GILBARCO VEEDER-ROOT

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FlexPay™ IV CRIND® (with Omnia) Retrofit Kit Installation Instructions for The Advantage® Series

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SECTION 1 - INTRODUCTION

Purpose

This manual provides instructions to install a 5.7-inch Color Screen FlexPay™ IV CRIND® (with Omnia) Retrofit Kit into The Advantage® Series. The Advantage Series includes configurations with or without CRIND. The FlexPay IV CRIND provides a secure payment platform that is EMV®-certified and Payment Card Industry PIN Entry Device (PCI-PED)-certified.

This manual also includes instructions for installing the Omnia board, which replaces the Dispenser Communication Module (DCM)2.X [including Gilbarco Systems on Module (GSoM) Printed Circuit Board (PCBs)] in the FlexPay IV units.

Intended Users

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

Required Tools

- Phillips® and Flat-blade Screwdrivers
- 1/4-inch Socket Set (Nut Driver)
- 7- and 8-mm Socket (Nut Driver or Socket Set)
- Diagonal Cutters
- Needle Nose Pliers
- T15 or T20 Torx Driver, depending on the Universal Payment Module (UPM)
- Universal Joint Socket Adapter
- Putty Knife or Scraping Tool (if required)

Configured Kits - Parts List

FlexPay IV CRIND Retrofit Kits are configured based on the serial number of the pump/dispenser unit for which they are intended. Therefore, the parts list will vary for each configured kit and unit/option type.

For additional part details, refer to the Bill of Materials (BOM) in the kit, contact your distributor, or contact Gilbarco Customer Service.

A common FlexPay IV CRIND (with Omnia) Retrofit Kit will include the following parts:

- CIM™ insert with UPM assembly (keypad), UX300, display card reader, Omnia Peripheral Interface PCB (PIP) Assembly
- T-rail assembly with Omnia assembly
- Universal Serial Bus (USB) Printer assembly
- Applause™ Media System, Omnia assembly

SECTION 1 - INTRODUCTION

Configured Kit Optional Components

The following parts are potential configured kit optional components:

- UX400 Contactless Card Reader
- Cabinet Heater (optional for 5.7-inch display)

For a complete parts list of the configured kit, refer to the build ticket that is provided with the kit.
Note: Printers will be needed for all units.

Components

For a complete parts list, see the packing list. The following parts are critical components for FlexPay IV with Omnia:

Location	Description	Part #	Notes
Located on Left Door	Assembly, Advantage Door	M14500	Variants are color
	5.7” Softkeys	M01254A003	
	5.7” Color Display	M10369B001 M10369B003	Ampire AM320240SNTN-QW16H
	PCA, Omnia PIP	M15649A001	
	Card Reader, VeriFone® UX300	M14330A001	
	Contactless Card Reader, VeriFone, UX400	M14331A001	
	Printer Assembly	M12479A001	Print head: M13832A001
	Cable, Wire and Speaker	M09259A001	
Located on CRIND Tray	Assembly, UPM	M13888AXXX	“XXX” varies based on customer requirement
Omnia Assembly	Omnia	M16181A002	
	DCM3	M15724A001	
	Phoenix Supply	M04161B001	
	Fuse Board	M05748A001	

SECTION 2 - IMPORTANT SAFETY INFORMATION

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)

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.

Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a 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.

SECTION 2 - IMPORTANT SAFETY INFORMATION

Working With Fuels and Electrical Energy

Prevent Explosions and Fires

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

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

No Open Fire

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

No Sparks - No Smoking

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

Working Alone

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

Working With Electricity Safely

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

Hazardous Materials

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

⚠ WARNING

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

⚠ WARNING

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

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

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

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

Lockout/Tagout

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

SECTION 3 - REMOVING COMPONENTS

Before You Begin

IMPORTANT INFORMATION
Ensure that the unit is functional. Check with the manager for any existing operational issues. If the unit has any special features, such as TRIND®, barcode scanner, and so on, verify proper operation before removal. Print a system health report to verify printer and CRIND functions.

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 unit for the installation:

1 Perform an inventory of the parts list provided. Ensure that there is no damage to the parts and that all the parts are accounted for based on the BOM shipped with the kit. Ensure that you carry the recommended spare parts to the installation site.
Note: Retain all parts (including cables, nuts, bolts, screws, and so on) that are removed. These are required in case the unit must be reverted to the original as a fallback mitigation.

2 Read all the safety information found in “Important Safety Information” on page 3. Perform a Job Safety Analysis (JSA) before beginning the installation.

3 Inform the manager.

4 Barricade the unit to be worked on.

5 Check the current state of the unit.

a Verify that the printer firmware is version 3.00 or later by removing and refeeding paper to the printer while it is still powered.
Note: If the software is not V3.00 or later, be prepared to update the printer software.

b Verify site and dispenser operation.

c Perform a fueling transaction, including printing a receipt.

d Check Applause for idle and busy media (if applicable). Verify video and audio.

e Verify all unit options are functional (for example, intercom).

f Check the pump software version and update to the latest version, if necessary.

SECTION 3 - REMOVING COMPONENTS

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

7 Isolate the two-wire, any Ethernet® cabling, and any network connections from the unit.

⚠ WARNING

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

Left Option Door

To remove the left option door:

1 Open the main door by loosening the lower screws that secure the lower portion of the main door and then open the left and right option doors. Release the four main door latches.

2 Disconnect all the cables from the left option door, CRIND display, card reader, and Contactless Smart Card (CSC) antenna (if applicable).
Note: Discard the CSC antenna cables as they cannot be reused.

Figure 1: Opening Left Option Door

3 Remove the left option door by pulling the hinge pin up through the hole.
Note: The left option and the main door must be open to gain access to the hinge pin.

4 Remove any existing old gaskets on the option door opening using a putty knife or scraping tool.

5 Remove any customer supplied locks and add to the new option door.

SECTION 3 - REMOVING COMPONENTS

CRIND Electronics

Note: If the unit is not equipped with CRIND, proceed to the installation instructions beginning with "FlexPay IV CRIND Retrofit Kit" on page 11.

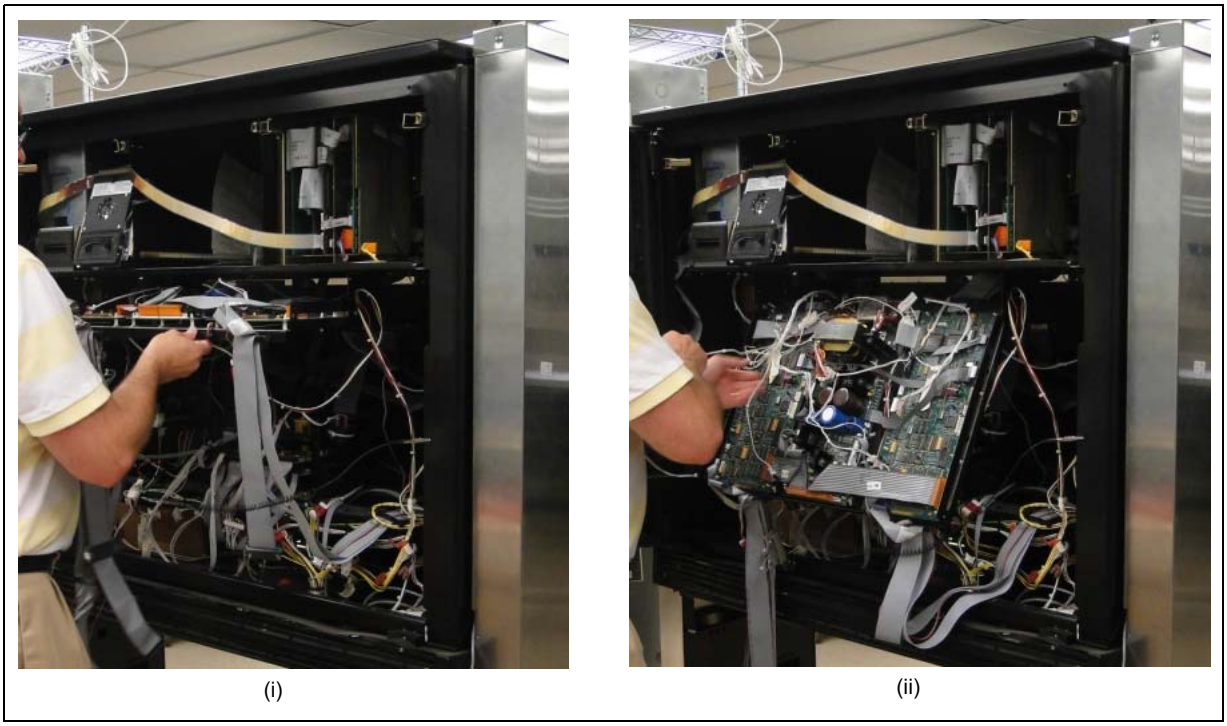
To remove the existing CRIND electronics from the cabinet:

1 Disconnect all the cables connected to the CRIND tray.

2 Disconnect the cables that are connected to the printer. Then remove all the CRIND cables and place with the CRIND tray, when removed.

3 Remove the CRIND tray by pulling it out toward you and lifting it out of the support bracket (see Figure 2 (i) and (ii)).

Figure 2: Removing CRIND Tray



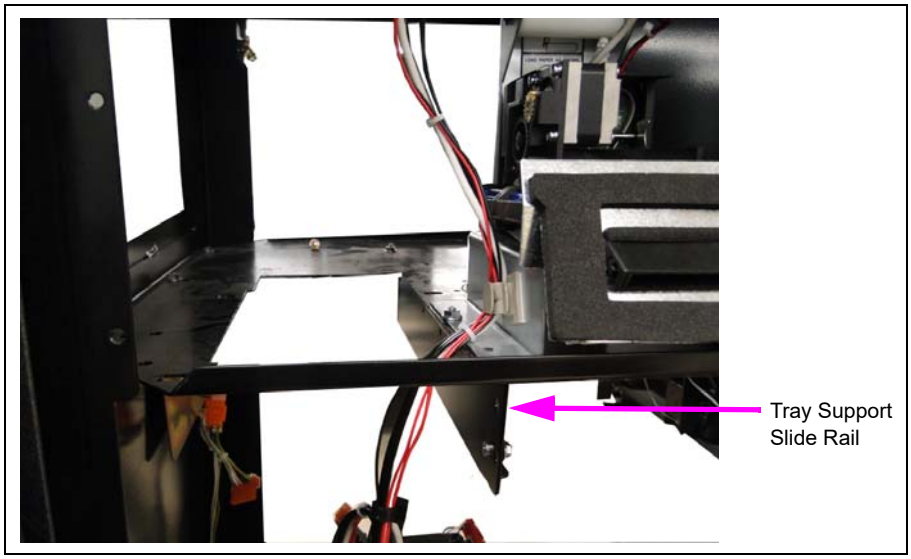
(i) (ii)

SECTION 3 - REMOVING COMPONENTS

4 Remove the tray and carefully place it in a safe location.

5 Remove the tray support slide rails.

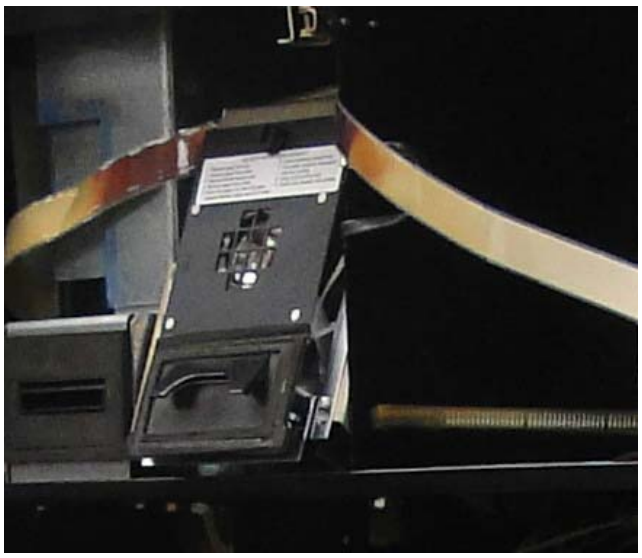
Figure 3: Removing Tray Support Slide Rails



Printer

To remove the printer, disconnect all printer cables and remove the existing printer(s) by removing the three or four nuts underneath.
Note: The printer cables can be discarded.

Figure 4: The Advantage Series Printer



(i)
Printer Front View

(ii)
Printer Rear View

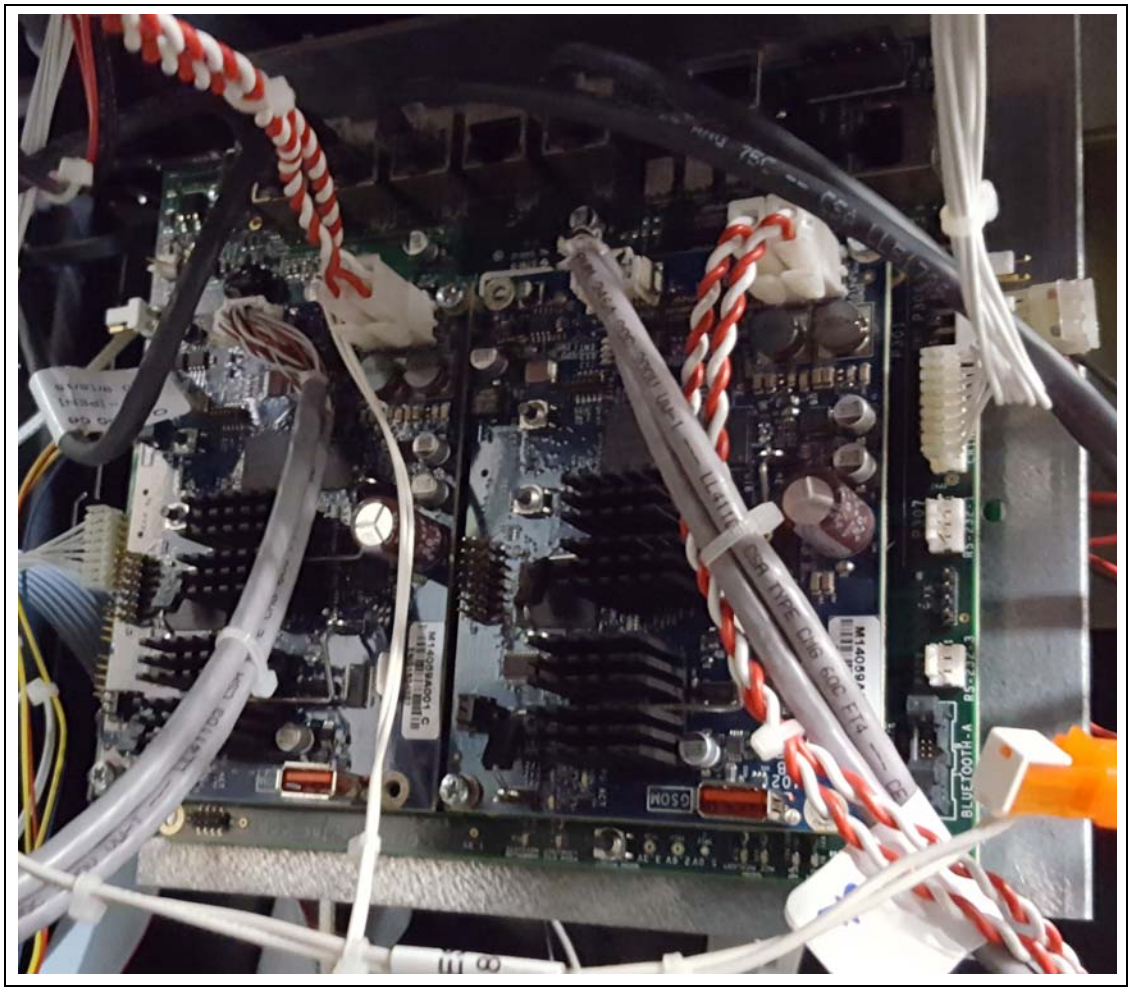
SECTION 3 - REMOVING COMPONENTS

AFP/HIP 2/DCM2/DCM2.x

To remove the Hub Interface PCB (HIP) 2/AFP/DCM2/DCM2.x bracket:

1 Disconnect all the cables from the AFP, HIP 2, or DCM2/DCM2.x (see Figure 5).

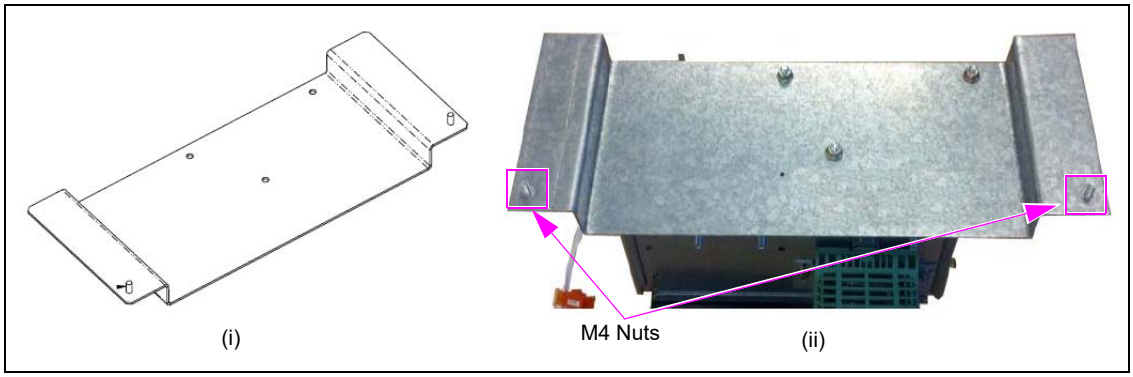
Figure 5: Disconnecting Cables (DCM2)



SECTION 3 - REMOVING COMPONENTS

2 Remove the two M00414B005 M4 Nuts to detach the AFP, HIP 2, or DCM2/DCM2.x bracket.

Figure 6: Mounting Bracket



SECTION 4 - INSTALLATION

FlexPay IV CRIND Retrofit Kit

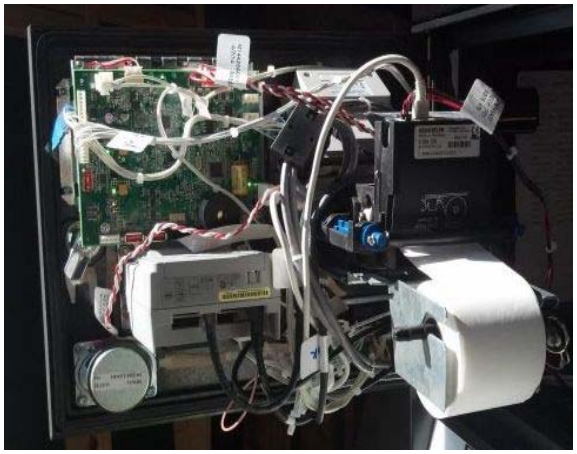
Left Option Door

To install the new left option door:

1 Place the new left option door in the opening.

2 Re-insert the hinge pin to secure the new left option door.

Figure 1: Installing Left Option Door



(i)

Rear View of Left Option Door

(ii)

Front View of Left Option Door

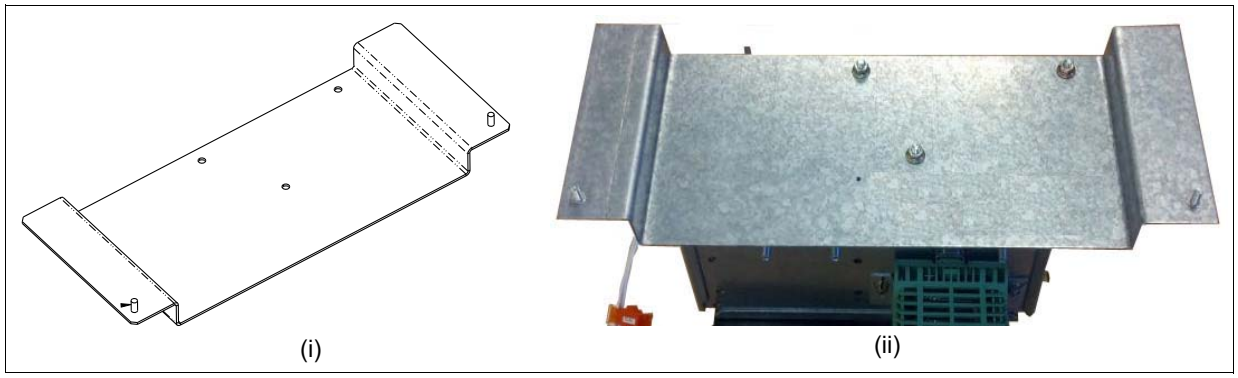
SECTION 4 - INSTALLATION

Omnia Assembly

To install the Omnia assembly, proceed as follows:

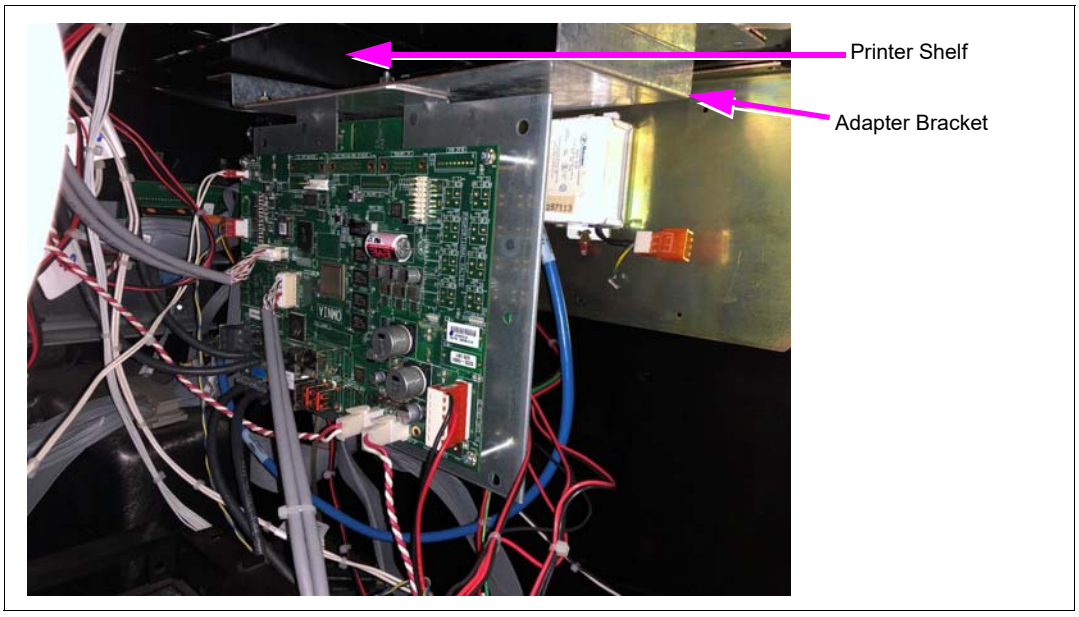
1 Attach the Omnia bracket to Advantage Adapter Bracket (M15122A001) using three M00414B005 M4 Nuts supplied in the kit.

Figure 2: Attaching Omnia Bracket



2 Attach this assembly underneath the Advantage printer shelf, opposite of the main power supply, using the two holes vacated by the right side CRIND tray rail. Secure with two M00414B005 M4 Nuts.

Figure 3: Mounting Omnia Assembly



3 Continue with instructions to connect cables.

SECTION 4 - INSTALLATION

Connecting Cables

To connect the cables:

Note: Ensure that the AC cables are not bundled with any non-AC cables.

1 Connect J104 of the M12777A004 Cable to the M04406A001 AC Distribution Cable in the U-channel.

2 Connect P301A/B of the M14340 Cable side A to J301A of the M12777A004 Cable.

3 Connect P301A/B of the M14340 Cable side B to J301B of the M12777A004 Cable.

4 Connect the Ethernet cable to the card reader. The yellow Category 5 (CAT5) cable in the kit matches the yellow connector on the Omnia PCB (for dedicated side).

Figure 4: Connecting Ethernet Cable to the UX300 Card Reader

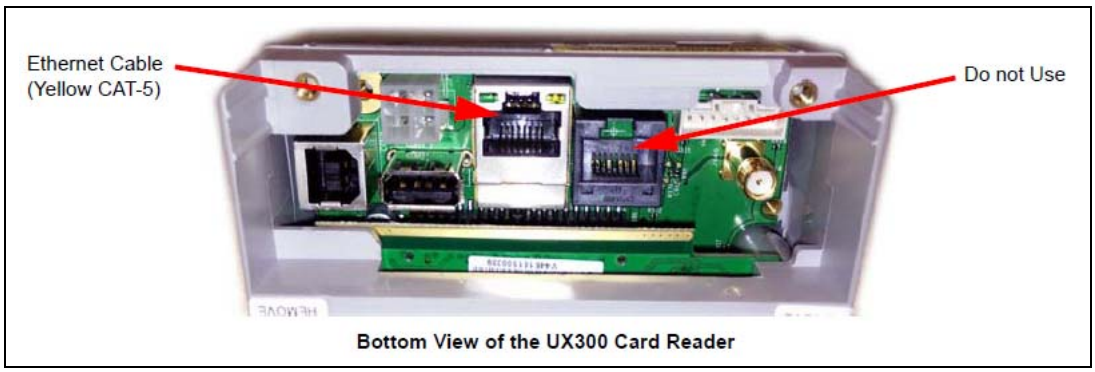
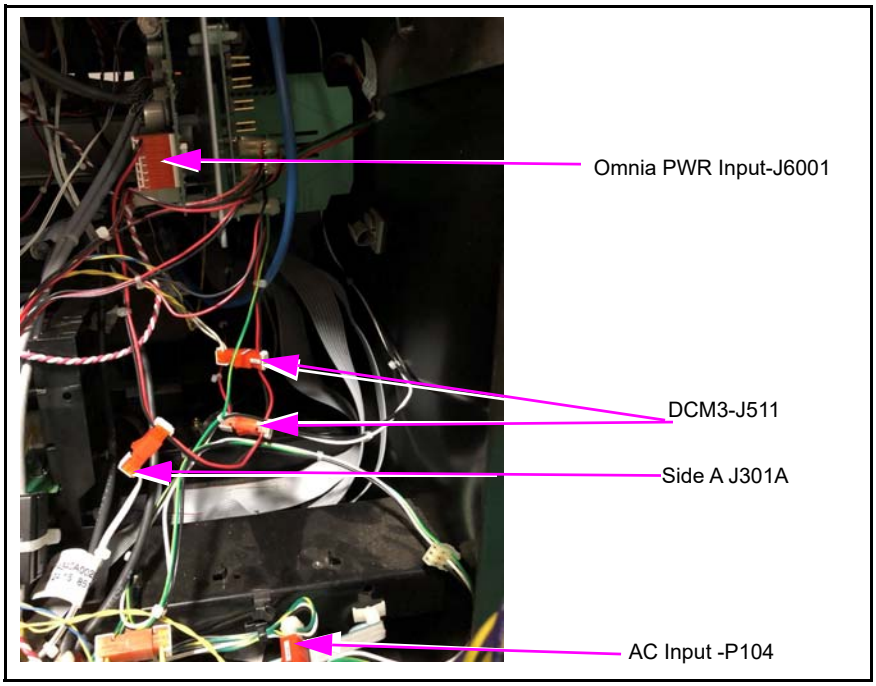


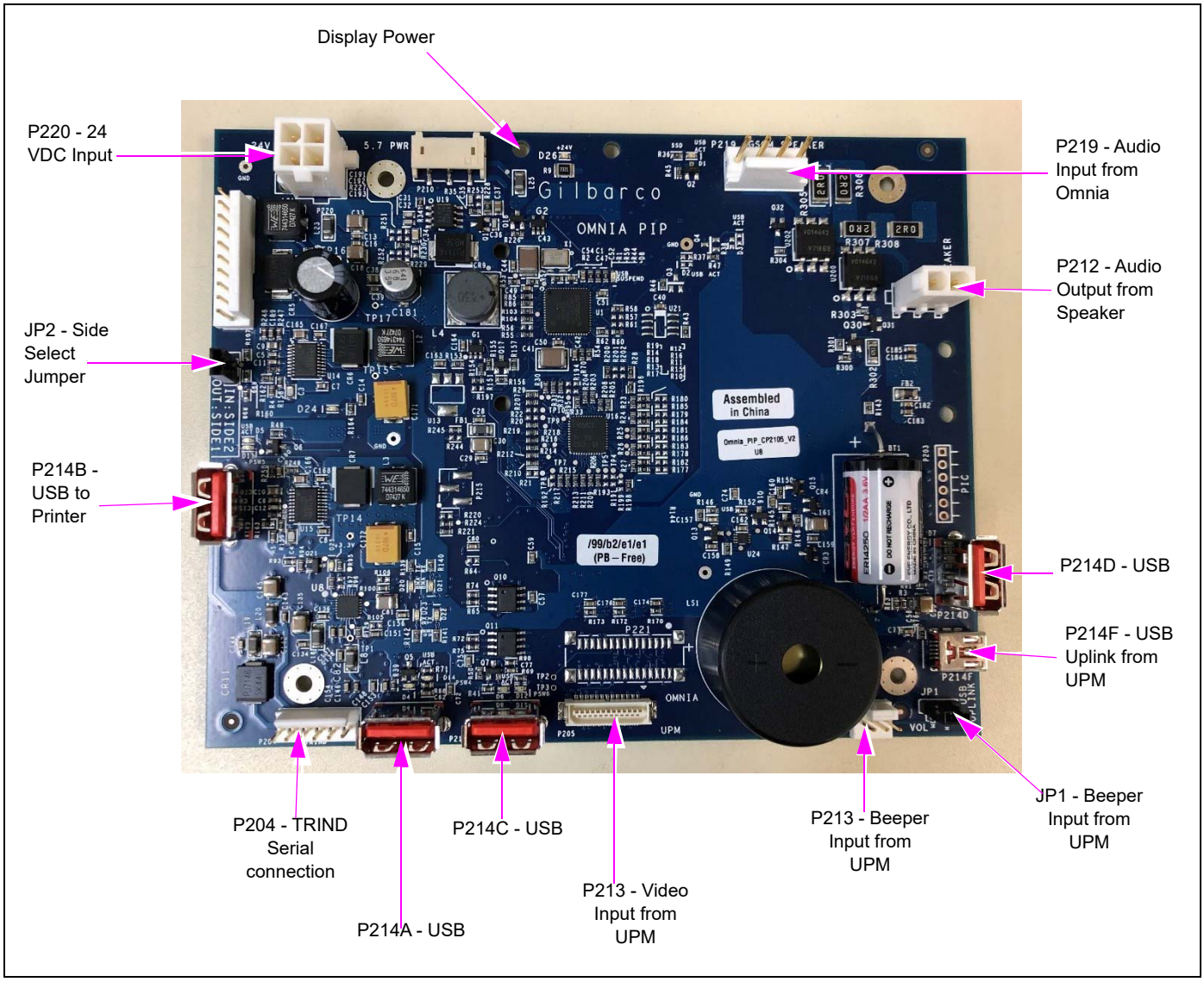
Figure 5: M12777A004 Cable Connection



SECTION 4 - INSTALLATION

5 Connect the USB cable from the printer to Omnia PIP, using the port on the left side.
Note: Ensure that the USB printer cable is seated.

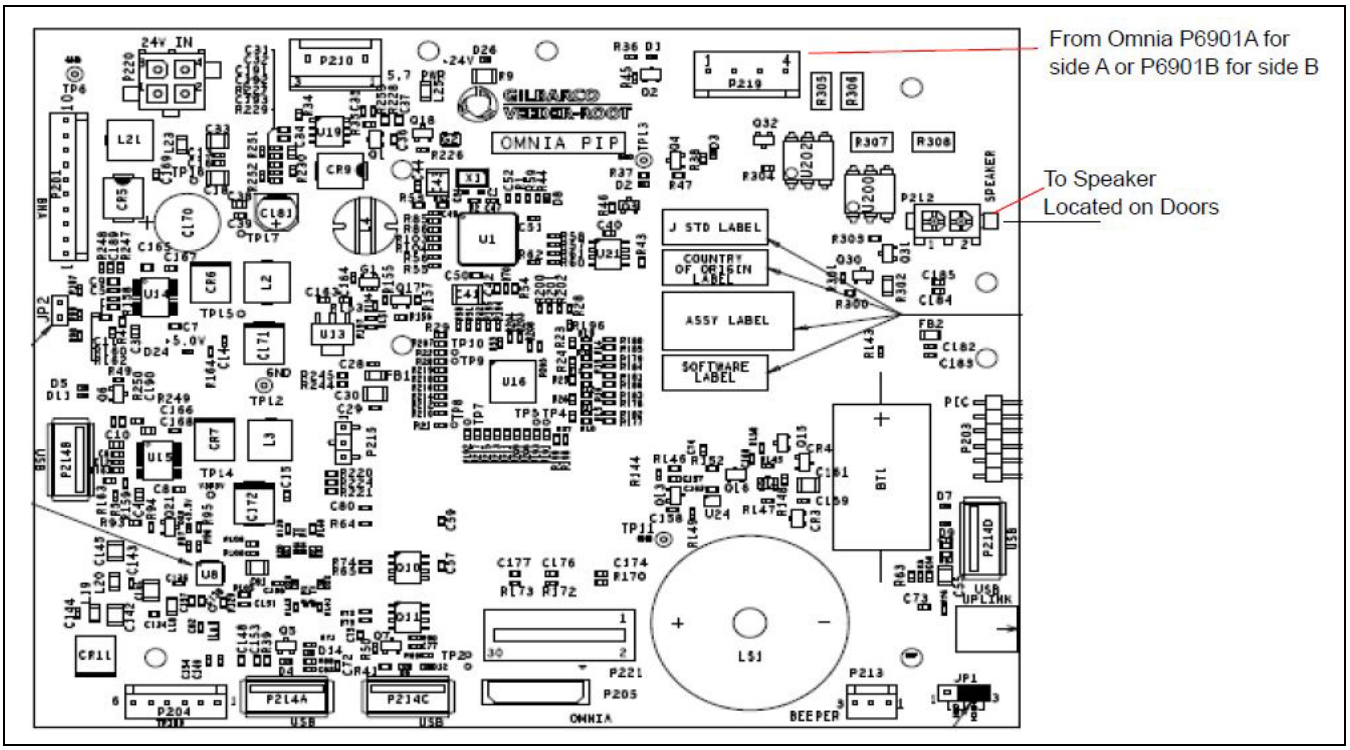
Figure 6: Omnia PIP (M15649A001) Connections



SECTION 4 - INSTALLATION

6 Connect P212 to speaker.

Figure 7: Omnia Speaker Connection



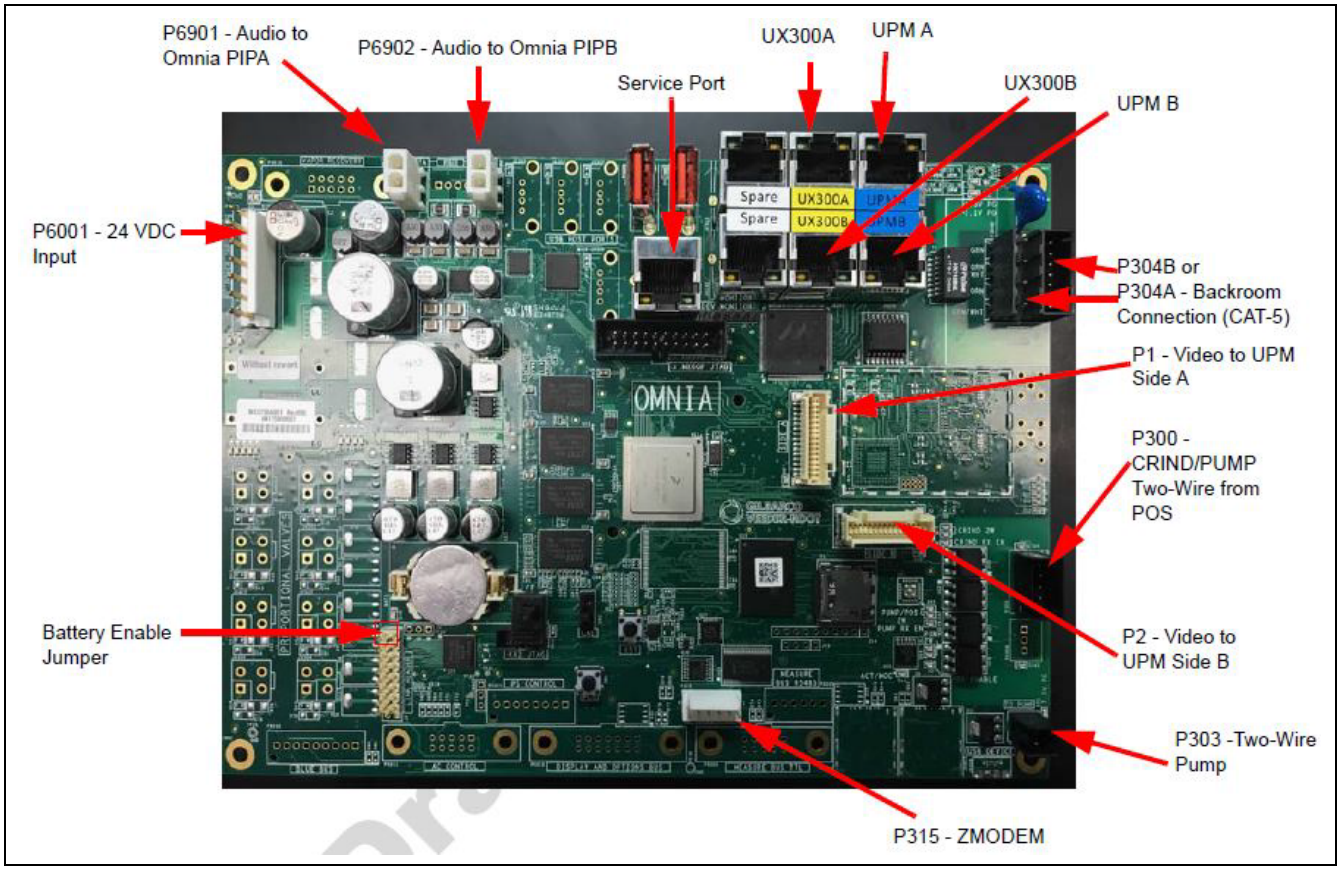
Notes: 1) If Applause Media System is installed, there will also be a new audio cable from Omnia PIP and a video cable from Omnia to UPM. Audio Cable (M14425A002) goes from P419L to Omnia PIP P219. Video Cable (M14338A00X) goes from Omnia P1 for Side A UPM and Omnia P2 for Side B UPM to UPM P6.

2) On the Omnia PIP, the J202 connection (RS-232 Serial Cable) will not be used. The cable can be removed or tucked away neatly on the door.

SECTION 4 - INSTALLATION

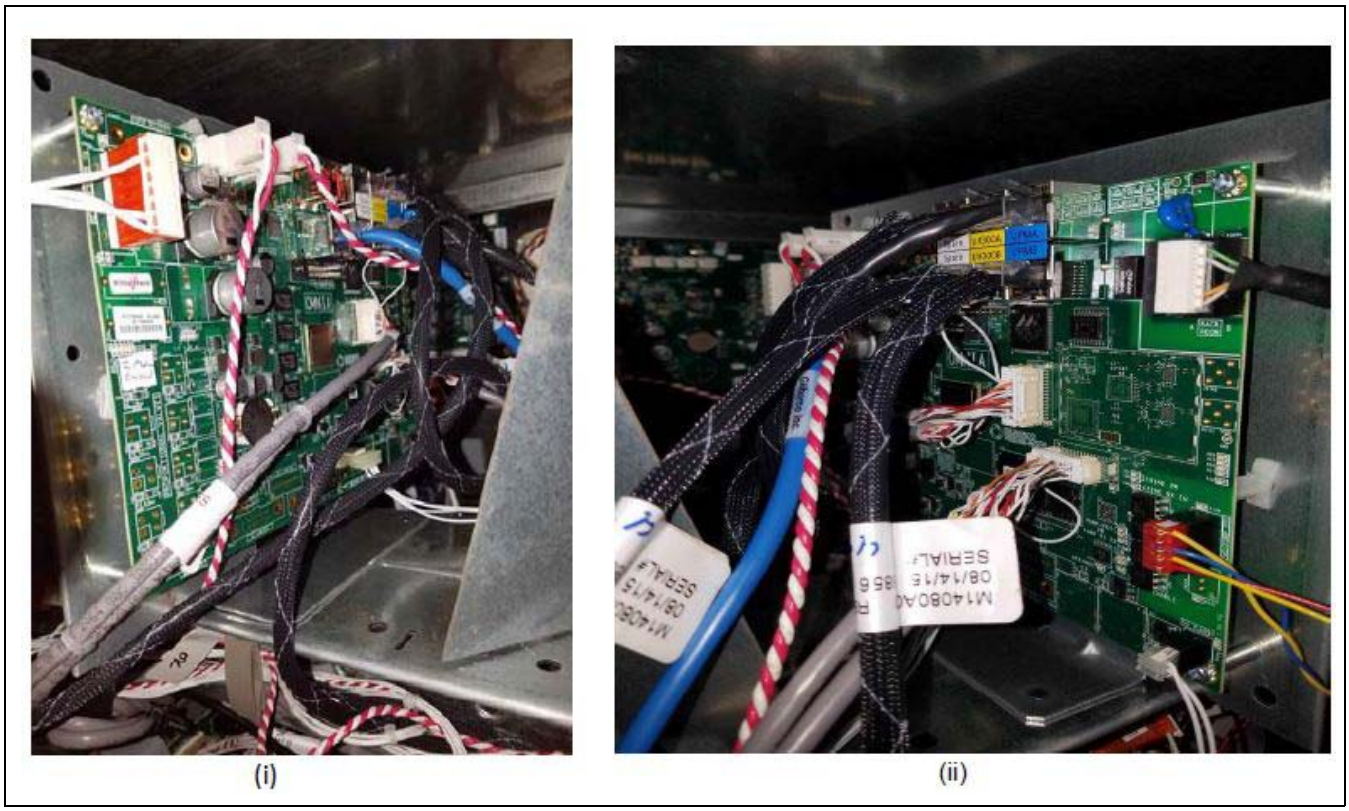
7 Connect all the applicable cables to the Omnia assembly as shown in Figure 8. For additional details regarding direct CAT5 connections, refer to *MDE-5369F FlexPay IV (with Omnia) Programming and Service Manual Insite360™ Forecourt with Applause Media System*.

Figure 8: Omnia Board Connections



SECTION 4 - INSTALLATION

Figure 9: Connecting Cables

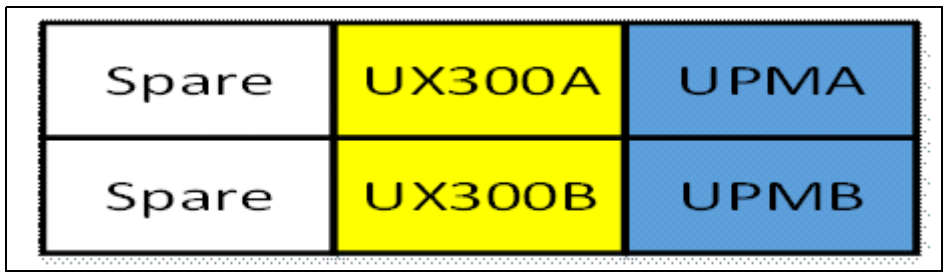


8 Connect the Ethernet cable from each UPM to the Omnia board.

Note: These ports are dedicated. The UPMs and UX300 Card Readers must be connected to the correct ports.

Figure 4 on page 13 shows the labels on the Omnia board.

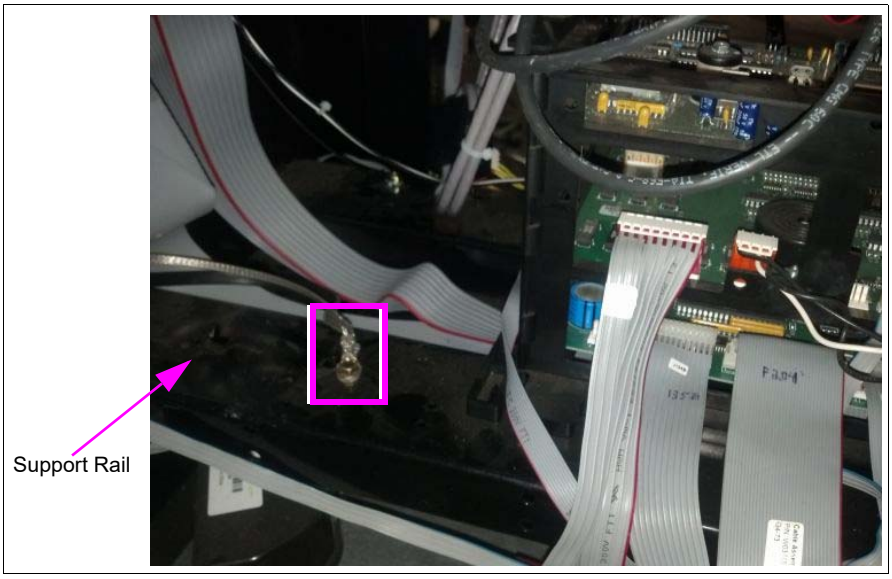
Figure 10: Omnia RJ-45 CAT5 connections for UPMs and UX300s (+ Spares)



9 Route the two Braid Terminal Ground Cables [M04431A002 (one from the UX300 and one from the UPM)] on each Advantage left-side door under the printer tray and secure on the underside with the cable push mount provided.

10 Secure the two ring terminals to the support rail using a M00417B101 M5 Screw as shown in Figure 11.

Figure 11: Securing Ring Terminals



11 Repeat steps 9 on page 17 through 10 for side B of the unit.

Power Supply Grounding Connection

To make grounding connection for the power supply, connect the M04431A002 Cable between the Omnia assembly and the power supply support rail using a M00417B101 Screw.

SECTION 4 - INSTALLATION

AC Power

The Advantage Series has one of two different AC wiring schemes depending on the year the unit was built. Refer to the steps below after identifying the configuration present.

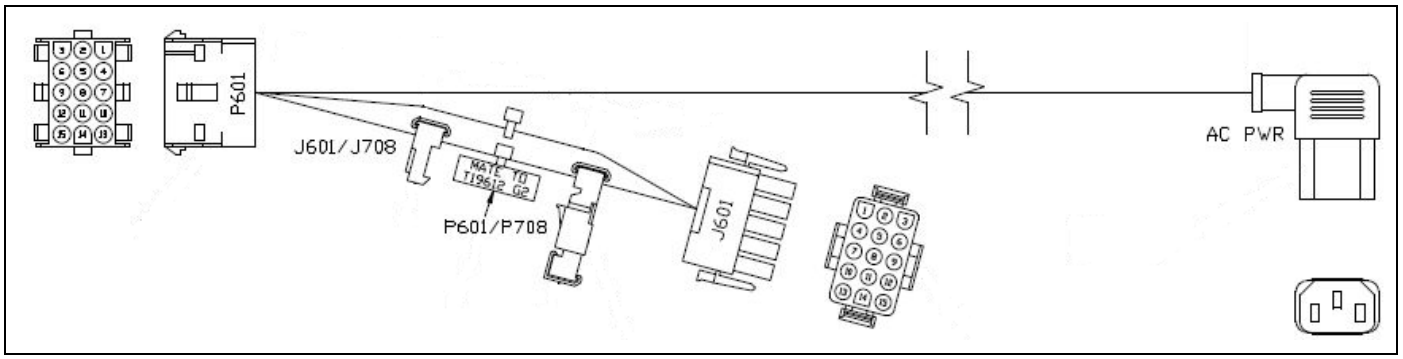
The Advantage Series Units Built Prior to 1999

To make AC power connections for The Advantage Series units built prior to 1999:

1 Install the AC Power Adapter Cable (R20580-G3) by inserting it between J601 and P601 (see Figure 12).

2 Plug the AC power input of M04406 from the Omnia assembly into P601 of R20580-G3 Cable.

Figure 12: Plugging AC Power Input from Omnia to R20580-G3



AC Power Distribution Cable

The Advantage Series Units Built After 1999

To make AC power connections for The Advantage Series units built after 1999:

1 Locate the AC Adaptor Cable Assembly (T19612-G2) from the pump power supply located across the bottom of the electronics cavity.

2 Plug M04406 into J550 or an available three-pin connection.

3 Ensure that all AC connections are paired as black-to-black, white-to-white, and green-to-green.

Note: After all the cables have been routed from the doors to the interior of The Advantage Series unit, ensure to route the cables to avoid pinching.

SECTION 4 - INSTALLATION

Use the T19612 Cable Assembly AC Adaptor to connect to the other modules in the dispenser that require AC voltage. The T19612 Cable Assembly AC Adaptor connects to the J401 connector attached to the conduit, from where it is connected to the modules in the dispenser wherever AC voltage is required. (see Figure 13 on page 20).

Figure 13: AC Power Distribution Cable Connection

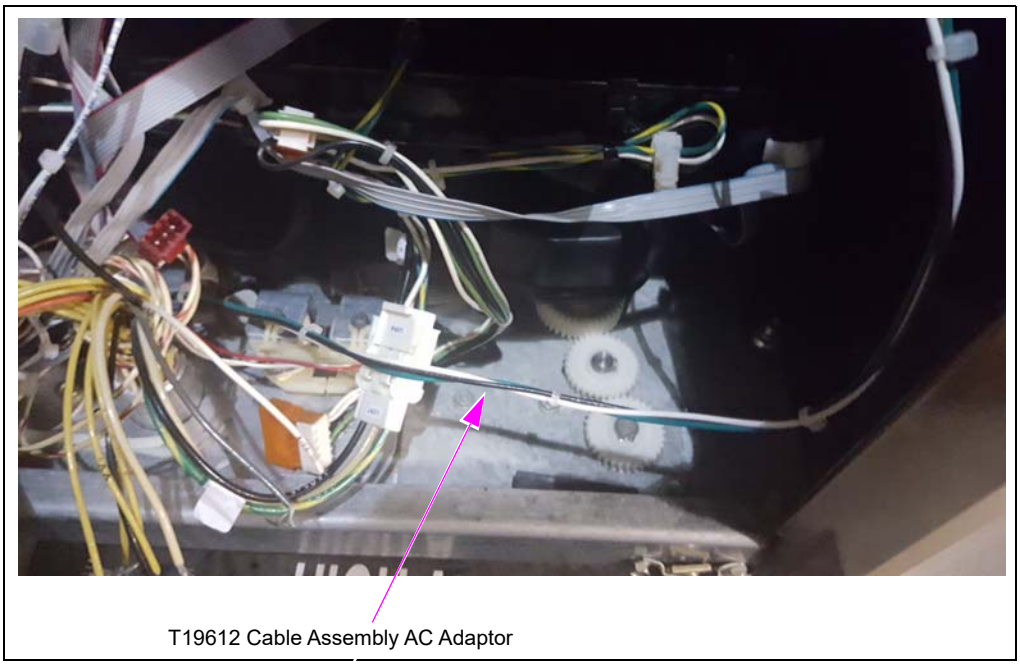
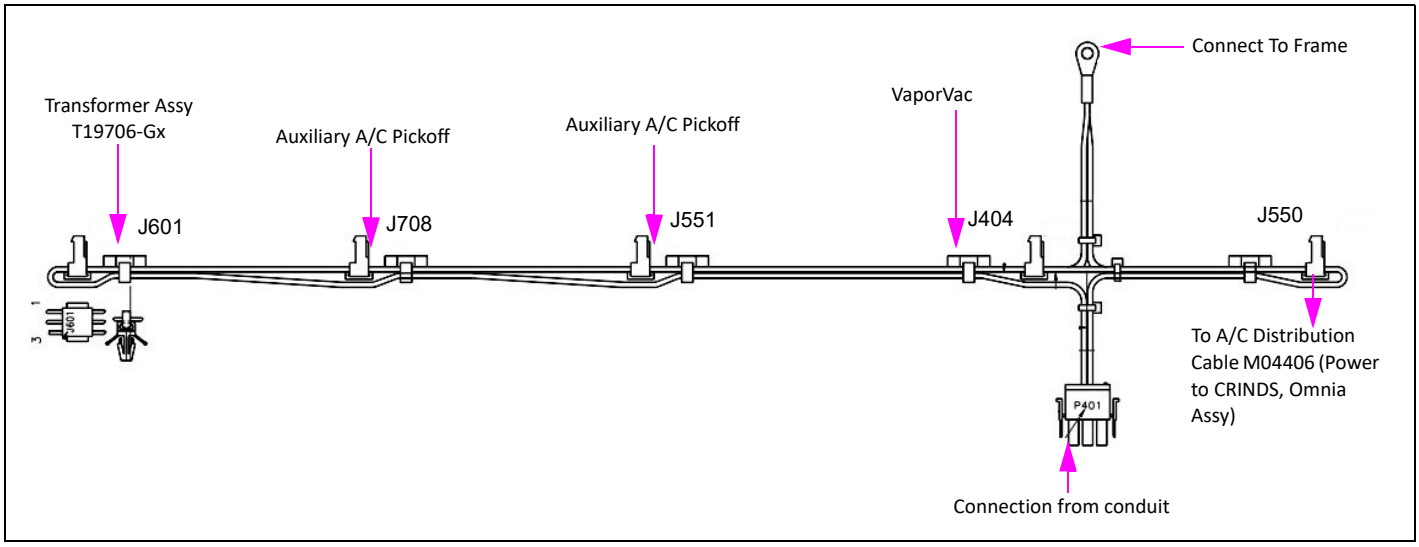


Figure 14 shows internal connections for T19612-G2 in the dispenser.

Figure 14: T19612-G2 Internal Connections

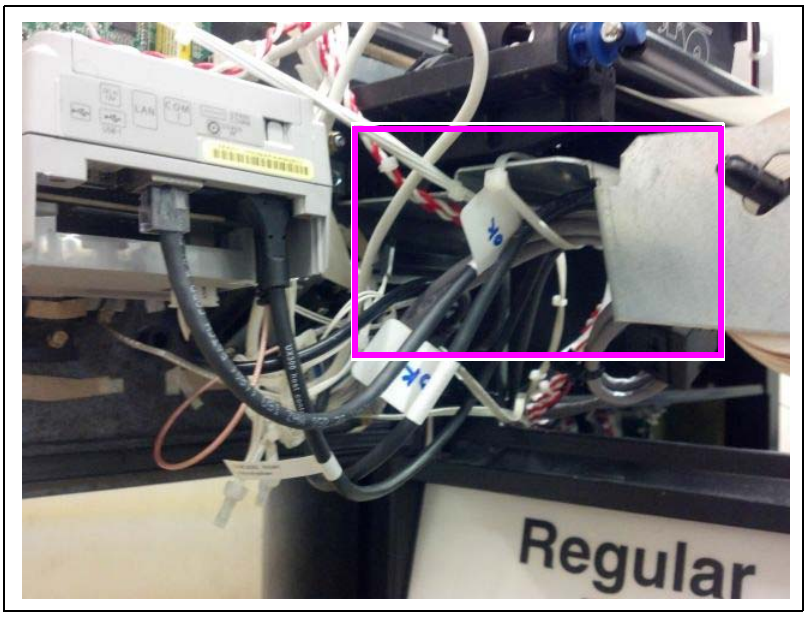


SECTION 4 - INSTALLATION

To route the cables:

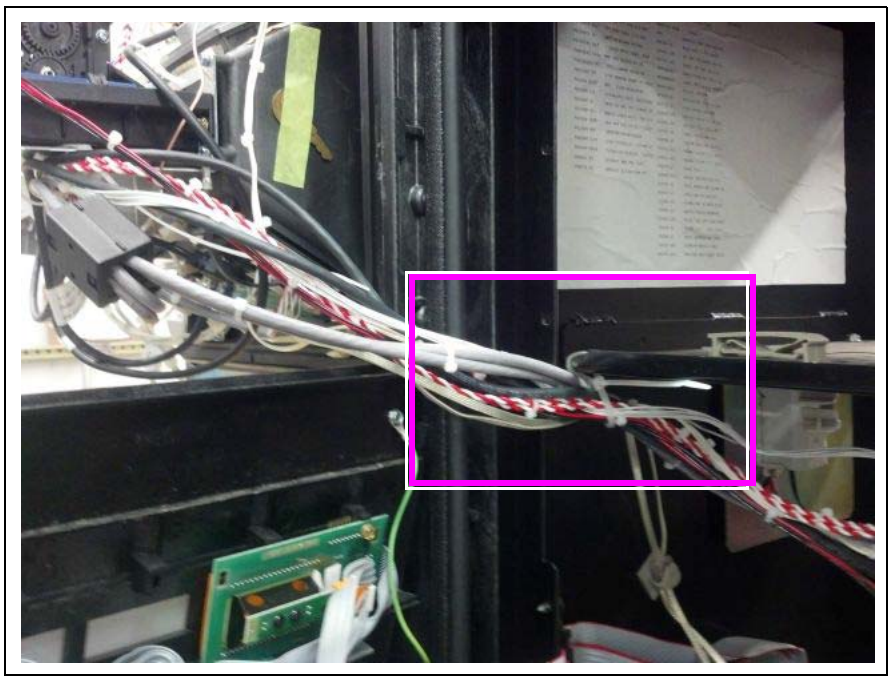
1 Secure the door cables underneath the printer paper holder.

Figure 15: Securing Door Cables Underneath Printer Paper Holder



2 Tie-wrap the cables to the printer shelf, near the main door hinge, keeping both doors completely open. This will ensure there is sufficient space between the cables.

Figure 16: Securing Cables to Printer Shelf



SECTION 4 - INSTALLATION

Completing Installation

To complete the installation, inspect all the connections and cable routing before applying power.

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(s) opens and closes for service. The cables must be dressed neatly. Ensure that there is no interference after the cables are connected and routed.
ESD ground straps can be bundled together, but need to be separated from data and power cables.

IMPORTANT INFORMATION

For start-up information, refer to *MDE-5221 FlexPay IV CRIND Start-up Manual.*

For detailed block diagrams of cable connections, refer to “Appendix C: System Block Diagram” on page 31.

Registering Kits with Gilbarco Warranty

To register the kits with Gilbarco Warranty:

1 After the kits are successfully installed, register kits through web commissioning within 30 days.

2 Provide the correct model and serial numbers.
Note: Registering the kits ensures that proper warranty is applied.

The Advantage Retrofit Kit part number is EPK M7 ADV.

SECTION 5 - REFERENCE INFORMATION

Related Documents

Document No.	Title
MDE-2531	Gilbarco Pump and Dispenser Start-up and Service Manual
MDE-5221	FlexPay IV CRIND Start-up Manual
MDE-5223	FlexPay IV CRIND Service/Troubleshooting Guide
MDE-5227	M7 Maintenance Tool User Guide
MDE-5369	FlexPay IV with Omnia Start-Up and Service Manual
PT-1728	The Advantage Series Pumps and Dispensers Illustrated Parts Manual
PT-1869	Gilbarco Products Recommended Spare Parts for Domestic Products

Abbreviations and Acronyms

Term	Description
AFP	Auxiliary Feature PCB
ASC	Authorized Service Contractor
BNA	Bank Note Acceptor
BOM	Bill of Material
BRCM	Back Room Communication Module
CAT5	Category 5
CIM	Customer Interface Module
CRIND	Card Reader in Dispenser
CSC	Contactless Smart Card
D-Box	Distribution Box
DCM	Dispenser Communication Module
EMV	Europay®, MasterCard®, and Visa®
ESD	Electrostatic Discharge
GSoM	Gilbarco Systems on Module
JSA	Job Safety Analysis
MOC	Major Oil Company
OSHA	Occupational Safety and Health Administration
PCB	Printed Circuit Board
PCI	Payment Card Industry
PCI-PED	Payment Card Industry PIN Entry Device
POS	Point of Sale
PIP	Peripheral Interface PCB
SSoM	Secure System on Module
TRIND	Transmitter/Receiver in Dispenser
UPM	Universal Payment Module
USB	Universal Serial Bus
VDC	Voltage Direct Current
W&M	Weights and Measures

SECTION 5 - REFERENCE INFORMATION

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SECTION 6 - APPENDICES

Appendix A: PCB, Connections, and LED Information

Omnia Board Connections

Connector	Port Number	Function	From	To
7-pin MTA	P60001	Power IN	P60001	Power input
2-pin plug	P6901	Audio out to Omnia PIPA	P6901	Omnia PIP: P219
2-pin plug	P6902	Audio out to Omnia PIPB	P6902	Omnia PIP: P219
25-pin high density	P1	Video out to UPM A	P1	UPM-P6
25-pin high density	P2	Video out to UPM B	P2	UPM-P6
5-pin MTA	P300	Two-wire connection to POS	P300	Conduit/POS
2-pin MTA	P303	Two-wire to pump	P303	Pump-P1109
7-pin MTA	P304A	Backroom connection/DCM3	P304A	DCM3-J17
4-pin plug	P304B	Backroom connection	P304B	Conduit

Note: Verify P6001 of the Omnia board is on the same side as the Weights and Measures (W&M) switch.

For more information, refer to "Appendix B: System Block Diagram" on page 30.

Omnia PIP Connections

The following table lists the connections on the Omnia PIP:

Connector	Port Number	Function	From	To
10-pin MTA	P201	Cash Acceptor	P201	BNA
6-pin MTA	P204	TRIND	P204	TRIND J182
3-pin Plug	P213	BEEP Connector	P213	UPM P2
4-pin Plug	P220	24 VDC IN	P220	Power Supply Cable (M14340)
Mini Universal Serial Bus (USB)	USB UPLINK	USB IN	USB UPLINK	UPM P4
USB	P214A	USB Out	P214A	USB Expand
USB	P214B	USB Out	P214B	USB Expand
USB	P214C	USB Out	P214C	USB Expand
USB	P214D	USB Out	P214D	USB Expand
4-pin MTA	P219	Speaker Input from Omnia	P219	P6901A and P6901B
2-pin Mat-n-Lok	P211	Audio to Left Speaker	P211	Left Speaker
25-pin	P205	Video Input from UPM	P205	UPM P5
20-pin	P206	LVDS Data to 10.4"	P206	10.4"
33-pin	P207	Video Data to 5.7"	P207	5.7"
2-pin	P215	Up/Down for 5.7"	P215	DNP
10-pin	P208	10.4" Backlight	P208	10.4" Backlight
3-pin	P210	5.7" Backlight	P210	5.7" Backlightt

SECTION 6 - APPENDICES

Omnia Assembly Jumpers

The following table lists the status and functions of jumpers:

Jumper	Description
Omnia Board	
J3	Jumper ON = Battery connected Jumper OFF = Battery disconnected
Omnia PIP	
JP2	Jumper ON = Side B Jumper OFF = Side A

Omnia PIP LEDs

Reference Designator	Color	Function	Behavior
D1	Green	USB link	ON: U8 connected to USB Hub
D4			ON: USB device plugged into P214A OFF: No USB device connected
D5			ON: USB device plugged into P214B OFF: No USB device connected
D6			ON: USB device plugged into P214C OFF: No USB device connected
D7			ON: USB device plugged into P214B OFF: No USB device connected
D9	Red	USB over current	ON: Over current fault detected on P214D OFF: Normal operation
D11			ON: Over current fault detected on P214B OFF: Normal operation
D12			ON: Over current fault detected on P214C OFF: Normal operation
D14			ON: Over current fault detected on P214A OFF: Normal operation
D20	Yellow	Serial communication	ON: UPM TX to BNA OFF: UPM is not communicating with BNA
D21			ON: BNA TX to UPM OFF: BNA is not communicating with UPM
D22			ON: UPM TX to TRIND OFF: UPM is not communicating with TRIND
D23			ON: TRIND TX to UPM OFF: TRIND is not communicating with UPM
D24	Green	Power good	ON: 5 VDC power is good OFF: 5 VDC power fault or board not powered
D25			ON: 3.3 VDC power is good OFF: 3.3 VDC power fault or board not powered
D26			ON: 24 VDC power is good OFF: 24 VDC power fault or board not powered

Note: Install a jump jack on JP2 when Omnia PIP is located on Side 2 of the dispenser.

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Omnia LEDs

Reference Designator	Color	Function	Behavior
D7	Green	1.5V power good LED	ON: 1.5 V power is good OFF: 1.5 V power is not good
D8		1.1V power good LED	ON: 1.1 V power is good OFF: 1.1 V power is not good
D17		1.8V power good LED	ON: 1.8 V power is good OFF: 1.8 V power is not good
D18		1.35V power good LED	ON: 1.35 V power is good OFF: 1.35 V power is not good
D22		Power Input LED	ON: Omnia PCB has 24 VDC from power supply OFF: Omnia PCB does not have 24 VDC from power supply
D23		5V USB power good LED	ON: USB power is good OFF: USB power is not good or the regulator is not enabled.
D24		5V power good LED	ON: 5 V power is good OFF: 5 V power is not good
D25		5VPS power good LED	ON: 5 VPS power is good OFF: 5 VPS power is not good
D26		3.3V power good LED	ON: 3.3 V power is good OFF: 3.3 V power is not good
D37	Yellow	CRIND 2W RX	Blinking: Data received from POS
D38		CRIND 2W TX	Blinking: Data sent to POS
D39	Green	CRIND TX Enable	ON: TX enable line is active. Omnia will successfully communicate to the POS OFF: Omnia will not send messages to the POS
D45	Yellow	Pump (POS) 2W RX	Blinking: Data received from POS
D47		Pump (POS) 2W TX	Blinking: Data sent to POS
D49	Green	Pump (POS) TX Enable	ON: TX enable line is active. Omnia will successfully communicate to the POS OFF: Omnia will not send messages to the POS
D53	Yellow	Pump 2W RX	Blinking: Data received from pump
D56		Pump 2W TX	Blinking: Data sent to pump
D57	Green	Pump TX Enable	ON: TX enable line is active. Omnia will successfully communicate to the pump OFF: Omnia will not send messages to the pump
D58	Green	Active Mode LED	ON: Omnia configured correctly. OFF: Omnia not properly configured
D73	Yellow	7.5V power good LED	ON: 7.5 V power is good OFF: 7.5 V power is not good or is not enabled by Omnia

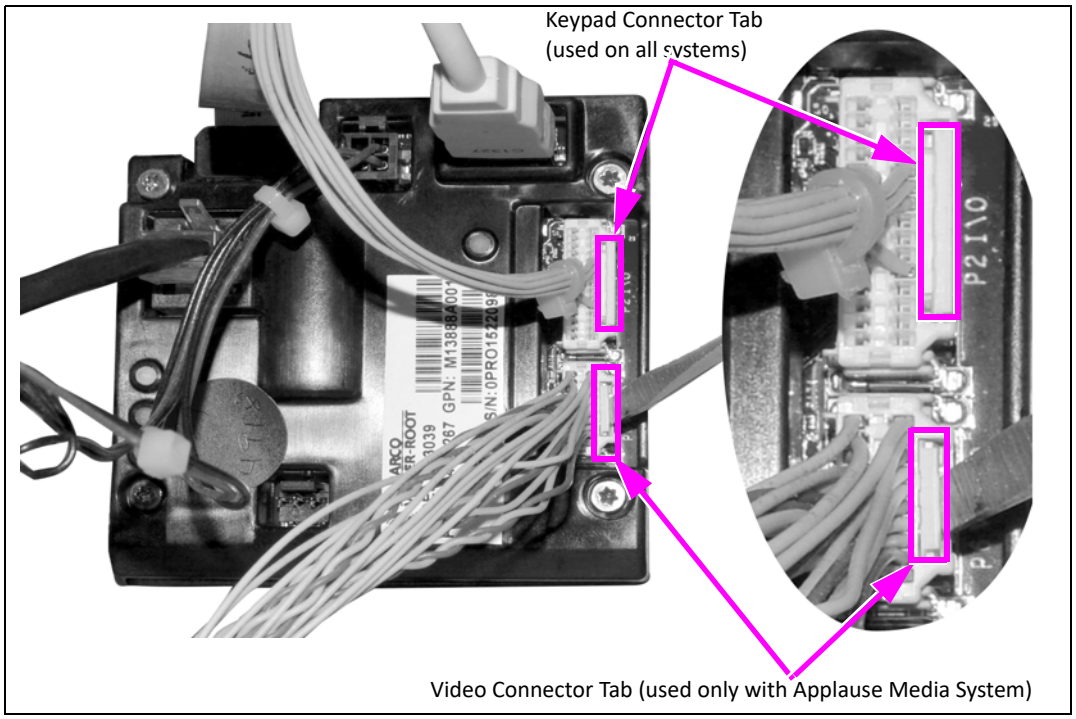
SECTION 6 - APPENDICES

UPM Board Connections

CAUTION

Keypad Connector Tab
Some of the connectors have a tab on the side that must be pressed prior to removing the connector. You must depress and hold the tab on the side of the UPM softkey connector if you want to remove it. If you do not press the tab, the wire might be pulled out from the connector.

Figure 1: Keypad and Video Connector Tabs



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The following table lists the connections on the UPM:

Port Number	To	Function
P1	24 V Power into UPM	UPM power (and keypad heater power, if equipped)
P2	Omnia PIP - (P213), softkeys, door node (P2111), door switch (192), ADA, call	Input/Output (I/O) to multiple CRIND functions: • Softkeys • ADA • Door switch • Beeper
P3	Omnia Blue UPM Omnia Yellow Card Reader (see Figure 1 on page 28)	Ethernet to the Omnia board
P4	Omnia PIP - USB uplink	USB uplink to the Omnia PIP
P5	Omnia PIP - P205	Video out
P6	Omnia - P406 Applause Media System video input	Video input from the Omnia

The following table lists the peripherals for the cables:

Part Number	Port Number	Function
M03184A00X	P201	Cash Acceptor
R20773-GX	P204	TRIND
M09267A00X	P213	BEEP Connector
M09794A00X	P220	24 VDC Power In
M14337A001	P1	UPM Heater Cable

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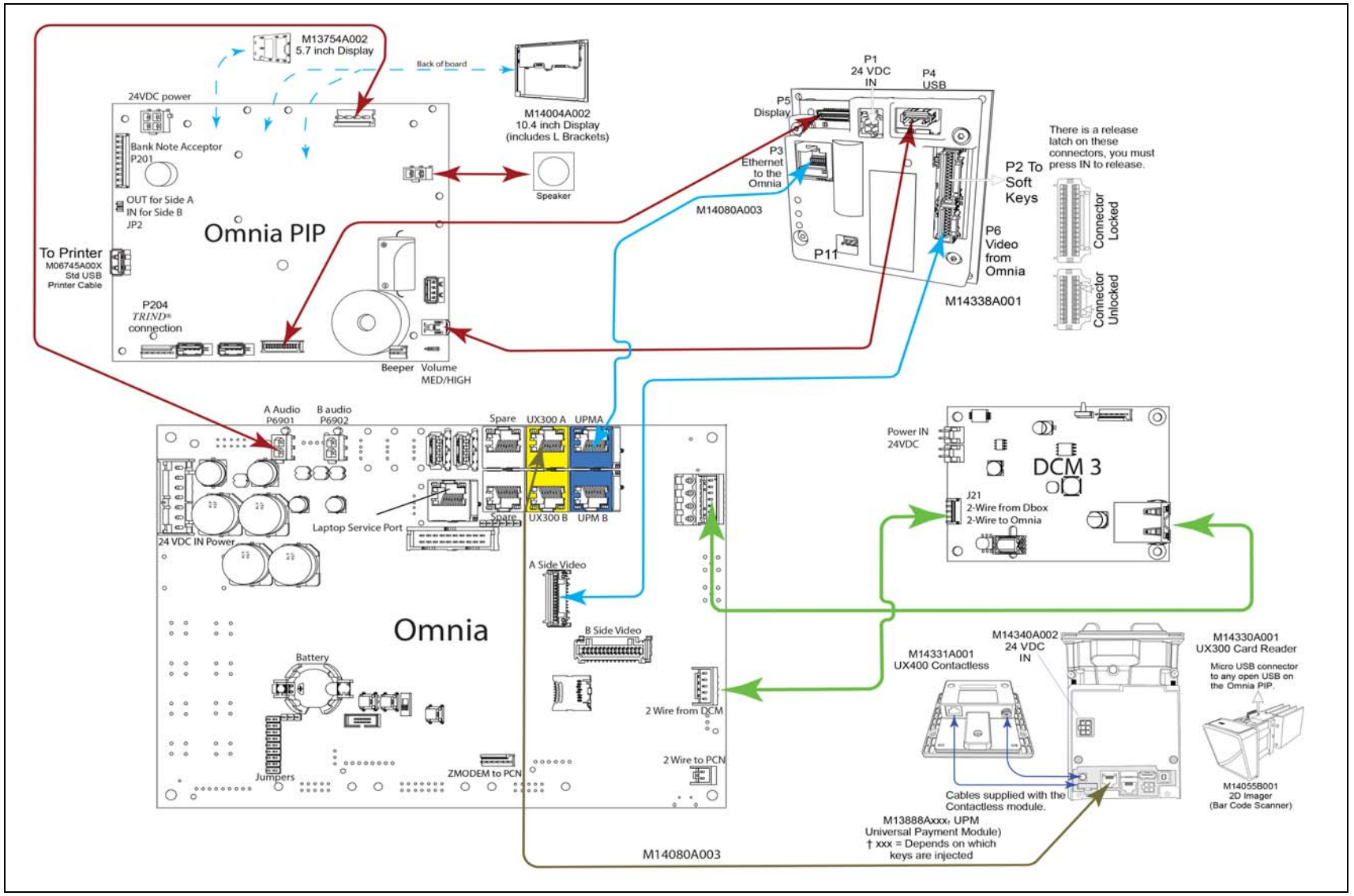
Appendix B: System Block Diagram

Figure 2: Cable Block Diagram for FlexPay IV CRIND



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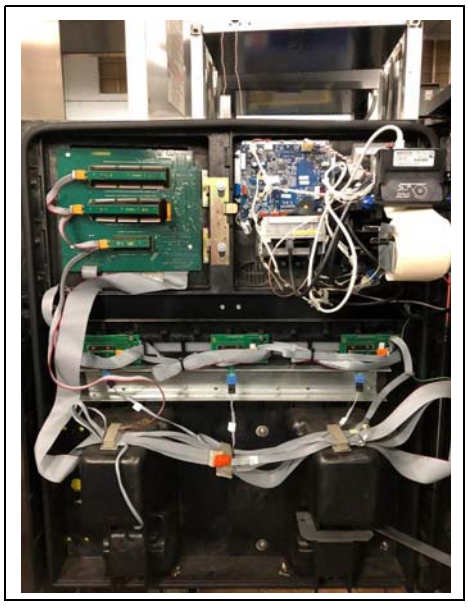
Appendix C: Verifying Cable Connections

Cable Connections on Display Assembly

Figure 3 shows the cable connections on the display assembly.

Figure 3: Cable Connections on Display Assembly



To verify the cable connections:

Power Cabling

Ensure that the power cables are connected as follows:

1. **Omnia PIP**: P220 port is connected to +24 V Cable (M14340A001).
2. **UPM**: P1 port is connected to +24 V cable.
3. **Omnia**: P6001 port is connected to +24 V cable.

Omnia PIP Cabling

Ensure that the Omnia PIP board cables are connected as follows:

1. Omnia PIP USB uplink port is connected to the USB Cable (M03695B004) and connected to the P4 port on the UPM.
2. P213 port of Omnia PIP is connected to the M13119 Cable, which connects to the UPM P2.
3. P211 port is connected to the Speaker Cable (M09259A004) and to the left speaker.
4. P205 port is connected to M14136A00X Cable and to UPM P5.

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5 P206 port is connected to 10.4-inch LVDS Cable (M13722A002) and to 10.4-inch display.

6 P207 port is connected to 5.7-inch Parallel Cable (M9224B001) and to 5.7-inch display.

7 P209 port is connected to 10.4-inch Backlight Cable (M9224B001) and to 10.4-inch display.

8 P210 port is connected to 5.7-inch backlight leads from the 5.7-inch display.

UPM Cabling

Ensure that the UPM cables are connected as follows:

1 P1 port is connected to 24 V Power Cable (M14340A001).

2 P2 port of Softkey Cable (M13119AXXX) is connected to the softkeys, P213 of Omnia PIP for the beeper, J2111 for the door node, and J192 for the door switch.

CAUTION

You must depress and hold the tab on the side of the UPM softkey connector to remove it. If you do not depress the tab, you are very likely to pull out the wire from the connector.

3 P3 port of Ethernet Cable (Q13850-XX) is connected to P303A/B on Omnia board.

4 P4 port of USB Cable (M03695B007) is connected to USB UPLINK on Omnia PIP board.

5 P5 port of LVDS Cable (M14136A00X) is connected to P205 on Omnia PIP board.

6 P6 port of LVDS Cable (M14338A001) is connected to P606A/B on UPM board.

7 Earth Ground Cable (M04431A002) is connected to the U-channel running across the bottom of the unit cavity. These need to be mounted with separate bolts and not together.

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UX300/UX301/UX400 Card Reader Cabling

Ensure that the card reader cables are connected as follows:

1. P1 port is connected to 24 V Power Cable (M14340A001).
2. LAN port of Card Reader Cable (M13443B006) is connected to the Omnia.
3. If UX400 contactless reader is present, the RF port (UX400 RF) on the card reader connects to the RF port (UX400 RF) on the contactless reader.
4. If UX400 contactless reader is present, power/data port (UX400 COMM) on the card reader connects to the power/data (UX400 COMM) port on the contactless reader.

The card reader has an earth ground cable that is connected to the U-channel.

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Appendix D: DCM3 Assembly (M15724A001)

The DCM3 is used when high-speed communication is required across the forecourt. The DCM3 is only used with the BRCM2. Connect all the applicable cables to the DCM3 assembly as shown in Figure 4.

Figure 4: DCM3 Connections

6

LEDs

Reference Designator	Color	Function	Behavior
D1	Green	1.2 V Power Good	ON: 1.2 VDC ON OFF: 1.2 VDC fault or board not powered
D9		3.3 V Power Good	ON: 3.3 VDC ON OFF: 3.3 VDC fault or board not powered
D8		24 V Power Good	ON: 24 VDC ON OFF: 24 VDC fault or board not powered
D6	Yellow	High Speed ACT	ON: Link present Blink: TX/RX data OFF: No link present
D7	Green	High Speed Link	ON: Successful connection to BRCM2 OFF: No link to BRCM2

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Connection Table (M15724A001)

Connector	Port Number	Function	From	To
RJ-45	J17	Ethernet	J21	Omnia P304
5-pin MTA	J21	OLC/two-wire	Conduit/J21	Omnia P300
2-pin MTA	J15	Power IN		DCM3
2-pin MTA	J16	Power Out	N/A	N/A-no current use

DCM3 Two-Wire Connections

These instructions detail how to perform two-wire connections when a DCM3 is used in the system. The DCM3 is required when a BRCM2 is used to provide high-speed communication across the forecourt. The BRCM2 when used with the DCM3 supports the following two modes:

- The option of merging the high speed data onto the same conductors used for current loop.
- The option of not merging high-speed data onto the same conductors used for current loop. This setup requires additional wire pairs brought out to each dispenser.

DCM3 Two-Wire Connection (Merged)

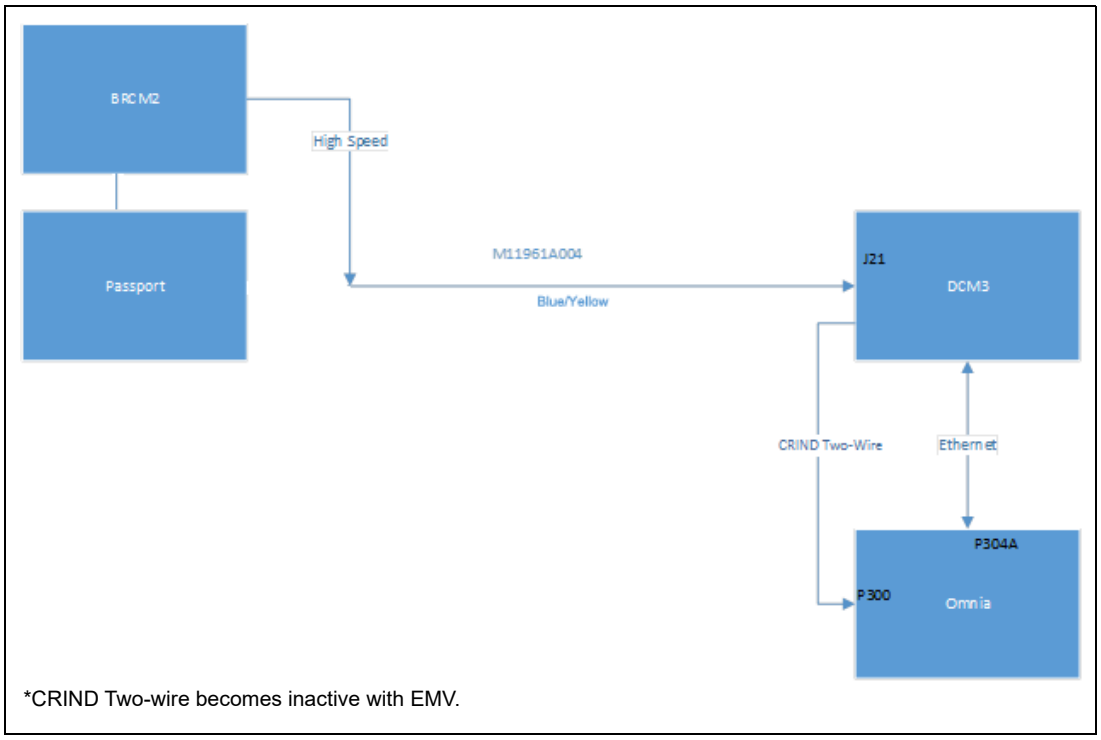
Ensure that the two-wire connection when high speed data is merged onto the same conductors is as follows:

1 Connect P21 of the M11961A004 cable to J21 of the DCM3.

2 Connect J300 of the M11961A004 cable to P300 of the Omnia.

3 Connect the Y/Y pair of the M11961A004 to the B/Y pair of wires coming from the conduit.

Figure 5: MOC (Merged), Pre-EMV*



*CRIND Two-wire becomes inactive with EMV.

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DCM3 Two-Wire Connection (Non-Merged)

Ensure that the two-wire connection when high speed data is not merged onto the same conductors is as follows:

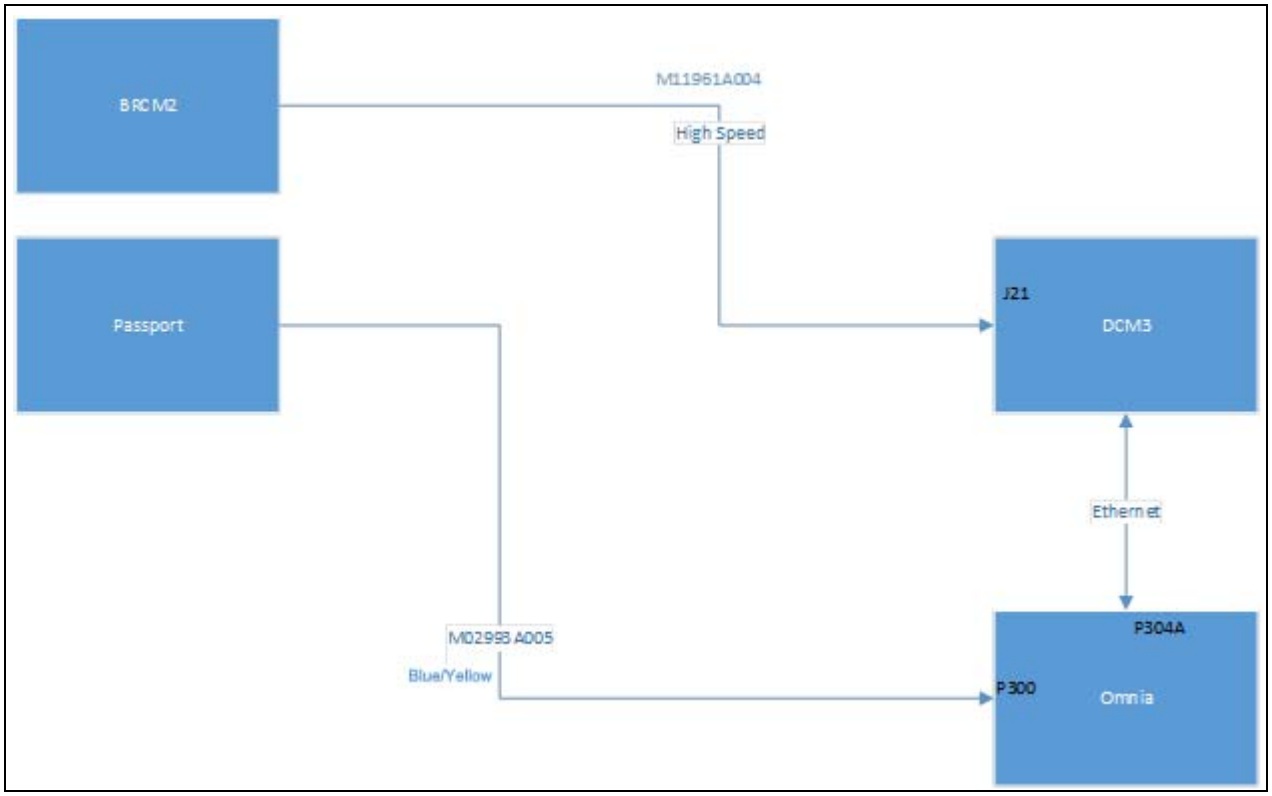
1 Connect P21 of the M11961A004 cable to J21 of the DCM3.

2 Connect the Y/Y pair of the M11961A004 to the designated wires coming out of the conduit.

3 Connect J300 of the M02993A005 cable to P300 of the Omnia.

4 Connect the B/Y pair of the M02993A005 to the B/Y pair coming from the conduit.

Figure 6: MOC (Non-Merged)



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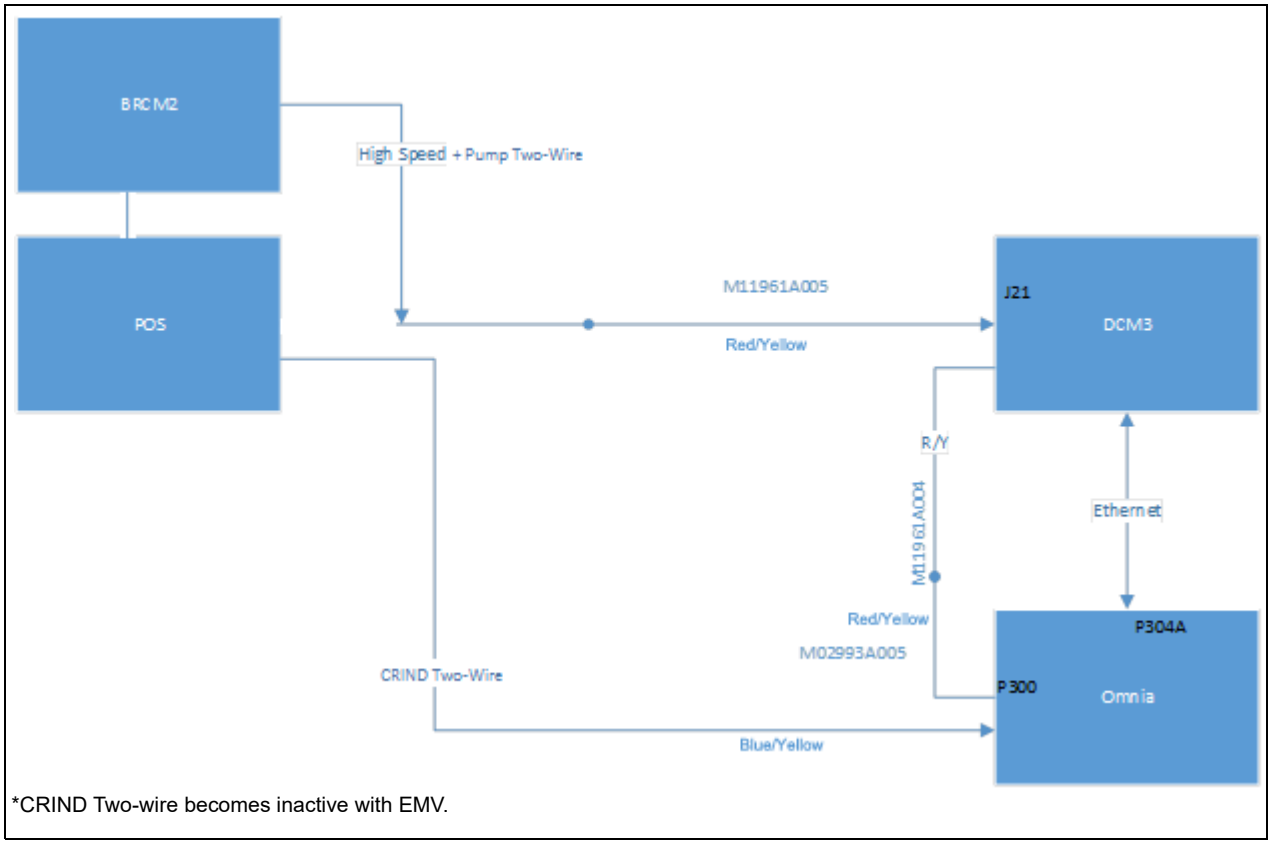
Generic (Merged)

The Omnia board supports high speed communication via the BRCM2. When connection to a BRCM2 is required, the kit will ship with a DCM3 (M15724A001) attached to the Omnia bracket assembly. See the following wiring instructions.

Ensure that the connection to Omnia is as follows:

1. Connect P21 of the M11961A005 cable to J21 of the DCM3.
2. Connect the Y/Y pair of the M11961A005 to the R/Y pair of wires coming from the conduit.
3. Cut J300 off M11961A005.
4. Connect the R/Y pair of M11961A005 to the R/Y pair of M02993A005.
5. Connect J300 of the M02993A005 cable to P300 of the Omnia.

Figure 7: Generic (Merged), Pre-EMV*



*CRIND Two-wire becomes inactive with EMV.

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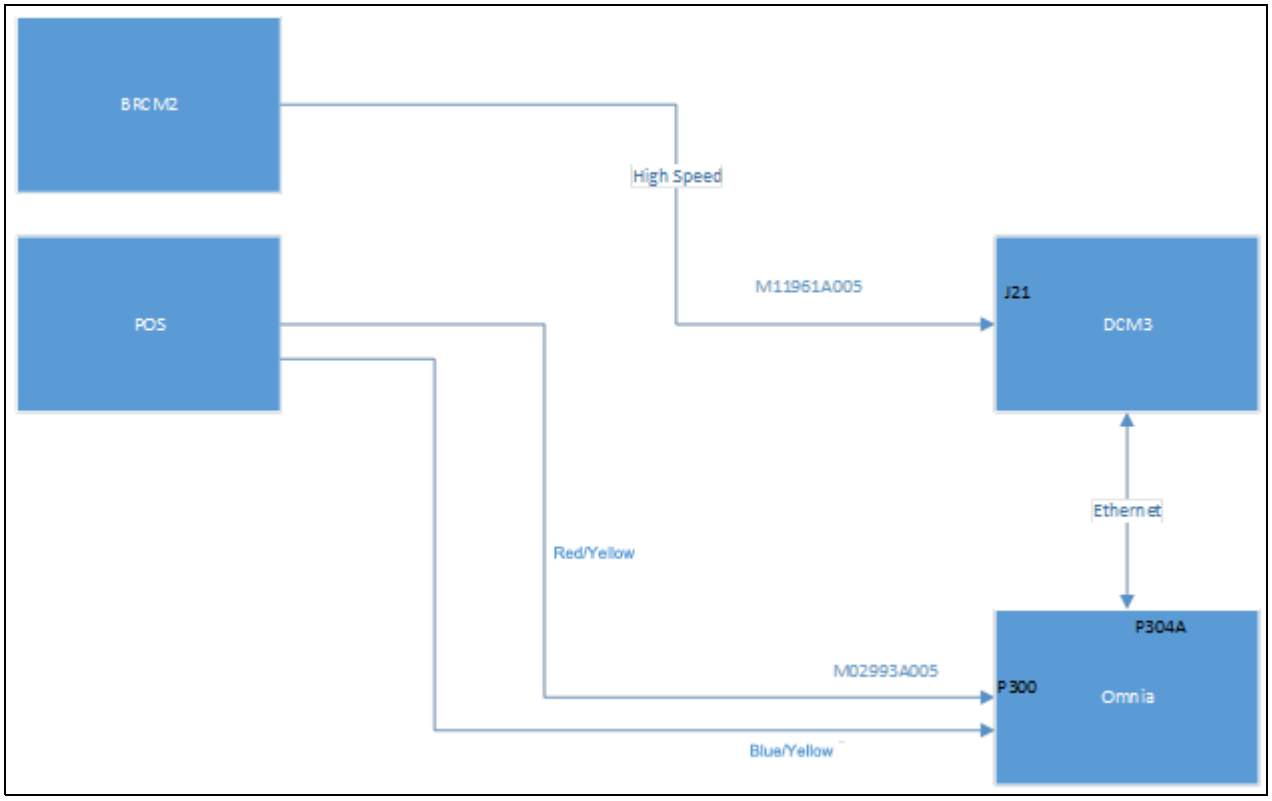
Generic (Non-Merged)

Ensure that the connection to Omnia is as follows:

1. Connect P21 of the M11961A005 cable to J21 of the DCM3.
2. Connect the Y/Y pair of the M11961A005 to the designated wires coming the conduit.
3. Connect J300 of the M02993A005 cable to P300 of the Omnia.
4. Connect the B/Y pair of M02993A005 to the B/Y pair of wires coming from the conduit.
5. Connect the R/Y pair of the M02993A005 to the R/Y pair coming from the conduit.

Figure 8: Generic (Non-Merged)



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FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interferences that may cause undesired operation.

FCC Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information
Unique Identifier: FlexPay IV CRIND Advantage Retrofit Kit

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