GALAXY CONTROL SYSTEMS

635-FTS Factory Programming Guide

(Supported on 635-CPU v10.4.9 - *or later*)

Factory Program & Flash with a 635 Factory Test Station(FTS)

GALAXY TECHNICAL GUIDE ◆ 1st EDITION ◆ SEP 2015

GALAXY
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VERSION 10.4.9

How to Use a 635 Factory Test Station to Program/Restore Boards to their Factory Defaults.

The "635-CPU Factory Test Station" is a built-in feature of the 635 v10.4.9 (or later), which was released September 2015. This feature allows a 635-CPU to function as a Factory Test Station in a real Field Installation situation.
The embedded *FTS Mode* can be used to perform a *factory tests* and restore *factory-default settings & flash code* on both 635-series & 600-series boards.

1st Edition - Sep 2015

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Table of History - Document Version & Features

Date	Version & Editions	Descriptions
SEP 2015	**SG 10.4.9** 1st Edition	**635-CPU Flash v10.4.9 (or later) supports Built-in Factory Test Station (FTS):** **Factory Test Station** - provides the ability to perform factory tests on a target board or to reprogramming the factory-default settings and flash code. File transfer requires the Web Server or Terminal supporting XMODEM protocol.

1. Overview: The 635 Factory Test Station (embedded FTS)

*This guide provides instructions for using the **635 Factory Test Station (FTS)** to test and reprogram boards.*

Introduction to the "Built-in" 635 Factory Test Station Mode

The 635-CPU is designed with the **635 Factory Test Station (FTS)** built into its embedded system. The Factory Functions have been added to the embedded *635 Web Server,* so that a technician can perform factory flashing using the native Ethernet connection - thus allowing the *target board* to remain connected to its field panel.

Capabilities of the 635-CPU(FTS) v10.4.9 (or higher) …

- ***Restore the factory-default programming and S28 Flash Code*** for 600/635 circuit boards. (THIS GUIDE)
- ***Run Factory Tests*** on 600/635 circuit boards. (See 635-FTS Factory Testing Guide)
- Continues to support normal ***board configuration*** and ***board test features***.

The *Factory Test Station Process* using the 635 Web Server ...

1. **Install the Factory Test Cable** (PN 81-0680-00)
2. **Launch the 635 Web Server** (PC/Browser)
3. **Execute factory functions** (Program Factory Flash or Run Factory Tests)
4. **Exit Factory Test Station & Reset Board**

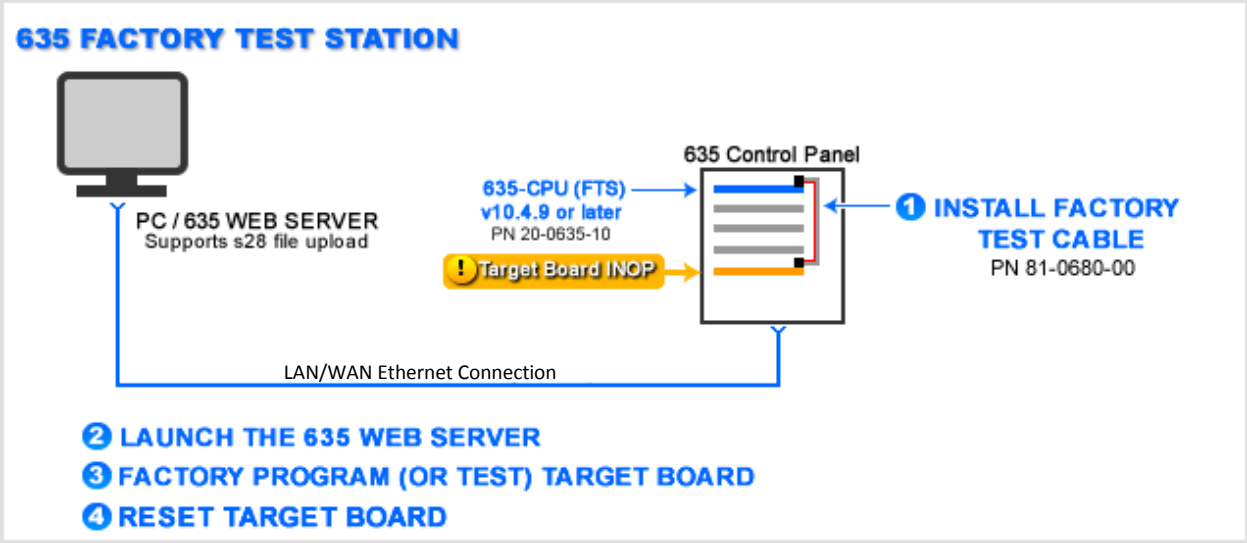


Diagram of Factory Test Station process using embedded 635 Web Server

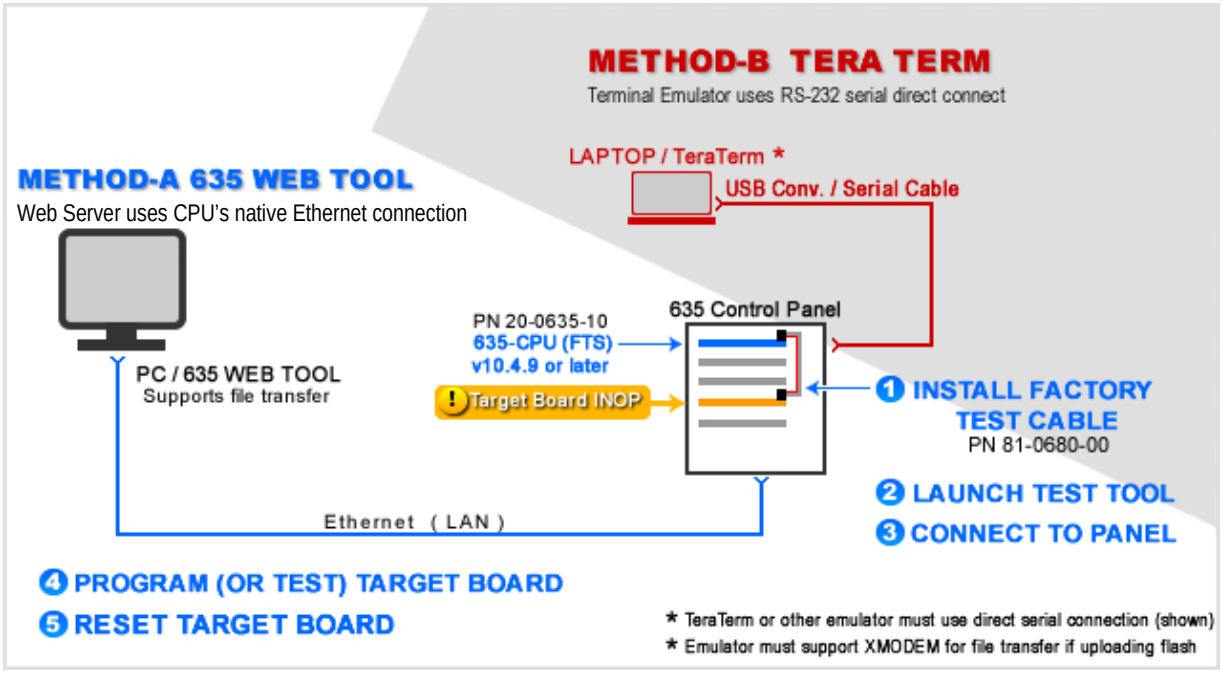
PROPER TEST TOOLS & CABLES

The table shows which cables & tools are used for both methods of factory programming in the field setting.

You can use the **Embedded Web Server** or a **Terminal Emulator** that supports XMODEM protocol (such as VanDyke, HyperTerminal, etc). TeraTerm is a suitable open source emulator that is provided on the Factory Test CD.

	METHOD-A Embedded 635 WEB SERVER	METHOD-B TERMINAL EMULATOR
TEST TOOL	**Embedded 635 WEB SERVER** **using Native Ethernet Connection** PC/Browser must be able to access the CPU IP Address	**TeraTerm or equivalent installed on Laptop** - must support XMODEM protocol **using Direct RS-232 Serial Connection** Laptop/Notebook
Factory Cable Additional Cables	• **14-PIN Factory Test Cable** PN 81-0680-00 - - No additional cables needed - -	• **14-PIN Factory Test Cable** PN 81-0680-00 • **Serial RS-232 COM Cable** PN 81-2100-00 *a.k.a. the Controller/CPU Programming Cable.* • **USB to 9-PIN Serial Converter (PN 81-1015-00)** Only needed if your laptop doesn't have a 9-pin serial port
CPU /Flash ver. choices	**635-CPU(FTS) / v10.4.9 or higher** PN 20-0635-50 • Use the embedded flash on 635-CPU(FTS) • Upload alternate flash to match field system	**635-CPU(FTS) / v10.4.9 or higher** PN 20-0635-50 • Use the embedded flash on 635-CPU(FTS) • Upload alternate flash to match field system
Special Boards	Special boards: 600-CPU, 635-OEM (OTIS), 635-CTM (Card Tour), 635-ERM (Enrollment Reader Module) must load their flash from a ***separate S28 file.*** **All alternate s28 files are found on the Factory Test Station CD**.	

Diagram Showing Both Methods for Factory Resetting Boards:



Factory Test Station in field setting - showing both methods (Embedded Web Page or Terminal Emulator).

IMPORTANT: Normal access control operations are suspended during the Factory Test Station Mode. Plan accordingly.
It typically takes *less than 10 minutes* to factory program board from start to finish.

Requirements & Recommendations

HARDWARE REQUIREMENTS

1. FTS Mode requires a 635-CPU running v 10.4.9 (or later) **PN 20-0635-50**.
2. The Target Board can be 600-series or 635-series model.
3. The ***635-CPU(FTS)*** supports uploading an older/alternate S28 flash different than the embedded version .
    a) You can upload a version of S28 that matches the field system.
    b) You can upload an S28 file for a special board.
    c) You can upload an alternate S28 flash for one target board at a time.

POWER AND CABLES

1. **+12 VDC power** must be applied/ON for the 635-CPU & Target Board (supplied by the panel power supply).
2. The 635-CPU will require using the correct **14-PIN Factory Data Ribbon Cable PN 81-0680-00**.

NETWORK STIPULATIONS

1. You should be able to connect to your *635-CPU(FTS) embedded web page* by entering the IP Address into a browser anywhere on the network.
2. IF you don't know the IP Address, you should be able to look up the ***last-known IP Address*** in the SG Controller Programming screen.
3. IF you cannot obtain or cannot connect to the *635-CPU(FTS) embedded web page* , then you can use …
    a) Use **TeraTerm*** *or equivalent* and a direct Serial Programming Cable to connect to the CPU serial port.
    b) **Or** use the ***635 Web Config Tool*** *to auto-detect the CPU's MAC Address (which requires the panel door to be open and the local PC to be on the same network segment as the panel) . Once you connect to the CPU this way, you can find (or correct) the CPU IP Address by clicking the CPU Serial number link – then you can connect to the embedded panel status page again via the web browser)
    c) Optionally, you can open the embedded web page by temporarily connecting directly into the *CPU Ethernet port with a Cat-5 cable (standard cable should work).*

*** The install EXE files for the TeraTerm emulator and 635 Web Server Config Tool are both on the Factory CD.**

SOFTWARE TOOL NEEDED

1. Method-A: If you are using the **embedded *635 Web Server*** to perform the factory functions, you must use a compatible browser. The latest **Firefox browser** is recommended.
2. Method-B: if using TeraTerm (*or equivalent terminal emulator*) to perform the factory functions, the following things must be true ...
    » In this case you will connect to CPU using the RS-232 Serial Programming Cable **PN 81-2100-00**.
    » If your laptop doesn't have a 9-pin com port, you will need a USB-Serial Converter **PN 81-1015-00.**
    » Connection Parameters must be set to 57600 Baud, 8-bit Data, 1 Stop Bit, No parity, No flow control.
    » An equivalent emulator must support XMODEM protocol for file transfer (used for "uploading" flash files).

OTHER STIPULATIONS

1. The 600/635 Target Boards can be running any version of firmware if they are being factory tested.
   NOTE: The ***FTS-CPU*** can only upload flash file for one target board at a time (i.e. DPI, DRM, DSI, DIO, …)
2. **Factory Testing is covered in the Factory Testing Guide.**

2. Preparing Test Tools and Files

This section covers information about the test tools and files available on the Factory Test Station CD.

What's on the Factory CD …

The following files/tools are found on the Factory CD …

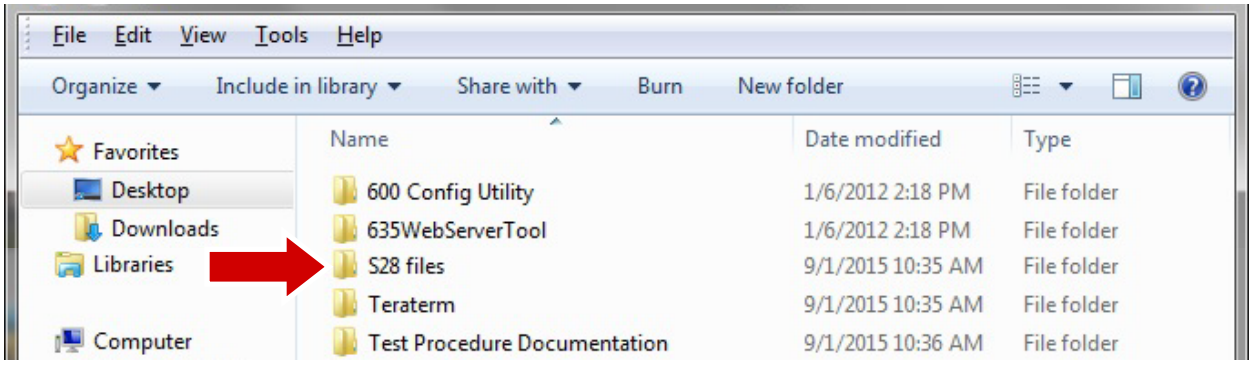
FOLDERS	DESCRIPTION
635 Web Server Config Tool *	Supports **configuring CPU Network IP Settings** via native ***Ethernet connection*** on the CPU. » If you cant connect to the embedded Panel Status page or can't find the IP Address from the SG Controller properties screen, then installing this ***635 Web Server Config Tool*** allows you to auto-detect the 635 CPUs by their MAC Address. (PC must be on same network segment as panel and panel door must be open.) » This can optionally be installed on a Laptop if needed – direct connect using a standard Ethernet cable.
S28 Files	Subfolders contain all the past version of **S28 Flash files** (organized by hardware model/board type) » The 635-FTS(CPU) can upload one (1) alternate S28 file at a time.
TeraTerm	Supports **flashing and configuring boards** via direct connect to the ***CPU Serial Port***. » Can be installed on a Laptop – connect using USB/Serial cable. » Supports "uploading" older/alternate S28 version using XMODEM protocol.
Test Procedure Documentation	Supporting documents for Factory Testing.

Finding Alternate S28 Flash Files …

If the 635-CPU(FTS) embedded S28 version does not match the system version, and you need to upload the S28 version from CD.

Cases for uploading an *alternate S28 flash file*:

- The ***target board*** needs an **older version of flash** than the embedded FTS version.
- The **Factory Test Station *embedded version*** cannot flash **special boards**
  (600-CPU, 635-CTM, 635-OTIS, 635-ERM, ….)



View of the Factor Test folder (Factory Test Station CD)

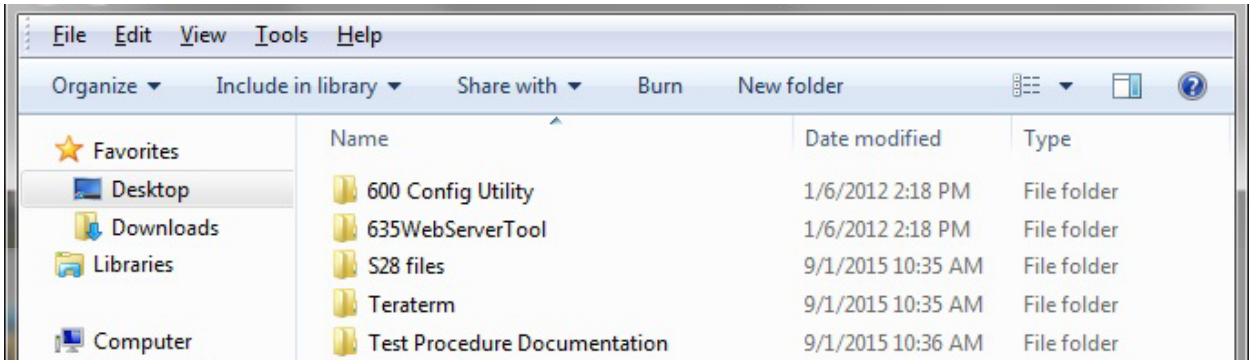
HOW TO INSTALL & CONFIGURE TERATERM …

Install and configure the **TeraTerm Emulator only** if you cannot connect to the 635-Factory Test Station(CPU) using the 635 Web Page/browser.

INSTALLING TERATERM EMULATOR

- Insert the Galaxy CD and open the **Windows File Explorer window …**
  1. Open the **Factory Test** folder
  2. Open the **TeraTerm** folder
  3. Copy the ***TeraTerm executable file*** to your laptop.
  4. Double-click on the ***TeraTerm.exe file*** to launch the install program
  5. Accept the license agreement and all the default settings on each install screen.
  6. When finished, the TeraTerm desktop icon should be installed on your desktop.

See the next section for instructions on Configuring the RS-232 Serial Port Settings.



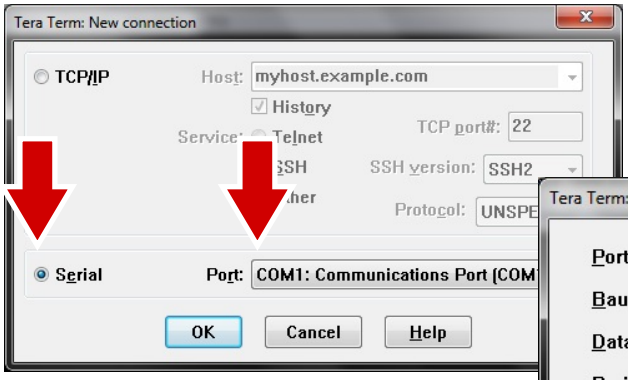
CONFIGURING SERIAL PORT SETTINGS

You must correctly set up the ***connection parameters*** to connect to the 635-FTS (CPU) Board. These settings are used regardless of which Terminal Emulator you choose.

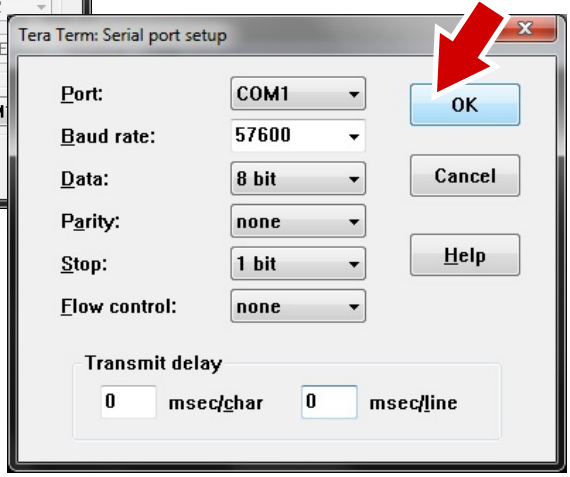
When using the terminal emulator, you must connect the USB Serial Cable from the laptop com port to the Serial Port on the 635-CPU.

❖ Insert the Galaxy CD and open the **Windows File Explorer window …**

1. **Launch TeraTerm from the Desktop Icon** – to open the *New Connection* window.
2. Click the **[Serial] option**.
3. Choose the desired **COM Port**.
4. Click **[OK] button**.
5. From TeraTerm menu, choose **Setup > Serial Port …** (to configure the connection parameters).
6. **Select desired COM Port and the following parameters:**
   - » Baud Rate = "**57600**"
   - » Set Data = **8 bit**
   - » Parity = **None**
   - » Stop Bit = **1 bit**
   - » Flow Control = **None**
7. Click **OK Button** to begin communicating with the board.
8. At this point you can issue the "fts" command as desired – see Chapter 4 for instructions.



New Connection window @ step-1



Serial Port Setup window @ step-5

3. Programming Factory Flash via embedded 635 Web Page (Method-A)

This section covers how to factory reset target boards via the embedded 635 Web Tool.

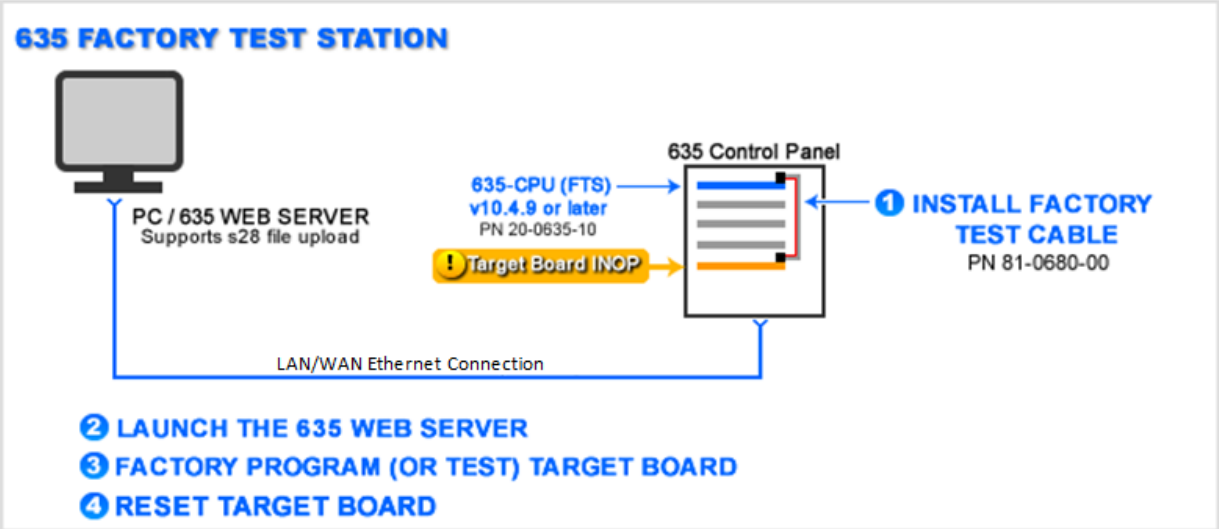
FACTORY FLASHING A TARGET BOARD IN THE FIELD

Factory Programming supports two flashing options

1. Flashing the target board to the embedded version on the 635-CPU(FTS) Board.
2. Flashing the target board to an alternate S28 file version
   - *A version that matches the system version in the field.*
   - *The target board is a special board*

REQUIREMENTS FOR USING 635 WEB SERVER (Method-A)

- a **635- FTS(CPU) v10.4.9 or higher = PN 20-0635-50** (installed in the target panel)
- a **Factory Ribbon Cable = PN 81-0680-00** (installed in the target panel)
- a **Local PC Browser** **(**able to connect to the IP Address of the 635-FTS (CPU)**)**
- the latest **Firefox Web Browser** (recommended)
  NOTE: user can detect the CPU by MAC Address using the 635 Web Tool - see Appendix**.**
- the **Factory Test Station CD** (needed only if an alternate S28 Flash file will be uploaded)**.**



ADDITIONALLY: If the *target board* is a 600-CPU, or is a special board, or simply requires an older system flash than the embedded version on the 635-FTS/CPU, the user must *upload* the appropriate alternate s28 file into the 635-FTS/CPU memory slot. **Special boards cannot be flashed with the embedded FTS flash.**

HOW TO FACTORY FLASHING A TARGET BOARD – METHOD-A

STEP-1 INSTALL THE FACTORY TEST CABLE (PN 81-0680-00)

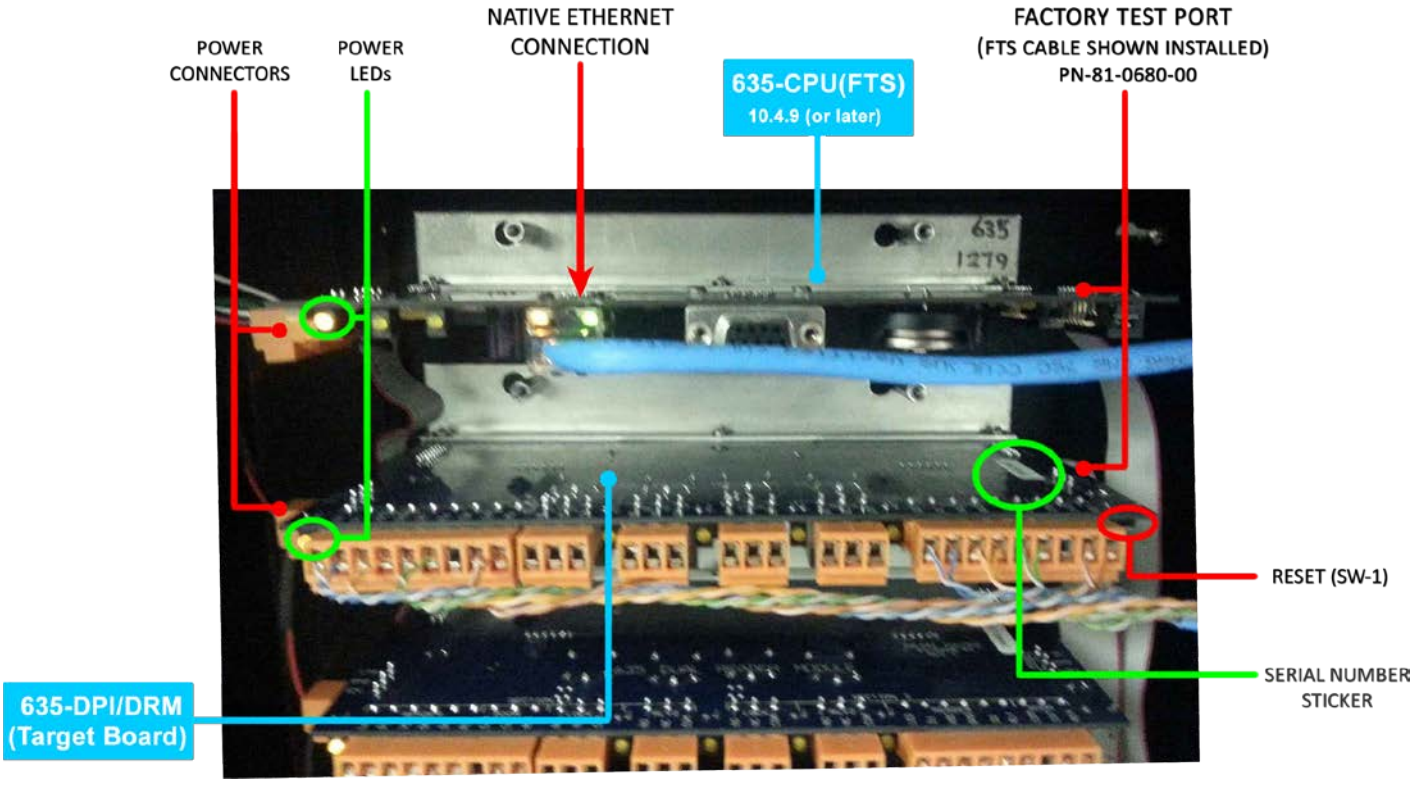
1. Go to the ***target panel*** and open the controller door.
2. Make sure the **power LED is lit/ON** for both the CPU and the *target board*.
   The board should remain on the I2C Buss during the process.

> **TIP:** You can write down **serial number** of the target board from the sticker on the back of the board.
> **635 boards begin with 030 …; and 600 boards begin with 020…;**
> It is also possible to get the *board serial number* from the embedded *Web Tool's Panel Status page* provided the I2C Data Buss is operating (16-pin ribbon cable next to the power connector).

3. Install the **14-PIN Factory Test Cable** (**PN 81-0680-00;** Ribbon Cable opposite side from power connector)
   - Connect one end of the FTS Cable to the ***factory port*** of the ***CPU Board***
   - Connect the other end of the FTS Cable to the ***factory port*** of the ***target board***

     (Factory Ports are located opposite of the I2C Buss).

4. The enclosure door of the target panel must remain open during this process.



STEP-2 LAUNCH the Embedded 635 Web Server Page (METHOD-A)

1. Open the **Web Browser** from a *PC/Laptop*.

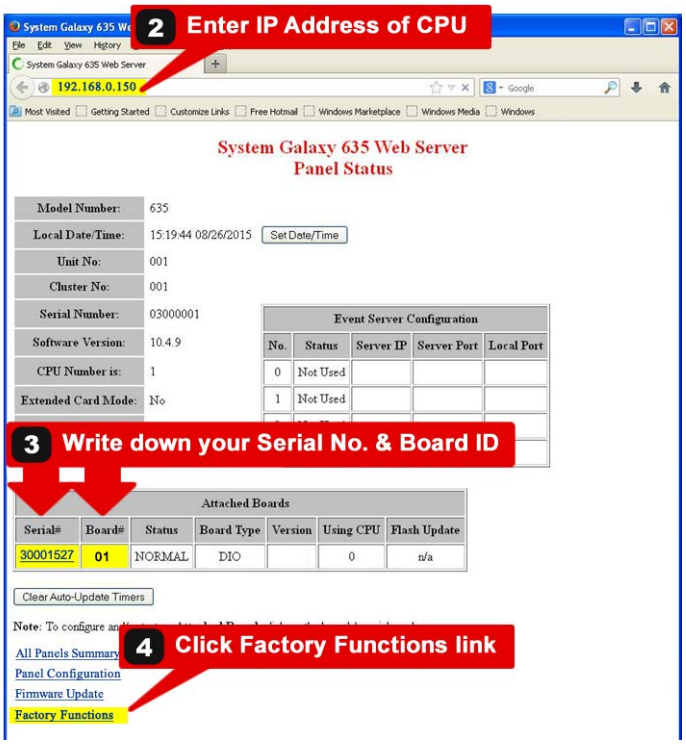
2. Type the **CPU's IP Address** into the web browser address field.
   - » You can find your CPU IP Address from the SG Software Controller Properties screen – look on the CPU tab for the last known IP Address or in the Loop Diagnostics screen if needed.

3. Write down the **serial number & Board ID** of the target board – found on the Panel Status page.
   - » If you cannot see the target board, you can get the serial number from the sticker on the back of board.
   - » Also you can find your board ID from the SG Software Configurations – look in the controller or device properties screen for a device that is attached to the target board.

IMPORTANT: You must obtain the Serial No. & Board ID of target board before proceeding to next step.

See the Appendix for tips on finding Board Numbers and CPU IP Addresses.

4. Click on the **Factory Functions link** at the bottom of the **Panel Status page.**
   (The presence of this link confirms your target board can be flashed using the embedded Web Server.)



Panel Status page

If you cannot connect to the 635-CPU(FTS) using the IP Address in a Web Browser, then you can choose to connect using one of the following options:

- » Use Method-B / TeraTerm on a Laptop and connect directly to the CPU with the Serial Cable (**see chapter 4**).
- » Use the client-side 635 Web Config Tool to find the MAC Address (***see Appendix*** for important instructions on installing/using the 635 Web Tool).

STEP-3 UPLOAD ALTERNATE S28 FLASH FILE (Optional Step – used only if needed)

Alternate flash must be uploaded if you have ….

- a ***special board*** that cannot be flashed from the embedded version on the 635-FTS(CPU)
- OR – if the target board needs to match the field system version (older than the embedded version)

SKIP THIS STEP IF YOU DON'T NEED TO UPLOAD AN ALTERNATE S28 VERSION.

1. Insert the **Factory Test Station CD** into the PC drive.
2. Click the **BROWSE button** on the Panel Status page to find the S28 file you need to upload.

   HINT: if the ***embedded version*** *column* does not show a version link, then you must upload an alternate file.

Factory Functions page

CONTINUED ON NEXT PAGE …

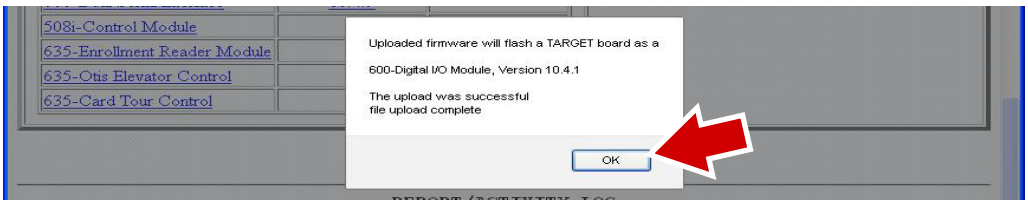
SKIP THIS PAGE IF YOU DON'T NEED TO UPLOAD AN ALTERNATE S28 VERSION.

3. Navigate to the desired folder on the FTS CD
4. Select (highlight) the appropriate **S28 File version**.
5. Click **OPEN button** to queue the file.

6. The chosen ***file name*** will appear in the upload queue.
7. Click the **UPLOAD FILE button** to upload the file.

Factory Functions - screenshot showing DIO v10.4.1, but this could be any flash version for any model of board.

8. Click **OK button** when the upload is complete.

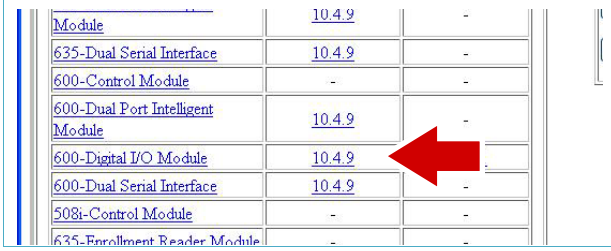


STEP-4 SELECT THE FLASH VERSION LINK

1. User will click the *appropriate* ***version link*** to begin flashing the target board.

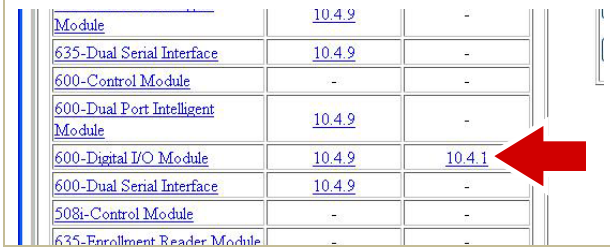
IF FLASHING WITH EMBEDDED VERSION

a) Click embedded version link.



IF FLASHING WITH UPLOADED VERSION

b) Click uploaded version link.



STEP-5 ENTER SERIAL NUMBER & BEGIN FLASHING TARGET BOARD

1. **Enter the correct Serial Number!** *You should have recorded this number in Step-1 or -2*.

   <u>635-series target board</u> – serial number must exactly be 8-digits and must begin with zero !
   a. Type **"03" (**enter a leading zero in front of the '3'**)**
   b. Then omit a zero after the '3' **(**in order to maintain the 8-digit length**)**
   c. Then enter the remainder of the board's serial number.

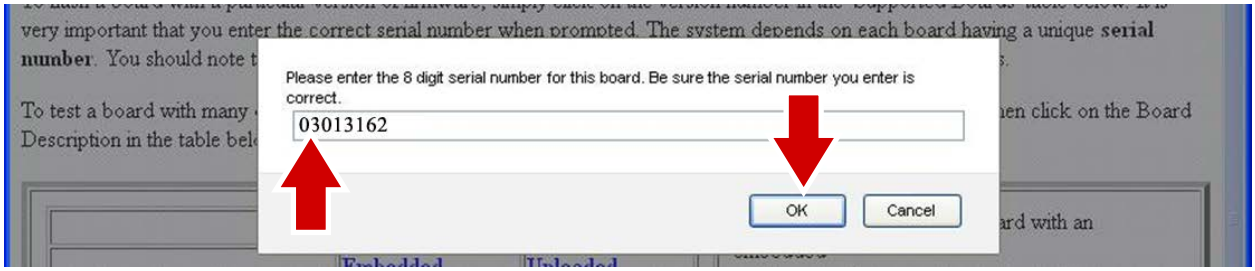
   <u>600-series target board</u> – serial number must exactly be 8-digits and must begin with zero !
   a. Type **"02" (**enter a leading zero in front of the '2'**)**
   b. Then omit a zero after the '2' **(**in order to maintain the 8-digit length**)**
   c. Then enter the remainder of the board's serial number.

EXAMPLE: if the board number is "<u>30</u>013162", the user will type "<u>03</u>013162"

Notice that a zero is added before the **3,** but omitted after the **3.** This maintains the 8-digit number.

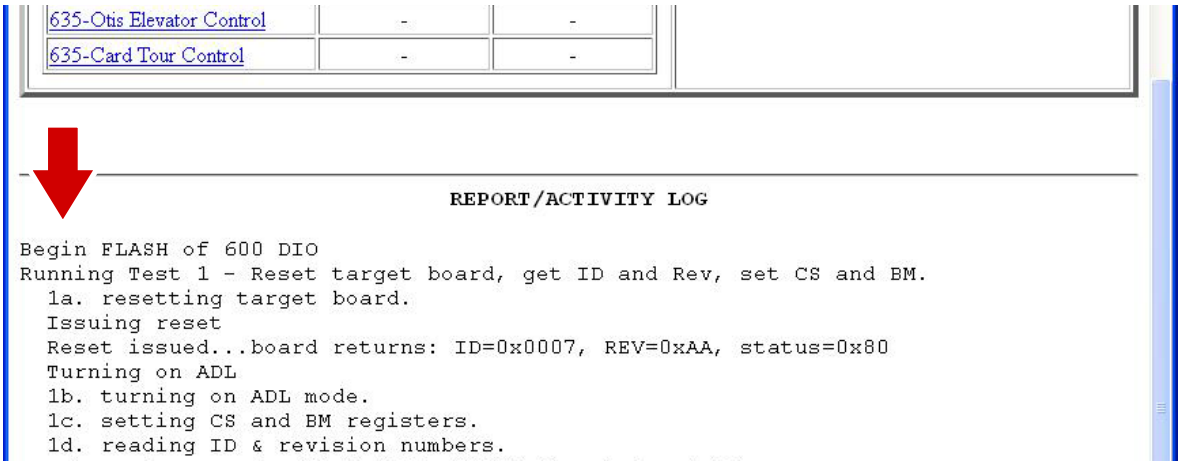
The SERIAL NUMBER must start with a zero(0). Serial Number cannot be a duplicate of another serial number.

2. **Click OK button to begin flashing**.



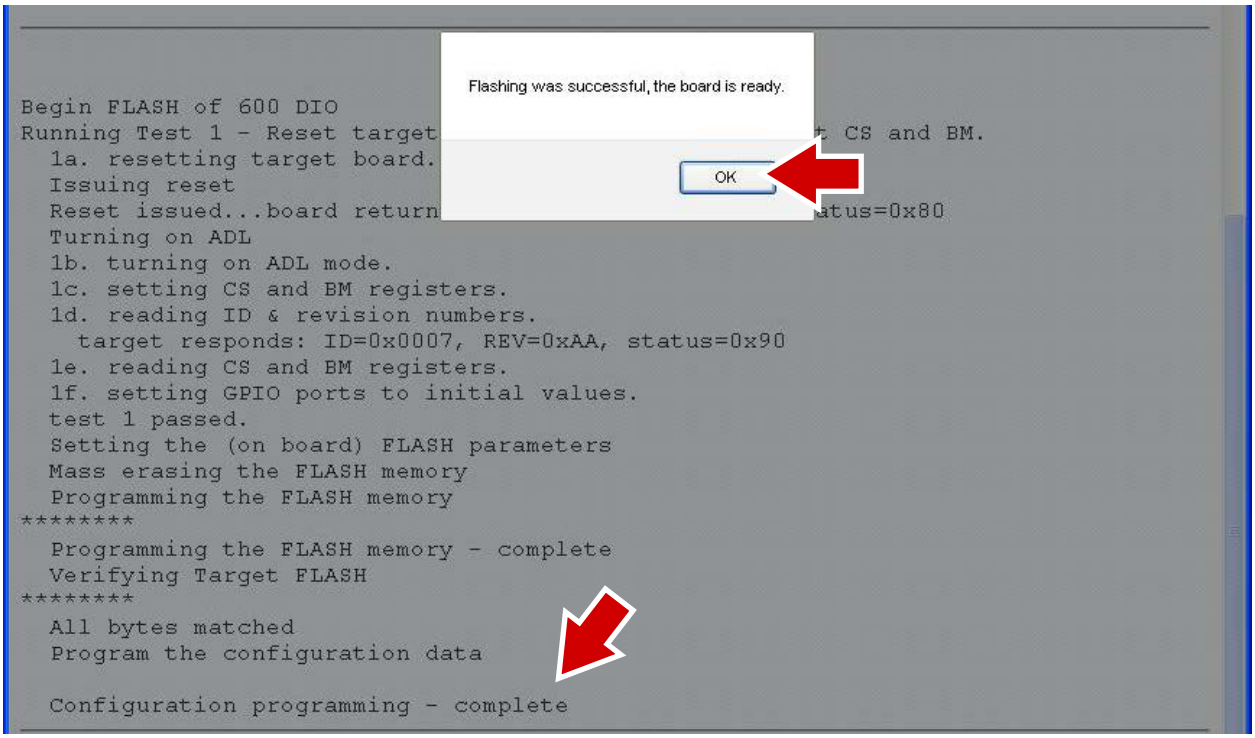
Factory Functions - screenshot shows user entering the 8-digit serial number of a target board.

3. When flashing begins, the flashing progress is reported to the Factory Functions Page



Factory Functions - screenshot showing progress of flashing target board.

4. Click the **OK Button** when flashing completes successfully.



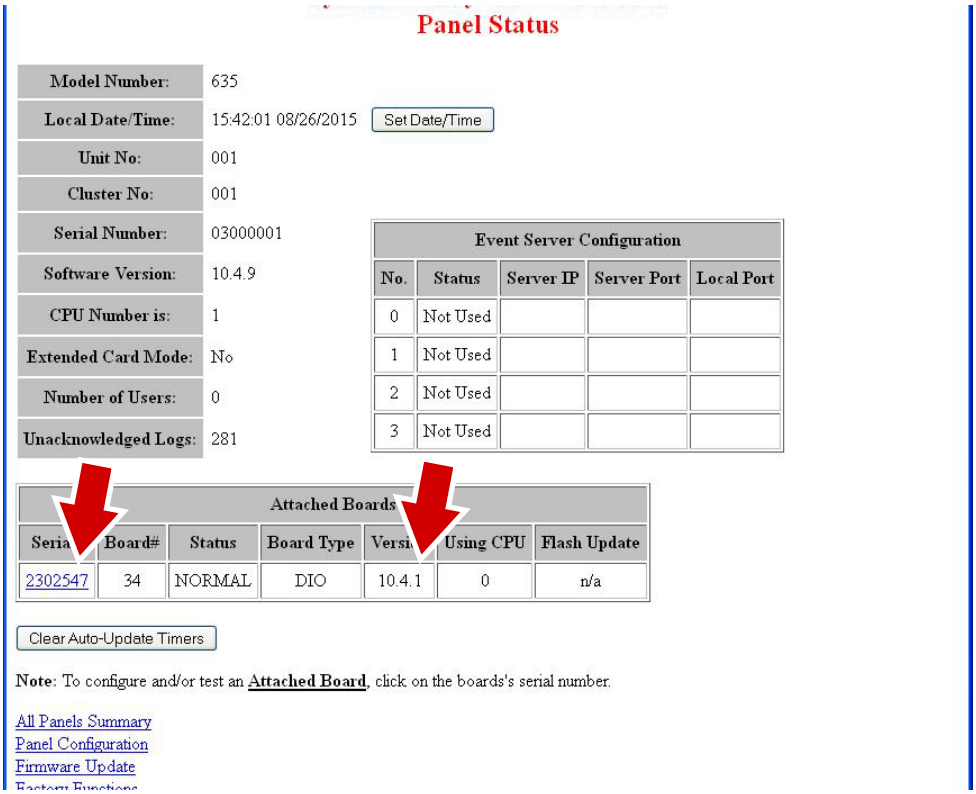
Factory Functions - screenshot showing flashing complete.

STEP-6 RESET TARGET BOARD

1. Click the **Panel Status link** (bottom of page) to return to the Panel Status page.
2. User must physically **reset the target board** by pressing the **SW-1 Button** on the board.
3. When the target board comes online, you should see the correct ***serial number*** and ***flash version***.
   Click **F5 key** to refresh the Panel Status page – could take a minute for the board to report.

   - 635-series boards will show the current Board ID according to dipswitch setting.
     Factory Flashing does not affect dipswitch settings.

   - 600-series boards will reset to the Factory ID = 34 and must be configured to original ID number.



Panel Status Page – showing a target board after being factory flashing to an alternate S28 version.

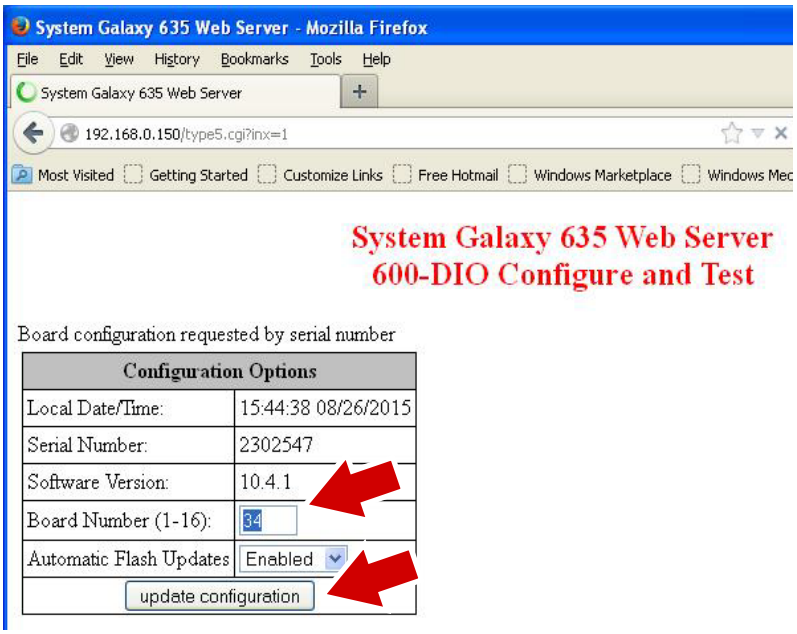
STEP-7 RECONFIGURE BOARD ID (600-SERIES ONLY)

❖ From the Panel Status page, click the board ***serial number link*** to open the Configuration page.

1. Enter the **correct Board ID** that the target board had before it was factory flashed.
   Board ID must be valid and unique (1-16 valid).

IMPORTANT: YOU MUST RESTORE THE BOARD's ORIGINAL ID NUMBER.
Changing the board's ID will cause you to reconfigure all the attached hardware devices in the SG Software properties .

2. Click the **Update Configuration button** to save the ID.



600-series Board Configuration Page

See the Appendix for tips on recovering the board number if you forgot to obtain it.

STEP-8 REMOVE THE FACTORY CABLES

1. **Remove the Factory Test Cable (ribbon cable) from the target board.**
2. Close and secure the panel door.

STEP-9 LOADING DATA & CONFIRMING OPERATION

The panel should be reloaded with the system data after factory flashing is completed.

IMPORTANT: System data MUST be re-loaded to the panel if the target board was a CPU or DSI board.

1. **Open System Galaxy** and log in with the master login.
2. From the **Hardware Tree**, right-click on the ***Loop Name*** that the target panel belongs to.
3. Choose **'Load'** from the context menu, to open the GCS Loader program.
4. Select the ***Controller Name*** of the target panel you need to load.
5. Select on the **Load Data tab** and select to **load all data/all cardholders**.
6. Click the **Load button** and allow the panel to load.
7. **Perform any walk-tests or system checks to verify that the system is performing correctly.**

4. Program Factory Flash using TeraTerm Emulator (Method-B)

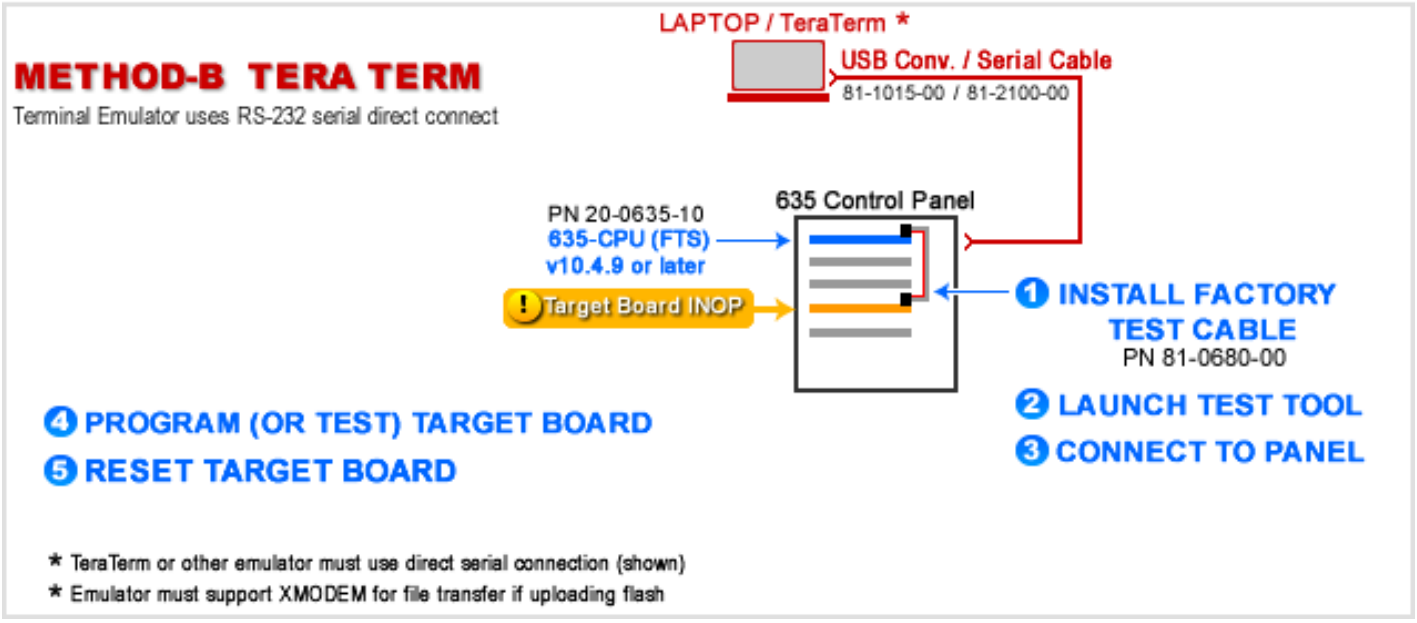
This section provides the instructions to reset boards to their factory flash version using the TeraTerm or other emulator.

HOW TO FACTORY FLASHING A TARGET BOARD IN THE FIELD

Restoring a CPU board to factory default settings will reset the network IP Address to the of 192.68.0.150. Likewise on 600-series boards, the board ID will be reset to the factory default ID (34).

LIST OF REQUIREMENTS FOR FLASHING VIA METHOD-B

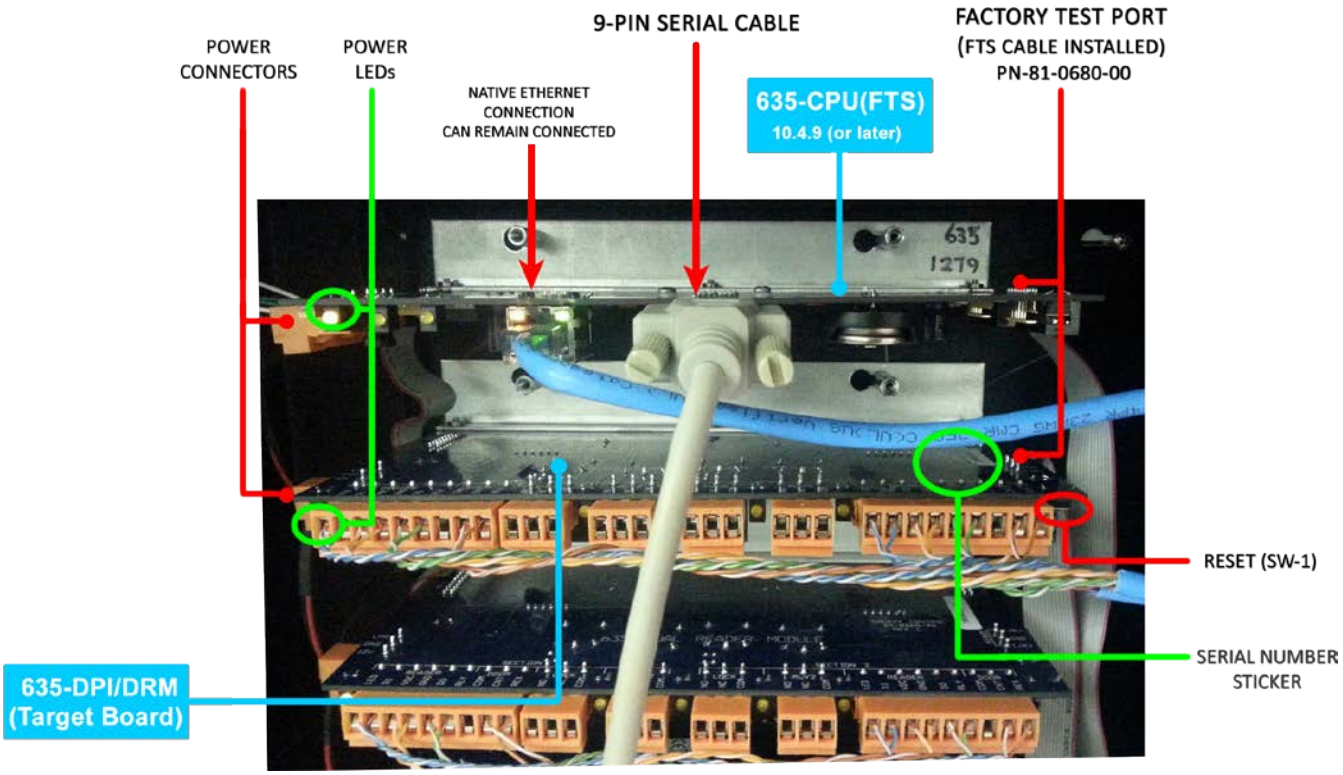
- a **Laptop** that can connect directly to the target panel in the field setting.
- the **TeraTerm Emulator program** – see Chapter 2 for install instructions if needed.
- the **635-FTS(CPU) = PN 20-0635-50** (running v10.4.9 or higher embedded)
- the **14-pin Factory Test Cable = PN 81-0680-00** (ribbon cable).
- a **RS -232 Serial COM Cable = PN 81-2100-00** (9-pin Programming Cable; D-shell connector on both ends).
- a **USB to RS-232 Serial Converter = PN 81-1015-00** (USB to 9-pin D-shell; if your PC doesn't have a 9-pin serial port).
- the **Factory Test Station CD** if a specific *alternate S28 Flash file* is needed.
  Alternate s28 flash is required if the target board is a special type (600-CPU, 635-OTIS, 635-CTM, 635-Enrollment Reader Module), or if the target board needs a lower/older version than the embedded version of the 635-FTS(CPU)



STEP-1 INSTALL CABLES AT THE TARGET PANEL

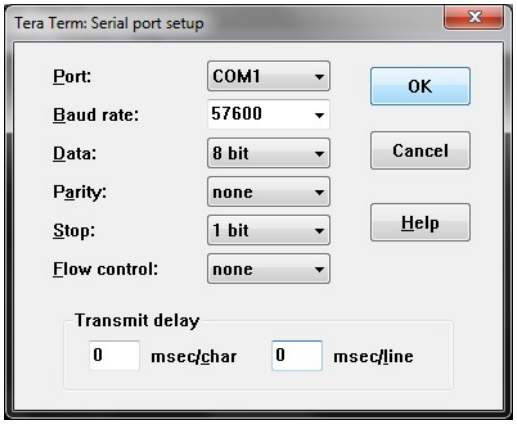
These instructions assume a 635-FTS(CPU) v10.4.9 or higher is already existing in the target panel.

1. Open the enclosure door to the Target Panel where the ***target board*** is installed
2. Make sure the **635-FTS(CPU)** is powered ON (power LED is lit)
3. Make sure the **target board** is powered ON (power LED is lit)
4. The **I2C Data Ribbon Cable can remain connected** to all boards as normal. *In a later step you will issue the boards command that will require the I2C Buss to be connected*.
5. Connect the **USB Converter and 9-PIN Serial Cable** from the **Laptop USB Port** to **635-FTS(CPU) Serial Port (J4)**, which located on the front edge of the CPU board.
   - **USB Serial Converter = PN 81-1015-00** (USB to 9-pin D-shell).
   - **Serial COM Cable = PN 81-2100-00** (9-pin D-shell male/female).
6. Connect the **14-PIN Factory Test Cable** (PN 81-0680-00) to the **635-FTS(CPU) factory port.**
7. Connect the other end of the 14-**PIN Factory Test Cable** to the **target board factory port**.



STEP-2 LAUNCH THE TEST TOOL

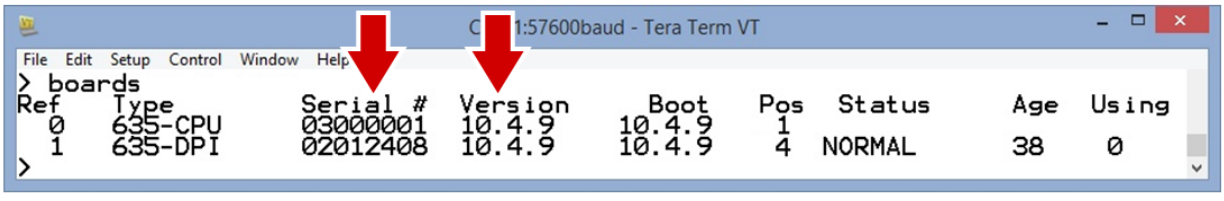
1. Launch the ***TeraTerm emulator*** from the desktop icon.
2. Select the **[Serial] option** and pick the correct COM port for the CPU.
3. Make sure you are using the following connection parameters …
   - » Baud Rate = "**57600**"
   - » Set Data = **8 bit**
   - » Parity = **None**
   - » Stop Bit = **1 bit**
   - » Flow Control = **None**



Serial Port Setup window

STEP-3 OBTAIN BOARD SERIAL NUMBER & BOARD ID

1. Type "**boards**" (to confirm your CPU is a 635-CPU running v10.4.9 or higher).
2. Write down **serial number** of the **target board.**
   You can also obtain the serial number from the sticker on the back of the target board.
3. Write down of the **board ID**.
   - » You can also obtain the Board ID from the System Galaxy controller programming screen for the devices attached to this board.
   - » If the target board is a CPU, you must record the IP Address, Network Mask and Gateway Address using the "config" command to view the CPU settings.



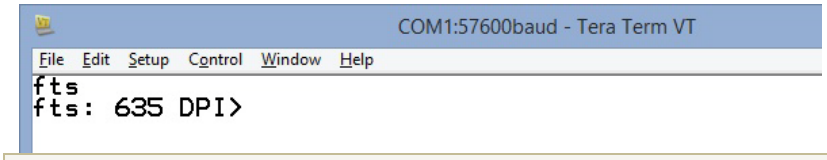
The screenshot shows the results of issuing the "boards" command – with 635-DPI (DRM) as the target board.

See the Appendix for tips on finding Board Numbers and CPU IP Addresses.

STEP-5 BEGIN "FTS" MODE

NOTICE: all commands must be typed on lower-case without quote marks " ".

1. Type "**fts**" and press **<Enter> key** (keyboard) – to display the 635 prompt.



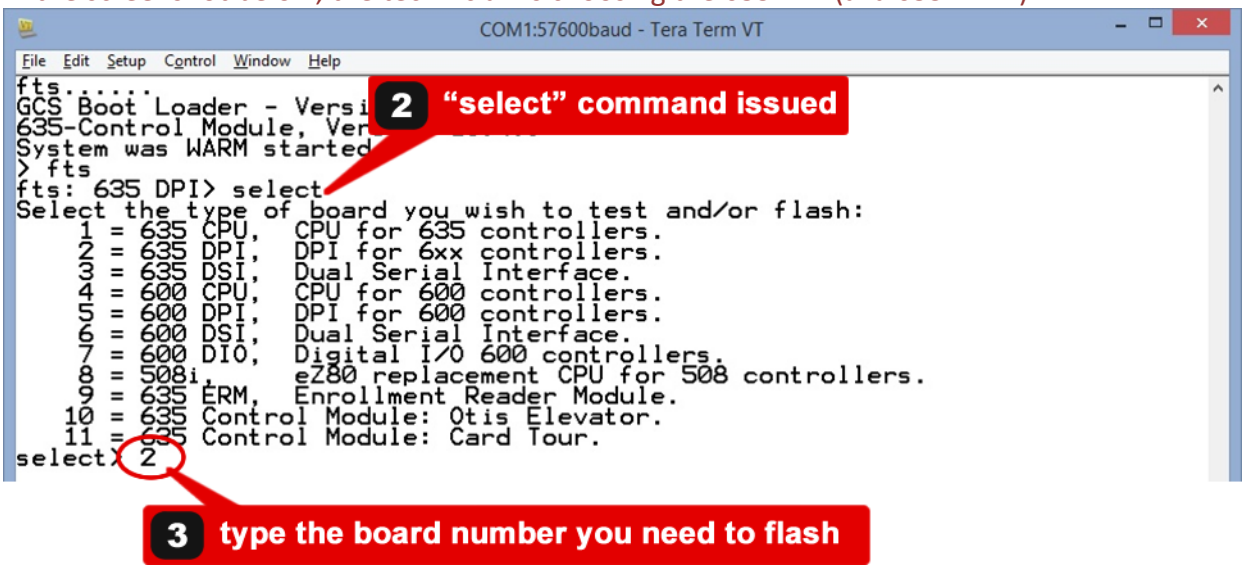
NOTICE: the prompt shows the ***last known*** board model, which may **not** be the board you are connected to. This is OK, because you will choose the appropriate board in the following steps.

2. Type "**select**" and press **<Enter> key** – to display the list of boards supported.
3. Type the ***number*** for the type that matches your target board.
   You can only target one board at a time.

1.	635-CPU
2.	635-DPI
3.	635-DSI
4.	600-CPU*
5.	600-DPI
6.	600-DSI
7.	600-DIO
8.	508i CPU
9.	635-ERM*
10.	635-Otis Module*
11.	635-CTM*

*** Special boards must have their S28 flash to be uploaded.**

In the screenshot below, the technician is choosing the 635-DPI (aka 635-DRM)



4. Press **ENTER key** to continue.

STEP-6 UPLOAD AN ALTERNATE S28 FILE (optional)

SKIP THIS PART IF YOU ARE FLASHING THE TARGET BOARD TO THE EMBEDDED VERSION OF THE 635-CPU(FTS)

Only perform these steps if any of the following cases is true ….

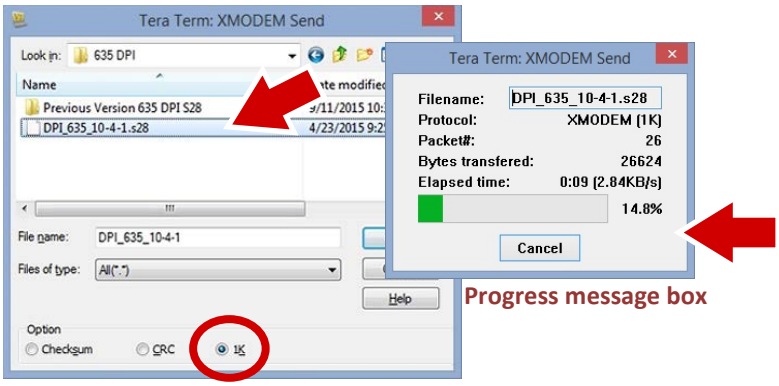
A. The **target board requires an older flash version**.

B. The **target board is a Special Board**:

- **600-CPU**
- **635-CTM** (Card Tour Module)
- **635-OEM** (OTIS Elevator Module)
- **635-ERM** (Enrollment Reader Module)

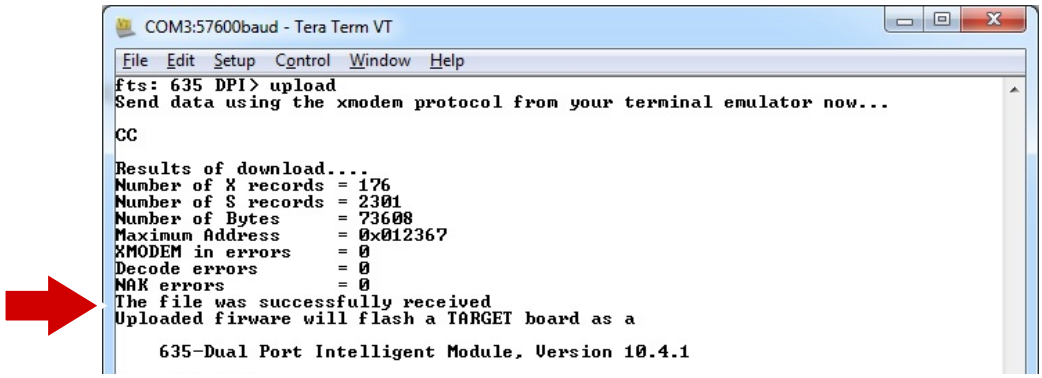
1. Insert the Factory Test Station CD into the PC disk drive.
2. Type **"upload"** and press **ENTER key**.
3. From **TeraTerm menu,** select **File > Transfer > XMODEM > Send …** *to open the XMODEM Browse window*
4. Select **[1K] Option** on the XMODEM Browse window.
5. Browse to the **appropriate S28 Files folder** on the Factory Test Station CD that matches the target board.
   Factory Test\S28 files\635\635 *~ and choose the folder for your target board type
   Factory Test\S28 files\600\600 *~ and choose the folder for your target board type
6. Double-click the ***S28 file name*** of your desired version to begin the file transfer.
7. Wait for the ***green progress bar*** to complete. The message box closes when the file is successfully received.

Note: you only have a few seconds to select the desired filename. If your transfer times out, the green progress bar on the Send message box will not start. Simply ***cancel*** and retry the transfer from step 3.



Progress message box

XMODEM File Browse window



TeraTerm main window

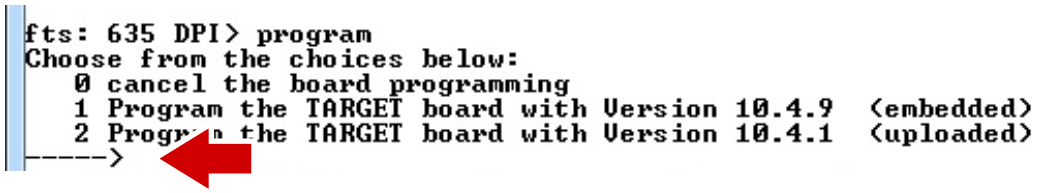
STEP-7 PROGRAM THE CORRECT S28 FLASH (EMBEDDED VS. UPLOADED)

1. Type "**program**" and press **ENTER key.**
2. Type the ***appropriate choice*** at the **>** prompt**:**

   0 = cancels board programing

   1= programs Target Board with **embedded 635-CPU Flash** (v 10.4.9 (or higher))

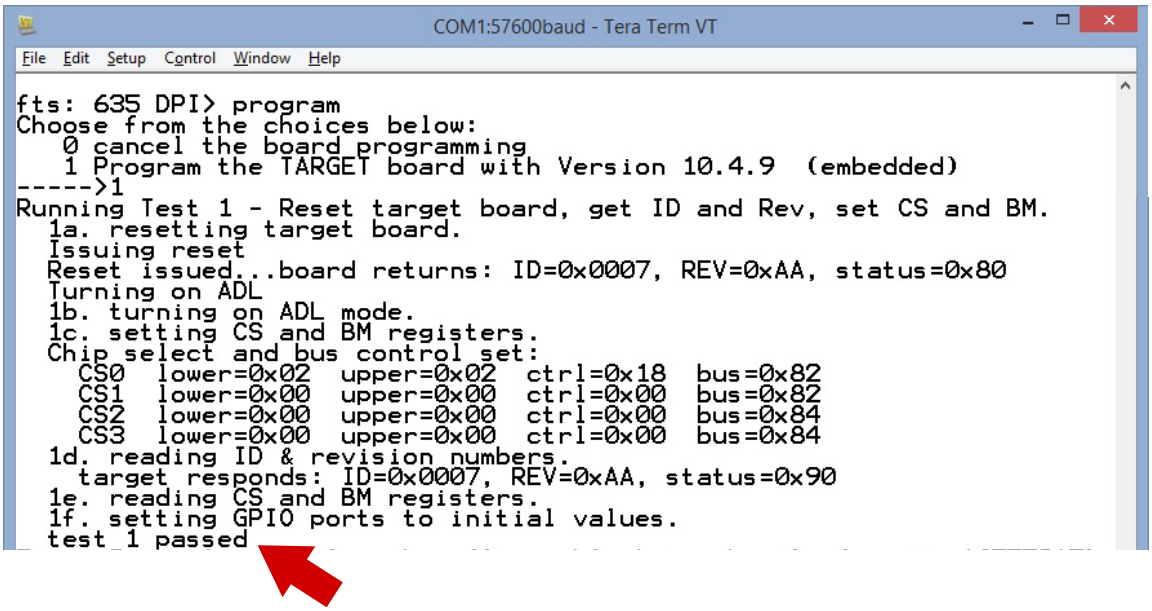
   2= programs Target Board with ***uploaded flash version*** (in memory; you uploaded in prior step)



3. Press **ENTER key** to begin the Factory Flash process.

NOTICE: The chip set test must pass before you the flash can load.

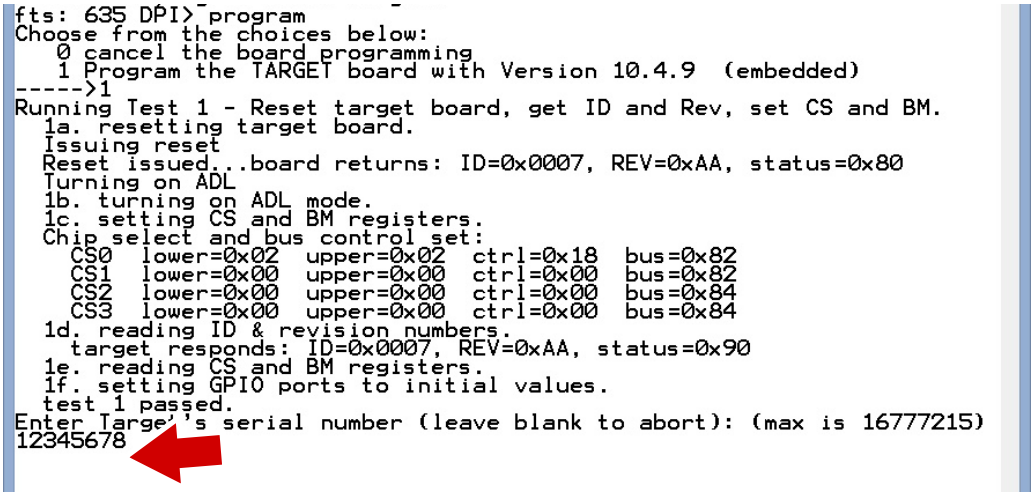
If the test fails, simply reissue the **program** command, repeating Step-1, 2, and 3.
The board should pass upon subsequent effort.



STEP-8 CONFIGURE BOARD SERIAL NUMBER

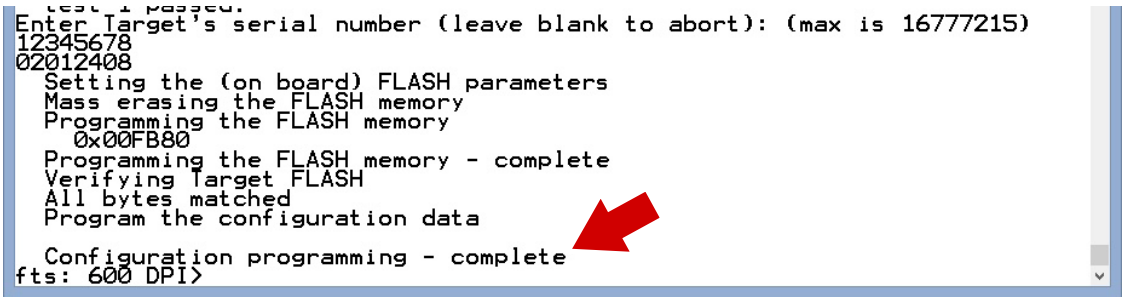
1. Type the ***serial number*** of the target board starting with the appropriate prefix**:**
   - » **635 target board**: Type **"03" plus the remainder of the serial number** on board's sticker
   - » **600 target board**: Type **"02" plus the remainder of the serial number** on board's sticker

For example: Type "03013162" if the board number is "3013162"
Notice that a zero is added before the 3, and a zero is omitted after the 3 - to maintain an 8-digit number.



Note: enter your serial number **under the 12345678 (8-digit guide).** This helps you be sure you have entered exactly 8 digits. **The 1st digit must be a zero (0).**

2. **Press ENTER key** to complete programming.



3. Type "**exit**" and press **ENTER** to exit the Factory Test Mode.

STEP-9 RESETTING THE TARGET BOARD

❖ Make sure the target board is on the I2C buss with the operating CPU.

1. Press the **[SW-1] button on the Target Board** (this will not cause a visible result on the emulator). The reset button is on the front corner of the target board.
2. Type "**boards**" command - to confirm the Target Board has come back online.

NOTE: It make take a minute for the CPU to pick up the Target Board.
You can reissue the ***boards command*** as many times as you like until your board comes online.

```
  Configuration programming - complete
fts: 635 DPI> exit
> boards
Ref    Type         Serial #   Version     Boot     Pos   Status      Age   Usi
ng
  0    635-CPU      03000001   10.4.9      10.4.9     1
  1    635-DPI      03003162   10.4.9      10.4.9    16   NORMAL       7     1

>
```

STEP-10 ADDRESSING THE TARGET BOARD (600-MODEL ONLY)

SKIP THIS SUBSECTION IF THE TARGET BOARD IS A 635 MODEL WITH DIPSWITCHES

1. At ***TeraTerm*** prompt, Type "**config**" command and press **<Enter> key**
2. Select the target board ***number*** and press **<Enter> key**
3. type "**yes**" to begin configuring board.
   - » A 635-model target board has dipswitch addressing and should not need to be reconfigured.
   - » A 600-model target board will experience a reset to the factory ID (34), which is not valid on the I2C buss.
4. Enter a **valid/unique Board ID** (1-16 is valid). Use same ID number that was in the board previously.

IMPORTANT: If the target board was a CPU, then you must reconfigure the IP Address, Subnet and Gateway Addresses - as well as the Event Server IP Address/port numbers.

5. Press **<Enter> key** as many times as needed to skip other settings.
6. Type "**yes**" to save configuration.
7. Type "**boards**" again to confirm your board is online and is configured as expected.

See the Appendix for tips on recovering the board number if you forgot to obtain it.

STEP-11 REMOVING CABLES

1. Remove the **14-pin Factory Ribbon Cable** if you haven't already done so**.**
2. Be sure that all boards are properly connected to the I2C buss and power harness.
3. Reset the main CPU and make sure all daughter boards come up and are reporting the correct flash code version and IDs. (issuing the boards command again)
4. Disconnect the **USB/Serial cable** from the 635-CPU(FTS).
5. Close and secure the panel door.

STEP-12 LOADING DATA & CONFIRMING OPERATION

- If the **target board** was the CPU or DSI (600 or 635) **you must reload data** to restore the Controller memory from the System Galaxy software ***GCS Loader Program*****.**
- As best practice, you may want to load data regardless of the type of target board, to ensure proper operating data.

1. Open **System Galaxy** and log-in with the master level login.
2. From the **Hardware Tree**, right-click on the ***Loop Name*** that the target panel belongs to.
3. Choose **'Load'** from the context menu, to open the GCS Loader program.
4. Select the ***Controller Name*** of the target panel you need to load.
5. Select on the **Load Data tab** and select to **load all data/all cardholders**.
6. Click the **Load button** and allow the panel to load.
7. Perform any **walk-tests or system checks** to confirm the system is performing correctly.

See the Appendix for description of the GCS Loader if needed.

5. Appendix – TIPS and HELP

Related Galaxy Reference Manuals:

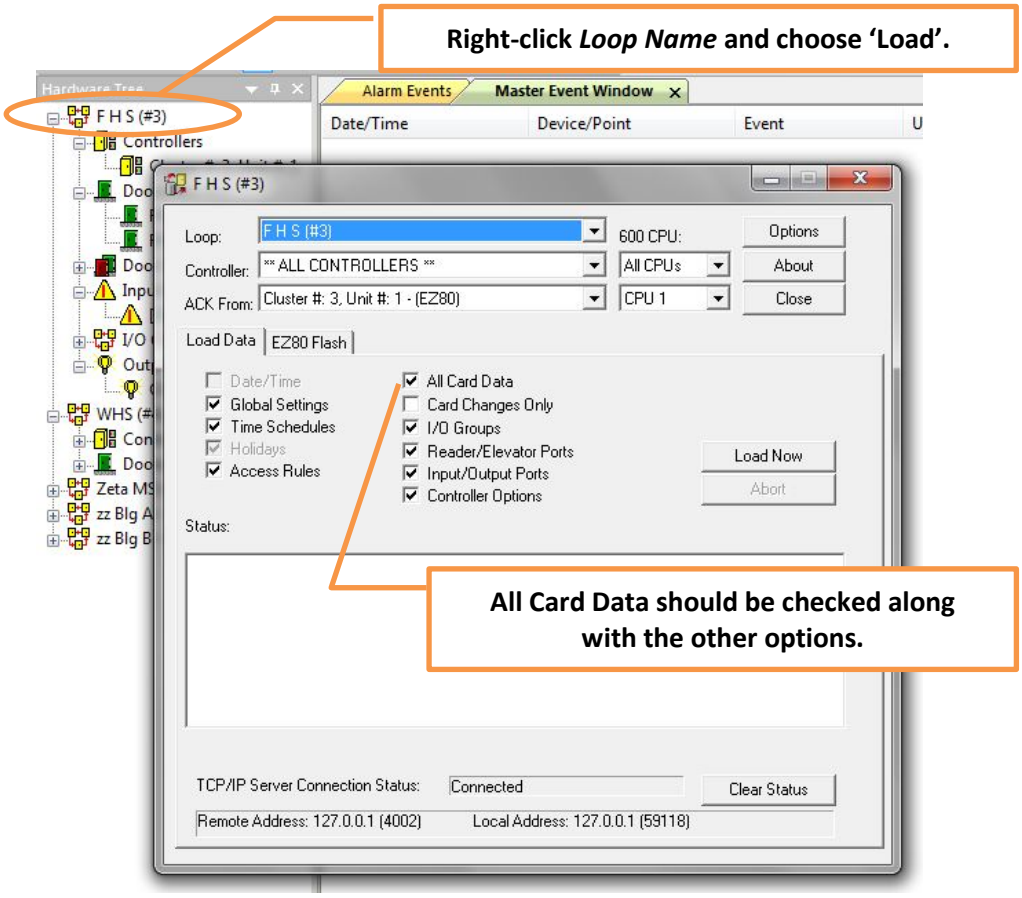
- 635-FTS Factory Testing Guide
- 635-FTS Factory Programming Guide (THIS GUIDE)
- 635 Web Server Configuration Tool
- 635-600 Hardware Installation Guide
- System Galaxy Software User Guide

About Loading the System Data

Covers loading system data back into the CPU after factory flashing. Also applies to factory flashing a DSI board.

❖ Open Hardware Tree from menu **View > Hardware** Tree if needed.

- Open the GCS Loader from the System Galaxy Hardware Tree by right-clicking on the Loop Name that the target panel belongs to. Then choose the Load option from the shortcut menu.
- Perform a full load of all data including **all card data**.



Tips for Finding a Board ID within System Galaxy

Factory flashing a 600 daughter board will reset the ID to the factory-default Board ID (34). You must return the board to its normal ID used in the system programming to restore proper operation. You want to avoid having to reconfigure system devices.

If the Board is not reporting/detected on the I2C Buss (Panel Status Page OR TeraTerm emulator), you can find the last known board ID by looking in the System Galaxy programming screens.

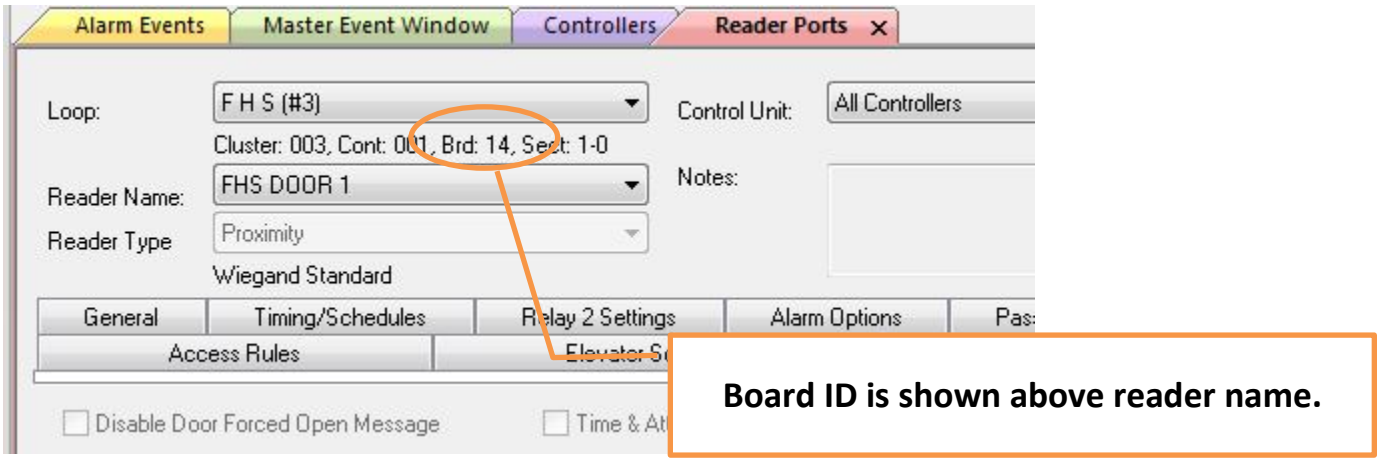
FINDING A 600-DPI BOARD ID (FROM READER PROPERTIES SCREEN)

If your board is a 600-DPI, go to the Reader Properties screen of the reader that is wired to your board.

- Open System Galaxy and login with master login - as needed
- From menu, choose **Configure > Hardware > Doors/Readers**

1. Select the Loop Name that the reader belongs to.
2. Select the Controller Name that the reader belongs to.
3. Select the Reader Name for the desired reader.

» **The Board number is listed above the Reader Name field.**



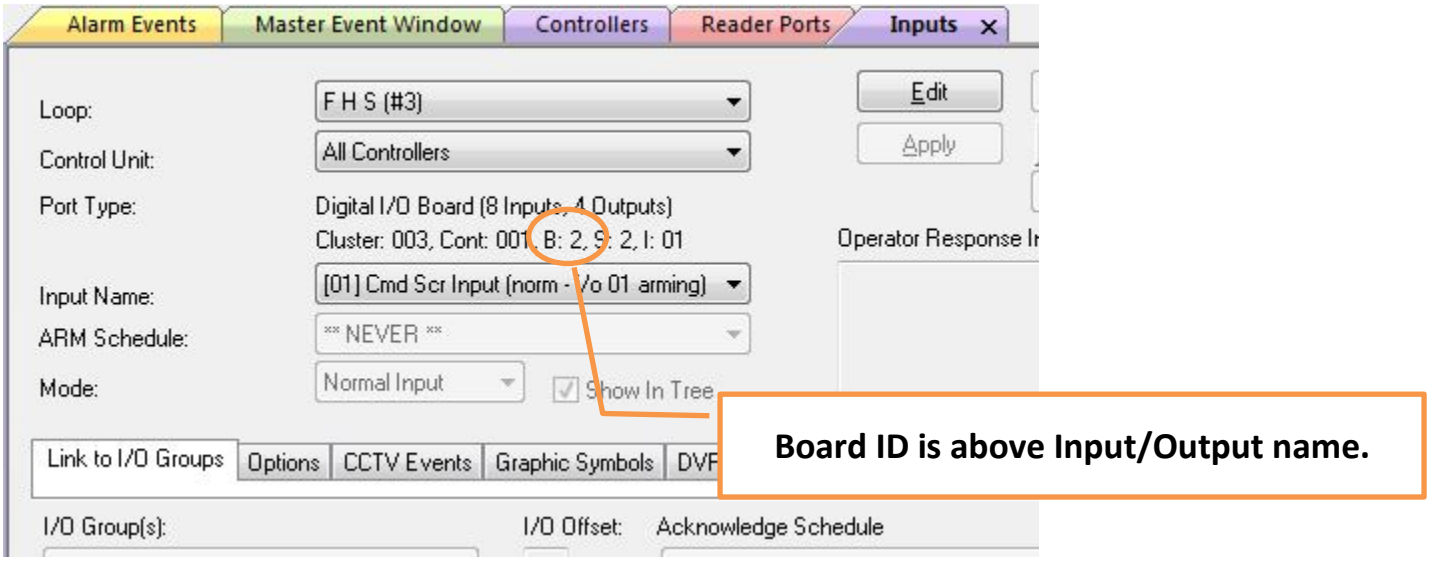
FINDING A 600-DIO BOARD ID – (FROM INPUT/OUTPUT PROPERTIES SCREEN)

If your board is a 600-DIO, go to the Properties screen of an Input or Output that is wired to your board.

- Open System Galaxy and login with master login - as needed
- From menu, choose **Configure > Hardware > Inputs (or Outputs)**

1. Select the Loop Name that the device belongs to.
2. Select the Controller Name that the device belongs to.
3. Select the Input/Output Name for the desired device.

» **The Board Number is listed above the Input/Output Name field.**



FINDING A 600-SERIES BOARD ID (FROM THE CONTROLLER PROPERTIES SCREEN)

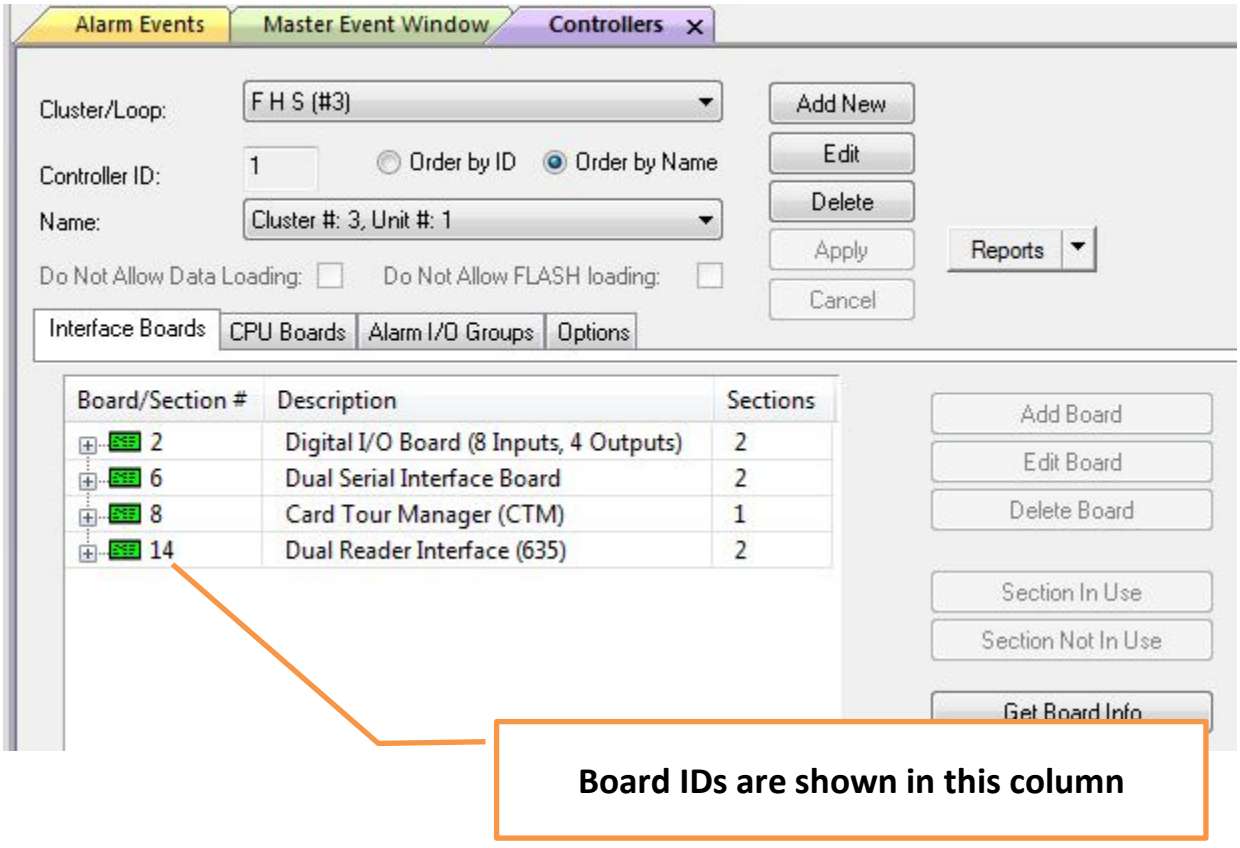
Another place to see all the board numbers that are known to be connected to the panel, is by looking Controller Properties screen.

- Open System Galaxy and login with master login - as needed
- From menu, choose **Configure > Hardware > Controllers(600)**

1. Select the Loop Name that the controller belongs to.
2. Select the Interface Boards tab – if needed

   DO NOT CLICK THE GET BOARDS INFO BUTTON.

» **The Board numbers are listed in the first column showing the Board/Section #.**



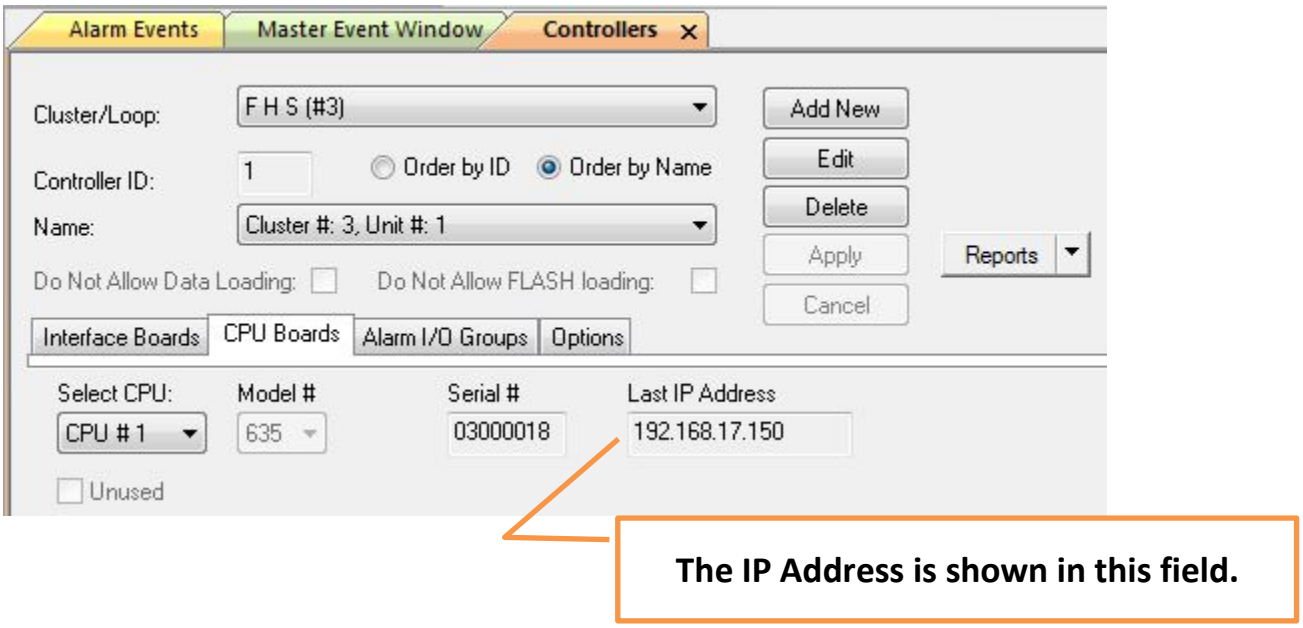
FINDING a CPU IP Address (IN THE CONTROLLER PROPERTIES SCREEN)

The last known IP Address for your 635-CPU(FTS), is found in the Controller Properties screen.

- Open System Galaxy and login with master login - as needed
- From menu, choose **Configure > Hardware > Controllers(600)**

1. Select the Loop Name that the controller belongs to.
2. Select the CPU Boards tab – if needed

» **The last-known IP Address is displayed in the [Last IP Address] field.**



If you cannot use the last known IP Address to connect to your panel, then see the next section about installing the Web Config Tool and connect via Ethernet connection – or Go to Chapter 4 to TeraTerm terminal emulator via direct serial connection.

How to Install the 635 Web Server Config Tool

Normally, the **embedded 635 Web Server – Panel Status page** can be opened by typing the ***CPU IP Address*** into a PC/Browser.

If the IP Address is unknown, or needs to be configured, the ***client-side 635 Web Server Config Tool*** is able to auto-detect the MAC Addresses of the CPUs that are on the ***same network segment*** as the panel.

If you cannot get to the same network segment as the panel, you can install the ***635 Web Server Config Tool*** on a laptop and temporarily jack directly into the on-board Eternet port on the CPU. Another option is to use TeraTerm emulator to connect to the Serial Port on the CPU (which requires a serial programming cable).

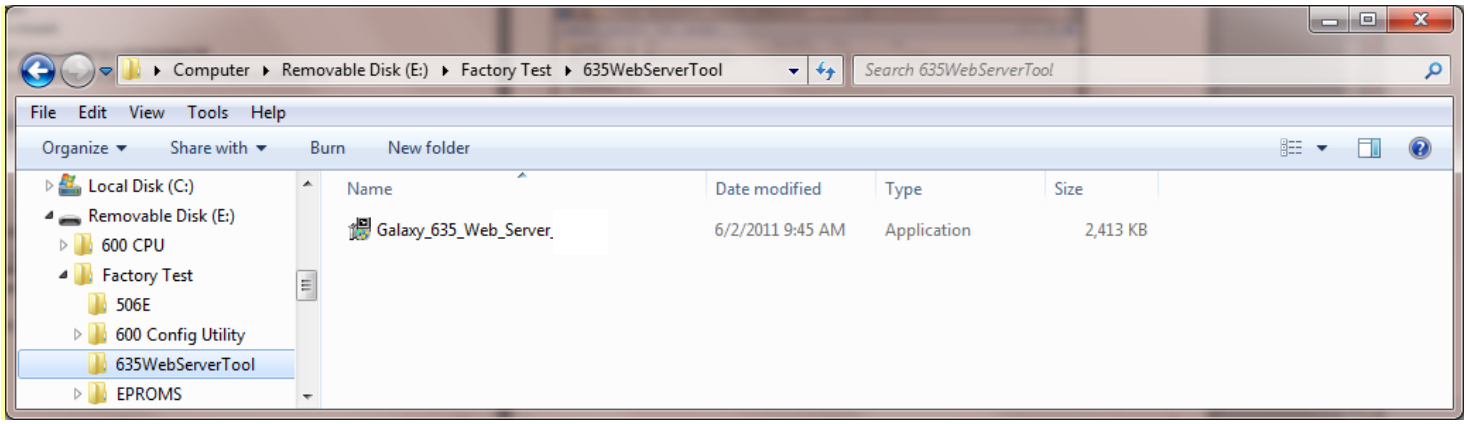
ONLY INSTALL this tool IF you need to find the CPU by MAC Address.

INSTALLING THE 635 WEB SERVER CONFIGURATION TOOL

- The latest version of Firefox browser is recommended/needed.
- The ***Galaxy_635_Web_Server executable*** is found in the **635 Web Tool** folder on the Factory Test CD.
  1. Copy the ***Galaxy_635_Web_Server executable file*** to your laptop.
  2. Double-click on the ***Web Tool.exe*** file to launch the install program.

» When finished, the 635 Web Tool **desktop icon** 

should be installed on your desktop.



PATH: CD\Factory Test\635WebServerTool\Galaxy_635_Web_Server_V106.exe (shown)

USING THE 635 WEB SERVER CONFIGURATION TOOL

This tool is designed to find the Galaxy MAC Addresses from your local PC/Browser.

- ❖ The latest version of Firefox browser is recommended/needed.
- ❖ The **door to the panel enclosure must be open** for the Web Tool to detect MAC Addresses .

1. Double-click the **desktop icon** 

to open the 635 Web Tool and detect the MAC Addresses.
   - **a)** The Browser will list only the Galaxy MAC Addresses
   - **b)** Click the **serial number link** to configure the IP Address and network settings if needed.
   - **c)** Click the **IP Address link** to go to the **Panel Status page –** you can complete all the tasks required by using the 635 Web Config Tool.

» NOTE: The **panel door must remain open** if you need to configure a Board ID for a 600-series target board.