



TRAFCON E-Z MESSAGE USER MANUAL

Version 24.05.15



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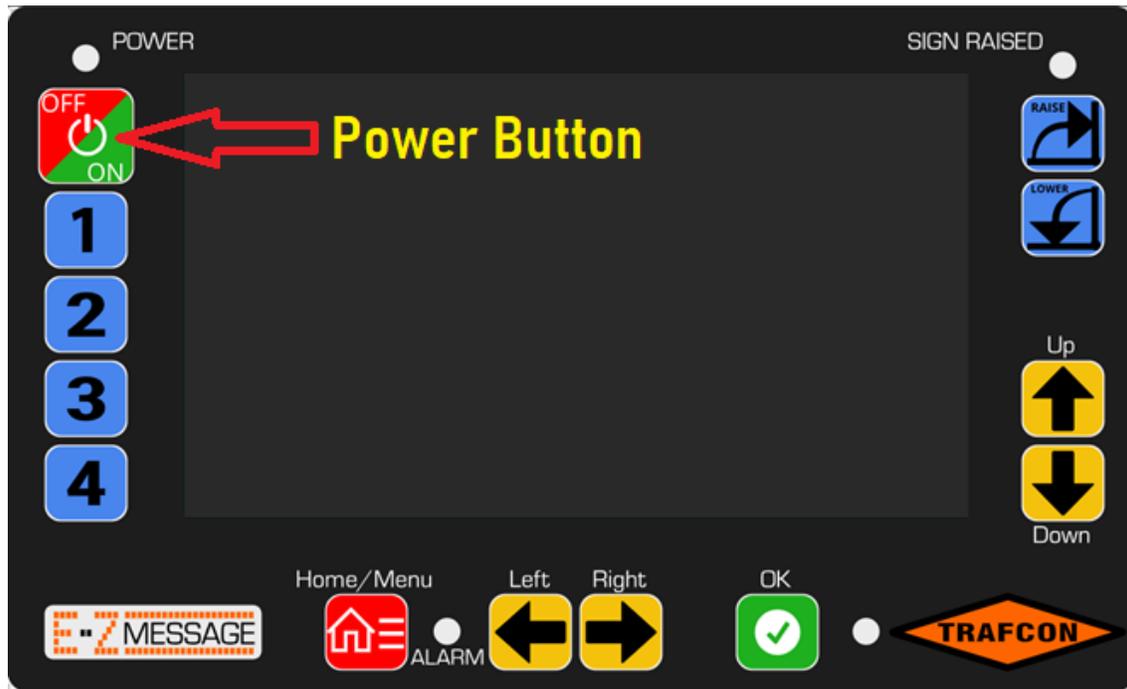
User Levels

Functions are divided into three levels and need different level passwords to access them.

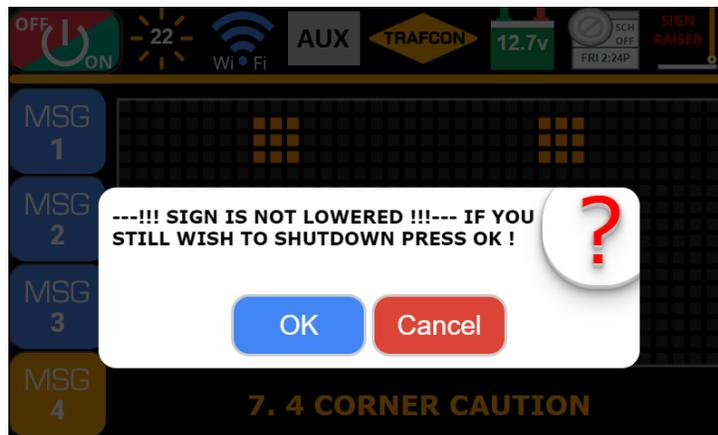
- 1) Level 1: Basic User No password required.
- 2) Level 2: Advanced User password required. (Administrator or Supervisor)
- 3) Level 3: Factory password required. (Trafcon Only)

Chapter 1: Basic Functionality (Level 1)

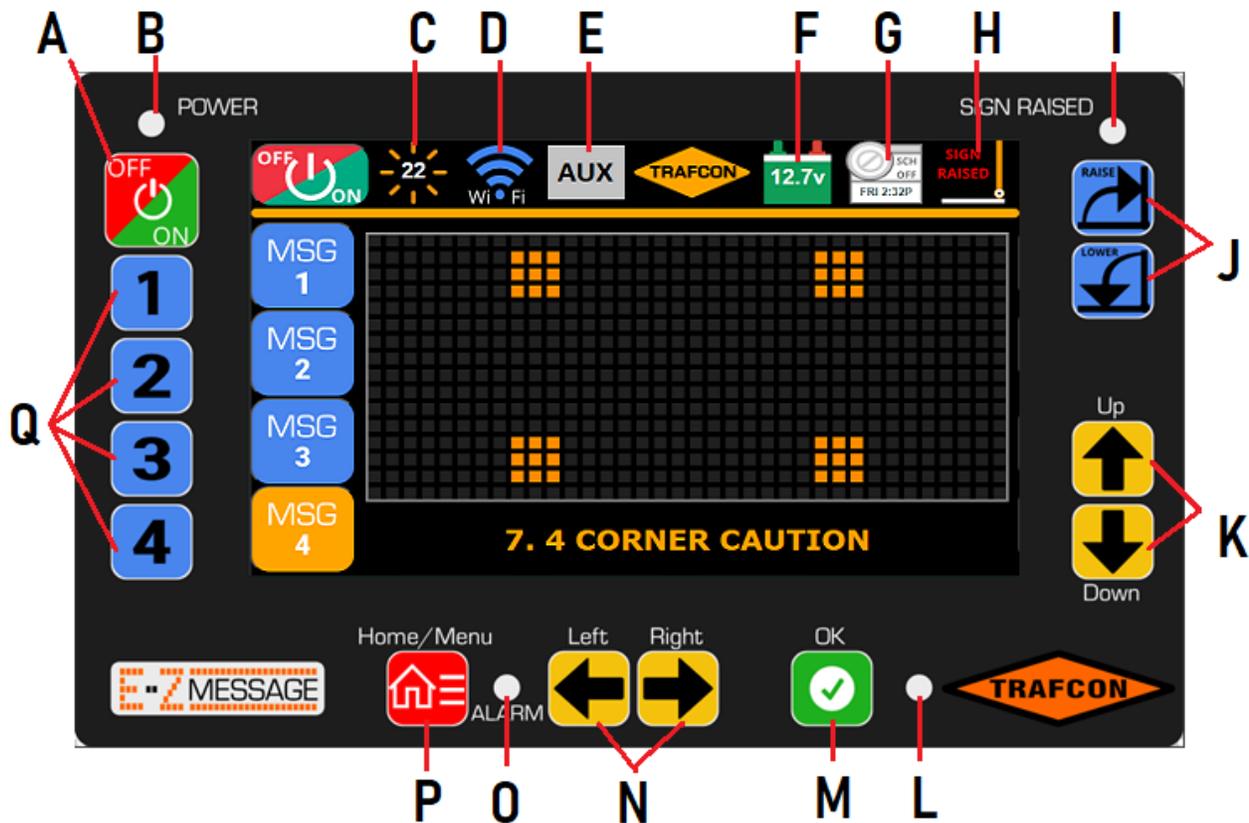
1.1 Turn Message Sign ON/OFF with remote control



- When the sign is off, press the power button to turn the sign on. The screen might show some loading texts while the sign is turning on. After the process is completed, the screen will show the HOME page. If there is no connection established between the remote and the controller (due to many reasons), it will show a “No Connection” white page. See chapter 14 for Connection Diagnostics.
- When the sign is on, and the screen is showing the HOME page, press the power button to turn the sign off.
 - If the sign is lowered, it will be turned off after the button is pressed.
 - If the sign is in “raised” position, a pop-up will appear to remind the user that the sign is not lowered. Press “OK” to turn it off, or press “cancel”, lower the sign then turn it off.



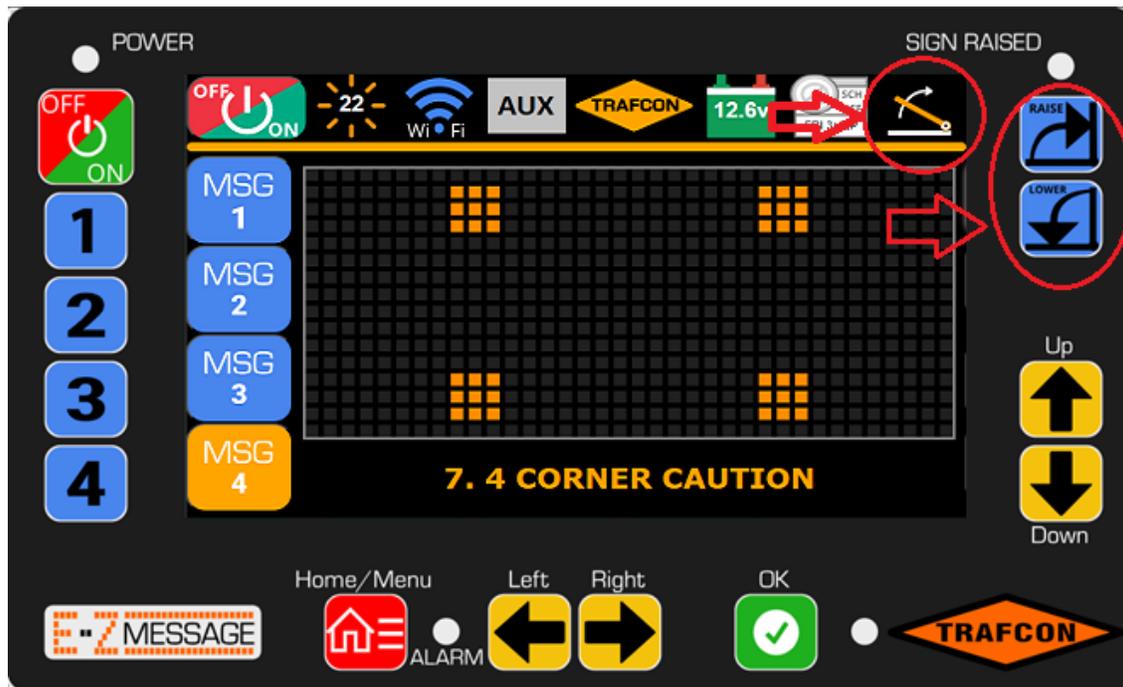
1.2 Home Page



- A. Power Button: Press to turn sign on/off.
- B. Power LED: Light indication if the sign is on or off (when remote is on)
- C. Sign Brightness icon: Showing sign brightness in percentage (%)
- D. Wifi Signal icon: showing current wireless connection and the signal strength.
- E. Auxiliary Relays Control icon: if equipped, can be interacted to control the relays.
- F. Sign battery voltage icon: If voltage drops, battery color changes from green to yellow then red.
ALARM led (O) will be flashing warning and caution battery levels.
Green Battery: Good voltage, sign functions normally.
Yellow Battery: Warning voltage, sign functions normally, ALARM LED flashing.
Red Battery: Low voltage, sign ONLY displays "Default message", ALARM LED flashing.
- G. Clock and scheduler icon: Showing current date, time, and if scheduler is on/off.
- H. Sign Position icon: showing the sign position raised/raising/lowering/lowered.
- I. Sign raised LED: blinking if the sign is in raised position.
- J. Sign position control buttons: if equipped with electric actuator, these buttons can be used to raise/lower the sign.
- K. Up/Down button: to navigate among menu items, or open message list in HOME page.
- L. Ambient Light sensor
- M. OK button: to confirm an action if prompted.
- N. Left/Right button: to navigate among menu items or change the message in HOME page.
- O. Alarm LED: will flash when there are any errors.
- P. Home/Menu Button: To enter Menu and go back to Menu/Home page while in a sub menu.
- Q. Quick message buttons: to quickly select a pre-set message.

1.2.1 Change Sign Position

- If equipped with electric actuators, the sign position can be changed by pressing the Raise or Lower button.
- After a button is pressed, the sign position icon will show an animation of the sign raising or lowering. The process will stop if:
 - Sign reaches the raised/lowered position; the controller sees a current surge and turns off the actuators (current limit can be set in the Elevation Settings).
 - Sign has been raising/lowering longer than the limit time due to whatever reason; controller will turn off the actuators due to “timeout” (currently set to 30 seconds).
 - User stops it manually in case of an emergency or simply just changes his mind. To stop the actuator, press the opposite button of the current action.
 - If the sign is raising, press “LOWER” button to stop.
 - If sign is lowering, press “RAISE” button to stop.



1.2.2 Change the current displaying message

There are 3 ways to change the current displaying message from the HOME screen:

- Use Quick message buttons (1,2,3,4): these are messages pre-set for these buttons from the “Message Manager” menu. Just press a “Quick Message” button and a preview of the message will be shown on the screen. Press “OK” to confirm the message and start displaying it on the sign.



- Use Left/Right buttons: when pressed, it will go to the next or previous message on the list, showing a preview on the screen. Press “OK” to confirm.
- Use Up/Down buttons: When pressed, it will show the message list, use up/down buttons to navigate to the desired message and press “OK” to confirm. OR enter the message ID into the “Enter M. ID” box and it will jump to the message (if exists), press “OK” to confirm.



NOTE:

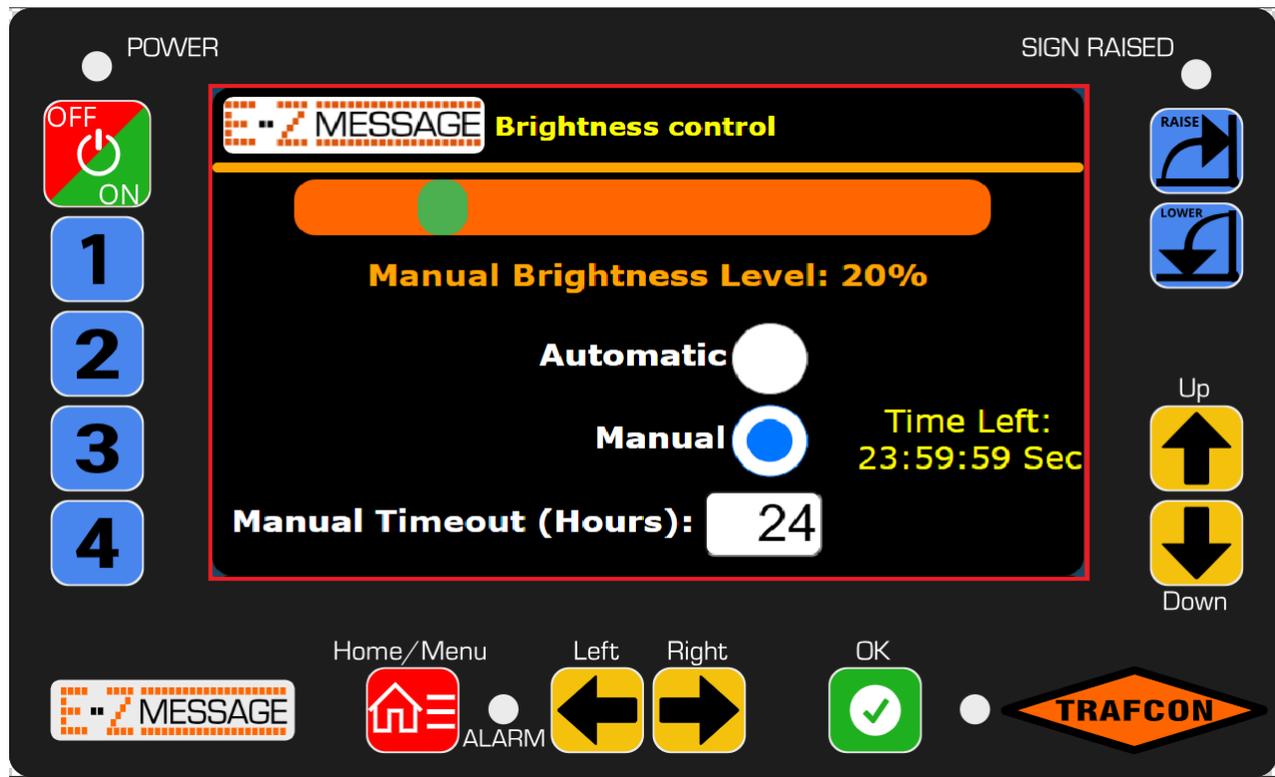
- A preview message is displayed in GRAY dots, which means it is only showing on the remote screen and is not actually displayed on the message sign.
- A confirmed message is displayed in ORANGE dots, which indicates that the message is also being displayed on the actual message sign.

1.3 Brightness

To change the message sign brightness, simply press the brightness icon on home screen or press “Home/Menu” button, then press “Brightness” button.



- By default, the sign is set to operate in automatic brightness mode. In this mode, sign brightness will be automatically calculated based on the environment brightness values provided by the photocell located on the sign frame. There are advanced settings that the user can “set” to achieve better sign brightness for certain lightning conditions.
- Users can also use manual mode to set sign brightness control from 1 to 100% by dragging the slide bar or use left/right arrow buttons. Users can also change the manual brightness timeout from 1 to 24 hours (select the timeout box and press the up/down arrow buttons to change). Default timeout is 24 hours, if the unit is powered off, the unit will default back to automatic brightness when powered back on.



1.4 Auxiliary Relays

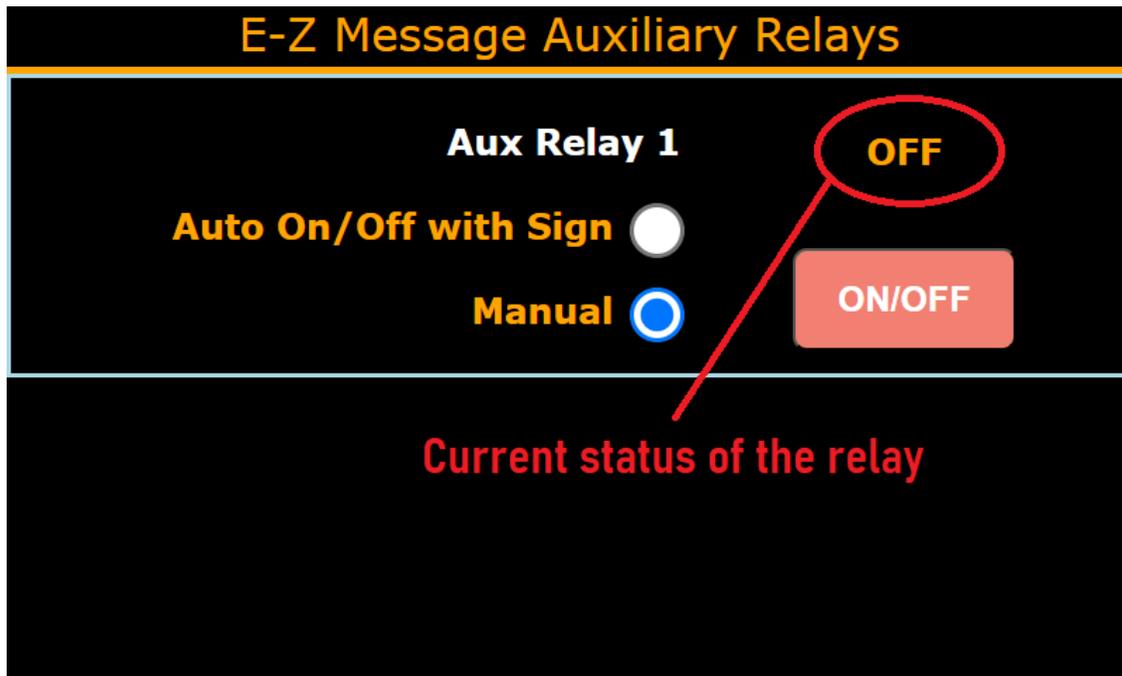
If equipped, auxiliary relays can be very useful in many scenarios.

The relays are rated for (250AC / 12VDC) and (10A resistive load / 5A inductive load).

User can access “Auxiliary Relays” menu by pressing the “AUX” icon on the HOME screen or go to Menu>Auxiliary Relays



Depends on the EZ-Message controller model, there can be 1 or 2 auxiliary relays.

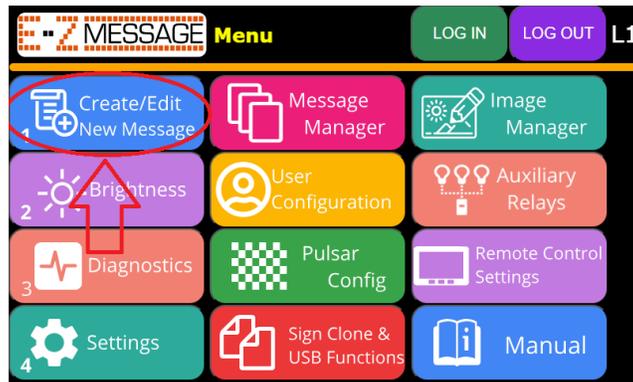


The auxiliary relays can be operated in 2 modes:

- “Auto On/Off with Sign”: If this mode is selected, the relay will automatically be turned on if the sign is on and turned off if the sign is off.
- “Manual”: If this mode is selected and the sign is on, user can manually control the relay by pressing the “ON/OFF” button. The text above the button indicates the current status of the relay. HOWEVER, even in manual mode, if the sign is turned off, the relay then will also be turned off for safety reason.

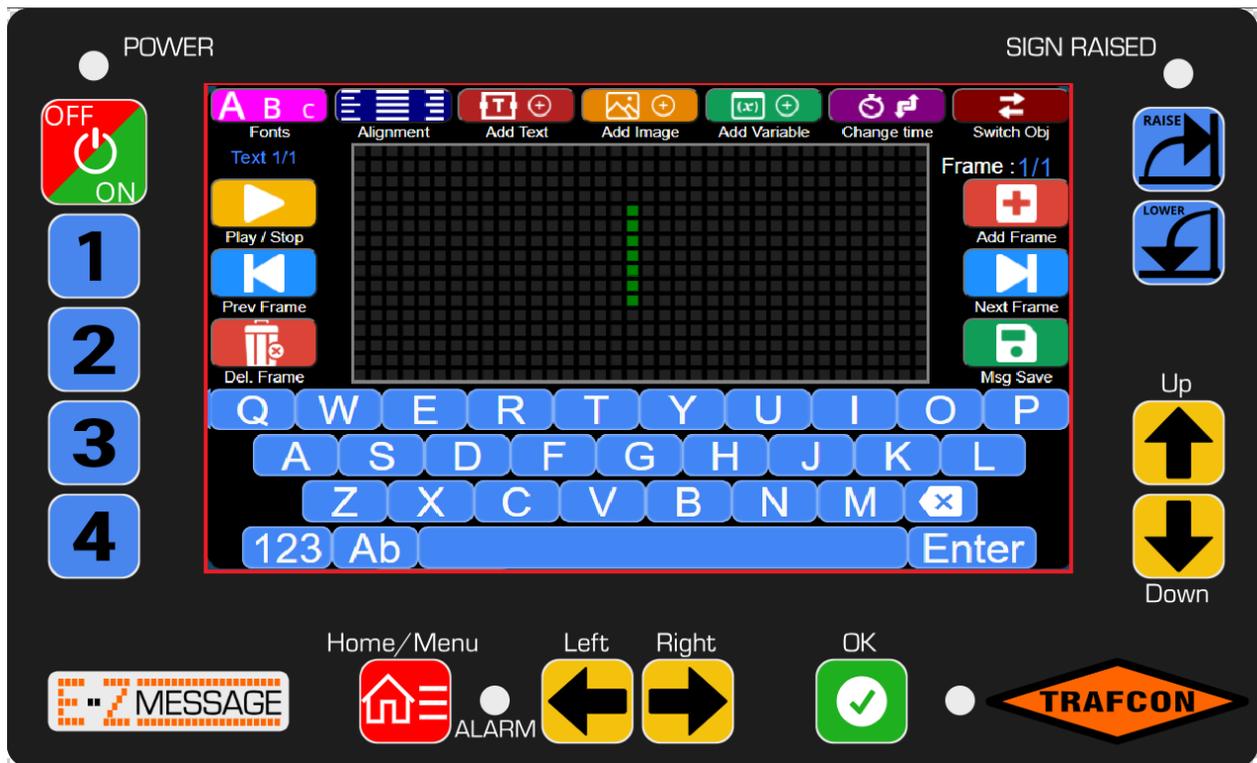
Chapter 2: Create New Messages (Level 2)

To create a new message, user first needs to navigate to the “Create/Edit Message” Menu by pressing the “Home/Menu” button, then “Create/Edit Message” button.



To enter this menu, the user is required to be logged in as “level 2” (advanced user). A login page will appear if the user does not have access to this page. Once logged in, the menu will look like this:

**Note: User needs an advanced level password to enter this page.*



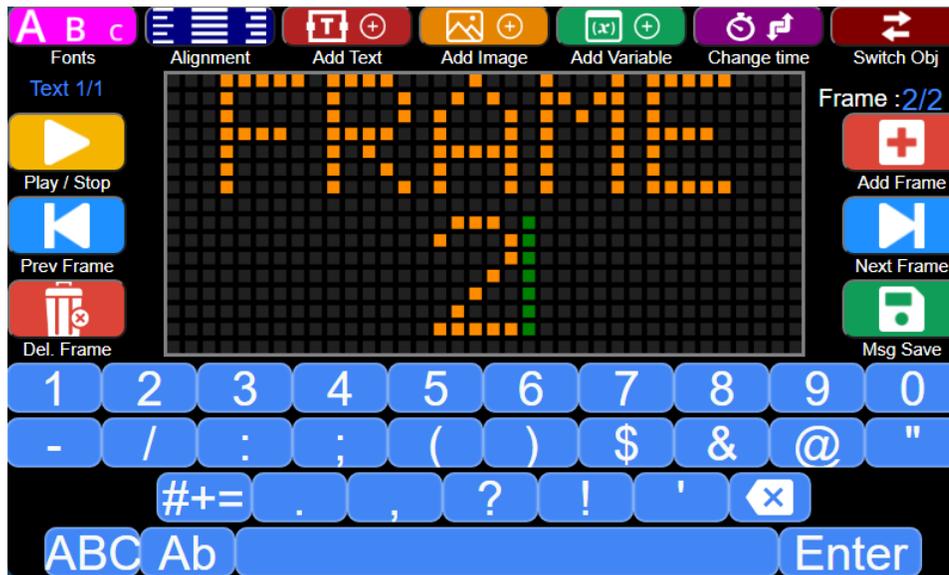
- An EZ-Message contains what we call frames.
- In each frame, it can contain text, images and variables.
- Each frame also has its display timing.

A message is a series of frames being displayed consecutively and looped back when it finishes displaying the last frame.



2.1. Adding Frames

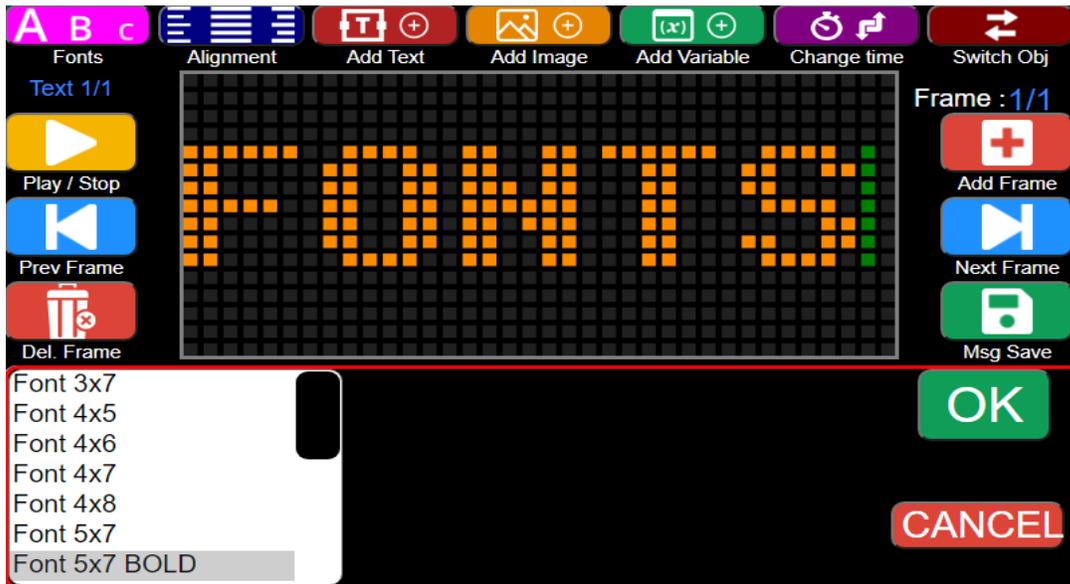
- A message must have at least 1 frame which is automatically added when entering the page.
- Users can add a new frame or delete the existing frame. The default time between frames is set at 2 seconds.



- Users can switch between frames by using Next or Previous Frame Buttons.

2.2. Choose Fonts

- By default, text can be added when a new frame is added. And the default font is the standard 5x7 pixel font.
- User can change to a different font by pressing the “Fonts” button, select the desired font, then click “OK” on screen.

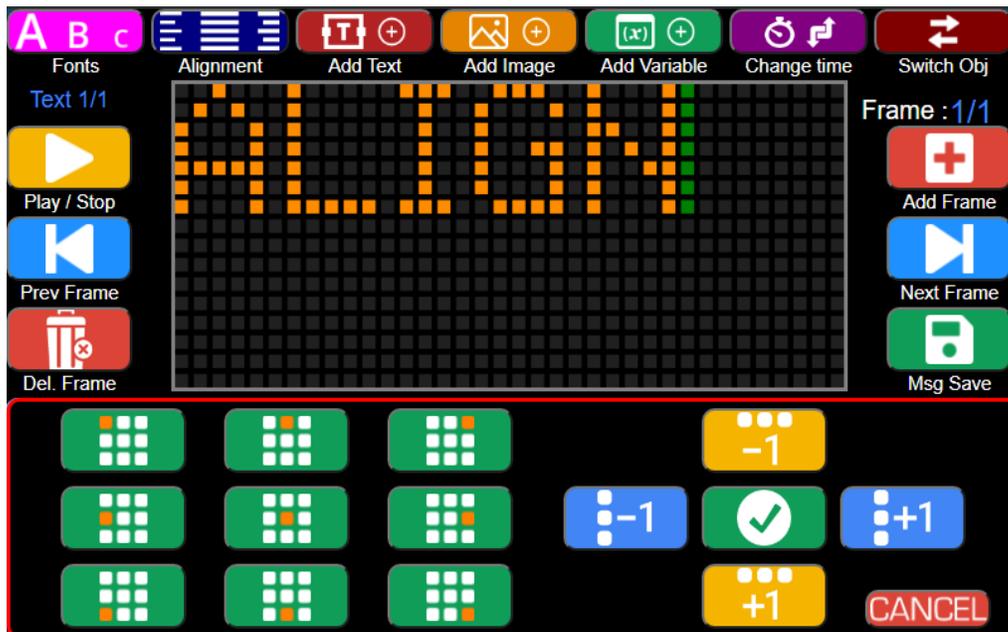


- There can be multiple text objects in 1 frame and each text can have its own font.

WARNING: Please follow MUTCD/DOT rules on different font usage.

2.3. Alignment

- User can align the text by clicking the “Alignment” button, then select the desired text position. By default, the text is centered both horizontally and vertically.
- Users can also add the alignment offset (by Using +1 or -1 buttons) for precise placement to the pixels.



2.4. Add Text

- Users can add multiple text objects using the “Add Text” button on the same frame.
- By doing this the user can align the 2nd object at different places and even add different fonts to it as shown in the image below.



WARNING: Please follow MUTCD/DOT rules on different font usage.

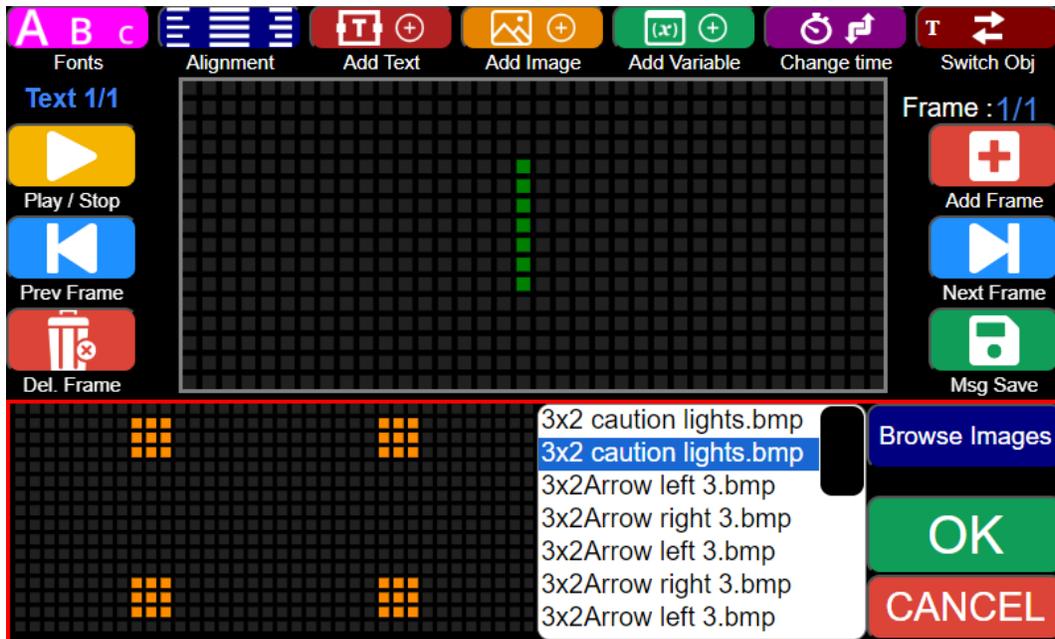
2.5 Switch Objects

- Users can use the SWITCH OBJ button to switch between different text or image objects in a frame to edit them. Users can keep track of the number of the objects in frame by OBJ counter.



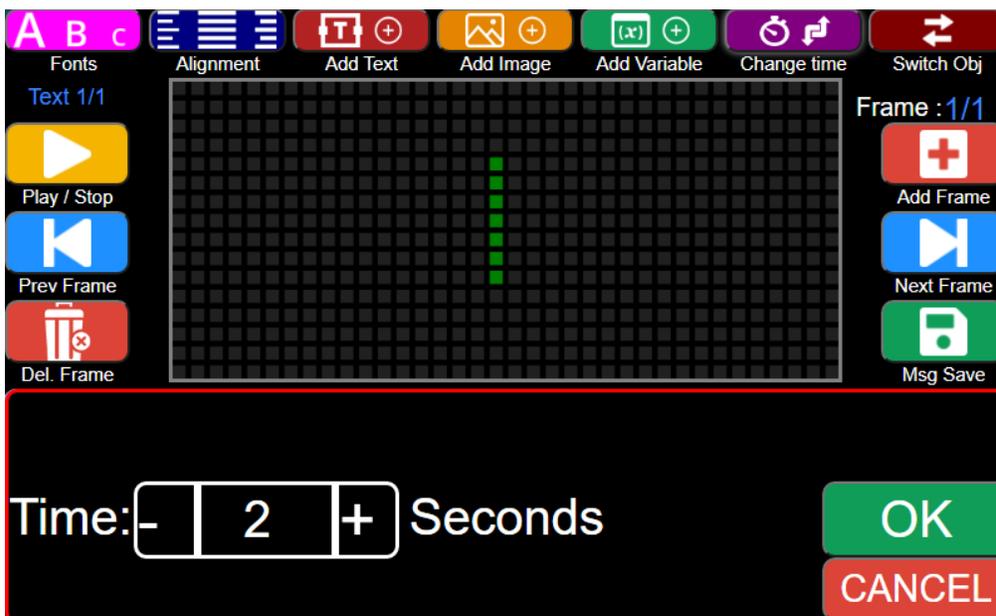
2.6 Add Image

- User can add images to the message using the “Add Image” button, select the image from the list and a preview will be shown for the image selected and by clicking the OK on screen add the image to the frame. Users can also import new images from a PC by clicking the “Browse Image” button. (See chapter 12 on how to create a bitmap image)



2.7 Change Frame Display Time

- Users can change the display time of a frame by clicking “Change Time” button.
- Once time has been set, press OK on screen to save.



WARNING: Please follow MUTCD/DOT rules on minimum and maximum display time of a frame.

2.8 Save Message

- Once done with the message and changes, the user may play/stop the message on the remote to see how it will display on sign. If satisfied with the message, the user can save the message by using the MSG SAVE button.
- When user creates a message by default it will not add to ACTIVE LIST, If the user wants to add a message to ACTIVE LIST “Add to Active List” must be checked before the “SAVE” button is pressed.
- If the user wants to display the created message on the sign right away “Set as Display Message” must be checked before the SAVE button is pressed.



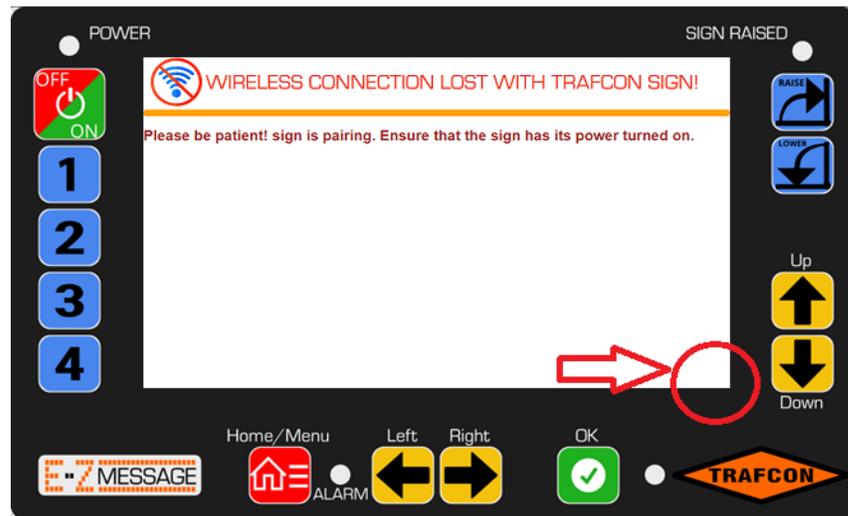
Chapter 3: Controller/Remote Wifi Paring process (Level 1, Level 2)

3.1. First time Paring

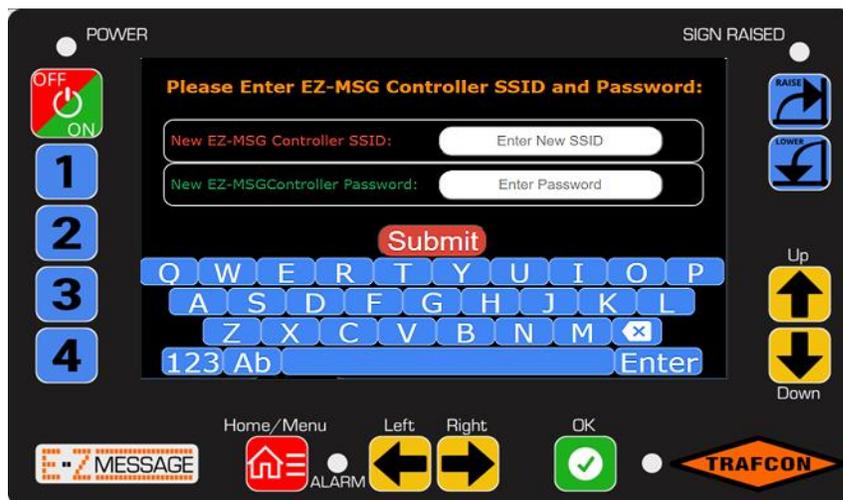
Users will see this “wireless connection lost” page on many occasions. The page that appears indicates that the HHR is not connected to any controller, and one of the reasons may be that it has never been paired to the controller.

Here are the steps to pair a remote to a controller:

- Power up the controller (plug in the power cable).
- Power up the HHR, then press the “ON/OFF” button.
- After the HHR is loaded, it will show a “Wireless Connection Lost” page. There is a hidden button on the bottom right corner of the screen. Press that area.

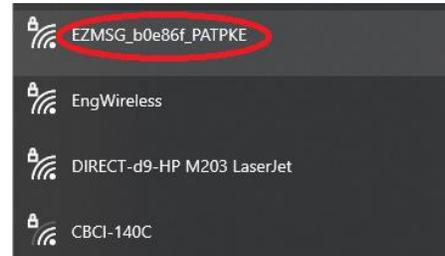


- After pressing the hidden button, it will go to a Wifi paring page. Use the Wifi SSID located on the sign and on main controller and **password provided by Trafcon** to fill the required fields (all letters are case sensitive, so type it exactly as provided). Then press “SUBMIT” button to save the info.



Note: If not sure about the wifi SSID, user can use a PC or tablet to scan for wifi devices. If the controller is turned on, it will broadcast its wifi SSID, starting with EZMSG_xxxxxx where x's are the unique code of the controller, compare that with the sticker on the sign panel and controller to make sure it matches. If it is the correct SSID number, write it down, and write down the wifi password provided by Trafcon.

- e. After submitting the new wifi SSID and password, the remote will save that information, then turn itself off.
- f. Press “ON/OFF” button to turn on the HHR. This time it will look for the new wifi SSID just entered, it should connect to the sign and start displaying the message.



3.2 Change Wifi SSID suffix

EZ_Message Wifi SSID contains 3 fields separated by underscores:

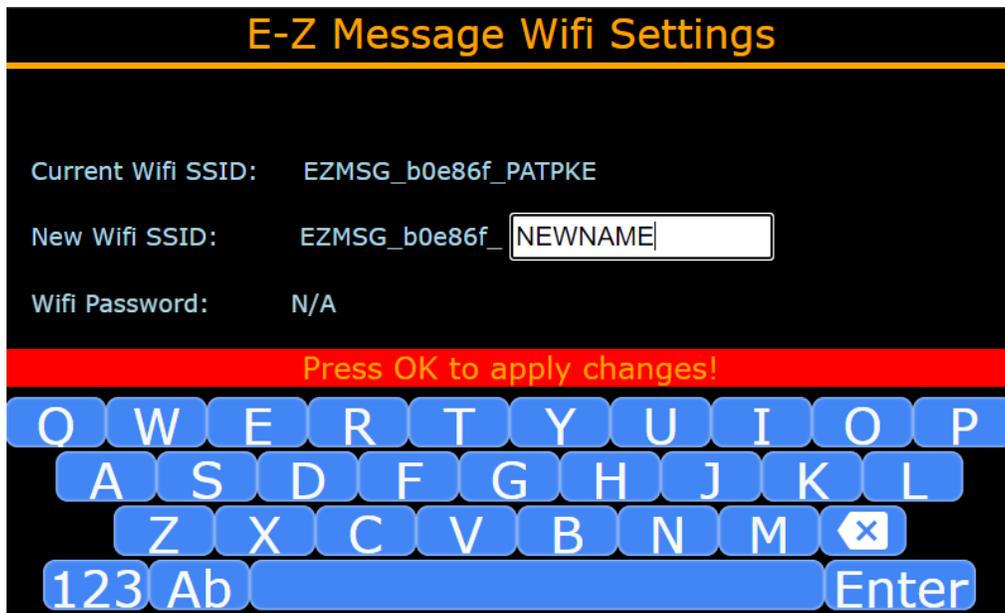
- EZMSG
- Controller unique ID
- Suffix

Example: EZMSG_b0e86f_PATPKE

- The first 2 fields are fixed and can't be changed. However, the suffix is changeable and can support up to 15 characters. This is useful to manage a large fleet of EZ-Message signs by giving the controller Wifi SSIDs meaningful names.

Note This feature can only be completed with Level 2 access or higher

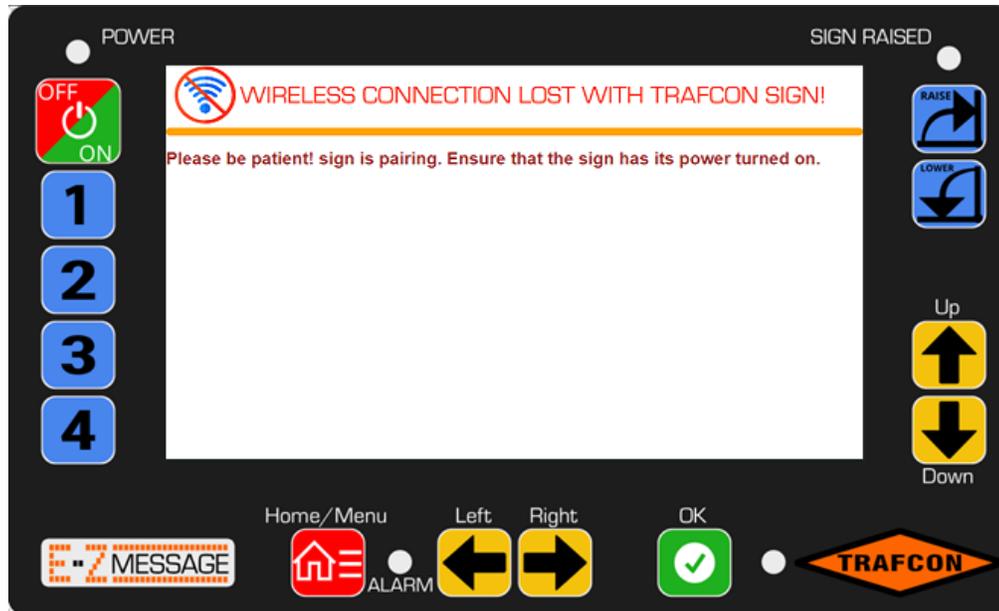
- To change the SSID suffix, go to: “Menu>Settings>Connection Settings”



- Enter the new suffix, then press “OK” button. The controller will reset after that, wait for a few minutes, then the “Wireless Connection Lost” page will appear because the Wifi SSID has changed. Go back to (3.1) to re-pair the remote to the controller using the new SSID (same password).

3.3. No wireless connection

- While operating EZ-Message sign, users might see this no wireless connection page sometimes.



This page will pop up when there is no wireless connection between the controller and the remote. Here are the steps to troubleshoot when seeing this page.

- Wait a few minutes. Sometimes it takes a few minutes for the HHR to establish the connection with the controller.
- After a few minutes without connection, check if the sign has power.
 - If it does not, check the power source and fuse.
 - If it does have power, reset the remote by unplugging it from the power source, wait for 10 seconds and plug it back in.
- If both the sign and remote are powered, and no connection after a few minutes. Reset all by disconnecting the power to the sign and the HHR, wait for 60 seconds then restore power to both of them.
- If there's still no connection, use a cellphone or a tablet to check if EZ-Message is broadcasting Wifi signal. It will be in this format: EZMSG-xxxxxx-suffix.
 - If it is broadcasting Wifi, go to 3.1 to re-pair the HHR/controller.
 - If it is not broadcasting any Wifi signal, call Trafcon tech support for help.

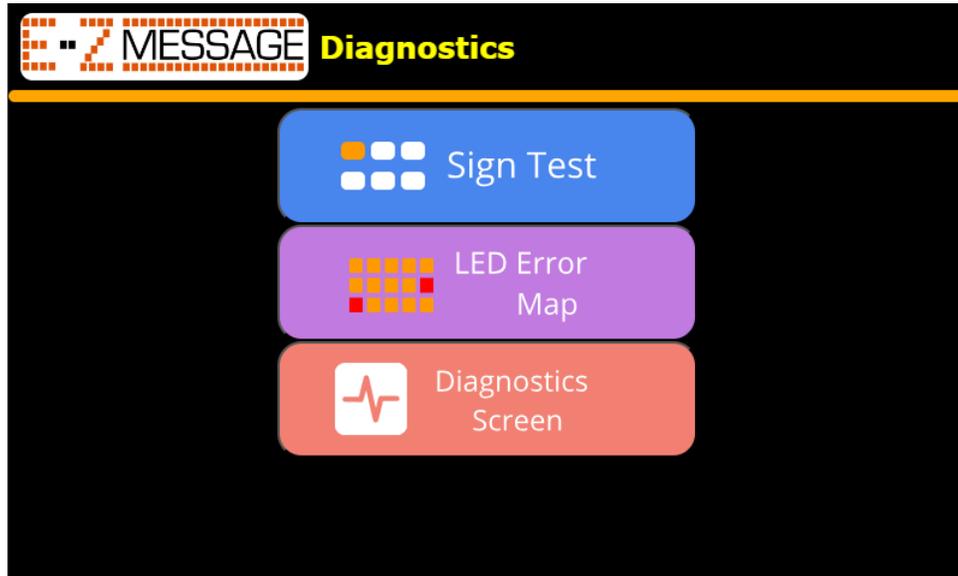
** Note: It is recommended to completely turn off the sign and disconnect it from the power source if the sign is not being used for a long time. If the job does not allow the sign to be turned off for a long time, then a complete reset (power cycle) is recommended.*

Chapter 4: Diagnostics (Level 1, Level 2)

The user can perform sign diagnostics from this page. Users can reach this page by pressing the **Home/Menu** button and clicking the **Diagnostics** button.

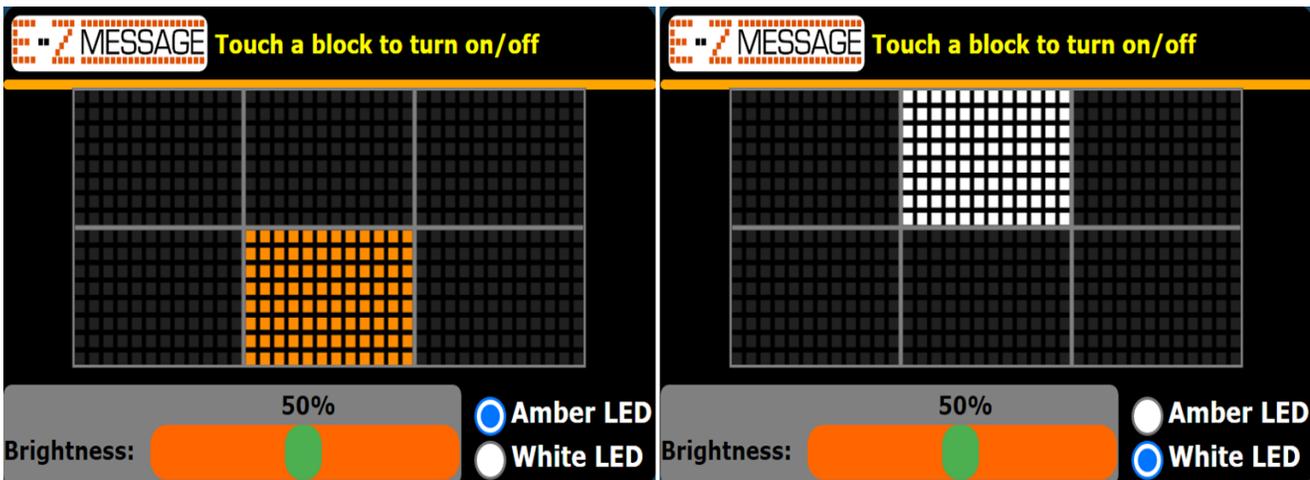
The user has 3 different options in the Diagnostics menu.

- 1) Sign Test
- 2) LED Error Map
- 3) Diagnostics Screens



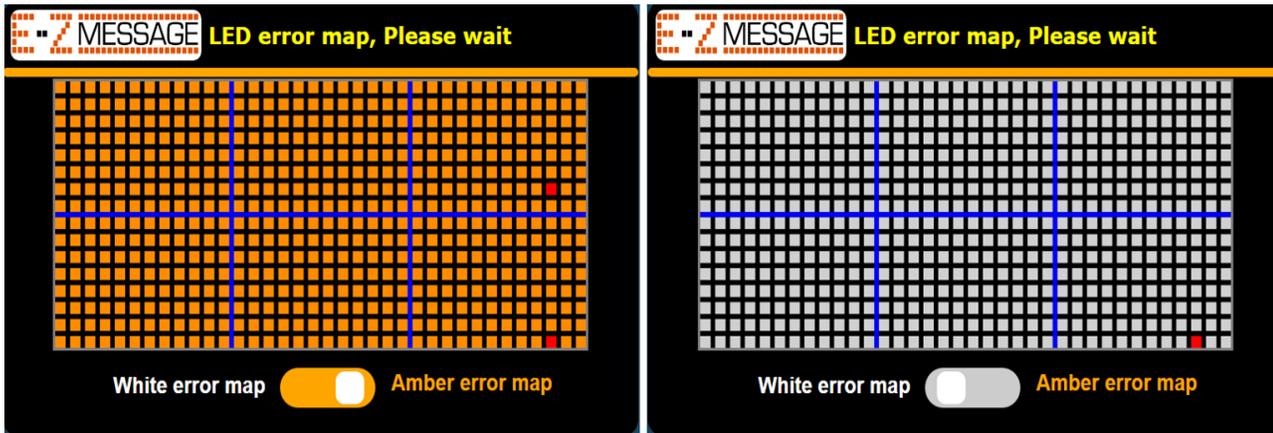
4.1. Sign Test (Level 1)

- In sign test the user can turn ON/OFF each panel of the sign. User can test both Amber and White (Pulsar if equipped).
- In “Sign Test” brightness of the panel can be tested by dragging the slider to desired value.



4.2. LED Error Map (Level 2)

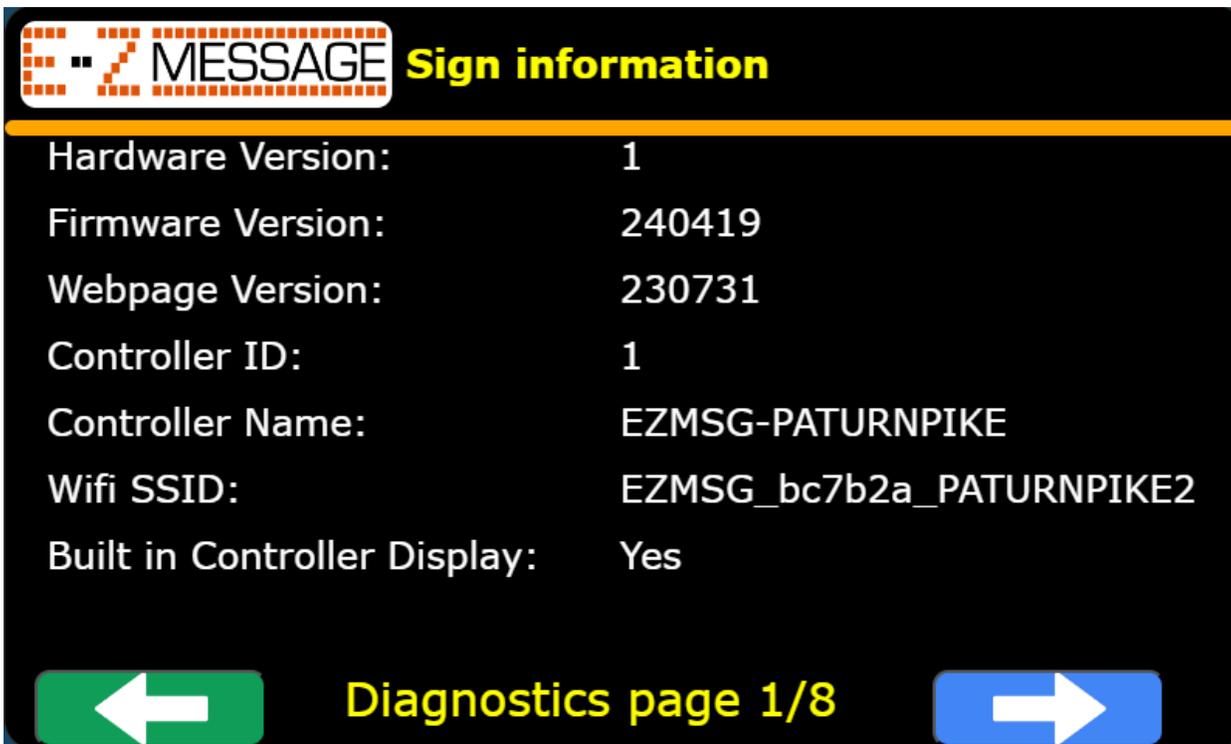
- LED error map runs automatic tests on blocks and reports failed LEDs in **RED**. You can switch between amber and white (If equipped with white-Pulsar).



- In the above example, two amber LEDs have failed, and one white LED has failed.

4.3. Diagnostics Screen (Level 1)

- The information for the sign is available to the user. If there is an issue, have this information available when contacting tech support.

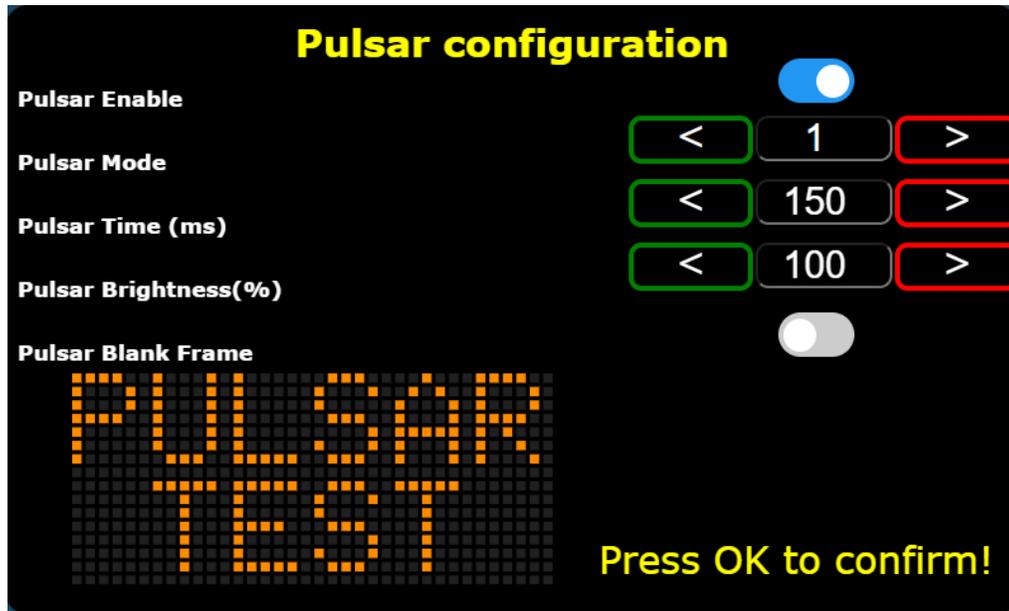


- User can switch between different screens of information by clicking blue and green arrows.

Chapter 5: Pulsar Configuration (Level 2)

If your sign comes equipped with the pulsar option, you have the option to turn it ON and select between different modes. Amount of time, Brightness and Option to have pulsar on black frame.

User can reach this page by pressing the **Home/Menu** button and clicking the **Pulsar-Config** button.



5.1. Pulsar Modes

Pulsar Enable: ON/OFF

Mode 1: Display message with white LEDs first, then white OFF, then amber ON

Mode 2: Display message with both white and Amber LEDs, then white OFF amber still ON.

Mode 3: Display the whole sign with white LEDs, then white OFF and amber (message) ON.

Mode 4: Display the whole sign in alternate white LEDs (to save power), then white OFF and amber (message) ON.

Mode 5: Display white LEDs where the message is not present, then turn OFF the white and turn ON the amber (message).

5.2. Pulsar Time

- The amount of time the pulsar is ON during any given frame.

5.3. Pulsar Brightness

- Pulsar LED brightness goes from 1 to 200%.

5.4. Pulsar Blank Frame

- This option allows the user to choose a blank frame that uses pulsar on it.

Example: If the user created a sign with 2 frames, one with content and one blank frame. The pulsar will be turned ON two times.

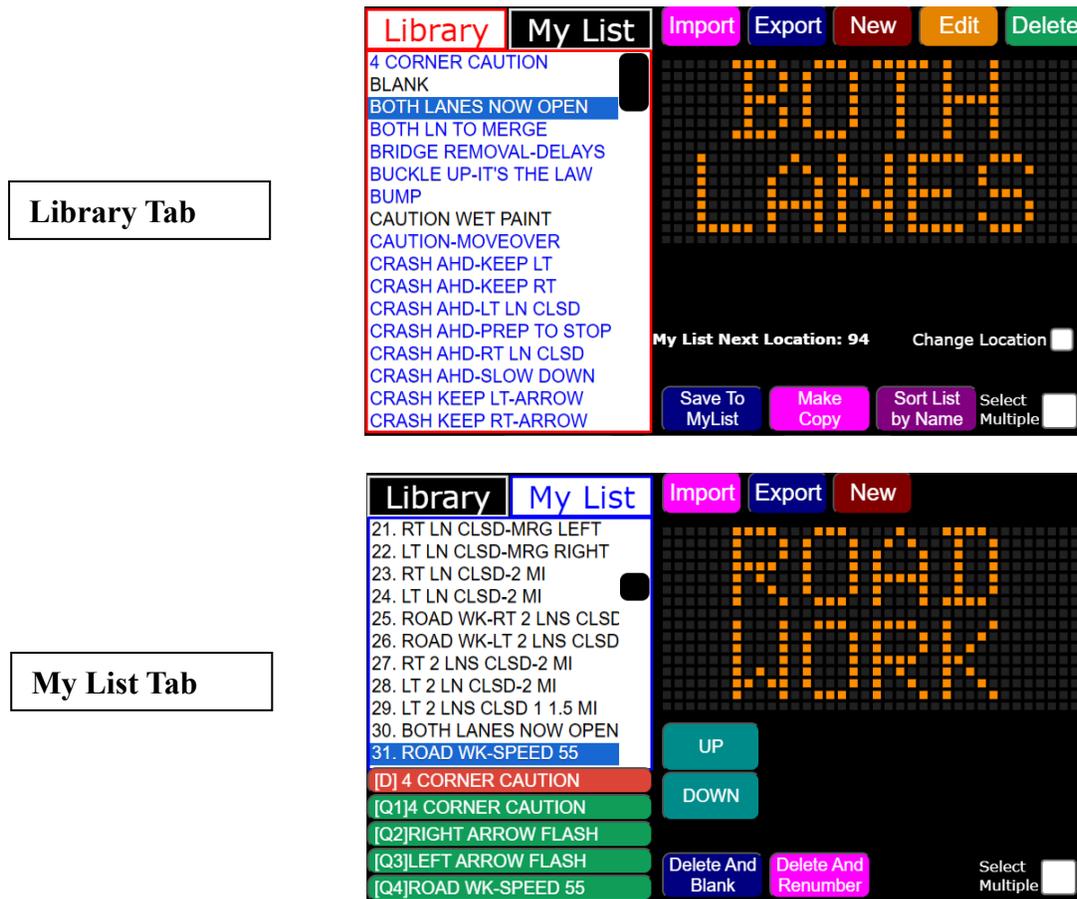
**Note: Pulsar time and brightness settings in each mode are stored separately*

Chapter 6: Message Manager (Level 2)

The message manager user has the ability to Import or Export messages to and from a USB drive, Edit already created messages, Delete messages, Make a copy of existing messages, Set a message from Library to My List. Users can reach this page by pressing the **Home/Menu** button and clicking the **Message manager** button.

- Library: All the messages available that are stored in the controller.
- My List: is a subset of Library, contains messages that are “active” and available to be displayed on the sign. In the Library tab, messages with blue texts are in My List.

Ex: The controller has 200 messages (Library) but the owner wants to make the most used 50 messages available for the user (My List) so the User doesn't need to scroll through 200 messages to select a message.



6.1. Import/Export

- Users can Import and Export messages from a USB drive. Once a USB drive is connected press Import button. If there are any messages in the USB drive, they will show up in a pop-up screen, select all the messages needed and click download button.
- User can Export messages, after connecting the USB and select the messages and press Export.

6.2. Edit

- Users can edit a message by selecting it and clicking the Edit button. It will put the message into the create edit page with the data where the user edits and saves the message.



6.3. Delete

- Users can delete messages by selecting one or more messages and then clicking Delete button.

Note: Delete operation is permanent, if a message is part of My List, it first needs to be removed from My List before deleting it.

6.4. Set My List

- User can select a message(s) and click “Set to My List” to make it an active message. There is a “Select Multiple” option which will let the user select multiple messages.

6.5. Make Copy

- Users can make an exact copy of an already existing message. This function is useful when the user is trying to create a message like an existing message.

Example: Existing message: “ROAD CLOSED MOVE RIGHT”
 New message: “ROAD CLOSED MOVE LEFT”

Step 1: Select message and click the Make Copy button.

Step 2: A copy message will be added to the end of the list, Select the message and click Edit button.

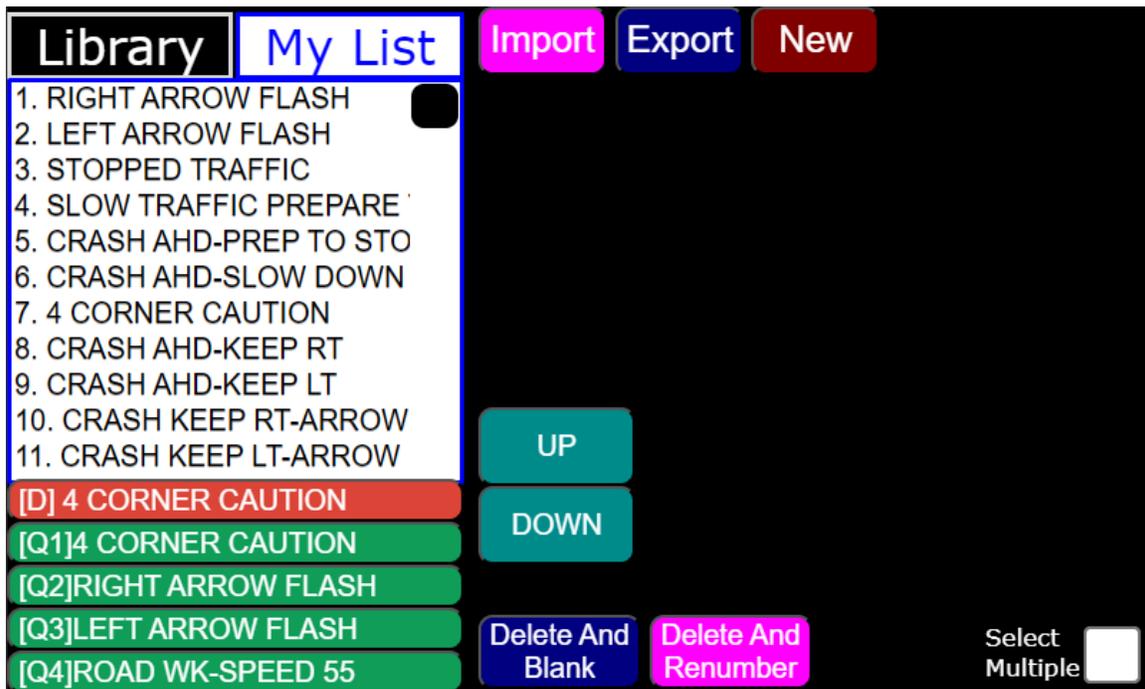
Step 3: You will be transferred to the Create/Edit page with the message data, where you can edit the message and give it a new name.

6.6. Sort List by Name

- Users can sort the message list by the name if the list is not in order.

6.7. My List

- Users can switch between Library and My List by clicking on the respective tabs.



- When the user switches to My List there will be new options available. Where user can assign Default messages [D], 4 quick messages [Q1, Q2, Q3, Q4].
- These can be assigned simply by selecting a message from the My List then click on the respective option.



Default Message [D]: **It is recommended that “Caution message” is used as the Default message.** This is what the message will switch to in a low battery condition.

WARNING: Please follow MUTCD/DOT rules on Warning/Caution messages.

6.8. MOVE UP/DOWN

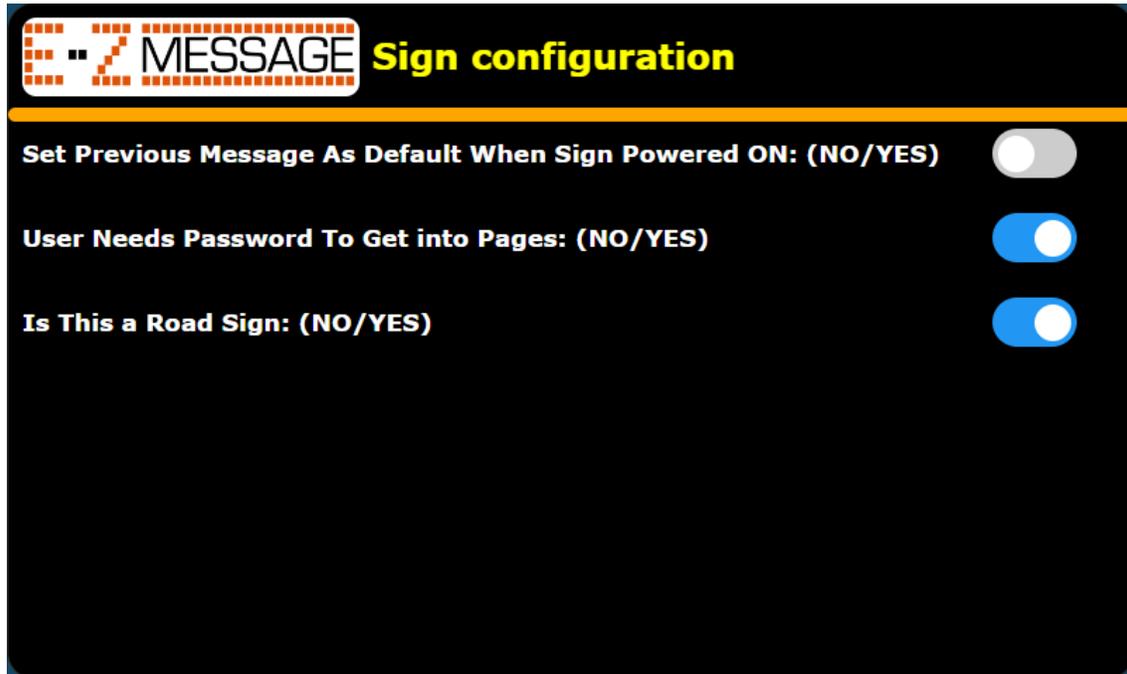
- Users can set the order of the My List by moving the message up or down by clicking the UP/DOWN buttons, once the desired list is achieved click the OK button.

6.9. Delete and Renumber

- Users can remove selected message(s) from the My List by selecting and clicking Remove from My List.

Chapter 7: User Sign Configuration (Level 2)

Users have the following options when setting up a user sign configuration. Users can reach this page by pressing the **Home/Menu** button and clicking the **User Configuration** button.



7.1. Set Previous Message As Default When Sign Powered ON

- If this option is selected, when the sign is turned ON, it will display the last message it displayed instead of the default message.

Note: Be cautious if using this option as a Road Sign because it can direct traffic when it's turned on.

Ex: User turns on sign with message displaying “ROAD CLOSED MOVE RIGHT”,

- If this option is set to YES, when the sign is turned back ON “ROAD CLOSED MOVE RIGHT” will be displayed.
- If this option is set to OFF, when the sign is turned back ON Default Message (CAUTION Message) will be displayed.

Note: It's better to set YES for signs that will stay at a permanent location and NO for the signs that are mobile.

7.2. User Needs Password To Get into Pages

- This option lets the user turn off password features to get into advanced pages.

Note: It's better to leave this option set to YES.

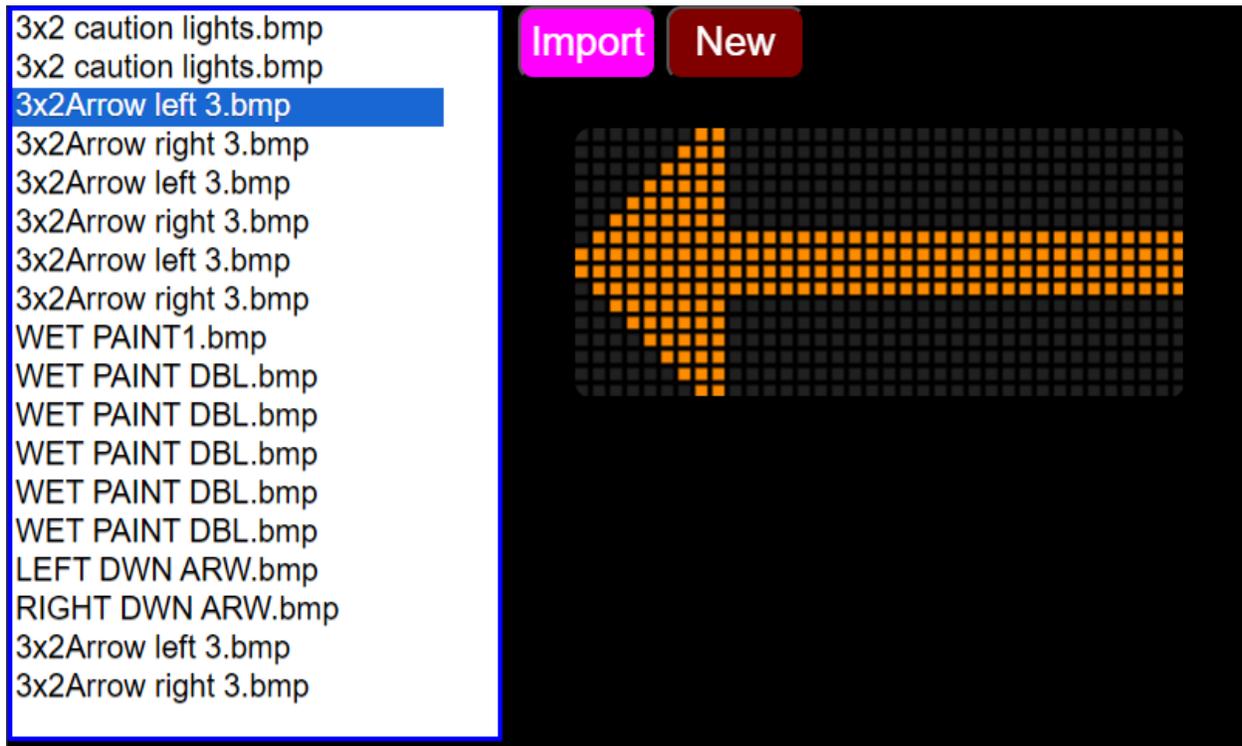
7.3. Is this a Road Sign (Not currently available)

By selecting NO on this option, it allows user to use some smaller fonts or approved images when making messages which are not allowed by DOT.

WARNING: Please follow MUTCD/DOT rules when making ROAD SIGN messages.

Chapter 8: Image Manager & Creator (Level 2)

Image Manager displays all the images present in the controller. Users can reach this page by pressing the **Home/Menu** button and clicking the **Image Manager** button.



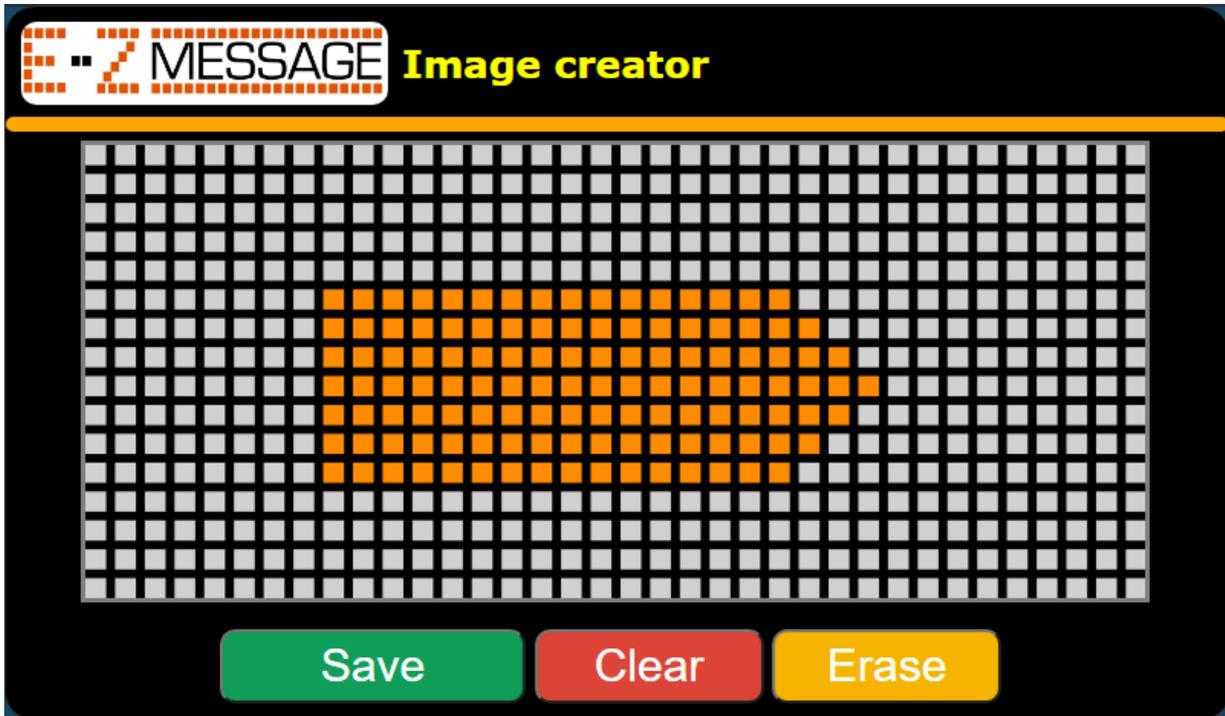
8.1. Import

- Users can import new images to the controller from USB or a computer. The image should be in **.bmp** (Bitmap) format. Please refer to Chapter 9 how to create **.bmp** (Bitmap) images using paint on a windows computer.

8.2. New

- By clicking the “New” Image creator page will be presented where the user can create an image by drawing on the canvas provided and save it to the controller.

Image Creator lets the user create different images by drawing on the canvas. User can reach this page by pressing the **Home/Menu** button and clicking the **Image Create** button.



8.3. Erase

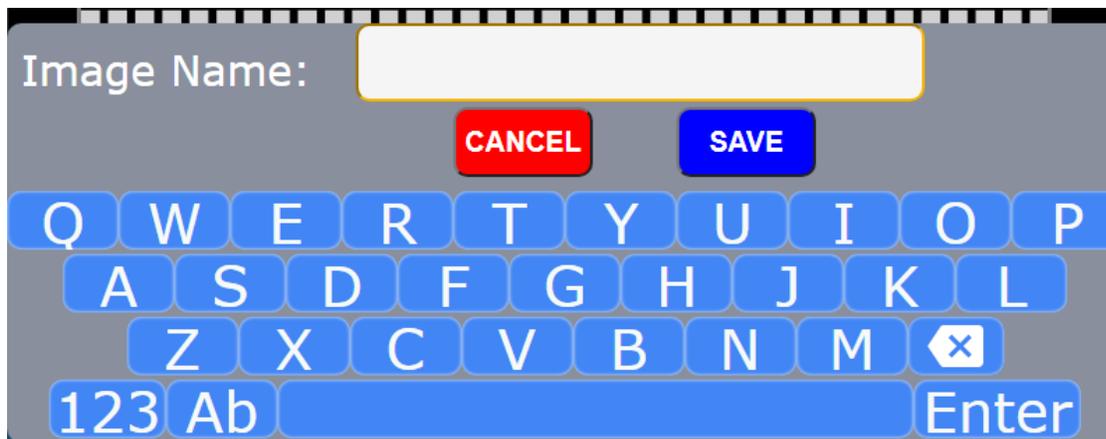
- Users can click the Erase button and erase unwanted pixels, by clicking the Erase button again stops this function.

8.4. Clear

- Clear allows the user to clear all the pixels on the canvas.

8.5. Save

- Once done, the user can click the save button and give Image a name and save the image to the controller.

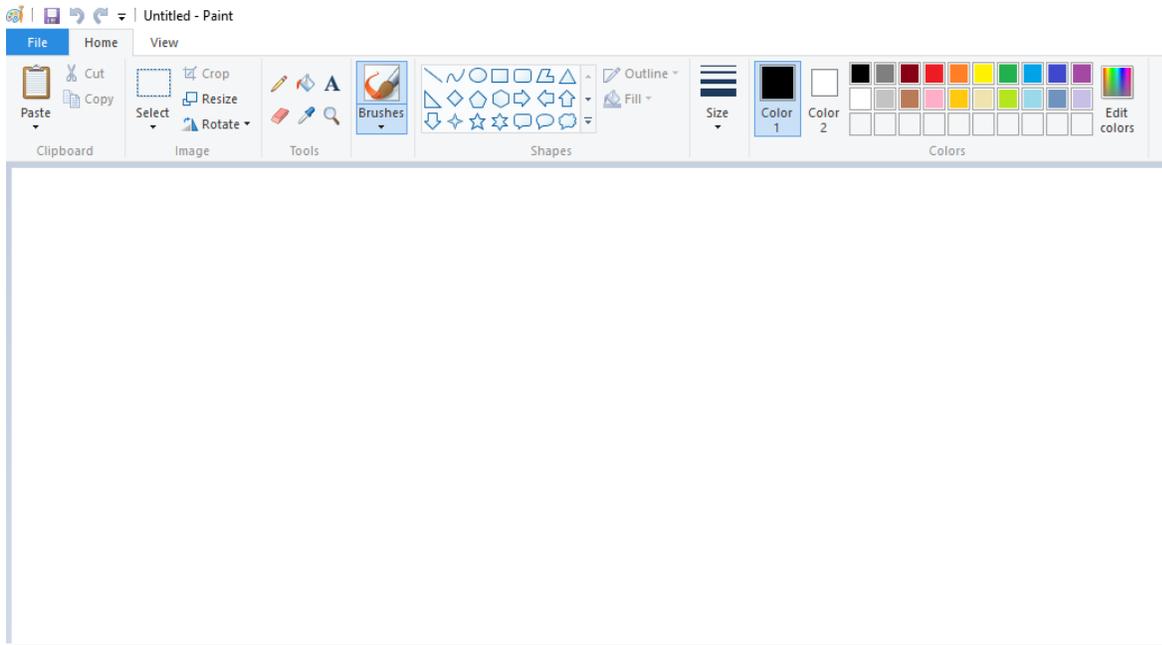


Chapter 9: How to create Bitmap (.bmp) images from a computer. (Level)

Users can create images using a computer and import them into a sign.

9.1. Open paint

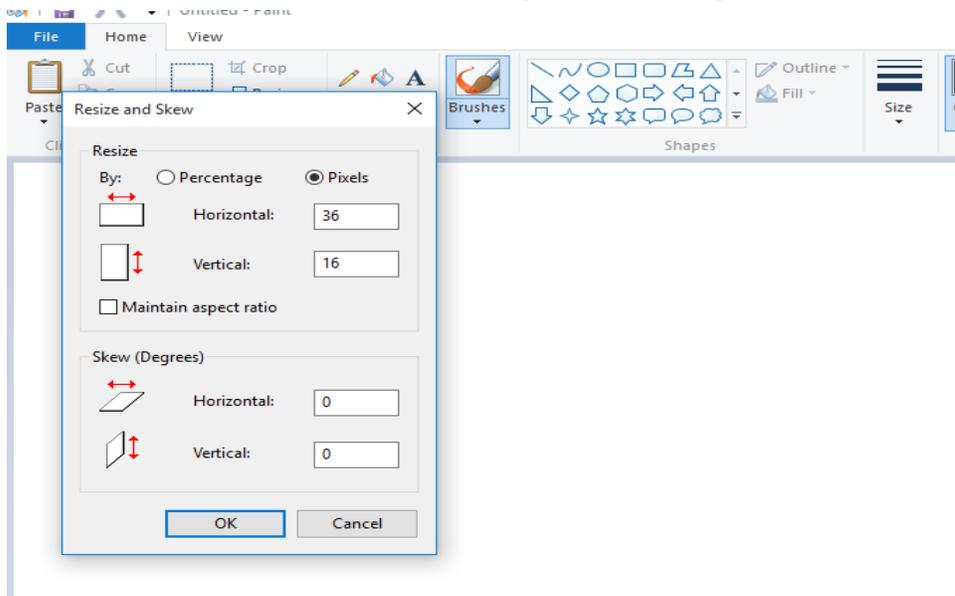
- Open paint using the start menu on your windows computer.



9.2. Resize Image (Refer to Paint Properties)

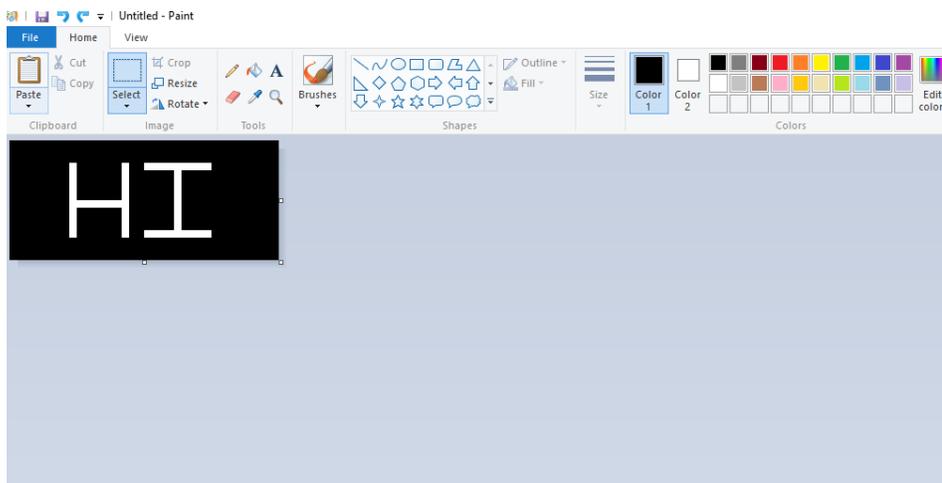
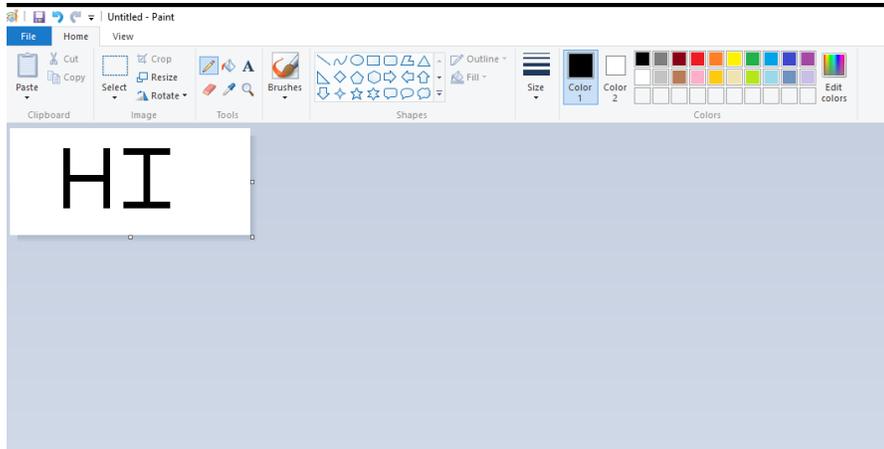
- Click on the “Resize” button, and select “Pixels”, Uncheck the “Maintain aspect ratio box”. Enter the number of pixels (3 x 2 block sign is 36 x 16 pixels).

Note: 1 panel is 12 x 8 pixels.



9.3. Zoom window and draw

- 12.2 will create a very small box to draw at the top left corner, Zoom on the box to the maximum level allowed and select the pencil tool.
- Now you should be able to draw on the canvas one pixel at a time. Please use black color and dots will light up on the sign.



- If user wishes to revert to the image, right click on the image and press Invert color option.

9.4. Save the image

- Once done with the changes user needs to save the images by selecting File→ Save as
- Once the save window pops up. Select Monochrome Bitmap from the drop-down list.

File Name: Give appropriate name

Save as type: Monochrome Bitmap (*.bmp;*.dib)

Chapter 10: Sign Clone & USB Function (Level 2)

This page allows the user to Export all the sign messages and settings or Clone already existing sign. Users can reach this page by pressing the **Home/Menu** button and selecting the **Sign Clone & USB Functions** button.



10.1. Export All

- This option will export all the messages and settings from the controller and save them to a USB drive in .zip format. The file name will be “EZMsgData-(Controller serial number).zip”

10.2. Import All (Clone)

- This option allows users to import everything (clone) from a .zip file (usually created by the export all option). *This will erase all the current data in the controller and replace them with the new data from the zip file. It is recommended to export all data as a backup before using this option.*
- To clone all the data to the controller, users need to plug in the USB drive with the .zip file, select “Import All (Clone)” button. A popup will appear showing all the .zip files in the USB drive. Select the desired zip file then press “download”. The process might take a few minutes.

10.3. Import Settings Only

- This option allows user to ONLY import the settings from a .csv file or .zip file (messages in a .zip file will not be imported if this option is used).

10.4. Import Messages Only

- Similar to Import Settings Only option, but to import messages only from a .zip file.

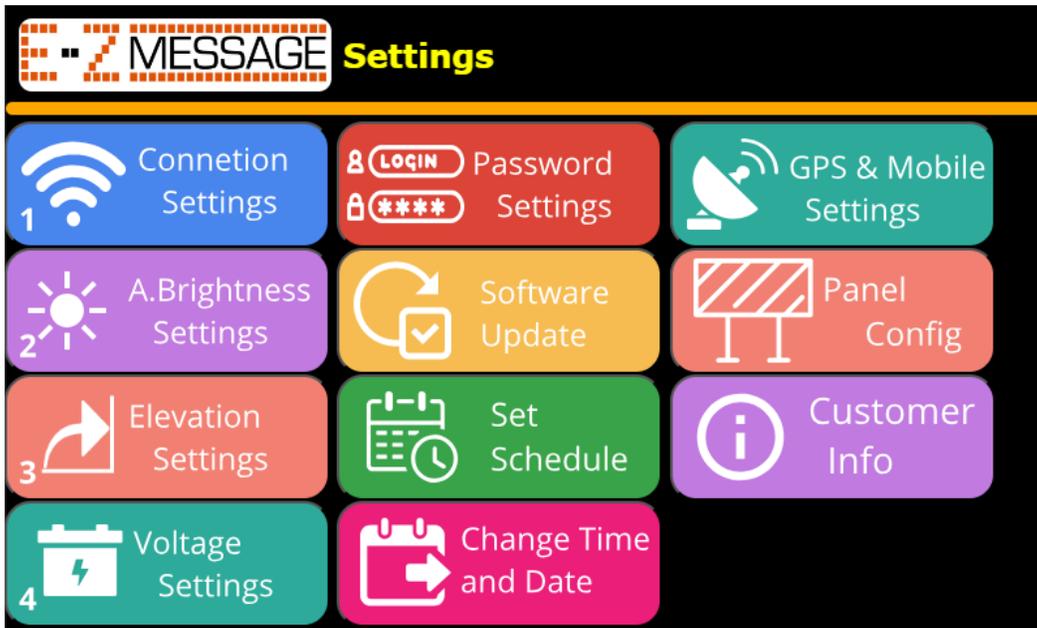
Warning: Import/ Export function takes a significant amount of time based on the number of messages present in the controller so please be patient and don't abort the operation.

10.5. Download Controller Data Log

- The controller keeps a record of its operations in a log file for debugging and diagnostics purposes. This option allows users to download the log file into a USB drive to analyze it later.

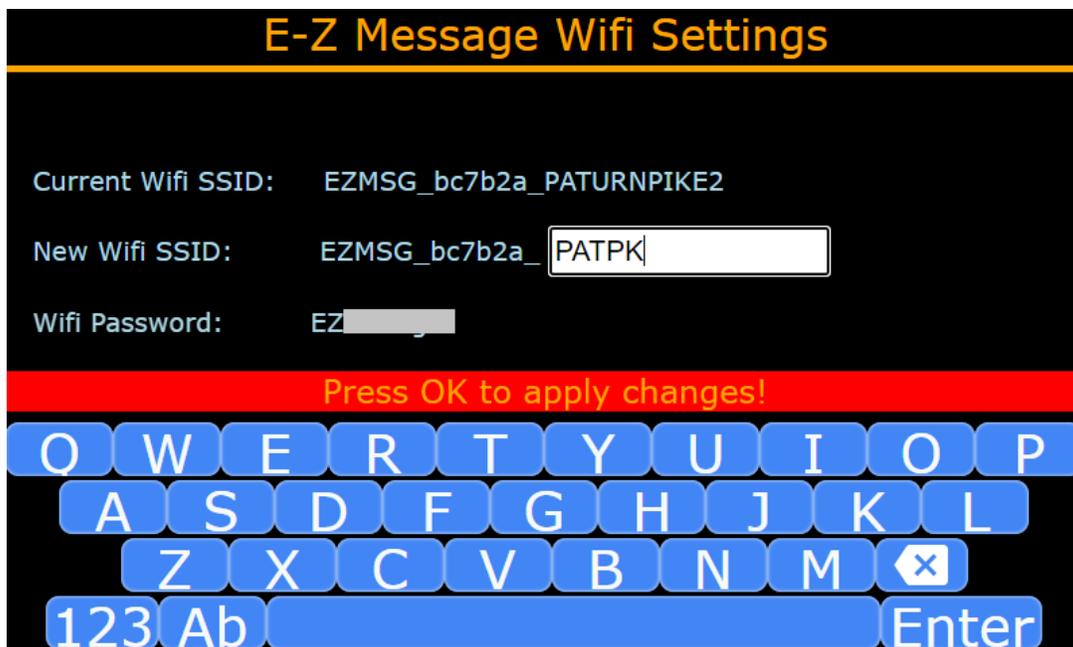
Chapter 11: Settings (Level 2)

Settings menu consists of all the advanced settings related to the sign. Users can reach this page by pressing the **Home/Menu** button and clicking the **Settings** button.



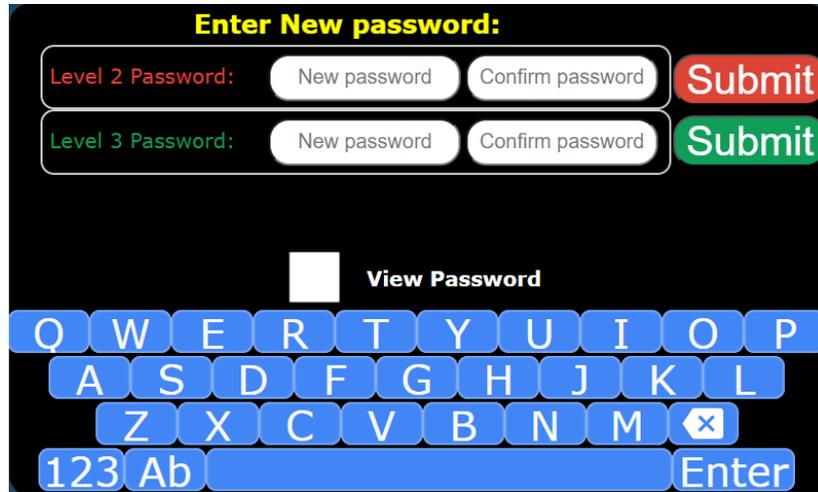
11.1. Connection Settings (Level 2)

- E-ZMessage controller Wifi SSID contains 3 parts: EZMSG, unique code and suffix separated by underscores “_”.
- This setting allows users to change the Wifi suffix by simply type into the text box, then press “OK” button. *Maximum 16 characters.*



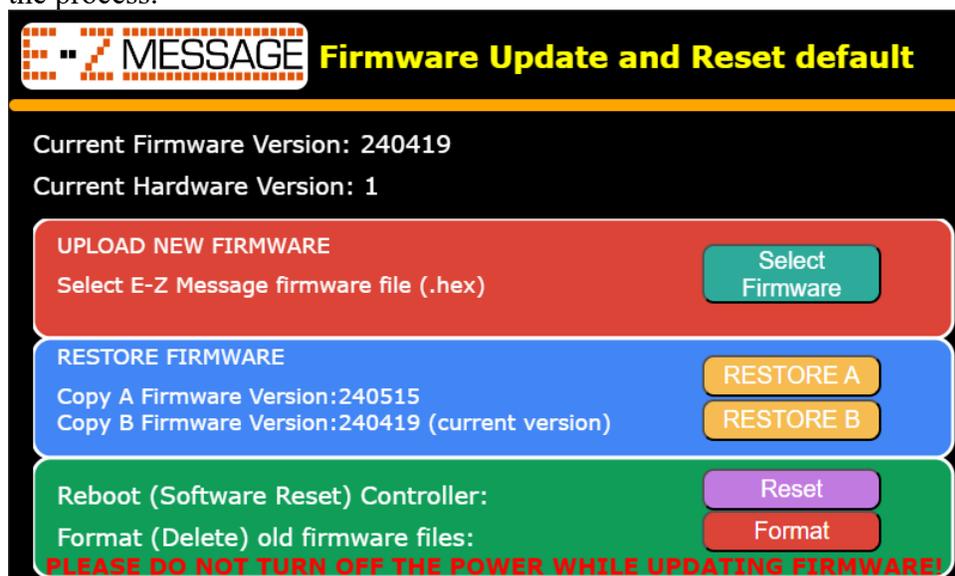
11.2. Password Settings (Level 2)

- Depends on the current logged in level, users will see one or multiple password levels that can be changed. Higher authority users can change the password of the lower levels.
- To change a password, simply type in the new password and confirm it (type in a second time to confirm), then press “Submit” button.



11.3. Software Update (Level 2)

- Controller software (firmware) can be updated over the air (OTA), check with Trafcon support for the latest firmware.
- In this page, users can see the current firmware and hardware versions of the controller unit.
- To update firmware, put the .hex file (provided by Trafcon) into a USB drive and plug in. Press “Select Firmware” and a popup will appear showing all the .hex files. Select the correct .hex file and press “upload”. Another popup will appear showing the requirements for the new firmware to be installed.
 - Check if the Current Hardware Version is supported by the new firmware. If not, press “Cancel” and contact Trafcon support.
 - If the firmware is good and the hardware is supported by the new firmware. Press “OK” to continue the process.



- The controller will keep 2 latest copies of the firmware (that got updated OTA) in case users want to restore to the old firmware for some reasons. To restore to a different firmware version, simply press the “RESTORE A” or “RESTORE B” and wait for the process to complete.
- Users can manually reboot the controller by pressing the “reset” button.
- User can also erase all firmware copies stored in the controller by pressing “Format” button. This will erase Copy A and Copy B firmware if existed.

11.4. Panel Config (Level 2)

This setting page allows users to see basic information of the sign panel configuration and change it to fit the physical sign.

- On the left is a preview of the panel configuration. The numbers on the top left corner of each panel are the panel ID.
- Number of Panels: The total number of Panels detected by the controller. If this number does not match the physical number of panels on your sign, please check the panel connection then run the “Auto Config” (see below)
- Panel Config. (CxR): This shows the panel configuration in Column x Row. In the example, it is a 3x2 sign (3 columns and 2 rows of panels), a total of 6 panels.
- Panel Orientation: Horizontal or Vertical. This is the orientation of each individual panel.
- Sign Pixel Resolution: The total number of pixels of the sign represented in columns x rows. In the example, it’s 36x16 (each panel is 12x8 Horizontally or 8x12 Vertically), so a 3x2 sign with horizontal panels will be 36x16 pixels.
- If the number of panels detected by the controller does not match the number of physical panels, then this “RUN AUTO CONFIG” feature will force the controller to reinitialize the detection process and change the panel configuration based on the number of panels it detected that connected to the sign. Users can also select panel orientation before running auto config.

MESSAGE Sign Panel Configuration							
<table border="1"> <tr> <td>40</td> <td>50</td> <td>60</td> </tr> <tr> <td>30</td> <td>20</td> <td>10</td> </tr> </table>		40	50	60	30	20	10
40	50	60					
30	20	10					
Number of Panels	6						
Panel Config. (C x R)	3 x 2						
Panel Orientation	Horizontal						
Sign Pixel Resolution	36 x 16						
<input checked="" type="radio"/> Horizontal <input type="radio"/> Vertical							
<input type="button" value="RUN AUTO CONFIG"/>							

11.5. Elevation Settings (Level 2)

Use the **Left/Right** arrows to switch between options and **Up/Down** arrows to increase or decrease value. After changes Select **OK** to confirm changes.

Elevation motor settings:

Enable elevation Motor	<input checked="" type="checkbox"/>
Sign raise time (Seconds):	<input type="text" value="6"/>
Sign lower time (Seconds):	<input type="text" value="6"/>
Sign raise auto stop current (Amps):	<input type="text" value="5"/>
Sign lower auto stop current (Amps):	<input type="text" value="5"/>

NOTE: USE ARROW KEYS TO CHANGE VALUES

- Enable Elevation Motor: Select this if your sign is equipped with electric elevation motor(s).
- Sign raise/lower time (Seconds): The minimum time it takes to raise/lower the sign. The controller will not look for stop current until this time expired (Range: 1 to 100 Seconds)
- Sign raise/lower auto stop current (Amps): The electric current threshold to determine if the sign is completely raised/lowered. The controller will check the motor current and compare to this setting to stop the motor after the “sign raise/lower time” expired (Range: 1 to 50 Amps)

11.6. Voltage Settings (Level 2)

This setting allows users to select different voltage limits/thresholds reflect the actual battery usage and protect the battery from over discharging. Use **Left/Right** arrows to switch between options and **Up/Down** arrows to increase or decrease value. After changes Select **OK** to confirm changes.

Advanced voltage settings:

Battery over voltage (V)	16
Warning voltage (V):	11
Automatic caution voltage (V):	10.5
Shutdown voltage (V):	10
Caution delay (S):	60
Warning delay (S):	60
Shutdown delay (S):	60

NOTE: USE ARROW KEYS TO CHANGE VALUES

- Battery over voltage (V): Any value over this is considered over voltage.
Effects: Sign will be turned off; Battery icon turns red & Alarm flashes.
- Warning voltage (V): Any value below this is considered warning voltage.
Effects: Battery icon turns yellow & Alarm flashes. Message display normally if sign is on.
- Automatic caution voltage (V): Any value below this is considered Automatic caution voltage.
Effects: The current display message changes to default message, Battery icon turns red & Alarm flashes.
Note: Default message can be changed in message manager.
- Shutdown voltage (V): Any value below this is considered Shutdown voltage.
Effects: Sign is turned off; Battery icon turns blue & Alarm flashes.
- Caution/Warning/Shutdown delay (S): Every time a voltage reading crosses the threshold, it has to stay at least this many seconds of delay in order to confirm the next voltage state.

Example:

- a. Current voltage is 11.5V.
- b. System is constantly looking if the average voltage reading drops below 11.0V. If yes, goes to step c.
- c. A timer starts, counting up to 60 seconds. There will be 2 scenarios here:
 - After counting to 20s, the average reading now goes back up to 11.1V. In this case, the timer will be reset, no voltage state change and it goes back to step b.
 - After counting pass 60s, and the average reading now is still below 11.0V, system confirms a voltage state change to “Warning Voltage”, timer is reset and goes to step c
- d. System now is constantly looking if the average voltage reading drops below 10.5V or raise above 11.0V, then starting the timer accordingly...

11.7. Change Time And Date (Level 2)

The controller is equipped with a real time clock that runs off a capacitor that is not field replaceable, which can retain time for about a month without connecting to a power source. If it has not been powered for a while, date and time may be incorrect because it has lost time.

To change date and time, type in the appropriate box then press “Submit”.

Note:

- Only enter the last 2 digit of the year.
- Hour is in 24-hour format so 15 is 3PM

The screenshot shows a control interface for changing the time and date. At the top, there is a 'MESSAGE' icon and the title 'Change Time and Date'. Below this, there are six input fields for YEAR, MONTH, DAY, HOUR, MINUTE, and SECOND. The current values are 24, 5, 15, 15, 6, and 16 respectively. Under the YEAR field, there is a '20xx' label. Below the input fields, the current date and time are displayed as 'Wed 2024/05/15 15:06:16'. A green 'Submit' button is located to the right of the current date/time. At the bottom of the interface is a numeric keypad with buttons for digits 1 through 0, and a backspace key represented by a white 'X' on a blue background.

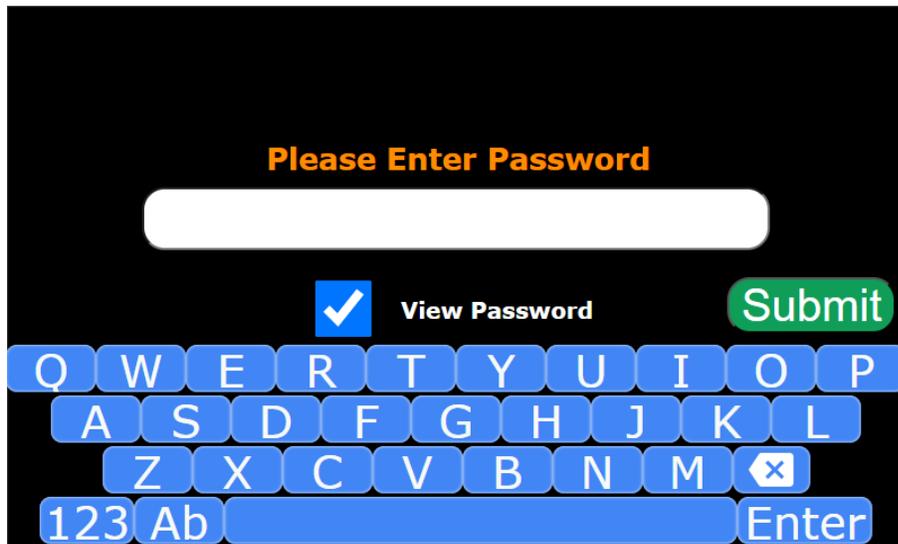
11.8. Set Schedule (Currently Level 2)

This feature allows users to schedule to display different messages during different time and days of a week. Once enabled, it will automatically run until users turn it off manually, changing current display message or it goes to low power mode.

Chapter 12: Password Login (Level 2)

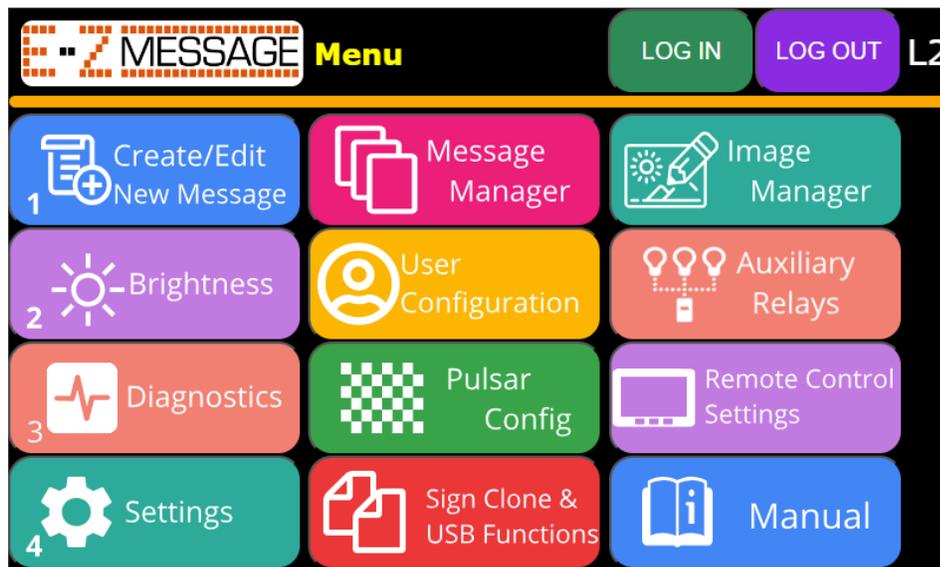
12.1. Login:

- For user to enter certain pages, a Level 2/Level 3 password is required. When the user is presented with a login screen, a password can be entered using the screen keyboard and select the submit button. Users can view the password by clicking the view password box. If the password doesn't match “***WRONG PASSWORD***” message will pop up.



12.2. Log Out:

- User has a current authorization level until the sign is turned off or Logs out of current authorization. Users can log out from the menu page by clicking “LOG OUT” button.



Users can see the current login level on the top right corner of the MENU page (L1/L2)

Trafcon E-Z Message Quick reference sheet

Level -1 (Basic User)

1. Turn On/Off the sign by pressing ON/OFF button. Power led indicates remote is powered ON.
2. Selecting message – Must be on the home screen (Press home/menu If not already there)
 - Option 1 – Use Quick Buttons 1,2,3,4, to preview a message press “OK” to confirm.
 - Option 2 – Use Left/Right arrows to preview messages, press “OK” to confirm.
 - Option 3 – Use Up/Down arrows display & scroll through the list, “OK” to confirm.
3. Brightness – Tap brightness icon on home screen, or press home/menu, then Brightness
 - Automatic or manual may be selected.
 - Manual setting can be changed with the slider bar, Timeout can be changed by clicking in the timeout box and using up & down arrows to increase/decrease timeout (Max 24 hours).
4. Elevation motor – From the home page, Use RAISE and LOWER buttons to Raise and Lower the sign.

Level -2 (Advanced User)

5. Create a new message – Press home/menu, then Create/Edit New Message
 - Must enter Level 2 password if not already logged in as an advanced user.
 - Create a message and add text and frames as desired.
 - Press play/stop to preview created message.
 - Press MSG save when complete.
 - Enter a message name.
 - Check boxes for “Save to active list” and “Display message immediately” if you want to see this on the sign immediately.
6. Message Manager – Press home/menu, then Message Manager
 - Allows you to add or remove existing messages from “My List” available for display.
 - Allows Copy, Edit & Delete of messages.
 - Assign quick and default messages, Change order of “My List”.
 - Allows message copy to/from USB stick.
7. Sign Clone & USB Functions – Press home/menu, then Sign clone & USB Functions
 - Export sign messages and settings.
 - Clone a sign from the exported copy.
8. Connecting with a computer or tablet:
 - User can use a computer or tablet to connect to sign and use as remote. The user needs to select SSID **(Starts with E-Z_MSG)** from the WiFi device list and enter the password from the decal on the controller.
 - Windows Computer/Tablet with WIFI: Connect to E-Z Messenger network, Open browser and type 192.168.10.1 in address bar and press enter.
 - Android Tablet: Connect to Trafcon network from settings→Connections→Wifi. Then Open chrome browser and type 192.168.10.1 in address bar and press enter.
 - Apple iPad: Connect to Trafcon network from settings→Connections→Wifi. Then Open chrome browser and type 192.168.10.1 in address bar and press enter.

***Warning: Only one device can be connected to the sign at any given time.**

Some functions may not be available without official Trafcon HHR.

9. Advanced Elevation setup: Press home/menu→Settings→ Elevation Settings
 - Enter appropriate Elevation raise and lower times.
 - Enter appropriate auto stop current limits.
 - Time is the run time before it looks at the current limit. The sign then runs until it reaches the current limit.
 - Refer to chapter 11.5 for a detailed explanation of each option.
10. Advanced Voltage setup: Press home/menu→Settings→ Voltage Settings
 - Enter all the values requested by the customer.
 - Battery turns yellow during Warning voltage (11.5V) and switches to red and locks to default message in Automatic caution voltage (10.7V). Default message can be set in the message manager.
 - Refer to chapter 11.10 for a detailed explanation of each option.