Introduction

Purpose

This manual provides the product overview, installation instructions, troubleshooting, and other important information for the Gilbarco® Security Module (GSM). This revision contains the following:

- Information previously published in the customer-specific addenda.
- Instructions for "Installing PA025801XXXXX GSM in SMART CRIND™".

Table of Contents

Important Shelf Life Information

Plug the GSM into a wall outlet immediately upon receipt. An internal battery retains factory programming. This internal battery has a shelf life of approximately six months from the factory start-up date. The label affixed to the GSM housing records the factory start-up date. The battery is not rechargeable.

> ### CAUTION
>
> **If the internal battery discharges fully, the GSM will no longer be usable**. For this reason, once you install the GSM, **do not** shut off the AC power to the GSM. Reserve the internal battery power for power failure backup.

Product Overview

The GSM is a security device that encrypts (encodes) the data entered at the Card Reader In Dispenser (CRIND®) device or PIN pad during a debit sale, for transmission from the site controller to the debit card network host. The site controller may be a C-2 G-SITE® Point Of Sale (POS) system, PC-based G-SITE POS system, Passport® POS system, or a third-party controller.

The GSM is powered by a separate power supply, and is cabled to the site controller through an RS-232C Port labeled "To Controller". A status Light Emitting Diode (LED) or light displays the GSM's current state.

The network encryption key codes are injected at the factory and the GSM is sealed. The GSM is not serviceable in the field and must not be opened or disassembled.

CAUTION

If the GSM cover is removed or tampered with, the data inside the GSM will be destroyed, and the GSM will no longer be usable.

When installing a GSM with a third-party controller, refer to the installation documentation provided by the third-party supplier.

Parts List

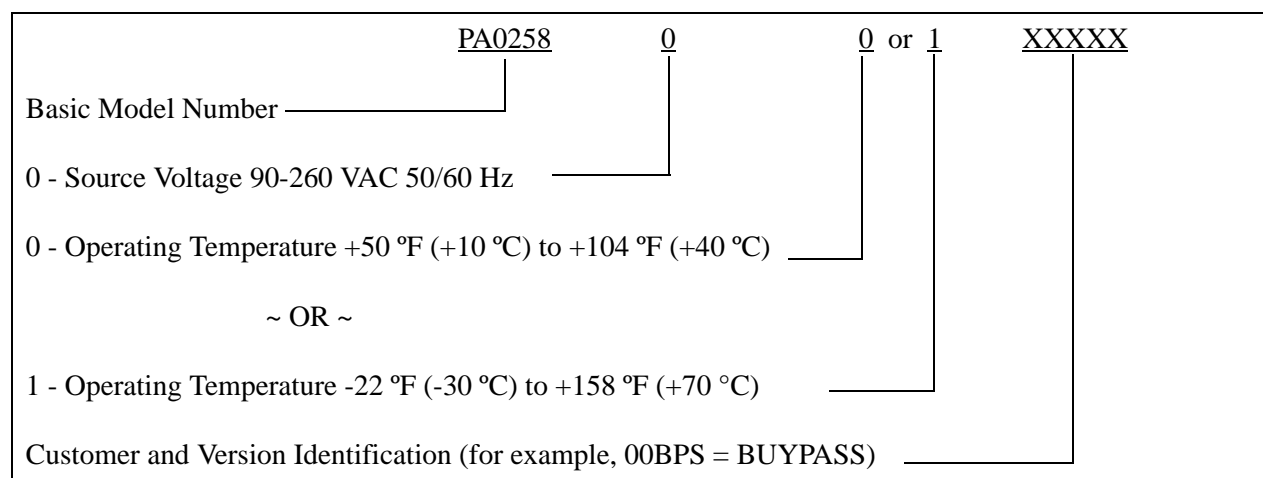| Description	Part Number	Quantity
Gender Mender - 9-pin (GSM to CAT-5 Cable)	Q13180-04B (Black)	1
Gender Mender - 9-pin (COM to CAT-5 Cable)	Q13180-20B (Black)*	1
RJ-45 to 9-pin Male Cable Adapter	M09747B010*	1
Gender Mender - 25-pin (Controller to Modular Cable)	Q13180-22B (Black)	1
GSM	PA0258XXXXXXX	1
GSM Power Supply, 5 V (OUT) or 90-260 VAC (IN)	Q13698-03	1
Modular Cable, 10'	Q13850-10	1

* Not included with the GSM.

CAUTION

Devices such as GSM, Mannatec®, Car Wash, Tank Monitor™, and Price Sign controllers will be connected to the Enhanced Dispenser Hub (after Passport V8.02 software upgrade) through an RS-232 connection. Gilbarco recommends an RS-232 Line Booster for these devices if the CAT-5 Cable distance (run) is between 50 and 100 feet. If the CAT-5 Cable distance (run) is greater than 100 feet, an RS-232 Line Booster will be required, along with an additional booster for every additional 50 feet.

Note: Cables provided with the GSM may not support all third-party controllers. Refer to third-party documentation for specific cabling requirements.

Model Number Breakdown for the GSM

PA0258   0   0 or 1   XXXXX

Basic Model Number ⎯⎯⎯⎯⎯⎯⎯⎯

0 - Source Voltage 90-260 VAC 50/60 Hz ⎯⎯⎯

0 - Operating Temperature +50 ºF (+10 ºC) to +104 ºF (+40 ºC) ⎯⎯⎯

~ OR ~

1 - Operating Temperature -22 ºF (-30 ºC) to +158 ºF (+70 ºC) ⎯⎯⎯

Customer and Version Identification (for example, 00BPS = BUYPASS) ⎯⎯⎯

Glossary

Download
Data sent from the host computer to the Controller. A download may be required before the Controller can process debit cards.

Factory Start Up Date
Date when the GSM's internal battery is enabled and encryption keys injected. Factory start up date is recorded on a label affixed to the GSM housing. Upon receipt, the GSM must be maintained under power to retain programming. If the internal battery is allowed to discharge completely, the GSM will no longer be usable.
Note: GSMs are no longer remanufactured.

Injected Key Serial Number
A serial number injected by Gilbarco that uniquely identifies the GSM to the network host. It is permanently erased if the GSM housing is opened or if the internal battery is allowed to discharge completely. The POS system can interrogate the GSM for the injected key serial number and pass it to the network host.

Install Date
Date when the GSM was installed to work with the host network.

Environmental Requirements

Parameter	Part Number	Values
Operating Temperature	PA025800XXXXX	+50 ºF (+10 ºC) to +104 ºF (+40 ºC)
	PA025801XXXXX	-22 ºF (-30 ºC) to +158 ºF (+70 ºC)
Relative Humidity		0% to 95% (Non-condensing)
Storage Temperature		-22 ºF (-30 ºC) to +176 ºF (+80 ºC)

Physical Specifications

Dimensions

Parameter	Values
Height	1.5" (3.81 cm)
Width	6" (15.24 cm)
Length	9" (22.86 cm)
Weight	GSM: 4.2 pounds (1.91 kg) Power Supply: 1.3 pounds (0.5897 kg)

Power Supply Specifications

Dedicated Circuit - Isolated Ground Receptacle suitable for the following:
Q13698-03 GSM Power Supply (90-260 VAC nominal, 50/60 Hz)

Power Type	Voltage
AC Power Consumption	25 W
DC Output	5 VDC at 0.7 Amp max.

Related Documents

Document Number	Document	GOLD Library
MDE-2530	Pump and Dispenser Installation Manual	The Advantage® and Legacy® Models
MDE-3110	PC-based G-SITE System Installation Manual	G-SITE
MDE-3111	G-SITE System Start-Up and Service Manual	• G-SITE • Service Manual
MDE-3620	POS Site Preparation Manual	Site Preparation
MDE-3816	Passport Hardware Start-Up and Service Manual	• Passport • Service Manual
MDE-4157	Passport Combined Cashier/Manager Workstation Installation Poster (PX51)	Passport
MDE-4158	Passport Cashier Workstation Installation Poster (PX51)	Passport
MDE-4159	Passport Standalone Manager Workstation Installation Poster (PX51)	Passport
	Related Third-party Documents	N/A (Refer to Third-party Documentation)

Abbreviations and Acronyms

Term	Description
ANSI	American National Standards Institute
CRIND	Card Reader IN Dispenser
GSM	Gilbarco Security Module
ISO	International Organization for Standardization
LED	Light Emitting Diode
NEMA®	National Electrical Manufacturer's Association
POS	Point Of Sale
UPS	Uninterruptible Power Supply

Important Safety Information

Note: Save this Important Safety Information section in a readily accessible location.

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

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

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

⚠ WARNING

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

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

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

Evacuating, Barricading and Shutting Off
Any procedure that requires access to the pump/dispenser or STPs requires the following actions:

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

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

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

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

Safety Symbols and Warning Words
This section provides important information about warning symbols and boxes.

Alert Symbol

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

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

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

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

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

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

Working With Fuels and Electrical Energy

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

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

No Open Fire

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

No Sparks - No Smoking

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

Working Alone

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

Working With Electricity Safely

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

Hazardous Materials

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

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

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

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

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

> ⚠ **WARNING**
> Gasoline spilled in eyes may cause burns to eye tissue.
> Irrigate eyes with water for approximately 15 minutes.
> Seek medical advice immediately.

> ⚠ **WARNING**
> Gasoline 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 workstation 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.

Installation

Before You Begin

Review the basic site criteria in this sub-section before installing the GSM.

Safety Considerations

- The GSM is not suitable for use over hazardous locations. Refer to MDE-2530 Pump and Dispenser Installation Manual for information on hazardous locations.
- Site electrical service must comply with all installation requirements for a complete fueling system.

Choosing a Location

- Locate the GSM (PA0258XXXXXXX) in an area with an office-type environment not subject to extreme variations in temperature. The ambient temperature must be between +50 ºF (+10 ºC) and +104 ºF (+40 ºC) for PA025800XXXXX, and -22 ºF (-30 ºC) to +158 ºF (+70 ºC) for PA025801XXXXX.
- Locate the GSM in an area with minimal possibility of liquid spills.
- Locate the GSM in a position away from direct sunlight. If necessary, provide a suitable sun screen.

Installing Cables

- Install all cables so that they are protected from damage or accidental disconnection. Route along a wall or under a counter and secure with cable ties or suitable cable clamps.
- Route cables away from fluorescent lights, compressor wiring, or other sources of electrical interference.

Connecting the GSM and Controller

- Connect the GSM to a dedicated circuit with an Isolated Ground Receptacle (Hubbell® 5261 or equivalent).
- This circuit must NOT share the conduit with wiring for devices that draw high amperage (compressor, freezer, STP, and so on) or a device that is a source of Radio Frequency Interference (TV, microwave, intercom, two-way radio, and so on).
- Ideally the GSM should be powered by the same outlet as the POS to which it is connected. At a minimum it should share a breaker with the POS Controller (C-2, PC-based G-SITE POS system, Passport POS system, third-party POS, and so on).
- GSM and Controller must be on the same phase of AC power.

Installing the GSM

Verifying and Preparing for Installation
To verify and prepare for the installation of the GSM, proceed as follows:

1 Verify if the GSM to be installed displays the correct model number. The sticker placed on the GSM indicates the oil company compatibility, which should match with the model number code. For example, Shell® Oil Company GSM with PA02580000SHL.

Figure 1: Installing the GSM

* Refer to third-party documentation for installation of GSM with a third-party controller.
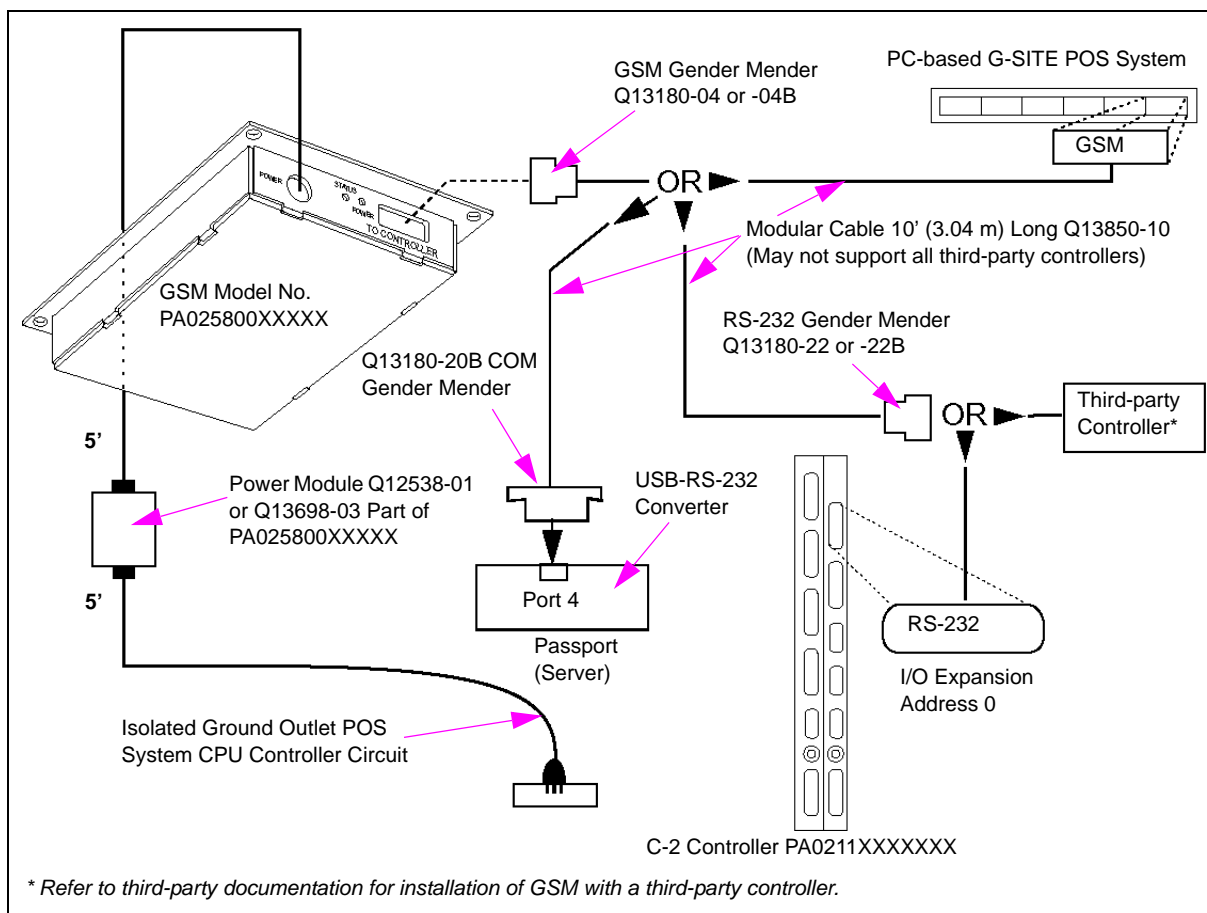
2 Use the following table to verify if the correct CRIND software is installed.

Controller	CRIND Logic Board	Software Version
Gilbarco POS System	T17361	15.2 or later
	T17764 M03651A001, A002	16.0 or later
	M04108A001	02.x.x
Third-party	T17361	50.2.4
	T17764 M03651A001, A002	51.1.6, 60.x.x, or 62.x.x
	M04108A001	02.x.x

3 Position the unit within 10 feet (3.04 m) of an isolated ground outlet and the POS system.

4 Mount the GSM on a wall or shelf, using the unit as a template (do not use the GSM as a drill guide). Ensure that you can see the LED indicators when the GSM is installed.

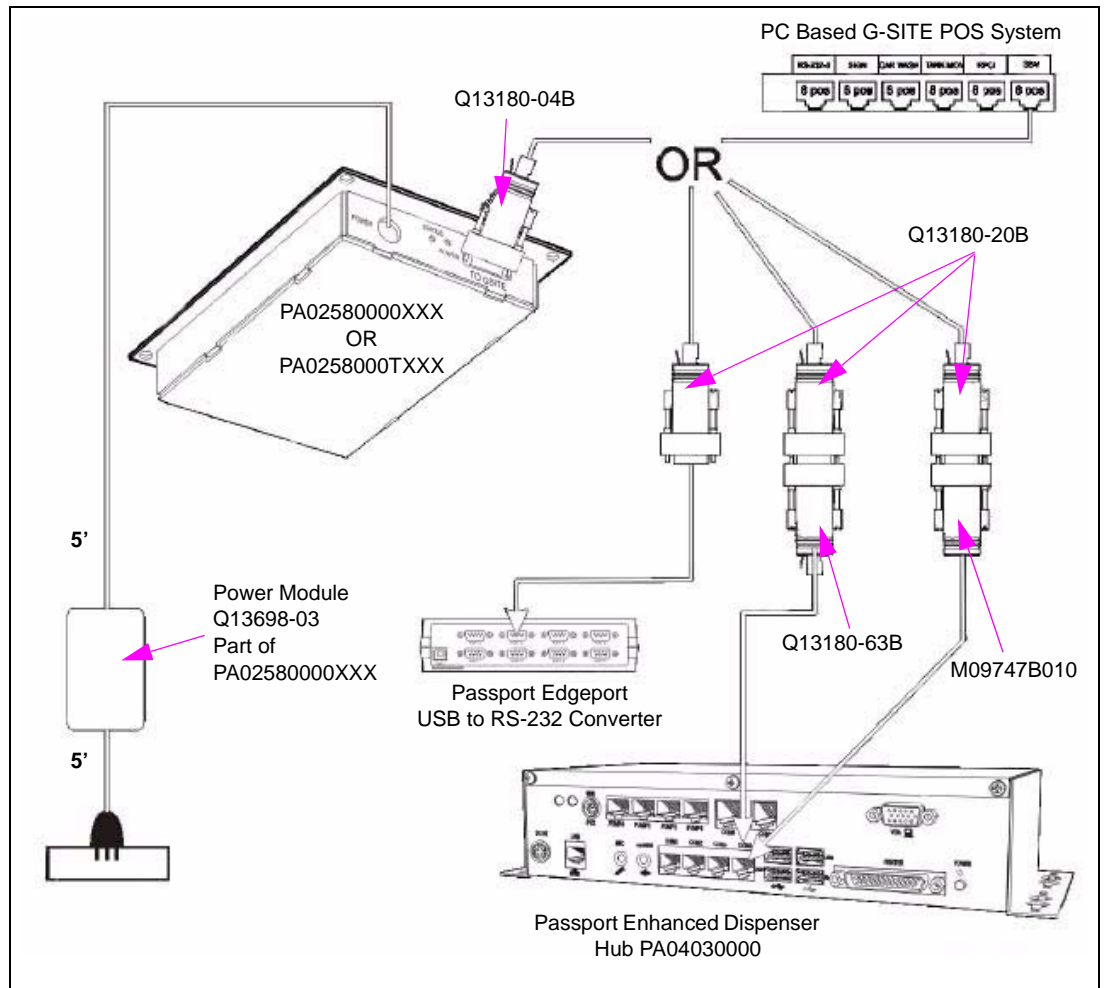**5** Turn off power to the Controller.

Connecting the GSM to PC G-SITE Controller

To connect the GSM to the PC G-SITE Controller, proceed as follows:

1 Connect a 9-pin RPCI Gender Mender (Q13180-04B) to the GSM (see Figure 2).

Figure 2: Connecting the CAT-5 Cable

2 Connect one end of the CAT-5 Cable (Q13482-XX) to the 9-pin Gender Mender and run the other end to the PC G-SITE Controller.

3 Connect the CAT-5 Cable (Q13482-XX) to the appropriate position on the G-SITE Controller (see Figure 2).

4 Connect the power module to the GSM.

5 Insert the GSM power module outlet cord into the outlet.
   *Note: Power must be applied to the GSM before it is applied to the Controller.*

6 For Q13698-03 power supplies:
  • Connect the Q11121-01 Cable to the power supply.
  • Plug cable into the power outlet.

  For applications that do not have a National Electrical Manufacturer's Association (NEMA) 5-15 style outlet, the customer must supply a connector and attach it to the end of a Q11736-01 Cable.

7 Turn on power to the Controller.

8 Verify the G-SITE system or third-party controller programming by checking for the following:
  • Correct addresses Poll/Cluster/Select.
  • Correct number of Terminal IDs.
  • Correct Terminal IDs.
  • Correct Terminal address.
  • Correct device type.

9 Contact the network for verification of parameters and station start up.

10 Observe the CRIND device display.
  • If the CRIND device initiation is successful, you see a prompt requesting card insertion on the display once the start up and initiation are complete.
  • If the CRIND device displays OUT OF SERVICE or ONE MOMENT PLEASE, open the
  • G-SITE POS system shift.
  • If the CRIND device displays PLEASE PAY INSIDE and beeps, it implies that the third-party controller is not polling the CRIND device.

11 Using a permanent ink marker, write the month, day, and year of installation in block letters on the front product label (see Figure 3).

Figure 3: Front Product Label
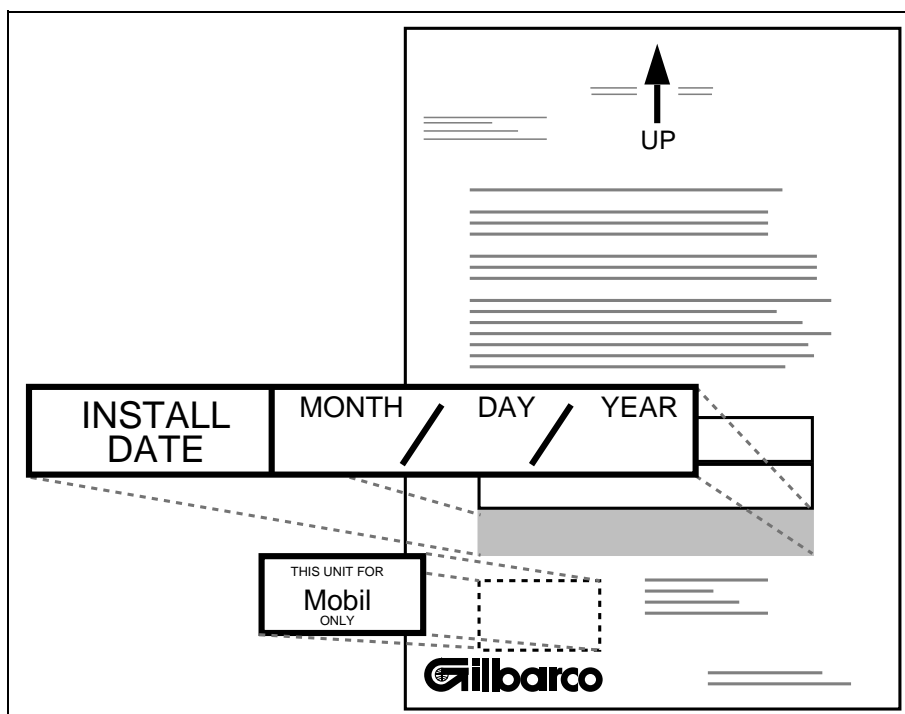
12 Verify correct debit card processing by attempting a debit card transaction at the CRIND device. Refer to "Testing and Troubleshooting" on page 21.

Connecting the GSM to Passport (V3.6 to V8.0)

To connect the GSM to the Passport system, proceed as follows:

1 Connect a 9-pin RPCI Gender Mender (Q13180-04B) to the GSM (see Figure 2 on page 11).

2 Connect one end of a CAT-5 Cable (Q13482-XX) to the 9-pin Gender Mender (Q13180-04B) and run the other end to the Passport Server Edgeport Device.

3 Connect the CAT-5 Cable (Q13482-XX) to a 9-pin Gender Mender (Q13180-20B), then connect Q13180-20B to the COM 3 position on the Passport Server Edgeport Device (see Figure 2 on page 11).

4 Connect the power module to the GSM.

5 Insert the GSM power module outlet cord into the outlet.

6 For Q13698-03 power supplies, perform the following:
- Connect Q11121-01 Cable to the power supply.
- Plug cable into the power outlet.

For applications that do not have a NEMA 5-15 style outlet, the customer must supply a connector and attach it to the end of a Q11736-01 Cable.

7 Turn on power to the Controller.
Note: Power must be applied to the GSM before it is applied to the Controller.

8 Verify the Passport POS system programming by checking for the following:
- Correct addresses Poll/Cluster/Select.
- Correct number of terminal IDs.
- Correct terminal IDs.
- Correct terminal address.
- Correct device type.

9 Contact the network for verification of parameters and station start up.

10 Observe the CRIND device display.
- If the CRIND device initiation is successful, you see a prompt requesting card insertion on the display once the start up and initiation are complete.
- If the CRIND device displays OUT OF SERVICE or ONE MOMENT PLEASE, open the G-SITE POS system shift.
- If the CRIND device displays PLEASE PAY INSIDE and beeps, it implies that the third-party controller is not polling the CRIND device.

11 Using permanent ink marker write the month, day, and year of installation in block letters on the front product label (see Figure 3 on page 13).

12 Verify correct debit card processing by attempting a debit card transaction at the CRIND device. Refer to "Testing and Troubleshooting" on page 21.

Connecting the GSM to Passport (V8.02 or Later)
To connect the GSM to the Passport system, proceed as follows:

1 Connect a 9-pin RPCI Gender Mender (Q13180-04B) to the GSM (see Figure 2 on page 11).

2 Connect one end of a CAT-5 Cable (Q13482-XX) to the 9-pin Gender Mender (Q13180-04B) and run the other end to the Enhanced Dispenser Hub Device.

3 At the Enhanced Dispenser Hub, connect the loose end of the CAT-5 Cable to a 9-pin COM Gender Mender (Q13180-20B).

4 Connect the 9-pin Gender Mender (Q13180-20B) to an RJ-45 to DB-9 Male Cable Adapter (M09747B010), or attach Q13180-20B to an Enhanced Dispenser Hub COM Gender Mender (Q13180-63B). Q13180-63B will be attached to the Enhanced Dispenser Hub with a Q13480-XX CAT-5 Cable.

5   Attach either the RJ-45 to DB-9 Cable Adapter (M09747B010) or the Enhanced Dispenser Hub COM Gender Mender (Q13180-63B) to COM 4 on the Enhanced Dispenser Hub (see Figure 2 on page 11). Q13180-63B will be attached to the Enhanced Dispenser Hub with a Q13480-XX CAT-5 Cable.

> # IMPORTANT INFORMATION
>
> With Passport V8.02 and later, communication to the GSM is through the Enhanced Dispenser Hub. COM Port 4 of the Enhanced Dispenser Hub has been hard-coded for communication to the GSM. Port mapping of other serial devices should NOT be done against COM Port 4.

6   Connect the power module to the GSM.

7   Insert the GSM power module outlet cord into the outlet.
  Note: Power must be applied to the GSM before it is applied to the Controller.

8   For Q13698-03 power supplies:
  • Connect the Q11121-01 Cable to the power supply.
  • Plug the cable into the power outlet.

  For applications that do not have a NEMA 5-15 style outlet, the customer must supply a connector and attach it to the end of a Q11736-01 Cable.

9   Turn on power to the Controller.

10 Verify the Passport POS system programming by checking for the following:
  • Correct addresses Poll/Cluster/Select.
  • Correct number of terminal IDs.
  • Correct terminal IDs.
  • Correct terminal address.
  • Correct device type.

11 Contact the network for verification of parameters and station start up.

12 Observe the CRIND device display.
  • If the CRIND device initiation is successful, you see a prompt requesting card insertion on the display once the start up and initiation are complete.
  • If the CRIND device displays OUT OF SERVICE or ONE MOMENT PLEASE, open the
  • G-SITE POS system shift.
  • If the CRIND device displays PLEASE PAY INSIDE and beeps, it implies that the third-party controller is not pulling the CRIND device.

13 Using permanent ink marker, write the month, day, and year of installation in block letters on the front product label (see Figure 3 on page 13).

14 Verify correct debit card processing by attempting a debit card transaction at the CRIND device. Refer to "Testing and Troubleshooting" on page 21.

Installing PA025801XXXXX GSM in SMART CRIND™
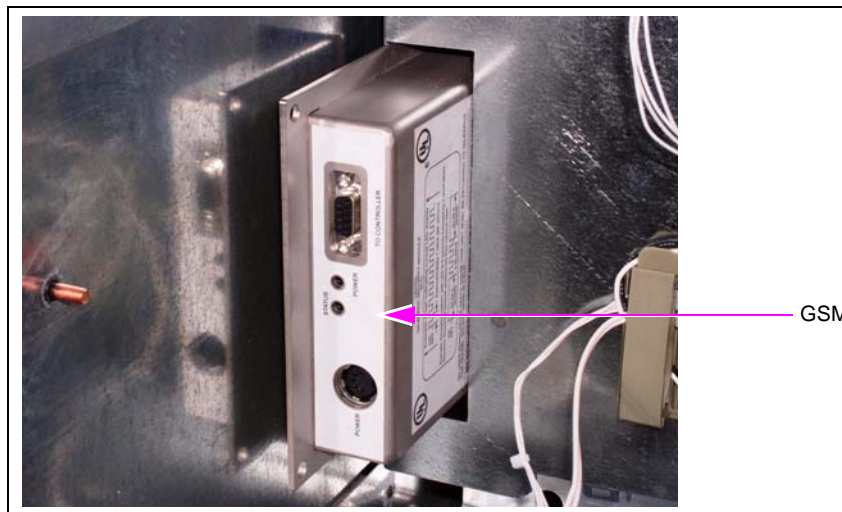
To install the GSM in the SMART CRIND, proceed as follows:

1 Install the GSM sideways into the slot next to the UPS and main power supply (from Side 2).

Figure 4: Installing the GSM Sideways

Bolts that secure the GSM to the frame
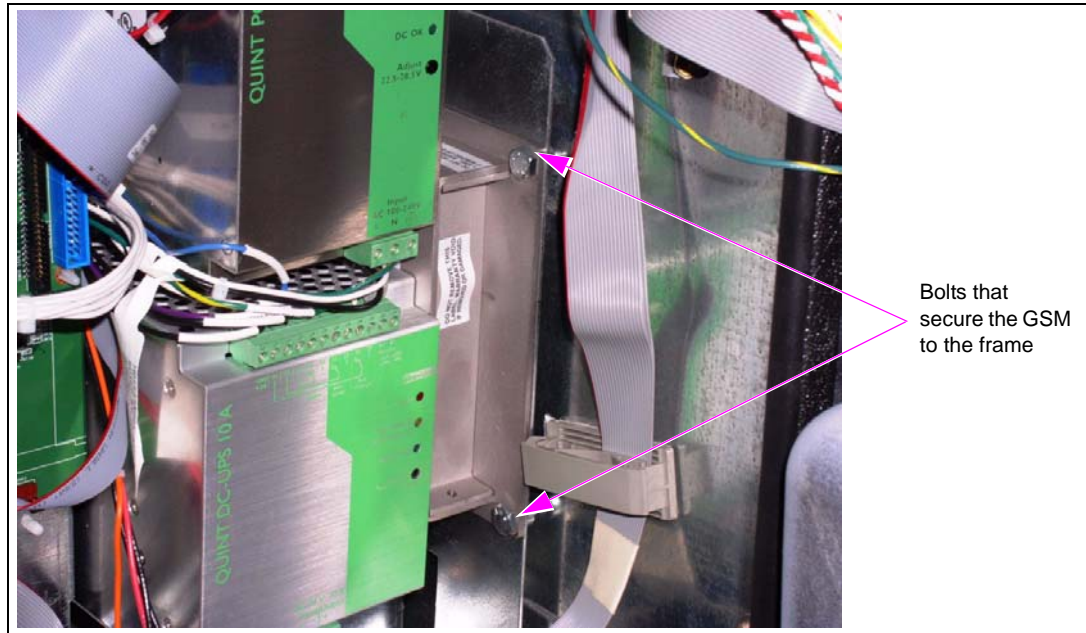
2 Secure the GSM onto the frame using the 7/16" bolts provided as a part of the SMART CRIND Assembly.

Figure 5: Securing the GSM

GSM

Note: The GSM may touch the Power Supply (Battery Back-up) when sliding into place. If so, move the Power Supply to the left.

3 With the power off, connect the Power Supply Cable and the cable from the site controller into the relevant ports at the rear of the GSM (see Figure 6).

Figure 6: Connecting the Power Supply Cable

Cable from SBC or
Interface Board

Power Supply Cable
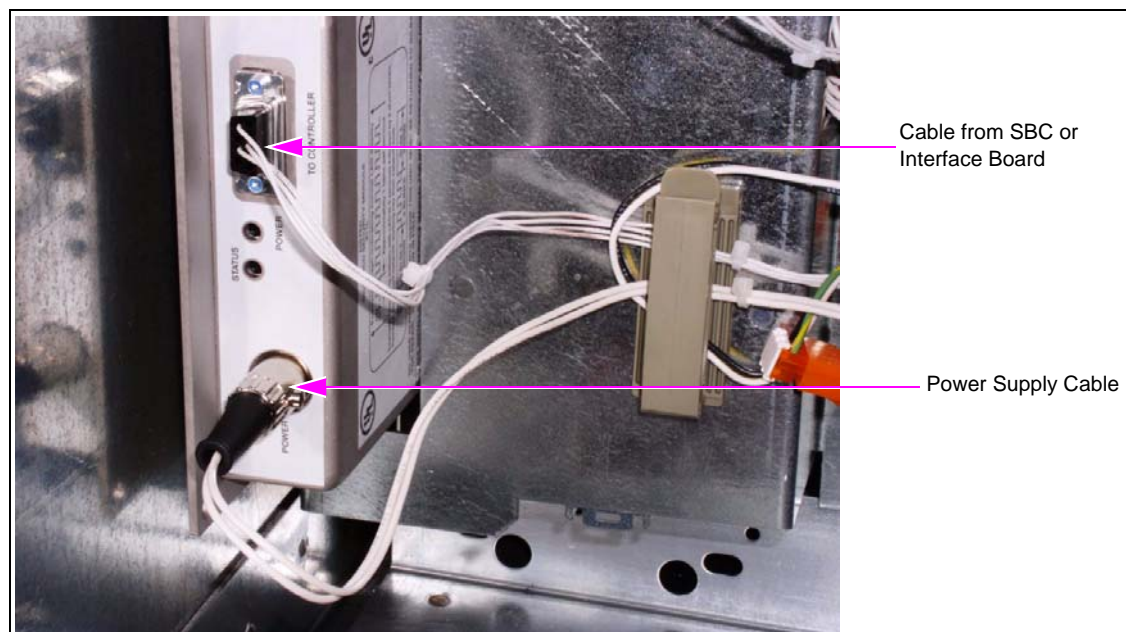
The installation of the GSM in the SMART CRIND is complete.

Removing the GSM from Service

To adhere to the American National Standards Institute (ANSI)/International Organization for Standardization (ISO) PIN key management security guidelines, the security regulations mandated by the networks require that all cryptographic devices removed from service have their encryption keys erased/destroyed.

As a result, it is necessary to erase the encryption key(s) maintained in the GSM when it is removed from service.

CAUTION

This procedure renders the GSM unusable. Once performed, the GSM cannot be placed back into service.

To remove the GSM from service, proceed as follows:

1 Disconnect the GSM Communications Cable from the Controller.

2 Remove the security label covering the screw on the end of the GSM opposite the Status LED.

3 When the GSM is powered up, remove the screw and discard.
Note: This process destroys the encryption key(s) in the GSM. The GSM is no longer usable.

4 Record the model number, serial number, and any other identifying marks on the GSM label that may be required by the network or owner of the GSM to document the destruction of the GSM key(s).

5 With a pocketknife or Exacto-knife, lift one corner of the label on the face of the GSM and slowly peel away from the GSM. This process should leave many small "dots" behind, on the GSM.

6 Dispose of the removed label. The purpose of this step is to indicate that the GSM is **VOID** and to remove any indication of the network/customer keys that were contained in the GSM.

7 Properly dispose of the GSM according to specific instructions provided by the network for the destruction of cryptographic devices.
Note: The GSM contains hazardous materials such as lithium and lead that cannot be disposed of using regular procedures. It must be disposed of with a processor that can accommodate hazardous materials.

For your convenience, you may return the out-of-warranty GSM devices to Gilbarco Veeder-Root®, postage pre-paid, and we will dispose of in the proper manner. Units may be shipped to the following address:

Gilbarco
Attn: GSM Disposal
c/o Board Repair Operations
7300 West Friendly Avenue
Greensboro, NC 27420

System Operation

The GSM has two LED indicators, labeled "Power" and "Status".

Power Indicator LED

The GSM power indicator LED should be continuously lit when connected to the GSM power supply and plugged in. If the LED is not lit, proceed as follows to correct the problem:

1 Confirm if the wall receptacle is providing power.

2 Measure the GSM power supply output. Output voltage should be 5 V ± 0.25 V.
   • If the power supply voltage is outside the specified range, replace the GSM power supply.
   • If the power supply voltage is within the specified range and power indicator LED still is not lit, replace the GSM.

Status LED

When a new GSM is initially powered up, the status LED should flash in one of the following patterns.

For Master/Session Key

| LED Pattern	Indication
Continuous ON/OFF Flash (see Figure 7)	GSM good - Ready for debit
Diagnostic Code 3 (refer to "GSM Diagnostic Codes" on page 20)	GSM good - Indicates that the network working key has been successfully loaded from the network
Any other error code pattern	Replace GSM

Once the GSM has received a network working key (Master/Session only), the status LED will blink ON and OFF continuously, approximately once per second, as shown in Figure 7. This GSM is ready for debit.

For DUKPT

LED Pattern	Indication
Continuous ON/OFF Flash (see Figure 7)	GSM good - Ready for debit
Any other error code pattern	Replace GSM

A DUKPT injected GSM will blink ON and OFF continuously right out of the box (network working key is not required).

Figure 7: LED Status
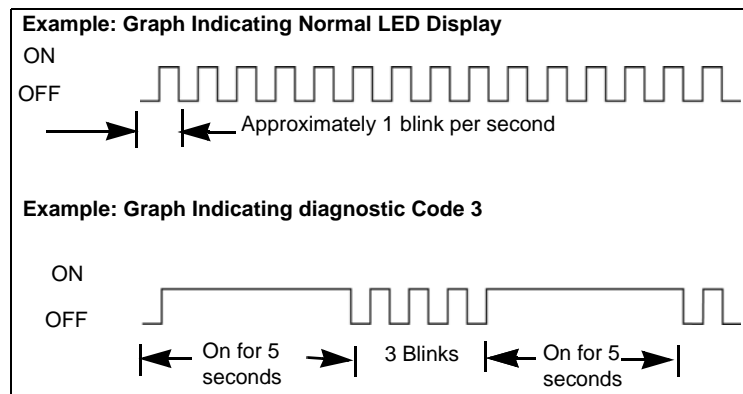
GSM related errors are signaled by diagnostic code displays on the status LED. The status LED will stay lit for approximately five seconds between the display of diagnostic code. This sequence repeats continuously. Refer to "GSM Diagnostic Codes" on page 20.
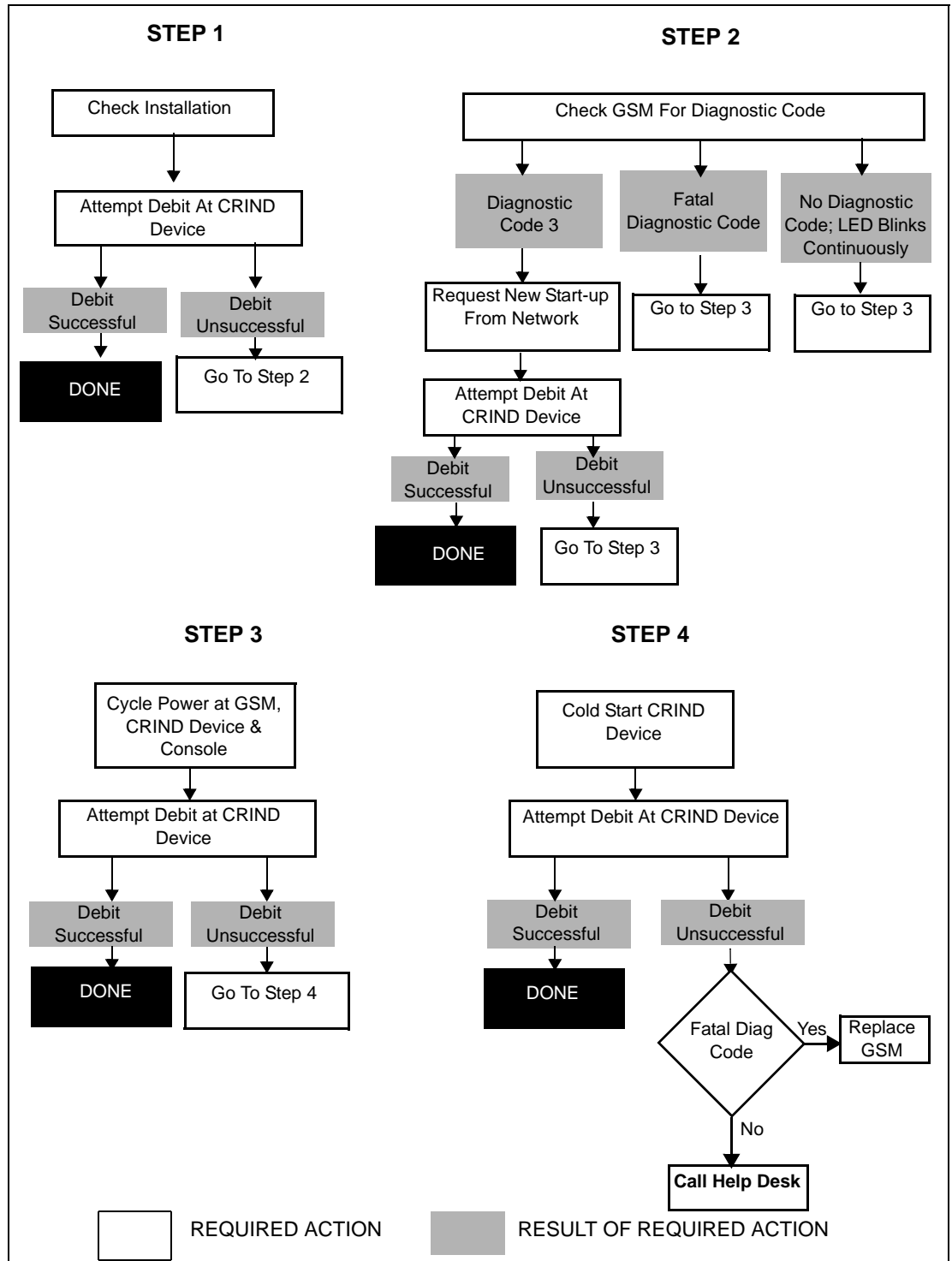
GSM Diagnostic Codes

The following are the GSM Diagnostic Codes:

LED Pattern	Corrective Action[*]
Diagnostic Code 3 - Repeating pattern with LED lit for five seconds followed by three short blinks	Download network working key from network host.
LED constantly on or LED constantly off	Replace GSM (Fatal diagnostic code).
Very Slow Blinking	Powerfail GSM by disconnecting the AC side of the power supply and plug back in.
Any other diagnostic/error code pattern	Replace GSM (Fatal diagnostic code).

* *When a diagnostic is displayed, try cycling power to the GSM at the wall outlet before replacing the unit or taking any other corrective action.*

Testing and Troubleshooting

Use the following troubleshooting procedure to verify the proper operation of the GSM and to isolate and correct problems in processing debit card transactions.

STEP 1

Check Installation

↓

Attempt Debit At CRIND Device

Debit Successful → DONE

Debit Unsuccessful → Go To Step 2

STEP 2

Check GSM For Diagnostic Code

Diagnostic Code 3 → Request New Start-up From Network → Attempt Debit At CRIND Device

Fatal Diagnostic Code → Go to Step 3

No Diagnostic Code; LED Blinks Continuously → Go to Step 3

Debit Successful → DONE

Debit Unsuccessful → Go To Step 3

STEP 3

Cycle Power at GSM, CRIND Device & Console

↓

Attempt Debit at CRIND Device

Debit Successful → DONE

Debit Unsuccessful → Go To Step 4

STEP 4

Cold Start CRIND Device

↓

Attempt Debit At CRIND Device

Debit Successful → DONE

Debit Unsuccessful → Fatal Diag Code

Fatal Diag Code — Yes → Replace GSM

Fatal Diag Code — No → **Call Help Desk**

☐ REQUIRED ACTION   ▨ RESULT OF REQUIRED ACTION

Note: G-SITE systems may require initiating CRIND downloading from the Supervisor mode. Attempt this step before cold starting any CRIND devices.

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