

## Introduction

### Purpose

This manual provides instructions to install the UX410 Contactless Card Reader (CCR) Kit on dispensers with FlexPay™ II CRIND®.

#### **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, Inc. (UL®).

#### **IMPORTANT INFORMATION**

##### **Industry Canada Regulation:**

This device complies with Industry Canada license-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.

### Intended Users

This manual is intended for Gilbarco®-trained and certified Authorized Service Contractors (ASCs).

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## Required Tools

The following tools are required to install the UX410 Contactless Card Reader Kit:

- Phillips® Screwdriver
- Small Channel Locks or Pliers
- 1/4-inch Nut Driver or Socket
- 7-mm Nut Driver with Extension Socket
- 3.5-mm or 5/16 Sub Miniature A (SMA) Torque Wrench Coax Long
- CRIND Diagnostics Card (Q12534-170)
- FlexPay Maintenance Tool (Version 3.0.1.6 or later)
- FlexPay EMV® CRIND Software version 3.3.24 or later

## Parts List

The following table lists the parts required to install the UX410 Contactless Card Reader for E-CIM dispensers with FlexPay II:

Item	Description	Part Number	Quantity
1	UX410 Contactless Card Reader Kit	M15482A001	1
2	Assembly, Bracket, Control Unit	M15171A001	1
3	Gasket, TRIND® Lens	M13132B001	1
4	Nut, Metric, Hex Serrated Flange M4	M00414B005	12
5	Mount, Antenna UX410 E-CIM™	M15982B001	1
6	Antenna Retainer, E-CIM	M15255B001	1
7	Cable, DC Power for UX410 on M5	M13117A003	1
8	Cable Assembly, Category 5 (CAT-5) 6-ft	M14080A002	1
9	Cable Tie, Push Mount Panduit	Q12942-07	4
10	Assembly, Dispenser Communication Module (DCM)2.2	M15737A001	1
11	Jumper.100 Centerline (Height.385 max)	Q11011-01	1
12	Cable, Remote Management, CCP to SPP	M15242A001	1
13	Label, FCC	M02962B020	1
14	Cable, Cash Acceptor	M03184A011	(Optional)

The following table lists the parts required to install the UX410 Contactless Card Reader on E300/500 dispensers with FlexPay II:

Item	Description	Part Number	Quantity
1	UX410 Contactless Card Reader Kit	M15482A001	1
2	Assembly, Bracket, Control Unit	M15171A001	1
3	Gasket, UX410 Mount E300/500	M15554B001	1
4	Nut, Metric, Hex Serrated Flange M4	M00414B005	10
5	Mount, Antenna UX410 E300/500	M15253B001	1
6	Screw, Special, #6-20X3/8 Thread Forming	M08070B001	4
7	Screw, Hex Washer Head, Thread Forming	Q11677-24	4
8	Cable, DC Power for UX410 on E300/500 M5	M13117A005	1
9	Cable Assembly, CAT-5 6-ft	M14080A002	1
10	Cable Tie, Push Mount Panduit	Q12942-07	4
11	Assembly, DCM2.2	M15737A001	1
12	Jumper .100 Centerline (Height .385 max)	Q11011-01	1
13	Cable, Remote Management, CCP to SPP	M15242A001	1
14	Encore Option Panel 1 Graphic, HCR2 W/ Cash and Scanner	EN2004G001	1
15	Keypad, Miscellaneous Options	M08412B001	1
16	Label, FCC	M02962B020	1
17	Cable, Cash Acceptor	M03184A011	(Optional)

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-4771	Encore® S Enhanced FlexPay™ EMV CRIND Start-up/Service Manual	<ul style="list-style-type: none"> <li>Encore and Eclipse®</li> <li>FlexPay Connect</li> </ul>
MDE-5062	FlexPay Maintenance Tool for FlexPay/SPOT CRIND System	FlexPay II and IV
MDE-5315	Upgrading to SSoM (DCM2.1 and DCM2.2)	<ul style="list-style-type: none"> <li>Encore and Eclipse</li> <li>Service Manual</li> </ul>

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
BOM	Bill Of Material
CAT-5	Category 5
CCR	Contactless Card Reader
CRIND	Card Reader IN Dispenser
DCM	Dispenser Communication Module
E-CIM	Enhanced Customer Interface Module
EMV	Europay®, MasterCard®, and Visa®
e.r.i.p	equivalent isotropically radiated power
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
HIP	Hub Interface PCB

<b>Term</b>	<b>Description</b>
JSA	Job Safety Analysis
LAN	Local Area Network
LED	Light Emitting Diode
OSHA	Occupational Safety and Health Administration
OTI	On Track Innovations
PPN	Product Part Number
RF	Radio Frequency
RSS	Radio Standards Specification
SCR	Secure Card Reader
SMA	Sub Miniature A
SPOT	Secure Payment for Outdoor Terminal
TAC	Technical Assistance Center
UL	Underwriters Laboratories
VDC	Voltage Direct Current
VFI	Verifone Inc.
VLAN	Virtual Local Area Network

# 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).

<b>⚠ WARNING</b>	
	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.

## 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.

## 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.

## Important Safety Information

### 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.



Gilbarco Veeder-Root encourages the recycling of our products. Some products contain electronics, batteries, or other materials that may require special management practices depending on your location. Please refer to your local, state, or country regulations for these requirements.

## 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 Perform an inventory of the parts list provided. Ensure that there is no damage to the parts and that all parts are accounted for based on the Bill Of Material (BOM) shipped with the kit. Ensure that you carry the recommended spare parts to the installation site.
- 2 Read all the safety information found in [“Important Safety Information”](#) on [page 5](#). Perform a Job Safety Analysis (JSA) before beginning the installation.
- 3 Inform the manager.
- 4 Barricade the unit to be worked on.
- 5 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.
- 6 Isolate two-wire cable to the unit.

### 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.

### IMPORTANT INFORMATION

Verify if the dispenser has DCM2.2 (M15737A001) installed. If DCM2.2 is already installed, install the Virtual Local Area Network (VLAN) jumper (refer to [Figure 3](#) on [page 9](#)) and continue to “[Installing UX410 Contactless Card Reader on E-CIM Dispenser with FlexPay II](#)” on [page 14](#) or “[Installing UX410 Contactless Card Reader on Encore 300/500 with FlexPay II](#)” on [page 21](#).

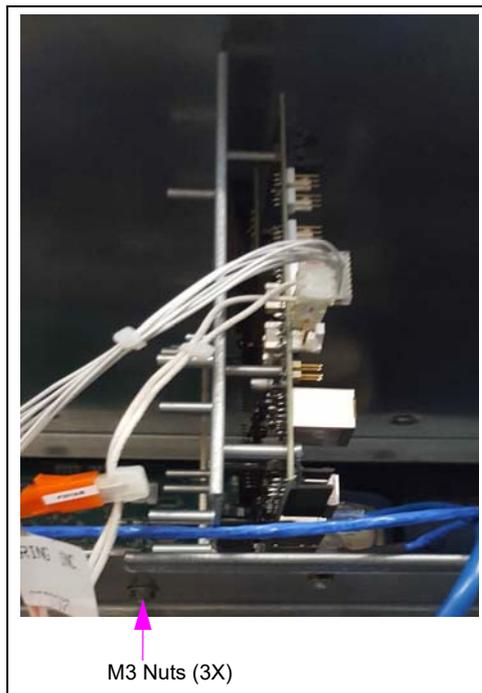
*Note: If the site does not have a BRCM2, DCM will need to be used in the dispenser for Applause™ Media System/Insite360 to function.*

## Installing DCM2.2

- 1 Disconnect all the cables from the Hub Interface PCB (HIP) 2, or DCM2/DCM2.1.
- 2 Detach the HIP2/DCM2/DCM2.1 bracket located on the T-rail by removing the three M3 nuts as shown in [Figure 1](#).

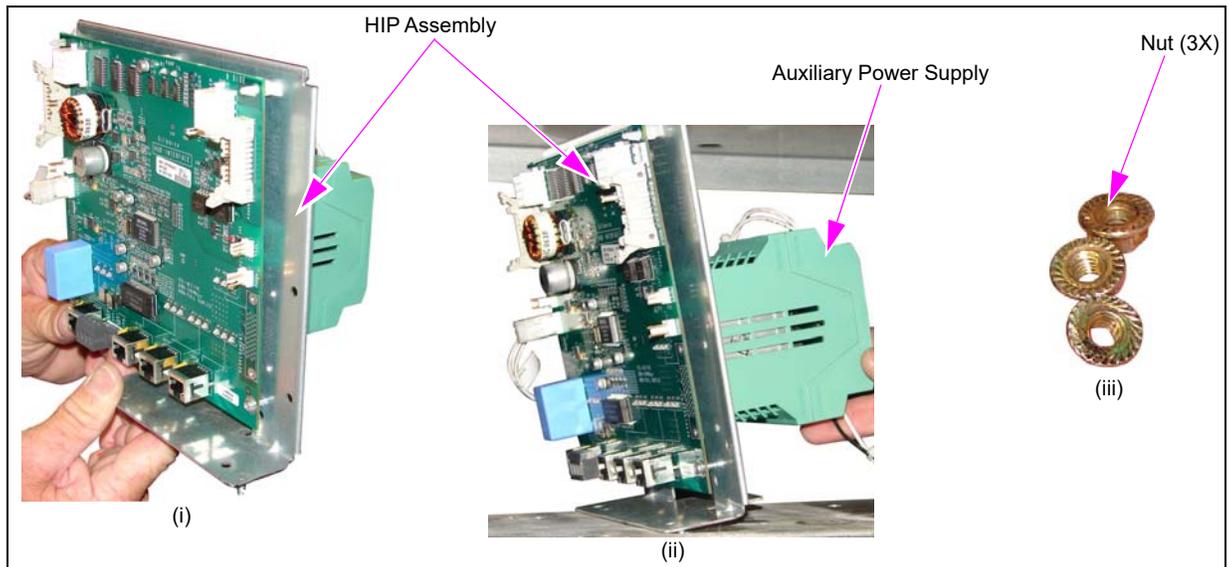
*Note: Retain nuts for reuse.*

**Figure 1: Removing HIP2/DCM2/DCM2.1 Bracket**



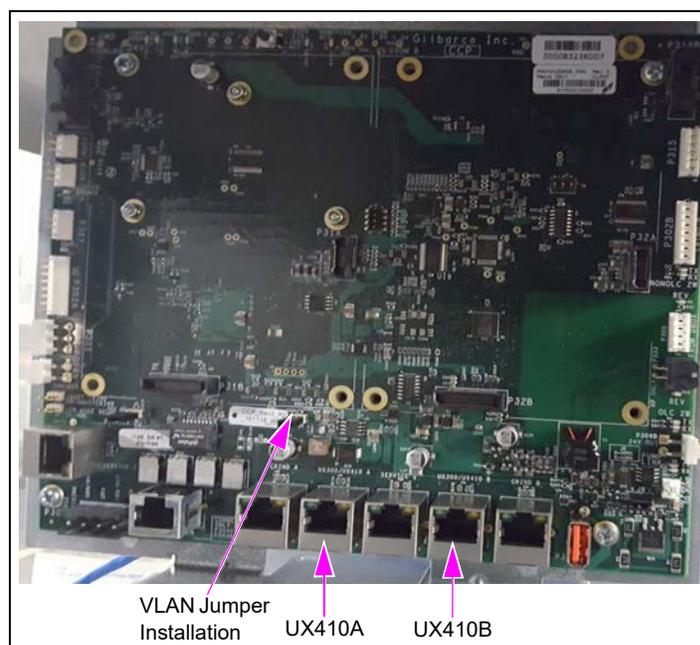
- 3 (For E300 only) Remove the power supply and bracket, fuse board, and stand-offs (if present) from the removed assembly. Transfer on to the new DCM2.2 assembly prior to installation. Remove existing DCM assembly and cables, if present. If the site has more than 16 dispensers, save for mounting to new DCM2.2 assembly. If the site has 16 or fewer dispensers, save for return to Gilbarco.

**Figure 2: Removing HIP Assembly**



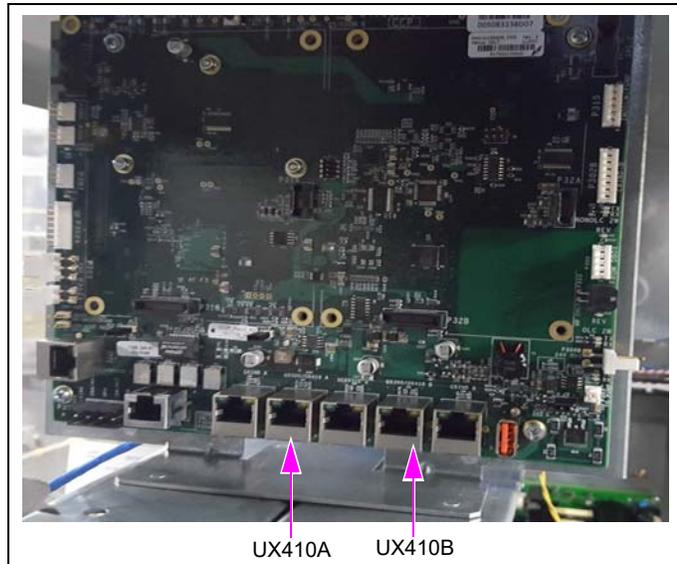
- 4 Install the VLAN jumper on the DCM2.2 for UX410 application as shown in [Figure 3](#).

**Figure 3: Installing VLAN Jumper on DCM2.2**



- 5 Reuse the three M3 nuts removed in step 4 on page 9 to mount the DCM2.2 bracket on the T-rail.

**Figure 4: Mounting DCM2.2 Bracket Assembly**



- 6 Reconnect all the applicable cables to the DCM2.2.
  - a Connect J302 A/B of the SPP Cable (M15242A001) to P302A of DCM2.2. Connect J402 to P402 on the FCB.
  - b (For E-CIM, E500S, and E500 only) Install the 24 VDC M07973A006 Power Cable in place of M07973A004 and make the following connections:
    - Connect P305 to J305.
    - Connect J401 to P301 on the DCM2.2 assembly.
    - Connect power to each CRIND (J301A to P301A/B and J301B to P301A/B).

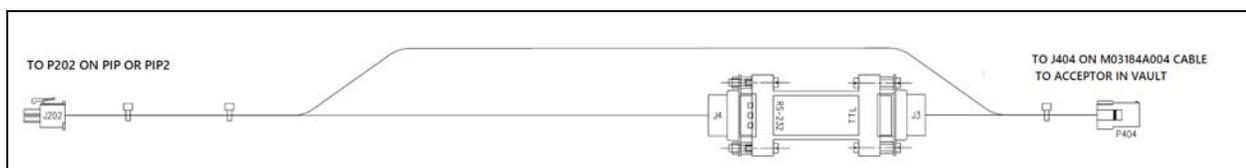
- 7 Dispensers with FlexPay II, DCM2, and a cash acceptor require a specific cable (M03184A011) with a built-in voltage converter to support the cash acceptor.
 

*Note: The HIP and HIP2 provided a voltage level conversion for the cash acceptor data. The DCM2 does not support the cash acceptor. Therefore, a new cable, M03184A011, has been designed with a built-in voltage converter to support the cash acceptor.*

- a Power down the dispenser and open the main door.
- b Locate the M03184A004 cable from the cash acceptor.
 

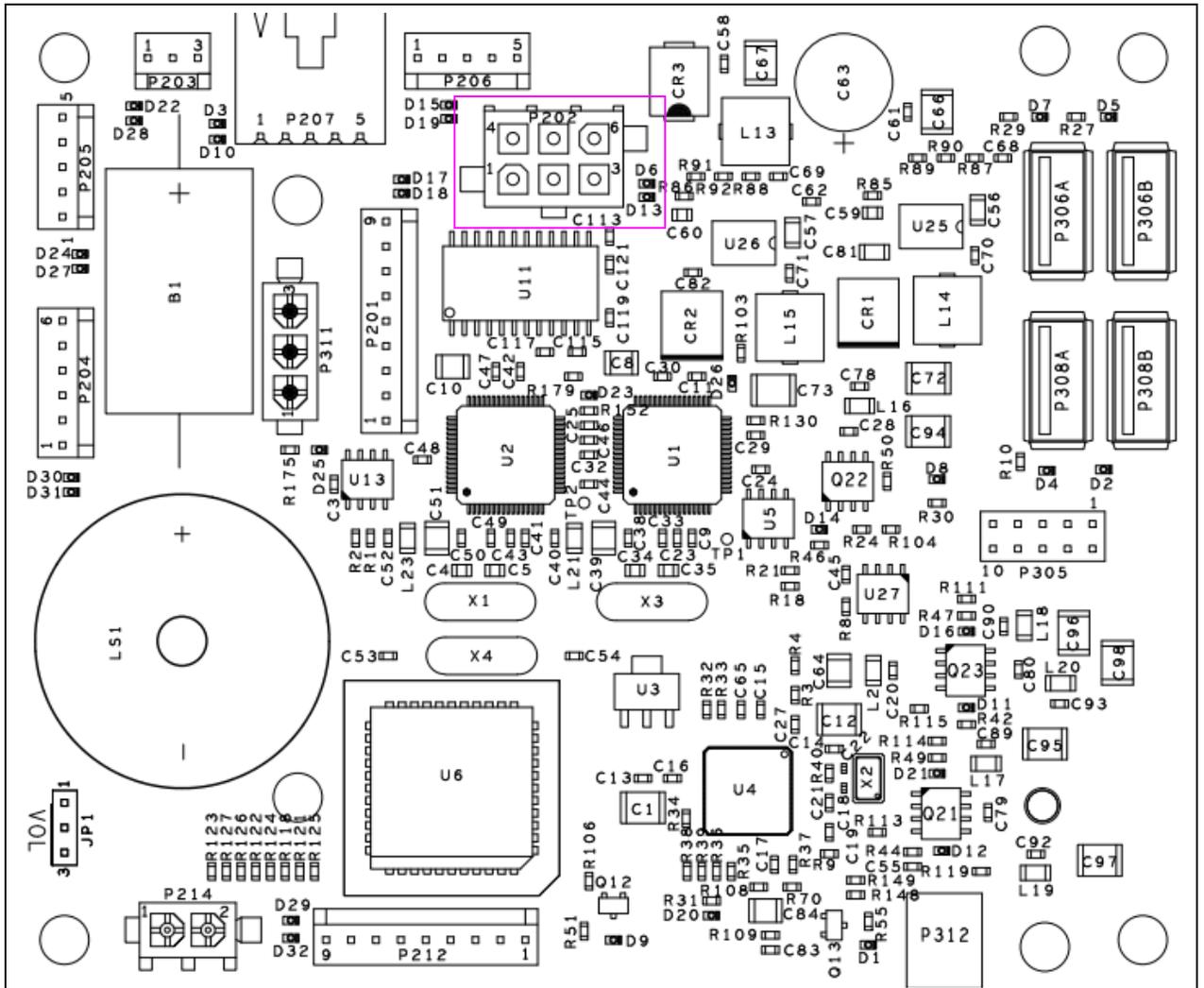
*Note: J404 is used to plug into the HIP or HIP2.*

**Figure 5: Plug and Jack Connections**



- c Plug M03184A004-J404 into the M03184A001-P404 connector.
- d Plug M03184A011-J202 into the P202 connector on the PIP board.

**Figure 6: PIP Board and P202 Connector**

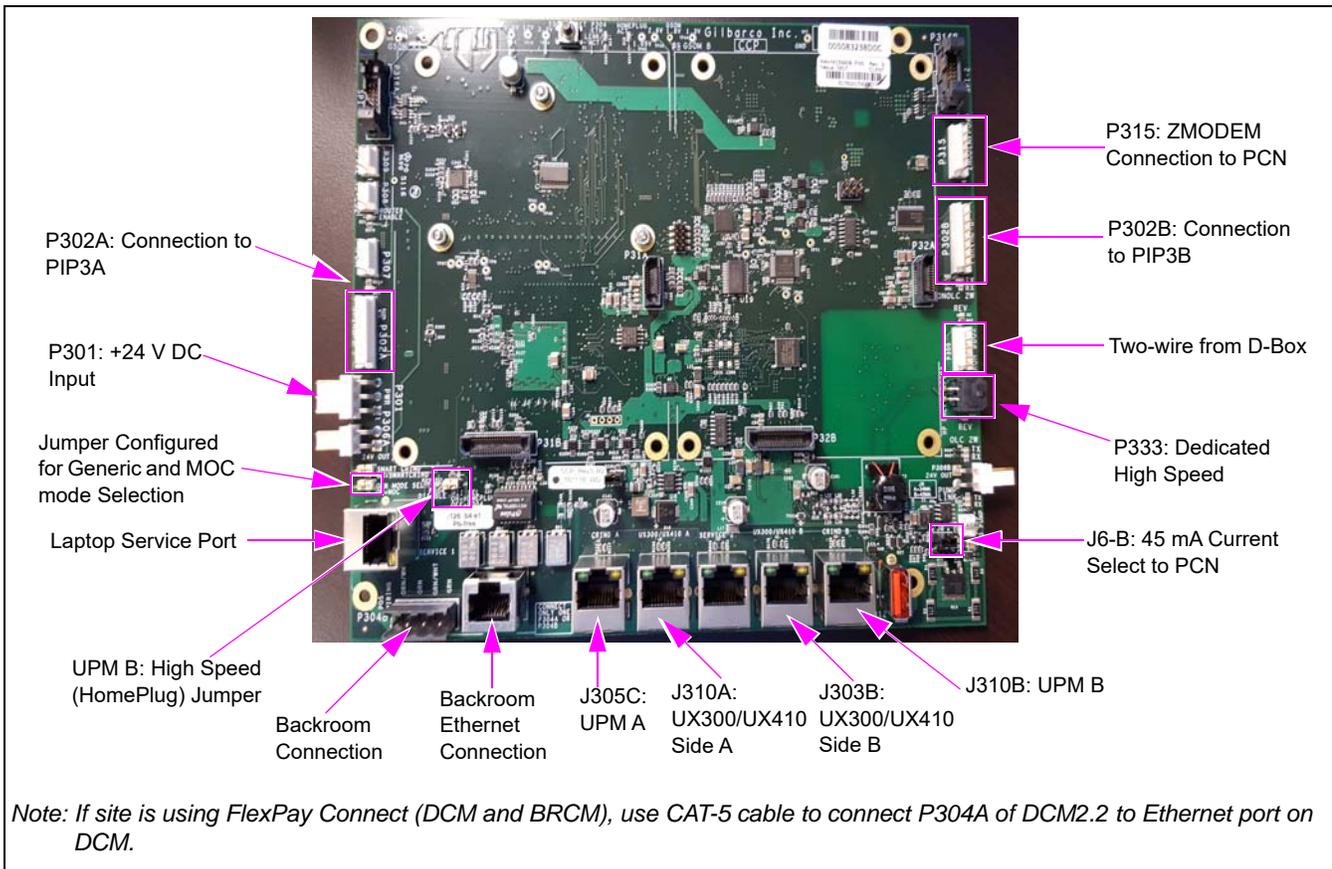


- e Dress the cables in the dispenser and ensure that the data cables routed around the door hinge are separated from the ground cables.
- f Repeat steps b to e for the other side of the dispenser.
- g Power up the dispenser and ensure that the installed cash acceptors go through a bill-stack operation.

After the dispenser is powered up ensure that both the communication LEDs near P202 on the PIP board are blinking.

- If either of the two is blinking, there is a connection problem. Power down the dispenser and inspect the cable connections.
- If neither of the two LEDs are blinking, go to CRIND diagnostics and check if the acceptor is enabled.

**Figure 7: Connecting Cables to DCM2.2 Assembly**



- 8 (For E-CIM, E500S, and E500 only) Connect the M15241A002 ZMODEM cable (J1111) to P1111 on the Pump Control Node (PCN), and J315 to P315 (also labeled as ZMODEM Pump on the DCM2.2).

**DCM2.2 Jump Jacks**

The following table lists the status and functions of jump jacks:

Connector	ON	OFF	Function
J3	X		High-speed connection active. P304 A/B disabled.
		X	High-speed connection inactive. P304A and P304B connects to Category 5 (CAT-5) running through the conduit for high speed connection (if used).
J4	X		Unit is connected to a Passport Point of Sale (POS) MOC
		X	Unit is connected to a third party POS (Generic)
J5	X		VLAN is enabled
		X	VLAN is disabled
J6		B	Install the Jump Jack on the B position for the 45 mA Current loop

## DCM2.2 Connector Table

The following table lists the port numbers and functions of DCM2.2 connectors:

DCM2.2 Connector	Port Number	Function
3-pin MTA .156"	P301	24 VDC power input
2-pin MTA .156"	P306A	24 VDC power output (fused). This is primarily used to power the DCM in Applause Media System.
5-pin MTA .100"	P300	Two-wire from D-Box [CRIND and Pump (Generic only)].
2-pin MTA .100"	P303	Two-wire to PCN
8-pin MTA .100"	P302A	RS-232 pump and CRIND to PIP3 A
4-pin	P333	Dedicated High Speed
8-pin MTA .100"	P302B	RS-232 pump and CRIND to PIP3 B
RJ-45	P304A/B	Ethernet connection to the back room. P304B is the optional discreet wire connection.
	J305C	Ethernet connection to UPM A
	J310A	Ethernet connection to UX300/UX410 A
	J310B	Ethernet connection to UPM B
	J303B	Ethernet connection to UX300/UX410 B
	J303A	Laptop Service port 1
	J310A	Laptop Service port 2

## DCM2.2 Light Emitting Diode (LED) Indicators

Check the following LED indicators after DCM2.2 is power ON.

Function	Color	Control
CCP Power_Good LED	Green	Driven when 24 VDC is present
High-Speed Power LED	Green	ON: Power ready Flashing: Loading firmware OFF: Power not ready
High-Speed Status LED	Green	ON: High-speed link detected Flashing: TX or RX activity OFF: High-speed link not detected
Two-wire	Orange	Flashing: TX and RX (two-wire) detected ON: RX is solid and TX is OFF if there is an Open connection. Wire is not connected. OFF: No communication. Both TX and RX are OFF.
SSoM Activity	Green	ON: SSoM is detected Flashing: After SSoM registered
Router Enable	Green	ON: When the SSoM is installed and has Cloud connectivity
P304 ETH Link/Act	Orange	ON: When using CAT-5 configuration OFF: When using high speed (HomePlug)

*Note: Continue with the UX410 Contactless Card Reader installation instructions on “Installing UX410 Contactless Card Reader on E-CIM Dispenser with FlexPay II” on page 14 and “Installing UX410 Contactless Card Reader on Encore 300/500 with FlexPay II” on page 21.*

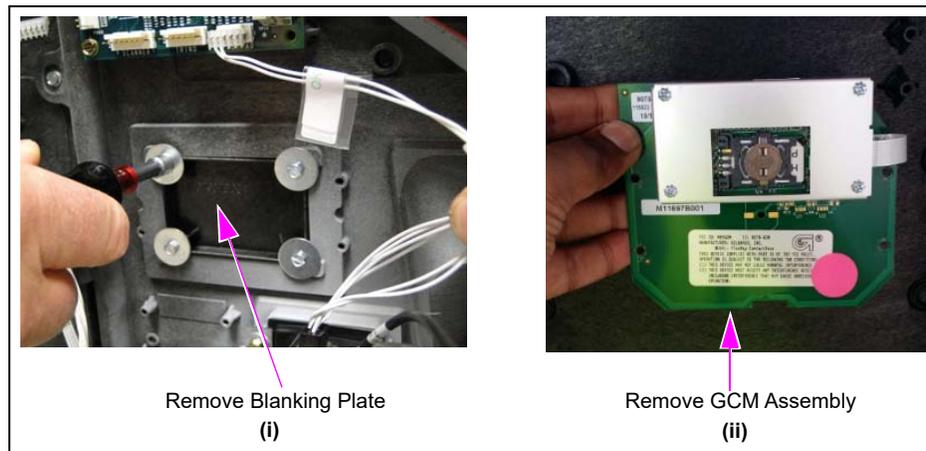
# Installing UX410 Contactless Card Reader on E-CIM Dispenser with FlexPay II

To install the UX410 Contactless Card Reader on an E-CIM dispenser, proceed as follows:

*Note: Ensure that DCM2.2 is installed. DCM2.2 is a pre-requisite for UX410 Contactless Card Reader. Refer to “Installing DCM2.2” on page 8.*

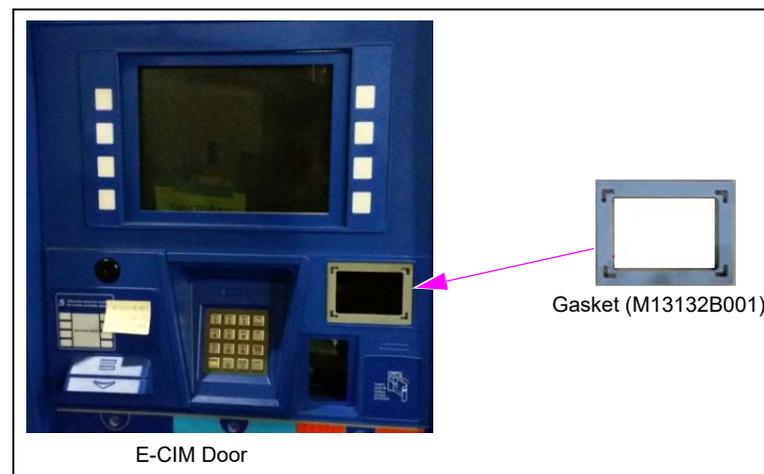
- 1 Remove the existing CCR [Gilbarco Control Module (GCM)] and lens or the contactless blanking plate from the door by removing the four screws as shown in [Figure 8](#).

**Figure 8: Removing Existing GCM or Blanking Plate from E-CIM door**



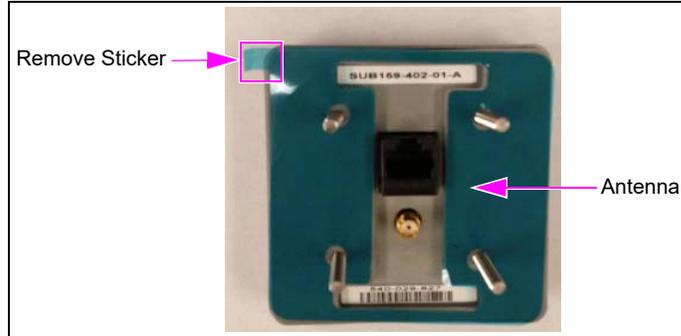
- 2 Replace the existing M07715B002 Gasket with the new M13132B001 Gasket provided in the kit.

**Figure 9: Installing New M13132B001 Gasket**



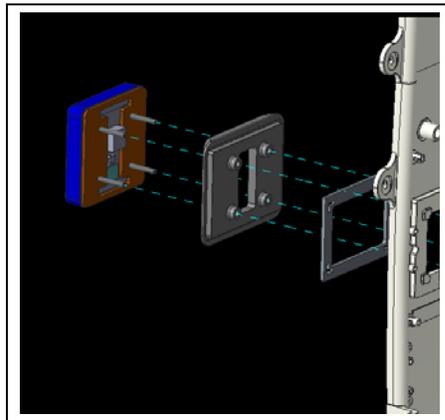
- 3 Open the UX410 Contactless Card Reader Kit and remove the VeriFone® antenna, coaxial antenna, controller, and CAT-5 cables. Remove the sticker from the back of the VeriFone antenna (see [Figure 10](#)).

**Figure 10: Removing Sticker**



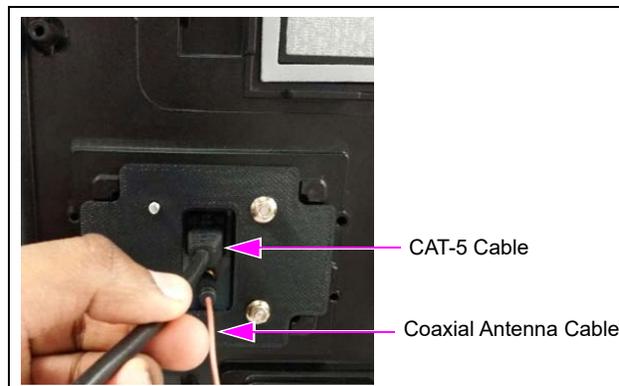
- 4 Align the screws and place the antenna on the UX410 E-CIM Antenna Mount (M15982B001) so that the CAT-5 and coaxial antenna ports are accessible from the back and the VeriFone logo is right-side up on the front.

**Figure 11: Antenna Mount and Screws**



- 5 Install the coaxial antenna cable and CAT-5 cable to the antenna as shown in [Figure 12](#).

**Figure 12: Assembling Antenna**



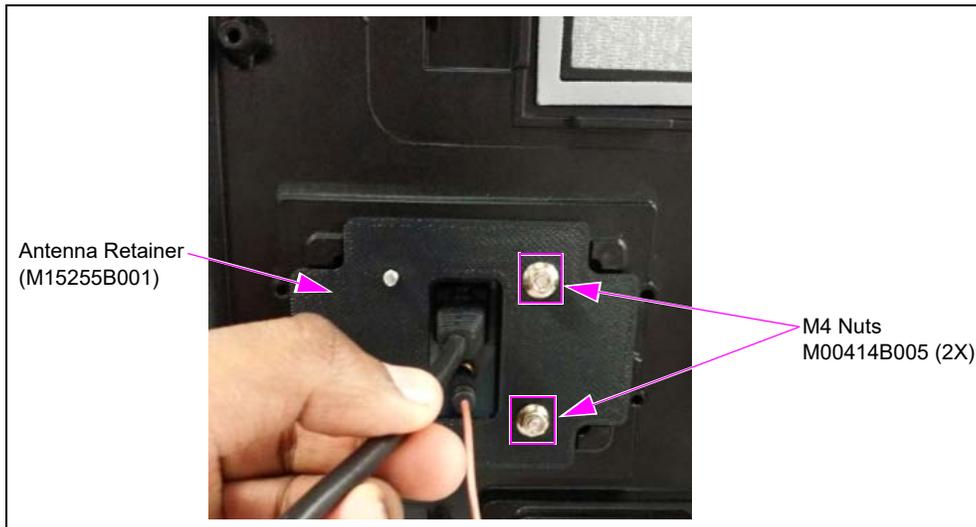
- 6 Mount the antenna assembly to the front of the E-CIM bezel.

**Figure 13: Mounting Antenna Assembly to E-CIM Bezel**



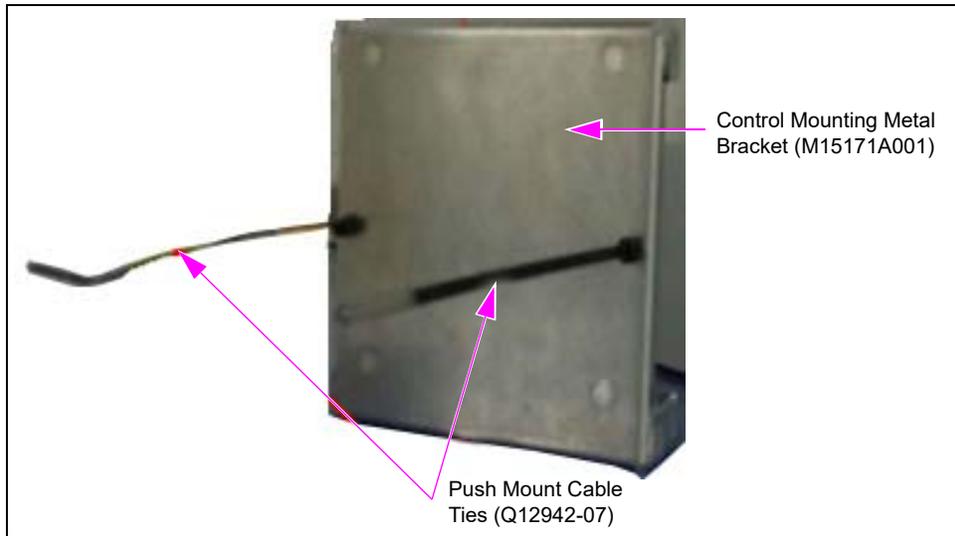
- 7 Run the cables through the opening of the Antenna Retainer (M15255B001). Align the holes of the retainer with the studs of the antenna. Opening the printer door to hold the antenna, tighten the two M4 nuts as shown in [Figure 14](#) to complete the antenna installation.

**Figure 14: Mounting Antenna Retainer**



- 8 Install the Push Mount Cable Ties (Q12942-07) into the holes of the Controller Mounting Metal Bracket (M15171A001) as shown in [Figure 15](#).

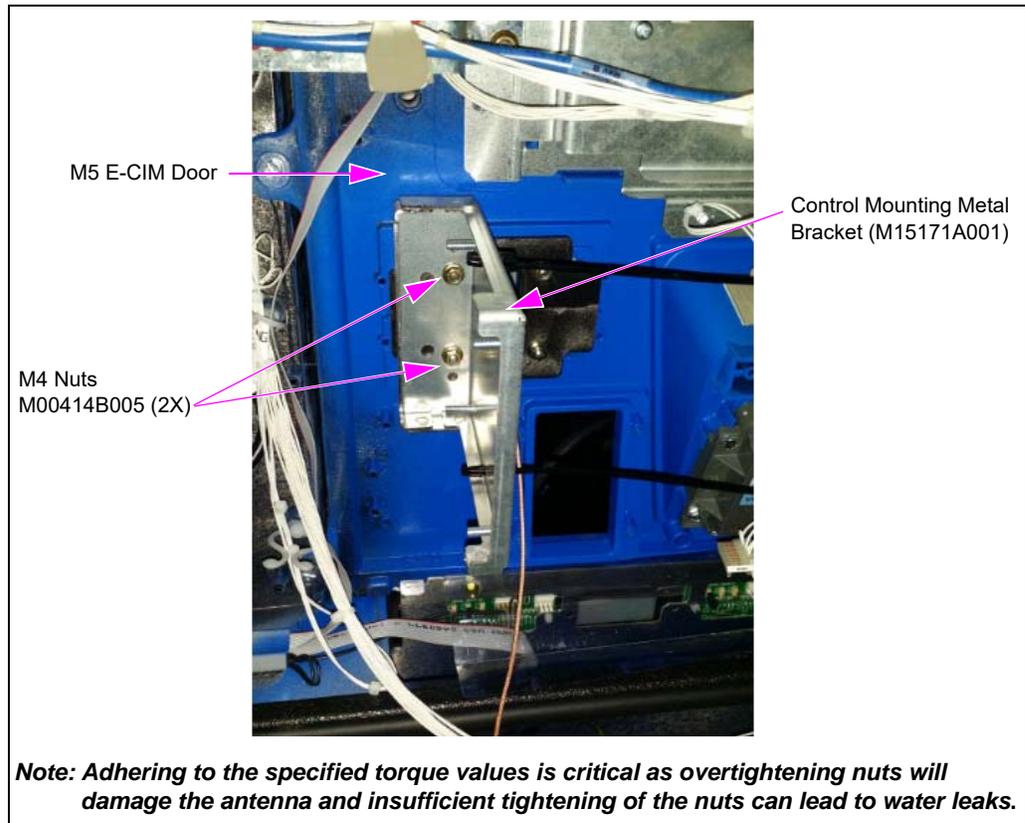
**Figure 15: Push Mount Cable Ties**



- 9 Install the Controller Mounting Bracket using additional M00414B005 M4 Nuts (2X) as shown in [Figure 16](#).

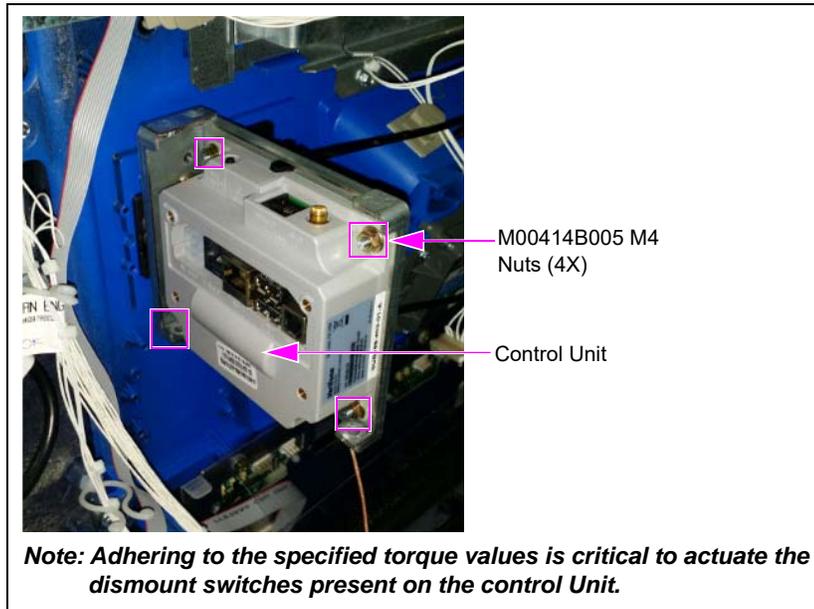
*Note: Torque all four M00414B005 M4 Nuts equally to 10 inch-lbs.*

**Figure 16: Mounting Controller Mounting Metal Bracket**



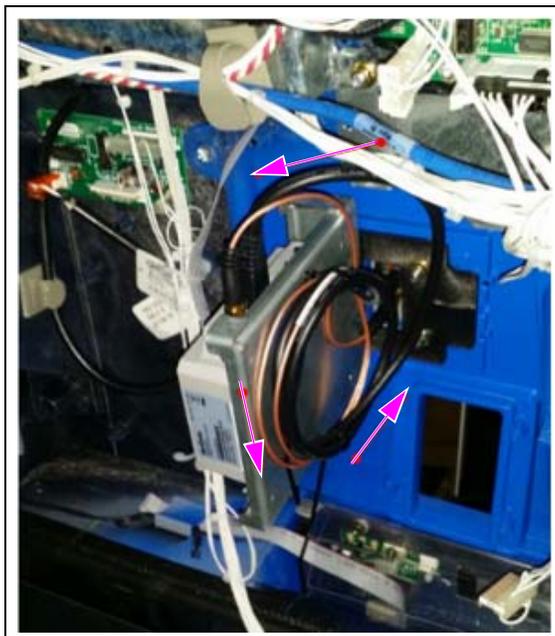
- 10 Mount the UX410 Control Unit as shown in [Figure 17](#) using M00414B005 M4 Nuts (4X).  
*Note: Torque all four M00414B005 M4 Nuts equally to 10 inch-lbs.*

**Figure 17: Mounting UX410 Control Unit**



- 11 Secure the CAT-5 and coaxial antenna cables as shown in [Figure 18](#). Follow the arrow directions while winding the cables and ensure that they stay within the metal bracket boundary. Connect the other end of the coaxial and CAT-5 cables to the Control Unit.

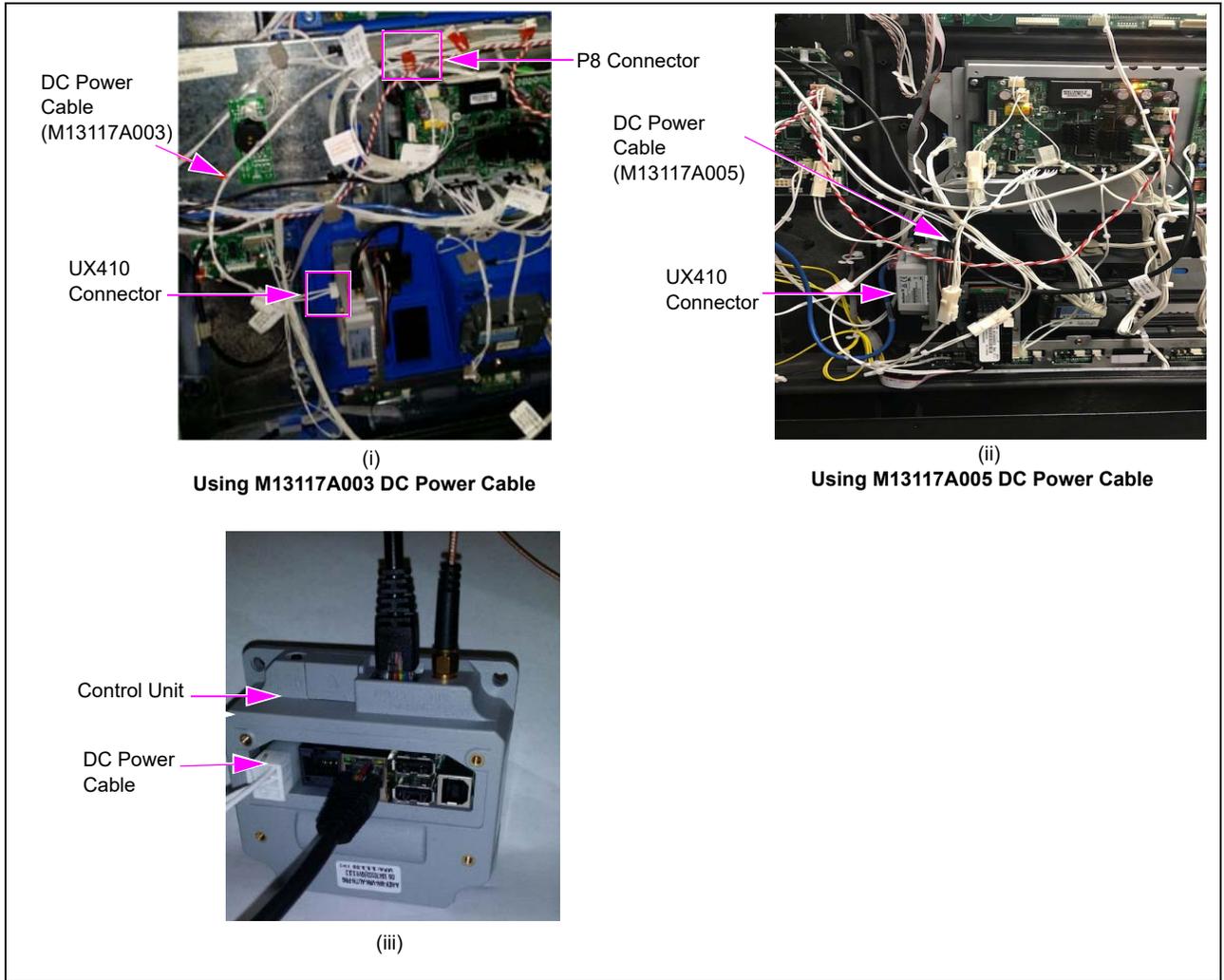
**Figure 18: Securing CAT-5 and Coaxial Antenna Cables**



- 12 After making cable connections, ensure that there is no tension or strain on the cables, and then tighten cable ties mounted on the Metal Control Unit Bracket.

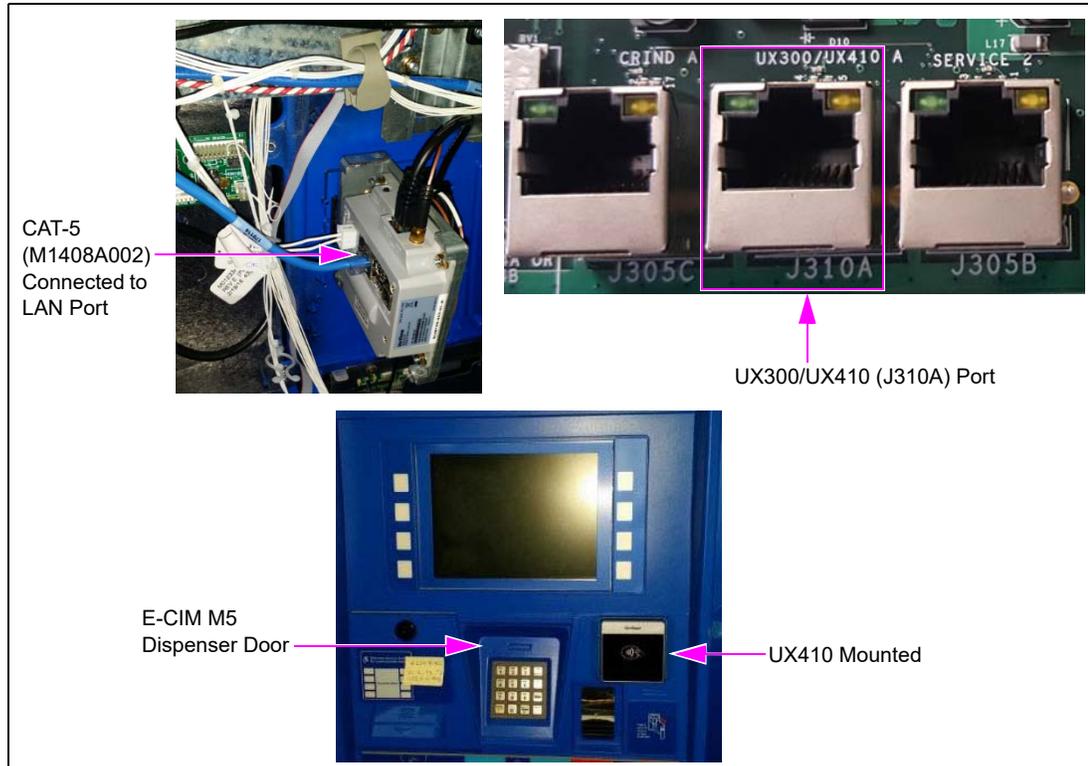
- 13 Connect the DC Power Cable (M13117A003) to an available plug on the 24 V DC distribution cable as shown in Figure 19. If the kit contains M13117A005, connect the M13117A005 DC Power Cable to an available plug on the 24 VDC distribution cable. Ensure that the dispenser power is OFF during the installation and the source DC power to the display is connected to provide power to the UX410 Control Unit.

**Figure 19: Connecting DC Power Cable**



- 14 Connect the CAT-5 cable to the LAN port on the UX410 controller and connect the other end of the CAT-5 cable to the UX300/UX410 port on the DCM2.2 board.  
*Note: Ensure that UX300/UX410 A (J310A) is connected to Side A Contactless Card Reader and UX300/UX410 B (J303B) is connected to Side B.*

**Figure 20: Connecting CAT-5 Cable**



# Installing UX410 Contactless Card Reader on Encore 300/500 with FlexPay II

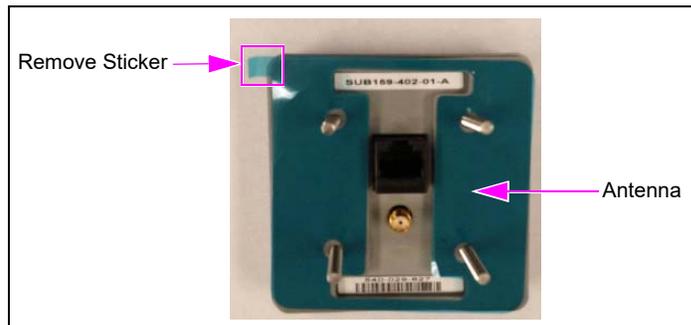
*Note: Ensure that DCM2.2 is installed. DCM2.2 is a pre-requisite for UX410 Contactless Card Reader. Refer to “Installing DCM2.2” on page 8.*

To install the UX410 Contactless Card Reader Kit on Encore 300/500 M5 dispensers, proceed as follows:

*Note: The UX410 mounts in the same position on the door as the TRIND. If there is a TRIND, it must be removed to accommodate the UX410.*

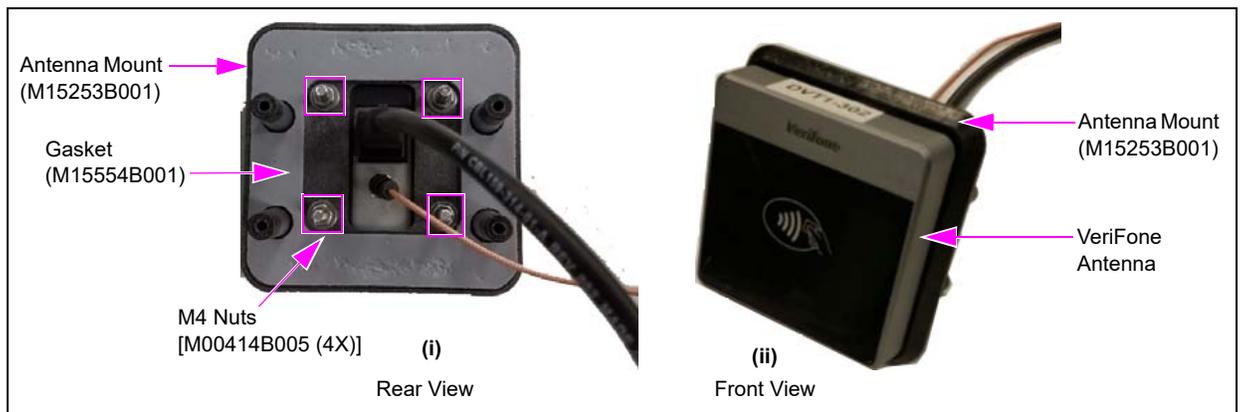
- 1 Open the UX410 Contactless Card Reader Kit and remove the VeriFone antenna, controller, coaxial antenna, and CAT-5 cables. Remove the sticker from the back of the VeriFone antenna (see [Figure 21](#)).

**Figure 21: Removing Sticker**



- 2 Connect the coaxial antenna and CAT-5 cables from the VeriFone kit to the Antenna and tighten the four M00414B005 M4 Nuts on to the mount; orient as shown in [Figure 22](#).

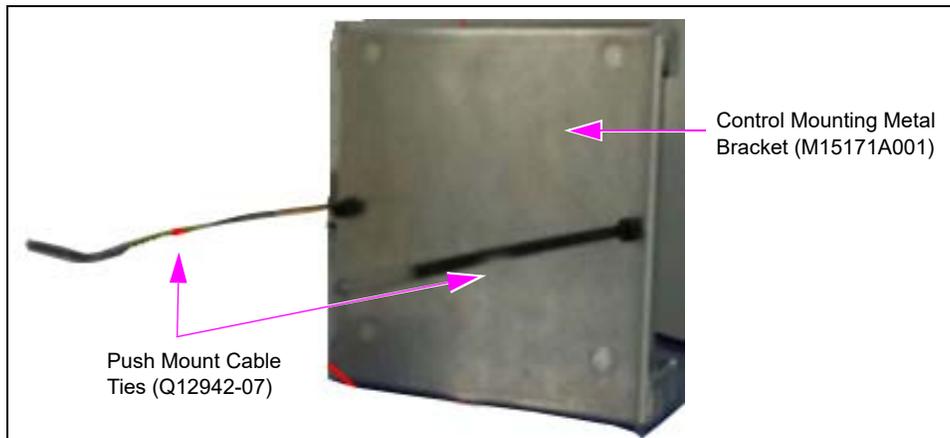
**Figure 22: Cable Connections and Mount**



- 3 Align the screws and place the antenna on the UX410 Antenna Mount (M15253B001) so that the part number is right-side up on the back and the VeriFone logo is right-side up on the front.

- 4 Install the 2X Push Mount Cable Ties (Q12942-07) into the holes on the Controller Mounting Metal Bracket (M15171A001) as shown in [Figure 23](#).

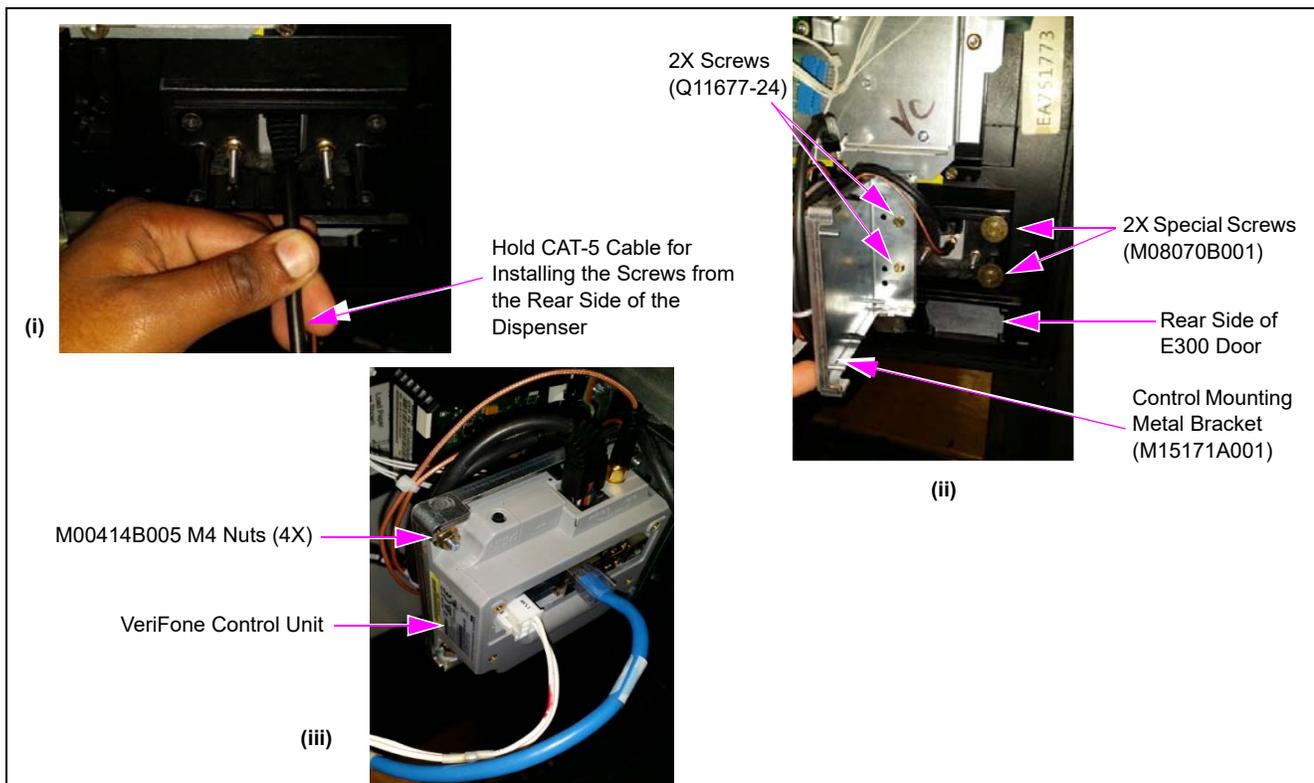
**Figure 23: Push Mount Cable Ties**



- 5 Mount Contactless Antenna assembly on the dispenser door. Holding the CAT-5 cable, install 2X Special Screws (M08070B001) to secure the assembly. Fix 2X Push Mount Cable Ties on controller mounting metal bracket and install the bracket as shown using Q11677-24 2X Screws provided in the kit. Tighten all four screws to specified torque of 10 inch-lbs (see [Figure 24](#)).

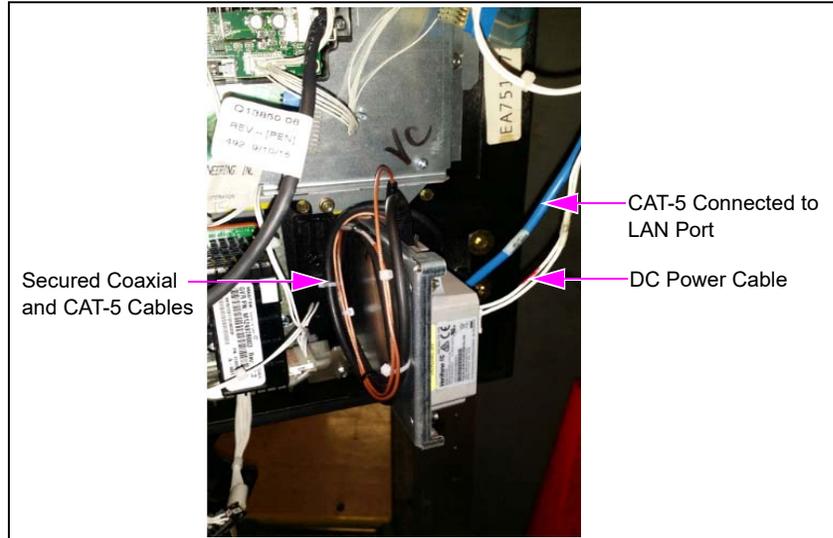
*Note: Adhering to the specified torque values is critical as overtightening nuts will damage the antenna and insufficient tightening of the nuts can lead to water leaks.*

**Figure 24: Mounting Contactless Antenna on Dispenser**



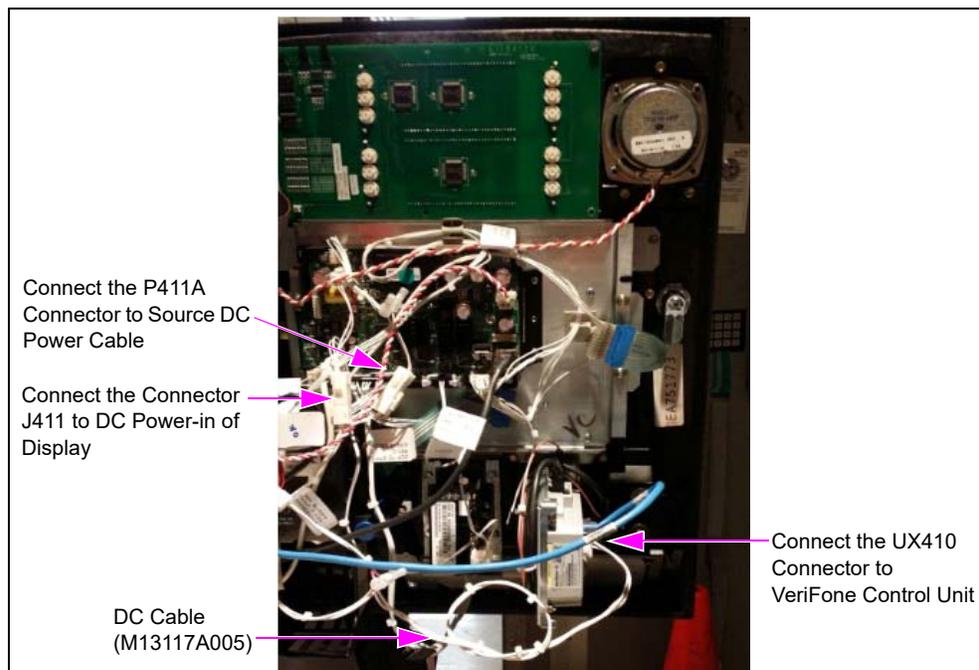
- 6 Secure the CAT-5 and coaxial antenna cables as shown in [Figure 25](#), winding the cables to ensure that they stay within the metal bracket boundary. Connect the other end of the coaxial and CAT-5 cables to the Control Unit.
- 7 Tighten cables ties mounted on the Metal Control Unit Bracket to hold cables onto the metal bracket.

**Figure 25: Securing Cables**



- 8 Connect the M13117A005 DC Power Cable to an available plug on the 24 VDC distribution cable as shown in [Figure 26](#). Ensure that the dispenser power is OFF during the installation and the source DC power to the display is connected to provide power to the UX410 Control Unit.

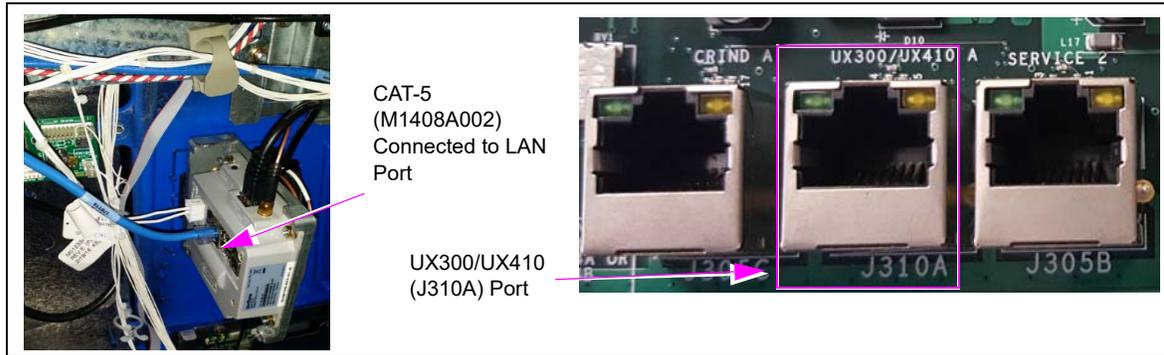
**Figure 26: Connecting M13117A005 DC Power Cable**



- 9 Connect the CAT-5 cable to the LAN port on the UX410 controller and connect the other end of the CAT-5 cable to the UX300/UX410 port on the DCM2.2 board.

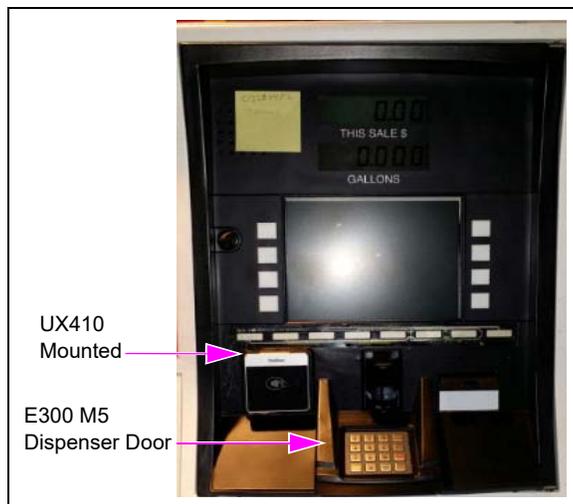
*Note: Ensure that UX300/UX410 A (J310A) is connected to Side A Contactless Card Reader and UX300/UX410 B (J303B) is connected to Side B.*

**Figure 27: Connecting CAT-5 Cable to LAN Port**



- 10 The UX410 Contactless Card Reader is mounted on the FlexPay II dispenser (see [Figure 28](#)).

**Figure 28: Location of Mounted UX410 Contactless Card Reader**



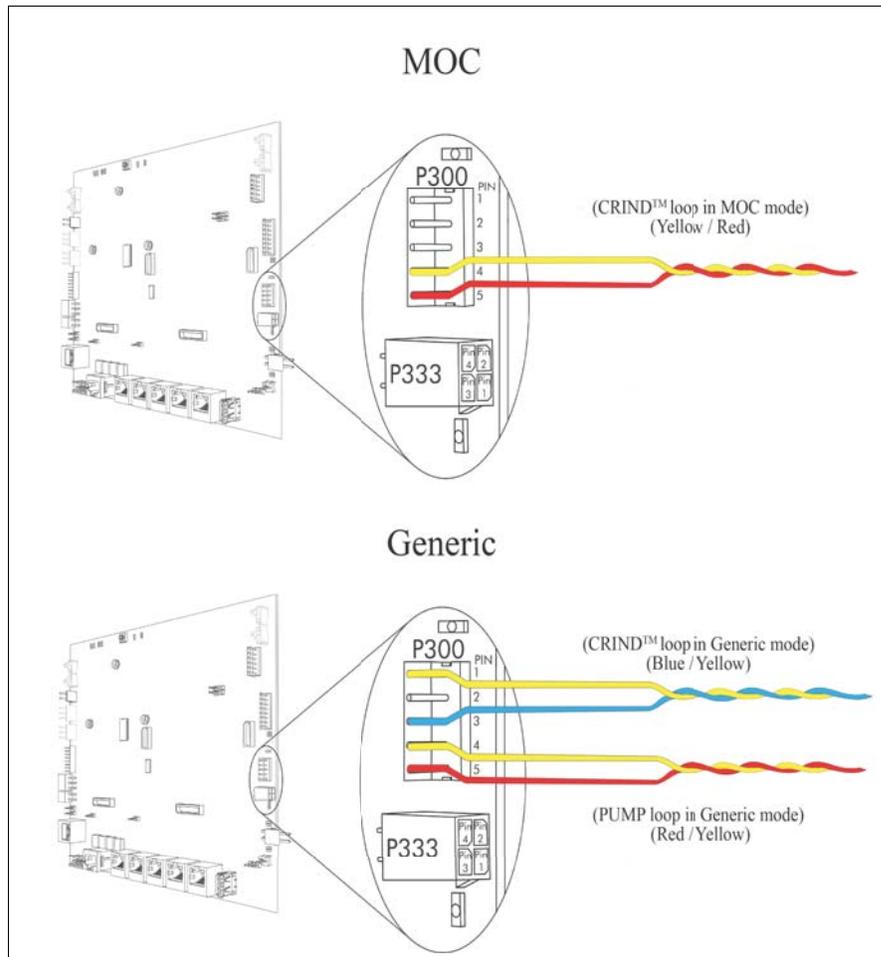
## Field Communication Wiring

*Note: Depending on the dispenser type and whether or not it has factory-installed conduit, there are different specifications in the current loop wiring. Refer to the drawings (Figure 29 and Figure 30 on page 26) in the following instructions for your configuration.*

### Non-Dedicated High-Speed Field Wiring (DCM2.2 Only)

If you are not using the dedicated high-speed connection, refer to the following figure.

**Figure 29: Block Diagram for DCM2.2 Two-wire Configuration (Non-Dedicated)**



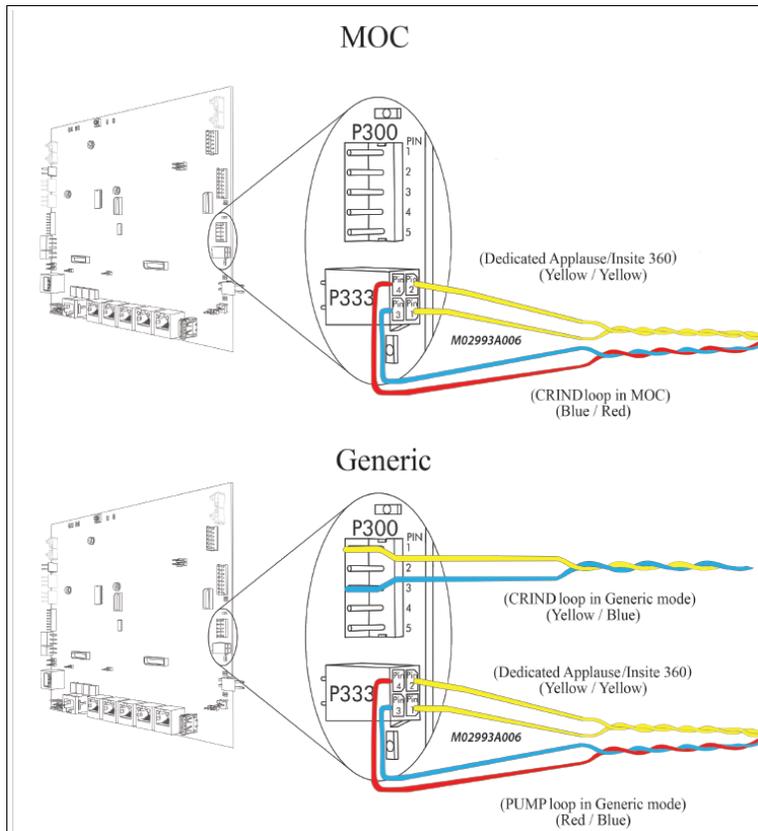
*Note: Do not use the BRCM2.1 in passthrough mode with a Fuel Controller. Use a D-Box instead.*

## Dedicated High-Speed Field Wiring (Non-POS) Instructions (DCM2.2 only)

### MOC/Passport

If you are using the dedicated high-speed (HomePlug) connection (MOC/Passport type configuration), refer to the following:

**Figure 30: Block Diagram for DCM2.2 Two-wire Configuration (Dedicated)**



The following table lists wiring details for MOC mode:

Cable Part	Connector	Color	Description
M02993A006	P333.1	Yellow	High Speed
M02993A006	P333.2	Yellow	High Speed
M02993A006	P333.3	Red	CRIND+
M02993A006	P333.4	Blue	CRIND-

The following table lists wiring details for Generic mode:

Cable Part	Connector	Color	Description
M02993A005	P300.1	Red	CRIND+
M02993A005	P300.3	Yellow	CRIND-
M02993A006	P333.1	Yellow	High Speed
M02993A006	P333.2	Yellow	High Speed
M02993A006	P333.3	Red	Pump+
M02993A006	P333.4	Blue	Pump-

## 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 door.*

### 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 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 UX410 Contactless Card Reader

To configure the Secure Payment Outdoor Terminal (SPOT) EMV CRIND for UX410, the high-level tasks are as follows:

- Load FlexPay II CRIND software. The minimum version required is 3.3.24.
- At the laptop, load the TLS certificates.
- At the laptop, set the IP addresses at the SFDT Configuration Tool.
- Configure the Network Settings from the Diagnostics Startup Menu at the CRIND.
- Set Contactless Setting to VFI in System Config Menu.
- Activate the unit from the ASC app on your phone.
- From the Diagnostics Startup Menu at the CRIND, confirm contactless card reader functionality.

## Installing FCB Software

For more information on installing FCB Software, refer to *MDE-5062 FlexPay Maintenance Tool for FlexPay/SPOT CRIND System*.

- Notes:*
- 1) The minimum software version that supports UX410 is 3.3.24.
  - 2) FlexPay Maintenance Tool must be version 3.0.1.6 or higher. To correctly install FlexPay Maintenance Tool version 3.0.1.6, you must uninstall the existing FlexPay Maintenance Tool on the laptop and then install or re-install the version 3.0.1.6.

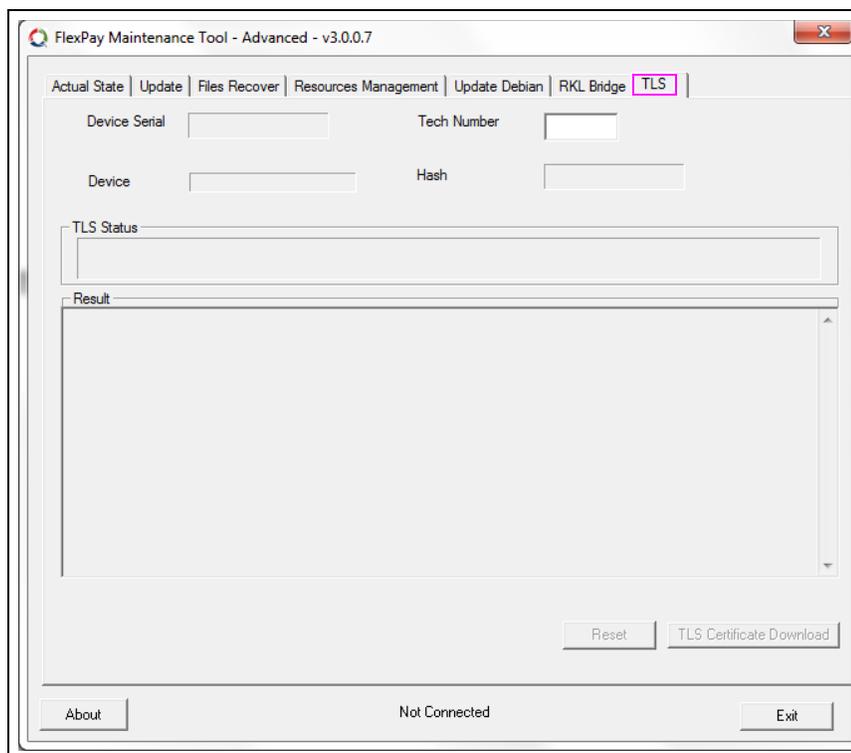
## Loading Certificates

It is a two-step process to download the certificate and call the Gilbarco Help Desk for authorization. Restart the unit and confirm the installation of TLS certificates using the FlexPay Maintenance Tool. For more information, refer to [“Transport Layer Security \(TLS\) Certificate Download”](#) on page 28.

## Transport Layer Security (TLS) Certificate Download

FlexPay Maintenance Tool supports TLS Certificate Download from the Remote Certificate Signing Host (RCSH) server. The TLS tab is dedicated for TLS Certificate Download. [Figure 31](#) shows the initial screen of the TLS tab.

**Figure 31: TLS Certificate Download - Initial Screen**



The initial screen includes the following fields/buttons:

- **Device Serial Number:** This is the SPOT PPN.
- **Hash:** This is a security number used to establish a secure connection with the server.
- **Device:** This includes information about the platform for downloading certificate.
- **Tech Number:** The user has to enter a valid technician number in the edit box.
- **TLS Status:** This displays the progress of the certificate download.
- **Result:** This displays the status messages received from the SPOT device during the certificate download.
- **TLS Certificate Download:** This button is used to start the Certificate Download process. On pressing this button three times, the TLS Certificate Download process is complete.  
*Note: Read and follow instructions in the Result section after the initial button is pressed.*
- **Reset:** This button is used to reset all the fields.

## Initial Configuration Setup

The initial settings for the Certificate Download are available in the RKLBridge.ini file (C:\Program Files (x86)\Gilbarco\FlexPayMaintenance or from the default installation path if different). The section to be modified is labeled “TLS” and is located toward the end of the configuration file.

The Server IP address and Proxy Server IP address need to be set up the first time, before using the tool to download TLS certificates. The Server IP should be set to 64.90.127.9 (this should be the IP address of the RCSH server located at [ercsh.gilbarco.com](http://ercsh.gilbarco.com)). The Proxy Server IP address should be set to the laptop’s static IP address (this is usually set to something like 10.5.55.15 to allow connectivity to the terminal).

Figure 32 shows the TLS section of the configuration file:

**Figure 32: TLS Section**

```
[TLS]
# TLS Certificate Download Configurations
#Server IP
ServerIp = 64.90.127.9
#Server Port
ServerPort = 25204
#Proxy Server IP NOTE: Enter the working IP address of your system as ProxyServerIP
ProxyServerIp = 10.5.55.15
#Proxy Server Port
ProxyServerPort = 1080
```

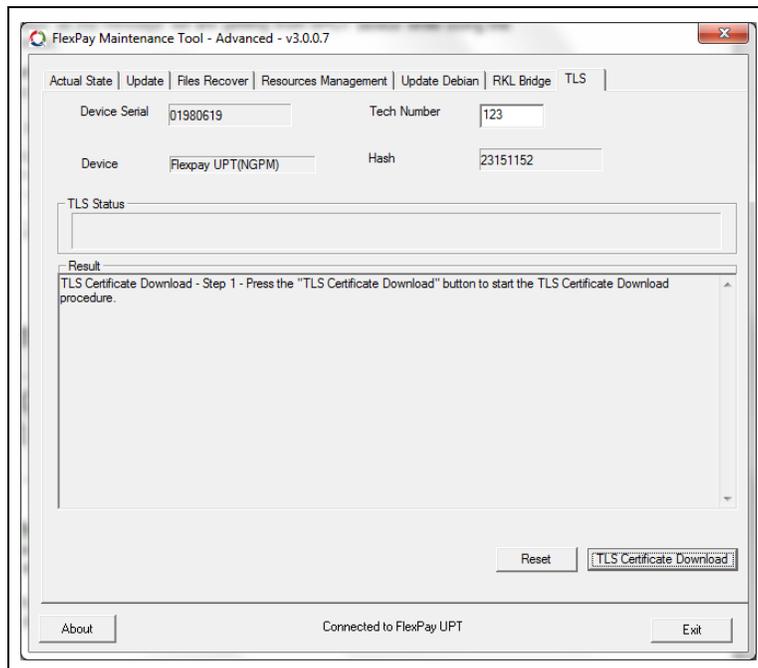
## Downloading Certificate

To start the certificate download, proceed as follows:

- 1 Click the **TLS** tab in the Advanced Mode of the FlexPay Maintenance Tool.
- 2 Enter the Technician ID in the Tech Number field.

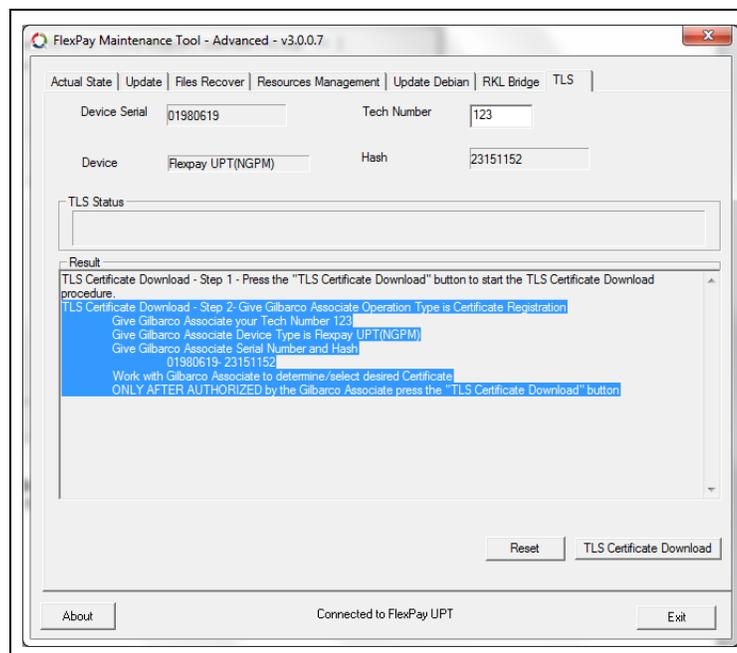
- 3 Click **TLS Certificate Download**. Status message as shown in [Figure 33](#) is displayed in the Result section of the tool.

**Figure 33: Certificate Download - Step 1**



- 4 Click **TLS Certificate Download** to complete step 2. Note the information required to set up the device for downloading the certificate.
- 5 Call the Gilbarco Support Center and provide them with the information displayed in the Result section as shown in [Figure 34](#):

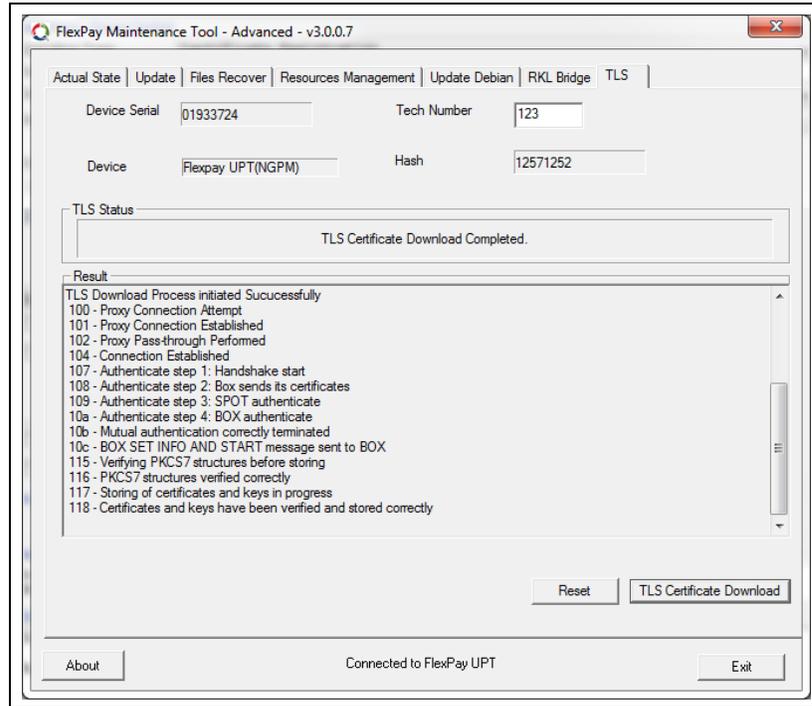
**Figure 34: Certificate Download - Step 2**



- 6 On authorization by the Gilbarco associate from the Support Center, click **TLS Certificate Download** to start certificate download.

The Result section of the tool displays additional status messages from the SPOT unit until the download process is complete as shown in [Figure 35](#).

**Figure 35: Certificate Download - Step 3**



## Configuring CRIND IP Addresses on the SSoM

To configure CRIND IP addresses on the SSoM, proceed as follows:

*Note: With the exception of the CRIND ID programming, all other IP addresses are for example only.*

- 1 Connect the CAT-5 cable from the laptop to the DCM2.2 assembly installed in the dispenser.
- 2 Set the laptop's static IP address as 172.16.100.15 and the subnet mask as 255.255.255.0.
- 3 Open the web browser (preferably Chrome) and type <http://172.16.100.254:61084> in the address field.

**Figure 36: Opening SFDT Configuration screen**



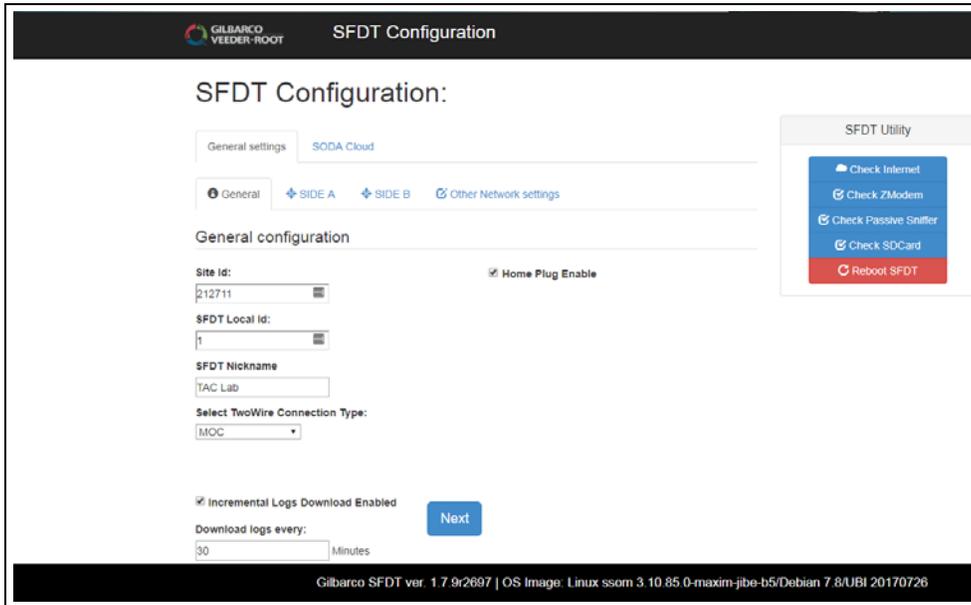
The SFDT Configuration page opens (see [Figure 37](#)).

Notes: 1) Configure the general settings first.

2) Local ID is the lowest number of the fueling position that is being worked on.

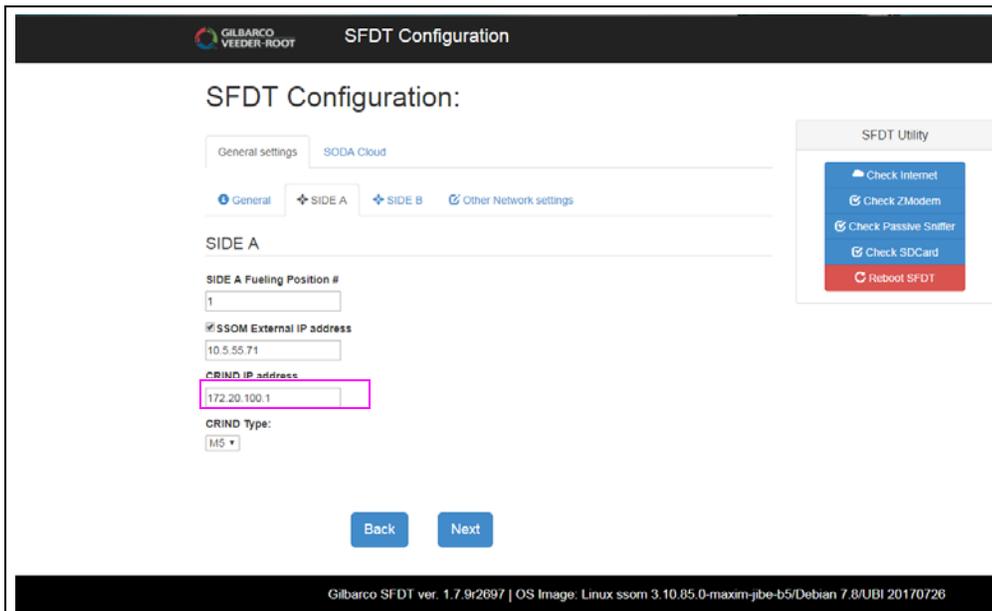
3) If the site does not have Applause Media System/Insite360, keep the Home Plug Enable check box clear.

Figure 37: SFDT Configuration Page



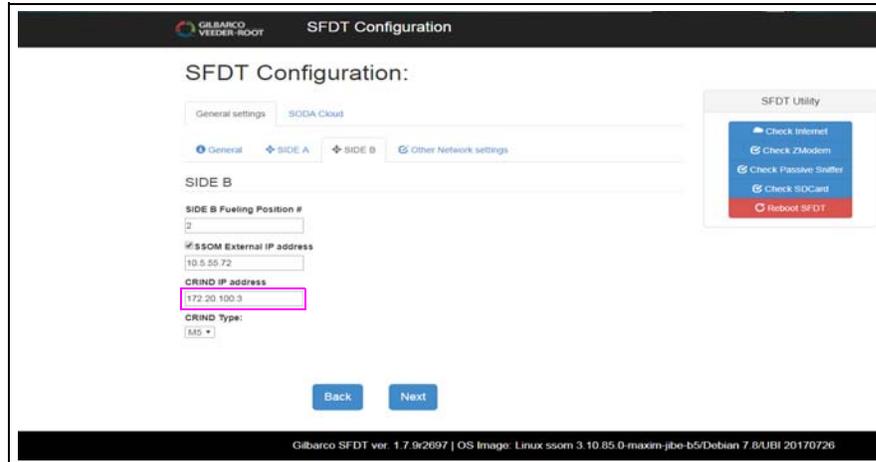
- 4 Click **Side A** and change the CRIND IP address to 172.20.100.XX (XX - This number depends on the fueling position number).

Figure 38: Changing Side A IP Address



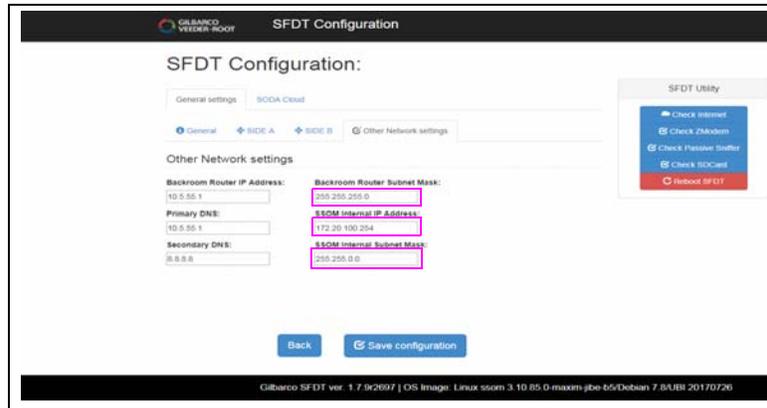
- Click **Side B** and change the CRIND IP address to 172.20.100.XX (XX - This number depends on the fueling position number).

**Figure 39: Changing Side B IP Address**



- Click **Other Network settings** and set the addresses as follows:
  - Backroom Router Subnet Mask: 255.255.255.0
  - SSOM Internal IP Address: 172.20.100.254
  - SSOM Internal Subnet Mask: 255.255.255.0

**Figure 40: Network Settings**



- After changing network settings, click **Save configuration**.
- Close the webapp. In the laptop settings, change the static IP address to 172.20.100.15 and the subnet mask to 255.255.255.0.
- Open the web browser (preferably Chrome) and type <http://172.20.100.254:61084> in the address field.
- Confirm that the IP addresses are correct.

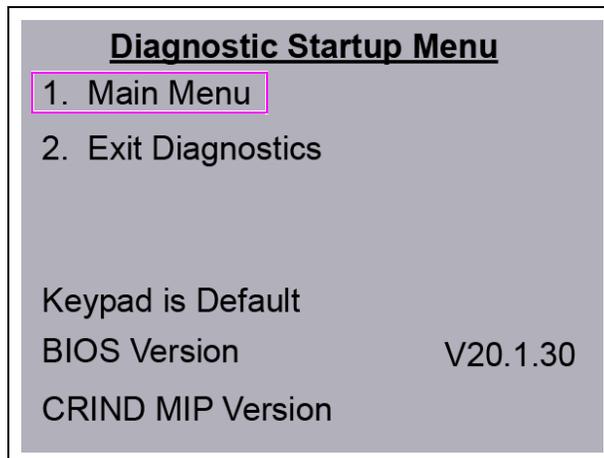
Next, go to the CRIND Diagnostics Menu to configure the SPOT addresses to match the IP addresses set on the SSOM.

## Configuring Network Settings at the CRIND

To Configure Network Settings at the CRIND, proceed as follows:

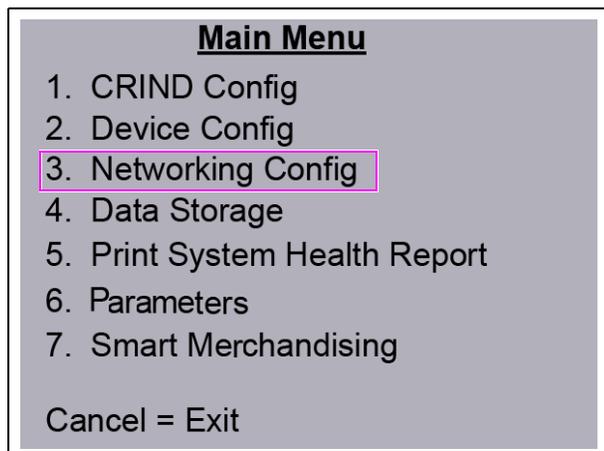
- 1 Swipe the CRIND Diagnostics Card (Q12534-170) through the Secure Card Reader (SCR) 2. The CRIND Diagnostic Startup Menu screen opens.
- 2 Press **1 > Enter**. The Main Menu screen opens.

**Figure 41: CRIND Diagnostics - Diagnostic Startup Menu**



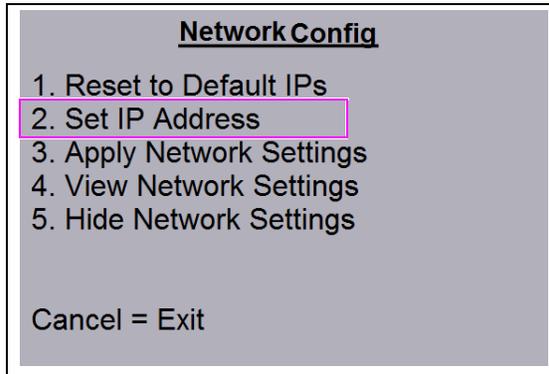
- 3 Press **3 > Enter** to open the Networking Config screen.

**Figure 42: CRIND Diagnostics - Main Menu**



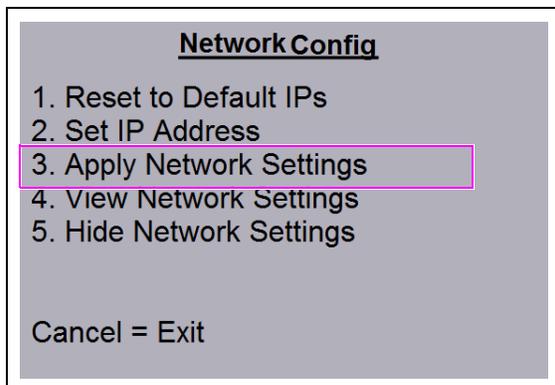
- Press 2 to Set IP Addresses.

**Figure 43: Network Configuration**



- Press 3 to Apply Network Settings.

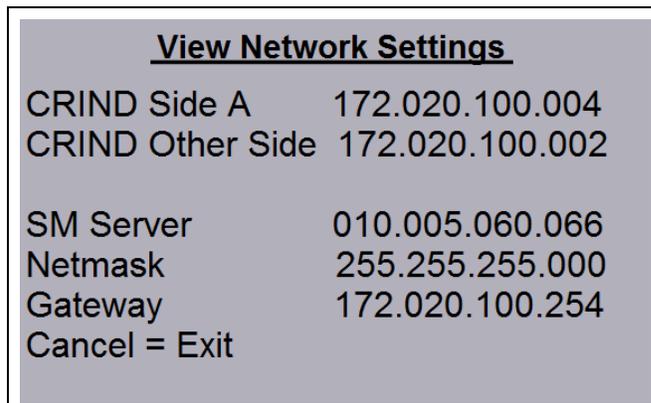
**Figure 44: Apply Network Settings**



- Press 4 to View Network Settings and confirm (see Figure 45).

*Note: The CRIND Side A, CRIND Other Side, and SM Server IP addresses are examples only.*

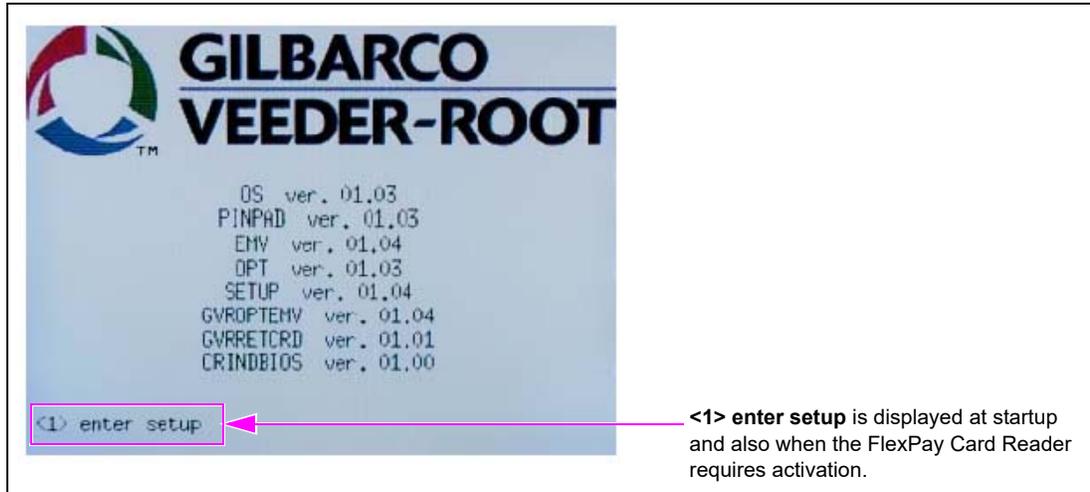
**Figure 45: Network Settings**



## Configuring and Activating UX410 Contactless Card Reader at the CRIND

- 1 While restarting the SPOT EMV CRIND, a white screen with the Gilbarco logo and software package version is displayed.

**Figure 46: Software Packages Screen**



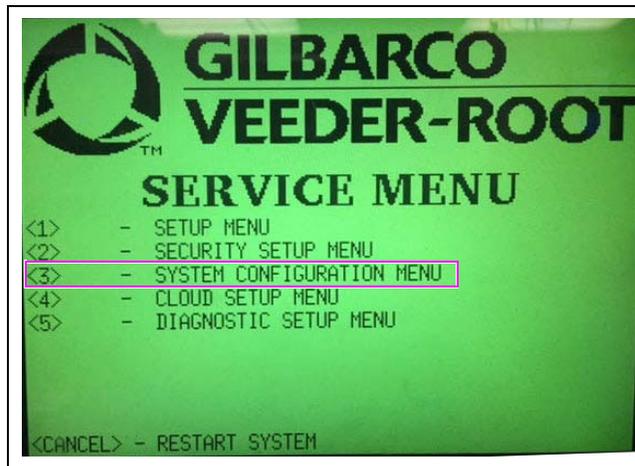
- 2 Press **1**. The Service Menu screen opens. Enter the right-most six digits of the Product Part Number (PPN) and press **ENTER/OK**. The Service Menu - Main Menu screen opens.  
*Note: If you do not enter the password within 60 seconds, the unit automatically restarts.*

**Figure 47: Service Menu - Password Screen**



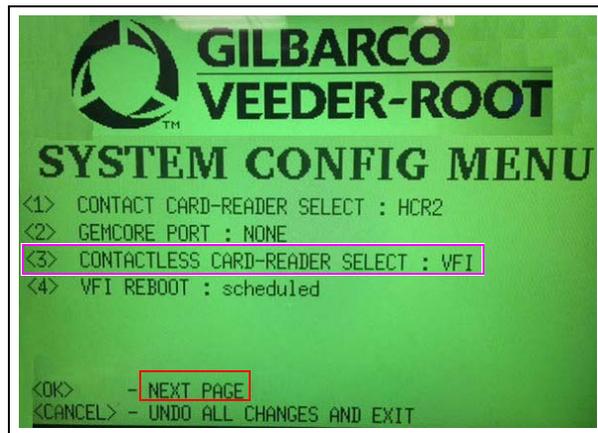
- 3 Press **3** System Configuration Menu. The System Config Menu screen opens.

**Figure 48: Service Menu - Main Menu**



- 4 Press **3** until the Contactless Card Reader changes to VFI, and then press **OK**.

**Figure 49: System Configuration Menu**



- 5 Press **OK** to save the changes, and exit.

- The Service Menu screen opens (see [Figure 50](#)). Press **Cancel**. The SPOT EMV CRIND restarts.

*Note: After the restart, the UX410 Antenna should show a solid white Light Emitting Diode (LED) and logo.*

**Figure 50: Service Menu - Main Menu**



- After restart, the unit goes to the green screen for activation. The message “Contactless dismantled” is displayed. Enter the password again to open the Service Menu.

**Figure 51: Service Menu**



- Press 2 to open the Security Setup Menu.

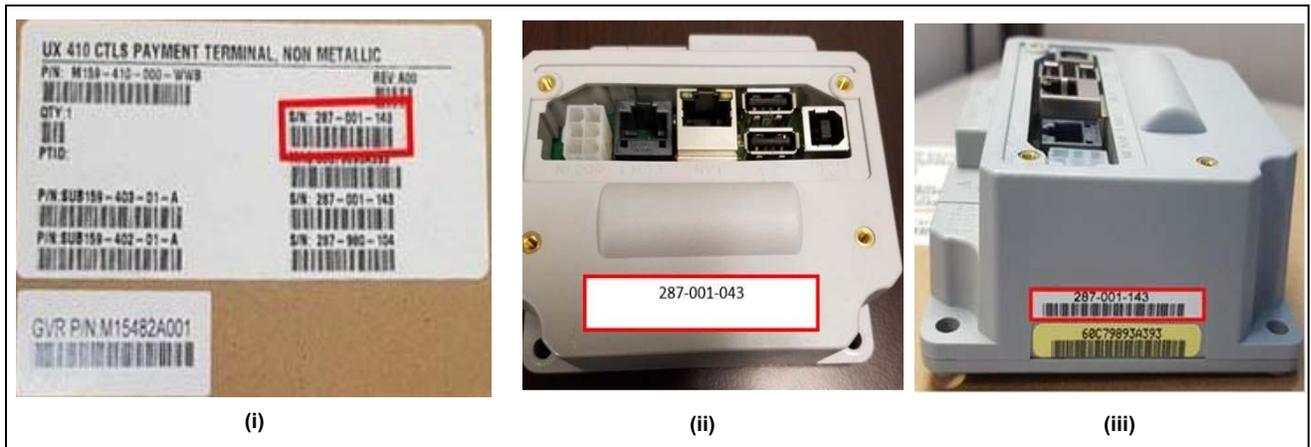
**Figure 52: Service Menu - Main Menu**



*Note: Contact Gilbarco Help Desk or use the ASC Tool to activate the UX410 Contactless Card Reader. Select UX410 from the **Part Type** list for activation.*

- Enter the serial number on the UX410 Control Unit. Locate the serial number on the outside of the box (if available) or on the controller, either on the side or below the battery as shown in [Figure 53](#).

**Figure 53: Locating Serial Number**



- Input the activation data from the ASC App.
- Press **Cancel** when activation is complete to restart the unit.

Configuring the SPOT EMV CRIND for FlexPay UX410 Contactless Module is now complete.

# Verifying UX410 Contactless Card Reader Functionality Using CRIND Diagnostics

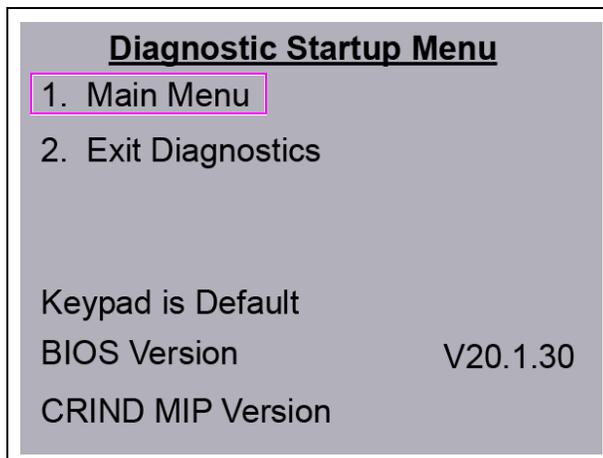
To verify the functionality of the UX410 Contactless Card Reader using the CRIND diagnostics, proceed as follows:

## 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).

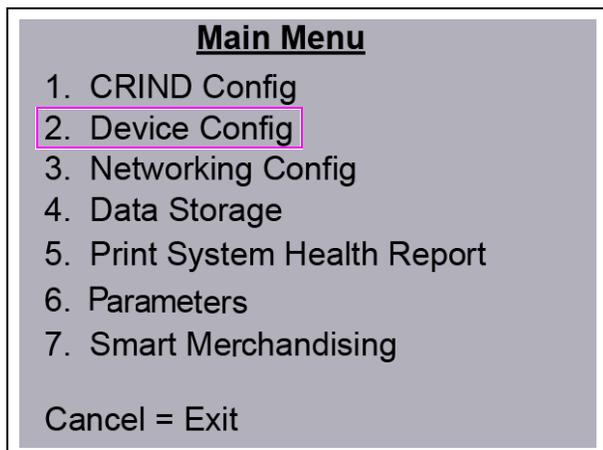
- 1 Swipe the CRIND Diagnostics Card (Q12534-170) through the SCR 2. The CRIND Diagnostic Startup Menu screen opens.
- 2 Press **1** > **Enter**. The Main Menu screen opens.

**Figure 54: CRIND Diagnostics - Diagnostic Startup Menu**



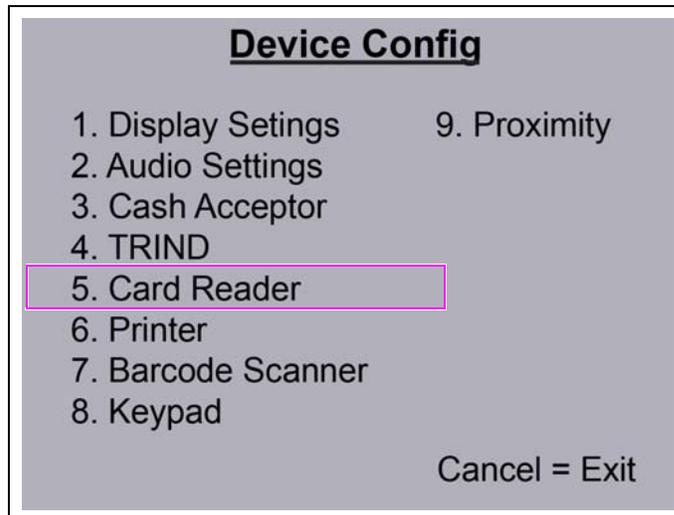
- 3 Press **2** > **Enter**. The Device Config screen opens.

**Figure 55: CRIND Diagnostics - Main Menu**



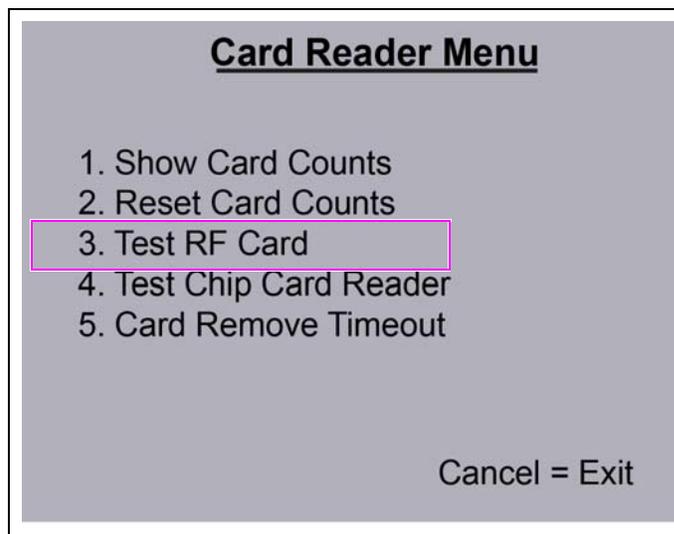
- 4 Press **5** > **Enter**. The Card Reader Menu screen opens.

**Figure 56: CRIND Diagnostics - Device Configuration Menu**



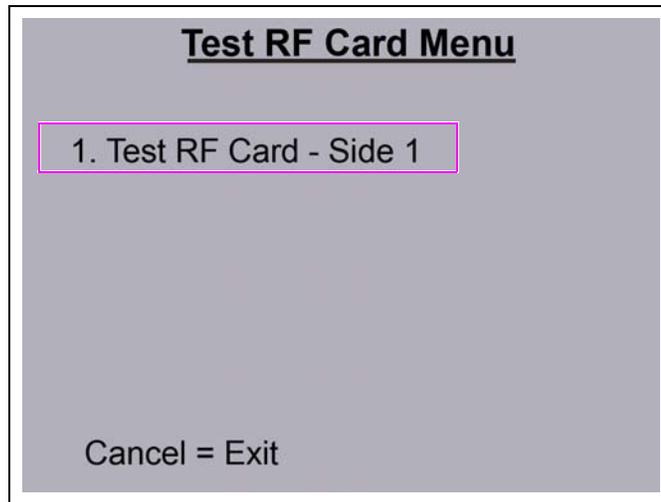
- 5 Press **3** > **Enter**. The Test Radio Frequency (RF) Card Menu screen opens.

**Figure 57: CRIND Diagnostics - Card Reader Menu**



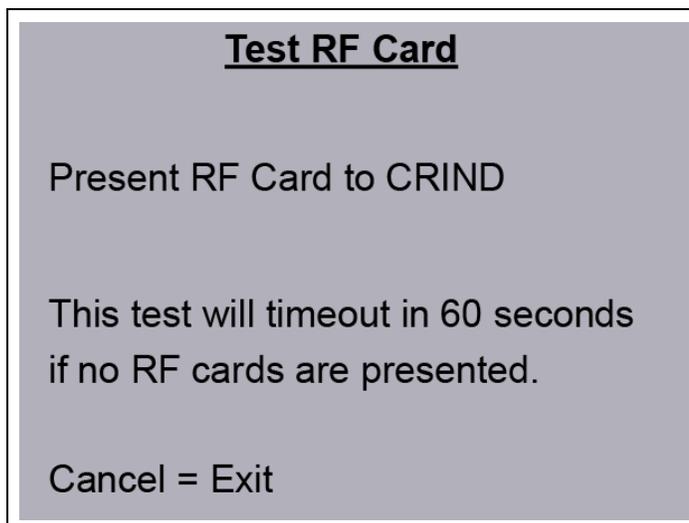
- 6 Press **1** > **Enter**. The Test RF Card screen is displayed.

**Figure 58: CRIND Diagnostics - Test RF Card Menu**



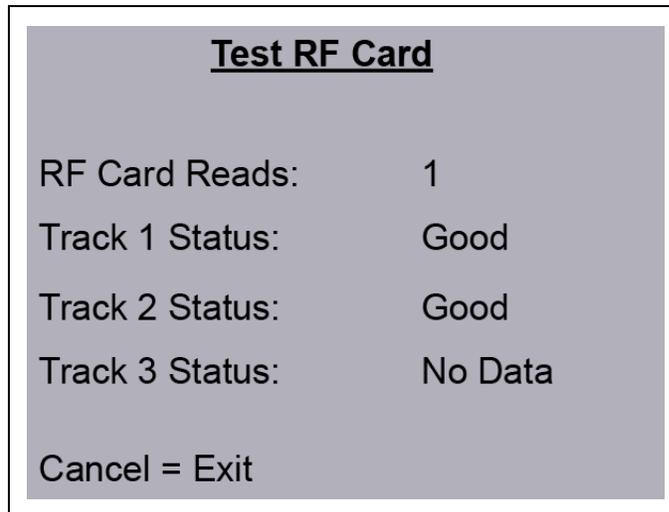
- 7 Present the RF card or device.

**Figure 59: CRIND Diagnostics - Test RF Card**



If a valid transaction is made, the Test RF Card screen is displayed, as shown in [Figure 60](#).

**Figure 60: CRIND Diagnostics - Successful Test RF Card**



If a valid transaction is not made, verify cable connections and power connections. Check the LED indicators for power connection, proper functioning, and other similar parameters.

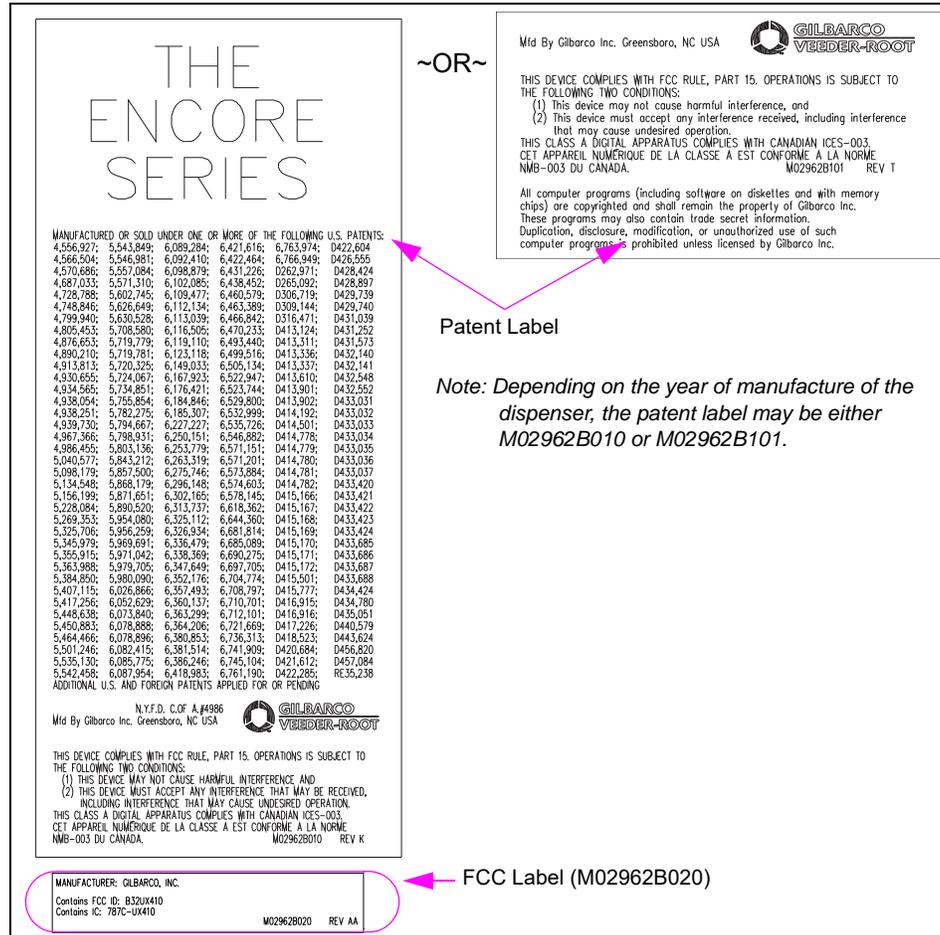
**NOTE**

If contactless reader is not communicating with POS, first confirm IP settings and basic reader functionality. If LED 1 is still flashing, confirm RFID settings in POS menu (may vary depending on POS type).

## Affixing FCC Label (M02962B020)

Obtain the FCC label from the kit and install it on the dispenser inner sheathing under the patent label as shown in [Figure 61](#).

**Figure 61: Affixing FCC Label**



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