Disclaimer

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Digital Payment Technologies Corporation.

No patent liability is assumed with respect to the use of the information contained herein. Neither is any liability assumed for damages resulting from the use of the information contained herein.

Neither Digital Payment Technologies Corporation nor its affiliates shall be liable to the purchaser of this product or third-parties for damages, losses, costs, or expenses incurred by purchaser or third-parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product, or failure to strictly comply with Digital Payment Technologies Corporation’s operating and maintenance instructions.

Digital Payment Technologies Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original Digital Payment Products.

General Notice: Other product names used herein are for identification purposes only and may be trademarks of their respective owners. Digital Payment Technologies Corporation disclaims any and all rights in those marks.
Warranty Statement

The product you have purchased is under warranty by Digital Payment Technologies Corporation (Digital Payment) against defects in workmanship and/or materials for one year from the date of original purchase. Parts that prove to be defective within the one year period will be either repaired or replaced at the option of Digital Payment.

In order to return parts to Digital Payment for repair or replacement, the Customer is to first contact Customer Service at 888-687-6822 extension 326 to advise Digital Payment of the part to be returned and its serial number and to obtain a Returning Materials Authorization (RMA) number. The part is to be returned to Digital Payment at the address to be specified by Customer Service together with the RMA number and the original invoice number.

Digital Payment will fully test all repaired or replacement parts before returning them to the Customer. Digital Payment will use reasonable commercial efforts to ship repaired or replacement parts within five business days of their receipt by Digital Payment. Parts will be shipped overnight, unless the Customer has indicated otherwise.

Repairs or replacement parts required as a result of rust or corrosion, damage due to accident, improper handling or operation, improper maintenance, shipping damage, abuse, misuse, unauthorized repairs or attempted repair, vandalism or “Acts of God” are not covered by warranty. In addition, the use of unauthorized paper, or other unauthorized components and/or supplies will void the warranty.

At no charge, Digital Payment will also accept support phone calls during business hours (7:30 a.m.–4:00 p.m. Pacific Time, Monday to Friday) for the first full year after shipment. These phone calls are provided to aid in the initial setup and implementing the product and implementation of processes or systems within your organization. Phone calls regarding defective parts are not counted for this purpose. Any phone calls in excess of this number or more than 90 days after shipment date or that must be responded to outside of business hours, will be charged at the rate in effect at that time. For more information, contact Customer Service at the abovementioned number.

This limited warranty is in lieu of all other warranties express or implied, including warranties of merchantability and fitness for a particular purpose. In no event will Digital Payment be liable to the Customer or to any third-party for indirect damages or losses (in contract or in tort) in connection with the above-noted warranty, including, but not limited to, damages for lost profits, lost savings or incidental, consequential or special damages.

Please contact Digital Payment to obtain a copy of the complete Warranty and Scope of Services contract to answer any questions that may pertain to warranty services.

Contacting Digital Payment

Toll Free: 888-687-6822
Phone: 604-688-1959
Fax: 604-687-4329
Web site: www.digitalpaytech.com

Sales and Replacement Orders sales@digitalpaytech.com
4105 Grandview Highway
Burnaby, B.C.
V5C 6B4

Customer Service support@digitalpaytech.com
604-688-1959 extension 326
Copyright Notice

The Digital brand mark and the “Serious Parking Solutions” tagline are Service Marks of Digital Payment Technologies Corporation © Copyright 2007 Digital Payment™ Technologies Corporation. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Digital Payment Technologies Corporation. No patent liability is assumed with respect to the use of the information contained herein. Neither is any liability assumed for damages resulting from the use of the information contained herein.

Neither Digital Payment Technologies Corporation nor its affiliates shall be liable to the purchaser of this product or third-parties for damages, losses, costs, or expenses incurred by purchaser or third-parties as a result of: accident, misuse, abuse of this product, unauthorized modifications, repairs, or alterations to this product, or failure to strictly comply with Digital Payment Technologies Corporation’s operating and maintenance instructions.

Digital Payment Technologies Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as original Digital Payment Products.

General Notice: Other product names used herein are for identification purposes only and may be trademarks of their respective owners. Digital Payment Technologies Corporation disclaims any and all rights in those marks.

Printing History

Version 6.2.0 October 2007
Contents

Welcome ........................................................................................................................ 1
How to Use this Manual ................................................................................................ 1
Additional Documentation ......................................................................................... 1

The LUKE User Guide ............................................................................................... 3
Sections Covered ......................................................................................................... 3
Overview of Parts ...................................................................................................... 4

1. Upgrading LUKE to Version 6.2.0 ....................................................................... 7

2. Accessing Internal Components ........................................................................ 9
Types of Keys .............................................................................................................. 9
Opening the Main Cabinet Door ............................................................................. 9
Opening the USB Door (Optional) .......................................................................... 11
Opening the Pedestal Door ..................................................................................... 12
Accessing and Removing the Coin Bag ................................................................. 14
Re-inserting the Coin Bag ....................................................................................... 15
Removing the Bill Stacker ...................................................................................... 16
Opening the Bill Stacker to Remove Bills ............................................................. 17
Replacing Printer Paper for US Micro Printers .................................................... 17
Replacing Printer Paper for FutureLogic Printers .............................................. 18

3. Using the Service Menu ................................................................................... 20
About the Service Menu – Main ........................................................................... 20
The Splash Screen .................................................................................................. 21
Accessing the Service Menu .................................................................................... 21
Downloading Transactions ..................................................................................... 22
Uploading Bad-Listed Cards .................................................................................. 23
About the Coin Changer Menu .............................................................................. 23
Replenishing the Coin Changer ............................................................................. 23
Printing a Report Showing Current Coin Tube Levels ..................................... 25
Auto-Detecting Tube Counts ................................................................................ 25
Replenishing Coin Hoppers .................................................................................. 29

4. Printing Reports .................................................................................................. 30
Report Types ........................................................................................................... 30
Printing a Stall Report ............................................................................................ 30
Printing a Local Stall Report (Offline Pay Stations) .......................................... 31
Printing an Audit Report ....................................................................................... 31
2. Installation Planning........................................................................................................... 65
   Site Selection Guidelines........................................................................................................ 65
3. Wireless Communications.................................................................................................... 66
   General Guidelines.................................................................................................................. 66
4. Mounting Instructions......................................................................................................... 68
   Before You Start....................................................................................................................... 68
   Preparing a Pedestal Footing or Slab..................................................................................... 68
   Bolt Installation....................................................................................................................... 70
5. Power Hookups.................................................................................................................... 72
   Installing AC Power.................................................................................................................. 72
   Installing Optional AC Adaptors.............................................................................................. 72
   Grounding Your LUKE.............................................................................................................. 72
6. Battery Connectivity............................................................................................................ 75
   Storing Batteries..................................................................................................................... 75
   Surge Protection...................................................................................................................... 75
   Connecting the Batteries for AC or Solar Charge................................................................. 75
   Checking the Battery Voltage (Old Controller Boxes Only)................................................. 76
   Re-connecting and Testing the Alarm...................................................................................... 76
   Triggering Alarms During Installation................................................................................... 78
   Re-connecting the AC Battery Charger Option...................................................................... 78
7. Solar Panel Installation....................................................................................................... 80
   Tools Required....................................................................................................................... 80
   Installation Steps.................................................................................................................... 80
8. Loading Printer Paper.......................................................................................................... 84
   Loading Thermal Paper into US Micro Printers...................................................................... 84
   Loading Thermal Paper into FutureLogic Printers............................................................... 85
9. Preparing Your Workstation (BOSS Requirements).......................................................... 87
   Credit Card Processing.......................................................................................................... 87
10. Testing and Commissioning.............................................................................................. 89
   LUKE Installation Checklist................................................................................................... 89
The LUKE Maintenance Guide................................................................................................ 92
   Sections Covered..................................................................................................................... 92
   Additional Documentation....................................................................................................... 92
   Recommended Toolkit............................................................................................................. 92
   General Safety Precautions.................................................................................................... 93
   LUKE Software Version......................................................................................................... 93
1. Scheduled Maintenance ................................................................. 94
   Once or More a Week ........................................................................... 94
   Every Two Weeks .................................................................................. 95
   Once a Month ........................................................................................ 95
   Every Six Weeks ..................................................................................... 95
   Lubricating Locks, Hinges and the Lockbar Plate ................................. 95
   Cleaning Rust ......................................................................................... 96
   Cold Weather Maintenance ................................................................. 96
   Correcting Time Drift ............................................................................ 96

2. LUKE Alarms .................................................................................... 97

3. Battery Maintenance .......................................................................... 99
   Recharging Drained Batteries ............................................................... 99
   Swapping Batteries ............................................................................... 99

4. Card Reader Cleaning and Maintenance .......................................... 101
   Cleaning the Card Reader .................................................................... 101
   Troubleshooting Card Reader Problems ............................................. 101

5. Printer Maintenance ........................................................................ 103
   Printer Types ......................................................................................... 103
   How to Clean the Printer ..................................................................... 103
   How to Clear Printer Jams .................................................................... 104
   Reloading Printer Paper for US Micro and FutureLogic Printers ........ 105
   How to Remove the Printer .................................................................. 106

6. Bill and Coin Component Maintenance ......................................... 108
   Cleaning the Coin Acceptor ................................................................. 108
   Clearing Coin Jams in the Coin Acceptor .............................................. 109
   Cleaning the Coin Changer ................................................................. 110
   Clearing Coin Jams in the Coin Changer .............................................. 111
   Removing the Coin Changer ................................................................. 113
   Coin Changer Disassembly and Assembly .......................................... 116
   Cleaning the Bill Acceptor ................................................................. 116
   Troubleshooting Coin Acceptor Problems ........................................ 118
   Troubleshooting Coin Changer Problems .......................................... 119
   Troubleshooting Bill Acceptor Problems .......................................... 121

7. LCD Maintenance ........................................................................... 125
   Replacing a Damaged Lexan Panel ...................................................... 125
   Tools Required ..................................................................................... 125
8. LUKE Reset Procedure..................................................................................... 130
Welcome

Welcome to Digital Payment Technologies (DPT) where serious parking solutions matter. We are pleased you have chosen the LUKE.

This manual walks you through the steps you need to take to use, install, maintain and service your LUKE, including using the Service Menu on the Liquid Crystal Display (LCD). Note that this manual describes the base model. Depending on your configuration, your LUKE may be customized. Contact DPT Customer Service at 888-687-6822 if you have any questions.

How to Use this Manual

This manual is an essential reference for parking meter technicians and maintenance staff responsible for cleaning, repairing and troubleshooting LUKE. It incorporates the following three guides:

- User Guide
- Installation Guide
- Maintenance Guide

Additional Documentation

The following manual and guides are available for review to thoroughly understand and operate DPT’s products:

- **SHELBY Manual** (featuring User, Installation and Maintenance Guides)
- Enterprise Management System (EMS) User Guide
- BackOffice Support System (BOSS) User Guide
LUKE User Guide
The LUKE User Guide

Sections Covered

- **Section 1**: A checklist to guide you through the upgrade process if you are upgrading your previous LUKE and software applications to version 6.2.0
- **Section 2**: Covers accessing internal compartments
- **Section 3**: Shows how to use the Service Menu, including the new Splash Screen feature
- **Section 4**: Describes the mini reports you can print on the LUKE and how to generate them
- **Section 5**: Covers changing the LUKE setup, including date/time changes, uploading new rates or configurations and viewing the existing configuration
- **Section 6**: Covers Advanced Service Menu options to reset the LUKE, use printer utilities and save system log files
- **Section 7**: Learn how to set the machine serial number, set the keypad type (tactile or hard), perform a firmware upgrade, change the EMS URL and exit the application within the Service Menu – Special, a new feature added to the LUKE Service Menu
- **Section 8**: Learn how to manage the public key, a form of encryption that resides on the LUKE to ensure that third-party technologies are unable to access any of the credit card information stored on or transmitted from the pay station
- **Appendix A**: Covers card swipe messages that appear on the LUKE after credit cards have been swiped
Overview of Parts

The LUKE is designed for ease of maintenance. A compact, modular design allows you to access most components in a matter of seconds.
<table>
<thead>
<tr>
<th>Parts</th>
<th>Description</th>
</tr>
</thead>
</table>
| Coin Acceptor               | • Accepts up to 12 different coins/tokens  
• Returns rejected coins, tokens or slugs immediately  
• Coin Acceptor release button for clearing of Acceptor path  
• Differentiates coins or tokens using two optical sensors and by examining diameter, width and metal content  
• Is vandal-resistant, weatherproof and corrosion-resistant |
| Bill Acceptor               | • Accepts in four directions  
• Accepts any combination of $1, $2, $5, $10, $20 and $50  
• Software configurable  
• 600 or 1,000 note-locked stacker |
| Coin Changer – Replenishing | • Five high-capacity tubes  
• Completely mechanically secured  
• Highest change capacity  
• Water- and jam-resistant  
• Easy to clear without tools |
| Credit/SmartCard Reader     | • Reads Tracks 1, 2 and 3 of all mag stripe cards conforming to ISO 7810 and 7811  
• Reads and writes to chip-based SmartCards conforming to ISO 7810 and 7816  
• Cards are not ingested – no moving parts to fail  
• Is modular, unplugs easily and can be replaced in less than two minutes  
• Flush-mounted with no part of the reader protruding outside the cabinet  
• Stores a maximum 10,000 bad card numbers in the LUKE memory |
| Receipt Printer/Paper       | • Standard – two inches with partial cut for receipt (Pay And Display)  
• Optional – three inches perforated two-piece paper (Pay And Display)  
• 100 percent recyclable  
• Thermal coating is made from water-soluble ingredients  
• Can be pre-printed with customized messages on back of receipt |
<table>
<thead>
<tr>
<th>Parts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Resistant to heat, fading and curling, and can be left on a vehicle dashboard for extended periods of time</td>
</tr>
<tr>
<td>Alarm</td>
<td>• Senses shock, vibration and door open</td>
</tr>
<tr>
<td></td>
<td>• Sends alarm notifications to EMS if unit is equipped for real-time communication</td>
</tr>
<tr>
<td></td>
<td>• Can wake the LUKE from sleep mode</td>
</tr>
<tr>
<td>Display</td>
<td>Color:</td>
</tr>
<tr>
<td></td>
<td>• 320 x 240 resolution</td>
</tr>
<tr>
<td></td>
<td>• 16-bit color (65,536 colors)</td>
</tr>
<tr>
<td></td>
<td>Monochrome:</td>
</tr>
<tr>
<td></td>
<td>• 320 x 240 resolution</td>
</tr>
<tr>
<td></td>
<td>• 4-bit grey scale</td>
</tr>
</tbody>
</table>
1. **Upgrading LUKE to Version 6.2.0**

If you are upgrading from a previous pay station to the new 6.2.0 version, follow these steps to ensure a seamless migration of your data **BEFORE** your upgrade and installation.

1. Before upgrading your LUKE and software applications to version 6.2.0, download all transactions from your BOSS Data Key to the BOSS software.

   **Important Note**

   **DO NOT** download any transactions from the LUKE until the unit is upgraded to version 6.2.0. BOSS version 6.2.0 will not download any transactions from a previous LUKE application version.

2. Upgrade your BOSS software on your computer using the **BOSS Installation** CD.

3. You will be prompted to uninstall your previous BOSS version during the 6.2.0 install.

4. Contact DPT Customer Service at 888-687-6822 to set up a limited EMS account to access credit card-related features if you are processing offline credit cards in BOSS.

5. Click on the **icon in BOSS to upload the Bad Credit Card list to EMS and then click the icon again to download the Bad Credit Card list to BOSS.**

6. To reload the Bad Credit Card list to the offline LUKE, insert your BOSS Data Key into your PC and click the **Sync BOSS Key** icon in BOSS. The **Sync BOSS Key** dialog box appears.

7. Check the **Bad Cards** and **Settings** boxes and then sync your BOSS Data Key.

8. Go to the LUKE Service Menu and select option **1 Upgrade Firmware.**

9. If BOSS is configured to require a password under **Machine Configuration,** you will be prompted to enter the **Upgrade** password.

10. Insert your BOSS Data Key and press **OK.**

11. Select option **1 Default.** The program will upgrade to the latest version that is on the BOSS Data Key.

12. After upgrading your LUKE, you will need to upload the configuration off the same BOSS Data Key.

13. To do this, go to the Service Menu and select option **2 Upload Configuration.**
14. Insert your BOSS Data Key at the prompt and then press **OK**. Your configuration will now be uploaded.

**Note:** The public key is automatically installed when upgrading from a previous LUKE application version. It was saved on the BOSS Data Key when the **Sync BOSS Key** icon was clicked.
2. Accessing Internal Components

This section details how to access different parts of the LUKE that require keys.

### Types of Keys

There are six key types used for the LUKE:

1. Cabinet door/pedestal door service key. Opens the LUKE cabinet.
2. **USB door key**. Opens a door to access the USB port.
3. **Coin bag route key**. Lets you remove the coin bag from the LUKE.
4. **Coin bag opening key** (money “room” key). Lets you open the coin bag.
5. **Bill stacker removal key** (A043). Lets you remove the Bill Stacker from the LUKE.
6. **Bill stacker opening key** (A042). Lets you open the Bill Stacker.

### About Key Distribution

DPT has a secure, auditable procedure for distributing main cabinet keys for the LUKE in partnership with Mul-T-Lock Canada Inc. Only staff authorized to receive and handle keys (as identified on the Key Distribution Forms) will receive them. A detailed description of our new procedure is outlined in the *Key Distribution Forms and Procedure* document.

A key authorization form will be sent to the individual in your organization who has officially purchased the equipment to identify staff authorized to receive and handle the keys. For security reasons, *keys will not be shipped until the key form has been completed in full and returned to DPT identifying the name(s) of the individual(s) authorized to receive the keys.*

### Opening the Main Cabinet Door

1. You need the **service key**, as shown here, to open the LUKE cabinet door.
2. To insert the key into the keyhole to open the cabinet door, raise the flange. Use your finger or the eraser tip of a pencil to raise it.

3. Insert the service key.

4. Turn the key clockwise to the twelve o’clock position as shown here:

   **Tip:** If the key doesn’t turn easily, first jiggle it counterclockwise and then turn it clockwise to the twelve o’clock position. The levers will be raised, and the cabinet door should now open.
**Opening the USB Door (Optional)**

The USB door is an **optional feature** on LUKE. If your LUKE has this door, it is located on the right side of the cabinet (front-facing) to provide direct access to the USB port where you can use a flash memory stick to transfer rates, settings and data between the LUKE and the BOSS software.

There is a special USB door key required to open the USB door.

1. Insert the key into the keyhole in the twelve o’clock position as shown here:

2. Turn the key 90 degrees to the left (nine o’clock position).
3. Remove the USB door.

**Additional Information**
For details, refer to the sub-section *Uploading Settings Using the BOSS Data Key* in the *BOSS User Guide*.

**Opening the Pedestal Door**
The pedestal door is located on the base of the LUKE where coin bags are contained.
You need a **service key** to open the LUKE pedestal door.

**Note:** In order to insert the key into the keyhole to open the pedestal door, raise the flange.
1. Use either your finger or the eraser tip of a pencil to raise the flange.

2. Insert the service key.

3. Turn the key clockwise to the twelve o'clock position.

   **Tip:** If the key doesn’t turn, first jiggle it counterclockwise and then turn it clockwise to the twelve o’clock position.

   The pedestal door will now open.
Accessing and Removing the Coin Bag

Read this section when you need to empty coins or replace the coin bag from the LUKE pedestal.

After you open the pedestal using the Service key, you need a route key to remove the coin bag itself.

To remove the coin bag:
1. Insert the key into the lock so that the notch lines up with the dot on the lock.
2. Turn the key 90 degrees clockwise (to the three o’clock position).
3. Grasp the lid of the coin bag and rotate it 90 degrees to the left.
4. The two raised line guides will align and the coin bag can now be removed freely.

To open the coin bag:
1. To open the top of the coin bag, you need the coin bag opening key (also known as the money “room” key), shown here:

2. On the lid of the coin bag, insert the key into the lock and turn it 90 degrees clockwise. The lid should come off easily.
3. To re-attach the coin bag, the lock must be in the open position and the key must be in the three o’clock position. There are two raised insert guides on one side of the coin bag, while there is only one raised insert guide on the other side. Orientate the coin bag with the two raised insert guides facing 90 degrees to the left.

Re-inserting the Coin Bag

To re-insert the coin bag into the LUKE:
1. Push the coin bag up into the housing and turn the lid 90 degrees to the right. The two raised insert guides should face you.
2. Turn the key 90 degrees counterclockwise (to the twelve o’clock position) and then remove the key.

The coin bag is now locked in place.

**Important Note**

Make sure that the coin bag hangs straight and isn’t twisted or wrinkled. This ensures that the bag can hold the full number of coins.

### Removing the Bill Stacker

The **bill stacker removal key** unlocks the bill stacker from the Bill Acceptor. The number on the key should be **A043**.

1. Remove the bill stacker from the bracket by inserting the key and turning it to the open position.

2. Now press the two release clips inward. The stacker should slide out easily.
Opening the Bill Stacker to Remove Bills

1. Once you have removed the bill stacker, to open it, insert the bill stacker opening key (A042) and turn it 90 degrees counterclockwise.

The door will open and the bills can be pulled out.

Replacing Printer Paper for US Micro Printers

Follow these steps when your US Micro printer runs low or out of paper:

1. Remove the retaining wheel on the right side of the printer spindle.
2. Slide the paper roll onto the spindle so the paper rolls from over the top.
   
   **Note:** The thermal side of the paper should be facing you as it goes through the printer head.
3. Replace the retaining wheel on the right-hand side of the paper. Do not over-tighten.
   
   **Important:** Tear off the first two feet (24 inches) from the thermal paper roll so that any sticky portion is removed.
4. Check that the green tension lever located under the printer is in the down (unlocked) position.
5. Gently guide the paper into the printer until you can see six inches below the printer. Center the paper on the cutting blade.
6. Flip the tension lever to the up (locked) position.
7. Tear the paper upwards using the serrated edge.
8. Print a report to ensure that the paper feeds through and cuts correctly.

---

**Replacing Printer Paper for FutureLogic Printers**

Follow these steps when your FutureLogic printer runs low or out of paper. The FutureLogic is a black-colored printer that uses two-inch paper.

1. Press the two retaining clips inward. This lets you release and remove the empty paper roll.

2. Slide the new paper roll onto the spindle so the paper rolls from **over the top**.
   
   **Note:** The thermal side of the paper should be facing you as it goes through the printer head.
   
   **Important:** Tear off the first two feet (24 inches) from the thermal paper roll so that any sticky portion is removed.

3. Pull the tension lever to the up position and hold it open. The tension lever is a blue plastic lever located on the left side.
4. Gently guide the paper into the printer until you can see about six inches exiting the bottom of the printer and ensure the paper is centered on the cutting blade.

5. Release the tension lever.

6. Access the Service Menu by pressing **Cancel-OK-OK** and then enter the Service Menu password. This will power on the printer.

7. Press the **Cut** button to cut the paper.
3. Using the Service Menu

The Service Menu lets you print reports, download transactions to a BOSS-formatted Data Key, upload rate and setting configurations, clear jams, upload bad-listed cards to the LUKE and perform upgrades.

**Note:** After you have upgraded to BOSS version 6.2.0, you will need to load **lot settings** to your LUKE.

### About the Service Menu – Main

The Service Menu – Main screen displays the following information:

- A menu of options you can select.
- The LUKE’s serial number appears in the lower left-hand corner.
- The version numbers of applications appear in the lower right-hand corner.
- The first four digits (for example, 5.2.0.2) represent the Programmable Interrupt Controller (PIC) firmware number, and the last set of digits represents the LUKE application version (for example, 6.2.0.14).
- The date and time are located in the upper right-hand corner.

![Service Menu - Main](image)

**Definition**

Programmable Interrupt Controller is a lower level program that senses certain LUKE peripherals, such as the door opening and closing, temperature and the voltage level, among other things.
The Splash Screen

Prior to the version 6.2.0 upgrade, the Windows CE operating desktop appeared on the LCD each time the LUKE was rebooted.

In version 6.2.0, once the LUKE reboots, it will display a solid grey screen with the message **Copying Files** (as it still does in earlier versions). This is now accompanied by the newly incorporated **Splash Screen** (facsimile below), which appears before you can access any Service Menu applications.

**Note:** The front door exit application to the Windows CE operating system found in earlier versions is no longer available in the 6.2.0 version. To access the Windows CE operating system, refer to the sub-section *Exiting the LUKE Application* discussed in the section **Service Menu – Special Options** in the User Guide.

Accessing the Service Menu

1. Press **Cancel-OK-OK** or **OK-Cancel-OK-OK** if your controller is new.
   
   The password prompt appears:

   ![Password Prompt](image)

2. Enter the Service Menu password by using the keypad and then press **OK**.
The default password set by DPT is **12345** if the LUKE has already been configured. This password can be changed in the **Configuration** menu in BOSS. If the LUKE still needs to be configured, the password is **1111**.

Your System Administrator can create a service password for you in BOSS. If the default password doesn’t work and you don’t know what password has been assigned, speak to your BOSS System Administrator or contact DPT at 888-687-6822.

**Problems?**
- If you press the wrong key or key combination, re-enter the password.
- If you enter the wrong password three times (one try followed by two retries), the main display appears and you have to re-start.

### Downloading Transactions

**What this Option Does:**
- Downloading transactions saves transaction data on the LUKE to a special BOSS Data Key configured by DPT.

  **Note:** This function may require a special password set up in BOSS. Check with your System Administrator.

At the end of the download, data will be stored on the BOSS Data Key. Also, audit reports can be automatically printed at the LUKE and sent to EMS depending on your BOSS setup. (Refer to the **BOSS User Guide** for details on downloading.)

**When to Read This:**
- When the network has gone down.
- When you plan to generate reports in BOSS.
- When you need to batch-process credit card transactions.

**Steps to Take:**
1. At the Service Menu, press 2 to choose **Download Transactions**. If BOSS was set up to require a **Revenue** password, a prompt appears. Enter your **Revenue** password required to download transaction data.

   **Note:** If you don’t know your Revenue password, contact your DPT System Administrator.

2. A new menu will appear prompting you to download new transactions or the date range of the transactions.

   If you choose **New**, all transactions since the last download will be transferred to the BOSS Data Key.

   If you choose **Date Range**, you need to enter the start date and end date using the format **mmddyy**. This option is designed for situations when a BOSS Data Key is lost or corrupt. All transactions that occurred within the date range will be downloaded to the BOSS Data Key.

3. At the prompt, insert your BOSS Data Key and press **OK**.

   LUKE checks for the BOSS Data Key. Next, LUKE will download the transactions to the BOSS Data Key. The screen shows how many transactions were downloaded. Depending on your configuration, LUKE will compile the audit report, print out either one or two
audit reports, and then send the audit report to the EMS. Finally, the Service Menu will re-
appear.

Problems?

- If the LUKE cannot detect the BOSS Data Key, a message appears. Try re-inserting the key.
  Contact DPT Customer Service at 888-687-6822 or support@digitalpaytech.com.

### Uploading Bad-Listed Cards

A bad-listed card is one that has been rejected by the credit card processor for any number of
reasons, i.e. expired, lost or stolen. This function lets you import bad-listed cards to the LUKE
to prevent future transactions using these cards. The maximum size of the bad card list is
16,000 cards.

When to Read This:

- When your financial institution has provided bad-listed credit cards you want to prevent being
  used at the LUKE.
- When you have updated the previous bad card list to remove cards no longer considered as
  blocked because they are lost.

Steps to Take:

1. At the Service Menu, press 3 to select **Upload Bad Card List**. A prompt appears asking
   you to insert the BOSS Data Key.
2. Insert the BOSS Data Key and press **OK**. LUKE checks for a valid BOSS Data Key.
3. Re-insert the key if a prompt appears letting you know that the key can’t be detected.

### About the Coin Changer Menu

The following is a description of how coin levels are displayed and represented:

- **Minimum levels.** An **M** beside a tube amount indicates that tube is the minimum level.
- **Maximum levels.** An **F** beside a tube amount indicates that the tube is at the maximum
  level.
- A **+** sign indicates that the coin dispenser is within four coins of changing to the next lower
  level in the tube.
- A **–** sign indicates that there are enough coins at that level in the tube.

### Replenishing the Coin Changer

The Coin Changer option lets you replenish the tubes and shows the status of the float. The
tubes configured in this menu are set up through BOSS. For more information on setting up
the coin tubes, refer to the **BOSS User Guide**.
When to Read This:

- To replenish the Coin Changer when the coin levels are low.

Steps to Take:

To check the status:

1. Enter 4 to choose the Replenish option on the Service Menu.

   The Replenish Coin Changer menu appears along with the amount that is in the float and the corresponding coin level annotation:

   ![Coin Changer Menu]

2. Choose 1 Replenish to replenish the tubes.

To replenish coins:

1. Insert the coins through the top of the Coin Acceptor.

   The coin level amounts will be updated on the five-second mark (for example, 5s, 10s, 15s).
2. Press **OK**. A report will be printed showing the amount added to the tubes and the final amount that is currently in the tubes.

3. Press **Cancel** to return to the service menu. Coin tubes that appear in this menu are set up through BOSS.

---

**Additional Information**

Refer to the [BOSS User Guide](#) for details on setting up coin tubes.

---

## Printing a Report Showing Current Coin Tube Levels

1. At the Service Menu, choose **4**. The **Replenish Coin Changer** menu appears.

2. Choose **2 Advanced Commands**. The **Advanced** menu appears.

3. Press **2** to **Print Current Report** of the tubes. This prints a report showing the amount status.

---

## Auto-Detecting Tube Counts

1. At the Service Menu, choose option **4**. The **Replenish Coin Changer** menu appears.

2. Choose **2 Advanced Commands**.

3. The **Coin Changer** menu screen appears with three options from which to choose:

   1. **Auto Set Tube Count** – auto-detects the tube count
   2. **Print Current Status Report** – prints the status of the tubes
   3. **Test Dispense** – tests the dispensing of each coin type
4. Select option 1 Auto Set Tube Count. By selecting this feature, you will enable the LUKE to detect the coin level in each tube.

**Important Note**

Set the minimum level to dispense at four coins. Over time, the tube spring can lose its sensitivity; below four coins, the Coin Changer can dispense an incorrect amount of coins.

5. A Warning prompt screen appears cautioning against modifying counts, which can cause inaccuracies with the reports. Press [OK] to continue or [Cancel] to exit.

6. Once you select [OK], the LUKE will begin a 10-second countdown to detect the tube status and will then display the pre- and post-audit readings upon completion. Press [OK] to overwrite the values or [Cancel] to exit the feature.
7. When you select [OK], the LUKE will save the pre- and post-audit reports to the BOSS Data Key, save the tube status, print the report and notify you of completion.

To test the Coin Changer:

1. At the Service Menu, choose option 4. The **Replenish Coin Changer** menu appears.
2. Choose 2 Advanced Commands.
3. The **Coin Changer** menu screen appears with three options from which to choose. Choose option **3 Test Dispense**.

4. The **Test Dispense** screen appears prompting you to insert your BOSS Data Key for authentication. Press **[OK]** when you are done.
5. Once LUKE has detected the BOSS Data Key, the Coin Changer will dispense a single coin for each of the available denominations.

6. After dispensing, a status report showing the test dispense will be saved to the BOSS Data Key and then printed. Press [OK] to conclude the test dispense.

**Replenishing Coin Hoppers**

LUKEs do not have coin hoppers. This menu option works only with SHELBY. Please talk to your sales associate for more information.
4. Printing Reports

This section covers how to print reports from your LUKE such as audit, cash status, transaction and revenue reports using the receipt printer.

Report Types

- **Stall Report.** This report is available for online LUKEs set up for Pay By Stall and lists all stall tickets paid for at this lot.
- **Local Stall Report.** This report prints tickets purchased at that unit for stalls.
- **Audit Report.** This is a summary of all transactions and money collected for a time period showing the last 10,000 transactions as well as totals for the life of the product. Audit reports can also list coins, bills and credit card payments separately.
- **Cash Status Report.** This is a summary of transactions since the last audit report was printed.
- **Transaction Report.** This is a summary of transactions over a specified time period. Each transaction is logged as soon as it is completed. This means up to the second reporting – excluding reports that show what happened yesterday or the last time you downloaded. It also means you have access to information about each individual transaction for complete analysis.
- **Revenue Report.** This report summarizes all transactions collected. It lists the totals for today, totals for the last 24 hours, yesterday’s totals, this month’s totals, last month’s totals, last year’s totals, third, fourth and fifth year’s totals. Totals include revenue, overpayment, first and last transactions and total transactions.

Printing a Stall Report

When to Read This:

- When you want to see all stall tickets that were paid for at this setting, for example, the lot. For online LUKEs, EMS will send the data for stalls in addition to the one you are using from which to print.

Important Note

This report is available for LUKEs that are set up for **Pay By Stall** only.

Steps to Take:

1. In the main menu, select the option **1 Stall Report.** A new menu will appear showing one of three options from which to choose:
   - **Valid** – stalls that have been paid for and are still valid.
   - **Expired** – stalls where the paid time has expired.
   - **Updated (since last report)** – prints all the stall changes since the last stall report was generated.

2. On the keypad, press the number that corresponds to the report option.
3. Next, at the prompt for the stall range, use your keypad to enter the range of stall numbers. LUKE will connect to the EMS and request a list of stalls, which will be printed.

4. If LUKE is unable to connect to EMS, a prompt appears to select **Retry** or **Cancel**.

5. If you enter the wrong range by mistake, a message appears showing the range that you can use. Enter the correct range.

   The Service Menu will appear after the Stall Report is printed.

### Printing a Local Stall Report (Offline Pay Stations)

If LUKE cannot connect to the EMS, the stall report is “local” only: it shows the stall tickets that were purchased from this pay station and not others in the same setting.

See the **EMS User Guide** for more information on Stall Reports.

### Printing an Audit Report

This report is a summary of the transactions and money collected for a period you specify.

**Requirement:**

- To print an Audit Report, you may need a Revenue password if this was set up in BOSS.

**Important Note**

If you set up BOSS to automatically print an Audit Report whenever transactions are downloaded to the BOSS Data Key, don’t select this Audit Report option. Otherwise the audit will be short of transactions and money when collections are taken from the machine.

**Steps to Take:**

1. At the Service Menu screen, press 6 on the keypad. The **Service Menu – Reports** appears.

   This will display the first four reports that you can choose.

   ![Service Menu - Reports](image)

2. Press 1 on the keypad.
3. If configured in BOSS, you will be prompted to enter the Revenue password. If you are unable to access this menu, please contact your BOSS System Administrator to confirm the password.

4. A new menu will appear prompting the user to select either **New** or **Previous**:
   - **New** will print out a summary of the transactions and money collected since the last time an audit report was requested.
   - **Previous** will print out the previous audit report.

5. Select the report that needs to be printed.

If there are no transactions since the last time an Audit Report was requested, then LUKE will say **No New Audit Report Available**. If you chose **Previous** but there is no previous Audit Report available because the LUKE has just been commissioned, the display shows **Failed to Retrieve Report**. If there are transactions available, LUKE will prepare the report, send it to EMS and then print it.

**Note:** Check the Audit Report number to make sure it is consecutive with previous reports.

### What the Audit Report Shows

The following table defines the audit report labels:

<table>
<thead>
<tr>
<th><strong>Coin Changer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Replenished</td>
</tr>
<tr>
<td>Overfill bag</td>
</tr>
<tr>
<td>Accepted bag</td>
</tr>
<tr>
<td>Accepted float</td>
</tr>
<tr>
<td>Dispensed</td>
</tr>
<tr>
<td>Test Dispense</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Coin Hoppers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Replenished 1</td>
</tr>
<tr>
<td>Replenished 2</td>
</tr>
<tr>
<td>Dispensed 1</td>
</tr>
<tr>
<td>Dispensed 2</td>
</tr>
<tr>
<td>Test Dispense 1</td>
</tr>
<tr>
<td>Table</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td><strong>Test Dispense 2</strong></td>
</tr>
<tr>
<td><strong>Coin Bag</strong></td>
</tr>
<tr>
<td><strong>Bill Stacker</strong></td>
</tr>
<tr>
<td><strong>Credit Cards and Custom Cards</strong></td>
</tr>
<tr>
<td><strong>SmartCards</strong></td>
</tr>
<tr>
<td>Charge</td>
</tr>
<tr>
<td>Recharge</td>
</tr>
<tr>
<td><strong>Overpayment</strong></td>
</tr>
<tr>
<td><strong>Other</strong></td>
</tr>
<tr>
<td>Collection</td>
</tr>
<tr>
<td>Change issued</td>
</tr>
<tr>
<td>Refund issued</td>
</tr>
<tr>
<td>Revenue</td>
</tr>
</tbody>
</table>

**Note:** If BOSS has been configured to print an audit report when the transactions are downloaded to the BOSS Data Key, then don’t use the audit report option. If BOSS hasn’t been configured to print an audit report, the audit report will always be short of transactions and money. Check the audit report number to make sure it is consecutive with your previous audit reports.
Printing a Cash Status Report

This report is a summary of the cash transactions that have occurred since the last Audit Report was printed.

1. At the Service Menu, select option 6 to go to the Reports screen.
2. Next, select option 2.
3. Depending on your BOSS configuration, a prompt appears for the Revenue password. Enter the password.
   
   If you are unable to enter this menu, please contact your BOSS System Administrator to confirm the password.

   A Cash Status report will be printed and appear in the receipt cup.

Printing a Transaction Report

This report is a summary of the transactions that have occurred for a certain time period.

1. At the Service Menu, select option 6 to go to the Reports screen.
2. Next, select option 3.
3. Depending on your BOSS configuration, a prompt appears for the Revenue password. Enter the password.
   
   If you are unable to enter this menu, please contact your BOSS System Administrator to confirm the password.
4. Enter the start date. The format is mmddyy.
5. Enter the end date. The format is mmddyy.

   A Transaction Report will be printed and appear in the receipt cup.

Printing a Revenue Report

This report is a summary of the transactions and money collected. It lists the totals for today, for the last 24 hours, yesterday’s totals, this month’s totals, last month’s totals, last year’s totals, third, fourth and fifth year’s totals. Totals include revenue, overpayment, first and last transactions and total transactions.

1. At the Service Menu, select option 6 to go to the Reports screen.
2. Next, select option 4.
3. Depending on your BOSS configuration, a prompt appears for the Revenue password. Enter the password.
   
   If you are unable to enter the Revenue password, please contact your BOSS System Administrator to confirm the password.

   A Revenue Report will be printed and appear in the receipt cup.
5. Changing the LUKE Setup

This section details how to make the following setup changes in the Admin menu:

- **Setup Date/Time.** This lets you change the displayed date and time.
- **Upload Configuration.** This lets you upload new rates and configurations to LUKE from a BOSS Data Key.
- **View/Print Configuration.** This shows what configurations have been uploaded into the LUKE.

### Accessing the Admin Menu

1. At the Service Menu, select option 6 twice times to go to the Admin menu:

![Service Menu - Admin](image)

### Changing the Setup Date or Time

**When to Read This:**

- When you notice that the date or time on the LUKE or ticket isn't correct.

**Setting the Date:**

1. At the Service Menu, select option 6 More Selections twice to go to the Admin screen.
2. Next, select option 1 Setup Date/Time.
3. To set the date, press 1, and then enter the month, day and year.
4. Press OK to confirm the change.

**Setting the Time:**

1. At the Service Menu, select option 6 More Selections twice to go to the Admin screen.
2. Select option 1 Setup Date/Time.
3. To set the time, select 2 Set Time.
4. Enter the time in a 24-hour format (hhmm), for example, for 9:38 p.m., enter 2138.
5. Press **OK**.
6. Confirm that the displayed date and time are correct.

## Uploading a Configuration

**When to Read This:**
- When uploading configurations and rates created in BOSS to an offline LUKE using a BOSS Data Key programmed by DPT

**Steps to Take:**
1. At the Service Menu, select option **6** twice to go to the **Admin** menu.
2. Next, selection option **2**.
3. At the prompt, insert the BOSS Data Key and press **OK**. Confirm that the serial number of the LUKE matches what is configured in BOSS.
4. LUKE will detect the BOSS Data Key. If it cannot find the key, it will inform you. Try re-inserting the key. Once detected, LUKE will upload the configuration, initialize the printer and upload rates. Once complete, LUKE will refresh the Service Menu.
5. If the configuration fails to upload, try re-saving it onto the BOSS Data Key from BOSS and then uploading it into LUKE.

### Additional Information

Refer to the **BOSS User Guide**.

## Viewing System Messages

This option displays the status of the battery voltage, the internal temperature of the controller box, when the cabinet door was last opened, and to check if a modem is connecting to the network.

**Steps to Take:**
1. At the Service Menu, select option **6** twice to go to the **Admin** screen.
2. Next, select option **4**. The last 20 system messages will be displayed. To go to the next page, press **0**. To return to the previous page, press **8**.
3. Press **Cancel** to return to the Service Menu.
Viewing/Printing Configuration

When to Read This:
- When you want to see what configurations have been uploaded into the LUKE.

Steps to Take:
1. At the Service Menu, select option 6 twice to go to the Admin screen
2. Next, select option 5.
3. To see configuration details displayed on the LCD screen, select option 1.
4. To print the configuration details, select option 2. A configuration report will be printed.
6. Advanced Service Menu Options

The Advanced Service menu offers options for checking log files, using utilities and other technical functions intended for service, repair and technicians.

- To access the Advanced Service Menu, select option 6 three times to go to the Advanced screen.

### Saving Log Files

**When to Read This:**

- When you are troubleshooting the LUKE. This function lets you copy log files to the BOSS Data Key so that they can be reviewed and analyzed.

**Steps to Take:**

1. At the Service Menu, select option 6 three times to go to the Advanced screen.
2. Select option 1.
3. Insert the BOSS Data Key and press OK. Any existing log files for that machine that are on the key will be deleted. The new log file is saved to the key.

### Preparing to Power Down or Reset the LUKE

You have a 20-second countdown to power off the LUKE and properly terminate connections to the database. **Don’t prepare for power down if you don’t know where the reset button or ON/OFF switch or battery connections are located.**

**Steps to Take:**

1. At the Service Menu, select option 6 three times to go to the Advanced screen.
2. Select option 2 only when you are ready to power down. The Prepare Reset/Power Down screen appears.
3. In the next 20 seconds, power down the LUKE using one of these methods:
   a. If your LUKE has a controller box V1, use the Service Menu to access the Reset or Power Down functionality for further instructions on powering down.
   b. If your LUKE has a controller box V2, press the ON/OFF switch.
   c. Unplug the batteries.
FutureLogic Printer Utilities

Requirements
You MUST have a FutureLogic printer to use these utilities. The Printer Utilities option appears only if you have a FutureLogic printer and the configuration has been loaded onto the LUKE.

When to Read This:
- To check if the printer is working.
- To check which version of the printer you have installed.
- To load FutureLogic templates.

Steps to Take:
1. At the Service Menu, select option 6 three times to go to the Advanced 1 screen.
2. Select option 3. The Printer Utilities menu appears:
3. Choose from the following options:

- **1 Print Test Ticket.** This prints a test ticket.
- **2 View printer version.** This shows the version of your printer.
- **3 Load Templates.** This loads the FutureLogic printer template. If pre-printed ticket option is selected, then the option **Load Templates** will not be shown. Instead, the following two options appear:
  
  - **Load By Stall Template.** Choose this option to load a template to print tickets on pre-printed paper installed on FutureLogic printers for LUKEs set up for Pay By Stall.
    
    i. Select option 2.
    
    ii. This will load the FutureLogic Pay By Stall printer template for pre-printed tickets.
  
  - **Load Pay And Display Template.** Choose this option to load a template to print tickets on pre-printed paper installed on FutureLogic printers for LUKEs set up for Pay And Display.
    
    i. Select option 3.
    
    ii. This will load the FutureLogic Pay And Display printer template for pre-printed tickets.

### Update Bill Acceptor

**When to Read This:**

- When upgrading the Bill Acceptor or to enable recognition of new bills in circulation.

  **Note:** DPT Client Services will contact you to let you know of new upgrades and will provide instructions if needed. You need to purchase an upgrade memory stick from DPT.

### Using Wireless Modem Utilities

**When to Read This:**

- When testing the signal strength of the GSM or CDMA modem.

  An acceptable signal strength is **more than -91 dbm**.

**Steps to Take:**

1. At the Service Menu, select option 6 four times to go to the **Advanced 2** screen.
2. Select option **1 Wireless Modem Utilities** and again option **1 Detect Signal Strength**.

## Testing EMS Connectivity

This feature allows the user to test connectivity by sending a message to EMS and measuring the return time for the response. An acceptable response time is more than 10 seconds.

**When to Read This:**
- To check if you have connectivity to EMS.

**Steps to Take:**
1. At the Service Menu, select option **6** four times to go to the **Advanced 2** screen.
2. Select option **2 Test EMS Connectivity**.

## Font File Management

This feature is used to load a non-roman font file to the LUKE to allow for multilingual languages such as Vietnamese. The font files will be loaded to the BOSS Data Key when the multilingual configuration is synchronized to the key from BOSS.

**Steps to Take:**
1. At the Service Menu, select option **6** four times to go to the **Advanced 2** screen.
2. Select option **3**.
3. Select **1 Upload Font File** to load the font files from the BOSS Data Key.
4. Select **2 Clear All Font Files** to delete all the loaded font files.
7. Service Menu – Special Options

The Service Menu – Special is a new component added to the LUKE Service Menu that incorporates several new features, which all require a phone-in Pass Code entry to access their functionalities:

- Set Machine Serial Number
- Set Keypad Type (Tactile or Hard)
- Change EMS URL
- Exit Application

Note: Upgrade Firmware, an existing feature, has moved from the Advanced Service Menu to the Service Menu – Special section.

Setting the Machine Serial Number

When to Read This:

- When you need to reset your LUKE's serial number due to the incorrect number listed on the controller box.

Steps to Take:

1. At the Service Menu, select option 6 five times to access the Service Menu – Special screen.
2. Select option 1 Set Machine Serial Number.
3. The **Pass Code** entry screen appears:

4. You must call DPT Customer Service at 888-687-6822, quoting your listed **Access Code**, to receive your **Pass Code**. This is a security precaution to verify that the caller has privileges to access the data.

   You will be prompted to press **OK** if you need more time to key in your **Pass Code**.

5. Using your keypad, enter the **Pass Code** you are given and press **OK**.

   **Note:** If you incorrectly key in your **Pass Code** three times, the LUKE will automatically regenerate a new **Access Code**, at which point you will have to phone DPT again to receive a new **Pass Code**.

6. At the prompt screen, enter your new serial number as shown on the bottom left-hand corner of the screen and press **OK**. Be careful you do not enter the previous serial number.
7. Once you receive confirmation of your new serial number accepted, as shown below, you will automatically be taken back to the Service Menu – Special screen.

Setting the Keypad Type (Tactile or Hard)

When to Read This:

- When maintenance requires that you change your keypad type from tactile to hard or vice versa.

Important Note

When toggling your keypad between tactile and hard, it’s important to note that selecting the wrong keypad type for the installed keypad will result in the numbers on the keypad being switched around, i.e. if you install a tactile keypad type and select a hard keypad software application, the left and right row of numbers on the keypad will be reversed. The middle row of numbers remains the same.
Steps to Take:

1. At the Service Menu, select option 6 five times to access the Service Menu – Special screen.
2. Select option 2 Set Keypad Type (either Tactile or Hard).

   ![Service Menu - Special](image1)

3. The Pass Code entry screen appears:

   ![Service Menu - Special](image2)

4. You must call DPT Customer Service at 888-687-6822, quoting your listed Access Code, to receive your Pass Code. This is a security precaution to verify that the caller has privileges to access the data.

   You will be prompted to press OK if you need more time to key in your Pass Code.

5. Using your keypad, enter the Pass Code you are given and press OK.

   Note: If you incorrectly key in your Pass Code three times, the LUKE will automatically regenerate a new Access Code, at which point you will have to phone DPT again to receive a new Pass Code.

6. You will then receive confirmation of your keypad selection type.
Performing Upgrades

There are several types of upgrades/reset from which to choose.

When to Read This:

- When a firmware upgrade resets or upgrades the controller box.
- When a default upgrade upgrades the registry, the PIC, application and database.
- When an advanced upgrade restores factory defaults, resets transactions and reports, or re-programs the PIC to the latest version.

Performing a Firmware Upgrade

The firmware is the software that runs on the LUKE. Performing a firmware upgrade allows you to upgrade or reset the LUKE controller box in a few easy steps. Depending on your BOSS configuration, you may need to enter the Upgrade password. The upgrade restricts access to this function.

Important Note

Ask for guidance or input from DPT Client Services before upgrading. This procedure first requires logging into BOSS and then transferring the application to the BOSS Data Key by selecting the Upgrade PS icon at the top of the BOSS window.

Refer to the BOSS User Guide for more details.

Performing a Default Upgrade

The default upgrade will attempt to upgrade the registry, PIC, application and database. This should only be done following instructions from DPT Client Services.

Steps to Take:

1. At the Service Menu, select option 6 five times to go to the Service Menu – Special screen.
2. Select option 3 Upgrade Firmware.
3. If BOSS is configured to require a password, you will be prompted to enter the Upgrade password.

4. Insert the BOSS Data Key and press OK.

5. Select option 1 Default. The program will upgrade to the latest version that is on the BOSS Data Key. If there are any errors, it will roll back to the original version.

Performing Advanced Upgrades

Depending on the option you choose, the upgrade will restore factory defaults, reset transactions and reports, or re-program the PIC to the latest version.

Steps to Take:

1. At the Service Menu, select option 6 five times to go to the Service Menu – Special screen.

2. Select option 3 Upgrade Firmware.

3. If BOSS was configured to prompt you for an Upgrade password, enter your password at the prompt.

4. Insert the BOSS Data Key and press OK.

5. Select option 2 Advanced.

6. There are three upgrade options from which to choose:
   a. Install Clean App
      i. Enter 1 using the keypad.
      ii. Confirm your selection. The application will be installed as per factory default. The configuration, transactions and reports will be reset to factory defaults.
   b. Install Clean Transdb
      i. Enter 2 using the keypad.
      ii. Confirm your selection. Transactions and reports will be reset to factory defaults.
   c. Re-program PIC
      i. Enter 3 using the keypad.
      ii. Confirm your selection. The PIC will be re-programmed to the latest version.

Changing the EMS URL

This is a field change affecting the purchase of an Enterprise Management Server. If you are running on the DPT ASP EMS, you do not need to change the EMS URL as you will be configured to the DPT Production Server.

Steps to Take:

These steps are executed on your keypad. You do not need to use a mouse or a keyboard.

1. At the Service Menu, select option 6 five times to access the Service Menu – Special screen.

2. Select option 4 Change EMS Url.
3. The **Pass Code** entry screen appears:

4. You must call DPT Customer Service at 888-687-6822, quoting your listed **Access Code**, to receive your **Pass Code**. This is a security precaution to verify that the caller has privileges to access the data.

   You will be prompted to press **OK** if you need more time to key in your **Pass Code**.

5. Using your keypad, enter the **Pass Code** you are given and press **OK**.

   **Note:** If you incorrectly key in your **Pass Code** three times, the LUKE will automatically regenerate a new **Access Code**, at which point you will have to phone DPT again to receive a new **Pass Code**.

6. The **EMS URL Menu** screen appears listing four options:

   1. **Production** (www.intellapay.com)
   2. **QA** (qa.digitalpaytech.com)
   3. **Home** (homer.intella-pay.com)
   4. **Import From Key**

7. Select option 4 **Import From Key**. The **EMS Url List** will appear with a selection of up to six URLs from which to choose. You must call DPT Customer Service at 888-687-6822.
to receive your digitally signed **EmsUrl.ps2** file, which you then need to copy onto your BOSS Data Key.

8. Insert your BOSS Data Key containing the **EmsUrl.ps2** file and choose from one of the URLs.

9. Once you have chosen your URL, you will receive confirmation of your selection with the URL listed at the bottom of the screen.
The EMS URL also appears in **System Messages**. To select this feature on the Service Menu, follow these steps:

1. At the Service Menu, select option 6 twice to access the **Service Menu – Admin** screen.
2. Select option 4 **View System Messages**.
3. The **System Messages** screen appears displaying your selected EMS URL and additional system data:
Exiting the LUKE Application

**When to Read This:**

- Upon exiting the Service Menu application. You will need a **Pass Code**—obtained by phoning DPT Customer Service at 888-687-6822—to access the Windows CE operating desktop. This is a security precaution to verify that the caller has privileges to access the data.

**Steps to Take:**

1. At the Service Menu, select option 6 five times to access the **Service Menu – Special** screen.

2. Select option **5 Exit Application**.

3. The **Pass Code** entry screen appears:
4. You must call DPT Customer Service at 888-687-6822, quoting your listed Access Code, to receive your Pass Code. This is a security precaution to verify that the caller has privileges to access the data.

You will be prompted to press OK if you need more time to key in your Pass Code.

5. Using your keypad, enter the Pass Code you are given and press OK.

Note: If you incorrectly key in your Pass Code three times, the LUKE will automatically regenerate a new Access Code, at which point you will have to phone DPT again to receive a new Pass Code.

6. The Windows CE operating system desktop screen appears:

Note: Once you have accessed the Windows CE operating system desktop, your six-digit Access Code will no longer be valid. You will require a new Access Code next time you select Exit Application.

7. You will need a mouse to access any one of the Windows CE applications.

If at some point your application malfunctions and does not start, you will need to exit the Splash Screen to access the Windows CE operating system.

1. To do so, reboot the LUKE controller.
2. Mouse-click on the DPT logo on the Splash Screen.
3. The Pass Code entry screen appears:
4. You must call DPT Customer Service at 888-687-6822, quoting your listed Access Code, to receive your Pass Code. This is a security precaution to verify that the caller has privileges to access the data.

You will be prompted to press OK if you need more time to key in your Pass Code.

5. Using your keypad, enter the Pass Code you are given and press OK.

Note: If you incorrectly key in your Pass Code three times, the LUKE will automatically regenerate a new Access Code, at which point you will have to phone DPT again to receive a new Pass Code.
8. Managing the Public Key

Overview

The public key is a form of encryption that resides on the LUKE to ensure that third-party technologies are unable to access any of the credit card information stored on or transmitted from the pay station. EMS contains a private encryption key, which will decrypt the message to facilitate the processing.

For online LUKEs, the public key is updated automatically on the EMS every six months or manually by DPT in the unlikely event the private key is compromised. For offline operations, BOSS will check for any public key update notification from EMS. If a new public key is available, BOSS will transfer this to the BOSS Data Key each time you sync the BOSS Data Key. The public key on the LUKE will then be updated when the BOSS Data Key is inserted into the LUKE and you select any one of the following seven operations from the Service Menu:

- Transaction Download
- Upload Configuration
- Changer Test Dispense
- Hopper Test Dispense
- Upgrade Firmware
- Save Log Files
- Upload Bard Card List

Accessing and Managing the Public Key

Steps to Take:

1. At the Service Menu, select option 6 twice to access the Service Menu – Admin screen.
2. Select option 3 Manage Public Key.
3. The **Manage Public Key** screen appears:

![Manage Public Key Screen]

4. You can either view or install the public key.

   - The **View** option is selected when you are asked by DPT to verify the hash of the current and next public key, which will be compared to the keys available in the EMS.
   
   - The **Install** option is selected to override the current public key on the system when the automatic update fails to initiate in rare instances. Under normal circumstances, the public key is updated automatically when you insert your BOSS Data Key into the LUKE and you perform any one of the seven operations mentioned in the Overview sub-section.

5. To view the public key, select option 1 **View Public Key**. The **View Public Key** screen appears:

![View Public Key Screen]

6. Public keys have a one year expiry date and typically, a public key would expire if the LUKE has not been utilized for a year. To install a new public key onto your LUKE, select option 2 **Install Public Key**.

7. The **Pass Code** entry screen appears:
8. You must call DPT Customer Service at 888-687-6822, quoting your listed Access Code, to receive your Pass Code and the new public key. This is a security precaution to verify that the caller has privileges to access the data. The public key then needs to be copied onto your BOSS Data Key.

You will be prompted to press OK if you need more time to key in your Pass Code.

9. Using your keypad, enter the Pass Code you are given and press OK.

Note: If you incorrectly key in your Pass Code three times, the LUKE will automatically regenerate a new Access Code, at which point you will have to phone DPT again to receive a new Pass Code.

10. The Install Public Key screen appears prompting you to insert your BOSS Data Key, which now contains the new public key. Press OK on your keypad when you are ready to proceed.

11. The LUKE will begin detecting for the BOSS Data Key that contains the new public key.
12. Once detection has been confirmed, you will receive the following validation of a successful public key installation:

**Detecting BOSS key...**

**BOSS key detected.**

**Succeeded installing public key.**
13. If no public key has been loaded to the LUKE or if the public key has expired within one year, you will be prompted with the message **Unable to Process Credit Card** when you attempt to process a credit card transaction. This message will also display one month before the public key expires.

<table>
<thead>
<tr>
<th>Rate:</th>
<th>3 hr - $3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stall:</td>
<td>00006</td>
</tr>
</tbody>
</table>

Parking Expires At:
Fri, May 12/2006, 8:21 PM

Amount Due: $3.00

**Unable to Process Credit Card**
Appendix A: Card Swipe Messages

The following messages appear on the LUKE after credit cards have been swiped. Refer to the BOSS User Guide for card setup options.

When customers use credit cards or custom cards to pay for parking, the following messages can appear:

<table>
<thead>
<tr>
<th>Message Type</th>
<th>What it Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>This Card is Authorized</td>
<td>The transaction is good. This appears if LUKE receives an authorization number from the credit card or the custom card processor. (This applies to online LUKEs.)</td>
</tr>
<tr>
<td>This Card is Accepted</td>
<td>This appears if LUKE was not able to get an authorization number for the transaction. This can happen due to a communications problem with the processor, and will only apply if the configuration is set up to accept cards while offline.</td>
</tr>
<tr>
<td>This Card is Denied</td>
<td>The card was denied by the processor or the card has expired.</td>
</tr>
<tr>
<td>This Card is Declined</td>
<td>The card has been declined by the financial institution or card issuer.</td>
</tr>
<tr>
<td>This is a Bad Card</td>
<td>The card has been bad-listed because it was flagged as lost, stolen or damaged.</td>
</tr>
<tr>
<td>This Card Type is NOT accepted</td>
<td>This card type has not been configured to accept the card. It hasn’t been set up in BOSS.</td>
</tr>
<tr>
<td>This Card is Invalid</td>
<td>The custom card pattern has not been defined in BOSS.</td>
</tr>
</tbody>
</table>

For Assistance or More Information

For any questions concerning procedures outlined in the LUKE User Guide, please contact DPT Customer Service at 888-687-6822 or support@digitalpaytech.com.
LUKE Installation Guide
The LUKE Installation Guide

Sections Covered

- **Section 1**: Describes how to safely unpack your LUKE
- **Section 2**: Covers installation planning
- **Section 3**: Discusses wireless network options that can be deployed on your LUKE
- **Section 4**: Provides detailed instructions on how to mount your LUKE
- **Section 5**: Outlines power hookups to get your LUKE up and running
- **Section 6**: Discusses battery connectivity
- **Section 7**: Discusses how to correctly install the 20-watt solar panel
- **Section 8**: Details how to load the thermal paper for US Micro and FutureLogic printers
- **Section 9**: Outlines how to prepare your workstation to meet BOSS requirements
- **Section 10**: Provides a checklist to use when testing each LUKE after installation and connectivity

Additional Documentation

The following manual and guides are available for review to thoroughly understand and operate DPT’s products:

- **SHELBY Manual** (featuring User, Installation and Maintenance Guides)
- **Enterprise Management System (EMS) User Guide**
- **BackOffice Support System (BOSS) User Guide**
I. Unpacking Your LUKE

DPT recommends you unpack the LUKE inside, set it up and then test it to make sure it was not damaged in shipping. This section provides instructions on how to safely unpack the LUKE.

Tools Required

- A utility knife
- Safety goggles

Shipping List

The following items are shipped with LUKE and should be listed on the packing slip:

- Bolts for pedestal
- One battery (depending on your order)
- A roll of thermal paper (if ordered)

If any items are missing or damaged, please contact your DPT Project Manager.

Key Distribution

DPT has a secure, auditable procedure for distributing main cabinet keys for the LUKE in partnership with Mul-T-Lock Canada Inc. Only staff authorized to receive and handle keys (as identified on the Key Distribution Forms) will receive them. A detailed description of our new procedure is outlined in the Key Distribution Forms and Procedure document.

A key authorization form will be sent to the individual in your organization who has officially purchased the equipment to identify staff authorized to receive and handle the keys. For security reasons, keys will not be shipped until the key form has been completed in full and returned to DPT identifying the name(s) of the individual(s) authorized to receive the keys.

If you have not received this form, contact your Project Manager as soon as possible.

Unpacking Instructions

Use caution when unpacking the LUKE. Two people are required to lift and move the crate and the LUKE.

1. Put on safety goggles and make sure there is enough room around the pallet to remove and unpack the boxes.
2. Remove the shrink wrapping and cut the high-tension strapping using a knife or sharp tool.
3. Each piece is packed in a separate box on the pallet:
   - Upper cabinet (largest)
   - Pedestal (second largest)
   - Battery (smallest)
   - Spares will be marked externally and packed separately, if ordered

4. Remove the strapping on the upper cabinet and lift the top section off the cabinet.

5. Remove the foam packing and shrink wrap.

6. The box encasing the pedestal can be carefully cut open with a box knife and the pedestal lifted out.

   Be careful when lifting or moving the LUKE. Don’t try to lift or move it yourself.

   **WARNING**
   
   NEVER open the cabinet door while the unit is horizontal. The locking mechanism can damage if the cabinet door closes shut while your unit is horizontal.

   WATCH for the cables in the upper cabinet. They can fall out and will be destroyed if caught or pinched.
Power Supply

The LUKE is powered directly from a single 12V Gel Cell battery. Always leave the battery packaged until it is ready to be used. Do not leave a loose battery resting on a concrete floor as this will drain the charge.

**WARNING** NEVER move the LUKE with the battery installed. Damage to the battery or cables can lead to a fire. Your warranty won’t cover damage caused to the LUKE resulting from moving the unit with batteries intact.

Depending on the configuration of your machine, there are other power options available. These include:

- A standard 20-watt solar power panel, including two batteries
- A two-battery system (DC-only system)
- AC charging system (standard on all AC orders), including one battery only

LUKE Dimensions

- 63.5” high (85.5” when height of solar panel included)
  
  **Note:** A second version of the LUKE cabinet (C2 version on the price list) is 4.5 inches lower to comply with changes to the American Disability Act (ADA).

- 14.5” wide
- 16” deep
- 165 lbs top cabinet, pedestal and all components installed (including battery but excluding solar panel)
- 75 lbs top cabinet only
2. Installation Planning

Site Selection Guidelines

Before choosing a site for your LUKE, DPT recommends you conduct a site inspection and evaluate the following factors:

General Considerations

- **Security**: Consider installing bollards or concrete tire stops for pole-mounted or pedestal-mounted LUKEs or additional impediments to prevent damage, vandalism and theft. Please follow the ADA guidelines or similar recommendations to choose a location as accessible as possible for all parkers. Contact your local Disabilities Association for advice.

- **Orientation**: Position the LUKE in a direction that is as easy as possible to access and to avoid excessive glare on the LCD display. Consider an awning for weather protection. If a line-up does form at the machine, make sure that it does not impede vehicle traffic.

- **Volume**: The placement of the machines should be positioned as such so that customers do not have to walk far to get to the LUKE, and that the LUKE will not blend into its surroundings easily enough that it is missed by new customers.

Solar Considerations

The solar panel needs between one-and-a-half hours and two hours of direct, unobstructed sunlight per day for peak performance. Regardless of orientation, south is the most common direction. DO NOT position the panel to source light off a building unless absolutely necessary.

- **Latitude and environmental variables**: Latitude or the distance north or south of the equator, will affect the capability of the solar panel. The further north a solar panel is installed, the less effective it will be both because of the increase in the amount of atmospheric sunlight needed to pass through and also because of the length of days in the winter. Solar installations north of this latitude should use a 60°-solar panel bracket.

- **View corridor**: Trees, buildings, signs and other obstructions will have a significant impact on the amount of sunlight reaching the solar panel. As much as possible, a clear view south should be allowed for the solar panels. If even a small portion of the solar panel is in shade, the amount of power generated drops significantly.

- **Alternative light sources**: Few sources of low ambient or artificial light can be converted by a solar panel into electricity. Standard street lights will not work. In addition, electrical lighting should not be considered a source of energy for charging batteries via the solar panel.
3. Wireless Communications

**General Guidelines**

LUKEs can deliver wireless networking by using 802.11b/g modems and antennas.

Your LUKE should be located in an area where there is good data cell coverage. Consult with your local cellular provider to ensure adequate coverage when using one of the following cellular communications:

**Wi-Fi**
- Check the signal from an existing access point.
- Check the line of sight to an access point.
- Ensure that the access point is no more than 400 feet away. If it is more, then use an alternate antenna.

**GSM**
- Consult with your local GSM cellular provider for rates and coverage.
- DPT is a T-Mobile VAR.
- Check your coverage area by logging onto [http://compass.t-mobile.com](http://compass.t-mobile.com)
- You must use an unlimited data account.

**CDMA**
- Consult with your local cellular provider for rates and coverage.
- If deploying a LUKE in Canada, use the cellular provider Bell and Telus. If deploying a LUKE in the U.S.A., use the cellular provider Verizon.
- You must acquire your own modem (Airlink) if deploying a LUKE in the U.S.A.
- You must use an unlimited data account.

The LUKE connects to DPT’s **EMS** to provide Web-based access to reporting while also facilitating applications that include real-time card processing and networked stall reporting.

All wireless communications are via TCP/IP encrypted with 128-bit SSL.

You or your reseller must ensure the following is in place prior to on-site installation and training:
- All access point connectivity and antennas must be in place and operational.
- All access point antennas must provide a clear line of sight for machines provisioned with Wi-Fi access.
- Wi-Fi network configuration provisioned with a dedicated IP address for each LUKE.

Based on the amount of data generated by the LUKE, each Internet connection should support up to 254 LUKEs, but this is entirely dependent on the efficiency of the router implemented.
Important Note

DPT can only deploy machines on a Wi-Fi network that provides a direct link to the Internet without the aid of a proxy or filtering device.

DPT's Wi-Fi solution does not support Wi-Fi networks with captive portals (for example, a Web page that requires a public-access network user to view and interact with before access is granted), or wireless LAN hotspot access point controllers.
4. **Mounting Instructions**

Your LUKE is designed to be mounted street-side on a concrete pad. Review this section regarding the preparation of the pedestal footing or slab before going forward with this work. If there are any questions about pedestal footing requirements or proper positioning of the LUKE, contact your DPT Project Manager.

**Before You Start**

Before you dig, trench or drill, you should contact local authorities to ensure that no utilities will be affected by your work. DPT recommends that only qualified personnel install the LUKE, and state licensed electricians install the necessary electrical connections.

**Important Note**

DPT takes no responsibility for any equipment or problems that result in bodily harm resulting from installation by uncertified electricians.

The LUKE has **four standard mounting holes** large enough to accommodate **5/8”-diameter bolts**. The bolts should protrude from the concrete at between two inches and three inches for ease of mounting and securing. Any longer and the pedestal may not sit properly.

**Preparing a Pedestal Footing or Slab**

1. Determine the maximum walk-up or drive-by height.
2. Allow for an ADA side-reach height of **54” (137 centimeters)** mounted on a **24” (61 centimeters)** pedestal for special needs parkers. This meets the specifications for side reach. Remember to check with your state office for any special requirements.
3. Install the conduit for AC power and/or communications/data cables through the three-inch diameter hole at the bottom of the pedestal.

4. Since the pedestal contains a battery and coin bag, use a stiff conduit (steel or PVC) and cut it flush with the concrete.

5. Use flexible steel or PVC conduit to route the cabling inside the LUKE. A flexible conduit can be easily installed on the sides of the pedestal and ensures there is enough room for the battery and coin bag.

6. If you can’t bring conduit up through the base of the pedestal to accommodate AC power or a telecommunications line, drill through the cabinet to accommodate a side entrance for conduit. Remember to contact your DPT Project Manager in advance if you are to do this so that the appropriate preparations can be made.

7. For resistance of approximately 500 lbs of horizontal force (1,350 lbs of concrete), you need to mount the LUKE into an existing sidewalk or a pad of poured concrete 2 feet x 2 feet (minimum) and by a depth of one foot.

8. To withstand more resistance such as 1,000 lbs of horizontal force (2,700 lbs of concrete), mount on a pad of poured concrete 2 feet x 2 feet (minimum) and by a depth of two feet.

9. Underneath the slab, ensure that there is good draining backfill material. This will help prevent heaving due to frost.

10. Bore holes approximately 5/8” in diameter and 7.5” deep into the slab for mounting. Cover the holes before pouring the concrete to prevent them filling in with the mix.
Important Note

When pouring concrete, ensure the area is as level as possible. A sloped or bumpy surface can result in malfunctions with coin dispensers and other internal components.

Check with your DPT Project Manager if you have any questions regarding tolerances for non-level areas.

A level surface ensures the components can function properly and allows customers to stand or wheel to the unit using a motorized scooter or a wheelchair. Note that wheelchairs require a minimum width of 60” in front of the LUKE.

11. Ensure there is a minimum of one foot clearance on the left side of the unit so that the pedestal door can be opened. Additional space is recommended for easier access to the battery and coin bag.

12. Ensure there is a minimum of six inches clearance on the right side of the unit so that access to the USB door is available.

13. If your LUKE has a wireless antenna, ensure at least six inches of space at the top of the unit.

Contact DPT before you use any welding equipment near LUKE. Welding heat can compromise the power cable sheathing and possibly lead to a fire.

Bolt Installation

The bolt patterns shown in the following illustrations represent the layout seen when you face the front of the unit. The main cabinet door is at the front, the pedestal door is on the left, and the USB door on the cabinet is on the right. To allow for unimpeded door movement, ensure there are no obstructions. Contact DPT before installing bolts if you have any questions.
**Standard Mounting Pedestal Pattern Post-October 2005**

This is the standard pedestal mounting pattern for 8” x 8”, 8” x 7” or 10” x 7” LUKE units shipped post-October 2005:

![Diagram of Standard Mounting Pedestal Pattern Post-October 2005]

**Standard Mounting Pedestal Pattern Pre-October 2005**

Use the following mounting pattern 8” x 7” if your pedestal has a pre-October 2005 configuration:

![Diagram of Standard Mounting Pedestal Pattern Pre-October 2005]
5. **Power Hookups**

### Installing AC Power

Use the AC power option to recharge the battery. Two options are available: 120V or 240V AC. The electrical power supply to the LUKE should be a **15A, 120V** or **240V 60Hz** power line with GFI breaker installed on the main supply line.

### Planning LUKEs per Circuit

To determine how many LUKEs can run on a single circuit, the power draw of a LUKE is 2.5 Amps with the 120V AC power option or 2.0 Amps with the 240V AC power option. The power draw of the heater that may be installed initially or in the future is 6.0 Amps with the 120V AC option or 4.5 Amps with the 240V AC option.

A single **15-Amp 120V AC** circuit can support the following:

- One LUKE with heater, or
- Six LUKEs without heaters

A single **15-Amp 240V AC** circuit can support the following:

- Two LUKEs with heaters, or
- Seven LUKEs without heaters

A single **20-Amp 120V AC** circuit can support the following:

- Two LUKEs with heaters, or
- Eight LUKEs without heaters

A single **20-Amp 240V AC** circuit can support the following:

- Two LUKEs with heaters, or
- 10 LUKEs without heaters

### Installing Optional AC Adaptors

The AC outlet is a dual-ganged-size 4” x 4” NEMA electrical box and contains a DPT custom cover plate with illuminated power switch and integrated thermal breaker, surge suppressor and two latching connectors for the AC charger and optional heater. **Note the junction box requires an earth grounding connection.** Contact a qualified electrician to connect the electrical conduit to the AC junction box inside the LUKE cabinet.

### Location Planning

The best location for the AC junction box is on the PEM studs to the right side of the pedestal, above the battery as shown below (the arrow points to the AC junction box).

The AC junction box can also be mounted in the upper cabinet.
The ideal place to run the electrical cable that feeds into the junction box is up through the bottom and side of the pedestal.

**Pre-drilling**

If conduit cannot be run up through the bottom of the pedestal, you will need to drill a hole through the outside of the cabinet where you can run the electrical cable into the side of the pedestal. Contact your DPT Project Manager for instructions on where to drill the holes.

**Grounding Your LUKE**

You need to ground your LUKE at the grounding terminal by connecting a ground cable to the electrical box or an earth ground. Earth grounding provides the best protection against static electricity.

The following images show proper earth grounding:
Use a licensed electrician to test for ground continuity. Failure to properly ground the LUKE will result in system failure, data loss and permanent damage that are not covered under the product warranty.
6. **Battery Connectivity**

This section details how to connect the battery inside your LUKE to make your LUKE operational. Read this after mounting LUKE and connecting the AC power.

### Storing Batteries

The LUKE is pre-assembled at DPT and shipped *with the battery* (additional batteries are included depending on your power option order). The battery is packed separately to prevent damage and drainage during shipment. The alarm is connected when the unit is shipped.

- Store batteries in a cool, dry area BUT do not store them on concrete floors.
- Regularly inspect the batteries for cracks, corrosion or damage.
- Keep an extra set of batteries in case of an emergency. If you aren’t using solar panels or battery rechargers, your batteries must be replaced regularly.

**WARNING**

Observe proper precautions when handling batteries. Batteries present the risk of electrical shock, burns from short circuits, fire or explosions from vented gas. When you replace batteries, use the same number: 12VDC IntellaGel. Refer to local codes for disposing batteries.

### Surge Protection

For surge protection in the event of a lightning strike, purchase a power bar to use with your LUKE, for example, the Polyphasor PSP-120; locate it next to a breaker or fuse. Another device, which can protect all LUKEs connected to one breaker box, is the APC PMP1X.

For further production documentation, please call DPT Customer Service at 888-687-6822.

### Connecting the Batteries for AC or Solar Charge

The battery connection is located in the pedestal and consists of a cable with two connectors. One connector goes to the battery; the other connector is pre-connected upon delivery to the optional AC charger or optional solar panel.

The green arrow shows the battery connection. The blue arrow shows the connection to the optional AC charger or optional solar panel. If there is no AC charger or solar panel, skip the connection shown by the blue arrow.
Fire Hazard
Connecting the battery can cause sparks. Keep all flammable objects away from the LUKE cabinet.

After connecting the battery, power up the controller by switching the power button on.

Checking the Battery Voltage (Old Controller Boxes Only)
Check the battery voltage by flipping the toggle switch to the right on the controller box VI. If the value is below 12.0V, recharge or replace the battery with one that is fully charged.

Re-connecting and Testing the Alarm
The alarm is connected at the factory prior to the LUKE shipping. The photo below shows where the alarm sits when connected. The alarm’s electrical harness is located on the back wall of the LUKE cabinet.
In the event that you need to re-connect the alarm, follow these steps:

1. Locate the **two wire leads** that end in connector terminals.

2. Join the two connector terminals together, making sure they are properly aligned.
   
   The green arrow below points to the connector.

3. To confirm the alarm is active, close the LUKE door and strike the side of the cabinet.
   
   The alarm will sound.
**Triggering Alarms During Installation**

These alarms can occur during installation and initialization. For a complete list of alarms, refer to the *Maintenance Guide* in this manual.

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Acceptor Not Present</td>
<td>This alarm occurs when the Bill Acceptor is being initialized and the LUKE doesn’t detect an Acceptor. <strong>Action to take:</strong> Check that the Bill Acceptor is properly connected.</td>
</tr>
<tr>
<td>Coin Acceptor Not Present</td>
<td>This alarm occurs when the Coin Acceptor is initialized and the LUKE doesn’t detect an Acceptor. <strong>Action to take:</strong> Check that the Coin Acceptor is properly connected.</td>
</tr>
<tr>
<td>Shock On</td>
<td>This alarm is triggered when the LUKE is jolted or kicked. It’s also triggered if the LUKE door is slammed shut.</td>
</tr>
<tr>
<td>LUKE Door Opened</td>
<td>This alarm is triggered whenever the main cabinet door is opened.</td>
</tr>
<tr>
<td>Battery Voltage Low</td>
<td>This alarm is triggered when the LUKE detects that the battery voltage is at 11.9V or lower over multiple readings. This alarm automatically clears when the battery has been recharged or replaced (and the voltage is above 12V).</td>
</tr>
<tr>
<td>Low Power Shutdown</td>
<td>This alarm is triggered when the battery voltage is equal to or lower than 11.4V.</td>
</tr>
</tbody>
</table>

**Re-connecting the AC Battery Charger Option**

If you have ordered the AC battery charger option, it is mounted on the back wall of the LUKE cabinet and is pre-connected upon delivery.

A cable runs down from the controller box into the pedestal and ends in a three-pin wide connector terminal. Connect this three-pin connector to the AC charger three-pin connector.

**To re-connect the battery charger:**

1. Open the pedestal door.
2. Connect the three-pin terminal as shown by the blue arrow in the photo below.
3. Plug the power cord of the battery charger into the AC outlet—if installed—or to the AC power source. Observe the light that comes on when you plug in each charger.

- A green light indicates the charger is working.
- A red light indicates a fault with the charger.

**CAUTION**

If a red light comes on when the battery charger is plugged in, unplug the power cord and double-check the connections in steps 1 and 2 above. Plug the power cord in and observe the light.

If the red light remains on, leave the battery charger unplugged and consult DPT Customer Service for a replacement part.
7. **Solar Panel Installation**

You can use the solar panel option as the power source to recharge the battery. The 20-watt solar panel is mounted on top of the LUKE. Install the solar panel so that it faces directly south and receives the maximum amount of light. Consult your local electrical codes for requirements specific to your area.

### Tools Required

- Three-quarter-inch socket wrench
- White lithium grease
- Zip straps
- Side cutters

### Installation Steps

1. Before installing your solar panel, ensure the LUKE is correctly mounted in the ground and is fully operational (but not powered on).

2. The top of the LUKE cabinet comes pre-drilled with two holes—the front hole (small) for the bolts and the rear hole (large) for the cables.
   - The solar panel ships separately.

3. Remove the bubble wrapping from the solar panel and cut the zip straps with the side cutters to loosen the cables.

4. Your solar panel may have two cables—one cable is the power connection for the solar panel and the other is the antenna hook-up for the modem.
   - Cables are easily identifiable by their ends—the solar power cable has black/red wires with a prong connector; the antenna cable can have different jackets and screws.

5. Your solar panel ships with the following hardware:
   - Two gaskets—one flat and one O-ring
   - Nut, split washer and flat washer (located at the bottom of the solar panel)
   - To remove the base from the solar panel, loosen the nut with a three-quarter-inch socket wrench.

6. Slide the cables out of the base.

7. The base is oriented with the same hole configuration as found on top of the LUKE.

8. Turn the base upside down and apply the flat gasket by removing the backing and aligning the sticky side with the base. Make sure the gasket is centered and put on evenly to avoid the formation of air bubbles, which could tear it.

9. Take the base and align it with the two holes atop the LUKE, matching the curvature of the solar base with the curvature on top of the cabinet.
10. Next, apply a thin layer of white lithium grease around the indent on the outside of the solar base.

11. Place the O-ring on top of the base aligning it with the indent (the grease serves to hold the O-ring in place).

12. Next, take the cables from the solar panel and insert them, one at a time, into the large back hole on top of the LUKE. Ensure the cables are not knotted or tangled.

   **Tip:** You may want to tape the two wires together, leaving the solar panel about six inches.

13. Guide the cables into the cabinet as you lift and carefully place the solar panel on top of the LUKE (this step requires two people to perform).

14. Make sure the O-ring is seated and the cables are not pinched as you lower the solar panel.

   For optimum performance, the solar panel alignment should be based on one-and-half hours to two hours of direct sunlight per day.

15. Two small studs protrude from under the solar panel in the same direction as the bolt. These align with the holes in the solar panel base.

   Do not orient the solar panel such that the studs do not align with the set holes in the solar panel base.

16. Make sure that once mounted, the solar panel sits directly on top of the O-ring, which must be flat and even.

   There should be no gap between the O-ring and the solar panel and between the O-ring and the solar base.

17. Ensure that the O-ring is even all around and that it’s seated inside the groove on the solar base.

18. When installing the solar panel in any direction, ensure the cables are seated into the cable guide to avoid damaging them.

19. Use the hardware in the following order—flat washer, split washer and nut—to tighten sufficiently and to fully compress the split washer.

20. Take the solar panel cable and run it to the back left of the unit all the way to the pedestal, attaching it at least two points in the upper cabinet with zip straps.

21. Remove the cover plate from the solar regulator, already mounted in the LUKE pedestal on the rear side, with 11/32” Kep nuts.

22. Wrap the solar panel cable in concentric circles, securing it with zip straps, leaving enough slack to mount the cable to the regulator and to remove the regulator from the pedestal with cables if necessary.

23. Take the **red wire** and attach it to position 4 (the positive solar terminal) on the regulator. Connect the **black wire** to position 3 (the negative solar terminal).

24. Re-mount the solar regulator with its cover, and secure it with four Kep nuts.

25. Connect the solar regulator cables to the LUKE charger cables as labeled:
   - Charger 1 to charger 1
   - Charger 2 to charger 2

26. If there is sufficient sun, you should observe the green charging light on the solar regulator. The brighter the sunlight, the stronger the charge.
27. Unless you need to connect the antenna cable, you are now done with installing the solar panel. You may now turn on the LUKE.

Connecting the antenna cable:
1. The antenna cable goes to the right side of the cabinet. It should not be attached to any other cables inside the LUKE.
2. Wrap the cable in concentric circles, leaving enough slack to reach the antenna connector on your LUKE.
3. Zip-strap the looped cable and place it behind the horizontal cable on the back of the LUKE cabinet.
4. Make sure you do not create sharp bends on the antenna cable otherwise the cable could be damaged, rendering it unusable.
5. Now attach the antenna cable to the modem. You may have to take the modem out of the cabinet to do so.
6. You can now power up the LUKE and verify the operation of the solar panel and any communications.
**Note:** The solar panel can be rotated at any time by loosening the nut inside the cabinet, lifting the solar panel three inches directly upwards and rotating as needed, and then re-placing it on the solar base. Remember to align the studs on the bottom of the solar panel. Always keep your solar panel clean for optimum performance.
8. Loading Printer Paper

Loading Thermal Paper into US Micro Printers

The LUKE can ship with a roll of thermal paper if ordered for printing tickets and reports. Make sure that the LUKE is powered up before you load the paper. Check your LUKE to determine the correct type.

To install the thermal paper on a US Micro printer (gold color printer using three-inch paper):

1. Unlock and open the cabinet.
2. Ensure the green tension lever is in the down (unlocked) position. The tension lever is a plastic tab located underneath the printer, on the left side.
3. Remove the dial on the right-hand side of the printer spindle.
4. Slide the new paper roll onto the spindle so that the paper rolls from over the top. The thermal side of the paper should be facing you as it goes through the printer head.
5. Replace the dial on the right-hand side of the paper. DO NOT over-tighten.
6. Tear off the first 24 inches (two feet) from the thermal paper roll so that any sticky portion is removed.

7. Gently guide the paper into the printer until you can see about six inches exiting the bottom of the printer and ensure the paper is centered on the cutting blade.
8. After loading the paper, flip the tension lever to the up (locked) position.
9. Tear the paper upwards using the serrated edge.

Gently push down on the green tension lever. Avoid using excessive force, which can damage the printer. If the lever doesn’t move easily, contact your DPT Project Manager.
To re-load printer paper:
1. Follow steps 1 and 2 above remembering to power up the LUKE before re-loading the paper.
2. Pull any paper out that is still in the printer head.
3. Remove the dial on the right-hand side of the printer spindle.
4. Remove the empty paper roll.
5. Follow through with steps 4 to 9 above.

Loading Thermal Paper into FutureLogic Printers

To install the thermal paper on a FutureLogic printer (black color printer using two-inch paper):
1. Ensure the LUKE is powered up.
2. Unlock and open the cabinet.
3. Pull the tension lever to the up position and hold it open. The tension lever is a blue plastic lever located on the left side.
4. Slide the new paper roll onto the spindle so that the paper rolls from over the top. The thermal side of paper should be facing you as it goes through the printer head.
5. Tear off the first 24 inches (two feet) from the thermal paper roll so that any sticky portion is removed.

Avoiding pulling hard on the blue tension lever. If the lever doesn’t move easily, contact your DPT Project Manager.

6. Pull the tension lever to the up position and hold it open.
7. Gently guide the paper into the printer until you can see about six inches exiting the bottom of the printer and ensure the paper is centered on the cutting blade.
8. Release the tension lever.
9. To power up the printer, go into the service menu in the LUKE application by pressing Cancel-OK-OK and then entering the Service Menu password.
10. Press the Cut button to cut the paper.
To re-load printer paper:
1. Follow steps 1 to 3 above.
2. Remove any paper still in the printer head.
3. Release the tension lever.
4. Press in the two retaining clips on the spindle and remove the empty paper roll.
5. Follow through with steps 4 to 10 above.
9. Preparing Your Workstation (BOSS Requirements)

The LUKE is shipped with the software already installed and still needing to be configured. To add rates, messages and allow the machine to accept payment, a configuration from the BOSS software must be uploaded.

BOSS needs to be installed onto a specific PC and configured to work with your LUKE. DPT recommends the following hardware and software configuration for optimum performance of BOSS:

- Intel® Core™ 2 Duo or higher
- RAM: 1 GB or higher
- Hard disk space: 80 GB or higher
- Monitor resolution of 1024x768 with 16-bit color
- Windows XP Pro operating system with latest service packs
- 24x CD-ROM or better
- 1 free USB port with which to connect your BOSS Data Key
- A PS/2 or USB mouse
- CD-RW, ZIP disk, or tape backup
- High-speed Internet connection

**Important Note**

Make sure that your network DOES NOT require Internet communication through an ISA proxy server. BOSS does not support ISA, only Basic Authentication.

Be aware that if you have a firewall, you can make an exception to your firewall rule to enable BOSS to communicate with EMS.

For more details on how to install and use the BOSS software, please refer to the BOSS User Guide.

Credit Card Processing

All LUKEs are ready to accept credit cards in batch-processing mode by default. One of LUKE’s most unique features is its ability to process credit cards in real-time using wired or wireless communication technology.

Available communications options for real-time features, including online processing of credit card payments, are:

- GSM/GPRS wireless modem
- CDMA 1x wireless modem
- 802.11b/g wireless network
- Direct Ethernet connection
In order for any credit card processing to take place, an active merchant account must be set up through a bank. The LUKE is designed to use specific merchant processors for credit cards; not all banks use the required merchants. All merchant account information must be forwarded to DPT so that the LUKEs can be configured. For more information on approved merchants and the related details, please contact your DPT Project Manager.

If your LUKE accepts offline credit cards, you will need to set up a limited EMS account to process offline credit card transactions. Contact DPT Customer Service at 888-687-6822 to set up the account.

**Important Note**

A new feature in the LUKE version 6.2.0 is the storing and forwarding of cached credit card transactions. This feature is available for LUKEs with online credit card processing that has been enabled and configured to accept credit cards when EMS is offline. This functionality caches credit card transactions at the LUKE when connectivity is lost, and then automatically uploads them for processing once the connection has been re-activated. You will not be required to manually download the transactions and process them in BOSS when there is communication at the LUKE. You will, however, need to process them in BOSS if you downloaded the transactions manually from the LUKE.
10. Testing and Commissioning

Use this checklist to test each LUKE after you install it and complete connectivity for AC and remote communications.

LUKE Installation Checklist

Date: ____________________________
LUKE serial number: ____________________________
Location: ____________________________
Tester: ____________________________

Testing Checklist

☐ Circle the appropriate configuration:
  ☐ Hard/tactile keypad ____________________________
  ☐ Serial number ____________________________
  ☐ Check power connections and power levels ____________________________
  ☐ Check solar panel is free of dirt and debris ____________________________
  ☐ Check solar panel is positioned to receive direct sunlight during the day ____________________________
  ☐ Test configuration upload with BOSS Data Key ____________________________
  ☐ Perform test transactions using the following devices:
    ☐ Credit Card Reader ____________________________
    ☐ Bill Acceptor ____________________________
    ☐ Coin Changer/Coin Acceptor ____________________________
  ☐ Tube configuration for Coin Changer ____________________________
  ☐ Verify change given ____________________________
  ☐ Verify ticket refunded ____________________________
  ☐ Verify time in Windows CE ____________________________
  ☐ Verify date in Windows CE ____________________________
  ☐ Verify time zone in Windows CE ____________________________
  ☐ Print audit report and confirm totals from test transactions ____________________________
  ☐ Download test transaction using BOSS Data Key ____________________________
  ☐ Print Configuration Report ____________________________
  ☐ Check Ethernet/Wi-Fi/GSM/CDMA connectivity to EMS through Service Menu option (if applicable)
☐ Check wireless signal strength through Service menu option (if applicable)
☐ Clear transactions
☐ Test real-time credit card processing with EMS setup

**BOSS Test Checklist**

☐ Test transfer of remote configuration
☐ Check credit card processor setup if there were any problems with the real-time credit card processing
☐ Create new configuration on BOSS Data Key
☐ Refund credit card test transaction

**Final Inspection**

☐ Clear old transactions off machine (contact your DPT Project Manager for assistance)
☐ Clear old transactions off EMS
☐ Load on final configuration file

**Comments:**
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

---

**For Assistance or More Information**

For any questions concerning procedures outlined in the LUKE Installation Guide, please contact DPT Customer Service at 888-687-6822 or support@digitalpaytech.com.
The LUKE Maintenance Guide

Sections Covered

- **Section 1**: Outlines the scheduled maintenance required to keep your LUKE operational
- **Section 2**: Discusses all the alarms that can be triggered
- **Section 3**: Discusses battery voltage checks and how to swap batteries
- **Section 4**: Focuses on card reader cleaning and clearing jams
- **Section 5**: Describes printer cleaning and clearing jams
- **Section 6**: Provides guidelines on coin and bill component cleaning, clearing jams and troubleshooting
- **Section 7**: Discusses LCD maintenance, including replacing a damaged LCD panel
- **Section 8**: Provides detailed steps on how to reset the LUKE

Additional Documentation

The following manual and guides are available for review to thoroughly understand and operate DPT’s products:

- **SHELBY Manual** (featuring User, Installation and Maintenance Guides)
- **Enterprise Management System (EMS) User Guide**
- **BackOffice Support System (BOSS) User Guide**

Recommended Toolkit

You will need the following tools when perform any maintenance on the LUKE:

- USB hub
- USB optical mouse
- BOSS Data Key with the latest settings stored on it
- 5/32” socket wrench
- 11/32” socket wrench
- 7/16” socket wrench
- #2 Phillips screwdriver
- #1 Phillips screwdriver
- Small flat-head screwdriver
- Rain-X®
- 5/32” open-ended wrench
- Super Lube®
- Graphite-based lubricant for locks such as non-stick Tri-Flow®
- Clear outdoor-rated silicone
- Clean, dry cotton cloth

**General Safety Precautions**

- Always ensure that all wiring is in good condition and solidly connected at both ends.
- Check that the voltage of the batteries is at least 12V with LUKE powered on.

**Electrostatic Discharge (ESD) Precautions**

Follow these guidelines to minimize damage resulting from ESD:

- Avoid using plastic, vinyl or Styrofoam in your work area.
- Wear an anti-static wrist strap.
- Wash any plastic-laminated surfaces (table, work bench, cubicle) with a liquid detergent solution to make them anti-static.
- Handle only non-conductive surfaces. Never touch an open-edge connector.

**LUKE Software Version**

To determine which version software is running on LUKE:

1. Access the Service Menu by pressing **Cancel–OK–OK** on the keypad.
2. Check the bottom right-hand corner of the screen (for example, 6.2.0.14).
1. **Scheduled Maintenance**

DPT recommends the following maintenance schedule as a guideline to ensure that your LUKE operates efficiently. DPT supplies maintenance kits, including cleaners and lubricants. After the first month, you may need more frequent maintenance depending on the weather conditions and volume of transactions.

**Once or More a Week**

- Inspect your LUKE for damage.
- Inspect external hinge surfaces for tampering and wear.
- Remove any graffiti on the LCD display, payment entrances, locks, access covers and solar panel.
- Wipe down the solar panel with damp cloth.
- Inspect locks to make sure key covers are in place and look for signs of tampering.
- Examine the door edges for signs of tampering. Check for a loose lockbar plate and make required adjustments for the main cabinet and pedestal.
- Clean the LCD with a soft lint cloth.
- Test the keypad to make sure all numbers you press appear on the display.
- Inspect Coin Acceptor pathway and clear any debris.
- Check that you can print a test ticket or report.
- Wipe the ticket receipt door and container with a cotton cloth.
- Check that the ticket door closes and that the container isn’t jammed.
- Inspect the coin return button works each way you press it.
- Open the cabinet door and close it again to make sure it shuts properly.
- Open the cabinet and clear paper dust from the printer and paper shards from the printer mechanism.
- Inspect the Bill Acceptor to ensure the access service doors are properly closed.
- Inspect for sealant leaks in RTV caulking along top outside edges of the front casting and attached panels.
- Wipe the Coin Acceptor pathway with Windex; dry the pathway with a cloth and then apply thin coat of Rain-X.
- Purchase credit card test ticket.
- Check the card reader by trying credit card and SmartCard transactions (if SmartCards are an option).
- Check that the battery voltage is greater than 12V while the LUKE is in test mode.
- Check that the time displayed is accurate within tolerances.
- Using a voltmeter, check that solar regulators/chargers have sufficient power measure. Compare the reading to the display and also check against the EMS readings.
- Check there is enough paper on the roll for next payment period (based on past use).
- Using a BOSS Data Key, download transactions and import the data into BOSS.
• Import Bad Card List from BOSS into each LUKE.

**Every Two Weeks**

• Wipe down the unit with Windex or similar cleaner to remove fingerprints on screen and instruction panel.
• Clean Bill Acceptor with pre-soaked cleaning pad.

**Once a Month**

• Clean printer with pre-soaked cleaning pad.
• Clean credit card reader.
• Lubricate hinges, locks and lockbar plate if your LUKE is located near salt water.
• Remove dirt and scuff marks.

**Every Six Weeks**

• Clear the printer of paper dust.
• Inspect the coin bag for wear.
• Blow out Bill Stacker using compressed air.
• Lubricate the hinges, locks and lockbar plate.
• Lubricate the Coin Acceptor return bar.
• Change access passwords as a security measure. Note that access passwords should be changed after employees leave your company.
• Check cable harness and door hinge joints for tie paths not binding.
• Check alarm module for audible activation.
• Check for loosened nuts or hardware.
• Inspect wear on plastic parts.
• Inspect for scratches and use touch-up paint.
• Inspect the bill cassette locks.
• Inspect for any signs of water ingress to cabinet and reinforce the RTV caulking in areas like the solar panel mount, if necessary.
• Observe Rotomold around solar panel for signs of cracking or openings.
• Ensure solar panel is properly aligned (check against the horizon line). Note that crooked panels do not charge properly.
• Ensure serial number plate is in place and is properly attached.

**Lubricating Locks, Hinges and the Lockbar Plate**

If your LUKE is being used daily, lubricate all locks, hinges and the lockbar plate three times a month.

• **Locks.** Use graphite-based lubricants such as non-stick Tri-Flow®.
- **Hinges and lockbar.** Use oil-based lubricants such as WD-40® or Super Lube® (preferable).

### Cleaning Rust

Rust can form on any parts that are not made of stainless steel or parts that have been scratched. Remove rust by sanding it off and then repainting the area with touch-up paint provided. In areas where rust is beginning to form, use WD-40 on a cloth.

### Cold Weather Maintenance

- Use a stiff nylon brush to remove snow and ice from the coin slot, bill slot, keypad, LCD and ticket container.
- If your LUKE does not have a heater, use a non-corrosive and biodegradable product. Enviro-MLT™ is a potassium acetate that is an environmentally friendly, non-toxic, non-corrosive de-icing and anti-icing agent. It is equally effective in melting ice as it is in preventing the formation of ice.

**CAUTION**

NEVER use an anti-freeze or an alcohol-based product. Avoid magnesium chloride and calcium chloride de-icers, which are corrosive to metal.

### Correcting Time Drift

**When to Read This:**

- When the time displayed on reports seems consistent with the other LUKEs. The time on the unit may be re-set by following these steps:

**Steps to Take for Offline LUKEs:**

1. Press **Cancel–OK–OK** to access the Service Menu.
2. Enter the password for the Service Menu. One of the choices you will see in the Service Menu is **TIME AND DATE**.
3. Select the **TIME AND DATE** option and enter the date in the format specified.
4. For the time, enter the time rounded to the next minute. When that minute arrives, press **OK** and the time on the machine will be synchronized.
5. Test that the time is correct by printing a **Configuration Report** or go back to the regular payment menu and start a transaction. Check the transaction time.

**Step to Take for Online LUKEs:**

1. If you have a version higher than 5.2, enable Time Sync in BOSS to automatically synchronize the time on the LUKE with an external time source. Your LUKE must have an Internet connection to use this feature.

### Additional Information

For details about synchronizing time, refer to the BOSS User Guide.
2. LUKE Alarms

Note that most alarms are cleared when the problem causing the alarm is resolved.

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Acceptor Not Present</td>
<td>This alarm occurs when the Bill Acceptor is being initialized and the LUKE doesn’t detect an Acceptor. <strong>Action to take:</strong> Check that the Bill Acceptor is properly connected.</td>
</tr>
<tr>
<td>Bill Acceptor Jam</td>
<td>This alarm occurs if the Bill Acceptor jams during a payment.</td>
</tr>
<tr>
<td>Bill Stacker Full</td>
<td>This alarm occurs when the Bill Stacker is full.</td>
</tr>
<tr>
<td>Bill Acceptor: Unable to Stack</td>
<td>This alarm occurs if the Bill Acceptor can’t stack bills during a payment.</td>
</tr>
<tr>
<td>Coin Acceptor Not Present</td>
<td>This alarm occurs when the Coin Acceptor is initialized and the LUKE doesn’t detect an Acceptor. <strong>Action to take:</strong> Check that the Coin Acceptor is properly connected.</td>
</tr>
<tr>
<td>Coin Jam</td>
<td>This is sensed during a payment. <strong>Parkers may be able to clear this jam by pressing the coin return button.</strong> This is averaged over three readings.</td>
</tr>
<tr>
<td>Shock On</td>
<td>This alarm is triggered when the LUKE is jolted or kicked. It’s also triggered if the LUKE door is slammed shut.</td>
</tr>
<tr>
<td>Coin Changer Empty</td>
<td>This alarm occurs if any coin tube is nearly empty (at the minimum level). This alarm is automatically cleared when all tubes are at least 25 percent full.</td>
</tr>
<tr>
<td>Coin Changer Low</td>
<td>This alarm occurs if any coin tube is less than 25 percent. This alarm is automatically cleared when all tubes are at least 75 percent full.</td>
</tr>
<tr>
<td>Coin Changer Jam</td>
<td>This alarm occurs during payment mode if the LUKE detects that a coin is jammed in the changer.</td>
</tr>
<tr>
<td>Printer: Paper Low</td>
<td>This alarm occurs if the paper level is low.</td>
</tr>
<tr>
<td>Printer: Paper Out</td>
<td>This alarm occurs if the printer has run out of paper.</td>
</tr>
<tr>
<td>LUKE Door Opened</td>
<td>This alarm is triggered whenever the main cabinet door is opened.</td>
</tr>
<tr>
<td>Battery Voltage Low</td>
<td>This alarm is generated when the LUKE detects that the battery voltage is at 11.9V or lower over multiple readings. This alarm automatically clears when the battery has been recharged or replaced (and the voltage is above 12V).</td>
</tr>
<tr>
<td>Alarm Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>Low Power Shutdown</td>
<td>This alarm is triggered when the battery voltage is equal to or lower than 11.4V.</td>
</tr>
</tbody>
</table>
3. **Battery Maintenance**

LUKE batteries use DC power and need replacement. Even if your LUKE is operating on solar power or AC power, the batteries generating the DC power eventually need to be replaced or swapped out with freshly charged batteries.

### Recharging Drained Batteries

Drained batteries should now be re-charged using a power charger. Batteries that have been used for two or three years may need to be replaced since they will not hold charge if a load is put on them when they are old.

### Swapping Batteries

**When to Read This:**
- When the battery voltage falls below 12V.
- When your LUKE sends out an alert that the battery voltage has reached 12.3V.

Note that high transaction levels and use of the heater can drain LUKEs quickly. If your LUKE is handling 200 to 400 transactions each day, you may want to change batteries once a week. At only 100 transactions per day, you may only need to change batteries every three months.

**Steps to Take:**

1. **To check the batteries on an AC unit, disconnect the battery chargers first. Leaving the chargers plugged in can mask the amount of the charge in the battery when you check it.**

   **CAUTION**
   
   *ALWAYS remove and disconnect batteries before you move the LUKE.* Batteries should be stored in a cool, dry place until after you have re-secured the LUKE in its new location.

   Failure to disconnect and remove the batteries from the LUKE before moving the unit can damage the battery cables and batteries. This damage can impact operations and potentially lead to fire. Damage caused to the LUKE under these circumstances will not be covered under warranty.

2. **Check the voltage level of the batteries by logging into the Service Menu (Cancel–OK–OK), entering the password and selecting the System Message Log Menu item.**

3. **If the battery voltage is below 12V, prepare two fully-charged batteries to swap out.**

4. **Open the pedestal door to gain access to the battery compartment.**

   Check that the connection for each battery has a cable with two connectors. In the photograph, each arrow shows a battery connection.
The white arrow shows the connection to the optional AC charger or optional solar panel. If there is no AC charger or solar panel, then the cable indicated won’t be connected.

**Note the following:**

- One battery cable set is red/black. The other battery cable set is white/green.
- One connector goes to the battery and the other connector should be attached to the optional AC charger or optional solar panel.
- Only the red/black cable set is used, with one connector going to the battery and the other connector going to the charger. There are labels on the cables to assist with the connection process.

![WARNING]

Keep all flammable objects away from the inside of the cabinet; connecting cables can cause a spark.

Before you install the batteries, ensure there is heat shrink protecting the terminal leads of the battery. Lack of heat shrink on the terminals can cause an electrical shock when the batteries are installed.

5. Disconnect the clips attaching the batteries and remove each battery from the pedestal.
6. Install the new batteries by connecting the cable clips to each battery. Refer to the labels on the cables.
7. Plug the power cable back into the black controller box to ensure power is running through the unit.
8. Re-connect the AC chargers to power.
9. Test the voltage by checking the Service Menu and the **System Message Log**.
10. The battery voltage should read a minimum of 12.5V with new batteries. If the battery voltage looks good, lock the pedestal and the cabinet doors.

The drained batteries should now be re-charged using a power charger.
4. **Card Reader Cleaning and Maintenance**

### Cleaning the Card Reader

**When to Read This:**
- The card reader should be cleaned once a month at minimum.
- If there is a problem with credit card or custom card swipes reported by parkers.

For further product documentation, please call DPT Customer Service at 888-687-6822.

**Steps to Take:**
1. Inspect the reader for any paper or objects obstructing it.
2. Check that the left side of the slot (which acts like a switch) moves freely by inserting a credit card half an inch inside the slot and observing the movement of the switch.
3. At the back of the card reader is another switch. Push the card in all the way and feel for the switch in the last 1/8” before the card is fully inserted.
4. Use the head-cleaning card to remove any deposits that may have developed inside the reader. To use the cleaning card, slide it in and remove it from the reader several times.
5. Blow compressed air into the reader to remove any loose deposits.

### Troubleshooting Card Reader Problems

**When to Read This:**
- When parkers are notifying you that they can’t use their credit card or SmartCard to buy a ticket. There are a number of ways to find out the source of the problem.
- The problem could be card-related, for example:
  - The parker is using a card that isn’t supported.
  - The parker is using a debit card (ATM card) instead of a credit card or SmartCard.
  - The parker’s card is expired, demagnetized or damaged.

**Steps to Take:**
1. If you are at the LUKE, try to purchase a ticket using a credit card. Insert the card all the way into the reader and remove it quickly after the **Remove Card** message appears. If you aren’t at the LUKE, ask the parker to check for a message.
   - One of the following messages should appear:
     - **Processing Card. Please Wait.** This means the card reader is working.
     - **Unable to read card. Please Re-try.** This means the card could be expired, demagnetized, scratched, incorrectly inserted or isn’t supported.
If no message appears:

- Check in BOSS which types of credit cards are supported. Also check that the credit card setting in BOSS has been uploaded to the LUKE.
- Check the card reader **wiring connections**.
- Check inside the card reader for loose wiring by:
  a. Gently prying loose the protective plastic cover on the credit card reader. The cover is held on by double-sided tape at both sides.
  b. Lifting up the cover.
  c. Checking the interface cable for loose wires and ensuring the connection is good.
  d. Re-installing the cover if the connection is good.

**Important Note**

These procedures are intended for DPT staff only.
5. Printer Maintenance

This section covers printer maintenance, including loading paper and clearing paper jams for US Micro TK-41 and FutureLogic KBM2-60 thermal printers.

Printer Types

**US Micro TK-41**

This printer is designed for wider paper (150-millimeter diameter paper roll). The printer can automatically detect paper jams, low paper levels, paper outages, the wrong position of the printer head, wrong voltage and temperatures outside the operating range. It can operate at temperature ranges between 0° C and 55° C (32° F and 131° F).

**FutureLogic KBM2-60**

FutureLogic's KBM2-60 thermal printer is built specifically for high-reliability outdoor kiosk applications such as parking and transit LUKEs. The KBM2-60 can operate at temperature ranges between -30° C and +70° C (-22° F and 158° F).

Forcing can damage printer components. Never try to force a tension lever on a printer or try to force the cutter head upwards. If levers or printer heads seem stuck, contact DPT.

How to Clean the Printer

**When to Read This:**

- When you notice that the ticket appears streaked. This means that residue has built up inside the printer head.

**Steps to Take:**

1. Unlock and open the cabinet.
2. Remove the power connection to the controller box. If you have an older controller box model, this is the only square connector that is located underneath the center black round connector on the left side.
3. Locate the tension lever on the left side of the printer and use it to release the tension on the paper.
4. Gently pull the paper out of the printer heads and remove the paper roll.

5. Blow out the printer with compressed air.

6. Take the thermal printer pre-soaked cleaning card and manually feed it halfway through the printer heads. You may need to cut the cleaning card down to size to fit the printer.

7. Using both hands, grasp the card at the bottom and pull it three-quarters of the way through. Then grasp the card at the top and pull it upwards. Repeat this process several times.

8. Mount the thermal paper roll in the machine and feed the paper through the printer heads. See the section Loading Printer Paper in the Installation Guide.

9. Power up the LUKE. If you have old controller box model, plug in the power connection to the black controller box. If you have a new controller box, flip the power switch.

10. Test the printer by printing a few test tickets and reports to judge the quality of the print. If it is still streaky, repeat this procedure.

![CAUTION] NEVER use a wet cloth or an alcohol-based solvent to clean the printer or try to disassemble the printer itself. These actions will void the warranty.

How to Clear Printer Jams

When to Read This:
- When parkers are reporting that they can’t get a ticket (receipt).
- When you can’t print a Stall Report or Configuration Report.

Steps to Take:

To test the printer:
1. Ensure the LUKE is powered up and in normal operating mode.
2. Access the Service Menu by pressing Cancel-OK-OK on the keypad.
4. Check in the System Messages that the voltage of all batteries is above 12V.

What to Check if Tickets Won’t Print
1. Open the cabinet and check the paper supply.
2. Check the power connection to the printer.
3. Inspect the printer for jammed paper, a jammed printer head or anything stuck in the printer.
4. If the paper seems to be misfed, re-feed it into the printer and re-align it.
5. If the printer seems to be jammed or has substances on it, follow these steps to clear the obstructions:
   - If you see dirt, debris or residue of any type, clean the printer head as described earlier in this section.
US Micro printers: Disengage the printer head using the green tension lever on the bottom left of the printer and inspect it. If the cutter head on a US Micro printer appears jammed downwards, try to GENTLY raise the cutter head by spinning the wheel at the front-bottom of the printer.

**CAUTION**

Do not attempt to raise the cutter head by force as this can permanently damage it.

FutureLogic printers: Disengage the blue tension lever on the bottom left side. For both printers, try re-feeding the paper and attempting another print job.

**CAUTION**

When using the tension lever on either printer, do not use excessive force as this can damage the printer. If the lever will not move under reasonable force, please contact DPT.

6. If the printer is a FutureLogic, re-upload the printer templates. You need to access the Service Menu by pressing **Cancel-OK-OK** on the keypad and selecting the option **Re-upload the FutureLogic Printer Templates**.

7. Try to re-boot the LUKE by following the steps outlined in the section **LUKE Reset Procedure** at the end of this guide.

**What to Check For in BOSS**

Check that the correct printer type has been selected. The gold printer is US Micro. The black printer is FutureLogic. Upload the configuration from the BOSS Data Key into the LUKE to ensure that the printer type is correct.

**When to Call Customer Service**

When you have tried all the options, re-tested the printer and still no tickets or reports are printing.

**Reloading Printer Paper for US Micro and FutureLogic Printers**

**CAUTION**

Use only thermal paper supplied by DPT. Failure to do so will invalidate the warranty on the printer.

**When to Read This:**

- When you receive an SMS text message on your cell phone notifying you that the paper is low.
- When the LCD shows an out-of-paper message on offline LUKEs.
- When you see a Printer: Paper Low alarm in EMS.

When paper levels are low, online LUKEs send a **Printer: Paper Low** alarm notification to EMS; the alarm appears in the LUKE **Active Alarms** list in EMS when you click on an alarm icon in the home window. Online LUKEs will also send text messages to your cell phone if this option is configured.
Refer to the section **Loading Printer Paper** in the **Installation Guide** for detailed steps on reloading printer paper.

## How to Remove the Printer

### When to Read This:

- When the thermal printer stops working for some reason and you need to get it back up and running, follow these steps to remove the printer and contact DPT for a replacement printer.

### Steps to Take:

1. Unlock and open the cabinet.
2. Open the pedestal door to access the battery compartment.
3. Unplug the battery to cut power to the controller box. If you are using a second battery, unplug it as well.
4. Remove the power cable from the back pane of the new controller box (V2).
5. If you are using an older controller box model (V1), remove the power cable from the box itself. This is the fourth connector located at the bottom left-hand side of the controller, and it's the only **square connector**.
6. Remove the paper from the thermal printer. Refer to the section **Loading Printer Paper** in the **Installation Guide** for more information.
7. The printer bracket under the printer has four Kep nut screws holding it in place. Remove these with an 11/32” nut driver.
8. Once the bracket is out, remove the US Micro printer (gold) from the bracket by unscrewing the four Kep screws with a #2 Phillips screwdriver and an 11/32” nut driver. The FutureLogic printer (black) may be removed from the bracket using a #1 Phillips screwdriver.

9. Remove the two connectors at the back of the printer. The nine-pin serial connector can be removed with a small flat-head screwdriver. The power cable may be removed by pulling on the connector.

   ![WARNING]

   Do not pull on the cables as you could possibly damage them.

10. Re-connect the nine-pin printer connector to the new printer and secure with a flat-head screwdriver. Then re-connect the power cable to the new printer.

11. Install the new printer by attaching it onto the bracket first, and then mounting the bracket back into the LUKE.

12. Re-install the paper. Refer to the section Loading Printer Paper in the Installation Guide for detailed steps on re-installing the printer paper.

13. Test the new printer by printing a report from the Service Menu.
6. **Bill and Coin Component Maintenance**

This section details the cleaning and maintenance of the Coin Acceptor, Coin Changer and Bill Acceptor.

### Cleaning the Coin Acceptor

**When to Read This:**

- When you are trying to clear a coin jam and you find the Acceptor has residue.
- When periodically cleaning the coin passage every six weeks to ensure coins don’t get stuck.

**Steps to Take:**

1. Make sure the Coin Acceptor path is clear by opening the coin gate and pushing back on the lever at the back of the Coin Acceptor. Alternatively, pull back the coin gate to inspect for jammed coins.

   **WARNING**

   *Never try to overextend the opening. This can damage the spring and cable connections.* Do not use any lubricants, solvents, steel wool, scouring pads or a brush with metal bristles. Doing so will decrease the performance and possibly damage the unit.

2. Clean the coin gate area with hydrophobic solution such as Rain-X ([www.clorders.com](http://www.clorders.com), 800 421-1223 Product # RX11413D) and apply with a lint-free cloth. Apply solution on the both sides of the coin gate.

   Hydrophobic solution should be applied each time the paper is replaced. Note that the coin gate is spring-loaded and should move in and out with minimal force. Check the coin gate to ensure no contaminants will interfere with its operation.
Preventive Maintenance Tip
To avoid moisture-related problems, use a moisture absorbing product that is safe for metals.

Clearing Coin Jams in the Coin Acceptor

When to Read This:
- When the Coin Acceptor stops working and the troubleshooting tips outlined later in the Maintenance Guide do not help to get it back up and running. Contact DPT for further assistance.

Steps to Take:
1. Detach the connector at the back of the Coin Acceptor by gently pulling on the connector.

2. To remove the Coin Acceptor, pull the bottom out first as shown in the photo and then slide the top clips along the grooves for easy removal.

3. Inspect the bottom of the Coin Acceptor for any jammed coins or blockages. Shake the Coin Acceptor upside down to loosen any coins stuck in it.

4. Check the top of the Coin Funnel under the Coin Acceptor for any coin blockages. If coins are building up in the Funnel, it could be the result of the coin bag not being properly seated into its bracket.

5. Check the coin bag and make sure it is properly attached to its bracket and is positioned in the correct way. If this doesn’t loosen the coins, please contact DPT for further assistance.
6. Re-install the Coin Acceptor by re-attaching the cable at the back of the unit.

7. Align the top clips to the grooves at the top of the metal bracket. By leaning the bottom of the Coin Acceptor at an angle away from the bracket, the clips should slide into the grooves and the Coin Acceptor will snap back into place.

**Cleaning the Coin Changer**

*When to Read This:*

- When you clean the coin changer every six weeks to ensure trouble-free operation.
- When you clean the coin changer after you replace the paper.

*Steps to Take:*

1. Open the coin gate by pushing back on the yellow lever. Alternatively, *gently* pull back the gate to look for jammed coins. Note that the coin gate is spring-loaded and should move in and out with minimal force. Take care that you do not overextend the opening, as this causes permanent damage to the spring and cable connections.

2. Check for stuck coins, paper jams or other contaminants, such as gum.

3. Using a lint-free cloth, clean both sides of the coin gate area with hydrophobic solution such as Rain-X (www.clorders.com, 800 421-1223 Product # RX11413D). Apply the solution on the both sides of the coin gate.

   ![WARNING](image)

   Do not use any lubricants, solvents, steel wool, scouring pads or a brush with metal bristles. Doing so will decrease the performance and possibly damage the unit.

4. For greasing, use Super Lube to grease the Coin Return button as well as any friction points of the coin bar lever as shown in the photo below.

   **Note:** The bracket has been removed from the LUKE to show more easily the points to grease.)
Clearing Coin Jams in the Coin Changer

Steps to Take:

1. To remove the Coin Changer, unlock the padlock and open the black flap. The white arrow shows the location of the padlock, if one is used.

2. Remove the screw on the top of the coin bar lever using a #2 Phillips screwdriver. Then raise the coin bar lever.
3. Pull the Coin Changer up and out to release it from the three screws holding it in place. Then slide it out of the bracket from the bottom to the top.

4. Detach the connector at the back of the Coin Changer by gently pulling on the connector.

5. Inspect the bottom of the Coin Changer for any jammed coins or blockages.

6. Check the top of the Coin Funnel under the Coin Changer for any coin blockages. If coins are building up in the Funnel, it could be the result of the coin bag not being properly seated in its bracket. Check the coin bag and make sure it is properly attached to its bracket and is positioned in the correct way. If this doesn't loosen the coins, contact DPT for further assistance.

7. Re-install the Coin Changer by re-attaching the cable at the back of the unit.

8. Mount the Coin Changer into the bracket. There are three screws on the bracket that align with the holes on the Coin Changer. Center the screws over the holes, and then lock into place by pushing down. Ensure that the cable is fed underneath the lever.

   The following photo shows the Coin Changer in place. Note that it is flush to the left side of the bracket.
The following photo shows the Coin Changer cable fed underneath the lever.

9. Connect the cable from the Coin Changer to the connector.
10. Attach the screw into the top of the coin lever bar using a #2 Phillips screwdriver.
11. Close the black flap and lock with a padlock, if necessary.

Removing the Coin Changer

**Steps to Take:**
1. Disconnect the communication/power cable to the Changer.
2. Remove the two 11/32" Kep nuts from the PEM studs that secure the Changer bracket to the cabinet.
3. Remove the bracket by lifting the assembly up and out of the cabinet as shown below:

4. If coins are in the tube, remove the tube cassette from the Changer to prevent the coins from falling out. See the photo below:

5. Find the three studs located between the bracket and the Changer that hold the two pieces together.

6. Slide the Changer up by pushing on the bottom of it.
The Changer should slide up about 0.250” from the bottom of the bracket, as shown below:

7. Maintain pressure by pushing up on the Changer while lifting it out from below.

8. The Changer and the bracket will be separated, as shown here:

Three studs mate with mounting holes on the back of the changer to secure it to the bracket.
Coin Changer Disassembly and Assembly

When you remove the Coin Changer, you may need to remove or replace the tubes.

Additional Information

For further product documentation on Coin Changer maintenance, please call DPT Customer Service at 888-687-6822.

Cleaning the Bill Acceptor

When to Read This:

- Every six months or 60,000 bills and when checking for dirt or paper residue on the transport rollers, bill path and optical sensors. Circulated bills tend to be dirty. Within six months, dust and dirt deposits can accumulate inside the components.

Steps to Clean the Bill Slot:

1. Check the slot for anything jamming it—coins, credit cards, bills or paper.
2. Wipe the slot with a damp cloth.
3. Using the Service Menu, select a ticket purchase option that requires a bill input and then insert a Bill Acceptor cleaning pad instead of a bill.
4. When the pad is rejected, turn it over and insert it back into the machine. Repeat this step several times. When the pad is rejected again, cancel the purchase.

**Steps to Clean Inside the Bill Acceptor:**

1. Open the LUKE cabinet door and unlock the Bill Acceptor.

2. Push the button on the top of the Bill Acceptor and then press the two tabs on the sides.

3. Pull from the top of the Bill Acceptor down and then remove the stacker, clearing the slide lock at the bottom.

4. Check the rollers, optical sensors and bill path for dirt or cracks.

5. Check the transport rollers for cracks.

6. Clean the bill path using a soft cloth moistened with Isopropyl alcohol.
7. Next, open the Bill Acceptor by pressing on the button below. The bottom will swing open and the other portion attached to the button clip can be disengaged by gently pulling up on it.

8. Once the bottom of the Bill Acceptor is open, use a citrus cleaning solution and a lint-free swab to clean the rollers. Remove dirt from the interior surface.

9. Use compressed air to blow out the stacker portion of the Bill Acceptor.

10. Close the Bill Acceptor from the bottom first and install it back in the LUKE.

NEVER use acetone or petroleum-based cleaning products.

Additional Information

For further product documentation on Bill Acceptor maintenance, please call DPT Customer Service at 888-687-6822.

Troubleshooting Coin Acceptor Problems

When to Read This:
- When coins are not being accepted or are jamming.

Steps to Take:
1. Check your BOSS configuration to see what coins the Coin Acceptor will take. Refer to the BOSS User Guide for detailed information. If the coin configuration is not set up in BOSS, you need to change the BOSS setting, save the new configuration, load it onto your BOSS Data Key for manual download onto the LUKE, or transmit the update via EMS.

2. If the coin is selected in BOSS and it is still not being accepted, try other coins of the same value to see if the problem persists.

3. If the coins are still being rejected, try a different value coin to see if the problem occurs with all values of coin.
To check for jams:
- If the problem persists, remove the Coin Acceptor and make sure nothing is jamming it and that the connection at the back of it is properly seated. (Refer to the sub-section Cleaning the Coin Acceptor discussed in the section Bill and Coin Component Maintenance of the Maintenance Guide for more information on removing the Coin Acceptor and clearing coin jams.)

To check for connection problems:
- Check that the connection at the back of the Coin Acceptor is properly seated.
- To remove the Coin Acceptor, refer to the sub-section Clearing Coin Jams in the Coin Acceptor discussed in the section Bill and Coin Component Maintenance of the Maintenance Guide

To reset the Coin Acceptor:
- If the problem persists, try to re-boot the LUKE to see if the Coin Acceptor needs to be reset. (Refer to the last section – LUKE Reset Procedure – at the end of this guide for more details.)

Contact DPT for a replacement Coin Acceptor if all of the above steps have been tried and the problem still persists.

**Important Note**

If metalwork changes have been made to correct jams, the procedures and options may differ. Contact DPT for details.

**Troubleshooting Coin Changer Problems**

**When to Read This:**
- When a tube is not dispensing change or dispenses incorrect amounts of change.

**For New Coin Changers:**
1. Check that the type of coin in the tube matches the BOSS configuration, which determines which coin tubes should be installed.
2. Check that the number of tubes for each denomination is correct. Check that the Enable Coin Refunds is selected. Upload the setting to ensure that the correct configuration is installed.

**For Older Coin Changers Already in Operation:**
1. Check that the tube isn’t empty and has at least four coins in every tube.
2. Check that there is nothing stuck inside the tube.
3. Check that the colored tube base is correctly seated.
Correctly seated base.

Incorrectly seated base. The white arrows point to the problem. The tab should fit into the slot.

Checklist:

- Check the replenish report against the actual number of coins in the tubes. If the report is incorrect, select **Autoset Tube Count** to re-sense the number of coins in the tubes.

- Ensure the tubes are inserted into the correct positions.

- Ensure the cassette is inserted correctly into the unit. The yellow handle must freely move up and down to release and secure the cassette into the unit.

- Ensure the Coin Changer cable is connected to the controller box.

- Ensure the Coin Changer is powering up by putting the LUKE into Service Menu, pressing **Cancel-OK-OK**, and then going into the **Replenish Coin Changer**. The Coin Changer should initialize.
Troubleshooting Bill Acceptor Problems

When to Read This:

- When parkers report that the Bill Acceptor keeps rejecting their money. Often bills are rejected because they are old or heavily creased, and the parker is trying to insert the most wrinkled side of the bill. Attempts to use a phony bill or engaging in vandalism (stuffing the Bill Acceptor with paper) can cause the Bill Acceptor to jam.

Steps to Take:

1. If you are at the LUKE, try to purchase a ticket using a fairly flat and new bill.
2. Try all four directions.
3. Check that the green light comes on when you try to insert the bill.
4. Using a stacker key, open the Bill Stacker and check to see if any bill is blocked or stuck, or if there are any obstructions such as cardboard or paper.

To check the Bill Acceptor:

1. Press the button at the bottom of the Bill Acceptor. Once the clip is engaged, open the bottom of the Bill Acceptor by gently pressing on the bottom and top doors.
2. Look inside the Bill Acceptor for any jammed bills or foreign objects.
3. Remove bills, debris or any obstructions.
4. Wipe down the inside of the housing using a citrus cleaning solution and a lint-free swab.

**Frequently Asked Questions**

**Q: The Bill Acceptor seems to be working, but when I put the stacker on, nothing happens.**
1. Check that the LUKE is in payment mode.
2. Check that the green light at the front of the Bill Acceptor is on. This indicates whether the Bill Acceptor is powered up.
3. If the green light is off, check your BOSS settings to ensure the Bill Acceptor is activated. (Refer to the **BOSS User Guide** for more information on how to activate the Bill Acceptor.)
4. Check the Bill Acceptor’s connection to the stacker. You may need to replace the stacker.

   If the problem persists, open the bill stacker and check for a blockage. (Refer to the sub-section on **Cleaning the Bill Acceptor** discussed in the section **Bill and Coin Component Maintenance** of the Maintenance Guide for instructions on how to remove the stacker.)

**Q: Why does the LUKE accept my money but not give any credit?**
1. The data cable is either not plugged in or it is defective. Ensure the cable is plugged in properly. If you are sure the cable is connected properly and the Bill Acceptor is still eating your money, replace the Bill Acceptor data cable set.

**Q: Why won’t the LUKE accept my $20 bill but it will accept $1, $5, $10?**
1. Check the bill configuration in BOSS to ensure all bills are selected. If the $20 bill is not selected, select it, save the configuration and upload the machine configurations to the LUKE using your BOSS Data Key to accept the $20 bill. (Refer to the **BOSS User Guide** for more details on this process.)
2. If this is a newly issued bill from the mint/treasury, then the Bill Acceptor will not accept it until it has been upgraded. Please contact DPT for an upgrade.

**Q: Why is the Bill Acceptor still not working after trying all of the above?**
1. If you continue to have any issues with your Bill Acceptor, check that the battery voltages for the unit are within the appropriate range (12.0V DC or above).
2. If the power is fine, call DPT Customer Service at 888-687-6822 for further assistance. If your Bill Acceptor needs replacing, please follow these steps to remove the unit:
a. Remove the stacker from the Bill Acceptor housing by unlocking it and pressing the tabs on the side of the stacker. Pull the stacker down from the top and remove it out of the Bill Acceptor housing.

b. Disconnect the cable to the Bill Acceptor. The cable is located on the left side.

c. Pull off the cover on the back of the Bill Acceptor by grabbing the top right-hand corner of the cover and gently pulling. The cover will then come off.
d. Remove the five Kep nuts holding in the Bill Acceptor using an 11/32" nut driver.

e. Install the new Bill Acceptor by reversing the directions used for removing it. Test the new Bill Acceptor by making some transactions with different bills.
7. LCD Maintenance

Replacing a Damaged Lexan Panel

When to Read This

- When the Lexan panel has been scratched or marked due to vandalism. The Lexan panel provides protection to LUKE’s LCD screen.

Tools Required

- A new Lexan panel
- 7/16” socket
- 11/32” socket
- #2 Phillips screwdriver
- Small flat-head screwdriver
- Clear outdoor-rated silicone
- Clean, dry cotton cloth

Steps to Take:

1. Open the LUKE cabinet door.
2. Switch off power to the controller box.

For a new controller box (V2), turn the ON/OFF switch to OFF. If you are using an old controller box (V1), unplug the square connector that provides power to the unit. (It is the fourth connector up from the bottom on the left side and the only connector that is square.)
3. Begin removing the LCD screen cover from LUKE by using the 11/32" socket to remove the three nuts, as indicated by the photo below:

4. With the cover removed, unplug the three cables.

5. Remove the four screws holding the LCD assembly using a #2 Phillips screwdriver. Be sure to hold the LCD panel in place so it doesn’t fall down when the final screws are removed.

6. Remove the four Hex Bolts using the 7/16" socket, and then remove the two screws using the #2 Phillips screwdriver.

7. Be sure to hold the plate in place with one hand while removing all the bolts and screws.

**WARNING**
The power to LUKE must be turned off before continuing with this procedure as the LCD Assembly produces high voltage.
8. When both hands are free, carefully remove the LCD screen. The Lexan panel is attached with silicone. You may need to pry the panel loose.

9. Clean off the area where the Lexan has been installed. Ensure you remove all of the old silicone.

10. Hold the Lexan panel on its edges to avoid getting finger oil and dust on it.

11. Remove the paper off the front and back of the new panel.

12. When the paper is removed, set the Lexan panel into place and hold it with one hand. Use the other hand to put the metal plate into place so that it holds the Lexan panel.

13. Line up the metal plate with the Hex Bolt holes.

14. Screw in the four Hex Bolts and two screws loosely to keep the panel in place.
For the Hex Bolt at the lower far right of the Lexan panel, remember to re-attach the safety ground wire and washers. **This procedure applies only if you are using older versions of the controller.** The order in which these items should be put on the bolt is first the flat washer, then the safety ground wire and finally the external tooth washer.

15. Use the discarded backing or a clean, dry cotton cloth to remove any residue, finger oils or dust on the panel as well as on the LCD screen.

16. Look at the front of the cabinet to make sure the Lexan screen is in the proper position and then tighten all bolts and screws.

17. Put the LCD screen back into position. Use the #2 Phillips screwdriver to attach the four screws. For the lower right-hand screw, the ground wire must be attached.

18. Re-attach the four cables.

19. Put the LCD cover back into position. Use the 11/32" socket to attach the three nuts.

20. Apply a thin bead of clear silicone around the edges of the Lexan at the front of the cabinet to create a water seal.

   The silicone may then be smoothed out using the tip of your finger. Wait a few minutes and then use a clean cloth to remove any remaining residue (see photos below):
21. Plug the power back into the controller box when you are ready to put your LUKE back into operation.

22. Gently wipe the Lexan panel clean with a clean, dry cotton cloth to remove any remaining residue.
8. LUKE Reset Procedure

When to Read This:

- When you need to restart the LUKE after a software “freeze.” LUKE can reset itself but there are times you may need to reset the software in the controller box manually.

Steps to Take:

1. Unlock and open the cabinet.
2. Switch off power to the controller box.

- For controller box V1, deployed in units prior to October 2006, locate the power cable on the controller box and unplug it (the four-pin square connector, which is the fourth connector up from the bottom left side). For controller box V2, deployed in units after October 2006, flip the ON/OFF switch to OFF (O indicates OFF and “ – ” indicates ON, as labeled on the switch.)

3. Wait for about 15 to 20 seconds.

- Re-plug in the power cable for the controller box V1. Flip the ON/OFF switch to ON for the controller box V2.

4. The LUKE will reboot showing a solid white screen. The message Copying Files appears. Next, the Windows CE operating desktop appears for a few seconds. Finally, the LUKE software should restart as normal. If there are still problems with your LUKE, repeat the procedure one more time.

For Assistance or More Information

For any questions concerning procedures outlined in the LUKE Maintenance Guide, please contact DPT Customer Service at 888-687-6822 or support@digitalpaytech.com.