GILBARCO VEEDER-ROOT

FlexPay™ Encrypting PIN Pad (EPP)

Start-up and Service Manual

MDE-4784D

Computer Programs and Documentation

Federal Communications Commission (FCC) Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Approvals

Gilbarco is an ISO 9001:2008 registered company.

Underwriters Laboratories (UL):

U L File#	Products listed with U L
MH1941	All Gilbarco pumps and dispensers that bear the UL listing mark.
MH8467	Transac System 1000 and PAM 1000
E105106	Dell DHM Minitower
E165027	G-SITE and Passport Systems

California Air Resources Board (CARB):

Executive Order #	Product
G-70-52-AM	Balance Vapor Recovery
G-70-150-AE	VaporVac

National Conference of Weights and Measures (NCWM) - Certificate of Conformance (CoC):

Gilbarco pumps and dispensers are evaluated by NCWM under the National Type Evaluation Program (NTEP). NCWM has issued the following CoC:

CoC#	Product	Model #	CoC#	Product	Model #
02-019	Encore	Nxx	02-036	Legacy	Jxxx
02-020	Eclipse	Exx	02-037	G-SITE Printer (Epson)	PA0307
02-025	Meter - C Series	PA024NC10		G-SITE Distribution Box	PA0306
	Meter - C Series	PA024TC10		G-SITE Keyboard	PA0304
02-029	CRIND	—		G-SITE Mini Tower	PA0301
02-030	TS-1000 Console	—		G-SITE Monitor	PA0303
	TS-1000 Controller	PA0241		G-SITE Printer (Citizen)	PA0308
	Distribution Box	PA0242	02-038	C+ Meter	T19976
	Meter - EC Series	PA024EC10	02-039	Passport	PA0324
	VaporVac Kits	CV	02-040	Ecometer	T20453
			05-001	Titan	KXXY Series

Trademarks

Non-registered trademarks

Applause™ Media System	G-SITE® Lite™	SMART Meter™
CIM™	Highline™	SmartPad™
C-PAM™	Horizon™	Surge Management System™
ECR™	MultiLine™	Tank Monitor™
EMC™	Optimum™ Series	TCR™
FlexPay™	PAM™ 1000	Titan™
G-CAT™	PAM™	Ultra-Hi™
Gilbert™	SMART Connect™	ValueLine™
G-SITE® Link™	SMART CRIND™	

Registered trademarks

CRIND®	InfoScreen®	Transac®
Dimension® Series	Legacy®	Transac® System 1000
e-CRIND®	Making Things Better®	Trimline®
Eclipse®	MPD®	TRIND®
Encore®	Passport®	VaporVac®
G-SITE®	Performer®	
Gilbarco®	The Advantage® Series	

Additional US and foreign trademarks pending.

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1 – Introduction

Purpose

This manual provides start-up, service, and troubleshooting instructions for FlexPay™ Encrypting PIN Pads (EPPs) that are installed on the Encore® Series, Eclipse®, and The Advantage® Series dispensers.

Intended User

This manual is intended for Authorized Service Contractors (ASCs) who are trained to service the FlexPay EPP.

Overview

FlexPay EPPs meet Payment Card Industry (PCI) requirements for debit transactions that are processed at fuel dispensers.

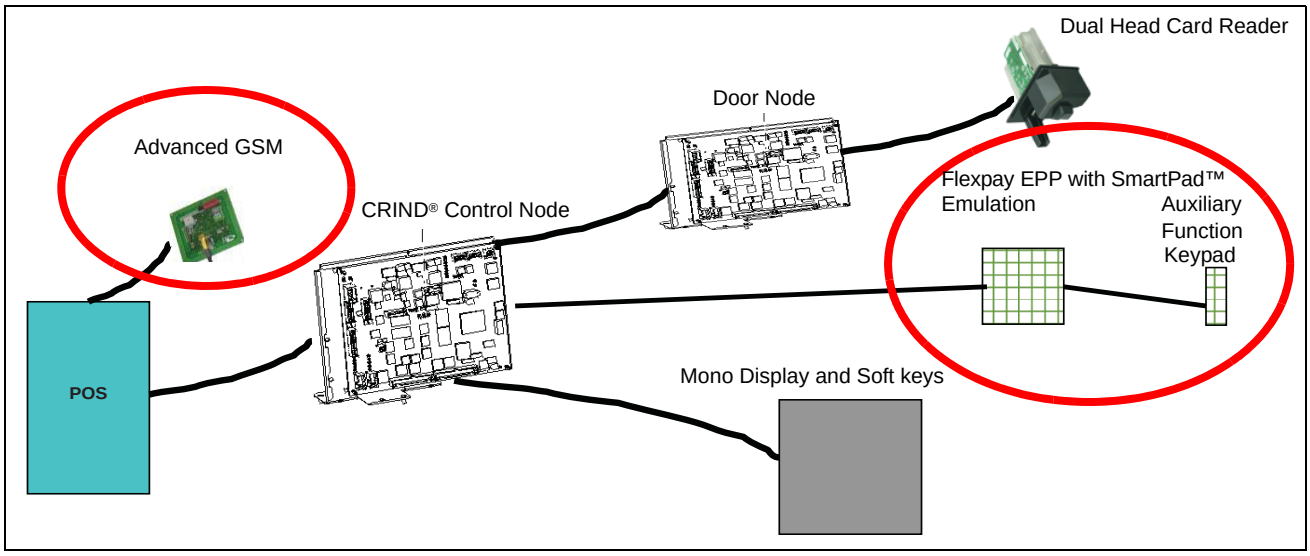
They provide an integrated solution that can be factory-installed or retrofitted in the field.

The major advantages of Gilbarco®'s FlexPay EPPs are listed below:

- No wiring or Point Of Sale (POS) system changes
- Integrated appearance
- Local key encryption in PIN Pad
- Triple-Data Encryption Standard (TDES)

Figure 1-1 shows the FlexPay EPP system configuration.

Figure 1-1: FlexPay EPP - System Configuration



Component	Functionality
FlexPay EPP with SmartPad Emulation	• Emulates SmartPad protocol • Holds acquirer TDES Derived Unique Key Per Transaction (DUKPT) key and sends PIN block encrypted in acquirer DUKPT Key • Supports Auxiliary Function Keypad interface
Aux.iliary Function Keypad	Supports up to eight low-cost add on function keys
Advanced GSM	GSM used for CRIND devices with all FlexPay devices (shipped before or after January 1, 2009) and CRIND devices without FlexPay, including a SDES/TDES mixed environment.

The FlexPay EPP standard mandates PCI physical and logical security including the encryption of PINs using acquirer DUKPT keys using TDES for encryption.

Product Configurations

- FlexPay EPP Factory Installed - Encore 300/500/S and Encore S Enhanced dispensers
- FlexPay EPP Retrofit Kits - Encore 300/500/S, Encore S Enhanced, The Advantage Series (Monochrome only), and Eclipse dispensers

Product Specifications

Figure 1-2: FlexPay EPP

- PCI Compliant PIN Pad
  - PIN encrypted directly in PIN Pad. Capable of remote key loading
  - TDES encryption standard
- PIN Pad equipped with standard buttons and color indicators: YES/Receipt, No, Cancel, Clear, Enter/OK, and Americans with Disabilities Act (ADA)
- Option keys (4) available with no POS system changes
- Integrated into current dispenser design for seamless look
- Side shield protection for all models
- Backwards compatible with POS and current CRIND hardware

Required Tools

The following tools are required to service the FlexPay EPP on a dispenser:

- Hand Drill/Pneumatic Air Drill
- 7 mm Drill Bit
- 1/4” Socket/Ratchet Set or Nut Driver (magnetic)
- 5/16” Socket/Ratchet Set or Nut Driver (magnetic)
- 9/32” Socket/Ratchet Set or Nut Driver (magnetic)
- Flat-blade Screwdriver
- Phillips® Screwdriver
- Putty Knife/Exacta Knife
- Needle Nose Pliers
- Isopropyl Alcohol
- Laptop and FlexPay EPP Programming Cables
- Wrist Strap
- Antistatic Mat
- IC Extractor

Related Documents

Document Number	Title	GOLD Library
MDE-2531	Gilbarco Pump and Dispenser Start-up/Service Manual	Service Manual
MDE-2540	The Advantage, Legacy® & MPD® Series Owners Manual	Advantage & Legacy Models
MDE-3802	Encore & Eclipse Site Prep Manual	• Encore and Eclipse Installers • Encore and Eclipse • Site Prep
MDE-3804	Encore/Eclipse Start-Up/Service Manual	• Encore and Eclipse • Service Manual
MDE-3893	Encore and Eclipse Owner's Manual	• Encore and Eclipse • Encore and Eclipse Installers
MDE-3985	Encore Installation Manual	• Encore and Eclipse • Encore and Eclipse Installers • Footprint & Elevation Library
MDE-4799	FlexPay Encrypting PIN Pad (EPP) Mapping Cables	FlexPay EPP & SCR
MDE-4807	FlexPay Encrypting PIN Pad (EPP) Remote Key Loading (RKL) and Debit Activation Instructions	• Encore and Eclipse • FlexPay EPP & SCR
MDE-4900	Secure Card Reader (SCR2) Kit Installation Instructions for Encore 500 S	• FlexPay EPP & SCR • Encore and Eclipse
MDE-4927	Secure Card Reader (SCR) V2 Kit Installation Instructions for Encore 500	• FlexPay EPP & SCR • Encore and Eclipse
MDE-4928	SCR2 Kit Installation Instructions for Encore S Enhanced	• FlexPay EPP & SCR • Encore and Eclipse
MDE-4929	Secure Card Reader (SCR) V2 Kit Installation Instructions for Eclipse	• FlexPay EPP & SCR • Encore and Eclipse
MDE-4930	Secure Card Reader (SCR2) Kit Installation Instructions for The Advantage Series	• FlexPay EPP & SCR • Advantage & Legacy Models
MDE-4931	Secure Card Reader (SCR) V2 Kit Installation Instructions for Encore 300	• FlexPay EPP & SCR • Encore and Eclipse
PT-1736	The Advantage/MPD/CRIND Illus. Parts Manual	Parts Manual
PT-1936	Encore Illustrated Parts Manual	• Parts Manual • Encore and Eclipse • Encore and Eclipse Installers

Abbreviations and Acronyms

Term	Description
ADA	Americans with Disabilities Act
ASC	Authorized Service Contractor
CRIND	Card Reader IN Dispenser
DUKPT	Derived Unique Key Per Transaction
EPP	Encrypting PIN Pad
GSM	Gilbarco Security Module

Term	Description
IC	Integrated Circuit
MOC	Major Oil Company
PCA	Printed Circuit Assembly
PCI	Payment Card Industry
POS	Point Of Sale
SDES	Single-Data Encryption Standard
TDES	Triple-Data Encryption Standard
TRIND®	Transmitter/Receiver IN Dispenser

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2 – Important Safety Information

Notes: 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

Preliminary Precautions

You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.

Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

⚠ WARNING

The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.

You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

Evacuating, Barricading and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:

- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones or barricades at the affected unit(s)
  - A total electrical shut-off of the affected unit(s)

Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code (NEC)*, Occupational Safety and Hazard Association (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

Replacement Parts

Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

Alert Symbol

This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury or damage to the equipment:

DANGER: Alerts you to a hazard or unsafe practice which will result in death or serious injury.

WARNING: Alerts you to a hazard or unsafe practice that could result in death or serious injury.

CAUTION with Alert symbol: Designates a hazard or unsafe practice which may result in minor injury.

CAUTION without Alert symbol: Designates a hazard or unsafe practice which may result in property or equipment damage.

Working With Fuels and Electrical Energy

Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF fluid lines.

No Open Fire

Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.

No Sparks - No Smoking

Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

⚠ WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

⚠ WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

⚠ WARNING

Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

⚠ WARNING

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors.
If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

⚠ WARNING

Gasoline inhaled may cause unconsciousness and burns to lips, mouth and lungs.
Keep airway open.
Seek medical advice immediately.

⚠ WARNING

Gasoline/DEF spilled in eyes may cause burns to eye tissue.
Irrigate eyes with water for approximately 15 minutes.
Seek medical advice immediately.

⚠ WARNING

Gasoline/DEF spilled on skin may cause burns.
Wash area thoroughly with clear water.
Seek medical advice immediately.

⚠ WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice/recommended treatment if DEF spills into eyes.

IMPORTANT: Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

Lockout/Tagout

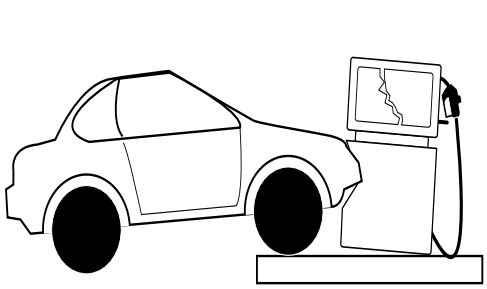
Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

Hazards and Actions

WARNING

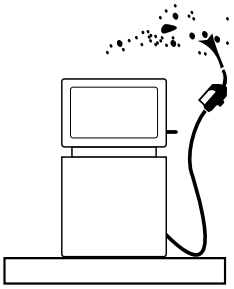
Spilled fuels, accidents involving pumps/dispensers, or uncontrolled fuel flow create a serious hazard.
Fire or explosion may result, causing serious injury or death.
Follow established emergency procedures.
DEF is non-flammable. However it can create a slip hazard. Clean up spills promptly.

The following actions are recommended regarding these hazards:



Collision of a Vehicle with Unit

Fire at Island



Fuel Spill

- Do not go near a fuel spill or allow anyone else in the area.
- Use station EMERGENCY CUTOFF immediately. Turn off all system circuit breakers to the island(s).
- Do not use console E-STOP, ALL STOP, and PUMP STOP to shut off power. These keys do not remove AC power and do not always stop product flow.
- Take precautions to avoid igniting fuel. Do not allow starting of vehicles in the area. Do not allow open flames, smoking, or power tools in the area.
- Do not expose yourself to hazardous conditions such as fire, spilled fuel, or exposed wiring.
- Call emergency numbers.

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3 – Start-up and Service

This chapter provides start-up, service, and troubleshooting instructions for the FlexPay EPP.

These procedures must be performed by a Gilbarco ASC who is trained to service the FlexPay EPP.

⚠ WARNING

Always wear proper eye protection when servicing the dispenser.

⚠ WARNING

AC or battery powered drills must not be used at the dispensing unit. There exists a danger of explosion or fire due to the presence of hazardous vapors.

Start-up Procedure for the FlexPay EPP

Before you begin, read and understand all safety information found in MDE-3804 Encore/Eclipse Start-Up/Service Manual.

Inform the Manager that the power will be removed and remove all power supplied to the dispenser at the breaker located in the building. Block off the dispenser from customers.

To start up the FlexPay EPP in a factory-installed dispenser, proceed as follows:

1 Remove power to the dispenser. Follow OSHA Lock-out and Tag-out procedures.

⚠ WARNING

Failure to turn off the unit during the installation of the kit may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during kit installation.

2 Open the main door (or lower door followed by the main door for Encore S dispensers).

3 Isolate the Two-wire cable.

4 Ensure that all FlexPay EPP cables are connected appropriately and secured.

5 Restore power to the dispenser.

6 Purge memory (in case of The Advantage Series or Encore 300 dispensers, install the coldstart jumpers and perform a coldstart).

IMPORTANT INFORMATION
The FlexPay EPP may not enable proper debit functions if the purge memory or coldstart procedure is not performed.

7 When the dispenser comes up, enter the CRIND Diagnostic Mode, program the CRIND IDs, CRIND Mode, and enable any peripheral devices (Cash Acceptors, TRIND®, and so on). For Encore 500 and Eclipse dispensers, refer to "Entering Diagnostic Mode Using the CRIND Diagnostic Card" on page 15 and for Encore 300 and The Advantage Series dispensers, refer to "Entering Diagnostic Mode Using the CRIND Diagnostic Card" on page 18 .

8 Bring the POS back online by re-connecting the Two-wire cable or by de-isolating at the D-Box.

9 After the download is complete, run a Keypad test (For Encore 500 and Eclipse units, refer to "Performing the Keypad Test" on page 16 and for Encore 300 and The Advantage Series units, refer to "Performing the Keypad Test" on page 18).

10 Check if debit transactions are accepted using the newly installed FlexPay EPP.

Temperature Range

Operating Temperature Range	-30 °C to +70 °C
Storage Temperature Range	-40 °C to +70 °C

Note: For security reasons, the encryption keys will be deleted and the FlexPay EPP will not work, if the temperature is outside the storage range.

Built-in Battery Life

The battery has a minimum life of 5 years; it is indefinite when powered on.

Note: Do not replace or tamper with the battery. If the battery is tampered with, information about the keys will be erased and the FlexPay EPP will have to be replaced. The battery is a non-replaceable part.

Sensors

The FlexPay EPP has secure hardware, preventing tampering with the electronics and disclosure of the secret keys and PIN codes that are being stored.

The FlexPay EPP has sensors that can detect the following:

- Disassembly of the keyboard
- Disassembly of the security box
- Drilling into the PCB
- Drilling of the security box
- Low temperature
- High temperature
- Low battery

Tampering

The FlexPay EPP is tamper-resistant. If tampering is detected, the FlexPay EPP will stop working. All encryption functionality will be disabled or destroyed, and a new FlexPay EPP must be installed. This is to ensure that a cardholder's personal data is not compromised.

Service Tool

A FlexPay EPP Service Tool is provided by Gilbarco and can be downloaded using the Gilbarco Laptop Tool. The tool is a software-based application that will reside on your laptop. The tool requires a Power/Serial Adapter Cable for downloading software programs to the FlexPay EPP. The FlexPay EPP requires a software download to support TDES (refer to "Tools" on page 14).

The Service Tool supports the following functions:

- Diagnostics
  - Test basic responses
  - Display Serial Number
  - Error codes
  - Key status
- Configuration
  - Set key map (select from the list provided)
- Tools
  - Downloads the TDES software to the FlexPay EPP which is provided by Gilbarco (must be connected to a Gilbarco Server using an Ethernet connection).

IMPORTANT INFORMATION

To perform Remote Key Loading of TDES keys, refer to MDE-4807 FlexPay Encrypting PIN Pad (EPP) Remote Key Loading (RKL) and Debit Activation Instructions.

For information on connecting a laptop to the FlexPay EPP, refer to "Connecting a Laptop to the FlexPay EPP" on page 25.

Reading the Status LEDs

The Light Emitting Diodes (LEDs) on the CRIND Node and rear of the FlexPay EPP indicate the status of FlexPay EPP communications.

IMPORTANT INFORMATION

LEDs are not present on the CRIND Logic Board in Encore 300 and The Advantage Series dispensers.

In Encore 500 Series and Eclipse dispensers, SmartPad TX and RX LEDs are present on each side, located underneath the Heartbeat LED. Flashing Yellow/Orange LEDs indicate that the unit is functioning properly. If the LEDs are off, verify if the cable is connected properly at both ends, that is, at the CRIND Board and FlexPay EPP. Then, verify if the LEDs on the rear of the FlexPay EPP are flashing. The Red LED must be flashing steadily. Flashing Green LED indicates that the FlexPay EPP is receiving and sending commands.

IMPORTANT INFORMATION

If there is a solid Red LED on power-up and the FlexPay EPP is not operational, then attempt another warmstart. If a solid Red LED appears again, then it indicates that the FlexPay EPP is damaged and must be replaced.

CRIND Diagnostics

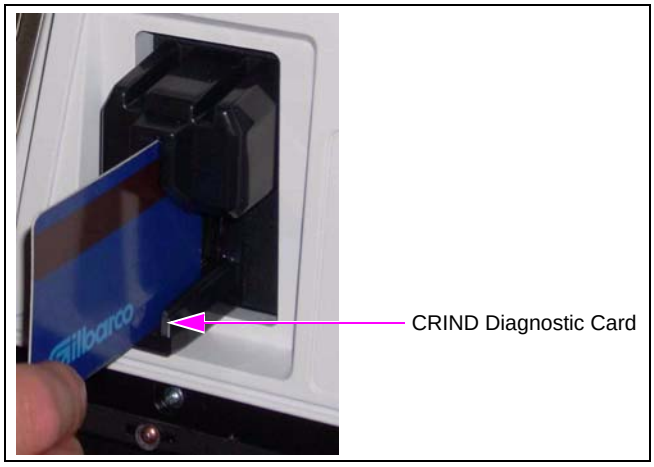
Encore 500 Series and Eclipse Dispensers

Entering Diagnostic Mode Using the CRIND Diagnostic Card

To enter the Diagnostic Mode, proceed as follows:

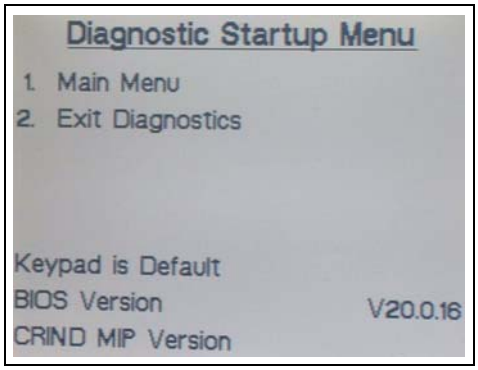
1 Swipe the CRIND Diagnostic Card (see Figure 3-1).

Figure 3-1: Entering the Diagnostic Mode



The CRIND Diagnostic Startup Menu appears.

Figure 3-2: CRIND Diagnostic Startup Menu

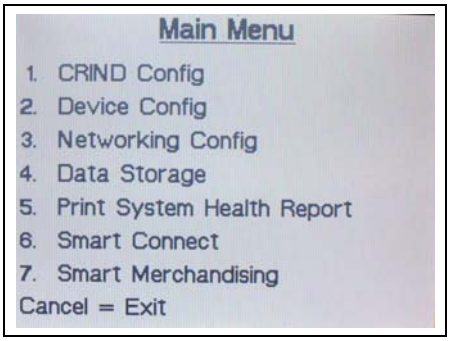


Performing the Keypad Test

To perform the Keypad Test, proceed as follows:

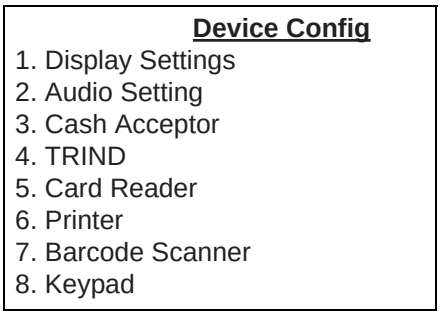
1 On the CRIND Diagnostic Startup Menu, press **1**. The CRIND Diagnostic Main Menu appears.

Figure 3-3: CRIND Diagnostic Main Menu



2 On the CRIND Diagnostic Main Menu, press **2**. The Device Config Menu appears.

Figure 3-4: Device Config Menu

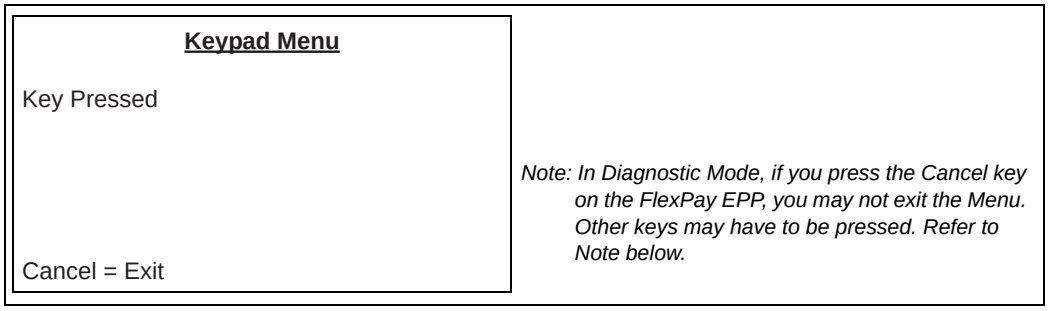


3 On the Device Config Menu, press **8**. The Keypad Menu appears. The Keypad Menu displays a unique code in real-time for each key that is pressed.

Notes:1) When you enter the Keypad Test in Diagnostic Mode, a message is displayed at the bottom of the screen that indicates the Debit status (on Encore 500 Series and Eclipse dispensers only).

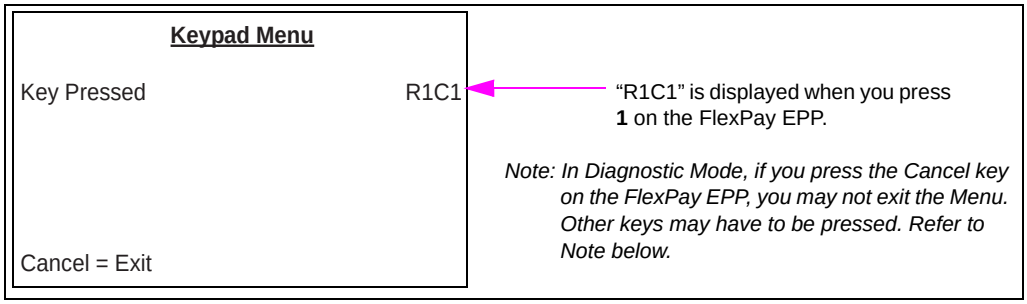
2) If you have the FlexPay EPP still plugged into the Mapping Cable, you will see error messages on the CRIND display which must be ignored. Ensure that the FlexPay EPP is plugged into the CRIND before running the Keypad Test.

Figure 3-5: Keypad Menu



4 Press any key on the FlexPay EPP. The row/column information for the key is displayed on the screen (see Figure 3-6).

Figure 3-6: Keypad Test Example



Note: In Diagnostic Mode, the key that functions as the Cancel key may not be the actual Cancel key on the FlexPay EPP. If the Cancel key does not work, try all Function keys (YES/NO/CANCEL/HELP) and the four Option keys, until you locate the key that functions as the Cancel key in Diagnostic Mode.

IMPORTANT INFORMATION

When you perform the Keypad Test, the Function keys on the FlexPay EPP and Auxiliary Keypad may display different rows/columns from what is expected. This is normal. The FlexPay EPP or the Auxiliary Keypad must not be replaced, if this is observed.

Exiting Diagnostic Mode

To exit the Diagnostic Mode after performing the Keypad Test, proceed as follows:

1 Return to the Diagnostic Startup Menu.

2 Press **2** to exit the Diagnostic Mode.

The Advantage Series and Encore 300 Dispensers

Entering Diagnostic Mode Using the CRIND Diagnostic Card

To enter the Diagnostic Mode using the CRIND Diagnostic Card, proceed as follows:

1 Insert and remove the Diagnostic Card. The following messages are displayed in sequence:
- "POWERUP TESTING" - This message is displayed approximately for 8 seconds while the system verifies internal hardware operation.
- "BIOS VER xx.x" - This message is displayed approximately for 6 seconds.

The system is now ready for tests in the Diagnostic Mode. A menu of various tests available in the Diagnostic Mode is displayed on the screen with the corresponding keypad numbers.

Performing the Keypad Test

To perform the Keypad Test, proceed as follows:

1 Press **3**. The message, "KEYS TEST" appears.

2 Press any key on the FlexPay EPP. The following table shows the default (unmapped) key code values for each key:

Key	Display
1	11
2	12
3	13
YES/RECEIPT	16
4	21
5	22
6	23
NO	26
7	31
8	32
9	33
CANCEL	36
CLEAR	41
0	42
ENTER	43
HELP	46

IMPORTANT INFORMATION
Function keys on the FlexPay EPP and the Auxiliary Keypad may display different rows/columns from what is expected. This is normal. The FlexPay EPP or the Auxiliary Keypad must not be replaced, if this is observed.

Exiting Diagnostic Mode Using Diagnostic Card

Insert and remove the Diagnostic Card. The message, “EXIT DIAGNOSTICS” appears, indicating that you have exited the Diagnostic Mode.

System Health Report

Note: This section is applicable only to Eclipse and Encore Series dispensers.

There are two methods to print the System Health Report. If you follow “Method 1” to print the System Health Report, only one side of the dispenser will be inoperable. If you follow “Method 2”, both sides of the dispenser will be inoperable.

Method 1

To print the System Health Report, proceed as follows:

Note: This method will disable only one side of the dispenser.

1. Press **Clear** on the FlexPay EPP.
2. Swipe the Diagnostic Card within 30 seconds of pressing the Clear key. The System Health Report is printed.

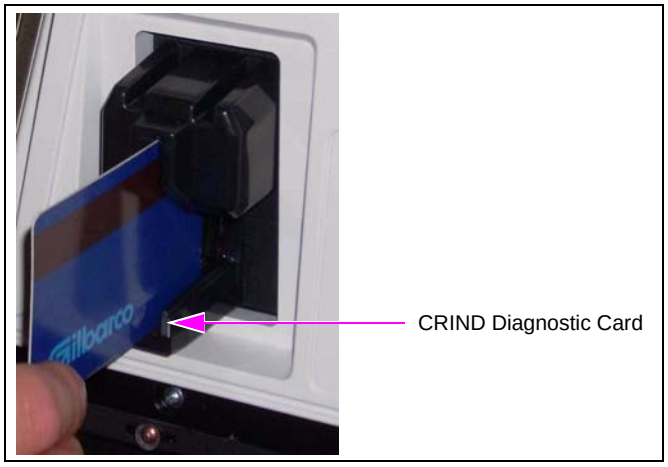
Method 2

To print the System Health Report, proceed as follows:

Note: This method will disable both sides of the dispenser.

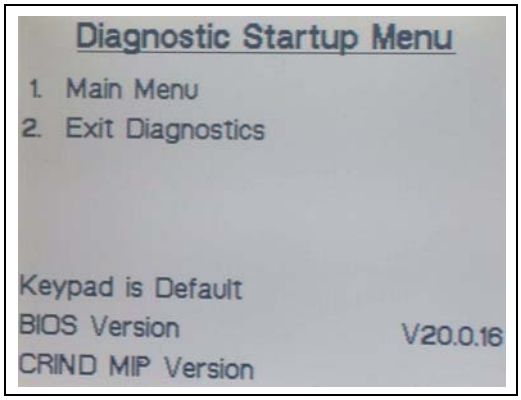
1 Swipe the CRIND Diagnostic Card (see Figure 3-7).

Figure 3-7: Entering the Diagnostic Mode



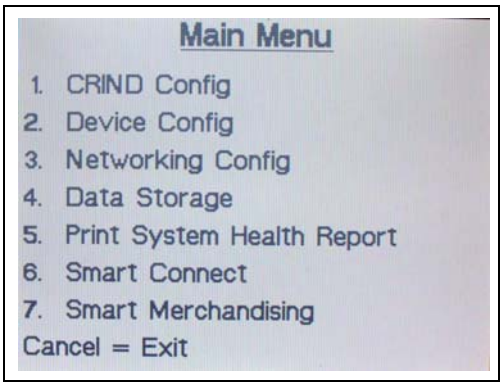
The CRIND Diagnostic Startup Menu appears.

Figure 3-8: CRIND Diagnostic Startup Menu



2 On the CRIND Diagnostic Startup Menu, press **1**. The CRIND Diagnostic Main Menu appears.

Figure 3-9: CRIND Diagnostic Main Menu



3 On the CRIND Diagnostic Main Menu, press **5**. The System Health Report is printed.

The System Health Report consists of four sections (for example, see Figure 3-10 on page 22 to Figure 3-13 on page 25):

- Software Config Report
- Software Status Report
- Performance Report
- Software Version Report

The System Health Report provides the following information:

- The type of keypad in use
- The state of the SmartPad, that is,
  - If the SmartPad is running and on which side
  - If the SmartPad is in a tampered state

Figure 3-10: System Health Report Example

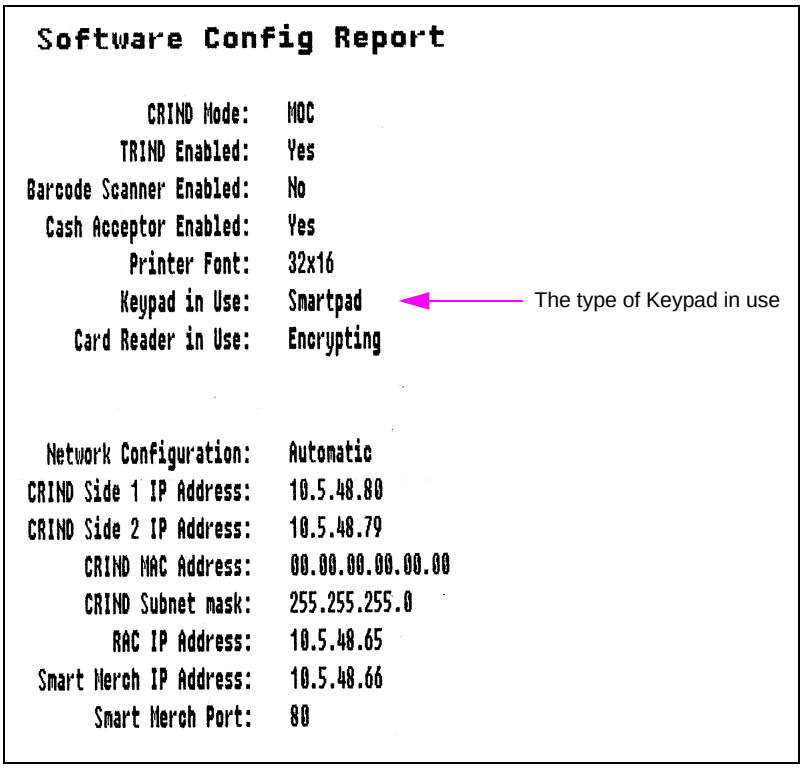
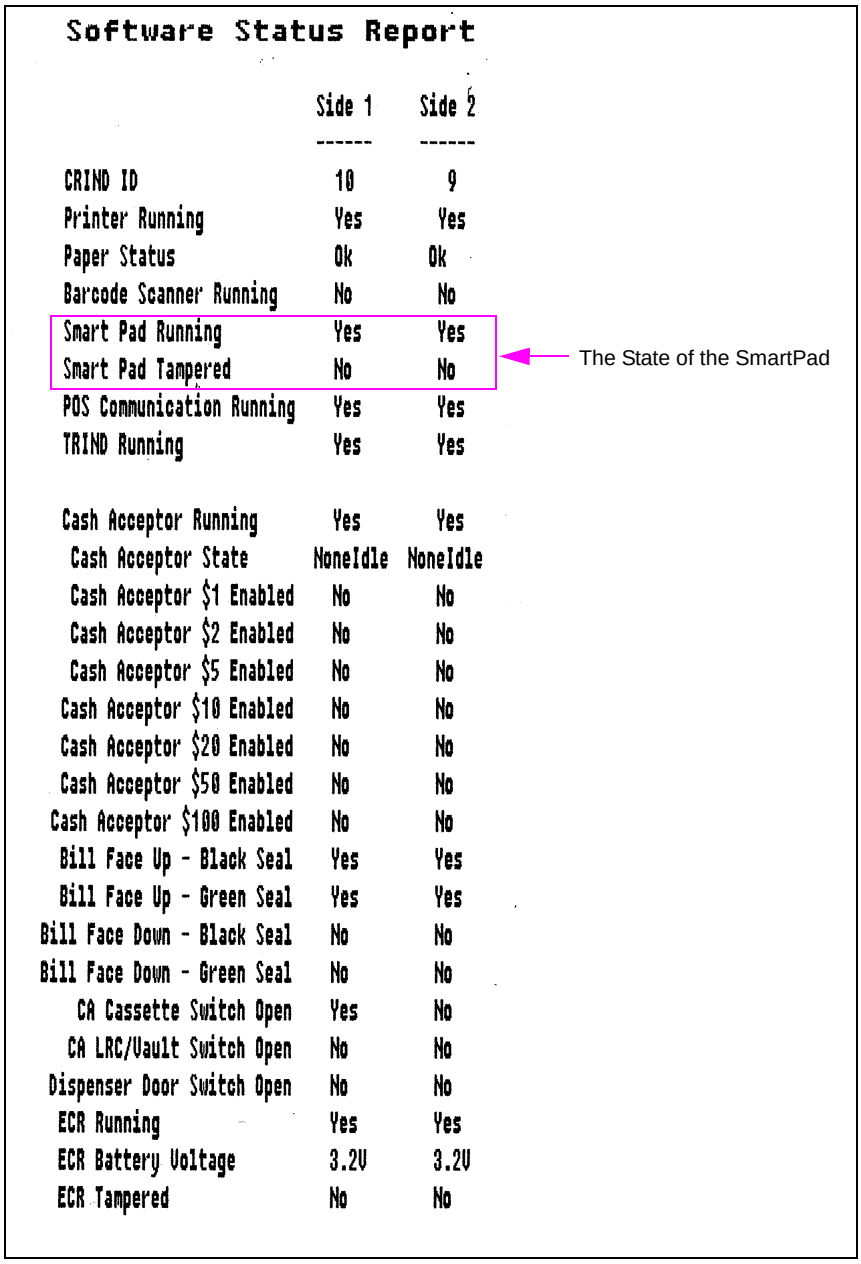


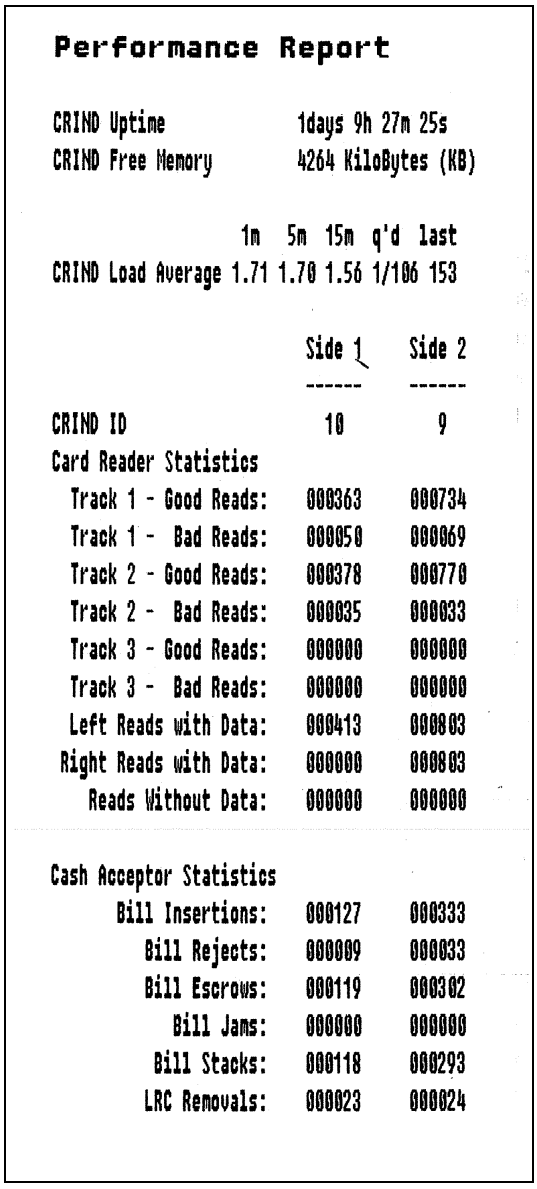
Figure 3-11: System Health Report Example Continued



Software Status Report

	Side 1	Side 2
CRIND ID	10	9
Printer Running	Yes	Yes
Paper Status	Ok	Ok
Barcode Scanner Running	No	No
Smart Pad Running	Yes	Yes
Smart Pad Tampered	No	No
POS Communication Running	Yes	Yes
TRIND Running	Yes	Yes
Cash Acceptor Running	Yes	Yes
Cash Acceptor State	NoneIdle	NoneIdle
Cash Acceptor $1 Enabled	No	No
Cash Acceptor $2 Enabled	No	No
Cash Acceptor $5 Enabled	No	No
Cash Acceptor $10 Enabled	No	No
Cash Acceptor $20 Enabled	No	No
Cash Acceptor $50 Enabled	No	No
Cash Acceptor $100 Enabled	No	No
Bill Face Up - Black Seal	Yes	Yes
Bill Face Up - Green Seal	Yes	Yes
Bill Face Down - Black Seal	No	No
Bill Face Down - Green Seal	No	No
CA Cassette Switch Open	Yes	No
CA LRC/Vault Switch Open	No	No
Dispenser Door Switch Open	No	No
ECR Running	Yes	Yes
ECR Battery Voltage	3.2V	3.2V
ECR Tampered	No	No

Figure 3-12: System Health Report Example Continued



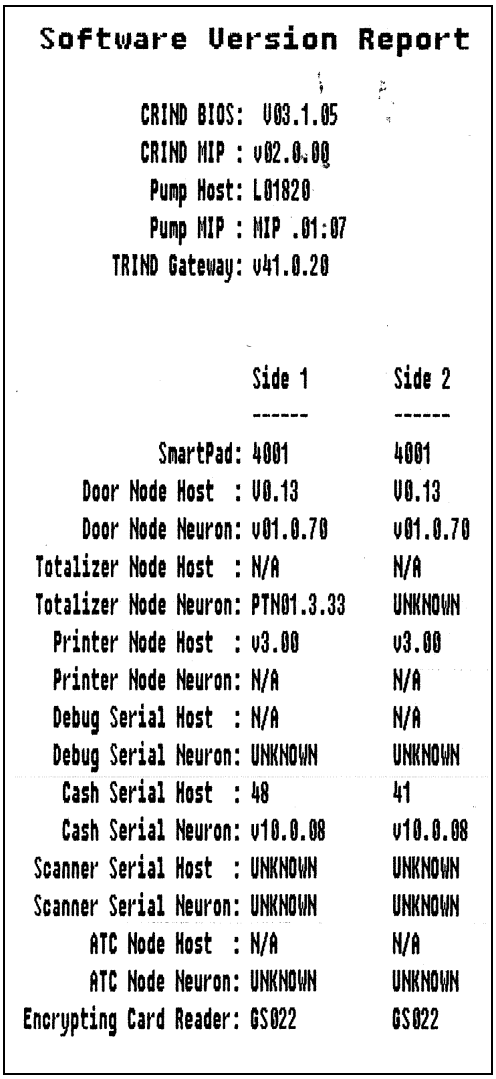
Performance Report

CRIND Uptime 1days 9h 27m 25s
CRIND Free Memory 4264 KiloBytes (KB)

	1m	5m	15m	q'd	last
CRIND Load Average	1.71	1.70	1.56	1/106	153

	Side 1	Side 2
CRIND ID	10	9
Card Reader Statistics		
Track 1 - Good Reads:	000363	000734
Track 1 - Bad Reads:	000050	000069
Track 2 - Good Reads:	000378	000770
Track 2 - Bad Reads:	000035	000033
Track 3 - Good Reads:	000000	000000
Track 3 - Bad Reads:	000000	000000
Left Reads with Data:	000413	000803
Right Reads with Data:	000000	000803
Reads Without Data:	000000	000000
Cash Acceptor Statistics		
Bill Insertions:	000127	000333
Bill Rejects:	000009	000033
Bill Escrows:	000119	000302
Bill Jams:	000000	000000
Bill Stacks:	000118	000293
LRC Removals:	000023	000024

Figure 3-13: System Health Report Example Continued



Software Version Report

CRIND BIOS: V03.1.05
CRIND MIP : v02.0.00
Pump Host: L01820
Pump MIP : MIP .01:07
TRIND Gateway: v41.0.20

	Side 1	Side 2
SmartPad:	4001	4001
Door Node Host :	V0.13	V0.13
Door Node Neuron:	v01.0.70	v01.0.70
Totalizer Node Host :	N/A	N/A
Totalizer Node Neuron:	PTN01.3.33	UNKNOWN
Printer Node Host :	v3.00	v3.00
Printer Node Neuron:	N/A	N/A
Debug Serial Host :	N/A	N/A
Debug Serial Neuron:	UNKNOWN	UNKNOWN
Cash Serial Host :	48	41
Cash Serial Neuron:	v10.0.08	v10.0.08
Scanner Serial Host :	UNKNOWN	UNKNOWN
Scanner Serial Neuron:	UNKNOWN	UNKNOWN
ATC Node Host :	N/A	N/A
ATC Node Neuron:	UNKNOWN	UNKNOWN
Encrypting Card Reader:	GS022	GS022

Connecting a Laptop to the FlexPay EPP

To map keys using the FlexPay EPP Mapping Tool and to perform service routines using the FlexPay EPP Service Tool, connect a laptop to the FlexPay EPP.

There are two types of FlexPay EPP Programming Cables which can be used to connect a laptop to the FlexPay EPP:

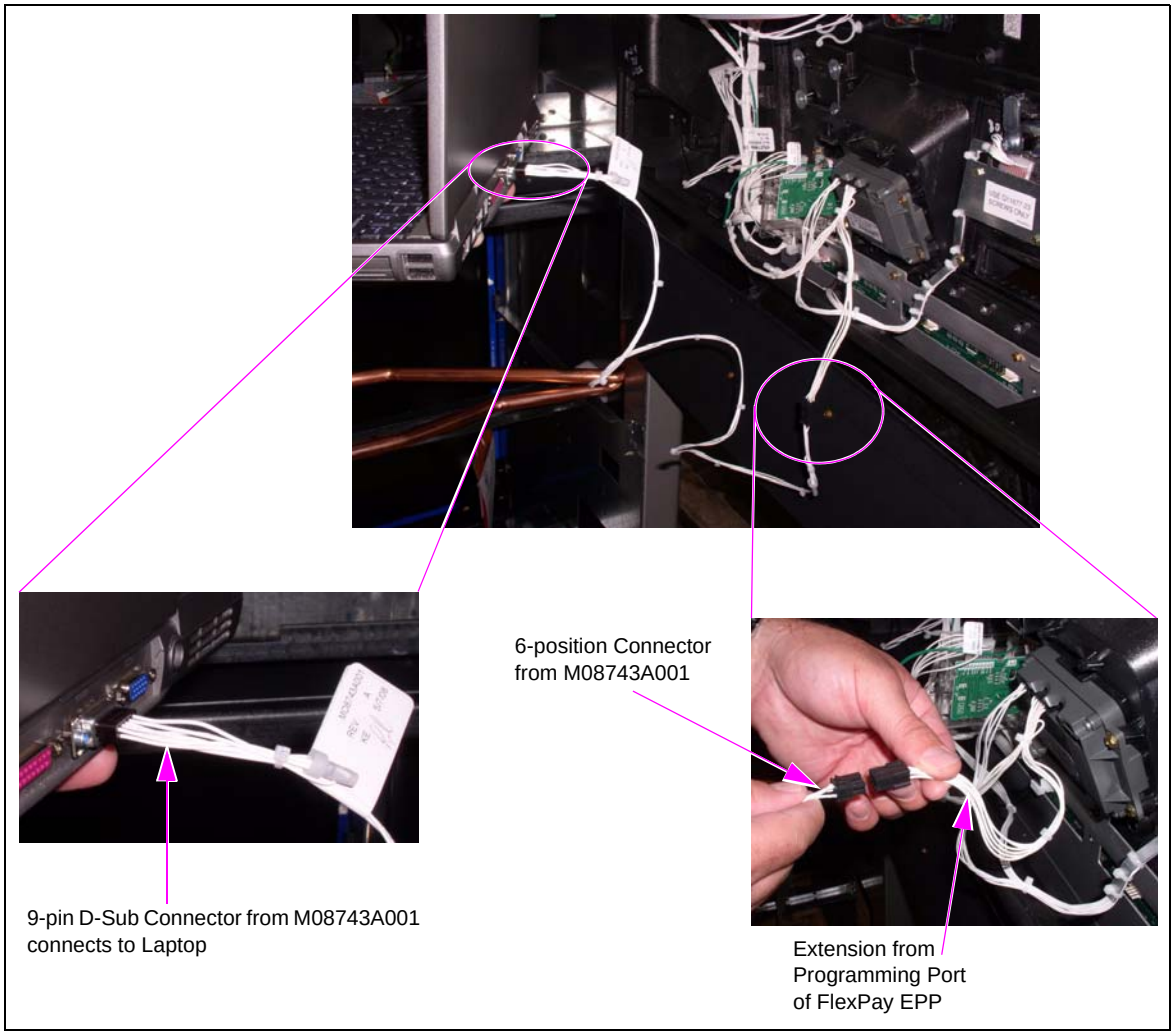
- M08743A001 FlexPay EPP Programming Cable
- M08743A002 Standalone FlexPay EPP Programming Cable

Using the FlexPay EPP Programming Cable (M08743A001)

This cable consists of two connectors: a 9-pin D-Sub connector which connects to the port on the laptop and a 6-position connector which connects to the pigtail connector at the rear of the FlexPay EPP.

Use this cable when the FlexPay EPP is already installed in the dispenser. In this case, the PIN Pad receives power from the dispenser.

Figure 3-14: Connecting a Laptop to the FlexPay EPP using the M08743A001 Cable



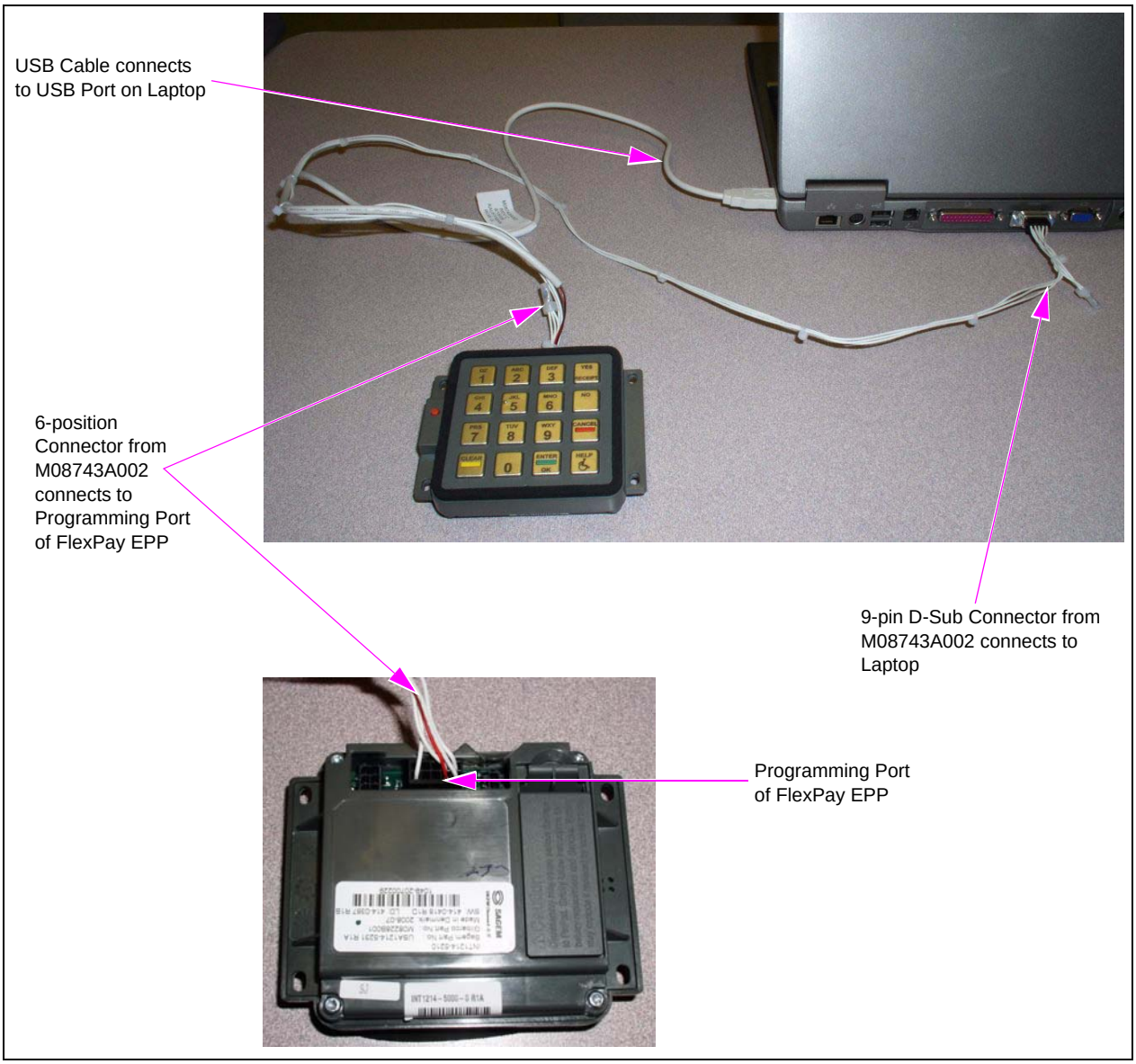
Using the Standalone FlexPay EPP Programming Cable (M08743A002)

This cable consists of three connectors: a USB cable which connects to a USB port on the laptop, a 9-pin D-Sub connector which connects to the port on the laptop, and a 6-position connector which connects to the rear of the FlexPay EPP.

Note: If the laptop used by the ASC does not contain a 9-pin Serial Connector, the ASC will require a Serial to USB converter.

Use this cable when the FlexPay EPP is not installed. The PIN Pad requires power and the extra USB cable allows the laptop to provide power to the PIN Pad, so that software can be downloaded into the PIN Pad.

Figure 3-15: Connecting a Laptop to the FlexPay EPP using the M08743A002 Cable



Using the FlexPay EPP Mapping Tool

The Mapping Tool allows you to map keys (and their associated functions) present in the current keypad to those present on the FlexPay EPP.

Common Terms

Term	Description
Key	The basic unit of a keypad which has a unique position (row and column) and may have unique key code.
Button	A visual unit of a keypad which may have one or two keys within. Those that have two keys are called double-space buttons.
Hitting Position	The place where a button is selected. One key has one hitting position, so a double-space button will have two hitting positions as it comprises of two keys.

Backward Compatibility

Version 10.2.8 of the FlexPay EPP Mapping Tool is backward compatible with the following versions:

- 10.2.1
- 10.2.2
- 10.2.3
- 10.2.4
- 10.2.5
- 10.2.6
- 10.2.7

For versions 10.2.6 and 10.2.7, copy the KeyMapLoader.exe (version 10.2.8) to replace the old versions of the KeyMapLoader.exe.

For other older versions (10.2.1 to 10.2.5), unzip the version 10.2.8 files, run the KeyMapLoader.exe file, then copy all map files (*.aut) under the old version of KeyMapLoader into the \aut\ folder under the KeyMapLoader version 10.2.8. This ensures that all key maps created using earlier versions of the tool are referenced.

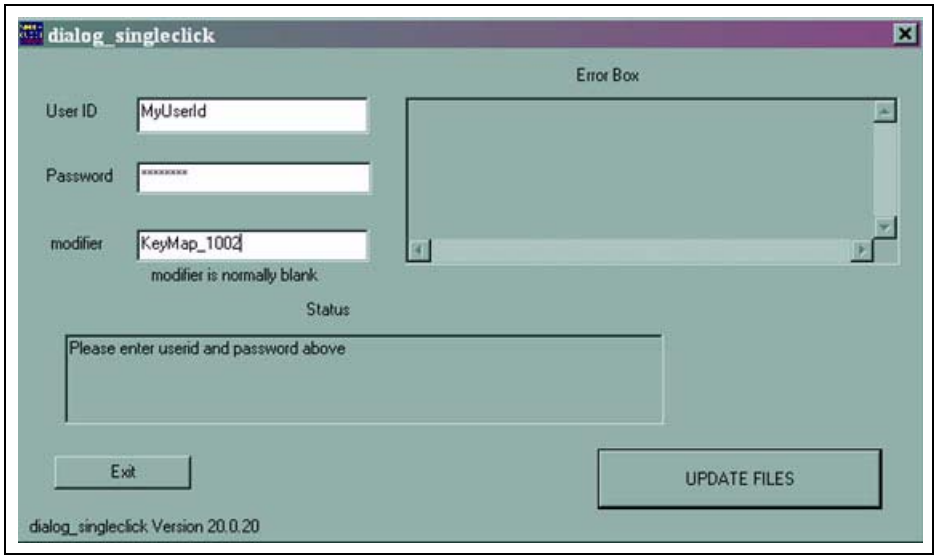
Downloading the Single Click Update Tool

To download the Single Click Update tool, proceed as follows:

1 Log on to the Gilbarco Extranet and click **Technician Resources** > **Laptop Tool** > **Single Click Update**. Download the latest version of the dialog_singleclick.exe file onto your laptop (for example, C:/ drive).

2 Locate the dialog_singleclick.exe file application on your laptop and double-click the **dialog_singleclick.exe** file. The dialog_singleclick window appears (see Figure 3-16).

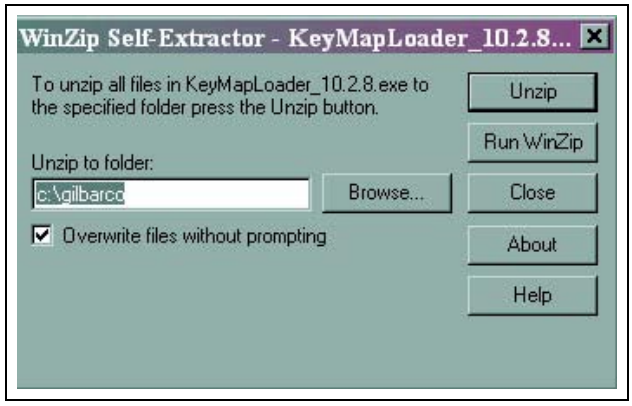
Figure 3-16: Dialog_singleclick Window



3 Enter your User ID and Password. Use **KeyMap_1002** as the modifier.

4 Click **UPDATE FILES**. The Winzip Self-Extractor - KeyMapLoader_10.2.8.exe window appears (see Figure 3-17).

Figure 3-17: Winzip Self-Extractor - KeyMapLoader_10.2.8.exe Window

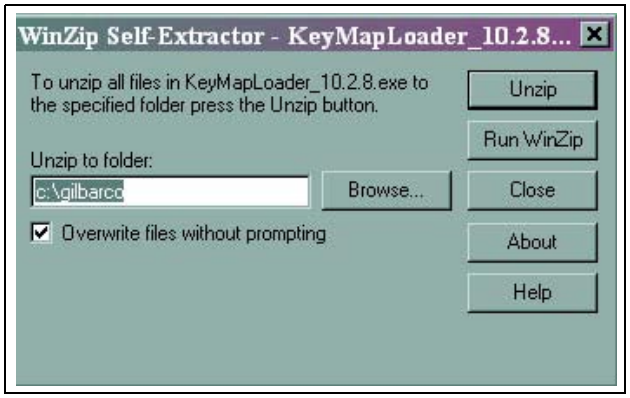


5 Click **Unzip**.
- If the unzip operation is successful, the Winzip Self-Extractor window appears (see Figure 3-18). The files are unzipped successfully.

Figure 3-18: Unzip Successful Message Window

a Click **OK**. The Winzip Self-Extractor - KeyMapLoader_10.2.8.exe window appears (see Figure 3-19).

Figure 3-19: Winzip Self-Extractor - KeyMapLoader_10.2.8.exe Window

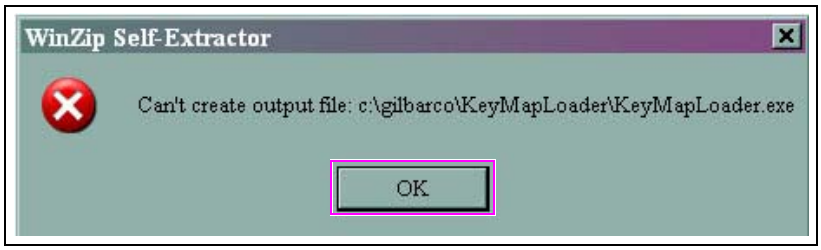


b Click **Close**. The program is now installed in the C:\gilbarco\KeyMapLoader directory and a KeyMapLoader.exe icon is created on the desktop (see Figure 3-20).

Figure 3-20: KeyMapLoader.exe Icon

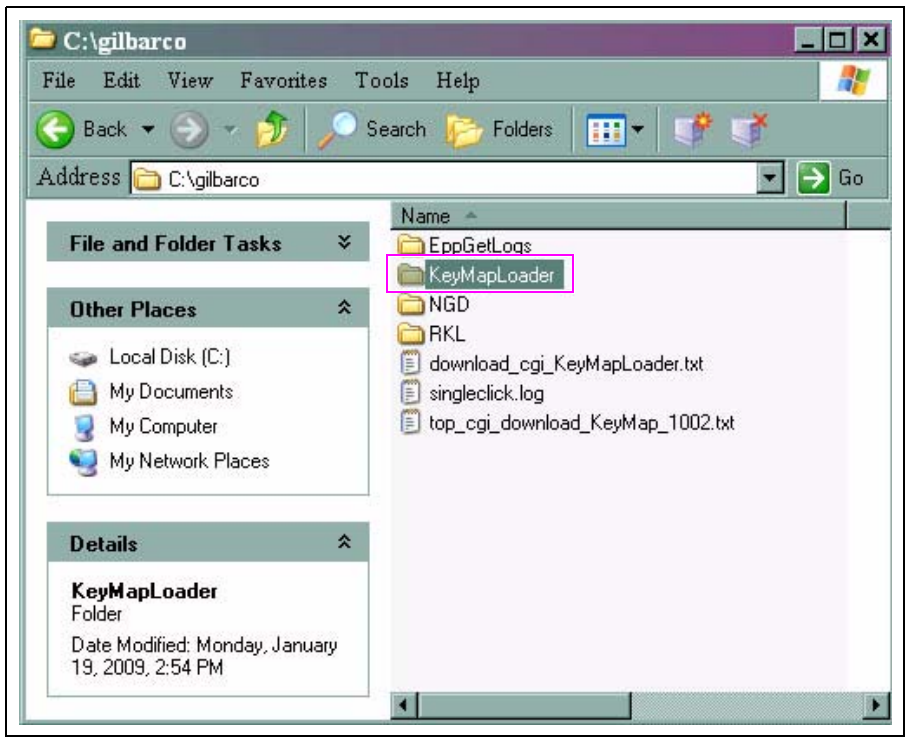
- If the unzip operation fails, a message appears that states that the output file cannot be created (see Figure 3-21).

Figure 3-21: Error Message



a Click **OK**. Navigate to the KeyMapLoader directory from Windows Explorer (see Figure 3-22).

Figure 3-22: Accessing the KeyMapLoader Directory

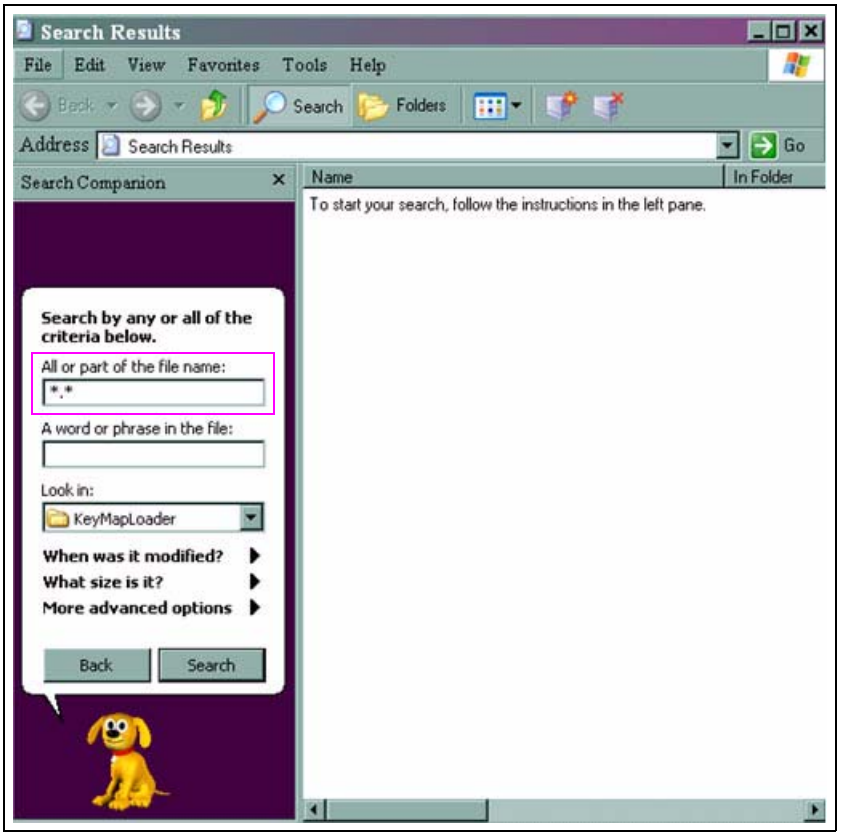


b Right-click the KeyMapLoader folder and click **Search** (see Figure 3-23).

Figure 3-23: Searching the KeyMapLoader Folder

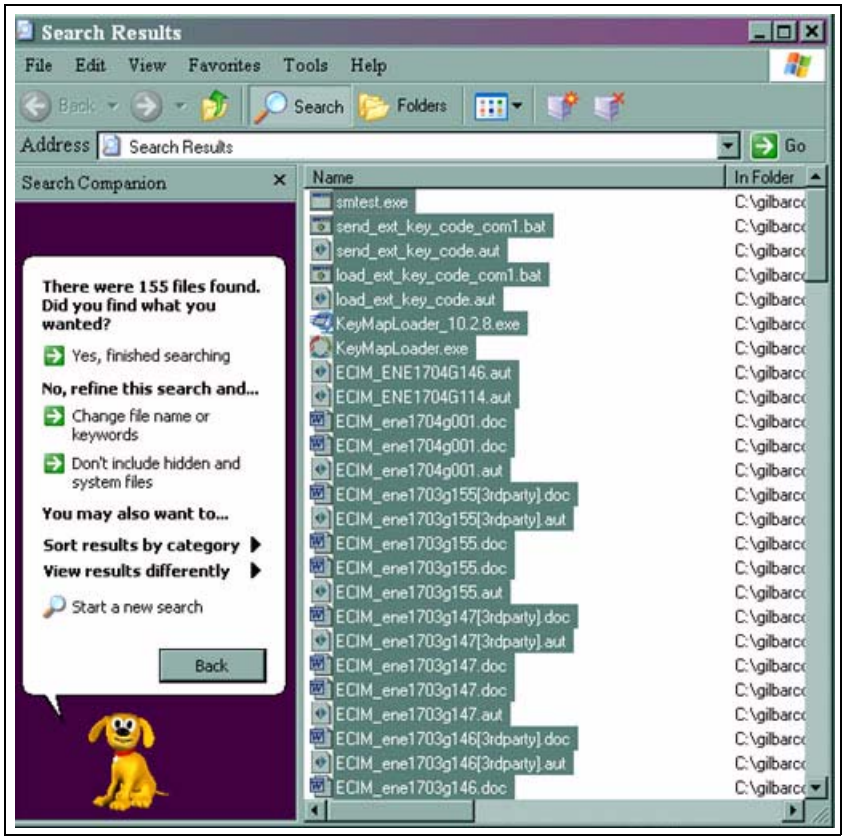
c Enter ***.*** in the "All or part of the file name:" field and click **Search** (see Figure 3-24).

Figure 3-24: Search Window



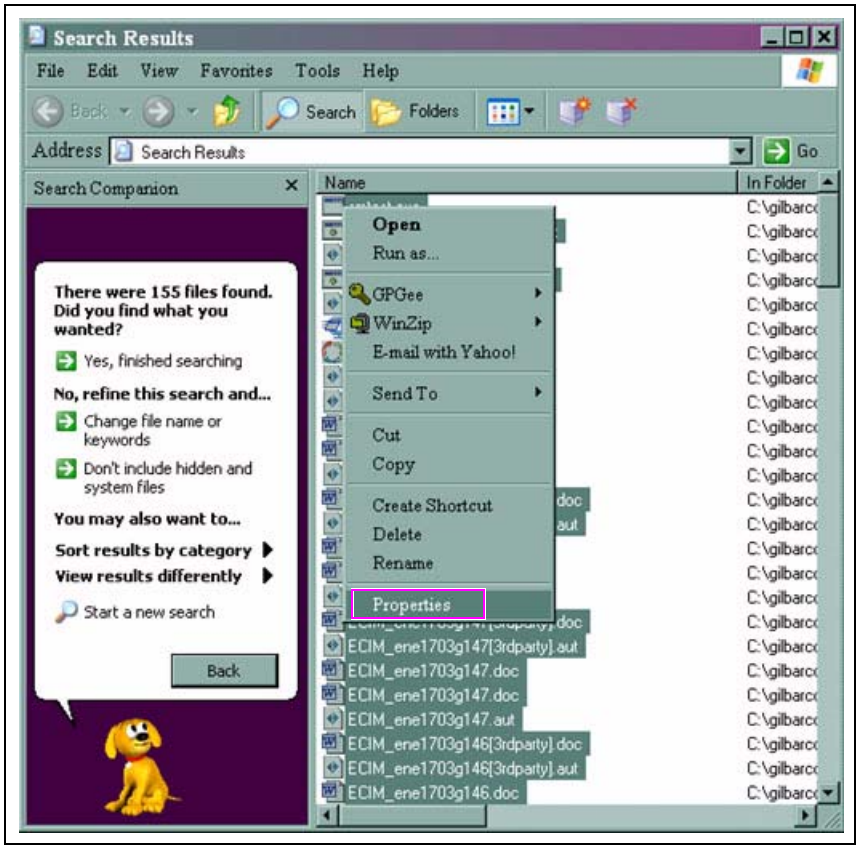
d Select any file and then press **CTRL** and **A** simultaneously. All the files in the window will be highlighted (see Figure 3-25).

Figure 3-25: Search Results Window



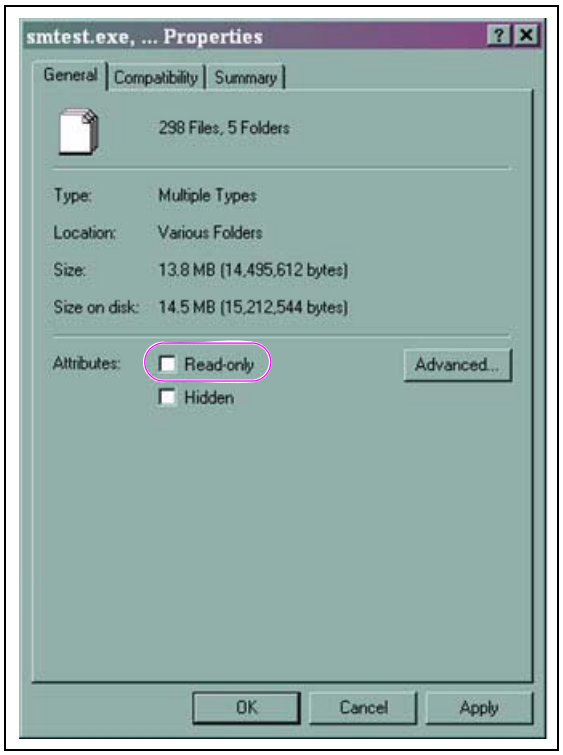
e Select any file, right-click and click **Properties** (see Figure 3-26).
Note: If you have accidentally deselected all files, then repeat step d on page 33.

Figure 3-26: Selecting the Properties Option



f Deselect the “Read-only” option (if the option is selected). Click **OK** (see Figure 3-27).

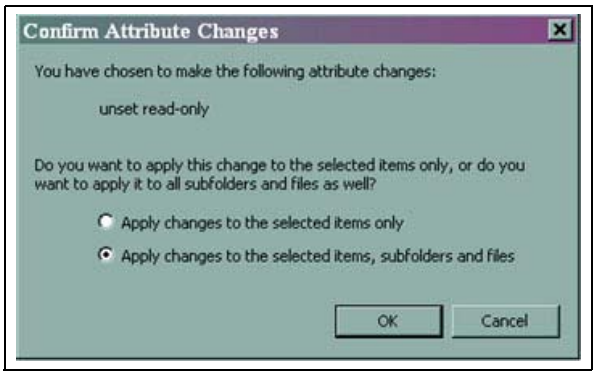
Figure 3-27: Properties Window



The Confirm Attributes Changes window appears.

g Select **Apply changes to the selected items, subfolders and files** and click **OK** (see Figure 3-28).

Figure 3-28: Confirm Attributes Changes Window



h Repeat step 4 on page 29 to proceed with the unzip process.

Installing the FlexPay EPP Mapping Tool

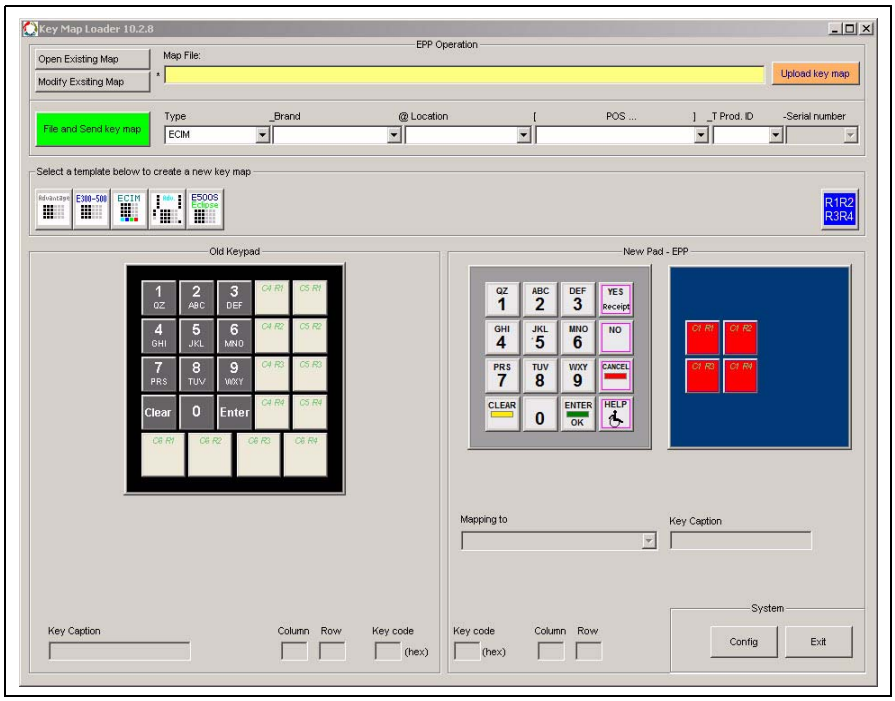
To install the FlexPay EPP Mapping Tool, proceed as follows:

1 Double-click the KeyMapLoader.exe icon on your laptop. An Open File-Security Warning window appears (see Figure 3-29).

Figure 3-29: Open File-Security Warning Window

2 Click **Run**. The Key Map Loader window appears (see Figure 3-30), which can be used to map the keys from the current keypad to the keys on the FlexPay EPP.

Figure 3-30: Key Map Loader Window



Configuring the FlexPay EPP Mapping Tool

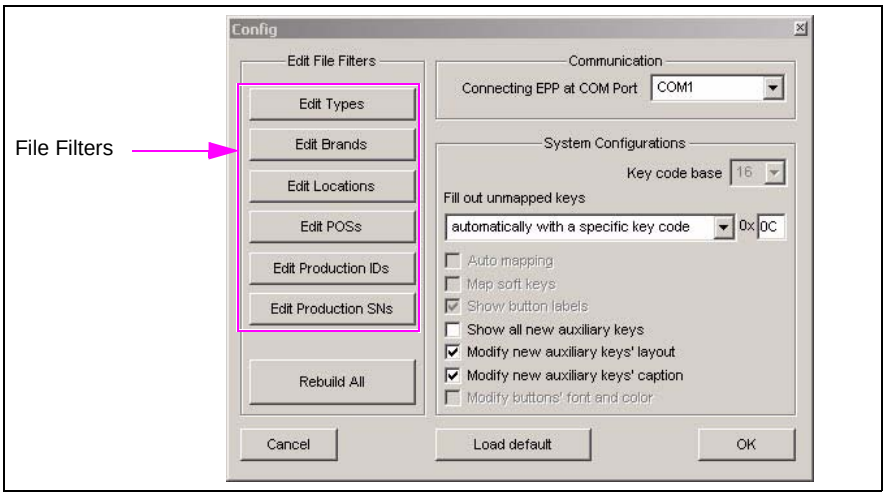
To configure the FlexPay EPP Mapping Tool, proceed as follows:

1 Select the required template from the options available (see Figure 3-34 on page 40).

2 Click **Config**. The Config window appears.

3 Open and edit the items under “Edit File Filters”, which can be selected in the combos when opening or modifying an existing map.

Figure 3-31: Config Window



4 Click **Rebuild All** to reset all viewing filters based on the files in the key map, after you select one of the files from the directory in which key map files are present.
Note: This function will delete all previous filters and rebuild all filters based on the file names in the directory you select.

IMPORTANT INFORMATION
Perform steps 3 and 4 only if instructed to do so by a Gilbarco Support Associate.

5 In “Communication”, select the COM Port that the FlexPay EPP is connected to, from the list of options available.
Note: The COM Port is used to connect the FlexPay EPP to the laptop containing the FlexPay EPP Mapping Tool application.

6 The functionality for each of the options under "System Configurations" is described below. Select the required settings.

- **Key code base**: This field is preset and cannot be modified.
- Options for **Fill out unmapped keys**:
  - Automatically with a specific key code

    Note: This is the default filling option and the default key code for this option is 0x0C, the value of which can be changed.
  - Manually
  - Automatically with the least unused key code
- **Auto mapping**: This field is preset and cannot be modified.
- **Map soft keys**: This field is preset and cannot be modified.
- **Show button labels**: This field is preset and cannot be modified.
- **Show all new auxiliary keys**: Enabling this option will display all the new keys on the Auxiliary Function Keypad.
- **Modify new auxiliary keys layout**: Enabling this option will allow you to modify the key layout on the Auxiliary Function Keypad by pressing the R1-R4 button.
- **Modify new auxiliary keys caption**: Enabling this option will allow you to modify the captions of the new keys on the Auxiliary Function Keypad.
- **Modify buttons font and color**: This field is preset and cannot be modified.

7 Click **OK** to accept the updated settings or **Cancel** to exit the Config window.

Creating a New Key Map

Color Convention for Buttons on the Keypad

Color	On Old Keypad	On New KeyPad -FlexPay EPP
Red	Key/Button is not mapped to a key/button on the new FlexPay EPP side.	Key/Button is not mapped to a key/button on the new FlexPay EPP side.
Blue	At least one key in the button is mapped to multiple keys on the new FlexPay EPP side, which may or may not be in a button.	-
Green	At least one key is mapped to a single key on the new FlexPay EPP side.	At least one key is mapped to a single key on the new FlexPay EPP side.
Yellow	-	This key has been assigned a key code which does not exist on the old keypad and it is not a part of a double-space button with the same name.
Gray	A key on the old keypad that has not been named.	-

Notes: 1) The color convention of buttons is only applicable to mappable buttons on the old keypad and auxiliary buttons of the new keypad.

2) None of the buttons on the new keypad are blue.

3) A key on the old keypad (for example, at the column 5 and row 2) may be blue if it has text in it, as there are at least four hidden keys on the new keypad (when clearing the "Show all auxiliary keys") that have the default key code same as that of the key.

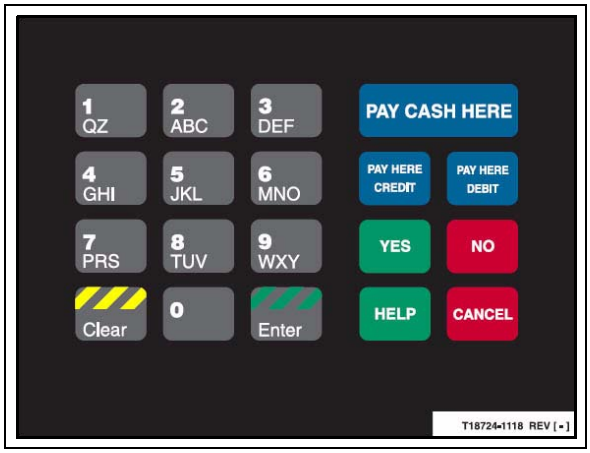
To create a new key map, proceed as follows:

1 Connect the FlexPay EPP on the dispenser to the laptop that contains the FlexPay EPP Mapping Tool application using the programming connector.

2 Power on the FlexPay EPP.

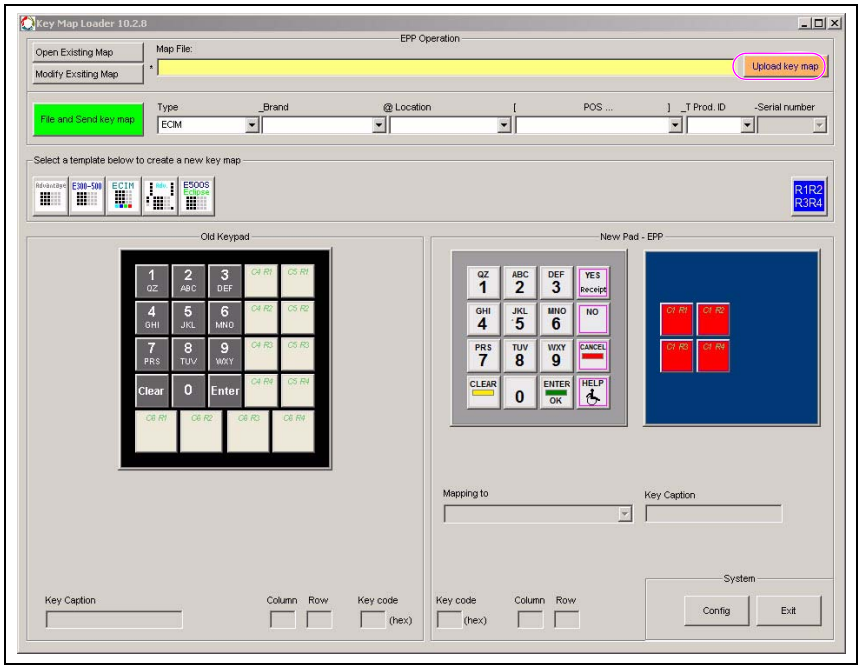
3 Determine the keypad for which the key map must be replaced.

Figure 3-32: Sample Keypad



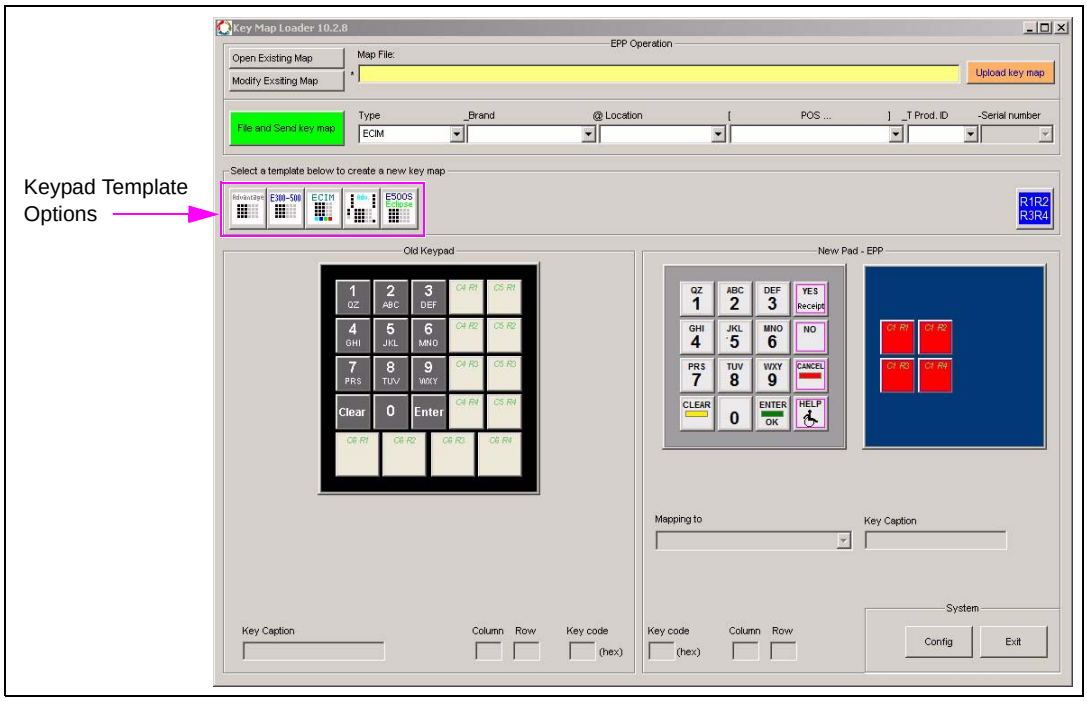
4 Click **Upload Key Map** to load the key codes from the FlexPay EPP. Proceed to step 18 on page 47, if the “Map File” field is populated with the key map file which matches the FlexPay EPP connected. Else, proceed to step 5 on page 40.

Figure 3-33: Selecting the Load Key Map Option



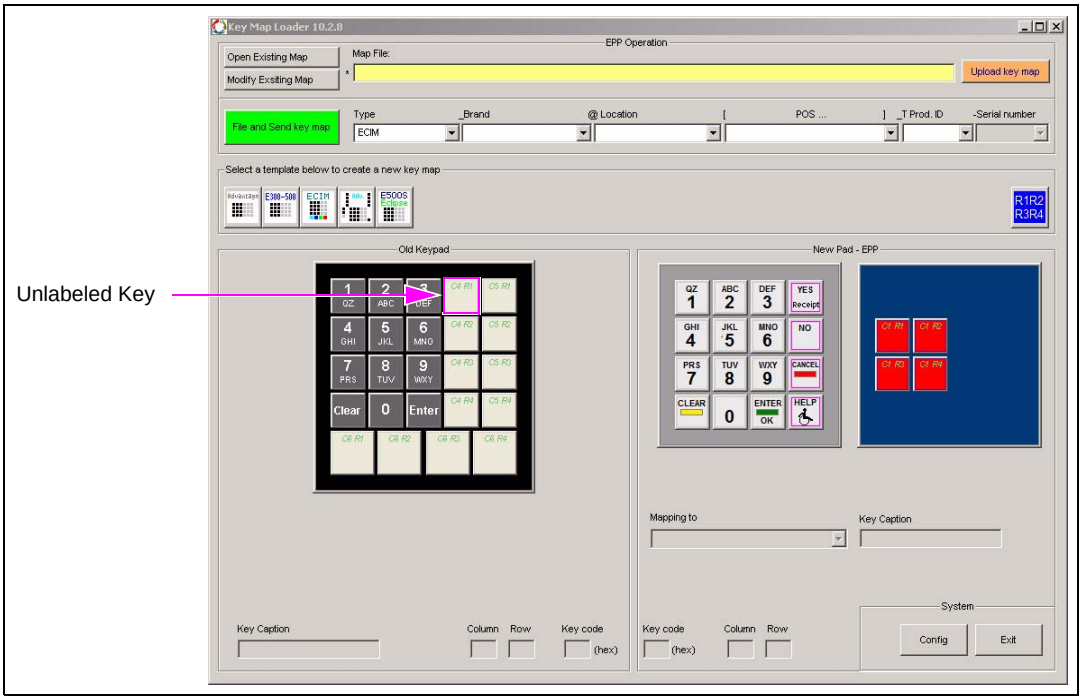
5 If there is no key map file available, manually select the required template for the FlexPay EPP connected and edit the key captions, if required (see Figure 3-34).

Figure 3-34: Keypad Template Options



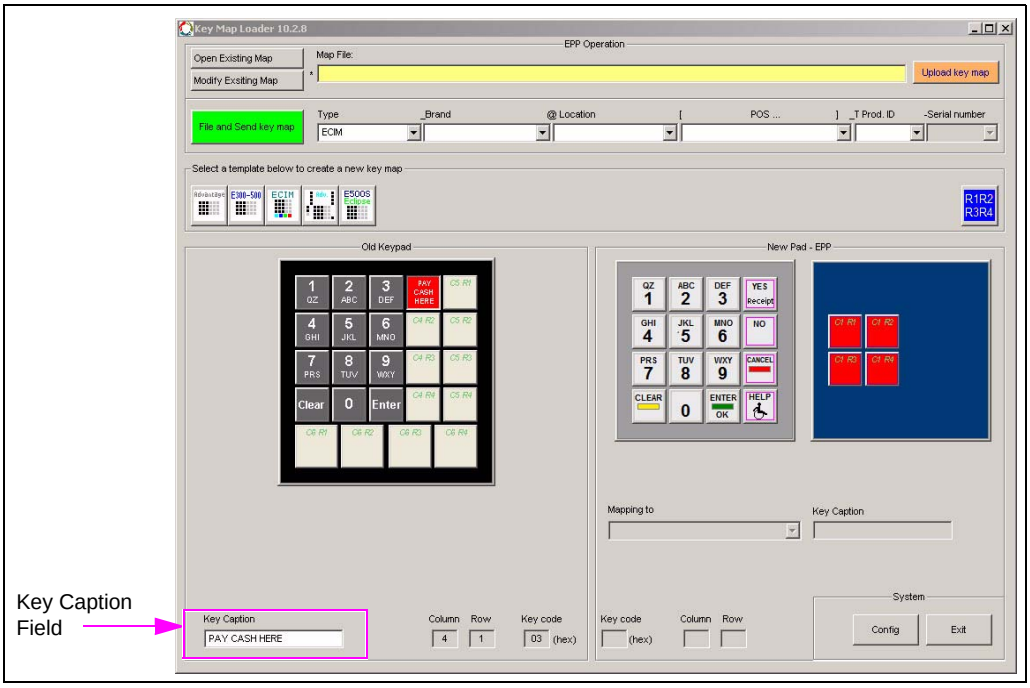
6 Click one of the unlabeled keys under “Old Keypad”.

Figure 3-35: Selecting the Key



7 Enter the required caption in the “Key Caption” field. For example, “PAY CASH HERE”.

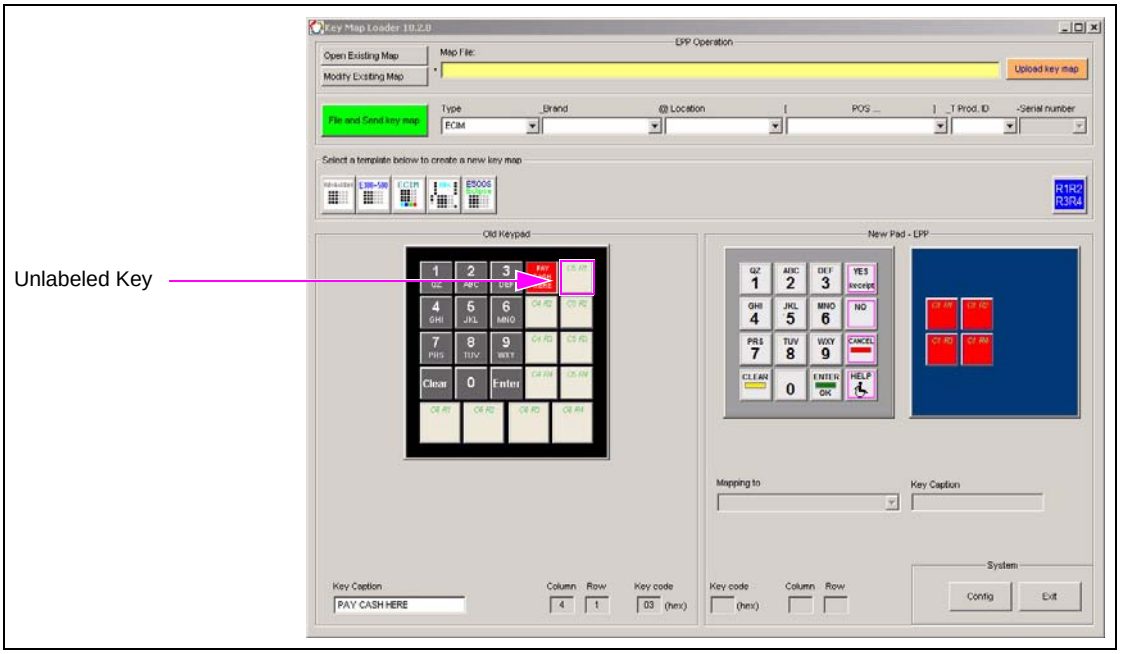
Figure 3-36: Key Caption



Note: At any time, if the text of a key caption is erased, the corresponding mapping relation will be deleted automatically.

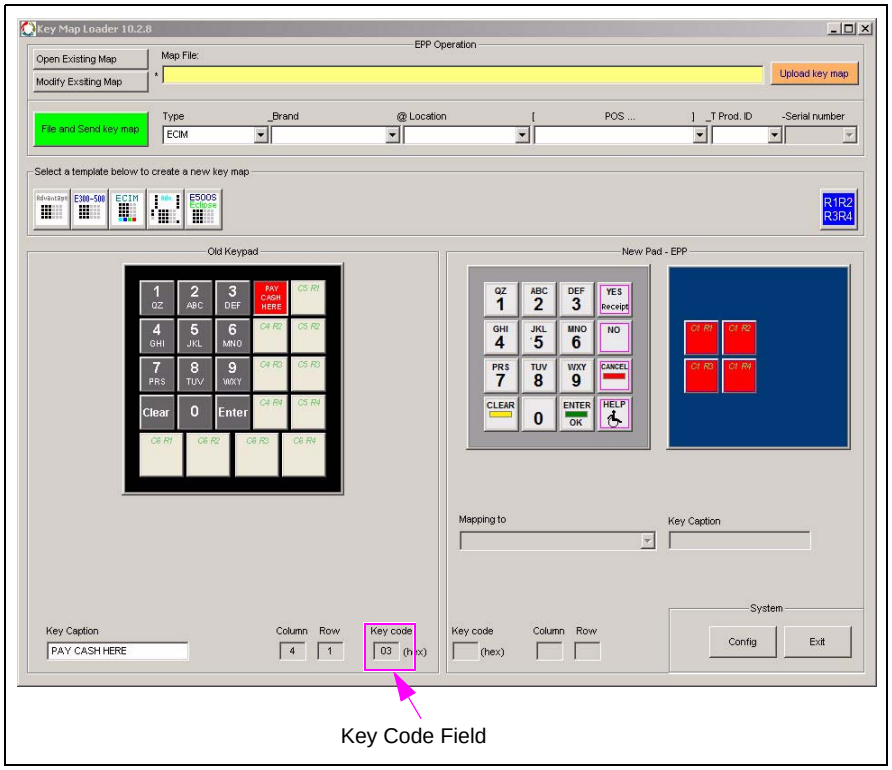
8 To create a double-space button, click the unlabeled key next to the button that was created previously. If you do not need to create a double-space button, proceed to step 11 on page 44.

Figure 3-37: Creating a Double-space Button



9 Enter the same caption as in step 7 on page 41.

Figure 3-38: Key Code



Note: For a double-space button, two different codes are displayed in the "Key Code" field when you hit the two keys in the double-space button.

The keypad is displayed as shown in Figure 3-39.

Figure 3-39: Updated Key

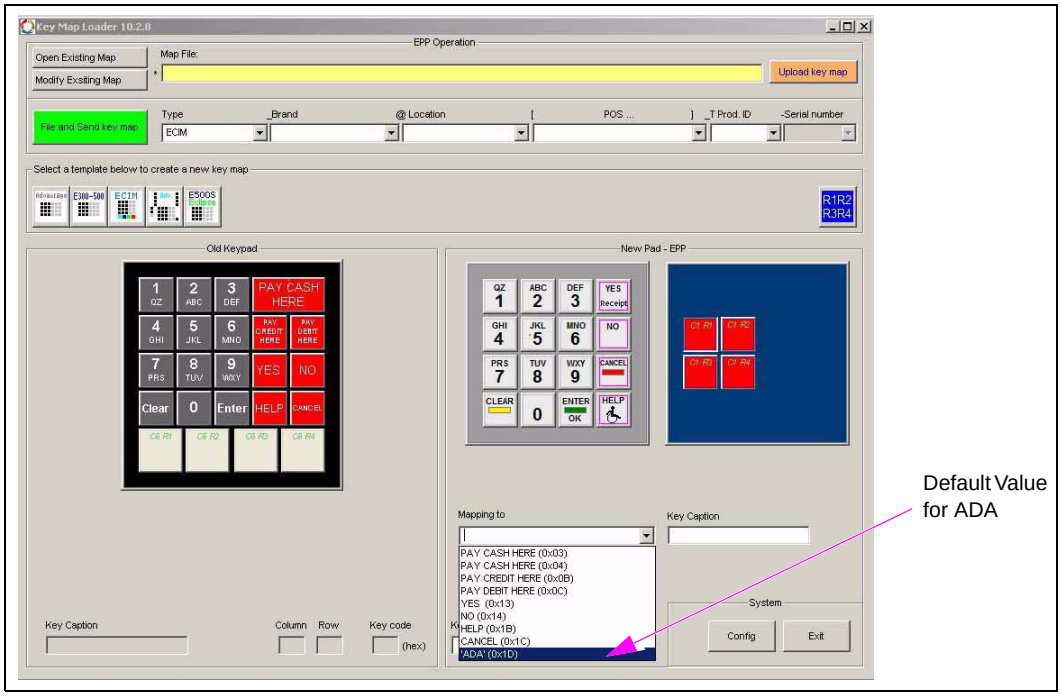
10 Repeat steps 6 (on page 40) to 9 (on page 42) to create the required keys. The keypad is displayed as shown in Figure 3-40.

Figure 3-40: Updated Keypad

Note: The ADA key displays the following features:

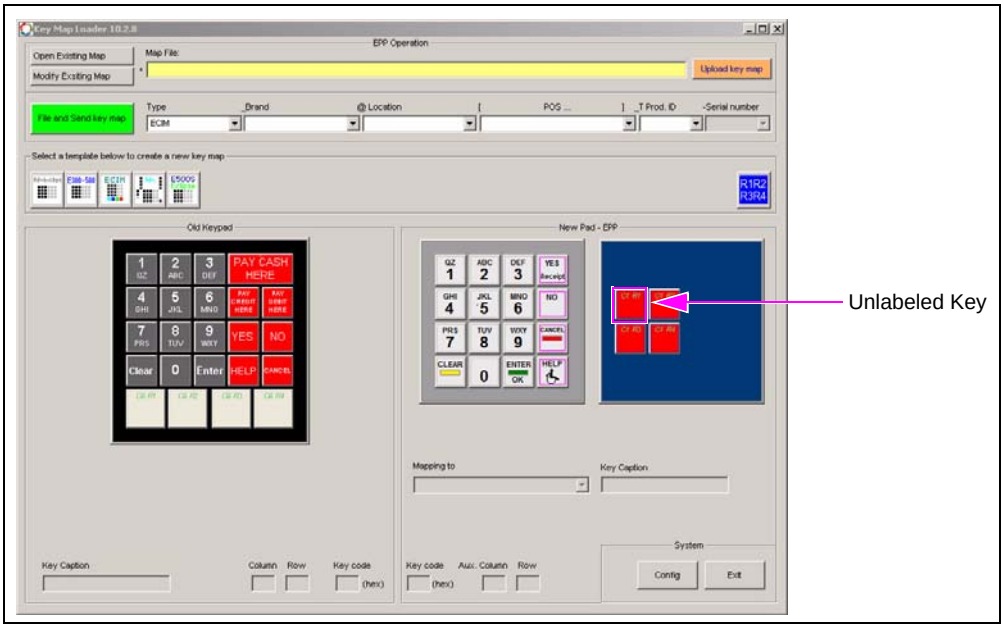
- *When ADA is entered in the "Key Caption" field under "Old Keypad", the HELP button will split to display **Help/ADA**. The ADA function will automatically be assigned to the ADA portion of the Help/ADA button. Only the Help portion of the Help/ADA button will allow a selection for mapping.*
- *Any of the buttons/double-space buttons under "New Pad - EPP" can be mapped to the ADA function.*
- *If the ADA button has not been created under the "Old Keypad", the ADA function will appear as "'ADA'0x1D" under the "Mapping to" list of options. Any of the buttons/double-space buttons under "New Pad - EPP" can be mapped to the ADA function using this default value.*

Figure 3-41: ADA Function



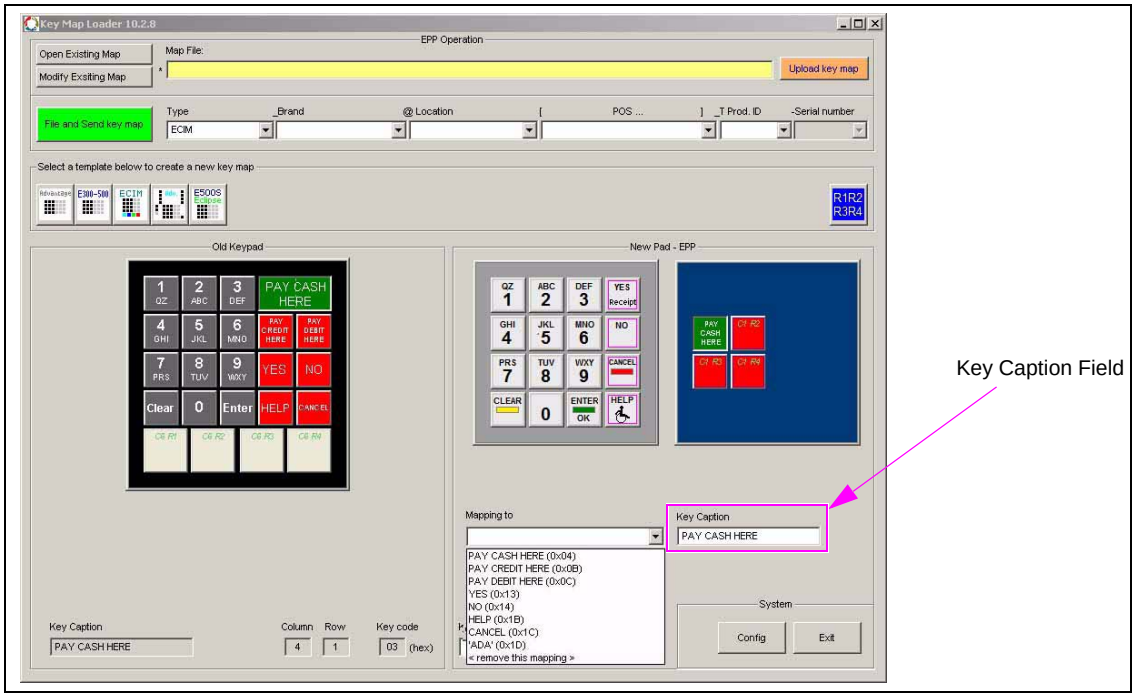
11 Reference the Auxiliary keypad on the unit with the FlexPay EPP and select the key to be mapped with “PAY CASH HERE” under “New Pad - EPP”.

Figure 3-42: Selecting the Key to be Mapped



12 Select the required name for the key from the list of options under the "Mapping to" field. Else, enter the name of the key in the "Key Caption" field, if the name is different from that of the key it will be mapped with. Also, change the font and color of the key, if required.
Note: This information can be gathered from the new keypad.

Figure 3-43: Entering the New Key Caption



Notes: 1) The "Aux Column" and "Row" fields indicate the position of the selected key on the Auxiliary Function Keypad.

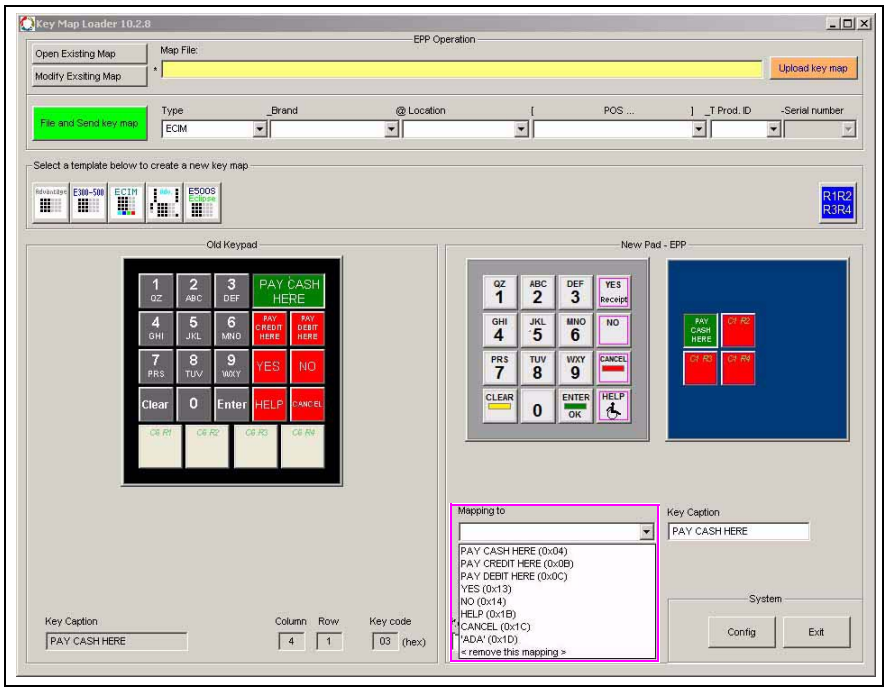
*2) Select the **R1...R4** button to change the key layout on the new FlexPay EPP.*

3) At any time if the text of a key caption is erased, the corresponding mapping relation will be deleted automatically.

13 Select one of the keys that has a box around the text.
Note: The box around the text indicates that the key has not been mapped.

14 Select the list of options in the “Mapping to” field to view the old keys that are available.

Figure 3-44: List of Old Mapping Keys

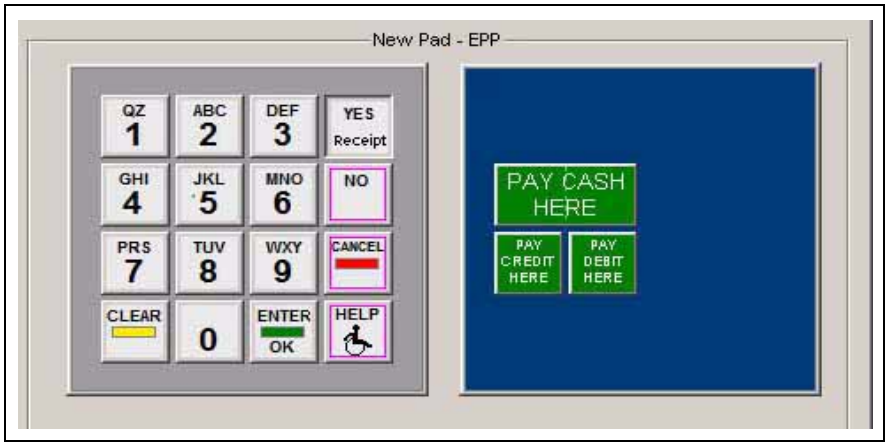


15 Select the required old key to which the new key must be mapped.

Note: If there is no old key that can be mapped, enter the required key code in the “Key code” field. If the old key has been mapped with another new key, it will not appear in the list of options in the “Mapping to” field.

16 Repeat steps 11 (on page 44) to 15 to map the required new keys with the old keys. The keypad will be displayed as shown in Figure 3-45.

Figure 3-45: Updated New Keypad



17 Enter the required information in the following fields in “EPP Operation”:

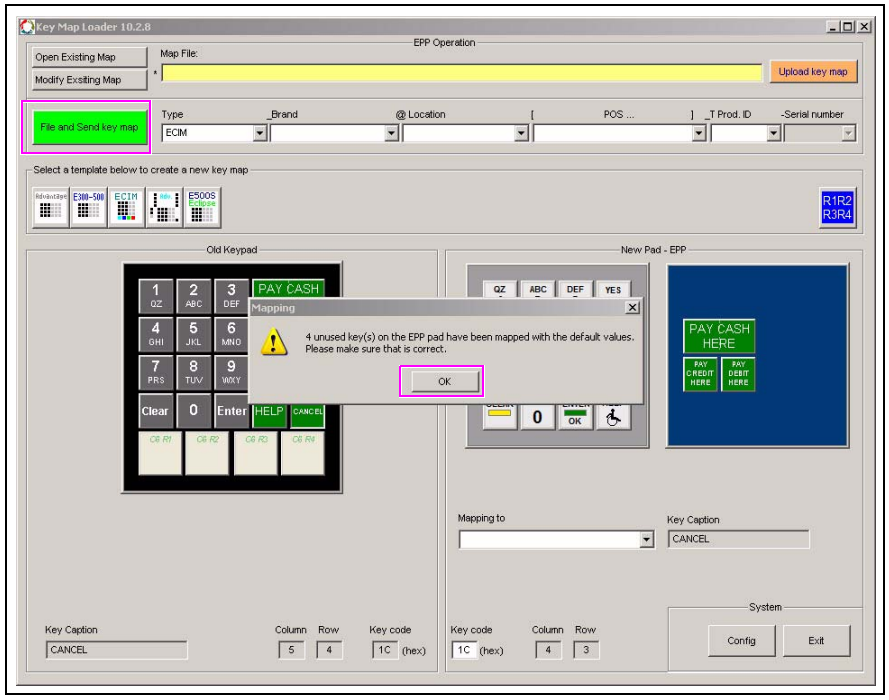
- Type
- _Brand
- @ Location
- [POS...]
- _T Prod. ID
- -Serial number

Note: The key map file name component fields display the following features:

- *The first letter of the “_T Prod. ID” field must be a numerical.*
- *The “Serial number” will be enabled only when the “_T Prod. ID” field is filled.*
- *The system automatically removes \, /, :, *, ?, “, <, >, and letters which are illegal to be used in a file name.*
- *The system automatically replaces “[” and “(” with “{” , and “]” and “)” with “}”, as they may cause a problem when building a DOS batch file name.*
- *The system automatically replaces ‘ ’ (space) with ‘_’, but not in the “Type” field.*
- *The system automatically replaces ‘_’ with ‘-’ in the “Type” field.*

18 Click **File and Send key map** to save the map and generate an .aut file. The Mapping window is displayed, which indicates the number of unused/unmapped keys and the default Key Codes on the FlexPay EPP.

Figure 3-46: Saving the Key Map

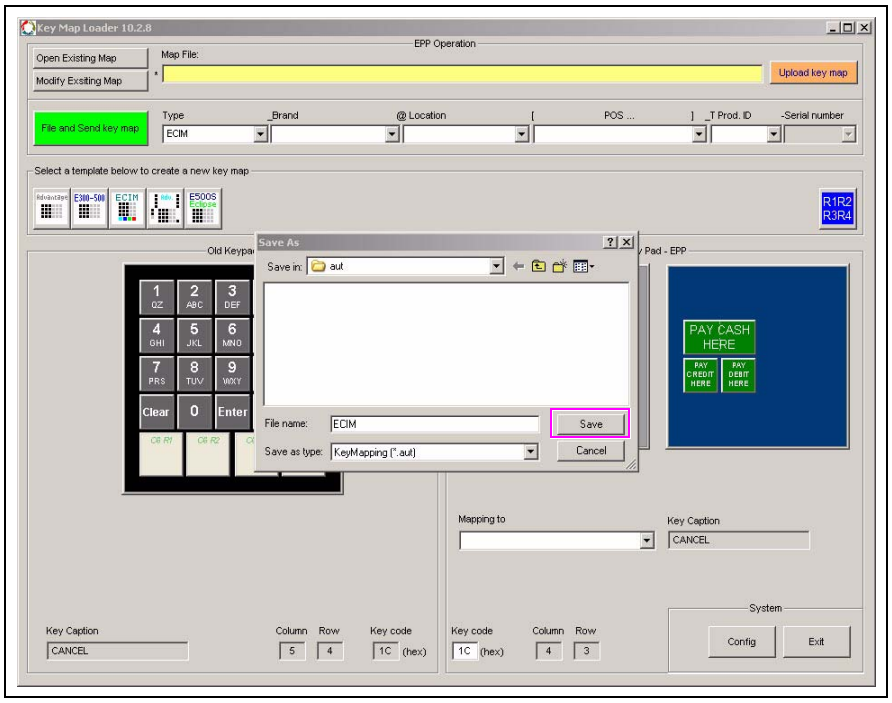


19 Click **OK**. The Save As window is displayed. The map is sent to the FlexPay EPP automatically.

Note: The Key Codes can be saved or sent to FlexPay EPP, if there are no changes made to the Key Captions.

20 Enter the required name and location for storing the map and click **Save**.

Figure 3-47: Saving the Key Map (Continued)



If the key map file has been successfully sent to the FlexPay EPP a .txt file for the key map appears which displays, “0 SYNTAX errors” (see Figure 3-48 on page 49). If the key map file has been not been sent to the FlexPay EPP, a .txt file for the key map appears, which displays the number of SYNTAX errors and the message, “Could not be sent packet to SM” (see Figure 3-49 on page 49). After the .txt file is closed, a Warning window appears which displays the location of the key map file and the reasons for not being able to send the key map file to the FlexPay EPP.

21 Click **OK**.

Note: The tool will report an error if the FlexPay EPP is offline, power has been turned off, or if the FlexPay EPP has been connected using the wrong COM.

Figure 3-48: Sending the Key Map Successfully

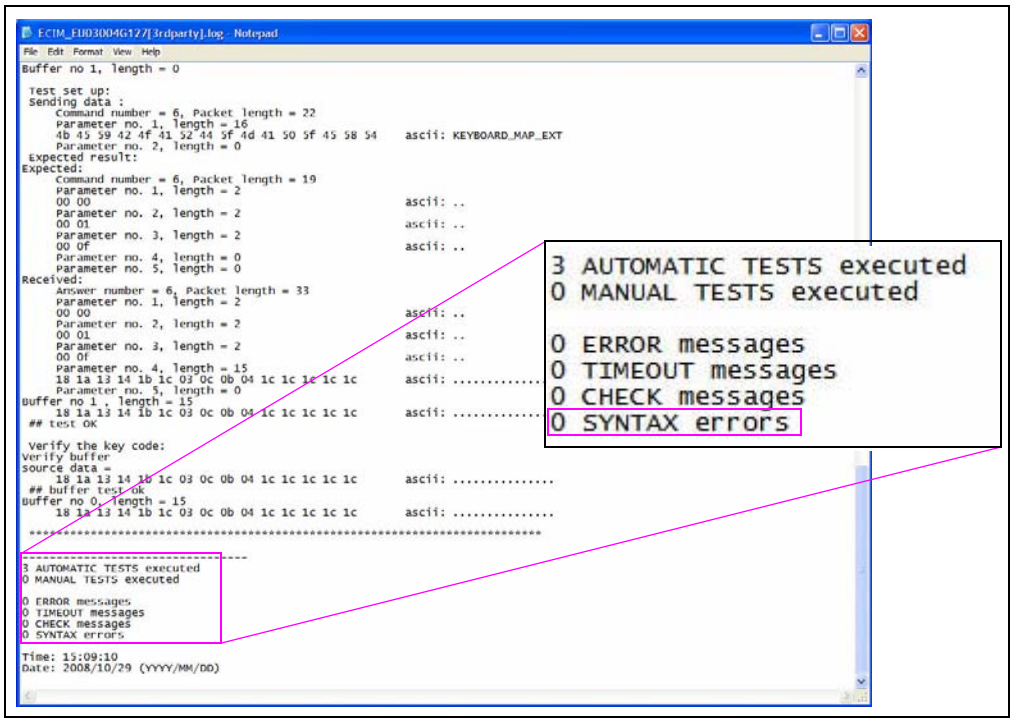
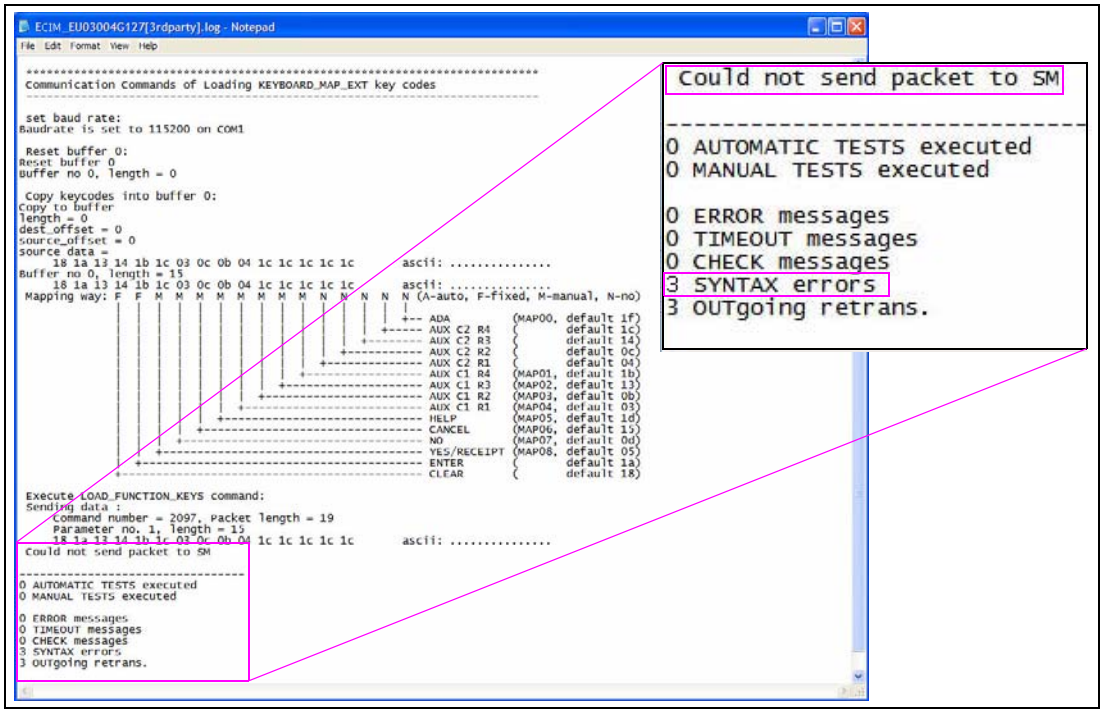


Figure 3-49: Sending the Key Map Unsuccessfully



Setting Up the Clone Function in a Key Map

To clone the key map for a FlexPay EPP, proceed as follows:

1 Connect the laptop that contains the FlexPay EPP Mapping Tool application to a FlexPay EPP on the dispenser using the programming connector. Refer to "Connecting a Laptop to the FlexPay EPP" on page 25.

2 Open the FlexPay EPP Mapping Tool application.

3 Select **Upload key map**. If there is an existing map in the aut\ directory, the map appears on the screen. If there is no map existing under the aut\ directory that matches the FlexPay EPP map, the Loading Key Map from EPP window appears as shown in Figure 3-50.

Figure 3-50: Loading Key Map from EPP Window

4 Select one of the following options:
- **Yes** to map the regular functions, such as YES, NO, CANCEL, HELP, and ADA, and automatically fill out the key captions.
- **No** to manually enter the key captions.

5 Disconnect the laptop from the current FlexPay EPP.

6 Replace the FlexPay EPP and connect the new FlexPay EPP to the laptop.

7 Click **File and Send key map** to save the clone data and send it to the new FlexPay EPP.

8 Edit the captions of the buttons on the new FlexPay EPP, if required. Refer to "Creating a New Key Map" on page 38.

9 Repeat steps 5 to 7 to program other FlexPay EPPs, if required.

Sending the Key Map File to the FlexPay EPP

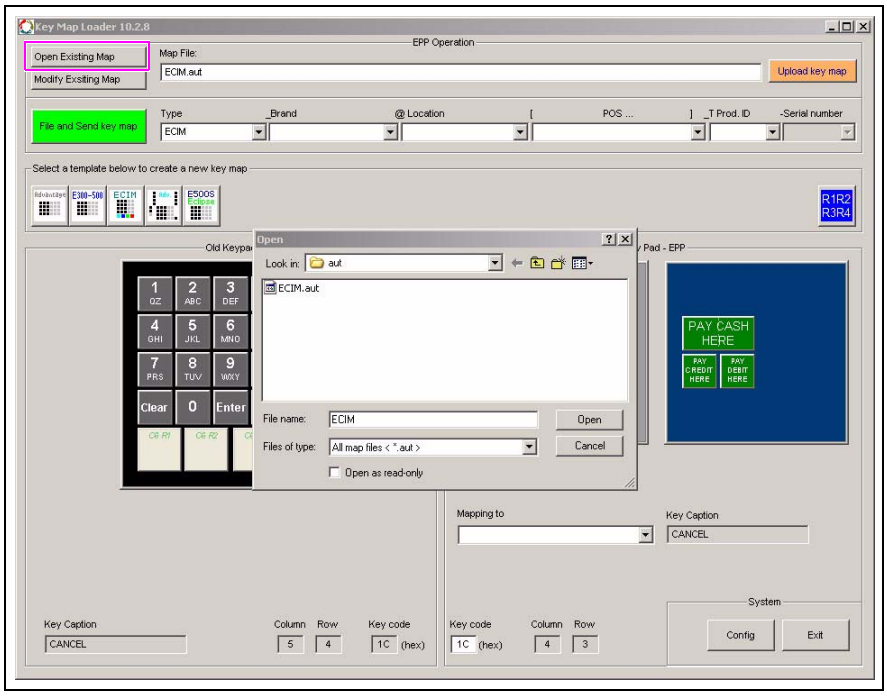
To send the required key map to a FlexPay EPP, proceed as follows:

1 Connect the laptop that contains the FlexPay EPP Mapping Tool application to a FlexPay EPP on the dispenser using the programming connector. Refer to "Connecting a Laptop to the FlexPay EPP" on page 25.

2 Open the FlexPay EPP Mapping Tool application.

3 Click **Open Existing Map** to select a key map file. The Open window appears.
*Note: The button layout of the auxiliary keys cannot be changed when **Open Existing Map** is selected.*

Figure 3-51: Selecting the Key Map File



4 Select the required key map file from the aut\ directory and click **Open**.
Note: If the required key map file does not exist in the aut\ directory, change the directory to find the required key map file.

The name of the key map file selected appears in the "Map File" field.

5 Select **File and Send key map** to save a copy and send the map to the FlexPay EPP. The Save As window appears.

6 Enter a new file name to save a copy of the key map file, if required.

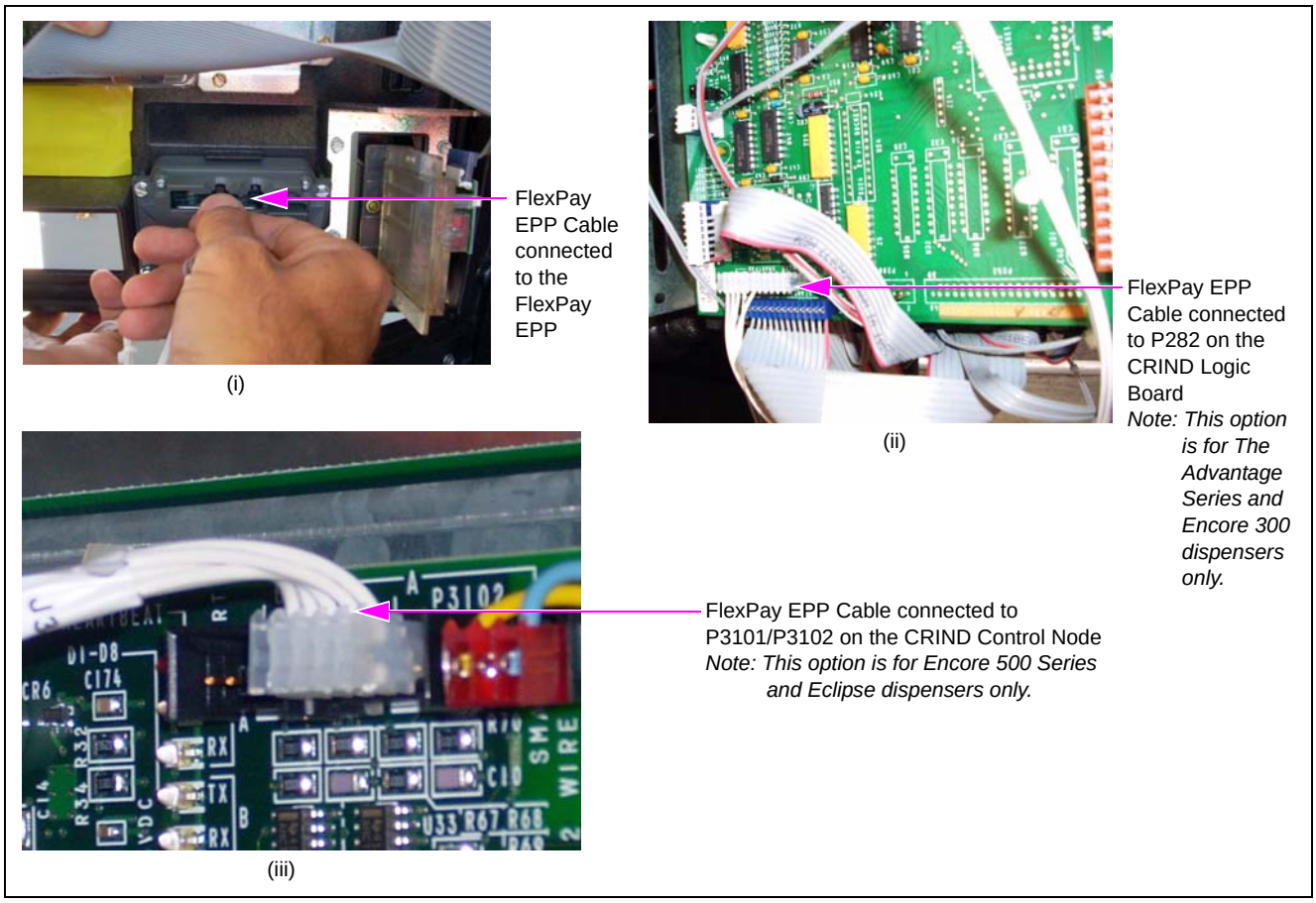
7 Click **Save**. A dialog box appears.

8 Click **Yes**.
- If the key map file has been successfully sent to the FlexPay EPP a .txt file for the key map appears, which displays “0 SYNTAX errors”. See Figure 3-48 on page 49.
- If the key map file has not been sent to the FlexPay EPP, a .txt file for the key map appears, which displays the number of SYNTAX errors and the message, “Could not be sent packet to SM”. See Figure 3-49 on page 49. After the .txt file is closed, a Warning window appears. Click **OK**.

9 Perform steps 3 (on page 51) to 8 to program other FlexPay EPPs, if required.

Verifying FlexPay EPP Cable Connections

Figure 3-52: Verifying FlexPay EPP Cable Connections



Encore 500 Series and Eclipse Dispensers

On Encore 500 and Eclipse dispensers, ensure that one end of the FlexPay EPP cable is connected to the rear of the FlexPay EPP and the other end to P3102 (SmartPad port) on the CRIND Control Node for Side A of the unit and P3101 on the CRIND Control Node for Side B of the unit.

The Advantage Series Units and Encore 300 Dispensers

On The Advantage Series and Encore 300 units, ensure that one end of the FlexPay EPP cable is connected to the rear of the FlexPay EPP and the other end to P282 (SmartPad port) on the appropriate CRIND Logic Board for each side of the unit.

IMPORTANT INFORMATION

The SmartPad port is present only on the CRIND Logic Boards (T17764-G3 or T17764-G4 Z180). If your unit was built before November 1996, the CRIND Logic Board in the unit may not contain the SmartPad port and must be replaced with the latest released Logic Board.

The date of manufacture of the unit must be specified when ordering the FlexPay EPP Kit. If an incompatible version of the CRIND Logic Board exists, the latest CRIND Logic Board (M03651A001) will be shipped as part of the FlexPay EPP Kit.

Verifying CRIND Software Version

Encore 500 Series and Eclipse Dispensers

Ensure that the latest CRIND software version has been installed.

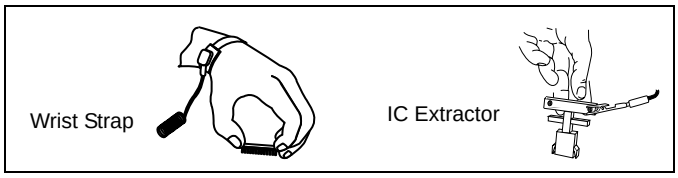
The Advantage Series and Encore 300 Dispensers

In The Advantage Series and Encore 300 dispensers, if the supplied CRIND firmware chip is not installed, the FlexPay EPP will not function. Two firmware chips are provided with the FlexPay EPP Kit. If you are using the G-SITE® or Passport® system, the K93744-06 chip must be installed; for any other POS system, the K93744-10 chip must be installed. This will update the CRIND BIOS software to recognize the new keypad.

Note: The K93744-06 chip is a version 22.X.XX chip. The K93744-10 chip is a version 62.X.XX chip.

The firmware chip must be installed on the U7 slot of the CRIND Logic Board.

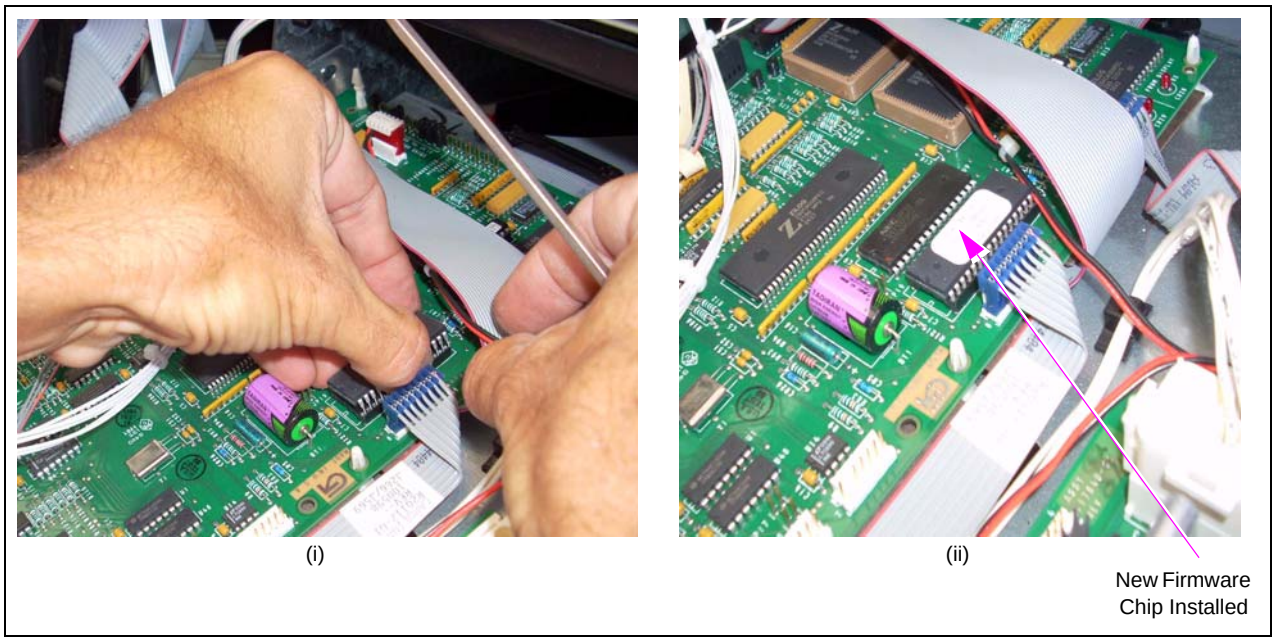
Preventing Electrostatic Discharge



Printed Circuit Assemblies (PCAs) and Integrated Circuits (ICs) are sensitive to electrostatic discharge caused by static electricity. Electrostatic discharge can damage electronic parts. When removing PCAs or handling sensitive parts:

- Touch an unpainted metal surface to discharge any static electricity buildup.
- Use a wrist strap connected to a grounded metal frame or chassis.
- Place removed PCAs or ICs on a grounded antistatic mat.
- Use an IC extractor tool to remove ICs.
- Place PCAs you plan to return for credit or repair in antistatic bags.

Figure 3-53: Installing the New Firmware Chip in Encore 300/The Advantage Series Units



Advanced GSM

The Advanced GSM replaces a Standard GSM. It is configured to work with the CRIND FlexPay EPP with Gilbarco CRIND (Generic and MOC), without any controller (POS) changes, in TDES mode.

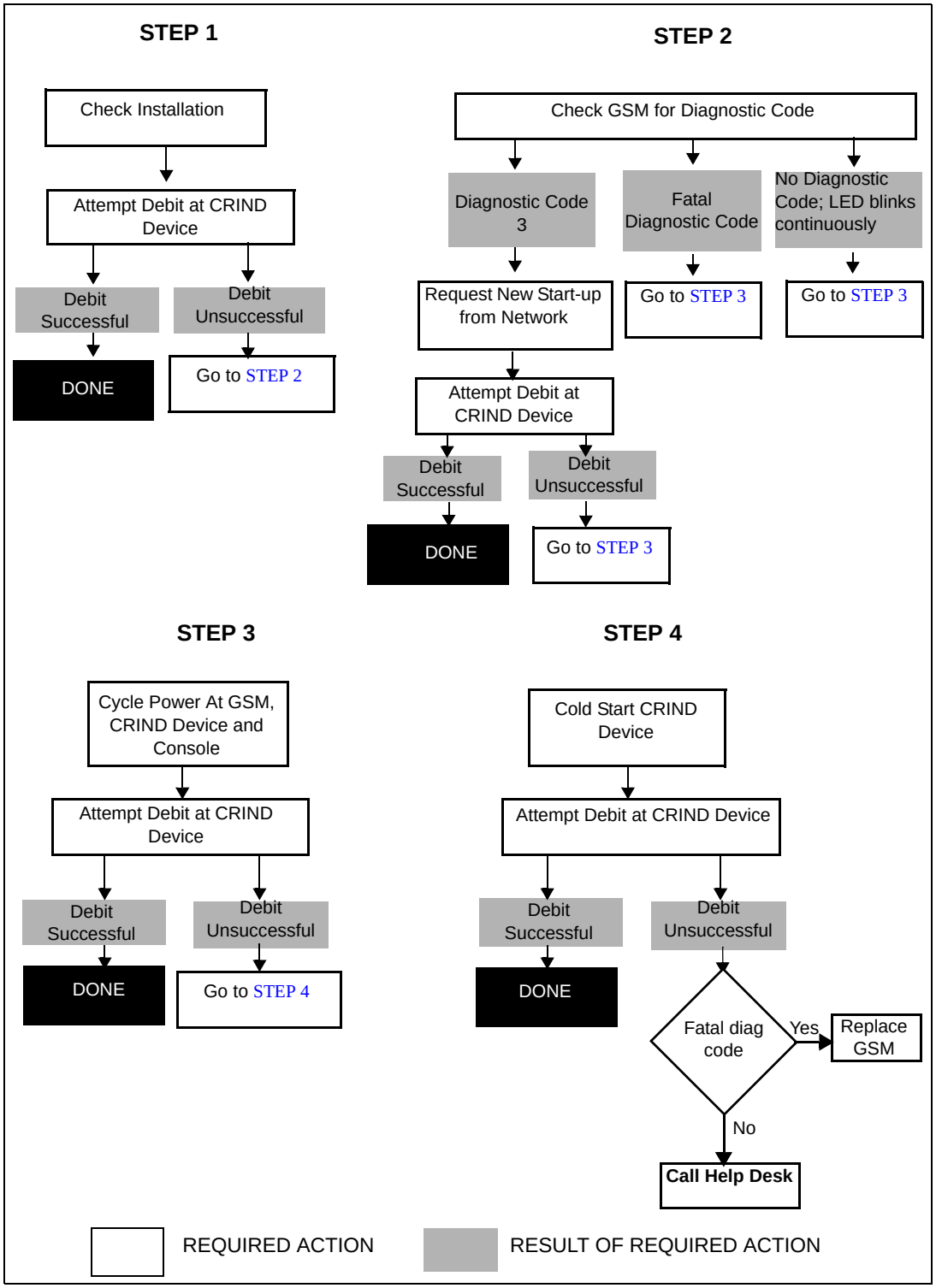
The POS/Forecourt software communicates with the Advanced GSM through standard PC "COM Port" operations.

If an Advanced GSM fails, the system will recover automatically upon power-up when a replacement Advanced GSM is connected.

IMPORTANT INFORMATION
The Advanced GSM is required for debit to work in SDES/TDES mode.

To verify the proper operation of the Advanced GSM and to isolate and correct problems in processing Debit Card transactions use the troubleshooting procedure (Figure 3-54).

Figure 3-54: Advanced GSM Troubleshooting Procedure



Replacing the FlexPay EPP

CAUTION

Ensure that you install a new Card Reader Gasket, if you remove and reinstall the Card Reader when replacing the FlexPay EPP. Else, water may leak around the old gasket.

Encore 500 Series and Eclipse Dispensers

Before you begin, read and understand all safety information found in MDE-3804 Encore/Eclipse Start-Up/Service Manual.

To replace the FlexPay EPP in Encore 500 Series and Eclipse dispensers, proceed as follows:

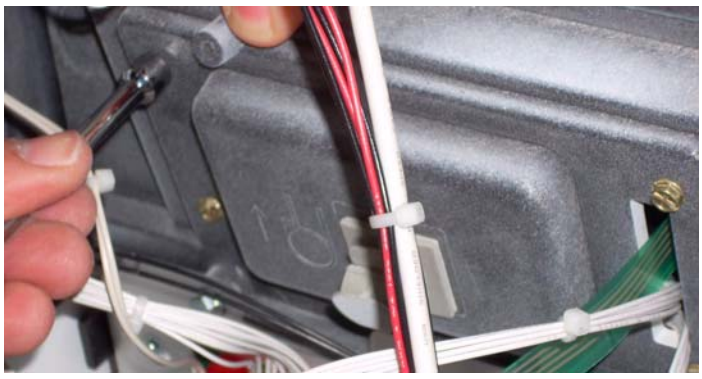
1. Inform the Manager that the power will be removed and remove all power supplied to the unit at the breaker located in the building. Block off the unit from customers.

⚠ WARNING

Failure to turn off the unit during the installation of the kit may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during kit installation.

2. Cone off the dispenser to traffic.
3. Open the main dispenser door.
4. Remove all cables from the rear of the FlexPay EPP.
5. Remove the screws that hold the FlexPay EPP in place.

Figure 3-55: Removing the Screws



Note: Encore 500S is shown in the figure.

6 Remove the FlexPay EPP.

7 Mount the new FlexPay EPP on the unit using the screws removed in step 5 on page 57.

8 Reconnect the cables removed in step 4 on page 57.

9 Restore power to the unit.

10 Enter the Diagnostic Mode using the Diagnostic Card. Refer to "Entering Diagnostic Mode Using the CRIND Diagnostic Card" on page 15.

11 Purge the memory.

12 When the unit comes up, enter the Diagnostic Mode again, program the CRIND IDs, CRIND Mode, and enable any peripheral devices (Cash Acceptors, TRIND and so on).

13 In the Diagnostic Mode, run a Keypad Test to check all keys. For instructions, refer to "Performing the Keypad Test" on page 16.

14 Exit the Diagnostic Mode. For instructions, refer to "Exiting Diagnostic Mode" on page 18.

15 Run a debit transaction to verify proper operation.

16 Close the main dispenser door.

The Advantage Series and Encore 300 Dispensers

To replace the FlexPay EPP in The Advantage Series and Encore 300 dispensers, proceed as follows:

1 Inform the Manager that the power will be removed and remove all power supplied to the unit at the breaker located in the building. Block off the unit from customers.

⚠ WARNING

Failure to turn off the unit during the installation of the kit may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during kit installation.

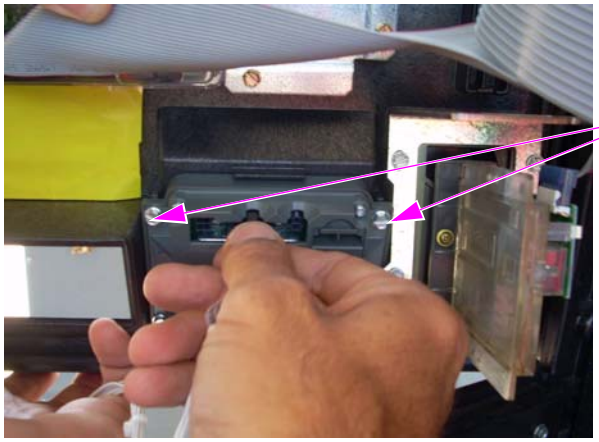
2 Cone off the dispenser to traffic.

3 Open the Payment door.

4 Remove all cables from the rear of the FlexPay EPP.

5 Remove the screws that hold the FlexPay EPP in place.

Figure 3-56: Screws Holding the FlexPay EPP



Note: The Advantage Series is shown in the figure.

6 Remove the FlexPay EPP.

7 Mount the new FlexPay EPP on the unit using the screws removed in step 5.

8 Reconnect the cables removed in step 4.

9 Install jumpers on coldstart pins on the CRIND Logic Board and perform a coldstart.

10 Enter the Diagnostic Mode using the Diagnostic Card. For instructions, refer to "Entering Diagnostic Mode Using the CRIND Diagnostic Card" on page 18.

11 In the Diagnostic Mode, run a Keypad Test to check all keys. For instructions, refer to "Performing the Keypad Test" on page 18.

12 Exit the Diagnostic Mode. For instructions, refer to "Exiting Diagnostic Mode Using Diagnostic Card" on page 19.

13 Run a debit transaction to verify proper operation.

14 Close the Payment door.

New Features in FlexPay EPP 2.1 (M10662B001)

The FlexPay EPP 2.1 has the following new features when compared to FlexPay EPP 1.3:

- There are four Activation switches (two per side) that are used to activate the PIN Pad for more security (see Figure 3-57).

Figure 3-57: FlexPay EPP 2.1

- The **Wheelchair/ADA** symbol has been removed from the **Help** key. The ADA key must be programmed as an auxiliary key.
- The **Red** button that was present on the left hand side of the FlexPay EPP has been removed.
- FlexPay EPP 2.1 has a new part number: M10662B001.
- When FlexPay EPP 2.1 is released, FlexPay EPP 1.3 will be sold as a spare only.
- All FlexPay EPPs (2.1) will have a yellow sticker on the rear side (see Figure 3-58).

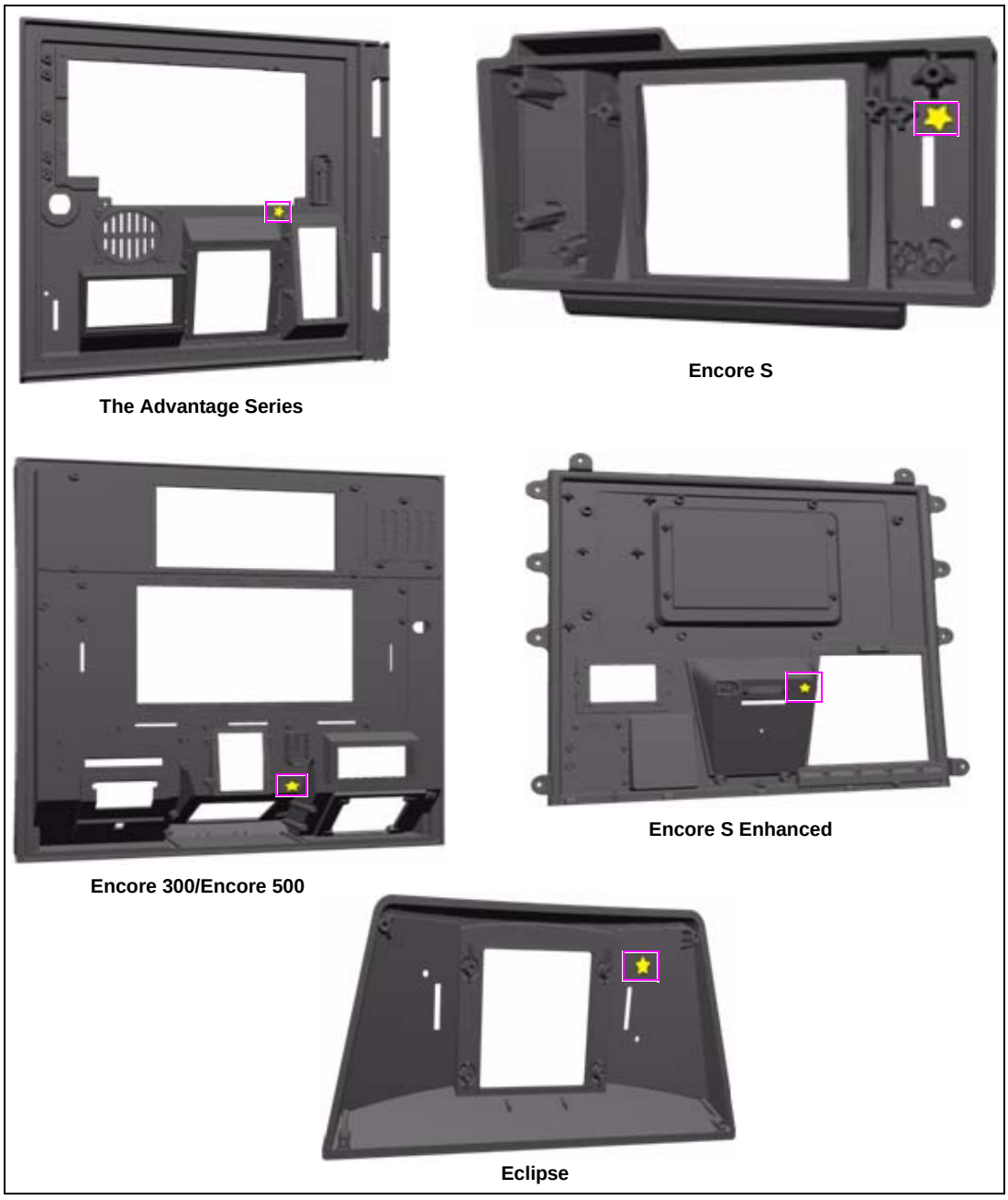
Figure 3-58: Yellow Sticker on the Rear Side of FlexPay EPP 2.1

Changes in the Bezel/POD for FlexPay EPP 2.1

The bezels/PODs for FlexPay EPP 2.1 are different from the bezels/PODs for FlexPay EPP 1.3. The bezels/PODs for FlexPay EPP 2.1 are manufactured with a few changes to accommodate the FlexPay EPP 2.1 and Activation switches. The new bezels/PODs for the various dopiness types are shown in Figure 3-59.

Note: The bezel/PODs for FlexPay EPP 2.1 are marked with a star symbol to differentiate them from a bezel/POD for FlexPay EPP 1.3.

Figure 3-59: Bezel/PODs for FlexPay EPP 2.1 with the Star Symbol



IMPORTANT INFORMATION

- The FlexPay EPP 2.1 will not fit into the bezel/POD intended for FlexPay EPP 1.3. If you have the FlexPay EPP 1.3 and want to upgrade to FlexPay EPP 2.1, then you must upgrade your bezel/POD.
- The FlexPay EPP 1.3 will fit in the bezel/POD intended for FlexPay EPP 2.1.
- You do not have to download software to the CRIND devices from the POS unless you change the CRIND firmware or software.
- If you are using the non-standalone cable to map FlexPay EPP 2.1 then you must perform a warmstart after you plug in the cable and after you remove the cable from the FlexPay EPP.
- The FlexPay EPP 2.1 mapping tool modifier is “Keymap_1002”.

Troubleshooting Communication Issues

FlexPay EPP Mapping Tool Issues

The old keypad is mapped with one or more of the following keys: Yes, No, Help, and Cancel. When you select one of these keys on the “New Pad-EPP” and select the “Mapping To” list of options, the only option available is “Remove Mapping”

To troubleshoot this problem, proceed as follows:

1. Click **Config** on the Key Map Loader window. The Config window appears.
2. Deselect the “Auto Mapping” check box.

Encore 500 Series and Eclipse Dispensers

The key does not work as labeled on the FlexPay EPP or the Auxiliary keypad

To troubleshoot this problem, proceed as follows:

1. Check the key mapping. In most cases, it would have been mapped incorrectly and has to be remapped.
2. Ensure that the CRIND has been purged or coldstarted.
3. Ensure that the POS has been programmed with the appropriate mapping that matches the old keypad mapping.

Both the FlexPay EPP and Auxiliary keypad appear dead (you do not hear a beep when keys are pressed)

To troubleshoot this problem, proceed as follows:

1. Check the rear of the FlexPay EPP to ensure the Red and Green LEDs are flashing.
2. Unplug the Auxiliary keypad from the rear of the FlexPay EPP and verify if the FlexPay EPP keys start to beep. If so, replace the Auxiliary keypad. If the keys still do not beep, replace the FlexPay EPP.
3. Check the LEDs at the rear of the FlexPay EPP. If the Red LED is solid Red, then attempt a warmstart. If the LED is still solid Red, then replace the FlexPay EPP.

The FlexPay EPP seems to be operating the opposite side of the dispenser

To troubleshoot this problem, proceed as follows:

1. Check the FlexPay EPP cable connections on the CRIND Logic Board. Verify the FlexPay EPP cables are connected to P3102 for Side A and P3101 for Side B. If they are not, power down the dispenser and connect the cables to the correct ports. Upon restoring power, perform a coldstart.
   Note: Ensure that you enable all peripheral devices after purging the memory.
2. Ensure that the CRIND IDs are not programmed backwards.

You do not hear a beep when you press the keys on the FlexPay EPP (keypad appears dead)

To troubleshoot this problem, proceed as follows:

1. Check if the dispenser is equipped with a beeper and it is plugged in.
2. Verify the transmit and receive LEDs for that keypad on the CRIND Node are flashing.
3. Verify the LEDs on the back of the keypad are flashing.
4. Check the LEDs at the rear of the FlexPay EPP. If the Red LED is solid Red, then attempt a warmstart. If the LED is still solid Red, then replace the FlexPay EPP.
5. Enter the Diagnostic Mode and perform a Keypad Test to check all keys (refer to “Performing the Keypad Test” on page 18). Ensure that the message, “Debit Active” is displayed.
   Note: When you are about to perform the Keypad Test in the Diagnostic Mode, a message is displayed at the bottom of the screen that indicates the Debit status.
6. Replace the keypad, if required.

A beep is heard when the keys on the FlexPay EPP are pressed. However, debit does not work

To troubleshoot this problem, proceed as follows:

1. Run a System Health Report and ensure that the FlexPay EPP type is programmed as "SmartPad".
2. On the same System Health Report, ensure that the FlexPay EPP is not in a tampered state (that is, "Yes" is displayed against the "SmartPad Running" field).
3. Verify the transmit and receive LEDs for that FlexPay EPP on the CRIND Node are flashing.
4. Enter the Diagnostic Mode and perform a Keypad Test to check all keys (refer to "Performing the Keypad Test" on page 18). Ensure that the message, "Debit Active" is displayed.
   Note: When you are about to perform the Keypad Test in the Diagnostic Mode, a message is displayed at the bottom of the screen that indicates the Debit status.
5. Ensure that the latest CRIND software version has been installed.
6. Purge persistent memory.
7. After you purge memory, enable all peripheral devices.

The message, "Please See Cashier" is displayed after the PIN is entered

To troubleshoot this problem, proceed as follows:

1. Perform a purge on the CRIND.
   Note: Ensure that you enable all peripheral devices after purging the memory.
2. Verify the transmit and receive LEDs for that keypad on the CRIND Node are flashing.
3. Enter the Diagnostic Mode and perform the Keypad Test (refer to "Performing the Keypad Test" on page 18). Ensure that the message, "Debit Active" is displayed.
   Note: When you are about to perform the Keypad Test in the Diagnostic Mode, a message is displayed at the bottom of the screen that indicates the Debit status.
4. Ensure that the latest CRIND software version has been installed.

The keypad keys do not work according to the labeling of the keys

To troubleshoot this problem, proceed as follows:

1. On the System Health Report, ensure that the keypad type is programmed as "SmartPad".
2. Enter the Diagnostic Mode and perform the Keypad Test (refer to "Performing the Keypad Test" on page 18).
3. Remap the keys using the Mapping Tool.

The Advantage Series and Encore 300 Dispensers

The key does not work as labeled on the FlexPay EPP or on the Auxiliary keypad

To troubleshoot this problem, proceed as follows:

1. Check the key mapping. In most cases, it would have been mapped incorrectly and has to be remapped.
2. Ensure that the CRIND has been coldstarted.

Both the FlexPay EPP and Auxiliary keypad appear dead (do not beep when keys are pressed)

To troubleshoot this problem, proceed as follows:

1. Check the rear of the FlexPay EPP to ensure that the Red and Green LEDs are flashing. If the Red LED is solid Red, then attempt a warmstart. If the LED is still solid Red, then replace the FlexPay EPP.
2. Unplug the Auxiliary keypad from the rear of the FlexPay EPP and verify if the FlexPay EPP keys start to beep. If so, replace the Auxiliary keypad. If the keys still do not beep, replace the FlexPay EPP.

When you are connecting cables to the CRIND Logic Board you notice that a P282 Connector is not present

CRIND Logic Boards T17764-G1 and T17764-G2 do not have a SmartPad connector on them (you must replace Logic Boards with either a T17764-G3/-G4 or M03651A001/002).

A beep is heard when the keys on the FlexPay EPP are pressed. However, debit does not work

To troubleshoot this problem, proceed as follows:

1. This indicates that a coldstart has not been performed. Install jumpers on coldstart pins on CRIND Logic Board and perform a coldstart.
2. Ensure that cable connections to P282 on the CRIND Logic Boards are secure.

You do not hear a beep when pressing the keys on the FlexPay EPP (keypad appears dead)

To troubleshoot this problem, proceed as follows:

1. Check if a beeper is installed on the unit.
2. The wrong firmware may be installed. Ensure that V22 is installed for MOC applications, and V62 for Generic applications.
3. Ensure that the LEDs on the rear of the FlexPay EPP are flashing.
4. Enter the Diagnostic Mode and perform the Keypad Test (refer to “Performing the Keypad Test” on page 18).

The correct software version is installed, the dispenser boots up and displays “SmartPad not working”

To troubleshoot this problem, proceed as follows:

1. Verify the LEDs on the rear of the FlexPay EPP are flashing.
2. Verify the cables between the FlexPay EPP and SmartPad port on the CRIND Logic Boards are connected properly.
3. Ensure that the mapping cable is not plugged into the FlexPay EPP.

The FlexPay EPP appears to be operating the opposite side of the dispenser

To troubleshoot this problem, proceed as follows:

1. Check the connections on the CRIND Logic Boards. Verify if the cables for the FlexPay EPP are not connected to the wrong CRIND Logic Boards.
   Note: If so, you must swap the connectors and then perform a coldstart on both CRIND devices.
2. Ensure that the jump jack settings that define the sides are set correctly (Side A is jumpered while Side B is not). Also, verify if the jump jacks for the CRIND IDs are set correctly for each side.

Troubleshooting Flowcharts

Figure 3-60: Troubleshooting Flowchart - 1

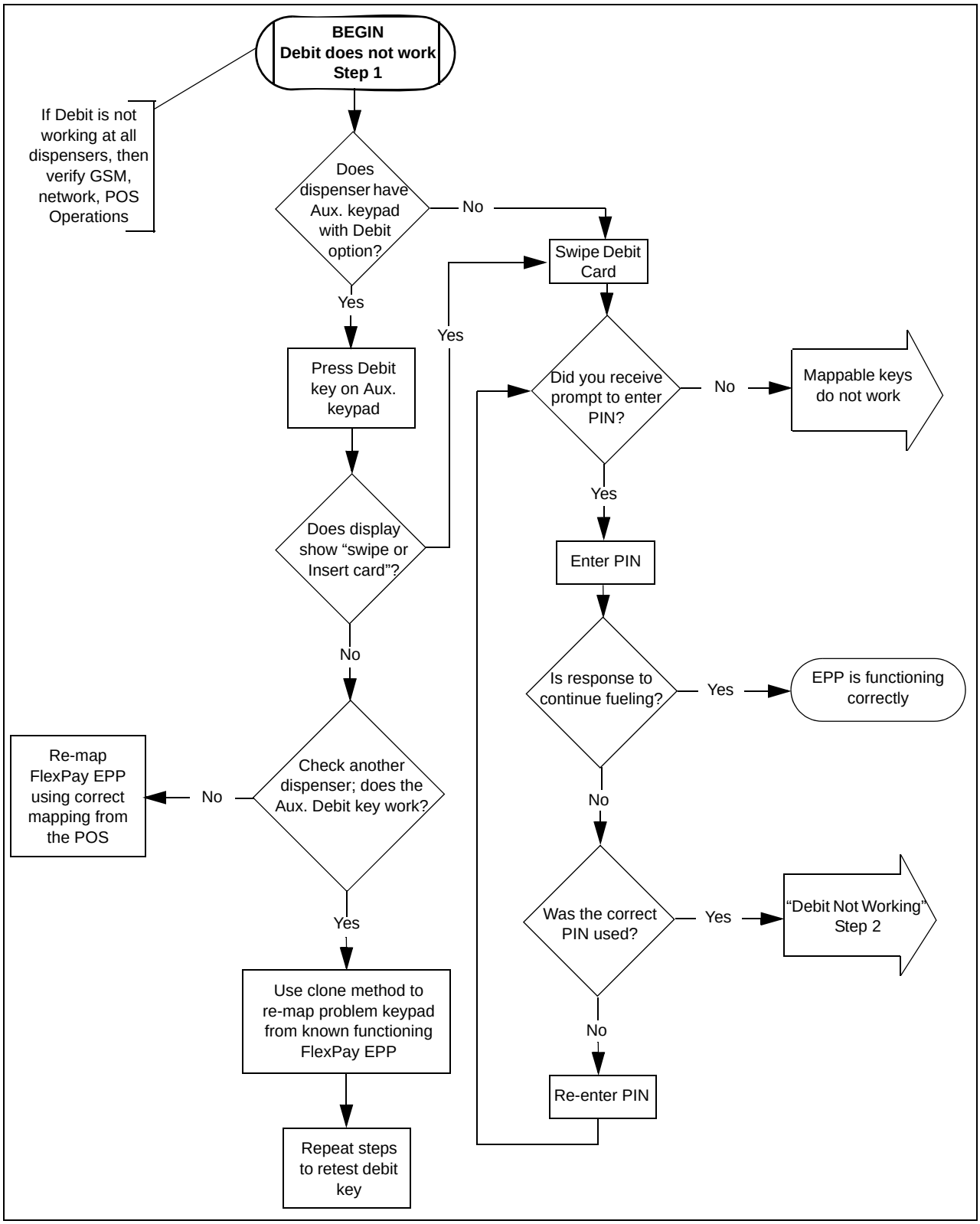


Figure 3-61: Troubleshooting Flowchart - 2

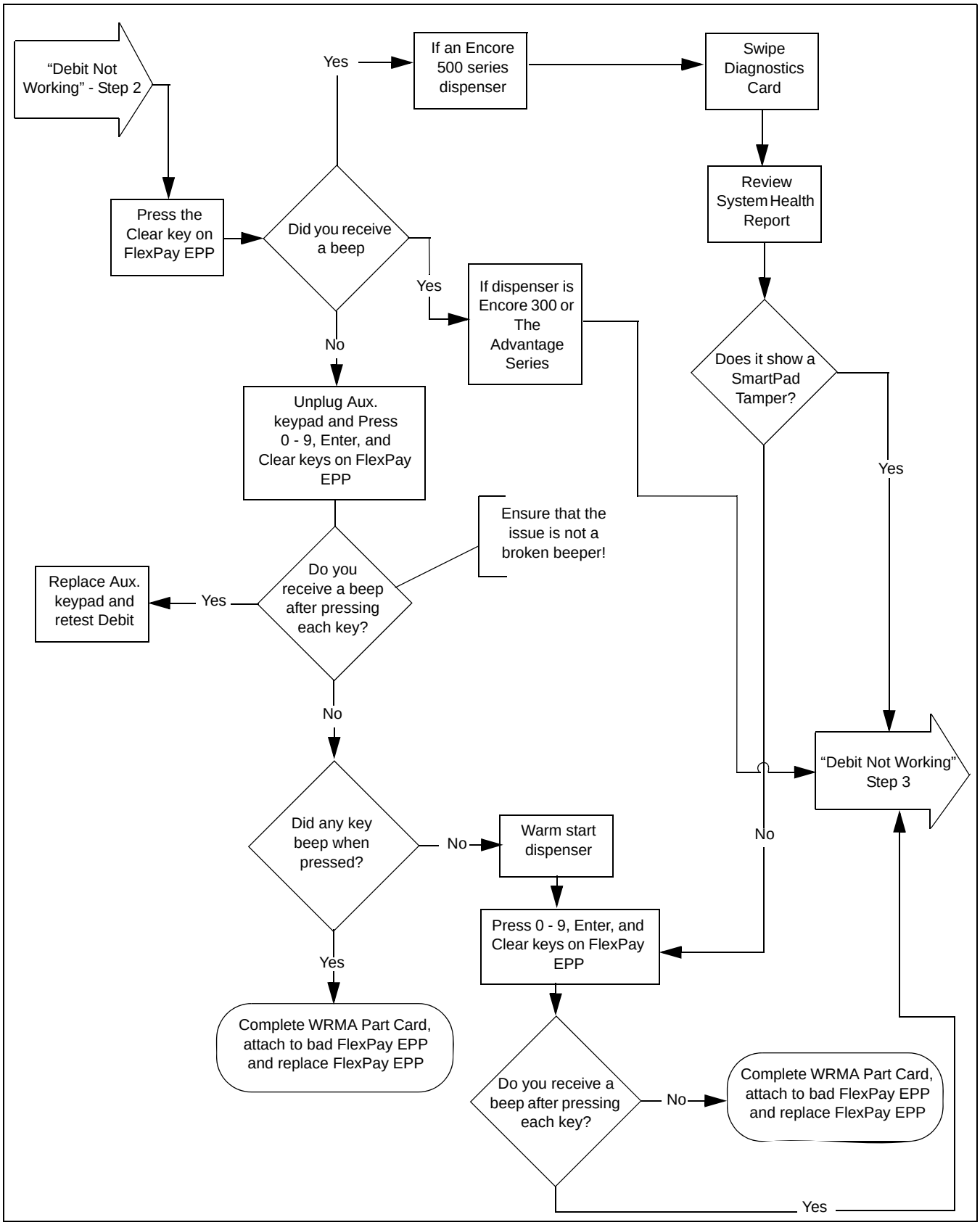


Figure 3-62: Troubleshooting Flowchart - 3

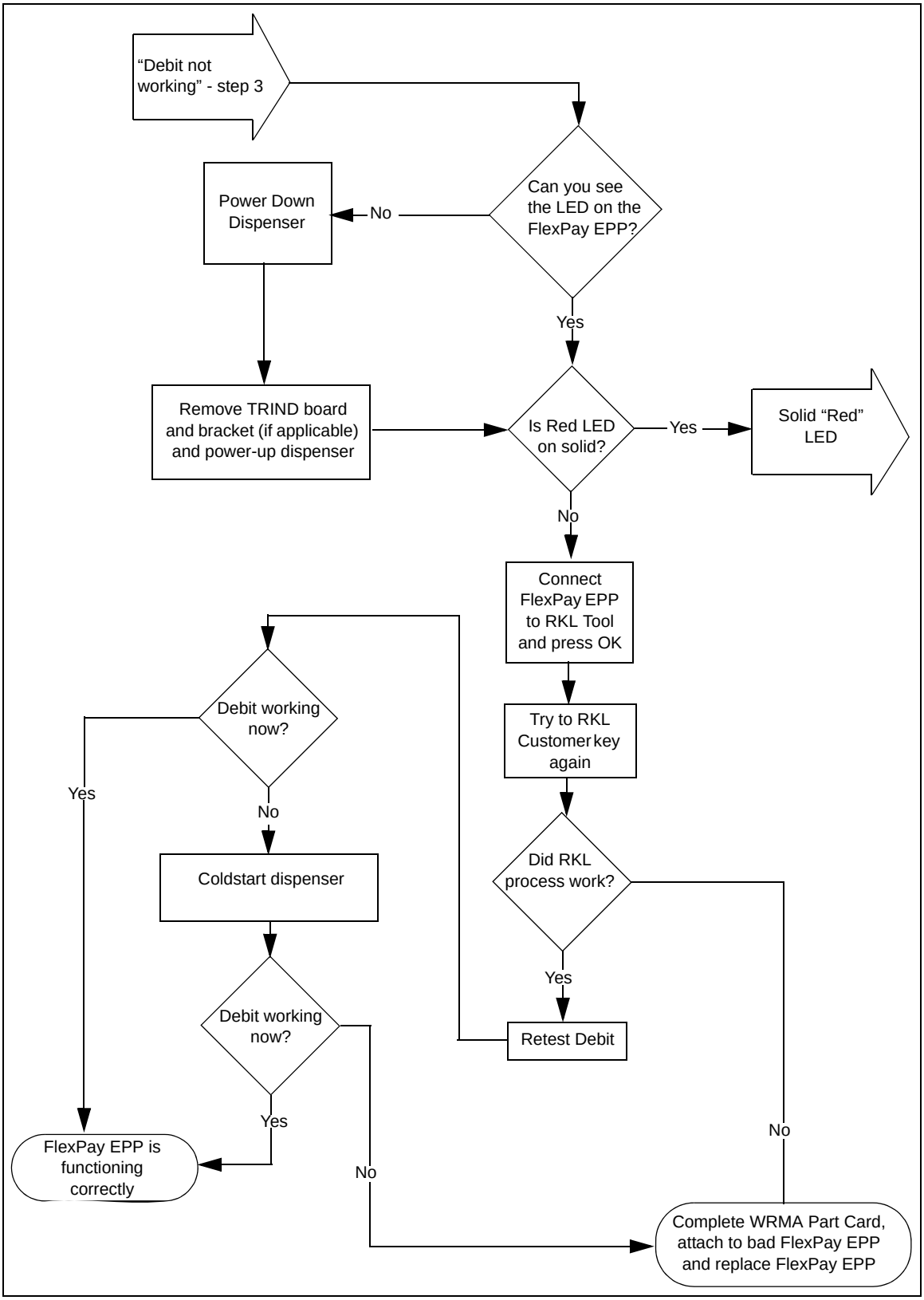


Figure 3-63: Troubleshooting Flowchart - 4

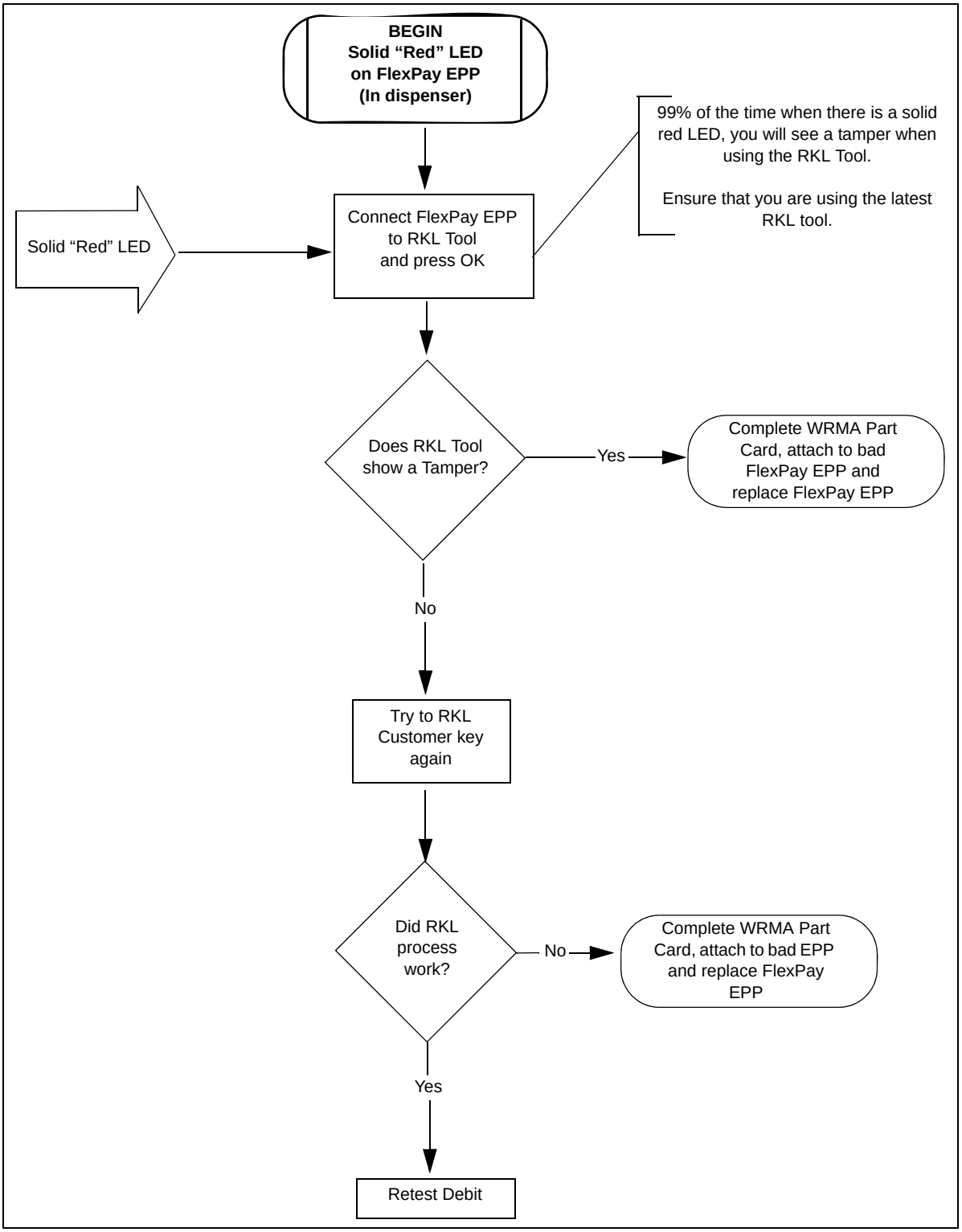


Figure 3-64: Troubleshooting Flowchart - 5

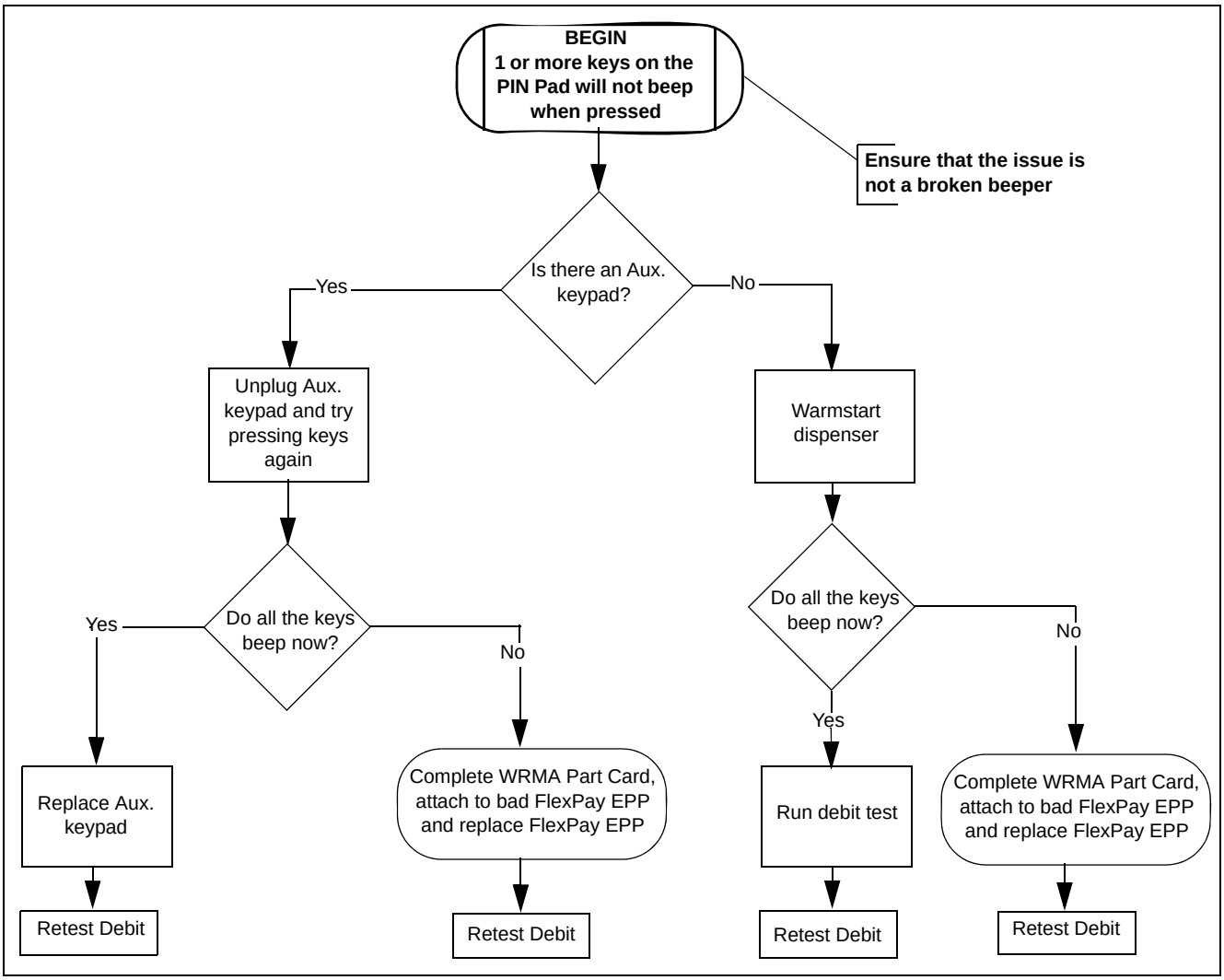


Figure 3-65: Troubleshooting Flowchart - 6

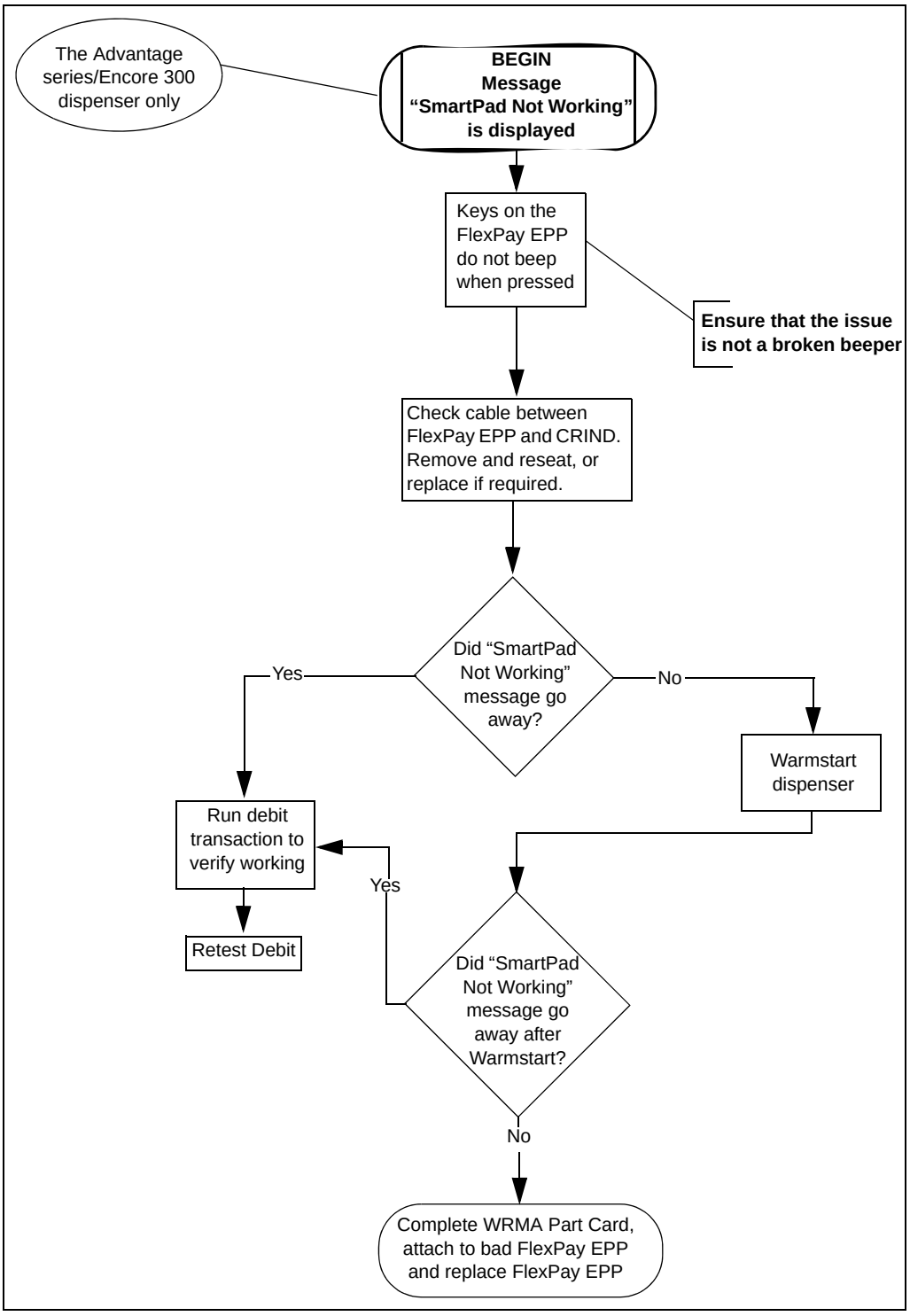


Figure 3-66: Troubleshooting Flowchart - 7

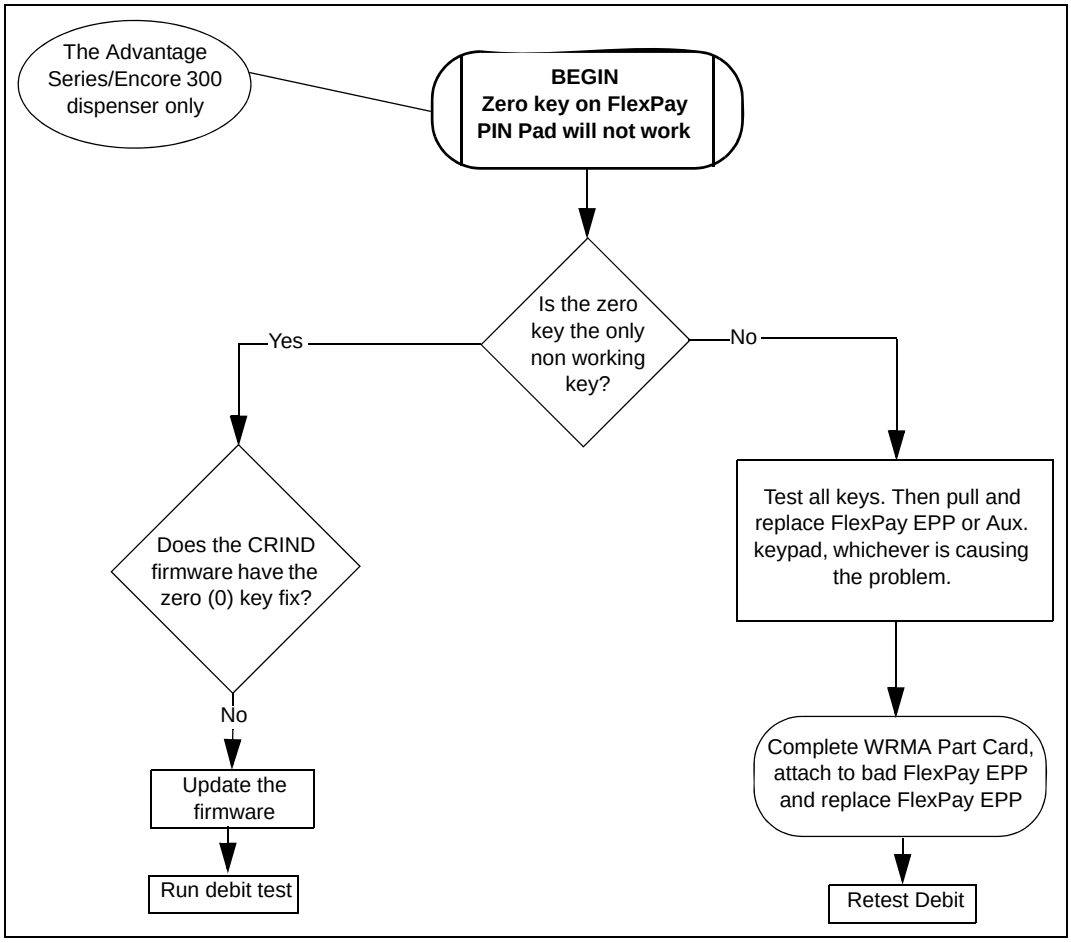


Figure 3-67: Troubleshooting Flowchart - 8

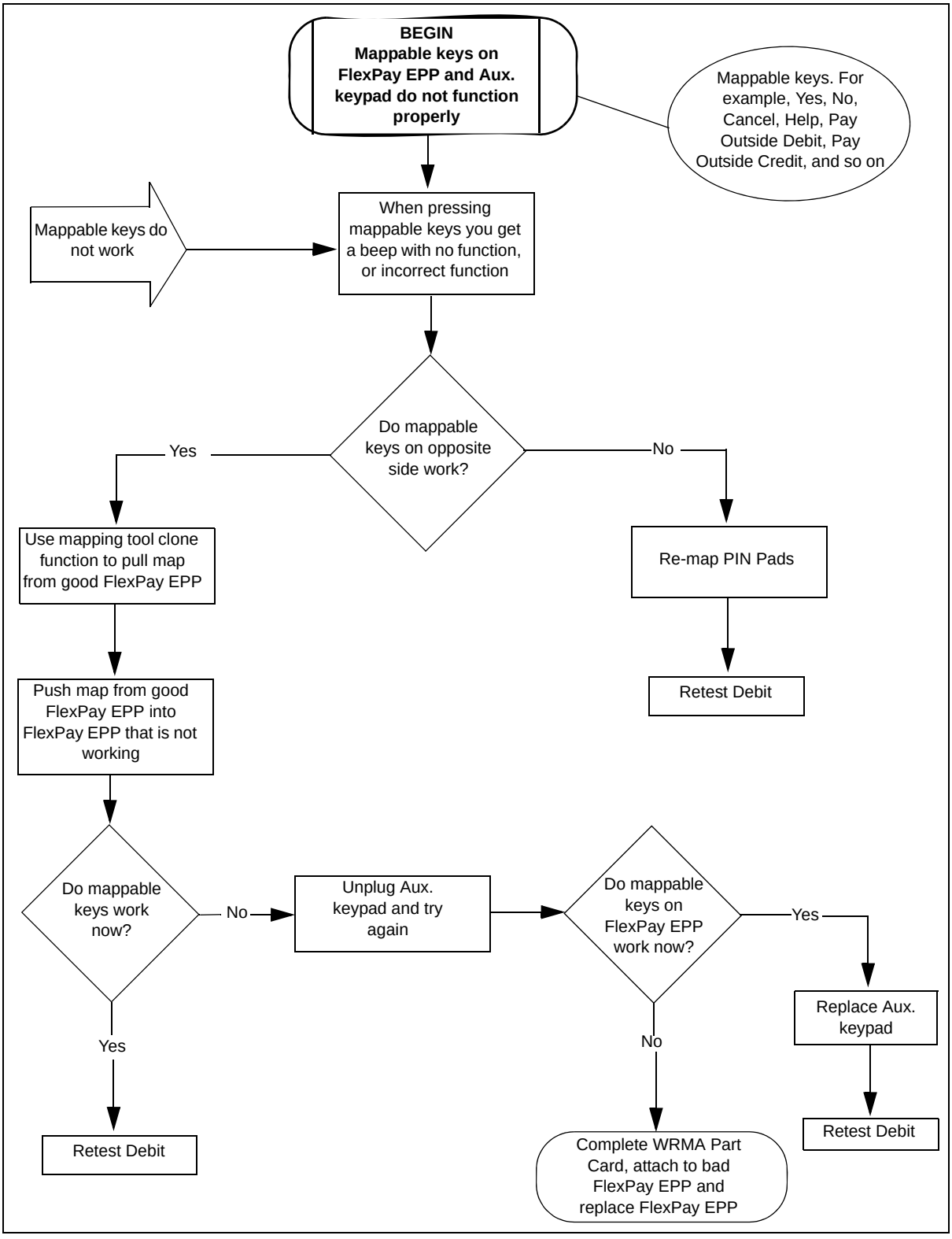


Figure 3-68: Troubleshooting Flowchart - 9

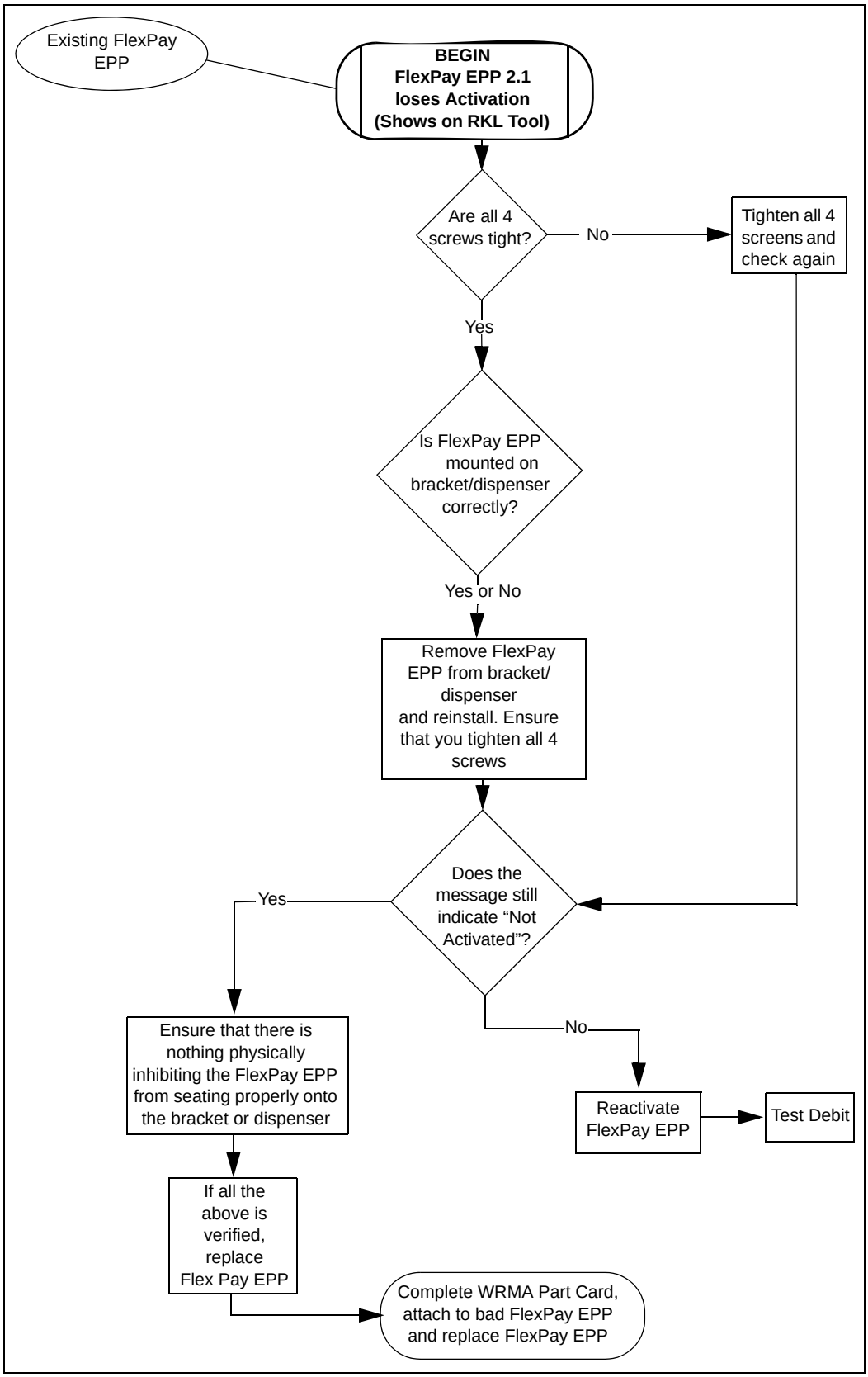
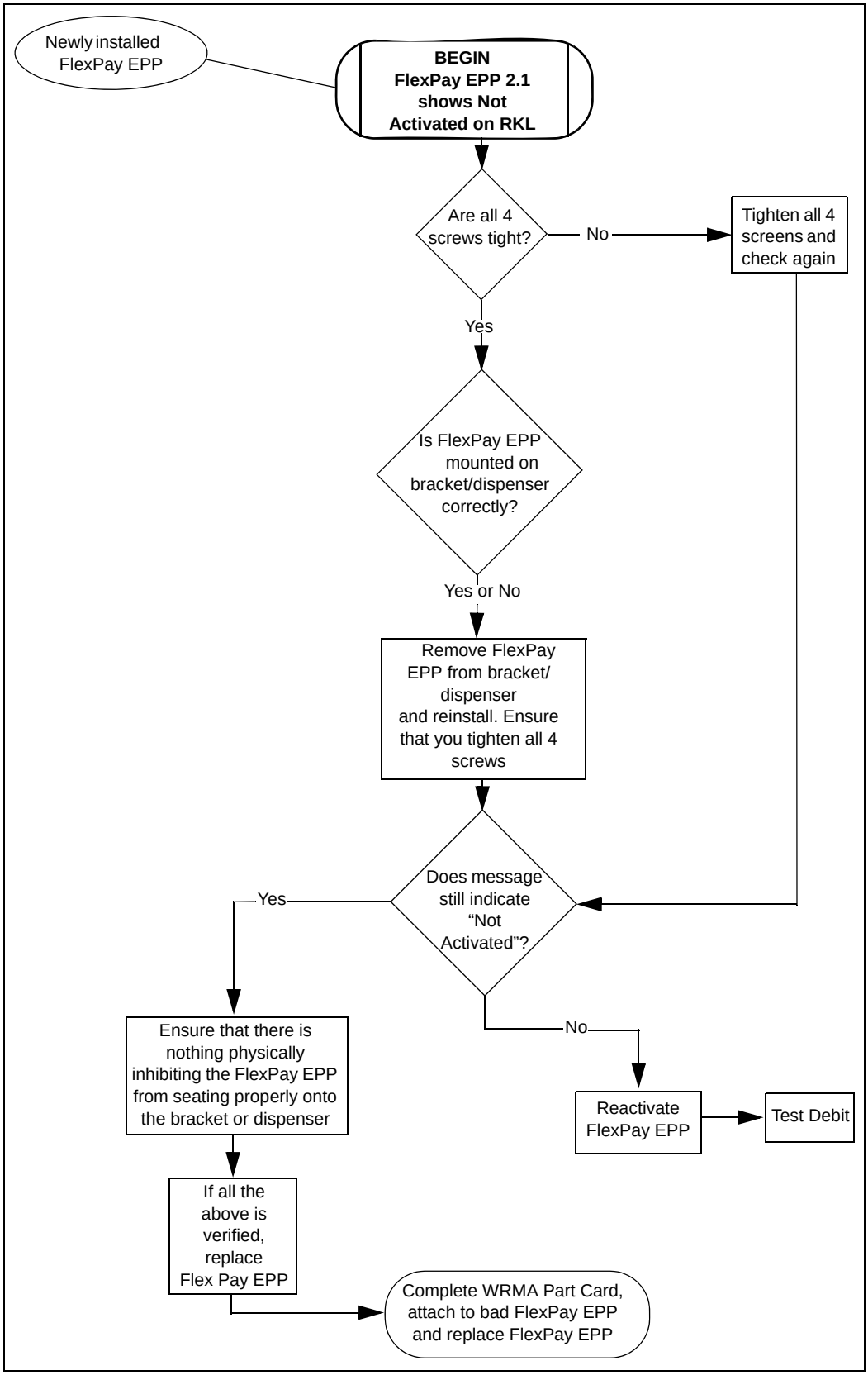


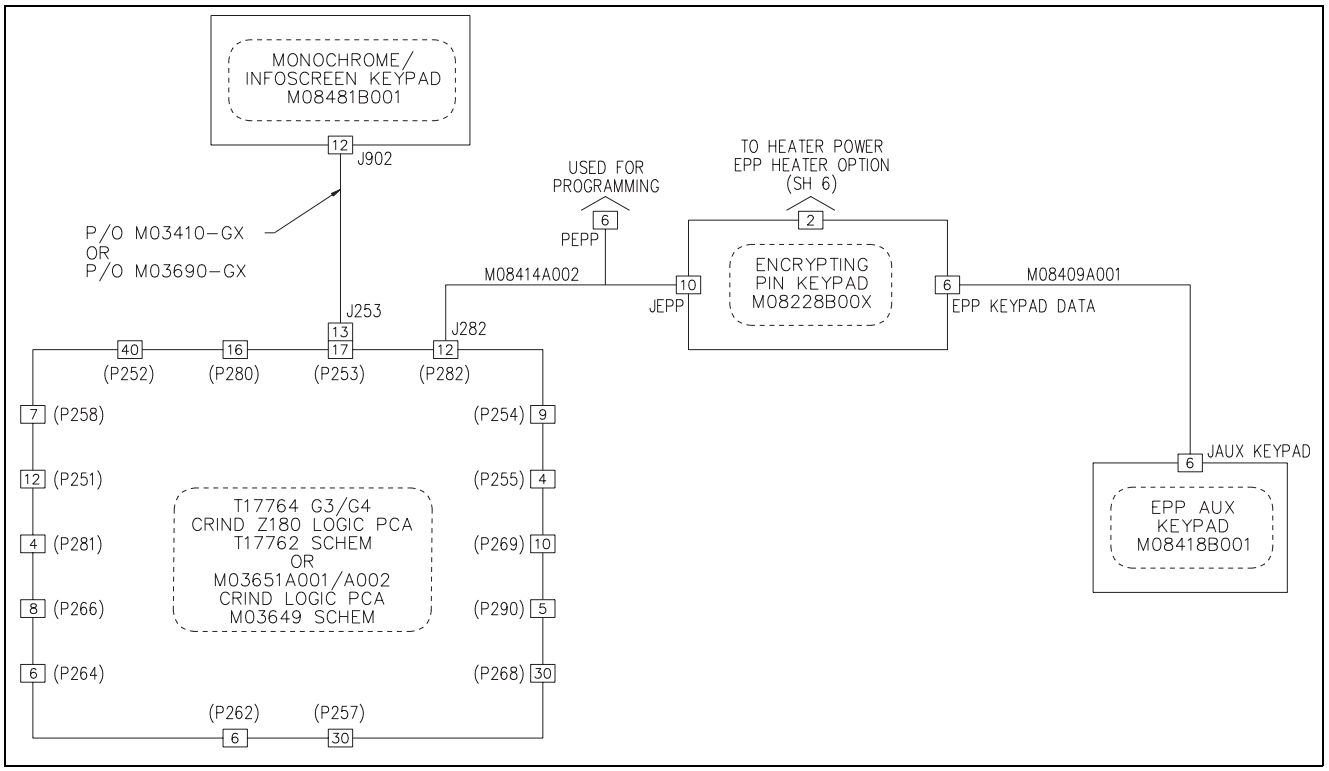
Figure 3-69: Troubleshooting Flowchart -10



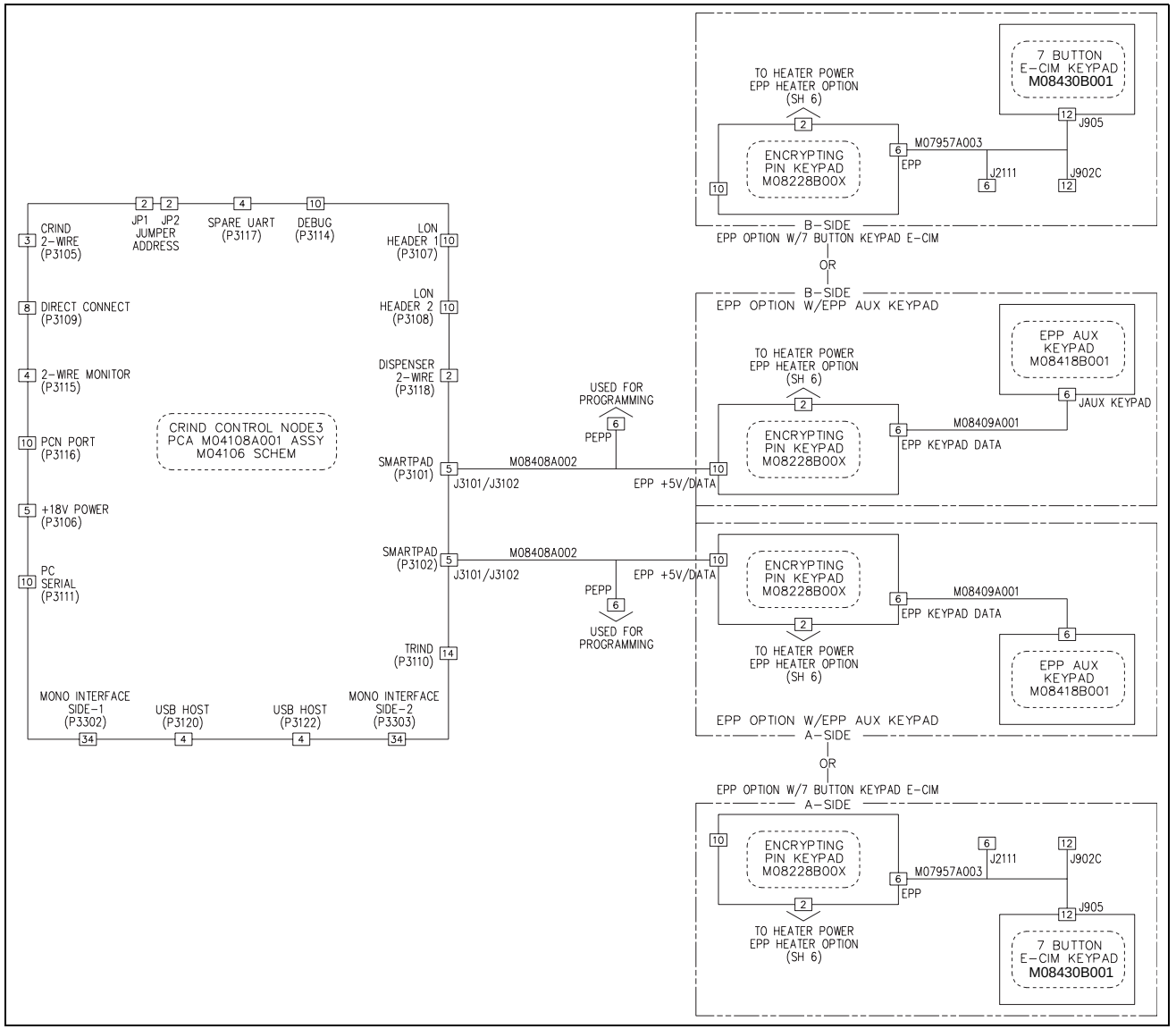
4 – Wiring

This chapter provides the FlexPay EPP Wiring diagrams for different Gilbarco dispensers.

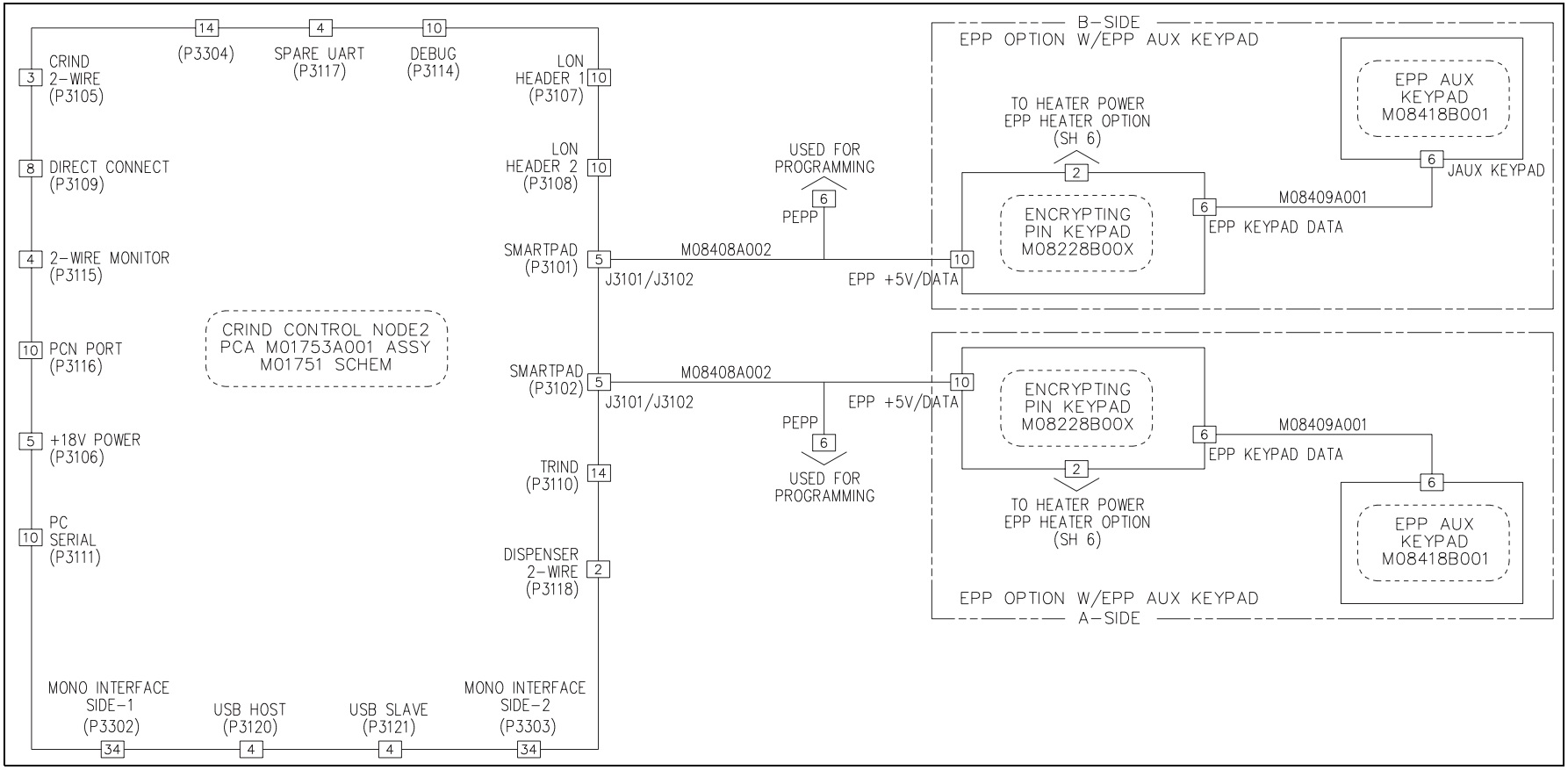
The Advantage Series - Side A and Side B



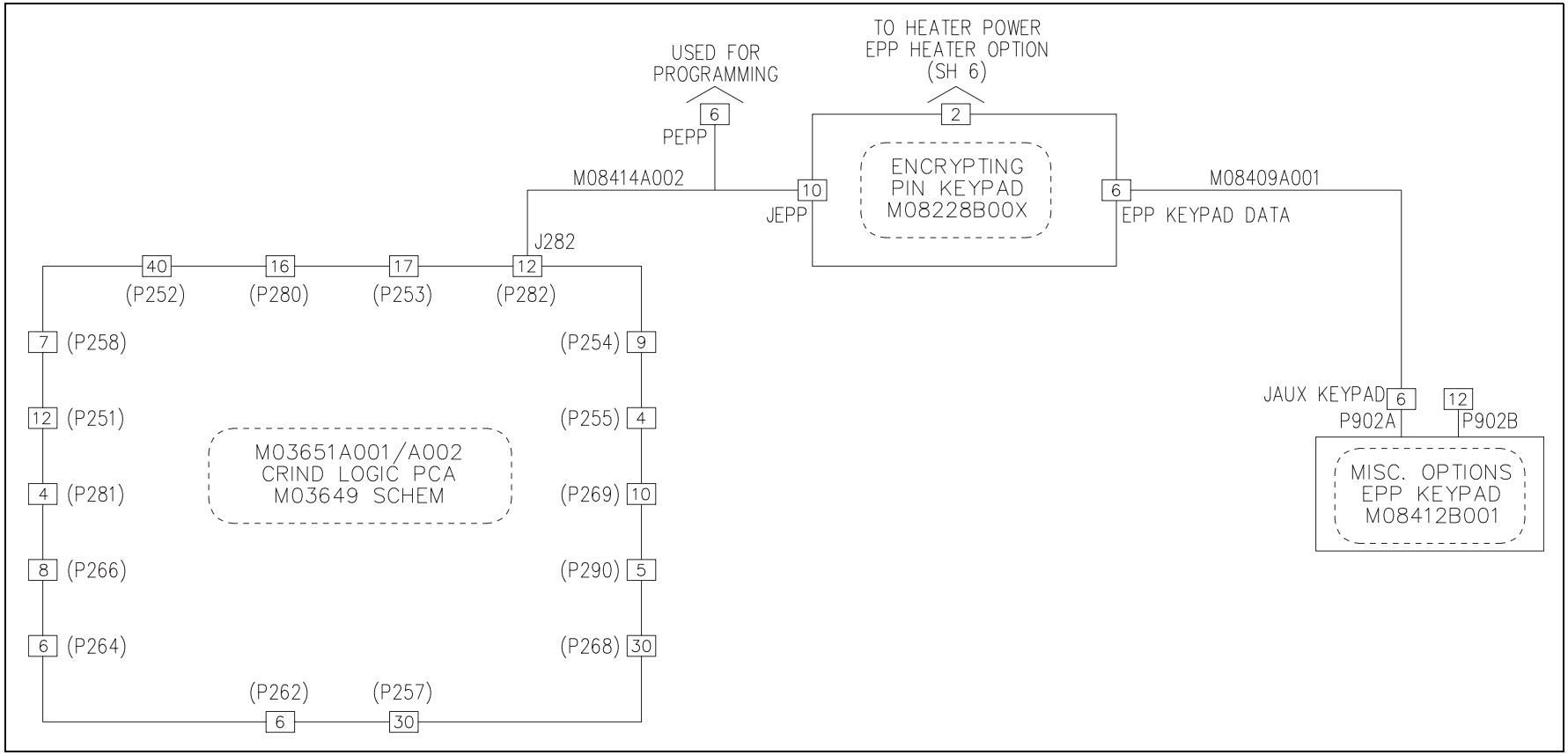
Encore S Series - Side A and Side B



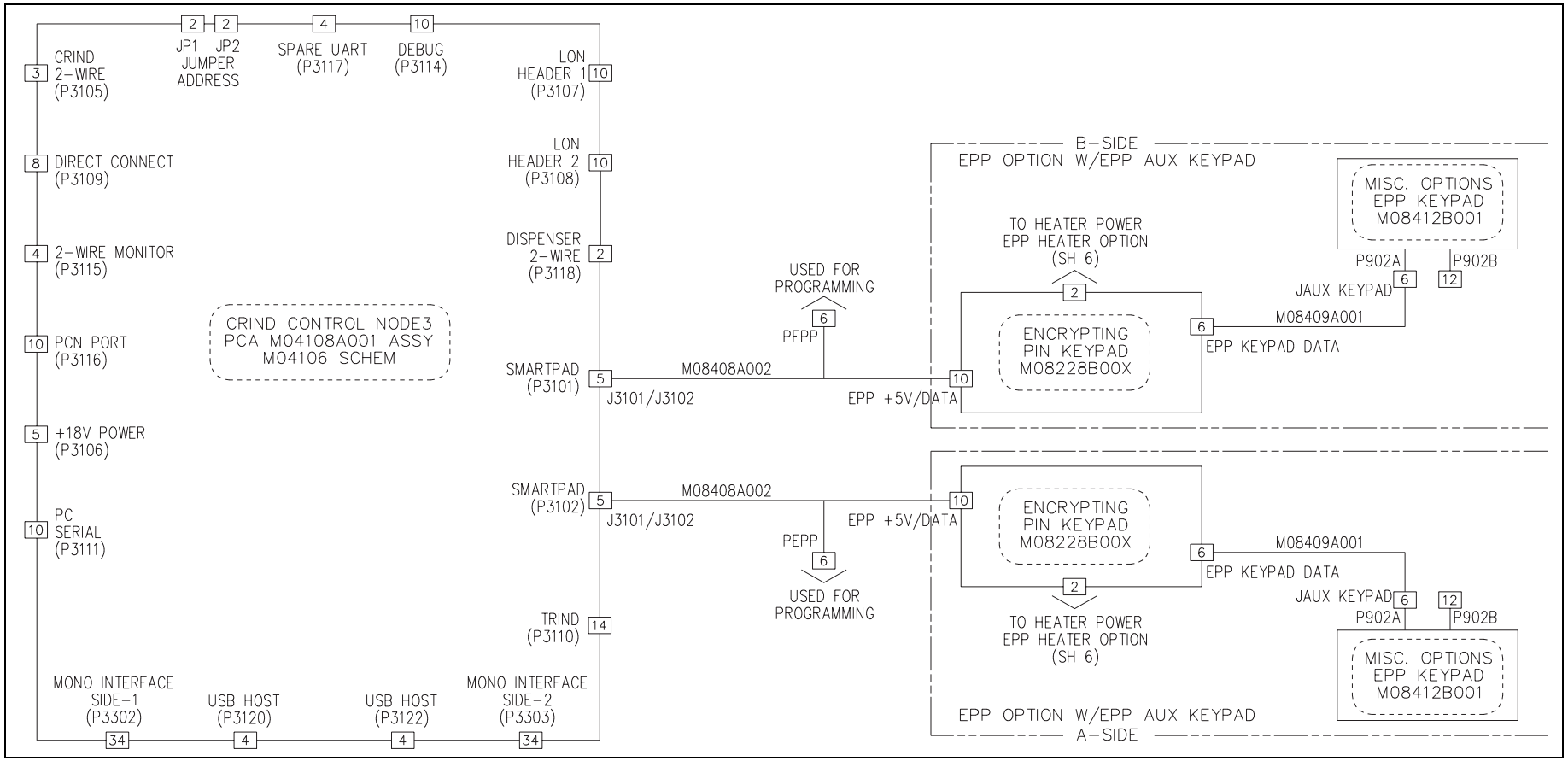
Eclipse Side-1 and Side-2



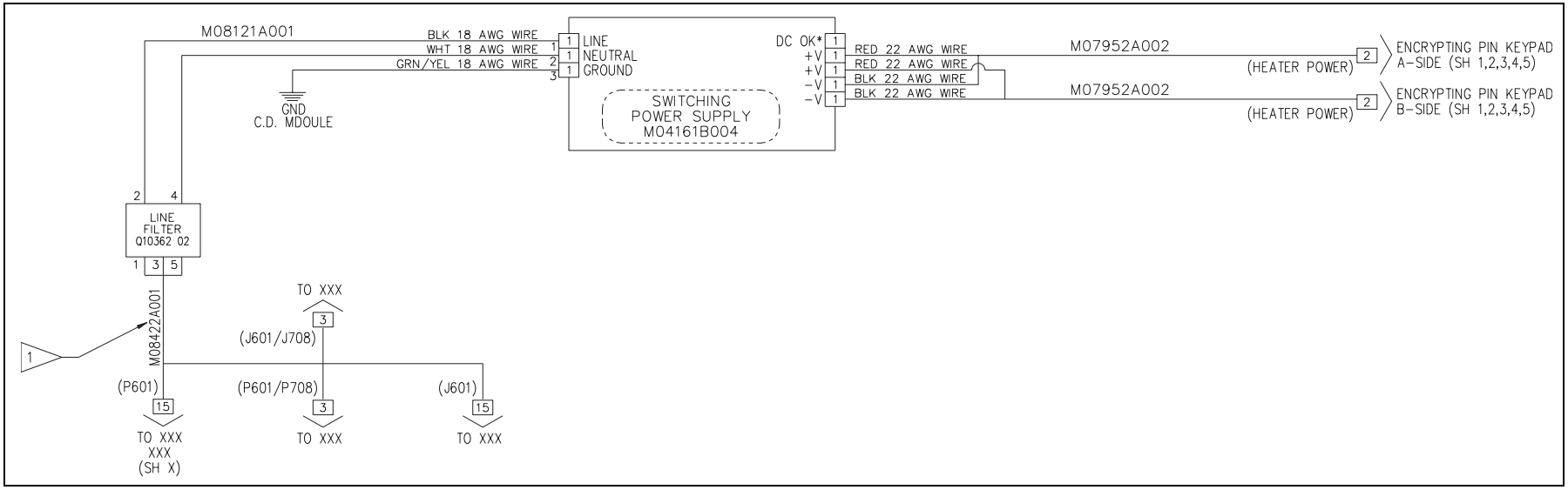
Encore 300


TO HEATER POWER
EPP HEATER OPTION
(SH 6)
USED FOR
PROGRAMMING
6
2
PEPP
M08414A002
10
JEPP
ENCRYPTING
PIN KEYPAD
M08228B00X
6
M08409A001
EPP KEYPAD DATA
J282
40
16
17
12
(P252)
(P280)
(P253)
(P282)
7 (P258)
12 (P251)
4 (P281)
8 (P266)
6 (P264)
(P254) 9
(P255) 4
(P269) 10
(P290) 5
(P268) 30
M03651A001/A002
CRIND LOGIC PCA
M03649 SCHEM
(P262)
(P257)
6
30
JAUX KEYPAD
6
12
P902A
P902B
MISC. OPTIONS
EPP KEYPAD
M08412B001

Encore 500 - Side A and Side B



FlexPay EPP Heater Option



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