

System Galaxy Quick Guide

CONFIGURATION AND OPERATION

SCHLAGE AD400/AD300

WIRELESS & HARDWIRED READERS and PIMS

Requires 635-CPU & 635-DSI Boards

Supports Privacy Mode / Office Mode as of SG 10.4.8
Readers originally integrated as of SG 10.2.0



JAN 2021

SG 11.7.0
to
Current

System Galaxy AD-400/AD-300 Guide

Integrating System Galaxy with
AD-400 Wireless & AD-300 Wired
*using Galaxy 635- DSI Board
RS-485 Serial Communication*

6th Edition REV-C

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This document describes how to wire & configure the Schlage PIM to work with the Galaxy DSI RS-485 Board, as well as how to configure wireless readers into the System Galaxy software. This guide does not supersede the manufacturer's documentation for products not manufactured by Galaxy Control Systems.

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Galaxy Control Systems

3 North Main Street
Walkersville MD 21793
301-845-6600
www.galaxysys.com

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DOCUMENT HISTORY

DATE	HISTORY
APR 2013	1 st Edition published with SG 10.2 release which introduced the AD300 AND AD400 product integration.
OCT 2014	2 nd Edition published for SG10.4 Release, included a requirements and instructions about the system registration for branded wireless locks.
MAY 2015	3 rd Edition UPDATE require 635 CPU and 635 DSI (600 no longer supporting changes made to 635 DSI). Also 635 DSI has had enhancements made to support wireless technologies.
JUL 2015	4 th Edition published for SG10.4.8 release, adding support for the privacy mode and office mode options for both AD400 and AD300 readers.
APR 2018	5 TH Edition published for SG10.5.6 (post rls update). Added a picture of 635c Board to the Hardware section and wiring pinout to a new AD400 PIM.
OCT 2019	6 TH Edition published for SG 11.2 Release: corrected/clarified the rules of operation of an Office-Mode Door during Crisis Mode schedule. Door cannot be unlocked by the system, only the button can be enabled or disabled – even in Crisis Mode. Setting CM schedule to same as unlock schedule will allow the door to appear unaffected by crisis mode and continue the same operation.

1 Introduction & Requirements

This guide provides requirements and installation/configuration instructions for integrating the following readers with System Galaxy ...

- *NDE/LE Readers*
- *AD400 wireless technology*
- *AD300 Hardwired Readers*
- *As of v10.5.1 the Privacy and Office modes are supported for both AD300 and AD400*

1.1 Versions & Compatibility

System Galaxy version 10.4.8 supports Schlage AD400 Wireless PIMs/Readers and AD300 Hardwired Readers including the Privacy and Office modes. Although older sites (10.2 and higher support the AD-Series readers, the 600 DSI support was discontinued in 10.4. Therefore the minimum requirement is now v10.4.8.

- **System Galaxy software v10.4.8**
- **635-CPU & 635-DSI Boards v10.5.1 flash (minimum).**
- **AD400 PIMs & Wireless Readers** (can install AD400s exclusively or mixed with AD300's)
- **AD300 Hardwired Readers** (can install AD300s exclusively or mixed with AD400's)
- **Schlage Utility Software (SUS)** and **Hand Held Device (HHD)** are needed for addressing and linking AD400 PIMs and Readers, as well as AD300 Readers.
- **Schlage Wireless Test Kit**
- **AD400 & AD300 Readers come in ABA and Wiegand formats – you cannot mix card formats on the same network bus (i.e. DSI board section).**



For information about integrating with legacy Schlage PIMs/WAPMs, see the [Galaxy 485 ODT PIM Guide](#).



For complete list of requirements, see the Requirements section of this guide .

1.2 Unsupported Reader Options

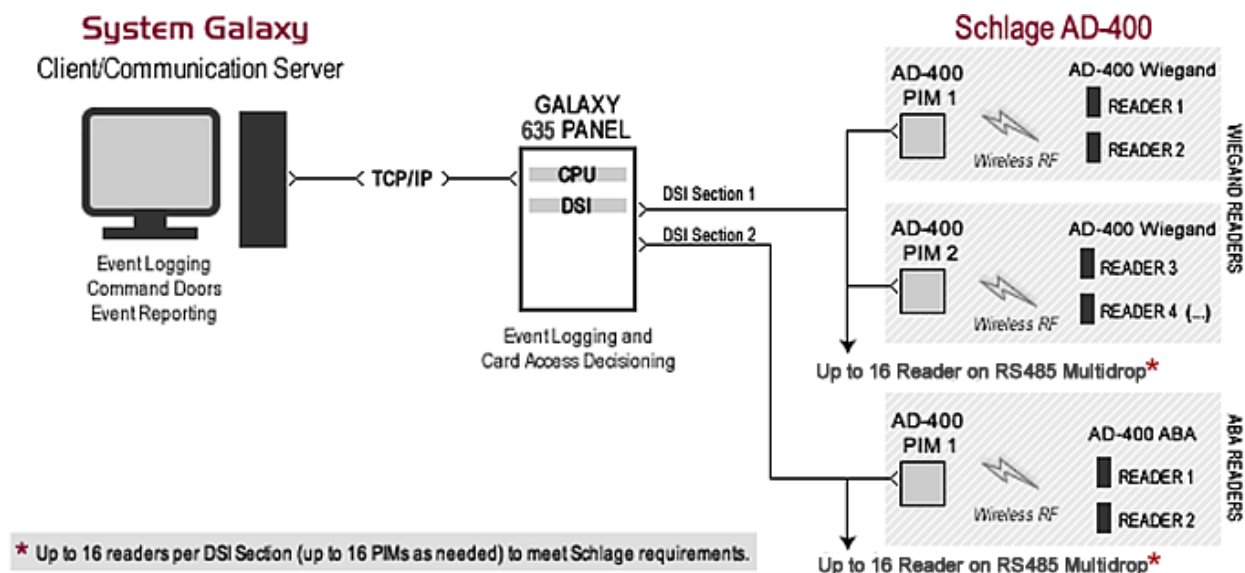
The following reader options are not supported with Schlage wireless readers.

- *Relay-2 configuration is unsupported*
- *You cannot use a Schlage reader for an elevator reader when wired through a DSI board*
- *Door Group and Door Interlock features are not supported*
- *Duress is not supported*
- *Pin Schedule Mode is not supported*
- *High security mode (card plus pin) is not supported*
- *Any grayed option is not supported – See the section in this guide that covers Reader Properties programming.*

1.3 INTEGRATION OVERVIEW

The Galaxy 635 Dual Serial Interface (DSI) board connects to the AD-400 PIM using RS-485 two-wire, multi-drop configuration. The AD-400 PIM maintains a wireless connection to the AD-400 Readers (door units) on one side of the system. The AD-400 PIM connects to the Galaxy access control panel via the DSI 485 board on the other side of the system. The AD-400 PIM converts the data from wireless protocol to RS-485 and visa-versa. The door events and credentials presented at the wireless door are sent thru the PIM to the Galaxy Panel. The Galaxy Panel returns the access decision to the PIM & logs event with the Comm. Server and SysGal database.

Figure 1 – SYSTEM DIAGRAM: AD400 PIM/Readers on RS-485 Multi-drop



IMPORTANT

- The *Card + PIN* “high-security mode” is not supported at this time.
- Each **section** of a DSI board supports the same card format (i.e. either all Wiegand Readers or all ABA Readers). The diagram above shows a system that has mixed card technology. You can see how you must install the ABA readers on a different 485-network section (DSI section).

1.4 UPDATING OR EXPANDING EXISTING SYSTEMS



NOTICE: Legacy **Wireless 485-PIM-ODT & WAPMs** are still supported in SG 10.2; however the Galaxy CPU must be flashed up to 5.0 – if you are upgrading from SG 8 or 9, you may want to contact dealer technical support to ensure you properly step through the hardware flash upgrade.

1.4.1 ADDING AD400'S TO AN EXISTING LEGACY SYSTEM

- a) **DEDICATED NETWORK:** You can install AD400 wireless hardware onto a separate DSI section. In this case you must configure the **Serial Channel programming** (in SG software) to use the Network Type = AD400 (wireless only) for the both new **AD400 network bus** as well as the **legacy Schlage ODT bus**. The addressing requirements must meet specifications – see the following sections on addressing AD400 PIMs and Readers.
- b) **SHARED NETWORK:** You can install the AD400 wireless hardware onto the same network bus with the existing legacy PIMs and Readers as long as you do the following:
- You must assign unique AD400 PIM addresses that do not duplicate the ODT PIM addresses.
 - You must assign unique addresses to AD400 Readers that do not duplicate the legacy readers on the network bus/section.
 - You cannot cross-link the equipment: Legacy readers can only link to legacy PIMs and visa-versa, AD400 readers can only link to AD400 PIMs.
 - You must set the Network Type to “AD400 (wireless only)” on the **Serial Channel** (in SG software).

1.4.2 ADDING AD300'S TO AN EXISTING AD400 SYSTEM

- a) **DEDICATED NETWORK:** You can install AD300 hardwired readers onto a separate DSI section. In this case you must set the Network Type to “AD300 (hardwired only)” the **Serial Channel** (in SG software) for the new **AD300 network bus**. Note: It is a requirement that even hardwired readers have a PIM address. Therefore the SG software auto-assigns a *PIM number* to the Reader that matches the binary address of the AD300 Reader.
- b) **MIXED NETWORK:** You can install the AD300 hardwired reader onto the same network bus with existing AD400 wireless hardware as long as you do the following:
- You must address the AD300 Readers to a binary value that is not used by any AD400 readers on the same network bus/section.
 - You must use treat the binary address of an AD300 reader its own PIM number; and therefore you cannot give the same binary address to an AD300 Reader and an AD400 PIM.
[Example: if an AD300 Reader is addressed to “4”, then there cannot be any AD400 PIMs addressed to 4].
 - You must set the Network Type to “AD300 & 400 (mixed-network)” on the **Serial Channel** (in SG software).



See other sections in this guide for diagrams of the **mixed-networks** and **dedicated networks**.

Also see: [Creating a “Mixed-Network” Channel](#) or [Creating an AD300-Only Channel](#) for step-by-step instructions.

1.5 OVERVIEW OR AD300 & AD400 Integration

The AD-series readers can be installed separately or in mixed-networks. The following paragraphs give you an overview of the installation types.

SG 10 software supports the following network types for Schlage Wireless Readers:

- **AD300-Only (dedicated)** = the 485-Channel is connected only to AD300 hardwired readers.
- **AD400-Only (dedicated)** = the 485-Channel is connected only to AD400 wireless readers.
- **AD300 & AD400 (Mixed Network)** = 485-Channel is connected to both Wireless and Hardwired Readers.

1.5.1 AD300-ONLY “DEDICATED HARDWIRED” RS-485 NETWORK

The AD300 Reader is hard-wired to the 485-network section of the Galaxy DSI board in a two-wire, multi-drop configuration. There is no PIM unit to install. In the System Galaxy Serial Channel programming, the DSI section must be set to use AD300 Only. Also, System Galaxy will automatically assign the PIM number in the Reader Properties screen to be the same value as the AD300 Reader ID (e.g. Reader 1 would assume PIM 1, Reader 4 would assume PIM 4).

1.5.2 AD400-ONLY “DEDICATED WIRELESS” RS-485 NETWORK

The AD400 PIM is hard-wired to the 485-network section of the Galaxy DSI board in a two-wire, multi-drop configuration. The PIMs are then linked to the wireless AD400 Readers using the Hand Held Device. In the System Galaxy Serial Channel programming, the DSI section must be set to use AD400 Only. In the Reader Properties screen, the operator must assign the correct PIM number to each reader according to what was programmed into the PIM.

Why make an ‘AD300-only’ channel?

- » **Convenient programming** - the SG software automatically sets the PIM numbers (in the software) for every AD300 reader that you add to the software from the Serial Channel screen.
- » **Eliminate potential conflicts with wireless PIM addresses** – PIM addressing can be tricky in “mixed network” mode. It is easy to create a duplicate PIM or address conflict with
- » **Simplify hardware installation/configuration** – especially if the existing PIMs will need to be reconfigured to accommodate the AD300 readers.

1.5.3 AD300 & AD400 “MIXED NETWORKS” RS-485 NETWORK

The AD400 PIMs & 300 reader models can be installed on the same 485-channel of the DSI board, which is called a “mixed-network”. While there are programming advantages to installing the AD300 readers on dedicated network, Galaxy offers the “mixed-network” configuration for convenience. You must keep in mind that the AD300 Reader must assume a phantom PIM ID that is the same value as the reader ID. Therefore any address that has been assigned to an AD300 Reader cannot be assigned to an AD400 PIM or AD400 reader on that same section. In the System Galaxy Reader Properties screen, you must take care to assign the PIM numbers correctly.

Why make a ‘MIXED NETWORK’ channel?

- » **Feasibility and convenience** – it may not be feasible to dedicate a channel to one type of reader due to placement of PIMS and panels.

1.6 DOCUMENTATION REFERENCES

1.6.1 OUTLINE OF THIS GUIDE

- **Chap. 1 Overview:** overview of the system integration with Schlage AD-400 Wireless and AD-300 Wired.
- **Chap. 1 Requirements:** Galaxy and Schlage requirements for integrating Schlage with System Galaxy.
- **Chap. 2 Configuration of Schlage and Galaxy Hardware:** Instructions to configure the Schlage PIMs & Readers; linking and connecting them to the SG hardware.
- **Chap. 3 Configuration of Galaxy Software:** Instructions to configure the Schlage PIMs and Readers in the SG hardware.

1.6.2 RELATED DOCUMENTATION

The latest versions of these manuals are found online.

System Galaxy

<http://www.galaxysys.com/index.php?tpl=support/index>

SG v10 System Specification Guide

System specifications for the database, software, hardware, operating system; and guidelines for system architecture, as well as 3rd Party integrations.

SG v10 Software User Guide

Describes how to configure and operate most features of the software

635-series Hardware Guide

Describes how to install and configure the hardware and its peripheral devices (readers, inputs, outputs, etc.).

SG Integration to Schlage AD400

Describes wiring the AD-400 PIM to the DSI in the Galaxy panel and how to configure the DSI & Door properties in System Galaxy. Includes information on using the Schlage HDD (hand-held) and SUS to re-link and re-couple the wireless door lock.

Schlage Documentation

www.schlage.com/support *Look for the row that pertains to AD-400*

Schlage Utility Software User Guide

Describes how to use the SUS Software. You must use this Schlage document to perform the Linking PIMs to Wireless Readers and Coupling the Hand Held Device to the Wireless Readers

Schlage HDD Guide

Describes how to use the Schlage Hand Held Device

1.7 SYSTEM REQUIREMENTS

The requirements for the **Galaxy to Schlage interface** is organized by sections; covering Galaxy hardware, Schlage hardware, Galaxy software, and Schlage Software.



ADDITIONAL SCHLAGE DOCUMENTATION NEEDED:

- **Schlage SUS Software documentation**
- **Schlage Hand Held Device documentation**

Contact *Galaxy Technical Support* for questions beyond the scope of documentation.

1.7.1 GALAXY HARDWARE REQUIREMENTS

Minimum Hardware and Firmware Requirements

RELEASE HISTORY: SG 10.0.0 (with Flash v 4.75) introduced support for Schlage AD-400 Wireless Readers/locks in Nov 2011. SG 10.2.0 (with Flash v 5.0) introduced support for *Mixed Network Topology*, using both AD300 & AD400, in July 2013. **SG 10.4.8 (Flash 10.4.8) introduces support for Office and Privacy Modes in Aug 2015; and requires 635-CPU/635-DSI**

SG 10.4.8 UPGRADE NOTES:

1. You must **upgrade to SG 10.4.8 and flash all panels up to 10.4.8** to take advantage of the latest fixes and features (e.g. Office Mode or Privacy Mode).
2. You also must replace any 600-CPU's and 600-DSI's **that are connected to Schlage readers** with 635-CPU/635-DSI's.
3. Schlage lockset firmware does not need to be upgraded this release.



IMPORTANT: DO NOT INTERRUPT POWER to the controller unit, CPU, or to any daughter boards during flashing. _Make sure all daughter boards have finished flashing before loading data to boards or connect devices.



ALSO SEE: See Appendix in this guide for tips. Or the **Galaxy 635 Hardware Guide** for detailed flashing instructions.

Maximum CPU Device Load

A Galaxy 635-series controller can support up to 64 devices (per CPU board).



IMPORTANT: DO NOT EXCEED the maximum CPU device load when installing Schlage Readers.

The device count (by board type) is listed below:

DPI Board	2	(i.e supports 2 readers)
DIO Board	1	regardless of the attached inputs or outputs
DSI for Schlage Readers		You must count every Schlage reader as 1 device (including AD400 and AD300 models)
DSI Board for 'other use'	2	each 485-channel (Section) counts as 1 device. (i.e. LCD Mods, Clocks, Relay Boards, or if not in use)

DSI Board Specifications (SG 10.4.8 or higher)

- 1) The DSI board(s) must be running a minimum of v10.4.8.
- 2) **IMPORTANT: DO NOT INTERRUPT POWER to the while DSI boards are flashing!**
- 3) **Each DSI board has two RS-485 Channels per board:** Specifications are listed per 485-channel [and per board]
 - a) **Jumper wires must be installed** between R+ and T+ terminals and between R- and T- terminals.
 - b) **Each 485-channel operates independently from the other 485-channel.** *This gives the installer the advantage of splitting the types of Schlage readers; or installer can use one section for readers while using the other section for a completely different purpose (such as General Purpose Relay boards, LCD's, etc.)*
 - c) **Each RS485-port supports RS-485 two-wire communication using a multi-drop network configuration.**
 - d) **Schlage Readers can be installed in a *mixed-network* or *dedicated network*.**



Mixed-Network: is when a DSI 485-Channel that has both **AD300 Hard-wired Readers** installed along with **AD400 wireless readers**. Ensure correct addressing of readers/PIMs and setting of HI-LO reader ranges. See section on addressing readers for mixed networks.



Dedicated-Network: when a 485-Channel is dedicated to communicating with only one model of reader. Thus, the wireless and wired readers are installed on separate 485-channels.

- e) **Each RS485-port supports up to 16 Schlage Readers (doors) per 485-channel** [total 32 Readers per DSI board].
- f) **Each RS485-port supports up to 16 PIMs per 485-channel** [the number of PIMs needed will be based on how many PIMs it takes to provide reliable RF coverage].



NOTE: Schlage specs an **RF signal radius** of “up to 200-feet”; but this distance may be reduced by interference from physical structures, overlapping PIM RF ranges, or other reasons.

- 4) Galaxy continues to support the **older model Schlage PIM-485 OTD readers/PIMs** for upgrades. See the *older PIM-485 OTD Guide* for requirements and installation of that product line.

Addressing AD-Series PIMs & Readers (unit numbering and HI-LO ranges):

- a) Each **AD400 Reader** must have a unique number on the 485-channel (1-16 is valid; zero is not valid in Galaxy).
Avoid creating duplicate reader numbers as this will cause undesirable behavior.
- b) Each **AD400 PIM** must have a unique number on the 485-channel (1-16 is valid; zero is not valid in Galaxy).
- Avoid creating duplicate PIM numbers as this will cause undesirable behavior.
 - You must install at least 1 PIM per 485-Network (one PIM can support up to 16 readers).
 - Test kits are available to determine best PIM placement - see Schlage manuals for details about PIM placement.
- c) All AD400 PIMs require a HI and LO range to be defined.
- d) **Do not overlap the ranges of one PIM with other PIMs.**
- The **HI Number** defines the highest reader number that can link to the PIM.
 - The **LO Number** defines the lowest reader number that can link to the PIM.
 - When numbering and linking readers you can skip or omit using a reader number, but you can't link readers that are outside of the HI-LO Range.
- e) Each **AD300 Reader** must have a unique number on the 485-channel (1-16 is valid; zero not valid in Galaxy);
- Avoid creating duplicate numbers as this will cause undesirable behavior.
 - AD300 Readers wire directly to the 485-channel of the DSI. *See requirements on Mixed-Networks in this section.*
 - Since there is no PIM, you must define the HI-LO Range of the AD300 reader in the Reader programming. This is done using the HHD, which can plug into the bottom of the AD300 reader.
- f) **REMEMBER!** There is a **max device load of 64 devices per CPU Board/control panel.**

Requirements for Mixed-Networks (mixing AD400 & AD300 on same channel)

- a) **Galaxy supports mixing AD-400 PIMs and AD-300 hardwired Readers on the same DSI 485- Channel.** This is known as a 'mixed network'. Likewise you can put your AD300's & AD400s on separate 485-channels, or even on separate DSI boards in the same or separate controllers where wiring distance or simpler networking is a factor.
- b) **If you are mixing AD300 readers with AD400 PIMS, then the reader number** you assign to the AD300 must be valid and unique on the network and CANNOT be a number within the HI-LO range of an AD400 PIM. Example (if the AD400 PIM HI-LO Range is 1-5, then AD300 Readers must use 6 and above. AD300 Readers must set a HI-LO Range as well even though a PIM is not involved – it is configured using the HDD. See section on AD300 Configuration instructions for details.
- c) **Galaxy also supports a non-mixed** or dedicated network for AD400-ONLY and AD300-ONLY, which may be to your liking.
- d) You must set the appropriate Network Type in the ***Serial Channel Programming screen*** (in the System Galaxy software) to match the installation (i.e. Mixed-Network or dedicated network for AD400-ONLY and AD300-ONLY).

Reader Formats for AD-Series

- Wiegand and ABA Readers cannot be mixed on the same 485-channel (see System Concept Diagram).
- Put ABA readers on a separate 485-channel from the Wiegand readers.
- The DSI 485-channels operate independently, so the same board can support one Wiegand channel and one ABA channel.

Stipulations on Termination Resistors

- Device terminating resistors may need to be installed on both extreme line ends to dampen line impedance.
- Symptoms of line impedance will include intermittent or spotty communications – which will affect the behavior of the lockset, such as door not unlocking when it should, door unlock schedule not taking effect – provided all other logical reasons have been eliminated (i.e. programming, configuring and addressing is correct; also wiring and or RF signal testing is good, all requirements are met, etc.)

RS-485 Network Field Wiring Specifications

Connection	Max Dist.	Wire
DSI to PIM device:	4,000 ft. *;	22 AWG, shielded/twisted pair (ground on one end only)

* RS-485 4,000 ft. to the last PIM on the DSI 485 channel.

Ethernet Network (LAN) Wiring Specifications for 635 Access Control Panel

Connection	Max Distance	Wire
Galaxy Control Panel: to network switch	100 m (328 ft.)	Cat 5e Unshielded, port to port LAN twisted-pair (UTP)

Upgrading existing 485-Networks (older model ODT 485 PIM/Readers):

- a) You must upgrade your Galaxy Software to 10.2.0 and your controllers' CPU Flash version to 5.0
- b) **Adding Schlage AD400 Readers:** if you have existing older model PIM-485 OTD PIM/Readers, you can add the newer model AD-400 PIM/readers to the same DSI 485-network bus with the following stipulations.
 - (1) You cannot cross-link **AD400 Readers** to the legacy model PIMs, or visa-versa.
 - (2) You must still meet requirements for unique **PIM & Reader addressing and HI-LO ranges** of the PIMs on the network.
 - Newly added PIMs must meet wiring distance requirements
 - Newly added PIMs must use a unique address on the 485-channel not already taken by an existing PIM.
 - Newly added PIMs must declare a HI-LO Range that does not overlap an existing PIM's HI-LO Range.
 - Newly added AD400 Readers must use a valid and unique address on the 485-channel that is not already in use by an existing Reader. See Stipulations for Addressing PIMs and Readers in this section.
 - Newly added AD400 Readers cannot be linked to existing legacy PIMs
 - New PIMs and Readers must not interfere with existing RF reliability of existing PIMs



IMPORTANT: It may be advisable to put new readers on separate 485-network and avoid changing the addressing of existing PIMs or overhauling their configuration since the existing RF channels and RF ranges are calibrated and working.

1.7.2 SCHLAGE HARDWARE REQUIREMENTS

www.schlage.com/support - download SUS, and installation documentation (PDF Reader required)

www.youtube.com/schlageAD - view training videos that demonstrate installation

SUPPORT: 877-671-7011

- 1) **Install MS Windows 7 or XP Mobile Device Driver** (*download free from Microsoft if your PC needs it*)
- 2) **Schlage Utility Software (SUS)** for HHD (can be download from Schlage and transferred to the HHD)
- 3) **Schlage Hand-Held Device (HHD)** with USB cable and Power cable is required (loaded with the SUS).



IMPORTANT: YOU MUST REMEMBER YOUR PASSWORDS (Operator, Manager and Coupling passwords must be set up). Be aware that the operator login can only 'tour' the doors. Coupling the HHD to a door (for the sake of configuring it), is only allowed under the Manager login.

IMPORTANT: Keep your coupling password secure.

IMPORTANT: DO NOT SHARE DOORS WHEN YOU COUPLE THE HHD to doors.

- 4) **AD-400 Wireless Firmware Package** (download v2.17 Firmware Package from Schlage and transfer to HHD)
- 5) **AD-400 PIM:**
 - PIM must ship with appropriate flash for RS-485 communication; (PTD-2 wiring uses a different flash therefore you cannot just swap between them);
 - unit number must be valid in Galaxy (1-16 is supported; zero is not valid to Galaxy);
 - RS-485 two-wire communication (jumpers installed; see Figure-6 in Section 2.1.2);



IMPORTANT: Galaxy still supports the Legacy PIM 485/WAPMs. You can put AD400's on a 485-channel with legacy ODT PIMs/Readers, but you cannot link new AD400 readers with the old ODT PIMs. You must match wireless reader models the PIM it was designed to work with. All the same rules apply for unique addressing and HI-LO range whether they coexist on the same 485-network or on separate channels. See diagram examples in the installation instructions of this guide

- 6) Credential types supported are **card code** and **keypad code**. The keypad must be configured for Type-7 (26bit Wiegand) using the HHD.



IMPORTANT: The *Card + PIN* known as "high-security mode" is not supported at this time.

- 7) **AD-400 Wireless Readers:** door number must be valid (1-16 is supported; zero is not valid to Galaxy)
 - Each Wireless Reader must be properly 'linked' to a PIM. You can use up to 16 PIMs on a 485-channel in a multi-drop configuration. Additional PIMs are only needed where one PIM ceases to support the RF ranged needed. Schlage establishes the RF reliability specifications.



IMPORTANT: Do not duplicate or overlap the door numbers of the Wireless Readers when installing more than one PIM to cover a 485-channel. If you have to correct a duplicate, overlap or incorrectly numbered a reader, you must re-link every reader to its correct PIM (see Figure-5 in Section 1.4.2).

- 8) **AD-300 Wired Readers:** door number must be valid (1-16 is supported; zero is not valid to Galaxy). The HDD is physically plugged into the bottom of the AD300 reader in order to configure it.
- 9) **AD-401 Wireless Readers** use Wiegand wiring from the PIM TD2 connector to a Galaxy **DPI (not DSI)**

1.7.3 SYSTEM GALAXY SOFTWARE REQUIREMENTS

- 1) **System Galaxy Software (SG)** version 9.6 (or higher)
- 2) **System Registration must including setting the Max DSI-based Reader count.**
- 3) **SG Programming Serial Channel:** Each DSI Section (channel) must be configured in System Galaxy.
 - a) Set the correct format “Schlage Wiegand Reader” OR “Schlage ABA Reader” (droplist).
 - b) **IMPORTANT:** you cannot mix ABA and Wiegand readers on the same DSI 485 channel.
 - c) Enable (“check”) the exact same door numbers that you actually installed. You should “uncheck” any door numbers that you did not actually install.
- 4) **SG Programming Door/Reader:** Each Door Reader must be configured in System Galaxy.
 - a) Set the correct PIM number that the door was linked to during hardware installation.
- 5) **The following Door/Reader options ARE supported for wireless readers:**
 - a) **PASSBACK/WHO’S IN** feature is supported.
 - b) **Door Groups** are supported (but not Man Traps)
- 6) **The following Reader options are NOT supported for wireless readers:**
 - a) **GENERAL OPTIONS that are NOT Supported**

» Disable <i>Request to Exit</i> Message	» Elevator Reader
» Enabling Duress	» Lock when Door Closes – this is controlled by the wireless reader.
» Two Person Rule	
» Energize Relay 1 on Pre-Arm delay	
 - b) **TIMING / SCHEDULE OPTIONS that are NOT Supported**

» PIN Required Schedule	» Unlock Delay time
» Require Valid Card before auto-unlock (AKA snow-day rule)	» Unlock Duration time
» PIN Mode “High Security”	» 2-digit PIN for reclose time

NOTE: PIN Mode ‘Information Only’ is supported for Time & Attendance.
 - c) **RELAY 2 SETTINGS are NOT Supported**

» Relay 2 settings do not apply to wireless readers	» Relay 2 settings only apply to a DPI NOTE: all Schlage readers use a DSI board
---	---
 - d) **GROUP/INTERLOCK OPTIONS that are NOT Supported**

» MAN TRAP IS NOT SUPPORTED	» Notify Group when unsecure
» Disable by Door Group	
 - e) **ALARM OPTIONS that are NOT Supported**

» Duress Alarm I/O	NOTICE: Reader heartbeat is supported and controlled by the PIM configuration. Reader Heartbeat frequency is set at the PIM and does impact battery life on the Reader Unit.
» Reader Heartbeat Alarm I/O	

» Any option that is grayed or non-selectable is not available.

1.7.4 SCHLAGE SOFTWARE REQUIREMENTS

1) The Schlage Utility Software (SUS) must be installed on the HHD (typically this comes preinstalled on your HHD)

- You MUST REMEMBER YOUR PASSWORDS to the HHD
- Do not try to couple more than one Hand Held Device to the same door; each door can be coupled to only one Hand Held Device. If you couple a second Hand Held Device to the door, then it will no longer work with the first Hand Held Device.

2) The Windows Mobile Synchronization software must be installed on your PC : this is used to transfer Schlage firmware and software files from your PC, the Schlage HHD and PIM/Schlage devices

If Mobile Synchronization software is not on your PC, go to www.microsoft.com/windowsmobile/en-us/downloads and download the Mobile Device software that matches your Windows OS.

- Download and install **Microsoft ActiveSync** = Windows XP
- Download and install **Microsoft Windows Mobile Device Center** = Windows-7 & Vista.

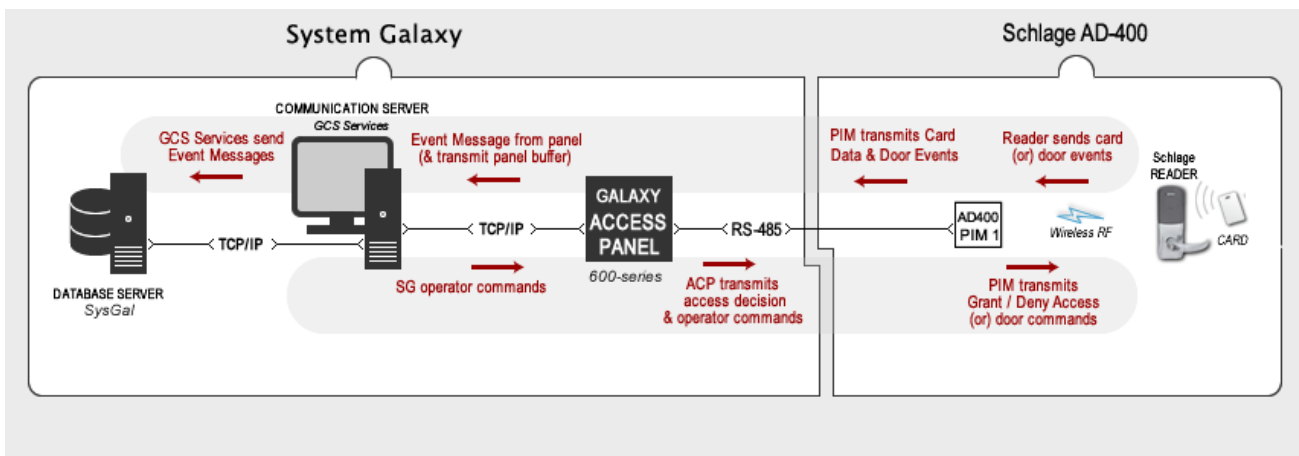
2 OVERVIEW OF EVENT COMMUNICATION

For troubleshooting purposes, it is helpful to understand the data transmission between each component in the two systems.

Example: If the Galaxy panel does not return a response to a card read, several things could be the cause.

- the wireless signal/range or channel could be receiving interference,
- the Schlage reader may need to be linked or coupled,
- the reader or PIM addressing could be invalid, the RS-485 wiring could be the problem,
- there could be a maintenance problem with the PIM, Reader or Galaxy ACP
- additionally, the card may not be enrolled or been given access to the door in question, or has not been loaded to the access control panel
- hardware failure of the components in the system is also a consideration

Figure 2 – AD400 DATA FLOW DIAGRAM



1. Events (*card swipe, door lever, etc.*) are transmitted via RF signal from the wireless reader to the AD-400 PIM.
2. The AD-400 PIM sends the event to the Galaxy 635-series Panel using the RS-485 two-wire protocol.
3. The Galaxy 635-series Panel logs the event and returns an access decision (valid or invalid) back to the PIM, provided the card has been enrolled/given permission to the Loop & Door for the time period the card was used; and has been in and loaded to the Galaxy access control panel.
4. The PIM receives & transmits the access decision to the wireless reader over wireless protocol.
5. The Galaxy panel also sends the event to the Communication Server over TCP/IP to be logged to the SysGal database and displayed on the Monitoring screen of the System Galaxy software.
6. If the System Galaxy software monitoring screen is open, the events will be displayed real-time. The System Galaxy operator can also send door commands to the wireless reader. System Galaxy operators can also send door commands to the reader from the Hardware Tree.
7. Wiring, connections, network equipment and IP setup; wireless RF signal strength/range, PIM channel, PIM linking, and power all need to be considered when troubleshooting the system.

2.1 ON-LINE EVENTS EXPLAINED

To Galaxy, “Online events” means the Galaxy access control panel is able to communicate with the System Galaxy database and communication server.

2.1.1 ACCESS DECISIONS AT THE PANEL

The panel always makes the access control decisions based on access privileges and cardholder programming that is stored in the memory of the panel, regardless of whether the server/database is online or not.

When the panel is online with the Server and Database, it immediately transmits the access decision (granted or denied) to the Software monitoring screen where the SG operator can monitor the event as well as logging the event the database for system reporting.

2.1.2 UNINTERRUPTED EVENT LOGGING

Since SG uses true background services, Operators can sign in & out of SG software, or sign in & out of PC user account, without interrupting the event communication between the panels and the SG Database. The core GCS services continue operation as long as the PC is powered on. Therefore events that occur while the SG software is logged out/shut down, or while the user is logged out of the PC OS, will be available from System Reports based on the logging to the database.

2.2 OFF-LINE EVENTS EXPLAINED

“Offline events” means the Galaxy panel is unable to communicate with the System Galaxy database.

The Galaxy 635 panel is designed to remain fully operational during an ‘off-line’ condition and continues to provide uninterrupted access control decisions. Events are stored at the panel until the connection to the database is restored; at which time the panel retransmits all buffered events to the database.

- » This can occur if the Communication/Database Server, database engine, or core GCS Services are down.
- » Access decisions are based on the rules stored in the panel’s memory.
- » Offline events are available in SG Activity History Reports after the event buffer has been transmitted.

2.3 WHAT EVENTS come from a SCHLAGE READER

The following events are communicated from the Schlage Readers.

- **VALID CARD** – is generated when a card is presented and is authorized by the Galaxy 635 Controller
- **INVALID CARD** – is generated when a card is presented at the reader that does not have authorization to enter that door/or is not authorized at that time (access group/schedules in the Galaxy panel apply).
- **NOT IN SYSTEM** – is generated when a card is not known or loaded to the Galaxy controller receives the card read from an AD-400 PIM
- **DOOR FORCED** – is generated when the door is opened by KEY OVERRIDE (i.e. using a key to open the door instead of a credential). A door forced event is also generated if the door is forced open without using a key or credential.
- **REQUEST to EXIT (REX)** – is generated by moving the inside door handle/lever.

NOTICE: The outside door lever is always movable and always generates an REN event, regardless of the door status, door schedule, or access rules (authorized/denied) of the credential. However, the door cylinder should only retract (open) when a valid access condition is met (i.e. door is unlocked, or credential is authorized, or operator sends door pulse or unlock command).

- **PIM TAMPER ALARM EVENT** – can be generated if a ***PIM tamper switch*** is activated that is wired to a Galaxy Input/Output Board (DIO) and has been configured in the System Galaxy software to behave as an alarm condition. See the main SG Software User Guide for instructions on configuring inputs and outputs to trigger alarms.

2.4 NUMBERING SCHEMES FOR PIMS & WIRELESS READERS

This section shows examples of both valid and invalid device numbering on an individual DSI 485 Section.

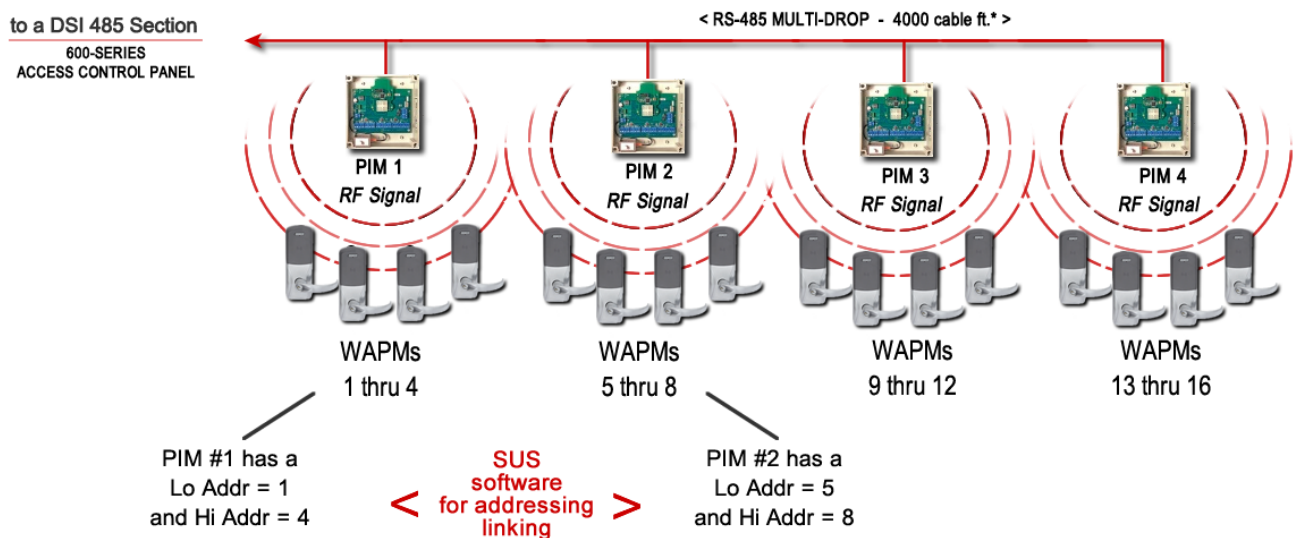
IMPORTANT NOTES

- **Reader numbers 1 through 16 are valid** on the network bus; no duplicates allowed on the network bus no matter how many PIMs are installed
- **PIM numbers 1 through 16 are valid** on the network bus; no duplicate PIM numbers allowed.
- **You must configure the HI-LO RANGE in the PIMs;** you cannot link a reader to a PIM who's Reader ID is outside the HI-LO Range.
- **Do not overlap HI-LO RANGES;**

2.4.1 VALID ADDRESSING OF AN AD400-ONLY NETWORK

You must use unique numbers for the PIM ID and Readers. The diagram below shows an example of valid device numbering for Schlage AD-400 PIM & AD-400 Wireless Readers.

Figure 3 – Diagram of Valid Numbering for AD400's

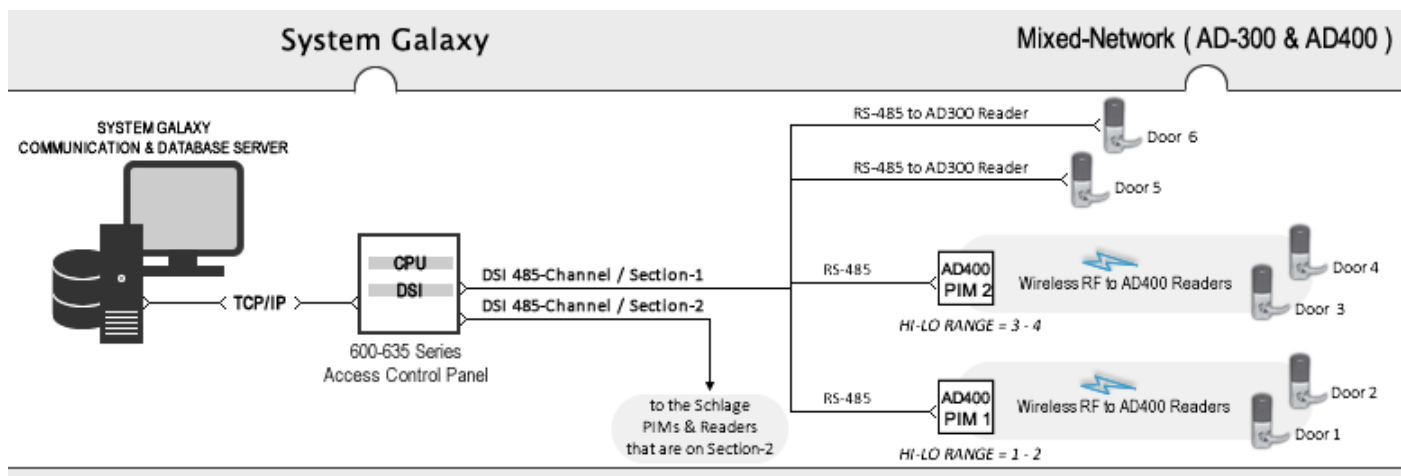


2.4.2 ADDRESSING READERS ON A MIXED-NETWORK

The diagram below provides an example of addressing Schlage PIMs & Readers on a mixed-network (AD300 & AD400).

- The AD300 Readers are hard-wired into the same 485 multi-drop network as the AD400 PIMs.
- **All Readers** must be have a unique address (no duplicates) on the same 485 network bus.
- An AD300 Reader address cannot be used as an AD400 PIM address.
- AD300 Readers must be given a binary address that is outside of the HI-LO Range of any AD400 PIM on that same network bus. *Notice that Readers 5 and 6 are AD300's – and they are not within the two AD400 PIM ranges of 1-2 and 3-4.*
- Each AD400 Reader must be given a binary address that is within the HI-LO Range of the PIM it is linked to; and the address must be unique (not duplicated) by an AD300 Reader on the same network.

Figure 4 – MIXED-NETWORK DIAGRAM: AD400 & AD300 Readers on RS-485 Multi-drop



2.4.3 DEVICE ADDRESSING EXCEPTIONS

The diagrams below show examples of numbering schemes with exceptions (skip/omit, overlap, duplicate). Some are invalid and will cause communication problems.

- It is VALID to skip/omit a number when setting Wireless Reader ID's (Example A).
- It is INVALID duplicate or overlap numbers in the 485 multi-drop (Example B)

Figure 5 – Example A: SKIP/OMIT A NUMBER is OK/VALID

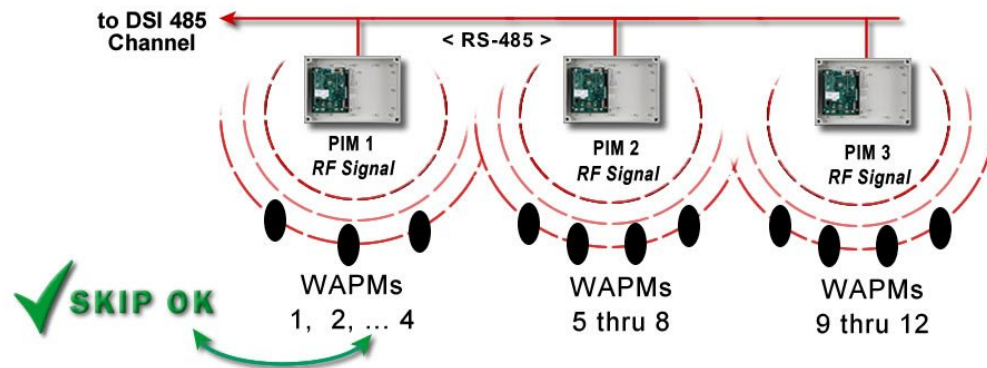
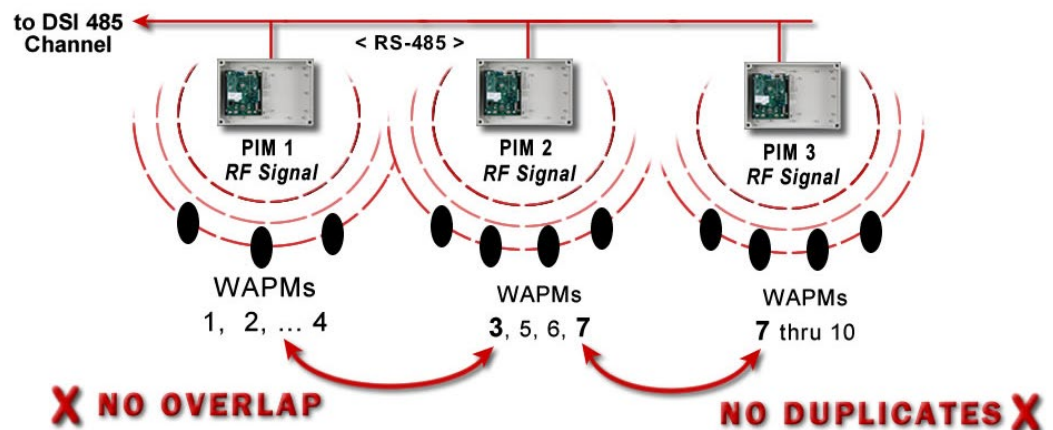


Figure 6 – Example B: DUPLICATE or OVERLAPPING NUMBERS ARE INVALID



CAUTION: If you need to correct a duplicate, overlapped or incorrectly numbered a reader, you may need to re-link some or all the readers on the network.

3 Installing & Configuring the Hardware

3.1 Installing 635-Series Hardware

Properly install the Controller, the CPU board and DSI board according to the instructions

Some of the relevant DSI-Specific install info is included in this guide, but the Panel and CPU install instructions are in the main [635 Hardware Install Guide](#) – available on the [SG Online Help Website – documentation page](#).

3.1.1 GALAXY HARDWARE PANEL & 635-CPU

This section covers brief notes in installing the Panel and 635 CPU.

1. Install the Galaxy panel according to the install instructions in the main 635 Hardware Guide

A. Galaxy “Minimum Flash Requirements” for office mode and privacy mode ...

- 635 CPU Board – with min. v10.4.8 .S28 flash code (or higher)
- 635 DSI Board – with min. v10.4.8 flash (or higher)

Table 1: FLASH VERISON CHART

S28 FLASH VERSION	CPU	DPI	DIO	DSI	SG SOFTWARE VERSION
Flash 10.5.6 →	10.5.6	all boards*			SG 10.5.6
Flash 10.5.3 →	10.5.3	all boards*			SG 10.5.1
Flash 10.4.15 →	10.4.15	all boards*			SG 10.4.9

2. You must flash the CPU according to the instructions in the Hardware Install Guide.

3. When you install the Galaxy panel, you must configure the 635 CPU

A. See the [635 Hardware Guide](#) for instructions.

B. You will need a PC to assist with programming and flashing the panel /boards. Use one of the following options ...

- Either use PC/Laptop with a COM port and HyperTerminal or suitable emulator such as Putty. You will also need the serial programming cable which comes with the controller. This option is useful if you don't have a PC in the same network segment as the panel.
- Or use a PC in the same network segment of the Panel to program the boards from their 635 Embedded Web Page. Simply find the panel by its CPU MAC Address – or – type the CPU IP Address into the browser URL field. See the [635 Web Config Tool Guide](#) for details.

- If you are using a 635-CPU: you can configure it using the 635 Web configuration Tool

- 4.

3.2 Installing 635-Series DSI Board

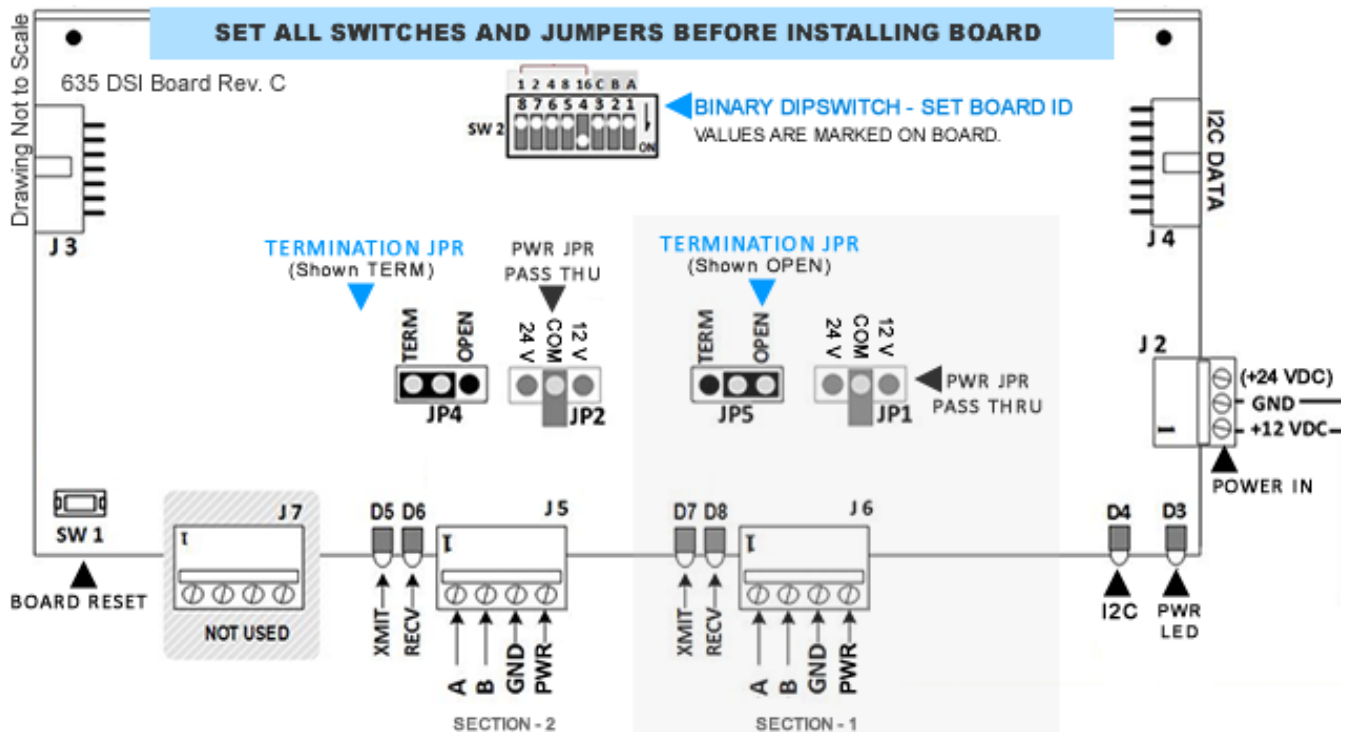
This section covers installing the 635 DSI. The older 633-series Board does not support Schlage Office Mode and Privacy Modes.

3.2.1 635 DSI ~ BOARD OVERVIEW OF FEATURES

- ▶ **Board Reset Switch (SW1):** for resetting the board to initialize the Jumpers and Dipswitch settings, or reset operation.
- ▶ **Binary Dipswitch (SW2):** for assigning the Board ID (before installing), as well as Option-B.
- ▶ **Termination (JP4/JP5) 2-Pin Jumpers:** allows installer to set the Termination if the board is at EOL (independent sections) (factory default = OPEN). Matching 120 Ω Termination Resistor must be installed at the extreme end of line.)
- ▶ (OPTIONAL) **Passthru Power Output (JP1/JP2) 2-Pin Jumpers:** ability to configure the pass-thru voltage from the power input (J2). (factory def = UNSET) 12V pos. passes power from J2 Pin-1; 24V pos. passes pwr from J2 Pin-3 via separate 24v P.S.
- ▶ **Power Input (J2)** for 12V on PIN-1 from controller DC Power Supply; 24V on PIN-3 from separate DC Power Supply.
- ▶ **Power LED (D3)** indicates board is connected to the power harness and the power is on (solid/on).
- ▶ **I2C Data Input (J4)** for ribbon cable connection to the CPU Board I2C Data Buss.
- ▶ **RS-485 Connectors (J5/J6)** used for RS-485 Communication with various multi-drop devices (see Section for wiring).
- ▶ **LEDs for XMIT/RECV (D5/D6, D7/D8):** blinking or flickering indicates RS485 Communication is detected.

Figure 7 – 635 DSI Board Features:

Diagram shows board component-side up. The board installs component-side down. Power input should be on the same side as the power harness when the board is installed in the controller.



3.2.2 635-DSI ~ BOARD INSTALLATION

This section covers installing the 635-model DSI Board.

STEP 1 – Pre-Configure the EOL Termination Jumpers (635-DSI)

If you know the DSI Section or sections will be at one extreme end of the 485-wire-run, you can go ahead and install the TERM jumper(s) as appropriate.

- ▶ **120-ohm Termination Resistors** are included with the DSI Board (packing envelope). These can be installed at each end of the wire-run if board is not at one end – See **EXAMPLE-B** in Figure below.
- ▶ **“On-Board” Termination Jumpers** (120-ohm) are provided on the DSI Board = one JP for each Section. See **EXAMPLE-A** in the figure below.

“TERM” = 120-ohms is applied at the DSI Board – the board/section should be at EOL.

“OPEN” = no termination resistance applied at the DSI Board (Factory default).

Figure 8 – Examples of when to use 635 DSI “ON-BOARD” Termination vs. Resistors at end of line:

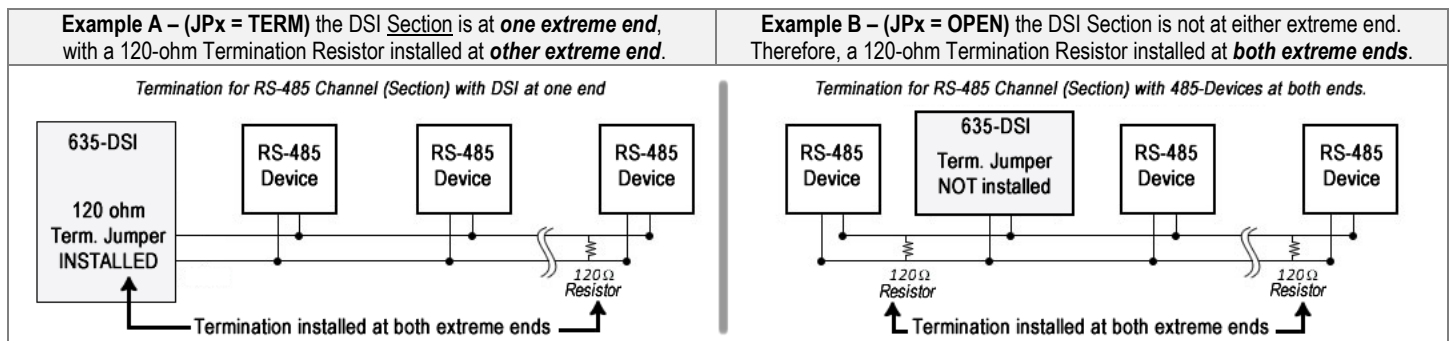


Table 2: SET THE TERMINATION JUMPERS FOR EACH SECTION

SECTION	JUMPER	Setting if Section is at EOL	Setting if Section is not EOL
Section-1	JP5	“TERM” (A)	OPEN (factory default) (B)
Section-2	JP4	“TERM” (A)	OPEN (factory default) (B)

- (A) Example A: If the DSI Board is at one extreme end of the wire-run, you must install a matching 120-ohm Termination Resistor at the **other extreme end** of 485-run.
- (B) Example B: IF the DSI Section is set to OPEN, then you must install a 120-ohm Resistor at **both extreme ends** as near to the end device as possible (120-ohm resistors are supplied with the board in a Ziploc).

PART 2 – SETTING THE PASS-THRU VOLTAGE JUMPERS

If you are not using pass-thru voltage and the jumpers (JP1/JP2) are already in the UNSET, then skip this part.

For convenience, the 635 DSI supports Pass-thru voltage from the power input.

The voltage (12v/24v) is passed thru Pin-4 (Pwr Out) of the RS-485 Connectors (J6/J5).

NOTICE:

- ▶ Leave the Jumpers open (factory default) if you are not using pass-thru voltage.
- ▶ Install the Jumpers in the correct position if you are using pass-thru voltage.
- ▶ Each 485 Section must be configured for pass-thru, independently. It is possible to use pass-thru on one Section and not on the other Section. Or it is possible to pass 12V on one Section and 24V on the other section.

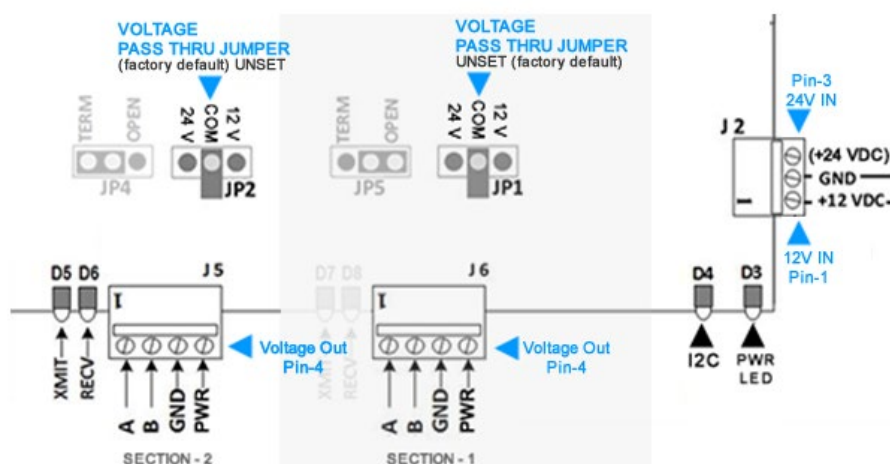
Table 3: SET THE PASS-THRU JUMPERS FOR EACH SECTION

SECTION	JUMPER	Pwr Input(J2) Pin-1	Pwr Input(J2) Pin-3	NO PASS THRU VOLTAGE
Section-1	JP1	Set to "12V" (A)	Set to "24V" (B)	UNSET (factory default) (C)
Section-2	JP2	Set to "12V" (A)	Set to "24V" (B)	UNSET (factory default) (C)

- (A) 12V pass-thru from the controller 12V power supply (PIN-1 of Power Input(J2)) to PIN-4 of the RS485 Connectors.
- (B) 24V pass-thru from an auxiliary power supply (PIN-3 of Power Input(J2)) to PIN-4 of the RS485 Connectors.
- (C) UNSET means no voltage is passed thru to PIN-4 of the RS485 Connectors.

Figure 9 – Using Pass-thru Jumpers on the 635 DSI Board:

This diagram shows the pass-thru jumpers in the UNSET position.

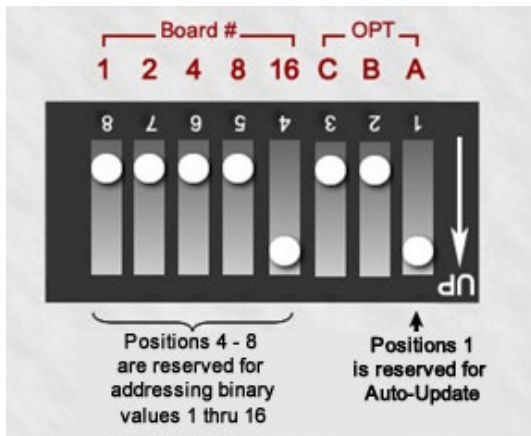


PART 3 – PRE-CONFIGURING THE BOARD ID (required)

1. SETTING THE BOARD ID (SW2):

- a) The Binary Dipswitch [SW2] is located on the center of the DSI board.
 - ! Each board ID must be unique and valid on the I2C Data Buss (1 thru 16; no duplicates).
 - ! If you are replacing an existing board – **you must use the same ID as the old board to maintain the system programming** of the readers/doors, inputs, outputs – whatever is supported.
- b) Turn “ON” only the switches needed to achieve the desired ID.
 - ▶ **Positions 4 thru 8:** for binary addressing. Find the desired value in *Board ID column* of table (below).
 - ▶ **Positions 2 and 3:** are unused and should remain OFF.
 - ▶ **Position 1:** should remain ON (factory default). This option enables flash auto-update.

Figure 10 – BINARY DIPSWITCH for DSI Board ID



CAUTION: DO NOT INTERRUPT BOARD POWER OR RESET THE BOARD WHEN IT IS FLASHING. Resetting the board or power during a flash update can damage the factory flash. **Be sure the DSI is not in the flashing process.**

Table 4: BINARY ADDRESS TABLE FOR 635-DRM

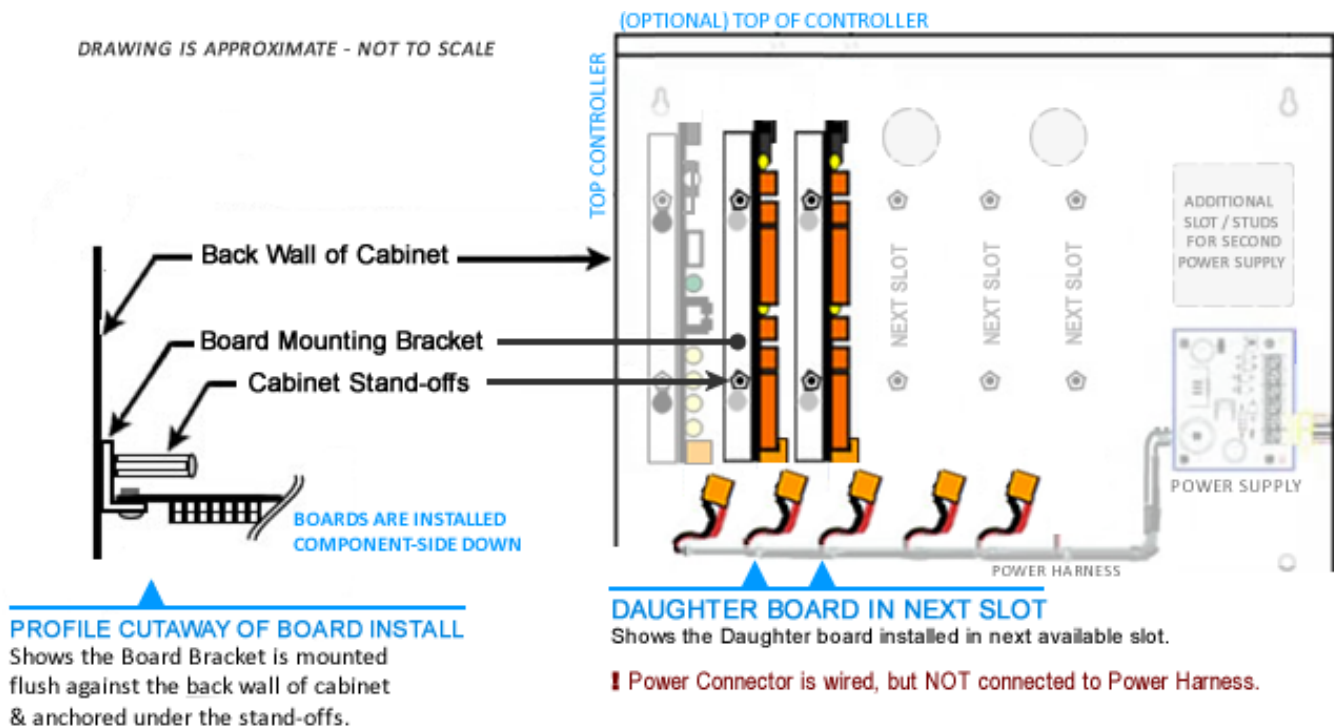
Binary Address Table								
Binary Value >	(1)	(2)	(4)	(8)	(16)	unused		Auto update
Dipswitch Position >	8	7	6	5	4	3	2	1
Board ID						OFF		ON
1	ON					< position 6 and 7 = currently unused >		< default ON – auto update flash enabled >
2		ON						
3	ON	ON						
4			ON					
5	ON		ON					
6		ON	ON					
7	ON	ON	ON					
8				ON				
9	ON			ON				
10		ON		ON				
11	ON	ON		ON				
12			ON	ON				
13	ON		ON	ON				
14		ON	ON	ON				
15	ON	ON	ON	ON				
16					ON			
Binary Value >	(1)	(2)	(4)	(8)	(16)	unused		Auto update
POSITIONS are OFF unless shown as ON								

PART 4 – INSTALLING THE 635 DSI BOARD IN THE CONTROLLER (required)

1. **Loosen the stand-offs and mount Board (bracket) flush against the back wall of cabinet**, in next available slot.
DO NOT mount bracket on end of stand-off – See diagram below
NOTE: Board installs with components facing toward power supply.
2. **Tighten stand-offs on the bracket**, to anchor the board firmly in position.
3. **Connect the Ribbon Cable** to the Data port (J4).
4. **Repeat instructions (beginning at 1) for each DSI Board you will be installing.**
5. **DO NOT CONNECT BOARD TO THE POWER HARNESS UNTIL YOU HAVE FINISHED INSTALLING ALL BOARDS.**
6. **Once you have all boards configured and installed, connect power to one board at a time (orange connector).**
7. At this point you can flash the DSI if you need to. Use the Web Config Tool or Terminal Emulator to discover the Board Flash.
8. You can do a Board RESET (switch-1) if needed, to initialize the Board ID. You should follow the Hardware Guide instructions for applying power and flashing the board.

Figure 11 – Installing a DSI Board with bracket against back of cabinet:

This diagram shows the installation of an interface board in the next available slot.



635-DSI Examples of How DSI Sections Function Independently

This table shows how the sections can work independently or mixed. You don't have to put the same hardware on one section as you do on the other section. **However, you do have to stay under the 64-device max CPU count. And you cannot mix Wiegand and ABA on the same section.**

Table 5: Examples of DSI Sections Functioning Independently

Wireless Function	635-DSI SECTION-1	635-DSI SECTION-2	Result
DSI EXAMPLE 1	Schlage AD400 – Wgn dedicated	Schlage AD300 – ABA dedicated	Card format solution
DSI EXAMPLE 2	Schlage AD400 & AD300 (MIXED)	Schlage AD300 – ABA dedicated	Section-1 mixed AD300/400
DSI EXAMPLE 3	Schlage AD400 & AD300 (MIXED)	Galaxy LCD Displays (dedicated)	Section-2 different product
NOTICE: AD300 & AD400 are the only readers that can mix on the same section (provided they are all the same Card Format (i.e. ABA vs Wiegand)). You cannot mix ABA and Wiegand on the same section with any wireless readers.			

Table 6: Mapping the DSI “Section Use” in the SG Software Serial Programming screen

Section Use is set in the System Galaxy in the DSI Programming screen before you Walk-Test the system. Most are self-explanatory. You must configure each DSI Section with the appropriate setting.

Purpose	Boards Needed	“SECTION USE” in System Galaxy
“Not in use”	n/a	UNUSED SECTION means you are not installing any hardware on that section of the DSI Board.
Schlage (ABA) AD300 Hardwired	635 DSI	PIM ABA Readers
Schlage (ABA) AD400 Wireless		
Schlage (Wgn) AD300 Hardwired	635 DSI	PIM Wiegand Readers
Schlage (Wgn) AD400 Wireless		

635-DSI Wiring Distances

Table 7: WIRING DISTANCES FOR HARDWARE

Connection	Max Distance	Wire
AD-400 PIM or AD-300 Reader	4,000 ft ¹ ²	22 AWG, shielded, twisted pair
Total line distance 4,000 ft max. measures from DSI Board to the last PIM/Reader on the 485-multidrop; i.e. the full length of the 485 wire-run.		
1) Always install termination (resistors/jumper) on both extreme ends of the 485-run. See prior step about Setting Board Termination Jumpers for details on how to configure this before installing the board. If you didn't set the jumpers you can still use the Termination Resistors. 2) IMPORTANT: you can Set the DSI Section to “MIX AD400 & AD300” on the same DSI-Section, or you can dedicate a DSI Section to “AD400s ONLY”, or “AD300 ONLY”. DSI-Sections operate independently; therefore, you can support different products using different Sections.		
WARNING! Observe Fire and Electrical Codes for wiring insulation jackets for PVC-rated cable or plenum-rated cable. Use plenum-rated cable when appropriate.		

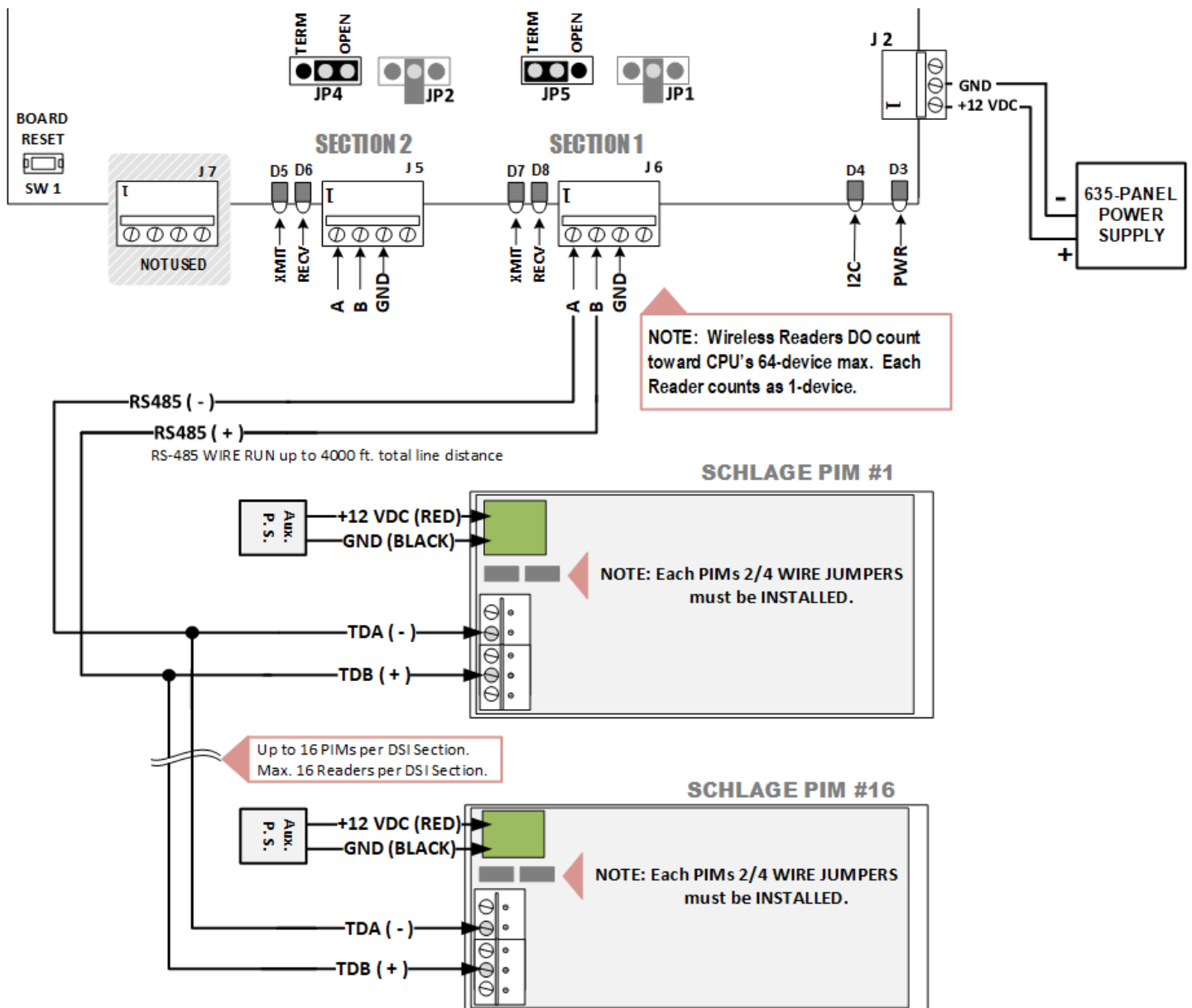
3.2.3 WIRING SCHLAGE PIMS TO 635-DSI BOARD

A DSI board can have up to 16 doors on each RS-485 Section. There are two (2) RS-485 Sections on a DSI board. Multiple 485 PIMs can be connected in a daisy-chain fashion to the DSI RS485 Section.

IMPORTANT NOTES

1. On every PIM Unit, you must install the **2 black jumpers** (2/4 Wire Jumpers).
2. The PIM unit should be powered on a separate power supply.
3. You must ground the shielding on each/every segment of RS-485 wire-run on one end only. Ground the shielding for the 1st segment at the controller end.
4. Remove the 2-piece orange connectors and use screw terminals to landing the wires from the PIM to DSI ports:
PIM TDA- to **DSI A**; and **PIM TDB+** to **DSI B**; use diagram below.
5. **You must set the AD-series PIM or Reader unit address to a valid non-zero address (1-16 is valid; zero is not valid)**

Figure 12 – Wiring PIM to 635-DSI Board



3.3 About Installing the Schlage Hardware

Installing the Schlage AD-400 hardware requires the use of a Hand Held Device and the SUS (Schlage Utility Software). Schlage Software Utility User Guide covers how to do this in step-by-step instructions.

YOU WILL NEED THE FOLLOWING SCHLAGE MANUALS AND DEVICES

ID	Description
HHD KIT	Handheld Device pre-loaded with SUS, USB Cable
HH-USB	Cable used to connect HHD to AD- and CO-Series products.

Schlage Documentation www.schlage.com/support *Look for the row that pertains to AD-400*

Schlage Utility Software User Guide This describes how to use the SUS Software. YOU MUST USE THE SCHLAGE DOCUMENT TO PERFORM LINKING, COUPLING AND ADDRESSING.

3.3.1 SCHLAGE INSTALLATION PROCESS OUTLINED

1. Download and Install Windows Synchronization Software

- Browse to www.microsoft.com/windowsmobile/en-us/downloads.
- Download the software that matches your operating system.
 - » For Windows XP or Windows 2000, download Microsoft ActiveSync.
 - » For Windows Vista, download Microsoft Windows Mobile Device Center.
- Launch the installer and follow the on-screen instructions.

2. Go to the Schlage support website www.schlage.com/support

- » Download (from the VIEW link on the table) the v 2.17 package version for the AD-400 firmware (NOTE the AD-400 is firmware version is actually 2.15).

3. Download the SUS v4.4.0 setup.exe for the Hand Held Device (HHD)



IMPORTANT: If you forget/lose the HHD passwords, you must re-install the SUS onto the HHD.

IMPORTANT: Do not share doors with a second HHD. If you couple to a second HDD, then the door will no longer work with the first HDD.

- the OPERATOR password can tour doors _____
- the MANAGER password can tour doors and more (see Schlage Docs) _____
- the COUPLING password is required to perform coupling _____

4. Follow instructions in the Schlage Guides for ...

- Coupling the HHD to readers
- Linking the AD400 PIMs to AD400 readers
- Configuring the AD400 PIMS, AD400 wireless Readers, AD300 hardwired readers.

4 CONFIGURING SYSTEM GALAXY SOFTWARE

4.1 Adding the 635 Controller, DSI and Readers to the Software

System Galaxy software must be configured with the parameters and settings of the Controllers, DSI boards and Schlage Readers.

The following subsections describe configuring the System Galaxy software for Schlage Wireless readers. The main SG Software User Guide describes the programming of cards, access rules, schedules, etc.

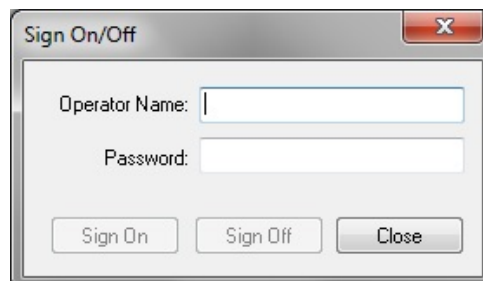
4.1.1 ABOUT USING SYSTEM GALAXY SOFTWARE

- ▶ **The System Galaxy software and core GCS Services must be running** in order to
 - configure the 635 Loop/cluster and controller settings, add DSI boards, configure the DSI channel for the PIM-485, configure reader properties, schedules, access rules, etc.
 - load all data to controllers (access rules, schedules/holidays, reader properties, etc.)
 - connect to the controllers and receive events and alarms
 - monitor doors and issue operator door commands, etc.

4.1.2 SIGNING-IN TO THE SYSTEM GALAXY SOFTWARE

- ▶ Start up System Galaxy software and log-on as a master operator:
 - a. Double-click the **SG icon** on the desktop of the Communication server
 - b. Supply the **login name** and **password** for a Master level operator

Figure 13 – Sign On/Off: Logging into System Galaxy



4.1.3 CONFIGURING SYSTEM REGISTRATION

All product levels support the registration/licensing of wireless locks for branded readers.

To open the System Registration screen you must be signed in as a master operator.

- 1) **Open the Registration Screen:** select *Configure > Options > Registration > System*
- 2) **Select the correct Product Level**
- 3) **Enter appropriate information and option settings**
 - a. **NEW INSTALL/SYSTEM REGISTRATION:** you must select the correct product level according to the purchased license agreement. You must configure all options according to the agreement. The Max Readers count the Max DSI-Based Readers count must match the purchase agreement.
 - b. **UPGRADING REGISTRATION /ADDING WIFI READERS:** you must update ...
 - **the Max Readers count** (this is the total number of readers in the system including the total number of wireless readers)
 - **the Max DSI-Based Readers count** (this is the total number of wireless readers)
- 4) **Enter the correct Registration Code.**
- 5) **Click [Apply] to save changes.**

The screenshot shows the 'Product Registration' window with the 'System Registration' tab selected. The window contains various fields for system information, product level, features, and registration details. Red arrows point from text boxes to specific fields in the window.

Annotations:

- Max Readers cannot be less than the Max DSI Readers** (points to the 'Maximum Readers' field, which is set to 16)
- Max Readers cannot be less than the Max DSI Readers** (points to the 'Maximum DSI-Based Readers' field, which is set to 0)
- Registration Code must be obtained by an authorized Galaxy Dealer** (points to the 'Registration Code' field, which contains 'GJTLRW4H')

Fields and Values:

- Current System ID: 1716590731
- Registered System ID: 1716590731
- Created Date/Time: 9/9/2014 3:09:24 PM
- Workstation Count: 1
- Customer Name: (empty)
- Authorized Galaxy Dealer Name: (empty)
- Product Level: Professional
- System-Wide Features:
 - ☐ CCTV Control
 - ☐ Card Data Import/Export/Replication
 - ☐ Event Log Output (RS-232/TCP/IP/File)
 - ☐ S.G. Time & Attendance
 - ☐ User Status/ Who's In
 - ☒ Galaxy DVR
 - ☐ 3rd Party DVRs
 - ☐ Alarm Panel Support
 - ☐ Guard Tour
 - ☐ Passback & Door Groups
 - ☐ Graphic Device Status
 - ☒ 508i & 502i Support
 - ☒ Biometric Interface Support
 - ☐ Unlimited Card Capacity (600 only)
 - ☐ Access Rule Override (600 only)
- DVR Limit: 0
- Software Maintenance Settings:
 - Expiration Date: 9/23/2014
 - Maximum Version: 10.xx
- Limits:
 - Maximum Clients: 2
 - Maximum Readers: 16
 - Maximum Biometric Readers: 0
 - Maximum DSI-Based Readers: 0
- Web Client:
 - ☐ Web Client
 - ☐ Photo
 - * Requires Card Exchange Inside
- Badge Printing System: No Badging System
- Registration Code: GJTLRW4H
- Last Registered Date/Time: (empty)

4.1.4 ADDING THE LOOP/CLUSTER IN SYSTEM GALAXY

Add the 635 Loop/cluster before adding the access control panel:

- ❖ **Click on the Loop button on the toolbar;**
{Or from the menu, select **Configure > Hardware > Loops/Clusters.**}
- ❖ When the Loop Properties screen opens, click [**Add New**].
- ❖ **Type in a loop name.**
- ❖ **Set Loop Type to “600”.**
- ❖ **Set Connection Type to “TCP/IP”.**
- ❖ **Enter the IP address of the Event Server** (the PC running the GCS Event Service)
- ❖ **Remote Port should be “4003”**
- ❖ **Enter the computer name of the Communication Server** (the PC running the GCS Communication Service). you can click the [This Computer] button if you are programming this on the communication server.
- ❖ **Click [Apply] to save settings.**

Figure 14 – Loop/Cluster Properties: Configuring the Loop

The screenshot shows the 'Loop/Cluster Properties' dialog box with the 'Configuring the Loop' tab selected. The dialog is divided into two main sections. The top section contains fields for 'ID #' (1), 'Name' (Main Building), 'Serial #' (03000010), and 'System Type' (600). To the right of these fields are buttons for 'Add New', 'Edit', 'Delete', 'Apply', and 'Cancel'. The bottom section contains tabs for 'Communication', 'Card Settings', 'Share Options', 'LED Options', and 'Advanced'. The 'Communication' tab is active, showing 'Connect using' (TCP/IP), 'Event Server IP' (63.122.126.193), 'Remote Port' (4003), and 'Loop Communication Server' (W70360-TEST). There are also buttons for 'Event Servers' and 'This Computer'.

ID #	1	<input type="radio"/> Order by ID	<input checked="" type="radio"/> Order by Name	Add New
Name:	Main Building			Edit
Serial #:	03000010			Delete
System Type:	600			Apply
Cancel				

Communication | **Card Settings** | Share Options | LED Options | Advanced

Connect using:	TCP/IP		
Event Server IP:	63.122.126.193	Event Servers	
Remote Port:	4003		
Loop Communication Server:	W70360-TEST	This Computer	

4.1.5 ADDING THE CONTROL PANEL & DSI BOARD IN SYSTEM GALAXY

Add the 635 Controller (access control panel) to the loop/cluster:

- ❖ **Open the Controller Properties screen:** click on the Controller button on the toolbar, {Or from the menu, select **Configure > Hardware > 635 Controller**}
- ❖ When the Controller Properties screen opens, **select the Loop/Cluster name** you just created in the previous step.
 1. Click [**Add New**] to add the controller.
 2. **Enter the Controller serial number** (found on the CPU board). This can be a valid serial number of any CPU in this loop/cluster.
 3. **Enter a user-friendly descriptive Name** for the control panel. The software automatically assigns a controller name – you can / should change that to a name that logically describes the location or purpose of the panel (i.e. Lobby controller, or East Wing, 1st floor, etc.) for administration and future maintenance purposes.
 4. **Click the [Get Board Info] button:** the Board Info screen will open and display the list of boards in that panel.
 5. **Click the [Save] button** to add the boards.
 6. *Configure **Alarm I/O Groups** and other **Options** as needed. You would only use Alarm I/O Groups here if you were monitoring the controller alarm events.*
 7. Click [**Apply**] to save the configuration.

Figure 15 – Controller Properties: Configuring a 635-series Controller

Cluster/Loop: Main Building

Controller ID: 1

Name: Cluster #: 1, Unit #: 1

Bypass loading: ☐

Interface Boards | CPU Boards | Alarm I/O Groups | Options

Board/Section #	Description	Sections
2	Dual Reader Interface (600)	2
5	Dual Serial Interface Board	2
10	Dual Reader Interface (600)	2
16	Dual Reader Interface (600)	2

Buttons: Add New, Edit, Delete, Apply, Cancel, Reports, Add Board, Edit Board, Delete Board, Section In Use, Section Not In Use, Get Board Info

4.1.6 CONFIGURING THE SERIAL CHANNELS IN SYSTEM GALAXY

You must have added the DSI board in the controller property screen in order to be able to configure the serial channels. All the readers on a channel must be the same format (e.g. all Wiegand or all ABA). You cannot mix reader technology. This means you cannot have both ABA and Wiegand on the same DSI port/channel.

- ♦ Open the **Serial Channel** screen : **Configure > Hardware > Serial Channel** from the SG menu
 1. Select the **Cluster/Loop Name**
 2. Select the **Controller Name**
 3. Select the appropriate **DSI Board & section number** (e.g. Board 1; Sect 1) from droplist.
 4. Click **Edit** button.
 5. Set the **Channel Mode**: 'Wiegand' or 'ABA'.

NOTE: setting a channel to 'Unused' will disable the channel.

6. Select the correct **Network Type**
7. **"check"** the appropriate reader numbers ID's that you have attached to this DSI channel.
8. Then **Apply** to save changes.

Figure 16 – Serial Channel: AD300-ONLY (HARDWIRED NETWORK)

Cluster: 635
Control Unit: All Controllers
Description: Cluster: 001, Cont: 001, Brd: 5, Sect: 2
Channel Mode: PIM Wiegand Readers
Network Type: AD-300 Only (Hardwired Network)

Reader (WAPM) #	Name
<input type="checkbox"/> 1	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 1
<input type="checkbox"/> 2	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 2
<input type="checkbox"/> 3	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 3
<input checked="" type="checkbox"/> 4	IR
<input type="checkbox"/> 5	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 5
<input type="checkbox"/> 6	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 6
<input type="checkbox"/> 7	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 7
<input type="checkbox"/> 8	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 8
<input type="checkbox"/> 9	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 9
<input type="checkbox"/> 10	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 10
<input type="checkbox"/> 11	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 11
<input type="checkbox"/> 12	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 12
<input type="checkbox"/> 13	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 13
<input type="checkbox"/> 14	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 14
<input type="checkbox"/> 15	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 15
<input type="checkbox"/> 16	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 16

NOTE for ALL Wireless Readers: each PIM number* must be manually set to match the PIM address that is programmed into the PIM hardware.

NOTE for ALL Hardwired AD300 Readers: the PIM Number must be set to match its own reader number (e.g. Reader number '3' must set its PIM number to '3').

System Galaxy automatically sets the PIM number IF you choose "AD300-ONLY (Hardwired Network)" as the System Type in this screen.

If you choose the "Mixed Network" option in this screen, you must manually set each AD300 Reader's PIM Number* to match its reader number.

* REFERENCE: The PIM Number field is located on the General tab in the Reader Properties screen. The reader number is the last number (after the dash) in the Section number, which displays above the Reader Name field in Reader Properties (i.e. "Sect: 1-3" is reader number 3).

See the following page to see the mixed-network and wireless only network setup.

Figure 17 – Serial Channel: AD400-ONLY (WIRELESS NETWORK)

Cluster: 635
Control Unit: All Controllers

Cluster: 001, Cont: 001, Brd: 5, Sect: 2
Description: Serial Channel Cluster: 001, Cont: 001, Brd: 5, Sect: 2

Channel Mode: PIM Wiegand Readers

Network Type: AD-400 Only (Wireless Network)

Reader (WAPM) #	Name
<input checked="" type="checkbox"/> 1	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 1
<input checked="" type="checkbox"/> 2	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 2
<input checked="" type="checkbox"/> 3	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 3
<input checked="" type="checkbox"/> 4	IR
<input type="checkbox"/> 5	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 5
<input type="checkbox"/> 6	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 6
<input type="checkbox"/> 7	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 7

NOTE for ALL Wireless Readers: each PIM number* must be manually set to match the PIM address that is programmed into the PIM hardware.

NOTE for ALL Hardwired AD300 Readers: the PIM Number must be set to match its own reader number (e.g. Reader number '3' must set its PIM number to '3').

System Galaxy automatically sets the PIM number IF you choose "AD300-ONLY (Hardwired Network)" as the System Type in this screen.

If you choose the "Mixed Network" option in this screen,

Figure 18 – Serial Channel: AD300 & AD400 (MIXED NETWORK)

Cluster: 635
Control Unit: All Controllers

Cluster: 001, Cont: 001, Brd: 5, Sect: 2
Description: Serial Channel Cluster: 001, Cont: 001, Brd: 5, Sect: 2

Channel Mode: PIM Wiegand Readers

Network Type: AD-400 & AD-300 (Mixed Network)

Reader (WAPM) #	Name
<input checked="" type="checkbox"/> 1	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 1
<input checked="" type="checkbox"/> 2	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 2
<input checked="" type="checkbox"/> 3	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 3
<input checked="" type="checkbox"/> 4	IR
<input type="checkbox"/> 5	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 5
<input type="checkbox"/> 6	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 6
<input type="checkbox"/> 7	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 7
<input type="checkbox"/> 8	Clust: 001, Cont: 001, Brd: 5, Sect: 2, Rdr: 8

NOTE for ALL Wireless Readers: each PIM number* must be manually set to match the PIM address that is programmed into the PIM hardware.

NOTE for ALL Hardwired AD300 Readers: the PIM Number must be set to match its own reader number (e.g. Reader number '3' must set its PIM number to '3').

System Galaxy automatically sets the PIM number IF you choose "AD300-ONLY (Hardwired Network)" as the System Type in this screen.

If you choose the "Mixed Network" option in this screen, you must manually set each AD300 Reader's PIM

4.2 Configuring the Reader Properties in System Galaxy

Reader behaviors can be configured from System Galaxy. This section briefly covers the options that can be set from System Galaxy. See the **System Galaxy Software User Guide** for in depth instructions on reader settings.

4.2.1 OPENING THE READER PROPERTIES SCREEN

❖ **Open the Reader Properties screen:** from the menu, select **Configure > Hardware > Reader Ports**

1. **Select the [Loop] and [Controller Unit]** that your DSI 485-Channel is connected to.
2. **Select the desired *Reader* from the [Reader Name] droplist;** (you can identify **section - reader** number you are selecting by looking at the default system name).
3. **Click the Edit button.**

4.2.2 PROGRAMMING READER NAME

4. **Change the default *reader name* to something useful that describes the reader location** (i.e. Entrance, Closet, Room-01, etc.). The system mapping for the board and section and reader binary ID is still displayed above the reader name field.

Figure 19 – Reader Properties: Programming a useful, descriptive Reader Name (example 1)

In this example, the reader is named “Restroom (Privacy Mode avail.)” –The operator can easily identify the reader in the SG Event screen and SG Hardware Tree. Although this name doesn’t mean Privacy mode is constantly engaged, it notifies the Operator that Privacy mode is enabled at this reader and to anticipate certain behavior from this reader. (See following steps for details on behavior)

Loop: 635
Cluster: 001, Cont: 001, Brd: 5, Sect: 2-4
Reader Name: Restroom (Privacy Mode available)
Reader Type: PIM Wiegand Readers
Ingersol Rand PIM (Wiegand/Prox)

System default name for the reader.

The programmed "useful/descriptive" name.

Figure 20 – Reader Properties: Programming a useful, descriptive Reader Name (example 2)

In this example, the reader is named “Front Entrance (Office Mode)” – The operator can easily identify the reader in the SG Event screen and SG Hardware Tree. Although this name doesn’t mean Office mode is constantly engaged, it notifies the Operator that Office mode is enabled at this reader and to anticipate certain behavior from this reader. (See following steps for details on behavior)

Loop: 635
Cluster: 001, Cont: 001, Brd: 5, Sect: 2-4
Reader Name: Restroom (Office Mode available)
Reader Type: PIM Wiegand Readers
Ingersol Rand PIM (Wiegand/Prox)

System default name for the reader.

The programmed "useful/descriptive" name.

NOTE: Office and privacy modes are newly supported in SG V10.4.8 -- See following steps for details on their behavior.

4.2.3 PROGRAMMING READER TYPE FIELD

1. The Reader Type field will be disabled, but it will display the format you assigned to this reader in the *Serial Channel Properties* screen (PIM Wiegand or PIM ABA).

4.2.4 PROGRAMMING PIM NUMBER

The PIM Number is configured differently based on which type of reader configuration you have installed.

IMPORTANT: If the DSI Section is dedicated to all AD-300 readers, the system will automatically assign the PIM number to the same value as the reader number. Otherwise the user must take care to set the correct PIM Number for each AD-series reader.

1. On the General Options tab, Operator must set the PIM number as follows

	DSI-Section	How to set the PIM#
See 4.2.4.1	AD-300 Only (Dedicated)	<ul style="list-style-type: none">Field is disabled - the system auto-assigns a PIM# to the same value as the AD-300 reader number – even though the reader really doesn't connect to a PIM.
See 4.2.4.2	AD-400 ONLY (Dedicated)	<ul style="list-style-type: none">set the PIM# to the exact value the PIM ID that this reader was linked-up with during installation.
See 4.2.4.3	AD-400 & AD-300 (MIXED)	<ul style="list-style-type: none">set the AD-300 PIM# to the same value as the AD-300 reader number.set the AD-300 PIM# to match the value that you configured for the PIM ID that this reader was linked-up with during installation. Note the AD-400 PIMs cannot use a number that is being used by an AD-300 Reader on this same section.

Programming PIM Number for Dedicated “AD-300 Only” Section

PIM# will always equal the Reader number.

Example below shows the “AD-300 Only” Dedicated Section. The PIM # Field is locked and the system auto-assigns the PIM ID when the DSI Section is dedicated to AD-300 only.

Figure 21 – Reader Properties: System auto-sets PIM Number for “AD-300 Only” Section (Dedicated)

Loop: 535 Control Unit: All Controllers

Cluster: 001, Cont: 001, Brd: 5, Sect: 2-4

Reader Name: IR

Reader Type: PIM Wiegand Readers

Ingersol Rand PIM (Wiegand/Prox)

Notes:

Apply Cancel Reports

Access Rules Elevator Schedules Graphic Symbols

General Timing/Schedules Relay 2 Settings Alarm Options Passback/Who's In Group/Interlock Options CCTV Events

☐ Disable Door Forced Open Message ☐ Time & Attendance Reader

☐ Disable Open Too Long Message ☒ Event Log E-Mail Enabled

☐ Disable Door Closed Message ☒ Event Log RS-232 & TCP/IP Transmit Enabled

☐ Disable Request To Exit Message ☒ Event Log File Output Enabled

Door Supervision: No Supervision Resistors

PIM Number: 04

Programming PIM Number for Dedicated “AD-400 Only” Section

PIM# must be manually set to the actual AD-400 PIM address that was assigned during installation.

- Use the **mapping template in the back of this guide** to assist you with recording your actual programming so you know which PIM# to set.

Figure 22 – Reader Properties: Configuring the PIM Number AD-400 ONLY (Dedicated)

In this screen shot, notice that the PIM Number must be configured by the installer.

Loop: 635 Control Unit: All Controllers

Cluster: 001, Cont: 001, Brd: 5, Sect: 2-1

Reader Name: Cluster: 001, Cont: 001, Brd: 5, Sect: 2-1

Reader Type: PIM Wiegand Readers

Ingersol Rand PIM (Wiegand/Prox)

Access Rules: General, Timing/Schedules, Relay 2 Settings, Alarm Options, Passback/Who's In, Group/Interlock Options, CCTV Events

Door Supervision: No Supervision Resistors

PIM Number: 02

Programming PIM Number for MIXED “AD-400 & 300” Section

For an AD300 Reader, the PIM number must match the actual Reader Address.

For an AD400 Reader, the PIM number must match the PIM Address that was assigned during installation.

- Use the **mapping template in the back of this guide** to assist you with recording your actual programming so you know which PIM# to set.
- Note the AD-400 PIMs cannot use a number that is being used by an AD-300 Reader on this same section.

Figure 23 – Reader Properties: Configuring the PIM Numbers for AD-300 & 400 (MIXED NETWORK)

Loop: 635 Control Unit: All Controllers

Cluster: 001, Cont: 001, Brd: 5, Sect: 2-1

Reader Name: Cluster: 001, Cont: 001, Brd: 5, Sect: 2-1

Reader Type: PIM Wiegand Readers

Ingersol Rand PIM (Wiegand/Prox)

Access Rules: General, Timing/Schedules, Relay 2 Settings, Alarm Options, Passback/Who's In, Group/Interlock Options, CCTV Events

Door Supervision: No Supervision Resistors

PIM Number: 02

4.2.5 SETTING GENERAL READER PROPERTIES

- After completing Reader Properties, the reader settings must be loaded to the access control panel.
- Any options that are locked are not supported by IR Readers.
- See the **SG User Guide** for programming information outside the immediate scope of this addendum.

Configuring a Reader for OFFICE MODE (AD300 & AD400)

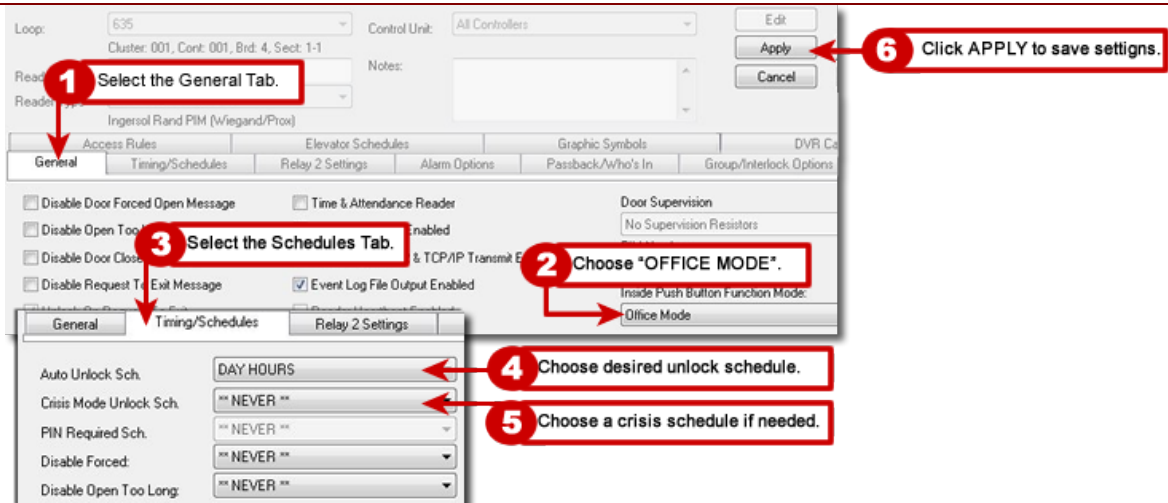
SG 10.4.8 introduces new support for the **Office Mode**. When Office Mode is configured, the **[inside push-button]** on the Reader will toggle or control the **lock state** of the door. The system will **not** unlock the door through schedules, or crisis mode, or an operator-issued command. The only way to unlock the office-mode door is (a) by presenting a valid access card, or (b) by pressing the push-button **during** an unlock status – *which means that either an unlock command or unlock schedule is in effect*. System schedules and commands only control when the button can work. A valid access card can unlock the door briefly whether the state of the door is locked or unlocked.

TO ENABLE OFFICE MODE:

1. Select the **General Tab** (with the reader in Edit Mode)
2. Set the **[Inside Push Button Mode]** field to "Office Mode".
3. Select the **Timing/Schedules Tab**
4. Choose an **Unlock Schedule** (required). The unlock schedule does not unlock the office mode door. It only allows the Office Mode button to work. The door only unlocks when the person activates the button. *(You must have already created the unlock schedule in the Schedules programming screen.)*
5. Choose a **crisis mode behavior** for the Office Mode schedule. This controls how the reader/door behaves during *crisis mode*. If you don't want crisis mode to change the behavior, choose the same schedule as you did for the [unlock schedule]. REMEMBER – The system can only enable the office-mode button, it cannot unlock an office mode door through a schedule or operator command. When the unlock schedule or an unlock command takes effect, the button becomes available, but when the schedule ends, the button becomes unavailable and the door is locked by the system. If Crisis Mode = Always, the Door will **not** unlock but the button will be available. If Crisis Mode = Never, the door is Locked, and the button won't work.
6. Click **[APPLY]** to save.

See the following section on How To Start Office Mode for more details.

Figure 24 – Reader Properties > General & Schedules Tabs: Configuring Office Mode



Disabled or grayed out options are not supported by Schlage readers.

HOW TO WALK-TEST READERS FOR OFFICE MODE:

It is a good idea to manually test & validate that you have properly configured (enabled) office mode.

Test-1: Verify that Office Mode is working as you have configured it ...

A	Try to open the door before the auto-unlock schedule takes effect without a credential.	The door should be locked and require valid access credential for each entry.
B	Access the door with a valid credential. Close the door then press the inside lock button on reader	The user should gain access. The inside lock button should not blink green and should not unlock the door or log an event
C	Allow the unlock schedule to take effect/start Try to open the door after the top of the minute.	Door should remain locked and require valid access credential for each entry.
D	Present a valid credential and open the door. Close the door and press the inside lock button on reader	User should gain access. The green LED should blink 3 times and the door should unlock – and remain unlocked. Also the 'Office Mode Entered' event should log at SG
E	While Office Mode is still active, open the door from the outside.	Door should open /unlocked from the outside without requiring a valid access credential for each entry.

Test-2: Verify that Office Mode can be exited ...

A	While the auto-unlock schedule is still in effect and the door is still open in Office Mode, press the inside lock button .	The LED on the inside lock button should blink RED and the door should be locked and require valid access credential for each entry. Also an OFFICE MODE EXITED event should log.
B	Try to open the door from the outside without a valid credential.	The user should NOT gain access.
C	Present a valid credential	The door should unlock on time and relock.

Test-3: Verify that Office Mode will expire when unlock schedule expires ...

A	While auto-unlock schedule is still in effect present a valid credential, and then press the inside lock button .	The LED on the inside lock button should blink GREEN 3 times and Office Mode Entered should be logged.
B	Wait for the schedule to expire naturally.	Door should relock and Office Mode Exited event should log.

Note	If the test fails, then go back to the <i>Reader Properties Screen</i> and verify the lock button function field is set to "none". Click APPLY AND LOAD DATE from the GCS Loader Utility. RERUN the test again. If test still fails, try cold-starting your panel and DSI to be sure it is loading data correctly.
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HOW TO DISABLE OFFICE MODE:

Disabling office mode is done by removing the property setting in the Reader programming screen. The system should update the Reader as soon as the change is saved/applied. But in the event the connection is down, you can enforce the update to the reader by performing a Data Load using the GCS Loader Utility

1. **Place the reader properties into EDIT mode.**
2. Set the **[Inside Push Button Mode]** field to “None”. Remember to remove the unlock schedule and crisis mode schedule as appropriate.
3. Click **Apply** to save. (Unlock schedule is automatically canceled)
4. Load panel using the GCS Loader Utility if needed.

HOW TO TEST OFFICE MODE IS DISABLED:

It is a good idea to manually test & validate that you have properly disabled office mode.

Test-1: Verify that Office Mode is DISABLED ...

A	Try to open the door AFTER the auto-unlock schedule would have taken effect when you had office mode working.	The door should be locked and require valid access credential for each entry.
B	Present a valid credential and enter the door.	User should gain access.
C	Press the inside lock button one time	The button should not blink GREEN and should not unlock the door.
D	Try to open the door from the outside without using a valid credential.	User should not gain access
Note	If the test fails, then go back to the <i>Reader Properties Screen</i> and verify the lock button function field is set to “none”. Click APPLY AND LOAD DATE from the GCS Loader Utility. RERUN the test again. If test still fails, try cold-starting your panel and DSI to be sure it is loading data correctly.	

How To Use OFFICE MODE (Start and Exit the mode)

Office Mode becomes available after the *Unlock Schedule* becomes active. However the door does not unlock or open when the schedule becomes active. *User must start office mode to place the door in a constant unlocked state. Office Mode expires when the Unlock Schedule expires or user releases it.*

Office Mode is not functional during the time when the *Unlock Schedule* is inactive.

4.2.5.1.1 HOW TO ENTER “OFFICE MODE”:

1. After the *Unlock Schedule* becomes active, user will present a valid credential to access the door.
(The door will unlock 1 time.)
2. After the door closes, user must press the **Inside Lock Button** on the reader to activate Office Mode.
 - The **Inside Lock Button** will turn green and blink 3 times.
 - An “**Office Mode Entered**” event will be logged and sent to the SG Event Monitoring screen.
3. The door will remain open (unlocked) until the user exits office mode or it expires ...
 - User can press the **Inside Lock Button** again, which will exit office mode and relock the door.
 - Office mode expires when the **unlock schedule** expires – door will relock.

No events are logged for the reader during active Office Mode since the door remains **unlocked**.

Date/Time	Device/Point	Event
7/15/2015 3:26:06 PM	IR AD-series OFFICE ENTRANCE	Office Mode Entered
7/15/2015 3:25:53 PM	IR AD-series OFFICE ENTRANCE	Valid Access
7/15/2015 3:25:14 PM	IR AD-series OFFICE ENTRANCE	Not In System
7/15/2015 3:25:14 PM	IR AD-series OFFICE ENTRANCE	Not In System

Callout 1: User presents valid access credential at Reader.

Callout 2: The **Inside Lock Button** is pressed by user.

4.2.5.1.2 HOW TO EXIT “OFFICE MODE”:

1. User must press the *Inside Lock Button* again to exit OFFICE MODE – or let the unlock schedule expire.
 - The **Inside Lock Button** will turn red and blink one time to indicate OFFICE MODE is exited.
 - An “Office Mode exited” event will be logged to the panel and to the Monitoring screen.

Date/Time	Device/Point	Event
7/15/2015 3:32:27 PM	IR AD-series OFFICE ENTRANCE	Office Mode Exited
7/15/2015 3:31:27 PM	IR AD-series OFFICE ENTRANCE	Office Mode Entered
7/15/2015 3:31:16 PM	IR AD-series OFFICE ENTRANCE	Valid Access
7/15/2015 3:30:25 PM	Cluster #: 1, Unit #: 1	Crisis Mode Reset
7/15/2015 3:30:05 PM	IR AD-series OFFICE ENTRANCE	Valid Access

Callout: The **Inside Lock Button** is pressed by user.

Note: Office Mode will also expire when the auto-unlock schedule expires if door is still in unlocked state.

How To Configure a Reader for PRIVACY MODE (AD300 & AD400)

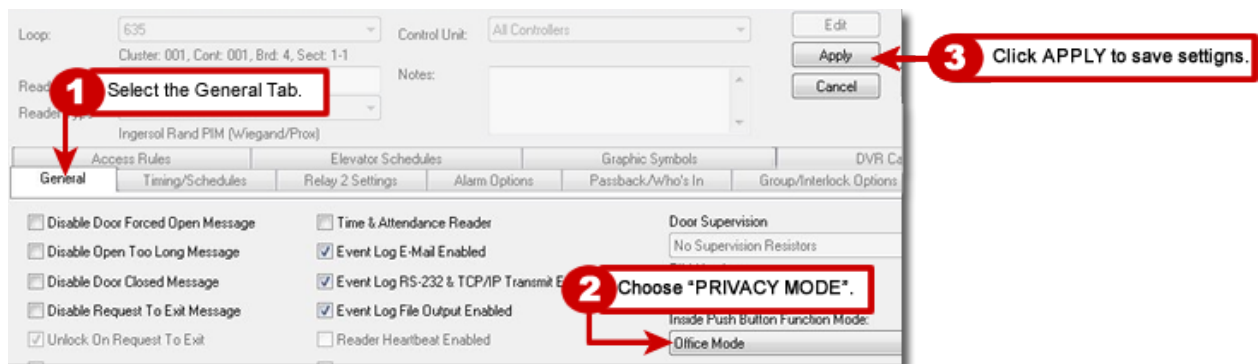
SG 10.4.8 introduces new support for the **Privacy Mode**. When Privacy Mode is configured, the [inside lock button] at the Reader will toggle the **lock state** of the door. Privacy mode allows the user to lock the door from the inside / secure side, which disables the reader and prevents entry by another credential.

TO ENABLE PRIVACY MODE:

1. Select the General Tab (with the reader in Edit Mode)
2. Set the [Inside Push Button Mode] field to "Privacy Mode".
Unlock Schedules are not available for Privacy Mode.
3. Click [APPLY] to save.

See the next section on How To Start Office Mode for more details.

Figure 25 – Reader Properties > General & Schedules Tabs: Configuring Privacy Mode



Disabled or grayed out options are not supported by Schlage readers.

HOW TO WALK-TEST READERS FOR PRIVACY MODE:

It is a good idea to manually test & validate that you have properly configured (enabled) privacy mode.

Test-1: Verify that Privacy Mode is working as you have configured it ...

A	Try to open the door when privacy mode is not active .	The door should be locked and require valid access credential for each entry.
B	Access the door with a valid credential. Close the door then press the inside lock button on reader	The user should gain access. The inside lock button should blink RED continually The door should remain locked from the outside. The Privacy Mode Entered event should log at SG.
C	Try to open the door from the outside without a valid credential.	Door should remain locked.
D	Present a valid credential and try to open the door.	User should not gain access. Door should remain locked.
E	Turn the inside handle to open the door from the inside	
F	Try to open the door from the outside without a valid credential.	and require valid access credential for each entry.

Test-2: Verify that Privacy Mode can be exited ...

A	Turn the inside handle to open the door from the inside while the Privacy Mode Entered is still in effect.	The door should release and the RED LED should stop blinking. The Privacy Mode Exited event should log at SG.
B	Try to open the door from the outside without a valid credential.	The user should NOT gain access. Door should remain locked.
C	Present a valid credential from the outside.	The door should unlock one time as per normal. The user should gain access.

Note	If the test fails, then go back to the <i>Reader Properties Screen</i> and verify the lock button function field is set to "none". Click APPLY AND LOAD DATE from the GCS Loader Utility. RERUN the test again. If test still fails, try cold-starting your panel and DSI to be sure it is loading data correctly.
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HOW TO DISABLE PRIVACY MODE:

1. Place the reader properties into **EDIT mode**.
2. Set the **[Inside Push Button Mode]** field to “None”. Remember to remove the unlock schedule and crisis mode schedule as appropriate.
3. Click **Apply** to save.
4. Load panel as needed.

HOW TO TEST THAT PRIVACY MODE IS DISABLED:

It is a good idea to manually test & validate that you have properly disabled privacy mode.

Test-1: Verify that Privacy Mode is DISABLED ...

A	Present a valid credential and enter the door.	User should gain access.
B	Press the inside lock button one time	The button should NOT blink RED Door should NOT LOCK. <i>Privacy Mode Entered</i> event should NOT be logged at SG.
C	Turn the handle to exit the door.	<i>Privacy Mode Exit</i> event should NOT be logged at SG.
Note	If the test fails, then go back to the <i>Reader Properties Screen</i> and verify the lock button function field is set to “none”. Click APPLY AND LOAD DATE from the GCS Loader Utility. RERUN the test again. If test still fails, try cold-starting your panel and DSI to be sure it is loading data correctly.	

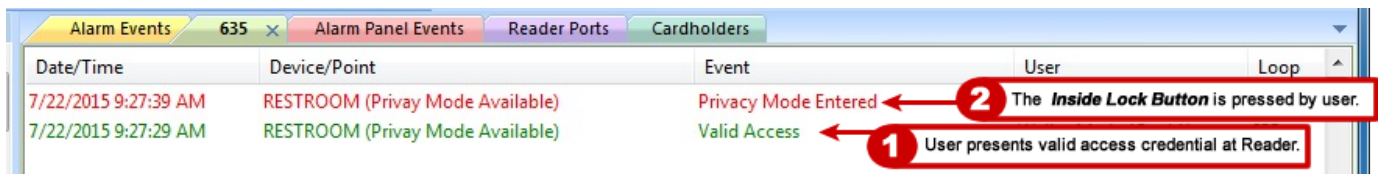
How To Use PRIVACY MODE (Start and Exit the mode)

Privacy Mode is always available if the reader has been configured to use Privacy Mode. The door remains in normal mode until the Privacy Mode is started. *User must manually start privacy mode to place the door in a constant locked state. Privacy Mode expires when the user releases it.*

Privacy Mode does not support any door schedules of any kind.

4.2.5.1.3 HOW TO ENTER “PRIVACY MODE”:

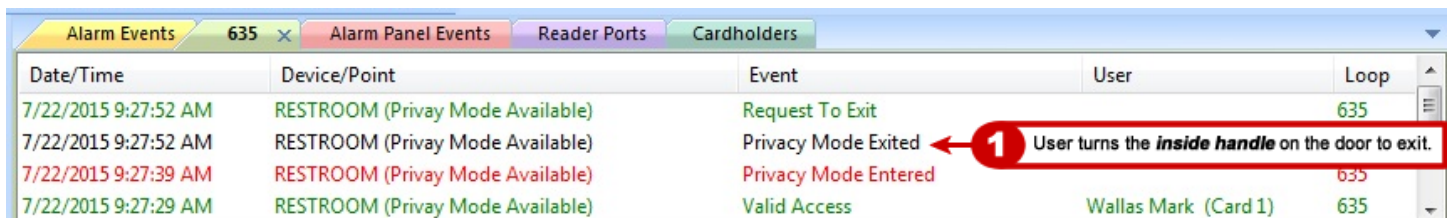
1. User will present valid access credentials to open the door.
2. After the door closes, user must press the **Inside Lock Button** on the AD Reader.
 - The **Inside Lock Button** and the **outside Schlage button** will both blink RED continuously.
 - A “**Privacy Mode Entered**” event will be logged to the SG Event Monitoring screen.
3. The door will remain **locked** until the user turns the handle to exit the door.
 - **No events are logged for the reader during active Privacy Mode since the door is constantly locked.**
 - **The SG operator cannot override Privacy Mode with a door pulse or door unlock commands.**
 - **No external access is granted during Privacy Mode either.**



Date/Time	Device/Point	Event	User	Loop
7/22/2015 9:27:39 AM	RESTROOM (Privay Mode Available)	Privacy Mode Entered		
7/22/2015 9:27:29 AM	RESTROOM (Privay Mode Available)	Valid Access		

4.2.5.1.4 HOW TO EXIT “PRIVACY MODE”:

1. User must turn the **Inside Door Handle** to exit Privacy Mode.
 - The **Inside Lock Button** will stop blinking to indicate that PRIVACY MODE is exited.
 - A “**Privacy Mode exited**” event is logged to the SG Event Monitoring screen.
 - Also a “**Request to Exit**” event is logged to the SG Event Monitoring screen.



Date/Time	Device/Point	Event	User	Loop
7/22/2015 9:27:52 AM	RESTROOM (Privay Mode Available)	Request To Exit		635
7/22/2015 9:27:52 AM	RESTROOM (Privay Mode Available)	Privacy Mode Exited		
7/22/2015 9:27:39 AM	RESTROOM (Privay Mode Available)	Privacy Mode Entered		635
7/22/2015 9:27:29 AM	RESTROOM (Privay Mode Available)	Valid Access	Wallas Mark (Card 1)	635

4.2.6 SETTING READER SCHEDULES

These options, and the schedules on which they rely, must be configured in the SG software, saved (applied) and then loaded to the access control panel. The *Schedules* tab contains fields that affect the timing of the locking and unlocking at the reader. *Disabled (grayed) features are not available for Schlage Wireless readers.*

Auto Unlock Schedule: when selected, the door or Wireless Reader will receive an unlock command from the access control panel when the schedule becomes active. The door will receive a lock command from the access control panel when the schedule becomes inactive. Also holidays can affect the unlock schedule. Schedules and Holidays must be created and loaded to the control panel. *An auto-unlock schedule is used when a door should always unlock and relock at a specific time (e.g. 8am to 5pm). During the unlocked portion of the schedule, the door is open and no card access is required. During the locked portion of the schedule, an access card must have 'valid access privileges' in order to open the door.*

(OFFICE MODE) Auto Unlock Schedule: A schedule cannot unlock an office mode door, at best it can only enable the office mode button. When configured, the *unlock schedule* determines when Office Mode button is available to the user. When *unlock schedule* is active/in effect, a user can activate Office Mode and door will remain unlocked (open) from the outside. When *unlock schedule* is inactive/not in effect, Office Mode button is disabled, and door remains locked and requires valid access credentials. *Valid Access card works at all times.*

(OFFICE MODE) Crisis Mode Unlock Schedule: a Crisis Mode schedule cannot unlock an office mode door, at best it can enable the office mode button. When this *Crisis Mode Unlock Sch. field* is set to the same schedule as the *Auto Unlock Sch field*, then crisis mode will not affect the reader/door operation. – the reader will remain in the same state/behavior during a crisis mode. If you want the crisis mode to change the behavior of the reader/door, then set the crisis schedule field to the schedule that you want the door to follow during a crisis (i.e. “Never” = door is locked / button disabled; “Always” = door is locked / button is enabled (user can unlock by pressing button).

PIN required schedule: *not available for Schlage Wireless readers.*

Disable Forced (schedule): when selected, the system will not report a door forced condition at the door.

Disable Open Too Long (schedule): when selected, the system will not report a ‘door open too long’ condition at the door. This could be helpful during certain times when a door must be open for an extended period of time on a routine basis (e.g. a loading dock).

Reclose Within (mm:ss): the default is 15 seconds. This is the amount of time the controller will wait for the door contact to close at the door before generating a ‘door open too long alarm’.

Figure 26 – Reader Properties: Configuring the Timing/Schedules

Loop: 635 Cluster: 001, Cont: 001, Brd: 5, Sect: 2-4 Control Unit: All Controllers Edit Apply Cancel Reports

Reader Name: IR Notes:

Reader Type: PIM Wiegand Readers Ingersoll Rand PIM (Wiegand/Prox)

General Timing/Schedules Relay 2 Settings Elevator Schedules Alarm Options Passback/Who's In Group/Interlock Options Graphic Symbols CCTV Events

Auto Unlock Sch. DAY HOURS

Crisis Mode Unlock Sch. ** NEVER **

PIN Required Sch. ** NEVER **

Disable Forced: ** NEVER **

Disable Open Too Long: ** NEVER **

Min:Sec

Unlock delay: 0 0

Unlock for: 0 5

Reclose Within: 0 15

☐ 2 Digit PIN specifies Reclose Time for Valid Access

PIN Mode: High Security

Disabled or grayed out options are not supported for Schlage readers.
See the PREVIOUS Sections on How to Configure Office Mode for steps and screen shots.

4.2.7 SETTING READER ALARM OPTIONS

Several device conditions can be configured to generate an Alarm Event in System Galaxy. The conditions are: **Door Forced, Open Too Long, Invalid Attempt, Valid Access, and Passback Violation.**

An **alarm event** is generated when a condition occurs at a door/reader that is configured to generate an acknowledgeable Alarm. The **alarm event** displays in the Alarm Event window in the order it occurs unless an **alarm priority** is assigned. IF an alarm priority is assigned, the alarm message appears in the Alarm Event window sorted in the order of the assigned priority number.

IMPORTANT

- » These options, and any I/O Groups on which they rely, saved (applied) and loaded to the access control panel.
- » (OPTIONAL) You can assign an I/O Group to the condition. This is not required since Alarm Options are independent of I/O groups.
- » (OPTIONAL) You can also assign priorities to the Alarm Conditions.
- » **The ACKNOWLEDGE check-box must be checked to make the event display in the Alarm Event window; also required for the Priority sorting to apply.**

I/O Groups: The drop-down list shows all the available I/O Groups. By default, the field is set to ****NO I/O GROUP****. When an I/O Group is selected, that I/O group will be activated whenever the condition occurs on the reader. I/O groups are used to activate outputs associated with the alarm condition.

I/O Offsets: This field contains the I/O Offsets for each condition.

Acknowledge: Select (check) this checkbox if the condition should appear as an alarm event (in alarm events window).

Priority: The Acknowledge check-box must be selected before Priority will apply. The priority field is an optional numeric field that accepts a value equal or less than 9999. This is the priority level of that will be assigned to the alarm event. Priority affects the order of the alarm events in the Alarm Events window. Alarms with higher priority number are sorted to the top of the screen regardless of the order they occur.

Instructions: The Acknowledge check-box must be selected before Instructions will apply. When this button is clicked, a window appears in which you can type in text instructions for responding to the alarm event.

Audio: The Acknowledge check-box must be selected before Audio will apply. The location of files must also be set up in the Multimedia tab of the Workstation Options window (Configure > Options > Workstation Options > Multimedia tab). One .wav file can be selected to play when the alarm event occurs.

Figure 27 – Reader Properties: Configuring the Alarm Options

Condition	I/O Group the event is linked to	I/O Offset	Acknowledge Schedule	Priority	Instructions	Audio
Door Forced Open:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Open Too Long:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Invalid Attempt:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Duress:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Passback Violation:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Reader Heartbeat:	** NO I/O Group **		** NEVER **	0	Instructions	Audio
Valid Access:	** NO I/O Group **					Valid Access Audio

Valid Access Disarms I/O Groups:

** NO I/O Group **	** NO I/O Group **
** NO I/O Group **	** NO I/O Group **

Disabled or grayed out options are not supported for Schlage readers

4.2.8 SETTING READER PASSBACK/WHO'S IN OPTIONS

Passback and Who's in are available for wireless readers. You must configure Schedules and Areas before you can set up these options in the Reader Properties screen.

See the main SG Software User Guide for instructions on Schedules, Areas, Who's In and Passback configuration.

Figure 28 – Reader Properties: Configuring the Passback/Who's In

Loop: 635 Control Unit: All Controllers Edit
Cluster: 001, Cont: 001, Brd: 5, Sect: 2-4 Apply Reports
Reader Name: IR Notes: Cancel
Reader Type: PIM Wiegand Readers
Ingersol Rand PIM (Wiegand/Prox)

Access Rules		Elevator Schedules		Graphic Symbols	
General	Timing/Schedules	Relay 2 Settings	Alarm Options	Passback/Who's In	Group/Interlock Options
			CCTV Events		

Passback Area: ** NO CHANGE ** ☐ Allow Passback Access
From Area: ** NO CHANGE **
Automatic Forgive: Never
Who's In Area: ** NO AREA **

Disabled or grayed out options are not supported for Schlage readers

4.2.9 UNSUPPORTED READER OPTIONS

The following reader options are not supported with Schlage wireless readers.

- *Relay-2 configuration is unsupported*
- *You cannot use a Schlage reader for an elevator reader when wired through a DSI board*
- *Door Group and Door Interlock features are unsupported*
- *Duress is not supported*
- *Pin Schedule Mode is not supported*
- *High security mode (card plus pin) is not supported*
- *Any grayed option is not supported – See the section in this guide that covers Reader Properties programming.*

5 APPENDIX OF TABLES AND TIPS

5.1 READER MAPPING TO DEVICE ADDRESS TABLE

The following table is used during the install of the Aperio & Galaxy hardware. Take care to accurately record the addresses of Panels, Boards, Schlage PIMs and readers. This helps you configure the Reader to PIM mapping in the System Galaxy software. *Sample entries help you get started. Make copies as needed.*

This table goes with Chapter-3: enabling sections in Serial Channel screen and mapping in Reader Properties.

Figure 29 – MAPPING PIMS AND READERS IN SYSTEM GALAXY SOFTWARE

GALAXY HARDWARE			APERIO HARDWARE		SG SOFTWARE	
LOOP# / UNIT #	BOARD ID	SECTION	HUB ADDRESS	No. of Locks 'paired' to HUB	Enabling of DSI Readers	Mapping of reader numbers
<i>LOOP 1 / UNIT 1</i>	<i>DSI 5</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>Select Loop-1, and controller-1; board-5 sect 1; Choose the correct Schlage type and network type and enable (check) readers 1 and 2</i>	<i>reader assigned to Board 5; Sect 1-1; maps to</i> PIM 1/READER 1
						<i>Board 5; Sect 1-2 maps to</i> PIM 1/READER 2
<i>LOOP 1 / UNIT 1</i>	<i>DSI 5</i>	<i>1</i>	<i>2</i>	<i>8</i>	<i>3 thru 10 HUB 2/READER 1 thru ... PIM 2/READER 8</i>	<i>Board 5; Sect 1-3 thru ... Board 5; Sect 1-10*</i>

The hardware entry (shown above) is an example of how to record hardware addressing. Info in gray is an example of what you expect to see in the SG Reader Properties when you map readers to the Schlage PIM/reader numbers.

[illegible]