FREEDOM TOOL®

U.S. Elevator

WORLD electronics

7502.9040

This is Your Software Security Access Key:

DO NOT LOSE IT !

This security device must be plugged into the notebook computer's USB port or the spare USB port on your interface box whenever the FREEDOM Tool Software is to be run.

List of Trademarks

- Windows 3.1, Windows 95, Windows 98, and MS-DOS are registered trademarks/products of Microsoft Corporation.
- MP 1220, MP 1230, Ascension 1000, and Ascension 2000 are trademarks of the Thyssen Elevator Corporation (US Elevator Corp).
- WORLD electronics, the WORLD electronics' logo, FREEDOM Tool, and FREEDOMWare are registered trademarks of WORLD electronics Sales and Service, Inc.
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Table of Contents:

Introduction:

The FREEDOM Tool is a sophisticated software tool that allows the operator to service various elevators and elevator control systems. The software allows the operator to simultaneously view independent operations within the elevator system by opening windows to those systems / operations of interest. The selected windows may be left open during the maintenance / repair session and accessed when desired.

This User's Guide and Reference, part number 7502.9040, has been written to specifically target the Thyssen/US Elevator MP 1220, MP 1230, Ascension 1000, and Ascension 2000 elevator control systems. All references to **FREEDOM Tool** throughout this manual imply that it pertains solely to the software systems that support the MP 1220, MP 1230, Ascension 1000, and Ascension 2000 elevator control systems.

FREEDOM Tool Features:

The FREEDOM Tool is a Graphical User Interface (GUI) and provides all the functions necessary to service the Thyssen/US Elevator MP 1220, MP 1230, Ascension 1000, and Ascension 2000 elevator control systems. The software runs under the Microsoft Windows operating system and provides the following features:

- A Graphical User Interface, representing the adjustment and diagnostic capabilities of the elevator service tool residing within the Thyssen/US Elevator MP 1220, MP 1230, Ascension 1000, and Ascension 2000 elevator control system, makes it easy for the user to learn and adjust the elevator control systems mentioned within this manual.
- Simple point and click operations. The computer does all necessary commands for the user in the background.

Minimum Hardware and Software Requirements:

The software is provided as a package by WORLD electronics and is installed on a PC running with Microsoft Windows based Operating systems which have the following characteristics:

- A Pentium or equivalent microprocessor.
- Windows 98, Windows Me, Windows NT, Windows XP or Windows 2000 Operating System.
- CD-ROM Drive
- Mouse, Trackball, or other pointing device.
- 1 USB (Universal Serial Bus) Port

The FREEDOM Tool software is not capable of being executed without a sophisticated **security key** that is to be connected to the USB port of the computer or the spare USB port on the interface box at the time of the FREEDOM Tool execution. A WORLD electronics "FREEDOM Tool Interface for US Ascension Products" (7502.9062) is required. This interface box provides the proper signal conversions and connections between the computer and the Thyssen/US Elevator MP 1220, MP 1230, Ascension 1000, and Ascension 2000 elevator control system, allowing them to communicate with one another. Older systems may use the Parallel Port based Interface Box for the Ascension software Modules (7502.9036).

How to contact WORLD electronics:

If you are having any problems operating the FREEDOM Tool, feel free to contact us at the following location. We value you as a customer and welcome any comments concerning the use of the FREEDOM Tool.

WORLD electronics
3000 Kutztown Road
Reading, PA 19605-2617

Phone: 1-800-523-0427
Phone: (610) 939-9800
Fax: (610) 939-9895

E-mail:

Elevator Sales:
ESales@world-electronics.com

Service:
Service@world-electronics.com

FREEDOM Tool:
fwhelp@world-electronics.com

When calling WORLD electronics for assistance, have your product serial number, the model computer being used, operating system type, and the error description ready.

Package Contents (Hardware Components):

US (Ascension) USB Interface Box (7502.9062):

The US (Ascension) USB Interface Box provides the communication interface between the US Elevator CPU Boards and the Notebook Computer on which the FREEDOM Tool Software Module is loaded. Without this device, the USB US Elevator(Ascension) FREEDOMWare module will not work.

Figure 1

The US (Ascension) USB Interface Box as shown in Figure 1 is comprised of a black box with a 25 pin male D-shell connector on one end marked **Elevator Connection**. On the other end of the interface box are two(2) USB Ports labeled **USB to PC** and **Security Key**. Looking at the label found on the Interface Box, several things can be determined. Among these are: 1) the name of the Interface Box (**FREEDOM Tool Interface for US Ascension Products**), 2) connection point for the elevator system, 3) connection point for the Security Key, and 4) connection point for the Notebook Computer. The Interface Box may be plugged into the elevator system at any time, but the connection to the Notebook Computer must be made before the software is to be run.

NOTE: A one(1)-time installation procedure must be followed on each Notebook PC using the USB Interface Box in order for the interface and security key to function properly in conjunction with the software. This installation procedure is described in detail in the section titled **Installing the USB Device Drivers** on Page 11.

Information on connecting to the elevator system:

The connector which interconnects the FREEDOM Tool with the US Elevator control system is physically located on the elevator's CPU board. The connector itself is a 25 pin D-Shell type connector. The connector can be connected into the elevator system at any time. It is important to note that the display information sent to the PCD Service Tool upon any connection initialization is for Display 0.

Security Key (6015.0014):

Figure 2

The FREEDOM Tool Software can be loaded on any computer, but only one(1) instance of the program can be run at any single time. To ensure this, WORLD electronics protects itself and its FREEDOM Tool software by utilizing a sophisticated security device that must be plugged into a Notebook Computer USB port or the USB port on the interface box labeled **Security Key** prior to operating the FREEDOM Tool software(Figure 2). If the security key is plugged into the USB Interface Box, then the Interface Box must be plugged into the USB port of the Notebook PC. This security key is unique to every FREEDOM Tool and must be plugged into the Notebook PC while the FREEDOM Tool software is running. The security key is not to be confused with the communications interface box. The communications interface box is easily identifiable by its label located on its face.

WARNING! - It is extremely important that this security key is not lost. The replacement value of this device is equal to the dollar value of the FREEDOM Tool software module(s) purchased from WORLD electronics. This cost is in **thousands** of dollars. Please take the steps necessary to safeguard yourself against loss of the security device.

Installation CD (6015.0002):

All software related to the operation of the FREEOM Tool is located on the FREEDOMWare Installation CD. To access the installation program located on the CD-ROM, simply insert the FREEDOMWare Installation CD into the Notebook PC's CD-ROM Drive.

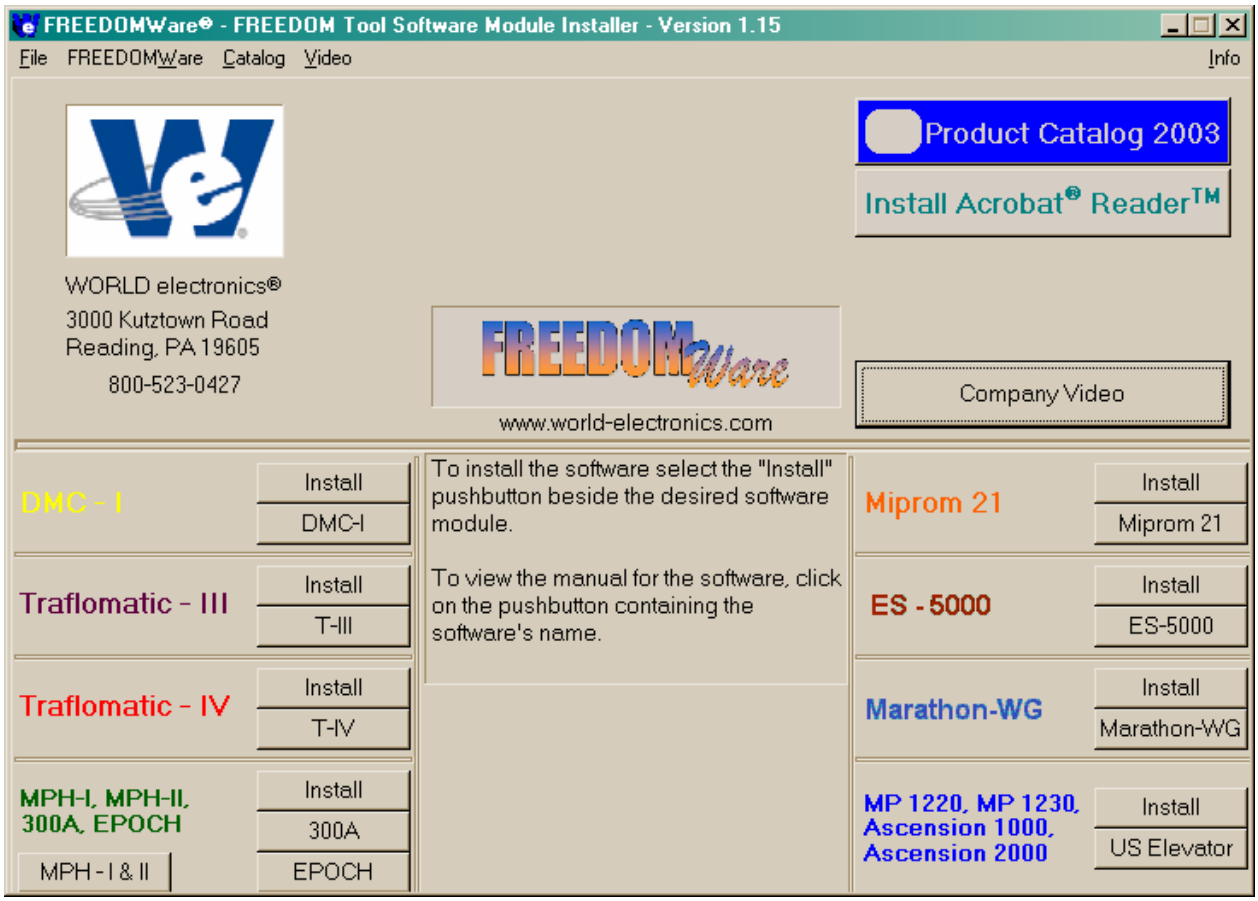


Figure 3

Upon insertion the installation program should launch allowing the user access to the installation routines and reference manuals for all available FREEDOM Tool Software Modules (Figure3). Please refer to the section labeled **Installing the USB US Elevator(Ascension) Software Module** for instructions on installing the USB US Elevator Software Module for the MP 1220, MP1230, Ascension 1000, and Ascension 2000.

Installing the USB US Elevator(Ascension) Software Module:

IMPORTANT: DO NOT PLUG THE US ASCENSION INTERFACE OR SECURITY KEY INTO THE NOTEBOOK COMPUTER UNTIL STEP 8 OF THIS INSTALLATION IS REACHED. STEP 8 WILL GIVE DETAILS ON PROPERLY CONNECTING THE HARDWARE DEVICES AND PROPERLY INSTALLING THEIR RESPECTIVE HARDWARE DRIVERS.!!

The installation procedure for the USB US Elevator(Ascension) Software Module is described as follows:

1. Insert the FREEDOMWare Installation CD into the Notebook PC's CD-ROM Drive. After approximately 10 seconds a window will appear titled **FREEDOMWare – FREEDOM Tool Software Module Installer**. Please refer to Figure 4.

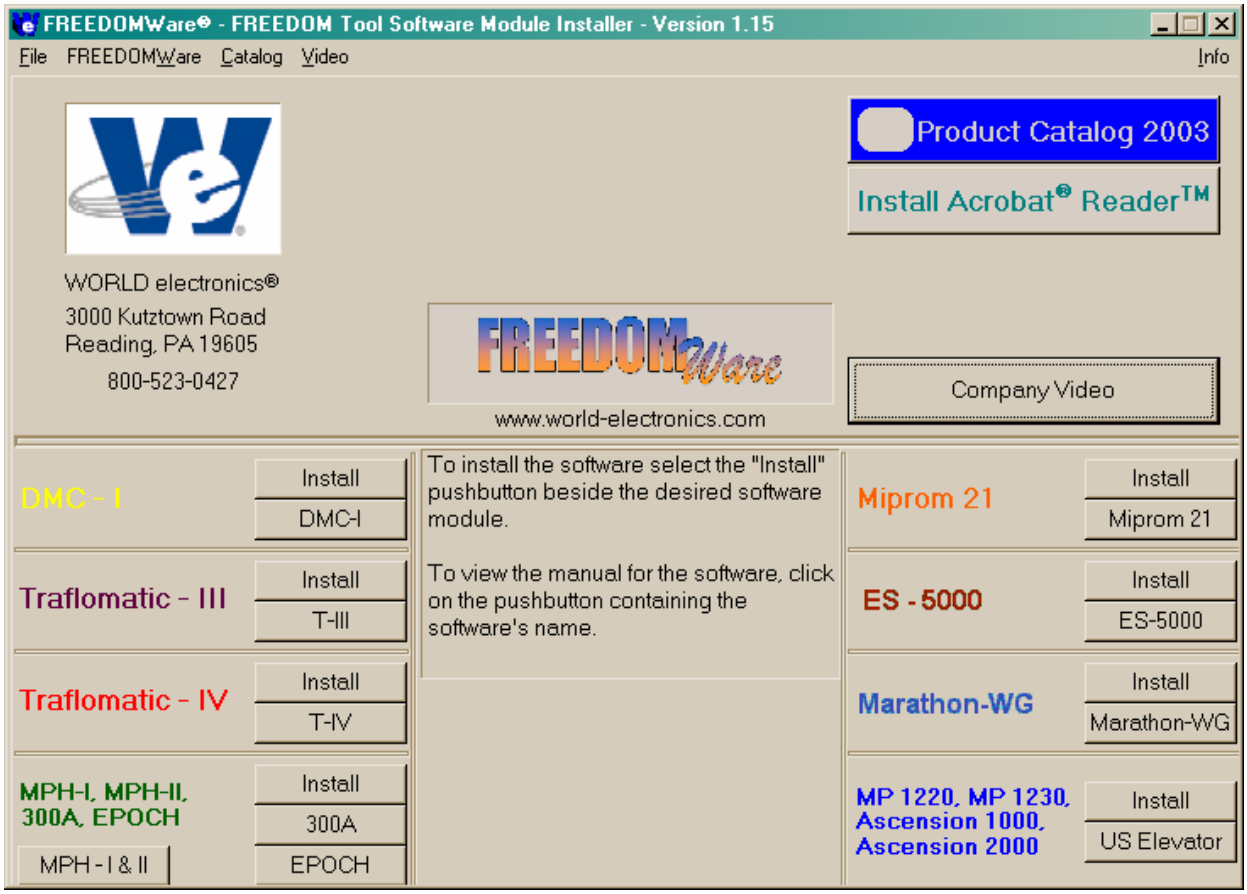


Figure 4

If this window does not appear please do the following:

a) Select **Start**.
b) Select **Run**.
c) Type the following into the field: **d:\startup.exe**

(Note: substitute "d:" with the Notebook Pc's designation for the CD-ROM Drive)

d) Click **OK** with the PC's pointing device and the installation program will run.

2. After selecting the **Install** pushbutton associated with the MP1220, MP 1230, Ascension 1000, and Ascension 2000 section of the FREEDOMWare Installer, the Install Shield Wizard will run showing a window similar to the one shown in Figure 5. To continue with the setup of the US Elevator(Ascension) software module simply click the **Next** pushbutton with the PC's pointing device.

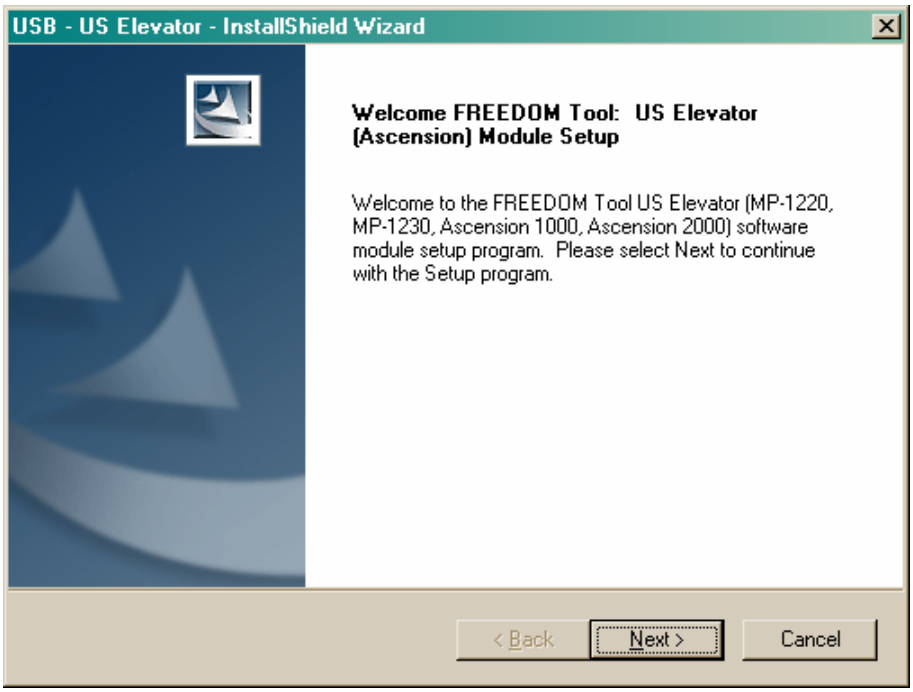


Figure 5

3. After selecting **Next**, a **Registration Info** window will appear as in Figure 6. In this window the user will need to fill in the fields beside **User Name:**, **Company Name:**, and **Serial Number:**. The Serial Number can be obtained from a label located on the US Elevator(Ascension) Module's Security Key. A second location where the serial number can be found is the side of the US Elevator(Ascension) Software Module's Product Box.

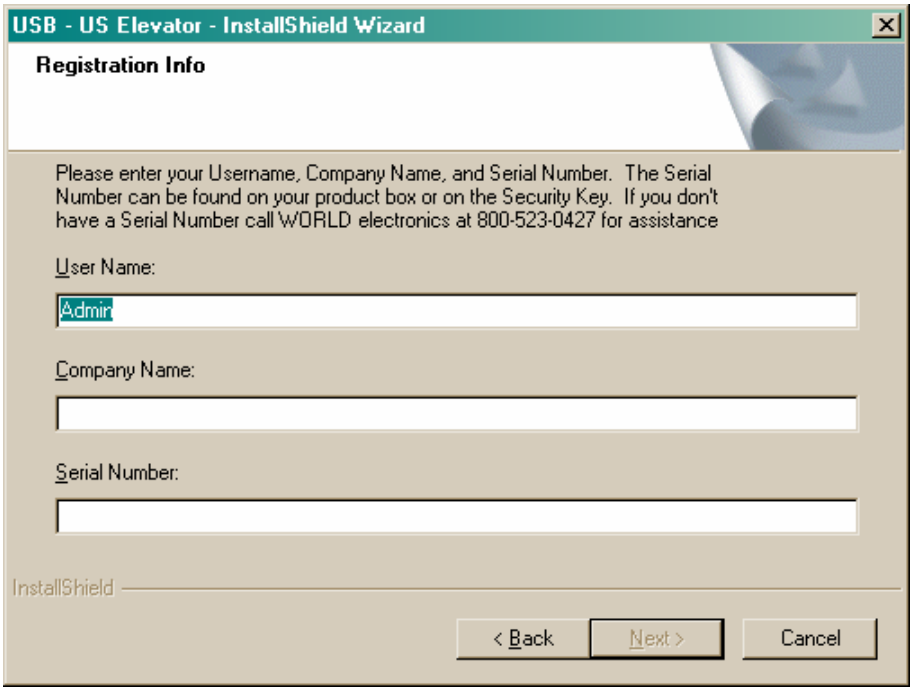


Figure 6

4. After entering all the information into the 3 separate fields, the **Next** pushbutton will appear allowing the installation to continue (Refer to Figure 7). Select **Next** to continue with the installation.

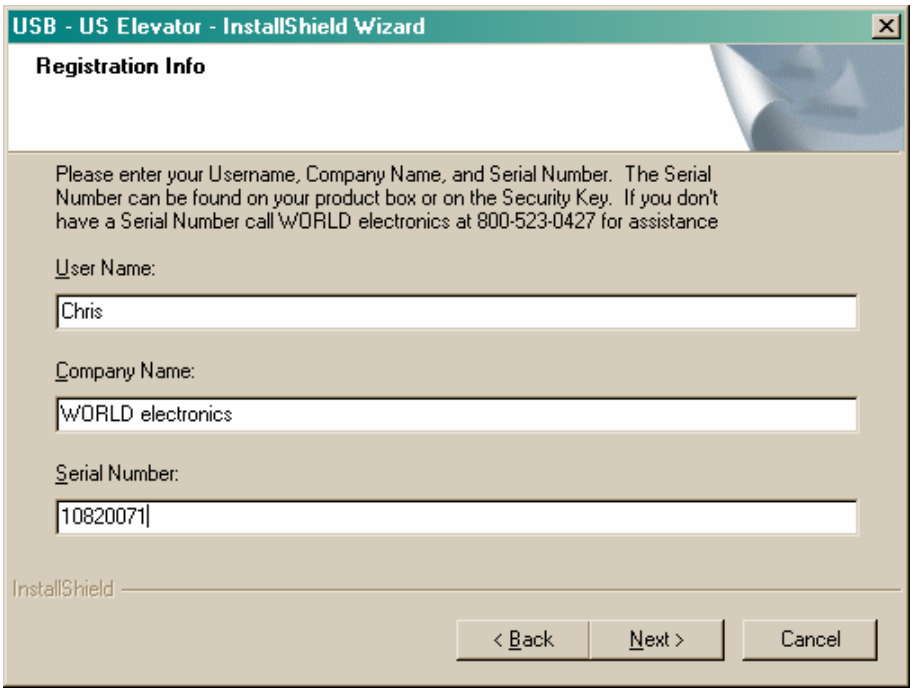


Figure 7

5. The **Ready to Install the Program** window will now appear as in Figure 8. This window informs the user that the installation is ready to begin and instructs the user to select the Install pushbutton to begin the software installation process. At this time select the **Install** pushbutton with the PC's pointing device.

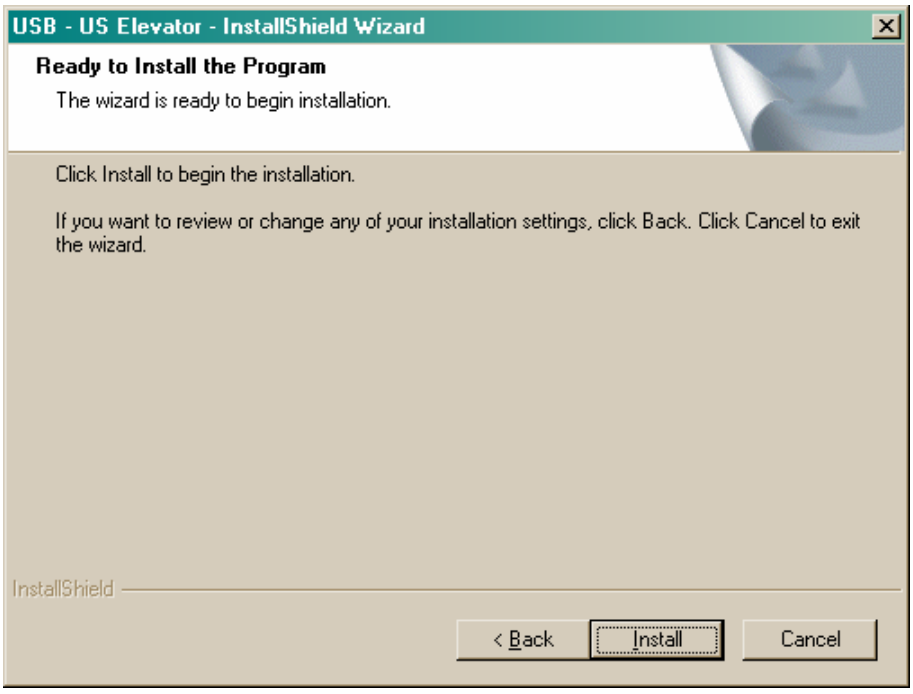


Figure 8

6. The Setup Status window will appear (Figure 9) showing the user the status of the installation procedure. Immediately upon completion of copying the FREEDOM Tool software, the Installation program will begin installing the necessary files for the Security Key Device. Upon the completion of the Security Key Software Installation a window similar to Figure 10 will appear. This window informs the user that the **Az-Tech Device Drivers Setup** is complete and the user should select Finish to complete the installation. At this time select the **Finish** pushbutton on the screen to complete the **Az-Tech Device Driver Setup** and continue with the FREEDOMWare Installation.

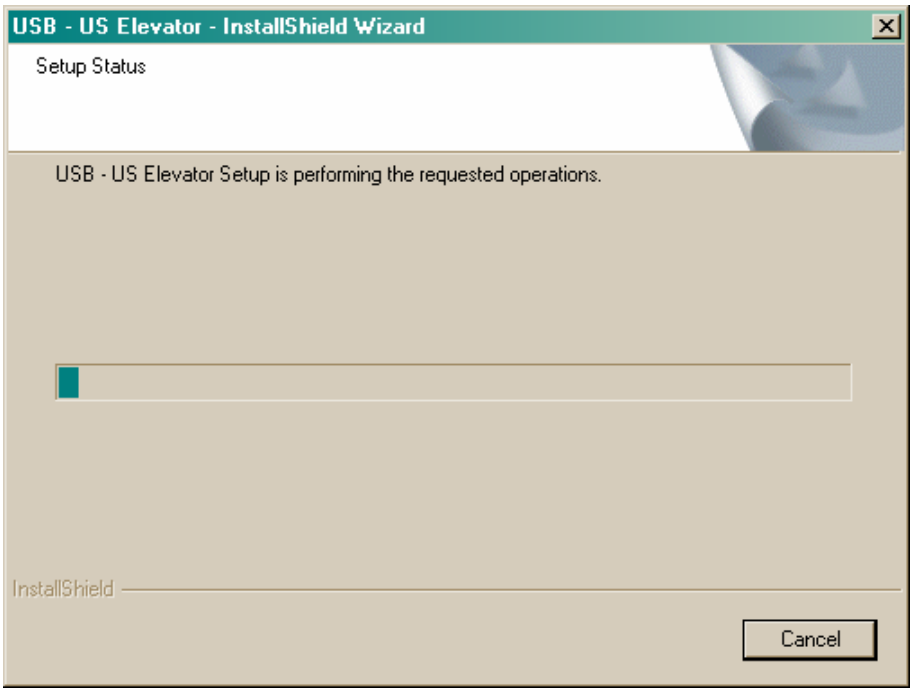


Figure 9

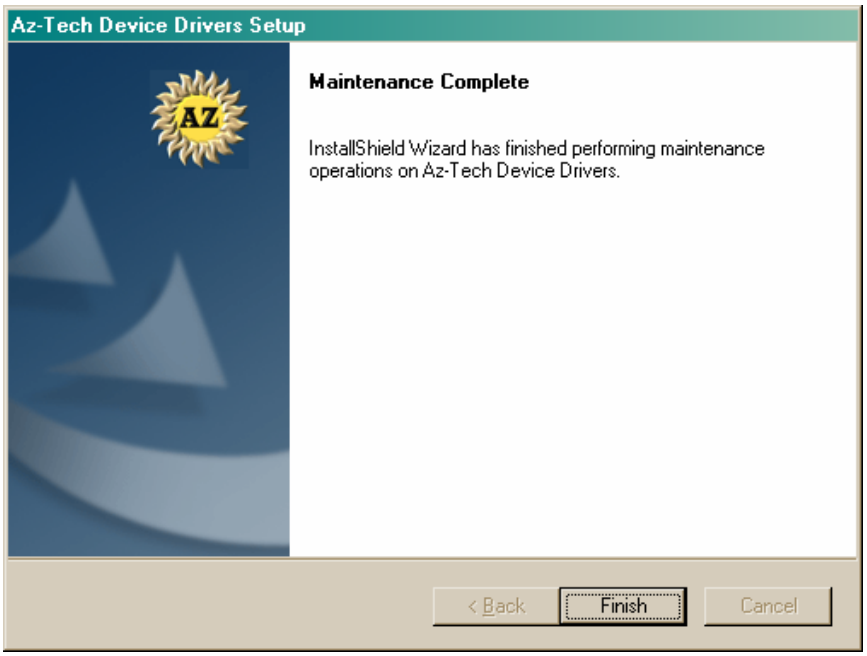


Figure 10

7. After a brief delay another window will appear(Figure 11) informing the user that the FREEDOMWare installation is complete and instructs the user to once again select the Finish pushbutton to complete the FREEDOMWare installation.

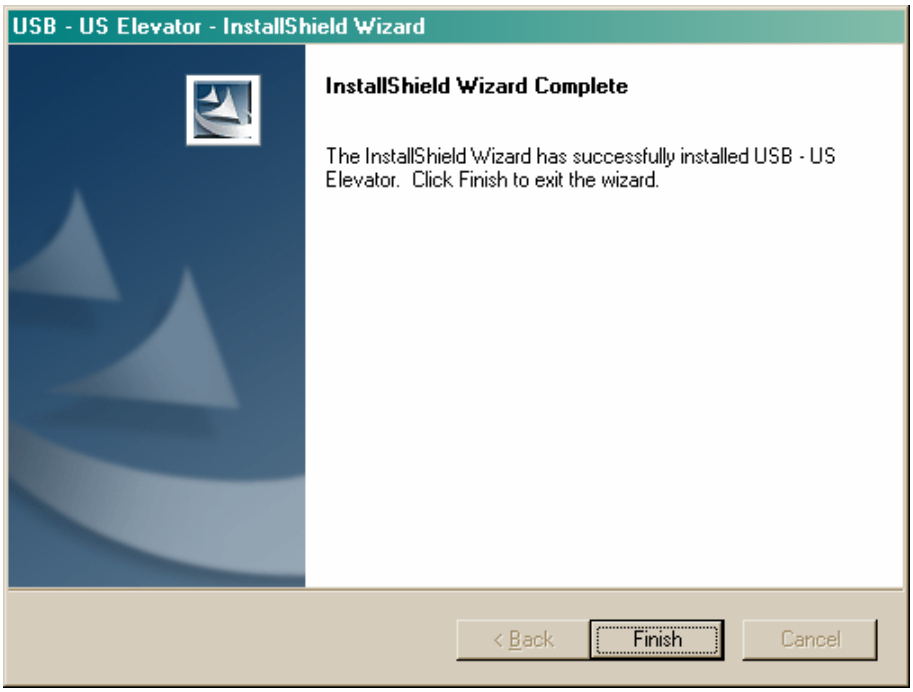


Figure 11

Installing the USB Device Drivers

1. AT THIS TIME PLUG THE US (ASCENSION) USB INTERFACE BOX INTO THE USB PORT ON THE NOTEBOOK PC. ***DO NOT PLUG THE USB SECURITY KEY INTO ANY PORT (INCLUDING THE ONE LOCATED ON THE USB INTERFACE BOX) AT THIS TIME.***

2. A **Found New Hardware Wizard** window should appear. See Figure 12. In this window click, one time, on the circle beside **No, not this time**. The Circle should have a Black Dot in its center. Click the Next pushbutton to continue.

Figure 12

3. The window shown in Figure 13 should appear. In this window, click one time on the circle beside **Install from a list or specific location (Advanced)** so that it has a black dot in its center. After completing this task, select **Next** to continue with the Driver Installation.

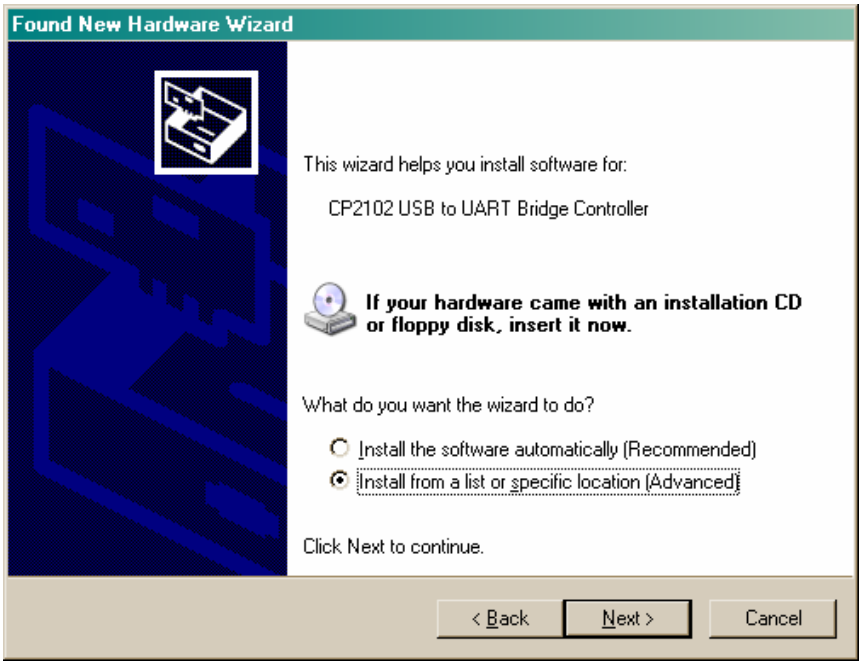


Figure 13

4. After selecting list or specific location, the New Hardware Wizard window will appear as seen in Figure 14. In Figure 14, the user must make sure the following items are selected with a black dot or check mark: **Search for the best driver in these locations**, **Include this location in the search:**. When **Include this location in the search:** is checked the pushbutton labeled **Browse** should be

enabled. At this time select the Browse pushbutton with the PC's pointing device.

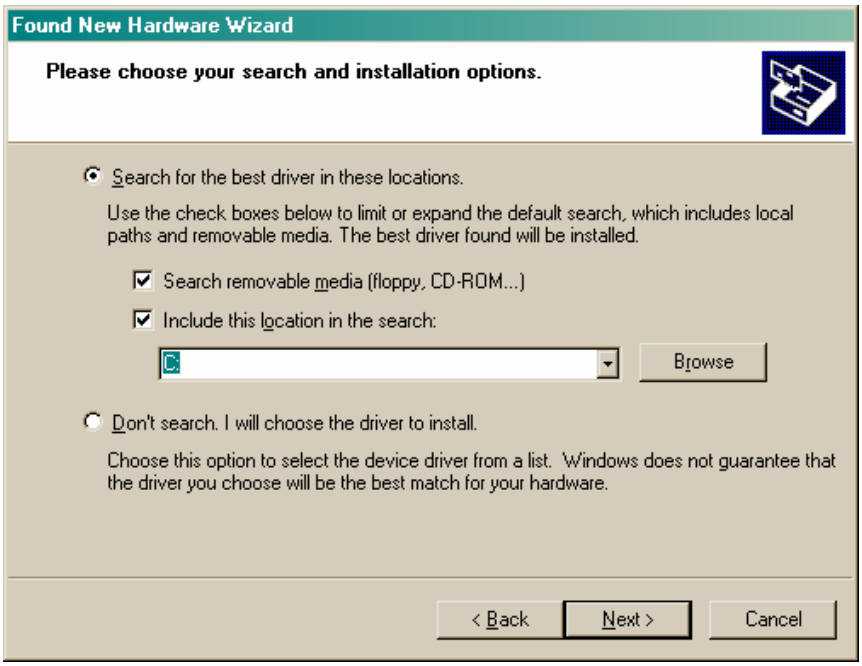


Figure 14

5. When the Browse pushbutton is selected, a **Browse for Folder** will appear as in Figure 15. Do the following in this window:

   a) Click on **My Computer**.
   b) Click on **Local Disk (C:)**.
   c) Click on **Nellie**.
   d) Click on **SiLabs**.
   e) Click on **MCU**.
   f) Click on **Cp210x**.
   g) Click on **WIN**.
   h) Click on **OK** pushbutton.

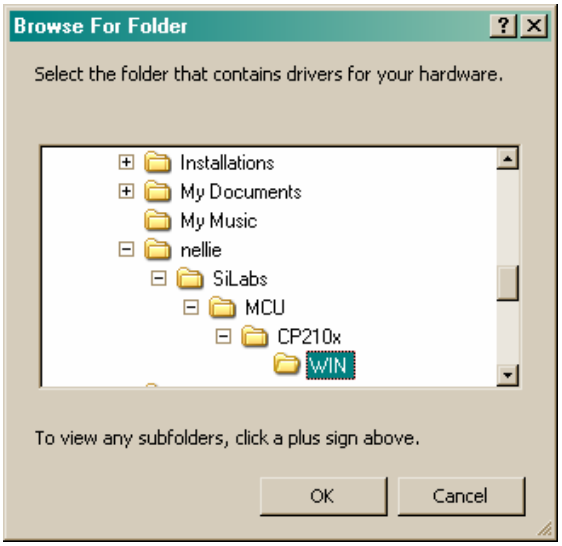


Figure 15

6. After the **OK** pushbutton is selected in the **Browse For Folder** window, the input focus will once again be upon the **Found New Hardware Wizard** window requesting the user to choose the search and installation options. Looking at the field underneath **Include this location in the search:** should be the directory path: **C:\nellie\SiLabs\MCU\CP210x\WIN**. Refer to Figure 16. To continue, press the **Next** pushbutton found at the bottom of this window.

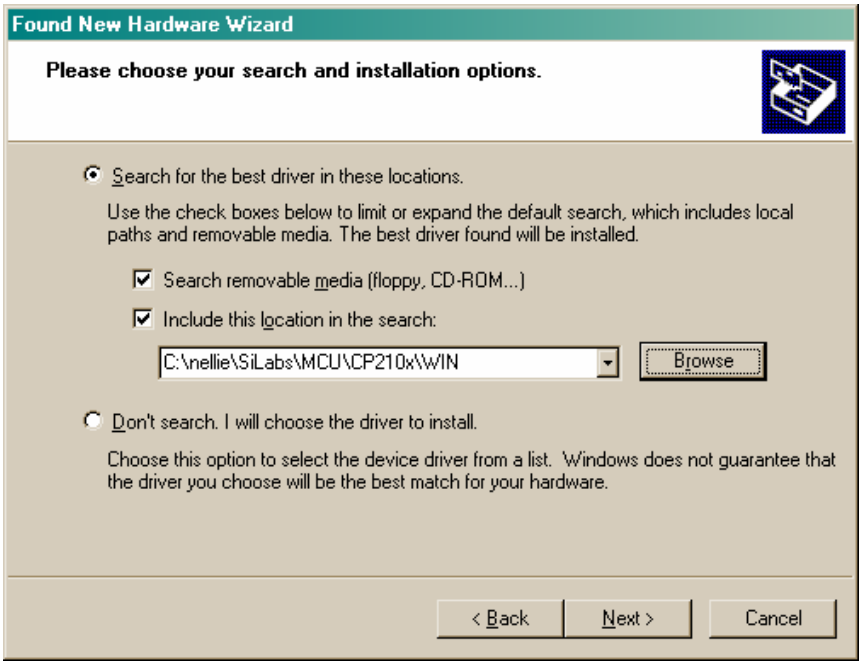


Figure 16

7. The Wizard will look for the necessary drivers for the CP2102 USB to UART Bridge Controller and Install them (See Figure 17). When the installation is complete and successful the **Completing the Found New Hardware Wizard** will appear (Figure 18) showing the user the installation status. Click the **Finish** pushbutton to complete the installation.

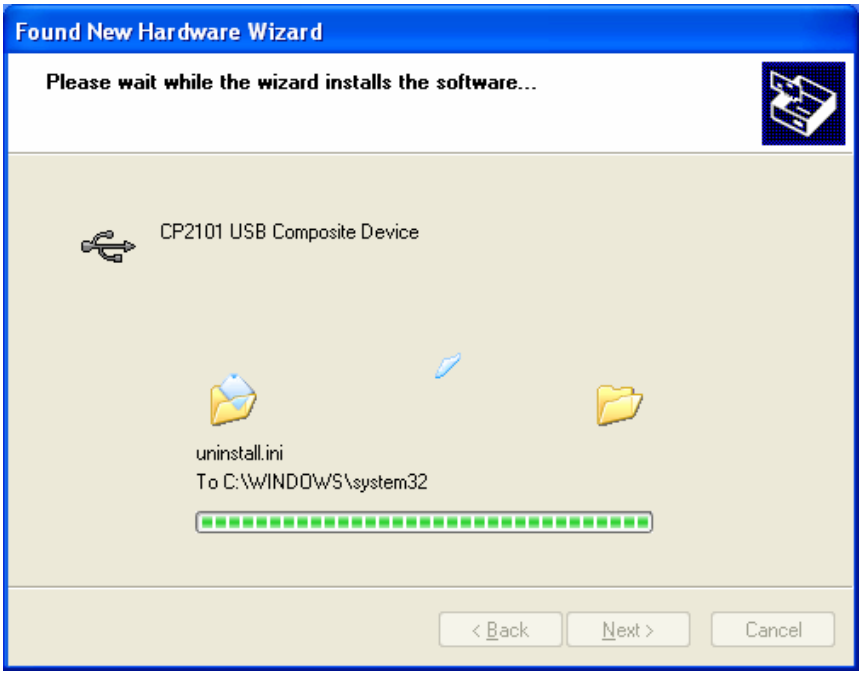


Figure 17

Figure 18

8. Shortly after selecting the **Finish** pushbutton, a second **Found New Hardware Wizard** should appear. Refer to Figure 19. It is important that this Wizard is completed in order to completely install the USB Interface Box. If this second part of the USB Interface Box driver installation is not followed, the FREEDOM Tool USB US(Ascension) Software Module WILL NOT WORK. As before, click one time in the circle beside **No, not this time**. When the circle beside **No, not this time** is selected, press the **Next** pushbutton to continue with the Found New Hardware Wizard.

Figure 19

9. After selecting Next in the Windows represented in Figure 19, the Window will update as shown in Figure 20. In this window the user should select the circle beside the text **Install from a list or specific location (Advanced)**. As commanded at the bottom of the window, select the **Next** pushbutton to continue with the **Found New Hardware Wizard**.

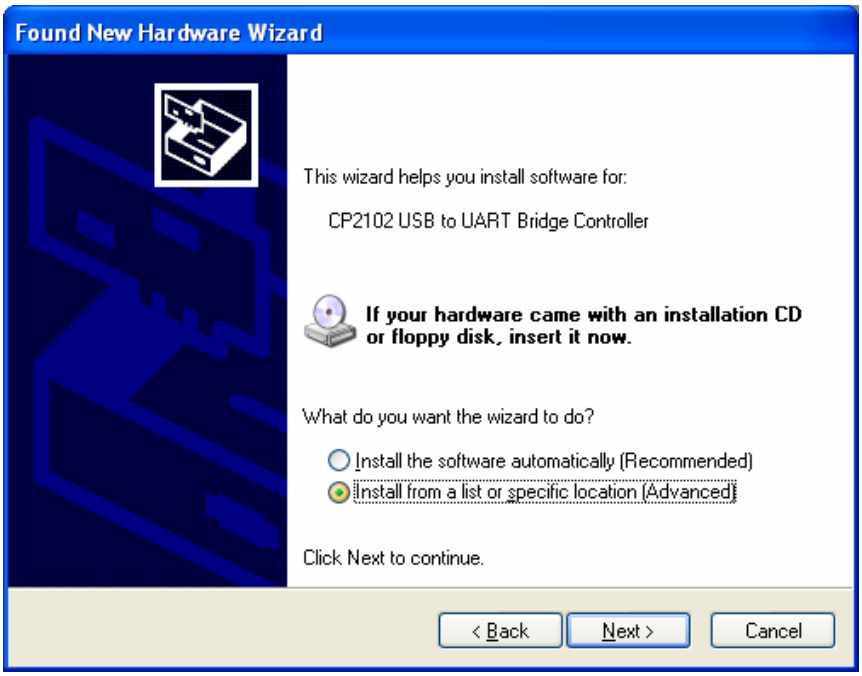


Figure 20

10. As it did in the first section of the USB Interface Driver Installation the window now updates allowing the user to select where the driver files will come from. Refer to Figure 21. The field underneath

Include this location in the search: should now show the path **C:\nellie\SiLabs\MCU\CP210x\WIN.** If it does, continue by selecting the **Next** pushbutton. If the path is not located in the text field beneath **Include this location in the search:** please refer to Step 5 of this installation procedure in order to get that path displayed. Select Next to continue with the Found New Hardware Wizard.

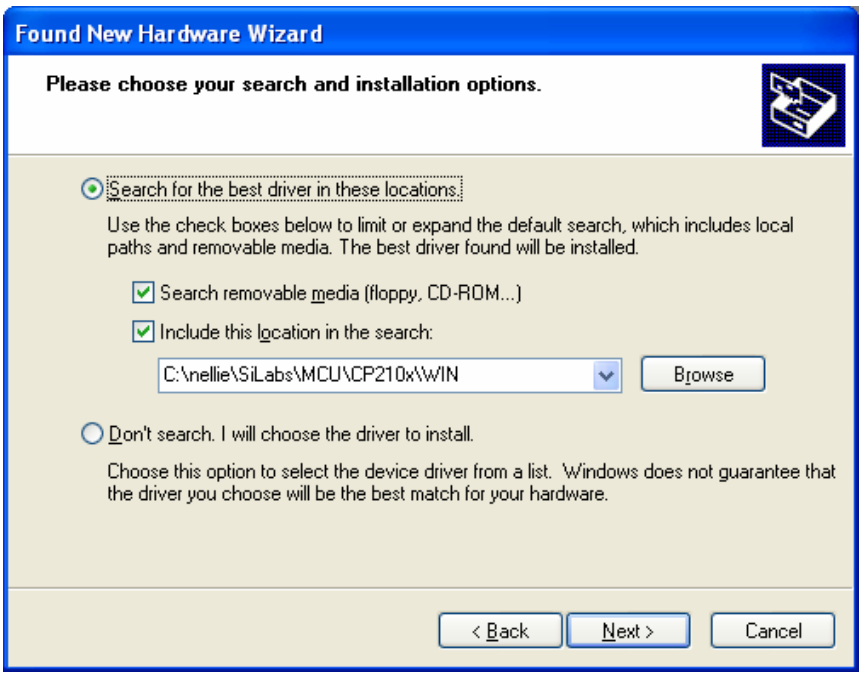


Figure 21

11. Upon selecting Next, the Found New Hardware wizard will continue with the installation of the remaining drivers for the US (Ascension) USB Interface Box (Figure 22). Upon completion of the driver installation, the window will update similar to the one shown in Figure 23. The window in Figure 23 informs the user that the driver installation was successful and that the Finish pushbutton should be pressed to complete the Found New Hardware Wizard Installation. At this time, select Finish to complete the US (Ascension) USB Interface Box installation.

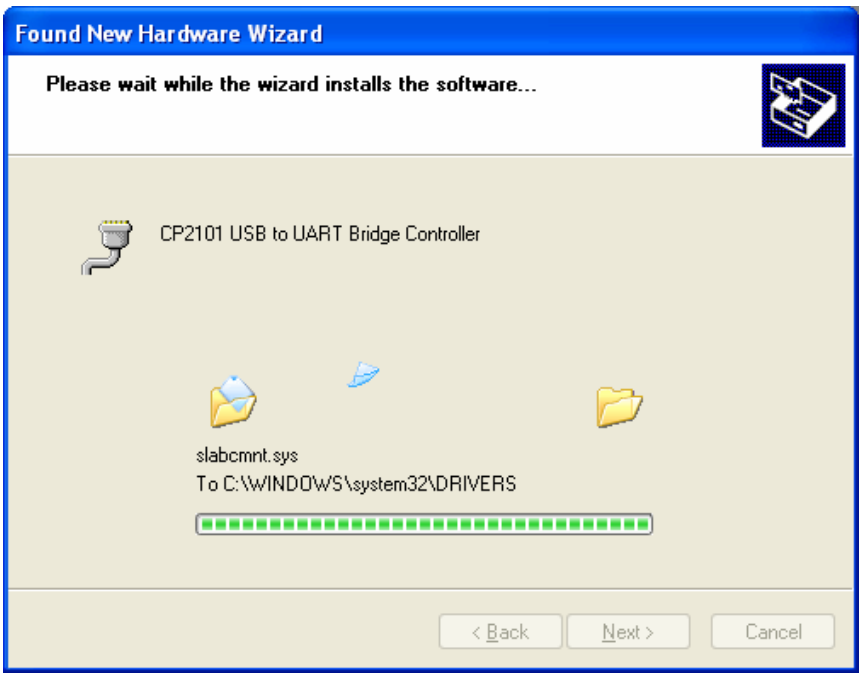


Figure 22

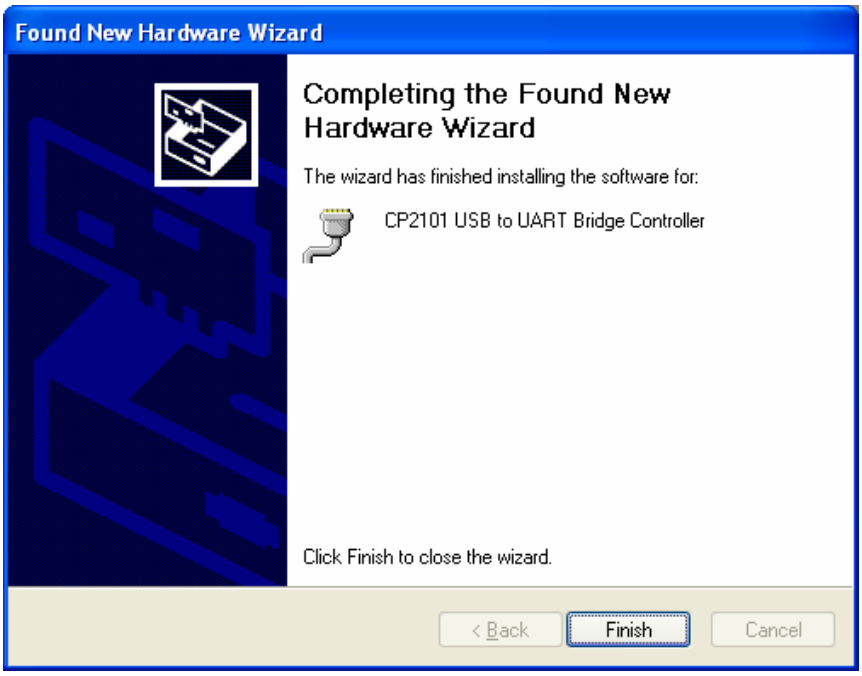


Figure 23

12. **AT THIS TIME PLUG THE USB SECURITY KEY INTO THE USB PORT ON THE USB INTERFACE BOX.**

13. Shortly after connecting the USB Security Key for the first time, a **Found New Hardware Wizard** will appear. Figure 24. The user should click on the circle beside **No, not this time** so that a Black Dot appears in the circle. Once this has been selected the user should select the **Next** pushbutton with

the PC's pointing device in order to continue the Security Key Setup.

Figure 24

14. The next window in the Security Key Setup informs the user that the wizard will help install the necessary software for USB KEY. Refer to Figure 25. In this window make sure the circle beside **Install the software automatically (Recommended)** has a black dot. With the Black Dot in place in the desired location, select the **Next** pushbutton to continue with the Security Key Installation.

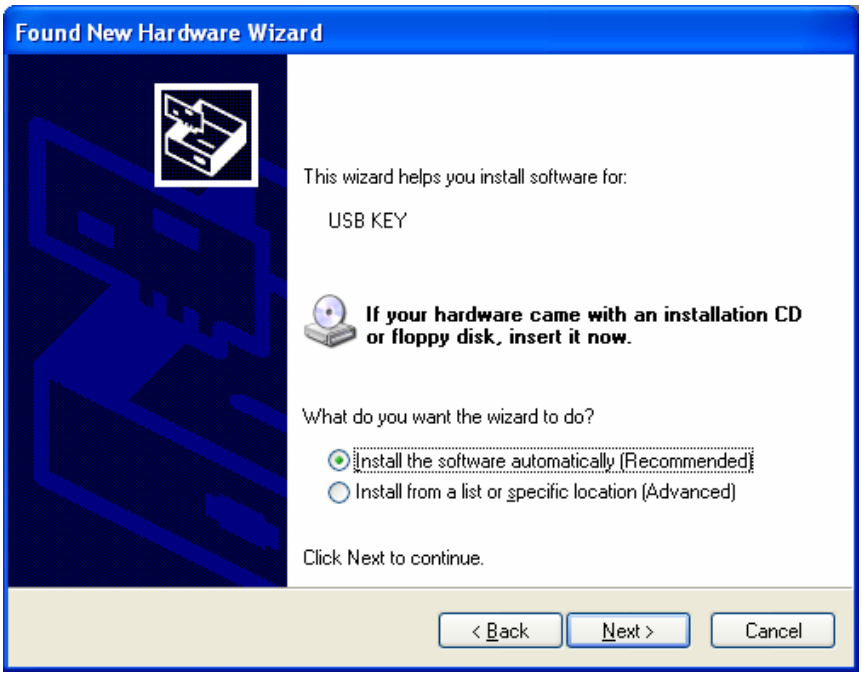


Figure 25

15. The installation will continue with installing the drivers for the security. While this installation is proceeding, a window will pop up notifying the user that the software being installed for the USB KEY **has not passed Windows Logo testing to verify its compatibility with Windows XP**. Refer to Figure 26. This window gives the user the options of **Continue Anyway** or **STOP Installation**. At this time, the user MUST select the pushbutton labeled **Continue Anyway** in order to successfully install the drivers for the USB Security Key.

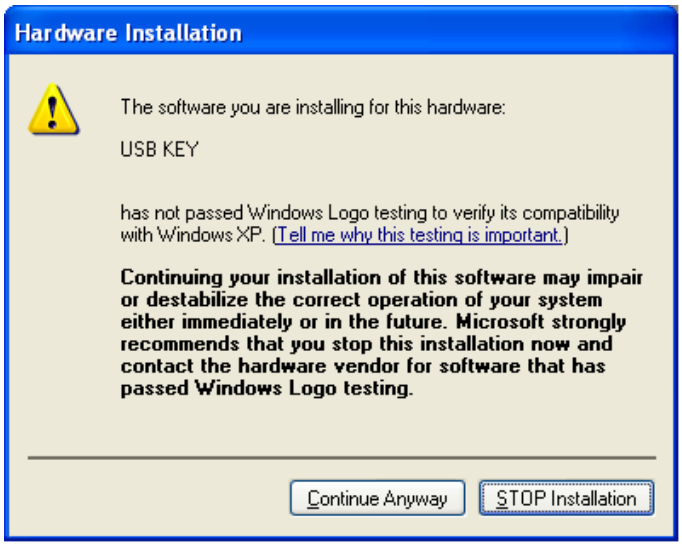


Figure 26

16. After selecting Continue Anyway, the installation will continue with the USB Key Driver Installation by copying and updating the necessary files. A window similar to Figure 27 appears showing this installation progress. When the copying is completed a window similar to Figure 28 appears showing that the Installation was complete. At this time select the Finish push button to complete the USB Key Driver Installation.

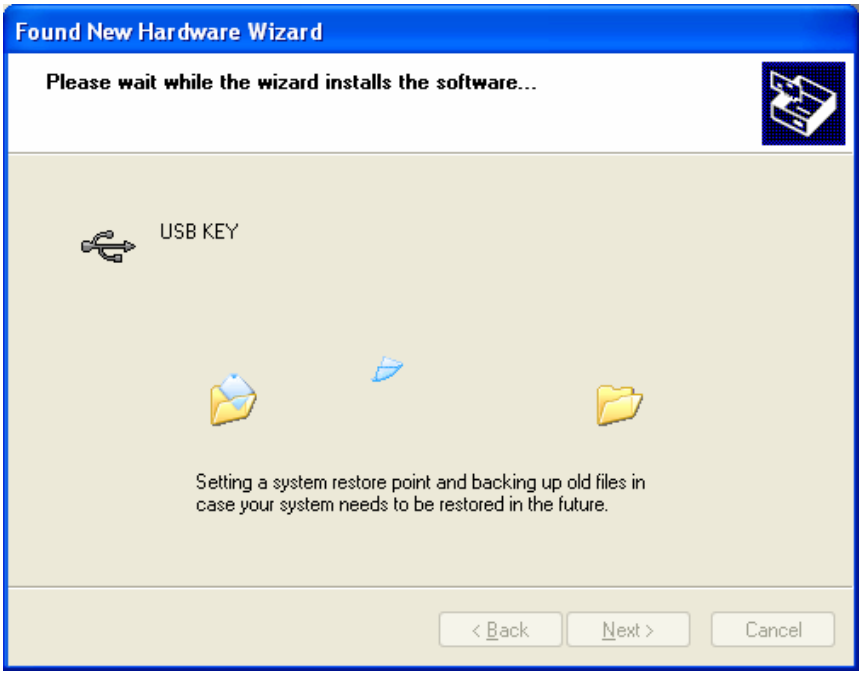


Figure 27

Figure 28

Executing the FREEDOM Tool Shell Program (USB Version):

The start up procedure of the WORLD electronics' FREEDOM Tool is described as follows:

1. Make sure the security key is installed on the USB port of the computer or the spare USB port located on the interface box. If the security key is plugged into the USB port located on the US (Ascension) USB Interface Box, then make sure the interface box is plugged into the USB port on the Notebook PC.

2. From the Microsoft Windows Desktop Screen select the **FREEDOM Tool** Icon by using the pointing device to position the cursor directly over the **FREEDOM Tool** Icon and double clicking the pointing device button. Refer to Figure 29.

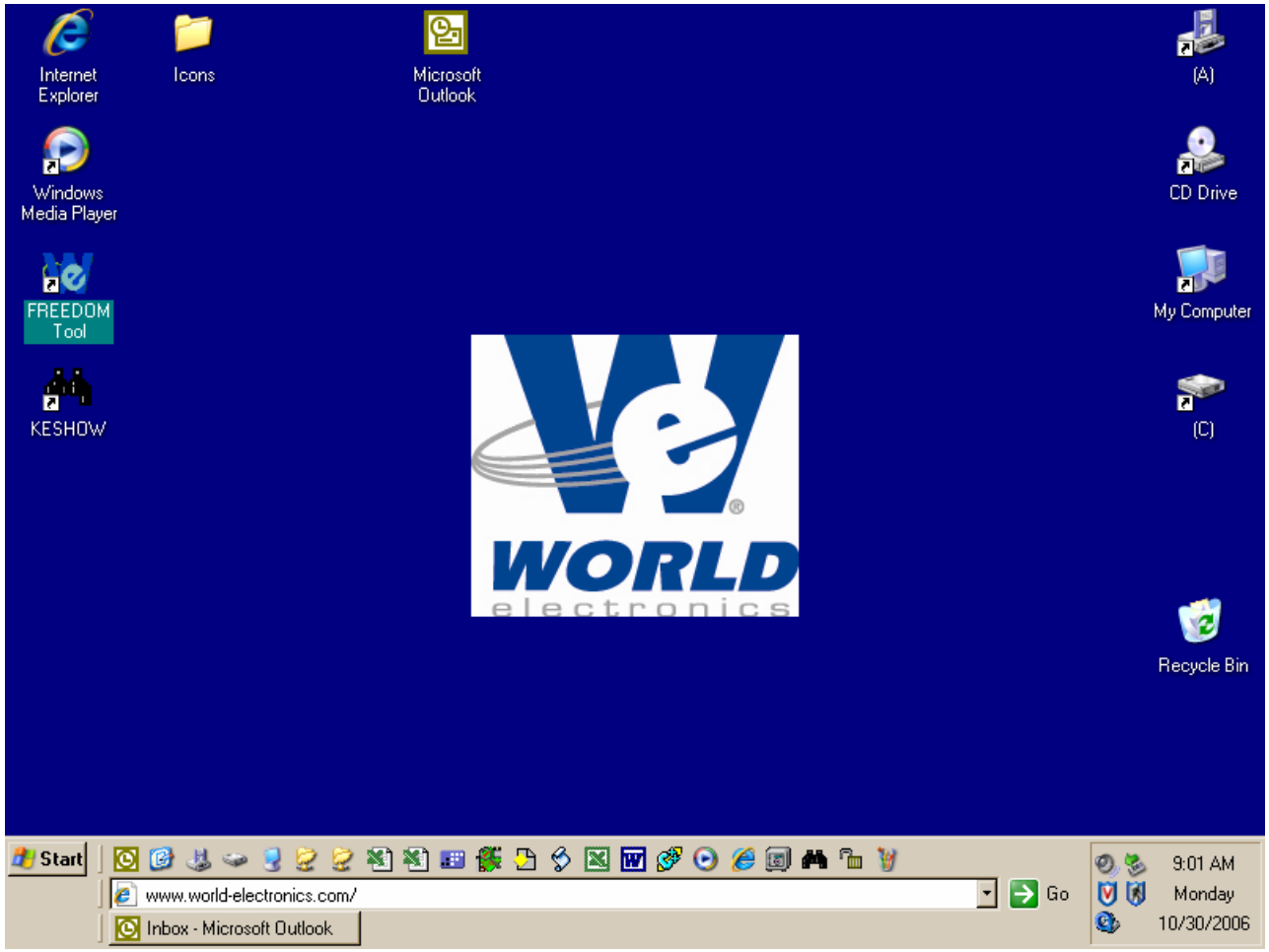


Figure 29

3. Double clicking the **FREEDOM** Tool Icon will run the main FREEDOM Tool Application software. This software allows the user to select the various FREEDOMWare module that WORLD electronics has available. Refer to Figure 30.

Figure 30

NOTE: Only installed FREEDOMWare software will run. If the module selected is not installed a window will appear as in Figure 31 informing the user that the Module is not installed and to contact WORLD electronics. If this window appears and the software was purchased from WORLD electronics, then contact a member of WORLD electronics' technical support staff. If the software was not purchased, it can be purchased by contacting WORLD electronics' Sales Staff. The contact information on both of these departments can be found on Page 2 of this manual.

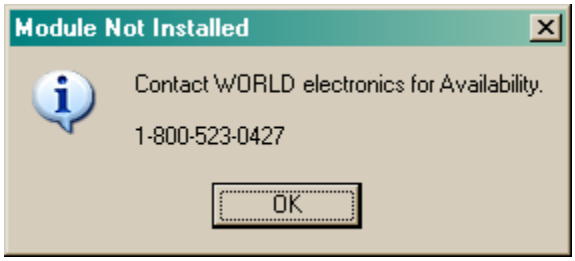


Figure 31

4. In order to run the USB US Elevator(Ascension) Software Module the user would need to select **US** from the menu. Refer to Figure 32. After US is selected the user is presented with choices of **USB and Printer Port**.

Figure 32

5. The next item to be selected in order to run the USB US Elevator(Ascension) Software Module is the menu choice USB. In the USB category there are four(4) choices of controllers listed. Refer to Figure 33.

Figure 33

The four controllers listed are MP1230, MP 1220, Ascension 1000, and Ascension 2000. At this time position the Notebook PC's pointing device over top of the desired controller choice and click one time. If the module is installed, the software will begin running at this time.

Executing the FREEDOM Tool Shell Program:

Parallel Port ONLY!:

The start up procedure of the WORLD electronics' FREEDOM Tool is described as follows:

1. From a power down condition, make sure the security key is installed on the parallel port of the computer. If using a USB Security Key, make sure the USB Security Key is plugged into the Notebook PC's USB port at this time.

2. Turn on the computer and allow the Windows operating system to become operational. From the Desktop either double click with the pointing device on the **FREEDOM Tool** icon, or select the **Start** Menu button then **FREEDOM Tool Folder** and then **FREEDOM Tool**. Refer to Figure 34.

Figure 34

3. The **FREEDOM Tool** window will be displayed as revealed in Figure 35.

Figure 35

4. Position the cursor over **US** and single click the pointing device button to display the US Elevator system menu selections, shown in Figure 36.

Figure 36

5. In order to run the Parallel Port version of the software, the user must have the Parallel Port version of

the US Elevator Interface Box and the PC must have at least Parallel(Printer) port. If these requirements are met, then the user can continue by selecting **Printer Port** from the drop down portion of the **US** menu selection. Doing this will provide another menu selection as viewed in Figure 37.

Figure 37

6. The FREDOM Tool Software Module Menu window, as shown in Figure 37 gives the user the choices of **MP1220, MP 1230, Ascension 1000, and Ascension 2000**. Position the cursor over the desired controller and single click with the pointing device button.

Getting Started:

Starting the US Elevator(Ascension) Software Module - USB:

1. With the FREEDOM Tool selection window open, position the cursor directly over the appropriate system manufacturer menu item selection, and single click the pointing device button. This causes a drop down list to appear giving the user a choice of USB or Printer Port. Selecting USB at this time will allow the user to select which controller to diagnose using the USB interface box. If Printer Port is selected the User can select which controller to diagnose using the Printer Port Interface Box. Refer to Figure 38.

Figure 38

2. Position the cursor over the desired interface type, USB or Printer Port, and single click the pointing device button to display the US Elevator controller selections, shown in Figure 39.

Figure 39

3. The US Elevator service tool currently services the MP 1220, MP 1230, Ascension 1000, and the Ascension 2000 elevator control systems. To open the US Elevator(Ascension) Software module, position the cursor over any of the following choices: Ascension 2000, Ascension 1000, MP 1230, or MP 1220. When the cursor is positioned over the desired controller, single click with the pointing device button.

4. The Communication Port Set-Up window, similar to the one seen in Figure 40 will appear. Figure 40 allows the users to choose the serial port assigned to the USB Interface Box by the computer. If the USB interface box is connected to the Notebook PC and it is detected, one of the eight(8) COM pushbuttons should be in a pressed state indicating the assignment. If not, the user must select the pushbutton for the COM port assigned to the USB Interface Box. This assignment can be viewed in the Device Manager found within the control Panel of the Notebook PC. When the desired COM port is selected, the user can select the **OK** pushbutton. Upon clicking **OK**, the window will close, and the software will set up the notebook computer's serial port for the assignment selected.

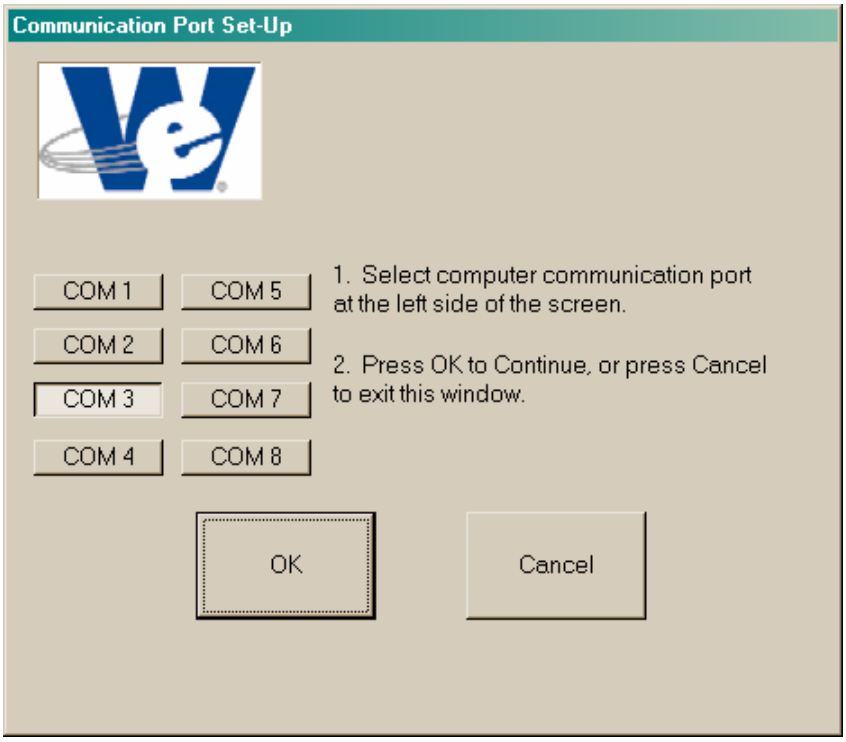


Figure 40

5. The **About: Security Key Information** window, as seen in Figure 41, will appear next due to the software system checking the Notebook PC for the proper security key. The security key must be plugged into the printer port of the computer or a USB port, at all times, for proper operation of the FREEDOM Tool software. It is important to note a green background surrounding the picture of the security key indicates that the security key check passed. The Security Key Information window shows the user information on the software module being used, the serial number, the expiration date, the security key check status, and connection instructions. The program can continue at this point, by positioning the cursor over one of the US Elevator Controller pushbuttons and single clicking with the pointing device button.

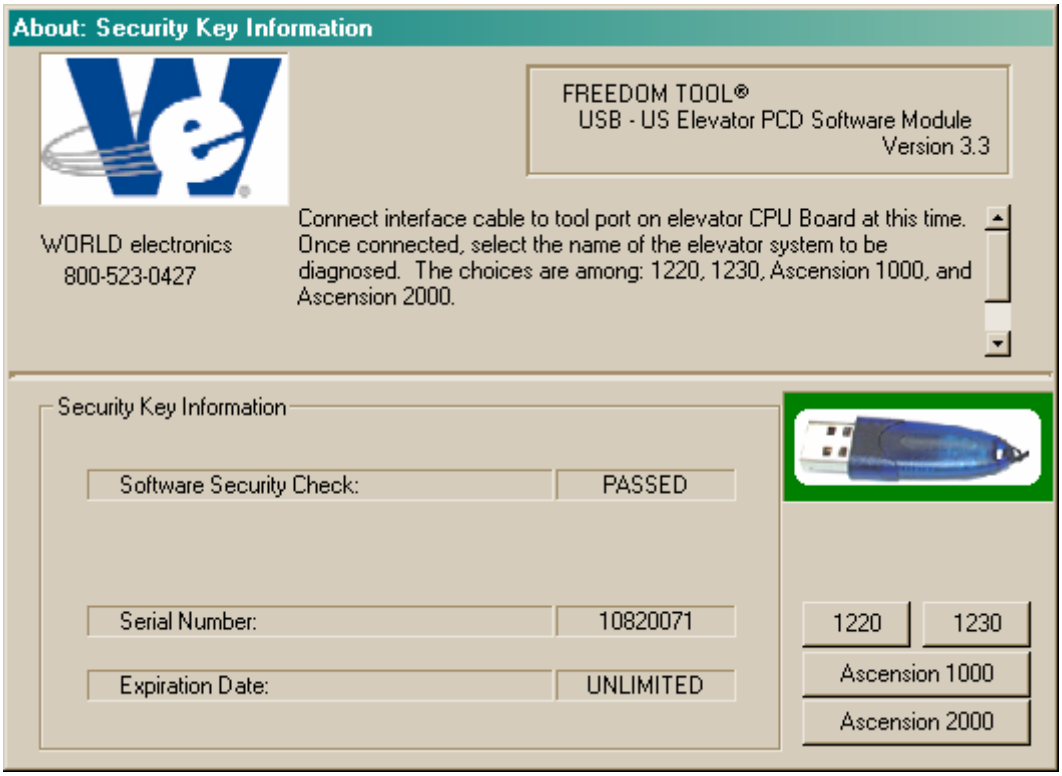


Figure 41

In the event, the security key has not been installed or a problem exists with the installed key, a **About: Security Key Information** window would be displayed revealing an Authorization Error Number and a Red Background surrounding a picture of a security key as in Figure 42. Take note of this error number and call WORLD electronics for help, the phone number is located below the WORLD electronics logo found on this window. To continue, position the cursor over the **Close** pushbutton and single click with the pointing device button. This causes the FREEDOM Tool software to terminate execution and return to the Windows desktop.

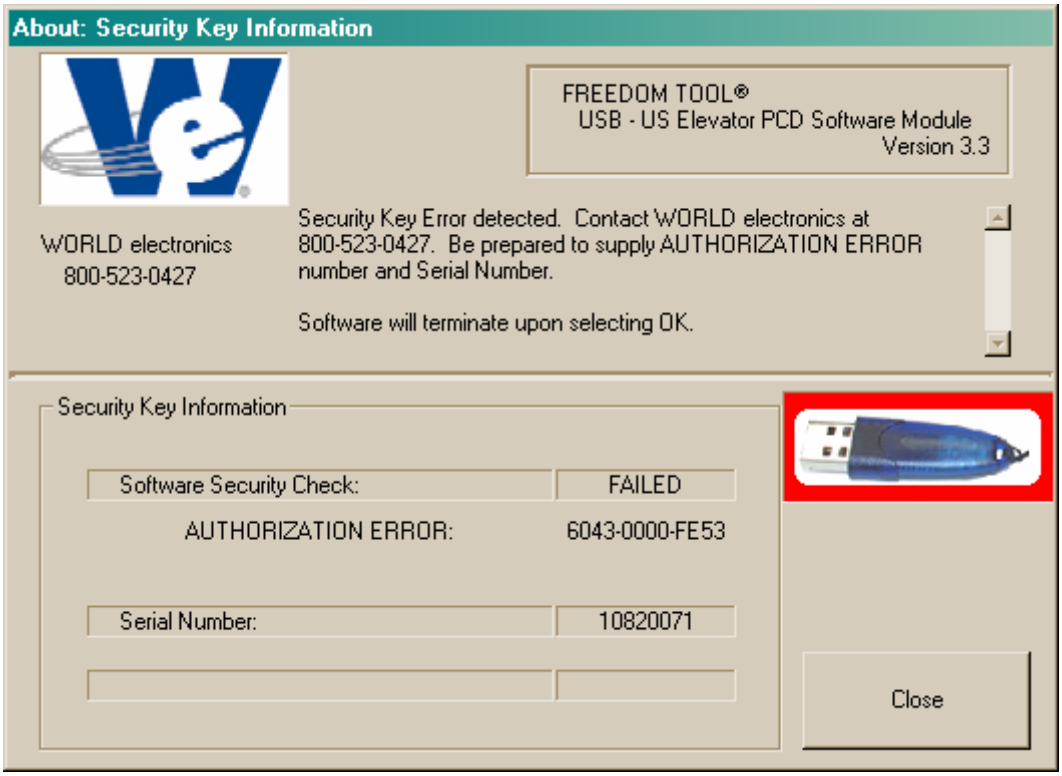


Figure 42

General Description:

The FREEDOM Tool is a multi-functional diagnostic tool that allows the user to do everything from diagnosing faults to setting up the elevator system. All software functions can be accessed from the FREEDOM Tool's Main window as seen in Figure 43. On the top line of the FREEDOM Tool software module is a description of the software running. The elevator system being diagnosed will be found in this description along with the version number.

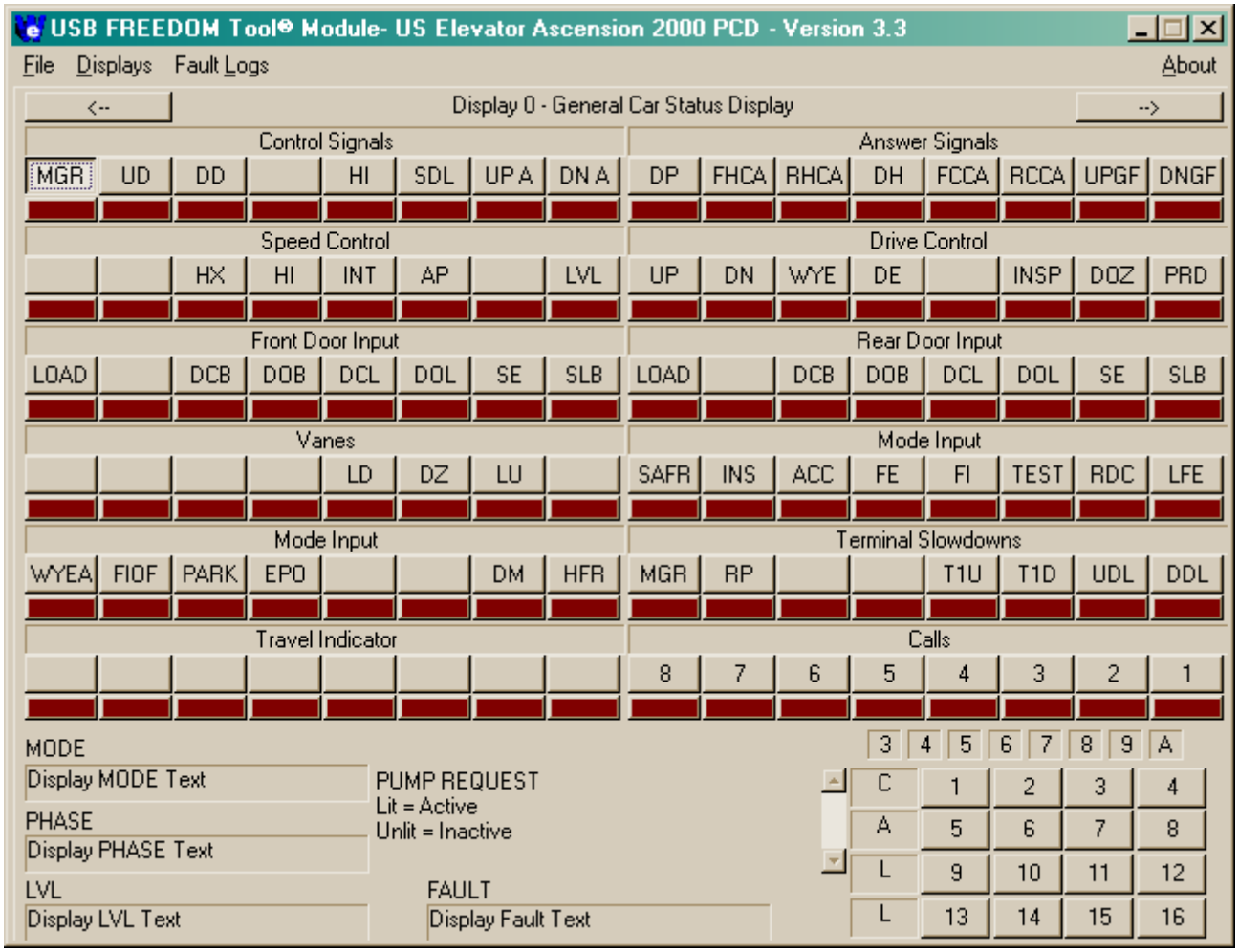


Figure 43

The user can maneuver throughout the FREEDOM Tool using menu choices. Along with the menu choices, the main window also contains LED Banks with description selection buttons, Status Displays, call buttons, and forward and back pushbuttons. Not all options/items are available from one control system to the next. If an option is used within the selected elevator control system, the menu item for that option will be shown in **black** lettering. **Grey** lettering is used whenever an option is disabled for a particular system.

The Menu

The FREEDOM Tool Menu consists of four(4) choices. These choices presented to the user are File, Displays, Fault Logs, and About. These 4 menu selections are described in further detail in the following:

File:

Selecting the File menu, refer to Figure 44, the user is presented with choices which allow the user to set up the displays to work with the four(4) elevator controllers that the FREEDOM Tool works on. Also located on the file menu is a choice labeled **Exit** and one labeled **PCD Emulator.** Selecting an Elevator Controller from this menu will adjust the I/O display labels and menus so that they are specific to the elevator system selected. The title bar of the Main Window will always indicate what controller mode the FREEDOM Tool is in. The original PCD manufactured by US Elevator was a black box with banks of LED's and several LCD Displays along with a numerical Keyboard. In order to determine what LED went

with what I/O signal, the user needed to cross-reference the selected display with a manual provided by US Elevator Systems Inc. The PCD emulator menu choice changes the main window display to one with just banks of generic LED's, simple numerical indicators, and a keypad. This is similar to the original PCD Tool. If the user is more comfortable using the FREEDOM Tool as if it was a PCD unit, the user needs to select **PCD Emulator** from the **File** menu. The **Exit** choice found on the **File** menu allows the user to exit the FREEDOM Tool Software Module.

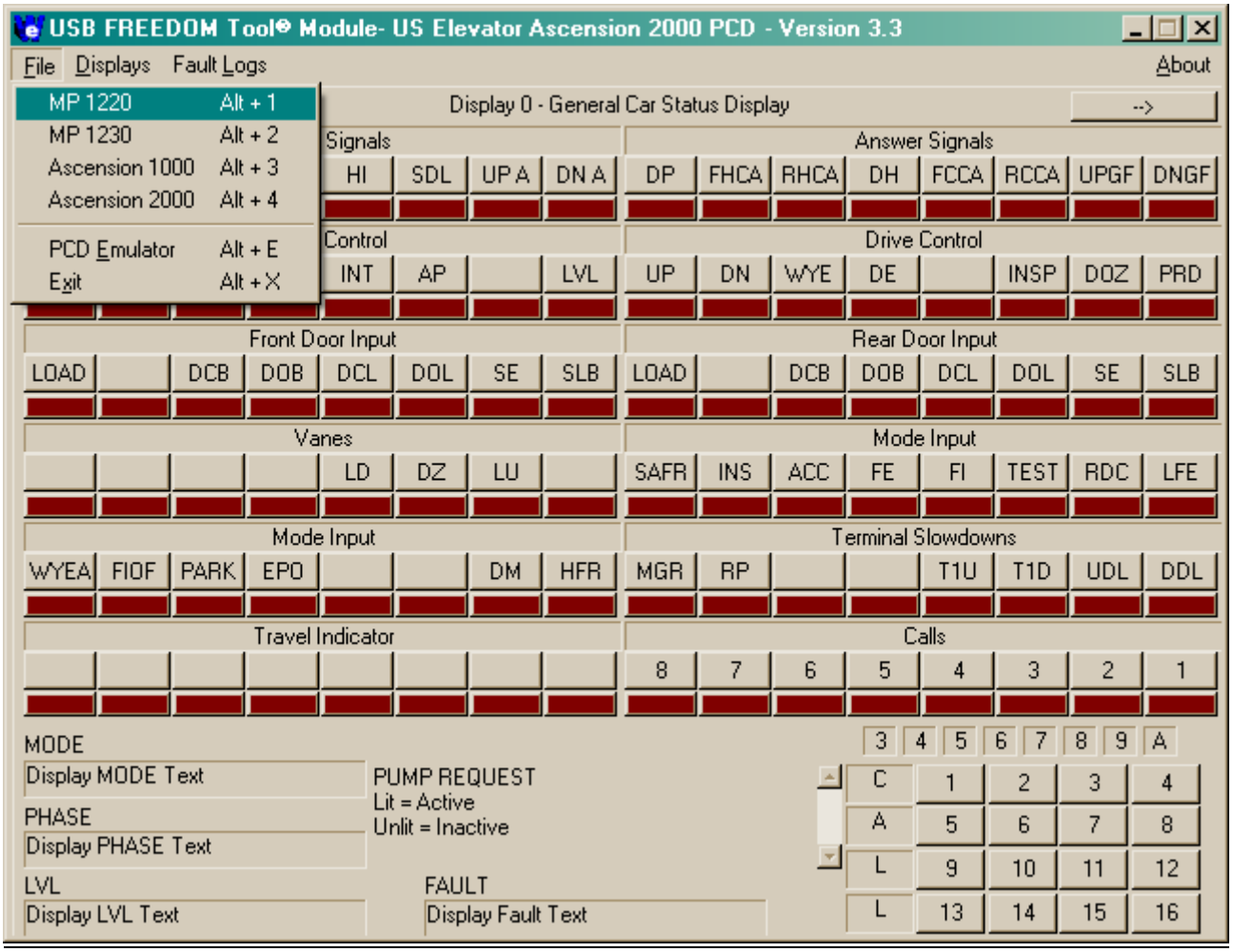


Figure 44

Displays:

The display menu, as seen in Figure 45, gives the user access to the various I/O displays within the selected elevator system. On this menu, active displays for the selected elevator system are shown in black while the inactive displays are shown in gray. Active displays are different from one controller system to the next. The displays seen in this window are the equivalent of selecting **D**, the display number, and then **Enter** on a PCD unit for the US Elevator controllers. More detailed information on each display is given under the display section for the selected controller.

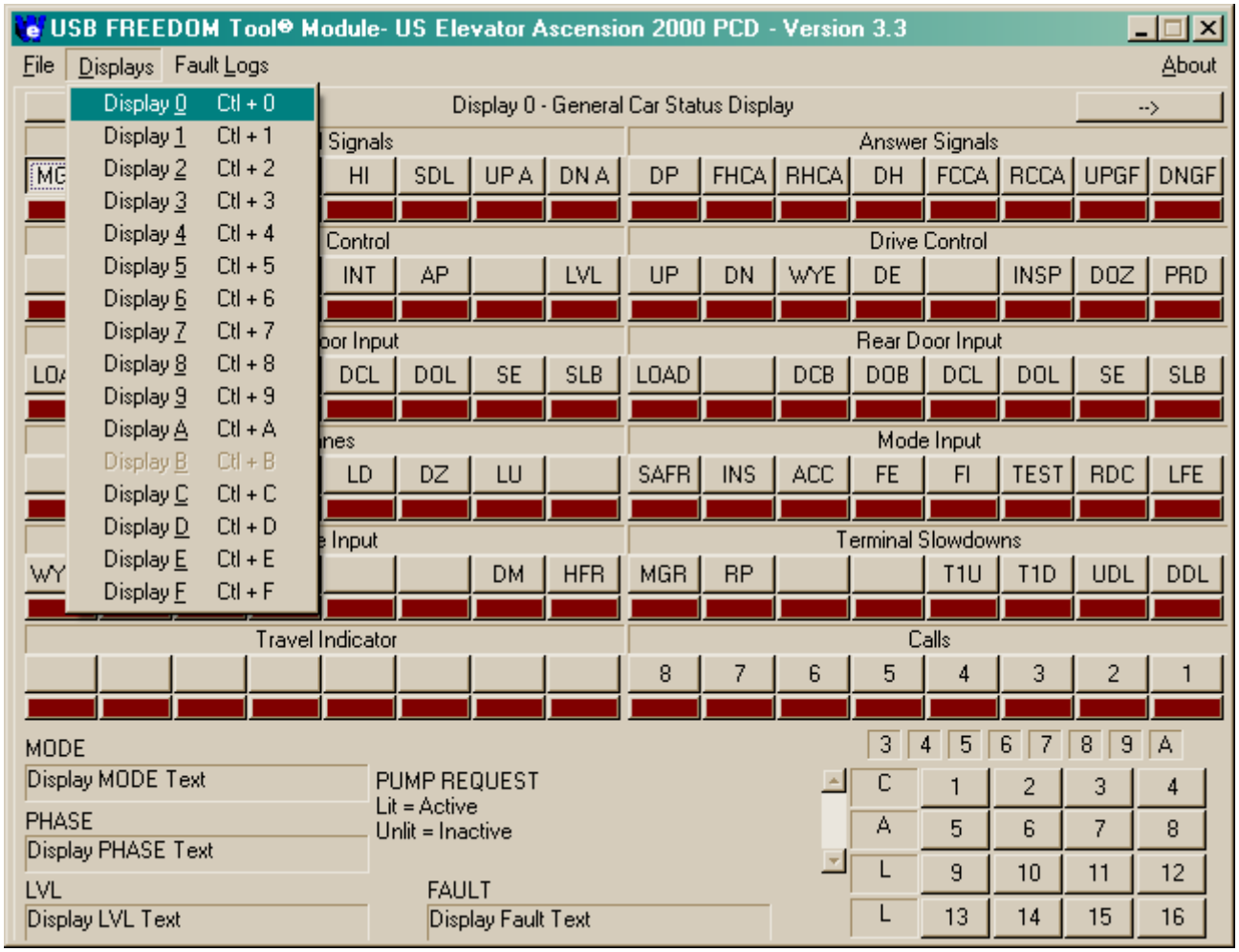


Figure 45

Fault Logs:

The US Elevator controllers have the ability of storing I/O signals at the time that a fault occurred. Each time a fault occurs, the I/O's of Display 0 are recorded in Fault Logs 1 through 10. The I/O information recorded in the Fault Log is dependent upon what controller selection the user selected at start-up. The menu selection **Fault Logs**, as seen in Figure 46, gives the user access to the fault logs in the FREEDOM Tool module. Greater information for each individual controller's fault log is given under the fault section for the desired elevator controller.

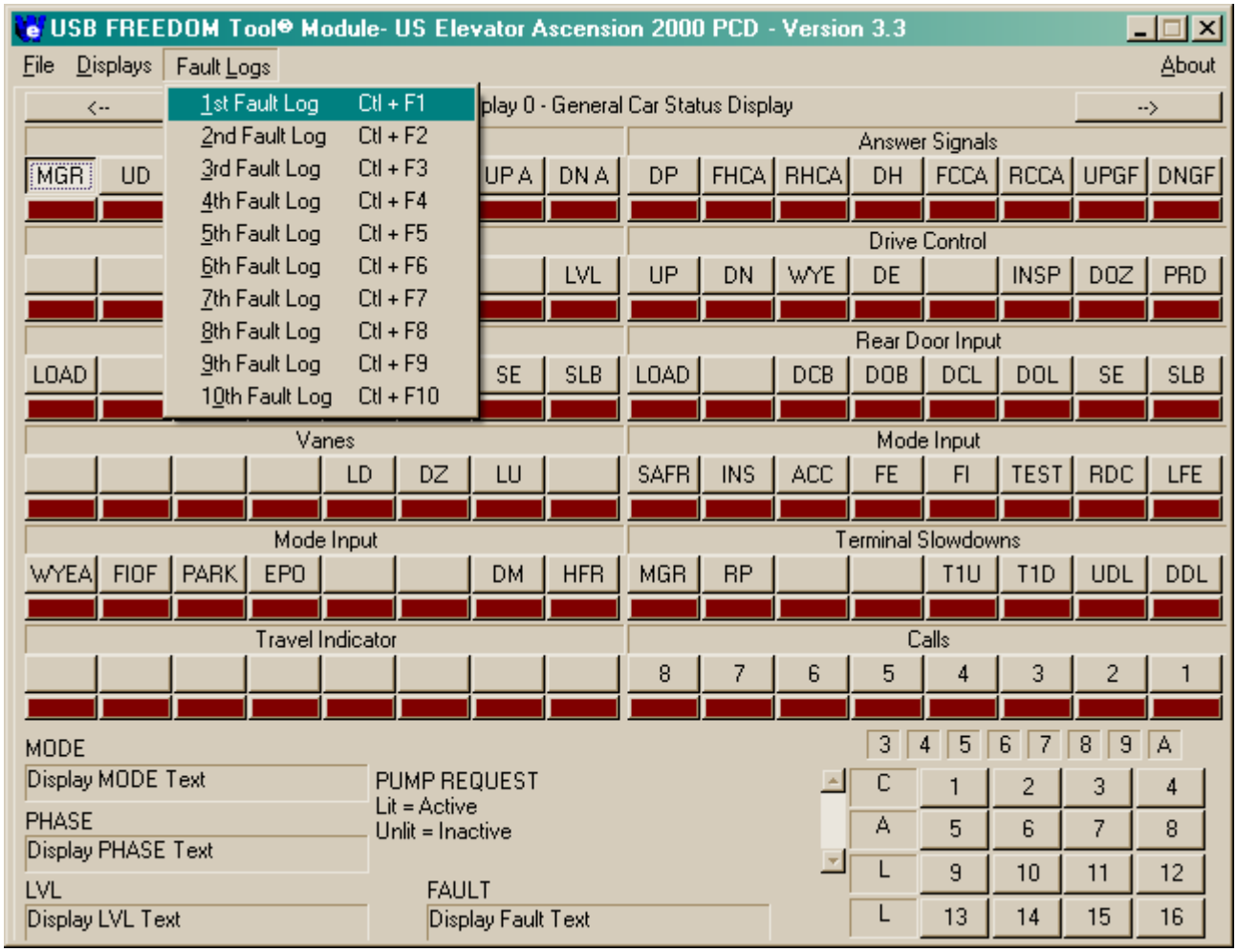


Figure 46

The Windows

Displays:

The user can see various inputs and outputs among other items using the display windows. Depending on what elevator system is being diagnosed there can be up to 15 display windows. Each of these windows is unique in what they display, but have the same operational functions. Figure 47 depicts a Display window for the Ascension 2000 elevator control system. The basic display window contains: twelve signal groups with eight control signals each, a title block, Fault mode description, Mode of operation description, Phase description, landing indicator, signal descriptor, sixty-four signal pushbuttons, 16 call pushbuttons, and 2 pushbuttons to move forward or backward one(1) display for the selected elevator controller. The operation of these items is described as follows:

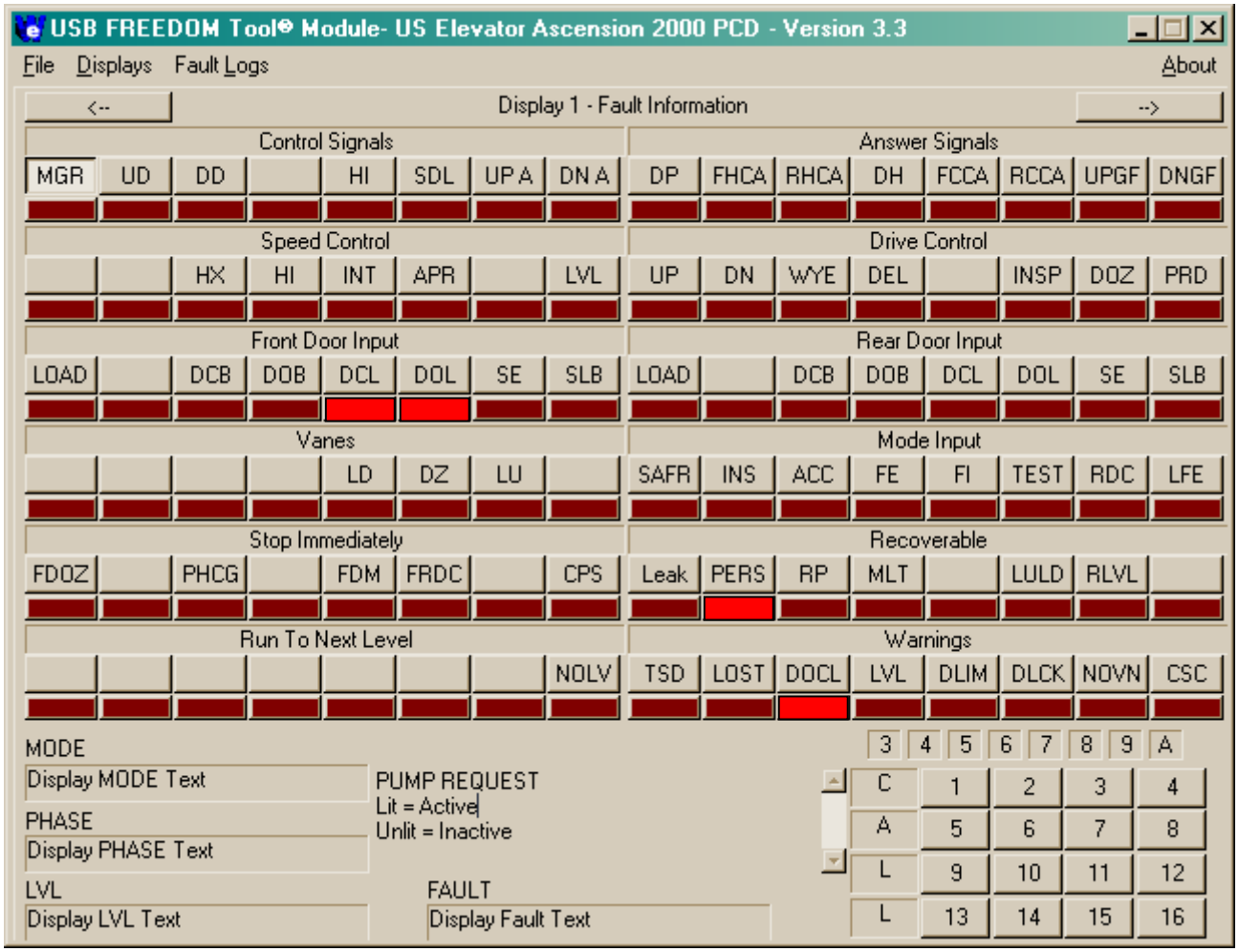


Figure 47

Title Bar:

The Title Bar of the Display Window informs the user to the display selected. In the case of Figure 47, the display selected is **Display 1 – Fault Information**. The title of the displays depends upon the elevator system and the display selected.

Signal Groups:

Every display window contains twelve signal groups. These signal groups organize the different elevator control signals into functional groups. In Figure 47, the signal groups are: Control Signals, Answer Signals, Speed Control, Drive Control, Front Door Input, Rear Door Input, Vanes, Mode Input, Stop Immediately, Recoverable, Run To Next Level, and Warnings. Within each signal group are eight signal indicators and eight signal buttons. The signal indicators represent LED's within the PCD tool. If the signal indicators are red the signal is active. Otherwise, the signal is inactive. Any time a different display is selected or the elevator system being diagnosed is changed, the signal group names will change.

Signal Buttons:

In every signal group there is a total of eight pushbutton controls. These pushbutton controls display the signal name for each individual signal indicator within the signal group. The pushbutton controls also perform another function, this function is to display a definition of the control signal that is

selected. To select a control signal for definition the user would maneuver the pointing device arrow over the desired control signal pushbutton and click the pointing device selector button once. When a control signal pushbutton is selected, the Signal Descriptor area, found in the bottom, center section of the display window, will update showing the signal name and the definition for the selected signal.

Signal Descriptor:

In the bottom, center portion of the display windows is a blank region. This blank region is called the Signal Descriptor. The Signal Descriptor shows the definition of the Signal Button selected along with the associated signal name.

FAULT:

The Fault indicator of the Display Window informs the user as to the fault status of the elevator controller the tool is in communication with. Each individual controller section in this manual will list the possible fault modes that the selected controller could have.

MODE:

The mode of operation of the selected controller can be determined through the Mode section of the Display Window. The Mode section informs the user as to which mode of operation the elevator controller is in. The modes are set up in order of priority. Each individual controller section of the manual lists the different modes each elevator controller could possibly have.

PHASE:

To determine what the elevator controller is trying to do, while the tool is connected it, the Phase indicator found within the Display window is used. The Phase indicator gives the user information as to what the car is doing in relationship with its motion. Each type of elevator controller has a different list of Phases it could possibly have. The specific Phase an elevator controller will have is defined under the Phase section of each individual elevator controller section.

Level:

The level indicator gives the user an indication of where the car is within the hoistway.

Call Pushbuttons:

The Call Pushbuttons found in the lower right-hand corner of the Display Window is indicated by the letters C-A-L-L on the left side of the Call Buttons. When these buttons appear in the display window, they can be used to enter a call into the Elevator Control System. They perform the equivalent task of pressing **C,** followed by the landing number, and then **Enter**. If these pushbuttons are not located on the selected display window, then calls can't be entered through the selected window.

Personality Pushbuttons: Ascension 2000 Display 9 and A ONLY

When the Personality Windows are opened in the module geared for the Ascension 2000 elevator system, the pushbuttons found in the lower right corner will aid the user in navigating through and changing the programmable personality data. These pushbuttons are indicated by **CLR** (0), **SET** (1), **GRP** (E), and **BIT** (F). The **CLR** (0) pushbutton will change a personality bits state from active to inactive. **SET** (1) changes the personality bit's state from inactive to active. Using the **GRP** (E) pushbutton places the personality display into an update state and then changes the focus from one group to the next. The **BIT** (F) pushbutton toggles the flashing focus through the individual bits within a group. To change a specific bit the user would use a combination of the **E** and **F** pushbuttons to navigate to the desired bit and then press either **1** or **0** to set or clear the desired personality bit.

CLEAR pushbutton:

Several of the display windows can be cleared using the PCD Tool. This can be done by pressing the pushbutton labeled **CLEAR**. This **CLEAR** pushbutton will appear above the Signal Descriptor area in the bottom center of the display window. Only windows that allow the FREEDOM Tool to clear their values will show the **CLEAR** pushbutton allowing the user to select this function. The **CLEAR** pushbutton is the equivalent of pressing **CODE(10)**, **C**, and then **Enter** on the PCD Tool.

Forward and Backward Pushbuttons:

Located on either side of the Title Bar of the display window are pushbuttons that have arrow indicators on them. One arrow is pointing to the right and the other to the left. Pressing the button that points right will change the display window to the next Display Window for the selected elevator system. If you were on Display 1, pressing the **Right(→)** pushbutton would advance the tool display to Display 2. Conversely the **Left(←)** pushbutton would take the user to the previous display. While in Display 1, pressing the **Left** pushbutton would cause the display to change to Display 0.

Fault Log:

The Fault Log shows the basic I/O signals that were present at the time the elevator system detected a fault. The elevator system can store this log for up to ten different fault occurrences. Once ten faults have been reached, the oldest fault will be purged and replaced with the next oldest. The first fault log always shows the I/O signals (Display 0) for the most recent fault occurrence. The Fault Log window is identical in appearance and functionality of the Display window for Display 0. There is one exception, the fault log has the ability to be cleared by using the Clear pushbutton. As mentioned the Fault Log window is similar in setup to the Display Window. It contains twelve display groups with eight signal buttons, an indicator for Phase, Mode, Level, and Fault, a Signal Descriptor, a Title Bar, and a Close pushbutton. Refer to Figure 48.

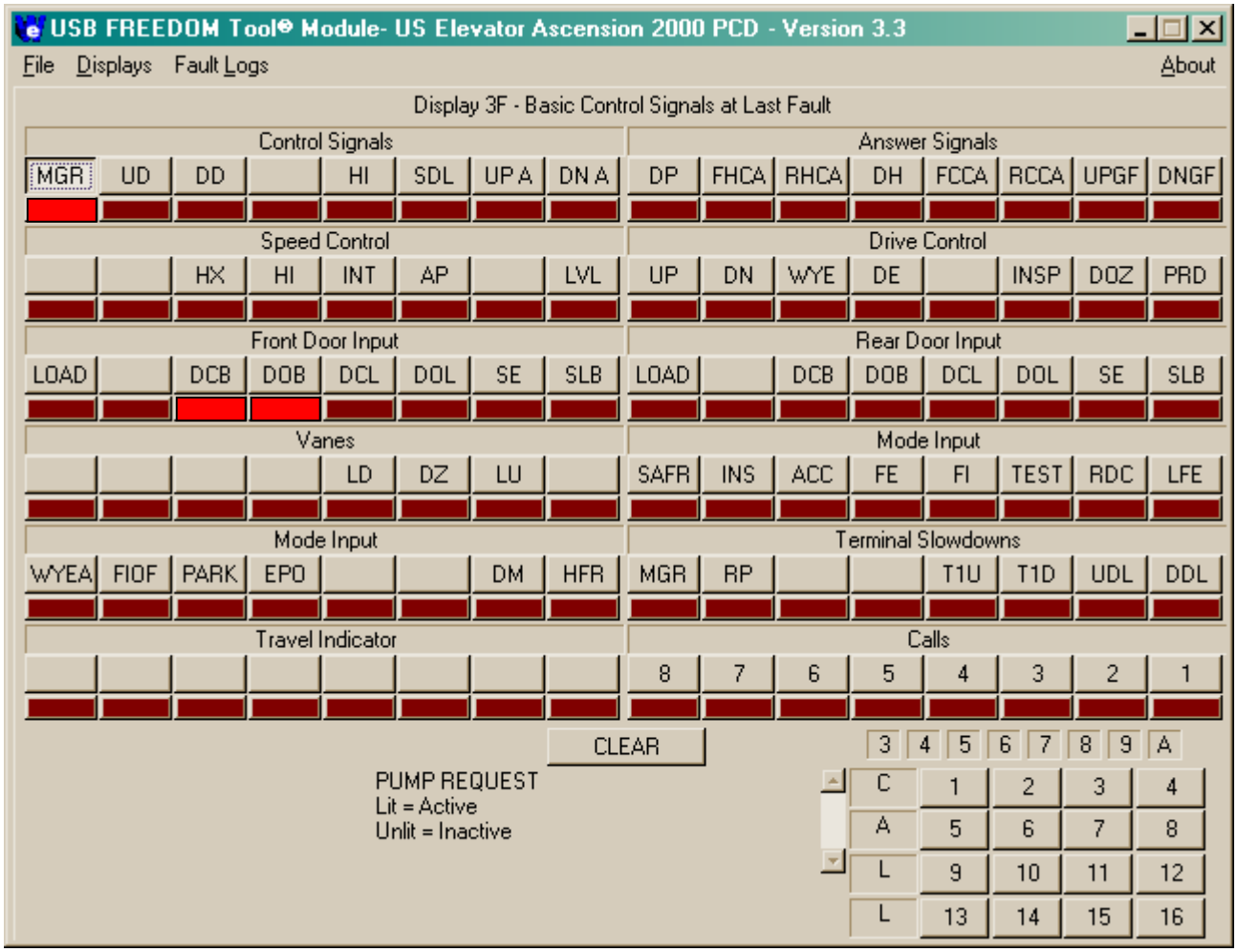


Figure 48

When the Clear pushbutton is selected and the faults have cleared, the Status area beside the Clear pushbutton will flash the letters “CLEAR”. It will be noticed that all active I/O signal indicators will go to their inactive (blank rectangle), state.

US Elevator MP 1220

FAULT:

0. **Internal** An error was detected in the elevator CPU board.
1. **EPROM:** An error was detected with the elevator software or RAM memory.
2. **Warning:** A non-volatile fault has occurred. This type of fault will not cause the car to shut down.
3. **Terminal** A volatile fault has occurred. Car will run to terminal landing and stay there with doors open.
4. **Next Lvl** A volatile fault has occurred. Car will run to next landing and stay there with doors open.

5. **Stop Now** A volatile fault has occurred. Car will stop at its immediate position in the hoistway.

PHASE: – The following is a list of phases of the run the MP 1220 controller may have.

0. **Fault** A fault was detected while car was running.
1. **Shutdown** Car has shutdown.
2. **Lost** Car has lost its position within the hoistway.
3. **Wakeup** Car is just starting.
4. **Rest** Car is parked at landing.
5. **Relevel** Car is releveling into a landing.
6. **Level** Car is running at leveling speed.

8. **Approach** Car is decelerating into a landing.
9. **Intermediate** Car is accelerating from landing.
A. **High** Car is running at high speed.

MODE: The following is a list of modes of operation that the MP 1220 controller may have. They are listed in order of priority, with the top mode having highest priority.

0. **Restart** Car CPU communication lock (Should not be seen through service tool)
1. **Inspect** Inspection operation.
2. **Access** Hoistway Access.
3. **Fire Ind.** Fireman's Service Phase 2.
4. **Fault** System contains a fault. Fault display – Stop Now has occurred.
5. **Test** CPS I/O board toggle switch in test position (down).
6. **Emerg. Power** Car is on emergency power operation. Generator is providing main car power.
7. **Fire Return** Fireman's Service Phase 1
8. **Test Rqst.** CPS I/O board toggle switch in test position but car calls are in the system. When car calls are answered, mode will change to Test.
9. **Secure Park** Car will park at secure landing with doors either open or closed, depending on personality setup.
A. **Independent** Car is on independent service operation.
B. **Sp. Srv. I** Hall Station special service operation activated. All car calls are answered before car responds to special service floor.
C. **Sp. Srv. II** Hall Station special service operation activated. All car calls are canceled before car responds to designated special service floor.
D. **Automatic** Car is on automatic service.

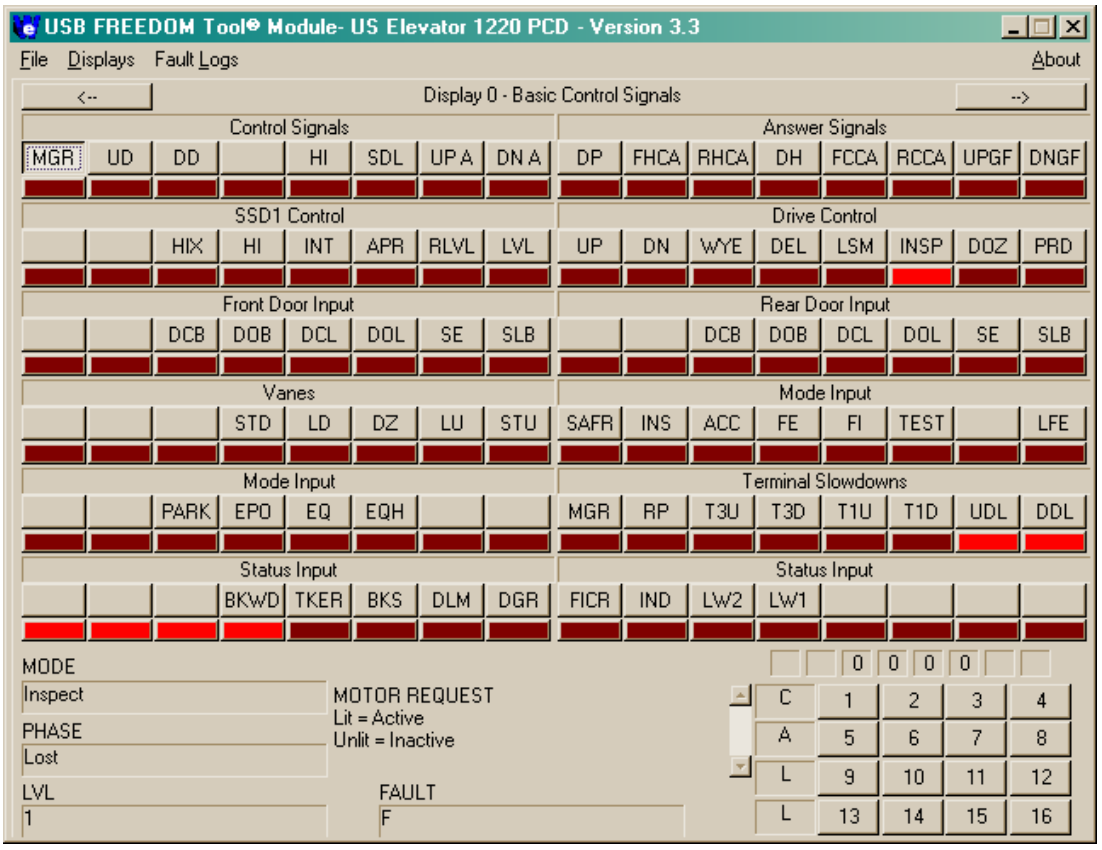
E. **Attendant** Car is on attendant operation.

LEVEL:

The level display replicates a position indicator for the car currently in communication with the tool.

DISPLAY:

Display 0 Basic Control Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up arrow
DN A	Down arrow

Answer Signals

DP	Direction preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
DH	Drop high speed zone
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Front up gong
DNGF	Front down gong

SSD1 Control

-	
-	
HIX	High speed indicator
HI	High speed command
INT	Intermediate speed command
APR	Approach speed command
RLVL	Relevel speed command
LVL	Level speed command

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
LSM	Low speed monitor
INSP	Inspection
DOZ	Door open zone
PRD	Power drive

Front Door Input

-	
-	
DCB	Front door close button
DOB	Front door open button
DCL	Front door close limit
DOL	Front door open limit
SE	Front safety edge
SLB	Front safety ray

Rear Door Input

-	
-	
DCB	Rear door close button
DOB	Rear door open button
DCL	Rear door close limit
DOL	Rear door open limit
SE	Rear safety edge
SLB	Rear safety ray

Vanes

-	
-	
-	
STD	Down stepping vane
LD	Level down vane
DZ	Door zone vane
LU	Level up vane
STU	Up stepping vane

Mode Input

SAFR	Car safety string
INS	Inspection
ACC	Access
FE	Fireman's emergency return – Phase 1
FI	Fireman's independent – Phase 2
TEST	Test
-	
LFE	Lobby fire – Alternate fire service

Mode Input

-	
-	
PARK	Secure park
EPO	Emergency power
EQ	Earthquake detection circuit
EQH	Earthquake hold – Counterweight collision

Terminal Slowdowns

MGR	Motor request
RP	3 phase status
T3U	Up terminal slowdown switch #3
T3D	Down terminal slowdown switch #3
T1U	Up slowdown switch
T1D	Down slowdown switch
UDL	Up directional limit
DDL	Down directional limit

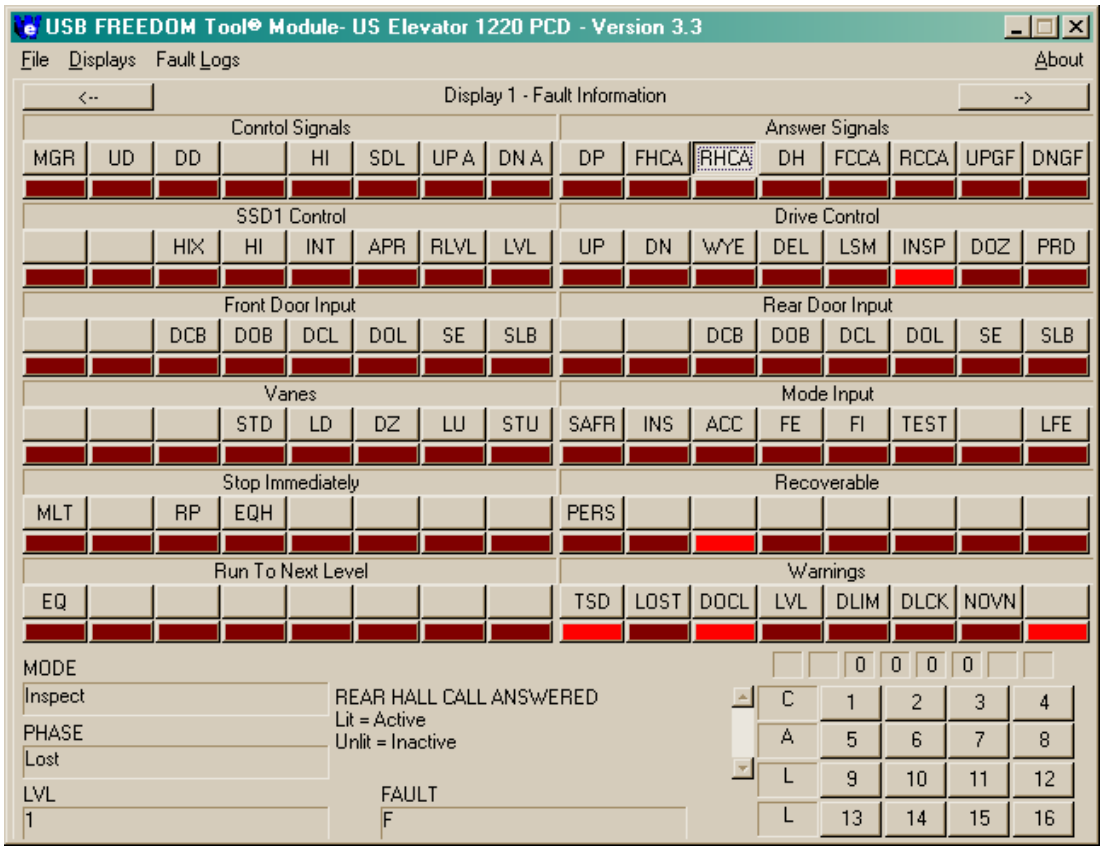
Status Input

-	
-	
-	
BKWD	Brake watchdog circuit
TKER	Tachometer error
BKS	Brake switch
DLM	Door lock contacts
DGR	Door gate relay

Status Input

FICR	Phase 2 Fireman's Service - Call Reset
IND	Independent Service
LW 2	Loadweigher switch 2
LW 1	Loadweigher switch 1
-	
-	
-	
-	

Display 1 Fault Information



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up arrow
DN A	Down arrow

Answer Signals

DP	Direction preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
DH	Drop high speed zone
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Front up gong
DNGF	Front down gong

SSD1 Control

-	
-	
HIX	High speed indicator
HI	High speed command
INT	Intermediate speed command
APR	Approach speed command
RLVL	Relevel speed command
LVL	Level speed command

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
LSM	Low speed monitor
INSP	Inspection
DOZ	Door open zone
PRD	Power drive

Front Door Input

-	
-	
DCB	Front door close button
DOB	Front door open button
DCL	Front door close limit
DOL	Front door open limit
SE	Front safety edge
SLB	Front safety ray

Rear Door Input

-	
-	
DCB	Rear door close button
DOB	Rear door open button
DCL	Rear door close limit
DOL	Rear door open limit
SE	Rear safety edge
SLB	Rear safety ray

Vanes

-	
-	
-	
STD	Down stepping vane
LD	Level down vane
DZ	Door zone vane
LU	Level up vane
STU	Up stepping vane

Mode Input

SAFR	Car safety string
INS	Inspection
ACC	Access
FE	Fireman's emergency return – Phase 1
FI	Fireman's independent – Phase 2
TEST	Test
-	
LFE	Lobby fire – Alternate fire service

Stop Immediately

MLT	Motor Limit Timer
-	
PARK	Reverse Phase Check
EPO	Earthquake hold – Counterweight collision
EQ	
EQH	

Recoverable

PERS	Personality Fault
-	
-	
-	
-	
-	
-	
-	

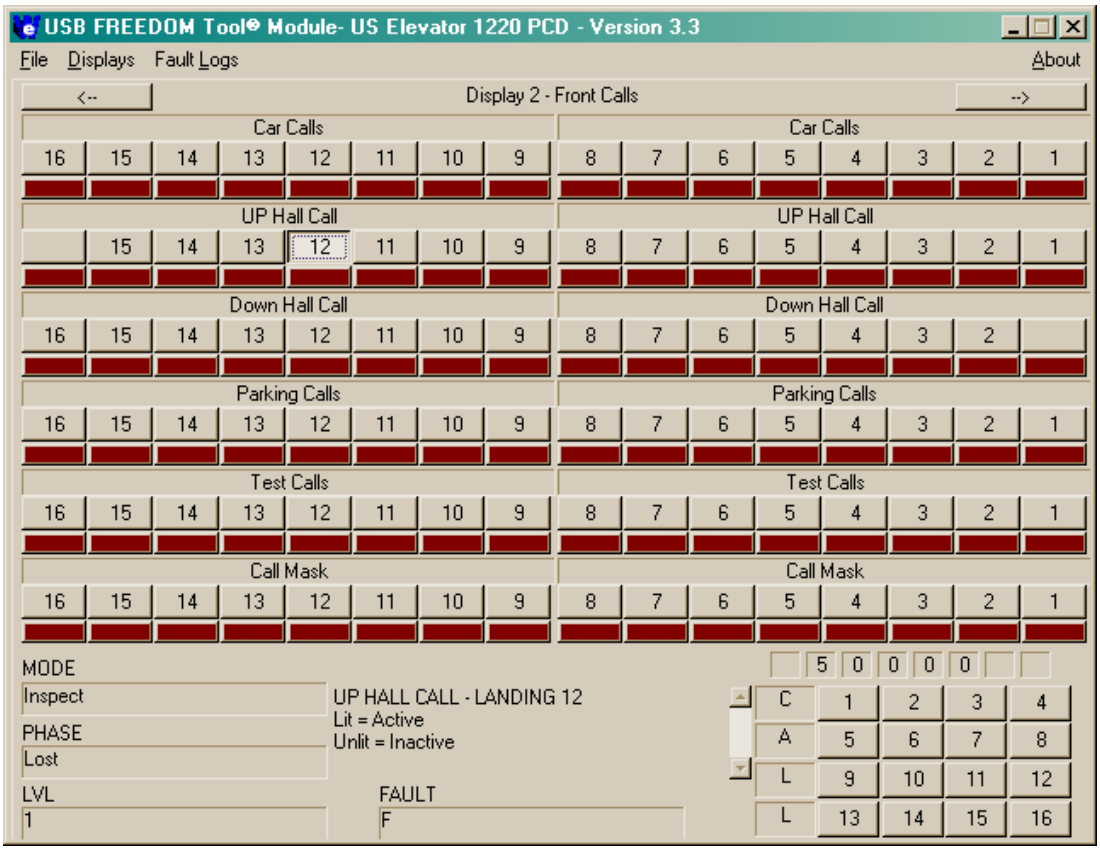
Run to Next Level

EQ	Earthquake detection circuit
-	
-	
-	
-	
-	
-	
-	

Warnings

TSD	Top and Bottom Slowdown Active
LOST	Car Lost
DOCL	Door Close Limit and Door Close Limit Active
LVL	Level Up and Level Down Active
DLIM	Direction Limit
DLCK	Door Lock
NOVN	No Vane
-	

Display 2 Front Calls



Car Calls

16	16th Landing Car Call
15	15th Landing Car Call
14	14th Landing Car Call
13	13th Landing Car Call
12	12th Landing Car Call
11	11th Landing Car Call
10	10th Landing Car Call
9	9th Landing Car Call

Car Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

UP Hall Calls

-	
15	15th Landing Up Hall Call
14	14th Landing Up Hall Call
13	13th Landing Up Hall Call
12	12th Landing Up Hall Call
11	11th Landing Up Hall Call
10	10th Landing Up Hall Call
9	9th Landing Up Hall Call

UP Hall Calls

8	8th Landing Up Hall Call
7	7th Landing Up Hall Call
6	6th Landing Up Hall Call
5	5th Landing Up Hall Call
4	4th Landing Up Hall Call
3	3rd Landing Up Hall Call
2	2nd Landing Up Hall Call
1	1st Landing Up Hall Call

Down Hall Calls

16	16th Landing Down Hall Call
15	15th Landing Down Hall Call
14	14th Landing Down Hall Call
13	13th Landing Down Hall Call
12	12th Landing Down Hall Call
11	11th Landing Down Hall Call
10	10th Landing Down Hall Call
9	9th Landing Down Hall Call

Down Hall Calls

8	8th Landing Down Hall Call
7	7th Landing Down Hall Call
6	6th Landing Down Hall Call
5	5th Landing Down Hall Call
4	4th Landing Down Hall Call
3	3rd Landing Down Hall Call
2	2nd Landing Down Hall Call
-	

Parking Calls

16	Car requested to park at 16th landing
15	Car requested to park at 15th landing
14	Car requested to park at 14th landing
13	Car requested to park at 13th landing
12	Car requested to park at 12th landing
11	Car requested to park at 11th landing
10	Car requested to park at 10th landing
9	Car requested to park at 9th landing

Parking Calls

8	Car requested to park at 8th landing
7	Car requested to park at 7th landing
6	Car requested to park at 6th landing
5	Car requested to park at 5th landing
4	Car requested to park at 4th landing
3	Car requested to park at 3rd landing
2	Car requested to park at 2nd landing
1	Car requested to park at 1st landing

Test Calls

16	Test call placed at 16th landing
15	Test call placed at 15th landing
14	Test call placed at 14th landing
13	Test call placed at 13th landing
12	Test call placed at 12th landing
11	Test call placed at 11th landing
10	Test call placed at 10th landing
9	Test call placed at 9th landing

Test Calls

8	Test call placed at 8th landing
7	Test call placed at 7th landing
6	Test call placed at 6th landing
5	Test call placed at 5th landing
4	Test call placed at 4th landing
3	Test call placed at 3rd landing
2	Test call placed at 2nd landing
1	Test call placed at 1st landing

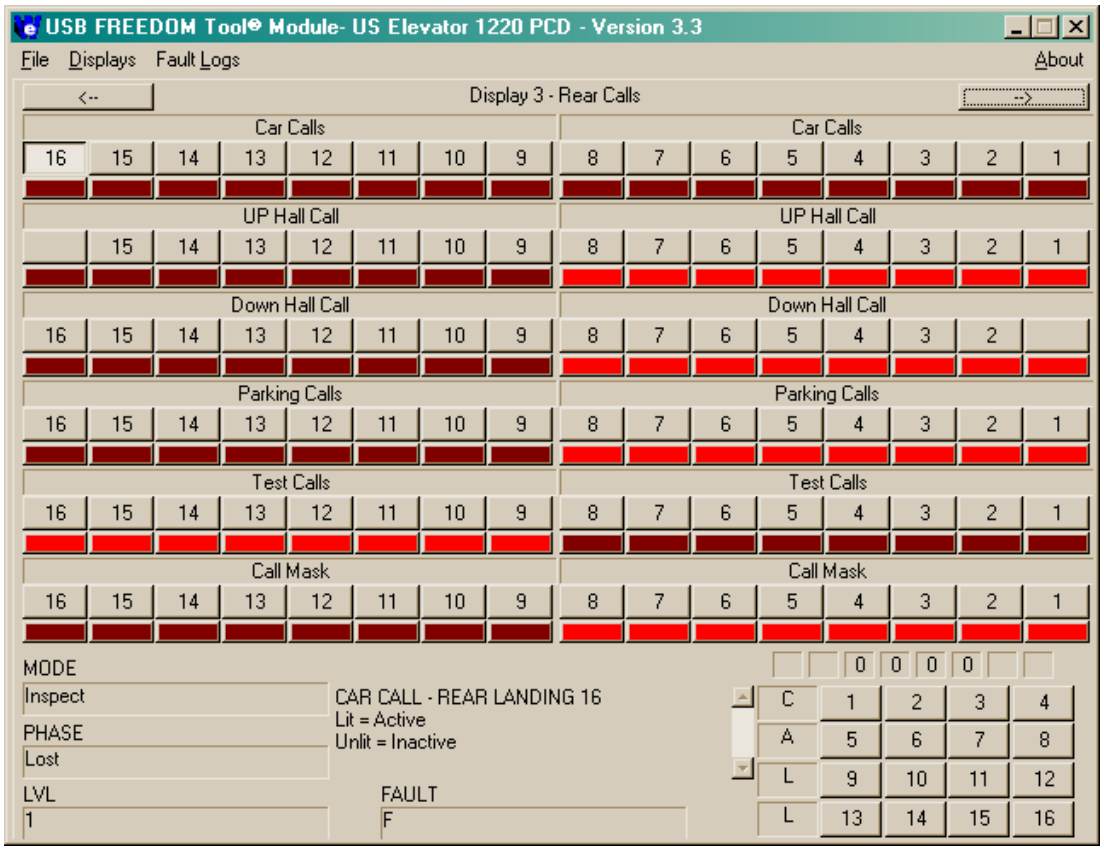
Call Mask

16	16th landing enabled
15	15th landing enabled
14	14th landing enabled
13	13th landing enabled
12	12th landing enabled
11	11th landing enabled
10	10th landing enabled
9	9th landing enabled

Call Mask

8	8th landing enabled
7	7th landing enabled
6	6th landing enabled
5	5th landing enabled
4	4th landing enabled
3	3rd landing enabled
2	2nd landing enabled
1	1st landing enabled

Display 3 Rear Calls



Car Calls

16	16th Landing Car Call
15	15th Landing Car Call
14	14th Landing Car Call
13	13th Landing Car Call
12	12th Landing Car Call
12	11th Landing Car Call
10	10th Landing Car Call
9	9th Landing Car Call

Car Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

UP Hall Calls

-	
15	15th Landing Up Hall Call
14	14th Landing Up Hall Call
13	13th Landing Up Hall Call
12	12th Landing Up Hall Call
11	11th Landing Up Hall Call
10	10th Landing Up Hall Call
9	9th Landing Up Hall Call

UP Hall Calls

8	8th Landing Up Hall Call
7	7th Landing Up Hall Call
6	6th Landing Up Hall Call
5	5th Landing Up Hall Call
4	4th Landing Up Hall Call
3	3rd Landing Up Hall Call
2	2nd Landing Up Hall Call
1	1st Landing Up Hall Call

Down Hall Calls

16	16th Landing Down Hall Call
15	15th Landing Down Hall Call
14	14th Landing Down Hall Call
13	13th Landing Down Hall Call
12	12th Landing Down Hall Call
11	11th Landing Down Hall Call
10	10th Landing Down Hall Call
9	9th Landing Down Hall Call

Down Hall Calls

8	8th Landing Down Hall Call
7	7th Landing Down Hall Call
6	6th Landing Down Hall Call
5	5th Landing Down Hall Call
4	4th Landing Down Hall Call
3	3rd Landing Down Hall Call
2	2nd Landing Down Hall Call
-	

Parking Calls

16	Car requested to park at 16th landing
15	Car requested to park at 15th landing
14	Car requested to park at 14th landing
13	Car requested to park at 13th landing
12	Car requested to park at 12th landing
11	Car requested to park at 11th landing
10	Car requested to park at 10th landing
9	Car requested to park at 9th landing

Parking Calls

8	Car requested to park at 8th landing
7	Car requested to park at 7th landing
6	Car requested to park at 6th landing
5	Car requested to park at 5th landing
4	Car requested to park at 4th landing
3	Car requested to park at 3rd landing
2	Car requested to park at 2nd landing
1	Car requested to park at 1st landing

Test Calls

16	Test call placed at 16th landing
15	Test call placed at 15th landing
14	Test call placed at 14th landing
13	Test call placed at 13th landing
12	Test call placed at 12th landing
11	Test call placed at 11th landing
10	Test call placed at 10th landing
9	Test call placed at 9th landing

Test Calls

8	Test call placed at 8th landing
7	Test call placed at 7th landing
6	Test call placed at 6th landing
5	Test call placed at 5th landing
4	Test call placed at 4th landing
3	Test call placed at 3rd landing
2	Test call placed at 2nd landing
1	Test call placed at 1st landing

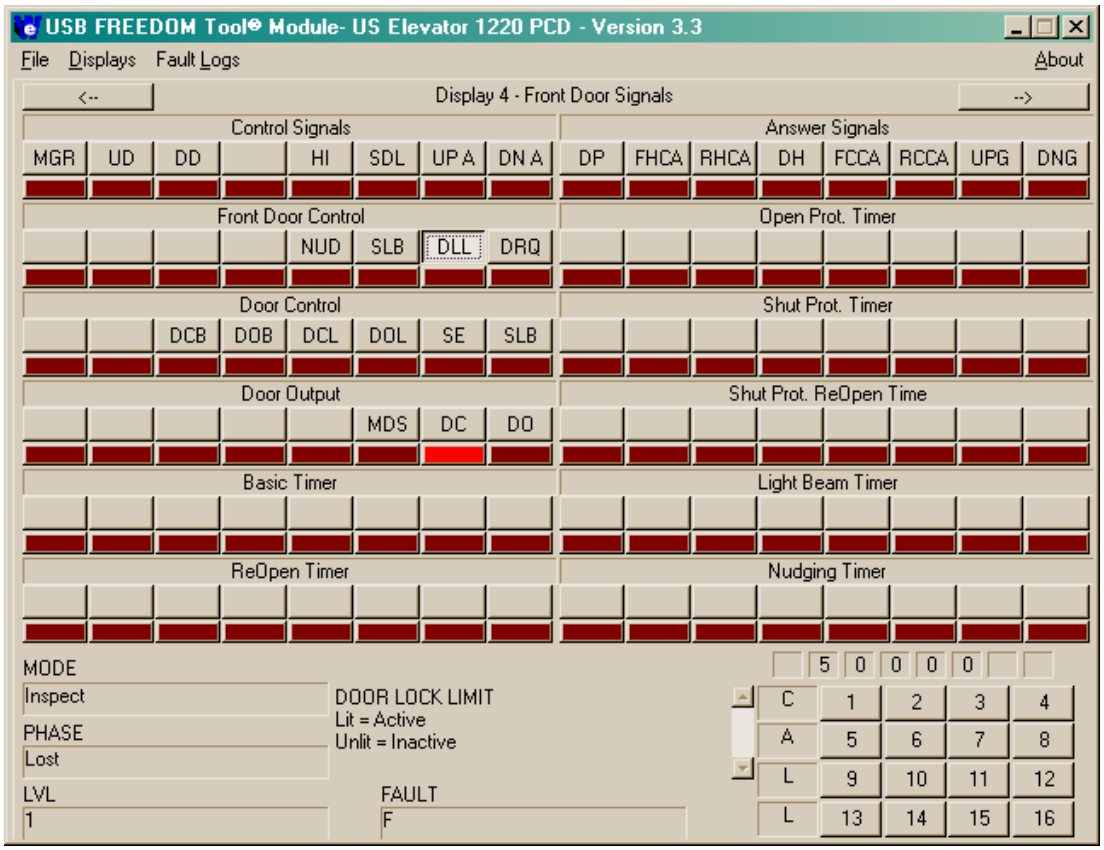
Call Mask

16	16th landing enabled
15	15th landing enabled
14	14th landing enabled
13	13th landing enabled
12	12th landing enabled
11	11th landing enabled
10	10th landing enabled
9	9th landing enabled

Call Mask

8	8th landing enabled
7	7th landing enabled
6	6th landing enabled
5	5th landing enabled
4	4th landing enabled
3	3rd landing enabled
2	2nd landing enabled
1	1st landing enabled

Display 4 Front Door Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPG	Front Up Gong
DNG	Front Down Gong

Front Door Control

-
-
-
-

NUD	Nudging request
SLB	Safety Ray
DLL	Door lock limit
DRQ	Door request

Open Protect Timer

Binary count of amount of time door is moved open before the door closes

Door Control

-
-

DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
SE	Front Safety Edge
SLB	Front Safety Ray

Door Output

-
-
-
-
-

MDS	Modified door speed
DC	Close front door
DO	Open front door

Basic Timer

Binary count of how long the door will normally stay open

Re-Open Timer

Binary count of how long door will stay open after a reopen

Shut Protect Timer

Binary count of amount of time door is moved closed before the door opens.

Shut Protect Re-Open Timer

Binary count of amount of time door reopens after shut protect timer expires

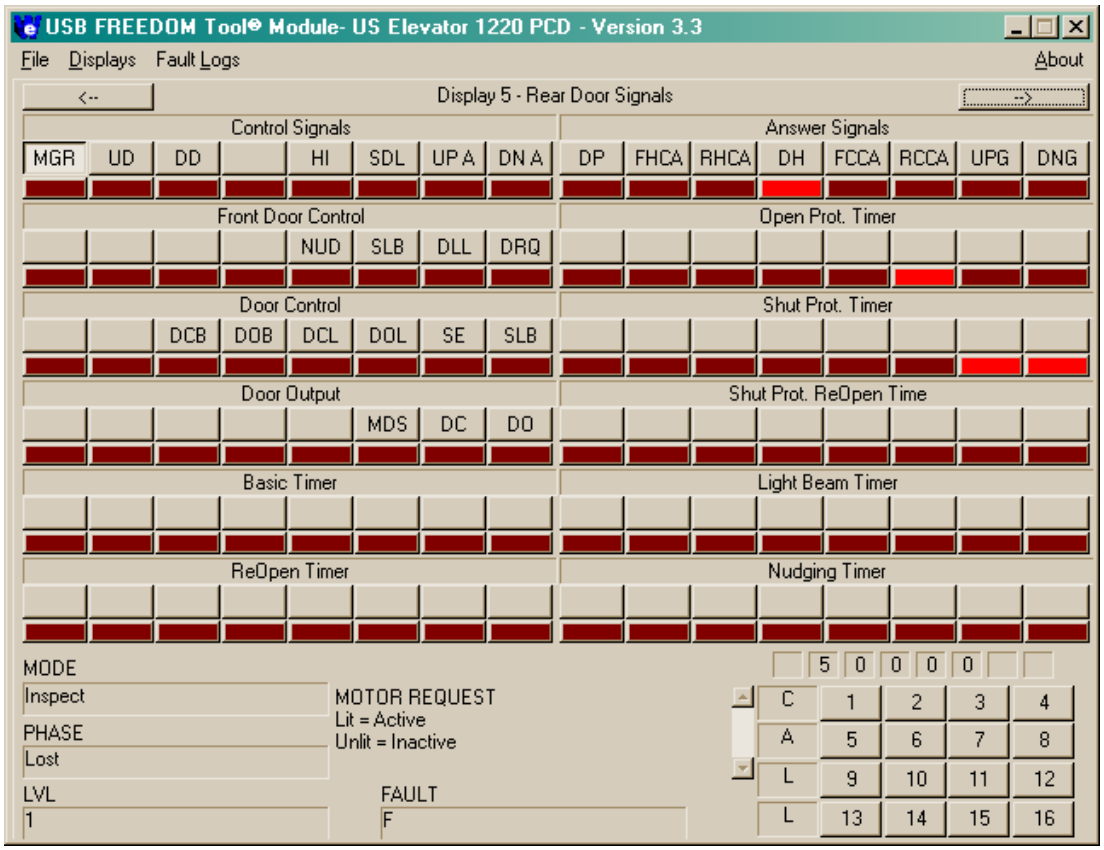
Light Beam Timer

Binary count of how long the light beam is activated before it is considered faulty and ignored

Nudging Timer

Binary count of how long doors will remain open before nudging operation engage

Display 5 Rear Door Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPG	Front Up Gong
DNG	Front Down Gong

Rear Door Control

-
-
-
-

NUD	Nudging request
SLB	Safety Ray
DLL	Door lock limit
DRQ	Door request

Open Protect Timer

Binary count of amount of time door is moved open before the door closes

Door Control

-
-

DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
SE	Front Safety Edge
SLB	Front Safety Ray

Door Output

-
-
-
-
-

MDS	Modified door speed
DC	Close front door
DO	Open front door

Basic Timer

Binary count of how long the door will normally stay open

Re-Open Timer

Binary count of how long door will stay open after a reopen

Shut Protect Timer

Binary count of amount of time door is moved closed before the door opens.

Shut Protect Re-Open Timer

Binary count of amount of time door reopens after shut protect timer expires

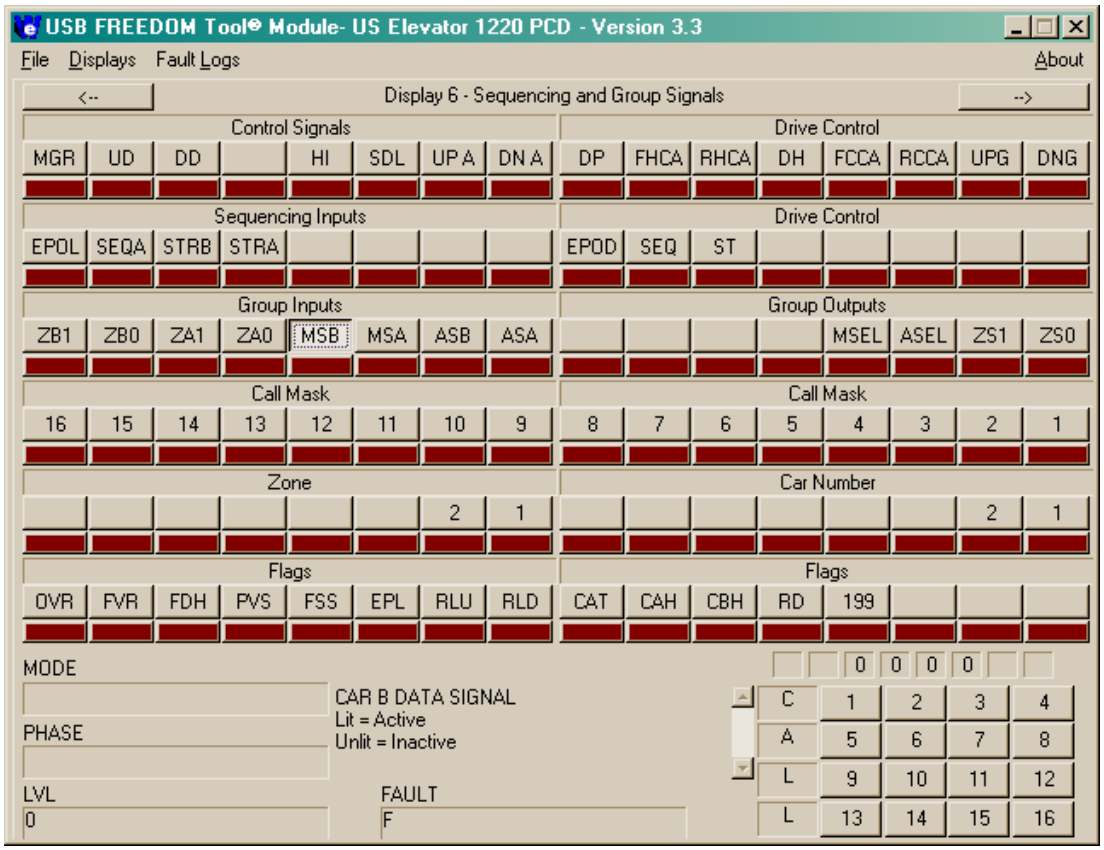
Light Beam Timer

Binary count of how long the light beam is activated before it is considered faulty and ignored

Nudging Timer

Binary count of how long doors will remain open before nudging operation engage

Display 6 Sequencing and Group Signals



Control Signals

MGR	Pump request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UPA	Up arrow
DNA	Down arrow

Drive Controls

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Sequencing Inputs

EPOL	Emergency power return floor request
SEQA	Emergency power duty car selected
STRB	B Car starter request
STRA	A Car starter request
-	
-	
-	
-	

Drive Control

EPOD	Emergency power return floor request
SEQ	Emergency power duty car
ST	Present car is engaging WYE starter
-	
-	
-	
-	
-	

Group Inputs

ZB1	Car B Zone Data – Bit 1
ZB0	Car B Zone Data – Bit 0
ZA1	Car A Zone Data – Bit 1
ZA0	Car A Zone Data – Bit 0
MSB	Car B Data Signal
MSA	Car A Data Signal
ASB	Car B on Automatic or attendant
ASA	Car A on Automatic or attendant

Group Outputs

-	
-	
-	
-	
MSEL	Car communicating with group
ASEL	Car in Automatic
ZS1	Car zone selected – Bit 1
ZS0	Car zone selected – Bit 0

Call Mask

16	16th landing enabled
15	15th landing enabled
14	14th landing enabled
13	13th landing enabled
12	12th landing enabled
11	11th landing enabled
10	10th landing enabled
9	9th landing enabled

Call Mask

8	8th landing enabled
7	7th landing enabled
6	6th landing enabled
5	5th landing enabled
4	4th landing enabled
3	3rd landing enabled
2	2nd landing enabled
1	1st landing enabled

Zone

-	
-	
-	
-	
-	
-	
2	Binary value of zone selected by car – Bit 2
1	Binary value of zone selected by car – Bit 1

Car Number

-	
-	
-	
-	
-	
-	
2	Number assigned to car through personality
1	Number assigned to car through personality

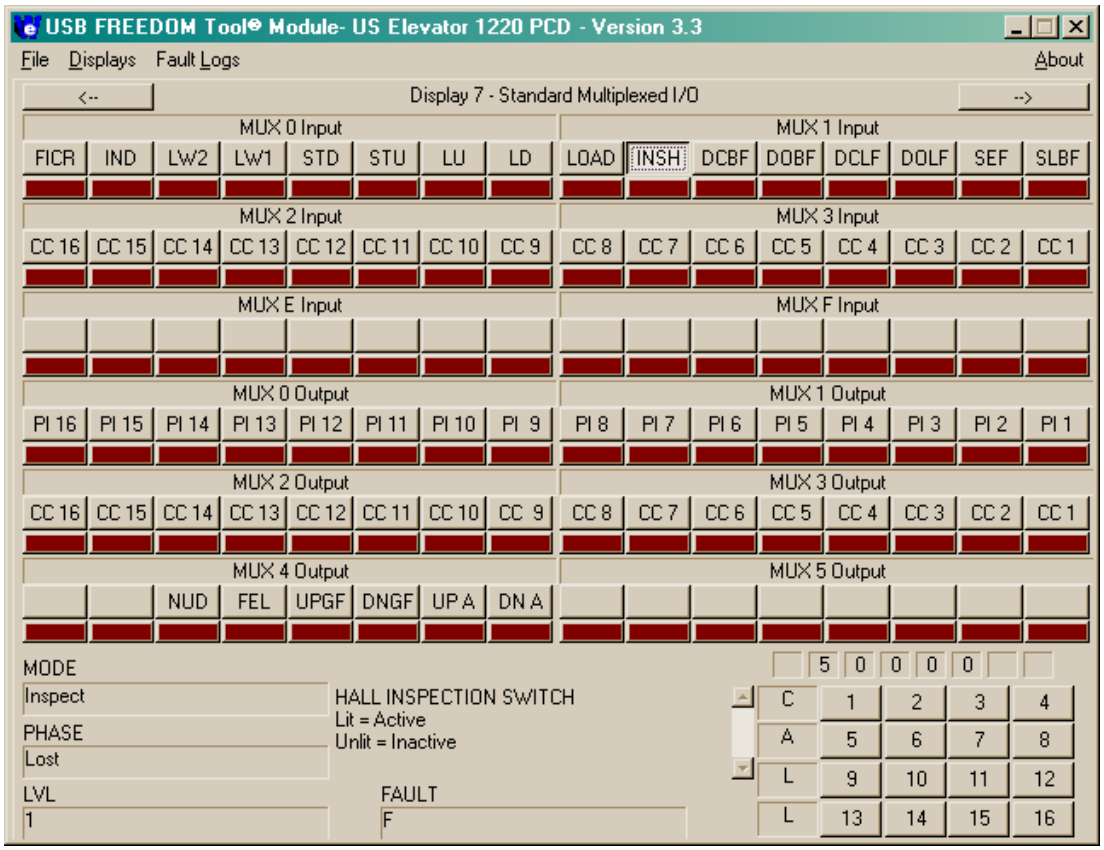
Flags

OVR	Overshoot
FRV	First vane
FDH	Force drop high zone
PVS	Previous step on vane
FSS	First step after door zone
EPL	Car has responded to emergency power service landing
RLU	Relevel last occurred in up direction
RLD	Relevel last occurred in down direction

Flags

CAT	Call placed at current car level
CAH	Call placed ahead of car's destination
CBH	Call placed behind car's destination
RD	Rear door enabled
199	Car call/Door open button pressed
-	
-	
-	

Display 7 Standard Multiplexed I/O



MUX 0 Input

FICR	Phase 2 Fireman's Service - Call Reset
IND	Independent Service
LW 2	Loadweigher switch 2
LW 1	Loadweigher switch 1
STD	Down stepping vane
STU	Up stepping vane
LU	Level up vane
LD	Level down vane

MUX 1 Input

LOAD	Front Load Switch
INSH	Hall inspection switch
DCBF	Front door close button
DOBF	Front door open button
DCLF	Front door close limit
DOLF	Front door open limit
SEF	Front door safety edge
SLBF	Front door safety ray

MUX 2 Input

CC16	16th landing car call
CC15	15th landing car call
CC14	14th landing car call
CC13	13th landing car call
CC12	12th landing car call
CC11	11th landing car call
CC10	10th landing car call
CC9	9th landing car call

MUX 3 Input

CC8	8th landing car call
CC7	7th landing car call
CC6	6th landing car call
CC5	5th landing car call
CC4	4th landing car call
CC3	3rd landing car call
CC2	2nd landing car call
CC1	1st landing car call

MUX E Input

-

MUX F Input

-

MUX 0 Output

PI16	16th landing position indicator
PI15	15th landing position indicator
PI14	14th landing position indicator
PI13	13th landing position indicator
PI12	12th landing position indicator
PI11	11th landing position indicator
PI10	10th landing position indicator
PI9	9th landing position indicator

MUX 1 Output

PI8	8th landing position indicator
PI7	7th landing position indicator
PI6	6th landing position indicator
PI5	5th landing position indicator
PI4	4th landing position indicator
PI3	3rd landing position indicator
PI2	2nd landing position indicator
PI1	1st landing position indicator

MUX 2 Output

CC16	16th landing car call
CC15	15th landing car call
CC14	14th landing car call
CC13	13th landing car call
CC12	12th landing car call
CC11	11th landing car call
CC10	10th landing car call
CC9	9th landing car call

MUX 3 Output

CC8	8th landing car call
CC7	7th landing car call
CC6	6th landing car call
CC5	5th landing car call
CC4	4th landing car call
CC3	3rd landing car call
CC2	2nd landing car call
CC1	1st landing car call

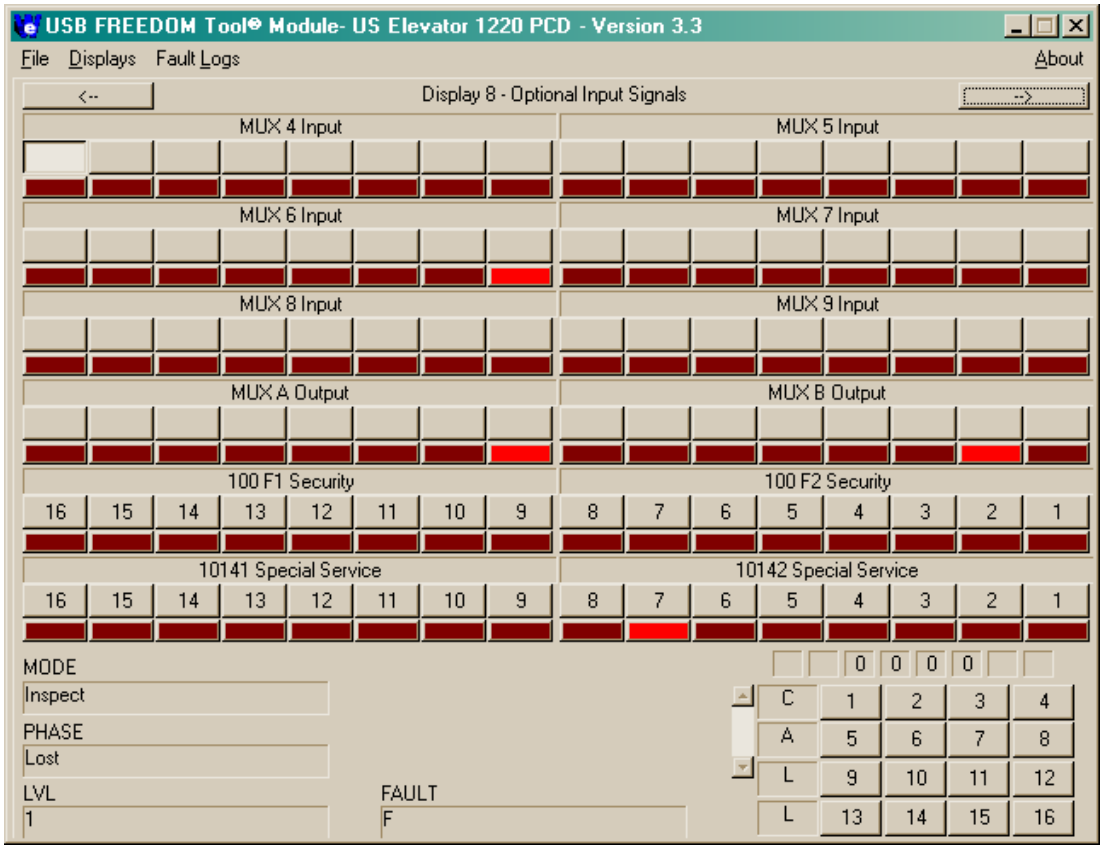
MUX 4 Output

-	
-	
NUD	Nudging buzzer
FEL	Fire emergency light
UPGF	Front Up Gong
DNGF	Front Down Gong
UP A	Up Arrow
DN A	Down Arrow

MUX 5 Output

-
-
-
-
-
-
-
-

Display 8 Optional Input Signals



MUX 4 Input

-

MUX 5 Input

-

MUX 6 Input

-

MUX 7 Input

-

MUX 8 Input

-

MUX 9 Input

-

MUX A Output

-

MUX B Output

-

100 F1 Security

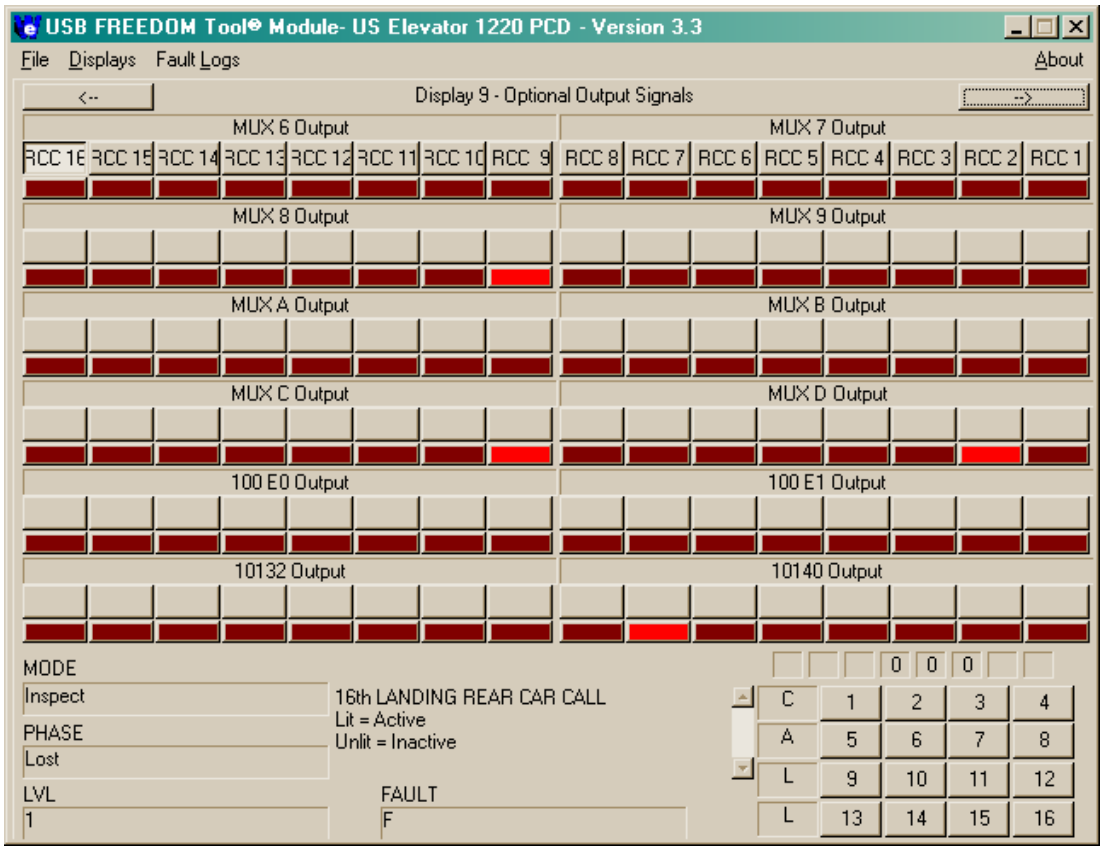
16	16th landing enabled through security
15	15th landing enabled through security
14	14th landing enabled through security
13	13th landing enabled through security
12	12th landing enabled through security
11	11th landing enabled through security
10	10th landing enabled through security
9	9th landing enabled through security

100 F2 Security

8	8th landing enabled through security
7	7th landing enabled through security
6	6th landing enabled through security
5	5th landing enabled through security
4	4th landing enabled through security
3	3rd landing enabled through security
2	2nd landing enabled through security
1	1st landing enabled through security

	10141 Special Service		10142 Special Service
16	16th landing call	8	8th landing call
15	15th landing call	7	7th landing call
14	14th landing call	6	6th landing call
13	13th landing call	5	5th landing call
12	12th landing call	4	4th landing call
11	11th landing call	3	3rd landing call
10	10th landing call	2	2nd landing call
9	9th landing call	1	1st landing call

Display 9 Optional Output Signals



	MUX 6 Output		MUX 7 Output
RCC16	16th landing rear car call	RCC8	8th landing rear car call
RCC15	15th landing rear car call	RCC7	7th landing rear car call
RCC14	14th landing rear car call	RCC6	6th landing rear car call
RCC13	13th landing rear car call	RCC5	5th landing rear car call
RCC12	12th landing rear car call	RCC4	4th landing rear car call
RCC11	11th landing rear car call	RCC3	3rd landing rear car call
RCC10	10th landing rear car call	RCC2	2nd landing rear car call
RCC9	9th landing rear car call	RCC1	1st landing rear car call

MUX 8 Output

MUX 9 Output

MUX A Output

MUX B Output

MUX C Output

MUX D Ouput

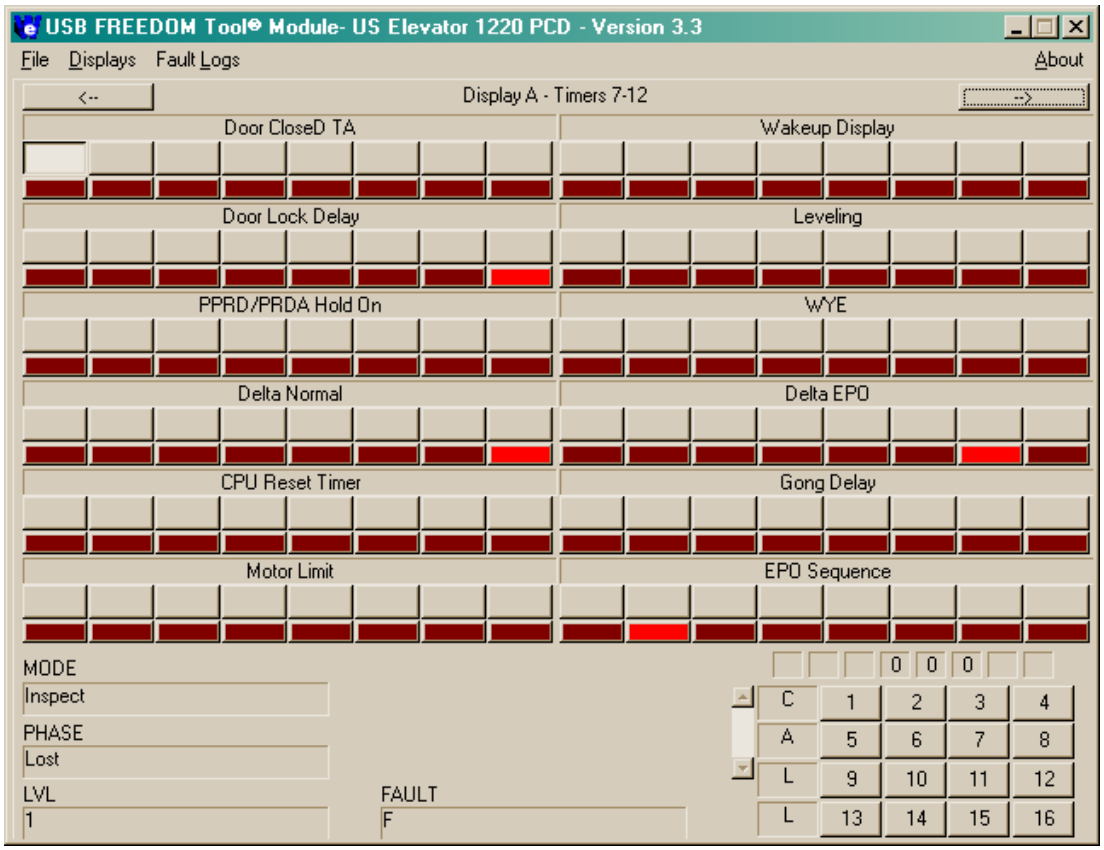
100 E0 Output

100 E1 Output

10132 Output

10140 Output

Display A Timers 7 - 12



Door Closed TA

Wakeup Display

Door Lock Delay

Leveling

PPRD / PRDA Hold On

WYE

Delta Normal

Delta EPO

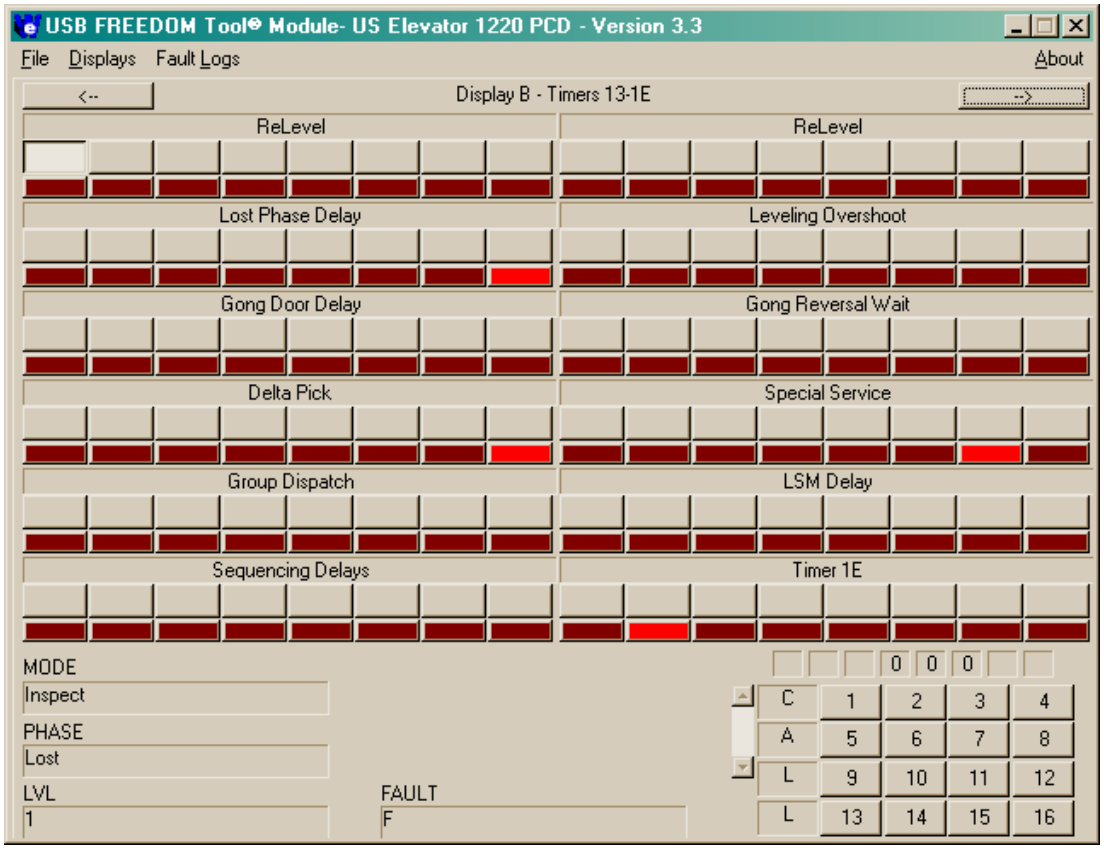
CPU Reset Timer

Gong Delay

Motor Limit

EPO Sequence

Display B Timers 13 – 1E



Re-Level

Re-Level

Lost Phase Delay

Leveling Overshoot

Gong Door Delay

Gong Reversal Wait

Delta Pick

Special Service

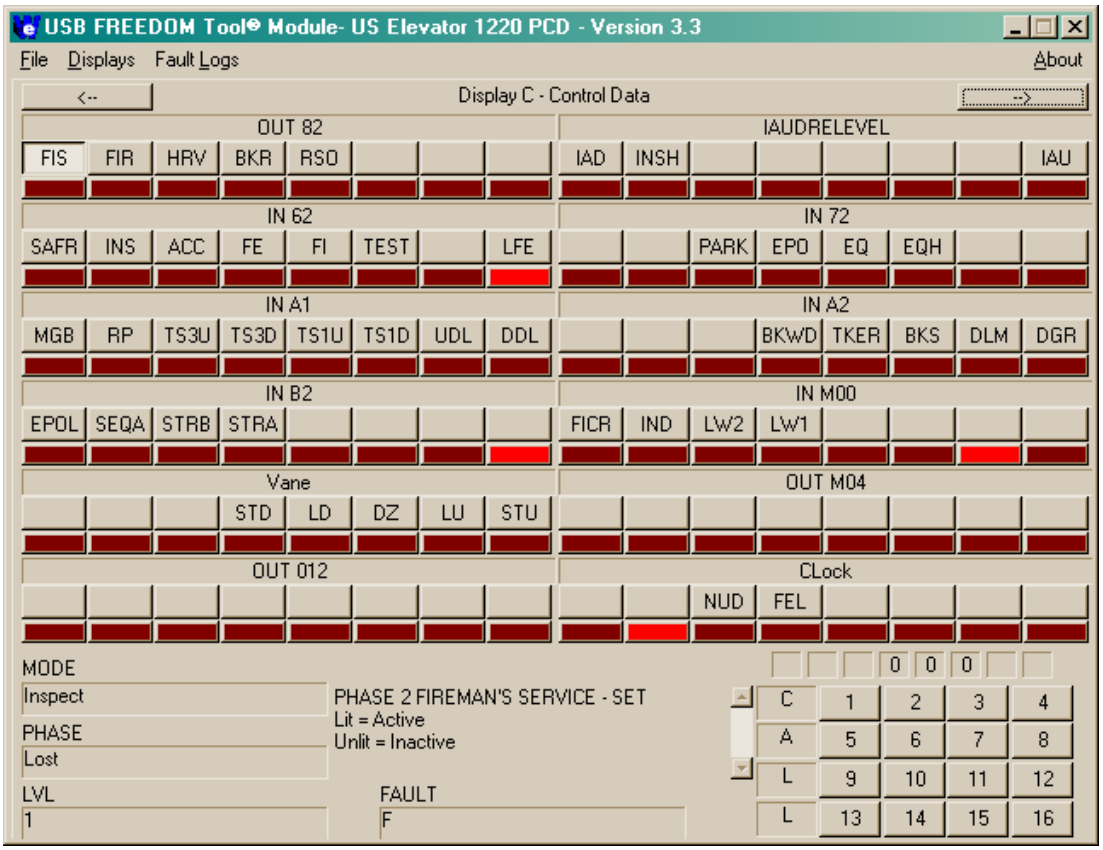
Group Dispatch

LSM Delay

Sequencing Delays

Timer 1E

Display C Control Data



OUT 82

FIS	Phase 2 Fireman's Service - Set
FIR	Phase 2 Fireman's Service - Reset
HRV	Hall riser voltage
BKR	Brake reset
RSO	Override run/stop switch
-	
-	
-	

IAUD

IAD	Inspection/Access down command
INSH	Hall inspection switch
-	
-	
-	
-	
-	
IAU	Inspection/Access up command

IN 62

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test mode
-	
LFE	Lobby Fire – Alternate Fire Service

IN 72

-	
-	
PARK	Secure Park
EPO	Emergency Power
EQ	Earthquake detection circuit
EQH	Earthquake hold – Counterweight collision
-	
-	

IN A1

MGR	Motor Request
RP	3 Phase Status
TS3U	Up Terminal Slowdown Switch #3
TS3D	Down Terminal Slowdown Switch #3
TS1U	Up Slowdown Switch
TS1D	Down Slowdown Switch
UDL	Up Directional Limit
DDL	Down Directional Limit

IN A2

-	
-	
PARK	Secure Park
EPO	Emergency Power
EQ	Earthquake detection circuit
EQH	Earthquake hold – Counterweight collision
-	
-	

IN B2

EPOL	Emergency power return floor request
SEQA	Emergency power duty car selected
STRB	B Car starter request
STRA	A Car starter request
-	
-	
-	
-	

IN M00

FICR	Phase 2 Fireman's Service - Call Reset
IND	Independent Service
LW 2	Loadweigher switch 2
LW 1	Loadweigher switch 1
-	
-	
-	
-	

Vane

-	
-	
-	
STD	Down stepping vane
LD	Level down vane
DZ	Door zone sensor
LU	Level up vane
STU	Up stepping vane

OUT M04

-	
-	
-	
-	
-	
-	
-	
-	

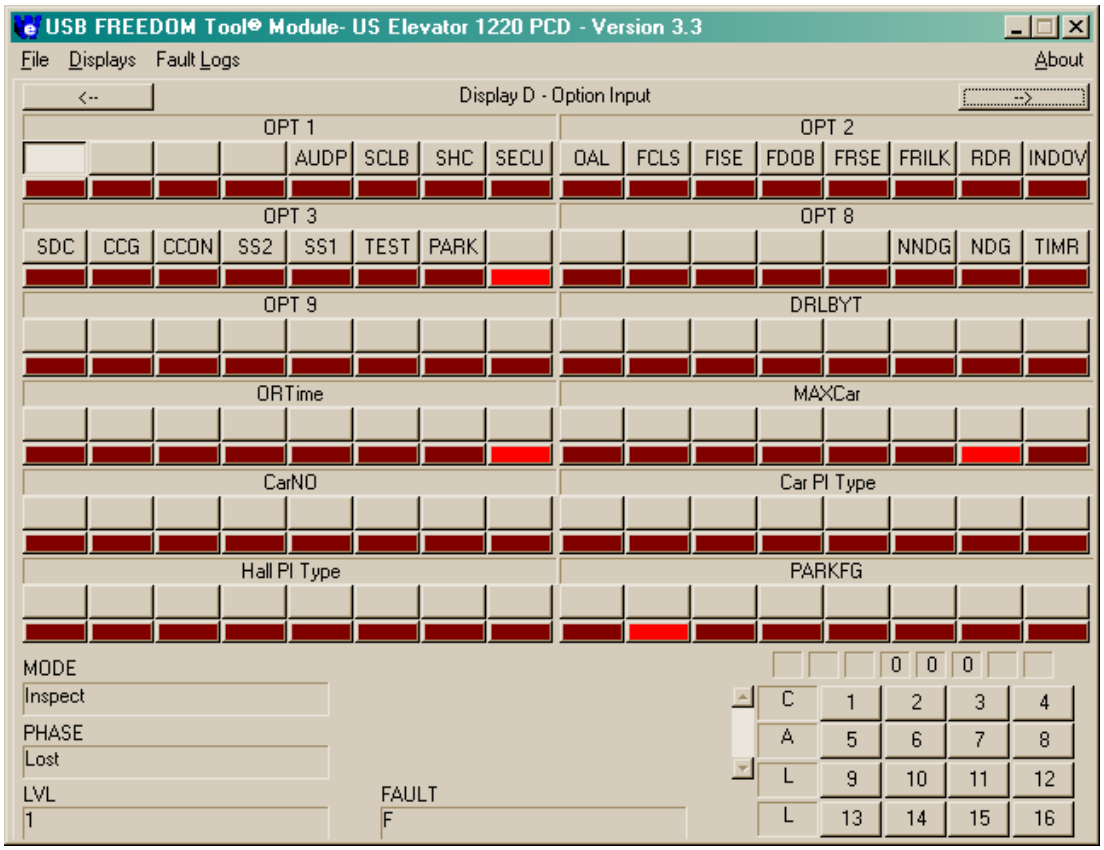
OUT 012

-	
-	
-	
-	
-	
-	
-	
-	

Clock

-	
-	
NUD	Nudging buzzer
FEL	Fire emergency light
-	
-	
-	
-	

Display D Option Input



OPT 1

-	
-	
-	
-	
AUDP	Audible passing tone
SCLB	Secure lobby stop
SHC	Secure hall call
SECU	Security operation used

OPT 2

OAL	Open door at lobby
FCLS	Fireman's service – Phase II – disable short door time
FISE	Fireman's service – Phase II – disable safety edge
FDOB	Front/rear door open pushbutton
FRSE	Front/rear door safety edge
FRILK	Front/rear door interlock
RDR	Rear door in operation
INDOV	Fireman's service is overridden by Independent service

OPT 3

SDC	
CCG	
CCON	
SS2	
SS1	
TEST	Enable call test cycle
PARK	Park with door open enabled.
-	

OPT 8

-	
-	
-	
-	
-	
NNDG	Nudging disabled in lobby
NDG	Nudging operation
TIMR	Nudging timer

OPT 9

DRLBYT

OR TIME

MAXCAR

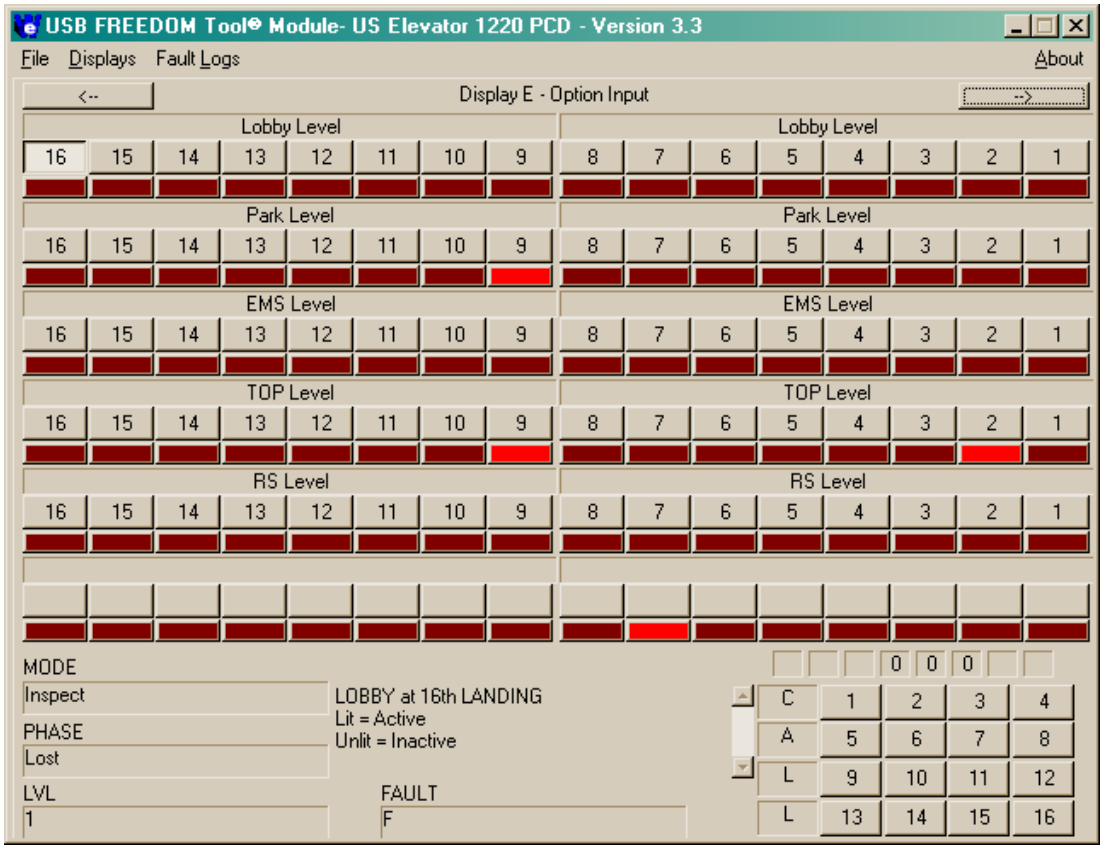
CARNO

Car PI Type

Hall PI Type

PARKFG

Display E Option Input



Lobby Level		Lobby Level	
16	Lobby at 16th landing	8	Lobby at 8th landing
15	Lobby at 15th landing	7	Lobby at 7th landing
14	Lobby at 14th landing	6	Lobby at 6th landing
13	Lobby at 13th landing	5	Lobby at 5th landing
12	Lobby at 12th landing	4	Lobby at 4th landing
11	Lobby at 11th landing	3	Lobby at 3rd landing
10	Lobby at 10th landing	2	Lobby at 2nd landing
9	Lobby at 9th landing	1	Lobby at 1st landing

	Park Level
16	Car parks at 16th landing
15	Car parks at 15th landing
14	Car parks at 14th landing
13	Car parks at 13th landing
12	Car parks at 12th landing
11	Car parks at 11th landing
10	Car parks at 10th landing
9	Car parks at 9th landing

	EMS Level
16	EMS at 16th landing
15	EMS at 15th landing
14	EMS at 14th landing
13	EMS at 13th landing
12	EMS at 12th landing
11	EMS at 11th landing
10	EMS at 10th landing
9	EMS at 9th landing

	Top Level
16	Top landing is 16th floor
15	Top landing is 15th floor
14	Top landing is 14th floor
13	Top landing is 13th floor
12	Top landing is 12th floor
11	Top landing is 11th floor
10	Top landing is 10th floor
9	Top landing is 9th floor

	RS Level
16	RS at 16th landing
15	RS at 15th landing
14	RS at 14th landing
13	RS at 13th landing
12	RS at 12th landing
11	RS at 11th landing
10	RS at 10th landing
9	RS at 9th landing

	Park Level
8	Car parks at 8th landing
7	Car parks at 7th landing
6	Car parks at 6th landing
5	Car parks at 5th landing
4	Car parks at 4th landing
3	Car parks at 3rd landing
2	Car parks at 2nd landing
1	Car parks at 1st landing

	EMS Level
8	EMS at 8th landing
7	EMS at 7th landing
6	EMS at 6th landing
5	EMS at 5th landing
4	EMS at 4th landing
3	EMS at 3rd landing
2	EMS at 2nd landing
1	EMS at 1st landing

	Top Level
8	Top landing is 8th floor
7	Top landing is 7th floor
6	Top landing is 6th floor
5	Top landing is 5th floor
4	Top landing is 4th floor
3	Top landing is 3rd floor
2	Top landing is 2nd floor
1	Top landing is 1st floor

	RS Level
8	RS at 8th landing
7	RS at 7th landing
6	RS at 6th landing
5	RS at 5th landing
4	RS at 4th landing
3	RS at 3rd landing
2	RS at 2nd landing
1	RS at 1st landing

US Elevator MP 1230

FAULT:

0.	**EPROM**	An error was detected with the elevator software or RAM memory.
1.	**EPROM**	An error was detected with the elevator software or RAM memory.
2.	**EPROM**	An error was detected with the elevator software or RAM memory.
3.	**EPROM**	An error was detected with the elevator software or RAM memory.

4. **Warning** A non-volatile fault has occurred. This type of fault will not cause the car to shut down.
5. **Motor Limit** Motor limit timer has expired. Car will run to terminal landing and stay there with doors open.
6. **Personality** An error is detected with personality settings. Car will stop where it is.
7. **Run Fail** Car has failed to start six times in twenty seconds. Car will run to bottom landing and sit with doors open.
8. **Reverse Phase** Reverse phase relay has dropped. Car will run to bottom landing and sit with doors open.

PHASE:

The following is a list of phases of the run the MP 1230 controller may have.

0. **Fault** A fault was detected while car was running.
1. **Shutdown** Car has shutdown.
2. **Lost** Car has lost its position within the hoistway.
3. **Wakeup** Car is just starting.
4. **Rest** Car is parked at landing.
5. **Relevel Down** Car is releveling into a landing in the down direction.
6. **Recover Down** Car is running down to the next level to recover from fault.
7. **Level Down** Car is running at leveling speed in the down direction.
8. **High Down** Car is running at high speed in the down direction.
9. **Relevel Up** Car is releveling into a landing in the up direction.
A. **Recover Up** Car is running up to the next level to recover from fault.
B. **Level Up** Car is running at leveling speed in the up direction.
C. **High Up** Car is running at high speed in the up direction.

MODE:

The following is a list of modes of operation that the MP 1230 controller may have. They are listed in order of priority, with the top mode having highest priority.

0. **Restart** Car CPU in a restart state.
1. **Inspect** Inspection operation.
2. **Access** Hoistway Access.
3. **Fire Ind.** Fireman's Service Phase 2.
4. **Fault** System contains a fault. Fault display – Stop Now has occurred.
5. **Test** CPS I/O board toggle switch in test position (down).
6. **Emerg. Power** Car is on emergency power operation. Generator is providing main car power.

7. **Fire Return** — Fireman's Service Phase 1

8. **Test Rqst.** — CPS I/O board toggle switch in test position but car calls are in the system. When car calls are answered, mode will change to Test.

9. **Secure Park** — Car will park at secure landing with doors either open or closed, depending on personality setup.

A. **Independent** — Car is on independent service operation.

B. **Sp. Srv. I** — Hall Station special service operation activated. All car calls are answered before car responds to special service floor.

C. **Sp. Srv. II** — Hall Station special service operation activated. All car calls are canceled before car responds to designated special service floor.

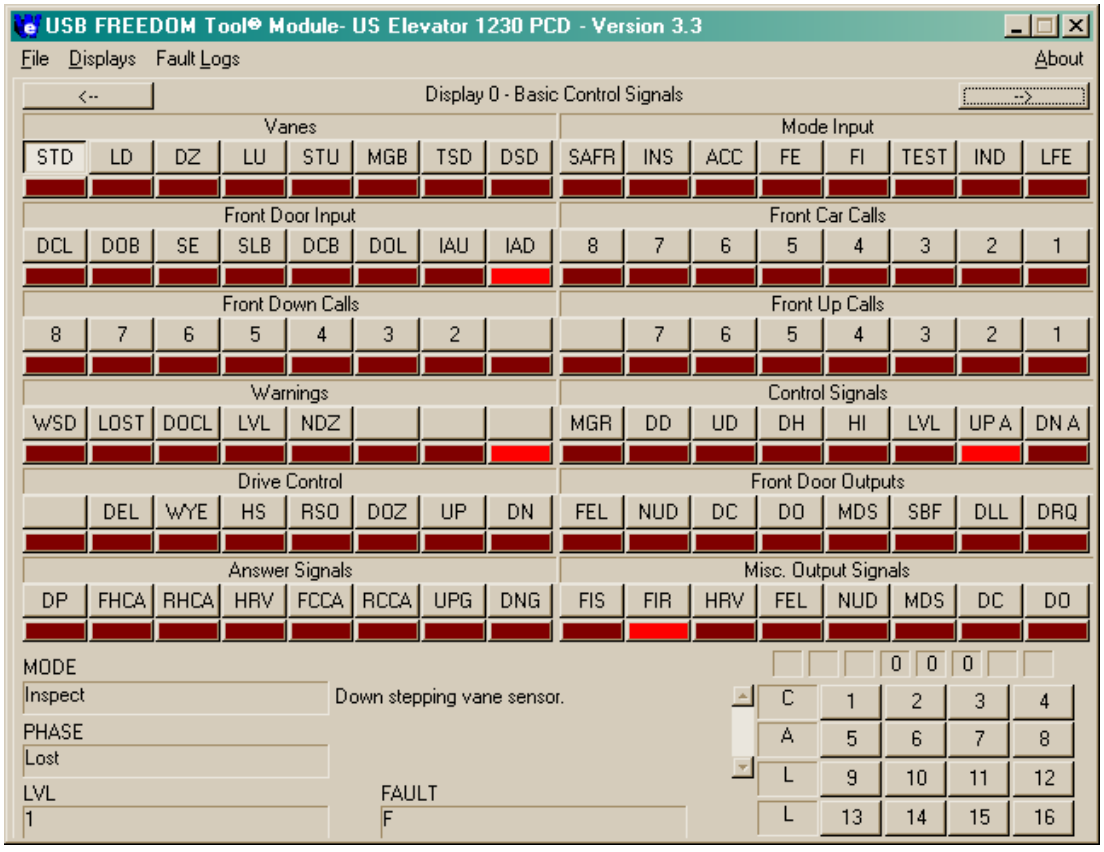
D. **Automatic** — Car is on automatic service.

LEVEL:

The level display replicates a position indicator for the car currently in communication with the tool.

DISPLAY:

Display 0 Basic Control Signals



Vanes

STD	Down stepping vane
LD	Level Down Vane
DZ	Door Zone Vane
LU	Level Up Vane
STU	Up stepping vane
MGB	Pump motor
TSD	Top slow down inactive
DSD	Down slow down inactive

Mode Input

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test
IND	Independent Service
LFE	Lobby Fire – Alternate Fire Service

Front Door Input

DCL	Front Door Close Limit
DOB	Front Door Open Button
SE	Front Safety Edge
SLB	Front Safety Ray
DCB	Front Door Close Button
DOL	Front Door Open Limit
IAU	Inspection/Access up command
IAD	Inspection/Access down command

Front Car Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

Front Down Calls

8	8th Landing Down Hall Call
7	7th Landing Down Hall Call
6	6th Landing Down Hall Call
5	5th Landing Down Hall Call
4	4th Landing Down Hall Call
3	3rd Landing Down Hall Call
2	2nd Landing Down Hall Call
-	

Front Up Calls

-	
7	7th Landing Up Hall Call
6	6th Landing Up Hall Call
5	5th Landing Up Hall Call
4	4th Landing Up Hall Call
3	3rd Landing Up Hall Call
2	2nd Landing Up Hall Call
1	1st Landing Up Hall Call

Warnings

WSD	Top and Bottom Slowdown Active
LOST	Car Lost
DOCL	Door Close Limit and Door Close Limit Active
LVL	Level Up and Level Down Active
NDZ	Door zone not found
-	
-	
-	

Control Signals

MGR	Motor request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed Command
UP A	Up Arrow
DN A	Down Arrow

Drive Control

-	
DEL	Delta signal
WYE	WYE signal
HS	High speed request
RSO	Override run/stop switch
DOZ	Door Open zone
UP	Up direction
DN	Down direction

Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

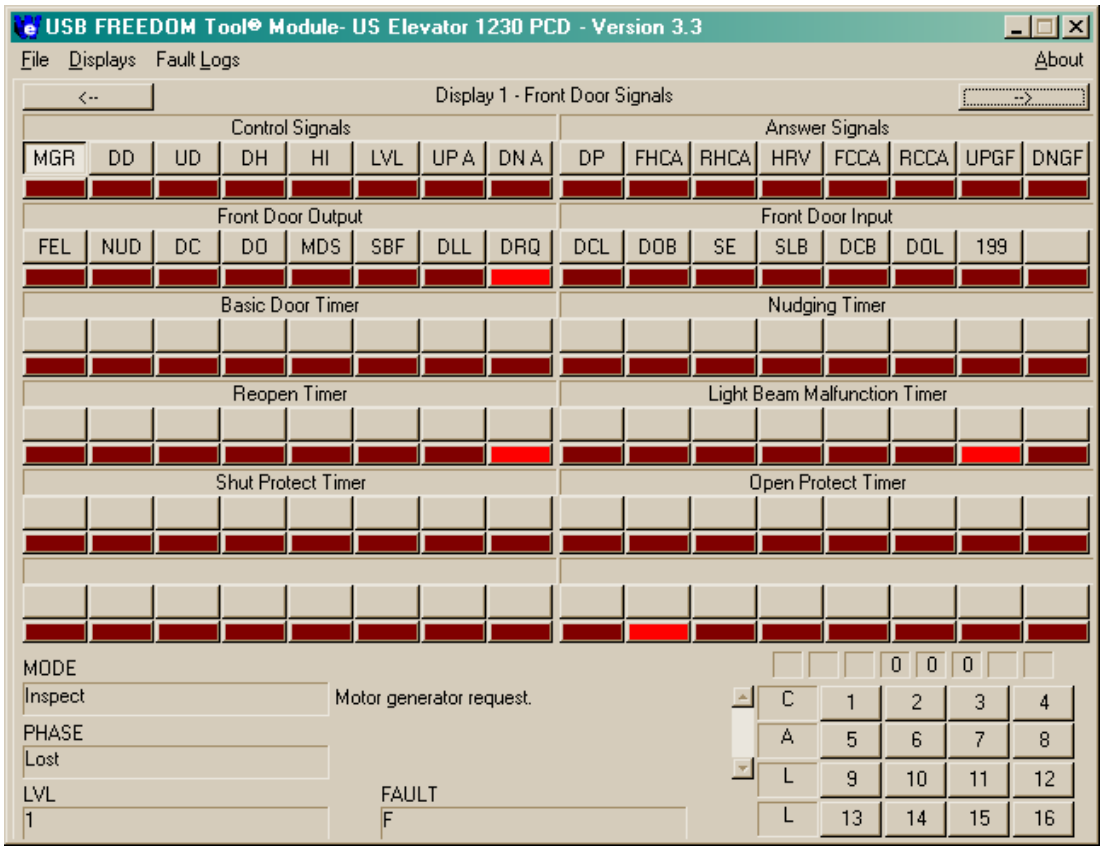
Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
HRV	Hall riser voltage
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPG	Front Up Gong
DNG	Front Down Gong

Misc. Output Signals

FIS	Phase 2 Fireman's Service - Set
FIR	Phase 2 Fireman's Service - Reset
HRV	Hall riser voltage
FEL	Fire emergency light
NUD	Nudging buzzer
MDS	Modified door speed
DC	Close front door
DO	Open front door

Display 1 Front Door Signals



Control Signals

MGR	Pump request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed request
UPA	Up arrow
DNA	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Front Door Output

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Front Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Basic Door Timer

Time door will be held open in normal operation.

Nudging Timer

Time until nudging operation occurs. (Used if nudging enabled on personality board)

Re-Open Timer

Time door will remain open after door is forced to reopen.

Light Beam Malfunction Timer

Time safety ray must remain broken before it is considered bad and ignored.

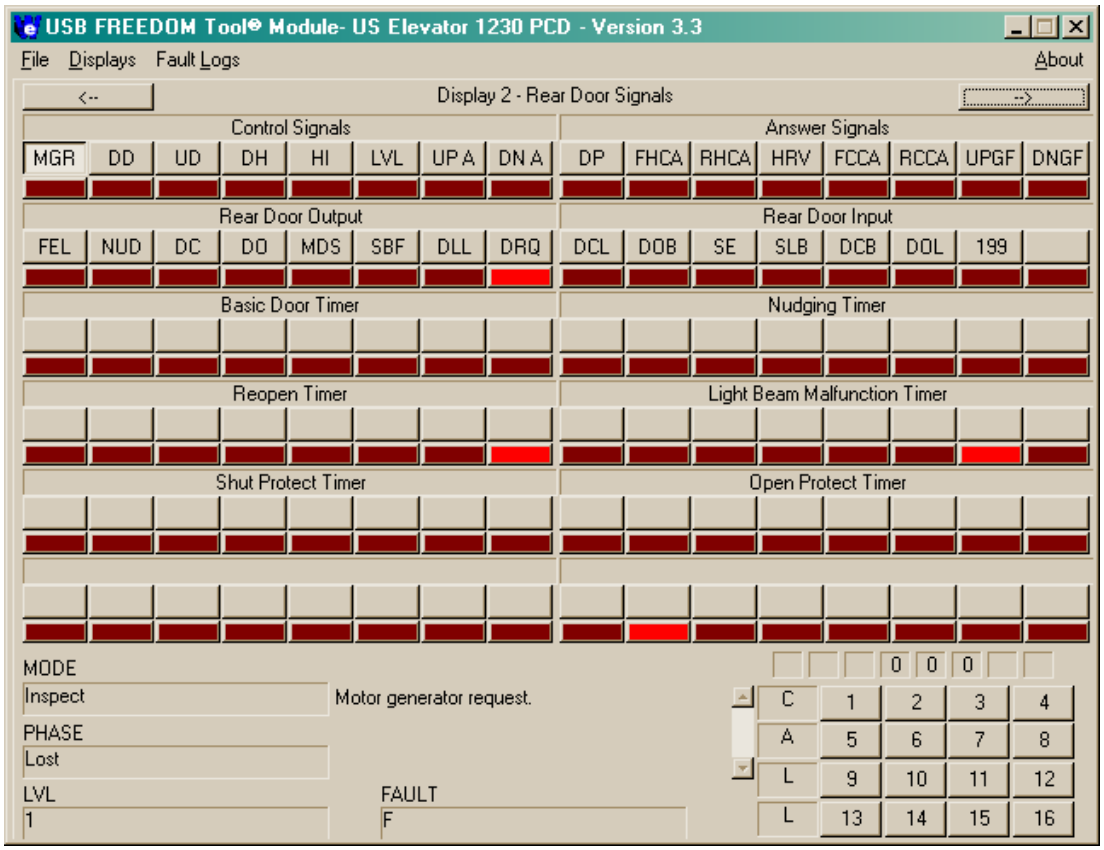
Door Shut Protect

Binary count of amount of time door is moved closed before the door is forced open.

Door Open Protect

Binary count of amount of time door is moved open before the door if forced closed.

Display 2 Rear Door Signals



Control Signals

MGR	Pump request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed request
UPA	Up arrow
DNA	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Rear Door Output

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Rear Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Basic Door Timer

Time door will be held open in normal operation.

Nudging Timer

Time until nudging operation occurs. (Used if nudging enabled on personality board)

Re-Open Timer

Time door will remain open after door is forced to reopen.

Light Beam Malfunction Timer

Time safety ray must remain broken before it is considered bad and ignored.

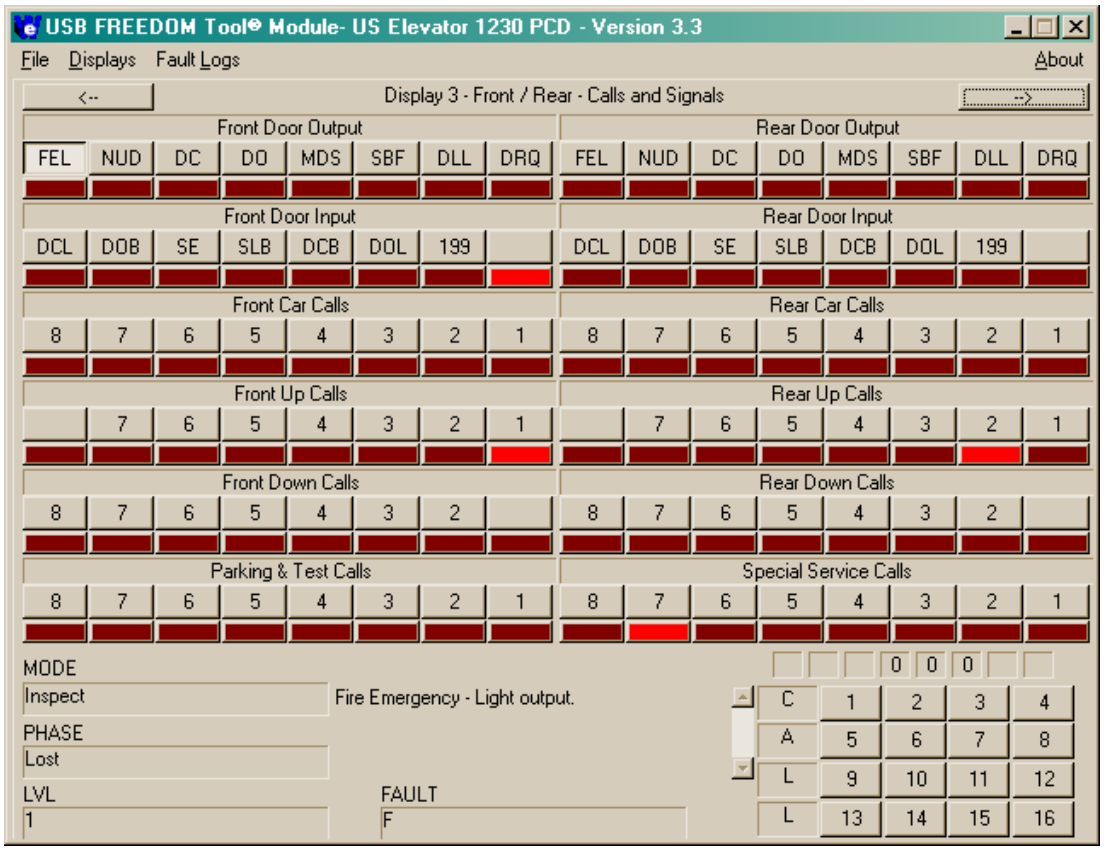
Door Shut Protect

Binary count of amount of time door is moved closed before the door is forced open.

Door Open Protect

Binary count of amount of time door is moved open before the door if forced closed.

Display 3 Front / Rear Calls and Signals



Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Rear Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close rear door
DO	Open rear door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Front Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Rear Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Front Car Calls

8	8th Landing car call
7	7th Landing car call
6	6th landing car call
5	5th landing car call
4	4th landing car call
3	3rd landing car call
2	2nd landing car call
1	1st landing car call

Rear Car Calls

8	8th Landing car call
7	7th Landing car call
6	6th landing car call
5	5th landing car call
4	4th landing car call
3	3rd landing car call
2	2nd landing car call
1	1st landing car call

Front Up Calls

-	
7	7th Landing front up hall call
6	6th Landing front up hall call
5	5th Landing front up hall call
4	4th Landing front up hall call
3	3rd Landing front up hall call
2	2nd Landing front up hall call
1	1st Landing front up hall call

Rear Up Calls

-	
7	7th Landing rear up hall call
6	6th Landing rear up hall call
5	5th Landing rear up hall call
4	4th Landing rear up hall call
3	3rd Landing rear up hall call
2	2nd Landing rear up hall call
1	1st Landing rear up hall call

Front Down Calls

8	8th Landing front down hall call
7	7th Landing front down hall call
6	6th Landing front down hall call
5	5th Landing front down hall call
4	4th Landing front down hall call
3	3rd Landing front down hall call
2	2nd Landing front down hall call
-	

Rear Down Calls

8	8th Landing rear down hall call
7	7th Landing rear down hall call
6	6th Landing rear down hall call
5	5th Landing rear down hall call
4	4th Landing rear down hall call
3	3rd Landing rear down hall call
2	2nd Landing rear down hall call
-	

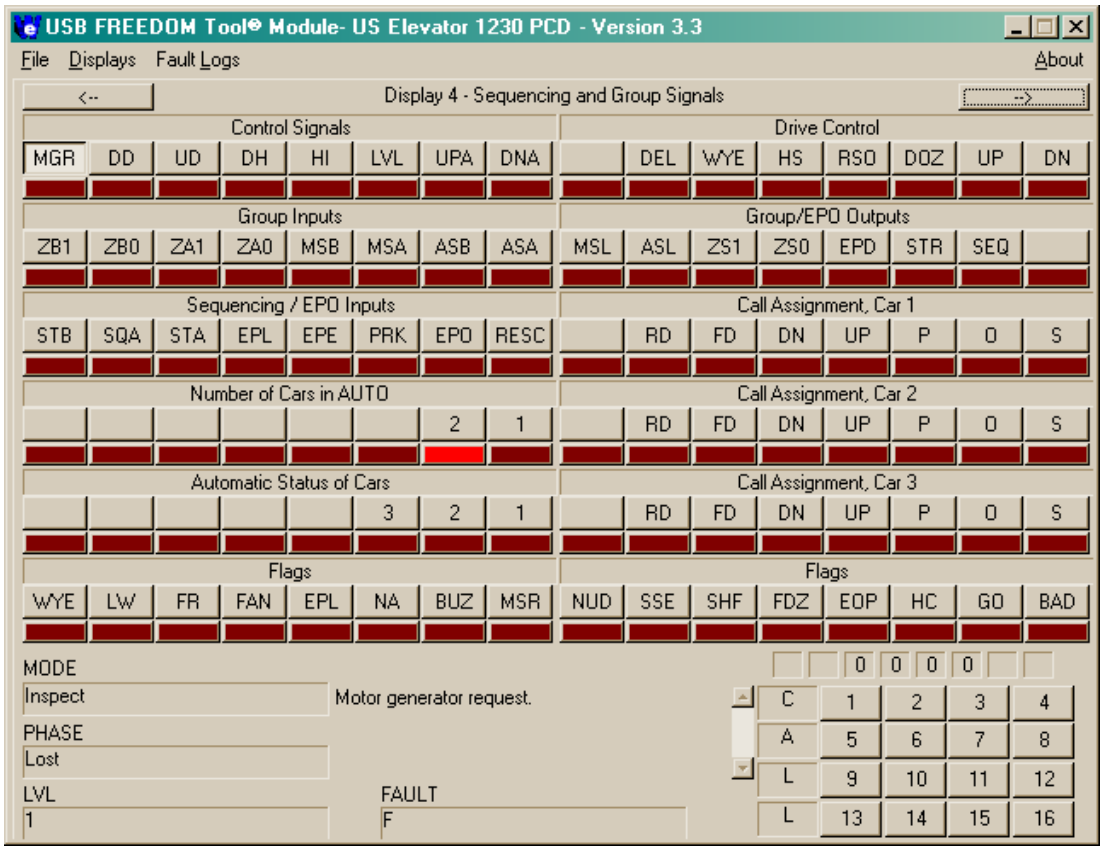
Parking & Test

-	
7	7th Landing call
6	6th landing call
5	5th landing call
4	4th landing call
3	3rd landing call
2	2nd landing call
1	1st landing call

Special Services

-	
7	7th Landing call
6	6th landing call
5	5th landing call
4	4th landing call
3	3rd landing call
2	2nd landing call
1	1st landing call

Display 4 Sequencing and Group Controls



Control Signals

MGR	Pump request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed request
UPA	Up arrow
DNA	Down arrow

Drive Controls

-	
DEL	Command to energize Delta relay
WYE	Command to energize WYE relay
HS	High speed request
RSO	Override run/stop switch
DOZ	Override safety string in Door zone
UP	Command to run car Up
DN	Command to run car Down

Group Inputs

ZB1	Car B Data – Bit 1
ZB0	Car B Data – Bit 0
ZA1	Car A Data – Bit 1
ZA0	Car A Data – Bit 0
MSB	Car B Data Signal
MSA	Car A Data Signal
ASB	Car B on Automatic or attendant
ASA	Car A on Automatic or attendant

Group Outputs

MSL	Group dispatching data
ASL	Car in Automatic or attendant
ZS1	Group dispatching data – Bit 1
ZS0	Group dispatching data – Bit 0
EPD	Car must respond to emergency power operation
STR	Car attempting to engage WYE starter
SEQ	Emergency power duty car
-	

Sequencing Inputs

STB	Car B start request
SQA	Emergency power duty car selected
STA	Car A start request
EPL	Car must respond to emergency power operation
EPE	Car available as duty car
PRK	Car on Secure parking
EPO	Emergency power operation
RESC	Rescue Elevator Operation

Cars in Automatic

-	
-	
-	
-	
-	
-	
2	Number of cars on automatic – Bit 2
1	Number of cars on automatic – Bit 1

Automatic Status of Cars

-	
-	
-	
-	
-	
3	Car 3 available for group dispatch
2	Car 2 available for group dispatch
1	Car 1 available for group dispatch

Flags

WYE	WYE starter requested
LW	Loadweigher – Car is full
FR	Fire Return door code has occurred
FAN	Transmit front door answer bit
EPL	Car has responded on Emergency Power Return
NA	Car not on automatic or attendant
BUZ	Attendant Service – Attendant notification buzzer
MSR	Master car

Call assignment, Car 1

-	
RD	Rear call assigned
FD	Front call assigned
DN	Down call assigned
UP	Up call assigned
POS1	Position of assigned call - Bit 1
POS2	Position of assigned call - Bit 2
POS3	Position of assigned call - Bit 3

Call assignment, Car 2

-	
RD	Rear call assigned
FD	Front call assigned
DN	Down call assigned
UP	Up call assigned
POS1	Position of assigned call - Bit 1
POS2	Position of assigned call - Bit 2
POS3	Position of assigned call - Bit 3

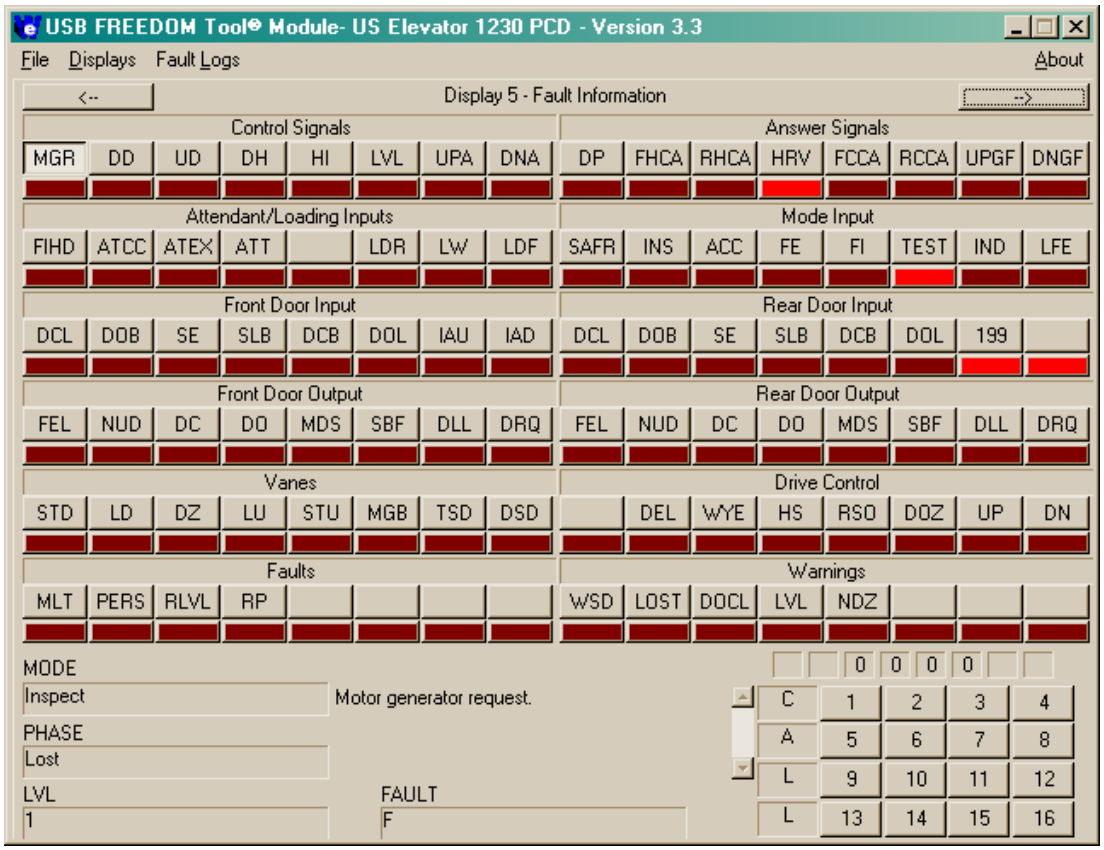
Call assignment, Car 3

-	
RD	Rear call assigned
FD	Front call assigned
DN	Down call assigned
UP	Up call assigned
POS1	Position of assigned call - Bit 1
POS2	Position of assigned call - Bit 2
POS3	Position of assigned call - Bit 3

Flags

NUD	Both slow down switches active simultaneously
SSE	Car is lost
SHF	Both door open and door close limits active
FDZ	Both level up and level down sensors active
EOP	Door zone vane not detected when expected
HC	Car communication rate
GO	Software may restart
BAD	Group communication timeout

Display 5 Fault Information



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up arrow
DN A	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Attendant / Loading Inputs

FIHD	Fireman's Service – Phase II – Hold Switch
ATCC	Attendant service – Call cancel
ATEX	Attendant service – Express
ATT	Attendant service
-	
LDR	Loading operation rear
LW	Load weigher – full car
LDF	Loading operation front

Mode Input

SAFR	Safe to run signal
INS	Inspection switch inactive
ACC	Access switch
FE	Fireman's service – Phase I
FI	Fireman's service – Phase II
TEST	Test switch
IND	Independent service
LFE	Fireman's service – lobby fire detector

Front Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
IAU	Independent/Access Up
IAD	Independent/Access Down

Rear Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
IAU	Independent/Access Up
IAD	Independent/Access Down

Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Rear Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Vane Signals

STD	Down stepping vane
LD	Level down vane
DZ	Door zone sensor
LU	Level up vane
STU	Up stepping vane
MGB	Pump motor
TSD	Top slow down inactive
DSD	Down slow down inactive

Drive Control

-	
DEL	Command to energize Delta relay
WYE	Command to energize WYE relay
HS	High speed request
RSO	Override run/stop switch
DOZ	Override safety string in Door zone
UP	Command to run car up
DN	Command to run car down

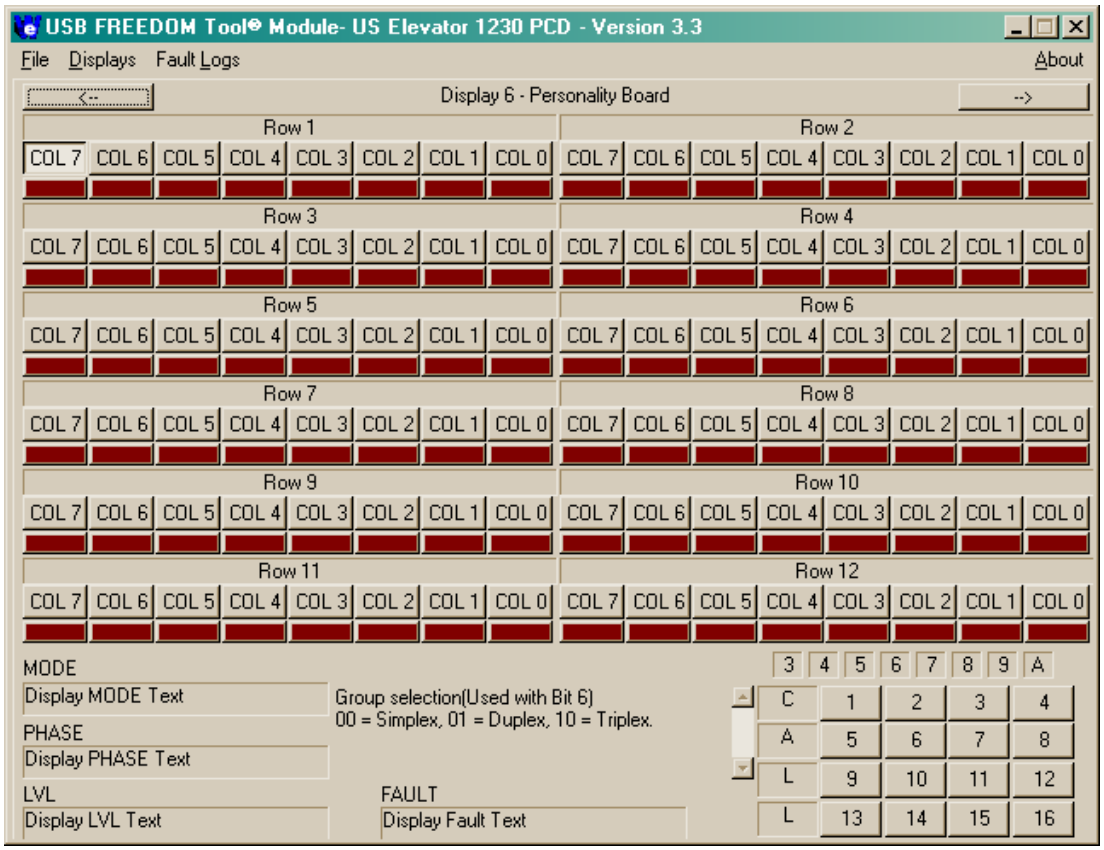
Faults

MLT	Motor limit timer
PERS	Incorrect personality jumper positions
RLVL	Excessive re-levels
RP	Reverse phase relay drop
-	
-	
-	
-	

Warnings

WSD	Both slow down switches active simultaneously
LOST	Car is lost
DOCL	Both door open and door close limits active
LVL	Both level up and level down sensors active
NDZ	Door zone vane not detected when expected
-	
-	
-	

Display 6 Personality Board



Row 1

Bit 7	Group operation – Bit 1 *See Chart A
Bit 6	Group operation – Bit 0
Bit 5	No short door time
Bit 4	Parking - Bit 1 *See Chart B
Bit 3	Parking - Bit 0
Bit 2	Top landing – Bit 2 *See Chart C
Bit 1	Top landing – Bit 1
Bit 0	Top landing – Bit 0

Bit 7	Bit 6	Description
0	0	Simplex
0	1	Duplex
1	0	Triplex

Chart A – Group Operation

Bit 7	Bit 6	Description
0	0	None
0	1	All Cars

Chart B - Parking

Bit 2	Bit 1	Bit 0	Description
0	0	0	Landing 0
0	0	1	Landing 1
0	1	0	Landing 2
0	1	1	Landing 3
1	0	0	Landing 4
1	0	1	Landing 5
1	1	0	Landing 6
1	1	1	Landing 7

Chart C – Top Landing

Row 2

Bit 7	Security Operation – Ignore hall calls
Bit 6	
Bit 5	Alternate fire service landing – Bit 3 *See Chart D
Bit 4	Alternate fire service landing – Bit 2
Bit 3	Alternate fire service landing – Bit 1
Bit 2	Primary fire service landing – Bit 3 *See Chart D
Bit 1	Primary fire service landing – Bit 2
Bit 0	Primary fire service landing – Bit 1

Bit 2	Bit 1	Bit 0	Description
0	0	0	1st Landing
0	0	1	2nd Landing
0	1	0	3rd Landing
0	1	1	4th Landing
1	0	0	5th Landing
1	0	1	6th Landing
1	1	0	7th Landing
1	1	1	8th Landing

Chart D – Fire Service Landings

Row 3

Bit 7	Nudging
Bit 6	Front and rear doors may be opened at same time
Bit 5	Ring gong on car call
Bit 4	A3 board
Bit 3	Fireman's service – safety edge disabled
Bit 2	Lobby landing – Bit 3 *See Chart E
Bit 1	Lobby landing – Bit 2
Bit 0	Lobby landing – Bit 1

Bit 2	Bit 1	Bit 0	Description
0	0	0	1st Landing
0	0	1	2nd Landing
0	1	0	3rd Landing
0	1	1	4th Landing
1	0	0	5th Landing
1	0	1	6th Landing
1	1	0	7th Landing
1	1	1	8th Landing

Chart E – Lobby Landing

Row 4

Bit 7	Secure park with door closed
Bit 6	Door remains open at lobby
Bit 5	Lobby door time - Bit 3 *See Chart F
Bit 4	Lobby door time – Bit 2
Bit 3	Lobby door time – Bit 1
Bit 2	Normal door time – Bit 3 *See Chart G
Bit 1	Normal door time – Bit 2
Bit 0	Normal door time – Bit 1

Bit 5	Bit 4	Bit 3	Description
0	0	0	0.6 Sec.
0	0	1	2.6 Sec.
0	1	0	3.8 Sec.
0	1	1	5.1 Sec.
1	0	0	7.7 Sec.
1	0	1	10.2 Sec.
1	1	0	12.8 Sec.
1	1	1	16.0 Sec.

Chart F – Lobby Door Times

Bit 2	Bit 1	Bit 0	Description
0	0	0	0.6 Sec.
0	0	1	1.3 Sec.
0	1	0	1.9 Sec.
0	1	1	2.6 Sec.
1	0	0	3.2 Sec.
1	0	1	4.5 Sec.
1	1	0	6.4 Sec.
1	1	1	9.6 Sec.

Chart G – Normal Door Times

Row 5

Bit 7 Hall call time differential – Bit 1
*See Chart H
Bit 6 Hall call time differential – Bit 0
Bit 5 Optional PI Type - Bit 3
*See Chart I
Bit 4 Optional PI Type – Bit 2
Bit 3 Optional PI Type – Bit 1
Bit 2 Car PI Type – Bit 3
*See Chart J
Bit 1 Car PI Type – Bit 2
Bit 0 Car PI Type – Bit 1

Bit 5 Bit 2	Bit 4 Bit 1	Bit 3 Bit 0	Description
0	0	0	In-Line
0	0	1	1 2 3 4 5 6 7 8
0	1	0	L 2 3 4 5 6 7 8
0	1	1	B 1 2 3 4 5 6 7
1	0	0	B L 2 3 4 5 6 7
1	0	1	P 1 2 3 4 5 6 7
1	1	0	P L 2 3 4 5 6 7
1	1	1	Adams

Chart I – PI Types

Bit 7	Bit 6	Description
0	0	0 Sec.
0	1	2 Sec.
1	0	4 Sec.
1	1	6 Sec.

Chart H– Hall Call Time Differential

Row 6

Bit 7 Car 1, Front door at landing 8
Bit 6 Car 1, Front door at landing 7
Bit 5 Car 1, Front door at landing 6
Bit 4 Car 1, Front door at landing 5
Bit 3 Car 1, Front door at landing 4
Bit 2 Car 1, Front door at landing 3
Bit 1 Car 1, Front door at landing 2
Bit 0 Car 1, Front door at landing 1

Row 7

Bit 7 Car 1, Rear door at landing 8
Bit 6 Car 1, Rear door at landing 7
Bit 5 Car 1, Rear door at landing 6
Bit 4 Car 1, Rear door at landing 5
Bit 3 Car 1, Rear door at landing 4
Bit 2 Car 1, Rear door at landing 3
Bit 1 Car 1, Rear door at landing 2
Bit 0 Car 1, Rear door at landing 1

Row 8

Bit 7 Single down gong
Bit 6 Ring gong at drop high
Bit 5 Fireman's Service – Phase II – Disable door close due to call
Bit 4 Cycle car calls while in test mode
Bit 3 Sound tone as each floor is passed
Bit 2 EPROM Test
Bit 1 Car Number – Bit 1
See Chart J
Bit 0 Car Number – Bit 0

Bit 1	Bit 0	Description
0	0	Car #1
0	1	Car #2
1	0	Car #3

Chart J – Car Number

Row 9

Bit 7 Car 2, Front door at landing 8
Bit 6 Car 2, Front door at landing 7
Bit 5 Car 2, Front door at landing 6
Bit 4 Car 2, Front door at landing 5
Bit 3 Car 2, Front door at landing 4
Bit 2 Car 2, Front door at landing 3
Bit 1 Car 2, Front door at landing 2
Bit 0 Car 2, Front door at landing 1

Row 10

Bit 7 Car 2, Rear door at landing 8
Bit 6 Car 2, Rear door at landing 7
Bit 5 Car 2, Rear door at landing 6
Bit 4 Car 2, Rear door at landing 5
Bit 3 Car 2, Rear door at landing 4
Bit 2 Car 2, Rear door at landing 3
Bit 1 Car 2, Rear door at landing 2
Bit 0 Car 2, Rear door at landing 1

Row 11

Bit 7
Bit 6
Bit 5
Bit 4
Bit 3 Security overrides independent service
Bit 2 Security – Answer placed calls before going on
Bit 1 WYE Timer – Bit 1
*See Chart K
Bit 0 WYE Timer – Bit 0

Bit 1	Bit 0	Description
0	0	1.0 Sec.
0	1	1.5 Sec.
1	0	2.0 Sec.
1	1	2.5 Sec.

Chart K – WYE Timer

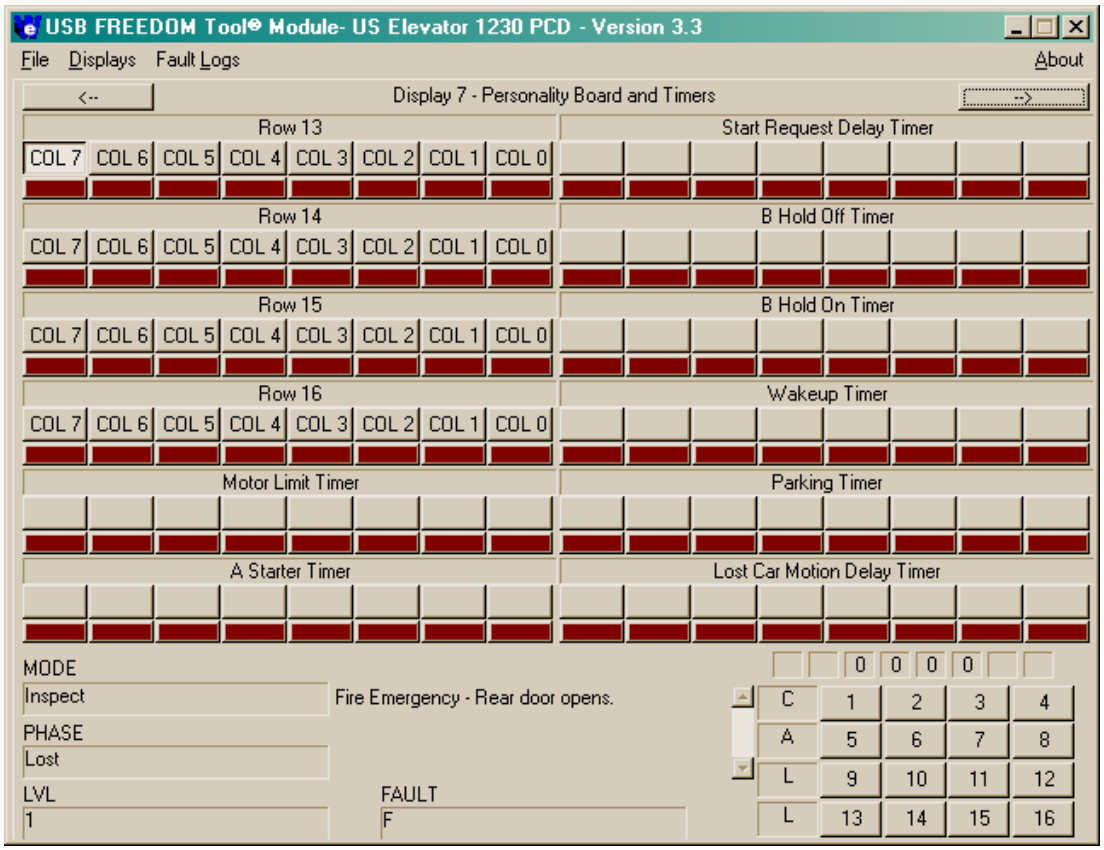
Row 12

Bit 7 Freight Doors
Bit 6 ANSI 85 Fire Service Code
Bit 5 Car emptied before going on Special Service
Bit 4 Secure parking delay
Bit 3 Fireman's Service – Phase II – Disable Safety Edge
Bit 2 Fireman's Service – Phase I – Disabled door open pushbutton
Bit 1 MLT Timer – Bit 1
*See Chart L
Bit 0 MLT Timer – Bit 0

Bit 1	Bit 0	Description
0	0	1.00 Min.
0	1	1.25 Min.
1	0	1.50 Min.
1	1	1.75 Min

Chart L – MLT Timer

Display 7 Personality Board and Timers



Row 13

Bit 7	Fireman's Service – Phase I – Rear door opens	-
Bit 6	Short floor – 7 & 8	-
Bit 5	Short floor – 6 & 7	-
Bit 4	Short floor – 5 & 6	-
Bit 3	Short floor – 4 & 5	-
Bit 2	Short floor – 3 & 4	-
Bit 1	Short floor – 2 & 3	-
Bit 0	Short floor – 1 & 2	-

Start Request Delay Timer

Row 14

Bit 7	Third parking landing – Bit 3 *See Chart A
Bit 6	Third parking landing – Bit 2
Bit 5	Third parking landing – Bit 1
Bit 4	Second parking landing – Bit 3 *See Chart A
Bit 3	Second parking landing – Bit 2
Bit 2	Second parking landing – Bit 1
Bit 1	Fireman's Service – Phase I – Overridden by independent service
Bit 0	Disable pre-floor door opening

Bit 7 Bit 4	Bit 6 Bit 3	Bit 5 Bit 2	Description
0	0	0	1st Landing
0	0	1	2nd Landing
0	1	0	3rd Landing
0	1	1	4th Landing
1	0	0	5th Landing
1	0	1	6th Landing
1	1	0	7th Landing
1	1	1	8th Landing

Chart A – Parking Landing

B Hold Off Timer

-

B Hold On Timer

-

Wakeup Timer

-

Parking Timer

-

Lost Car Motion Delay

-

Row 15

Bit 7	Car 3, Front door at landing 8
Bit 6	Car 3, Front door at landing 7
Bit 5	Car 3, Front door at landing 6
Bit 4	Car 3, Front door at landing 5
Bit 3	Car 3, Front door at landing 4
Bit 2	Car 3, Front door at landing 3
Bit 1	Car 3, Front door at landing 2
Bit 0	Car 3, Front door at landing 1

Row 16

Bit 7	Car 3, Rear door at landing 8
Bit 6	Car 3, Rear door at landing 7
Bit 5	Car 3, Rear door at landing 6
Bit 4	Car 3, Rear door at landing 5
Bit 3	Car 3, Rear door at landing 4
Bit 2	Car 3, Rear door at landing 3
Bit 1	Car 3, Rear door at landing 2
Bit 0	Car 3, Rear door at landing 1

Motor Limit Timer

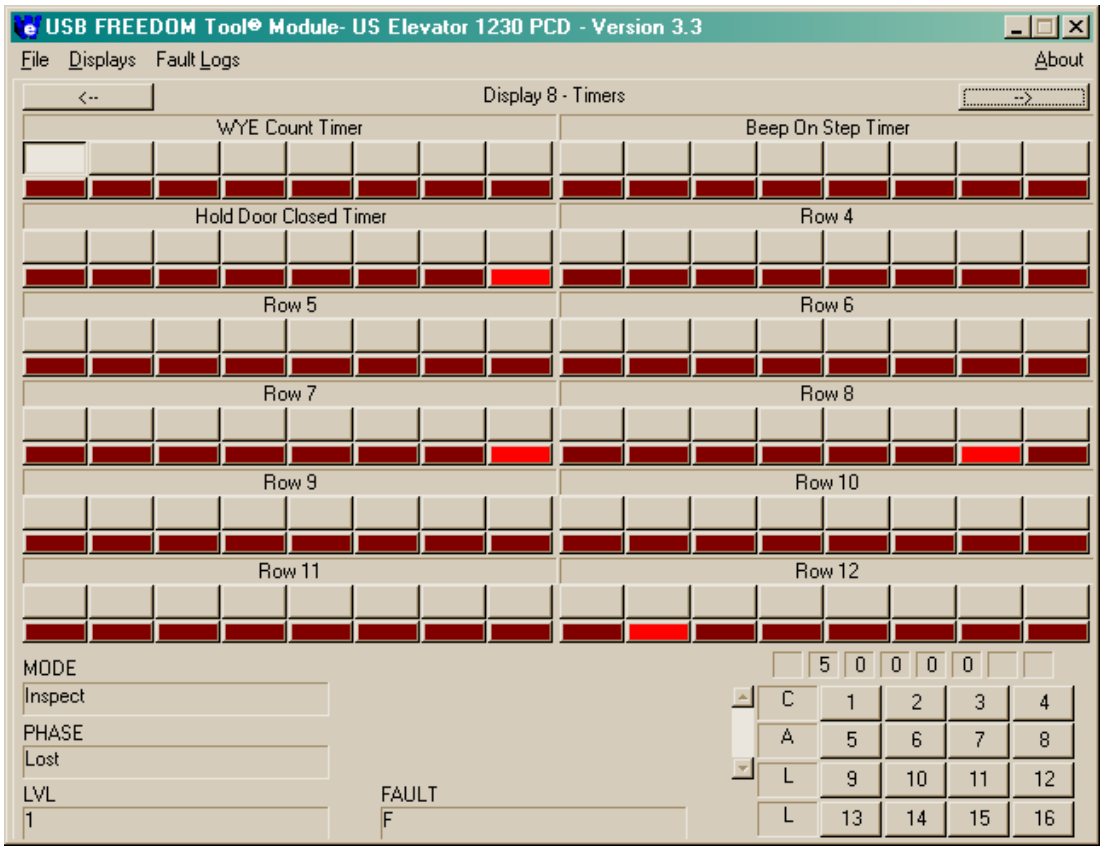
-

A Starter Timer

-

-

Display 8 Timers



Wye Count

Beep on Step

Hold Door Closed

Group Communication

No Motion

Test Call Delay @ Floor

Delta Without MGB

Attendant Service Call

Special Service

Restart

Front Gong

Rear Gong

US Elevator Ascension 1000

FAULT:

0.	**EPROM**	An error was detected with the elevator software or RAM memory.
1.	**EPROM**	An error was detected with the elevator software or RAM memory.
2.	**EPROM**	An error was detected with the elevator software or RAM memory.
3.	**EPROM**	An error was detected with the elevator software or RAM memory.
4.	**Warning**	A non-volatile fault has occurred. This type of fault will not cause the car to shut down.
5.	**Motor Limit**	Motor limit timer has expired. Car will run to terminal landing and stay there with doors open.
6.	**Personality**	An error is detected with personality settings. Car will stop where it is.
7.	**Run Fail**	Car has failed to start six times in twenty seconds. Car will run to bottom landing and sit with doors open.
8.	**Reverse Phase**	Reverse phase relay has dropped. Car will run to bottom landing and sit with doors open.

PHASE:

The following is a list of phases of the run the Ascension 1000 controller may have.

0.	**Fault**	A fault was detected while car was running.
1.	**Shutdown**	Car has shutdown.
2.	**Lost**	Car has lost its position within the hoistway.
3.	**Wakeup**	Car is just starting.
4.	**Rest**	Car is parked at landing.
5.	**Relevel Down**	Car is releveling into a landing in the down direction.
6.	**Recover Down**	Car is running down to the next level to recover from fault.
7.	**Level Down**	Car is running at leveling speed in the down direction.
8.	**High Down**	Car is running at high speed in the down direction.
9.	**Relevel Up**	Car is releveling into a landing in the up direction.
A.	**Recover Up**	Car is running up to the next level to recover from fault.
B.	**Level Up**	Car is running at leveling speed in the up direction.
C.	**High Up**	Car is running at high speed in the up direction.

MODE: The following is a list of modes of operation that the Ascension 1000 controller may have. They are listed in order of priority, with the top mode having highest priority.

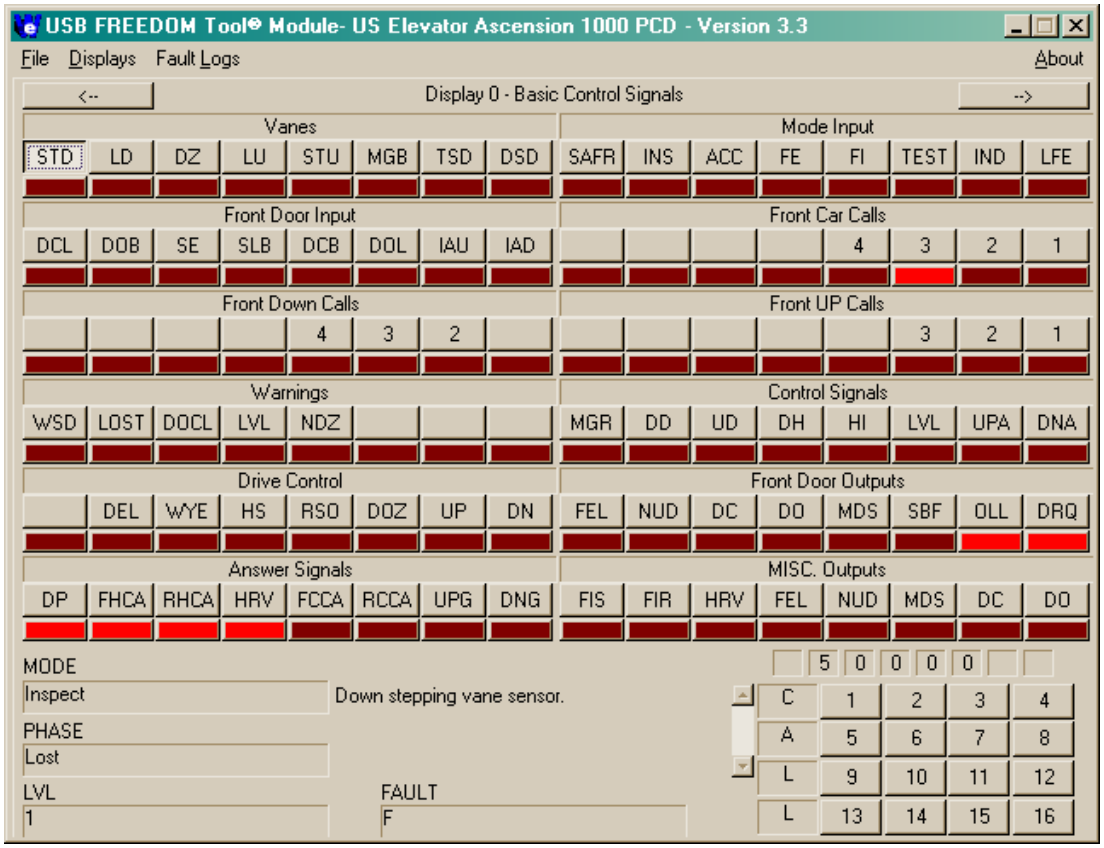
0. **Restart** Car CPU in a restart state.
1. **Inspect** Inspection operation.
2. **Access** Hoistway Access.
3. **Fire Ind.** Fireman's Service Phase 2.
4. **Fault** System contains a fault. Fault display – Stop Now has occurred.
5. **Test** CPS I/O board toggle switch in test position (down).
6. **Emerg. Power** Car is on emergency power operation. Generator is providing main car power.
7. **Fire Return** Fireman's Service Phase 1
8. **Test Rqst.** CPS I/O board toggle switch in test position but car calls are in the system. When car calls are answered, mode will change to Test.
9. **Secure Park** Car will park at secure landing with doors either open or closed, depending on personality setup.

A. **Independent** Car is on independent service operation.
B. **Sp. Srv. I** Hall Station special service operation activated. All car calls are answered before car responds to special service floor.
C. **Sp. Srv. II** Hall Station special service operation activated. All car calls are canceled before car responds to designated special service floor.
D. **Automatic** Car is on automatic service.

LEVEL: The level display replicates a position indicator for the car currently in communication with the tool.

DISPLAY:

Display 0 Basic Control Signals



Vane Signals

STD	Down stepping vane
LD	Level Down Vane
DZ	Door Zone Vane
LU	Level Up Vane
STU	Up stepping vane
MGB	Pump motor
TSD	Top slow down inactive
DSD	Down slow down inactive

Mode Input

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test
IND	Independent Service
LFE	Lobby Fire – Alternate Fire Service

Front Door Input

DCL	Front Door Close Limit
DOB	Front Door Open Button
SE	Front Safety Edge
SLB	Front Safety Ray
DCB	Front Door Close Button
DOL	Front Door Open Limit
IAU	Inspection/Access up command
IAD	Inspection/Access down command

Front Car Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

Front Down Calls

8	8th Landing Down Hall Call
7	7th Landing Down Hall Call
6	6th Landing Down Hall Call
5	5th Landing Down Hall Call
4	4th Landing Down Hall Call
3	3rd Landing Down Hall Call
2	2nd Landing Down Hall Call
-	

Front Up Calls

-	
7	7th Landing Up Hall Call
6	6th Landing Up Hall Call
5	5th Landing Up Hall Call
4	4th Landing Up Hall Call
3	3rd Landing Up Hall Call
2	2nd Landing Up Hall Call
1	1st Landing Up Hall Call

Warnings

WSD	Top and Bottom Slowdown Active
LOST	Car Lost
DOCL	Door Close Limit and Door Close Limit Active
LVL	Level Up and Level Down Active
NDZ	Door zone not found
-	
-	
-	

Control Signals

MGR	Motor request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed Command
UP A	Up Arrow
DN A	Down Arrow

Drive Control

-	
DEL	Delta signal
WYE	WYE signal
HS	High speed request
RSO	Override run/stop switch
DOZ	Door Open zone
UP	Up direction
DN	Down direction

Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

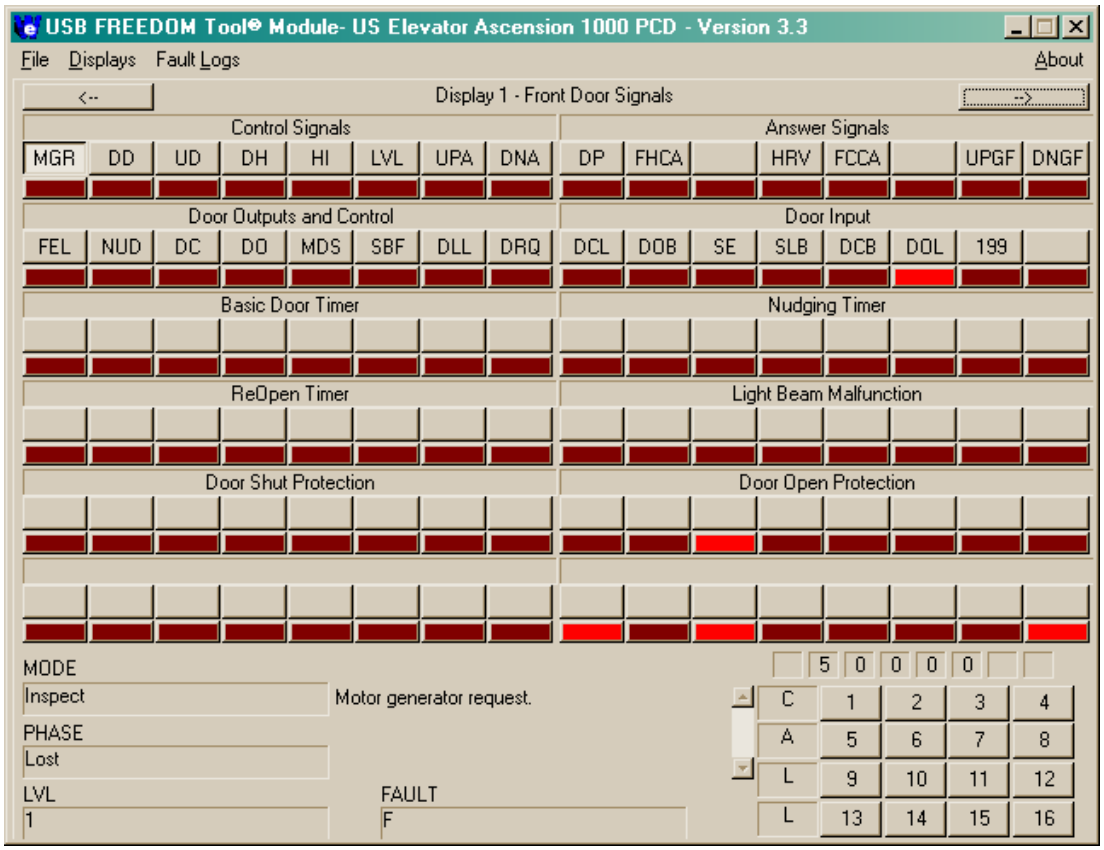
Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
HRV	Hall riser voltage
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPG	Front Up Gong
DNG	Front Down Gong

Misc. Output Signals

FIS	Phase 2 Fireman's Service - Set
FIR	Phase 2 Fireman's Service - Reset
HRV	Hall riser voltage
FEL	Fire emergency light
NUD	Nudging buzzer
MDS	Modified door speed
DC	Close front door
DO	Open front door

Display 1 Front Door Signals



Control Signals

MGR	Pump request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed request
UPA	Up arrow
DNA	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Door Outputs and Control

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Basic Door Timer

Time door will be held open in normal operation.

Nudging Timer

Time until nudging operation occurs. (Used if nudging enabled on personality board)

Re-Open Timer

Time door will remain open after door is forced to reopen.

Light Beam Malfunction Timer

Time safety ray must remain broken before it is considered bad and ignored.

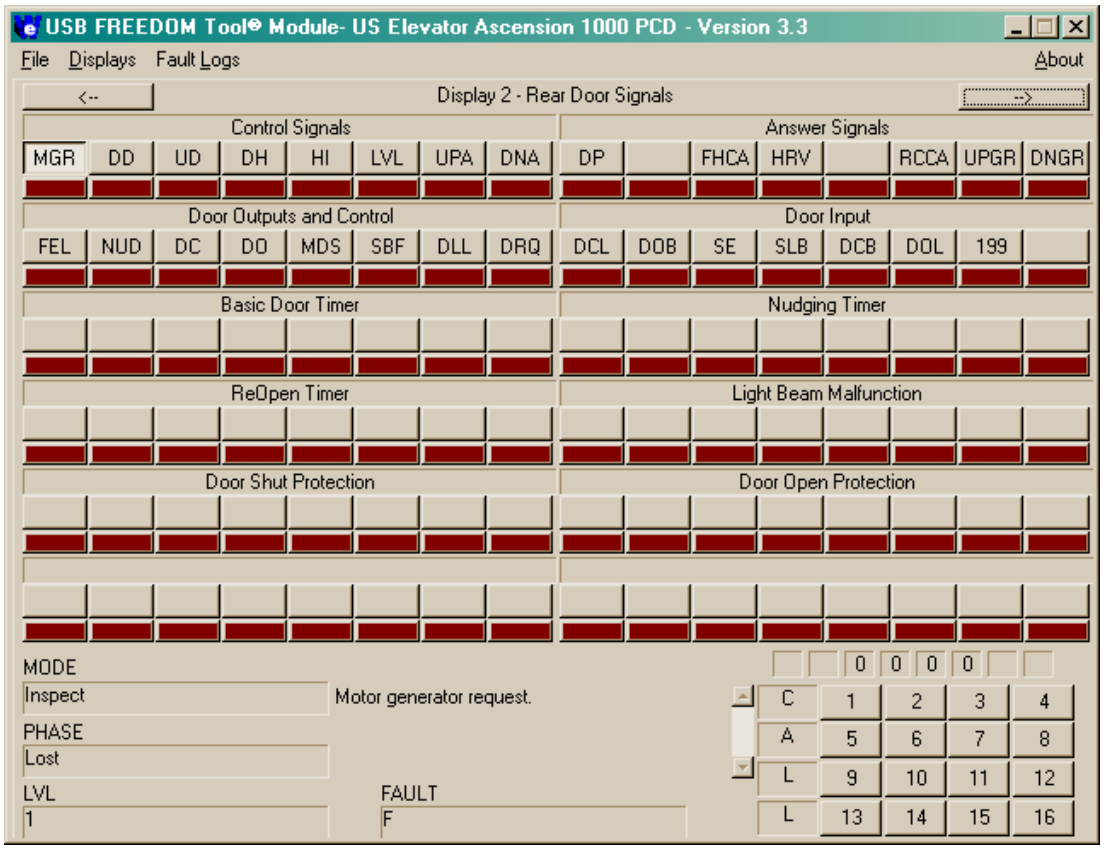
Door Shut Protect

Binary count of amount of time door is moved closed before the door is forced open.

Door Open Protect

Binary count of amount of time door is moved open before the door if forced closed.

Display 2 Rear Door Signals



Control Signals

MGR	Pump request
DD	Down direction request
UD	Up direction request
DH	Drop High speed zone
HI	High speed request
LVL	Level speed request
UPA	Up arrow
DNA	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Door Outputs and Control

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close rear door
DO	Open rear door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)
-	

Basic Door Timer

Time door will be held open in normal operation.

Nudging Timer

Time until nudging operation occurs. (Used if nudging enabled on personality board)

Re-Open Timer

Time door will remain open after door is forced to reopen.

Light Beam Malfunction Timer

Time safety ray must remain broken before it is considered bad and ignored.

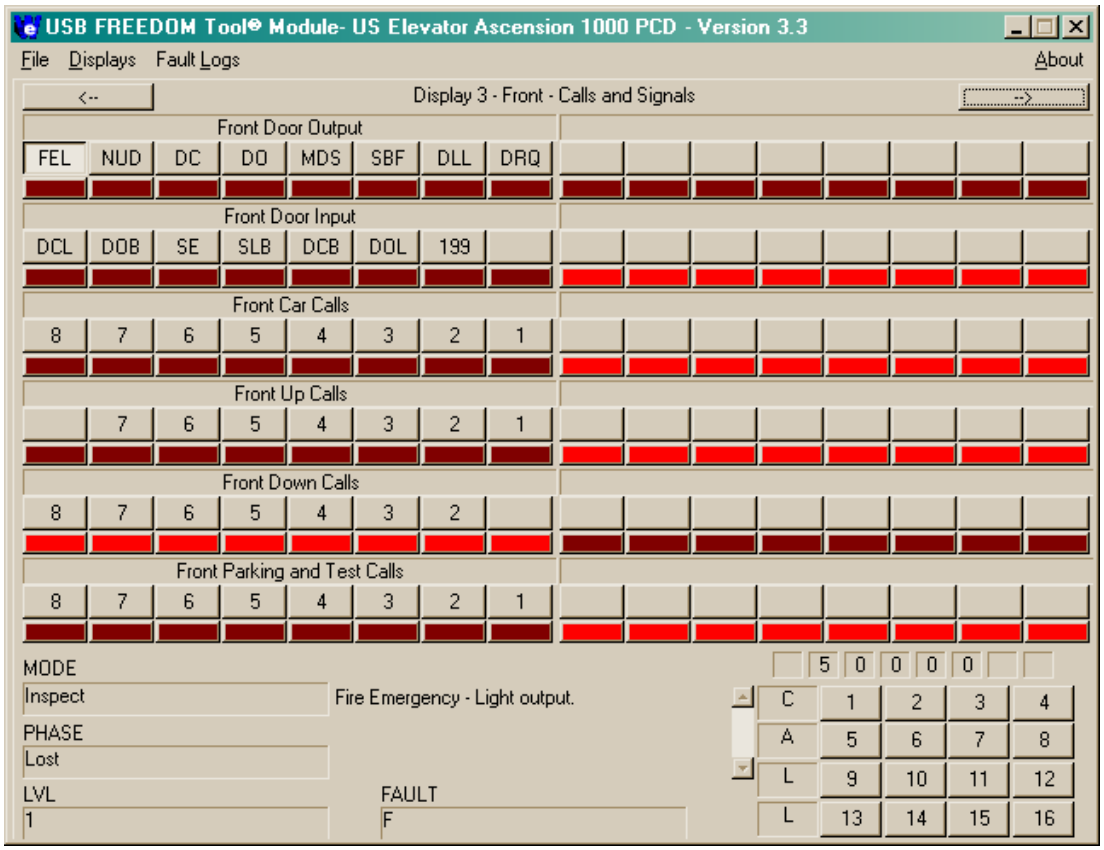
Door Shut Protect

Binary count of amount of time door is moved closed before the door is forced open.

Door Open Protect

Binary count of amount of time door is moved open before the door if forced closed.

Display 3 Front Calls and Signals



Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Front Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)

-

Front Car Calls

8	8th Landing car call
7	7th Landing car call
6	6th landing car call
5	5th landing car call
4	4th landing car call
3	3rd landing car call
2	2nd landing car call
1	1st landing car call

Front Up Calls

-	
7	7th Landing front up hall call
6	6th Landing front up hall call
5	5th Landing front up hall call
4	4th Landing front up hall call
3	3rd Landing front up hall call
2	2nd Landing front up hall call
1	1st Landing front up hall call

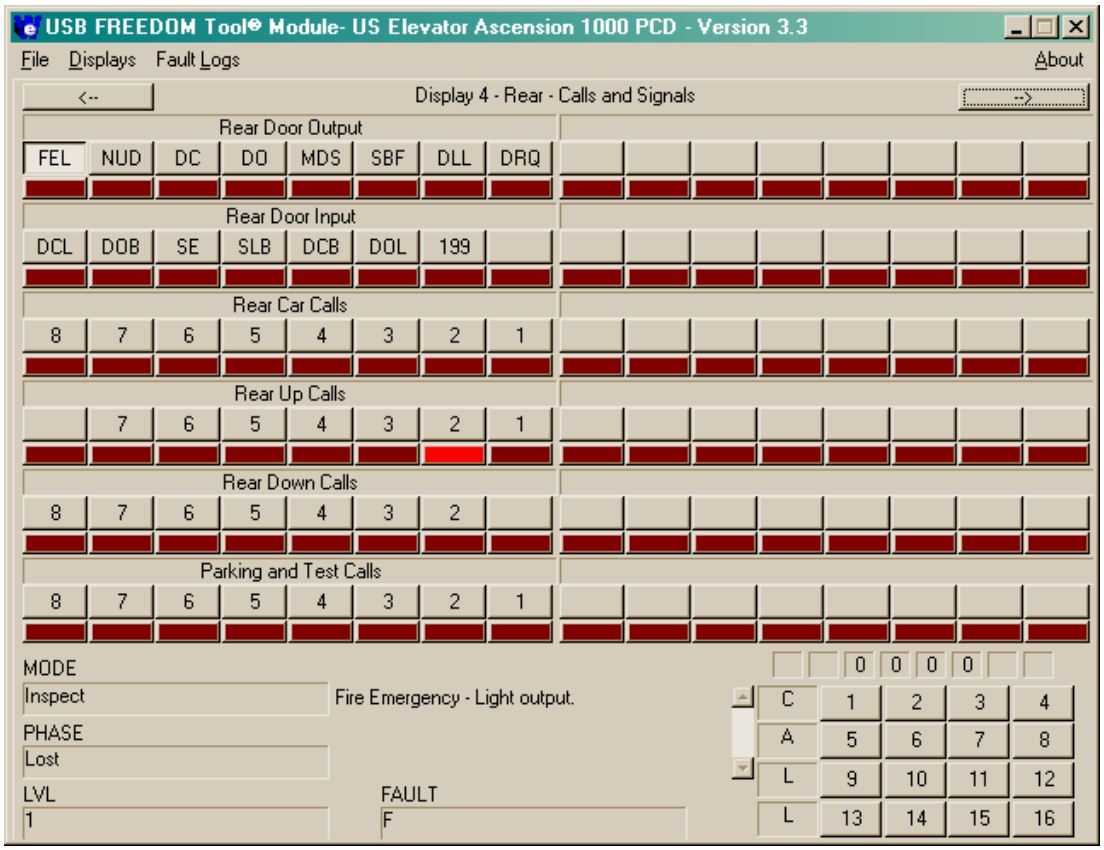
Front Down Calls

8	8th Landing front down hall call
7	7th Landing front down hall call
6	6th Landing front down hall call
5	5th Landing front down hall call
4	4th Landing front down hall call
3	3rd Landing front down hall call
2	2nd Landing front down hall call
-	

Parking and Test Calls

-	
7	7th Landing call
6	6th landing call
5	5th landing call
4	4th landing call
3	3rd landing call
2	2nd landing call
1	1st landing call

Display 4 Rear Calls and Signals



Rear Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close rear door
DO	Open rear door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Rear Door Inputs

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
199	Short door time activated (Car call or DCB pressed)

-

Rear Car Calls

8	8th Landing car call
7	7th Landing car call
6	6th Landing car call
5	5th Landing car call
4	4th Landing car call
3	3rd Landing car call
2	2nd Landing car call
1	1st Landing car call

Rear Up Calls

-	
7	7th Landing rear up hall call
6	6th Landing rear up hall call
5	5th Landing rear up hall call
4	4th Landing rear up hall call
3	3rd Landing rear up hall call
2	2nd Landing rear up hall call
1	1st Landing rear up hall call

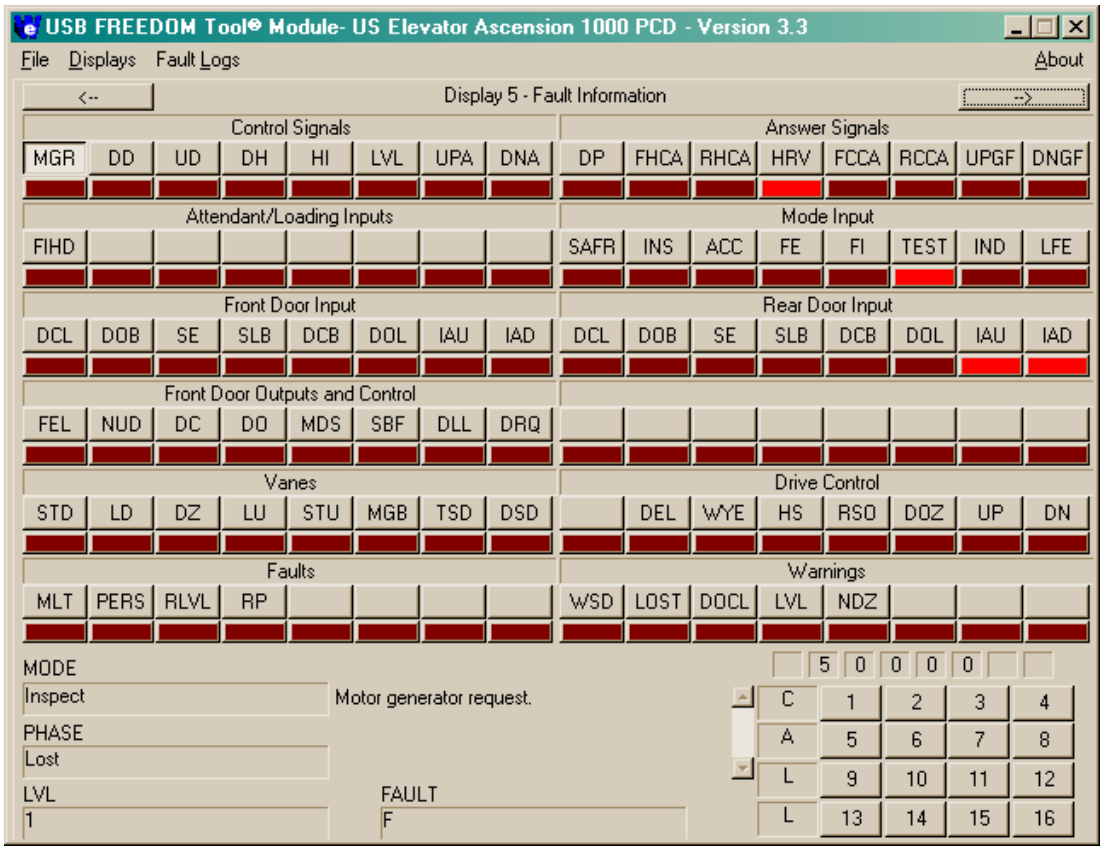
Rear Down Calls

8	8th Landing rear down hall call
7	7th Landing rear down hall call
6	6th Landing rear down hall call
5	5th Landing rear down hall call
4	4th Landing rear down hall call
3	3rd Landing rear down hall call
2	2nd Landing rear down hall call
-	

Parking and Test Calls

-	
7	7th Landing call
6	6th Landing call
5	5th Landing call
4	4th Landing call
3	3rd Landing call
2	2nd Landing call
1	1st Landing call

Display 5 Fault Information



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up arrow
DN A	Down arrow

Answer Signals

DP	Direction Preference
FHCA	Front hall call answered
RHCA	Rear hall call answered
HRV	Hall riser voltage
FCCA	Front car call answered
RCCA	Rear car call answered
UPGF	Up gong
DNGF	Down gong

Attendant / Loading Inputs

FIHD	Fireman's Service – Phase II – Hold Switch
ATCC	Attendant service – Call cancel
ATEX	Attendant service – Express
ATT	Attendant service
-	
LDR	Loading operation rear
LW	Load weigher – full car
LDF	Loading operation front

Mode Input

SAFR	Safe to run signal
INS	Inspection switch inactive
ACC	Access switch
FE	Fireman's service – Phase I
FI	Fireman's service – Phase II
TEST	Test switch
IND	Independent service
LFE	Fireman's service – lobby fire detector

Front Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
IAU	Independent/Access Up
IAD	Independent/Access Down

Rear Door Input

DCL	Door close limit
DOB	Door open button
SE	Safety edge
SLB	Safety edge light beam
DCB	Door close button
DOL	Door open limit
IAU	Independent/Access Up
IAD	Independent/Access Down

Front Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close front door
DO	Open front door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Rear Door Outputs

FEL	Fire emergency light
NUD	Nudging buzzer
DC	Close rear door
DO	Open rear door
MDS	Modified door speed
SBF	Safety ray broken
DLL	Door lock limit
DRQ	Door request

Vane Signals

STD	Down stepping vane
LD	Level down vane
DZ	Door zone sensor
LU	Level up vane
STU	Up stepping vane
MGB	Pump motor
TSD	Top slow down inactive
DSD	Down slow down inactive

Drive Control

-	
DEL	Command to energize Delta relay
WYE	Command to energize WYE relay
HS	High speed request
RSO	Override run/stop switch
DOZ	Override safety string in Door zone
UP	Command to run car up
DN	Command to run car down

Faults

MLT	Motor limit timer
PERS	Incorrect personality jumper positions
RLVL	Excessive re-levels
RP	Reverse phase relay drop
-	
-	
-	
-	

Warnings

WSD	Both slow down switches active simultaneously
LOST	Car is lost
DOCL	Both door open and door close limits active
LVL	Both level up and level down sensors active
NDZ	Door zone vane not detected when expected
-	
-	
-	

US Elevator Ascension 2000

FAULT:

0.	**Internal**	An error was detected in the elevator CPU board.
1.	**EPROM**	An error was detected with the elevator software or RAM memory.
2.	**Warning**	A non-volatile fault has occurred. This type of fault will not cause the car to shut down.
3.	**Terminal**	A volatile fault has occurred. Car will run to terminal landing and stay there with doors open.
4.	**Next Lvl**	A volatile fault has occurred. Car will run to next landing and stay there with doors open.
5.	**Stop Now**	A volatile fault has occurred. Car will stop at its immediate position in the hoistway.
6.	**Communication**	Car has lost communication throughout its system.

PHASE:

The following is a list of phases of the run the Ascension 2000 controller may have.

0.	**Fault**	A fault was detected while car was running.
1.	**Shutdown**	Car has shutdown.
2.	**Lost**	Car has lost its position within the hoistway.
3.	**Wakeup**	Car is just starting.
4.	**Rest**	Car is parked at landing.
5.	**Relevel**	Car is releveling into a landing.
6.		
7.	**Level**	Car is running at leveling speed.
8.	**Approach**	Car is decelerating into a landing.
9.	**Intermediate**	Car is accelerating from landing.
A.	**High**	Car is running at high speed.

MODE:

The following is a list of modes of operation that the Ascension 2000 controller may have. They are listed in order of priority, with the top mode having highest priority.

0.	**Shutdown**	Car CPU communication lock (Should not be seen through service tool)
1.	**Inspect**	Inspection operation.
2.	**Access**	Hoistway Access.
3.	**Fire Ind.**	Fireman's Service Phase 2.
4.	**Fault**	System contains a fault. Fault display – Stop Now has occurred.

5. **Test** CPS I/O board toggle switch in test position (down).

6. **Emerg. Power** Car is on emergency power operation. Generator is providing main car power.

7. **Fire Return** Fireman's Service Phase 1

8. **Test Rqst.** CPS I/O board toggle switch in test position but car calls are in the system. When car calls are answered, mode will change to Test.

9. **Secure Park** Car will park at secure landing with doors either open or closed, depending on personality setup.

A. **Independent** Car is on independent service operation.

B. **Sp. Srv. I** Hall Station special service operation activated. All car calls are answered before car responds to special service floor.

C. **Sp. Srv. II** Hall Station special service operation activated. All car calls are canceled before car responds to designated special service floor.

D. **Automatic** Car is on automatic service.

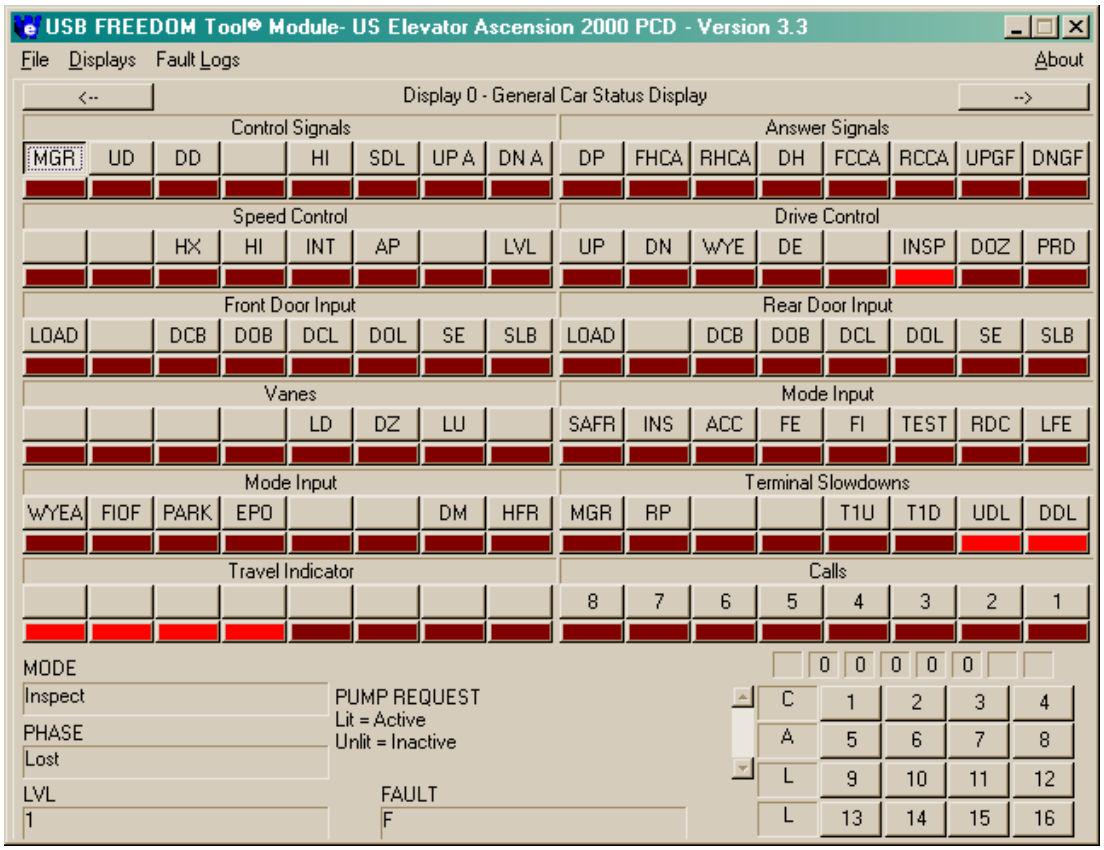
E. **Attendant** Car is on attendant operation.

F. **Street Car** Car lost communication with the group dispatcher. Car will run to top landing and stop each landing in the down direction. This mode can be disabled through the personality setup.

LEVEL: – The level display replicates a position indicator for the car currently in communication with the tool.

DISPLAY:

Display 0 General Car Status Display



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Speed Control

-	
-	
HX	High Speed Indicator
HI	High Speed Command
INT	Intermediate Speed Command
AP	Approach Speed Command
-	
LVL	Level speed Command

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
-	
INSP	Inspection
DOZ	Door Open zone
PRD	Power drive

Front Door Input

LOAD	Front Load Switch
-	
DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
SE	Front Safety Edge
SLB	Front Safety Ray

Vanes

-	
-	
-	
-	
LD	Level Down Vane
DZ	Door Zone Vane
LU	Level Up Vane
-	

Mode Input

WYEA	WYE Status
FIOF	Car Station Fire Switch Off
PARK	Secure Park
EPO	Emergency Power
-	
-	
DM	Door Monitor
HFR	Houston Fire Service

Travel Indicator

-	
-	
-	
-	
-	
-	
-	
-	

Rear Door Input

LOAD	Rear Load Switch
-	
DCB	Rear Door Close Button
DOB	Rear Door Open Button
DCL	Rear Door Close Limit
DOL	Rear Door Open Limit
SE	Rear Safety Edge
SLB	Rear Safety Ray

Mode Input

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test
RDC	Redundancy Monitor
LFE	Lobby Fire – Alternate Fire Service

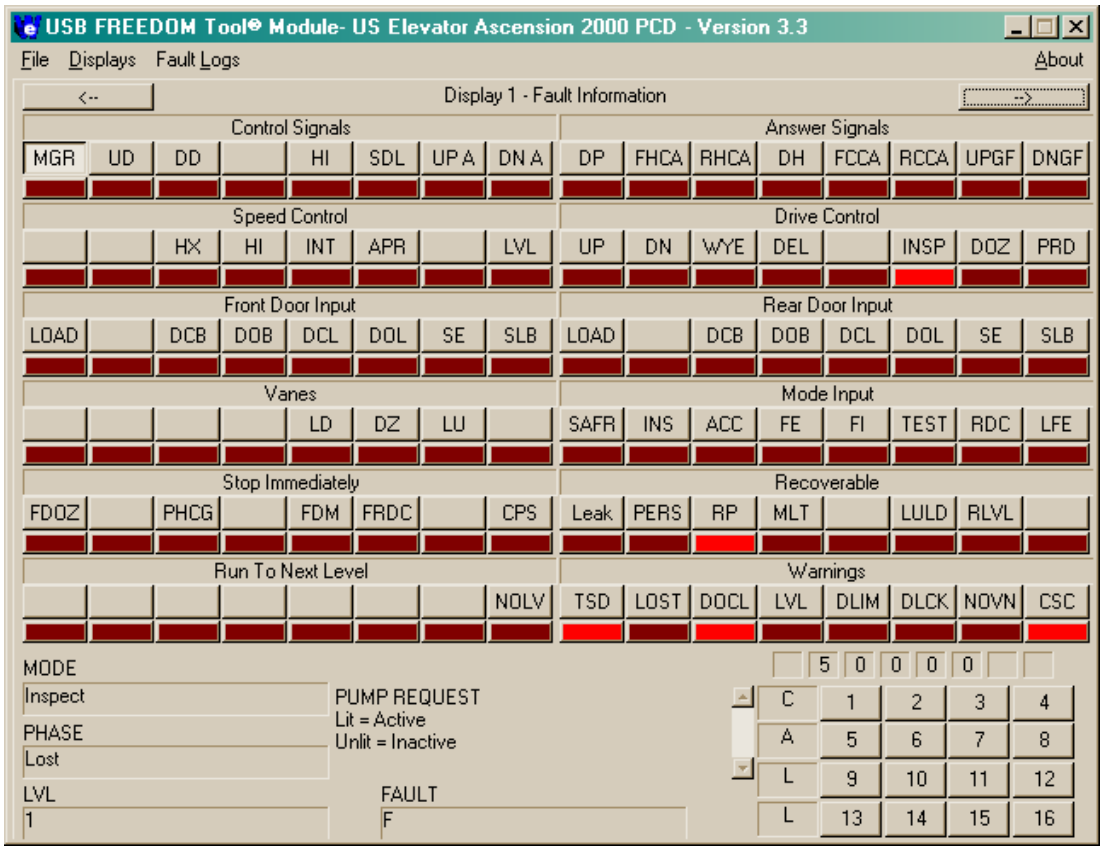
Terminal Slowdown

MGR	Motor Request
RP	3 Phase Status
-	
-	
T1U	Up Slowdown Switch
T1D	Down Slowdown Switch
UDL	Up Directional Limit
DDL	Down Directional Limit

Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

Display 1 Fault Information



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Speed Control

-	
-	
HX	High Speed Indicator
HI	High Speed Command
INT	Intermediate Speed Command
AP	Approach Speed Command
-	
LVL	Level speed Command

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
-	
INSP	Inspection
DOZ	Door Open zone
PRD	Power drive

Front Door Input

LOAD	Front Load Switch
-	
DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
SE	Front Safety Edge
SLB	Front Safety Ray

Rear Door Input

LOAD	Rear Load Switch
-	
DCB	Rear Door Close Button
DOB	Rear Door Open Button
DCL	Rear Door Close Limit
DOL	Rear Door Open Limit
SE	Rear Safety Edge
SLB	Rear Safety Ray

Vanes

-	
-	
-	
-	
LD	Level Down Vane
DZ	Door Zone Vane
LU	Level Up Vane
-	

Mode Input

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test
RDC	Redundancy Monitor
LFE	Lobby Fire – Alternate Fire Service

Stop Immediately

FDOZ	Door Open Zone Self Check Failure
-	
PHCG	Phase Change
-	
FDM	Door Monitor Fault
FRDC	Redundancy Fault
-	
CPS	CPS Data Fault

Recoverable

LEAK	Relevel counter overflow
PERS	Personality Fault
RP	Reverse Phase Check
MLT	Motor Limit Timer
-	
LULD	Level Up/Level Down
RLVL	Relevel Fault
-	

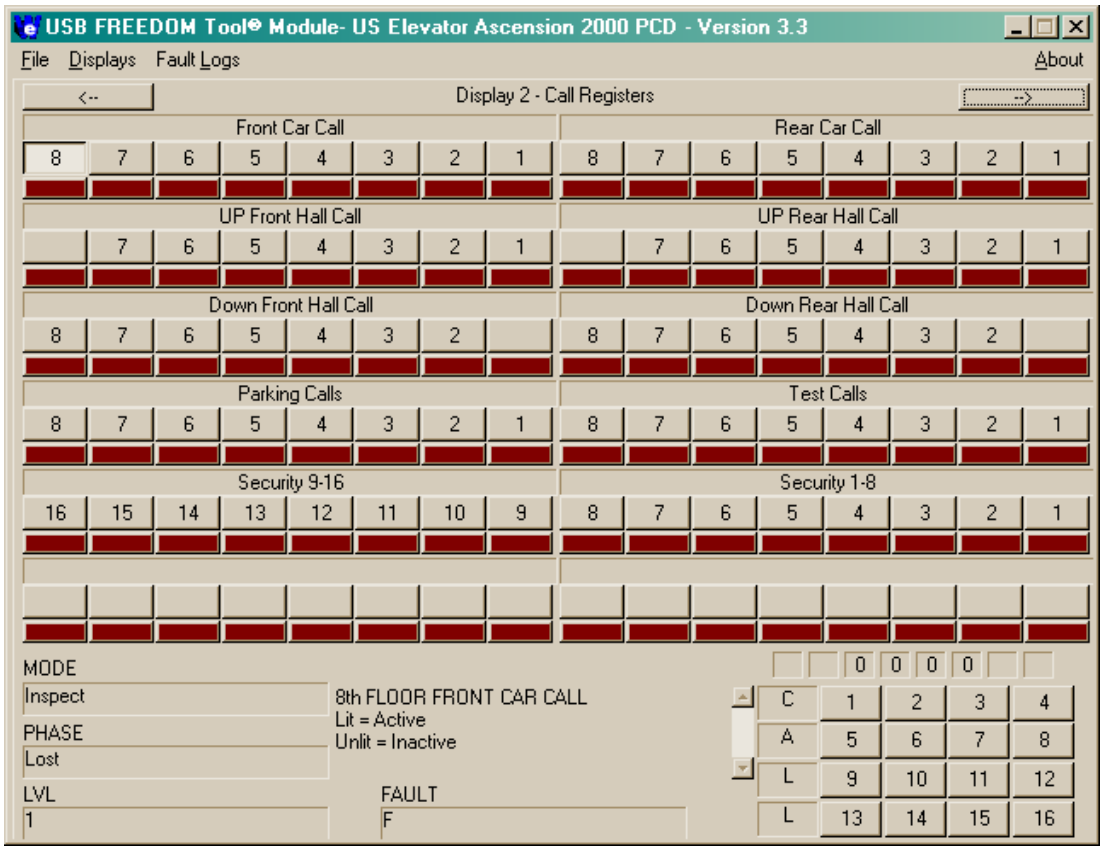
Run to Next Level

-	
-	
-	
-	
-	
-	
-	
NOLV	No Level Vane

Warnings

TSD	Top and Bottom Slowdown Active
LOST	Car Lost
DOCL	Door Close Limit and Door Close Limit Active
LVL	Level Up and Level Down Active
DLIM	Direction Limit
DLCK	Door Lock
NOVN	No Vane
CSC	Car Station Communication

Display 2 Call Registers



Front Car Call

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

Rear Car Call

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

Up Front Hall Call

-	
7	7th Landing Front Up Hall Call
6	6th Landing Front Up Hall Call
5	5th Landing Front Up Hall Call
4	4th Landing Front Up Hall Call
3	3rd Landing Front Up Hall Call
2	2nd Landing Front Up Hall Call
1	1st Landing Front Up Hall Call

Up Rear Hall Call

-	
7	7th Landing Rear Up Hall Call
6	6th Landing Rear Up Hall Call
5	5th Landing Rear Up Hall Call
4	4th Landing Rear Up Hall Call
3	3rd Landing Rear Up Hall Call
2	2nd Landing Rear Up Hall Call
1	1st Landing Rear Up Hall Call

Down Front Hall Call

8	8th Landing Front Down Hall Call
7	7th Landing Front Down Hall Call
6	6th Landing Front Down Hall Call
5	5th Landing Front Down Hall Call
4	4th Landing Front Down Hall Call
3	3rd Landing Front Down Hall Call
2	2nd Landing Front Down Hall Call
-	

Down Rear Hall Call

8	8th Landing Rear Down Hall Call
7	7th Landing Rear Down Hall Call
6	6th Landing Rear Down Hall Call
5	5th Landing Rear Down Hall Call
4	4th Landing Rear Down Hall Call
3	3rd Landing Rear Down Hall Call
2	2nd Landing Rear Down Hall Call
-	

Parking Calls

8	Car requested to park at 8th landing
7	Car requested to park at 7th landing
6	Car requested to park at 6th landing
5	Car requested to park at 5th landing
4	Car requested to park at 4th landing
3	Car requested to park at 3rd landing
2	Car requested to park at 2nd landing
1	Car requested to park at 1st landing

Test Calls

8	Test call placed at 8th landing
7	Test call placed at 7th landing
6	Test call placed at 6th landing
5	Test call placed at 5th landing
4	Test call placed at 4th landing
3	Test call placed at 3rd landing
2	Test call placed at 2nd landing
1	Test call placed at 1st landing

Stop Immediately

FDOZ	Door Open Zone Self Check Failure
-	
PHCG	Phase Change
-	
FDM	Door Monitor Fault
FRDC	Redundancy Fault
-	
CPS	CPS Data Fault

Recoverable

LEAK	Relevel counter overflow
PERS	Personality Fault
RP	Reverse Phase Check
MLT	Motor Limit Timer
-	
LULD	Level Up/Level Down
RLVL	Relevel Fault
-	

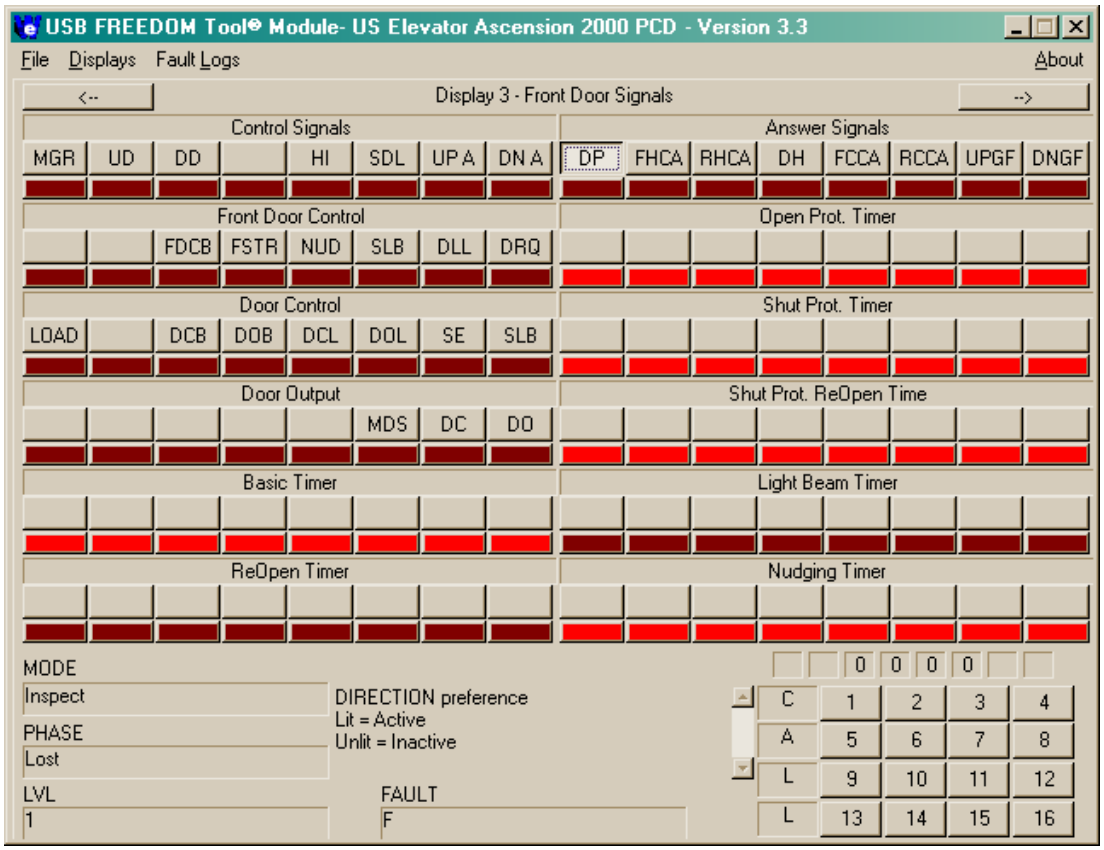
Security 9 – 16

16	16th landing enabled through security
15	15th landing enabled through security
14	14th landing enabled through security
13	13th landing enabled through security
12	12th landing enabled through security
11	11th landing enabled through security
10	10th landing enabled through security
9	9th landing enabled through security

Security 1 – 8

8	8th landing enabled through security
7	7th landing enabled through security
6	6th landing enabled through security
5	5th landing enabled through security
4	4th landing enabled through security
3	3rd landing enabled through security
2	2nd landing enabled through security
1	1st landing enabled through security

Display 3 Front Door Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Front Door Control

-	
-	
FDCB	Fireman's Service Phase 2- Door Close Button
FSTR	First short time request
NUD	Nudging request
SLB	Safety Ray
DLL	Door lock limit
DRQ	Door request

Open Protect Timer

Binary count of amount of time door is moved open before the door closes

Front Door Control

LOAD Front Load Switch
-
DCB Front Door Close Button
DOB Front Door Open Button
DCL Front Door Close Limit
DOL Front Door Open Limit
SE Front Safety Edge
SLB Front Safety Ray

Door Output

-
-
-
-
-
MDS Modified door speed
DC Close front door
DO Open front door

Basic Timer

Binary count of how long the door will normally stay open

Re-Open Timer

Binary count of how long door will stay open after a reopen

Shut Protect Timer

Binary count of amount of time door is moved closed before the door opens.

Shut Protect Re-Open Timer

Binary count of amount of time door reopens after shut protect timer expires

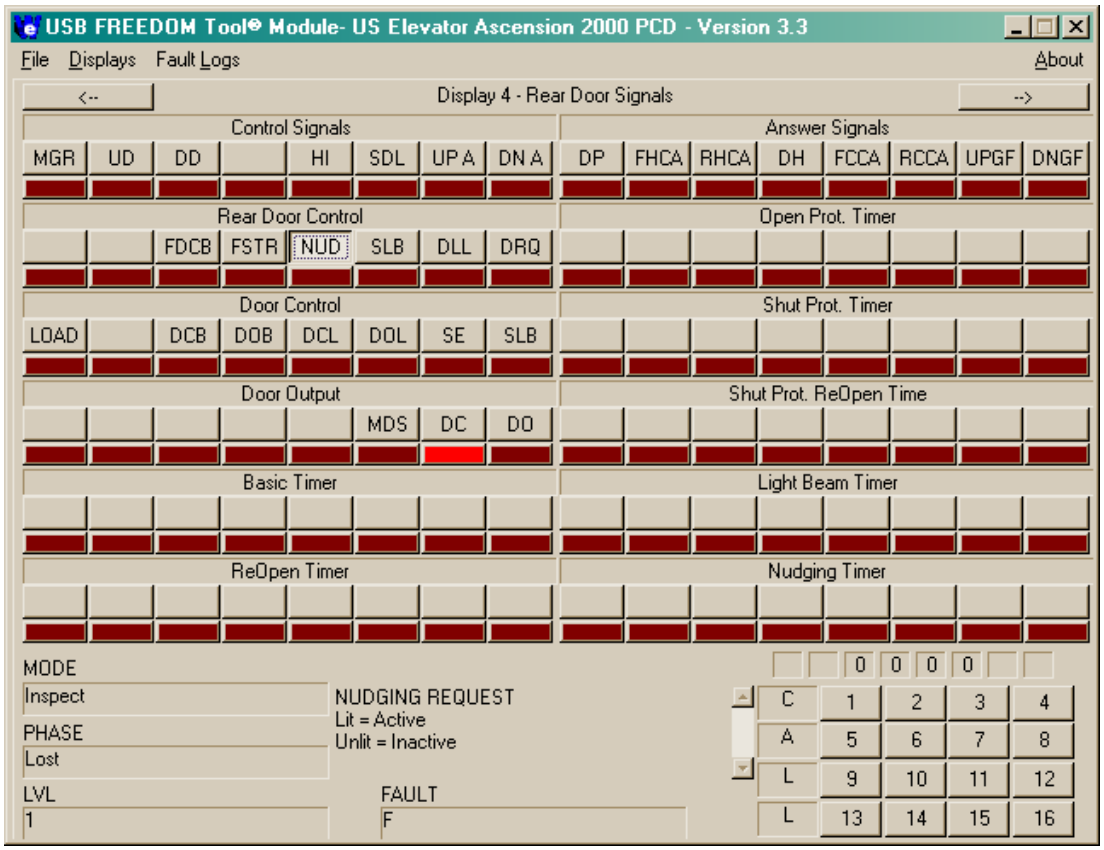
Light Beam Timer

Binary count of how long the light beam is activated before it is considered faulty and ignored

Nudging Timer

Binary count of how long doors will remain open before nudging operation engages.

Display 4 Rear Door Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Rear Door Control

-	
-	
FDCB	Fireman's Service Phase 2- Door Close Button
FSTR	First short time request
NUD	Nudging request
SLB	Safety Ray
DLL	Door lock limit
DRQ	Door request

Open Protect Timer

Binary count of amount of time door is moved open before the door closes

Rear Door Control

LOAD	Rear Load Switch
-	
DCB	Rear Door Close Button
DOB	Rear Door Open Button
DCL	Rear Door Close Limit
DOL	Rear Door Open Limit
SE	Rear Safety Edge
SLB	Rear Safety Ray

Door Output

-	
-	
-	
-	
-	
MDS	Modified door speed
DC	Close rear door
DO	Open rear door

Basic Timer

Binary count of how long the door will normally stay open

Re-Open Timer

Binary count of how long door will stay open after a reopen

Shut Protect Timer

Binary count of amount of time door is moved closed before the door opens.

Shut Protect Re-Open Timer

Binary count of amount of time door reopens after shut protect timer expires

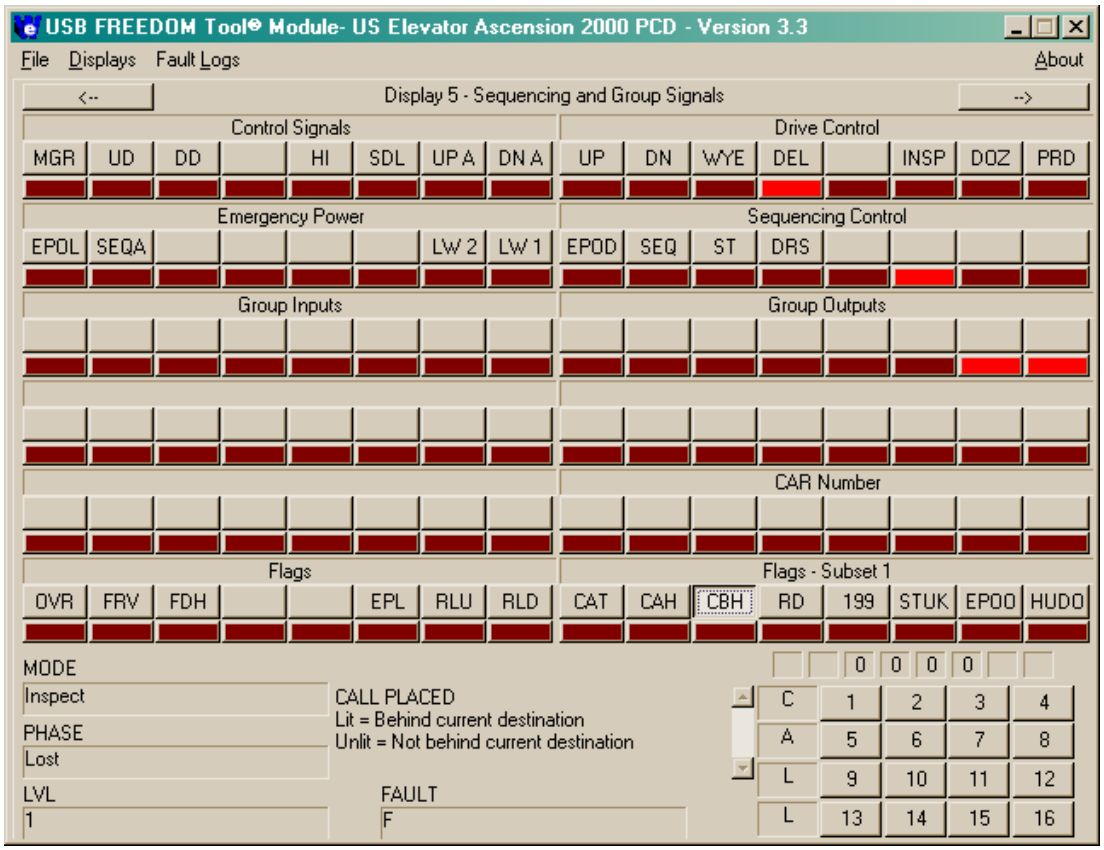
Light Beam Timer

Binary count of how long the light beam is activated before it is considered faulty and ignored

Nudging Timer

Binary count of how long doors will remain open before nudging operation engages.

Display 5 Sequencing and Group Signals



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up arrow
DN A	Down arrow

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
-	
INSP	Inspection
DOZ	Door Open zone
PRD	Power drive

Emergency Power

EPOL	Emergency power return floor request
SEQA	Emergency power duty car selected
-	
-	
-	
-	
LW 2	Loadweigher switch 2
LW 1	Loadweigher switch 1

Sequencing Control

EPOD	Emergency power return floor request
SEQ	Present car is emergency power duty car
ST	Present car is engaging WYE starter
DRS	Drive ready signal
-	
-	
-	
-	

Group Inputs

Group Outputs

Car Number

Car number assigned to this car through personality

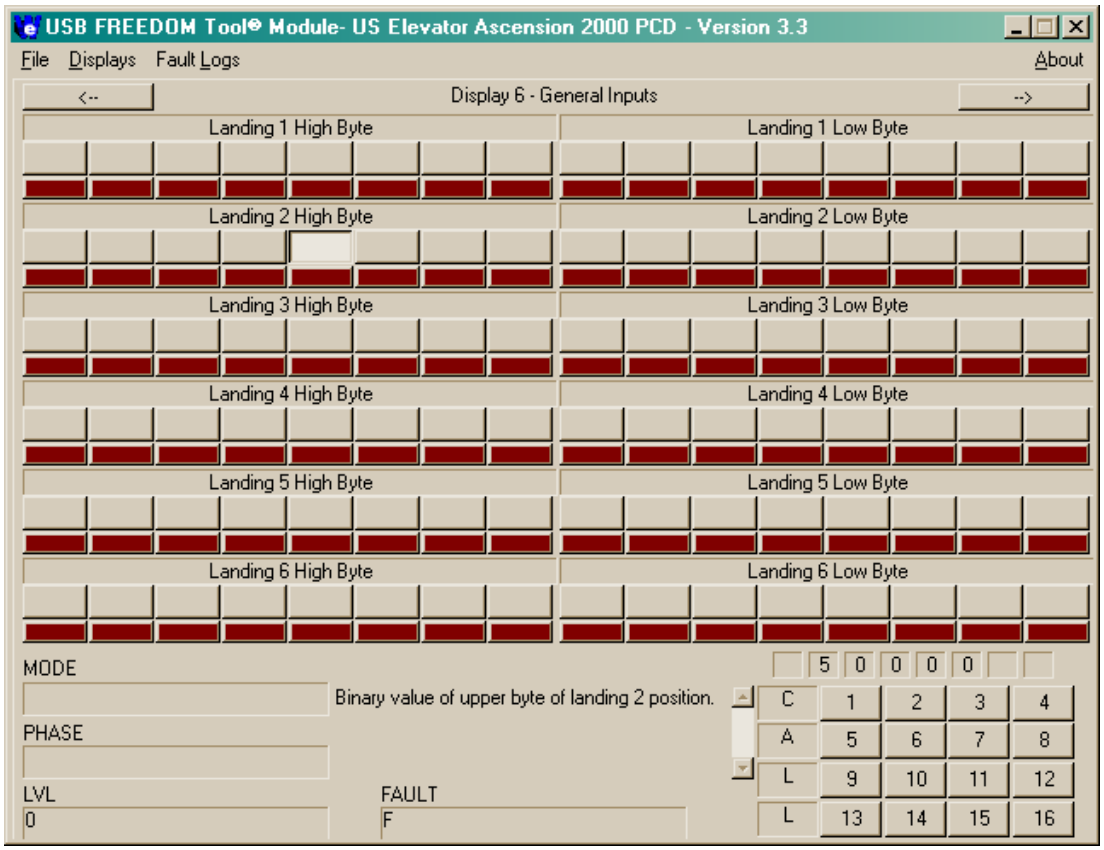
Flags

OVR	Overshoot
FRV	First vane
FDH	Force drop high zone
-	
-	
EPL	Car has responded to emergency power service landing
RLU	Relevel last occurred in up direction
RLD	Relevel last occurred in down direction

Flags – Subset 1

CAT	Call placed at current car level
CAH	Call placed ahead of car's destination
CBH	Call placed behind car's destination
RD	Rear door enabled
199	Car call/Door open button pressed
STUK	Front door stuck
EPOO	Emergency power - Door open request
HUDO	Houston fire service – Door open request

Display 6 General Inputs



Landing 1 High Byte

Binary indication of upper byte of landing 1 position

Landing 1 Low Byte

Binary indication of lower byte of landing 1 position.

Landing 2 High Byte

Binary indication of upper byte of landing 2 position

Landing 2 Low Byte

Binary indication of lower byte of landing 2 position.

Landing 3 High Byte

Binary indication of upper byte of landing 3 position

Landing 3 Low Byte

Binary indication of lower byte of landing 3 position.

Landing 4 High Byte

Binary indication of upper byte of landing 4 position

Landing 4 Low Byte

Binary indication of lower byte of landing 4 position.

Landing 5 High Byte

Binary indication of upper byte of landing 5 position

Landing 5 Low Byte

Binary indication of lower byte of landing 5 position.

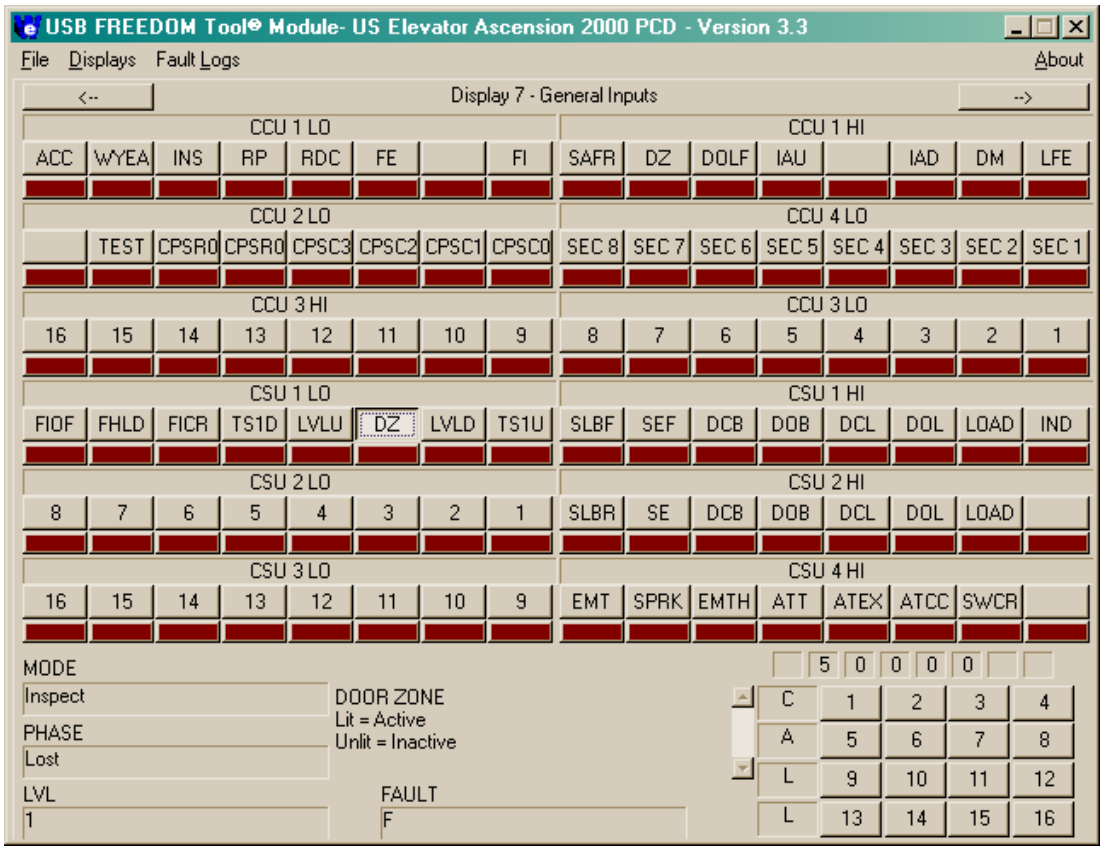
Landing 6 High Byte

Binary indication of upper byte of landing 6 position

Landing 6 Low Byte

Binary indication of lower byte of landing 6 position.

Display 7 General Inputs



CCU 1 LO

ACC	Access
WYEA	Another car in WYE operation
INS	Inspection
RP	Reverse phase check
RDC	Redundancy monitor
FE	Fireman's service – Phase 1
-	
FI	Fireman's service – Phase 2

CCU 1 HI

SAFR	Car safety string
DZ	Door zone vane
DOLF	Front door open limit
IAU	Inspection/Access up direction
-	
IAD	Inspection/Access down direction
DM	Door monitor
LFE	Lobby Fire – Alternate Fire Service

CCU 2 LO

-	
TEST	Test
CPSR0	CPS head data
CPSR0	CPS head data
CPSC3	CPS count data
CPSC2	CPS count data
CPSC1	CPS count data
CPSC0	CPS count data

CCU 4 LO

SEC 8	Landing 8 security operation
SEC 7	Landing 7 security operation
SEC 6	Landing 6 security operation
SEC 5	Landing 5 security operation
SEC 4	Landing 4 security operation
SEC 3	Landing 3 security operation
SEC 2	Landing 2 security operation
SEC 1	Landing 1 security operation

CCU 3 HI

16	Hall call # 16
15	Hall call # 15
14	Hall call # 14
13	Hall call # 13
12	Hall call # 12
11	Hall call # 11
10	Hall call # 10
9	Hall call # 09

CCU 3 LO

8	Hall call # 08
7	Hall call # 07
6	Hall call # 06
5	Hall call # 05
4	Hall call # 04
3	Hall call # 03
2	Hall call # 02
1	Hall call # 01

CSU 1 LO

FIOF	Phase 2 Fireman's Service - Off
FHLD	Phase 2 Fireman's Service - Hold
FICR	Phase 2 Fireman's Service - Call Reset
TS1D	Bottom Terminal Slowdown
LVLU	Level Up Sensor
DZ	Door Zone Sensor
LVLD	Level Down Sensor
TS1U	Top Terminal Slowdown

CSU 1 HI

SLBF	Front Safety Ray
SEF	Front Safety Edge
DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
LOAD	Front Load Switch
IND	Independent Service

CSU 2 LO

8	Car call # 08
7	Car call # 07
6	Car call # 06
5	Car call # 05
4	Car call # 04
3	Car call # 03
2	Car call # 02
1	Car call # 01

CSU 2 HI

SLBR	Rear Safety Ray
SE	Rear Safety Edge
DCB	Rear Door Close Button
DOB	Rear Door Open Button
DCL	Rear Door Close Limit
DOL	Rear Door Open Limit
LOAD	Rear Load Switch
-	

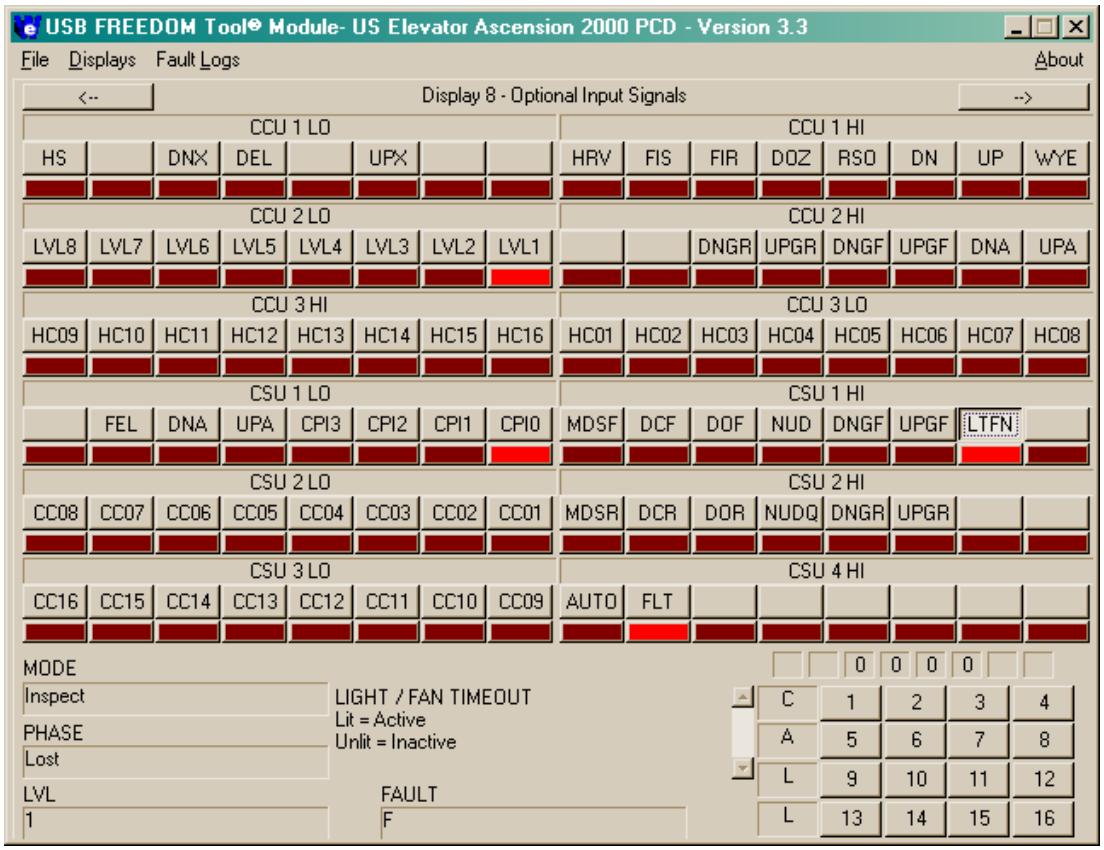
CSU 3 LO

16	Car call # 16
15	Car call # 15
14	Car call # 14
13	Car call # 13
12	Car call # 12
11	Car call # 11
10	Car call # 10
9	Car call # 09

CSU 4 HI

EMT	Emergency medical car switch
SPRK	Secure parking
EMTH	Emergency medical hall switch
ATT	Attendant service
ATEX	Attendant service – Express
ATCC	Attendant service – Call cancel
SWCR	Swing car service
-	

Display 8 Optional Input signals



CCU 1 LO

HS	High speed
-	
DNX	Down direction auxiliary
DEL	Delta starter signal
-	
UPX	Up direction auxiliary
-	
-	

CCU 1 HI

HRV	Hall riser voltage
FIS	Phase 2 Fireman's Service - Set
FIR	Phase 2 Fireman's Service - Reset
DOZ	Door override zone
RSO	Run/Stop override
DN	Down direction
UP	Up direction
WYE	WYE starter signal

CCU 2 LO

LVL8	Car at landing 8
LVL7	Car at landing 7
LVL6	Car at landing 6
LVL5	Car at landing 5
LVL4	Car at landing 4
LVL3	Car at landing 3
LVL2	Car at landing 2
LVL1	Car at landing 1

CCU 2 HI

-	
-	
DNGR	Rear down gong
UPGR	Rear up gong
DNGF	Front down gong
UPGF	Front up gong
DNA	Down arrow
UPA	Up arrow

CCU 3 HI

HC09	Hall call # 09
HC10	Hall call # 10
HC11	Hall call # 11
HC12	Hall call # 12
HC13	Hall call # 13
HC14	Hall call # 14
HC15	Hall call # 15
HC16	Hall call # 16

CCU 3 LO

HC01	Hall call # 01
HC02	Hall call # 02
HC03	Hall call # 03
HC04	Hall call # 04
HC05	Hall call # 05
HC06	Hall call # 06
HC07	Hall call # 07
HC08	Hall call # 08

CSU 1 LO

-	
FEL	Fire emergency light
DNA	Down arrow
UPA	Up arrow
CPI3	Car position Bit 3
CPI2	Car position Bit 2
CPI1	Car position Bit 1
CPI0	Car position Bit 0

CSU 1 HI

MDSF	Front door modified speed
DCF	Front door close signal
DOF	Front door open signal
NUD	Nudging buzzer
DNGF	Front down gong
UPGF	Front up gong
LTFN	Light/Fan Timeout
-	

CSU 2 LO

CC08	Car call # 08
CC07	Car call # 07
CC06	Car call # 06
CC05	Car call # 05
CC04	Car call # 04
CC03	Car call # 03
CC02	Car call # 02
CC01	Car call # 01

CSU 2 HI

MDSR	Rear door modified speed
DCR	Rear door close signal
DOR	Rear door open signal
NUDQ	Rear door nudging buzzer
DNGR	Rear down gong
UPGR	Rear up gong
-	
-	

CSU 3 LO

CC16	Car call # 16
CC15	Car call # 15
CC14	Car call # 14
CC13	Car call # 13
CC12	Car call # 12
CC11	Car call # 11
CC10	Car call # 10
CC09	Car call # 09

CSU 4 HI

AUTO	Automatic operation
FLT	Fault signal
-	
-	
-	
-	
-	
-	

PERSONALITY: Displays 9 and A are the personality displays. This personality information are adjustments/settings/features of the elevator system that are adjustable using the service tool. Display 9 and A are the only displays that allow the changing of information. To navigate through these windows, pushbuttons are made available to the user in the lower right-hand corner of the display. Notice that the call pushbutton and status indicators are removed from this window. When the user wants to change a personality bit use the following:

1) Press the **GRP(E)** pushbutton to get the **FOCUS** LED flashing. The **FOCUS** LED is the one currently receiving the focus of the input buttons **SET(1)** and **CLR(0)**.

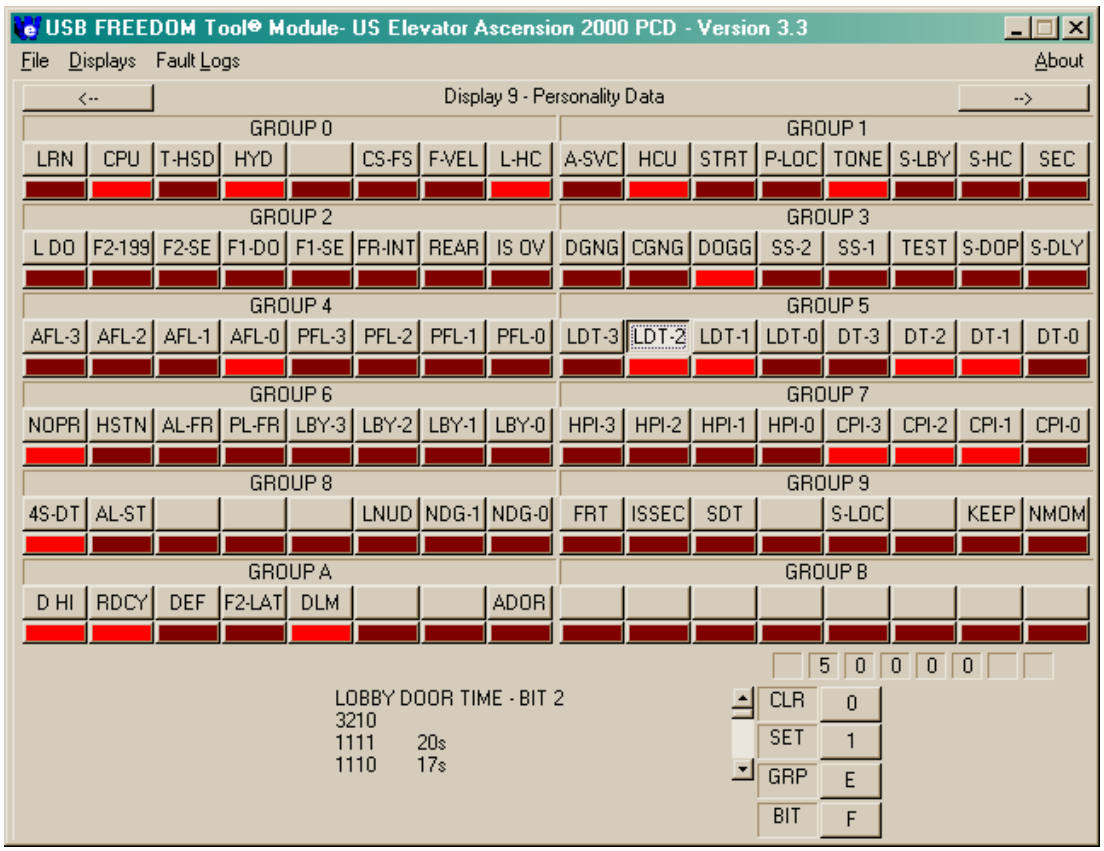
2) Once the **FOCUS** is flashing the user can press the **GRP(E)** pushbutton to change which group to change a bit in. **OR** the user can press the **BIT(F)** pushbutton to change which LED is the **FOCUS** within the group.

3) With the desired **FOCUS** flashing the user can press the **SET(1)** or **CLR(0)** pushbuttons to change the **FOCUS** state from **ACTIVE** (Bright Red) or **INACTIVE** (Dark Red).

- When the last group is reached, pressing the **GRP(E)** pushbutton will cause the **FOCUS** to jump to the first Group on the display in the upper left hand corner.

- When the last bit within a group is reached pressing the **BIT(F)** pushbutton will cause the **FOCUS** to jump to the first bit within the group.

Display 9 Personality Data



Row 0

Bit 7	Learn hoistway
Bit 6	CPU Error
Bit 5	Enable Test Mode – car travels at leveling velocity
Bit 4	Hydraulic Elevator
Bit 3	-
Bit 2	California Fire service code
Bit 1	Fixed velocity
Bit 0	Hall calls terminated at controller – Simplex

Row 1

Bit 7	Attendant service
Bit 6	Hall Call unit enabled – Group operation
Bit 5	Street Car Operation
Bit 4	Local parking – Set = Park at lobby Not Set = Park at last landing
Bit 3	Beep upon passing landing
Bit 2	Security operation – Lobby stop
Bit 1	Secure calls – Hall and car calls secure for programmed landings
Bit 0	Security Operation – individual car calls can be secured

Row 2

Bit 7	Park at lobby with door open
Bit 6	Phase 2 Fireman's Service – Disable car call door close operation
Bit 5	Phase 2 Fireman's Service – Disable safety edge
Bit 4	Phase 1 Fireman's Service – Disable door open button
Bit 3	Phase 1 Fireman's Service – Disable safety edge
Bit 2	Front and rear doors can't open at same time
Bit 1	Car has rear doors
Bit 0	Car must respond to emergency service floor and removed from independent service to be removed from Phase 1 Fireman's service

Row 3

Bit 7	Single down gong
Bit 6	Car call gong
Bit 5	Gong sounds on door open
Bit 4	Special service 2 – car calls cleared before car responds to special service call
Bit 3	Special service 1 – car responds to input landing before clearing car calls
Bit 2	Cycle mode – car will run from terminal to terminal on test mode
Bit 1	Car will secure park with door open
Bit 0	Car calls are cleared before elevator parks at secure landing

Row 4

Bit 7	Alternate fire service landing – Bit 3 *See Chart A
Bit 6	Alternate fire service landing – Bit 2
Bit 5	Alternate fire service landing – Bit 1
Bit 4	Alternate fire service landing – Bit 0
Bit 3	Primary fire service landing – Bit 3 See Chart A
Bit 2	Primary fire service landing – Bit 2
Bit 1	Primary fire service landing – Bit 1
Bit 0	Primary fire service landing – Bit 0

Bit 7	Bit 6	Bit 5	Bit 4	
Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	1st Landing
0	0	0	1	2nd Landing
0	0	1	0	3rd Landing
0	0	1	1	4th Landing
0	1	0	0	5th Landing
0	1	0	1	6th Landing
0	1	1	0	7th Landing
0	1	1	1	8th Landing
1	0	0	0	9th Landing
1	0	0	1	10th Landing
1	0	1	0	11th Landing
1	0	1	1	12th Landing
1	1	0	0	13th Landing
1	1	0	1	14th Landing
1	1	1	0	15th Landing
1	1	1	1	16th Landing

Chart A – Fire Service Landing

Row 5

Bit 7	Lobby door time – Bit 3 *See Chart B
Bit 6	Lobby door time – Bit 2
Bit 5	Lobby door time – Bit 1
Bit 4	Lobby door time – Bit 0
Bit 3	Door time – Bit 3 *See Chart B
Bit 2	Door time – Bit 2
Bit 1	Door time – Bit 1
Bit 0	Door time – Bit 0

Bit 7	Bit 6	Bit 5	Bit 4	
Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	0.5 Sec.
0	0	0	1	1.0 Sec.
0	0	1	0	1.5 Sec.
0	0	1	1	2.0 Sec.
0	1	0	0	2.5 Sec.
0	1	0	1	3.0 Sec.
0	1	1	0	4.0 Sec.
0	1	1	1	5.0 Sec.
1	0	0	0	6.0 Sec.
1	0	0	1	7.0 Sec.
1	0	1	0	8.0 Sec.
1	0	1	1	10.0 Sec.
1	1	0	0	12.0 Sec.
1	1	0	1	14.0 Sec.
1	1	1	0	17.0 Sec.
1	1	1	1	20.0 Sec.

Chart B– Door Times

Row 6

Bit 7 Disable pre-opening
Bit 6 Houston Fire Service Code
Bit 5 Alternate Fire Service Door
Set = Rear
Not Set = Front
Bit 4 Fire Service Door
Set = Rear
Not Set = Front
Bit 3 Lobby landing – Bit 3
*See Chart C
Bit 2 Lobby landing – Bit 2
Bit 1 Lobby landing – Bit 1
Bit 0 Lobby landing – Bit 0

Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	1st Landing.
0	0	0	1	2nd Landing
0	0	1	0	3rd Landing
0	0	1	1	4th Landing
0	1	0	0	5th Landing
0	1	0	1	6th Landing
0	1	1	0	7th Landing
0	1	1	1	8th Landing
1	0	0	0	9th Landing
1	0	0	1	10th Landing
1	0	1	0	11th Landing
1	0	1	1	12th Landing
1	1	0	0	13th Landing
1	1	0	1	14th Landing
1	1	1	0	15th Landing
1	1	1	1	16th Landing

Chart C– Lobby Landing

Row 7

Bit 7 Hall PI Type
*See Chart D
Bit 6 Hall PI Type
Bit 5 Hall PI Type
Bit 4 Hall PI Type
Bit 3 Car PI Type
*See Chart D
Bit 2 Car PI Type
Bit 1 Car PI Type
Bit 0 Car PI Type

Bit 7	Bit 6	Bit 5	Bit 4	
Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	In-Line
0	0	0	1	Binary

Chart D– PI Type

Row 8

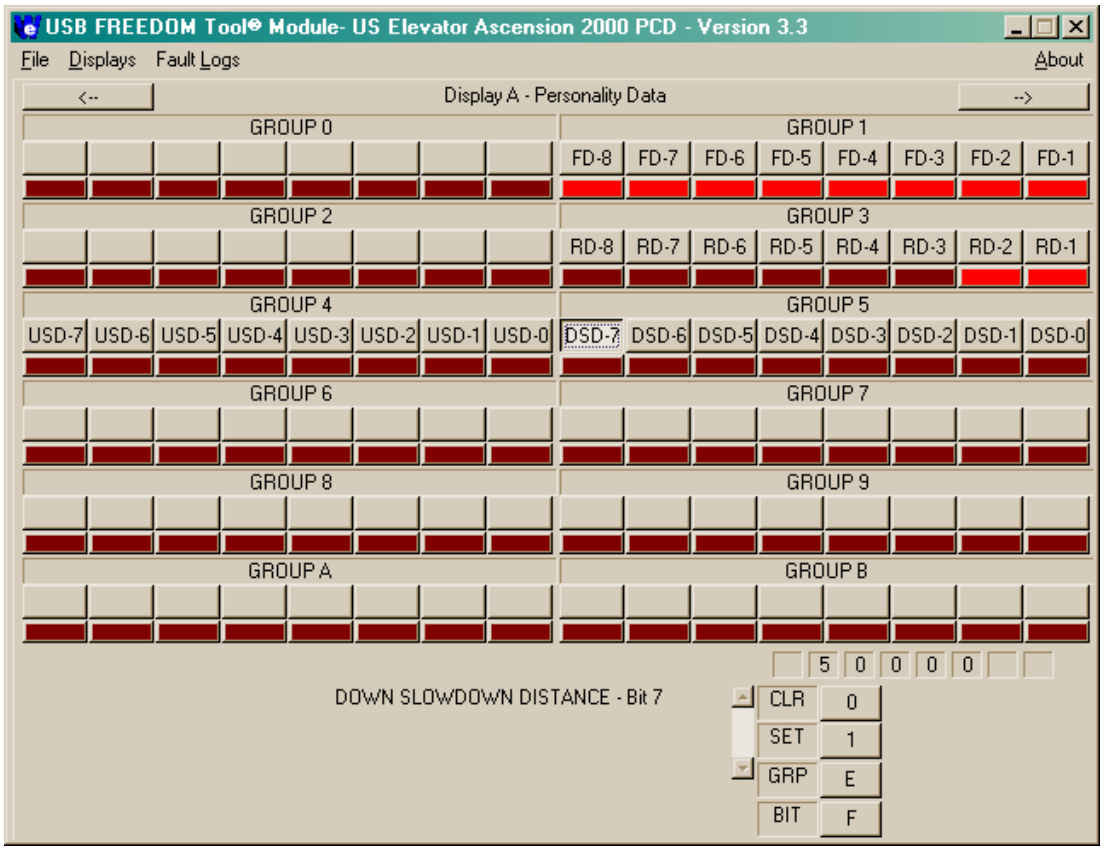
Bit 7 Set minimum door time to 4.0 Seconds
Bit 6 Across line start
Bit 5
Bit 4
Bit 3
Bit 2 Disable lobby nudging
Bit 1 Nudging Timer – Bit 1
*See Chart E
Bit 0 Nudging Timer – Bit 0

Bit 1	Bit 0	Description
0	0	Nudging Disabled
0	1	20 Sec.
1	0	30 Sec.
1	1	40 Sec.

Chart E – Nudging Timer

Row 9		Row A	
Bit 7	Freight Doors	Bit 7	Drop high point is fixed distance from landing
Bit 6	Independent service overrides Security operation	Bit 6	Redundancy feature
Bit 5	Door short time enable	Bit 5	Revert to default
Bit 4		Bit 4	Phase 2 Fireman's Service – Car calls latched before door is closed
Bit 3	Security location Set = Use I/O 3 board Not Set = Use I/O 4 board	Bit 3	Door lock monitor
Bit 2		Bit 2	
Bit 1	Security Operation - Car will answer all placed calls before securing landing.	Bit 1	
Bit 0	Fireman's Service – Door will close upon 1 press of the door close pushbutton	Bit 0	Attendant service – automatic door operation

Display A Personality Data



Row 0	
Bit 7	
Bit 6	
Bit 5	
Bit 4	
Bit 3	
Bit 2	
Bit 1	
Bit 0	

Row 1	
Bit 7	Front door at landing 8
Bit 6	Front door at landing 7
Bit 5	Front door at landing 6
Bit 4	Front door at landing 5
Bit 3	Front door at landing 4
Bit 2	Front door at landing 3
Bit 1	Front door at landing 2
Bit 0	Front door at landing 1

Row 2	
Bit 7	
Bit 6	
Bit 5	
Bit 4	
Bit 3	
Bit 2	
Bit 1	
Bit 0	

Row 3	
Bit 7	Rear door at landing 8
Bit 6	Rear door at landing 7
Bit 5	Rear door at landing 6
Bit 4	Rear door at landing 5
Bit 3	Rear door at landing 4
Bit 2	Rear door at landing 3
Bit 1	Rear door at landing 2
Bit 0	Rear door at landing 1

Row 4	
Bit 7	Up slowdown distance – Bit 7
Bit 6	Up slowdown distance – Bit 6
Bit 5	Up slowdown distance – Bit 5
Bit 4	Up slowdown distance – Bit 4
Bit 3	Up slowdown distance – Bit 3
Bit 2	Up slowdown distance – Bit 2
Bit 1	Up slowdown distance – Bit 1
Bit 0	Up slowdown distance – Bit 0

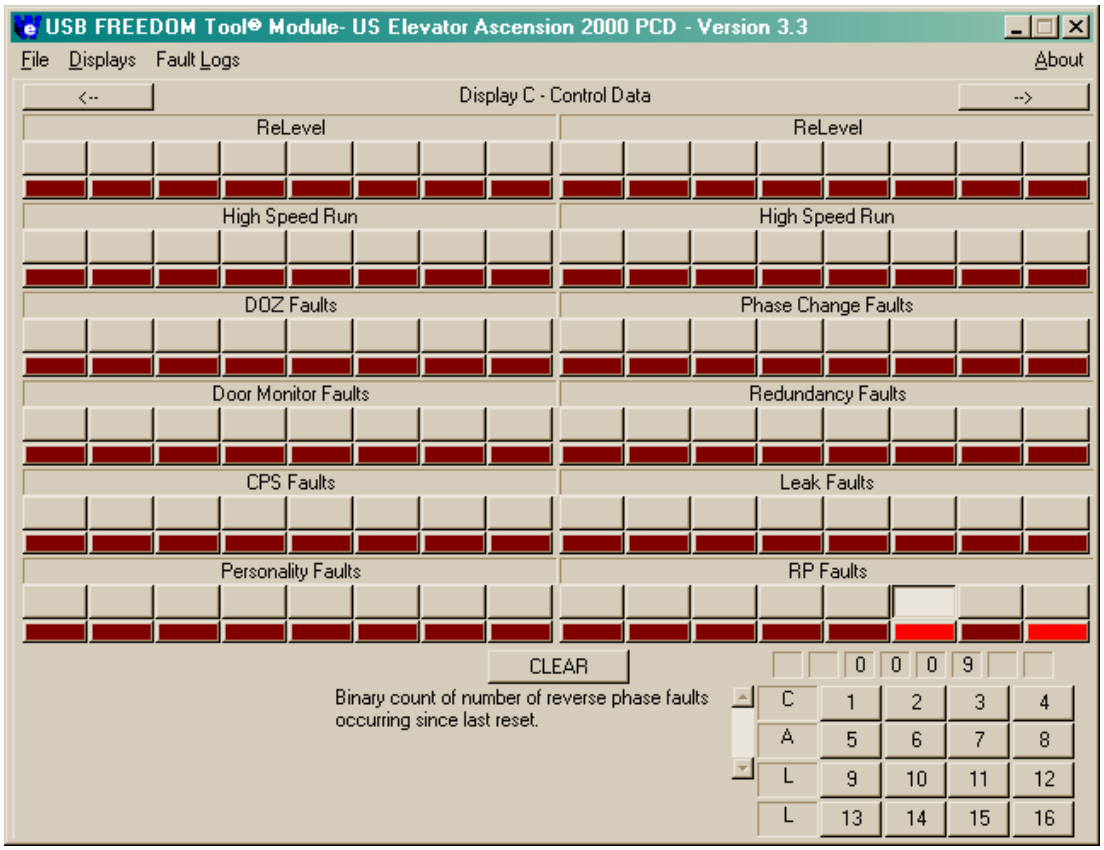
Row 5	
Bit 7	Down slowdown distance – Bit 7
Bit 6	Down slowdown distance – Bit 6
Bit 5	Down slowdown distance – Bit 5
Bit 4	Down slowdown distance – Bit 4
Bit 3	Down slowdown distance – Bit 3
Bit 2	Down slowdown distance – Bit 2
Bit 1	Down slowdown distance – Bit 1
Bit 0	Down slowdown distance – Bit 0

Display B Does not exist in the Ascension 2000 Elevator System

COUNTER DISPLAYS: Displays C, D, and E are the counter displays for the Ascension 2000 elevator system. Displays C and D count the amount of times any particular fault or signal occurs. These counters can be cleared using the **CLEAR** pushbutton found above the signal descriptor section of the FREEDOM Tool Display Window. Display E shows the basic I/O signals the car had at the time the counters were cleared.

NOTE: When servicing an Ascension 2000 that is shut down for no apparent reason, the service tool user should proceed **FIRST** to **Display C** and **PRESS THE CLEAR PUSHBUTTON**. The Ascension 2000 will shut down if the **Relevel** Counter in Display C gets too high. Pressing the **CLEAR** pushbutton will reset this counter and enable the car to run again. If after performing this reset, the car does not respond to any calls, then further troubleshooting techniques should be performed.

Display C Control Data



Relevel

Binary count of relevels since last cleared.

Relevel

Binary count of relevels since last cleared.

High Speed Run

Binary count of high speed runs since last cleared.

High Speed Run

Binary count of high speed runs since last cleared.

DOZ Faults

Binary count of times the door open zone and car safeties self check failed creating a DOZ Fault.

Phase Change Faults

Binary count of the controller detecting too many phase changes in a given period creating a phase change fault

Door Monitor Faults

Binary count indicating how many times the door lock monitor circuit detected a jumper on the door lock circuit during door operation

Redundancy Faults

Binary count indicating how many times the redundancy input was incorrect when the car was running or stopped

CPS Faults

Binary count indicating how many times data was not readable from the CPS unit

Leak Faults

Binary count indicating the relevel counter overflowing due to a leaking valve

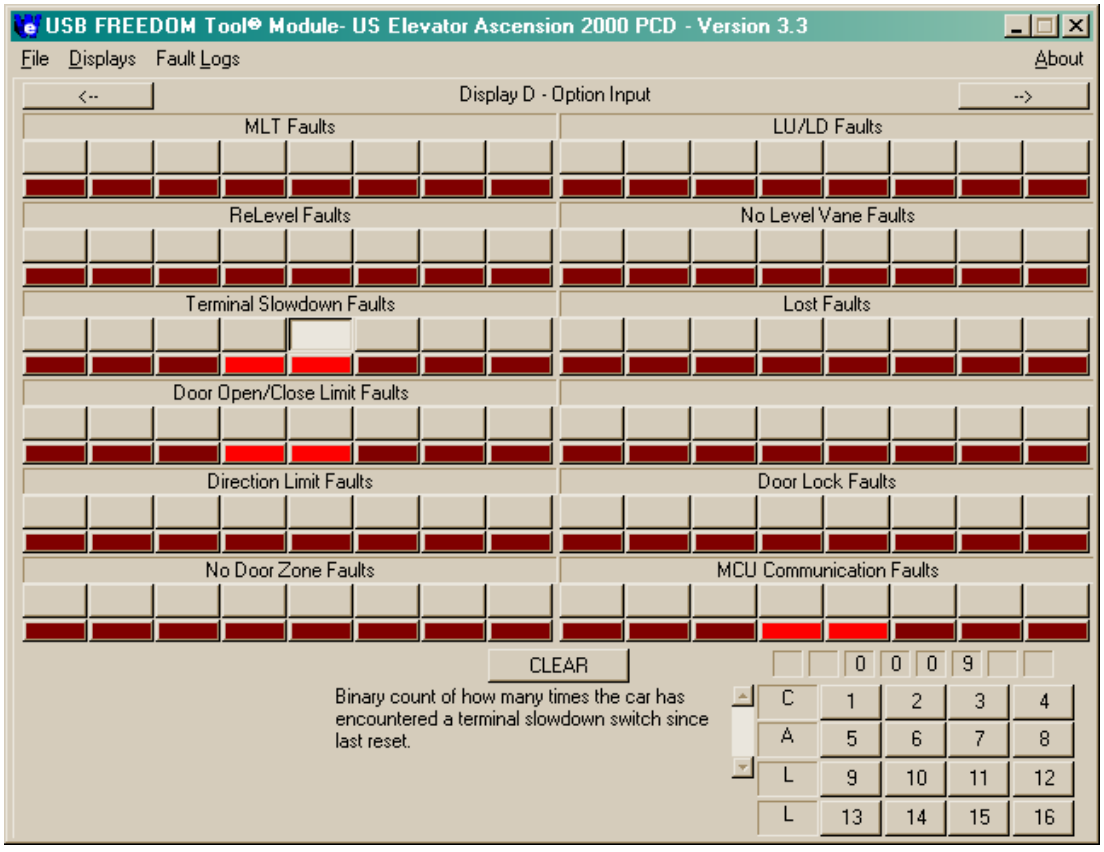
Personality Faults

Binary count of number of Personality faults occurring since last reset

RP Faults

Binary count of number of reverse phase faults occurring since last reset

Display D Option Input



MLT Faults

Binary count indicating number of times MLT fault had occurred since last reset.

LU / LD Faults

Binary count indicating how many time the Level Up and Level Down signals were active at the same time since the last reset.

Relevel Faults

Binary count of relevel faults since last reset.

No Level Vane Faults

Binary count indicating how many times the car has come to a landing, but has not detected a leveling vane. This is since last reset

Terminal Slowdown Faults

Binary count of how many times the car has encountered a terminal slowdown switch since last reset.

Lost Faults

Binary count indicating how many times car has been lost since last reset

Door Open / Close Limit

Binary count indicating number of times door open limit and door close limit active at same time since the last reset

Direction Limit Faults

Binary indication of how many times a directional limit switch was activated since last reset

Door Lock Faults

Binary count of door lock faults that have occurred since last reset

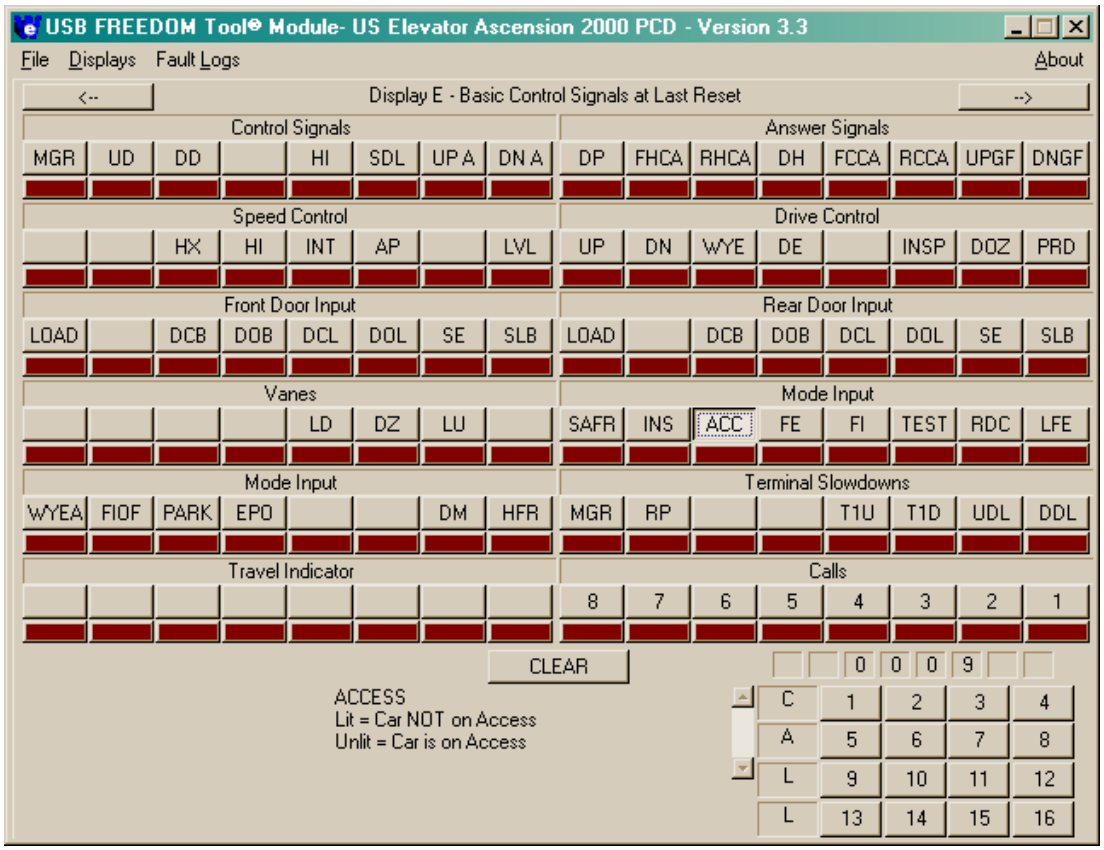
No Door Zone Faults

Binary count of times no door zone being detected when car is at landing since last reset.

MCU Communication Faults

Binary count of communication failures with MCU board since last reset.

Display E Basic Control Signals at Last Reset



Control Signals

MGR	Motor request
UD	Up direction request
DD	Down direction request
-	
HI	High speed request
SDL	Level speed request
UP A	Up Arrow
DN A	Down Arrow

Answer Signals

DP	Direction Preference
FHCA	Front Hall Call Answered
RHCA	Rear Hall Call Answered
DH	Drop High speed zone
FCCA	Front Car Call Answered
RCCA	Rear Car Call Answered
UPGF	Front Up Gong
DNGF	Front Down Gong

Speed Control

-	
-	
HX	High Speed Indicator
HI	High Speed Command
INT	Intermediate Speed Command
AP	Approach Speed Command
-	
LVL	Level speed Command

Drive Control

UP	Up direction
DN	Down direction
WYE	WYE signal
DEL	Delta signal
-	
INSP	Inspection
DOZ	Door Open zone
PRD	Power drive

Front Door Input

LOAD	Front Load Switch
-	
DCB	Front Door Close Button
DOB	Front Door Open Button
DCL	Front Door Close Limit
DOL	Front Door Open Limit
SE	Front Safety Edge
SLB	Front Safety Ray

Vanes

-	
-	
-	
-	
LD	Level Down Vane
DZ	Door Zone Vane
LU	Level Up Vane
-	

Mode Input

WYEA	WYE Status
FIOF	Car Station Fire Switch Off
PARK	Secure Park
EPO	Emergency Power
-	
-	
DM	Door Monitor
HFR	Houston Fire Service

Travel Indicator

-	
-	
-	
-	
-	
-	
-	
-	

Rear Door Input

LOAD	Rear Load Switch
-	
DCB	Rear Door Close Button
DOB	Rear Door Open Button
DCL	Rear Door Close Limit
DOL	Rear Door Open Limit
SE	Rear Safety Edge
SLB	Rear Safety Ray

Mode Input

SAFR	Car Safety String
INS	Inspection
ACC	Access
FE	Fireman's Emergency Return – Phase 1
FI	Fireman's Independent – Phase 2
TEST	Test
RDC	Redundancy Monitor
LFE	Lobby Fire – Alternate Fire Service

Terminal Slowdown

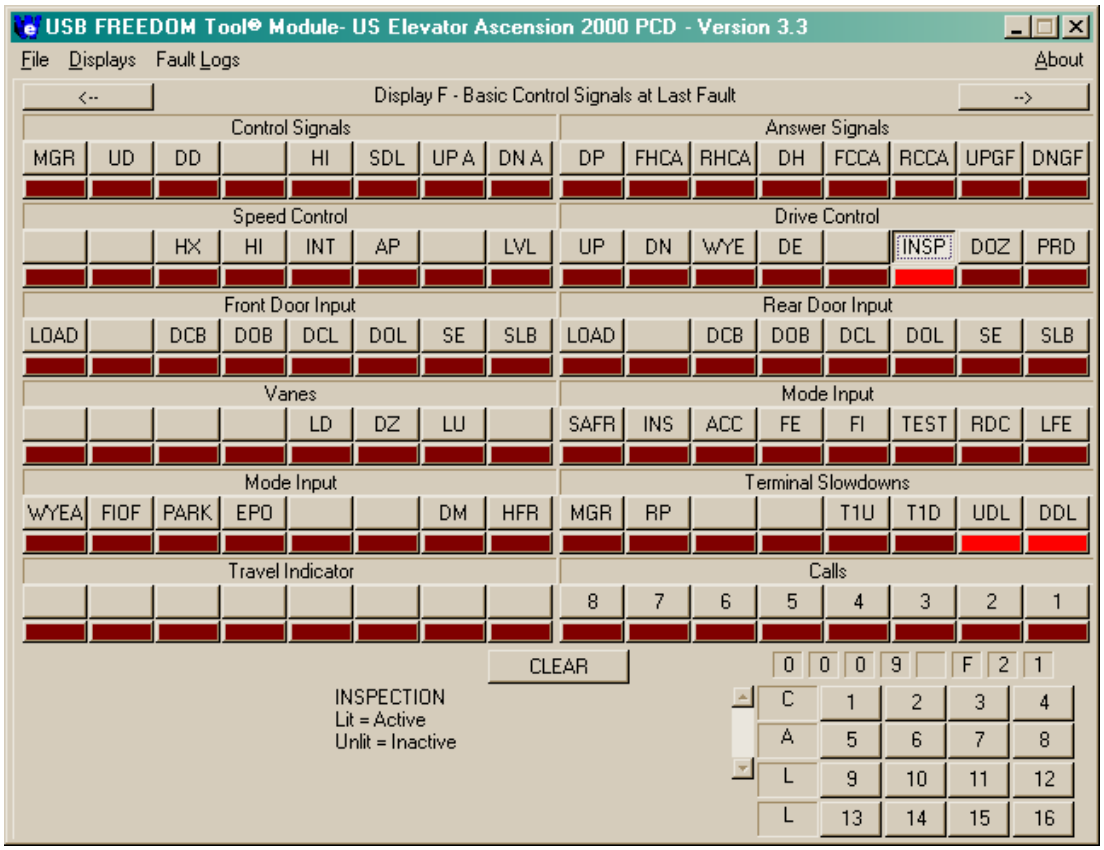
MGR	Motor Request
RP	3 Phase Status
-	
-	
T1U	Up Slowdown Switch
T1D	Down Slowdown Switch
UDL	Up Directional Limit
DDL	Down Directional Limit

Calls

8	8th Landing Car Call
7	7th Landing Car Call
6	6th Landing Car Call
5	5th Landing Car Call
4	4th Landing Car Call
3	3rd Landing Car Call
2	2nd Landing Car Call
1	1st Landing Car Call

FAULT DISPLAY: The Fault Displays (F through AF) are a log of the I/O signals when a fault occurred within the Ascension 2000 elevator system. The first fault will be logged in at 1F and progress through until it reaches AF. Once there are greater than ten faults, the oldest fault display will drop out every time a new fault occurs. When the **CLEAR** pushbutton is pressed, the entire fault log will be cleared out and new faults will be logged starting at Display 1F.

Display F (1F through AF) Basic Control Signals at Last Fault



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-	
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-	
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-	
-	
-	
-	
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LU	Level Up Vane
-	

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-	
-	
-	
-	
-	
-	
-	

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