

GALaxy IV GALileo Ethernet Manual

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Elevator control products must be installed by elevator personnel who have been trained in the construction, maintenance, repair, inspection, and testing of elevator equipment. The elevator personnel must comply with all applicable safety codes and standards



Every safety precaution, whether or not specifically stated in this document, must be implemented when installing, adjusting or servicing elevator equipment. All safety precautions must be followed to ensure the safety of elevator personnel and the general publ

Table of Contents

TABLE OF CONTENTS	2
SECTION 1 - INSTALLATION	4
1.1 Material Information:	
1.1.1 Network Switch	
1.1.2 CAT 5e cable	
1.1.3 Ethernet Tester	
1.1.4 GALX-1120AN board "Raspberry PI"	
1.1.5 GALX-1005AN "Ethernet Board"	6
1.2 CAT 5E WIRING GUIDELINES AND INSTRUCTIONS	7
1.3 GALILEO DIAGNOSTICS	8
SECTION 2 - TROUBLESHOOTING	9
2.1 GALX-1120AN board "Raspberry Pi"	9
2.1.1 Raspberry Pi & Solid-State drive	
2.1.2 Antenna USB	
2.1.3 GALX-1120AN board	11
2.2 Network Hardware:	12
2.2.1 Network Switch	12
2.2.2 CAT 5e Cable	12
2.2.3 Wiring Connections	12
2.3 Network Software:	12
2.3.1 Galileo Router Setup	13
2.3.2 GALX-1005AN "Ethernet board"	
SECTION 3 – GALILEO SETUP	18
SECTION 3 – GALILEO SETUP	 18 19
SECTION 3 – GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords	
SECTION 3 – GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users	
SECTION 3 – GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users	
SECTION 3 – GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup.	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.3.4 MULTI GROUP SETUP	18 19 21 21 22 23 23 23 23 24 24 24 24
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.1 Ethernet Setup 3.3.2 Wireless Setup. 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT	18 19 21 21 21 22 23 23 24 24 24 25
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT 3.6 AUTO EMAIL SETUP	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT 3.6 AUTO EMAIL SETUP SECTION 4 - GALILEO HOME	
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT 3.6 AUTO EMAIL SETUP SECTION 4 - GALILEO HOME	
SECTION 3 - GALILEO SETUP	18 19 21 21 21 22 23 23 24 24 24 25 25 25 25 25 26 27
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT 3.6 AUTO EMAIL SETUP SECTION 4 - GALILEO HOME 4.1 FAULT LIST 4.2 DOCUMENTS 4.3 VIDEOS	
SECTION 3 - GALILEO SETUP	
SECTION 3 - GALILEO SETUP	18 19 21 21 21 22 23 23 24 24 24 24 25 25 25 26 27 28 30 31
SECTION 3 - GALILEO SETUP 3.1 MANAGE USERS 3.1.1 Change Passwords 3.1.2 Create Users 3.1.3 Delete Users 3.2 UPLOAD FILES 3.3 ROUTER SETUP 3.3.1 Ethernet Setup 3.3.2 Wireless Setup 3.4 MULTI GROUP SETUP 3.5 REQUEST RE-INIT 3.6 AUTO EMAIL SETUP SECTION 4 - GALILEO HOME 4.1 FAULT LIST 4.2 DOCUMENTS 4.3 VIDEOS 4.4 GALILEO DIAGNOSTICS 4.5 CAR IO SCREEN 4.5.2 CC Test	18 19 21 21 22 23 23 24 24 24 24 25 25 26 27 28 30 31 32
SECTION 3 - GALILEO SETUP	
SECTION 3 - GALILEO SETUP	18 19 21 21 21 22 23 23 24 24 24 24 25 25 26 27 28 30 31 32 33

4.8 Fault Log	
4.9 Adjustable Variables	
4.10 Trace	
4.10.1 Trace Setup	
4.11 Traffic Analysis	
4.12 Set Date and Time	
4.13 CALL LOCKOUT	
4.14 Service Settings	
4.15 Events Scheduling	
Features	
Usage examples	
4.16 Multi Group	50
SECTION 5 – PC MONITORING	
5.1 LOBBY MONITOR	
5.2 LOBBY PANEL	
SECTION 6 – SETTING UP LOBBY PC	

Section 1 – Installation

In this section, we will go through all the materials needed to get the Galileo Elevator Monitoring System up and running through a wired ethernet connection. In addition, we will be providing details of each material and the most efficient procedure to install the Galileo Elevator Monitoring System via ethernet.

1.1 Material Information:

Material List:

- Network Switch
- CAT 5e cables
- Ethernet Tester
- Ethernet Crimper
- GALX-1120AN Board "Raspberry PI"
- GALX-1005AN "Ethernet Board"

1.1.1 Network Switch

The network switch will be mounted on the left panel of the elevator controller cabinet. The ports provided on the switch can be either a 5-ports, 8-ports or a combination of both depending on number of cars in the group. If there are 4 cars or less, a 5-ports switch will be provided. If a job has 5 cars or more, an 8-ports switch will be provided. If there are multiple groups, each of the groups will have a network switch mounted on the left panel of the elevator controller.

(*NOTE: 1 port is reserved for the GALX-1120AN "Raspberry Pi". Another port will be reserve for external use such as lobby monitor or hooking up a router etc. The rest of the ports will be used for each of the cars in the group)



Figure 1.1: 5-port network switch



Figure 1.2: 8-port network switch

1.1.2 CAT 5e cable

A roll of CAT 5e cables will be provided. 100 feet for non-dispatch cars and 1000 feet for job with remote monitoring or multi-machine room. The cable will need to be wired from the car with the network switch (usually the first car setup or the dispatcher car) to each of the cars in the group. Always overestimate when cutting the wires. An extra foot or 2 will be needed in case there is an error in crimping

the wires. The CAT 5e cables will need to be made on site. A tester will be provided to make sure that the ethernet cable has been made correctly. When stripping CAT 5e cables, one will find 4 twisted pairs as shown in figure 1.3. Be sure to strip a good amount to give room to untwist and crimp. Be careful when stripping CAT 5e cables, it is possible from one of the wires to accidently get cut. After untwisting the 4 twisted pairs, one will be left with 8 wires which will need to be ordered, pushed, and crimped to a RJ-45 as shown in figure 1.4.



Figure 1.3: CAT 5e cable stripped Figure 1.4: Cold

Figure 1.4: Color Code of Ethernet Cable

1.1.3 Ethernet Tester

The ethernet tester will be used after each cable is made to make sure that the cable is good and ready to use. The ethernet tester will have 2 different devices. One device is referred as the master (the one with the on and off switch). The other device is referred as the remote. To use the tester, hook up both ends of the CAT 5e cable. One on the master the other on the remote device. Turn on the master device and then look at both LED lights on both devices and be sure the light up sequentially in the following pattern 1, 2, 3, 4, 5, 6, 7, and 8. If the LEDs light up sequentially then the cable is good. If not, cable is bad and would need to be re-crimped.



Figure 1.5: Ethernet Cable Tester

1.1.4 GALX-1120AN board "Raspberry PI"

GALX-1120AN consist of 3 components, the Raspberry Pi 3 or Pi 4 & Solid-State drive, USB antenna, and the GALX-1120AN serial connector allowing a hard wire ribbon connection for the controller it is installed in. The raspberry Pi will consist of all the ports to connect the monitor, keyboard, solid state drive, keyboard, and network switch. The ethernet port will be connected to the network switch mounted on the cabinet. The Solid-State Drive, USB antenna, and keyboard USB dongle will be connected to the raspberry pi USB port. The Monitor will be connected to the Raspberry Pi 3 HDMI port or Raspberry Pi 4 Mini HDMI port. Once the pi is provided 5 volts of power the monitor will show the raspberry pi logo indicating that the Galileo is in the process of booting. Once it is fully bootup the home screen of the Galileo will be shown.



Figure 1.6: GALX-1120 "Raspberry PI"



Raspberry Pi 3

Raspberry Pi 4

* Note: The main difference of the Pi 3 and the Pi 4 is the HDMI port. The Pi 3 has a HDMI port and Pi 4 has a Mini HDMI port.

1.1.5 GALX-1005AN "Ethernet Board"

Every car that does not have the GALX-1120AN board will have an ethernet board which will connect to one end of the ethernet cable. The other end of the ethernet cable will connect to the network switch mounted on the controller with the GALX-1120AN board. Each ethernet board will be preconfigured with a unique IP address and the same subnet and gateway address.



Figure 1.7: GALX-1005AN "Ethernet Board"

1.2 CAT 5e Wiring Guidelines and Instructions

- 1) Locate the controller cabinet that has the GALX-1120AN and network switch mounted on the left panel.
- 2) Boot-up the raspberry pi and wait for the monitor to displace the Galileo home page. Once home page is booted click on Galileo Diagnostic pages. This page will help give a visual representation of how the wiring should look and whether a car is online or offline.
- 3) Take the CAT 5e roll and begin measuring the distance between the controller cabinet with the network switch and one of the cars in the group. Be sure to make it longer than what is needed allowing some room for error. (in case the wire is stripped and crimped incorrectly)
- 4) After the measurements have been made, cut the cable. Label the cable on the side where the network switch is. This will help identify which cable is for which car because there will be multiple cables on that side.
- 5) Repeat step 3 and 4 for each of the cars in the group.
- 6) Afterwards, take one end of the cable for a certain car and strip about 2" using a stripper. Be extra careful not to cut any of the wire inside. If you did then recut and restripe the wire. (which is why it's important to leave a lot of room for error)
- 7) Spread, untwist the pairs, and arrange the wire in the order of the desired cable end. Flatten the end between you thumb and fore finger.
- 8) Hold the RJ-45 plug with the clip facing down or away from you. Push the wires firmly into the plug. Inspect each wire is flat even at the front of the plug. Check the order of the wires. Double check again. Check that the jacket is fitted right against the stop of the plug. Push the wires down all the way through. Carefully hold the wire and firmly crimp the RJ45 with the crimper.
- 9) Cut the access wires sticking out of the crimper with a small diagonal cutter.
- 10) Repeat step 6, 7, and 8 on the other side of the cable where the car is.
- 11) Once both ends of the cable are crimped and ready, take the tester and hook up one end of the tester to the master device and the other end to the remote device.
- 12) Turn the tester on and make sure the lights on both ends of the device turn on sequentially.
- 13) Once should see led 1, then 2, then 3, then 4, then 5, then 6, then 7, then 8 turn on in that sequence on both devices. If that is shown, the ethernet cable has been successfully made and it is now function and ready to connect.
- 14) Connect one end of the cable to the switch. Connect the other end of the cable to the car give it a couple of minutes to connect. On the Galileo Diagnostics screen, the car just connected should now show an online status.
- 15) Repeat steps 6, 7, 8, 9, 10, 11, 12, 13, and 14 for each of the cables that was ran to each of the cars in the group.

1.3 Galileo Diagnostics

The Galileo Diagnostics Screen can be found on the home page by clicking the "Galileo Diagnostics" button. This screen will give you a simplify representation of the wiring layout and the connection status of each car in the group. This tool is useful to use during the setup process, so that you are able to pinpoint which connection is giving you issues. If there are any issues, follow the troubleshooting section sequentially to get a full breakdown of how the system works and where the problem may lie.



Section 2 – Troubleshooting

In this section, we will go through how to troubleshoot each component of the Galileo Elevator Monitoring System via ethernet. We will ask a series of question and have you verify each component, so that you will be able to narrow down the issue. Once the issues have been caught, a solution will be provided to diagnose any following problem.

2.1 GALX-1120AN board "Raspberry Pi"

The GALX-1120AN board which includes the raspberry pi mounted on top of it is the brains of the whole operation which is why we would want to check this system first making sure everything is working before moving on to the next system.

A fully functional GALX-1120AN board "Raspberry PI" will have a Monitor displaying the Galileo home page along with the Group ID displayed on the home monitor. In addition, one should be able to view and log on to the WIFI "Galweb". The car that has the GALX-1120AN mounted on the left side panel will have a hardwired ribbon cable connection. Thus, when you go to the Car IO screen for that specific car number is should display car data.

The GALX-1120AN board "Raspberry Pi" consists of 3 components which is the raspberry pi & solid-state drive (where the pi's software is kept), Antenna USB, and the serial port located on the GALX1120AN board.

2.1.1 Raspberry Pi & Solid-State drive

(*IMPORTANT: Verify that the monitor has power and is turned on. Also verify that the HDMI cable or Mini HDMI cable is connected to the Raspberry pi 3 or 4 and the HDMI to DVI cable is connected to the monitor.)

Is MCU and COMM LEDs on and bright? Is the monitor displaying the Galileo after boot-up (give it a couple of minutes to boot-up)?

- a) Yes: Raspberry Pi and Solid-State Drive are good.
- b) If not, does the following below appear on the monitor?



- a. Yes: Give it 5 7 minutes the Raspberry Pi is updating its software to the Solid-State Drive.
- b. If not and nothing appears in the monitor or Galileo home page never boots up, replace the GALX-1120AN board.

2.1.2 Antenna USB

Is Galweb, or Galweb1-5 visible on Available Networks on your phone?



- a) Yes: RPI and Antenna are good.
- b) If not, is the USB antenna connection plugged in correctly (it can be not plugged in all the way or plugged in backwards or antenna can be detached)?
 - a. Yes: Replace GALX-1120AN Board.
 - b. If not, plug it in correctly reboot the GALX-1120AN board and recheck to see if Galweb appears.

2.1.3 GALX-1120AN board

(*IMPORTANT: Verify that the grey ribbon cable is connected to the GALX-1120AN on one side and to the COM1 port of the GALX-1100AN CPU board.)

Is the car where you the GALX-1120AN board is mounted online? You can tell by looking at the Car IO screen and selecting that specific car number. The screen will display car data if it is online.



- a) Yes: The GALX-1120AN board is good
- b) If not, is "System Options:"- "COM 1 BAUD RATE=6" 115200bps?
 - a. Yes: It is correct.
 - b. If not, set "System Options:"- "COM 1 BAUD RATE=6" 115200bps and check to see if "System Options:"-"COM 1 Port Sel=6" Galcom Wireless Flow Control?
 - i. Yes: It is correct.
 - ii. If not, set "System Options:"- "COM 1 Port Sel=6" Galcom Wireless Flow Control.

If all steps have been completed and the car is still showing offline, one thing we can try before calling it quits and replacing the GALX-1120AN board is moving the ribbon cable from COM1 to COM2 and setting up the following field variables like so:

- a) Set "System Options:"- "COM 2 BAUD RATE=6" 115200bps.
- b) Set "System Options:"- "COM 2 Port Sel=6" Galcom Wireless Flow Control.

a. If it is still not communicating, then replace the GALX-1120AN board.

2.2 Network Hardware:

Now that we have verified that the GALX-1120AN board "Raspberry Pi" is fully functional. We are able to access the Galileo home page and go to Galileo Diagnostics. This screen will tell us whether each of the cars are communicating to the Galileo or not. The Galileo Diagnostics screen will show a red line indicating the car is offline and green line indicating that the car is online.

The network hardware has 2 components which is the network switch, and the CAT 5e cables. In addition, another factor that comes in to play is how your CAT 5e cables are connected and whether they are connected in the right spot according to the prints.

2.2.1 Network Switch

Is the network switch powered on where you can see the power light led on?

- a) Yes: Network Switch is good
- b) If not, plug in and power on network switch

2.2.2 CAT 5e Cable

Has each of the Ethernet Cables been tested using an ethernet tester?

- a) Yes: Ethernet cable is good.
- b) If not, use an Ethernet tester to test each end of the ethernet cable to verify that the RJ-45 has been crimped properly.
 - a. If ethernet cable is not working, remake a new ethernet cable testing the cable afterwards and making sure its functional.

2.2.3 Wiring Connections

Are the cables connected properly according to the prints with the link led on both on the GALX-1005AN and the network switch?

- a) Yea: Connections are good.
- b) If not, rewire the ethernet cables so that the connections match the prints. (Note: One side of the ethernet cable will always connect to the network switch the other side of the ethernet cable will connect to either the GALX-1005AN or GALX-1120AN.)

2.3 Network Software:

Even after all the network hardware is working properly, you may still have communication issues. If that is the case, you will need to look at the network software. The network software is the other part that is responsible for the communication between the car and the Galileo.

The network software consists of 2 components the Galileo Router setup, and the GALX1005AN "ethernet board" plugged in to each controller (except the controller that has the GALX1120AN Board).

Galileo Setup Router Setup Go to Then Go to Router Setup Wired (WAN) **IP Address** 192.168.1 19 Subnet Mask 255 . 255 255 . 0 Login Gateway Usernam 192 168. 1 admin Passwo **DNS Nameserver** 8.8.8. 8 Log In Cancel

2.3.1 Galileo Router Setup

Are there Multiple GALaxy IV groups in the area?

a) If not, is "IP Address" set to "192.168.1.19"? And "Gateway Address" set to "192.168.1.1"? a. Yes: Galileo Setup is correct

- b. If not, set "IP Address" to "192.168.1.19"? And "Gateway Address" to "192.168.1.1" Then reboot GALX-1120AN board.
- b) If yes, is "IP Address" set to "192.168.1.19"? And "Gateway Address" set to "192.168.1.1" on group 1?
 - c. Yes: Galileo Setup is correct on group 1.
 - d. If not, set "IP Address" to "192.168.1.19"? And "Gateway Address" to "192.168.1.1" on group 1. Then reboot GALX-1120AN board.

Login with

- c) If yes, is "IP Address" set to "192.168.1.29"? And "Gateway Address" set to "192.168.1.1" on group 2?
 e. Yes: Galileo Setup is correct on group 2.
 - f. If not, set "IP Address" to "192.168.1.29"? And "Gateway Address" to "192.168.1.1" on group 2. Then reboot GALX-1120AN board.
- d) If yes, is "IP Address" set to "192.168.1.39"? And "Gateway Address" set to "192.168.1.1" on group 3?
 - g. Yes: Galileo Setup is correct on group 3.
 - h. If not, set "IP Address" to "192.168.1.39"? And "Gateway Address" to "192.168.1.1" on group 3. Then reboot GALX-1120AN board.
- e) If yes, is "IP Address" set to "192.168.1.49"? And "Gateway Address" set to "192.168.1.1" on group 4?
 - i. Yes: Galileo Setup is correct on group 4.
 - j. If not, set "IP Address" to "192.168.1.49"? And "Gateway Address" to "192.168.1.1" on group 4. Then reboot GALX-1120AN board.
- f) If yes, is "IP Address" set to "192.168.1.59"? And "Gateway Address" set to "192.168.1.1" on group 5?
 - k. Yes: Galileo Setup is correct on group 5.

- I. If not, set "IP Address" to "192.168.1.59"? And "Gateway Address" to "192.168.1.1" on group 5. Then reboot GALX-1120AN board.
- g) If yes, is "IP Address" set to "192.168.1.69"? And "Gateway Address" set to "192.168.1.1" on group 6?
 - m. Yes: Galileo Setup is correct on group 6.
 - n. If not, set "IP Address" to "192.168.1.69"? And "Gateway Address" to "192.168.1.1" on group 6. Then reboot GALX-1120AN board.
- h) If yes, is "IP Address" set to "192.168.1.79"? And "Gateway Address" set to "192.168.1.1" on group 7?
 - o. Yes: Galileo Setup is correct on group 7.
 - p. If not, set "IP Address" to "192.168.1.79"? And "Gateway Address" to "192.168.1.1" on group 7. Then reboot GALX-1120AN board.
- i) If yes, is "IP Address" set to "192.168.1.89"? And "Gateway Address" set to "192.168.1.1" on group 8?
 - q. Yes: Galileo Setup is correct on group 8.
 - r. If not, set "IP Address" to "192.168.1.89"? And "Gateway Address" to "192.168.1.1" on group 8. Then reboot GALX-1120AN board.

2.3.2 GALX-1005AN "Ethernet board"

(NOTICE: When programming GALX-1005AN "ethernet board" be sure to remove the ethernet cable if there is any ethernet cable connected to the board. This way there is no other data being sent to the board while it is being setup.)

(*IMPORTANT: The parameter that needs to be checked is under "Adjustable Variables" -> "System Options" -> "Galileo Group #= 1". If there is only one group, the value should be set to 1. If there is multiple groups the value should be set to the group number it is. Then Set "System Options:"-"COM 1 BAUD RATE=6" 115200bps. Set "System Options:"-"COM 1 Port Sel=6" Galcom Wireless Flow Control. Make sure there is a ribbon cable connect from the COM1 of the GALX-1100AN board to the GALX1005AN board.)

The ethernet board on the Galaxy controller is programmed on the LCD screen under "Software Utilities" and then "Network Card Setup". Under the "Network Card Setup" there are options to "Auto Eth Setup" or "Manual Ethernet Setup". To start "Auto Eth Setup" you hit enter two times and wait for the LCD to show "Auto Eth Setup Complete". When the setup is completed give it a couple of minutes for the car to go online. If the car is still offline, lets looks at the following:

Is link LED "D1" on solid and does the data light occasionally blink?



- a) Yes: GALX-1005AN "ethernet board" is setup and working correctly.
- b) If not, is the GALX-1005AN "ethernet board" setup correctly?
 - a) On LCD screen go to "Software Utilities" hit enter
 - b) On LCD screen go to "Network Card Setup" hit enter.
 - c) On LCD screen go to "Manual Eth Card Setup" hit enter.
 - d) On LCD screen go to "Enter Eth Command Mode" hit enter.
 - i. If you cant enter command mode and the ribbon cable is connected and field variables are set, you have a bad GALX-1005AN board.
 - e) On LCD screen go to "Read Vars from Eth Card" hit enter.
 - f) On LCD screen go to "Set/View Local Eth Vars" hit enter.
 - g) On LCD screen scroll through the Eth Vars and verify that:

- i. On Car #2
 - 1. Car IP Address = 192.168.1.12
 - 2. Sub Net Mask = 255.255.255.0
 - 3. Local Port = 5560
 - 4. Gate Way = 192.168.1.1
 - 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup)
- ii. On Car #3
 - 1. Car IP Address = 192.168.1.13
 - 2. Sub Net Mask = 255.255.255.0
 - 3. Local Port = 5560
 - 4. Gate Way = 192.168.1.1
 - 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup) iii.
- On Car #4
 - 1. Car IP Address = 192.168.1.14
 - 2. Sub Net Mask = 255.255.255.0
 - 3. Local Port = 5560
 - 4. Gate Way = 192.168.1.1
 - 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup) iv.

On Car #5

- 1. Car IP Address = 192.168.1.15
- 2. Sub Net Mask = 255.255.255.0
- 3. Local Port = 5560
- 4. Gate Way = 192.168.1.1
- 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup)
- v. On Car #6
 - 1. Car IP Address = 192.168.1.16
 - 2. Sub Net Mask = 255.255.255.0
 - 3. Local Port = 5560
 - 4. Gate Way = 192.168.1.1
 - 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup) vi.

On Car #7

1. Car IP Address = 192.168.1.17

- 2. Sub Net Mask = 255.255.255.0
- 3. Local Port = 5560
- 4. Gate Way = 192.168.1.1
- 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup) vii.

On Car #8

- 1. Car IP Address = 192.168.1.18
- 2. Sub Net Mask = 255.255.255.0
- 3. Local Port = 5560
- 4. Gate Way = 192.168.1.1
- 5. Host IP Address = 192.168.1.19 (This IP address must match the IP address set on the Galileo under router setup)

h) If the parameters were not setup correctly set them up correctly then:

i. On LCD screen go to "Send Local Eth Vars" hit enter. ii.

On LCD screen go to "Exit Command Mode" hit enter.

iii. Repeat the verification process if any of the parameters you set are not the numbers you have set and sent the "Ethernet Board" is bad and needs to be replaced. i) If they were setup correctly

i. Make sure the ribbon cable is plugged between "CN1" on the GALX-1005AN board and "COM1" on the GALX-1100AN with the red stripe on the right. ii. Is "System Options:"-"COM 1 BAUD RATE=6" 115200bps? 1. Yes: it is correct

2. NO: set "System Options:"-"COM 1 BAUD RATE=6" 115200bps.

iii. Is "System Options:"-"COM 1 Port Sel=6" Galcom Wireless Flow Control? 1.

Yes: it is correct

2. NO: set "System Options:"-"COM 1 Port Sel=6" Galcom Wireless Flow Control?

Section 3 - Galileo Setup

In this section, we will go through the Galileo setup screen and all the initial setups that needs to be done when Galileo is first installed. In addition, we will go through the different setup options one has on the Galileo. The Galileo Setup menu includes the following shown on figure 3.2.

	Home So Group ID: 54	7282-18		Log In
(Haltes)	Car IO Screen	Select v	Traffic Analysis	
Ver. 1.01.03w1.18	Group Sc	reen	Set Date and Time	
Fault List	Hall IO Sc	reen	Call Lockout	
Documents	Fault Log	Select •	Service Settings	
Videos	Adj. Variables	Select •	Events Scheduling	
Galileo Setup	Trace	Select •	Multi Group	
Galileo Diagnostics			Elevator Setup	

Figure 3.1: Galileo Home page





3.1 Manage Users

In the Mange Users page, one can create users with different access levels, Delete Users, and change passwords. What each access level can view/do is shown below on figure 3.3. By default, a machine room Galileo will have an Adjuster access level and a Lobby monitor Galileo will have a monitoring access level. On initial boot-up, you will need to choose a person to have the role and access level of an admin. The Admin will be responsible for creating and managing user accounts/access levels. Once that person is chosen, the person will need to create a unique username and password that will need to be kept confidential.

Access Levels	Can Access/Change	Can View	Login Timeout
Admin	Manage Users	Everything	1 day
Adjuster	Adjust Variables, Router Setup, Email Setup, Upload Files, Multi Group Setup, Reset Galileo, Clear Faults, Record trace, Access Traffic Analysis, Lockout Calls, Modify Services Settings, Schedule Events, Change Time, Make Car calls	Everything	1 day
Mechanic	Clear Faults, Record trace, Access Traffic Analysis, Lockout Calls, Modify Services Settings, Schedule Events, Change Time, Make Car calls	Everything	1 day
Building	Access Traffic Analysis, Lockout Calls, Modify Services Settings, Schedule Events, Change Time, Make Car calls	Event Scheduling, Service Settings, Group screen, Call Lockouts, View Traffic Analysis, Group Screen, Lobby Monitor Screen, Multi Group	Never
Monitor	None	Group Screen, Lobby Monitor Screen, Multi Group	Never
No Account	None	None	-

Figure 3.3: Galileo Setup page

	Manage Users	Log In
Galileo Setup	Create User Administrator	
Home	Username: Password:	
Manage Users	Confirm Password:	
Change Password	Create	

Figure 3.4A: Manage Users page without admin account



Figure 3.4B: Manage Users page with admin account

3.1.1 Change Passwords

If your password was ever discovered and you wanted to change the password of a current account, you would be able to do so. Click "Change Password" and type in the following Username and the Old Password. Then put in the new password and confirm the new password. Be sure to remember this password and keep it confidential.

	Manage Users	Log Out: admin
Galileo Setup	Change Password	
Home	Username: Old Password:	
Create New User	New Password: Confirm New Password:	
Change Password	Submit Cancel	

Figure 3.5: Changing the password

3.1.2 Create Users

(Important: Without logging in as admin you will not be able to create users.)

After changing the admin password, you would need to login to the new admin account to create new users. Click the "Log In" button on the top right-hand corner and type in your new admin user and password as shown in figure 3.6.



Figure 3.6: Logging In

Once you log in as admin, click the "Create New User" button and create a user and password for each of the access levels shown in the chart 3.4. Keep track of all the passwords and users for each of the access level.

	Manage Users	Log Out: admin
Galileo Setup	Create User	
	Username:	
Home	Password:	
	Confirm Password:	
Manage Users	Select Access Level *Select*	
Change Password	Create	

Figure 3.7: Create User

3.1.3 Delete Users

(Important: Without logging in as admin you will not be able to delete users. The admin account can be deleted. If this is done, you will need to go to the Galileo Setup page. Then go back to back to Manage Users page and you will be prompted to create a new admin account. If you do delete the admin account be sure to create another one right away.)

Once all you users are created, if you ever need to delete a user the way to do that is clicking the "Manage Users" button shown in figure 3.8. Then you are able to hit the "Delete User" button to delete the user.



Figure 3.8: Delete User

3.2 Upload Files

In this menu user files can be uploaded. PDF files can be uploaded under document. MP4 video files can be added under video. Files can also be deleted. Once this is done, those files can be viewed on the home page under "Documents" or "Videos".

	File Transfer Setup	Log Out: admin
Galileo Setup Home	File Upload • Document • Video Choose Files No file chosen Upload File(s) Select All Delete Selected	■ GALaxy 4 Quickstart - Complete Document v2.5 .pdf ■ GALaxy IV Manual Combivert F5 (Version 1.5.7).pdf ■ GALaxy IV Manual M1000 AC (Version 1.5.7).pdf ■ GALaxy IV Manual Quattro DC (Version 1.5.7).pdf ■ GALaxy IV Manual Quattro DC (Version 1.5.7).pdf ■ KEB F5 Elevator Drive LCDv3_21 - Rev1D.pdf ■ TSSA VVVF Submission Rev1.08j.pdf

Figure 3.9: Upload Files

3.3 Router Setup

As shown in figure 3.10, the router setup is separated in 2 sections. One section is the "Wired (WAN)". This section represents the settings for the ethernet port that the raspberry pi has. The other section is the Wireless (LAN). This section represents the settings for the wireless USB antenna that is plugged on to the raspberry pi.



Figure 3.10: Router Setup

3.3.1 Ethernet Setup

To adjust the ethernet settings, you will need to delete and change the numbers that are right under the Wire (WAN) title. After settings are adjusted, click on the save button to save the following settings. In order for the settings to take effect, one must reboot the GALX-1120AN "Raspberry Pi" board. The following setting that can be adjust is the IP address, subnet mask, gateway, and DNS name server.

3.3.2 Wireless Setup

To adjust the wireless settings, you will need to delete and change the numbers and the names that are right under the Wireless (LAN) title. After settings are adjusted, click on the save button to save the following settings. For the settings to take in to effect, wait 2 – 3 minutes. Reboot is not required. The following setting that can be adjust is the WIFI network name, WIFI network password, and wifi network channel. The WIFI channel scan button can be used to find the channel with the least amount of traffic. For Galileo with internet access, the recommended channels are 1, 6, and 11 any other channels can be used but are not recommended.

3.4 Multi Group Setup

If you have more than one GALX-1120AN "Raspberry Pi", multi group setup will need to be setup. Click on the "Add Group" button shown on figure 3.11. Next, fill in the URL and group name. The URL will be the Wired (WAN) IP address of the Raspberry Pi shown under 'Galileo setup" -> "Router Setup". After all the groups have been added, click the send to all button and the save locally button to save all the changes you made.



Figure 3.11: Multi Group Setup



Figure 3.12: IP address of Galileo

3.5 Request Re-Init

If there are any changes made on the controller cons file, you can re-initialize the group by going to Galileo Setup and pressing the "Request Group Re-Init as shown in figure 3.13. This will retrieve what ever changes that was done on the controller and re-initialize the data on the Galileo. You will need to wait a minute before the re-initialization goes into effect.

	192.168.1.19 says	Log Out: admin
On the	Request has been made to Re-Initialize Configuration From the Group. This may take a few Moments	equest Group Re-Init
Gu	ок	Multi Group Setup
Home	Router Setup	Auto Email Setup

Figure 3.13: Request Group Re-Init

3.6 Auto Email Setup

Galileo has a feature where an email can be sent automatically when the car is in a certain service, an input has turned high, or when the shut down alarm occurs in a car. This feature will only work if the Galileo has internet access and a valid email has been saved. In addition, the user will need to enable one of the following options shows on figure 3.14.

	Auto En	nail Setup	Log Out: admin	
Galileo Setup Home				
(Use , for multiple emails with no space for example:				
example1@email.com,example2@email.com,example3@email.com) Save				
Email Sent to: example1@email.com,example2@email.com				
Email when the following service is:	● Disable ● Enable		Out of Service	
Email when the following input is high:	● Disable ● <i>Enable</i>		MRTH(Temperature High Input) •	
Email when shutdown alarm occurs in a car	● Disable ● Enable			

Figure 3.14: Auto Email Setup

Section 4 – Galileo Home

In this section, we will discuss all the monitoring features and tools the Galileo has. The Galileo provides a user-friendly advance display of our Galaxy controllers. This display includes manuals, training videos, Car Status screen, Group Status screen, Fault Log, Adjustable Variables, Hall IO screen, Trace screen, Traffic Analysis, Date and Time, Call Lockouts, Service Settings, Events Scheduling, and Multi Group.



Figure 4.1: Galileo Home page

4.1 Fault List

(Note: These are not actual car faults.)

The Fault List shows all the possible faults that can occur in our Galaxy Controllers. They are listed in alphabetical order and have a section for Device Faults and Controller Faults as shown in figure 4.2 and 4.3.

	ŀ	Fault List	Log in Adjustable Variables Trace Trace		
Go To De	Go To Device Faults Controller Faults				
Code	Fault	Description	Possible Cause/Suggested Fix		
552	APS P1 Camera CAN Flt	APS Selector Processor 1 on the APS Selector interface board is not communicating with the APS camera head on channel B.	 *** Verify the RJ-45 connector from the selector camera to the selector interface board GALX-1133 is properly connected. *** Verify that both LED***s on the RJ-45 connector are blinking at 1 second intervals. *** Make sure the CAT-6 cable is not run in parallel with any high voltage wires. *** Replace the GALX-1133 board. *** Replace the camera head. 		
560	APS P1 DN Input Fault	APS Selector Processor 1 on the APS Selector interface board detected a Down Normal Limit input fault.	*** Processor 1 detected that the input for DN was off when the output was being turned on. *** Faulty input, replace the input device. *** Faulty output for DN. Replace the output device.		

Figure 4.2: Fault List – Controller Faults

Go To Co	Go To Controller Faults Device Faults		
Code	Fault	Description	Possible Cause/Suggested Fix
15	Address Error	Invalid Address for Device	Program Error
13	Comm Fault	Device not communicating to the main CPU.	*** Faulty Can communication wire connection. Verify proper twisted pair wires to the canh and canl terminals on the board. *** Noise on the Can bus. Verify that the shield wire is connected according to the job print.
9	DL/GS Fault	Door Lock/Gate Switch Fault	*** Car is moving outside the door zone with the door open. The car will immediately shut down.

Figure 4.3: Fault List – Device Faults

4.2 Documents

Documents can be viewed or downloaded (Force Download) from this screen. Documents can be uploaded from the Galileo Setup menu. The job schematics, GALaxy Controller Manual, Drive Manual and GALaxy Quick start can be accessed from here along with any other document you have uploaded.



Figure 4.4: Documents

4.3 Videos

Galileo consists of training videos that can be view under the Videos Screen. By clicking on the link, you can view any of our training videos as shown at figure 4.5 and 4.6.

	Videos	Log In
Galte.	GALaxy Training Videos Displaying all videos Total of 14 videos available.	
Home	LCD User Guide Normal Brake Test Sel6 APS Installation Guide Sel6 APS Setup Spectral Lites Sturning Illumination TSSA Test 1 MC Contactor TSSA Test 2 Brake Contactors TSSA Test 3 Gripper Relays TSSA Test 4 EBrake TSSA Test 5 Shorted UP DNR 1 TSSA Test 6 Inspection Inputs TSSA Test 7 Lock Inputs TSSA Test 9 Com To Sp 1	

Figure 4.5: Videos



Figure 4.6: Viewing Videos

4.4 Galileo Diagnostics

The Galileo Diagnostics Screen displays the communication between the cars in the group and the Galileo. This helps you with identifying which car is having communication and run diagnostics on the following car. See section 2 for running diagnostics on a car with communication issues.



Figure 4.7: Galileo Diagnostics

4.5 Car IO Screen

The Car IO Screen consists of most of the Galaxy controllers' information's/statuses. On the top half of the page, all of the controllers IOs can be seen (except for Hall IO for the group that is shown under Hall IO screen). Inputs texts are in white and shows a green circle indicating that the input is on. Outputs texts are in blue and shows a red circle indicating that the output is on. The first 5 columns show the MAIN IOs. Then the selector limits are shown followed by the machine room can boards and last the car top can boards.

The left and right arrows on the keyboard can be used to scroll through all the IOs. The up and down arrows on the keyboard can be used to scroll through all the Cars in the group. The bottom half of the Car IO Screen consists of the car's statuses and flags. The first block on the left shows the car's service, and procedure. The 2nd block shows the cars velocity and door status. The next block shows the cars position/PI and flags. The 3rd block shows the drives status and velocity. The last block that is split into three shows our 3 other processors statuses (Safety Processor, NTS Processor, and PAL).

Car 1 IO Screen																	
_				Home	Car IO	Group	Hall IO	Fault Log	• Ad	ljustab	le Variab	les 🕇 Tr	ace 🔻				
AD: 🥥		CTA: 🌑	DNi:		UL : 🧿	FEP: 🌖		110CS:			RLS: 🥚	UN-1: 🌔	DPM: 🌔	FS20F: 🌔	LC:	13C:	CSPI1:
IND:		DTS:	NTSDi:		DZ-2:	FS:	OSEC:	120CS:	MSPI1	- 9	CSS:		EE:	FS2H:	2C:	14C:	CSPI2:
CBD:			TEMS.	DIIN	DZA	DF:	2003	14008	MSP12		DRm.	OTI	DOL	DCB.	40.0	160.	CSF13:
T.120.			LID.	DNR:	DZII	MES	3008	15008:	MOLIO		DET.	ITT 8-1 · •	SE	DOB	50.0	170.	
S10:	BKS:	DZ:		DNF:	DZD:	ALT:	40CS:	160CS:				UT1:	02.0	HBE:	6C:	180:	
		DZ-1:0		UP: O		MRS:	50CS:	17003:				UT2 : 🧿		ALM:	7C:	19C:	
GOV: 🥥				UPF: 🔵		HWS: 🧿	60CS:	180CS:						INDC:	8C:	20C:	
тг: 🥥	SFCi: O	P : 🥥		BRK : 🔵		HWS2: 📀	70CS:	190CS:							9C: 🔘	21C:	
BF: 🧿	PFCi:	ICI:				EPS:	BOCS:	20003:							10C:	PHC:	
PS:	MRID:	CST:	FLH:	DBC:		EPT:	9003:	21003:							11C:		
HSS:	MRIE	FFS:	GRZR:			EMP:	TUOCS	PHOCS:	TOPD			DN -1 -		ED:	120:	1200.	
BAD:	MPTN	TEN	T.F1				LFDH:		MSPOI						201	14CA:	CSPO1:
BAIL:	AUTO	TU	FST.						MSPO2	1		DT -			304	1504	CSP03
TAD:	MRSW :	INS:	FSTP:						MSP03						4CA:	16CA:	0020010
TAU:	RDY: O	MCCi:	RST:	5					- 11 P			DTS-1:			5CA:	17CA:	
DLB : 🥥	GTS: 🦲	MCAi:	MCC:	6								DT1: 🔘	NUD:		6CA:	18CA:	
DLB-1: 🧿	GRT1: 🥘	DON:	MCA:								IFL:	DT2:	DC : 🥥		7CA:	19CA:	
DLM: 🧿	GRT2: 📀	BRKi:	PFC:								IFB:				8CA:	20CA:	
DLM-1:		RUN1:	DBG:	2							COT:		DO:	FL:	9CA:	21CA:	
	GS:	MCX:	DIT2.								CDL:			FBNB:	11CA:	PHCA:	
DD1-1:0	EST:	RUNAL:	DU2:	2							T.T.G.			пр:	12CA:	011:0	
	TOTI .	KONA.			120004000000	100000					11.0.	Teans	-		IZCA.		Television
Automati	c Service		D	md Vel =	0 fpm	Pos =	1 F	PI = D		Run C	Cmd = S	itop	Safet	y Processo		NTS Proce	essor
Status O	ĸ		E	nc Vel =	0 fpm	Fir Cnt		4718		Enc D	ir = N	lone	Vel =	0	fpm Vel		0 fpm
Fire Off:N	Iormal Sv	с	V	el Diff =	0 fpm	Pls Cnt		4718		Dir Pr	ef = N	lone	Cnt =		0 CMI	D = NO CN	٩D
Waiting A	ssignmen	it	V	el Calc =	0 fpm	stepf	= 1	nstopf =	0	Drv V	el =	0 fpm	AUTO, C	Ж	NO	SVC, SEL	ComF
No Curre	nt Fault		S	D = NO		dcalls	= 0	stops =	0	Drv C	md = C)FF					
Normal P	ower		B	SD = NQ		predof	= 0	estop =	0	Drv S	tat = R	RDY .	PAL Stat	= ок	Dev =	0 Prog	$\mathbf{gF1} = 0$
No Med F	mergency		Ē	lev Door Cl	osed	startf	= 0	hsf =	0	Tora	Cmd=	0	PAL Vel	= 0	Dev2 =	0 Prog	gF2 = 0
No Code	Blue			lo Pear Dec	r	lovetf	- 0	relevel	ů L	Mtr Te		0	Check Ru	in = 35	CkLe	v Start =	0
No Coue	blue				CU	Matian	Timor	relevel -	~			40.04	Check St	art =	Chec	k Door =	36
No Seism	IIC			ICU = NO N	0	Motion	Timer =	8 I	0	Load	% =	40 %					An
			cmd Te	rminal	C Test S	peed						Run	To D	Run Up	1 ,	Run Down	1 1 🔻
									-								

Figure 4.8: Car IO Screen

4.5.2 CC Test

(Important: Without logging in as admin you will not be able to adjust ethernet settings.)

Car Call Tests can be set up in this screen. When this test is run the car will stop at all designated, continuously until stopped. The Auto Door switch must be OFF. It would be useful to change the parameter Adjustable Variables->Car Timers->Non Interfer T, to something higher than 4 seconds so the car can pause between runs. A value of 60 would be good. This Car Call Test screen can also be accessed from the Car Trace Screen.

Car 1 Car	Call Test Log Out: admin
Home Car IO 🔻 Group Hall IO Fault I	Log 🔻 Adjustable Variables 🔻 Trace 🔻
Refresh Enable	Select All Clear All
0 21	● PH
. 19	0 20
0 17	18
0 15	16
i 13 💮 13	0 14
	12
0 9	10
07	8
	0 6
	0 4
🔘 L	0 2
🔵 B	A
@ D	● C

Figure 4.9: Car Call Test

4.5.3 Speed

This menu is useful for adjusting the car. Speed curve parameters can be changed directly from this screen (Pattern Delay adjustment is displayed when "Pattern Delay" button is clicked – see red arrow).



Figure 4.10: Speed

4.6 Group Screen

In this screen, the hoistway position of all the cars can be seen. Car Calls, and Hall calls can also be registered here.

	Group Screen												
			Home Carl	Group	Hall IO Fau	Ilt Log 🔻 Ad	justable Variab	les Trace					
					N	ormal							
	Car	1	2	3	4	5	6	7	С	Car			
23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 L A B C D	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 9 8 7 6 5 4 3 2 2 4 8 0 7 6 5 5 4 10 0 9 9 8 8 7 6 5 5 4 0 0 19 0 19 0 19 0 19 0 19 0 19 0 19	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 5 4 3 2 2 4 8 7 6 5 5 4 8 7 6 5 5 4 8 7 6 5 5 4 8 7 6 5 5 7 6 7 6 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 7 8 7	23 PH 21 20 19 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 5 4 3 2 2 0 L A B C D	23 PH 21 20 19 19 18 17 16 15 14 13 12 11 10 9 9 8 7 6 5 5 4 3 0 2 0 4 0 5 5 4 0 3 2 0 0 5 0 5 0 4 0 5 0 5 0 5 0 6 0 5 0 6 0 5 0 6 0 5 0 6 0 7 0 6 0 7 0 0 0 19 0 18 0 19 0 19 0 18 0 19 0 18 0 19 0 19 0 19 0 19 0 18 0 19 0 19 0 19 0 19 0 19 0 19 0 19 0 19	23 PH 21 20 19 18 17 16 15 14 15 14 13 12 11 10 9 9 8 7 6 5 5 4 3 2 2 4 8 7 6 5 5 4 8 7 6 5 5 4 8 7 6 5 5 7 6 5 5 7 6 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 7 7	23 PH 21 20 19 19 18 17 16 15 14 13 12 11 10 10 9 8 7 6 5 5 4 4 3 2 0 L A B B C D	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 9 8 7 6 5 4 3 2 2 4 8 7 6 5 5 4 8 0 7 6 5 5 4 0 7 6 5 5 7 6 5 5 7 6 5 7 6 7 7 6 7 7 8 7 7 8 7 7 7 7 7 7 7 7 7	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 L A B C D	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 L A B C D			
S	ervice osition	AUT	OTS D	OTS D	OTS D	OTS D	OTS D	OTS D	OTS D	Service Position			

Figure 4.11: Group Screen

4.7 Hall IO Screen

This screen shows the state of all the hall input and outputs. All text in white are the inputs and all text in blue are the outputs. The green circle indicates that the input is on. The red circle indicates that the output is on

9 <u>.</u>	Hall IO Screen Log Out: admin														it: admin
				Home	Car IO	Group	Hall IO	Fault Log	 Adjust 	able Variables 🔻 🕇	race 🔻				
HCP: O	3D: 🔘	9D: 🌑	15D: 🌑	21D: 🕚	ADI : 🌑	6DI:	12DI:	18DI:	DUT : 🌑	3UT: 9UT:	15UT:	21UT:	4HOS:	16HOS:	
DU: 🔵	3U: 🔵	9U: 🌒	15 U:	210:	AUI : 🔵	6UI:	12UI:	18UI:	CDT:	4DT: 10DT:	16DT:	PHDT:	5HOS:	17HOS:	
CD:	4D:	10D:	16D:	PHD:	LDI:	7DI:	13DI:	19DI:	CUT:	4UT: 10UT:	16UT:	PHUT:	6HOS:	18HOS:	
CU:	4U: 🔵	100:	160:	PHU:	LUI : 🔘	701:	13UI:	19UI:	BDT:	5DT: 11DT:	17DT:	23DT:	7HOS:	19HOS:	
BD:	5D: 🔵	11D: 💿	17D: 🔵	23D: 🔵	2DI:	8DI:	14DI:	20DI:	BUT : 💿	5UT: 11UT:	17UT:	HCSO:	8HOS:	20HOS:	
BU:	5U: 💿	11U: 💿	17U: 💿	ICR:	201:	8UI:	14UI: 👩	20UI:	ADT: 🌑	6DT: 12DT:	18DT:	DHOS:	9HOS:	21HOS:	
AD: 🕥	6D: 🔵	12D:	18D:	ICR2:	3DI:	9DI:	15DI:	21DI:	AUT : 🔵	6UT: 12UT:	18UT:	CHOS:	10HOS:	PHHOS :	
AU:	6U: 🔵	120:	180:	DUI:	3UI : 🔵	9UI:	15UI:	21UI:	LDT :	7DT: 13DT:	19DT:	BHOS:	11HOS:	23HOS:	
LD:	7D: 👩	13D: 👩	19D:	CDI:	4DI:	10DI:	16DI:	PHDI:	LUT : 👩	7UT: 13UT:	19UT:	AHOS:	12HOS:	GSPI1:	
LU:	70:	130:	190:	CUI:	4UI : 🔵	10UI:	16UI:	PHUI:	2DT:	8DT: 14DT:	20DT:	LHOS:	13HOS:	GSPI2:	
2D:	8D:	14D:	20D:	BDI:	5DI:	11DI:	17DI:	23DI:	2UT :	8UT: 14UT:	20UT:	2HOS:	14HOS:	GSPI3:	
2U:	8U:	14U:	200:	BUI:	501:	11UI:	1701:	TR:	3DT:	9DT: 15DT:	21DT:	3HOS:	15HOS:		
	3DA:	9DA : 👘	15DA:	21DA:	ADIA:	6DIA:	12DIA:	18DIA:	DUTA:	3UTA: 9UTA:	15UTA:	21UTA:			
DUA:	3UA:	9UA:	15UA:	21UA:	AUIA:	GUIA:	12UIA:	18UIA:	CDTA:	4DTA: 10DTA:	16DTA:	PHDTA:			
CDA:	4DA:	10DA:	16DA:	PHDA:	LDIA:	7DIA:	13DIA:	19DIA:	CUTA:	4UTA: 10UTA:	16UTA:	PHUTA:			
CUA:	4UA:	10UA:	16UA:	PHUA:	LUIA:	7UIA:	13UIA:	19UIA:	BDTA:	5DTA: 11DTA:	17DTA:	23DTA:			
BDA:	5DA:	11DA:	17DA:	23DA:	2DIA:	8DIA:	14DIA:	20DIA:	BUTA:	5UTA: 11UTA:	17UTA:				
BUA:	5UA:	11UA:	17UA:		2UIA:	8UIA:	14UIA:	20UIA:	ADTA:	6DTA: 12DTA:	18DTA:				
ADA:	6DA:	12DA:	18DA:		3DIA:	9DIA:	15DIA:	21DIA:	AUTA:	6UTA: 12UTA:	18UTA:				
AUA:	6UA:	12UA:	18UA:	DUIA:	3UIA:	9UIA:	15UIA:	21UIA:	LDTA:	7DTA: 13DTA:	19DTA:				
LDA:	7DA:	13DA:	19DA:	CDIA:	4DIA:	10DIA:	16DIA:	PHDIA:	LUTA:	7UTA: 13UTA:	19UTA:			GSPO1:	
LUA:	7UA:	13UA:	19UA:	CUIA:	4UIA:	10UIA:	16UIA:	PHUIA:	2DTA:	8DTA: 14DTA:	20DTA:			GSPO2:	
2DA:	8DA:	14DA:	20DA:	BDIA:	5DIA:	11DIA:	17DIA:	23DIA:	2UTA:	8UTA: 14UTA:	20UTA:			GSPO3:	
2UA :	8UA:	14UA:	20UA:	BUIA:	SUIA:	11UIA:	17UIA:		3DTA:	9DTA: 15DTA:	21DTA:				

Figure 4.12: Hall IO Screen

4.8 Fault Log

These are the 50 Faults that get logged and overwritten. Clicking on 'Description' will bring up the Fault Description, Possible Cause/Suggested Fix as it appears in the GAL Manual. Clicking on 'Details' will bring up the Detailed Fault screen.

You get this screen by clicking on "Description" in the Fault Log. There is a button to exit this screen and take you back to the Fault Log.

This is the detailed fault view of the fault that you get when you click on "Details" in the Fault Log. This screen is essentially the same as the Car trace screen, plus it shows detailed status bits on the right side of the screen. You can scroll backwards and forwards through the faults and through the status bits.

	Car 1 Fault Log Log Out: admin														
	Home Car IO • Group Hall IO Fault Log • Adjustable Variables • Trace •														
	Clear Fault Log Download Fault Log Email Fault Log														
#	Fault	Time & Date	Pos	# Occ	Go To										
1	LW Load Table Fault	13:14:13 04/23/2019	1	1	Details Description										
2	Power Up Reset	13:14:14 04/23/2019	1	1	Details Description										
3	Car 2 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
4	Car 3 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
5	Car 4 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
6	Car 5 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
7	Car 6 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
8	Car 7 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
9	Car 8 Comm Loss	13:14:19 04/23/2019	1	1	Details Description										
10	Reset Fault	13:14:23 04/23/2019	1	1	Details Description										

Figure 4.13: Fault Log

33	Car 2 Comm Loss Back To Fault Log	The group car is not communicating with Car 2.	*** Faulty wiring from R/T+ and R/T- from car to car. *** Faulty U6 driver chip on 1100 board. *** Noise on shield wire. Connect shield only on one end. *** Noise on the communication wires. Run wires in separate conduit.
----	--------------------------------------	--	---

Figure 4.14: Fault Log - Description

	Car 1 Detailed Fault Log																
				Home	Car IO	Group	Hall IO	Fault Log	Adju	stable Variab	les 🔻 Tr	ace 🔻			Scroll Fa	ults	+ +
#3: Car 2	2 Comm L	oss	Code	e=33		13:14:19		04/2	3/2019		#Occ=1				Scro	1 10	+ +
AD: IND: LBP: CBP: CBP: S10: S10: COV: FF: BF: BF: BF: BF: BF: BAD: BAU: BAU: DLB: DLB-1: DLT-1: DLT-1: CDLT	BKS: SFCi: PFCi: MRID: MRIU: MRIU: MRIU: AUTO: MRSW: GTY: GTY: GTY: GTS: GS-1: GS: GS-1:	CTA: DTS: DN: UTS: UTS: DZ: DZ-1: DZ: DZ: DZ: CST: CST: CST: ID: ID: ID: INS: MCCi: DON: BRKi: BRKI: MCX: RUNAI:	DNI: NTSDI: UPI: ETS: FLH: GR2R: LE: LE: FSTP: RST: MCCA: PFC: DBG: BUZ:	RUNA: RUN: DNR: UPF: UPF: BRK: DBC: FS: BP: FS: BP: MES: ALT: MRS:	HWS2: • EPS: EPT: EMP: CSS: • CTS: • DET: IFL: IFB: CUL: CDL: FAN:	UL: DZ-2: DZA: DL: DL: DZU: DZU: DZD:	UN-1: UT: UT: UT2: DN-1: DT: DT: DT: DT: DT2:	DFM: 0 EE: DOL: DCL: SE: DC: DC: DC: DC: FS2OF: 0 FS2CF: DCB: DOB: DOB: HBE: ALM:	LC: 2C: 3C: 5C: 5C: 6C: 7C: 8C:	DLM: DL: AUTO: GBP: LBP: UL: UL: INS: ICI: ACC: UTS: RLM: DLB: GR1: ETS: UP: DNR: GS: DLT:	SFCO: FICEN: LSCS: comF: volF: posIN: actF: posIN: actF: posIV: sfcT: grlFx: sfCT: grlFx: shENU: brXTG: ebXTG: cohTG: cohTG: cohTG: sfCT: grlFx: sfCT: sfC	UN: UT: UT2: UT2: UT4: UT5: UT4: DT6: DT1: DT1: DT1: DT1: DT4: DT4: DT6: UF1: DT6: UF1: NT5D: NT5D: NT5D: islBP: isGBP:	unF: utF: utsF: utsF: ut2F: ut3F: utsF: utsF: dtF: dtF: dtF: dtF: dtF: dtF: dtF: dt	sfs10 sfH0 sfR0 sfRD sfGRH sfGRH sfGRH sfFC sfGC sfGDI sfGCI sfGCI sfGCI sfGCC rsRUM rsDNH rsDN rsDN rsD1 rsD2 rsD2 rsD2 rsD1	<pre>sfBKN: sfDRS: sfDRS: sfSF</pre>	S: s C: s B: s B: s C: s B: s C: s C: s C: s C: s C: s C: s C: s C	<pre>ffWI: ffDC: ffDC: ffDVF: ffDVF: ffDVF: ffDWD: ffMC: ffMC: ffMC: ffRR: ffR</pre>
	FSTi:	RUNX:		HWS: 🧿	LIG:			INDC:			sumtv : 🍈	isAOF:	isICI:	rsDLA	1: or pol	R : 0	sdZA : 🧿
Status OK Enc. Fire Off:Normal Svc Vel I Reset Mode Vel Q Car 2 Comm Loss SD Normal Power RSD No Med Emergency Elev No Code Blue No F No Seismic NCU			md Vel = nc Vel = el Diff = el Calc = D = NO SD = NO ev Door Cl o Rear Doo CU = No N	0 fpm 0 fpm 0 fpm 0 fpm osed r CU	Pos = Flr Cnt Pls Cnt stepf dcalls predof startf levstf Motion	1 P = = 1 = 0 = 0 = 0 Timer =	I = D 0 4718 nstopf = 0 stops = 0 hsf = 0 relevel = 0	Rt Er Di 0 Di 0 Di 0 Tc 0 Mi Lc	$\begin{array}{rrrr} \mathbf{Cmd} = \mathbf{S} \\ \mathbf{nc} \ \mathbf{Dir} &= \mathbf{N} \\ \mathbf{r} \ \mathbf{Pref} &= \mathbf{N} \\ \mathbf{v} \ \mathbf{Vel} &= \\ \mathbf{v} \ \mathbf{Cmd} &= \mathbf{C} \\ \mathbf{v} \ \mathbf{Stat} &= \mathbf{R} \\ \mathbf{orq} \ \mathbf{Cmd} &= \\ \mathbf{tr} \ \mathbf{Torq} &= \\ \mathbf{tr} \ \mathbf{Torq} &= \\ \mathbf{tad} \ \% &= \end{array}$	itop Ione Ofpm OFF DY 0 0 0 %	Safet Vel = Cnt = AUTO,C PAL Stat PAL Vel Check Rt Check St	y processo 0 E OK = OK = 0 un = art =	fpm 0 Dev 0 C 0 C	NTS Vel = CMD = M NO SVC, = 0 2 = 0 CkLev Sta Check Doo	Proce IO CM SEL C Prog Prog rt = Dr =	550F 0 fpm ID ComF F1 = 0 F2 = 0 0 0	

Figure 4.15: Fault Log - Detail

4.9 Adjustable Variables

All controller field adjustable variables can be accessed here. The field variables can also be copied to another car in the group or to all cars in the group. The software requires that the Auto Door switch be turned off if making changes - this is to ensure that whoever is making the changes be physically at the controller.

	Car 1 Adjustable Variables		Log Out: admin
	Home Car IO 🔻 Group Hall IO Fault Log 🔻 Adjustable V	ariables 🔻 T	race v
Menu: Car Motion	▼ Copy: Car Motion ▼ From Car: 1 ▼ To Car: All ▼ Co	py Download	Email
Variable	Description	Units	Value
Inspect Speed	Inspection Speed. Maximum car speed while running on inspection.	fpm	
Ins Decel Stop	Inspection Deceleration stop rate. The rate for the elevator to decelerate from inspection speed to zero.	fpm/s	300 + +
Access Speed	Access Speed. Car velocity while running on access	fpm	35 🖸 🖸 🛶 🔂 🖶
Pattern Delay	Pattern Delay. Delay time before the speed profile will start.	sec	0.30 🖸 🕶 🕶
Brake Pick Del	Brake Pick Delay. Delay time to pick the brake after the run relay is energized.	sec	0.0 • • • •
Soft Start Jerk	Soft Start Jerk Rate. Maximum jerk rate to roll into constant acceleration from a dead stop.	fpm/s/s	125 • • • • • •
Acceleration	Acceleration Rate. The constant acceleration rate to reach top speed.	fpm/s	92 🖸 🚭 🛶 🛶 🔂 🔂
Roll Over Jerk	Rollover Jerk Rate. Maximum roll jerk rate while rolling into top speed.	fpm/s/s	125 • • • • • •

Figure 4.16: Adjustable Variables

4.10 Trace

The Car Trace screen is essentially the Detailed Faults recorded over time. The controller has a buffer of 500 screens that continually records and can be stopped and started from this screen. The Trace can also be set to stop on a fault, status, process change, etc. The fineness of the capture can be adjusted, in the Car Trace Setup screen, from 10ms/f (buffer will hold 5 seconds of capture) to 40ms/f (buffer will hold 20 seconds of capture) – please note that there will still be only 500 frames in the capture.

							Car 1	Trace S	creen	į					Log C	out: admin
				Home	Car IO	Group	Hall IO	Fault Log	Adjus	table Variab	les 🔻 Ti	race 🔻				
Current	Trace			14:34:	40 04/2	3/2019				Start	Load	Trace	Setup			
Frame: 4	65 🛑							Play <		>	Trig 1	0 ms/f 🔻	Save Em	ail	Scroll I) 🗲 🌩
AD: 🌔		CTA: 🌑	DNi: 🌑		HWS2: 🌖	UL: 🌖	UN-1: 🌖	DPM: 🌖	LC:	DLM:	SECO:	UN:	unF:	sfS10:	sfBKS:	sfHWI:
IND:		DTS:	NTSDi:		EPS:	DZ-2:0	and the second second	EE:	2C:	DL:	PICEN:	UT:	utF:	sfHC:	sfTOC:	sfFDC:
LBP:		DN : O	UPi:	RUNA:	EPT:	DZA:	ŬT : 🥑	DOL:	3C:	AUTO:	LSCS:	UT1:	utsF:	sfSS:	sfDRV:	sfRDC:
GBP:		UTS:	ETS:	RUN:	EMP:	DL:		DCL:	4C:	GBP:	comF:	UT2:	utlF:	sfRDY:	sfSPB:	sfLVF:
L120:		UN : O		DNR:		DZU:	UTS-1:0	SE: 🔘	5C:	LBP:	velF:	UT3:	ut2F:	siGRP:	siDBR:	siDVF:
S10:	BKS: 🥥	DZ:		DNF:		DZD: 🥥	UT1:0		6C:	MRI:	posiN:	UT4:	ut3F:	sfIO:	sfSHD:	sfBKR:
		DZ-1:0		UP:			UT2:0		/C:	OT:	actF:	UT5:	ut4F:	stins:	sfAST:	siDMO:
GOV:		-		OPF:					86:	INS:	posUP:	016:	ut5F:	siBPI:	SISAF:	STHWL:
TF	SFCI	P:O		BRK:	RLS:					ICI:	ntsrv:	DN:	utor:	SIPOS:	SITLM:	SIPWL:
BF:	PFC1:	ICI:			CSS:			NUD:		ACC:	etsTV:	DT:	dnF:	SIAD:	sigrs:	SIEBK:
Po:	MRID	Cor:	CD2D.	DBC :	CTS:			DC 1		Dmg	TOMOT :	DTI:	dtaF:	storr:	SIDZE:	SILLD
naa:	MRIE	FFS:	GRZR		DET:		TAT. 1	201		DTS	BOMOT	DTZ:	dtsr:	SID4:	SIDKC	SIAPS:
ACC:	MRIU:	ID:					DN-1:	DO: C		RGS	gr IT:	ats:	dtir:	SIGDL:	SIFST:	51036:
BAD:	MRIN:	ILN:	DEI:				D			RLM:	SICT:	DT4:	dt-22:	afDCT -	SISEL:	afacm.
BAO:	MD gw	TNR	FOI:				DI			DIB:	GITER:	DTG:	dt4F.	afpcc.	aft.EV.	afcop
TAD	PIROW:	Magin	Dom.				Dmg 1 . 6	R8208.0		CD1	SMENU:	DIG:	dter:	SIDCC:	SILEV:	SICOF:
DIR	Cmg.	MCDi	Kor:	FEF:			D13-1:	F02UF:		GRI:	obkmC.	DNDT	dt GE	LSRUN:	LSDUD:	ISLE:
DIB-1	CDm1.	DON:	MCD	BD.	TRL		DT1.	F92C:			bkIV:	MESD.	acor.	relib.	TSGS.	TAFFD.
DIB-I	GRII:	DON:	DEC	DF:	TER		DTZ:	POZC:		ETS:	DALV:	NTSD:		LSOP:	ISKIM:	ISLER:
	GRTZ:	DINI:	DRC	LOV:	IFD:			DOR		DND	TCANZ:	NTSDI:	TNO.	rall.	ISRG5:	ISOLR:
DT.T.	C9.0	MCY	000.0	ALS.	CDL			HBF .		GR.	at aT .	I ST.BD.	I MDT -	reDZ.	TSDOL.	rasmr.
	C9-1 .	DIINA:	PITZ .	MDG.	EDD:			ATM.		DT.T.	etsr:	LSLDF:	isacc.	Taba:	T DOLD	TSSIF:
DP1-1:	GD-1:	RUNAL:	B02:	MRO:	TIC			TNDC		DDT:	aubio:	ISGBP:	ISACC:	TSDLT:	TDOLR:	TLOTE:
	FOTI:	RUNA		nwo:	P10: 0			INDC:			BOMLAS	ISAUF:	18101:	LSDIM:	UCDR:	ISD2A:
Automati	c Service		D	md Vel =	0 fpm	Pos =	1 P	I = D	Ru	n Cmd = S	stop	Safe	ty Processo	or	NTS Pro	cessor
Status O	<		Er	ic Vel =	0 fpm	Fir Cnt		4718	En	Dir = N	lone	Vel =	0	fpm Ve	el =	0 fpm
Fire Off.	lormal Sv	ĉ.	V	Diff -	0 fpm	Ple Cot		4718	Dir	Prof - N	lone	Cnt =		0 0	MD = NO (CMD
The On	ionnal Sv	2			orpin	FIS CITE		4710			ione	ALITO				ComE
Waiting A	ssignmen	IC	Ve	el Calc =	0 fpm	stepf	= 1	nstopf = 1	I Dr	/Vel =	0 fpm	AUTO,	UK	IN	U SVC, SEI	ComF
No Curre	nt Fault		SI	$\mathbf{D} = \mathbf{NO}$		dcalls	= 0	stops = 0	D Dr	/ Cmd = C	DFF			1 -		
Normal P	ower		RS	SD = NO		predof	= 0	estop = 0	D Dr	Stat = R	RDY.	PAL Stat	t = OK	Dev	= 0 Pr	ogF1 = 0
No Mod E	morgone		EI.	av Door Cl	acad	ctortf	- 0	hef - (To	a Cmd-	0	PAL Vel	= 0	Dev2	= 0 Pr	ogF2 = 0
NO MEU L	inergency	6	-		useu	Starti	- 0			q cina =	Ū	Check R	un = 3	5 Ck	ev Start =	0
No Code	Blue		N	o Rear Doo	r	levstr	= 0	relevel = 0) Mti	Torq =	0	Chock C	tort - 2	a Ch	nele Door -	26
No Seism	ic		N	CU = No N	CU	Motion	Timer =	0	Loa	ad % =	40 %	CHECK S		2 Ch		50
			cmd To	minal	Test	beed					Run	TOD	Rup II	1 -	Run Der	wp 1 -
			lei		o lest	heen					Run		Runo		Run Dor	

Figure 4.17: Trace Screen

DLM:	SFCO:	UN : 🌒	unF: 🔘	sfS10:	sfBKS:	sfHWI:	sfECT: ssGOV: ssFFS: doRQ: psHC:
DL:	PICEN:	UT : 🌑	utF:	sfHC:	sfTOC:	sfFDC:	sfIOT: ssTF: ssCST: dbRQ: psHCL:
AUTO:	LSCS:	UT1: 🔘	utsF: 🔘	sfSS:	sfDRV:	sfRDC:	sfGRT: ssBF: ssMRS: cdRQ: psCC:
GBP:	comF:	UT2: 🌑	utlF: 🔘	sfRDY:	sfSPB:	sfLVF:	sfDVP: ssPS: ssGTS: doEN: psCCL:
LBP:	velF:	UT3: 🌑	ut2F:	sfGRP:	sfDBR:	sfDVF:	sfNIT: ssHSS: ssB12: rdoRQ: psLHC:
MRI:	posIN: 🔘	UT4: 🔘	ut3F: 🕘	sfIO:	sfSHD:	sfBKR:	sfDRQ: ssCTS: ssB13: rdbRQ: psFEP:
UL : 🔘	actF:	UT5: 🔘	ut4F: 🔘	sfINS:	sfAST:	sfDMO:	sfDPM: ssCSS: ssB14: rcdRQ: psB06:
INS:	posUP: 🌒	UT6: 🌑	ut5F:	sfBPI:	sfSAF:	sfHWL:	sfRPM: ssRLS: ssB15: rdoEN: psB07: s
ICI:	ntsTV: 🌒	DN:	ut6F:	sfPOS:	sfTLM:	sfPWL:	sfVSC: fHWLN: fDVOF: prDO: psB08:
ACC:	etsTV: 🔵	DT: 🌑	dnF: 🔵	sfAD:	sfGTS:	sfEBK:	sfLVR: fHWI: fDBRT: dsUP: psB09:
UTS:	rumot : 🥥	DT1:	dtF:	sfSTP:	sfDZF:	sfKEB:	sfB26: fLIMD: fMTOL: dsDP: psB10:
DTS:	sumot : 🌒	DT2:	dtsF:	sfDZ:	sfBKC:	sfAFS:	sfB27: fSPBD: FB3B3: dsNP: psB11:
RGS:	gr1T: 🌑	dt3:	dt1F:	sfGDL:	sfFST:	s1036:	sfB28: fVELD: FB3B4: rdsUP: psB12:
RLM:	sfcT:	DT4: 🔘	dt2F:	sfP:	sfSEL:	sfRSR:	sfB29: fSPVD: FB3B5: rdsDP: psB13:
DLB : 🔘	gr1PK: 🔘	DT5: 🔘	dt3F: 🕘	sfDCL:	sfUDL:	sfSCT:	sfB30: fUDLD: FB3B6: rdsNP: psB14:
DZ:	3MENU:	DT6:	dt4F:	sfDCC:	sfLEV:	sfCOP:	sfB31: fLEV: FB3B7: psB15:
GR1:	brkTG: 🌒	UPI:	dt5F:	rsRUN:	rsDLB: 🥥	rsEE:	rsDO: fCOPC: fGRIP: ngUP: dcAB:
	ebkTG: 🔵	DNRI:	dt6F:	rsDNR:	rsGS:	rsSE:	rsDC: fSPBC: fENCD: ngDP: dcBL:
ETS:	bkLV:	NTSD:		rsUP:	rsRLM:	rsEER:	rsDOR: fB2B2: fB4B2: ongNP: owcAB:
UP: 🔘	rCAN2:	NTSD1:	1.0 × 1	rsDL:	rsRGS:	rsSER:	rsDCR: fB2B3: fB4B3: owcBL: owcBL:
DNR:	ntsT:		iINS: 🌑	rsUL:	rsDOL:	rsHSF:	rsB28: 🥥 fSLCT: 🕗 fB4B4: 🌑 rngUP: 🔘 occAB: 🌑
GS:	etsT:	isLBP:	isMRI:	rsDZ:	rsDCL:	rsSTF:	rsB29: 🕘 fSELC: 🕘 fB4B5: 🔵 rngDP: 🕘 occBL: 🌒
DLT:	adDIS:	isGBP: 🌒	isACC:	rsDLT:	rDOLR:	rLSTF:	rsB30: fENCC: fB4B6: rngNP: ohcAB:
	SUMTV:	isAOF:	isICI:	rsDLM:	rDCLR:	rsDZA:	rsB31: fENCI: fB4B7: ohcBL:

Figure 4.18: Status Bits

This is the "Status Bits" section of the Car Trace screen. Please note that this section is scrollable through Left/Right arrows directly above this section since only seven columns display at a time.

Please note that there are twelve columns in total.

These "Status Bits" are detailed in the GAL manual, "Section 6 – Main CPU Faults & Detailed Faults". The specific section where the bits can be decoded is as follows, starting with column 1 on the left, from the top down:

Column 1:

SPB ios1: (S1) Safety Processor I/O Byte 1 SPB ios2: (S2) Safety Processor I/O Byte 2 SPB ios5: (S5) Safety Processor I/O Byte 5 SPB ios3: (S3) Safety Processor I/O Byte 3

Column 2:

SPB ios4: (S4) Safety Processor I/O Byte 4 SPB Cmd: Safety Processor Command. (Controller command to safety processor)

Column 3:

NTSIO1: NTS Processor I/O Byte 1 NTSIO1: NTS Processor I/O Byte 2 NTSIO1: NTS Processor I/O Byte 3

Column 4:

LimFlt0: Limit Fault Byte 0 LimFlt0: Limit Fault Byte 1 LimFlt0: Limit Fault Byte 2

Column 5:

STATUSF: Control Status Flag (Status bit set to "1" when status active) Run Status: Control Run Status Flag (Status bit set to "1" when status active)

Column 6:

STATUSF: Control Status Flag (Status bit set to "1" when status active) Run Status: Control Run Status Flag (Status bit set to "1" when status active)

Column 7:

STATUSF2: Control Status Flag (Status bit set to "1" when status active) Run Status: Control Run Status Flag (Status bit set to "1" when status active)

Column 8:

STATUSF2: Control Status Flag (Status bit set to "1" when status active) Run Status: Control Run Status Flag (Status bit set to "1" when status active)

Column 9:

SS Status: Safety String Status Flt Bits 1 (FltB1): Faults Bits 1 (Byte 0) Flt Bits 2 (FltB2): Fault Bits 2 (Byte 1)

Column 10:

SS Status: Safety String Status Flt Bits 3 (FltB3): Fault Bits 3 (Byte 2) Flt Bits 4 (FltB4): Fault Bits 4 (Byte 3)

Column 11:

Door Req (DRq): Door Request Flags DSF (dsf): Door Status Flags Nudg Flags (Nud): Door Nudging Flags

Column 12:

PWR Status: Power Status Call Flags (CFg): Onward Call Flags

4.10.1 Trace Setup

In this screen, the conditions for a capture are set. It is beyond the scope of this document, at this time, to exhaustively detail all that can be done here but usually it will suffice to set the 'Fault Change', 'Service Change' and/or 'Process Change' to capture a specific situation.

			etup		Log	Out: admin		
	Home	ar IO 🔻 G	roup Hall	IO Fault Log 🔻	Adjustabl	e Variables 🔹 Trace 🔹		
Refresh	Time I	nterval		Trigger	Arm	Trigger Wine	dow	Back
Clear	10msec (5s	ec Total)		Always Armed	۱ ۲	0 🔻	i i	Save
Fault Change	 Off OR AND 	Fault	Match	 Off OR AND 		No Faults	7	
Service Change	 Off OR AND 	Service	e Match	 Off OR AND 		Out of Service	•	
Process Change	 Off OR AND 	Proces	s Match	 Off OR AND 		No Procedure Flag	•	
Run Status Change	 Off OR AND 	Run Stat	us Match	 Off OR Ox Ox 	00000			
Slowdown Change	 Off OR AND 	Slowdov	vn Match	 Off OR 0x000 AND 	0	••••		
Rear Slowdown Change	 Off OR AND 	Rear Sl Ma	owdown Itch	 Off OR 0x000 AND 	0	•••••		
Status Change	 Off OR AND 	Status	Match	 Off OR OX OX 	00000			
Status 2 Change	 Off OR AND 	Status	2 Match	 Off OR Ox OX OO 	00000			
Fault Bits 0 Change	OffORAND	Fault Bit	s 0 Match	 Off OR 0x00 AND 				
Fault Bits 1 Change	 Off OR AND 	Fault Bit	s 1 Match	 Off OR 0x00 AND 				
Fault Bits 2 Change	 Off OR AND 	Fault Bit	s 2 Match	 Off OR 0x00 AND 				
Fault Bits 3 Change	 Off OR AND 	Fault Bit	s 3 Match	 Off OR 0x00 AND 				
SPB Service Cha	inge	 Off OR AND 	SPB St	atus Change	 Off OR AND 	SPB Command	Change	 Off OR AND
NTS Service Cha	inge	 Off OR AND 	NTS St	atus Change	 Off OR AND 	NTS Command	Change	 Off OR AND

Figure 4.19: Trace Setup

4.11 Traffic Analysis

This screen displays Traffic Analysis.



Figure 4.20: Traffic Analysi

4.12 Set Date and Time

The controller date and time can be set in the following screen. If the Galileo has internet access, you can enable auto time update where the Galileo will update the controller date and time based on the internet clock. This will update the controller date and time when there is a daylight savings and the time goes one hour back or forward.

Set D	ate and Time Log Out: admin
Home Car IO V Group Hall IO	Fault Log Adjustable Variables Trace
Current	New
4/23/2019	MM / DD / YYYY
15:07:36	HH : MM
	Save
	Enable auto time update from the
	internet(Must have
	must be logged in as admin)



Figure 4.22: Set Date and Time – Enable Auto Time Update from the Internet

4.13 Call Lockout

Car Calls as well as Hall Calls can be locked out from this screen.

<u>6</u>				Call Lockout So	creen			Log Out: admin
		Home	Car IO 🔻 Group	Hall IO Fault Log 🔻	Adjustable Variables	Trace V		
		Refresh	Current 🔻	Activate •		Go		
	Car 1	Car 2	Car 3	Car 4	Car 5	Car 6	Car 7	Car C
	EEE	BBB	FFF	EBE	eee	EEE	eee	eee
23 CO HO					🥥 🗡 📶			
РН СС НС								
21 CC HC								
20 CC HC			●▲∀ AII		● 🔊 🖉 🔍			
19 CC HC								
18 CC HC						●▲▼ (All)		
17 CC HC								
16 CC HC								
15 CC HC			● ▲ ∀ (All)					
14 CC HC						●▲▼ AII		
13 CC HC			● ▲ ¥ (AII)			● ▲ ▼ AII		
12 CC HC			●▲¥ (AII)					
11 CC HC								
10 CC HC								
9 CC HC								
8 CC HC								
7 CO HO								
6 CO HO								
5 CO HO								
4 CO HO								
3 CC HC								
2 CO HO								
LCOHO								
		● A ¥ AII						
в СС НС								
C CC HC								
D CC HC		🤍 🔍 🔍			🤍 🙏 🤍	🤍 🙏 🥥		

4.14 Service Settings

All service flags can be set in this screen. The service can apply to the group, Next Car Up, Alt. Parking etc. or can apply to an individual car, Independent, Elevator Off, etc.

		Service Screen		Log Out: admin
	Home Car IO V Group	Hall IO Fault Log V Ac	djustable Variables 🔹 Trace	•
		Refresh Save		
Group	Car 1	Car 2	Car 3	Car 4
🖲 Up Peak	Independent	Independent	Independent	Independent
🖲 Down Peak	Return to Lobby	Return to Lobby	Return to Lobby	Return to Lobby
Alt. Lobby	Elevator Off	Elevator Off	Elevator Off	Elevator Off
Alt. Parking	Auto Doors Off	Auto Doors Off	Auto Doors Off	Auto Doors Off
Next Car Up	Car 5	Car 6	Car 7	Car C
Alt. Floor Sec	Independent	Independent	Independent	Independent
	Return to Lobby	Return to Lobby	Return to Lobby	Return to Lobby
	Elevator Off	Elevator Off	Elevator Off	Elevator Off
	Auto Doors Off	Auto Doors Off	Auto Doors Off	Auto Doors Off

Figure 4.24: Service Screen

4.15 Events Scheduling

Galileo remote monitoring system comes with built in event scheduling system that allow you to automate elevator services and call lockouts to turn on and off at a pre-defined time. The event scheduler includes a very user-friendly calendar-based user interface.

Features

- 1. Add, delete and modify events.
- 2. Event types:
 - a. Car Schedule car specific events such as Return to Lobby, Elevator Off etc.
 - b. Group Schedule group-based events such as Up Peak, Down Peak, Alt Parking etc.
 - c. Call Lockouts Schedule profile-based Hall Call and Car Call lockouts.
- 3. Calendar based user interface, easily navigate from month to month.
- 4. Events can be configured to run forever or specified range of dates.
- 5. Events can be configured to run all day or specified amount time of time.
- 6. Events can be configured to run certain days of the week or daily or a specified day of the month.

- 7. Event status is available on the calendar view where you can view currently on events.
- 8. Keeps history of the past scheduled timers.
- 9. New events can be created as long as memory is available on the system.
- 10. Fully password protected.
- 11. Events can be configured to be displayed as your desired color.

Usage examples

- 1. Create an event that puts Car 2 on Return to Lobby daily from 10/02/2017 to 10/10/2017.
- 2. Create an event that puts the group on Next Car Up from 7AM to 10AM every week day forever.
- 3. Create an event that locks out all up-hall calls, all day every week end forever.

Example # 1 - Create an event that puts Car 2 on Return to Lobby daily from 10/02/2017 to 10/10/2017 from 7AM – 12AM.

1. Go to Galileo home page

	Home So Group ID: V	Log In	
Quililise	Car IO Screen	Select	Traffic Analysis
Ver. 1.00.13w1.11	Group Sc	reen	Set Date and Time
Fault List	Hall IO So	reen	Call Lockout
Documents	Fault Log	Select •	Service Settings
Videos	Adj. Variables	Select *	Events Scheduling
Galileo Setup	Trace	Select T	

2. Click on "Events Scheduling," it will take you to "Calendar View" screen by default:



3. Next, click on "Add New Event" item on the left sidebar to create a new event and fill in the form to put Car 2 on Return to Lobby daily from 10/02/2017 to 10/10/2017 from 7AM to 12 AM.

	Event Scheduling	Log Out: galileo
Galiliso	Add a new event	
Home	Type : • Car • Group • Call Lockouts	
Calendar View	Car #: 2 *	
Add New Event	Service : Return to Lobb Date : 2017-10-02 to 2017-10-10 Forever	
Set Date and Time	Repeats : Daily	
	Time : 7 Y : 00 Y to 12 Y : 00 Y = All Day	
	Color : 🔲 📕 🖉 🛄 📕 📕	
	Status : • Enable • Disable	
	Submit	

4. Click "Submit" to create this new event.

Event Scheduling					Log Out: galile				
D Blog		October 2017 toda					today	< >	
Alatore	/	Sun	Mon	Tue		Wed	Thu	Fri	Sat
9 -		1		2	3	4	5	6	7
Home			7a Return to L	obby					
Calendar View		8	3	9	10	11	12	13	14
		Return to Lobby							
Add New Event		15	5	16	17	18	19	20	21
Set Date and Time									
		22	2	23	24	25	26	27	28
	-	29	9	30	31	i	ri	म्ब	4
			5	6	7	0	9	.10	11
Event Title	Type	Repeats	Status	Start Date	F	nd Date	System Time : Start Time	11:06:59 Date	: 10/02/201 On/Off
									- and and

If successfully event was successfully entered, you will see it on the calendar, and in the below table you see the status being ON/OFF.

5. To check if the Elevator controller received the RTL command we can go to Home -> Service Settings:

	Servi	ce Screen	Log Out: galileo
н	ome Car IO T Group Hall IO Fa	ault Log T Adjustable Variables T	Trace •
	Refresh	Save	
Group	Car 1	Car 2	Car 3
🖲 Up Peak	Independent	Independent	Independent
🖲 Down Peak	Return to Lobby	Return to Lobby	Return to Lobby
Alt. Lobby	Elevator Off	Elevator Off	Elevator Off
Alt. Parking	Auto Doors Off	Auto Doors Off	Auto Doors Off
🖲 Next Car Up	Car 4	Car 5	Car 6
Alt. Floor Sec	Independent	Independent	Independent
	Return to Lobby	Return to Lobby	Return to Lobby
	Elevator Off	Elevator Off	Elevator Off
	Auto Doors Off	Auto Doors Off	Auto Doors Off

As you can see Car # 2 is ON for Return to Lobby because of our automated event.

Example # 2 - Create an event that puts the group on Next Car Up from 7AM to 10AM every week day forever.

 Go to Home -> "Event Scheduling" -> "Add New Event" and fill in the desired start and end date and time parameters.

	Event Scheduling	Log Out: galileo
Galilio	Add a new event	
Home	Title : Next Car Up Type : • Car • Group • Call Lockouts	
Calendar View	Service : Next Car Up	
Add New Event	Date : 2017-10-02 to Forever	
Set Date and Time	S 🖩 M 🖾 T 🖾 W 🕮 T 🖾 S 🛢 Time : 🌱 7 💙 : 00 🌱 to 10 🍸 : 00 🍸 🔳 All Day	
	Color : 🛛 📕 📕 🛄 📮 🖉 🗖	
	Status : • Enable • Disable	
	Submit	

2. Click "Submit" button to this new event.

DOC-0124PN

3. If the event was successfully added, you will see it on the "Calendar View."



As you can see the "Next Car Up" event shows up on the list of events and it is in the OFF state due to the current time being above specified time which is 11:18 AM.

Example # 3 - Create an event that locks out all up hall calls, all day, every weekend forever.

- 1. In order to create a lockout event first, you will need to create and save a lockout profile.
- 2. To create new calls lockout profile, go to Home -> "Call Lockout"
- 3. Check off the desired floors you like to lock out from, in our case we want to disable all up calls.

			Call Lockout S	creen		Log Out: galile
		Home Carlo • G	Group Hall IO Fault Log *	Adjustable Variables * Tra	ice *	
		Refresh Current	· Save As · D	isable Up Calls	Go	
	Car 1	Car 2	Car 3	Car 4	Car 5	Car 6
	888	EEE	666	666	EEE	EEE
20 CC HC	O VAD	O YAD	🔍 👿 🔊	0 ¥ AD	0 ¥ AI)	🔍 🗡 🔊
19 CO HO	OXV AD	OXY AD	OXY AD	OXV AD		OXY AD
18 CC HC	OXY AD	OXY AI	OXY AD	OXY AD	OXY AD	
17 CO HO	OXV AD				OXY AD	
16 CC HC	OXY AD	OXY AII	OXV AD		OXV AII	OXV AD
15 CC HC	OXY AD	OXV AII	All	OXY AD		OXV AD
14 CG HG	OXV AD	OXV AD	OXY AD	OXY AD	OXV AU	OXY AD
12 CG HG	OXV AD		OXY AD	OXV AD	OXV AII	OXY AD
11 CC HC				OXY AD		OXY AD
10 CC HC	OXY AD			OXY AD		OXY AD
9 CC HC	AD	OXY AD	OXY AD	AD WX	OXY AII	OXY AD
8 CC HC	OXV AD	OXY AD	OXV AD	OXV AD		OXV AD
7 CC HC	OXY AD			OXY AD		ON VXO
6 CO HO	OXV AD	OXV AD	OXY AD	OXY AD	OXY AD	
5 CO HO	OXV AII		OXV AD	OXY AD	OXV AII	OXY AU
4 CO HO	OXY AD		All All	OXY AII		
3 CO HO	OXY AD	OXY AD	OXY AD	OXY AD	OXY AD	OXY AD
2 CC HO	OXY AD	OXY AD	OXY AD	OXY AD	OXY AD	OXV AD
GCOHO	OXV AD		OXY AD	OXV AD	OXY AD	OXY AD
1 CO HO			OXY AD			
32 CO HO			OXY AD			
B3 CC HC			OX AD			OX AD

DOC-0124PN

4. Next you go to Home -> "Event Scheduling" -> "Add New Event" and fill in the start and end date and time.

	Event Scheduling	Log Out: galileo
Galilee	Add a new event	
Home	Type : ● Car ● Group ● Call Lockouts	
Calendar View	Security Disable Up Call Profile :	
Add New Event	Date : 2017-10-02 to Forever	
Set Date and Time	S Ø M ■ T ■ W ■ T ■ F ■ S Ø Time : Ø All Day	
	Color :	
	Status : • Enable • Disable	
	Submit	

From the Security profiles, you will have to select the profile that you would like to choose to apply for the duration of this event.

5. The event will start showing in your list of events:

			Even	t Schedulin	g			og Out: gall
(Inthe	0	today < >						
Gentliss		Sun	Mon	Tue	Wed	Thu	Fri	Sat
0		1	2	3	4	5	6	7
Home			7a Return to Lobi	Y				
			7a Next Car Up				120	Deable Up C
Calendar View		8	9	10	11	12	13	14
	Ret	um to Lobby	-				1.23	Disable Op C
Add New Event	05	shie Up Calls	7a Next Car Up					
		15	16	1/	18	19	20	21
Set Date and Time	Des	able Up calls	7a Next Car Up				122	Desible Up (
		22	23	24	25	26	27	28
	Dis	ilahi Up Calle	7a Next Car Up				12	Disable Up C
		29	30	31	- c	2	з	
	Dia	inin tro calls	7a Next Car Up				10	Disable Lipps
			6					
		and the Call St.	ra wext car op					The subject of the
						System Time : 1	1:36:57 Date :	10/02/2017
Event Title	Туре	Repeats	Status	Start Date	End Date	Start Time	End Time	On/Off
Return to Lobby	Car	Daily	Enabled	2017-10-02	2017-10-10	07:00:00	12:00:00	
Next Car Up	Group	Weekly	Enabled	2017-10-02	Forever	07:00:00	10:00:00	
Disable Up Calls	Lockouts	Weekly	Enabled	2017-10-02	Forever		All day	

DOC-0124PN



6. When the current time is Weekend, the timer will turn ON as shown below.

7. And you can view the current applied profile on the Call Lockouts page.

		Refresh Current	Activate T		Go	
	Car 1	Car 2	Car 3	Car 4	Car 5	Car 6
	EEE	EEE	EEE	eee	GEE	GEE
O CO HO	All	🧧 🗡 (Al)	IAN I	🥥 💜 (AI)	🥥 💜 🔊	
9 CC HC	OXV AII	IAN VAC	All	OXV AII	All All	
8 CC HC		OXY AD	All	OX V AD		
7 CO HO	OXY AD	OXV AD				
6 CO HO	All All	OXV AD	AII AII			AII AII
5 CO HO	O X Y AII		All All		OXY AD	
4 CO HO	All All	OXY AD	(IIA)			
2 COHO	OXY AD		(IA)	OX V AD		
1 CO HO	OXY AD				OXV AD	
0 CC HC	All All	OXY AD	AII			ILA V AU
9 CO HO	OXY AD	OXY AD		OXV AD	OXY AD	
8 CC HC	All All			OXV AD	OXY AD	
7 CC HC	OXY AD	O X V AII	All		All VXO	
6 CC HC		OXY AD			OXV AII	
5 CO HO	OXY AD	OX V AU	(IA)			
4 CC HC	All VAU	OXV AII	All			
3 CO HO			All			
2 CO HO	All	All All	All			
GCOHO	All	All	OXY AD	All	All All	
1 COHO			OXV AD			O A V AD
2 COHO			All All			
3 CC HC			AI)			

4.16 Multi Group

If a job has more than one GALX-1120AN "Raspberry Pi", then multi group would need to be setup. After the setup is done, this screen is used to view the general statuses of each of the group. To view a car in detail of another group, the car can be clicked, and it will bring you to the Car IO Screen of that car. To view the group in detail, click on the group button of the group you want to view.

View Select v			Mu	ulti Group	Setup Ho	ome				
				Def	ault					
				Gro	up 1					
	1	2	3	4	5	6	7	С		
	T.									
	AUT	OTS	OTS	OTS	OTS	OTS	OTS	OTS		
				<u> </u>	D	U	D			
	_								J	

Section 5 – PC Monitoring

In this section, we will go through all the different PC monitoring that can be done with the Galileo and how to set it up. The 2 types of PC monitoring we offer with Galileo is Lobby monitor and Remote Access via internet. Lobby monitoring is where we run an ethernet cable from the machine rooms switch to the PC located in the lobby. Remote Access via internet is when you hook up the Galileo to the building's internet. A public IP address will need to be provided by the building ISP provider that public IP address will be used to access the Galileo via the internet. By typing in the public IP address on to a web browser, you will be able to access the Galileo for that job. Remote access can also be done through an internal network.

5.1 Lobby Monitor



Figure 5.1: Lobby Monitor with Multi Group

The Galileo Lobby Monitor only displays data – the monitor is not a touch screen. This is usually used to monitor the status of a group. The figure 5.2 below shows what is displayed on the Lobby Monitor.



Figure 5.2: Lobby Monitor Screen

5.2 Lobby Panel

	Group Screen Log Out: admin										
	Service Screen										
	Normal										
	Car	1	2	3	4	5	6	7	С	Car	
23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 L A B C	~~~~~~~~~~~~~~~~~~~~~~~	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 7 6 5 4 4 3 2 2 4 4 8 8 7 6 5 5 4 4 8 8 7 6 5 5 4 4 8 8 7 6 5 5 6 4 8 8 7 6 7 8 8 7 7 8 8 8 7 7 8 8 8 7 8 8 8 7 8	23 PH 21 20 19 18 17 16 15 14 13 13 12 11 10 9 9 8 7 6 5 4 4 3 2 2 4 4 3 2 2 4 5 5 4 8 8 7 6 5 5 4 8 8 7 6 5 5 4 8 8 7 6 7 8 8 8 7 7 8 8 8 7 7 8 8 8 8 7 7 8 8 8 8 8 7 8	23 PH 21 20 19 18 17 16 15 14 13 13 12 11 10 9 9 8 7 6 5 5 4 3 2 2 4 8 7 6 5 5 4 8 8 7 6 5 5 4 8 8 7 6 5 5 4 8 8 7 6 5 7 8 8 8 7 7 8 8 8 7 7 8 8 8 7 7 8 8 8 8 7 8	23 PH 21 20 19 18 17 16 15 17 16 13 13 13 13 13 13 13 13 13 13 13 13 13	23 • PH • 21 • 20 • 19 • 18 • 17 • 16 • 15 • 14 • 13 • 13 • 13 • 13 • 13 • 13 • 13	23 PH 21 20 19 18 17 16 15 14 13 13 12 11 10 9 9 8 7 6 5 5 4 4 3 2 2 4 4 8 8 7 6 5 5 4 8 8 7 6 5 5 4 8 8 7 6 5 5 6 7 8 8 8 7 7 8 8 8 7 8 8 8 7 8 8 8 8 7 8	23 PH 21 20 19 18 17 16 15 14 13 13 12 11 10 9 9 8 7 6 5 5 4 3 2 2 4 4 3 2 2 4 4 5 5 4 8 8 7 6 5 5 4 4 8 8 7 6 5 5 4 8 8 7 6 7 8 8 8 7 8 8 8 8 7 8 8 8 8 8 8	23 PH 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 L A B C	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	23 PP120 117 117 117 117 117 117 117 117 117 11
S	ervice osition	AUT D	OTS D	OTS D	OTS D	OTS D	OTS D	OTS D	OTS D	Service Positior	e n

The Lobby Panel is intended for control purposes such as placing cars on in different modes, such as independent service, and also to monitor car & group status. This Lobby Panel PC can be located anywhere, a manager's office, the lobby of a building, etc.

Service Screen Log Out: admin							
Group Screen							
Refresh Save							
Group	Car 1	Car 2	Car 3	Car 4			
🖲 Up Peak	Independent	Independent	Independent	Independent			
Down Peak	Return to Lobby	Return to Lobby	Return to Lobby	Return to Lobby			
Alt. Lobby	Elevator Off	Elevator Off	Elevator Off	Elevator Off			
Alt. Parking	Auto Doors Off	Auto Doors Off	Auto Doors Off	Auto Doors Off			
Next Car Up	Car 5	Car 6	Car 7	Car C			
Alt. Floor Sec	Independent	Independent	Independent	Independent			
	Return to Lobby	Return to Lobby	Return to Lobby	Return to Lobby			
	Elevator Off	Elevator Off	Elevator Off	Elevator Off			
	Auto Doors Off	Auto Doors Off	Auto Doors Off	Auto Doors Off			

Figure 5.3: Lobby Panel Screen

Section 6 – Setting Up Lobby PC

Ethernet Adapter Static IP Setup

 Go to Control Panel -> Network and Internet -> Network and Sharing Center -> Change adapter settings

Right click on the Ethernet Adapter and Properties



3 items 1 item selected

100 E

2. On Ethernet Properties: Select Internet Protocol Version 4 (TCP/IPv4) and Click Properties



3. Select "Use the following IP address" and enter the following info:

-		-	P Network Connections
Search Network	ن ~ ت	Cisco AnyConnect Secure Mobility Client Connecti	← → → ↑ 🤄 > Control Panel >
-		Networking Sharing	
	ocol Version 4 (TCP/IPv4) Properties X	Connect using:	Organize Enable this network devi
		🛒 Cisco AnyConnect Secure Mobility Client Virtual M	Bluetooth Network
	t IP settings assigned automatically if your network supports ity. Otherwise, you need to ask your network administrator romiate IP settings.	Con This connection uses the following items:	Not connected
	n an IP address automatically he following IP address:	 ✓	
	ask: 255 . 255 . 255 . 0 jateway: 192 . 168 . 1 . 1	Microsoft LLDP Protocol Driver Microsoft LLDP Protocol Driver Internet Protocol Version 6 (TCP/IPv6)	
	n DNS server address automatically	Install Uninstall Prop	
	e following DNS server addresses:	Transmission Control Protocol/Internet Protocol. The o wide area network protocol that provides communicat across diverse interconnected networks.	
	ate settings upon exit Advanced	ОК	

- 2 itoms 1 itom colocted
- 4. Click "OK" to save IP info and exit out to Desktop.

C. Se 5.	tup IE Homepage Now open up Internet Explore □ You're not connected × + ← → ♡ Search or enter web address	er and go to settings	- • ×
		You're not connected And the web just isn't the same without you. Let's get you back online • Check that your network cables are plugged in. • Make sure you're not in airplane mode. • See if your wireless switch is turned on. • Restart your router.	New window New InPrivate window Zoom — 100% + Cast media to devoce Find on page Print Print F12 Developer Tools Open with Internet Explorer Send feedback Extensions What's new and tips Settings

6. Click "A specific page or pages"

novire not connected in a T	- 0
- $ ightarrow$ Search or enter web address	□ ☆ = 12 © ·
You're not connected And the web just isn't the same without you. Let's get you back online • Check that your network cables are plugged in. • Make sure you're not in airplane mode. • See if your wireless switch is turned on. • Restart your router.	SETTINGS Choose a theme Light Open Microsoft Edge with Start page New tab page Previous pages A specific page or pages Favorites View favorites settings Clear browsing data Choose what to clear Account Account Account Sync your favorites and reading list Clear browsing addread reading list Choose straines Sync your favorites and reading list Choose straines Choose
	Delauit

7. Set Homepage URL to be <u>http://192.168.1.19/</u> and click save

Settings	4				
Choose a theme					
Light	\sim				
Open Microsoft Edge with					
A specific page or pages	Save				
192.168.1.19 ×					
Open new tabs with					
Top sites and suggested content	\sim				
Import favorites and other info					
Import from another browser					
Favorites bar					
Show the favorites bar					
Off Off					
Clear browsing data					
Choose what to clear					
Account					
Account settings					
Sync your favorites, reading list, top sites, and o	ther				

8. Lastly verify by opening up Internet Explorer.



And you are all done.