did not copy correctly, delete all data from the USB device so that no trace of the failed key attachment remains, then re-export the key to a different USB device, beginning with Step 2.

- **Emailed**—Confirm the receipt of the attachment by contacting the user to whom you sent the encrypted key file and verifying receipt and validity of the key.
Partition Settings


2. Select Details and write down all partition information (for each partition), including:
   - Name of each partition
   - Number of storage slots for each partition
   - Number of drives for each partition
   - Which tape drive acts as the “exporter” for the library
   - Which tape drives, their physical location or their designation are configured for each partition

Network Information


2. Write down all of the Network information.
Email Users and SMTP IP Address

1. Select **Configuration → Mail Users**. The Mail Users screen appears.

2. Select **Edit** to see more details, including the SMTP IP address, and write down the information.

3. Note which users receive which notifications (error, fatal, warning, and info).

AutoSupport Log (ASL) Profile

Gather the ASL information for each profile. Do not attempt to make any changes at this time; record any desired changes to implement after the replacement procedure is complete.
1. Select **Maintenance ➔ AutoSupport ➔ Manage Profile ➔ Edit** to navigate through the wizard and record the information. The Company Info screen appears.

![Company Info](image1)

2. Write down all information for each profile, including:
   - **Contract number**
   - **Company name and site address**

3. Select **Next** to view and record the contact name, phone number, and email address.

**General Library Information**

Select **Configuration ➔ Settings** to gather the general library settings.

![Settings](image2)
Users and Passwords

1. Select Security → Edit Users → Edit to gather the user settings.

2. Write down the user name, user type, and password of each user. Passwords are not shown, so write down the passwords, if they are known.

Create an Auto Support Log (ASL) File

The ASL creates a backup copy of your current configuration and gathers all the logs from the library. You can email the ASL file to SpectraGuard Support and they can provide you with the detailed information to reconfigure your library as a last resort. The only information not contained in this log file are the BlueScale logon passwords, and the Encryption keys. *The Encryption keys must be backed up or saved separately.*

If you do not have an AutoSupport Log Profile configured, creating one at this time may not work if the LCM is malfunctioning. If this is the case, make sure you record all the information in the previous sections to restore your library configuration after replacing the LCM.

**Able to Create ASL** If you are able to create a log, follow these steps:

1. Select Maintenance → Auto Support. The Auto support screen appears.
2. Select **Send Log Set** and **Select** the appropriate profile.

3. Select **Create a new support ticket** and select **Next**.

4. Use the keyboard to enter a description of the problem in the box. A description must be entered before the library allows you to continue. Enter the description and select **Next**.

If you are accessing the library using a web browser, you can copy the problem description to your computer’s clipboard and then paste it back into the problem description field after you edit the profile data.

You must enter something in the description field before the library will allow you to proceed to the next screen. Be as detailed as possible in this field, as it will improve the promptness of the resolution provided by Spectra Logic Technical Support.
5. Preview the Profile Information and select **Next**. Do not attempt to make any changes at this time; record any desired changes to implement after the replacement procedure is complete.

6. The **Summary** page displays.

7. Save the information using one of these options:
   - Save to a USB device, if possible (this is the recommended method)
     **Important!** Verify that all of the information that you saved to the USB device is available on the device before proceeding.
   - E-mail the information to the desired recipient and verify that they received a valid copy of the information.

**Unable to Create ASL**  If your LCM is malfunctioning, you might not be able to generate an AutoSupport Log (ASL). If you are unable to generate an ASL, make a note of all of your configured information.
1. Select **Maintenance ➤ AutoSupport ➤ Send Log Set ➤ Next ➤** (through the screens to the Profile Info screen) ➤ **Override** button to view the information for each heading.

![Profile Info Screen]

2. Make a note of all of the information (especially your contract number).

![Company Info Screen]
REPLACE THE LCM

Removing the LCM

1. Power off the library—Ensure that the library and flash card are both idle, and then power the library off. Press and hold the front panel power button for one second. The power-off sequence takes approximately two minutes while the library allows applications to shut down gracefully.

2. Disconnect any cables connected to the LCM and remove any USB devices, if present.

3. Loosen the finger screws securing the LCM to the chassis by hand or with a #2 Phillips screwdriver.

4. Grasp the finger screws and pull the LCM directly toward you to slide it out of the chassis.

5. Set the LCM aside for return to Spectra Logic.

Figure 2  LCM replace—power off the library.

Figure 3  Remove the screws securing the LCM to the chassis.
Installing the LCM

1. Remove the new LCM from the packaging.
   **Note:** Keep the packaging to return the old LCM to Spectra Logic.

2. Slide the new LCM into the empty slot.
   a. Align the two edges of the LCM card with the guide slots in the chassis.

   ![Back of Library](image)

   **Figure 4** Align the LCM in the guide slots in the chassis.

   b. Push the LCM in until it is flush against the chassis. The pressure needed is about the same as when installing RAM in a computer. If the card does not “snap” into place, verify that the LCM card edges are aligned in the guide slots.

3. Tighten the two screws using a #2 Phillips screwdriver or your fingers, shown in Figure 3, to secure the LCM to the chassis.
   **Note:** The new LCM ships from the factory with a new flash card installed, which contains updated firmware.

   Some libraries have a retaining plate to hold the flash card, and others do not (see Figure 1 and Figure 3); remove the plate if you need to replace the card.

   Ensure that the card is fully seated if there is no retaining plate securing the card. The card inserts easily when it is oriented correctly; do not force it into the slot.

   **Caution**

   Do not install the flash card from the LCM you replaced unless directed to do so by SpectraGuard Technical Support. Installing a corrupted flash card can cause the new LCM to fail.
4. Power on the library via the front panel (see Figure 2).
   a. Press and hold the front panel power button for two to three seconds until the button's LED illuminates.
   b. Wait while the library completes its power-on sequence, which takes six to nine minutes, depending on the library configuration.

5. Copy the hardware ID—The hardware ID is stored in both the Transporter and the LCM if your library is running BlueScale 10.3.1 or later. Once you replace the LCM, the user interface prompts you with this screen:

   ![Screen showing options to select Controller or Robotics]

   Select **Controller** (LCM). This action prompts the library to copy the hardware ID to the newly installed component.

   **Caution**

   Selecting the wrong option at the prompt—in this case, selecting Robotics rather than Controller—results in all of your option keys being lost. Ensure that you select the correct option.

The BlueScale user interface is again available through the front panel. You need to set up your Networking configuration to access BlueScale through a web browser.

It may be necessary to upgrade firmware on the LCM. See the *Spectra T50e Library User Guide* for detailed information about performing firmware upgrades. The LCM must reboot after a firmware upgrade, which will interrupt backups.

6. Package the old LCM and ship it to Spectra Logic as described in Return a Malfunctioning Component on page 22.
RESTORE THE LIBRARY CONFIGURATION

After the library restarts, restore the partition definitions and library configuration settings using one of the following methods.

- **Via USB**—Restore the configuration you previously saved to a USB storage device or uploaded to a file on a computer.

  **Note:** If you were unable to save the configuration to a USB, reconfigure the library using the information that you wrote down in You do not have a Valid Backup Library Configuration on page 6.

- **Via Flash Card**—If SpectraGuard Support directs you to do so, remove the card from the LCM you replaced and install it in the new LCM flash card slot (see Figure 1).

- **Via the Remote Library Controller (RLC)**—Re-enter the partition configurations and other library configuration settings as described below.

**Restoring the Configuration via USB**

This utility restores the library configuration from a USB device. The restore choices available are the previously stored configurations. This utility resets the library when completed.

1. Insert the USB device with the saved configuration into one of the USB ports in the back of the library (see Figure 1).
2. Select **Maintenance → Utilities → Tools → Advanced → Next**.
3. Select the **Restore Configuration from USB and RUN this test**. The library power-cycles after this utility completes.

If you do not have a saved configuration on the USB device, but have one saved in email or on your local system, you must set up networking and then access the library via the RLC to restore the configuration saved in email or on your local system.

**Restoring the Configuration via the RLC**

1. Log into the library front panel with superuser or administrator privileges.
2. Determine your network address requirements (Static or Dynamic).
   - Dynamic IP addressing is the default setting.
   - To change the address to static, select **Menu → Configuration → Network**. Set the static address.
3. Select **Maintenance > Utilities > Show Advanced > Yes**. The Utilities screen refreshes to show the advanced utilities.

4. Scroll through the options and select the one that is most suitable for your situation:

<table>
<thead>
<tr>
<th>Option</th>
<th>Use this option to...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Restore Configuration from Checkpoint</strong></td>
<td>Restore the library configuration from the checkpoint made at the last package upgrade. This should only be run after a package downgrade. This utility resets the library when completed.</td>
</tr>
<tr>
<td><strong>Upload Backup Configuration</strong> a</td>
<td>Upload a configuration file that you previously saved on a computer to a temporary location in the library memory.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you used this option, you must then run the <strong>Restore Library Configuration from Uploaded File</strong> utility to restore the library configuration.</td>
</tr>
<tr>
<td><strong>Restore Library Configuration from Uploaded File</strong> a b</td>
<td>Complete the restore process started by <strong>Upload Backup Configuration</strong> by uploading a a saved configuration file from a computer using the RLC. This utility resets the library when completed. <strong>Note:</strong> This option is used in conjunction with <strong>Upload Backup Configuration</strong>, which must be completed first.</td>
</tr>
<tr>
<td><strong>Restore Library to Backup Configuration</strong></td>
<td>Reset the library to the backup configuration stored on the RCM. The RCM will store a backup configuration when either the Reset to Factory Defaults or Remove All Library Partition diagnostics are run. This utility resets the library when completed.</td>
</tr>
</tbody>
</table>

a. These options are only available when you access the library from a web browser using the RLC.
b. Please note that this option may not be possible until you configure your library network settings.
5. Press **Select**. The screen refreshes to show the details for the selected utility.

6. Select **Run** to execute the utility. After a brief delay, the Utility Results screen appears, showing that the configuration file was uploaded and/or the configuration restored.

**Note:** Running any one of these utilities requires the library to reboot.

**Restoring the Configuration via Gathered Information**

If there is no stored configuration, or if the restoration of the configuration from the USB key fails, follow the procedures outlined in the *Spectra T50e Library User Guide* to build new partitions and to program the necessary user settings. Use the information that you gathered in You do not have a Valid Backup Library Configuration on pages page 6 to page 15.

Rebuild the configuration in this order:

1. Option keys
2. Encryption keys
3. Partitions
4. Networking
5. Email and SMTP information
6. Date and Time
7. Settings
8. AutoSupport Log profiles
9. Users and passwords

**Restarting Backups**

After you restore the library configuration and the library finishes rebooting, use your backup software to restart any backup processes.

**Store Configuration Changes**

Spectra Logic recommends that you always store a copy of the current library configuration on a USB device. Any time you make a change to a partition parameter, the library asks you to save the configuration change to a USB device; Spectra Logic recommends taking advantage of this feature.
RETURN A MALFUNCTIONING COMPONENT

After you complete the replacement procedure, return the malfunctioning component to Spectra Logic.

⚠️ Important

You must return the component within seven (7) days to avoid being invoiced for it.

Packaging the Component for Shipment

Note: Use the packaging from the replacement component to pack the component you are returning.

⚠️ Caution

Severe damage can occur if the component is not packaged correctly in its original box with the original packing materials. You may be invoiced if the returned component is damaged due to incorrect shipping.

You can request replacement packaging material if original packaging has been discarded. Ask your Spectra Logic Sales Representative for details (additional charges may apply).

1. Obtain a Return Materials Authorization (RMA) number from your SpectraGuard Technical Support representative. Spectra Logic needs this number to identify the part on its arrival.

2. Place the component inside the anti-static bag.

3. Fold the bag snugly around the component and tape it closed.

4. Using the packaging from the replacement component, place the bagged component inside the shipping box.

5. Tape the box securely shut.

6. Proceed to Shipping an RMA Return on page 23 for shipping instructions.
Shipping an RMA Return

1. Place the prepaid red and white shipping label that was included with the replacement component in a visible location on the outside of the shipping carton. Make sure the RMA number is written on the label.

If you do not have a return shipping label, contact the RMA Administrator at 1-800-227-4637 for instructions.

2. Follow the steps that are appropriate for your location to ship the component.

<table>
<thead>
<tr>
<th>Domestic Return Instructions a</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship the package to:</td>
<td></td>
</tr>
<tr>
<td>Spectra Logic Corporation</td>
<td>Contact FedEx Ground to schedule pick-up (1-888-777-6040).</td>
</tr>
<tr>
<td>ATTN: {RMA Number}</td>
<td>Note: Regular FedEx pickups will not accept ground packages. Spectra Logic will pay the return freight for all domestic shipments.</td>
</tr>
<tr>
<td>5571 Arapahoe Avenue</td>
<td></td>
</tr>
<tr>
<td>Boulder CO 80303</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>International Return Instructions a</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Return the completed form to Spectra Logic using one of the following methods:</td>
<td>When you receive confirmation from Spectra Logic, follow the instructions given to prepare the component for pickup by the shipper.</td>
</tr>
<tr>
<td>Email: <a href="mailto:intlreturns@spectralogic.com">intlreturns@spectralogic.com</a></td>
<td>If you have any questions about this process, contact the RMA Administrator at 303-449-0160 for instructions.</td>
</tr>
<tr>
<td>Fax: 303.939.8844</td>
<td></td>
</tr>
<tr>
<td>Post: Spectra Logic International Returns</td>
<td></td>
</tr>
<tr>
<td>1700 N 55th Street</td>
<td></td>
</tr>
<tr>
<td>Boulder CO 80301</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td></td>
</tr>
</tbody>
</table>

a. For follow-up on RMA equipment service and returns, contact SpectraGuard Technical Support either by phone or email (see Contacting Spectra Logic on page 2).
Notes