



F650 Bootcode and Firmware Upgrade

GEK-106310T (Chapter 9)

BOOTCODE & FIRMWARE UPGRADE

9.0 INTRODUCTION

This section explains how to upgrade the F650 boot code and firmware.

WARNING
BEFORE PERFORMING THE UPGRADE PROCEDURE CHECK THAT BOOT AND FIRMWARE VERSION MATCH

The boot code and firmware versions can be seen in the main screen: The relay firmware version appears after the text “F650” (1.20 in the example) with the boot program version (2.20 in the example) followed by “GENERAL ELECTRIC”, the relay model and the default front RS232 port communication parameters.

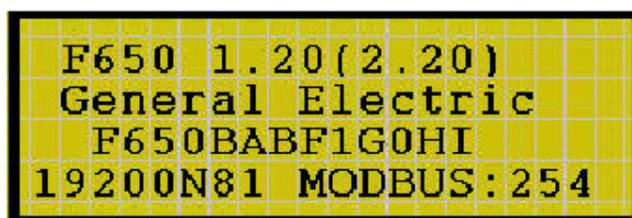


Figure 9-1: MAIN SCREEN

BOOT CODE RELEASE NOTES

It is mandatory to maintain version compatibility between firmware and boot code in the upgrade procedure, otherwise the relay will not start after upgrading.

FIRMWARE, BOOTWARE AND F650 PC PROGRAM VERSIONS COMPATIBILITY		
FIRMWARE CODE	BOOT CODE	ENERVISTA 650 PC
3.71	4.00 – 4.10	3,75
3.70	4.00 – 4.10	3,75
3.60	4.00 – 4.10	3,75
3.44	4.00 – 4.10	3,75
3.40	4.00 – 4.10	3,75
3.20	4.00 – 4.10	3,75
3.00	4.00 – 4.10	3,75
2.20	4.00 – 4.10	3,75
1.82	4.00 – 4.10	3,75
2.00	3.00	3,75
1.8x	2.35	3,75
1.7x	2.35	3,75
1.6x	2.35	3,75
1.5x	2.30	3,75
1.4x	2.30	3,75
1.3x	2.30	3,75
1.2x	2.20	3,75
1.13	2.20	3,75
1.11	2.00	3,75
1.00	2.00	3,75

NOTE

A STEP LIST SUMMARY that will allow the user to control the upgrading process is included at the end of this section. It is necessary to read paragraphs 9.1.1 to 9.4.2 of chapter 9 of [Manual GEK-106310T](#) before to perform the F650 UPGRADE PROCEDURE.

Be aware that boot program and firmware upgrades will erase all the data contained in the relay, thus it is advisable to save all the data, oscillography, events, settings and configuration files previously.

9.1 COMMUNICATION PARAMETERS

Before proceeding with the upgrade process, it is mandatory to check the following:

- 9.1.1 **Since F650 Setup Program acts as a TFTP sever, any other TFTP server installed in the PC must be disabled. Check if any other TFTP server is installed in the PC and/or if any other device is using Port 69 that it might be installed by default during the PC startup.** To disable it please proceed as follows in the PC:

- At **STARTUP>MY PC>Right Mouse key>MANAGE>SERVICES & APPLICATIONS>SERVICES**
- Select the operative **TFTP server**
- **Right Mouse key>MANUAL or STOP**
- **Reboot PC** (if **MANUAL**)

- 9.1.2 Ethernet Connection/Type – Both boot code and firmware upgrade processes require Ethernet communications. It is strongly recommended to use a direct connection between the PC and the relay using a Cross-Over RJ45 Ethernet cable, instead a direct connection through a hub or switch. In no one case upgrading will be done using a Local Area Network (LAN).

Serial RS232 Communication - Serial communication is necessary only to perform the bootware upgrade.

9.1.3 Relay IP Address – It must be assigned a IP address to the relay in the Ethernet parameters via HMI at **PRODUCT SETUP>COMMUNICATION>ETHERNET>ETHERNET1** menu or via Enervista 650 Setup at **SETPOINT>PRODUCT SETUP>COMMUNICATION SETTINGS>NETWORK (Ethernet) 1** as shown in the table 9.1

PRODUCT SETUP>COMMUNICATIONS SETTINGS>NETWORK (ETHERNET) 1			
NAME	VALUE	UNITS	RANGE
IP Address Oct1	192		[0 : 255]
IP Address Oct2	168		[0 : 255]
IP Address Oct3	37		[0 : 255]
IP Address Oct4	177		[0 : 255]
Netmask Oct1	255		[0 : 255]
Netmask Oct2	255		[0 : 255]
Netmask Oct3	255		[0 : 255]
Netmask Oct4	0		[0 : 255]
Gateway IP Oct1	192		[0 : 255]
Gateway IP Oct2	168		[0 : 255]
Gateway IP Oct3	37		[0 : 255]
Gateway IP Oct4	10		[0 : 255]

Table 9-1

9.1.4 PC IP Address - In the case the relay has been boot code previously upgraded (section 9.2), the IP address and other parameters already assigned in the process will be:

IP Address: 192.168.37.177
 Netmask: 255.255.255.0
 Gateway: 192.168.37.10

Then the PC settings should be the same pattern as follows:

IP Address: 192.168.37.xxx
 Netmask: 255.255.255.0
 Gateway: 192.168.37.10 (if desired)

Where xxx is a number between 0 and 255 that is not assigned to any other device to avoid collisions.

If no TCP/IP settings according to the pattern in the computer, it should be added (in order to communicate with the relay) following the next steps:

In the PC go to **STARTUP>CONTROL PANEL>NETWORK CONNECTIONS** option:

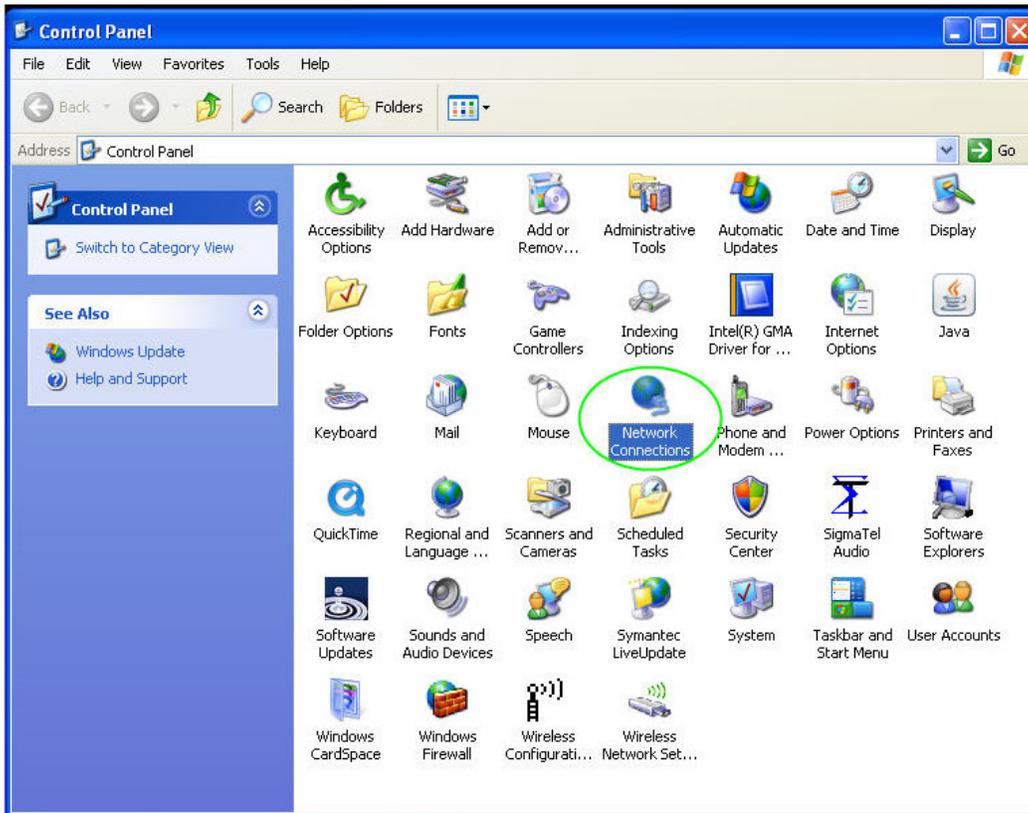


Figure 9-2: NETWORK MENU IN PC CONTROL PANEL

Choose **NETWORK CONNECTION** option and with **Right mouse key** select **Properties**. Then in **CONNECTION ITEMS** window, select **Internet Protocol (TCP/IP)** and click **Properties** button (see Figure 9-3a)



FIGURE 9-3a: INTERNET PROTOCOL

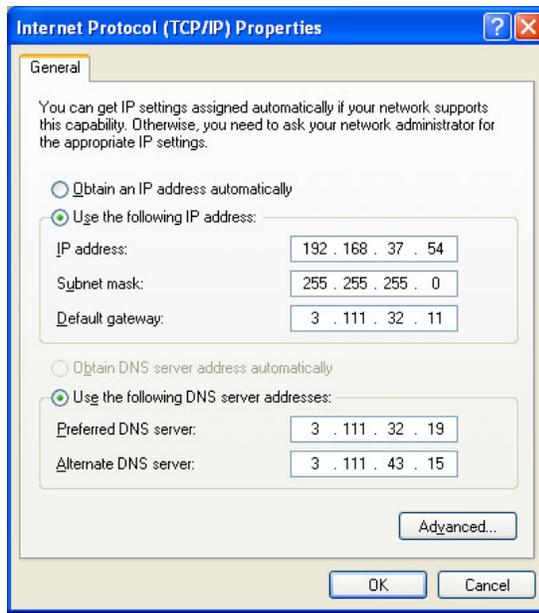


FIGURE 9-3b: ACTUAL TCP/IP PROPERTIES

The new window open (Figure 9-3b) will show the actual PC IP address and other parameters. Click **Advanced** button to add or modify the actual address.

The new window (Figure 9-5) will show all IP addresses configured in the PC.

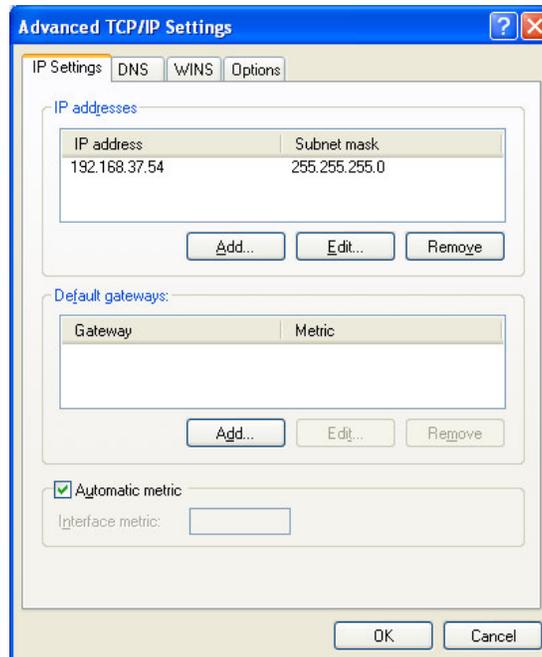


FIGURE 9-5: IP ADDRESS FOR COMPUTER

In case no one the existing IP addresses and Subnet mask shown in Figure 9-5 does not match the actual relay LAN pattern, click the **Add** button.

The new window (Figure 9-6) allows to add a new address in the PC corresponding to the same relay LAN pattern.



FIGURE 9-6: NEW IP AND SUBNET MASK ADDRESSES FOR PC

Windows allows Multihosting, so it permits having as many IP addresses as desired. It is necessary to turn OFF and ON the computer to activate the new address that has been assigned to the PC.

9.1.5 Other Network, Communications and Data Flow checks

9.1.5.1 According to the model number of the relay, to enable the 10/100 BASE TX-CABLE option in the relay communication board, a specific jumper in this board must be changed. See detailed instructions in paragraph 3.4.3 of Instruction Manual GEK-106310T.

9.1.5.2 IP address, netmask, gateway are correct and match the parameters used in the computer to perform the procedure. See chapter 9.1.1 of Manual GEK-106310T **COMMUNICATION PARAMETERS.**

9.1.5.3 In the computer check that:

- **WiFi connection is disabled.** Check it at **STARTUP>CONTROL PANEL>NETWORK CONNECTION>WIRELESS NETWORK** (it must be disabled).
- **There is only one communication board.** Check it at **STARTUP>CONTROL PANEL>NETWORK CONNECTION>LOCAL NETWORK>Right mouse key>Properties.**
- **There is only one IP address.** Check it at **STARTUP>CONTROL PANEL>NETWORK CONNECTION>LOCAL NETWORK>Right mouse key>Properties>TCP/IP>Properties button>Advance Options button**
- **Ethernet board parameters selection.** Check them at **STARTUP>CONTROL PANEL>NETWORK CONNECTION>LOCAL NETWORK>Right mouse key>Properties>Comm. Board Configure button>Advance Options Tab**
 - 802.1p QOS is Enabled
 - Flow control is Auto
 - Speed & Duplex is Auto (or 10 Mb Full)

9.2 BOOTWARE UPGRADE

Boot code upgrade is performed using Enervista 650 Setup. Please kindly use Enervista 650 Setup version 3.75. It is required that there is no active communication between the program and the relay, and that no configuration file is open.

During the boot code upgrading process, all the data stored in the relay will be lost, so it is required to save all calibration, settings, oscillography, Etc. files. from the relay before the upgrade. It is extremely important to save the relay settings and calibration before continuing with the process.

- 9.2.1 **Window NT SP6, Windows 2000 SP4 and Windows XP SP2** must be used for installation and the reliable operation of Enervista 650 Setup program and bootware/firmware relay upgrade.
- 9.2.2 To upgrade the boot code, it is required to connect an **RS232-RS232** cable to the front of the relay, and a **Ethernet Cross-Over** cable to the rear port (COM3).
- 9.2.3 If it is being used a **USB-to-Serial RS232 Cable Converter**, it must be a **RS-232C** standard compliant, powered by the User computer's USB bus and with DB9 male connector. To ensure the correct state of communication between the computer and the relay along the whole upgrading process, all other USB devices must be unplugged. Due to the extended variety of USB-to-Serial Cable Converters existing nowadays in the market, with different characteristics, even different charge imposed to the USB bus of the PC, it is strongly recommended to use the **GE USB-to-Serial RS232 Cable Converter, part number 0100-0001**.
- 9.2.4 When using **USB-to-Serial RS232** cable it is necessary first to know the COM Port number the Laptop will use through the USB device. Depending in the actual F650 upgrade task under operation, the procedure is as follows:
 - 9.2.4.1 *Firmware upgrade*: It is not necessary the use of serial cable.
 - 9.2.4.2 *Bootware and firmware upgrade being the relay fully operative with the actual F/W version*: The COM port number must be determined by using the 650 Setup program. With USB device disconnected from the Laptop and from the relay, start the 650 Setup program. At the top menu bar choose **COMMUNICATION>COMPUTER>COMMUNICATION PORT** menu and check the allowable serial ports displayed. Return to the main 650 Setup screen and connect the USB device to PC and select again at the top menu bar **COMMUNICATION>COMPUTER>COMMUNICATION PORT** menu the allowable serial ports now displayed. The new one port number shown is the USB port number to be used for the upgrade process.
 - 9.2.4.3 *Bootware and firmware upgrade being the relay blocked at startup* (no preliminary communication PC-Relay allowable): Repeat the process described in 9.2.4.2 above to know the COM PORT number and continue with upgrade process.
- 9.2.5 Once known the COM PORT number, set it at **COMMUNICATION>COMPUTER** menu and the BAUD RATE and PARITY parameters as well. Click **Store** key

- 9.2.6 Start Energivista F650 Setup program and at the top menu bar choose **'COMMUNICATION>UPGRADE OPERATING SYSTEM'**.



FIGURE 9-7: WARNING MESSAGE BEFORE BOOT CODE UPGRADE

If calibration files were saved click **Yes (Si)**, otherwise click **No** to cancel the upgrade process and save first the calibration files according to manual section 4.1.11.

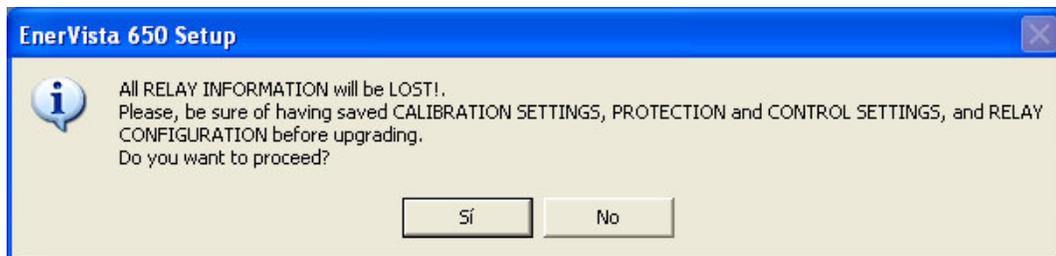


FIGURE 9-8: WARNING MESSAGE TO SAVE SETTING AND CONFIGURE FILES

Parameters already set in step 9.2.5 will be operative during serial communications.

- 9.2.7 As mentioned in step 9.2.2 above if the connection is made directly from the PC to the relay it is necessary to use a 10/100 Base T crossover cable. During the upgrade, the system will show the following message indicating the procedure to be followed:

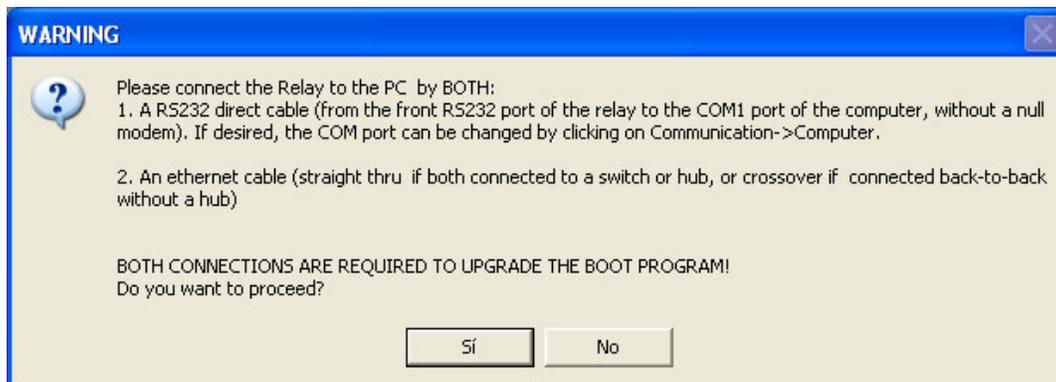


FIGURE 9-9: ETHERNET AND SERIAL CONNECTION MESSAGE

If click **Yes (Si)**, the next window will prompt to choose a temporary IP Address. It is advisable to set the IP Address that is going to be used lately in the relay for Ethernet connection.

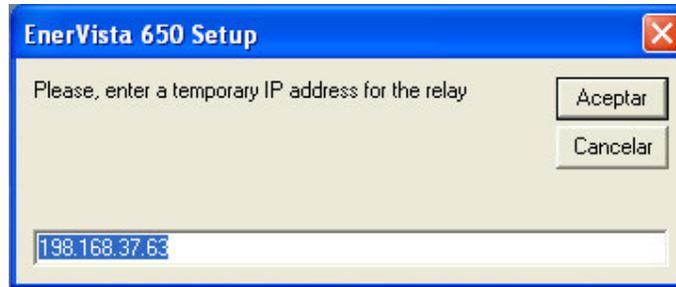


FIGURE 9-10: SETTING IP ADDRESS

9.2.8 After entering the temporary IP Address, the next new window will require the bootware file retrieved from www.geindustrial.com/multilin/ and previously stored someplace in the PC.

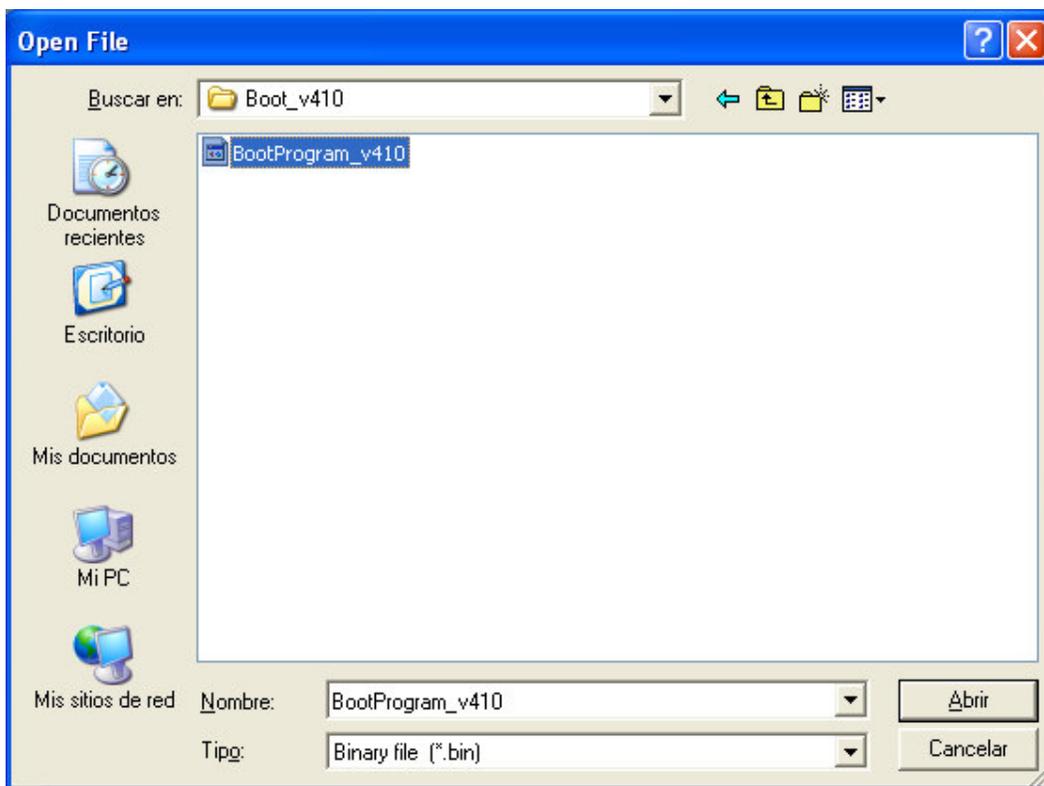


FIGURE 9-11: BOOT CODE FILE SELECTION

9.2.9 Choose the bootware file and click **Open** button (**Abrir**). The next screen will pop up:

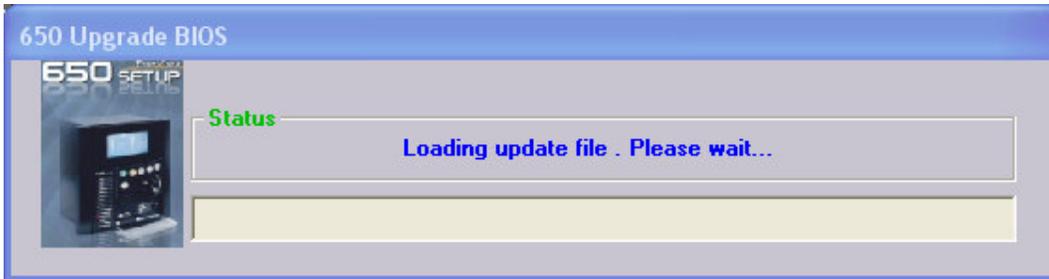


FIGURE 9-12: LOADING BOOT CODE FILE

9.2.10 Then the program shows a message requiring to switch OFF and ON the relay while the progress bar is in course, to start the upgrading process.



FIGURE 9-13: RELAY SWITCH OFF-ON MESSAGE

9.2.11 It is important to switch the relay OFF and ON again during the time shown by the progress bar; in case this time expires, the program will offer the option to continue with the process or to postpone. Verify the correct RS232 connections and try again later. Notice that the serial COM PORT used in the boot upgrade procedure is the one selected in step 9.2.4 above.

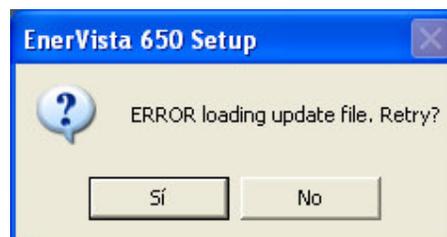


FIGURE 9-14: LOADING UPDATE FILE ERROR MESSAGE

9.2.12 If the relay gets stuck during the upgrading process after switching OFF and ON the relay, giving error message shown, it is due to no serial communication via the front RS232 port. Please check serial cable and serial settings connection. At this point the relay will not be upgraded.

After switching it OFF and ON it will continue working with the former firmware and bootware versions.

9.2.13 After switching the relay OFF and ON, if the serial communication between Enervista 650 Setup and the relay is correct the program shows the following message (Figure 9-13):

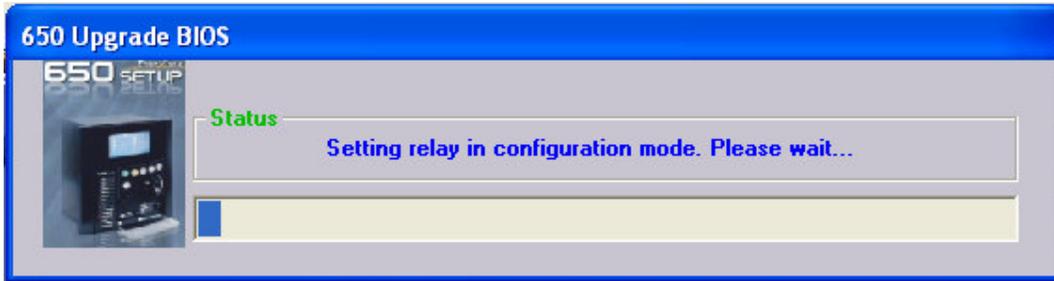


FIGURE 9-15: CONFIGURATION PROCESS IN PROGRESS

Then it requires the confirmation to proceed to upgrade:

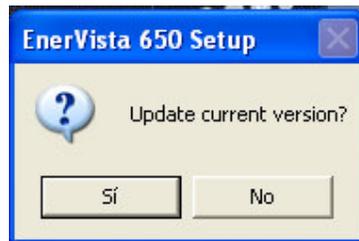


FIGURE 9-19: UPDATE CONFIRM

9.2.14 If click **Yes (Si)** the process will start, beginning with the relay flash memory deletion, so at this point all the information stored in the relay will be lost. Until now, no important change has been made to the relay, the boot memory upgrading process has been just prepared.

The process of flash memory erasing and boot code downloading can take some minutes, during which a progress bar is displayed.



FIGURE 9-17: FLASH MEMORY ERASE PROGRESS BAR

9.2.15 If the process is successful, continue with step 9.2.16 hereafter. If not and the relay gets stuck during at **"Sending file imagen_kernel..."** (Figure 9-18)



FIGURE 9-18: DOWNLOAD PROCESS ADVISORY

It may be due there is no communication via Ethernet port. At this moment, serial communications works properly, the relay flash memory has been erased and the upgrade procedure must be completed to start working with the unit. If the procedure is not completed, the HMI will show the message “**Os Loading...**” and the relay will not start up.

Then please check statements of point 9.1.4 above

If all the above points are correct but the problem persists:

- **Disable** and **Enable** the Ethernet connection while the files are being sent (during the “Sending file...” message – Figure 9-18). To do this, go to **STARTUP>CONTROL PANEL>NETWORK CONNECTION>LOCAL NETWORK>Right mouse key>Disable**. Now the Local Network status Icon will be shown as **Disabled**. In the same screen with **Right mouse key** over **LOCAL NETWORK** click **Enable** and wait until **Enabled** status is shown.

9.2.16 Once the memory has been erased and the files upgraded in the relay, the parameters for the Ethernet communications must be set. The requested values are the IP address and the gateway.



FIGURE 9-19: IP ADDRESS SETPOINT WINDOW

These values should match the LAN structure where the relay will be connected.

- The relay IP address should have the first three octets corresponding with the gateway and the last octet must be a free IP address reserved to the relay to avoid possible collisions with other devices.
- The gateway must be the one used in the LAN structure connecting the relay.

9.2.17 After assigned the Ethernet parameters, the upgrade of the boot code will be completed successfully (Figure 9-20).

9.2.18 New momentarily window will display: **“Setting Default IP address”**, and then it follows with

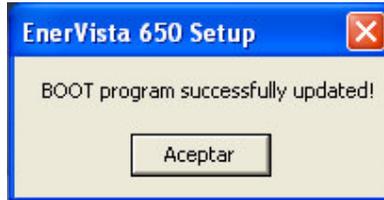


FIGURE 9-20: BOOTWARE UPGRADE SUCCESSFUL PROCESS

After boot code upgrade, the equipment firmware must also be upgraded (hereafter).

9.3 FIRMWARE UPGRADE

9.3.1 Introduction

- 9.3.1.1 The relay settings and configuration will be lost, so it is advisable to save them to a file.
- 9.3.1.2 For firmware revisions lower than 1.50, it is also required to save calibration settings in a file before upgrading the F650 to a new firmware version.
- 9.3.1.3 For firmware revision higher than 1.50 and only if just firmware upgrading (not bootware upgrade), it is not necessary to save the calibration files since they will not be modified.
- 9.3.1.4 Special care when boot code has been previously upgraded: all the data (including calibration settings) is lost.
- 9.3.1.5 In case of error during the firmware upgrading process, the user could repeat the whole process as many times as necessary, this is possible thanks to an independent boot memory (boot code).
- 9.3.1.6 Pure firmware upgrading process should be done using the Enervista 650 Setup software and Ethernet connection (COM3) via **Cross-Over RJ45 Ethernet cable**.

9.3.2 Firmware Upgrade

- 9.3.2.1 Once the communication with the relay through Ethernet connection has been verified, enter the Enervista 650 Setup program, select **COMMUNICATION >UPGRADE FIRMWARE VERSION** option at the top menu bar.

At this point, proceeding with the upgrade it will be erased all the data stored in the equipment, including the calibration settings in firmware version previous to 1.50. Therefore, it is necessary to save all settings to a file before following with the process (Figure 9-21).

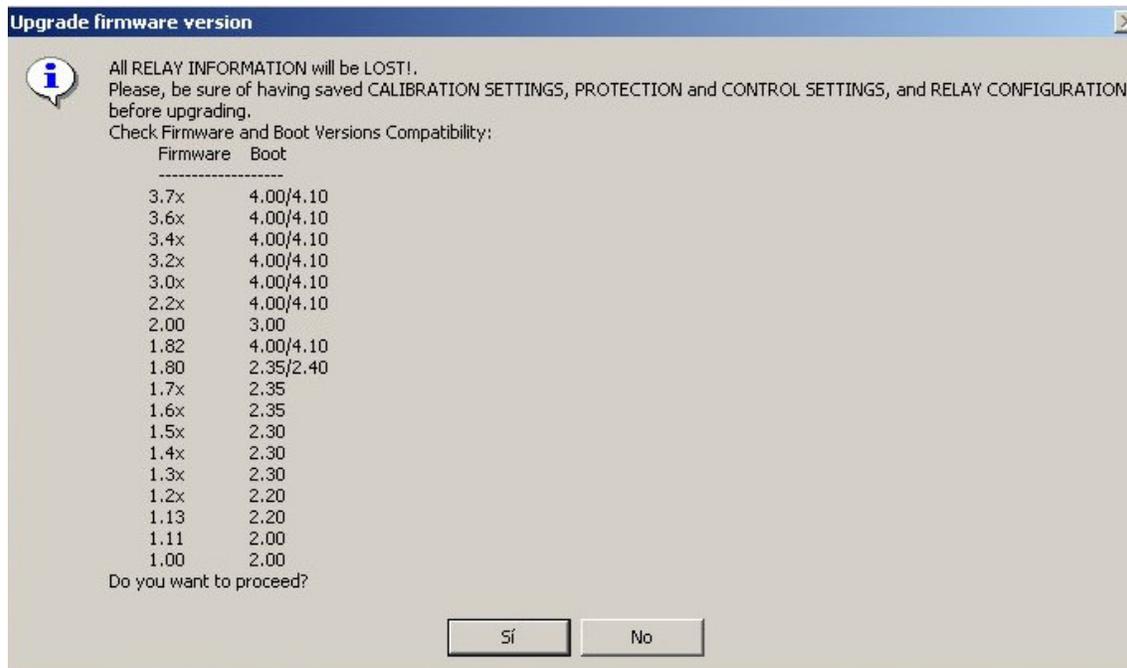


FIGURE 9-21: FIRMWARE UPGRADE STARUP

If click **Yes (Si)** to proceed a window will open up to upgrade parameters.

- In firmware version previous to 1.70 the EnerVista 650 Setup program requires the IP address of the relay under upgraded and its serial number.
- In versions 1.70 and higher it is also necessary to enter the ordering code for the relay. See Figure 9-22:

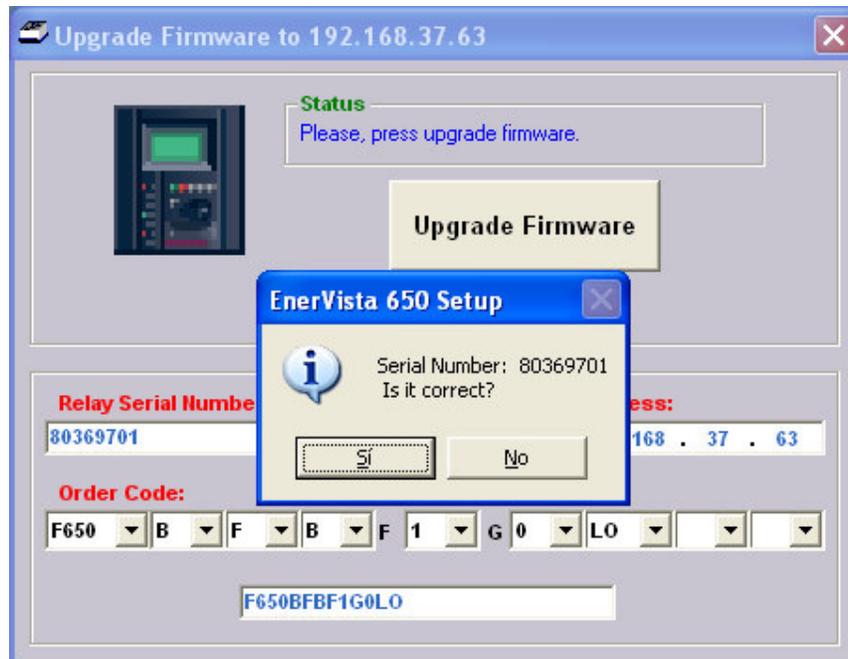


FIGURE 9-22: RELAY SERIAL NUMBER

9.3.2.2 If the relay under is not a enhanced model or control functionality then click the **Upgrade Firmware** button to continue the process (Figure 9-23). Then the process will continue as per step 9.3.2.4 forward.

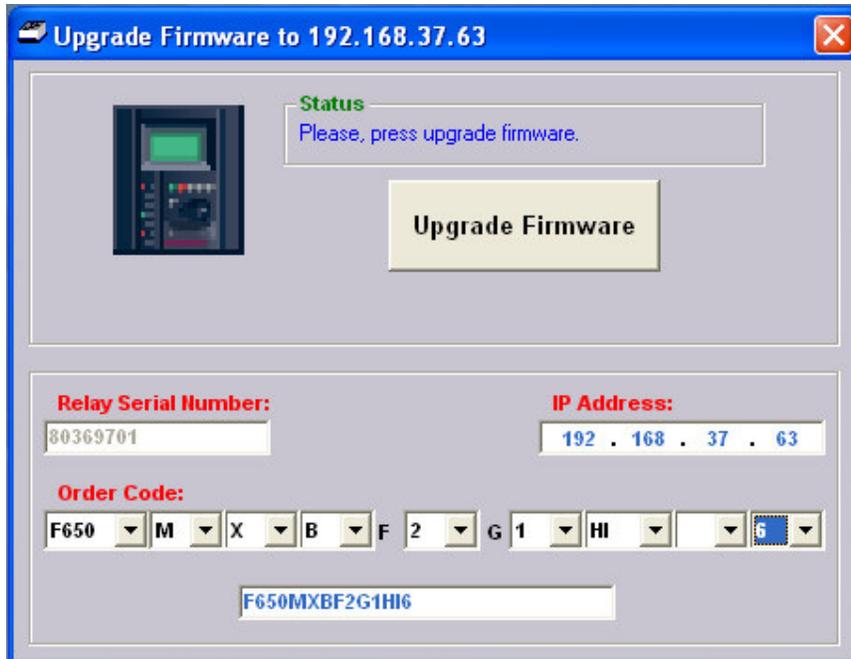


FIGURE 9-23: FIRMWARE UPGRADE ACCEPTANCE WINDOW

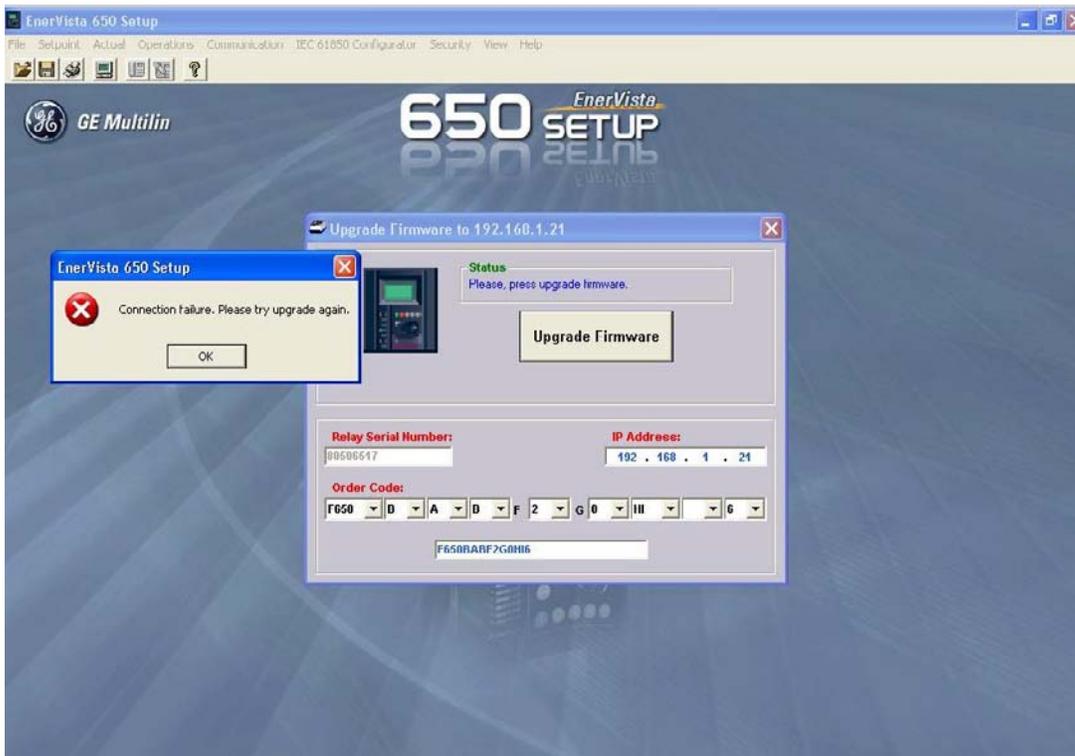
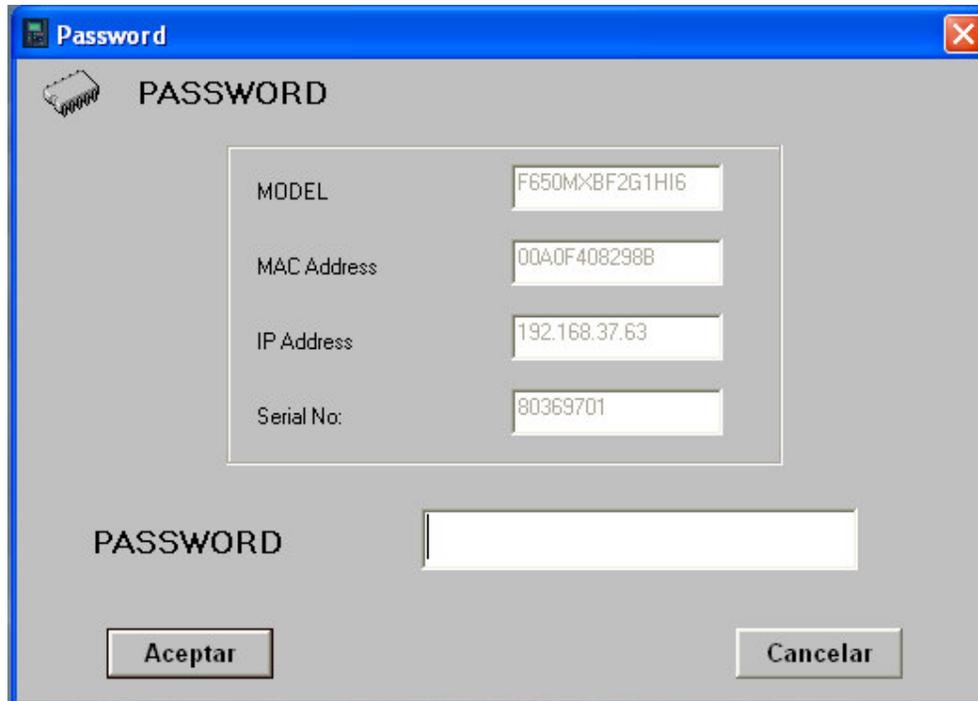


FIGURE 9-24: ADVISORY FOR LOCAL NETWORK REBOOT

9.3.2.3 If when click on **Upgrade Firmware** button (Figure 9-23) an advise message is given (Figure 9-24), local network reboot is necessary. Then please proceed as follows:

- Go to **STARTUP>CONTROL PANEL>NETWORK CONNECTION>LOCAL NETWORK>Right mouse key>Disable**. Now the Local Network status will be shown as **Disabled**. In the same screen with **Right mouse key** over **LOCAL NETWORK** click **Enable** and wait until **Enabled** status is shown. Then press **Upgrade Firmware** button to continue the process (Figure 9-23).

9.3.2.4 When upgrading models with Enhanced protection or control functionality (see model selection), the program will request a password to continue (Figure 9-25)



The screenshot shows a 'Password' dialog box with a blue title bar. The main area is grey and contains a 'PASSWORD' label and a chip icon. Below this are four input fields: 'MODEL' (F650M×BF2G1HI6), 'MAC Address' (00A0F408298B), 'IP Address' (192.168.37.63), and 'Serial No:' (80369701). At the bottom, there is a 'PASSWORD' label and an empty input field, and two buttons: 'Aceptar' and 'Cancelar'.

FIGURE 9-25: PASSWORD REQUIREMENT (SPECIAL MODELS)

In case special functionality model with password requirement please contact GE Multilin .

The following parameters must be clearly indicated in the order:

- Unit serial number
- Current model option (before memory upgrade)
- Desired model option (after memory upgrade)
- Unit MAC address (available in the identification label)

9.3.2.5 Once the upgrade parameters have been entered, press the **Upgrade Firmware** button. When communication has been established, the program will show a message requesting to turn OFF and back ON the relay to continue with the upgrade process (Figure 9-26).

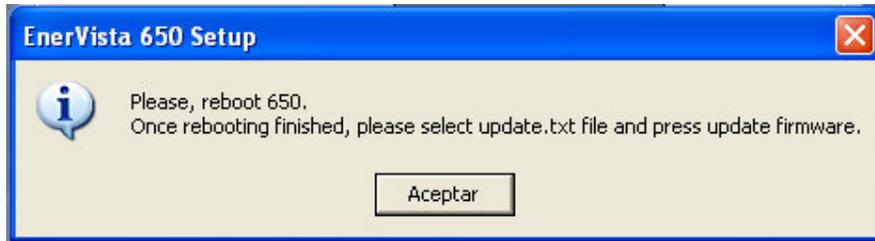


FIGURE 9-26: RELAY REBOOT STEP

9.3.2.6 Once the relay has been turned OFF and ON, a new screen (Figure 9-27) will require the firmware upgrade files ("update.txt"). Wherever from this upgrade.txt file would be obtained (www.geindustrial.com/multilin/ or from TS Dept. at any GE Multilin facility), then it must be saved in some directory in the root drive or in the desktop of the PC.

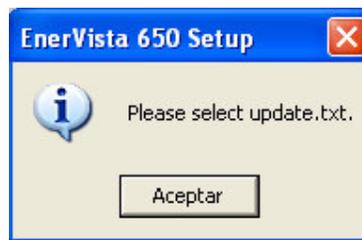


FIGURE 9-27: FIRMWARE FILE ACCEPTANCE

If the files are downloaded from the web, they are compressed in a *.zip file. Proceed to extract all files and save them in the directory just created.

Selection of upgrade.txt is shown in Figure 9-28. Select the desired "Update.txt" file and click **Open (Abrir)** button.

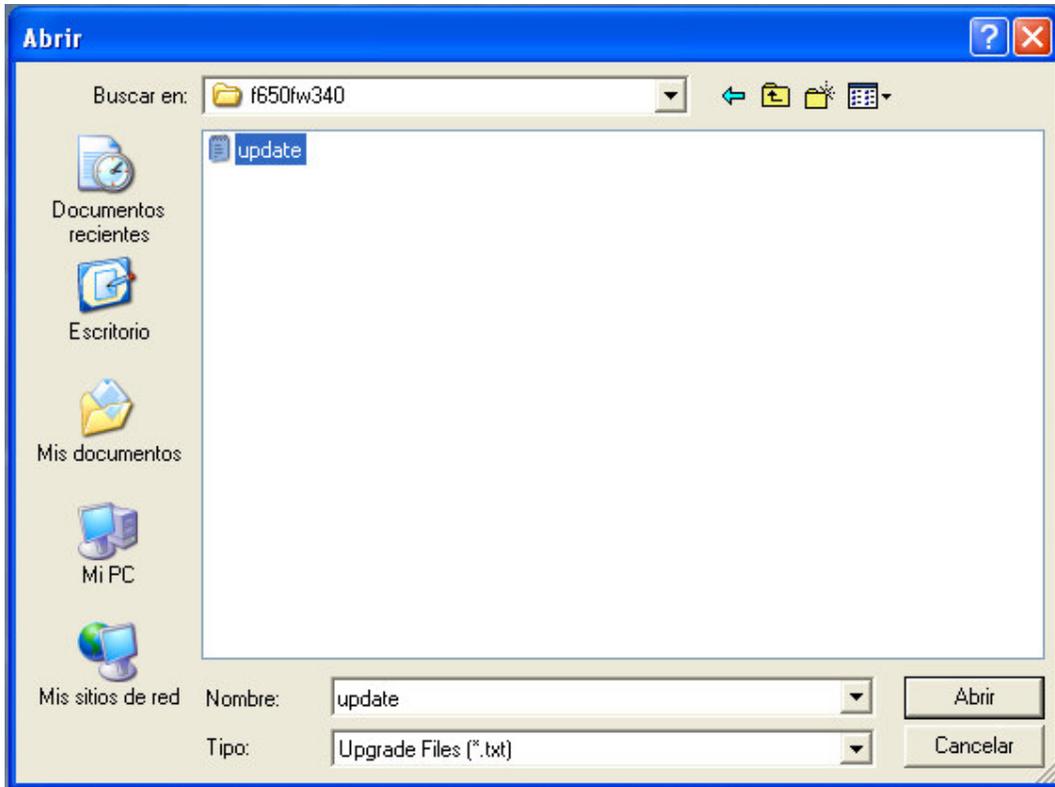


FIGURE 9-28: FIRMWARE FILE SELECTION

- 9.3.2.7 Now a voltage range selection window will appear (Figure 9-29). This voltage range is closely related to the serial number of the relay. **The Enervista 650 Setup program automatically pre-selects the appropriate voltage range for the unit based on its serial number, showing the selection with a step line square over the proper option.** Click **OK** button. Do not use the other option (option not square signaled) since it is dedicated to other lower firmware versions.

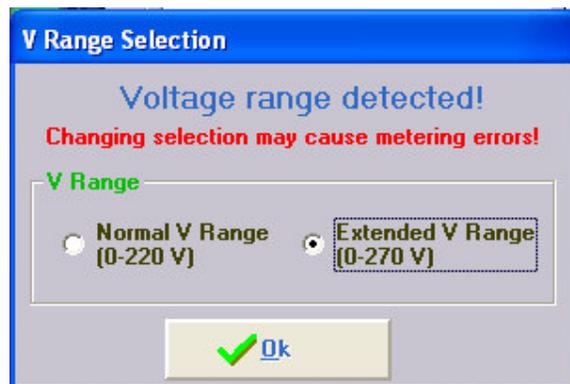


FIGURE 9-29: AC VOLTAGE RANGE SELECTION

Once **OK** button has been pressed a confirmation window will pop-up as shown in Figure 9-30.

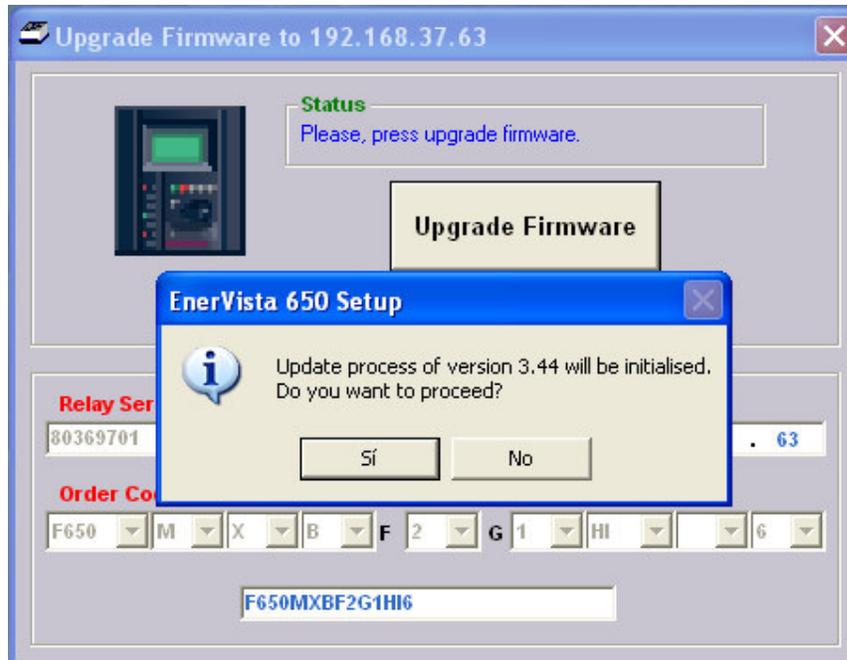


FIGURE 9-30: UPGRADE INITIALIZATION

9.3.2.8 Press **Yes (Si)** button.

9.3.2.9 Now the new window will show the **Upgrade Firmware** button ready to be enabled (Figure 9-31). Press it to start upgrade.

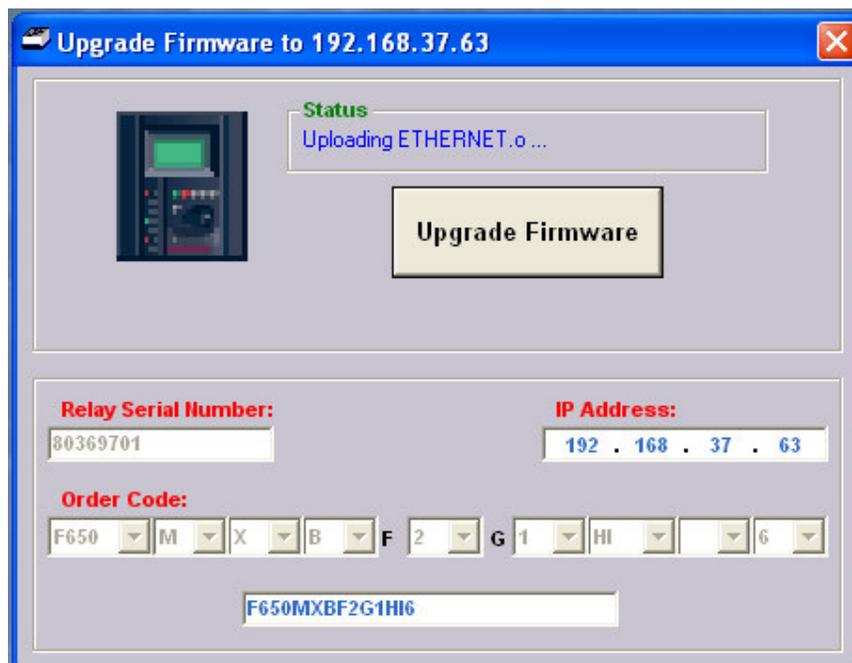


FIGURE 9-31: UPGRADE INITIATION

During the process, the program displays the files that are being upgraded.

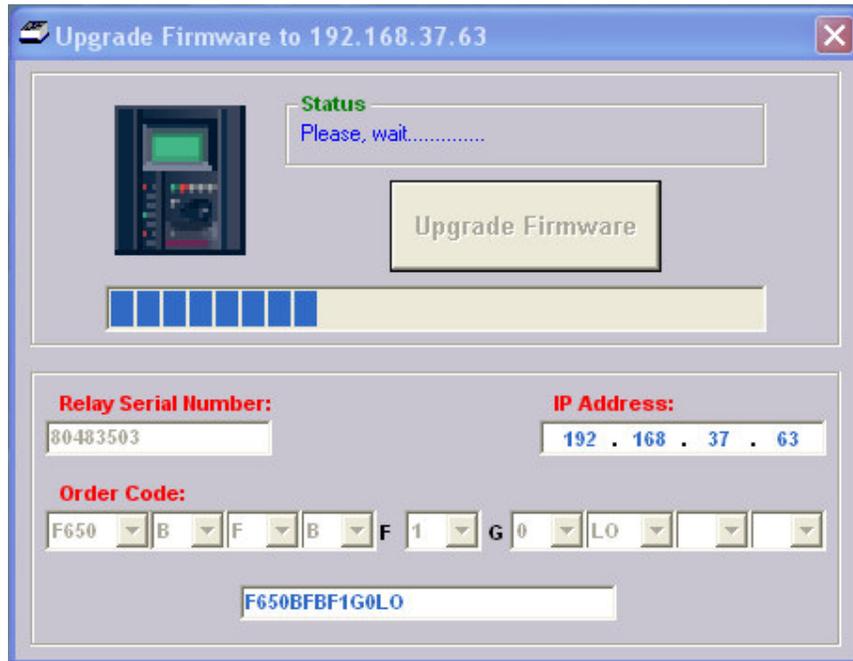


FIGURE 9-32: FIRMWARE FILE SELECTION

9.3.2.10 When the files transfer is finished, a message is displayed committing to wait sometime before resetting the unit in order to start working with the new firmware version in the relay (Figure 9-32).

9.3.2.11 When the whole process has finished a message will be displayed asking to switch OFF and ON the F650 relay (Figure 9-33).

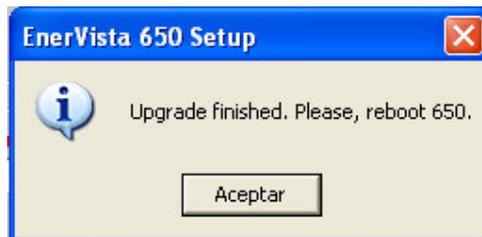


FIGURE 9-33: FIRMWARE UPGRADE ENDED

9.3.2.12 Click **OK (Aceptar)**. At this point, the firmware upgrade procedure is finished and the relay is ready to be powered OFF and ON to check that the firmware has been upgraded properly.

9.3.2.13 User settings and logic files downloading

When upgrading the firmware the entire settings and relay configuration are reset to factory default values. Then the User is committed to download the settings, configuration and logic files to the relay in order to get it fully operative.

Calibration settings and configuration must be loaded to the relay the relay was bootware upgraded also. If not calibration files were maintained during the firmware upgrading process.

To recover and download the different files to the relay go to Enervista 650 Setup and at the top menu bar choose:

- **COMMUNICATION>CALIBRATION>SET CALIBRATION FILES:** to restore in the relay the calibration settings if necessary.
- **FILE>CONFIG FILE (*.650) Converter:** to convert the setting and configuration file *.650 for the relay (if it was in a previous version format).
- **FILE>SEND INFO TO RELAY:** to send the new settings and configuration file to the unit.

9.4 BOOTWARE AND FIRMWARE UPGRADE – SUMMARY OF MAIN STEPS

9.4.1 Bootware

- 9.4.1.1 INSTALL THE PROPER VERSION OF THE ENERVISTA 650 SETUP PROGRAM.
- 9.4.1.2 CONNECT ONE RS-232 CABLE IN THE FRONT PORT OF THE RELAY AND ONE ETHERNET CABLE AT THE REAR ETHERNET PORT (CROSSOVER CABLE FOR BACK-TO-BACK CONNECTION AND STRAIGHT-THROUGH ETHERNET CABLE FOR HUB OR SWITCH) .
- 9.4.1.3 GET CALIBRATION SETTINGS (AND SAVE IT TO A FILE).
- 9.4.1.4 SAVE ALL THE DATA FROM THE RELAY (SETTINGS, OSCILLOGRAPHY, EVENTS).
- 9.4.1.5 FROM THE ENERVISTA 650 SETUP PROGRAM SELECT "**Communication > Upgrade Boot Code**".
- 9.4.1.6 FOLLOW THE INDICATIONS OF THE PROGRAM AND SELECT THE BOOT PROGRAM BIN FILE.
- 9.4.1.7 WHEN REQUIRED BY THE PROGRAM SWITCH OFF AND BACK ON THE RELAY.
- 9.4.1.8 CONTINUE WITH THE PROCESS AND SET THE IP ADDRESS AND GATEWAY WHEN REQUIRED.

9.4.2. Firmware

- 4.4.2.1 INSTALL THE PROPER VERSION OF THE ENERVISTA 650 SETUP PROGRAM.
- 4.4.2.2 CONNECT ONE ETHERNET CABLE AT THE REAR ETHERNET PORT (CROSSOVER CABLE FOR BACK-TOBACK CONNECTION AND STRAIGHT-THROUGH ETHERNET CABLE FOR HUB OR SWITCH).
- 4.4.2.3 SET THE APPROPRIATE IP ADDRESS IN THE RELAY.
- 4.4.2.4 SET THE APPROPRIATE IP ADDRESS IN THE PC.
- 4.4.2.5 FROM THE ENERVISTA 650 SETUP PROGRAM SELECT "**Communications > Upgrade Firmware Version**".
- 4.4.2.6 ENTER THE IP ADDRESS, SERIAL NUMBER AND ORDERING CODE OF THE RELAY TO UPGRADE.
- 4.4.2.7 WHEN REQUIRED BY THE PROGRAM SWITCH OFF AND BACK ON THE RELAY.
- 4.4.2.8 LOCATE THE UPGRADE.TXT FILE ACCORDING TO THE MODEL OF THE RELAY.
- 4.4.2.9 PRESS UPGRADE FIRMWARE AND INITIATE THE UPGRADE PROCESS.
- 4.4.2.10 TO COMPLETE THE PROCEDURE, SWITCH OFF AND BACK ON THE RELAY WHEN REQUIRED BY THE PROGRAM.
- 4.4.2.11 SET CALIBRATION SETTINGS (FROM THE PC TO THE RELAY) (for versions lower than 1.50).
- 4.4.2.12 THE SETTINGS AND CONFIGURATION ARE NOW SET TO FACTORY DEFAULT.
- 4.4.2.13 SEND THE NEW SETTINGS AND CONFIGURATION FILES TO THE RELAY IF NECESSARY.