GILBARCO VEEDER-ROOT

Introduction

Purpose

This manual provides instructions to mount the FlexPay™ Global Contactless Module (GCM) Kit (EPK GCM ECIM) on Encore® S E-CIM™ dispenser.

IMPORTANT INFORMATION

This equipment has been tested and found to comply with the limits pursuant to Part 15 of the Federal Communications Commission (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 radiates radio frequency energy. This equipment must be installed and used in accordance with the instruction manual to avoid harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference. In this case, the user must correct the interference at his own expense. Any change or modification must be approved by the manufacturer to allow the user to operate this equipment safely.

The long term characteristics or the possible physiological effects of radio frequency electromagnetic fields have not been investigated by Underwriters Laboratories (UL®).

IMPORTANT INFORMATION

Industry Canada Regulation:

This device complies with Industry Canada licence-exempt Radio Standards Specification (RSS) standard(s). Operation is subject to the following two conditions:
• This device may not cause interference.
• This device must accept any interference including undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain must be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that is required for successful communication.

Table of Contents

Required Tools and Materials

Following tools and materials are required for installing the FlexPay GCM on Encore S E-CIM dispenser:

- Phillips®-head Screwdriver
- Small Channel Locks or Pliers
- 1/4-inch Nut Driver or Socket
- 5.5 mm Nut Driver
- CRIND® Diagnostic Card (Q12534-170)

Parts List

The parts required for installing the FlexPay GCM Kit (EPK GCM ECIM) on Encore S E-CIM dispenser are listed in the respective parts table.

E-CIM Dispenser with Sandpiper® Electronics

Following table lists the parts required to mount the FlexPay GCM on E-CIM dispenser with Sandpiper electronics:

Item#	Description	Part Number	Quantity
1	FlexPay GCM Assembly	M12027A001	1
2	Lens, TRIND®	M07698B001	1
3	Gasket, TRIND Lens	M07715B002	1
4	Screw, Metric M3 X 8 Flat-head (for plastic application)	M00419B311	4
5	24 VDC Contactless Interface Board (CIB) Power Cable	M12093A001	1
6	MagTek® ECR Cable	M07702A017	1
7	OTI Antenna to CIB Cable	M12090A001	1
8	Decal, FCC ID N6SGCM	M02962B015	1
Optional Components Shipped Loose for Dispenser with Color Screen			
9	Printed Circuit Board Assembly (PCA), RS-232 to Transistor-to-transistor Logic (TTL) Converter	M07592A001	1
10	Standoff, Board Support	Q10651-02	4
11	Serial Programming Port, Generic Color Cable	M00719A004	1
12	RS-232 24 V Power Cable	M07746A001	1
13	Communications (COM)2 Cable	M07749A001	1
14	Flash Card, CRIND Software	M07743K001	1

E-CIM Dispenser with EMV® Electronics

Following table lists the parts required to mount the FlexPay GCM on E-CIM dispenser with EMV electronics:

Item#	Description	Part Number	Quantity
1	Flexpay GCM Assembly	M12027A001	1
2	Lens, TRIND	M07698B001	1
3	Gasket, TRIND Lens	M07715B002	1
4	Screw, Metric M3 X 8 Flat-head (for plastic application)	M00419B311	4
5	Cable, OTI to Secure Payment Outdoor Terminal (SPOT)	M11964A001	1
6	Decal, FCC ID N6SGCM	M02962B015	1

E-CIM Dispenser with 700 S Electronics

Following table lists the parts required to mount the FlexPay GCM on E-CIM dispenser with 700 S electronics:

Item#	Description	Part Number	Quantity
1	FlexPay GCM Assembly	M12027A002	1
2	Lens, TRIND	M07698B001	1
3	Gasket, TRIND Lens	M07715B002	1
4	Screw, Metric M3 X 8 Flat-head (for plastic application)	M00419B311	4
5	MagTek Encrypting PIN Pad (EPP)/Two-wire Cable	M07702A020	1
6	Cable, OTI Antenna to CIB	M12090A001	1
7	Decal, FCC ID N6SGCM	M02962B015	1
8	PCA, Peripheral Interface PCB (PIP) 2	M12806A001	1

Secure Card Reader (SCR) Contactless Card Reader (CCR) Upgrade

Following table lists the parts required for E-CIM dispenser that already has an SCR 2 installed or will have an SCR 2 installed (applies only if customer has E-CIM with Sandpiper):

Item#	Description	Part Number	Quantity
1	Bracket, CCR Interface	M11256B001	1
2	PCA, Contactless Interface	M11938A001	1
3	Screw MH PNH PHL 4-40 X	Q11270-17	2
4	Screw, #2-32 Thread Cutting	M12715B001	2
5	Cable, SCR to CIB	M12089A001	1

GCM Assembly Spare Kit (M12027K004)

Following table lists the parts in the GCM Assembly Spare Kit for E-CIM:

Item#	Description	Part Number	Quantity
1	GCM Assembly for E-CIM	M12027A001	1

GCM Assembly Spare Kit (M12027K006)

Following table lists the parts in the GCM Assembly Spare Kit for E-CIM with 700 S Electronics:

Item#	Description	Part Number	Quantity
1	GCM Assembly for E-CIM	M12027A002	1

GCM Mounting Component Spare Kit (M12027K005)

Following table lists the parts in the GCM Mounting Component Spare Kit for E-CIM:

Item#	Description	Part Number	Quantity
1	TRIND Lens	M07698B001	1
2	TRIND Lens Gasket	M07715B002	1
3	Metric Screw M3 X 8	M00419B311	4

Related Documents

Document Number	Title	GOLD℠ Library
MDE-4609	Heater/Fan Kit (M07333K00X) Installation Guide for Encore 300/The Advantage® Series [with FlexPay EMV (Canada Only)] and Encore S/Encore 500 Units	• Advantage and Legacy® • Encore and Eclipse® • FlexPay EMV
MDE-4736	FlexPay EPP Heater Kit (M08631K001) and Card Reader Heater Installation Instructions	• Encore and Eclipse • FlexPay EPP and SCR • Advantage and Legacy
MDE-4769	Personality Screen Change for Color Screen Update and/or Upload Instructions	• Applause Media System • Encore and Eclipse
MDE-4928	Secured Card Reader (SCR) 2 Kit (M07813K206) Installation Instructions for Encore S E-CIM	• Encore and Eclipse • FlexPay EPP and SCR
MDE-5062	FlexPay Maintenance Tool for FlexPay/SPOT CRIND System	• CRIND and TRIND • FlexPay EMV
MDE-5065	Contactless Card Reader Shield Kit (M13193K001) Installation Instructions	Encore and Eclipse Installers
MDE-5081	Hybrid Card Reader 2 (HCR 2) Shield Kit (M13193K002) Installation Instructions	• Advantage and Legacy • Encore and Eclipse • FlexPay EMV • Kit Selection
TRP-1641	CRIND Logic Board Update	N/A

Abbreviations and Acronyms

Term	Description
CCN	CRIND Control Node
CCR	Contactless Card Reader
CIB	Contactless Interface Board
COM	Communications
CPU	Central Processing Unit
CRIND	Card Reader in Dispenser
E-CIM	Enhanced Customer Interface Module
e.i.r.p.	equivalent isotropically radiated power
EMV	Europay®, MasterCard®, and Visa®
EPP	Encrypting PIN Pad
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
GCM	Global Contactless Module
GOLD	Gilbarco® Online Documentation
HCR 2	Hybrid Card Reader 2
HIP	Hub Interface PCB

Term	Description
LED	Light Emitting Diode
MTA	Mass Terminal Assembly
NGPM	Next Generation Payment Mid
OSHA	Occupational Safety and Health Administration
PCA	Printed Circuit Assembly
PCB	Printed Circuit Board
PCN	Pump Control Node
PIP	Peripheral Interface PCB
POS	Point of Sale
PPN	Product Part Number
RSS	Radio Standards Specification
SCR	Secure Card Reader
SPOT	Secure Payment Outdoor Terminal
SPP	Secure Payment PCB
TRIND	Transmitter/Receiver in Dispenser
TTL	Transistor-to-transistor Logic
UL	Underwriters Laboratories
USB	Universal Serial Bus

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 the Gilbarco Technical Assistance Center (TAC) at 1-800-743-7501. 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 Health Administration (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 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.

Before You Begin

> ### ⚠ CAUTION
> A properly grounded Electrostatic Discharge (ESD) wrist strap must be worn while servicing any electronic devices or components. Failure to use electrostatic precautions may damage electronic components and void warranty.

To prepare the site and dispenser for the upgrade, proceed as follows:

1 Inform the manager.

2 Barricade the unit to be worked on.

3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.

4 Match the parts received in kits with "Parts List" on page 2.

> ### ⚠ 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.

Mounting and Connecting FlexPay GCM on E-CIM Dispenser with Sandpiper Electronics

To mount the FlexPay GCM Assembly (M12027A002) on E-CIM dispenser with Sandpiper electronics, proceed as follows:

1 Remove the existing CCR (if present) and graphic.

~ OR ~

Remove the existing contactless blanking plate from the door by removing the four screws as shown in Figure 1.

Figure 1: Removing Existing Contactless Blanking Plate
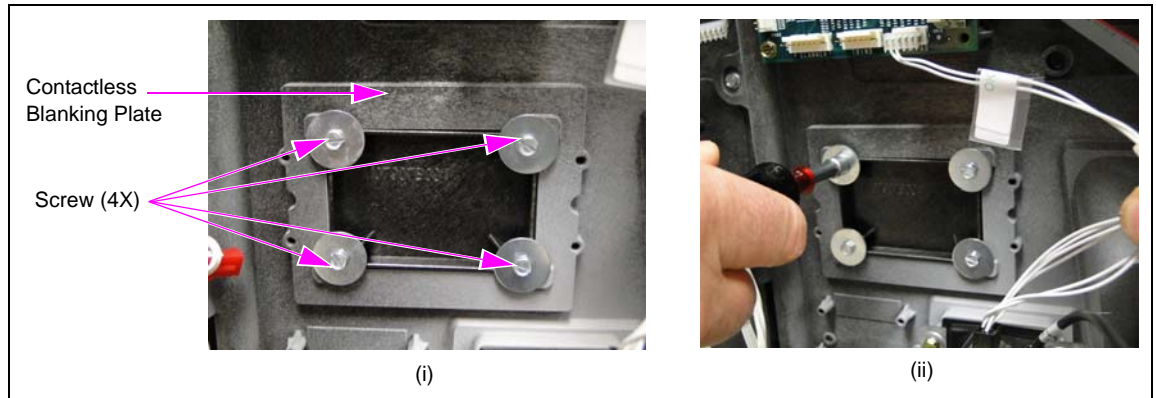
Contactless Blanking Plate

Screw (4X)

(i)

(ii)

2 Remove the existing gasket and install the new TRIND Lens Gasket (M07715B002).

3 Install the TRIND E-CIM Lens (M07698B001) on the bezel using the four M00419B311 Screws provided in the kit as shown in Figure 2 on page 10.
Note: Ensure that the screw head is flushed with the lens surface (counterside hole facing you).

Figure 2: Installing Clear Lens
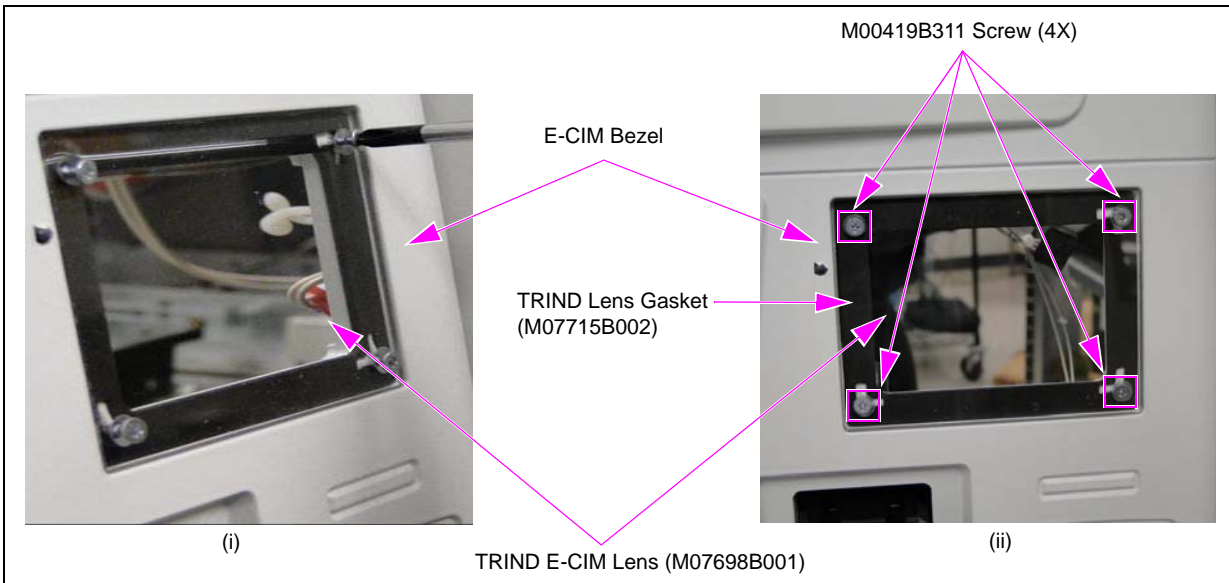
(i)

(ii)

M00419B311 Screw (4X)

E-CIM Bezel

TRIND Lens Gasket (M07715B002)

TRIND E-CIM Lens (M07698B001)

4 Mount the FlexPay GCM Assembly (M12027A002) onto the E-CIM bezel using the four Q11677-26 Screws (see Figure 3).

Figure 3: Mounting GCM Spacer and FlexPay GCM
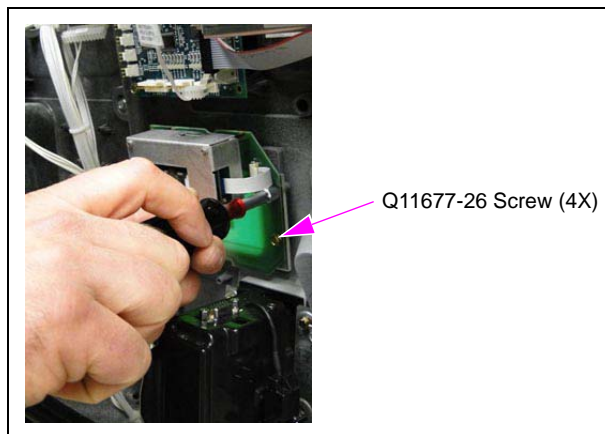
Q11677-26 Screw (4X)

5 Apply the graphics.

Mounting the FlexPay GCM on E-CIM dispenser with Sandpiper electronics is now complete.

6 Remove the CIB (M11938A001) on the SCR 2 (M10728B001) if present. Install the PIP 2 (M12806A001) if not present. The PIP 1 (M09112A001) should be replaced with the PIP 2 (M12806A001). The key difference between the two PIP boards is the serial port connector that is present on the PIP 2.

Notes: 1) E-CIM dispenser with Sandpiper electronics may not have an SCR 2 card reader; in that case a separate kit will be supplied along with the GCM Kit, which has an SCR 2 card reader. To install the SCR 2, refer to MDE-4928 Secure Card Reader (SCR) 2 Kit Installation Instructions for Encore S Enhanced, supplied with this kit.

2) E-CIM dispenser receiving a new SCR 2 card reader or which already has the SCR 2 card reader installed, go through steps a to d on page 13 to install the SCR CCR Upgrade Kit mentioned under "Secure Card Reader (SCR) Contactless Card Reader (CCR) Upgrade" on page 3.

a Remove the screw that secures the hexagonal standoff to the upper flange of the SCR 2 (see Figure 4) using a Phillips screwdriver (size 1). Discard the screw.

Figure 4: Removing Screw from Hexagonal Standoff

Old Screw   New Screw
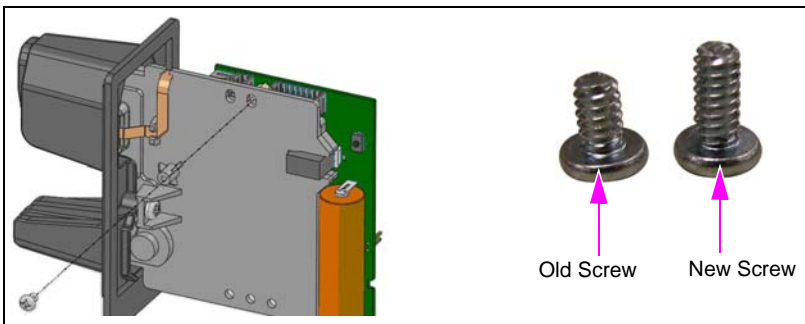
b Install the upper Mounting Bracket (M11256B001) and new Q11270-17 Screw provided in the kit for the CIB as shown in Figure 5.

Figure 5: Installing Upper Mounting Bracket

(i)

(ii)

Upper Mounting Bracket (M11256B001)

Note: Ensure that the hole in the bracket racket and card reader are aligned appropriately.
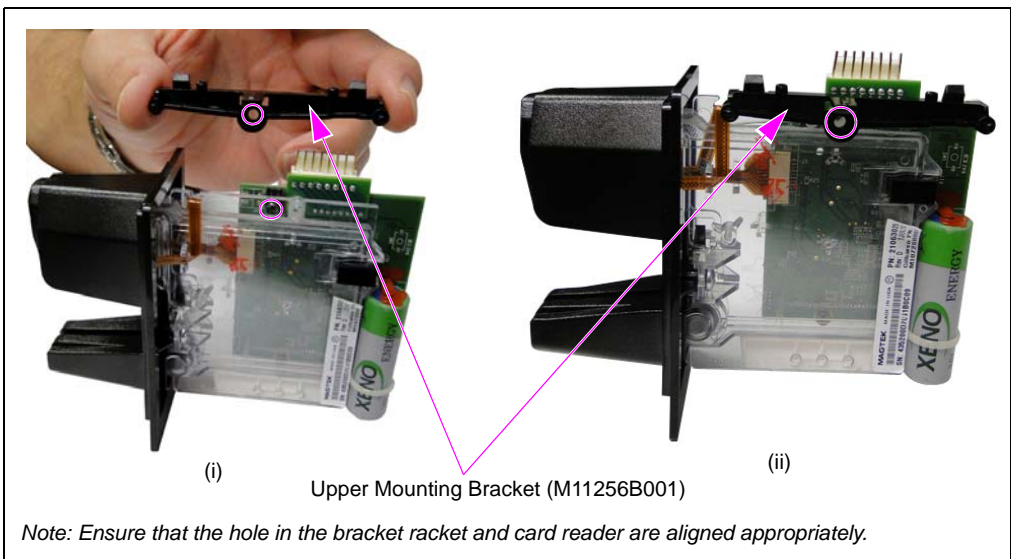
c Install the CIB by performing the following steps:

    i Align the holes on the top edge of the CIB to the two pins on the upper mounting bracket. Press the CIB until the upper mounting bracket snaps and holds the CIB in place as shown in Figure 6 and Figure 7 on page 13.

    ii Install the M12715B001 Screw provided in the kit through the forward lower mounting hole as shown in Figure 6.

Figure 6: Installing CIB
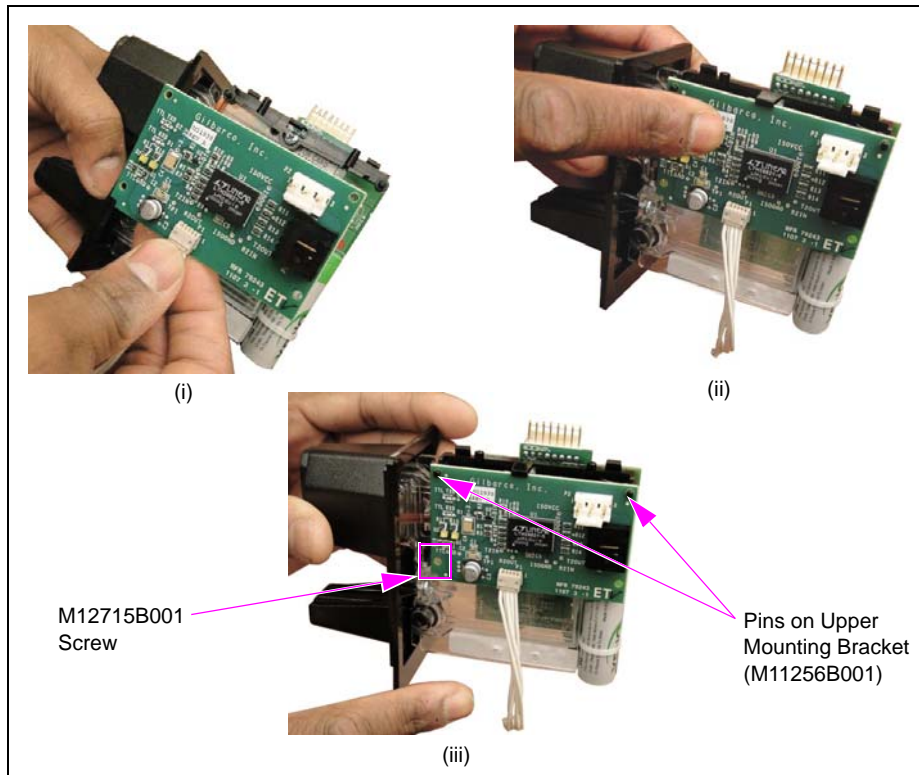
d Connect the CIB Interconnect Cable (M12089A001) to the SCR 2 as shown in Figure 7.
Note: Both ends of the CIB interconnect cable have the same connector, so either end may be used.

Figure 7: Connecting CIB Interconnect Cable

CIB Interconnect Cable
(M12089A001)

(i)

(ii)

(iii)
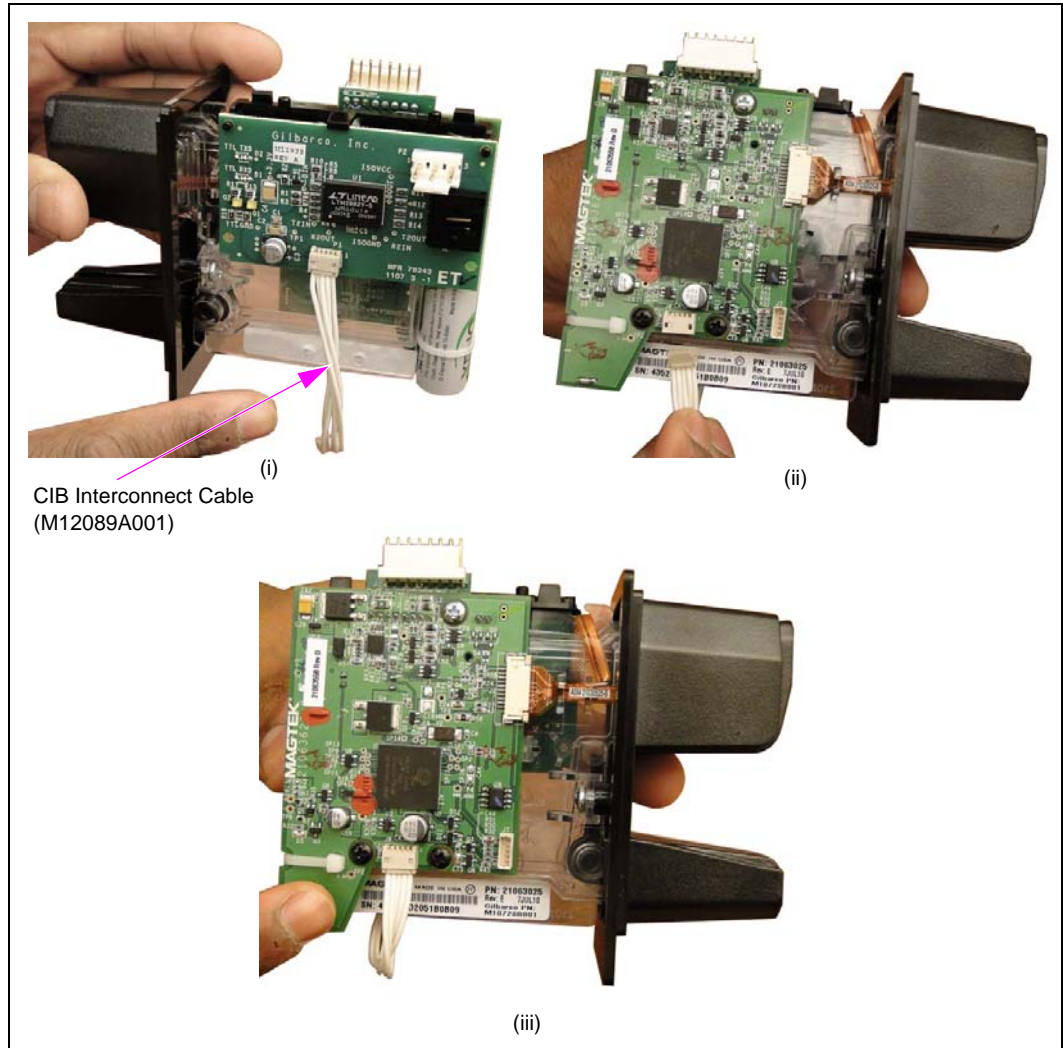
Installing the CIB on the SCR 2 is now complete.

| IMPORTANT INFORMATION |
|---|
| Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed. |

7 Connect the M12090A001 Cable.

a Connect the J1 connector of the cable to the P3 port of the SCR 2 card reader.

b Connect the JOTI connector of the cable to the GCM.

Figure 8: Connecting Cable to FlexPay GCM and SCR 2 Card Reader

Notes: 1) J1 connector of the M12090A001 Cable must be connected to the P3 port of the card reader.
2) JOTI connector of the M12090A001 Cable must be connected to the GCM.
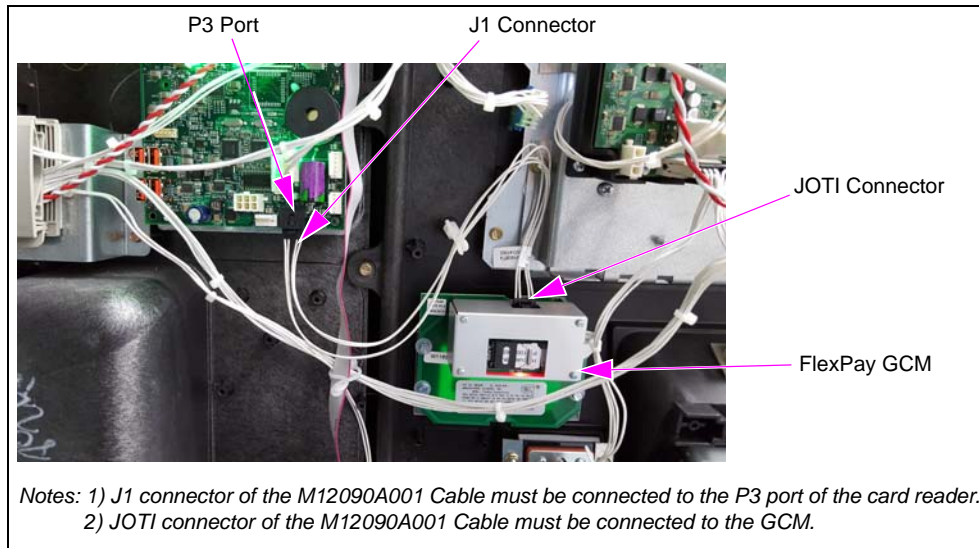
8 Connect the M12093A001 Cable.

a Connect the J2125 connector of the cable to the P2125 port on the door node (see Figure 9).

Figure 9: Connecting J2125 to P2125
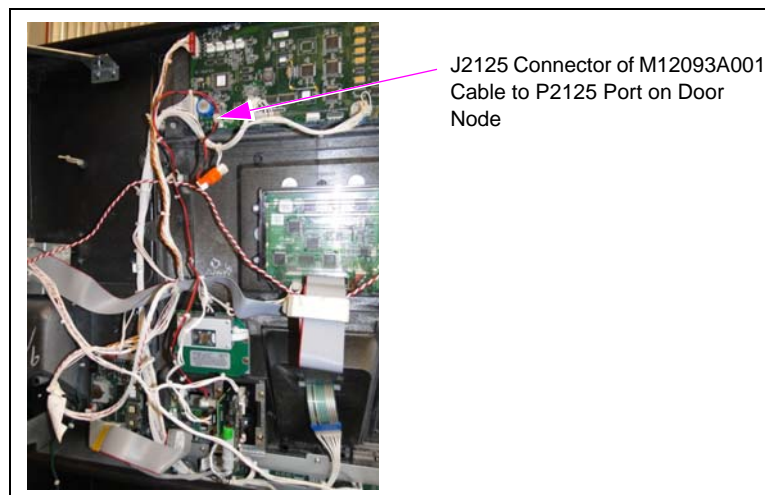
J2125 Connector of M12093A001 Cable to P2125 Port on Door Node

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

P2125 port (give and take) of the cable is shown in Figure 10.

Figure 10: P2125 Port (Give and Take)

P2125 Port (Give and Take)
of M12093A001 Cable
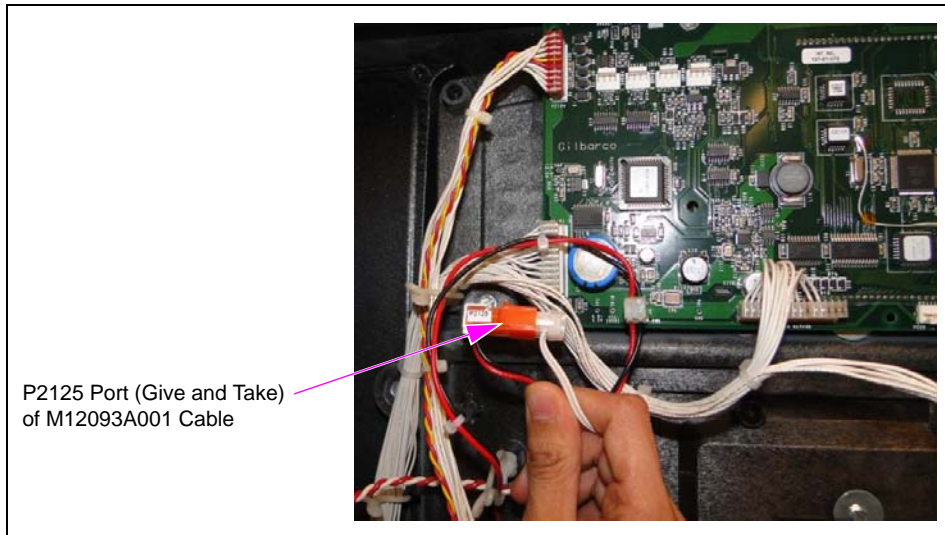
b Connect the J2 connector of the cable to the P2 port of the card reader [SCR 2 (see Figure 11)].

Figure 11: Connecting J2 to P2

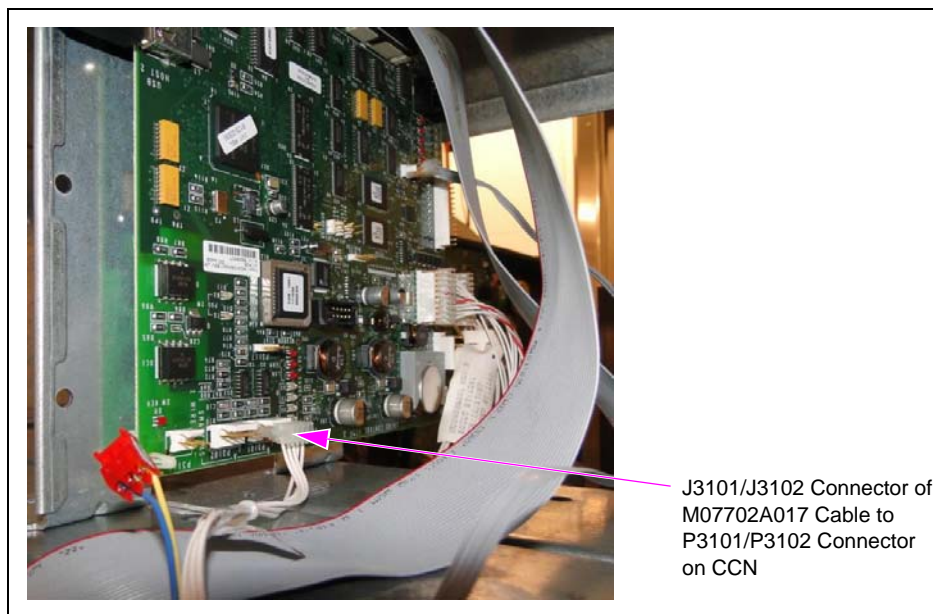J2 Connector of
M12093A001 Cable to
P2 Port on Card
Reader (SCR 2)
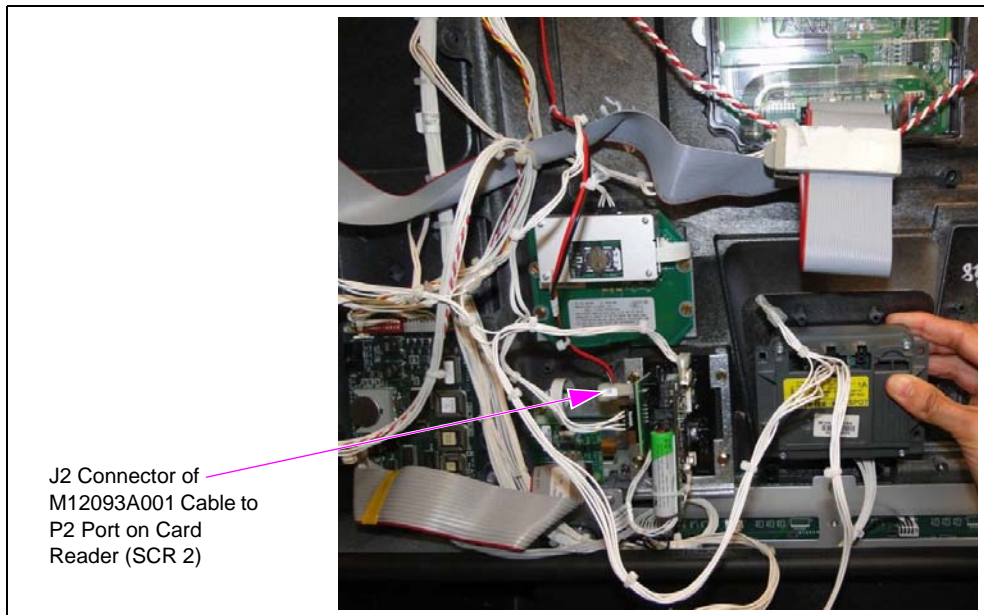
9 Connect the M07702A017 Cable.

a Connect the JMECR connector of the cable to the PMECR port of the card reader [SCR 2 (see Figure 12)].

Figure 12: Connecting JMECR Connector to PMECR Port

JMECR Connector of M07702A017 Cable to PMECR Port on Card Reader (SCR 2)
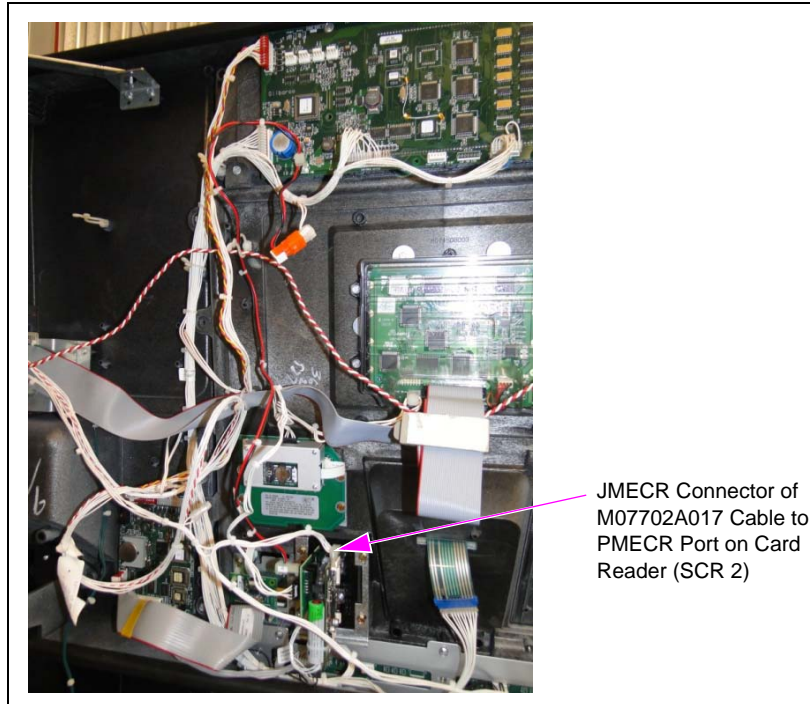
b Connect the J3101/J3102 connector of the cable to the P3101/P3102 connector on the CRIND Control Node [CCN (see Figure 13)].

Figure 13: Connecting J3101/J3102 to P3101/P3102 Connector

J3101/J3102 Connector of M07702A017 Cable to P3101/P3102 Connector on CCN

- If the customer has a 10.4-inch generic display with the M09112A001 PIP Board, then connect the J3101/J3102 connector of the M07702A017 Cable to the P101/P102 connector of the PIP board.
- If the customer has a 10.4-inch generic display with the M07592A001 RS-232 Board, then connect the J3101/J3102 connector of the M07702A017 Cable to the P3101/P3102 connector of the RS-232 board. If the customer is supplied with the RS-232 board along with associated parts, proceed as follows:

SmartPad Connections for Installing RS-232 to TTL and TRIND/SmartPad Interface Board (M07592A001):

i   Make the following connections on the RS-232 to the TTL and TRIND/SmartPad interface board:
- J202 of the M00719A004 Cable to the P202 COM1 port.
- J227 of the M07794A001 Cable to the P227 COM2 port.
- J302A of the M07746A001 Cable to the P302A port.

Figure 14: Connecting RS-232 to TTL and TRIND/SmartPad Interface Board
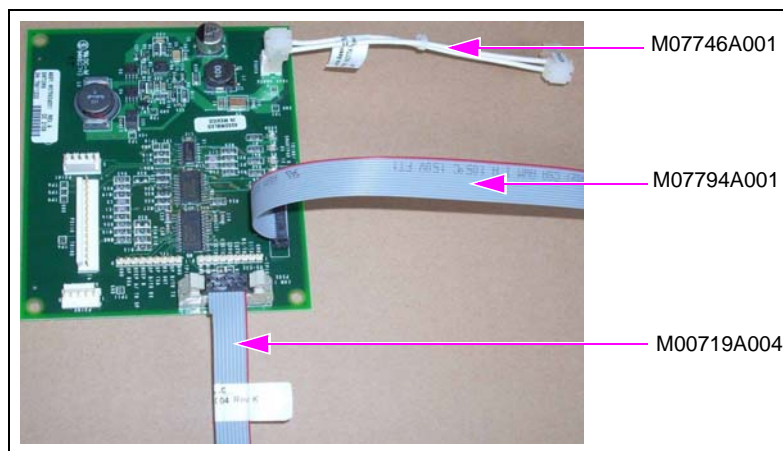
ii   Secure the TTL and TRIND/SmartPad interface board to the rear of the color screen Central Processing Unit (CPU) assembly, using the four standoffs supplied as part of the kit.

**Figure 15: Securing Board to Rear Side of Color Screen CPU Assembly**
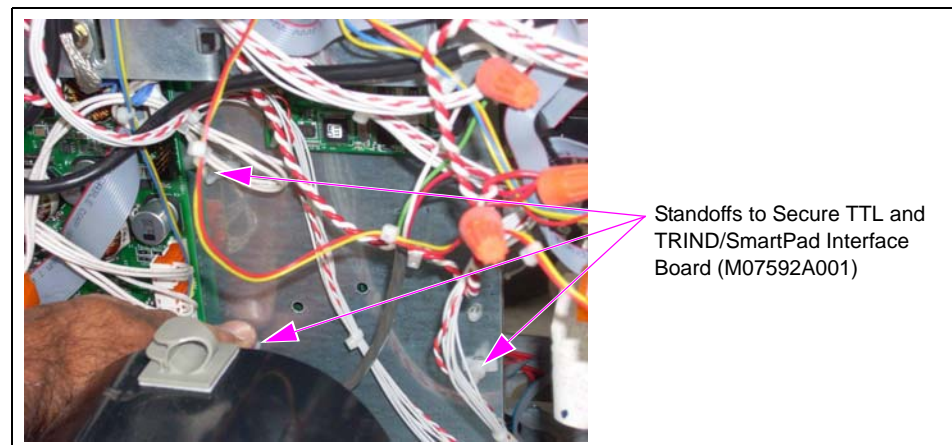
iii   Connect the J302X of the M07746A001 Cable to the P302X on the Color CRIND Interface Board (M06187A002).

**Figure 16: Connecting Power Supply Cables to Color CPU Assembly**

P302X on Color CPU Assembly

(i)

(ii)
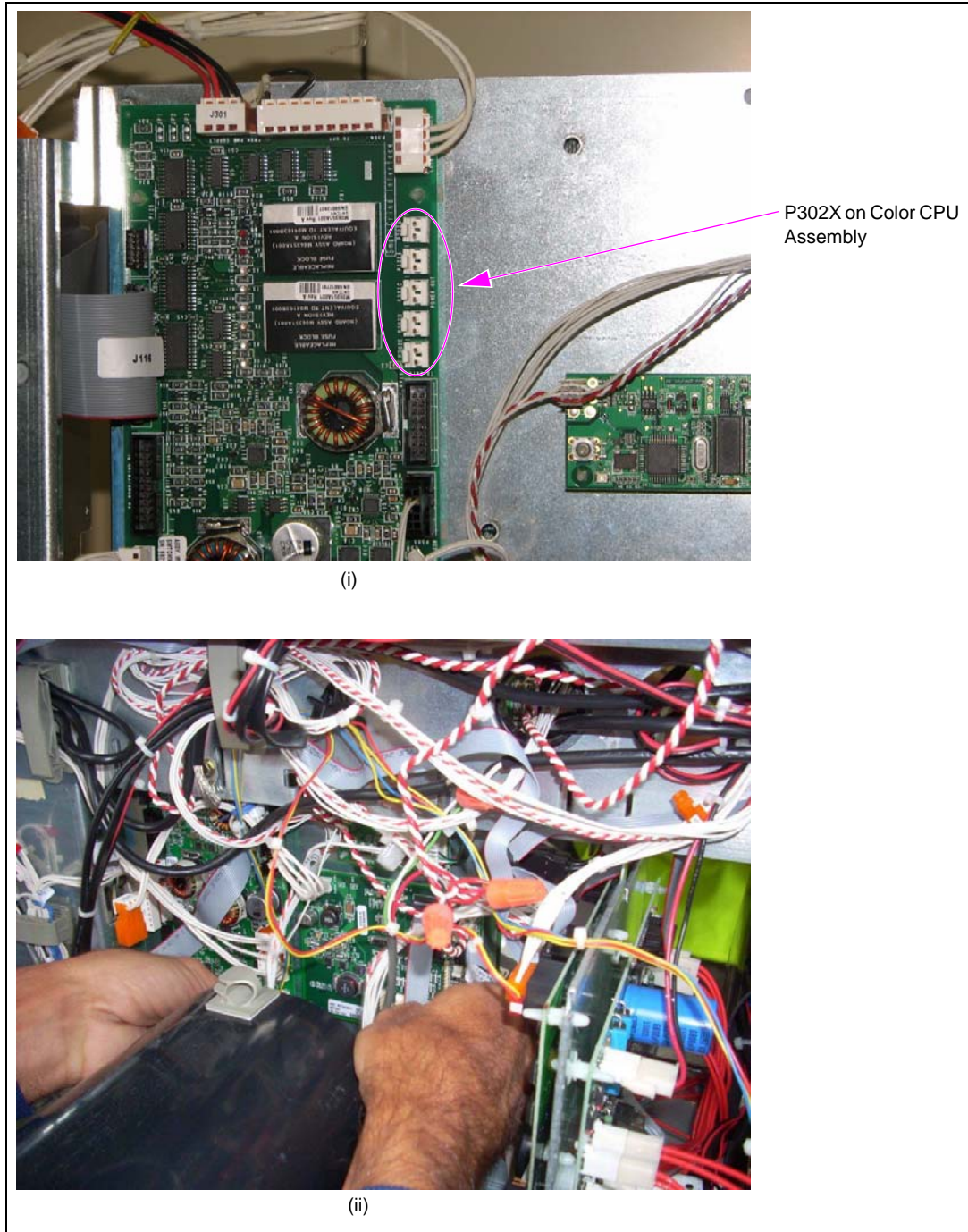
iv Connect the M07794A001 Cable from the P227 COM2 port on the M07592A001 to the CN27 port on the Color CRIND CPU Board (M03377A001).

**Figure 17: Connecting COM2 Port Cable to Color CPU Assembly**

(i)

CN27 Port

(ii)
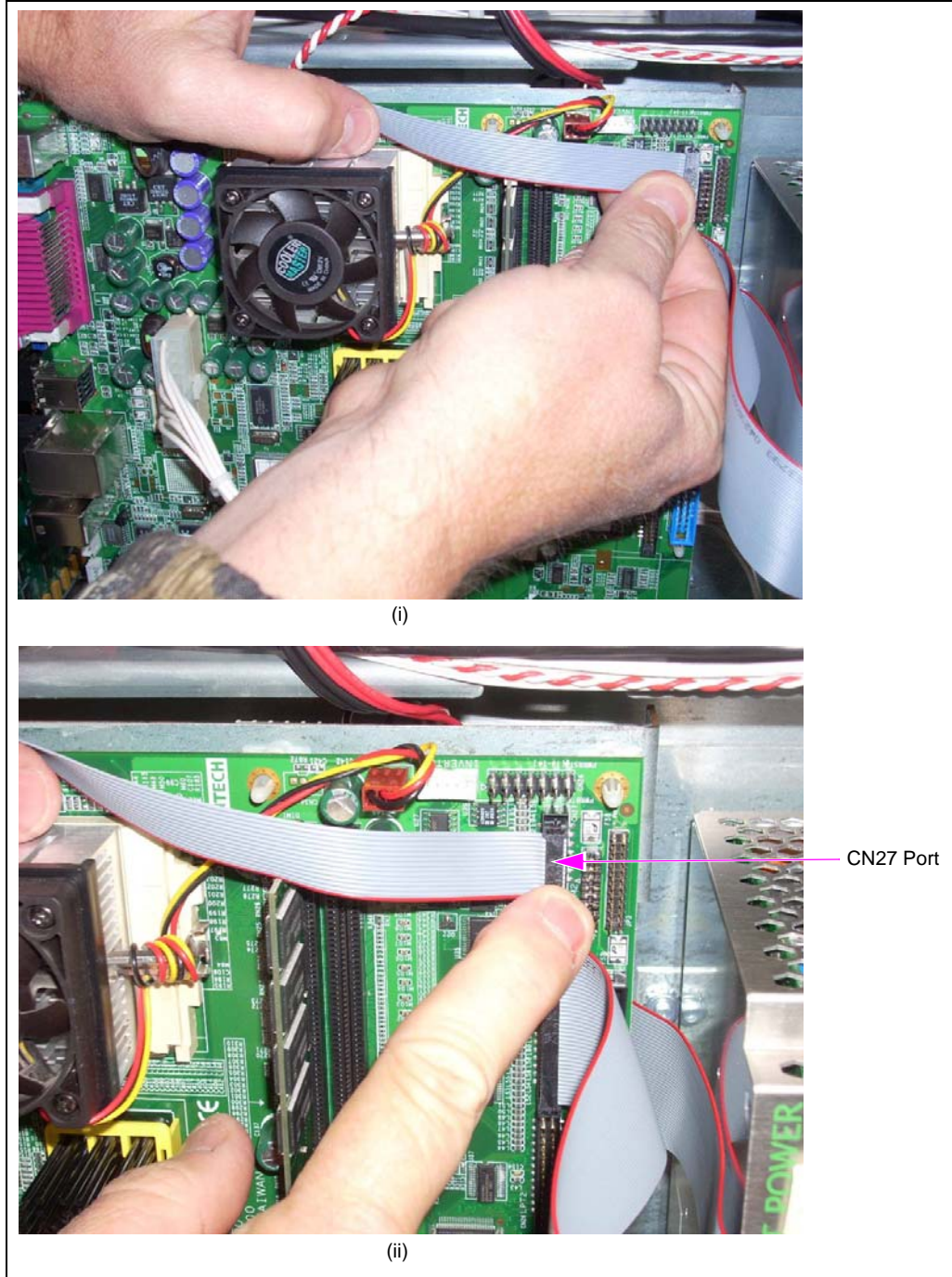
v Connect the M00719A004 Cable from the P202 COM1 port on the M07592A001 to the CN2 port on the Color CRIND CPU Board (M03377A001).

Figure 18: Connecting COM1 Port Cable to Color CPU Assembly

(i)

CN2 Port

(ii)
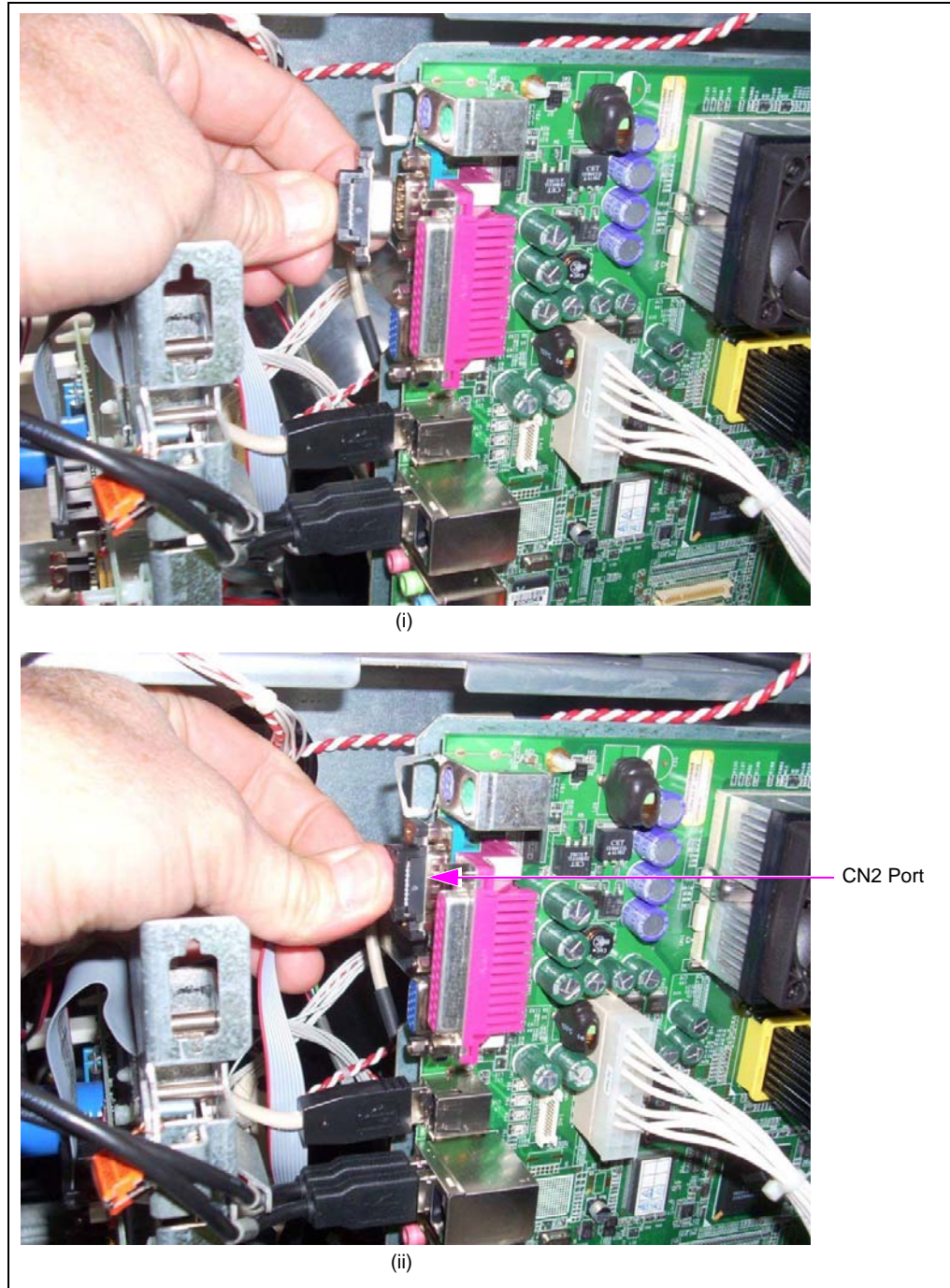
vi Connect the FlexPay EPP cables from the rear of the keypads to the appropriate SmartPad ports on the M07592A001 Board: P3101 for side B and P3102 for side A.

Figure 19: Connecting FlexPay EPP Cables to SmartPad Ports on Board

(i)

(ii)

P3102 SmartPad Port (Side A)

P3101 SmartPad Port (Side B)

(iii)
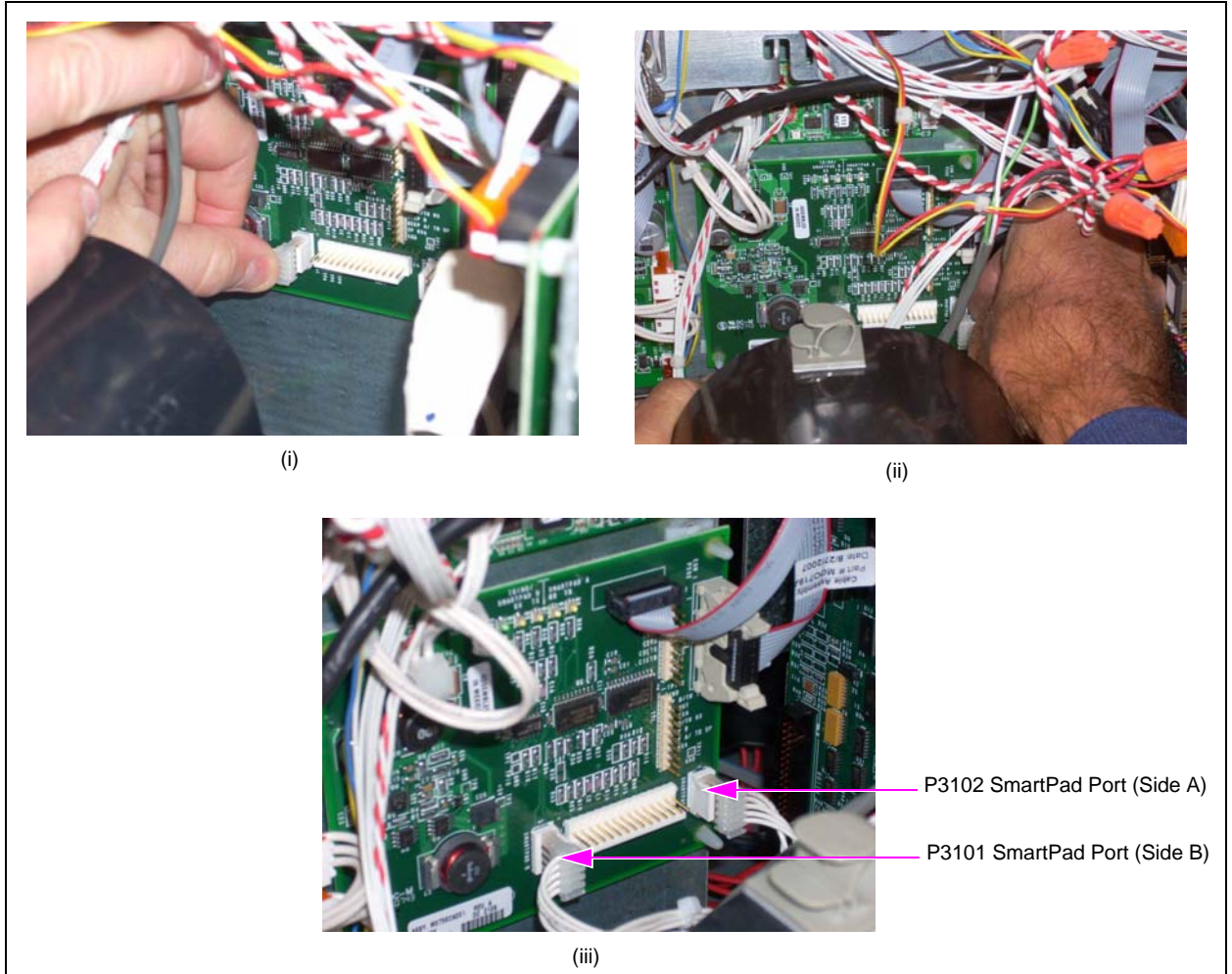
vii Proceed to "Upgrading Flash Card on Color Screen CRIND CPU Assembly" on page 22.

Upgrading Flash Card on Color Screen CRIND CPU Assembly

To upgrade the flash card on the color screen CRIND CPU assembly, proceed as follows:

i   Release the color screen CRIND CPU assembly from the standoffs.

Figure 20: CPU Board
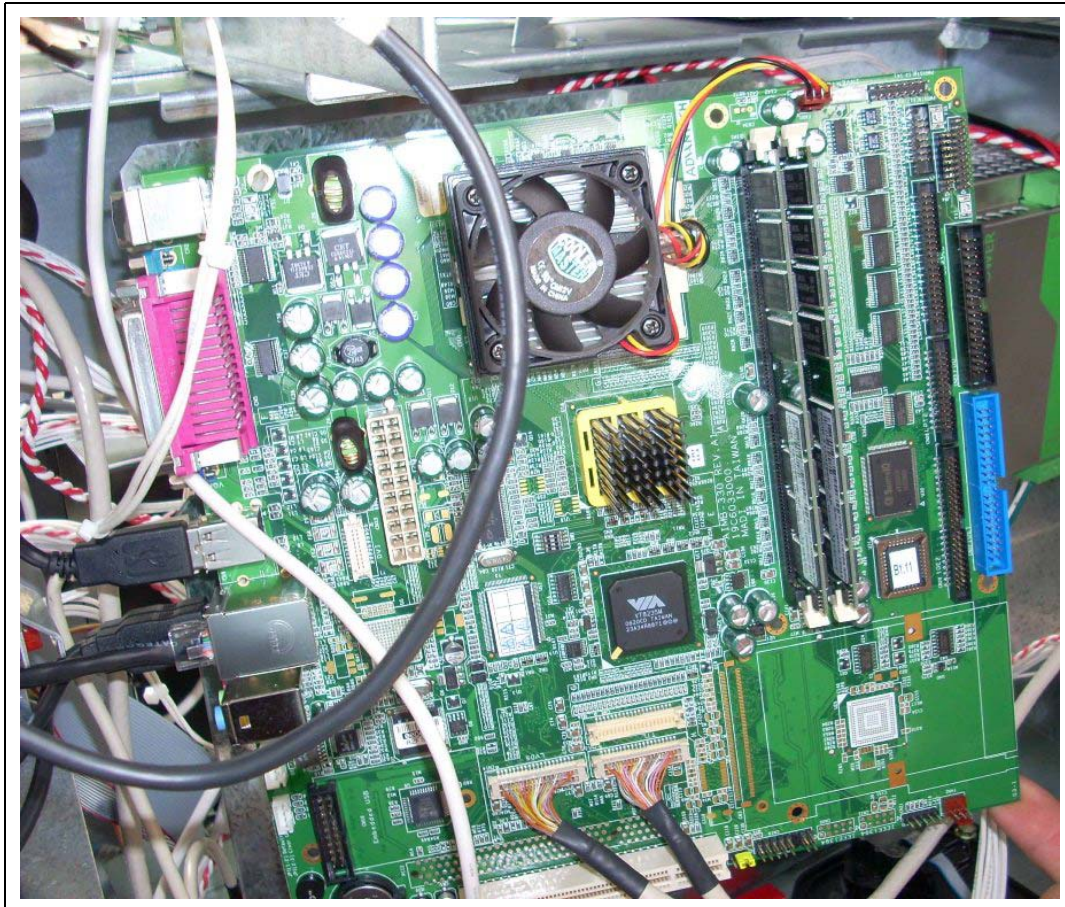
ii   Lower the CPU board to gain access to the rear portion that contains the flash card.

iii Remove the existing flash card and insert the new Flash Card (M07743K001), which contains the upgraded software (see Figure 21).
Note: Ensure that you do not bend the pins when you install the flash card.

Figure 21: Replacing Flash Card

(i)

(ii)

Existing Flash Card

New Flash Card
(M07743K001)

(iii)
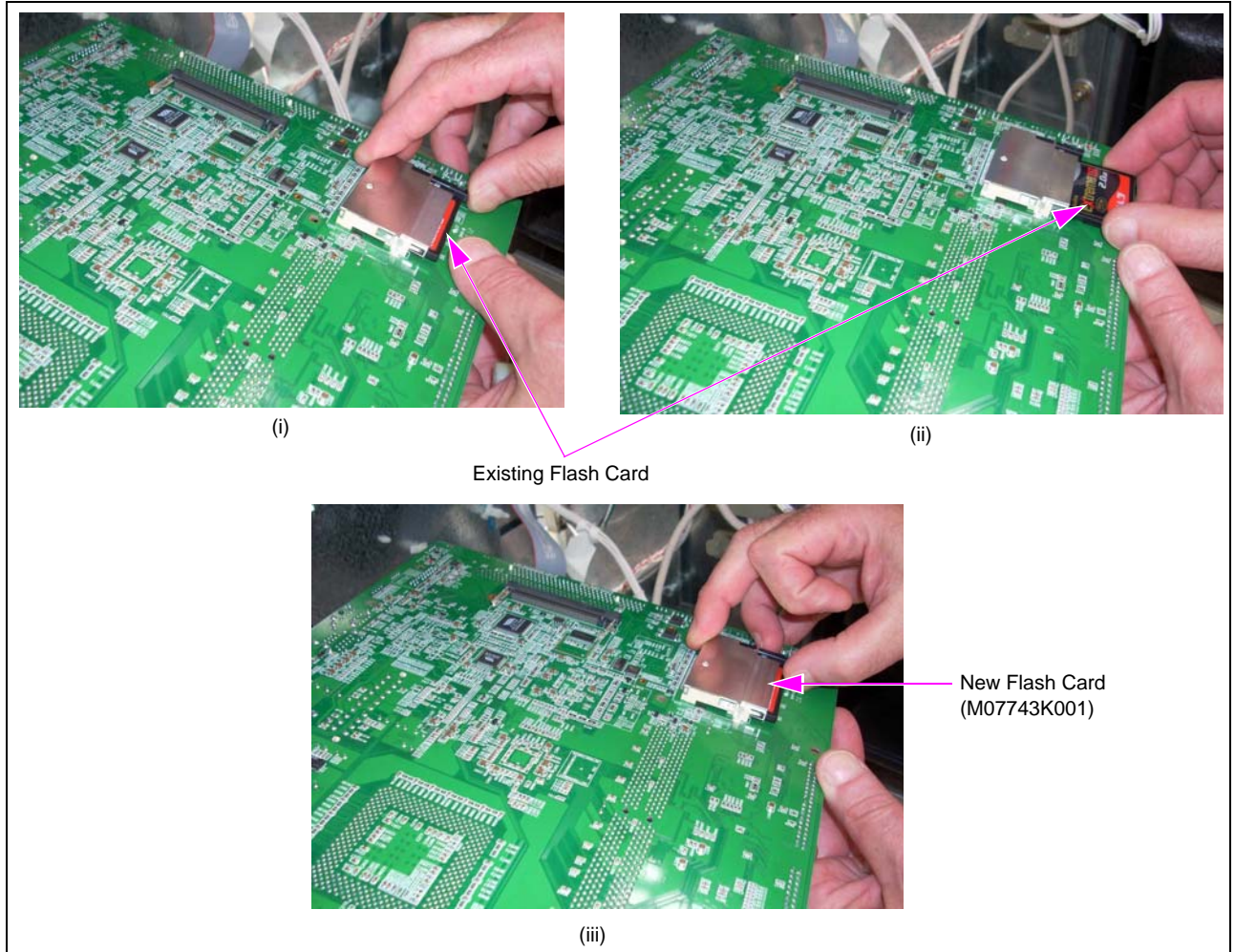
iv Secure the color screen CRIND CPU assembly to the standoffs.

v Check if any cables were disconnected from the color screen CRIND CPU assembly when installing the flash card. Secure/reconnect any loose/disconnected cables.

Figure 22: Reconnecting Cables to Color Screen CRIND CPU Assembly

(i)   (ii)
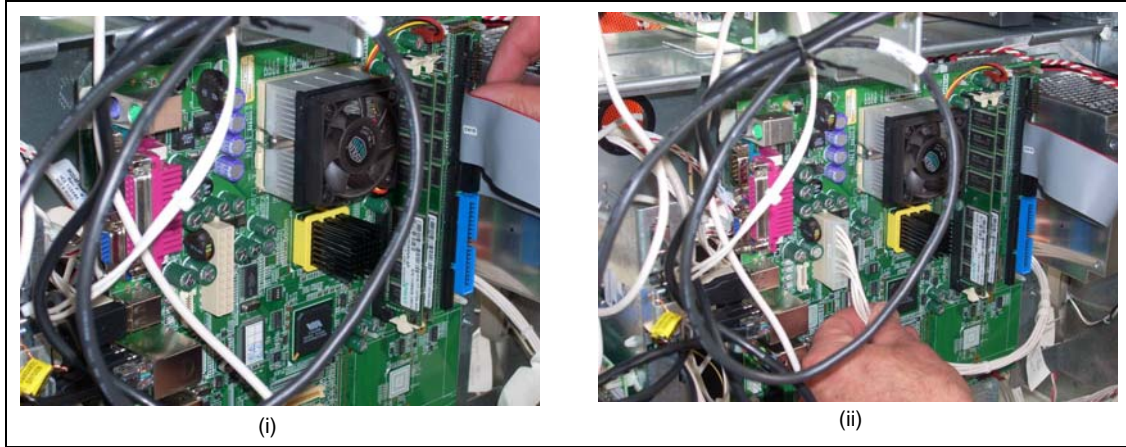
vi After upgrading the flash card, reload the personality screen(s). For detailed instructions on how to reload and configure the personality screens, refer to *MDE-4769 Personality Screen Change for Color Screen Update and/or Upload Instructions*.

c Connect the EPP of the cable to the EPP keypad if the EPP keypad is present, if not, then bundle that portion of the cable (see Figure 23).

Figure 23: Connecting EPP Cable to EPP Keypad

EPP of M07702A017
Cable to EPP Keypad
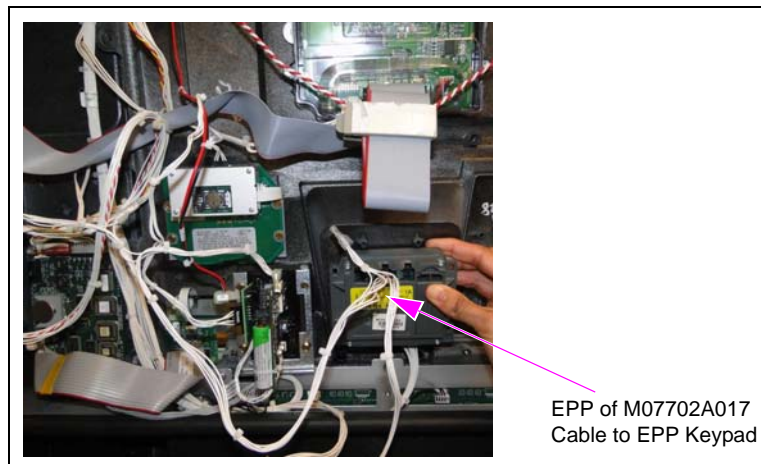
Connecting the FlexPay GCM on E-CIM dispenser with Sandpiper electronics is now complete.

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

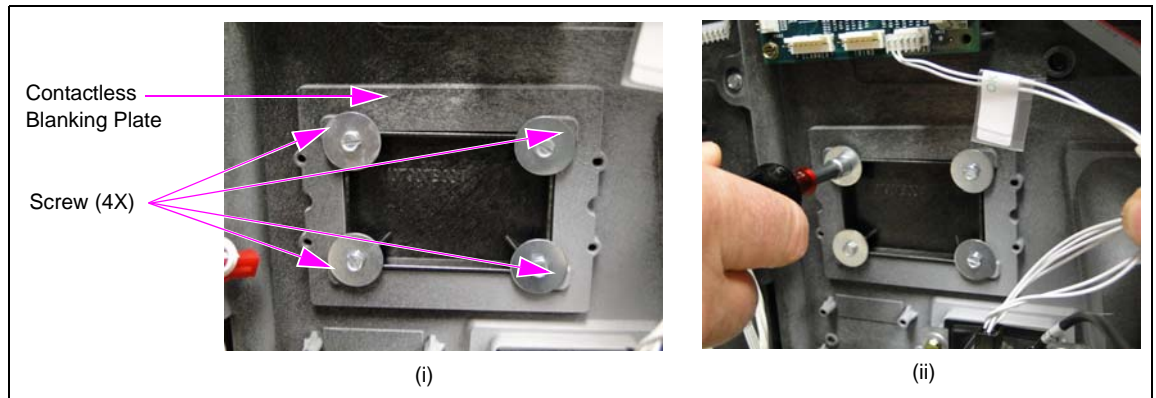# Mounting and Connecting FlexPay GCM on E-CIM Dispenser with EMV Electronics

To mount the FlexPay GCM Assembly (M12027A001) on E-CIM dispenser with EMV electronics, proceed as follows:

1   Remove the existing CCR (if present) and graphic.

~ OR ~

Remove the existing contactless blanking plate from the door by removing the four screws as shown in Figure 24.

Figure 24: Removing Existing Contactless Blanking Plate

Contactless Blanking Plate

Screw (4X)

(i)

(ii)

2   Remove the existing gasket and install the new TRIND Lens Gasket (M07715B002).

3   Install the TRIND E-CIM Lens (M07698B001) on the bezel using the four M00419B311 Screws provided in the kit as shown in Figure 25.
*Note: Ensure that the screw head is flushed with the lens surface (counterside hole facing you).*

Figure 25: Installing Clear Lens

M00419B311 Screw (4X)

E-CIM Bezel

TRIND Lens Gasket (M07715B002)

(i)

TRIND E-CIM Lens (M07698B001)

(ii)
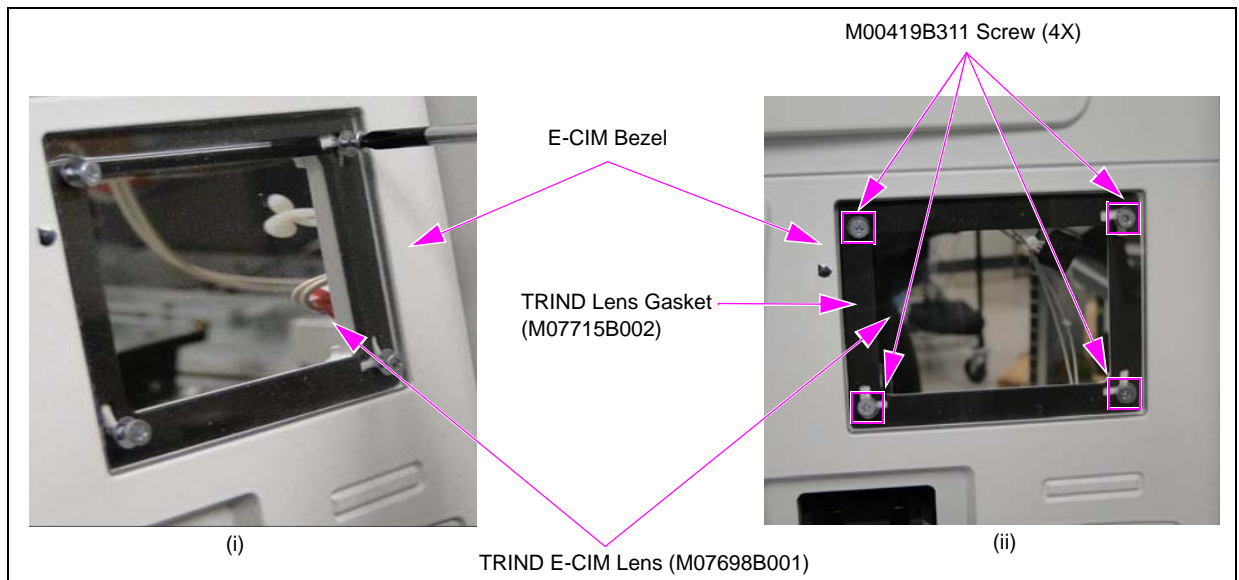
4 Mount the FlexPay GCM Assembly (M12027A001) onto the E-CIM bezel using the four Q11677-26 Screws (see Figure 26).

Figure 26: GCM Spacer and FlexPay GCM
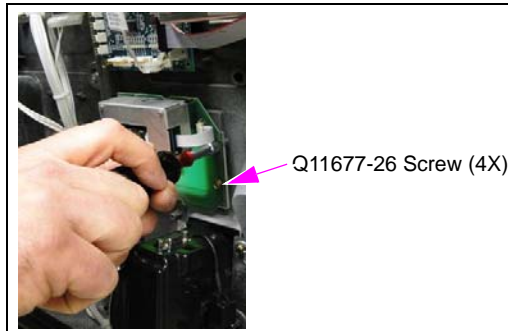
Q11677-26 Screw (4X)

5 Apply the graphics.

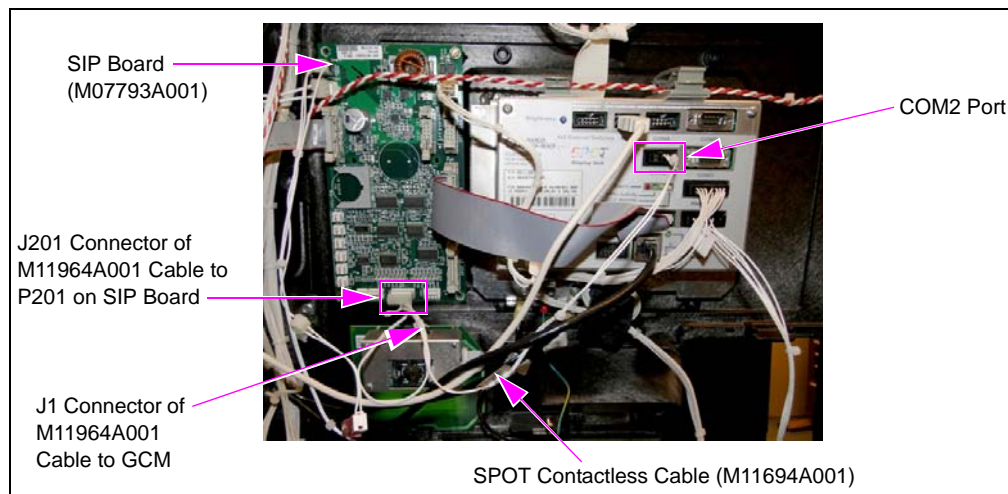Mounting the FlexPay GCM on E-CIM dispenser with EMV electronics is now complete.

6 Connect the M11964A001 Cable.

a Connect the COM2 connector of the SPOT cable to the COM2 port on the SPOT display (see Figure 27).

b Connect the J201 connector of the SPOT cable to P201 port on the SIP Board (M07793A001).

c Connect the J1 connector of the SPOT cable to the OTI port on the GCM (see Figure 27).

Figure 27: GCM to SPOT Cable Connection Port

SIP Board
(M07793A001)

COM2 Port

J201 Connector of
M11964A001 Cable to
P201 on SIP Board

J1 Connector of
M11964A001
Cable to GCM

SPOT Contactless Cable (M11694A001)

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

Connecting the FlexPay GCM on E-CIM dispenser with EMV electronics is now complete.

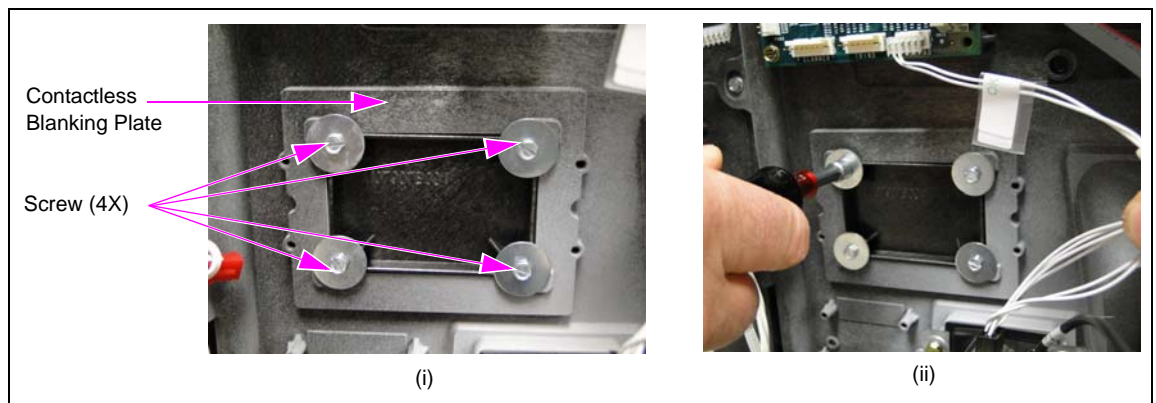# Mounting and Connecting FlexPay GCM on E-CIM Dispenser with 700 S Electronics

To mount the FlexPay GCM Assembly (M12027A002) on E-CIM dispensers with 700 S electronics, proceed as follows:

1   Remove the existing CCR (if present) and graphic.

~ OR ~

Remove the existing contactless blanking plate from the door by removing the four screws as shown in Figure 28.

Figure 28: Removing Existing Contactless Blanking Plate

2   Remove the existing gasket and install the new TRIND Lens Gasket (M07715B002).

3   Install the TRIND E-CIM Lens (M07698B001) on the bezel using the four M00419B311 Screws provided in the kit as shown in Figure 29.
Note: Ensure that the screw head is flushed with the lens surface (counterside hole facing you).

Figure 29: Installing Clear Lens
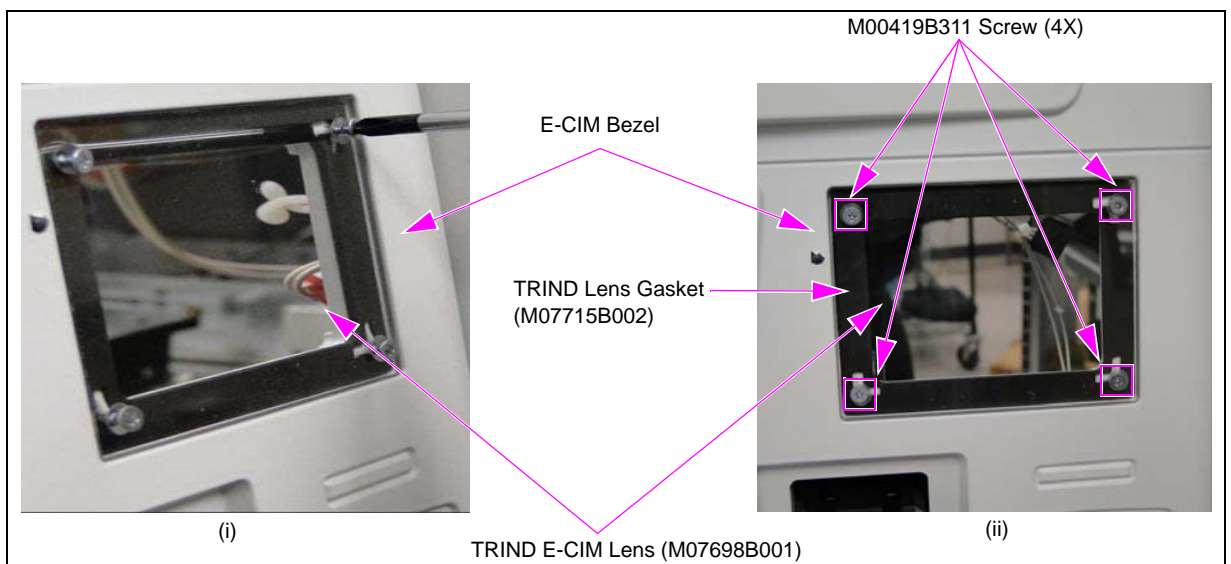
4 Mount the FlexPay GCM Assembly (M12027A002) onto the E-CIM bezel using the four Q11677-26 Screws (see Figure 30).

Figure 30: Mounting GCM Spacer and FlexPay GCM

Q11677-26 Screw (4X)
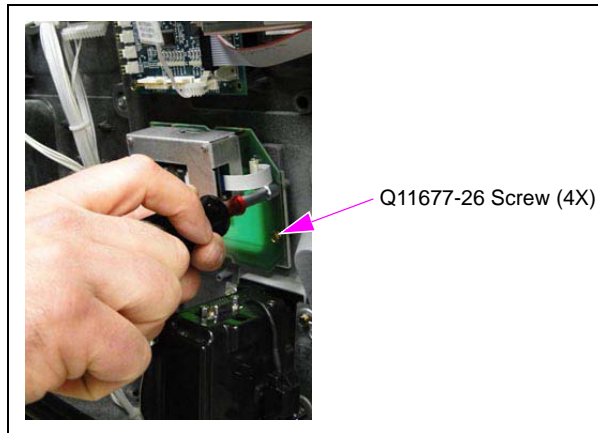
5 Apply the graphics.

Mounting the FlexPay GCM on E-CIM dispenser with 700 S electronics is now complete.

6 Remove the CIB (M11938A001) on the SCR 2 (M10728B001) if present. Install the PIP 2 (M12806A001) if not present. The PIP 1 (M09112A001) should be replaced with the PIP 2 (M12806A001). The key difference between the two PIP boards is the serial port connector that is present on the PIP 2.

Figure 31: Serial Port Connector
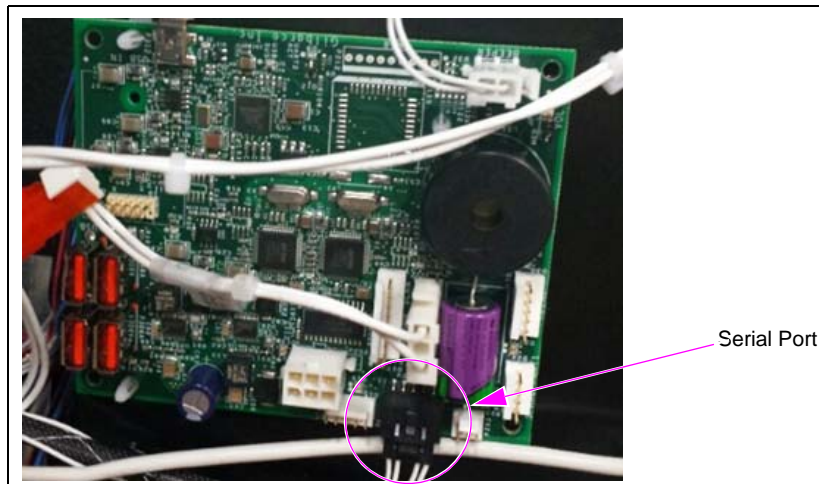
Serial Port

IMPORTANT INFORMATION
Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

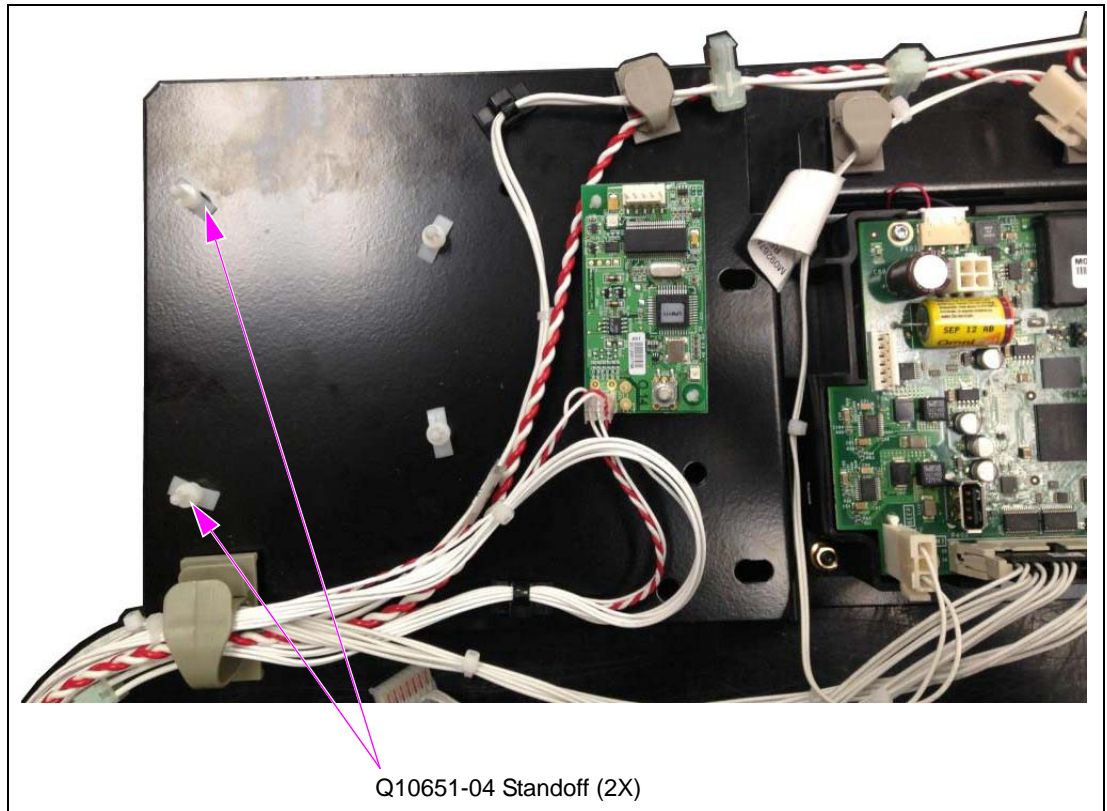# Installing PIP 2 Board (M12806A001)

To connect the PIP 2, proceed as follows:

Note: The minimum software version required for GCM to operate is V2.3.07.

To install the PIP 2 board (side A only), proceed as follows:

1 Install two Q10651-04 Standoffs (see Figure 32) to mount the PIP 2 board.

Figure 32: Installing Standoffs

Q10651-04 Standoff (2X)

2 Install the PIP 2 board (see Figure 33).
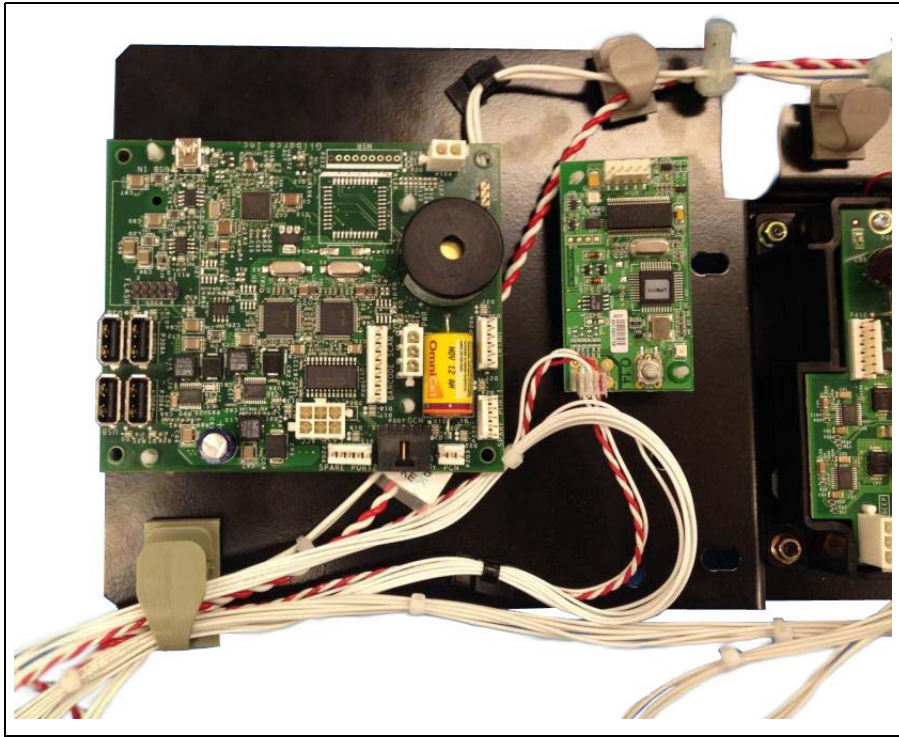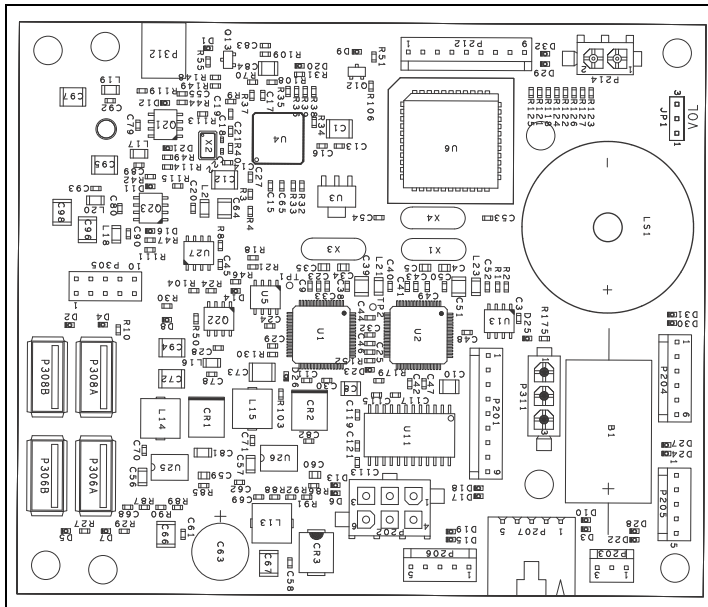
Figure 33: Installing PIP 2 Board

Figure 34: PIP 2 Printed Circuit Board (PCA)

PIP 2 Board Connections

Following table lists the connections on the PIP 2 board:

Connector	Port Number	Function
6-pin Plug	P202	Cash Acceptor
3-pin Mass Terminal Assembly (MTA)	P203	Pump Control Node (PCN) SMARTConnect™
6-pin MTA	P204	TRIND
9-pin MTA	P201	Barcode Scanner
2-pin Plug	P214	BEEP Connector
3-pin Plug	P311	Power IN
Mini USB	P312	Universal Serial Bus (USB) IN
Serial Connector	P207	GCM

Following table lists the peripherals for the cables:

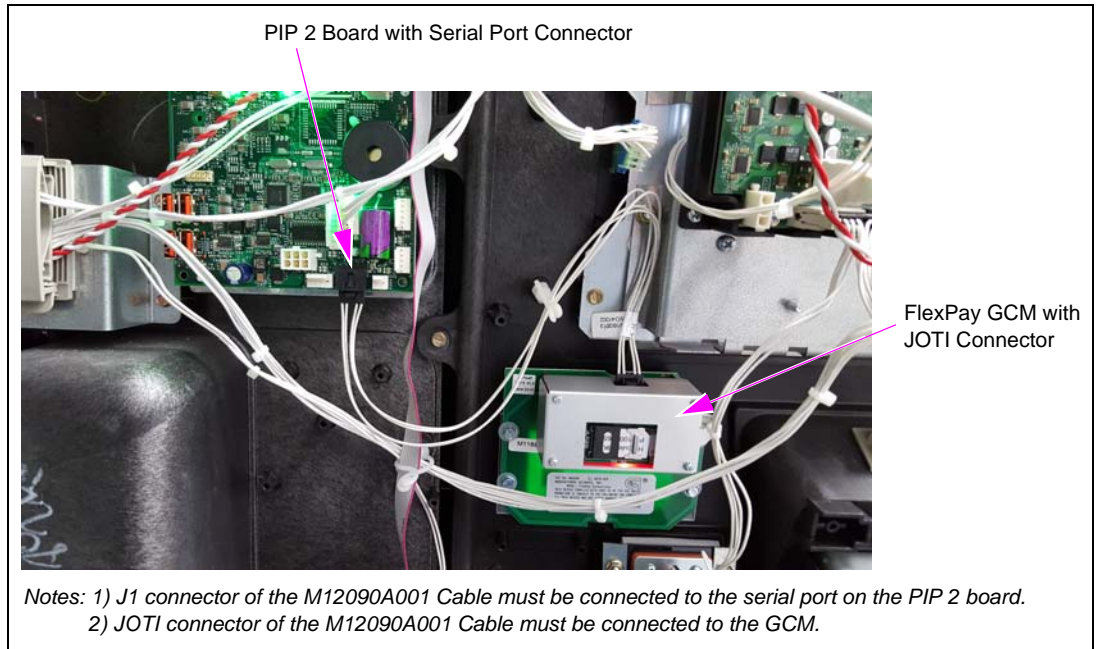| Part Number	Port Number	Function
M03184A00X	P202	Cash Acceptor
M07970A00X	P203	PCN SMARTConnect
R20773-GX	P204	TRIND
M08010A00X	P201	Barcode Scanner
M09267A00X	P214	BEEP Connector
M09794A00X	P311	Power IN
M12090A001	P207	GCM

Note: Ensure to set the audio level and check that Applause Media System is working properly.

For additional information on troubleshooting the PIP 2 board, refer to "Troubleshooting HIP 2/PIP 2/BEEP Board" section in *MDE-5040 FlexPay™ II CRIND® Retrofit Kit Installation Instructions for Encore® 500 S/E-CIM™*.

7 Reconnect all existing cable connections as required (refer to "PIP 2 Board Connections").

8 Connect the M12090A001 Cable.

a Connect the J1 connector of the cable to the serial port of the PIP 2 board.

b Connect the JOTI connector of the cable to the GCM.

Figure 35: Connecting Cable to FlexPay GCM and PIP 2

Notes: 1) J1 connector of the M12090A001 Cable must be connected to the serial port on the PIP 2 board.
2) JOTI connector of the M12090A001 Cable must be connected to the GCM.

IMPORTANT INFORMATION

Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.

Completing Installation

After all connections are made and the unit is ready to power up, proceed as follows:

1 Reinspect all the connections and cable routing before applying power.

Note: Ensure to route the cables away from the GCM.

| IMPORTANT INFORMATION |
|---|
| Cable routing is critical. It is very important to route and dress the cables properly. Exercise care in routing the cables, keeping in mind that the door moves opens and closes for service, and the option doors open for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed. |

2 Apply power to the unit at the breaker panel.

Configuring SPOT EMV CRIND for FlexPay GCM

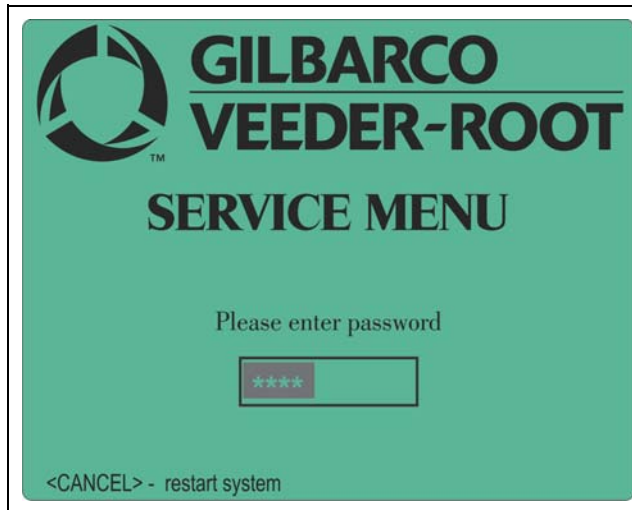To configure the SPOT EMV CRIND for the FlexPay GCM, proceed as follows:

1 Power up the SPOT EMV CRIND. A white screen with the Gilbarco logo and software package version appears.

Figure 36: Software Packages Screen
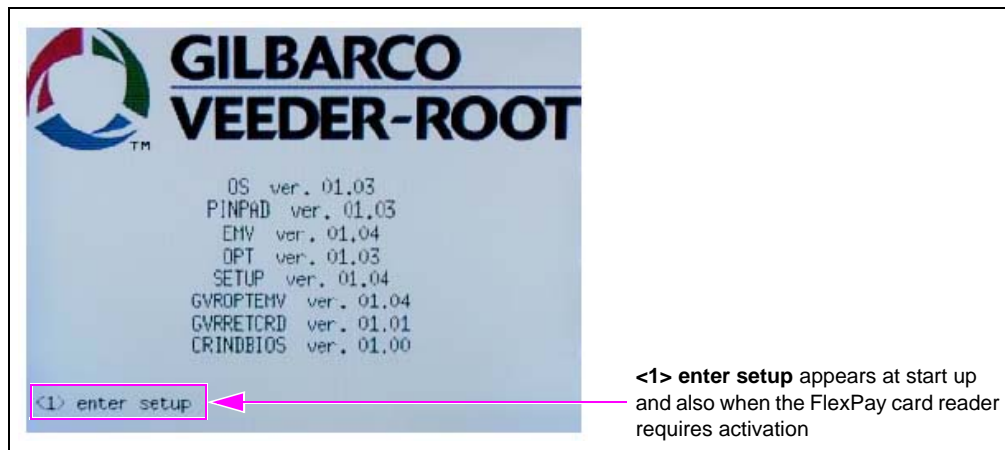
2 Press **1**. The Service Menu screen appears.

Figure 37: Service Menu - Screen 1

3 Enter the right-most six digits of the Product Part Number (PPN) and press ENTER/OK. The Service Menu screen appears.
Note: If you do not enter the password within 60 seconds, the unit automatically restarts.

Figure 38: Service Menu - Main Menu

4 Press **3**. The System Config Menu screen appears.

Figure 39: System Configuration Menu - Screen 1

5 Press **2** to change the contactless card reader to OTI.

Figure 40: System Configuration Menu - Screen 2

6 Press **OK** to save the changes and exit. The display goes back to the Service Menu screen Service Menu.

Figure 41: Service Menu

7 Press **Cancel**. The SPOT EMV CRIND restarts.

Configuring the SPOT EMV CRIND for the FlexPay GCM is now complete.
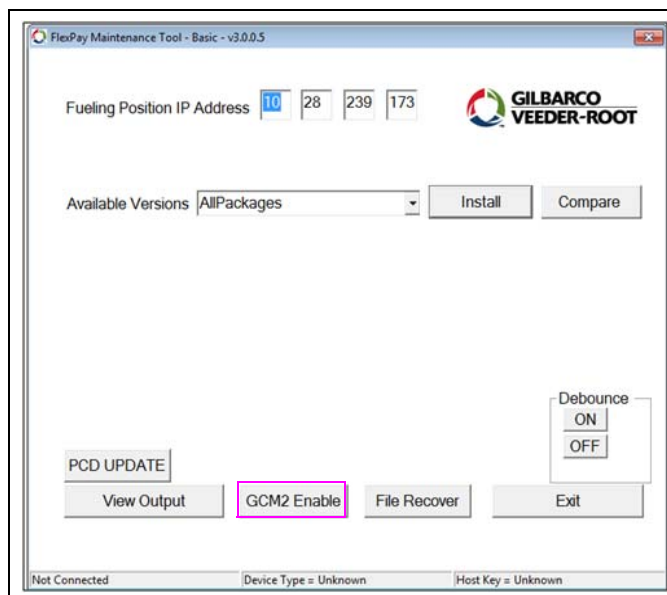
Enabling GCM2

To enable the GCM2, proceed as follows:

The FlexPay Maintenance Tool is available on the extranet under the Technical Resources/Laptop Tool page.
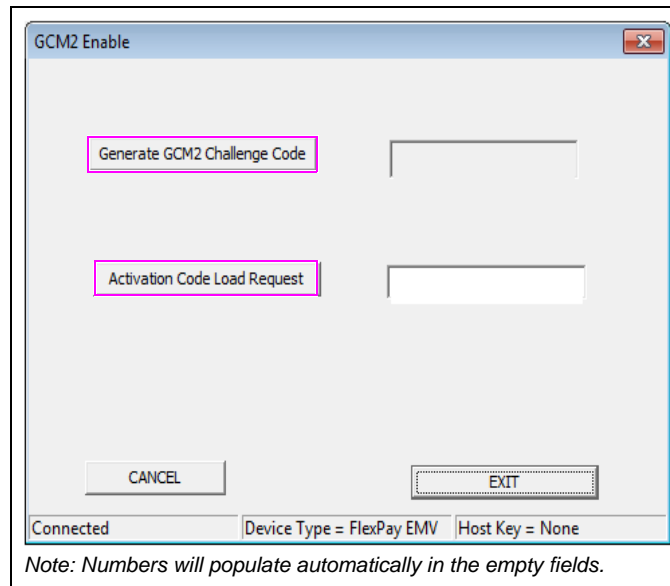
1 Click **GCM2 Enable** on the FlexPay Maintenance Tool - Basic mode home screen.

Figure 42: Enabling GCM2

A pop-up screen appears.

Figure 43: GCM2 Enable Screen

Note: Numbers will populate automatically in the empty fields.

The GCM2 Enable screen contains the following fields:

a Generate GCM2 Challenge Code - Used in the GCM2 activation procedure to generate 4 Bytes Challenge Code.

b Activation Code Load Request - Transmits to SPOT the activation code generated by an external system starting from the Challenge formerly received.

c CANCEL - Click CANCEL to interrupt GCM2 enable sequence after the generation of the challenge (for example, some error occurred in the external process generating the activation code).

d EXIT - Click EXIT to exit the GCM2 Enable window.

2 Click **Generate GCM2 Challenge Code**. The tool generates an 11-byte challenge code and displays it in the grayed-out text field next to the Generate GCM2 Challenge Code button.

3 Call the Service Call Center at 1-800-800-7498 and provide the 11-byte challenge code.

4 Type in the activation code provided by the service technician in the Activation Code Load Request field.

5 Click **Activation Code Load Request**.

This will trigger an activation process to validate the activation code provided by the Call Center. A pop-up message appears to confirm successful or unsuccessful validation of the activation code.

Clicking **Exit** before, during, or after the activation will cancel the activation process and close the activation pop-up screen.

Note: If the GCM hardware device (PCD) has GCM2 firmware that is already activated, Figure 44 will display when Generate GCM2 Challenge Code is clicked.

Figure 44: GCM Activation Screen
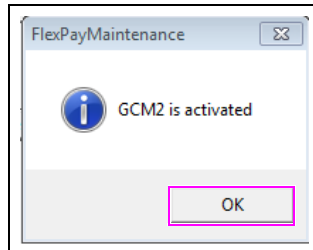

GCM2 Already Activated

To check if GCM2 is already enabled, proceed as follows:

1 Ensure that SPOT is connected to the network and your system has Internet access. Open the FlexPay Maintenance Basic Tool.

2 Enter SPOT IP Address and click **Connect**.

3 Click **GCM2 Enable** of GCM Update section from the Actual State tab. The GCM2 Enable screen appears.

4 Click **Generate GCM2 Challenge Code**.

The progress bar starts and a status message is displayed "Please wait while loading GCM2 driver…".

A pop-up stating that GCM2 is already activated appears as shown in Figure 45.

Figure 45: GCM2 Activated
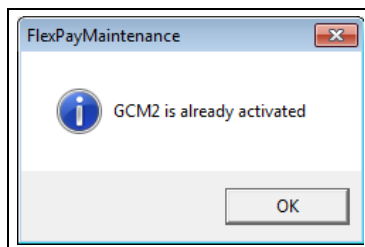
For more information, refer to *MDE-5062 FlexPay Maintenance Tool for FlexPay/SPOT CRIND System*.

Verifying FlexPay GCM Functionality Through CRIND Diagnostics

Note: This functionality is not a part of the SPOT EMV CRIND.

To verify the functionality of the FlexPay GCM through CRIND diagnostics, proceed as follows:

IMPORTANT INFORMATION

As an additional security measure, the FlexPay CRIND keypad requires that the **Enter** key be pressed after any number entry (in diagnostic mode only).

---

1 Enter CRIND diagnostics by swiping the CRIND Diagnostics Card (Q12534-170) through the SCR 2. The CRIND Diagnostic Startup Menu screen appears.

Figure 46: CRIND Diagnostics - Diagnostic Startup Menu

2 Press **1** > **Enter**. The Main Menu screen appears.

Figure 47: CRIND Diagnostics - Main Menu

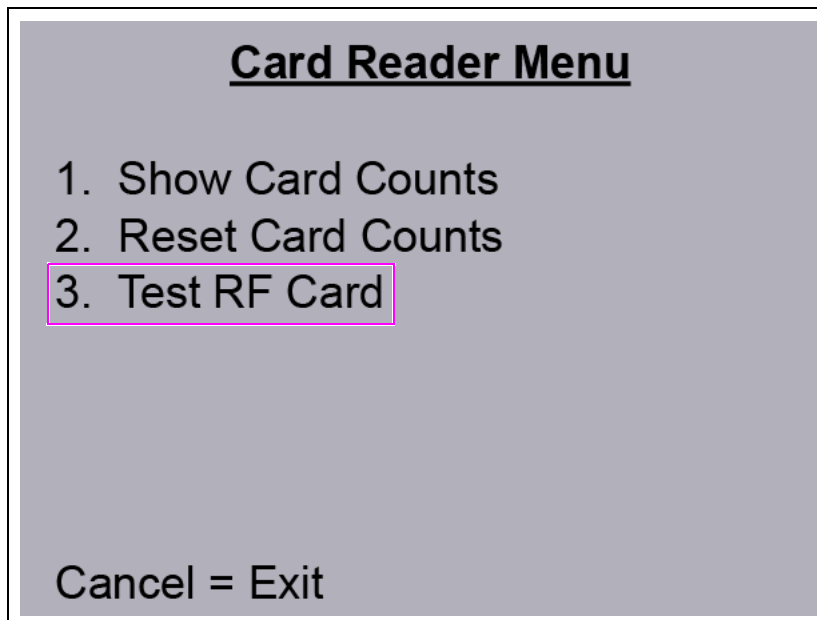**3** Press **2** > **Enter**. The Device Config screen appears.

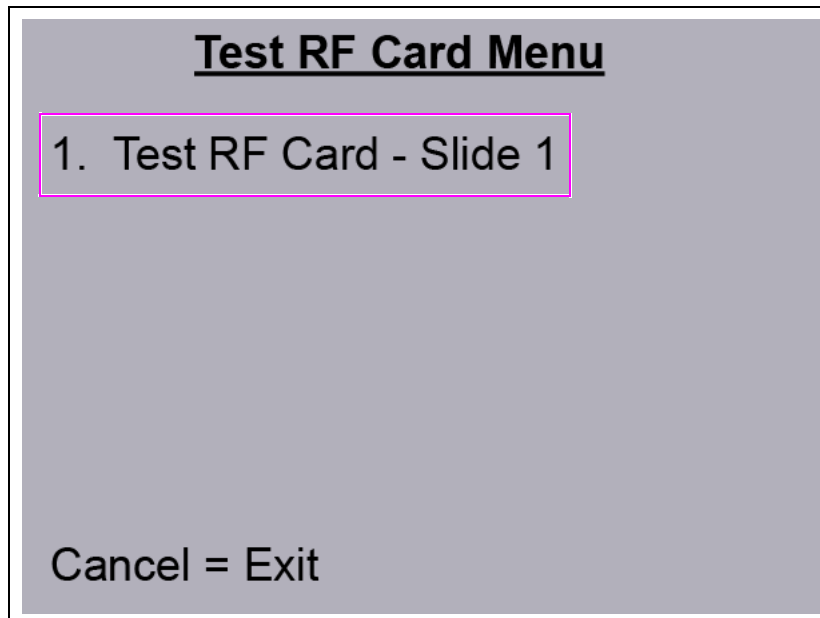**Figure 48: CRIND Diagnostics - Device Configuration**
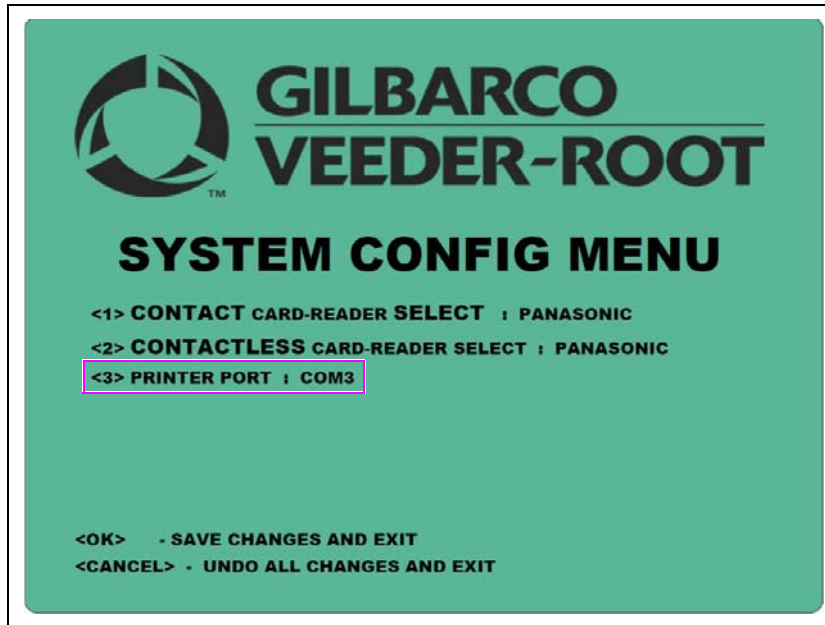
4 Press **5** > **Enter**. The Card Reader Menu screen appears.

Figure 49: CRIND Diagnostics - Card Reader Menu

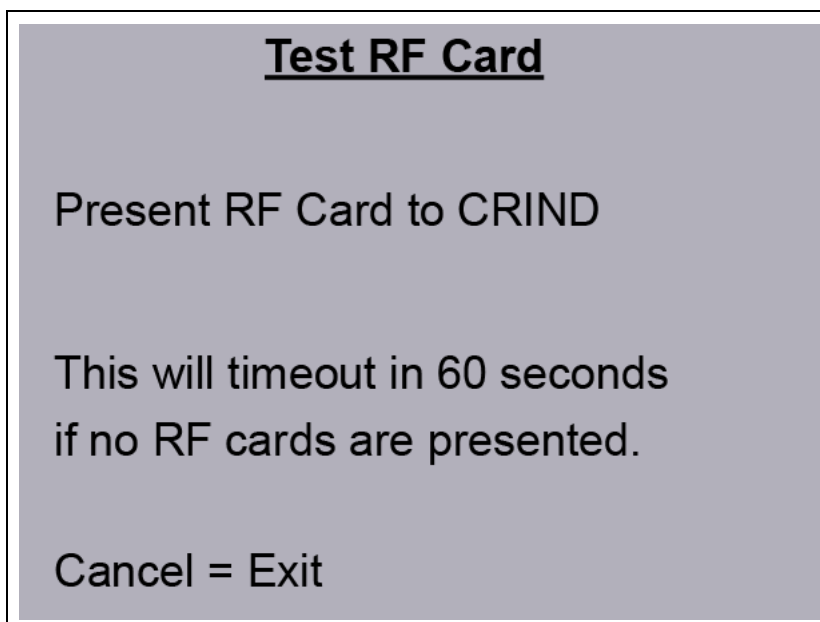**5** Press **3** > **Enter**. The Test RF Card Menu screen appears.

Figure 50: CRIND Diagnostics - Test RF Card Menu

Note: Depending on the side on which the CRIND diagnostics is performed, side 1 or side 2 appears.
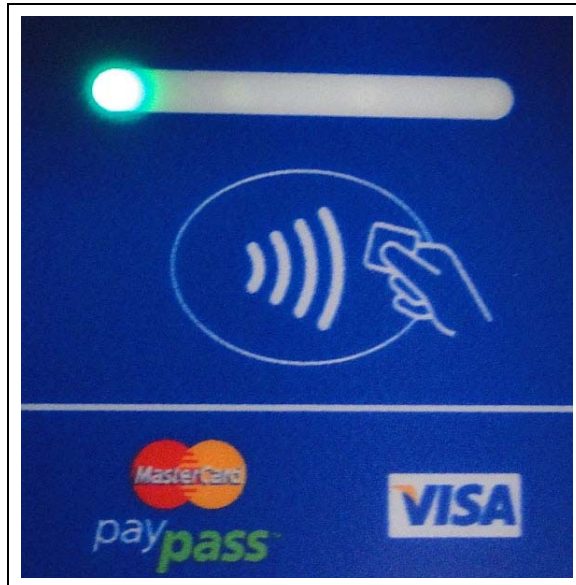
6 Press **1** > **Enter**. The Test RF Card screen appears.

Figure 51: CRIND Diagnostics - Test RF Card

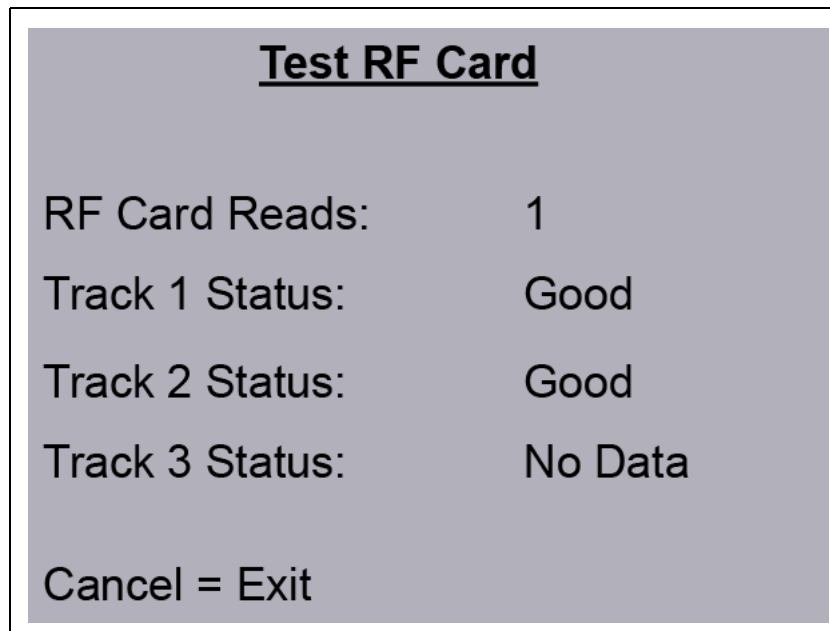Present the RF card as shown in Figure 52.

Figure 52: Presenting RF Card

If a valid transaction is made, the screen shown in Figure 53 appears.

**Figure 53: CRIND Diagnostics - Successful Test RF Card**

If a valid transaction is not made, verify cable connections and power connections. Check the Light Emitting Diode (LED) indicators for power connection, proper functioning, and so on.

Affixing FlexPay Global Contactless FCC Label (M02962B015)

Obtain the FlexPay global contactless FCC label from the kit and install it on the dispenser inner sheathing under the patent label as shown in Figure 54.

Figure 54: Affixing FlexPay Global Contactless FCC Label
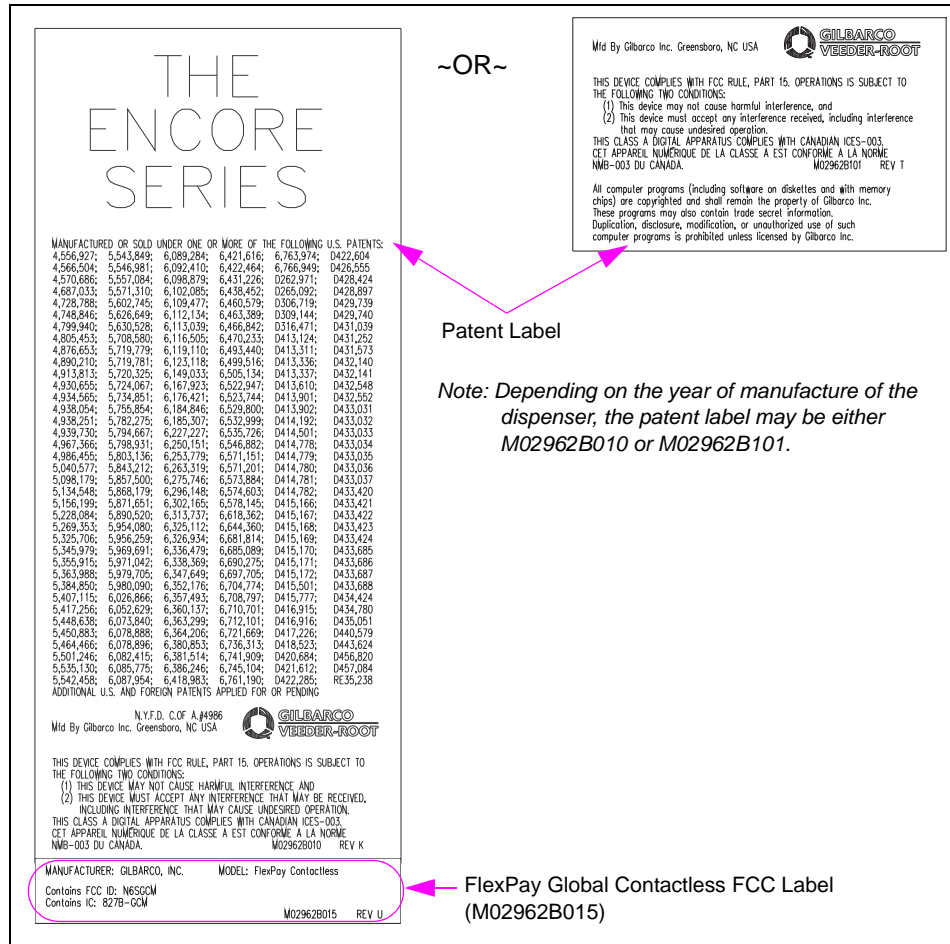
Verifying FlexPay GCM with Customer Loyalty or Test Credit Card

To verify that the FlexPay GCM works properly using a customer loyalty or test credit card, proceed as follows:

1 Obtain the test credit card from the customer or available credit card company.

**2** Waive the test credit card in front of the FlexPay GCM.

All LEDs must flash green in ascending order from left to right.

Troubleshooting Non-EMV Systems

System Operation (Non-EMV Systems with SCR 2) Overview

Figure 55 shows a system logical block diagram. For specific system's physical connections, refer to the wiring diagram.

Figure 55: System Logical Block Diagram
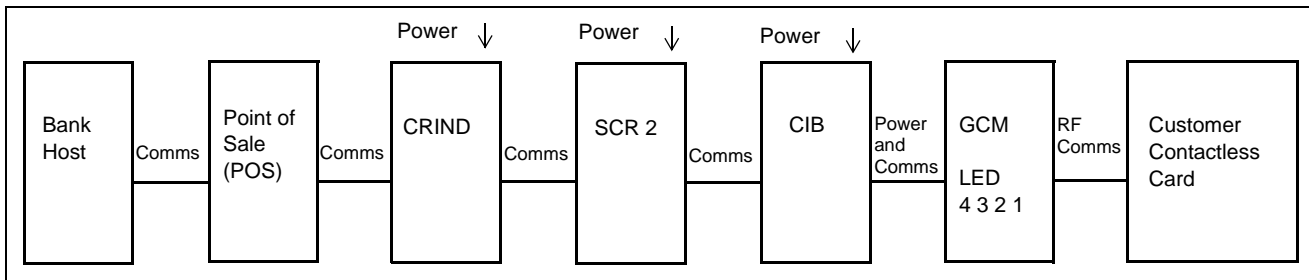
- **Bank Host**: Responsible for receiving card data from the site, verifying if the customer's card is valid, and sending authorization to the site.
- **POS**: Drives the details of the transaction by receiving events from the CRIND and sending commands to the CRIND. It also sends card data to the bank host to obtain authorization (or rejection) of a sale.
- **CRIND**: The basic interface to the customer who wants to purchase gas. It displays information from the POS, sends data to the POS (for example, key strokes and card data), and communicates with various CRIND devices (for example, SCR 2). In this configuration, the CRIND is not really aware of the GCM. All GCM interaction occurs through SCR 2.
- **SCR 2**: Responsible for magnetic stripe card reads and passing contactless card reads from the GCM to the CRIND in a form that looks like a magnetic stripe card read. The SCR 2 is responsible for enabling the GCM to accept contactless card reads.
- **CIB**: The communication interface between the SCR 2 and GCM. It also feeds power to the GCM unit.
  Note: Ensure that when there are some Tx and Rx LEDs on the CIB, they are not used in this application.
- **GCM**: Responsible for reading the customer's contactless card and passing the card data to the SCR 2.
- **Customer Contactless Card**: Contains the data required by the bank host to determine if the customer will be authorized to purchase gas at the CRIND.

System Flow (Start-up)

At start-up, the following occur:
- SCR 2 sends a message to the GCM to begin accepting contactless reads.
- GCM turns on LED 4 to indicate it is ready to read contactless reads.

Note: In the US systems with the SCR 2, neither the POS nor CRIND can send a command to disable the GCM (as indicated by LED 4 not being solid).

System Flow (Contactless Card Read)

Note: The GCM LED 4 must be solid to indicate that the GCM is ready to accept a contactless read.

Following occur when a contactless card is used:
- Customer contactless card and the GCM exchange communication.
- GCM turns on LED 1 through LED 3 briefly to indicate a good read of the contactless card (LED 4 is already on).
- GCM turns off LED 1 through LED 3 while leaving LED 4 on, to indicate that the read is complete.
- GCM sends data to the SCR 2.
- SCR 2 sends data to the CRIND, which looks like a magnetic stripe card read to the CRIND. However, there are few special characters within the data so that the POS or bank host knows it is a contactless read.
- If the POS likes the data, then it sends the data to the bank host. It is possible that the POS can have programming or data tables reject one or more (may be all) contactless cards.
- If the bank host likes the data, then it sends an authorization back to the POS. It is possible that the bank host can have programming or data tables reject one or more (may be all) contactless cards.
- POS sends a display (and probably other messages) to the CRIND to indicate to the customer that the customer contactless card was accepted.

Presteps

Before beginning the actual troubleshooting steps, check the following:

General Observations

Observe the unit or ask the store manager to find out some of this information:
- Has the GCM worked in the past (or is this a new install)?
- Does the GCM read some cards and not read other cards?
- If the GCM was previously working, what has changed?

Basic Checks

Verify the following before troubleshooting the GCM specifically:
- If none of the GCMs at the site accept a contactless card, then it is not a GCM issue.
- Are all connections connected to the correct ports (use the wiring diagram for the specific CRIND model)?
- Does the CRIND have the correct software for the specific CRIND model?
- Is the SCR 2 rev J (or later) that supports GCM (some field trial units are rev H that had the required firmware injected and CIB board installed at the factory)?
- Do all devices have power? The GCM has a red power LED that can bee seen through the rear of the unit.
- Does the SCR 2 read a standard magnetic stripe card? If not, follow the SCR 2 troubleshooting guide.

Troubleshooting Steps for LED 4

Following are the troubleshooting steps for LED 4:
- If the LED 4 is off (not slowly blinking), refer to "LED 4 Is off".
- If the LED 4 is on solid, refer to "LED 4 Is on".
- If the LED 4 blinks briefly once about every 5 seconds, refer to "LED 4 Blinks Once Every Five Seconds" on page 47.

Note: You will not be able to see the LED numbering. However, LED 4 is the left-most LED and LED 1 is the right-most, when looking at the contactless area on the CRIND door.

LED 4 Is off

Following guidelines indicate that either the GCM itself is bad, CIB is bad, SCR 2 has an issue, there is a power issue, or there is an issue with the cable(s):
- Verify the power at the GCM (red LED visible from the back side of the GCM).
- Verify the connections from the GCM to the CIB.
- Verify the connections from the CIB to the SCR 2.
- Verify if the SCR 2 is rev J or later.

If all of the above checks out OK, then there is no further troubleshooting other than replacing the SCR 2 to verify what fixes the issue.
- Turn off the power and then replace the GCM. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.
- Turn off the power and then replace the SCR 2. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.
- Turn off the power and then replace the CIB. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.

If you reach this point, then either the cable is bad or more than a single component are bad.

LED 4 Is on

GCM has power and is enabled to accept a contactless card read. This will indicate that the SCR 2 is good and all the cables are good.

Go into the CRIND diagnostics and enter the card reader diagnostics.

Attempt to read a contactless card that is known to work at other contactless readers (preferably another GCM).

Observe LEDs 1 Through 3
- If the LEDs 1 through 3 all turn on briefly, refer to "LEDs 1 Through 3 - All Turned on Briefly".
- If the LEDs 1 through 3 do not turn on briefly, refer to "LEDs 1 Through 3 - Do Not Turn on Briefly" on page 47.

LEDs 1 Through 3 - All Turned on Briefly

If all the LEDs turn on briefly, then this indicates that the GCM is reading the card. You must see an indication in the diagnostics menu that a card was read.

If a card will read in diagnostics but will not authorize a sale, then this indicates a problem outside the GCM or CRIND. Either there is an issue within the POS or bank host that will not allow authorization.

LEDs 1 Through 3 - Do Not Turn on Briefly

At this point, you might want to verify if your card used for testing is working. You can verify it with a card reader at another unit or with a card reader inside the store.

- If your contactless card will read at another CRIND, then this indicates a bad GCM.
- If your contactless card will not read at another CRIND, but can be read at a different contactless reader (for example, inside the store), then this indicates a potential configuration issue with the GCM. This requires factory support.

LED 4 Blinks Once Every Five Seconds

This indicates that the SCR 2 and GCM are communicating. However, either the GCM has not been enabled by the SCR 2 or there is an issue with the SCR 2.

At this point, either the SCR 2, CIB, or GCM are bad. However, it is highly likely that the cables are good.

There is no further troubleshooting other than replacing parts to verify what fixes the issue.

- Turn off the power and then replace the GCM. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.
- Turn off the power and then replace the SCR 2. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.
- Turn off the power and then replace the CIB. Verify if this fixes the problem. If not, then turn off the power, restore the original part, and continue.

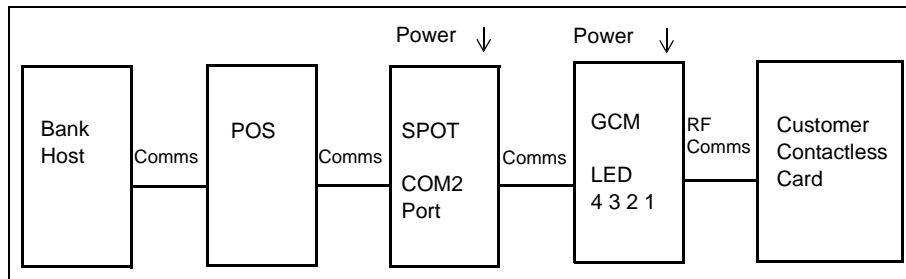If you reach this point, then more than a single component are bad.

Troubleshooting EMV GCM

System Operation (EMV with GCM)

System Overview

Figure 56 shows a system logical block diagram. For specific system's physical connections, refer to the wiring diagram.

Figure 56: System Logical Block Diagram

- **Bank Host**: Responsible for receiving card data from the site, verifying if the customer's card is valid, and sending authorization to the site.
- **POS**: Drives the details of the transaction by receiving events from the CRIND and sending commands to the CRIND. It also sends card data to the bank host to obtain authorization (or rejection) of a sale.
- **SPOT**: The basic interface to the customer who wants to purchase gas. It displays information from the POS, sends data to the POS (for example, key strokes and card data), and communicates with various CRIND devices. In this configuration, the CRIND is not really aware of the GCM.
- **GCM**: Responsible for reading the customer's contactless card.
- **Customer Contactless Card**: Contains the data required by the bank host to determine if the customer will be authorized to purchase gas at the CRIND.

System Flow (Start-up)

At start-up, the following occur:
- POS sends a message to the SPOT to begin accepting contactless reads.
- SPOT sends a message to the GCM to begin accepting contactless reads.
- GCM turns on LED 4 to indicate it is ready to read contactless reads.

Note: Until enabled by the POS (or diagnostics mode), the GCM will be disabled as indicated by LED 4 not being solid.

System Flow (Contactless Card Read)

> *Note: The GCM LED 4 must be solid to indicate that the GCM is ready to accept a contactless read.*

Following occur when a contactless card is used:
- Customer contactless card and the GCM exchange communication.
- GCM turns on LED 1 through LED 3 briefly to indicate a good read of the contactless card (LED 4 is already on).
- GCM turns off LED 1 through LED 3 while leaving LED 4 on, to indicate that the read is complete.
- GCM sends data to the SPOT.
- SPOT sends data to the POS.
- If the POS likes the data, then it sends the data to the bank host. It is possible that the POS can have programming or data tables reject one or more (may be all) contactless cards.
- If the bank host likes the data, then it sends an authorization back to the POS. It is possible that the bank host can have programming or data tables reject one or more (may be all) contactless cards.
- The POS sends message to the CRIND to indicate to the customer that the customer contactless card was accepted.

Presteps

Before beginning the actual troubleshooting steps, check the following:

General Observations

Observe the unit or ask the store manager to find out some of this information:
- Has the GCM worked in the past (or is this a new install)?
- Does the GCM read some cards and not read other cards?
- If the GCM was previously working, what has changed?

Basic Checks

Verify the following before troubleshooting the GCM specifically:
- If none of the GCMs at the site accept a contactless card, then it is not a GCM issue.
- Are all connections connected to the correct ports using the wiring diagram for the specific CRIND model?
- Does the CRIND have the correct software for the specific CRIND model?
- Do all devices have power? The GCM has a red power LED that can bee seen through the rear side of the unit.

Troubleshooting Steps for LED 4

Following are the troubleshooting steps for LED 4:
- If the LED 4 is off (not slowly blinking), refer to "LED 4 Is off".
- If the LED 4 is on solid, refer to "LED 4 Is on".
- If the LED 4 blinks briefly once about every five seconds, refer to "LED 4 Blinks Once Every Five Seconds" on page 51.

Note: You will not be able to see the LED numbering. However, LED 4 is the left-most LED and LED 1 is the right-most, when looking at the contactless area on the CRIND door.

LED 4 Is off

Following guidelines indicate that either the GCM module itself is bad, the GCM is not enabled, there is a power issue, or there is an issue with the cable(s):
- Verify the power at the GCM (red LED visible from the back side of the GCM).
- Verify the connections from the GCM to the SIP board.
- Verify the connections from the GCM to the SPOT COM2 port.
- Verify the SPOT contactless mode is set to OTI.

If all of the above check out OK, proceed as follows:

1 Enter diagnostics to verify proper operation of the GCM. If proper operation is observed then the GCM is good.

2 Power cycle the dispenser, then go to step 1. If proper operation is observed then the GCM is good.

3 Turn off power and then replace the GCM. Verify if this fixes the problem.

If you reach this point, then either the cable is bad or more than a single component are bad.

LED 4 Is on

GCM has power and is enabled to accept a contactless card read. This will indicate all the cables are good.

Go to the CRIND diagnostics, enter the card reader diagnostics, and test RF card diagnostics.

Attempt to read a contactless card that is known to work at other contactless readers (preferably another GCM).

Observe LEDs 1 Through 3
- If the LEDs 1 through 3 all turn on briefly, refer to "LEDs 1 Through 3 - All Turned on Briefly" on page 51.
- If the LEDs 1 through 3 do not turn on briefly, refer to "LEDs 1 Through 3 - Do Not Turn on Briefly" on page 51.

LEDs 1 Through 3 - All Turned on Briefly

If all the LEDs turn on briefly, then this indicates that the GCM is reading the card. You must see an indication in the diagnostics menu that a card was read.

If a card will read in diagnostics but will not authorize a sale, then this indicates a problem outside the GCM or CRIND. Either there is an issue within the POS or bank host that will not allow authorization.

LEDs 1 Through 3 - Do Not Turn on Briefly

At this point, verify if the card used for testing is working. This can be verified with a card reader at another unit or with a card reader inside the store.
- If your contactless card will read at another CRIND, then this indicates a bad GCM.
- If your contactless card will not read at another CRIND, but can be read at a different contactless reader (for example, inside the store), then this indicates a potential configuration issue with the GCM. Certain versions of the SPOT require a CVN-17 patch. Verify with Gilbarco support if this version requires the patch. This requires factory support.

LED 4 Blinks Once Every Five Seconds

Go to the CRIND diagnostics, enter the card reader diagnostics, and test RF card diagnostics.

1   Verify if the LED 4 turns on solid red. If it does, go to "LED 4 Is on" on page 50.

2   Go to step 1, if proper operation is observed then the GCM is good.

3   If the LED 4 is not solid red, then there is no further troubleshooting other than replacing parts to verify what fixes the issue.
- Turn off the power and then replace the GCM. Verify if this fixes the problem. If not, then turn off the power, restore the original part.

If you reach this point, then more than a single component is bad.

GCM Appears to Work Normally but Ghost Events Occur at POS

To troubleshoot these types of issues, do the following:
- Check with Gilbarco support to determine if a permanent fix is available.
- Swap the GCM with another GCM in a different dispenser.
- Check and reroute cables, if required, to ensure that cables are not dangling in front of or near the GCM reader.

If the issue is not resolved, then replace both GCM readers in the problem dispenser with new readers.