FREEDOM TOOL®

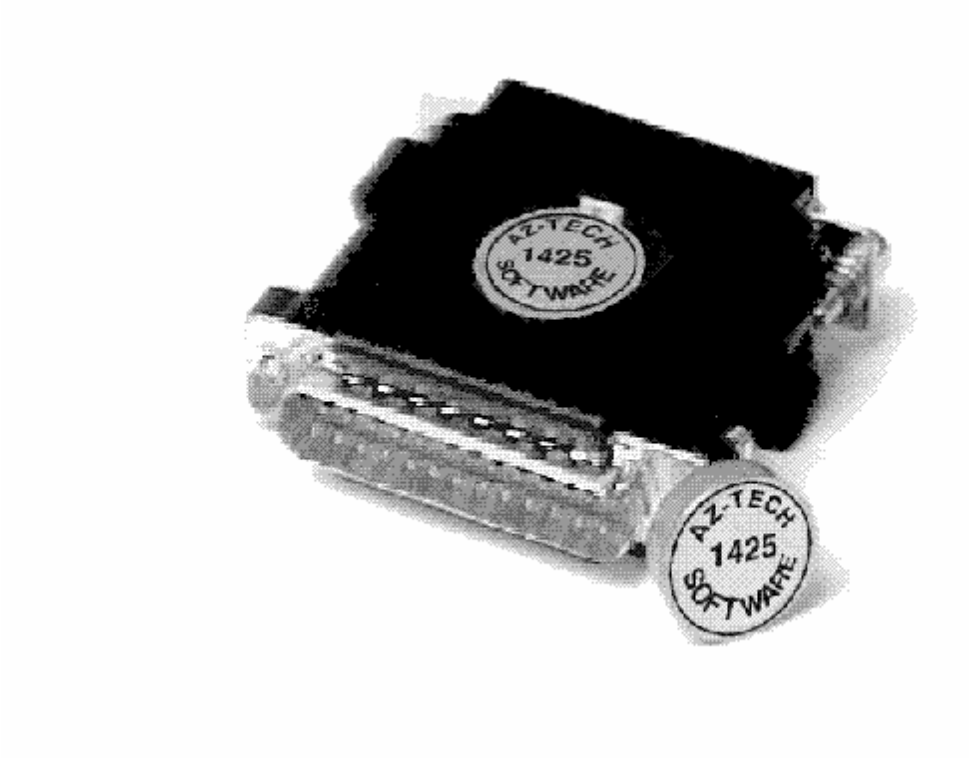
Schindler EPOCH

WORLD electronics

7502.9038

This is Your Software Security Access Key:

DO NOT LOSE IT !



DO NOT PLUG THE SECURITY KEY INTO ANY ELEVATOR INTERFACE PORT

This security device must be plugged into the notebook computer's PRINTER port whenever the FREEDOM Tool Software is to be run.

List of Trademarks

Microsoft Windows, Windows 95, and MS-DOS are registered trademarks/products of Microsoft Corporation.
EPOCH-I and EPOCH-II are trademarks of the Schindler Corporation.
IBM and PS/2 are registered trademarks of International Business Machines Corporation
WORLD electronics, the WORLD electronics' logo, FREEDOM Tool, and FREEDOMWare are registered trademarks of WORLD electronics Sales and Service, Inc.

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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 has been written to specifically target the Schindler / Westinghouse EPOCH-I and EPOCH-II traction elevator control systems. All references to "**FREEDOM Tool**" throughout this manual implies that it pertains solely to the software systems that support the Schindler / Westinghouse elevator control systems.

FREEDOM Tool Features:

The FREEDOM Tool is a Graphical User Interface (GUI) and provides all the functions necessary to service the Schindler / Westinghouse elevator systems. The software runs under the Microsoft Windows operating system and provides the following features:

- A Graphical User Interface which makes it easy to access various adjustment and diagnostic areas comprising the service tool resident upon the Schindler / Westinghouse elevator control system being diagnosed.

- Simple point and click operations. The computer does all necessary commands for the user in the background.

Minimum Hardware and Software Requirements:

The software provided as of a package by WORLD electronics and is designed to operate on an IBM compatible notebook computer that has the following minimum characteristics:

- A 486 microprocessor.
- 4 Megabytes of RAM memory.
- Windows 3.1 or Windows 95 Operating System.
- Mouse, Trackball, or other pointing device.
- Minimal clock frequency of 33MHz
- Internal Fax/Data Modem

The FREEDOM Tool software is not capable of being executed without a sophisticated **security key** that is to be connected to the parallel port of the computer at the time of the FREEDOM Tool execution.

A **WORLD electronics** "FREEDOM TOOL Serial Interface Cable" is required. These interface cables provide the proper signal conversions and connections between the computer and the Schindler / Westinghouse elevator system that allows them to communicate with one another.

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.

Getting Started:

Security Device Information:

WORLD electronics protects itself and its FREEDOM Tool software by utilizing a sophisticated security device that must be installed on the parallel printer port, physically located in the rear of the computer, before operating the FREEDOM Tool software. This security key is unique to every FREEDOM Tool and cannot be shared among other FREEDOM Tools.

WARNING! -- It is extremely important this device is not lost. The replacement value of this device is equal to the dollar value of the FREEDOM Tool software Systems 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. To Prevent theft, it is advisable to store the security device and the FREEDOM Tool in two (2) separate, secure locations when not in use. **DO NOT PLUG THE SECURITY KEY INTO THE ELEVATOR AT ANY TIME. ONLY PLUG THE SECURITY KEY INTO THE NOTEBOOK COMPUTER.** A damaged security key has a $250 charge affiliated with its replacement.

IMPORTANT!!: The "FREEDOM Tool Serial Interface Cable 7502.9030" must not be connected to the elevator system until the FREEDOM Tool instructs the user to do so.

Executing the Shell Program (Microsoft Windows 3.1):

The start up procedure of the WORLD electronics's 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.

2. Turn on the computer and allow the Windows operating system to become operational. From the Program Manager window, select the "Applications" Icon by using the pointing device to position the cursor directly over the "Applications" Icon and double clicking the pointing device button. Refer to Figure #1.

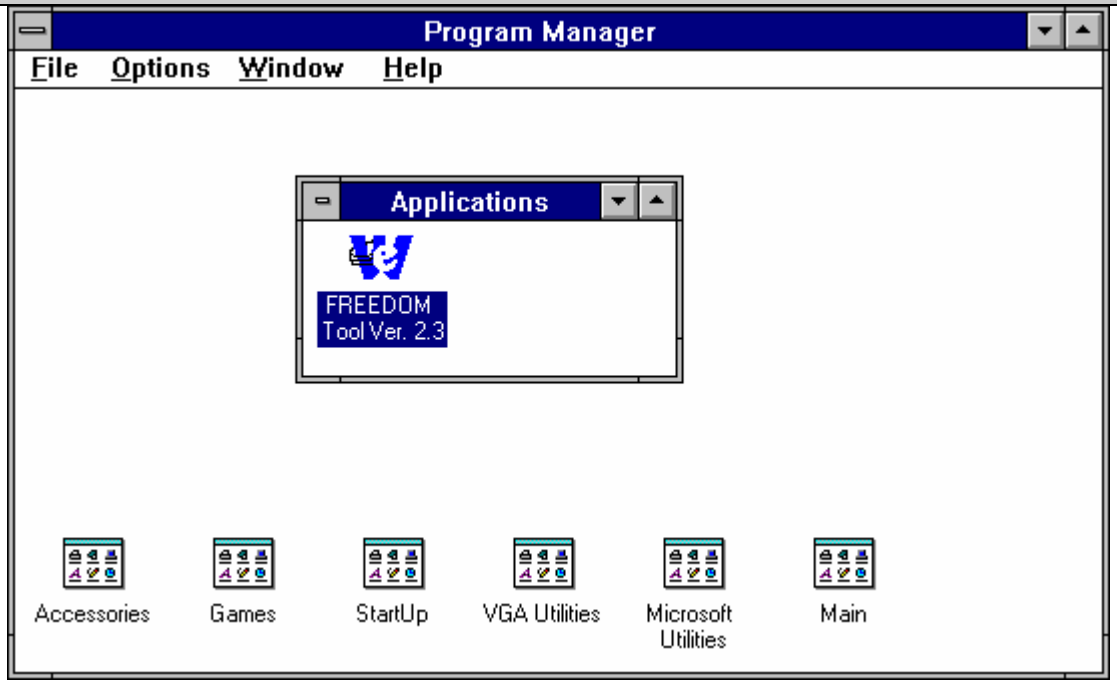

Figure 1

3. With the Applications window open select the “FREEDOM Tool” Icon by positioning the cursor over the “FREEDOM Tool” Icon with the pointing device and double clicking the pointing device button.

4. The “FREEDOM Tool Shell” window will be displayed as in Figure #2.

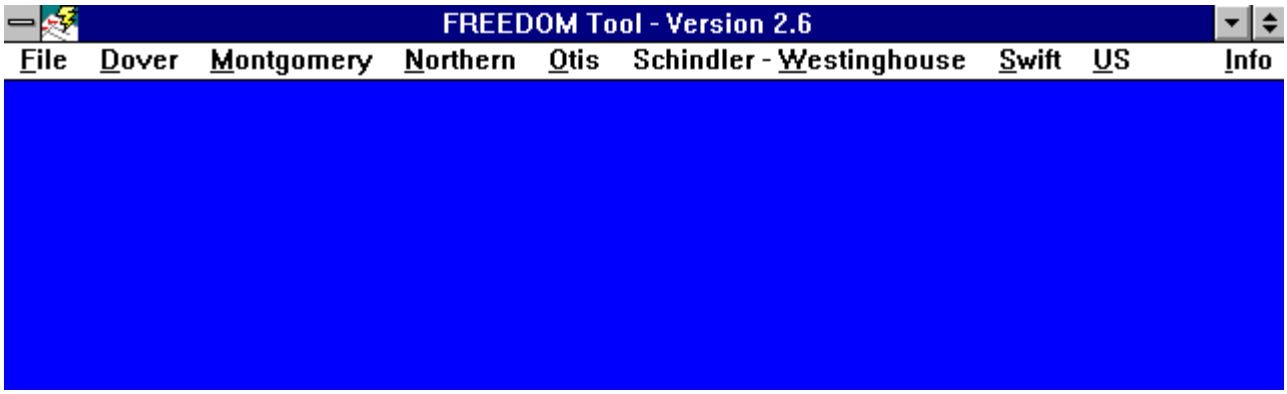

Figure 2

Executing the Shell Program (Microsoft Windows 95):

The start up procedure of the WORLD electronics’s 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.

2. Turn on the computer and allow the Windows 95 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, “FREEDOM Tool Folder”, and then “FREEDOM Tool” Refer to Figure #3.

Figure 3

3. The “FREEDOM Tool Shell” window will be displayed as revealed in Figure #4.

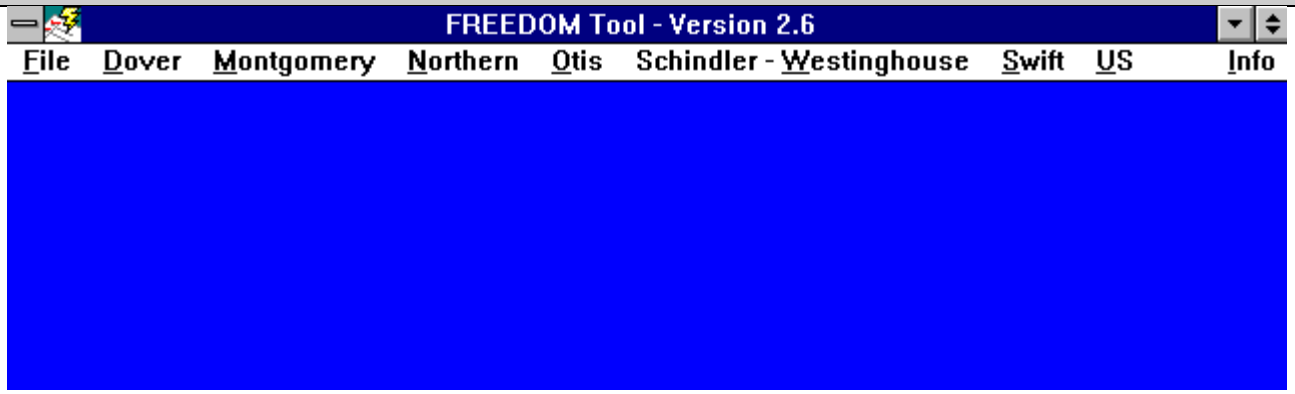

Figure 4

Starting the Schindler-Westinghouse Software Module:

1. With the "FREEDOM Tool Shell" window open position the cursor directly over the appropriate system manufacturer menu item selection and single click the pointing device button to pull down a list of controllers for each manufacturer as shown in Figure #5.

Figure 5

At this time, notice that the "W" in the menu item "Schindler - Westinghouse" is underlined. This "W" is underlined because it is a built-in Microsoft Windows shortcut. When the user presses and holds down the "Alt" key on the keyboard, and then presses the key representing the underlined letter, the item with that particular underlined letter will be selected. Any item with a character underlined within the FREEDOM Tool software can use this method for selecting that particular item.

2. Position the cursor over "Schindler - Westinghouse" and single click the pointing device button to display the Schindler - Westinghouse system menu elevator controller selections, shown in Figure #5.

3. There are a total of five elevator systems that the "Schindler - Westinghouse" tool will service. To select one of these systems, position the cursor over any one of the menu selections and single click with the pointing device button.

4. The "FREEDOM Tool: Security Key Information" window will be displayed as in Figure # 6 if the correct security key has been determined to be installed. The Security Key Information window gives the user information on the software module being used, part of the key being

diagnosed, the serial number, and the expiration date. Continue with the program by positioning the cursor over the OK button and single click with the pointing device button.

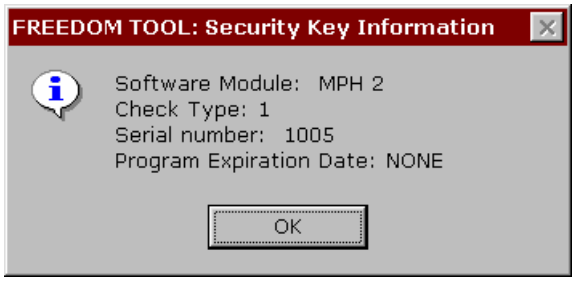

Figure 6

In the event that the security key has not been installed or a problem exists with the installed key, a "FREEDOM Tool: Security Key Information" window will be displayed revealing an authorization error as shown in Figure # 7. Please take note of this error number and call WORLD electronics for help. To continue, position the cursor over the OK and single click with the pointing device button. This causes the FREEDOM Tool software to terminate execution and return to the FREEDOM Tool Shell.

Figure 7

5. The "FREEDOM Tool Info" window will be displayed as in Figure #8 which indicates the software version selected, displays copyright information, and provides the 800 number in which to contact WORLD electronics. When finished viewing this window, continue by selecting OK with the notebook pointing device.

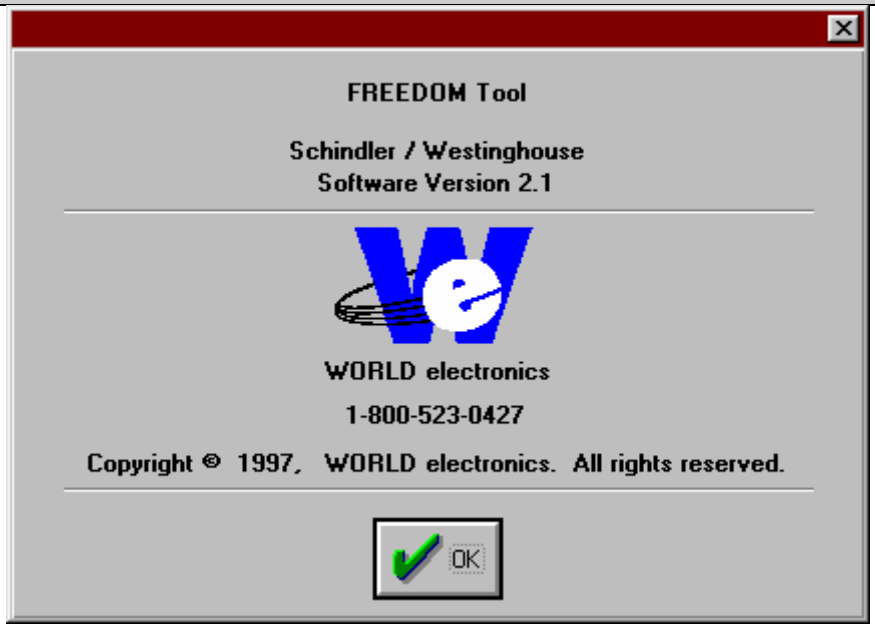

Figure 8

6. Close the FREEDOM Tool Module Information window by selecting the button labeled OK. The next window to appear will be the FREEDOM Tool User Interface Window, as in Figure #9, along with instructions on connecting and logging onto the elevator system. At this time plug the "FREEDOM Tool Serial Interface Cable" into the Processor Board's 25-pin female connector. When the cable is connected, proceed by positioning the cursor over the OK button and single click the pointing device button.

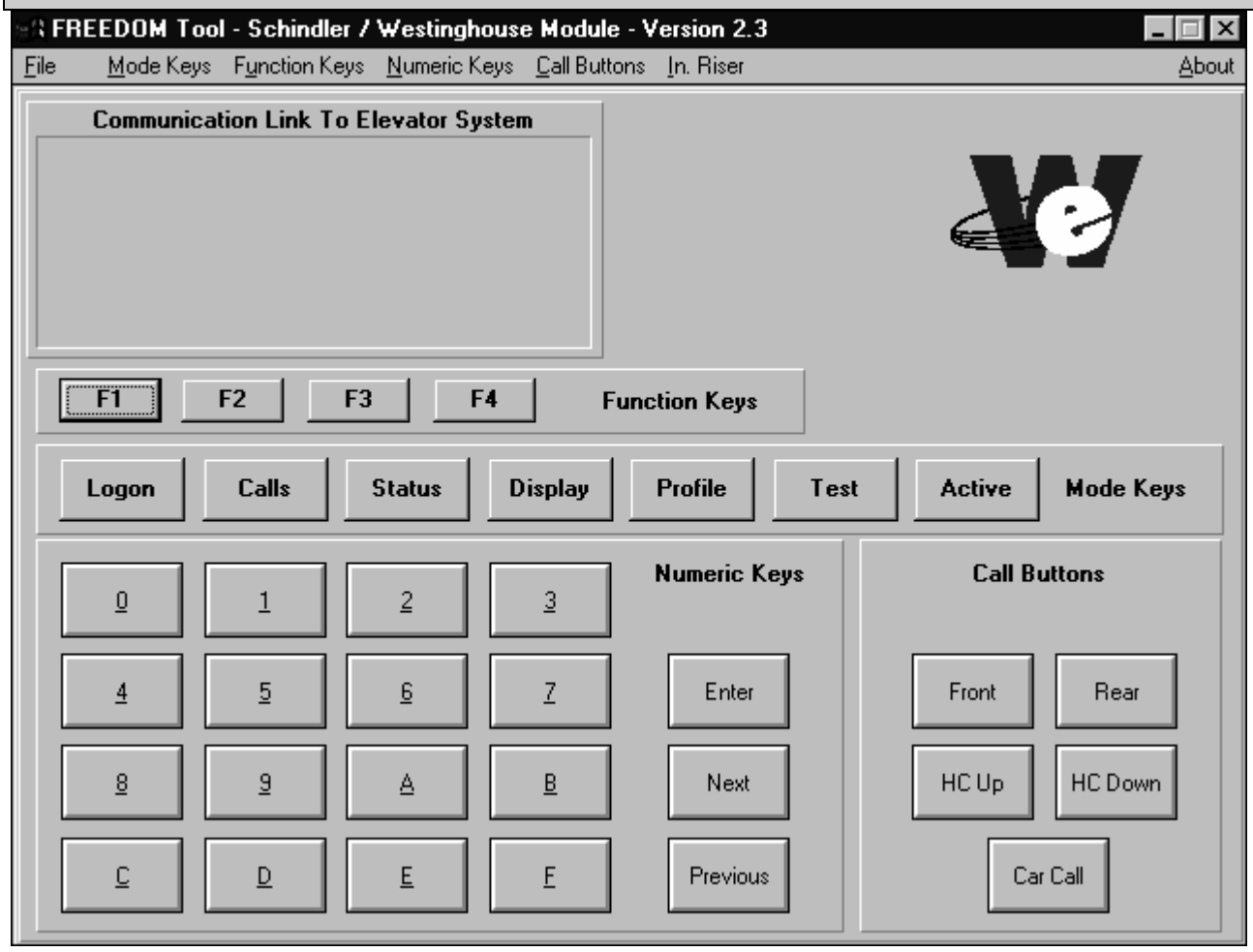
FREEDOM Tool - Schindler / Westinghouse Module - Version 2.3
File
Mode Keys
Function Keys
Numeric Keys
Call Buttons
In. Riser
About
Communication Link To Elevator System
F1
F2
F3
F4
Function Keys
Logon
Calls
Status
Display
Profile
Test
Active
Mode Keys
0
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Numeric Keys
Enter
Next
Previous
Call Buttons
Front
Rear
HC Up
HC Down
Car Call

Figure 9

General Description:

The FREEDOM Tool is a multi-functional diagnostic tool that allows the user to do everything from diagnosing faults registering car calls. All software functions can be accessed from the FREEDOM Tool's Main window as seen in Figure #10.

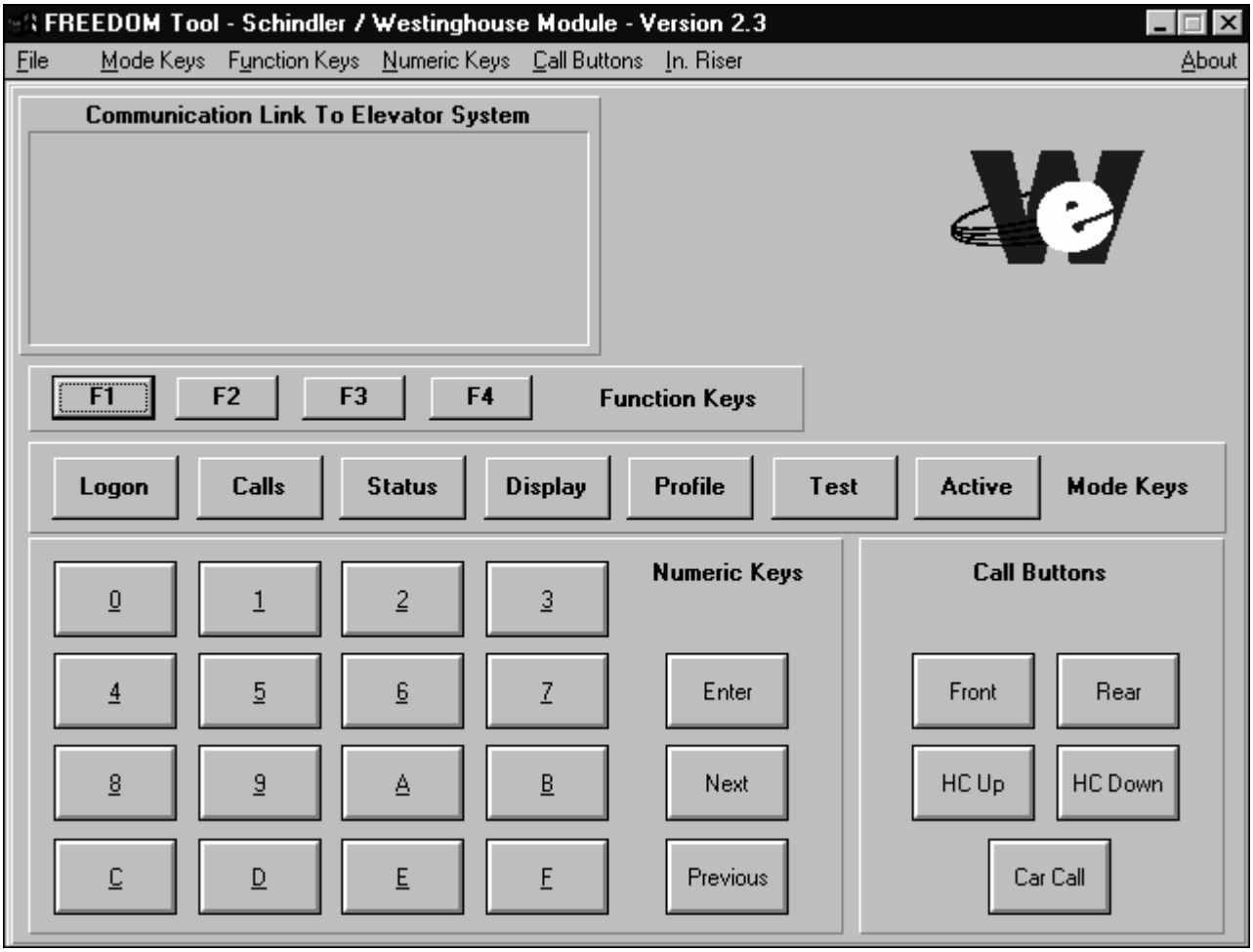

Figure 10

These software functions can be accessed from the main window by means of menu choices, accelerator keys, or the actual push buttons seen on the diagnostic screen. The tool's control window is broken into three sections. These three sections are the menu, the Communication Link to Elevator System, and screen controls. An overview of each of these three sections follows. For more detailed information about the operations with respect to the current elevator system being diagnosed please review the section of this manual for that elevator system.

- Communication Link to Elevator System:

  The window, labeled Communication Link to Elevator System, is exactly as it is titled. Any communication coming from the elevator system to the tool will be displayed within this

window. The information displayed in this window is dependent upon what mode the user puts the FREEDOM Tool in.

- If the Communication's Link window is blank or does not respond when a selection was made, the user should check all connections to the elevator system. If a thorough check of communication link turns up negative, a problem may be occurring within the main processor board of the system.

- If the Communication Link window is filling with repetitive "5's", the elevator system requires the tool to re-logon. Follow the procedures described under "Logon" to perform a Logon to the elevator system.

- Menu:

The Control window allows the user access to the elevator system in two distinct ways. The first of these interfaces is the push button controls found within the control window itself. The second of these interfaces is the menu choices along with their respective accelerators. The Schindler / Westinghouse software module has six menu groups in which certain functions will occur. These six menu groups are labeled as follows: File, Mode Keys, Function Keys, Numeric Keys, Call Buttons, and Independent Riser. A list of all keyboard accelerators appears in Appendix A.

- File:

The first of the six menu groups, File, lets the user exit out of the Schindler / Westinghouse software module. The "File" group has a single menu item as seen in Figure #11 labeled Exit. Beside the label Exit is another group of text labeled "Ctrl + X". This second grouping of text is called a keyboard accelerator. A keyboard accelerator allows the user to perform a menu choice without moving the mouse to the menu item. The keyboard accelerator assigned to the Exit function is "Ctrl + X". To exit out of the Schindler / Westinghouse software module at any point depress the following keys Control and X

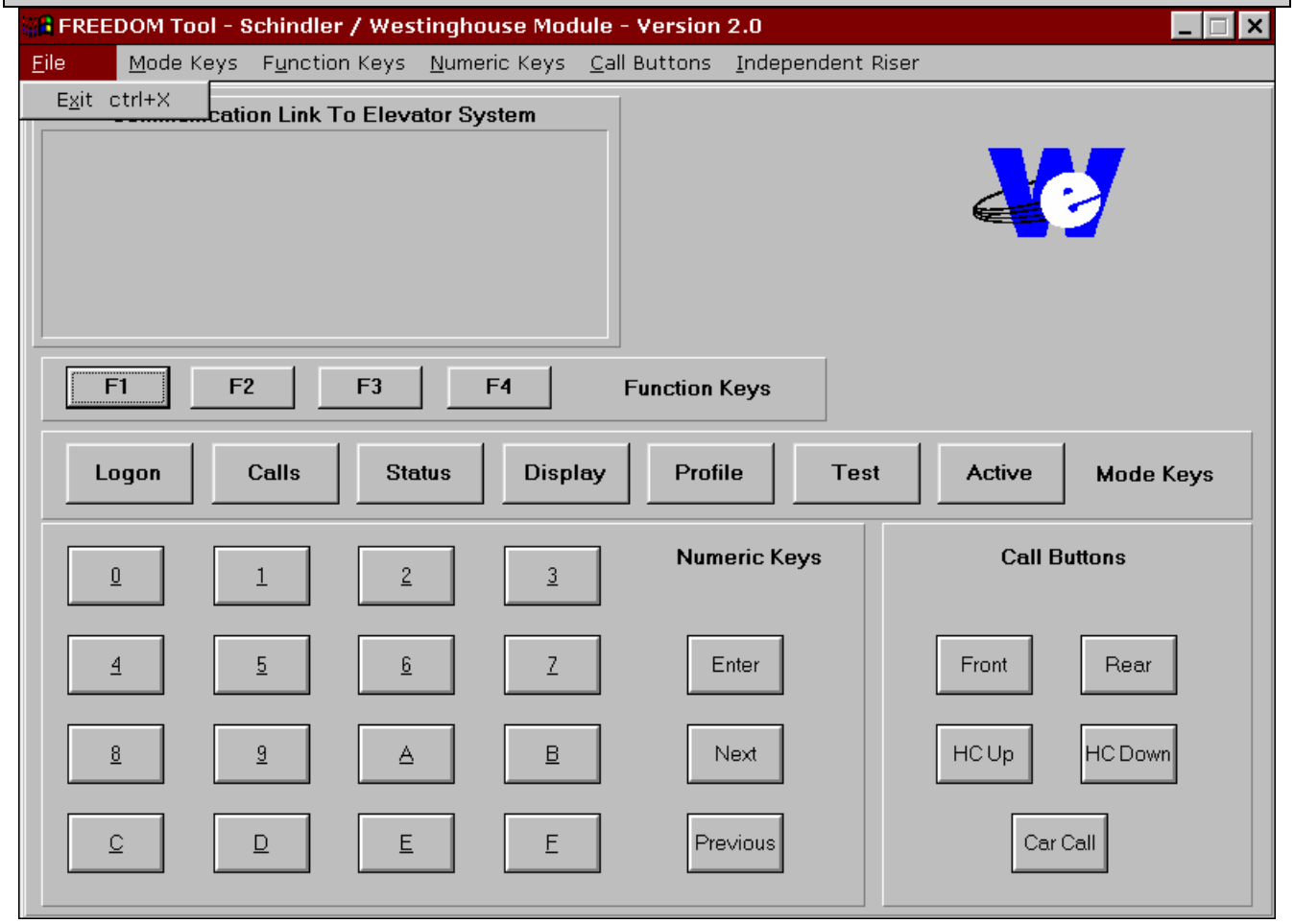

Figure 11

- Mode Keys:

  The seven mode selections found under the menu choice “Mode Keys” place the tool into seven distinct modes of operation. These modes are Logon, Calls, Status, Display, Profile, Test, and Active. Referring to Figure #12, notice that these mode selections also have keyboard accelerators assigned to them. The modes and their corresponding accelerators are described as follows:

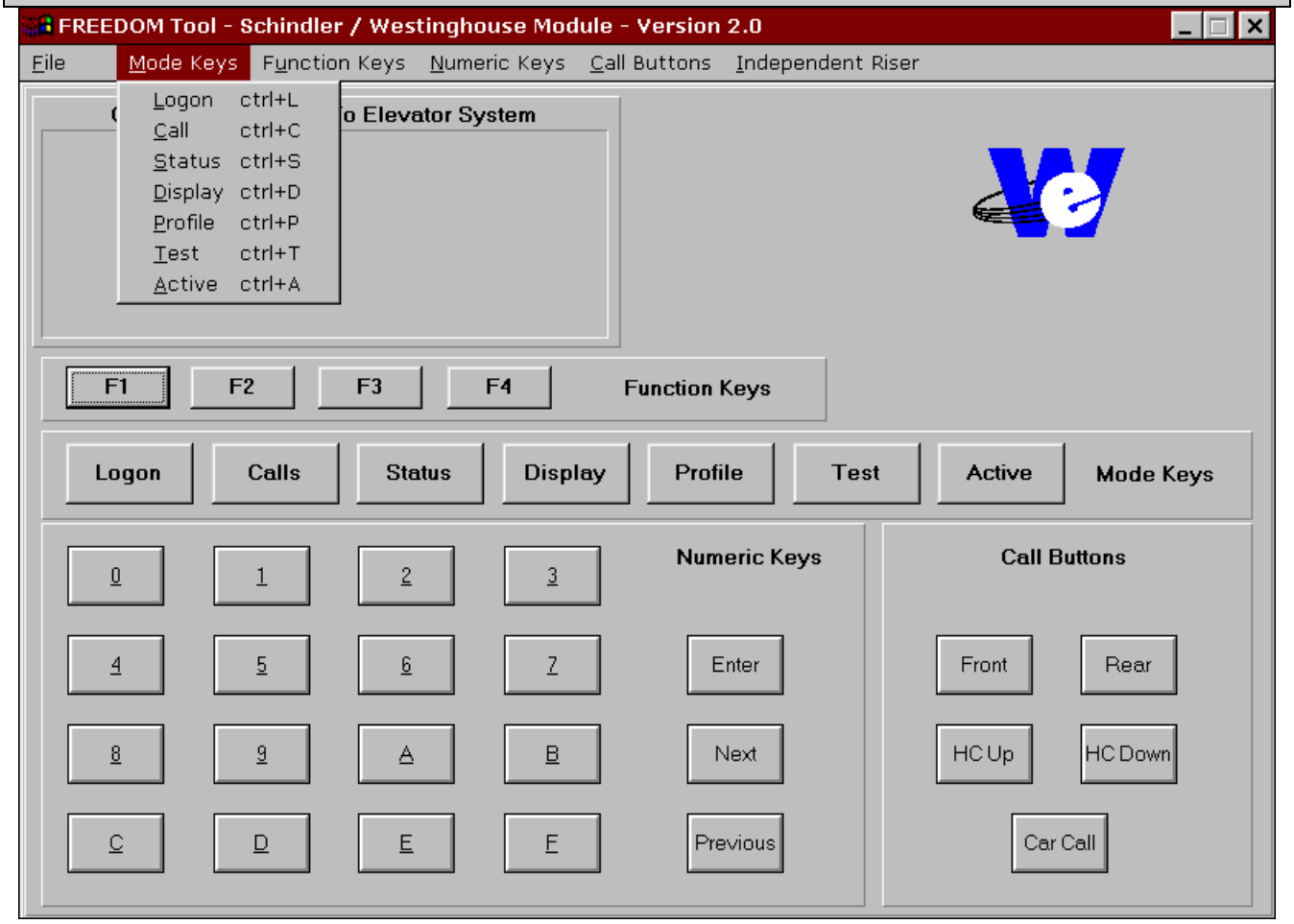

Figure 12

- Logon:

  Logon Mode uses the keyboard accelerator “Ctrl + L”. Whenever the “Ctrl” key is depressed along with the “L” key the command to logon onto the elevator system is given by the tool. If the elevator is ready to allow a user to logon to it, the elevator will respond to the tool with communication string “LOGON”. Please refer to the section titled “Logging on to an Elevator system” for more detailed instructions on logging on.

- Calls:

  The Call Mode of the Schindler / Westinghouse software module allows the user to perform various function with car and hall calls. The two main functions of this mode is to allow the user to set and display these calls. The Call Mode has “Ctrl + C” assigned to it as a keyboard accelerator. At any time within the Schindler/Westinghouse software module, depressing the “Ctrl” key along with the “C” key will invoke the Call Mode of the tool. Please see the Call Mode section of the elevator system currently being diagnosed for more information on how it works.

- Status:

  The keystrokes “Ctrl + S”, Control and “S” simultaneously, will invoke the Status Mode of the Schindler/Westinghouse software module. The Status Mode shows the user the current operating status of the elevator in terms of car and group operation. Please see the Status Mode section of the elevator system currently being diagnosed for more information on how it works.

- Display:

  Inputs, Outputs, and memory locations are among some of the things that are found within the Display Mode of the Schindler/Westinghouse software module. To invoke the Display Mode of the tool the user would either select the Display menu item with the pointing device or use the keyboard accelerator “Ctrl + D”. For more specific information on the operation of the Display Mode, please see the Display Mode section within the particular elevator system being diagnosed.

- Profile:

  The Profile Mode of the Schindler/Westinghouse software module gives the user job-specific information on the elevator being diagnosed. Adjustments, timers, enabled floors, and security settings are among the choices that can be found within this mode. The keyboard accelerator “Ctrl + P” is one way of gaining access to the Profile Mode. The other is by selecting the menu item “Profile” under the “Mode Keys” listing. A more detailed description of the functionality of Profile Mode may be obtained under the section labeled “Profile Mode” within the specific elevator section of the elevator being diagnosed.

- Test:

  When an individual device or I/O signal within the elevator system is desired to be diagnosed the user enables the Test Mode of the Schindler/Westinghouse software module. This module is enabled by selecting the menu item Test under the “Mode Keys” section of the manual. Notice that Test is assigned the keyboard accelerator “Ctrl + T”. This keyboard accelerator can be used at any time as a shortcut to invoking the “Test Mode” of the tool. Note: In most cases the elevator must be on Hand Operation before Test Mode can be enabled. More detailed information on the Test Mode can be found in the Test Mode section of the specific elevator being diagnosed.

- Active:

  Active Mode gives the user access to software specific features associated within a particular elevator system. This mode can be accessed by selecting the Active menu item within the Mode Keys section of the menu, or by selecting the keyboard accelerator “Ctrl + A”. For a more detailed description of Active Mode for each elevator system.

- Function Keys:

  Within each mode of the Schindler/Westinghouse tool there are functions that allow the user access to software dependent functions. These function labels can be seen at the bottom of the window labeled “Communication Link to Elevator System”. Each function key will line-up with a corresponding function label. The function keys progress from left to

right from F1 to F4. Referring to Figure #13 it is evident that there are accelerator keys assigned to the Function Keys. By depressing the keyboard button labeled “Ctrl” and the corresponding “F” key at the same time, the function at that location will be entered.

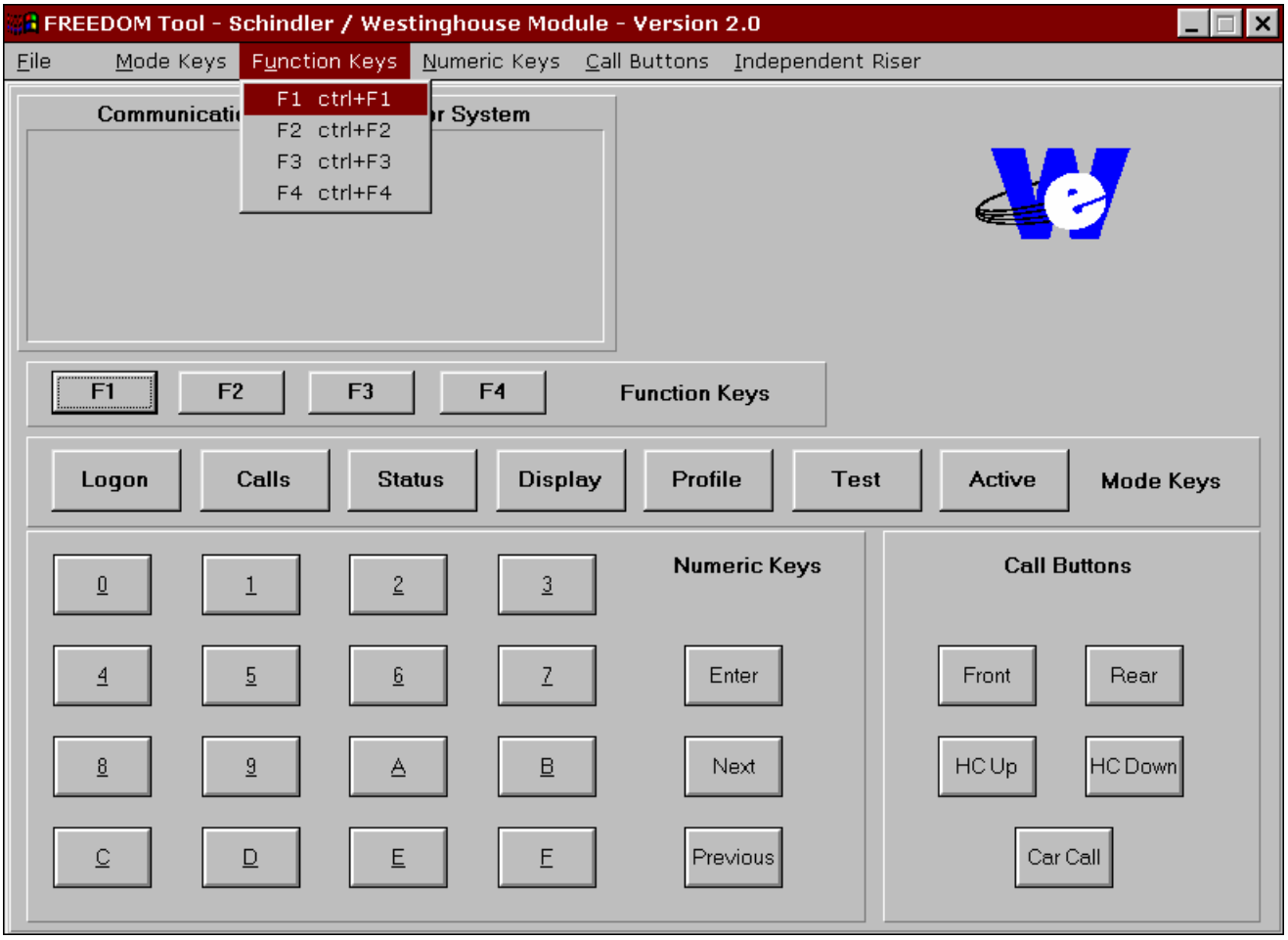

Figure 13

- Numeric Keys:

  Whenever data needs to be entered into a particular function within the Schindler/Westinghouse software module, the Numeric Keys as seen in Figure #14 will be used. Assigned to each option within the Numeric Keys menu selection are keyboard accelerator keys. The key that is used for the keyboard accelerator is the same as the label of the menu option, i.e. “A” for A, “Enter” for Enter, etc.

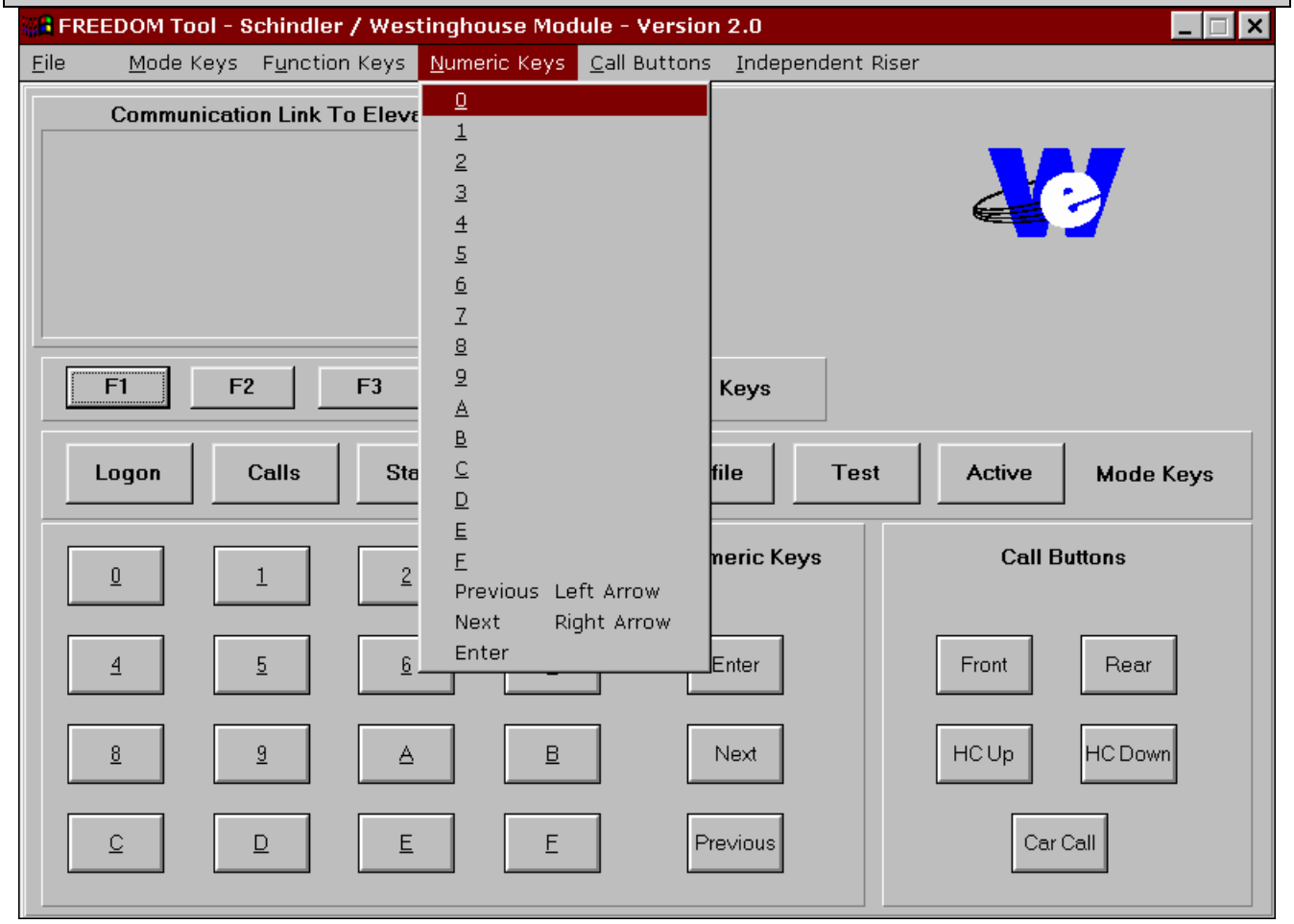

Figure 14

- Call Buttons:

  When the user is in Call Mode, the Call Buttons may be used to alter between front and rear car calls, front and rear up hall calls, and front and rear down hall calls. These choices can be seen in Figure #15. All commands within the Call Buttons Menu have keyboard accelerators associated with them. Refer to the additional label beside the desired call command to use the appropriate keyboard accelerator.

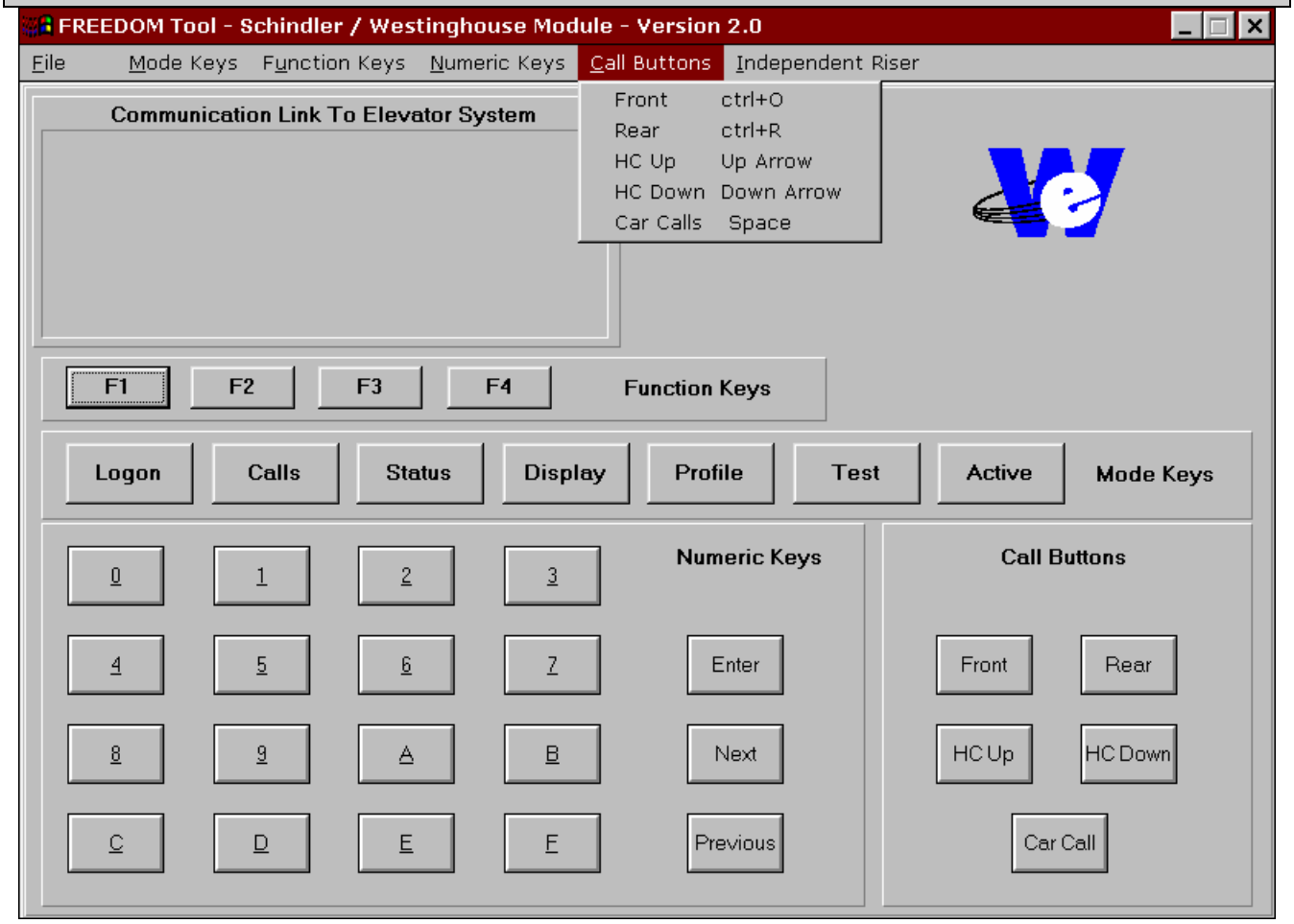

Figure 15

- Independent Riser:

  The Independent Riser menu selections, refer to Figure #16, allow the user to enter an Independent Riser Call in the Up or Down direction. Not all elevator controllers use this feature.

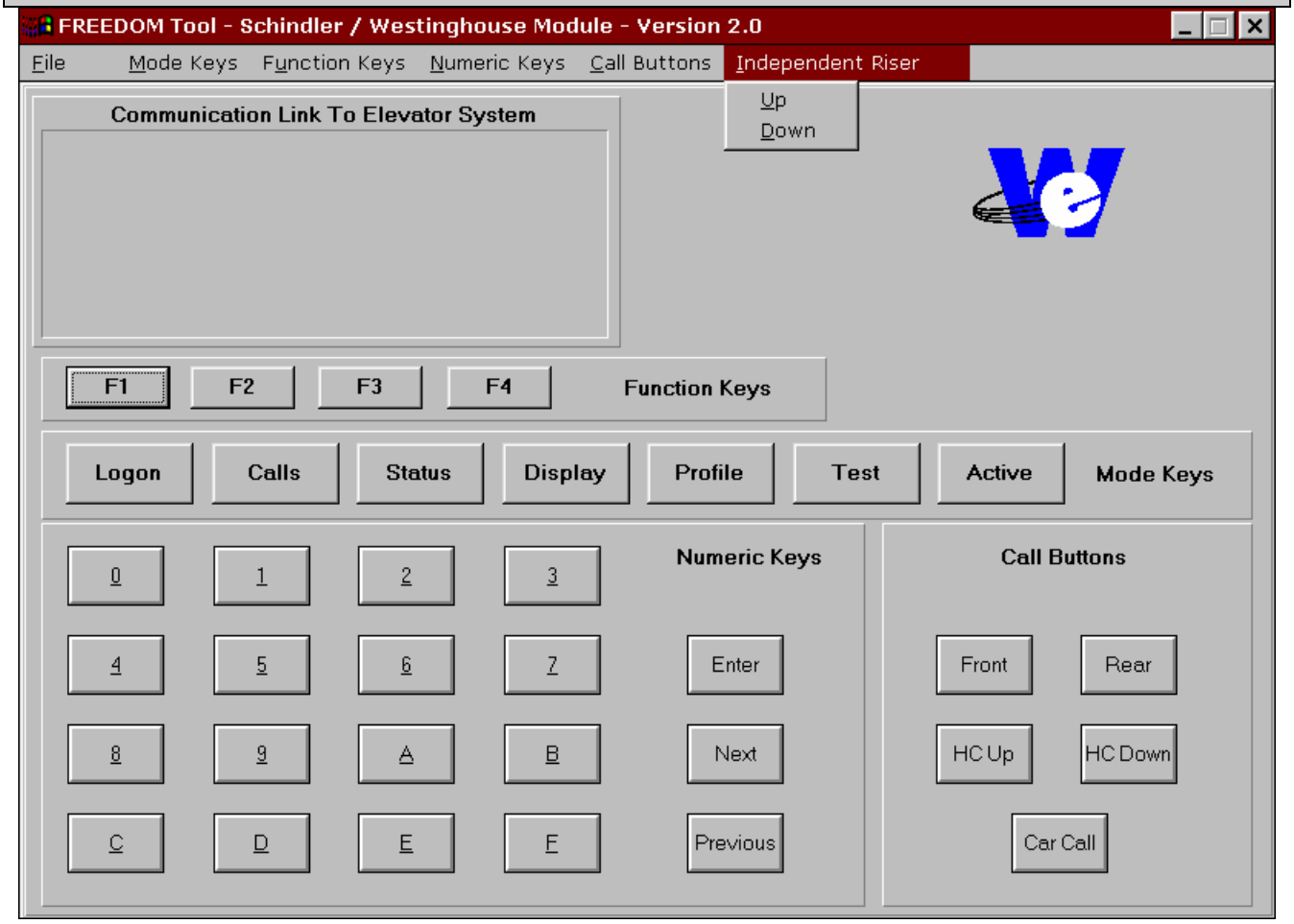

Figure 16

- Screen Controls:

  The screen controls within the Schindler/Westinghouse software module can be broken up into four distinct sections. Each of these sections has a corresponding menu allowing the user three ways to enable the operation of each particular screen control. The four distinct sections within the screen controls are the Function Keys, Mode Keys Numeric Keys, and Call Buttons.

  - Mode Keys:

    The seven mode selections found under the menu choice “Mode Keys” place the tool into seven distinct modes of operation. These modes are Logon, Calls, Status, Display, Profile, Test, and Active. The modes and their corresponding accelerators are described as follows:

    - Logon:

      Logon Mode uses the keyboard accelerator “Ctrl + L”. Whenever the Control key is depressed along with the “L” key the command to logon onto the elevator system is given by the tool. If the elevator is ready to allow a user to Logon to it, the elevator will

respond to the tool with the communication string “LOGON”. Please refer to the section titled “Logging on to an Elevator system” for more detailed instructions on logging on.

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- Profile:

  The Profile Mode of the Schindler/Westinghouse software module gives the user job-specific information on the elevator being diagnosed. Adjustments, timers, enabled floors, and security settings are among the choices that can be found within this mode. The keyboard accelerator “Ctrl + P” can be used to gain access to the Profile Mode. A more detailed description of the functionality of Profile Mode may be obtained under the section labeled “Profile Mode” within the specific elevator section of the elevator being diagnosed.

- Test:

  When an individual device or I/O signal within the elevator system is desired to be diagnosed the user enables the Test Mode of the Schindler/Westinghouse software module. This mode is enabled by selecting the button labeled Test or using the keyboard accelerator “Ctrl + T”. Note: In most cases the elevator must be on Hand Operation before Test Mode can be enabled. More detailed information on the Test Mode can be found in the Test Mode section of the specific elevator being diagnosed.

- Active:

  Active Mode gives the user access to software specific features associated within a particular elevator system. This mode can be accessed by selecting the Active push button within the Mode Keys section of the control window, or by selecting the keyboard accelerator “Ctrl + A”. For a more detailed description of Active Mode for each elevator system.

- Function Keys:

  The Function Keys section of the control window allows the user to choose several sub-modes or functions within each mode. Each Function Button labeled “F1” through “F4” corresponds to a label that will be placed directly above it in the window labeled “Communication Link to Elevator System”. There are shortcuts assigned to these buttons which are a combination of the “Ctrl” key and the corresponding “F” key. Please review the appropriate mode section for the elevator system being diagnosed for more precise information on what the function keys do.

- Numeric Keys:

  Whenever a function or mode require input from the user, the Numeric Keys section of the control window gives the user the interface required to enter this data. The Numeric Keys section contains a hexadecimal key set ranging from “0” to “F”. It also has the necessary interfaces for going forward or backwards within a particular function and an Enter key to accept any data entered by the user. Each of these Numeric Keys has an accelerator assigned to it. The accelerator is the actual key represented by the text label on the button. For example: “A” key for the “A” button, “Enter” key for the “Enter” button, etc.

- Call Buttons:

  The Call Buttons are used when the user is in the Call Mode. These buttons provide the user the necessary interface to enter and display car calls, hall calls, and specify whether the call is for front or rear. Each of these buttons has a corresponding shortcut.

- Logging onto an Elevator System:

  When the user has properly connected to the elevator system being diagnosed and no tool has been logged on to the elevator for a period of five minutes, the Communication Link to Elevator System window will update with the character 5. This 5 is a signal to the user that the elevator is looking for a tool to log on to it. A new 5 will be sent approximately every two minutes until the tool logs onto the elevator. To log-on the user selects the Logon Mode by either using the menu, the push button, or the keyboard shortcut. Done successfully, the Communication Link to Elevator System Window will update with the text LOGON. Refer to Figure #17.

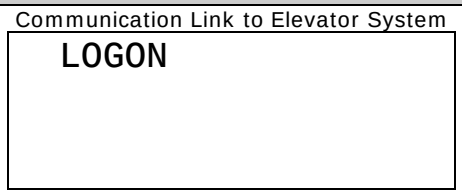

Figure 17

The text LOGON appearing is a signal to the user to enter the five digit logon code. This five digit logon code can be found printed on the EPROMS located on the Main Processor board in the system. The five digit code is actually the contract number affiliated with installation/purchase of the elevator system. It has been found that this number can be written just about anywhere within the machine room, i.e. controller cabinet, electrical conduiting, walls, door. After the five digit code has been punched in, the user should select the Enter key to have the elevator accept or reject the logon code. If no response is given to the user through the Communication Link to Elevator System window, the LOGON code was rejected and the Logon procedure should be repeated. When the Communication Link to Elevator System window is updated, the elevator has accepted the tool's logon code, and the user can continue using the different modes of the tool.

Note: If there is no communication to the elevator system after a period of five minutes, the elevator will start transmitting the 5 character over the Communication Link to Elevator System window until a Logon procedure is completed.

System Information:

The information within the following sections gives detailed information on the operation of the tool in regards to each elevator system. Due to software changes within the elevator, the information described herein may be different than the actual operation of the tool with respect to the elevator system being communicated.

EPOCH-I and EPOCH-II:

- CALL Mode:

Within the EPOCH diagnostic system car and hall calls may be entered and displayed through the tool. A test pattern of multiple calls may be set up and executed through the CALL Mode. The functions found within the CALL Mode of the EPOCH tool are : Display (DSP), Enter (ENT), Save Pattern (SAV), and Execute Saved Call Pattern (TSW). When the CALL Mode is initiated through the tool, the screen will update informing the user as to what mode the tool is in and the available functions. Refer to Figure #18.

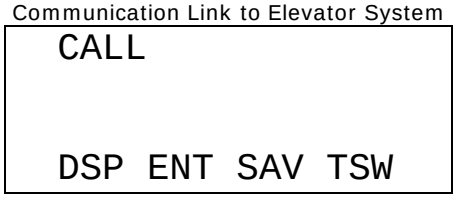

Figure 18

- DSP:

Used to display all registered car and hall calls. A “1” means a call is registered for that landing. “-“ means no call is registered for that landing. This window displays 16 calls at any single time. To display an additional set of calls, the user selects the button labeled Next. To look at a previous set of calls use the Previous button. Figures numbered #19 through #24 show the different methods to display car and hall calls.

Default: Front Car Calls:
Select: Calls and F1

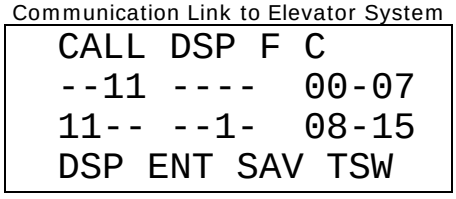

Figure 19

Rear Car Calls:
Select: Calls and F1 and Rear

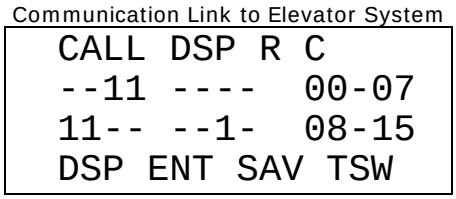

Figure 20

Front Up Hall Calls:
Select: Calls and F1 and HC Up

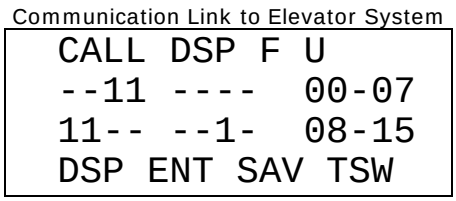

Figure 21

Front Down Hall Calls:
Select: Calls and F1 and HC Down

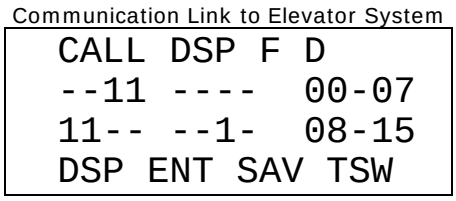

Figure 22

Rear Up Hall Calls:
Select: Calls and F1 and HC Up and REAR

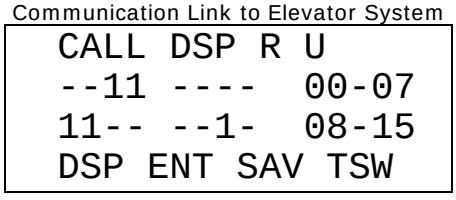

Figure 23

Rear Down Hall Calls:
Select: Calls and F1 and HC Down and REAR

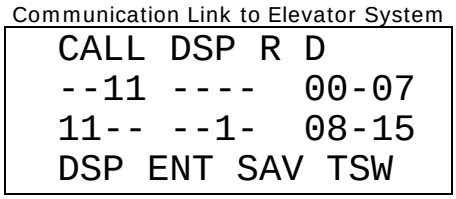

Figure 24

- ENT:

Used to register all car and hall calls. Figures #25 through #30 depict the different ways to register a call through the tool. Once a landing is entered the user can proceed to register a call at the previous or next landing by choosing the Previous or Next buttons respectively and then selecting Enter. When a call is entered the screen should update with the phrase “CALL ENTERED”.

Default: Front Car Calls:
Select: Calls and F2 and 16(Floor Number) and Enter

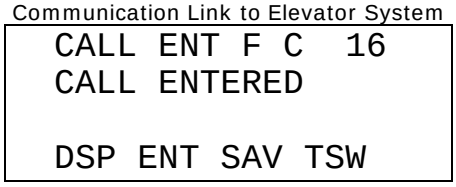

Figure 25

Rear Car Calls:
Select: Calls and F2 and REAR and 22(Floor Number) and Enter

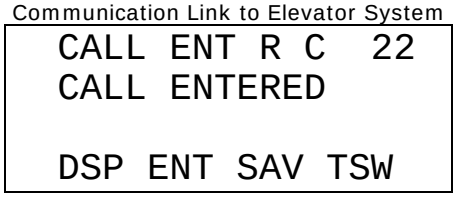

Figure 26

Front Up Hall Calls:
Select: Calls and F2 and HC Up and 5(Floor Number) and Enter

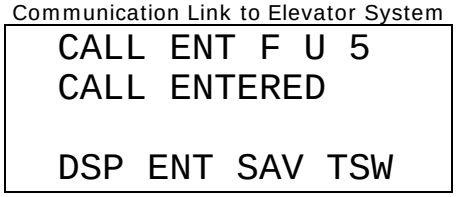

Figure 27

Front Down Hall Calls:
Select: Calls and F2 and HC Down and 10(Floor Number) and Enter

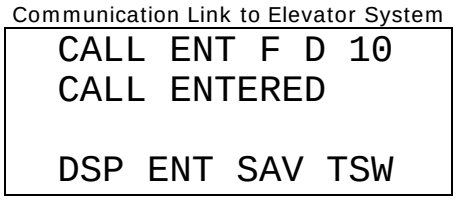

Figure 28

Rear Up Hall Calls:
Select: Calls and F2 and HC Up and REAR and 1(Floor Number) and Enter

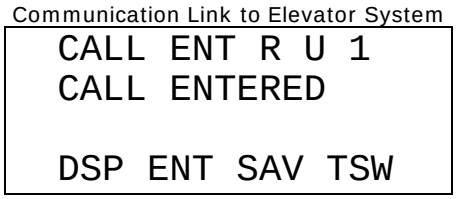

Figure 29

Rear Down Hall Calls:
Select: Calls and F2 and HC Down and REAR and 2(Floor Number) and Enter

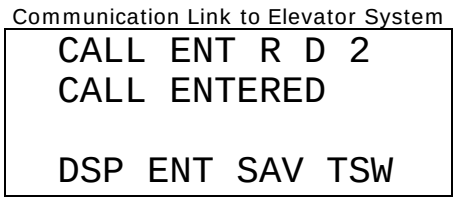

Figure 30

- SAV:

When the user desires to have the car respond to multiple calls in order to view the cars operation, the Save (SAV) function of the Schindler/Westinghouse diagnostic tool can be used. To enter a desired call sequence the user would first select the Call Mode of the tool and then F3 for the SAV function. Upon initial selection of the SAV function, the screen is updated with TSW TBLS CLEARED. The phrase TSW TBLS CLEARED informs the user that the previous test call sequence has been cleared and the tool is ready for a new test pattern. The SAV function will store all calls entered until the user leaves the SAV function. Please refer to Figures #31 and #32 for the actual messages displayed through the tool. Each call that is successfully entered into the tool will have the screen update with the phrase CALL SAVED. The function TSW is used to activate the call tabled entered through this call function.

Select: Calls and F3

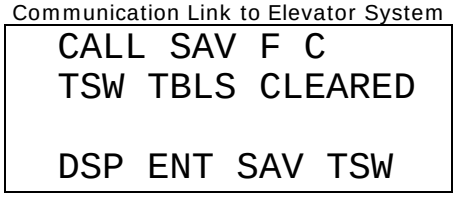

Figure 31

To add a call to the saved sequence.
Select: Call, F3, 15(Floor #), and Enter

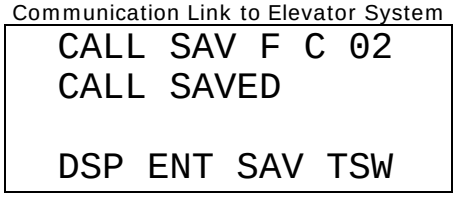

Figure 32

The previous sequence is repeated until all desired calls are entered into the sequence.

- TSW:

To invoke the call sequence entered through the SAV function, the user would select the function button labeled TSW. When the Execute Saved Call Pattern(TSW) function is selected the Communication Link to Elevator System Window updates to show that the saved calls have been entered. Refer to Figure #33. After CALLS ENTERED appears in the Communication Link to Elevator System Window the car should execute the call pattern entered through the tool. To Cancel the call pattern the user should select the F3 button. The F3(SAV) button terminates all calls and clears the Saved Call Table.

Select: Calls and F4

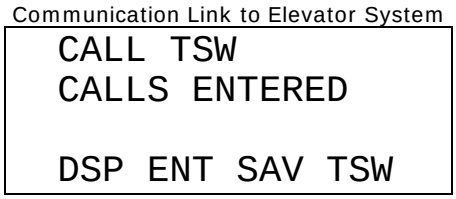

Figure 33

- Status Mode:

The Status Mode of the FREEDOM Tool Schindler/Westinghouse software module gives the user the ability to monitor several operations with respect to the operation of the EPOCH elevator system within the hoistway. When the user invokes the Status Mode of the tool a window as seen in Figure #34 appears. This window presents the user with a choice of four functions. These four functions are: Position (POS), Advanced Car Position (AVP), Velocity Pattern (PAT), and I/O Port Status (PRT). To select any these functions the user would select the appropriate "F" button under the function label.

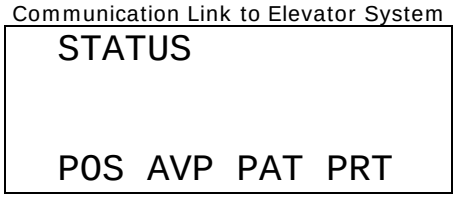

Figure 34

- POS:

The position function (POS) of the Status Mode allows the user to numerically visualize the location of the car within the hoistway. When the POS function is invoked, the Communication Link to Elevator System Window will appear as in Figure #35. In figure #35, the designations, Status, POS16, Actual, and Target appear. The first designation, STATUS, signifies the current mode of the tool, in this case Status Mode. Second, POS16, is the nomenclature for the position function. The 16 means that all pulse count data will be displayed in base 16 or hexadecimal format. The line marked ACTUAL is the numerical representation of the car's current position within the hoistway. This value is in hexadecimal format and updates as the car moves throughout the hoistway. The final term, TARGET, is the pulse count value of the target floor (floor car is running to), as it is stored within the Floor Table found within the RAM of the controller board. This TARGET value will change as the TARGET Floor changes. Note: When the car reaches its destination, the ACTUAL value should be identical to the TARGET value displayed. Refer to Figure #36 through #38 for information regarding car position with respect to the Target floor.

To enter into the POS function:
Select: Status and F1

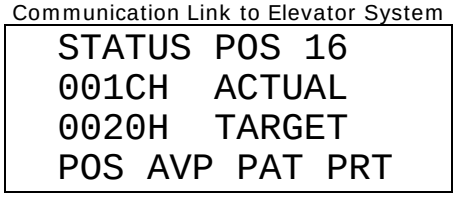

Figure 35

If the car is at the Target floor:

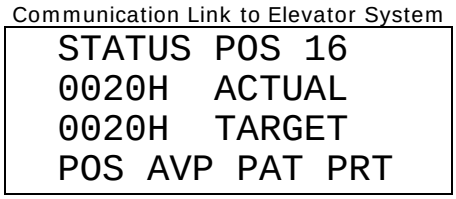

Figure 36

If the car is above the Target floor:

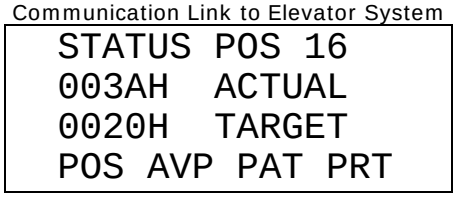

Figure 37

If the car is below the Target floor:

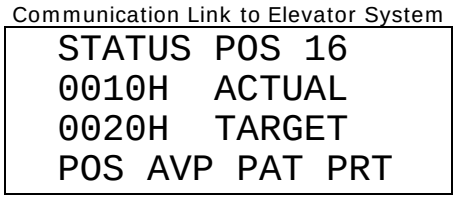

Figure 38

- AVP:

  Whenever a comparison needs to be performed on the floor table stored in RAM versus the floor table residing within the COE EPROM (ROM), the user can select the function, AVP, within the Status Mode. Once the user has successfully entered into the AVP function the Communication Link to Elevator System Window will update to appear as Figure #39. In Figure #39, the label AVP informs the user as to what function the tool is currently in. "16" in the upper right hand corner informs the user

that all data is presented in hex format. The line labeled RAM is the value for the current floor as it is represented within the floor table found within the RAM. Each floor can be evaluated by initiating a call for the elevator to respond. Once the elevator reaches that floor, the comparison can be made between the RAM and the ROM. Refer to Figure #39. The value found beside the label ROM is the value programmed into the COE EPROM. If these two numbers are significantly different, the new floor table value found within RAM should be burned into the COE EPROM. Refer to Figure #40. If the location of the elevator within the shaft does not match the opening, a correction can be made by initiating a floor height update procedure as described under the section labeled Active Mode.

To enter into the Advance Car Position Function:
Select: Status and F2

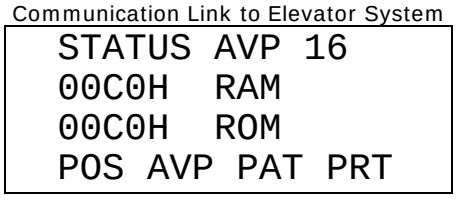

Figure 39

If the values significantly differ the RAM value should be burned into the COE EPROM.

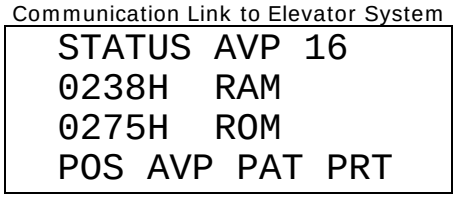

Figure 40

- PAT:

The PAT or Speed Pattern function of the Schindler/Westinghouse software module for the EPOCH-I and EPOCH-II elevator system allows the user to determine the speed of the car at any given time. When the PAT function is selected a window as in Figure #41 appears. In Figure #41 there are two areas of interest. The first of these is in line 1 of the display. In line 1 the text VPATTERN means that the PAT or Speed Pattern function has been activated. Line 2 gives the current speed of the car to the user in hexadecimal format. In Figure #41 the current speed of the elevator is 0 fpm. Any time the car is not running, the velocity notation will be 0000H.

For the Speed Pattern Function:
Select: Status and F3

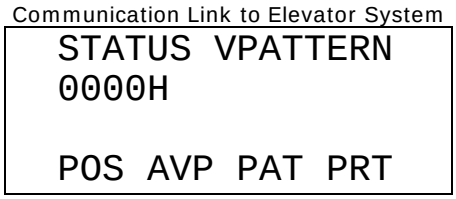

Figure 41

Figure #42 shows the speed of a car that is currently running. To calculate the car's speed use the following mathematical algorithm.

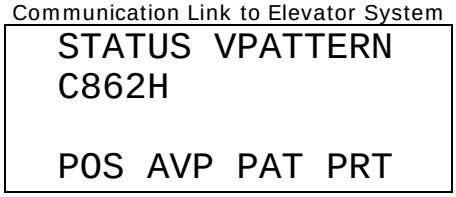

Figure 42

1) Take the most significant byte(the first character on line 2) and multiply by 16. Please refer to the hex conversion chart to convert hexadecimal (base16) numbers into decimal (base 10) numbers.

   Example:
   C x 16 = 192

2) Multiply the next most significant byte (the second character on line 2) by 1.

   Example:
   8 x 1 = 8

3) Add the 2 results together.

   Example:
   192 + 8 = 200

4) Multiply the result of step 3 by 2. The result of this multiplication is the speed of the car in feet per minute (fpm). Ignore the remaining bytes.

   Example:
   200 x 2 = 400 400 fpm

Hexadecimal (BASE 16)	Decimal (BASE 10)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15

- PRT:

The port communication status (PRT) function of the Status mode allows the user to check on the status of communications between the CPU board and any I/O board in the system. When the PRT function is enabled, the Communication Link to Elevator System Window will update to show the user the status of the I/O board communications. Figure #43 shows the contents of the Communication Link to Elevator System Window when no communication problems are within the system. If at any time there is a communication problem with an I/O board the Communication Link to Elevator System Window will appear as in Figure #44. Figure #44 presents to the user the addresses of the I/O boards within the system that have bad communication. For a further description of the I/O boards with addresses and bit assignments, please refer to Appendix B and C.

To enter into the port communications status function.
Select: Status and F4.

Communication Link to Elevator System

```
STATUS I/O PORT
NO PORT FAILURE

POS AVP PAT PRT
```

Figure 43

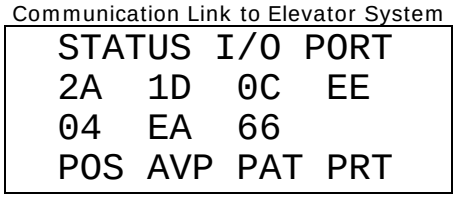

Figure 44

- Display Mode:

The Display Mode is used to show the user the operating values of a specific location within the elevator system. Specifically the Display Mode of the tool allows the user to see these values within the elevator's memory and I/O ports. To enter the tool into Display Mode, the user needs to select the button labeled Display or select Display from the mode keys menu. A keyboard shortcut of "Ctrl + D" will also enter the tool into Display Mode. Within the EPOCH elevator system Display Mode has up to two functions associated with it. Refer to Figure #45. These functions are: IO and MEM. A brief description of these functions within Display Mode are described as follows.

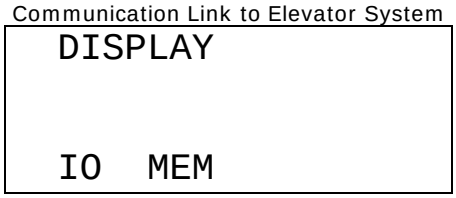

Figure 45

- IO:

The I/O state of a specific I/O port on an I/O board may be viewed using the IO function of the Display Mode. Refer to Figure #46. When the IO function is selected the user must decide which I/O board they desire to look and the address of the specific port they want to view. When the desired board is selected the user must enter the address of the I/O port they desire to evaluate on that board. When the address is entered and the Enter key is selected the elevator will respond showing the twelve I/O bits located at that port. Refer to Figure #47 and #48. Once the I/O port address is entered the user may move forward and backward through the I/O ports within the EPOCH-I and EPOCH-II systems by using the key labeled Previous and Next. In the EPOCH-I and EPOCH-II elevator systems, outputs are designated as active lows while inputs are designated as active highs. Please refer to Appendix B and C in the back of this manual for more information on the I/O ports and the I/O bit assignments.

To view the I/O bits at a specific location.
Select: Display and F1.

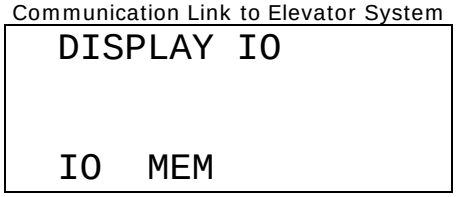

Figure 46

Select: 35 (I/O port address).

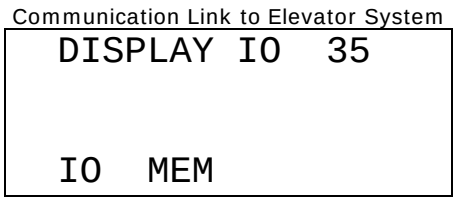

Figure 47

Select: Enter.

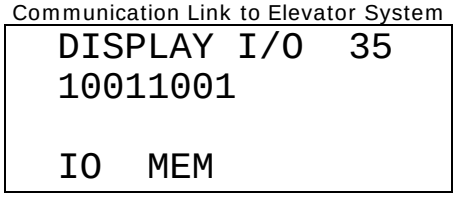

Figure 48

- MEM:

The memory function of the EPOCH diagnostic tool allows the user to view specific memory addresses within the elevator system. To enter into the memory function, the user would first select the button Status and then F2. Refer to Figure #49. After the MEM function is invoked, the user must enter a 5 byte hex address for the memory location desired to be viewed. Refer to figure #50. When this hex address has been completed the Enter push button is pressed to send it to the elevator system for a response by the tool. Refer to Figure #51. To move to the previous or next memory address the buttons labeled Previous and Next may be used respectively.

Select: Status and F2.

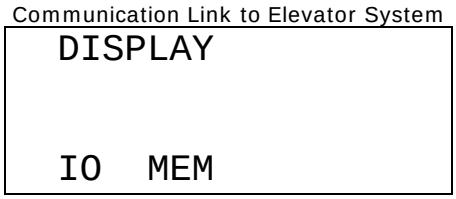

Figure 49

Select: 0008 (Memory Address).

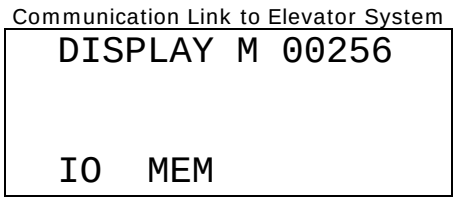

Figure 50

Select: Enter.

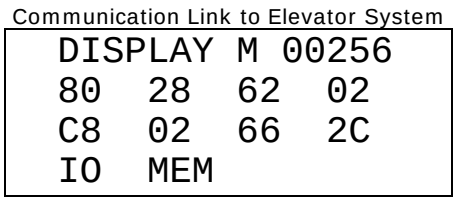

Figure 51

- Profile Mode:

The Profile Mode in the EPOCH elevator system shows features of the elevator system that are job specific. These features that the Profile Mode allows the user to view are contract features, enabled front landings, enabled rear landings, and service data. To enter into Profile Mode, the user would do one of the following three things: 1) Select the menu item Profile under the Mode Keys menu, 2) Select the button labeled Profile in the control screen, 3) Use the keyboard shortcut Ctrl + P. Once in Profile Mode four functions are displayed to the user: FET, ENF, ENR, INSV. Refer to Figure #52. Select one of the Function keys to call up one of these functions.

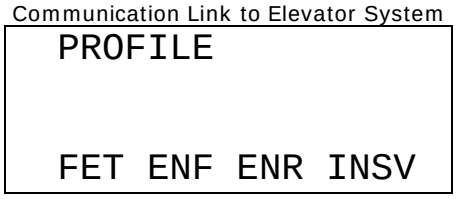

Figure 52

- FET:

  A number of elevator features are programmed at the factory. To view these factory programmed features and check their status the user should select the FET function. When the FET function is invoked the Communication Link to Elevator System Window will appear as seen in Figure #53. The FET function displays the feature acronym and the current status of the feature. Any feature shown within the FET function of the tool, is a feature the elevator is currently programmed to have. The value shown beside the feature name shows the user the current state of that particular feature. The Next and Previous buttons may be used to show any additional features the elevator may have. Four features are displayed at a time.

  To enter into the feature function:
  Select: Profile and F1

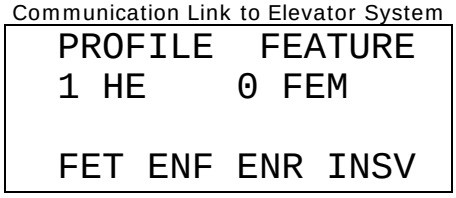

Figure 53

- ENF:

  The front landings enabled function allows the user to view which floors are active or enabled in the elevator system being diagnosed. An enabled floor is represented by the numeric character “1”, while a disabled floor is represented by a “-“. Refer to Figure #54. The front landings enabled function shows the enabled landings for the front landings, only. The front landings enable function displays 16 landings at a time. In order to move throughout the complete list of landings available in the EPOCH-I or EPOCH-II elevator system, the Previous or Next keys should be utilized.

To view the enabled front landings.
Select: Profile and F2.

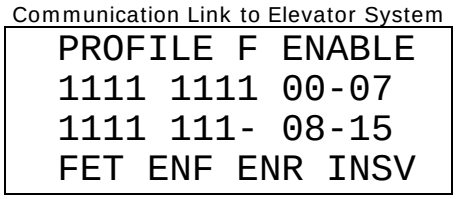

Figure 54

- ENR:

The rear landings enabled function allows the user to view which floors are active or enabled in the elevator system being diagnosed. An enabled floor is represented by the numeric character “1”, while a disabled floor is represented by a “-“. Refer to Figure #54. The rear landings enabled function shows the enabled landings for the rear landings, only. The rear landings enable function displays 16 landings at a time. In order to move throughout the complete list of landings available in the EPOCH-I or EPOCH-II elevator system, the Previous or Next keys should be utilized.

To view the enabled rear landings.
Select: Profile and F3.

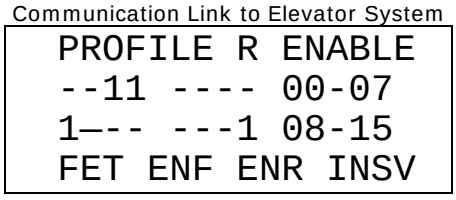

Figure 54

- INSV:

While the current car is operating, the user can view several operating parameters in real-time. The INSV or In-Service Data function allows the user this ability to view these operating parameter. To enter into the In-Service Data function, the function button F4 is selected in the Profile Mode of the Schindler / Westinghouse software module of the FREEDOM Tool. Once the INSV function is invoked, the Communication Link to Elevator System Window will update to appear similar to what is seen in Figure #55. Figure #55 displays the first two In-Service Data signals. In order to view the other In-Service Data signals the Next and Previous buttons should be employed.

To enter into the In-Service Data function:
Select: Profile and F4

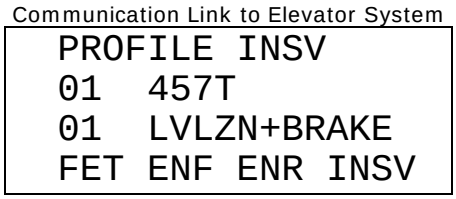

Figure 55

- Active Mode:

The Active Mode gives the user the ability to activate two specific modes of operation for the elevator system. These two modes of operation are the 55 Stop and the Floor Height Update functions. These functions have the labels STP and FHU respectively. Refer to Figure #56.

To enter into Active Mode:
Select: Active

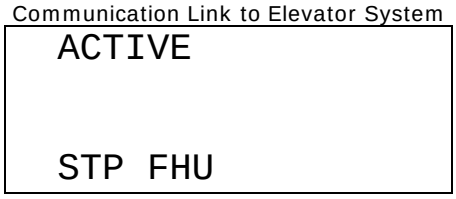

Figure 56

- STP:

The STP or 55 Stop function of the Active Mode allows the user to force the elevator into a mode where the car moves to the next available landing in the direction the car is moving in and stop. To invoke the 55 Stop function, the user selects the F1 button. When the F1 button is selected the Communication Link to Elevator System Window will update showing “STOP INTIATED”. Please refer to Figure #57.

To activate a 55 Stop:
Select: Active and F1

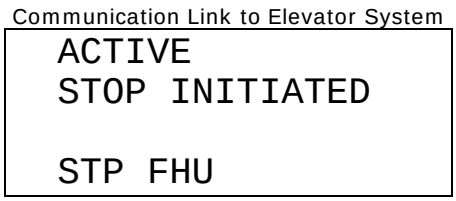

Figure 57

- FHU:

The Floor Height Update (FHU) function of the Active Mode allows the user to make changes to the floor parameter table in RAM memory. The floor parameter table in memory should be updated whenever the actual car position and the landing position do not line up. To enter into the FHU function of the Active mode several minimal conditions must be present. A list of the minimal requirements follows:

1. Car must be at bottom landing.
2. Door switch must be in the OFF position.
3. Car must be set to AUTO.
4. No Feature can be active. (To check to see if any features are active, enter into the Profile mode and select the FET function. Any function with the value "1" is currently active.)

Once these 4 conditions are met, the user may proceed with Floor Height Function by selecting the appropriate function button in the Active Mode. After the FHU function has been initiated successfully, the Communication Link to Elevator System Window will update to look like Figure #58. The car will then travel up through the hoistway at

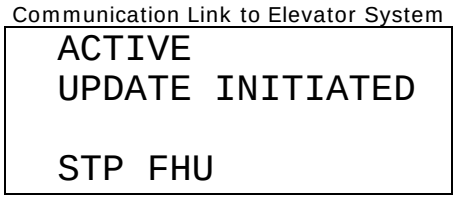

Figure 58

50 fpm. As a landing is reached, the car will pause for a brief period and then continue through the hoistway. While the elevator pauses at each landing, it will write the new pulse count value for that landing into the floor parameter table in RAM memory. When the car completes the FHU procedure, the new floor parameter table values for each landing should be compared to the values found in ROM memory. If a difference greater than 10 pulses is found the new value should be burned into the ROM memory located within the COE EPROM. Please review the AVP function within the Status Mode for instructions on viewing the floor parameter table values.

NOTE: The values learned performing the Floor Height Update function are stored in RAM memory of the elevator's controller board. Any time the power is reset to the elevator's controller board, the floor parameter table will be updated with the values found within the COE EPROM.

- Test Mode:

The Test Mode can be used to test the functionality of PI's, Hall Lanterns and Car Lanterns, Bottom Terminal Slowdown System, and Top Terminal Slowdown System. Refer to Figure #59. To enter into Test Mode the elevator must be on Hand operation or inspection, the door switch in the OFF position, and the car at landing 0. Once the car is on inspection these tests can be performed. Test Mode can be entered by selecting Test from the Mode Keys menu, selecting the Test push button, or using the Ctrl + T accelerator. The different functions located within the Test Mode are described as follows:

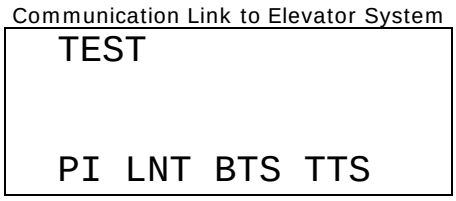

Figure 59

- PI:

The PI function of the Test Mode allows the user to test the functionality of the horizontal and digital PI's. Once the PI function is entered, the user needs to enter in the floor number for the PI location desired to be tested. After the floor location is entered, the communication link will update the screen to show the item is activated. Refer to Figures #60 and #61. When an item is activated, the user can then go to the device and check its condition.

To perform a PI test:

Select: TEST and F1

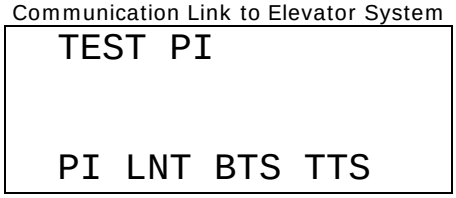

Figure 60

Select: 22(Floor Number) and Enter

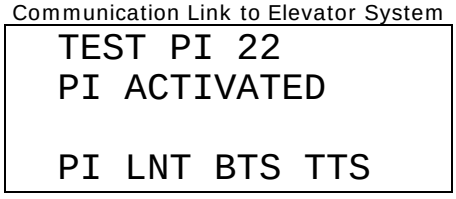

Figure 61

- LNT:

The LNT test, of the Test Mode, allows the user to determine the functionality of the hall lanterns of the EPOCH elevator system. When the user implements the LANT function of the Test Mode and then enters a landing number, the Hall lantern on that landing will light. Refer to Figures #62 through #65. The user has the ability to choose which lantern, Up or Down direction, to light by selecting the HC Up or HC Down call button. The Previous and Next keys may be used to move forward and backward through the adjacent landings.

Default: Up Lantern test:
Select: TEST and F2

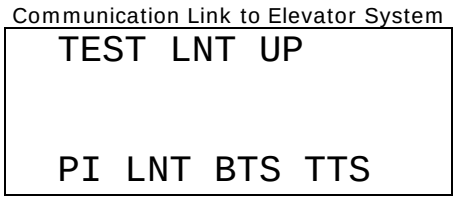

Figure 62

Select: 31(Floor Number) and Enter

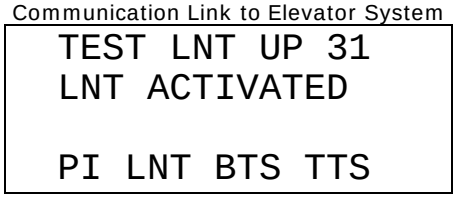

Figure 63

To perform a Down Lantern test
Select: TEST and F2 and HC Down

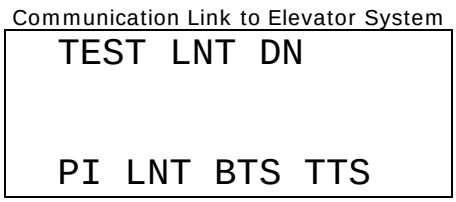

Figure 64

Select: 12(Floor Number) and Enter

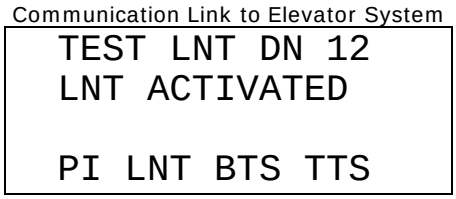

Figure 65

- BTS:

The function BTS allows the user to test the functionality of the Bottom Terminal Slowdown System within the EPOCH-I and EPOCH-II elevator control systems. When the F3 button is pressed the Communication Link to Elevator System Window will update to appear like Figure #66. Figure #66 is the introductory screen for the Bottom Terminal Slowdown test. As a safety

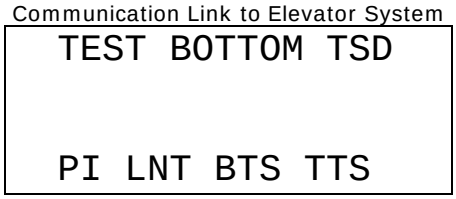

Figure 66

precaution, the BTS function does not go into action when the F3 button is pushed. The Enter button must be pressed at this time to implement the Bottom Terminal Slowdown Test. After the Enter button has been pressed, the Communication Link to Elevator System Window will instruct the user to enter a call in at the bottom landing, landing 00. Refer to Figure #67. When this appears in the Communication Link to Elevator System Window, the PI on the controller will change to the value for the top landing in the hoistway. When the controller PI changes to the value for the top landing, the user can enter a call for the bottom landing through the tool. All calls can be entered through the Enter function of the Call Mode of the Schindler/Westinghouse software module. When the call is entered the car will perform a Bottom Terminal Slowdown test.

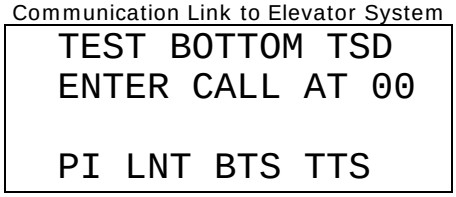

Figure 67

- TTS:

The function TTS allows the user to test the functionality of the Top Terminal Slowdown System within the EPOCH-I and EPOCH-II elevator control systems. When the F4 button is pressed the Communication Link to Elevator System Window will update to appear like Figure #68. Figure #68 is the introductory screen for the Top Terminal Slowdown test. As a safety precaution, the TTS function does

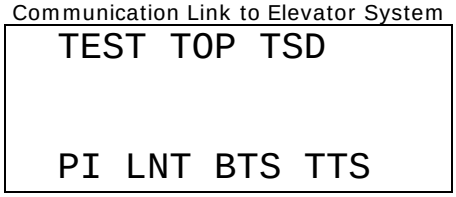

Figure 68

not go into action when the F4 button is pushed. The Enter button must be pressed at this time to implement the Top Terminal Slowdown Test. After the Enter button has been pressed, the Communication Link to Elevator System Window will instruct the user to enter a call in at the top landing, landing TT. Refer to Figure #69. When this appears in the Communication Link to Elevator System Window, the PI on the controller will change to the value for the bottom landing in the hoistway. When the controller PI changes to the value for the bottom landing, the user can enter a call for the top landing through the tool. All calls can be entered through the Enter function of the Call Mode of the Schindler/Westinghouse software module. When the call is entered the car will perform a Top Terminal Slowdown test.

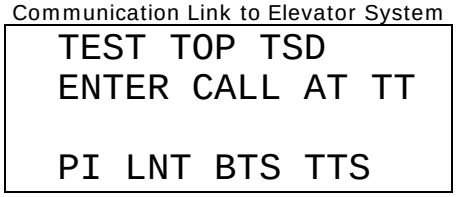

Figure 69

Appendix A: FREEDOM Tool Shortcut Keys

Shortcut Key	Function
Ctrl - X	Exit software
Ctrl - L	Logon Mode
Ctrl - C	Call Mode
Ctrl - S	Status Mode
Ctrl - D	Display Mode
Ctrl - P	Profile Mode
Ctrl - T	Test Mode
Ctrl - A	Active Mode
Ctrl - F1	F1
Ctrl - F2	F2
Ctrl - F3	F3
Ctrl - F4	F4
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	A
B	B
C	C
D	D
E	E
F	F
←, Left Arrow	Previous
→, Right Arrow	Next
Ctrl - O	Front
Ctrl - R	Rear
↑, Up Arrow	Hall Call Up
↓, Down Arrow	Hall Call Down
Space Bar	Car Calls

Appendix B: I/O Port Assignments B-6 Car Controller

I/O 6 SLOT B

Port	Address	Bit #:	Signal:	Type:	Description:
A	28	0	LU27R	Output	Rear hall lantern up landing 27
A	28	1	LD27R	Output	Rear hall lantern down landing 27
A	28	2	LU31R	Output	Rear hall lantern up landing 31
A	28	3	LD31R	Output	Rear hall lantern down landing 31
A	28	4	PH12R	Output	
A	28	5	PH13R	Output	
A	28	6	PH14R	Output	
A	28	7	PH15R	Output	
B	29	0	24BR	Input	24th landing rear car call
B	29	1	25BR	Input	25th landing rear car call
B	29	2	26BR	Input	26th landing rear car call
B	29	3	27BR	Input	27th landing rear car call
B	29	4	28BR	Input	28th landing rear car call
B	29	5	29BR	Input	29th landing rear car call
B	29	6	30BR	Input	30th landing rear car call
B	29	7	31BR	Input	31st landing rear car call
C	2A	0	L24BR	Output	24th landing rear car call latch
C	2A	1	L25BR	Output	25th landing rear car call latch
C	2A	2	L26BR	Output	26th landing rear car call latch
C	2A	3	L27BR	Output	27th landing rear car call latch
C	2A	4	L28BR	Output	28th landing rear car call latch
C	2A	5	L29BR	Output	29th landing rear car call latch
C	2A	6	L30BR	Output	30th landing rear car call latch
C	2A	7	L31BR	Output	31st landing rear car call latch

I/O 6 SLOT C

Port	Address	Bit #:	Signal:	Type:	Description:
A	24	0	LU19R	Output	Rear hall lantern up landing 19
A	24	1	LD19R	Output	Rear hall lantern down landing 19
A	24	2	LU23R	Output	Rear hall lantern up landing 23
A	24	3	LD23R	Output	Rear hall lantern down landing 23
A	24	4	PH08R	Output	
A	24	5	PH09R	Output	
A	24	6	PH10R	Output	
A	24	7	PH11R	Output	
B	25	0	16BR	Input	16th landing rear car call
B	25	1	17BR	Input	17th landing rear car call
B	25	2	18BR	Input	18th landing rear car call
B	25	3	19BR	Input	19th landing rear car call

Port	Address	Bit #:	Signal:	Type:	Description:
B	25	4	20BR	Input	20th landing rear car call
B	25	5	21BR	Input	21st landing rear car call
B	25	6	22BR	Input	22nd landing rear car call
B	25	7	23BR	Input	23rd landing rear car call
C	26	0	L16BR	Output	16th landing rear car call latch
C	26	1	L17BR	Output	17th landing rear car call latch
C	26	2	L18BR	Output	18th landing rear car call latch
C	26	3	L19BR	Output	19th landing rear car call latch
C	26	4	L20BR	Output	20th landing rear car call latch
C	26	5	L21BR	Output	21st landing rear car call latch
C	26	6	L22BR	Output	22nd landing rear car call latch
C	26	7	L23BR	Output	23rd landing rear car call latch

I/O 6 SLOT D

Port	Address	Bit #:	Signal:	Type:	Description:
A	20	0	LU11R	Output	Rear hall lantern up landing 11
A	20	1	LD11R	Output	Rear hall lantern down landing 11
A	20	2	LU15R	Output	Rear hall lantern up landing 15
A	20	3	LD15R	Output	Rear hall lantern down landing 15
A	20	4	PH04R	Output	
A	20	5	PH05R	Output	
A	20	6	PH06R	Output	
A	20	7	PH07R	Output	
B	21	0	08BR	Input	8th landing rear car call
B	21	1	09BR	Input	9th landing rear car call
B	21	2	10BR	Input	10th landing rear car call
B	21	3	11BR	Input	11th landing rear car call
B	21	4	12BR	Input	12th landing rear car call
B	21	5	13BR	Input	13th landing rear car call
B	21	6	14BR	Input	14th landing rear car call
B	21	7	15BR	Input	15th landing rear car call
C	22	0	L08BR	Output	8th landing rear car call latch
C	22	1	L09BR	Output	9th landing rear car call latch
C	22	2	L10BR	Output	10th landing rear car call latch
C	22	3	L11BR	Output	11th landing rear car call latch
C	22	4	L12BR	Output	12th landing rear car call latch
C	22	5	L13BR	Output	13th landing rear car call latch
C	22	6	L14BR	Output	14th landing rear car call latch
C	22	7	L15BR	Output	15th landing rear car call latch

I/O 6 SLOT E

Port	Address	Bit #:	Signal:	Type:	Description:
A	1C	0	LU03R	Output	Rear hall lantern up landing 3
A	1C	1	LD03R	Output	Rear hall lantern down landing 3
A	1C	2	LU07R	Output	Rear hall lantern up landing 7
A	1C	3	LD07R	Output	Rear hall lantern down landing 7
A	1C	4	PH03R	Output	
A	1C	5	PH02R	Output	
A	1C	6	PH01R	Output	
A	1C	7	PH00R	Output	
B	1D	0	00BR	Input	0th landing rear car call
B	1D	1	01BR	Input	1st landing rear car call
B	1D	2	02BR	Input	2nd landing rear car call
B	1D	3	03BR	Input	3rd landing rear car call
B	1D	4	04BR	Input	4th landing rear car call
B	1D	5	05BR	Input	5th landing rear car call
B	1D	6	06BR	Input	6th landing rear car call
B	1D	7	07BR	Input	7th landing rear car call
C	1E	0	L00BR	Output	0th landing rear car call latch
C	1E	1	L01BR	Output	1st landing rear car call latch
C	1E	2	L02BR	Output	2nd landing rear car call latch
C	1E	3	L03BR	Output	3rd landing rear car call latch
C	1E	4	L04BR	Output	4th landing rear car call latch
C	1E	5	L05BR	Output	5th landing rear car call latch
C	1E	6	L06BR	Output	6th landing rear car call latch
C	1E	7	L07BR	Output	7th landing rear car call latch

I/O 6 SLOT H

Port	Address	Bit #:	Signal:	Type:	Description:
A	10	0	LU27	Output	Front hall lantern up landing 27
A	10	1	LD27	Output	Front hall lantern down landing 27
A	10	2	LU31	Output	Front hall lantern up landing 31
A	10	3	LD31	Output	Front hall lantern down landing 31
A	10	4	PH12	Output	
A	10	5	PH13	Output	
A	10	6	PH14	Output	
A	10	7	PH15	Output	
B	11	0	24B	Input	24th landing car call
B	11	1	25B	Input	25th landing car call
B	11	2	26B	Input	26th landing car call
B	11	3	27B	Input	27th landing car call
B	11	4	28B	Input	28th landing car call
B	11	5	29B	Input	29th landing car call
B	11	6	30B	Input	30th landing car call

Port	Address	Bit #:	Signal:	Type:	Description:
B	11	7	31B	Input	31st landing car call
C	12	0	L24B	Output	24th landing car call latch
C	12	1	L25B	Output	25th landing car call latch
C	12	2	L26B	Output	26th landing car call latch
C	12	3	L27B	Output	27th landing car call latch
C	12	4	L28B	Output	28th landing car call latch
C	12	5	L29B	Output	29th landing car call latch
C	12	6	L30B	Output	30th landing car call latch
C	12	7	L31B	Output	31st landing car call latch

I/O 6 SLOT J

Port	Address	Bit #:	Signal:	Type:	Description:
A	0C	0	LU19	Output	Front hall lantern up landing 27
A	0C	1	LD19	Output	Front hall lantern down landing 27
A	0C	2	LU23	Output	Front hall lantern up landing 31
A	0C	3	LD23	Output	Front hall lantern down landing 31
A	0C	4	PH08	Output	
A	0C	5	PH09	Output	
A	0C	6	PH10	Output	
A	0C	7	PH11	Output	
B	0D	0	16B	Input	16th landing car call
B	0D	1	17B	Input	17th landing car call
B	0D	2	18B	Input	18th landing car call
B	0D	3	19B	Input	19th landing car call
B	0D	4	20B	Input	20th landing car call
B	0D	5	21B	Input	21st landing car call
B	0D	6	22B	Input	22nd landing car call
B	0D	7	23B	Input	23rd landing car call
C	0E	0	L16B	Output	16th landing car call latch
C	0E	1	L17B	Output	17th landing car call latch
C	0E	2	L18B	Output	18th landing car call latch
C	0E	3	L19B	Output	19th landing car call latch
C	0E	4	L20B	Output	20th landing car call latch
C	0E	5	L21B	Output	21st landing car call latch
C	0E	6	L22B	Output	22nd landing car call latch
C	0E	7	L23B	Output	23rd landing car call latch

I/O 6 SLOT K

Port	Address	Bit #:	Signal:	Type:	Description:
A	08	0	LU11	Output	Front hall lantern up landing 11
A	08	1	LD11	Output	Front hall lantern down landing 11

A	08	2	LU15	Output	Front hall lantern up landing 15

Port	Address	Bit #:	Signal:	Type:	Description:
A	08	3	LD15	Output	Front hall lantern down landing 15
A	08	4	PH04	Output	
A	08	5	PH05	Output	
A	08	6	PH06	Output	
A	08	7	PH07	Output	
B	09	0	08B	Input	8th landing car call
B	09	1	09B	Input	9th landing car call
B	09	2	10B	Input	10th landing car call
B	09	3	11B	Input	11th landing car call
B	09	4	12B	Input	12th landing car call
B	09	5	13B	Input	13th landing car call
B	09	6	14B	Input	14th landing car call
B	09	7	15B	Input	15th landing car call
C	0A	0	L08B	Input	8th landing car call latch
C	0A	1	L09B	Input	9th landing car call latch
C	0A	2	L10B	Input	10th landing car call latch
C	0A	3	L11B	Input	11th landing car call latch
C	0A	4	L12B	Input	12th landing car call latch
C	0A	5	L13B	Input	13th landing car call latch
C	0A	6	L14B	Input	14th landing car call latch
C	0A	7	L15B	Input	15th landing car call latch

I/O 6 SLOT L

Port	Address	Bit #:	Signal:	Type:	Description:
A	0C	0	LU03	Output	Front hall lantern up landing 3
A	0C	1	LD03	Output	Front hall lantern down landing 3
A	0C	2	LU07	Output	Front hall lantern up landing 7
A	0C	3	LD07	Output	Front hall lantern down landing 7
A	0C	4	PH00	Output	
A	0C	5	PH01	Output	
A	0C	6	PH02	Output	
A	0C	7	PH03	Output	
B	0D	0	00B	Input	0th landing car call
B	0D	1	01B	Input	1st landing car call
B	0D	2	02B	Input	2nd landing car call
B	0D	3	03B	Input	3rd landing car call
B	0D	4	04B	Input	4th landing car call
B	0D	5	05B	Input	5th landing car call
B	0D	6	06B	Input	6th landing car call
B	0D	7	07B	Input	7th landing car call
C	0E	0	L00B	Output	0th landing car call latch
C	0E	1	L01B	Output	1st landing car call latch

C	0E	2	L02B	Output	2nd landing car call latch

Port	Address	Bit #:	Signal:	Type:	Description:
C	0E	3	L03B	Output	3rd landing car call latch
C	0E	4	L04B	Output	4th landing car call latch
C	0E	5	L05B	Output	5th landing car call latch
C	0E	6	L06B	Output	6th landing car call latch
C	0E	7	L07B	Output	7th landing car call latch

I/O 8 SLOT P

Port	Address	Bit #:	Signal:	Type:	Description:
A	EC	0	SYA	Output	Synchronous driver dial A
A	EC	1	SYB	Output	Synchronous driver dial B
A	EC	2	SYC	Output	Synchronous driver dial C
A	EC	3	CLU	Output	Cab lantern- Up
A	EC	4	CLD	Output	Ca lantern- Down
A	EC	5	D44R	Output	Open rear door signal
A	EC	6	DHD	Output	Heavy door landing
A	EC	7	DNUDR	Output	Rear door nudging signal
B	ED	0	KLDO	Input	Fire service lobby door open push button
B	ED	1	KDORR	Input	Rear door open relay
B	ED	2	KDPOR	Input	Rear door power
B	ED	3	KSTER	Input	Rear door safety ray
B	ED	4	K40R	Input	Rear door gate contact
B	ED	5	K41R	Input	Rear doorlocks
B	ED	6	K43R	Input	Rear door closing
B	ED	7	K44R	Input	Rear door opening
C	EE	0	KTSR	Input	Rear landing traffic sentinel
C	EE	1	KBEAMR	Input	Rear safety ray
C	EE	2	KFDCR	Input	Fire service rear door close button
C	EE	3	KTSLTR	Input	Rear door open to preset limit
C	EE	4	KPASS	Input	Attendant bypass
C	EE	5	KPARK	Input	Parking
C	EE	6	KFDC	Input	Fire service door close button
C	EE	7	KFCR	Input	Fire service call reset button

I/O 8 SLOT R

Port	Address	Bit #:	Signal:	Type:	Description:
A	E8	0	DBELL	Output	Handicap Bell
A	E8	1	DU	Output	Demand Up (Attendant Service)
A	E8	2	DD	Output	Demand Down (Attendant Service)
A	E8	3	DFRL	Output	Lobby Firemen's return lantern
A	E8	4	DBUZ	Output	Fire service buzzer
A	E8	5	DLG	Output	Car light and fan
A	E8	6	DATG0	Output	Attendant service demand gong

A	E8	7	DMGS	Output	MG set start signal

Port	Address	Bit #:	Signal:	Type:	Description:
B	E9	0	KSDL	Input	Lobby smoke sensor
B	E9	1	KDOR	Input	Front door open signal
B	E9	2	KDPO	Input	Front door power
B	E9	3	KSTE	Input	Safety edge
B	E9	4	K40	Input	Front door gate contact
B	E9	5	K41	Input	Front doorlocks
B	E9	6	K43	Input	Front door closing
B	E9	7	K44	Input	Front door opening
C	EA	0	KTS	Input	Front landing traffic sentinel
C	EA	1	KBEAM	Input	Front safety ray
C	EA	2	KPWR	Input	Emergency power warning
C	EA	3	KCPR	Input	Control protective relay
C	EA	4	K9	Input	MG is on
C	EA	5	K55	Input	Governor overspeed
C	EA	6	KTSLT	Input	Front door preset limit
C	EA	7	KHCS	Input	One trip handicap operation

I/O 8 SLOT S

Port	Address	Bit #:	Signal:	Type:	Description:
A	E4	0	DFRL	Output	Energize FRL for full field
A	E4	1	DL2	Output	Verify run conditions
A	E4	2	DGU	Output	Verify up direction
A	E4	3	DGD	Output	Verify down direction
A	E4	4	DFEMC	Output	Phase-I fire service return
A	E4	5	D44	Output	Open front door signal
A	E4	6	DEMP	Output	Emergency power
A	E4	7	DNUD	Output	Front door nudging signal
B	E5	0	KFEM	Input	Phase-I fire service switch
B	E5	1	KA	Input	Brake set
B	E5	2	KFEMCM	Input	Phase-II fire service switch
B	E5	3	K6P	Input	Brake energized
B	E5	4	K32L	Input	Car running
B	E5	5	K29	Input	Safety circuit complete
B	E5	6	K5K	Input	Emergency power available
B	E5	7	KEMP	Input	Emergency power input
C	E6	0	K50	Input	Load weight switch - 50%
C	E6	1	K75	Input	Load weight switch - 75%
C	E6	2	KHEM	Input	Hospital service
C	E6	3	K980M	Input	In-service
C	E6	4	KU	Input	Attendant service up direction
C	E6	5	KD	Input	Attendant service down direction
C	E6	6	KTOP	Input	Top terminal selector reset
C	E6	7	KBOT	Input	Bottom terminal selector reset

I/O 8 SLOT T

Port	Address	Bit #:	Signal:	Type:	Description:
A	E0	0	AVP0	Output	Bit 0 - Advanced car position
A	E0	1	AVP1	Output	Bit 1 - Advanced car position
A	E0	2	AVP2	Output	Bit 2 - Advanced car position
A	E0	3	AVP3	Output	Bit 3 - Advanced car position
A	E0	4	AVP4	Output	Bit 4 - Advanced car position
A	E0	5	AVP5	Output	Bit 5 - Advanced car position
A	E0	6	DAUA	Output	Direction arrow - Up
A	E0	7	DADA	Output	Direction arrow - Down
B	E1	0	K60	Input	Automatic operation
B	E1	1	K1	Input	Car moving up
B	E1	2	K2	Input	Car moving down
B	E1	3	KTSD1	Input	Terminal Slowdown System - Low speed
B	E1	4	KLU	Input	Level up
B	E1	5	KL2	Input	Full speed
B	E1	6	KLD	Input	Level down
B	E1	7	KTSD2	Input	Terminal Slowdown system - High speed
C	E2	0	DCLK	Output	Clock pulse
C	E2	1	DSP	Output	Serial/Parallel Data
C	E2	2	DMD	Output	Serial/Parallel Mode
C	E2	3		N/A	
C	E2	4	KDIR	Input	DDD direction input
C	E2	5	KCTR	Input	Serial data input
C	E2	6	KINT	Input	Selector pulse
C	E2	7	KBATT	Input	Battery condition

I/O 8 SLOT N

Port	Address	Bit #:	Signal:	Type:	Description:
A	F0	0	DPOV	Input	Emergency Power - Manual override
A	F0	1	MBT	Input	Emergency Power - Transfer
A	F0	2		N/A	
A	F0	3		N/A	
A	F0	4		N/A	
A	F0	5		N/A	
A	F0	6		N/A	
A	F0	7		N/A	
B	F1	0	KPWR	Input	Emergency Power - Transfer warning
B	F1	1	KBT	Input	Emergency Power - Transfer in
B	F1	2	KPOV	Input	Emergency Power - Override switch
B	F1	3		N/A	
B	F1	4		N/A	

Port	Address	Bit #:	Signal:	Type:	Description:
B	F1	5		N/A	
B	F1	6		N/A	
B	F1	7		N/A	
C	F2	0	KATSVM	Input	Attendant service
C	F2	1	KIR980M	Input	Inconspicuous riser
C	F2	2	KESD	Input	Earthquake - Seismic device
C	F2	3	KEZL	Input	Earthquake - Lower zone switch
C	F2	4	KEZU	Input	Earthquake - Upper zone switch
C	F2	5	KEZM	Input	Earthquake - Middle zone switch
C	F2	6	KECD	Input	Earthquake - Counterweight derailment
C	F2	7	KCLS	Input	Earthquake - Collision switch

Appendix C: I/O Port Assignments B-7 Group Controller

I/O 2 SLOT A

Port	Address	Bit #:	Signal:	Type:	Description:
A	64	0	L24BUR	Output	24th rear landing up hall call latch
A	64	1	L25BUR	Output	25th rear landing up hall call latch
A	64	2	L26BUR	Output	26th rear landing up hall call latch
A	64	3	L27BUR	Output	27th rear landing up hall call latch
A	64	4	L28BUR	Output	28th rear landing up hall call latch
A	64	5	L29BUR	Output	29th rear landing up hall call latch
A	64	6	L24BDR	Output	24th rear landing down hall call latch
A	64	7	L25BDR	Output	25th rear landing down hall call latch
B	65	0	24BUR	Input	24th rear landing up hall call signal
B	65	1	25BUR	Input	25th rear landing up hall call signal
B	65	2	26BUR	Input	26th rear landing up hall call signal
B	65	3	27BUR	Input	27th rear landing up hall call signal
B	65	4	28BUR	Input	28th rear landing up hall call signal
B	65	5	29BUR	Input	29th rear landing up hall call signal
B	65	6	24BDR	Input	24th rear landing down hall call signal
B	65	7	25BDR	Input	25th rear landing down hall call signal
C	66	0	L26BDR	Output	26th rear landing down hall call latch
C	66	1	L27BDR	Output	27th rear landing down hall call latch
C	66	2	L28BDR	Output	28th rear landing down hall call latch
C	66	3	L29BDR	Output	29th rear landing down hall call latch
C	66	4	26BDR	Input	26th rear landing down hall call signal
C	66	5	27BDR	Input	27th rear landing down hall call signal
C	66	6	28BDR	Input	28th rear landing down hall call signal
C	66	7	29BDR	Input	29th rear landing down hall call signal

I/O 2 SLOT B

Port	Address	Bit #:	Signal:	Type:	Description:
A	60	0	L24BUR	Output	24th rear landing up hall call latch
A	60	1	L25BUR	Output	25th rear landing up hall call latch
A	60	2	L26BUR	Output	26th rear landing up hall call latch
A	60	3	L27BUR	Output	27th rear landing up hall call latch
A	60	4	L28BUR	Output	28th rear landing up hall call latch
A	60	5	L29BUR	Output	29th rear landing up hall call latch
A	60	6	L24BDR	Output	24th rear landing down hall call latch
A	60	7	L25BDR	Output	25th rear landing down hall call latch
B	61	0	24BUR	Input	24th rear landing up hall call signal
B	61	1	25BUR	Input	25th rear landing up hall call signal
B	61	2	26BUR	Input	26th rear landing up hall call signal
B	61	3	27BUR	Input	27th rear landing up hall call signal

Port	Address	Bit #:	Signal:	Type:	Description:
B	61	4	28BUR	Input	28th rear landing up hall call signal
B	61	5	29BUR	Input	29th rear landing up hall call signal
B	61	6	24BDR	Input	24th rear landing down hall call signal
B	61	7	25BDR	Input	25th rear landing down hall call signal
C	62	0	L26BDR	Output	26th rear landing down hall call latch
C	62	1	L27BDR	Output	27th rear landing down hall call latch
C	62	2	L28BDR	Output	28th rear landing down hall call latch
C	62	3	L29BDR	Output	29th rear landing down hall call latch
C	62	4	26BDR	Input	26th rear landing down hall call signal
C	62	5	27BDR	Input	27th rear landing down hall call signal
C	62	6	28BDR	Input	28th rear landing down hall call signal
C	62	7	29BDR	Input	29th rear landing down hall call signal

I/O 2 SLOT D

Port	Address	Bit #:	Signal:	Type:	Description:
A	58	0	L06BUR	Output	6th rear landing up hall call latch
A	58	1	L07BUR	Output	7th rear landing up hall call latch
A	58	2	L08BUR	Output	8th rear landing up hall call latch
A	58	3	L09BUR	Output	9th rear landing up hall call latch
A	58	4	L10BUR	Output	10th rear landing up hall call latch
A	58	5	L11BUR	Output	11th rear landing up hall call latch
A	58	6	L06BDR	Output	6th rear landing down hall call latch
A	58	7	L07BDR	Output	7th rear landing down hall call latch
B	59	0	06BUR	Input	6th rear landing up hall call signal
B	59	1	07BUR	Input	7th rear landing up hall call signal
B	59	2	08BUR	Input	8th rear landing up hall call signal
B	59	3	09BUR	Input	9th rear landing up hall call signal
B	59	4	10BUR	Input	10th rear landing up hall call signal
B	59	5	11BUR	Input	11th rear landing up hall call signal
B	59	6	06BDR	Input	6th rear landing down hall call signal
B	59	7	07BDR	Input	7th rear landing down hall call signal
C	5A	0	L08BDR	Output	8th rear landing down hall call latch
C	5A	1	L09BDR	Output	9th rear landing down hall call latch
C	5A	2	L10BDR	Output	10th rear landing down hall call latch
C	5A	3	L11BDR	Output	11th rear landing down hall call latch
C	5A	4	08BDR	Input	8th rear landing down hall call signal
C	5A	5	09BDR	Input	9th rear landing down hall call signal
C	5A	6	10BDR	Input	10th rear landing down hall call signal
C	5A	7	11BDR	Input	11th rear landing down hall call signal

I/O 2 SLOT C

Port	Address	Bit #:	Signal:	Type:	Description:
A	5C	0	L12BUR	Output	12th rear landing up hall call latch
A	5C	1	L13BUR	Output	13th rear landing up hall call latch
A	5C	2	L14BUR	Output	14th rear landing up hall call latch
A	5C	3	L15BUR	Output	15th rear landing up hall call latch
A	5C	4	L16BUR	Output	16th rear landing up hall call latch
A	5C	5	L17BUR	Output	17th rear landing up hall call latch
A	5C	6	L12BDR	Output	12th rear landing down hall call latch
A	5C	7	L13BDR	Output	13th rear landing down hall call latch
B	5D	0	12BUR	Input	12th rear landing up hall call signal
B	5D	1	13BUR	Input	13th rear landing up hall call signal
B	5D	2	14BUR	Input	14th rear landing up hall call signal
B	5D	3	15BUR	Input	15th rear landing up hall call signal
B	5D	4	16BUR	Input	16th rear landing up hall call signal
B	5D	5	17BUR	Input	17th rear landing up hall call signal
B	5D	6	12BDR	Input	12th rear landing down hall call signal
B	5D	7	13BDR	Input	13th rear landing down hall call signal
C	5E	0	L14BDR	Output	14th rear landing down hall call latch
C	5E	1	L15BDR	Output	15th rear landing down hall call latch
C	5E	2	L16BDR	Output	16th rear landing down hall call latch
C	5E	3	L17BDR	Output	17th rear landing down hall call latch
C	5E	4	14BDR	Input	14th rear landing down hall call signal
C	5E	5	15BDR	Input	15th rear landing down hall call signal
C	5E	6	16BDR	Input	16th rear landing down hall call signal
C	5E	7	17BDR	Input	17th rear landing down hall call signal

I/O 2 SLOT E

Port	Address	Bit #:	Signal:	Type:	Description:
A	54	0	L00BUR	Output	24th rear landing up hall call latch
A	54	1	L01BUR	Output	25th rear landing up hall call latch
A	54	2	L02BUR	Output	26th rear landing up hall call latch
A	54	3	L03BUR	Output	27th rear landing up hall call latch
A	54	4	L04BUR	Output	28th rear landing up hall call latch
A	54	5	L05BUR	Output	29th rear landing up hall call latch
A	54	6	L06BDR	Output	24th rear landing down hall call latch
A	54	7	L07BDR	Output	25th rear landing down hall call latch
B	55	0	00BUR	Input	0th rear landing up hall call signal
B	55	1	01BUR	Input	1st rear landing up hall call signal
B	55	2	02BUR	Input	2nd rear landing up hall call signal
B	55	3	03BUR	Input	3rd rear landing up hall call signal
B	55	4	04BUR	Input	4th rear landing up hall call signal
B	55	5	05BUR	Input	5th rear landing up hall call signal
B	55	6	00BDR	Input	0th rear landing down hall call signal

Port	Address	Bit #:	Signal:	Type:	Description:
B	55	7	01BDR	Input	1st rear landing down hall call signal
C	56	0	L02BDR	Output	2nd rear landing down hall call latch
C	56	1	L03BDR	Output	3rd rear landing down hall call latch
C	56	2	L04BDR	Output	4th rear landing down hall call latch
C	56	3	L05BDR	Output	5th rear landing down hall call latch
C	56	4	02BDR	Input	2nd rear landing down hall call signal
C	56	5	03BDR	Input	3rd rear landing down hall call signal
C	56	6	04BDR	Input	4th rear landing down hall call signal
C	56	7	05BDR	Input	5th rear landing down hall call signal

I/O 2 SLOT F

Port	Address	Bit #:	Signal:	Type:	Description:
A	44	0	L24BU	Output	24th landing up hall call latch
A	44	1	L25BU	Output	25th landing up hall call latch
A	44	2	L26BU	Output	26th landing up hall call latch
A	44	3	L27BU	Output	27th landing up hall call latch
A	44	4	L28BU	Output	28th landing up hall call latch
A	44	5	L29BU	Output	29th landing up hall call latch
A	44	6	L24BD	Output	24th landing down hall call latch
A	44	7	L25BD	Output	25th landing down hall call latch
B	45	0	24BU	Input	24th landing up hall call signal
B	45	1	25BU	Input	25th landing up hall call signal
B	45	2	26BU	Input	26th landing up hall call signal
B	45	3	27BU	Input	27th landing up hall call signal
B	45	4	28BU	Input	28th landing up hall call signal
B	45	5	29BU	Input	29th landing up hall call signal
B	45	6	24BD	Input	24th landing down hall call signal
B	45	7	25BD	Input	25th landing down hall call signal
C	46	0	L26BD	Output	26th landing down hall call latch
C	46	1	L27BD	Output	27th landing down hall call latch
C	46	2	L28BD	Output	28th landing down hall call latch
C	46	3	L29BD	Output	29th landing down hall call latch
C	46	4	26BD	Input	26th landing down hall call signal
C	46	5	27BD	Input	27th landing down hall call signal
C	46	6	28BD	Input	28th landing down hall call signal
C	46	7	29BD	Input	29th landing down hall call signal

I/O 2 SLOT H

Port	Address	Bit #:	Signal:	Type:	Description:
A	40	0	L18BU	Output	18th landing up hall call latch
A	40	1	L19BU	Output	19th landing up hall call latch

A	40	2	L20BU	Output	20th landing up hall call latch

Port	Address	Bit #:	Signal:	Type:	Description:
A	40	3	L21BU	Output	21st landing up hall call latch
A	40	4	L22BU	Output	22nd landing up hall call latch
A	40	5	L23BU	Output	23rd landing up hall call latch
A	40	6	L18BD	Output	18th landing down hall call latch
A	40	7	L19BD	Output	19th landing down hall call latch
B	41	0	18BU	Input	18th landing up hall call signal
B	41	1	19BU	Input	19th landing up hall call signal
B	41	2	20BU	Input	20th landing up hall call signal
B	41	3	21BU	Input	21st landing up hall call signal
B	41	4	22BU	Input	22nd landing up hall call signal
B	41	5	23BU	Input	23rd landing up hall call signal
B	41	6	18BD	Input	18th landing down hall call signal
B	41	7	19BD	Input	19th landing down hall call signal
C	42	0	L20BD	Output	20th landing down hall call latch
C	42	1	L21BD	Output	21st landing down hall call latch
C	42	2	L22BD	Output	22nd landing down hall call latch
C	42	3	L23BD	Output	23rd landing down hall call latch
C	42	4	20BD	Input	20th landing down hall call signal
C	42	5	21BD	Input	21st landing down hall call signal
C	42	6	22BD	Input	22nd landing down hall call signal
C	42	7	23BD	Input	23rd landing down hall call signal

I/O 2 SLOT J

Port	Address	Bit #:	Signal:	Type:	Description:
A	3C	0	L12BU	Output	12th landing up hall call latch
A	3C	1	L13BU	Output	13th landing up hall call latch
A	3C	2	L14BU	Output	14th landing up hall call latch
A	3C	3	L15BU	Output	15th landing up hall call latch
A	3C	4	L16BU	Output	16th landing up hall call latch
A	3C	5	L17BU	Output	17th landing up hall call latch
A	3C	6	L12BD	Output	12th landing down hall call latch
A	3C	7	L13BD	Output	13th landing down hall call latch
B	3D	0	12BU	Input	12th landing up hall call signal
B	3D	1	13BU	Input	13th landing up hall call signal
B	3D	2	14BU	Input	14th landing up hall call signal
B	3D	3	15BU	Input	15th landing up hall call signal
B	3D	4	16BU	Input	16th landing up hall call signal
B	3D	5	17BU	Input	17th landing up hall call signal
B	3D	6	12BD	Input	12th landing down hall call signal
B	3D	7	13BD	Input	13th landing down hall call signal
C	3E	0	L14BD	Output	14th landing down hall call latch

C	3E	1	L15BD	Output	15th landing down hall call latch
C	3E	2	L16BD	Output	16th landing down hall call latch

Port	Address	Bit #:	Signal:	Type:	Description:
C	3E	3	L17BD	Output	17th landing down hall call latch
C	3E	4	14BD	Input	14th landing down hall call signal
C	3E	5	15BD	Input	15th landing down hall call signal
C	3E	6	16BD	Input	16th landing down hall call signal
C	3E	7	17BD	Input	17th landing down hall call signal

I/O 2 SLOT K

Port	Address	Bit #:	Signal:	Type:	Description:
A	38	0	L06BU	Output	6th landing up hall call latch
A	38	1	L07BU	Output	7th landing up hall call latch
A	38	2	L08BU	Output	8th landing up hall call latch
A	38	3	L09BU	Output	9th landing up hall call latch
A	38	4	L10BU	Output	10th landing up hall call latch
A	38	5	L11BU	Output	11th landing up hall call latch
A	38	6	L06BD	Output	6th landing down hall call latch
A	38	7	L07BD	Output	7th landing down hall call latch
B	39	0	06BU	Input	6th landing up hall call signal
B	39	1	07BU	Input	7th landing up hall call signal
B	39	2	08BU	Input	8th landing up hall call signal
B	39	3	09BU	Input	9th landing up hall call signal
B	39	4	10BU	Input	10th landing up hall call signal
B	39	5	11BU	Input	11th landing up hall call signal
B	39	6	06BD	Input	6th landing down hall call signal
B	39	7	07BD	Input	7th landing down hall call signal
C	3A	0	L08BD	Output	8th landing down hall call latch
C	3A	1	L09BD	Output	9th landing down hall call latch
C	3A	2	L10BD	Output	10th landing down hall call latch
C	3A	3	L11BD	Output	11th landing down hall call latch
C	3A	4	08BD	Input	8th landing down hall call signal
C	3A	5	09BD	Input	9th landing down hall call signal
C	3A	6	10BD	Input	10th landing down hall call signal
C	3A	7	11BD	Input	11th landing down hall call signal

I/O 2 SLOT L

Port	Address	Bit #:	Signal:	Type:	Description:
A	34	0	L00BU	Output	0th landing up hall call latch
A	34	1	L01BU	Output	1st landing up hall call latch
A	34	2	L02BU	Output	2nd landing up hall call latch
A	34	3	L03BU	Output	3rd landing up hall call latch
A	34	4	L04BU	Output	4th landing up hall call latch

A	34	5	L05BU	Output	5th landing up hall call latch
A	34	6	L00BD	Output	0th landing down hall call latch
A	34	7	L01BD	Output	1st landing down hall call latch
Port	**Address**	**Bit #:**	**Signal:**	**Type:**	**Description:**
B	35	0	00BU	Input	0th landing up hall call signal
B	35	1	01BU	Input	1st landing up hall call signal
B	35	2	02BU	Input	2nd landing up hall call signal
B	35	3	03BU	Input	3rd landing up hall call signal
B	35	4	04BU	Input	4th landing up hall call signal
B	35	5	05BU	Input	5th landing up hall call signal
B	35	6	00BD	Input	0th landing down hall call signal
B	35	7	01BD	Input	1st landing down hall call signal
C	36	0	L02BD	Output	2nd landing down hall call latch
C	36	1	L03BD	Output	3rd landing down hall call latch
C	36	2	L04BD	Output	4th landing down hall call latch
C	36	3	L05BD	Output	5th landing down hall call latch
C	36	4	02BD	Input	2nd landing down hall call signal
C	36	5	03BD	Input	3rd landing down hall call signal
C	36	6	04BD	Input	4th landing down hall call signal
C	36	7	05BD	Input	5th landing down hall call signal

I/O 8 SLOT P

Port	**Address**	**Bit #:**	**Signal:**	**Type:**	**Description:**
A	78	0	DPOV1	Output	Emergency power override feeder 1
A	78	1	DPOV2	Output	Emergency power override feeder 2
A	78	2	MBT1	Output	Emergency power transfer feeder 1
A	78	3	MBT2	Output	Emergency power transfer feeder 2
A	78	4		N/A	
A	78	5		N/A	
A	78	6		N/A	
A	78	7		N/A	
B	79	0	KATSVM	Input	Attendant service
B	79	1	KPRD	Input	Priority/VIP landing
B	79	2		N/A	
B	79	3		N/A	
B	79	4		N/A	
B	79	5		N/A	
B	79	6	KLOB1	Input	Dual lobby landing 1
B	79	7	KLOB2	Input	Dual lobby landing 2
C	7A	0		N/A	
C	7A	1		N/A	
C	7A	2	KPWR1	Input	Emergency power transfer warning feeder 1
C	7A	3	KPWR2	Input	Emergency power transfer warning feeder 2
C	7A	4	KPOV1	Input	Emergency power override switch feeder 1
C	7A	5	KPOV2	Input	Emergency power override switch feeder 2

C	7A	6	KBT1	Input	Bank transfer feeder 1
C	7A	7	KBT2	Input	Bank transfer feeder 2

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Port	Address	Bit #:	Signal:	Type:	Description:
A	F4	0	L24BU	Output	24th landing up hall call latch
A	F4	1	L25BU	Output	25th landing up hall call latch
A	F4	2	L26BU	Output	26th landing up hall call latch
A	F4	3	L27BU	Output	27th landing up hall call latch
A	F4	4	L28BU	Output	28th landing up hall call latch
A	F4	5	L29BU	Output	29th landing up hall call latch
A	F4	6	L24BD	Output	24th landing down hall call latch
A	F4	7	L25BD	Output	25th landing down hall call latch
B	F5	0	24BU	Input	24th landing up hall call signal
B	F5	1	25BU	Input	25th landing up hall call signal
B	F5	2	26BU	Input	26th landing up hall call signal
B	F5	3	27BU	Input	27th landing up hall call signal
B	F5	4	28BU	Input	28th landing up hall call signal
B	F5	5	29BU	Input	29th landing up hall call signal
B	F5	6	24BD	Input	24th landing down hall call signal
B	F5	7	25BD	Input	25th landing down hall call signal
C	F6	0	L26BD	Output	26th landing down hall call latch
C	F6	1	L27BD	Output	27th landing down hall call latch
C	F6	2	L28BD	Output	28th landing down hall call latch
C	F6	3	L29BD	Output	29th landing down hall call latch
C	F6	4	26BD	Input	26th landing down hall call signal
C	F6	5	27BD	Input	27th landing down hall call signal
C	F6	6	28BD	Input	28th landing down hall call signal
C	F6	7	29BD	Input	29th landing down hall call signal