

# System Galaxy Installation Worksheet

This is a prep-list of information you must know and have before you install any hardware or software on a system.

## Minimum OS Requirements (Event Server)

- Microsoft **Windows 10 Pro/or Higher** (*not Home Edition*); with current Microsoft Updates installed.
- You must have **administrator rights** in order to install SG software.

## PC/Event Server Network Settings (TCP/IP)

The 635-model controllers will connect to the *GCS Event Service*. You must have a static IP address for this PC.

PC/Event Server Name:

(computer name only) \_\_\_\_\_

IP Address: \_\_\_\_\_

◀ this is the IP Address for Event Server-1 ( ipconfig )

Subnet: \_\_\_\_\_

Gateway: \_\_\_\_\_

## Network Settings for 635-Controller Panels (TCP/IP):

	Controller #1 ▼	Controller #2 ▼	Controller #3 ▼	Controller #4 ▼
IP Address	. . .	. . .	. . .	. . .
Subnet	. . .	. . .	. . .	. . .
Gateway	. . .	. . .	. . .	. . .
Cluster ID				
Panel Unit ID <sup>1</sup>				
CPU Number				
Event Server 1				
Physical Locale				

(1) Controllers (Panel Units) can be on the same cluster or on a separate cluster. Each controller must have a unique Unit ID within the same Cluster.

## Equipment & Materials:

- **System Galaxy Order Information** form - required to complete the registration.  
You should keep a copy of this inside the controller for future reference.
- **Galaxy Software Installation USB Drive** (Galaxy USB) – this includes drivers, utilities, and tools.
- **Laptop** – for programming and diagnostics.
- **Multimeter**
- **Installation Tools**
- **Configuration Tool and compatible cable:** for configuring the boards:

Programming Tool	Comm Cable	Connection Options
▶ <b>Web Configuration Tool</b> (install WCT*)	<b>Cat5e cable</b>	<ul style="list-style-type: none"> <li>• Connect Laptop to CPU at the on-board LAN Port. Laptop &amp; CPU must be on same network segment.</li> </ul>
* Path to find Web Config Tool → Galaxy Install USB:X:\Utilities\Galaxy_635_Web_Server_V107.exe		
▶ <b>Terminal Emulator Tool</b> (install TeraTerm **)	<b>RS-232 Serial cable</b>	<ul style="list-style-type: none"> <li>• Connect to the CPU at the on-board RS-232 Comm Port.</li> <li>• If needed, use a <b>USB to RS232 Serial Converter cable</b> PN 81-1015-00</li> </ul>
** Path to find Terminal Emulator → Galaxy Install USB:X:\Auxiliary\System Galaxy\FTS635\Factory Test\Teraterm\teraterm-4.87.exe		

# System Galaxy Software Install QRS

This document outlines the things you must do to properly install System Galaxy software.

## Verifying PC Prerequisites:

- 1) **Verify the PC reboots and operates with no error messages.** IT Staff must resolve issues before you can proceed.
- 2) **Verify Microsoft Updates & Patches are installed/current.** *The IT Staff must resolve this before you can proceed.*
- 3) You must have Administrator Rights to install System Galaxy software. Contact IT Staff for assistance.
- 4) You must have the System Galaxy Order Information form.

## Software Installation Steps

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◆ To open the **Galaxy Installer Splash Screen**, you must double-click the 'SGSetup.hta' file on the USB drive.

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1. Run **Step-1 Prerequisites** (*installs components needed for System Galaxy to operate*). **You must restart the PC.**

2. Run **Step-2 Database** Installation:

- a) Select **New Install > Option-1** to install SQL Server Express and attach the SG databases.
- b) Accept **default database logins** for SA and gcs\_client at this point.



**IMPORTANT:** Galaxy Installer runs a precheck and flags errors that must be corrected before **MS SQL Installer** runs. Notice: it may flag an IIS error. IIS is not required to complete Step-2, but IIS is required for idProducer badging.

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3. Run **Step-3 Software** Installation:

- a) Select **Option-A** to perform the complete installation of the System Galaxy software and GCS services.
- b) Select the **SQL Instance** for the PC/server where the database is installed ( i.e. [server\_name]\GCSSQLEXPRESS ).
- c) **Accept the default database and operator logins** at this point.

4. Double-click the **System Galaxy startup icon** (on the desktop) to launch System Galaxy the first time.

- a) Select **customer Product Level** – found on the System Galaxy Order Information form.
- b) Create a **Master Operator login name and password**, then confirm the password.
- c) Now **sign-in to System Galaxy** software using the login and password you just created.

5. Open the **Registration Wizard** ( from the menu, select **Configure > Options > Registration > Wizard** )

6. Perform the **System Online Registration** - using System Galaxy Order Information form:

- a) Enter the **Customer and Dealer information** into the System Registration screen.
- b) Enter the **Software License Key** – a green checkmark (✓) appears if your key is valid.
- c) Click the **[Register via Internet]** button to begin the online registration.
- d) In the pop-up window, you must **enter customer name, address, and contact** information.  
(Note: Address line-2 cannot be 'empty'. Enter a space (spacebar) if you do not have two address lines.)
- e) Click **[Register via Internet Now]** to finish the registration – *all options are automatically configured.*
- f) Click **[Next]** to advance to the Workstation Registration – *the Software License Key should prefill.*
- g) Enter the **Product Key** and **configure workstation** settings.
- h) Click the **[Register via Internet]** button to register the workstation settings.
- i) Click **FINISH** to save the registration.

7. **Close and restart System Galaxy** software to initialize these settings.

8. **Sign-in** using your master operator login. The system should be ready for programming (i.e. clusters, controllers, boards, readers, inputs/outputs, schedules, access privileges, etc.).

9. You can begin hardware installation if you have not already done so.

# 635-series Hardware Install QRS

This document lists things you must do to install the System Galaxy hardware.

## Hardware Installation Steps



**IMPORTANT SAFETY:** Observe **polarity** when wiring the orange connectors to the power harness (Red = 12 VDC; Black = ground). Do not remove heat-shrink from wire-pairs unless you are wiring a connector – i.e. leave heat-shrink in place on any empty slots. Do not short wires together when power is applied. Failure to observe safety precautions can result in equipment damage, injury, electrical shock, or undesirable performance.

1. Mount the controller to the wall in a clean dry place and apply power to power supply only.  
Do not apply power to the boards, yet. See [635-Hardware Installation Guide](#), Chapter 2 Step-2
2. Install the Battery that came with the controller - observing polarity (Red = 12 VDC; Black = ground).
3. Using your multimeter, verify the power supply is producing +12VDC (must be between +12.0 to +13.6 VDC).
4. Install the CPU Board in the first slot and connect the Data Ribbon Cable to the I2C Buss on the CPU.  
See [635 Hardware Installation Guide](#), Chapter 2 Step-4.1
5. Connect power wires (harness) to *orange power connector* on the CPU Board (observing polarity).  
See [635 Hardware Installation Guide](#), Chapter 2 Step-3 for wiring the 635 CPU plug
6. Connect to CPU using **serial cable + TeraTerm** (optionally, use Cat-5e cable + Web Config Tool )

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<b>CPU IP Address:</b>	192.168.0.150 (default factory)		
<b>TeraTerm settings:</b> (optional config tool)	<b>Bits per Second = 57,600K</b> <b>Parity = None</b>	<b>Data Bits = 8</b> <b>Stop Bits = 1</b>	<b>Flow Control = None</b>
	TeraTerm → Galaxy USB X:\Auxiliary\System Galaxy\FTS635\Factory Test\ Teraterm\teraterm*.exe		
<b>Web Config Tool:</b> <a href="#">Web Config Tool Guide</a>	PC/Laptop must be on the same network segment as the CPU to it by the mac address. Web Config Tool → Galaxy USB X:\Utilities\Galaxy_635_Web_Server_V107.exe		

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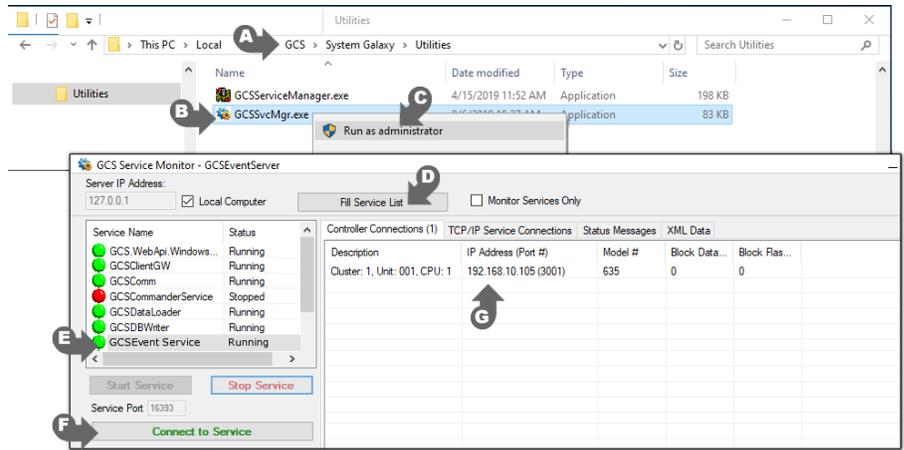
7. Configure the CPU network settings using the information from your Worksheet.  
(See [635 Hardware Installation Guide](#), Chapter 2 Step-6.1 for using TeraTerm and Step-6.2 for Web Config Tool )
  - CPU's IP Address, Subnet, and Gateway addresses.
  - Cluster ID number
  - Panel Unit number
  - CPU board number
  - Event Server IP Address settings into Event Server-1
8. Install the DRM Boards one at a time as follows: (See [635 Hardware Installation Guide](#), Chapter 2)
  - a) Configure a valid Board Address on the DRM dipswitch (1-16 is valid; each board must be unique). (Step 4.2.3)
  - b) Install the DRM Board into the next available slot and connect the Data Ribbon Cable to the board. (Step 4.2)
  - c) Connect power wires (harness) to *orange power plug* on the DRM Board – observing polarity! (Step 3)
  - d) At the CPU (*terminal emulator or web tool*), verify the new board comes online:
    - in TeraTerm type the "boards" command to find the new board.
    - In Web Config Tool go to the Panel Status page to find new the board.
    - Notice: It can take up to 45 seconds for the board to appear on the CPU Database after ribbon cable is attached. Board must have power.
  - e) Repeat A through D for each board in the controller.

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- At the PC/Event Server, verify the 635-Controller is connected to the *GCS Event Service*. Do this by running the *GCS Service Monitor* app, which is found on your local PC drive → C:\GCS\System Galaxy\Utilities folder.

The CPU must be connected to the LAN.

- Open the *Utilities* folder.
- Right-click *GCSSvcMgr.exe* file.
- Choose 'Run as administrator'.
- Click [ **Fill Service List** ] button.
- Select the *GCS Event Service*.
- Click [ **Connect to Service** ] button.
- The 635-Controller should show in *Controller Connections* tab.



- Verify the CPU board *flash version* matches the Flash released with your version of **System Galaxy**. In System Galaxy software screen, *open Help > About window from the SG Help menu to see the correct flash version*.

► **Update CPU Flash via embedded CPU web page:**

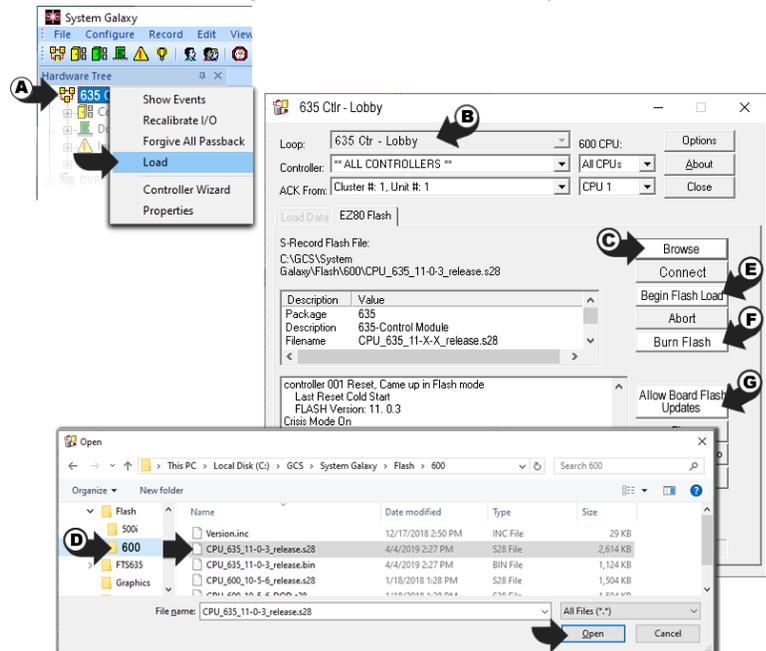
- Enter the CPU's IP Address into the browser address bar. The embedded web page will display.
- Click the **Update Firmware** link and choose the 635-CPU .bin file to load flash to the CPU.
- After the CPU is finished, select **Clear Auto** to begin flashing the daughter boards ( i.e. DRMs, DIOs, etc. ).

**Or optional method – you can Update CPU Flash using the GCS Loader Utility:**

**IMPORTANT:** you must have already installed the software and programmed your clusters and controllers into the software programming screens. See [SG Software User Guide Chapter-5 First Time Start-up](#) for instructions to add clusters, controllers. *NOTE: Chapters 8 and 9 cover adding Clusters and Controllers in depth. Chapter 6 covers the Loader features in depth.*

You must sign-in to System Galaxy as a master operator.

- In Hardware Tree, right-click the **cluster icon** and select the 'Load' from the menu to open the Loader Utility.
- Select the Loop/Cluster and Controller.
- Select the EZ80 tab and click [Browse] button.
- Open the "600" folder. Select the **635-CPU .S28 flash file**, and click [Open] button to link flash file to Loader.
- Click [Begin Flash Load] button and allow load to finish.
- Click [Burn Flash] to permanently burn flash into CPU.
- Click [Allow Board Updates] to update daughter boards (DRM, DIO, DSI, etc.).



**! Never interrupt power when flashing boards or burning flash. Doing so can damage boards and cause undesirable operation.**

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11. Connect the reader wiring to the DRM board:

- 6-conductor, 22 AWG, overall shielded; max cable distance is 500 feet to the panel.
- Ground the Drain-wire at one end only - at the DRM Board (GND).
- Reader will require separate power supply if the current draw is over 150 mA
- Refer to manufacturer's instructions for wiring (manufacturer's specs may supersede Galaxy specs).

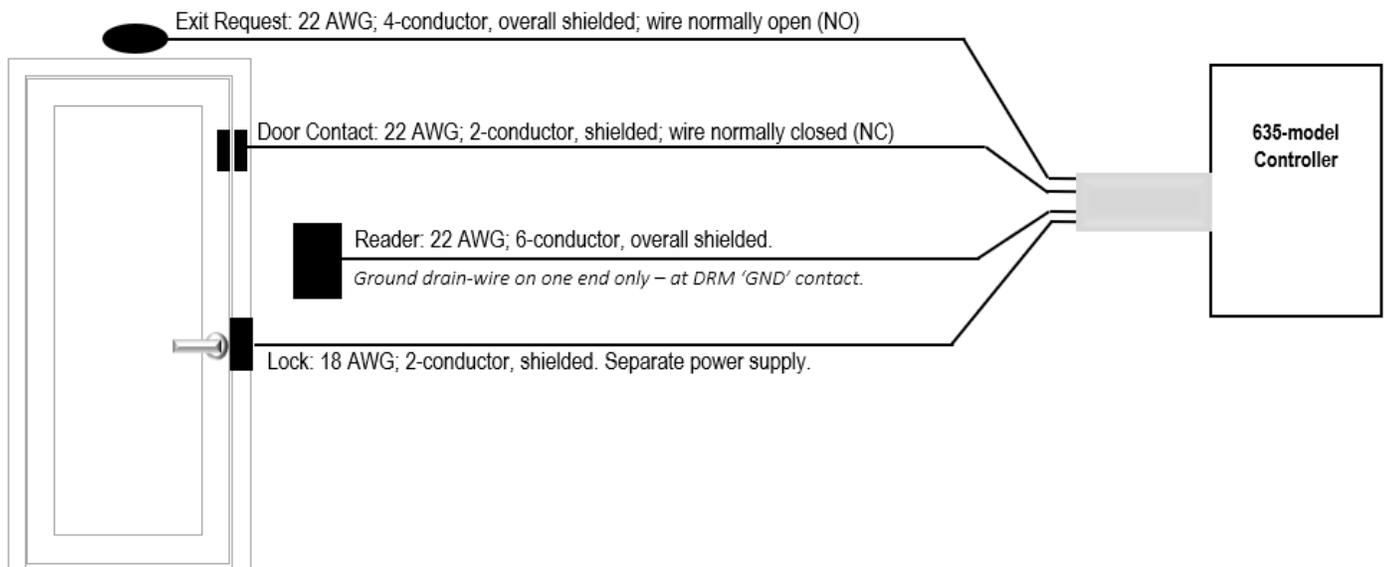
Wiegand Reader →	635-DRM Terminals (Function)	
LED Control	<b>LED</b>	(LED control line)
DATA 1	<b>D 1</b>	(Data 1)
VDC	<b>VDC</b>	(+12 VDC) <i>*for +5VDC use Regulator PN 92-3001-05</i>
GND	<b>GND</b>	(Power Supply Ground)
DATA 0	<b>D 0</b>	(Data 0)

See System Galaxy Online Help [Reader Wiring Guide](#) for additional reader formats.

12. Connect the Lock, Door Contacts, and REX to the DRM ...

Connection Type	Max Distance	Wire Gauge & Specifications
<b>Request to Exit</b>	500 ft. from controller	22 AWG; 4-conductor, overall shielded; wired normally open (NO)
<b>Door Contact</b>	500 ft. from controller	22 AWG; 2-conductor, overall shielded; wired normally closed (NC)
<b>Lock Hardware</b>	500 ft. from controller	18 AWG; 2-conductor minimum, shielded; Separate Power Supply.

*Refer to manufacturer's instructions for device wiring (manufacturer's specs may supersede Galaxy specs).*



13. Jumper-out unused contacts, as follows

- DRM board: If *Door Contacts* are not installed, you must jumper-out CNT to GND.
- CPU board: If *Low Battery* wiring is not installed, you must jumper-out Low Batt to GND.
- CPU board: If *AC Fail* wiring is not installed, you must jumper-out the AC Fail to GND.

14. Now you are ready to add your *Cluster* and *Controller* information into the SG software programming screens.

- The software can auto-import the daughter boards into the Controller programming screen by clicking the [Get Boards] button, as long as they are physically attached to the CPU I2C-Data (ribbon cable).
- You must manually program each Reader, Input, and Output into the SG programming screens and make any schedules you need.

15. Test that your Tamper Switch is working is working on each controller. The CPU reports *tamper events* to System Galaxy software.