Advance Warning Variable Message Sign (AWVMS) Installation & User Manual



PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE OPERATING THE UNIT

Version 4.9

9th July 2026

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Online Support:

Visit www.rtl.co.nz website for the latest version of this installation manual. Search AWVMS or scan the QR Code to view our Product Tutorial & Resource Page or Please get in touch with us via our online Book a Service Form.

1. Package Items

1.1 Supply only Package - ET AWVMSC EZ3):

Twin LED Advanced Warning Lights (Xenons)
RGB LED Colour Panels
LINAK Lifting System
Mid Hinge Frame
8" Touch Screen Tablet + network cable
In-Cab Up/Down Switch + 5m cable

2x Dedicated AGM Batteries
230v 40A Charging System
Heavy Duty Battery Box
NOTE: Beacons sold separately

Optional DCDC Alternator Charger available – see brochure for more details.

1.2 Install Package (- ESI100AWI):

ABOVE PACKAGE PLUS:
Installation to Vehicle Deck
Wiring in Tablet (power)
Mounting of Up/Down Switch
2x installed LED Beacons + Switch
Mounting Tablet Mount

Testing & Commissioning
Red / White Chevron onto Tailgate
Quick Operating Guide

NOTE: Installation is Ex RTL Auckland

2. Cleaning & Care

The AWVMS is designed for outdoor operation; however, correct cleaning and storage practices will help extend the service life of the equipment.



2.1 Cleaning:

- Do not use high-pressure water cleaners, pressure washers, or steam cleaning equipment. Although the enclosure is IP65 rated, high-pressure water may force moisture past seals, potentially damaging internal components.
- If cleaning is required, wipe the external surfaces with a soft, damp cloth.
- Do not use abrasive cleaners, solvents, or harsh chemicals, as these may damage the enclosure, labels, or seals.

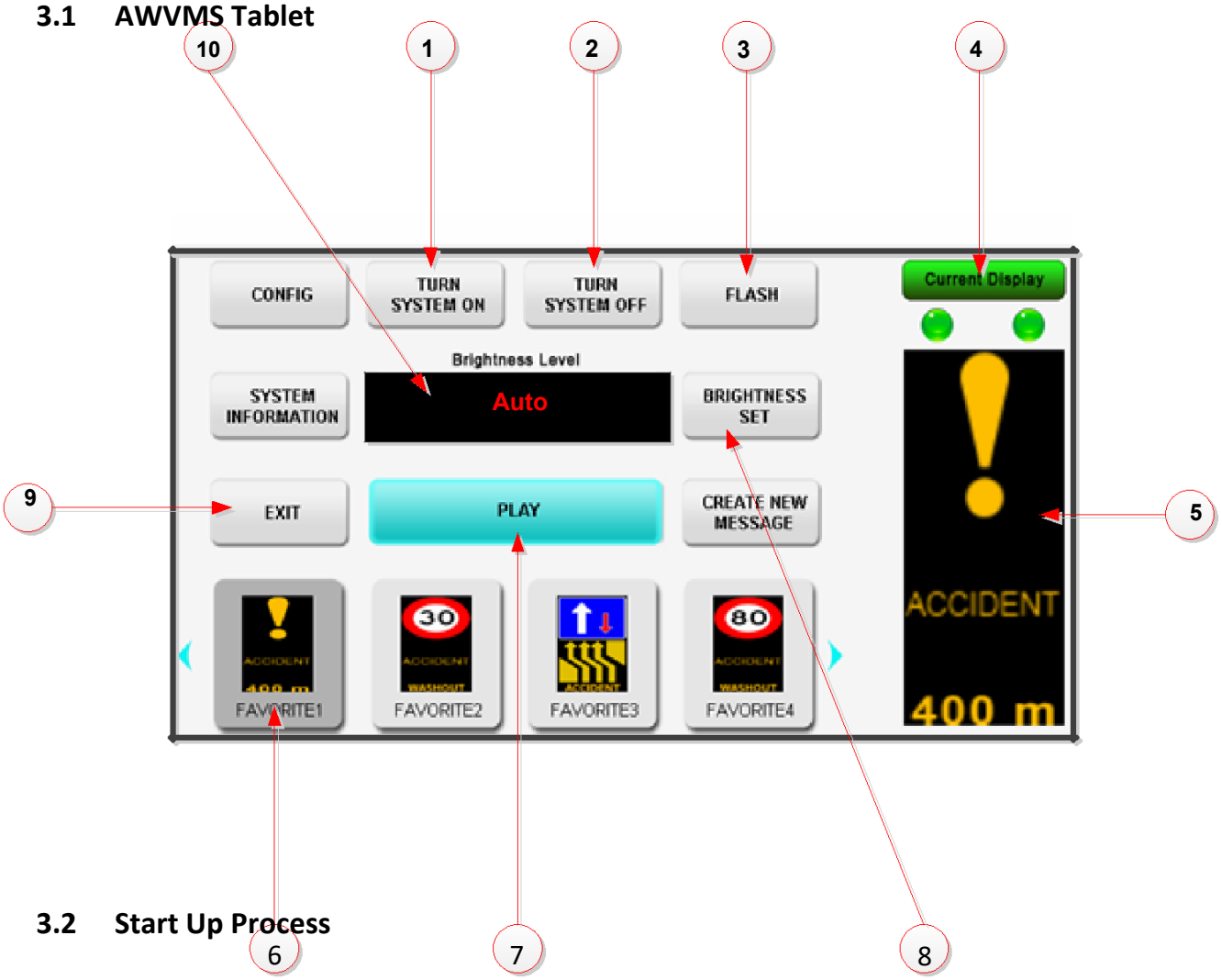
2.2 Storage:

- When not in use, store the AWVMS under cover in a clean, dry location whenever practical.
- If under-cover storage is not available, the unit may be stored outdoors in the raised position. However, under-cover storage is strongly recommended to minimise prolonged exposure to sunlight, rain, and other environmental conditions, helping to maximise the service life of the equipment.

Note: Damage caused by high-pressure cleaning or inappropriate storage practices is not covered under warranty.

3. Quick Operating Guide

3.1 AWVMS Tablet



3.2 Start Up Process

1. Turn ON the main power switch to the sign.

2. Put the sign in up-right position: Press and HOLD the Up button on the Rocker Switch (located in the Cab, near the tablet) until the board is fully upright. Note, as reference only, the tablet will display the board orientation (up or down). Press and HOLD the down button on the Rocker Switch to lower the board.

3. Switch ON the tablet (controller in the cab) by pressing and holding the power button (located the top left of tablet) for 3 seconds.

4. Wait for the tablet to boot up, you should see the AWVMS screen load up.
5. When the Current Display tab becomes green on the tablet at location 4 then press TURN SYSTEM ON 1

6. To resolve the brightness error, set the Brightness Level to AUTO using 10 send to sign using 8

7. Select an image from the favourites, e.g. Favourite 1 6

8. Press PLAY on the screen and select OK to the prompt. The image will be sent to the display. 7
9. Use FLASH to switch the two 340mm LED Advanced Warning Lights ON/OFF 3

3.3 Shut Down Process

1. Turn the two 340mm LED Advanced Warning Lights OFF using FLASH. 3
2. Press TURN SYSTEM OFF on the tablet. 2
3. Press EXIT on the Tablet. Select OK to the prompt. 9
4. Wait for the tablet to power OFF.
5. Bring the AWVMS board down to rest position: Press and HOLD the Down button on the rocker switch, until the board is all the way down.

3.4 On Return to the Depot

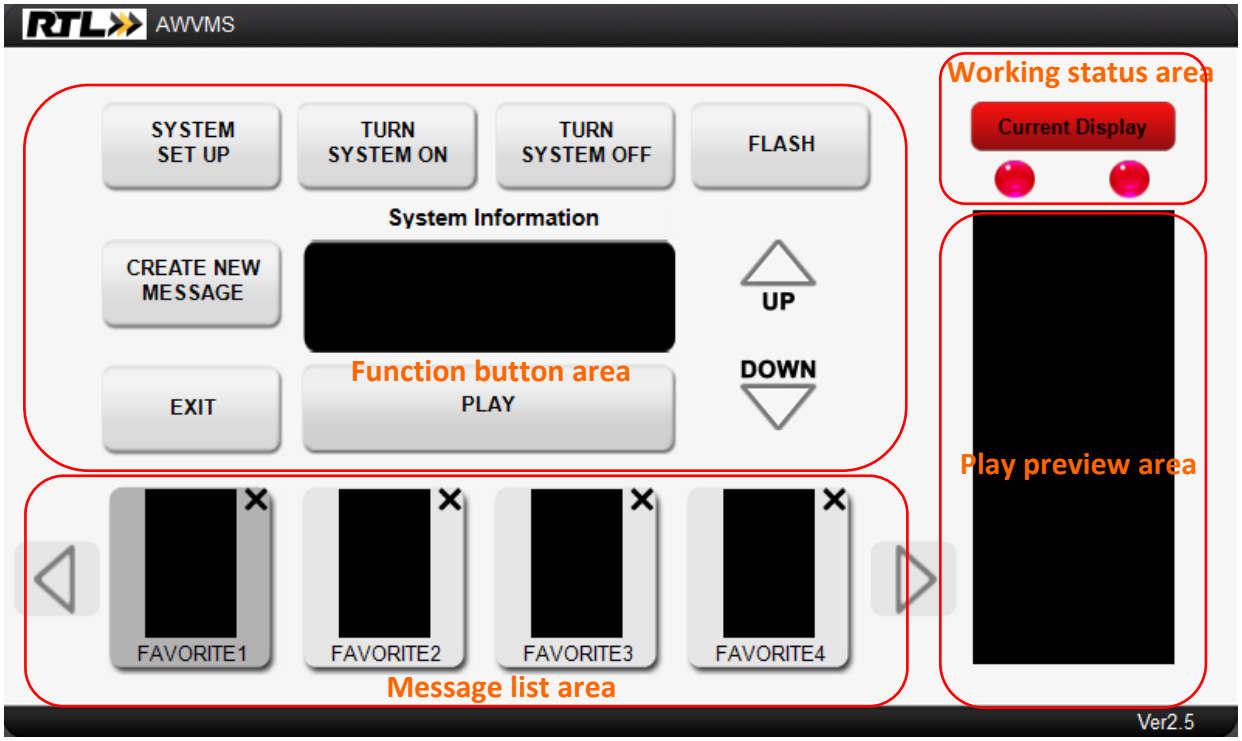
1. Turn the main power switch to the OFF position
2. Press TURN SYSTEM OFF on the tablet.

4. Software Introduction

This is the text-editing software designed for the RTL AWVMS. This software is capable of editing and sending messages, reading status from display, controlling the 340mm LED Advanced Warning Lights (Xenons) and setting the brightness of the display, etc.

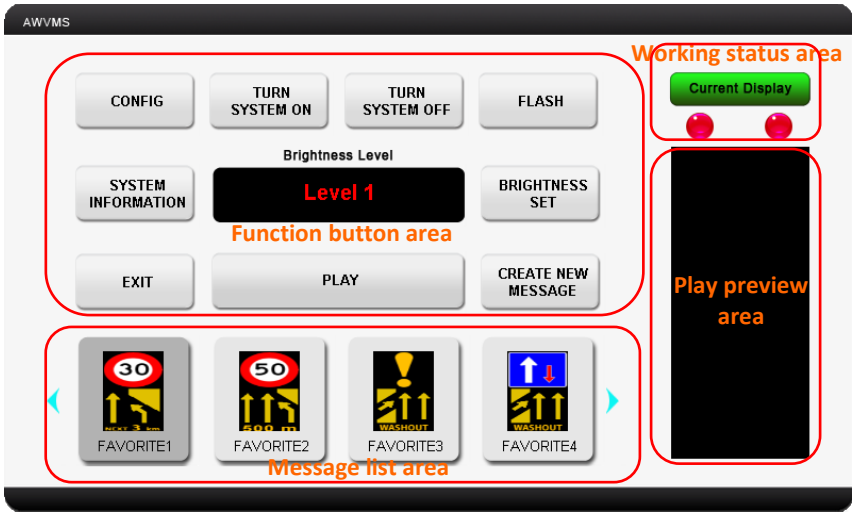
4.1 Main Interface

Version 2.5



V2.5 AWVMS Software: The System Set Up menu is password locked (Type “admin1”)

Version 1.6



V1.6 AWVMS Software: The System Information menu is password locked (Type “admin1”)

5. AWVMS Functions

5.1 Communication setting of tablet and LED display

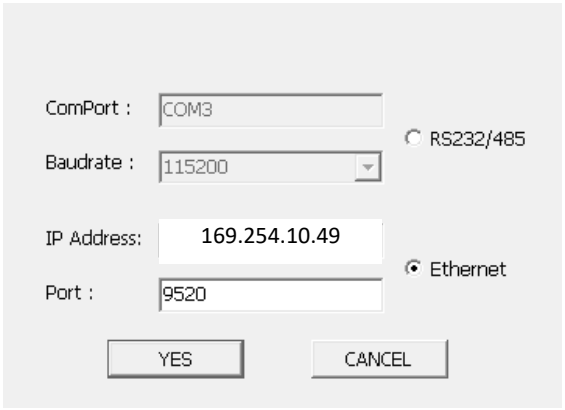
Click the function button "CONFIG". Both the network communication and serial port communication are available as options. Select network communication.

Click Ethernet, enter IP address and Port number (normally Port: 9520), click YES to activate the settings.

NOTE: The IP address is preset by RTL on the tablet for correct operation.

If the display can be successfully connected with the tablet, then the status monitoring zone 

will change to green, the brightness level of the display and the working status of the 340mm LED Advanced Warning Lights will also change to green



***Ethernet:**
IP Address (Address of LED display): 169.254.10.49
Port (Gateway port): 9520 (Note: Enter four digits if there is no gate port)
***RS232/485:** This option is not used on the RTL AWVMS

5.2 System Configuration

Accessing Settings:

V2.5 AWVMS Software: Click System Set Up. Password: Type “admin1”

V1.6 AWVMS Software: Click System Information. Password: Type “admin1”

Click on the function button “SYSTEM INFOMATION”. The software reads system information from the display (according to the communication settings) and shows details obtained from the display as shown below.

If the display fails to connect, the system configuration page will show “Not Connect”



Obtained display configuration successfully

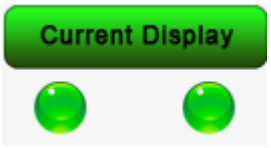
5.3 Display On/Off

Click on the function button “TURN SYSTEM ON”. This starts up the AWVMS display.

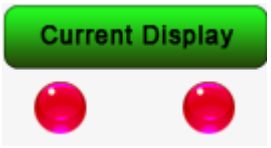
Click on the function button “TURN SYSTEM OFF”. This turns off the AWVMS display.

5.4 340mm LED Advanced Warning Lights (Xenons) Setting

The Interface of the status monitoring zone shows the working status of the two 340mm LED Advanced Warning Lights. If you want to change the Advanced Warning Light's working status, please click on function button "FLASH " as shown below on the left.



340mm lights are on



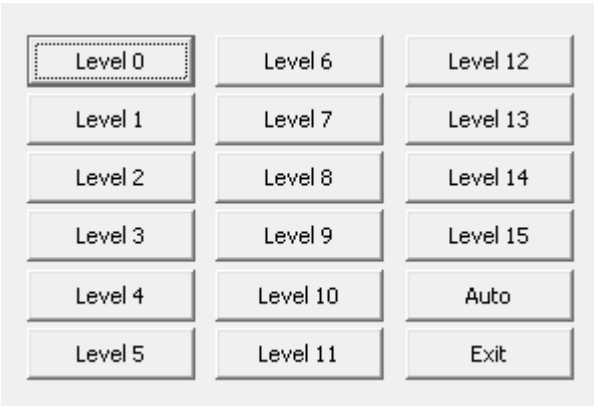
340mm lights are off

The flashing Advanced Warning Lights will turn off after you click on "FLASH".

5.5 Brightness Setting

Step 1: Click on 

below the "Brightness Level". The brightness level panel will pop up as shown below:



Step 2: Select the required level. i.e. Level 9.

Step 3: Click on "BRIGHTNESS SET" to set the new brightness.

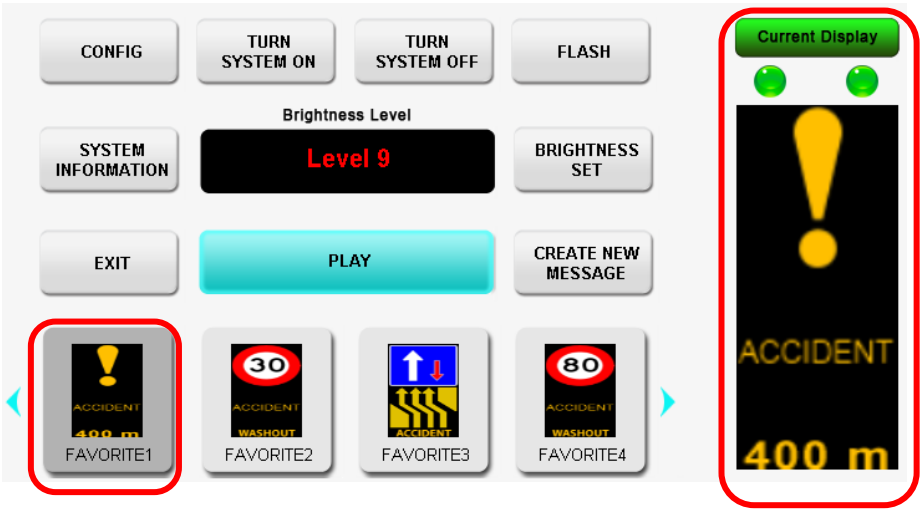
NOTE: We recommend that the brightness level to be set as "Auto". In this mode the display will automatically adjust to environmental condition.

5.6 Sending Information

Step 1: Select a message from list, i.e. FAVORITE1

Step 2: Click the “PLAY” button to send the message to the display.

After being sent successfully, the message will also be shown on the preview area.

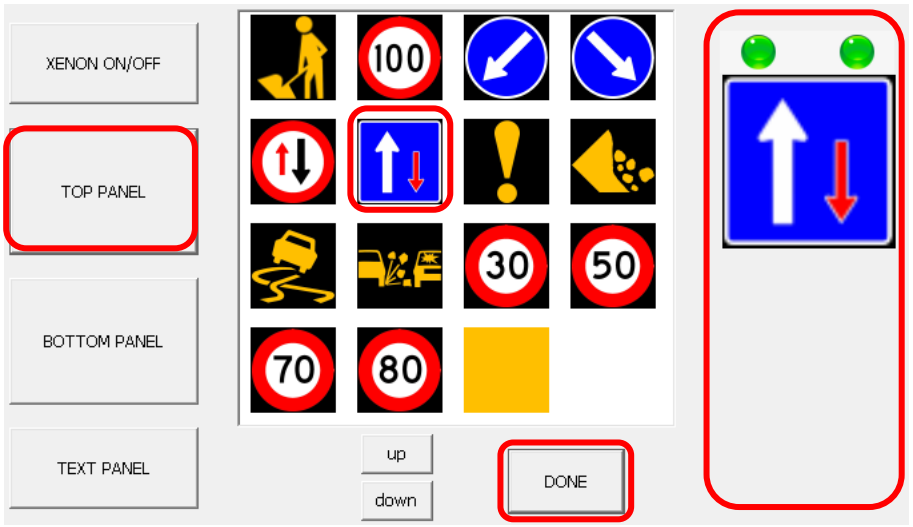


5.7 How to Create and add a new message to message list

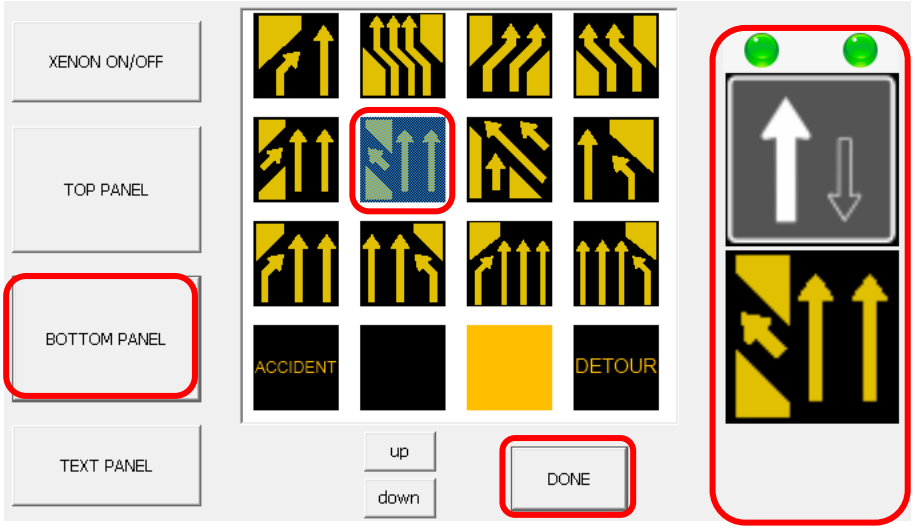
Step 1: Click “CREATE NEW MESSSAGE” to enter message-editing page;

Step 2: Click “Xenon/OFF” to set working status of the two 340mm LED Advanced Warning Lights;

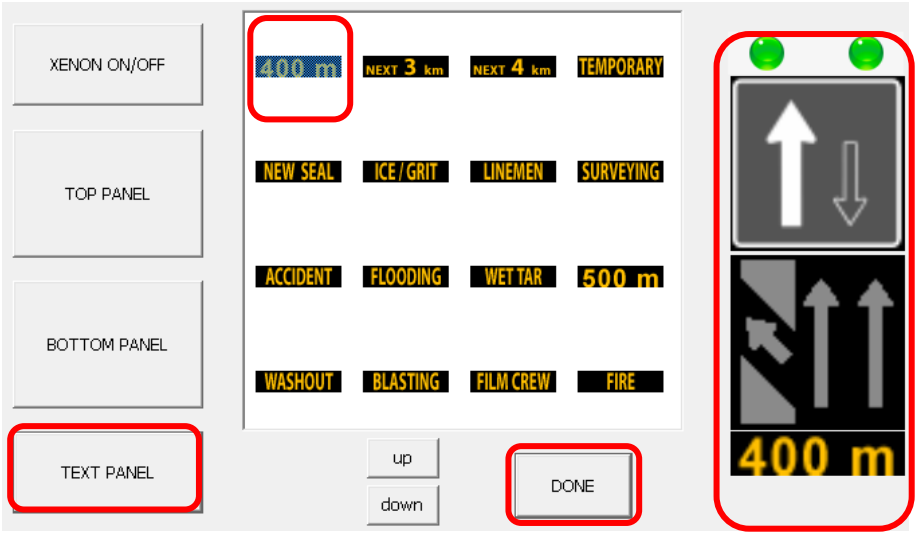
Step 3: Click “TOP PANEL” to select the image. Once the selected image shows on the right, then click “DONE”.



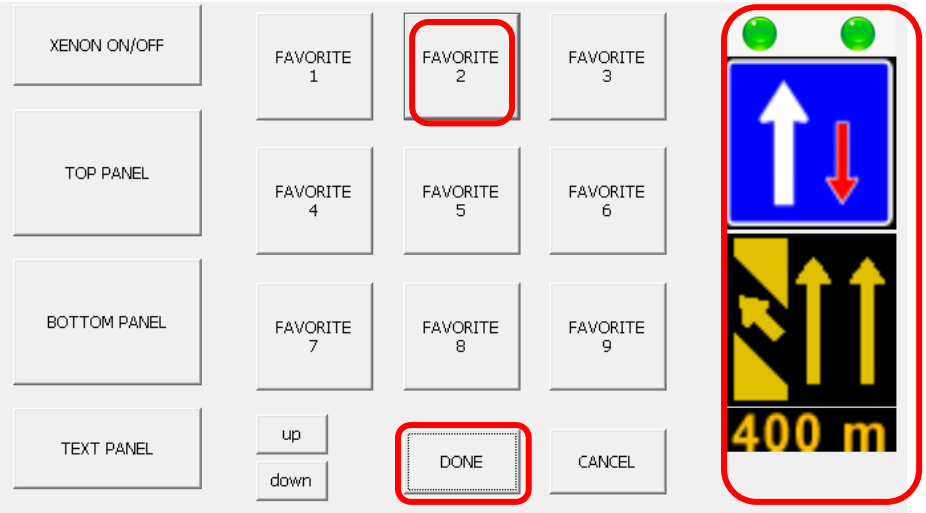
Step 4: Click “BOTTOM PANEL” to select image, then click “DONE”. The image set on the TOP PANEL turns gray. Now select the image for the bottom panel.



Step 5: Click “TEXT PANEL and select the desired text. Click “DONE”;



Step 6: Click “SAVE TO FAVORITE”. Select the save location i.e. “FAVORITE 2”, then click “DONE” to finish creating the new message.



Click “EXIT” to return to the main page. Check for the newly created message (it will be shown in the message list in “FAVORITE2”):



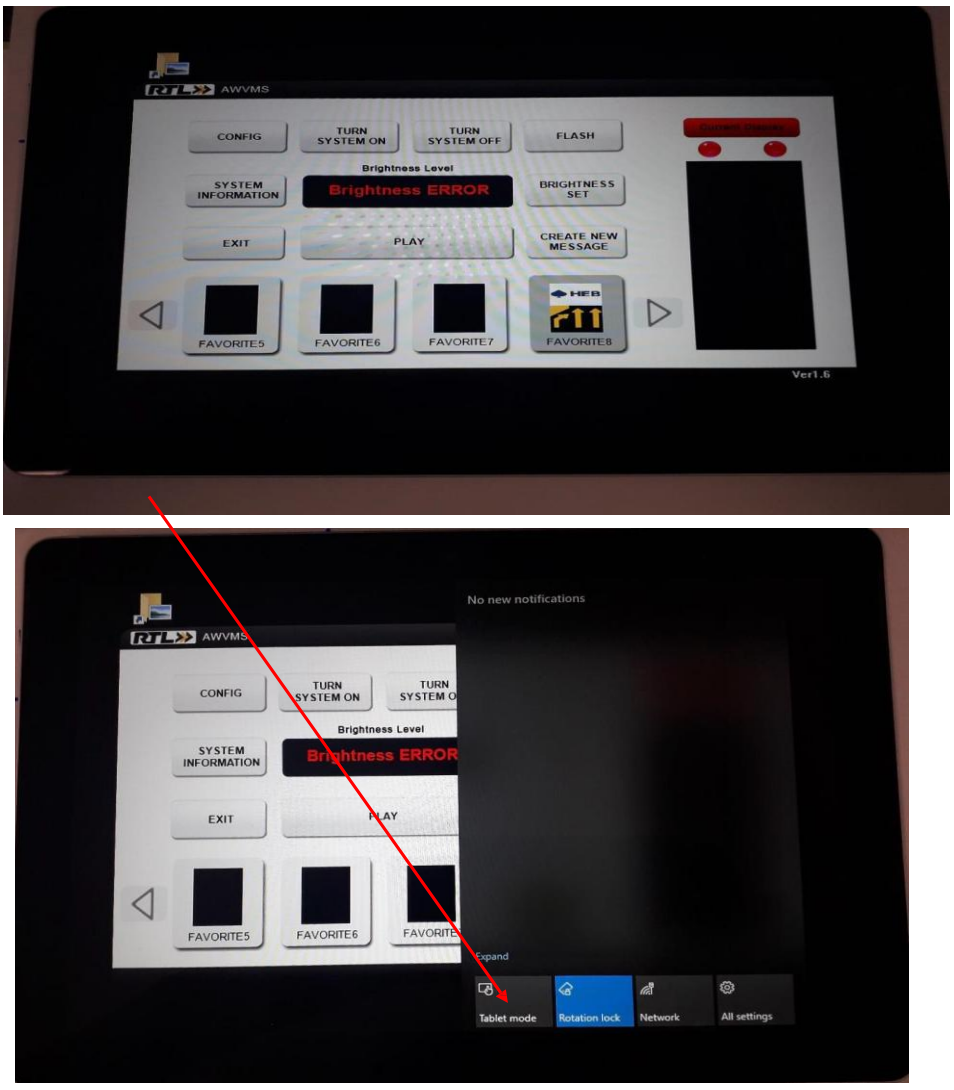
5.8 Adding a New Images / Custom Images to the Main board

The AWVMS is supplied with a comprehensive library of pre-loaded, compliant images suitable for most traffic management applications. Custom images can be created and uploaded to the controller if required.

The recommended image size for the Top Panel and Bottom Panel is 80 × 80 pixels, and 80 × 16 pixels for the Text Panel. Images with different dimensions or aspect ratios may not display correctly. The recommended file size is 4-50 KB per image.

Note: Excessive numbers of custom images, or images that have not been optimised, may slow communication with the display, resulting in longer message upload times or communication timeouts. If performance issues are experienced, remove unused custom images and rebuild favourites as required.

Step 1: Switch tablet on as per normal and the following screen should appear:

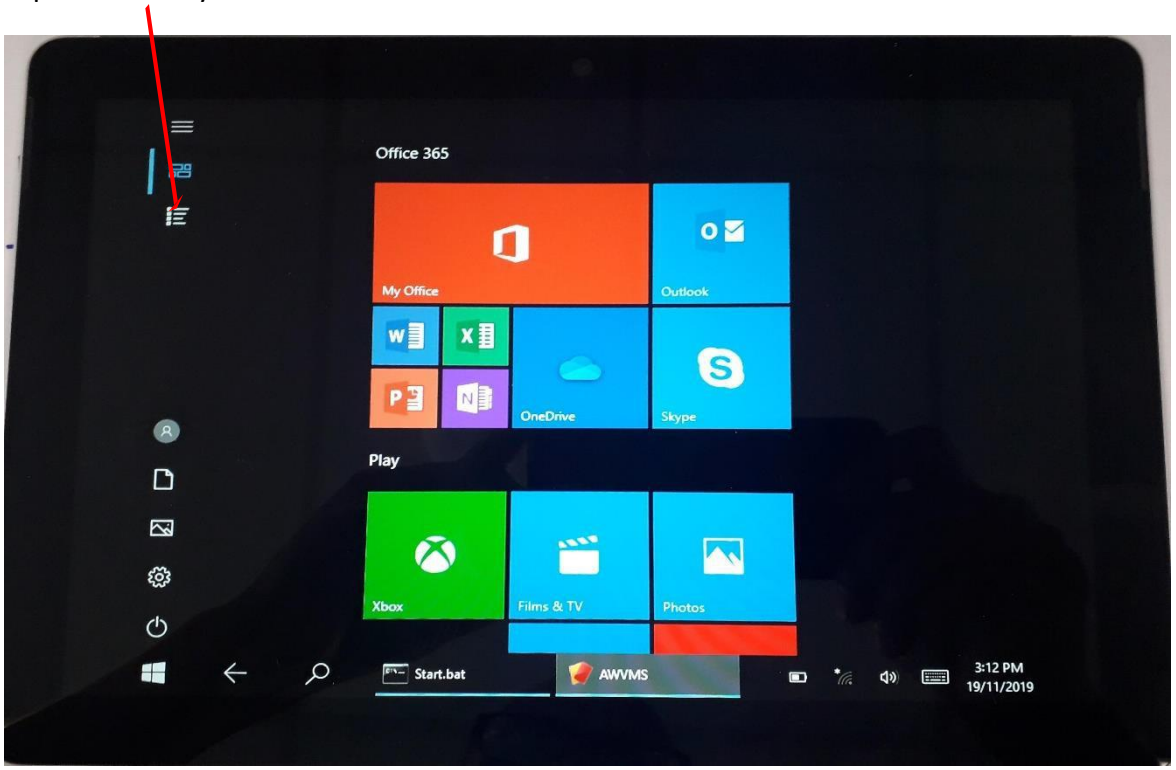


Step 2: Swipe right to left on the right-hand side of the tablet to access the menu as per below and select Tablet mode.

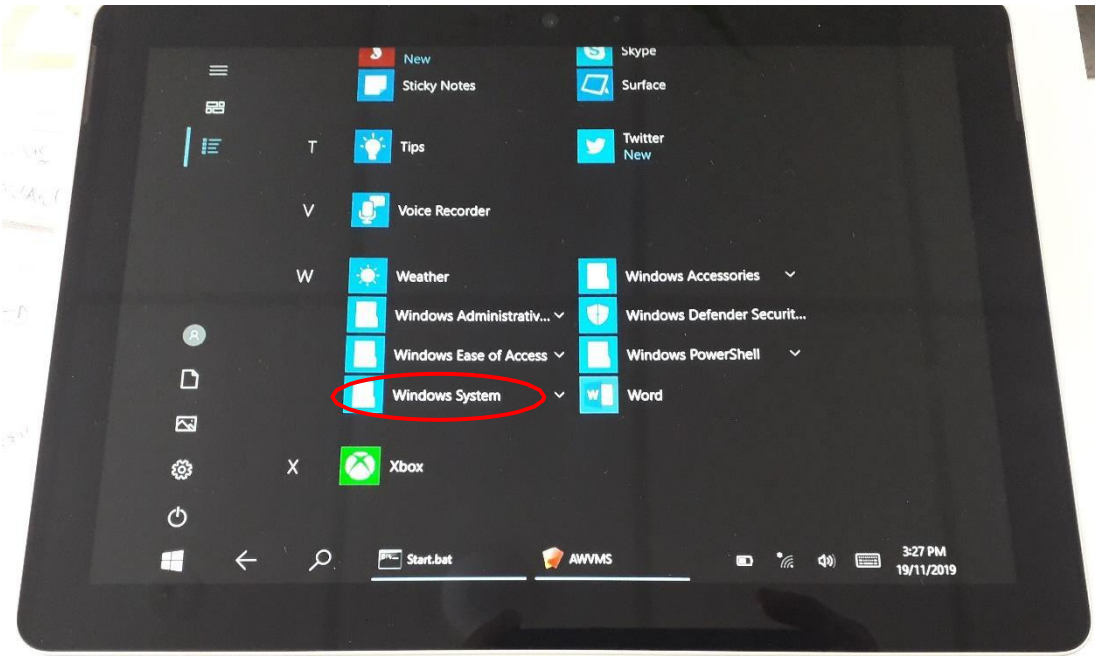
Step 3: Click anywhere on the screen to remove the side panel.

Step 4: Minimize AWVMS program and the screen will be as below.

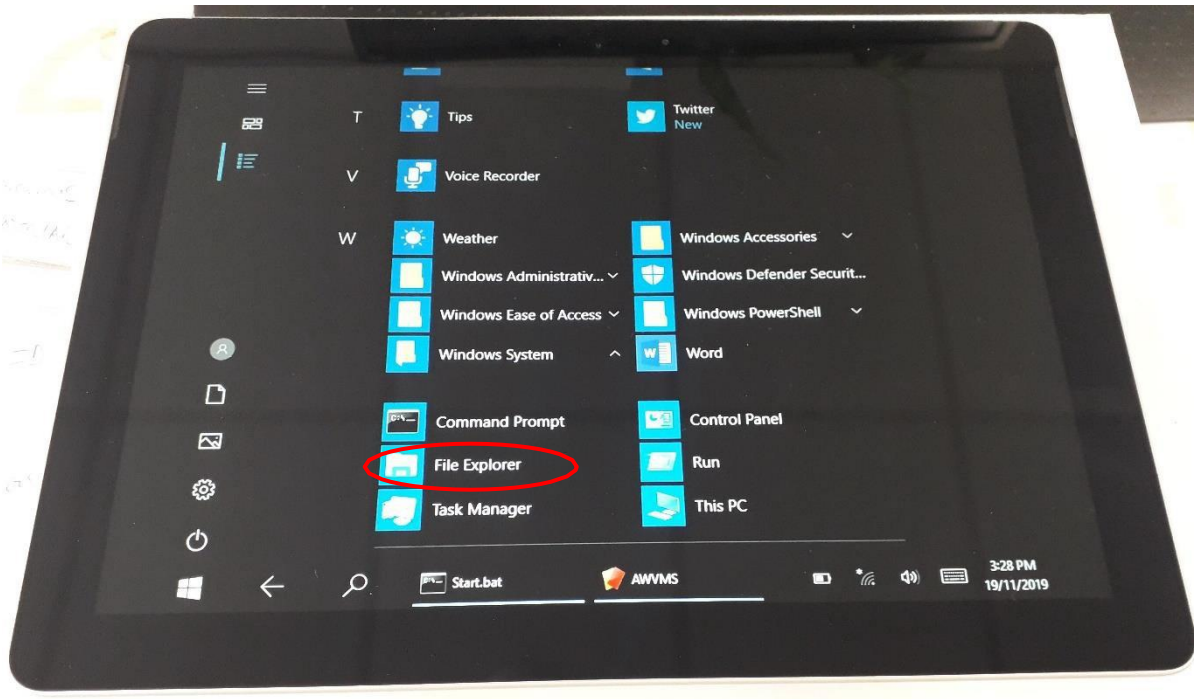
Step 5: Select layout:



Step 6: Scroll down to Windows Systems and open it.

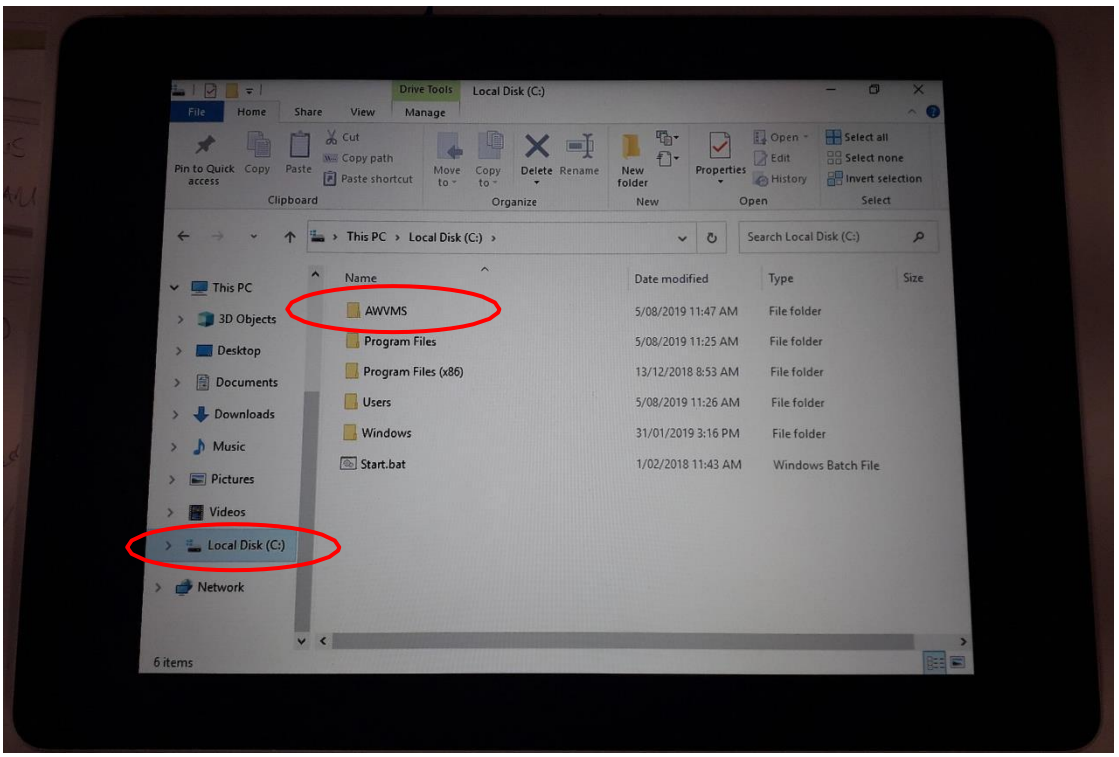


Step 7: Select File Explorer:



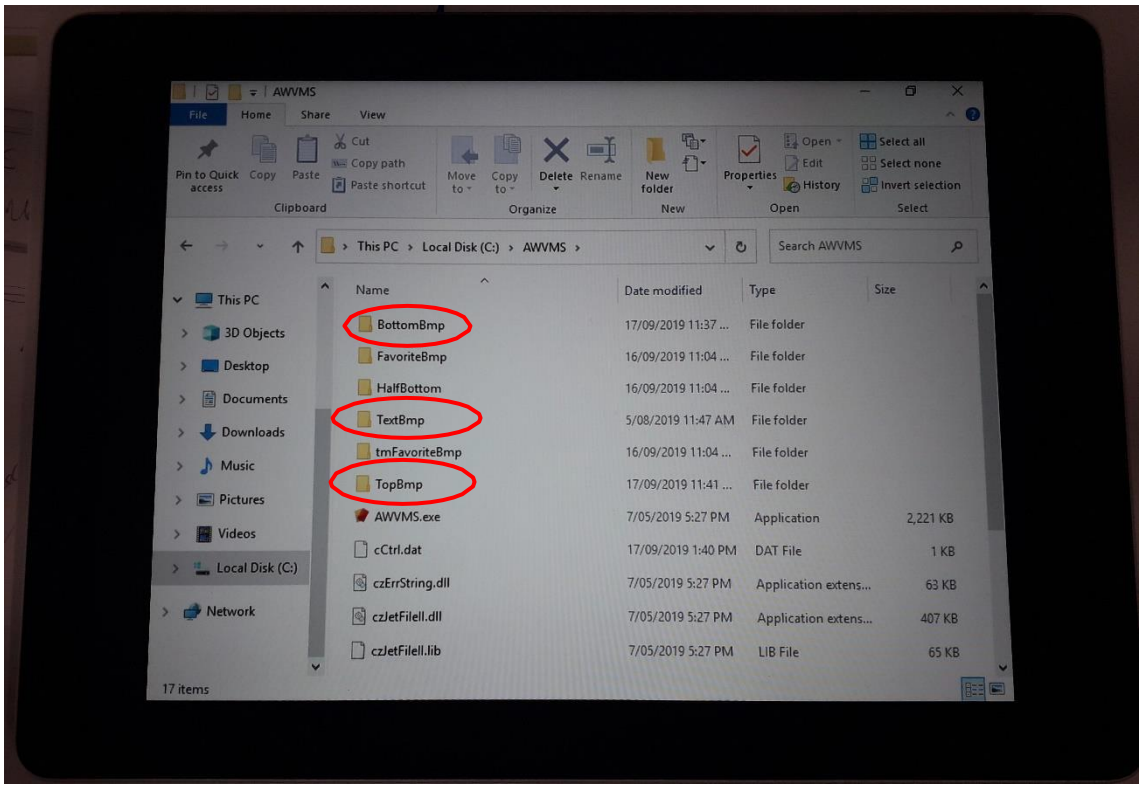
Step 8: Select Local Disk (C:)

Step 9: Open AWVMS folder and the following window will appear.



Step 10: Depending on which panel you designed your new image for, you can save them in the BottomBmp, TopBmp or TextBmp Folders.

NOTE: DO NOT MOVE OR EDIT ANY OTHER FILES OR FOLDERS.



Step 11: After you have saved your images, close the window. Swipe right to left at the right-hand side of the tablet as in **Step 2** and de-select Tablet mode. Click anywhere on the tablet and it will return to the AWVMS program.

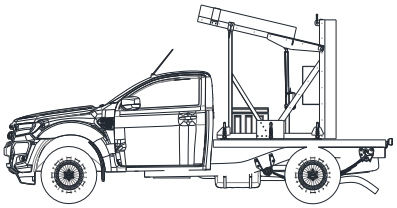
Step 12: Reboot AWVMS software and start up again before you will be able to see your images. You can now create new messages with your added images.

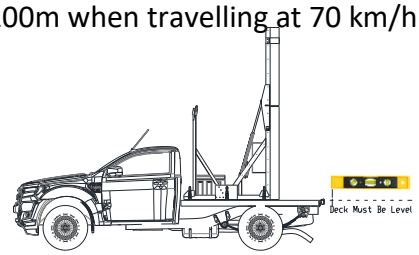
Note: The optimum image size & ratio is 80 x 80 pixels for the TOP PANEL and BOTTOM PANEL and 80*16 for the TEXT PANEL. Other image sizes or ratios will not be displayed correctly.

Please contact RTL for image upgrades or any special image required for your AWVMS.

6. Mid-Hinge Assembly Installation

Correct set-up of the AWVMS Assembly onto the vehicle is important to ensure that the EN12966 LED viewing angle is optimised. The installation instructions below provide optimised driver viewing from a distance greater than 100m when travelling at 70 km/hr.





6.1 Mount the Frame to the rear of the utility

a. Determine the location of the AWVMS sign using the dimensions supplied in (**Drawing 1**).

b. Strengthen underside of the deck to ensure that a suitable steel channel is welded in place and aligned to the frame dimensions.

c. Use strops/chain secured to the lifting eyes to lift the AWVMS Assembly into position (**Drawing 2**)

Important: the sign should not lean toward the following traffic.

d. Drill evenly spaced 12.5mm holes in the Frame on each corner and in the middle on the sides (Total 6 bolt holes).

e. Fix the AWVMS Frame using M12 x “xx” Bolts (High Tensile), washers and nyloc nuts.

6.2 In-Cab Rocker Swich (Used to Raise and Lower the AWVMS):

a. AWVMS is supplied with a up /down rocker switch including 5m of orange cable. The auto electrician / installer is responsible for installing the switch in the cab, in a convenient location for the driver to use.

b. The Driver must press and hold, to either raise or lower the AWVMS. As a reference, the in-cab tablet also shows the orientation of the board (raised or lowered)

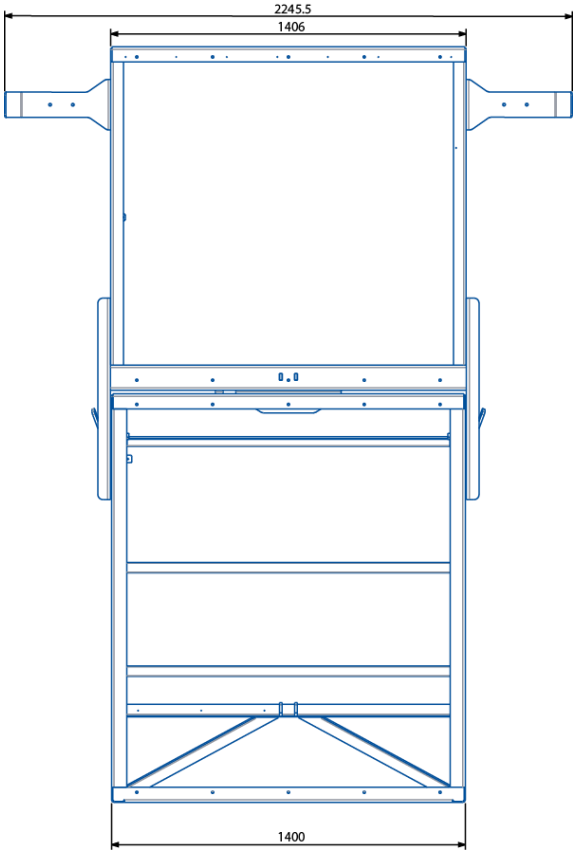
7. Serial Number Location:

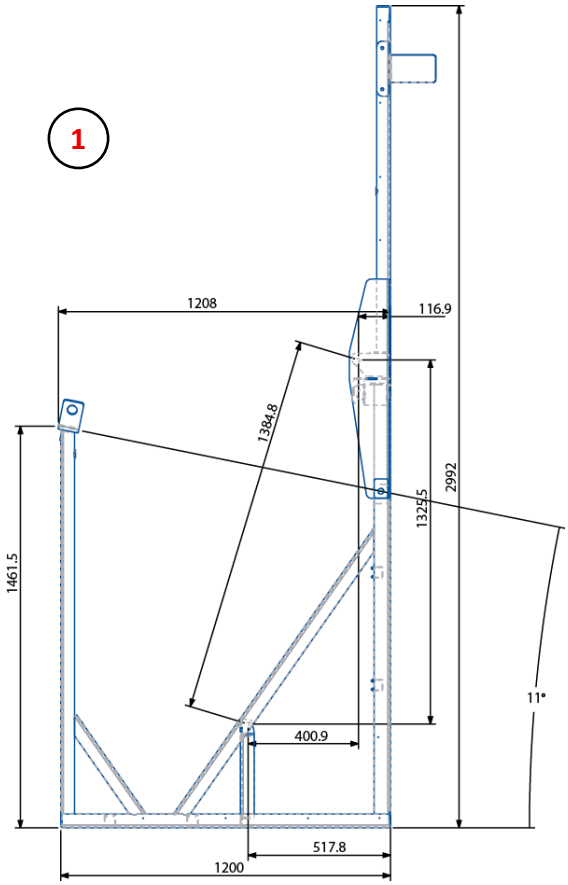
a. The RTL AWVMS Serial Number is located on the door of the Main Connection Box.



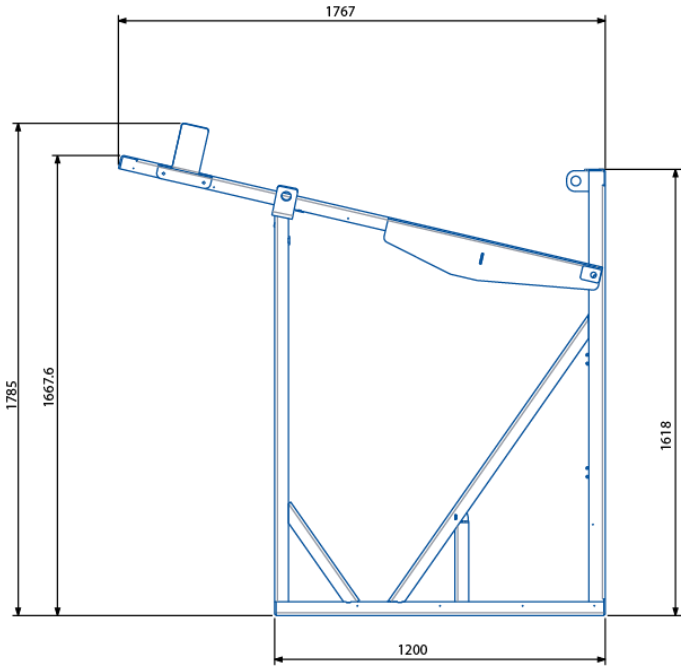
8. Dimensions

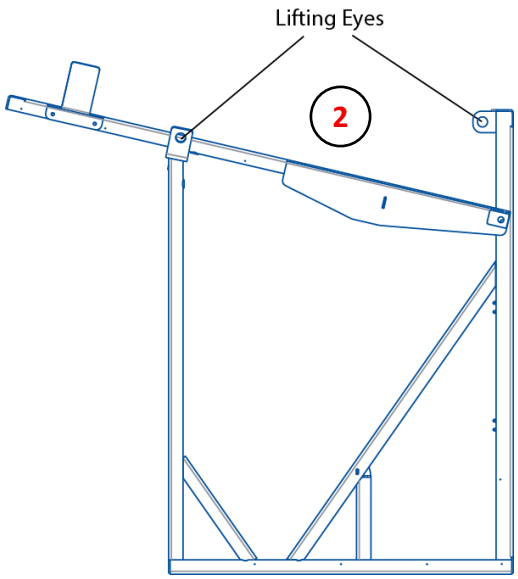
Deployed:





Stored:





The assembly drawings are indicative, and minor changes may have been made; please check the dimensions of the product before proceeding with the installation.

9. Technical Specifications

Top Panel
- Panel size 1360mm x 1360mm
- Display area 1280mm x 1280mm
- 80 x 80 Pixels – 16mm pixel pitch
- Enclosure – IP56
- EN12966 -1: 2005 + A1: 2009 Compliant

Bottom Panel
- Panel size 1360mm x 1616mm
- Display area 1280mm x 1536mm
- 96 x 80 Pixels – 16mm pixel pitch
- Image Display Area 1280mm x 1280mm
- Text Display Area 1280mm x 256mm, 16 x 80 Pixels
- Enclosure – IP56
- EN12966-1 : 2005 + A1 : 2009 Compliant

Optical
- LED TILE - P16
- Classifications: C2, L3, B6, R2
- Luminance Control – 2 x Light Sensors for automatic control + Manual level control

LED Advanced Warning Lights
- 340mm diameter amber light
- EN12352 Compliant

Electrical Source
- 12V DC Supply

Optimal Viewing Distance
- Minimum 55m
- Maximum 460m

Weight
- 430kg

Dimensions
- Deck footprint: 1.4m x 1.2m
- Stored: 1.5m x 1.9m x 2m
- Raised: 1.8m high x 1.4m

Light Goods Vehicle Requirements
- Tare Weight: 1.95 tonne
- Gross Weight: 2.75 tonne
- Vehicle Length: <5.25m
- Vehicle width (excl. mirrors): 1.91m

10. Trouble Shooting Guide

Problem	Cause	Solution
Unable to raise the sign	Low battery voltage	Check battery voltage. It should be 11.8 Volts and higher. If not plug in the charger and allow batteries to fully charge
	Isolator Switch	Batteries are fully charged. Check whether the main isolator switch is in the on position
	Blown fuse	Open control box and check whether the fuse is blown
	Still not raising	Book a Request with RTL: https://www.rtl.co.nz/book-a-service
Connection error	Incorrect start-up procedure	Turn system off and exit the AWVMS program. Switch tablet on again and wait until the Current display tab turns green before pressing Turn system on tab
	Ethernet cable damaged/disconnected	Check the ethernet connection to the tablet and the board
Sign not displaying	Connection error	Follow steps as above
	Blown fuse	Check fuses and replace where necessary
	Low battery voltage	Check battery voltage. It should be 11.8 Volts and higher. If not plug in the charger and allow batteries to fully charge
Red ERROR message on board	Low battery voltage	Check battery voltage. It should be 11.8 Volts and higher. If not plug in the charger and allow batteries to fully charge
Low battery voltage	Charging problem	Ensure that the LED display lights are illuminated on the Charger Check that the extension lead is properly plugged into the charger plug Check the lead is switched on at the wall plug Check that the kettle plug lead going into the charger is properly inserted and secure
Play Sequent Error	Incorrect display sequence selected by operator	Exit and re Start AWVMS program. Follow sequence of Turn System ON. Select Favourite, Play, OK.
	Not reading Master board	Check the ethernet connection on the bottom panel below the connection box. Make sure this is secure by pushing it in.
Turn On Error	IP address incorrect in Config.	Next go to Config on the tablet and ensure the IP address is set at 169.254.10.49. Go to System information. If it says Not Connected, Book a Request with RTL: https://www.rtl.co.nz/book-a-service