



RTL Smart Sign Truck Mounted VMS (TVMS) Installation Manual & User Guide



**PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE
PROCEEDING WITH INSTALLATION & OPERATION**

Version 1.0

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1. RTL SMART SIGN PACKAGE LIST

1.1. RTL Smart Sign package comes with the following items:

- Smart Sign TVMS
- Radar (plug and play)
- Dongle for data (fitted inside the sign)
- AC to DC Charger for Auxiliary batteries
- DC to DC Charger (alternator charging)
- 2x 6volt AGM batteries
- Kettle plug (in the AC to DC charger box)
- Isolator switch
- Fuse holder plus 50amp fuse
- External male plug with connection box
- 10" Android Tablet
- Mounting bracket for tablet
- 3mm Allen key

1.2. What is not included:

- Sim card for Dongle
- Cable for connecting batteries in series
- Cable for connecting batteries to the Smart Sign
- 8x M8 screws for mounting Smart Sign to truck frame
- 4x 5mm bolts/screws for externally mounting the radar

1.3. Smart Sign Dimensions

Truck Frame Mount Dimensions	1500mm x 770mm	Standard level 1 Arrowboard frame dimensions
Display dimensions	1610mm X 970mm	
Display area	5 columns, 3 rows of LED panels	

Note:

- RTL Smart Sign TVMS is suitable for Level 1 Arrow board retrofits
- For a new installation advise the truck builder to build a Standard Level 1 Truck Frame

2. INSTALLATION - PHYSICAL MOUNTING PROCESS

2.1. Mounting the Smart Sign to the frame

- There are four riv nuts (M8) on both vertical sides of the Smart Sign
- Use M8 bolts to secure the sign to the sides of the Truck frame (bolts not provided by RTL)

2.2. Radar Installation

- Mount the Radar to the center of the truck frame above the Smart Sign for optimal vehicle detection
- Use 4 x 5mm bolts or screws to secure the radar (bolts and screws not supplied by RTL)
- Radar cover is IP67 rated – fully waterproof
- Radar is plug and play to the radar cable at the back of the Smart Sign
- **Note**
- **The radar MUST NOT BE mounted to the sides of the truck frame. This will impede the detection of oncoming vehicles. Center mount is critical.**

2.3. Data Dongle

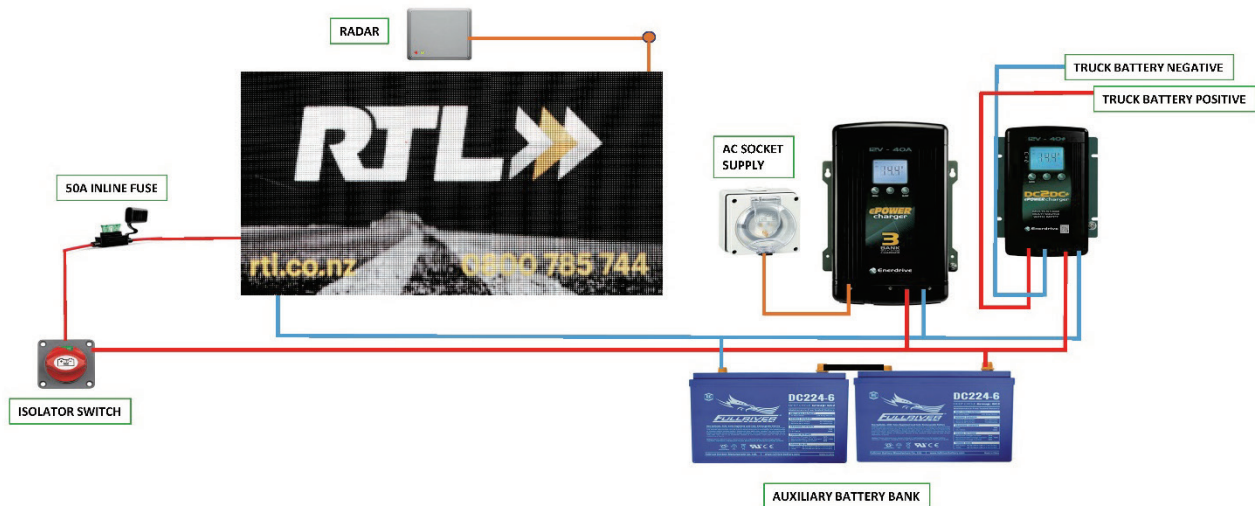
- Location (Located inside the board column 2, row 3)
- Insert Sim card into the Data Dongle (sim card not supplied by RTL)

3. INSTALLATION - ELECTRICAL

IMPORTANT NOTE

RTL Smart Sign TVMS **MUST NOT** be connected to the truck batteries. The current draw of the Smart Sign is greater than a Level 1 25 Lamp Arrow board and will drain the truck batteries rapidly.

You **MUST** use the charging system supplied by RTL for optimal functionality.



3.1. Charging system (supplied in full by RTL)

- 3.1.1. x 6volt AGM batteries (auxiliary batteries)
- 3.1.2. x 40amp AC to DC charger (auxiliary battery charger)
- 3.1.3. 1 x 40amp DC to DC charger (alternator charger)

3.2. How to connect the 40amp AC to DC charger to the AGM batteries

- 3.2.1. Connect the 2x 6volt AGM batteries in series (12volts)
- 3.2.2. Connect the 40amp AC to DC charger to the auxiliary batteries
- 3.2.3. Connect +ve cable from batteries to the charger
- 3.2.4. Connect -ve cable from batteries to the charger
- 3.2.5. Connect the supplied kettle plug to the charger (this kettle plug is supplied in the charger box)
- 3.2.6. Connect the other end of the kettle plug to the external male plug

3.3. How to connect the DC to DC charger to the truck alternator

Note: Also compatible with Smart alternators

- 3.3.1. Connect +ve cable from the truck batteries to the charger
- 3.3.2. Connect -ve cable from the truck batteries to the charger

3.4. How to connect the Smart Sign

- 3.4.1. Connect the +ve terminal from the DC to DC charger to the isolator switch
- 3.4.2. Connect the Isolator switch to the inline fuse
- 3.4.3. From the fuse to the +ve connector terminal inside the Smart Sign (column 2, row 3)
- 3.4.4. from the connector terminal, connect a - ve cable to the - ve terminal on the battery

4. TABLET CONTROLLER

4.1. Charging the tablet controller

- 4.1.1. We do not recommend that you connect the tablet to the truck batteries. You **MUST** charge the tablet regularly outside the cab. The tablet comes with a car charger which you may use as a backup on shift.
- 4.1.2. Install the tablet mounting bracket as per the instructions with the mounting bracket. You can mount the bracket in a position most suitable for your team to access it.

5. CREATING CUSTOM IMAGES

5.1. Creating the TVMS Canvas

IMPORTANT NOTE

RTL Smart Sign TVMS images can be designed in any graphics programme either vector or rasterized images.

To create an image that takes up the whole screen, image needs to be 240px wide x 144px high or a 16 : 9 ratio.

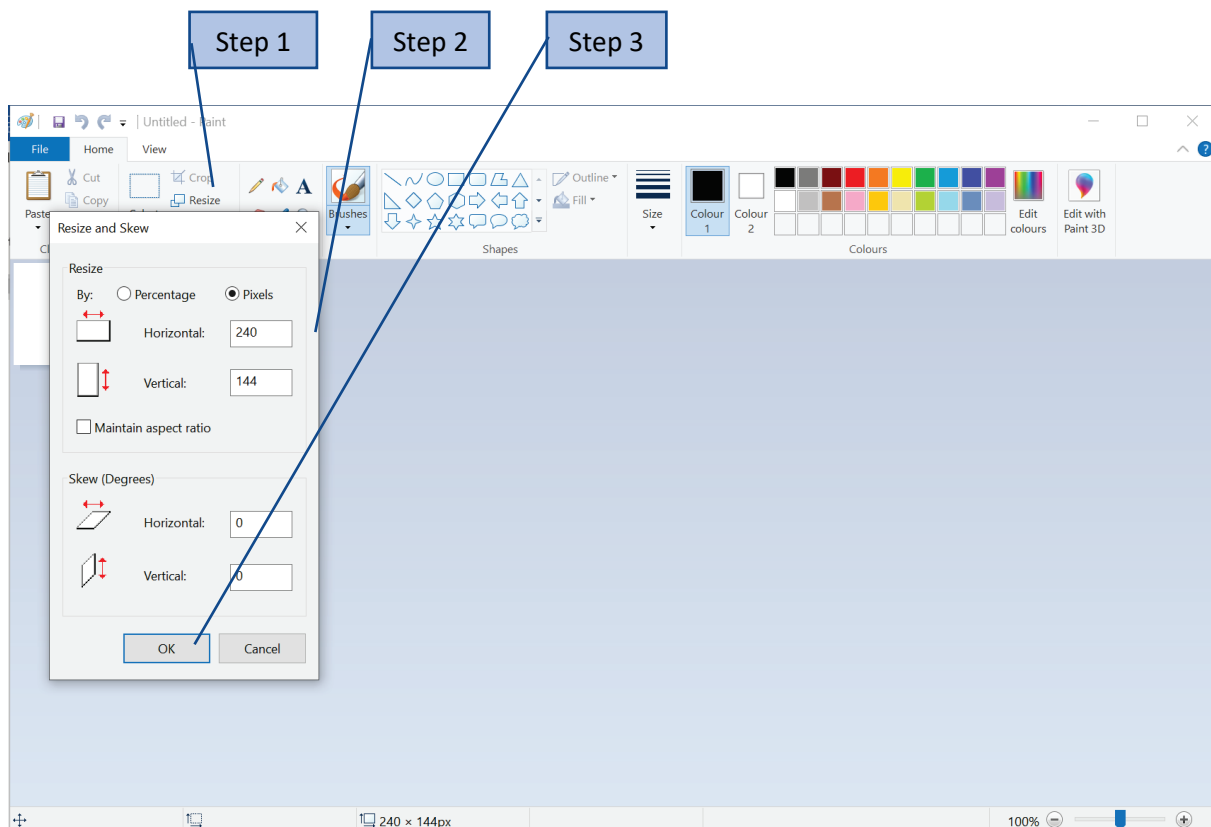
Images can be at a higher resolution, just need to be at a scale of 16:9. i.e 1280 x 768 will show correctly, as it's the same ratio as 240:144.

Images can be .jpeg, .bmp, gif or png format.

5.1.1. Step 1: Open Paint App (Microsoft) and select the Resize Icon

5.1.2. Step 2: Select Pixels, uncheck maintain aspect ratio and set horizontal and vertical pixels to 240x144 as in image below. This sets the size of the board canvas.

5.1.3. Step 3: Click OK

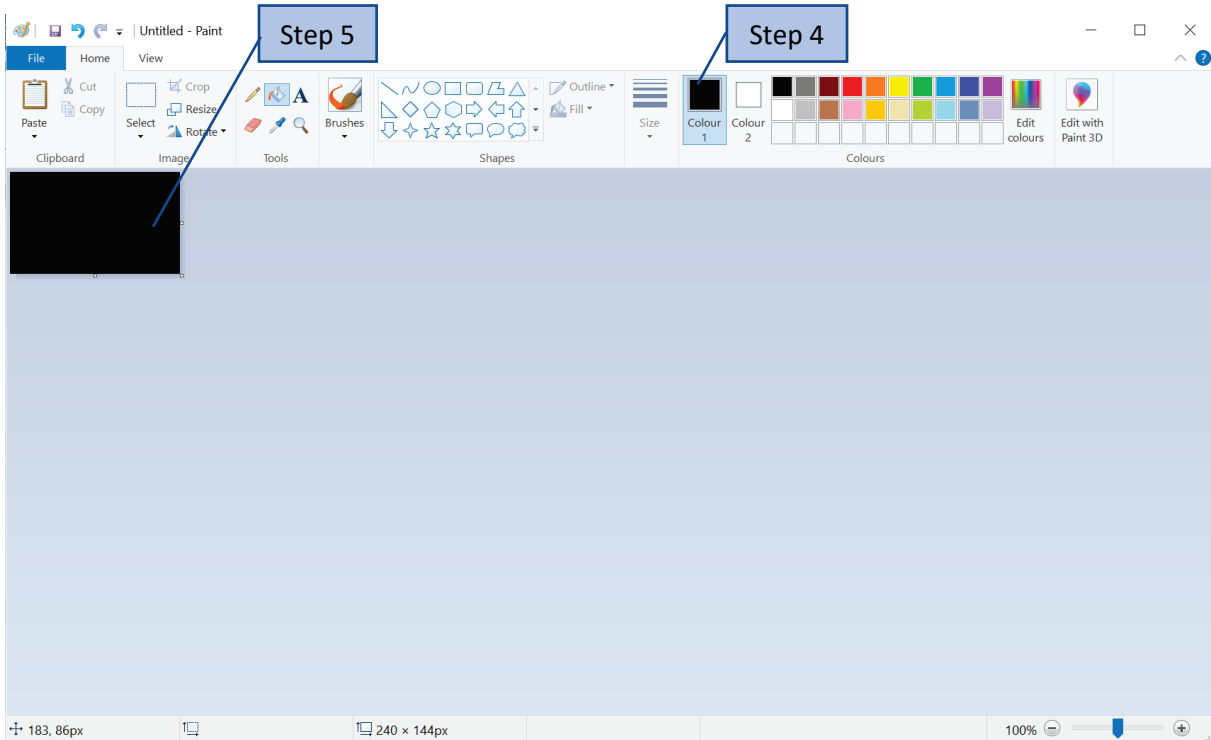


5.2. Creating the TVMS Canvas – Changing the Background Colour

5.2.1. Step 4: Select Colour 1 and choose Black

5.2.2. Step 5: Select the Paint bucket tool, drag mouse over white canvas and left click on the mouse

5.2.3. This sets the background colour of the board canvas

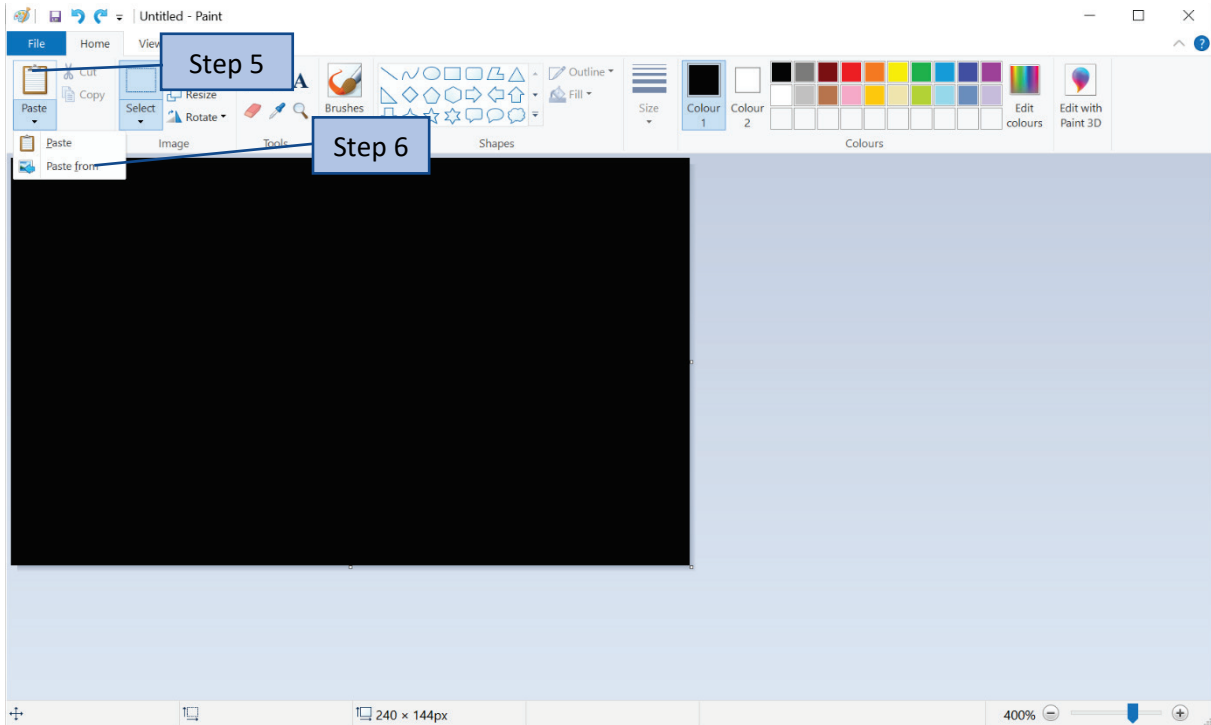


Note: this will be the standard canvas setting for ALL images. You can enlarge the canvas viewing size by pressing *Ctrl + PgUp* and decrease it with *Ctrl + PgDn*, this will not change the actual size of the canvas.

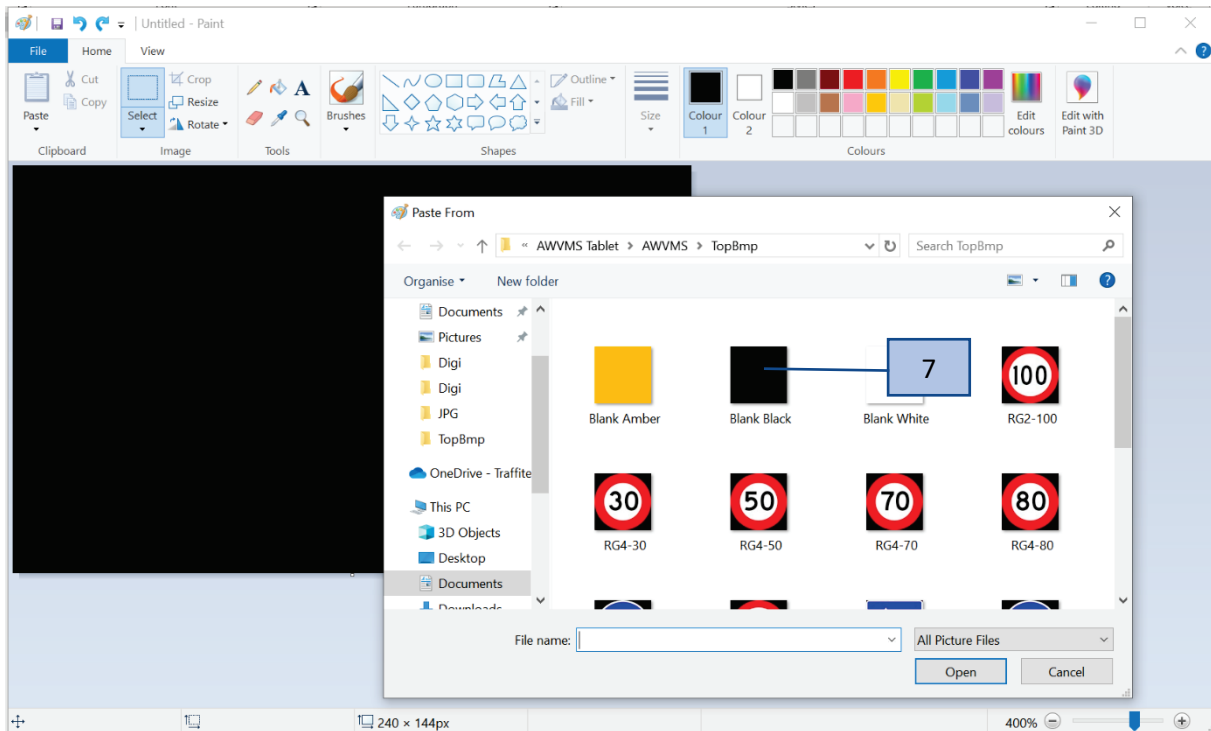
5.3. Adding Images to the TVMS Canvas

5.3.1. Step 5: Click the Paste Icon

5.3.2. Step 6: Select Paste from



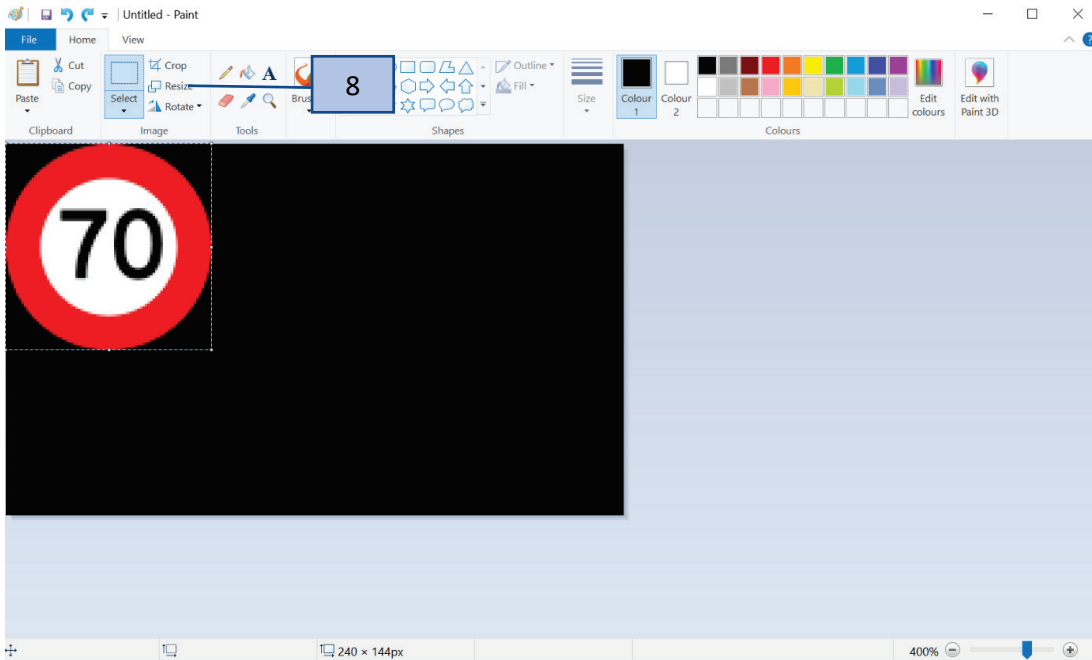
5.3.3. Step 7: Your file directory will open up and you can select a folder where you have stored your images. Select image, click open and the image will be inserted on the black canvas.



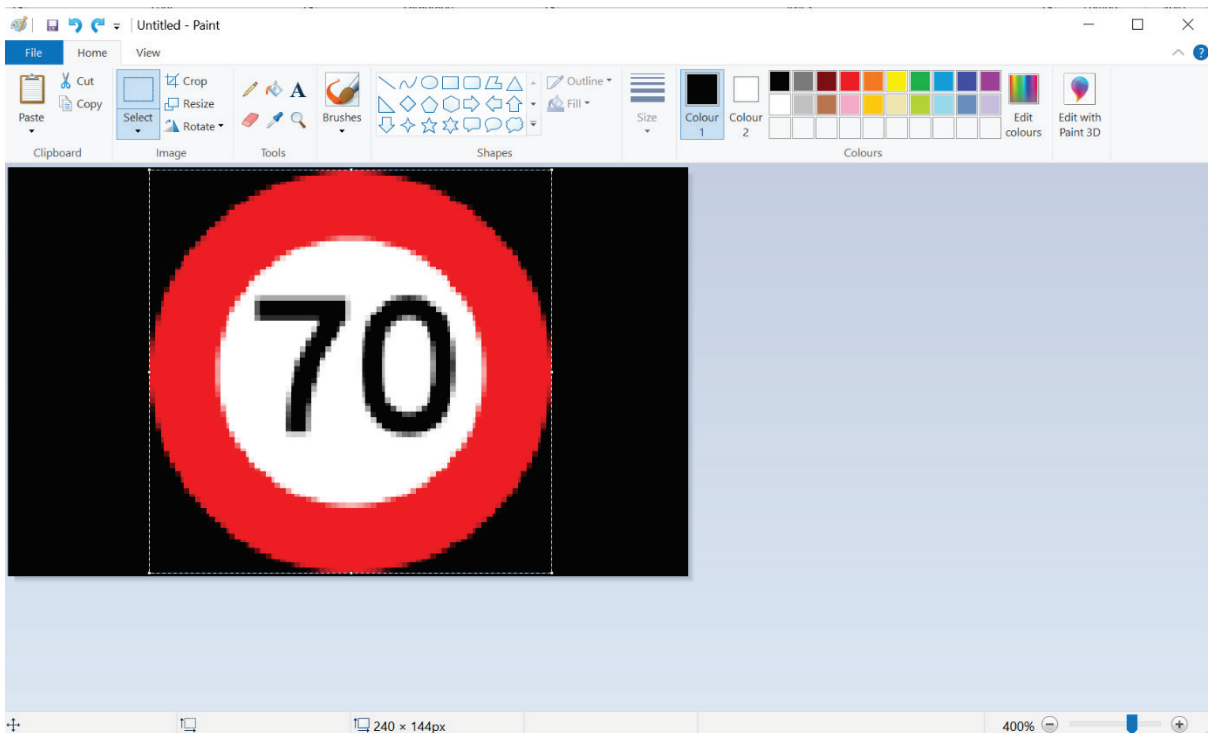
5.4. Resizing Images on the TVMS Canvas

5.4.1. Step 8: Click resize and set the inserted image at pixel size 144x144 (like Step 5.1.1 Step 1). This sets the sign size on the black background to be displayed on the board.

Move image to centre by using arrows on the keyboard.



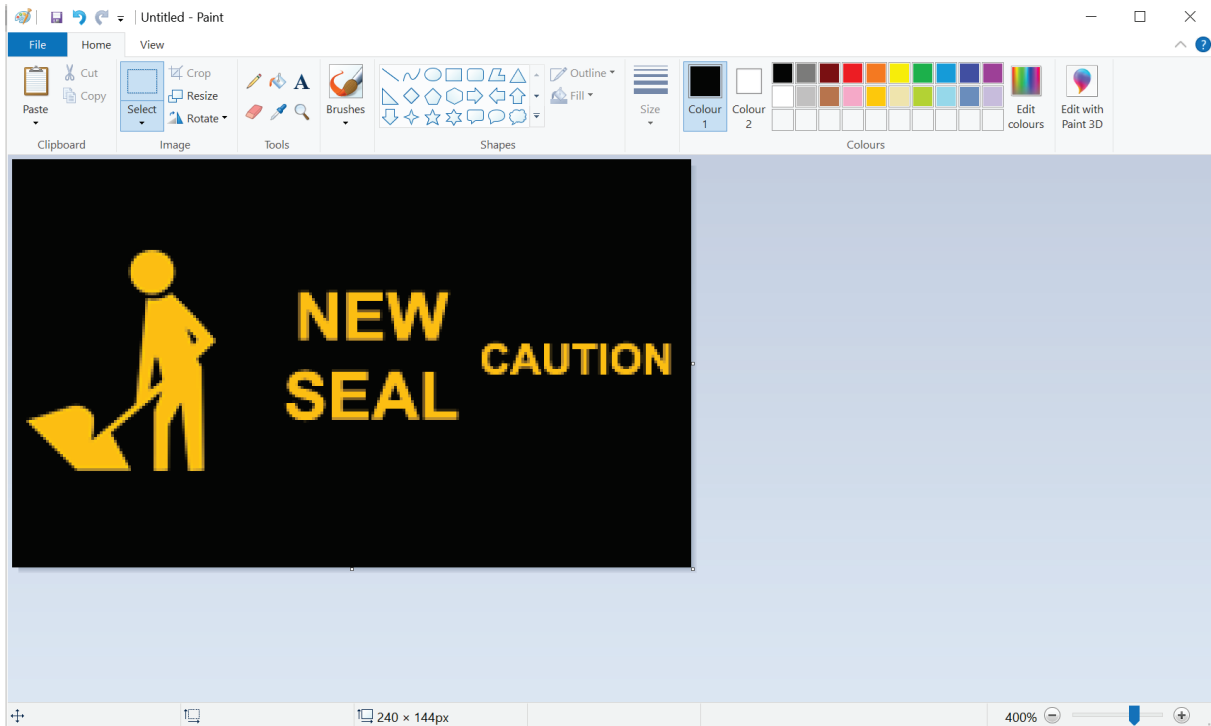
5.4.2. The Image below is set to 144 x 144 pixels and centred using the keyboard arrows. Click File tab, Save As, use JPG or PNG format and save to your chosen folder.



5.5. Adding Additional Images on the TVMS Canvas

5.5.1. Add any number of images to the canvas as required. Below is an example of 3 different images at 80 x 80 and 80 x 16 pixels. The images can be changed and formatted to any pixel size by editing the image in Paint.

5.5.2. Click File tab, save as, use JPG or PNG format, and save to your desired folder.



6. WEB SERVER – LOGGING INTO THE SMART SIGN

6.1. Once sign is online, login into server and check current IP address of the sign.

6.2. Open new tab on internet, type that IP address followed by :8000 and login into pi website.

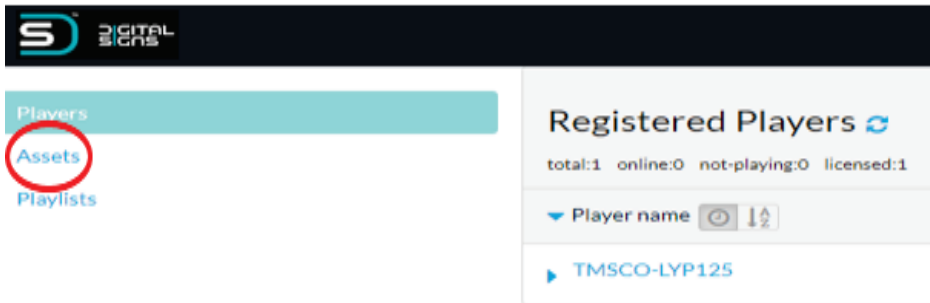
Username – pi

Password – pi

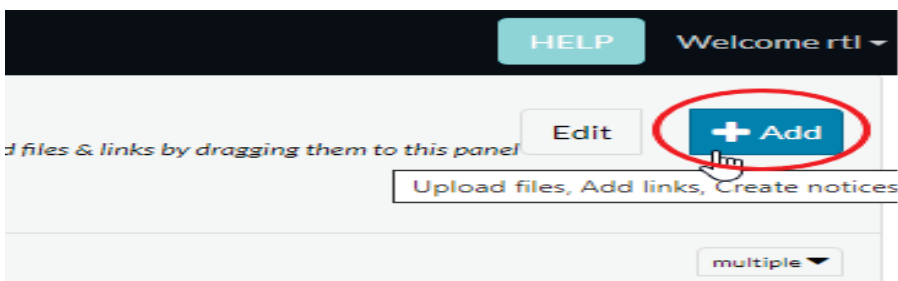
RTL01 IP: 192.168.8.103

7. UPLOADING CUSTOM IMAGES TO ASSET LIBRARY

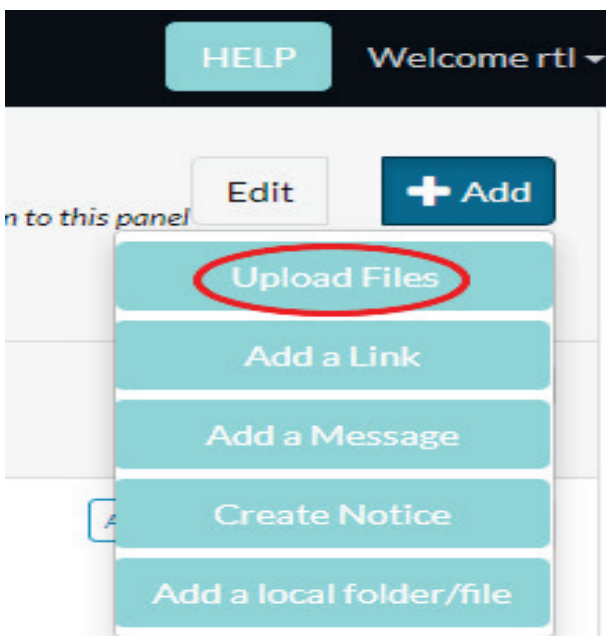
7.1. Click Assets on the left menu



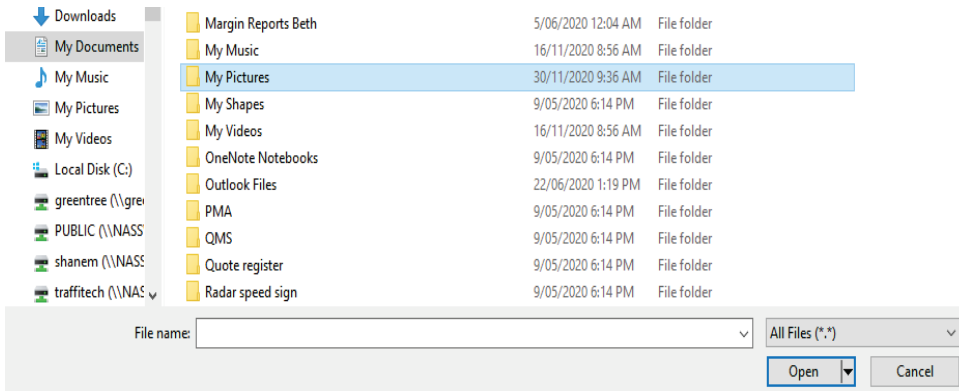
7.2. Click +ADD on the top right of the screen



7.3. Click Upload Files



7.4. A file directory will open, Select your Images folder



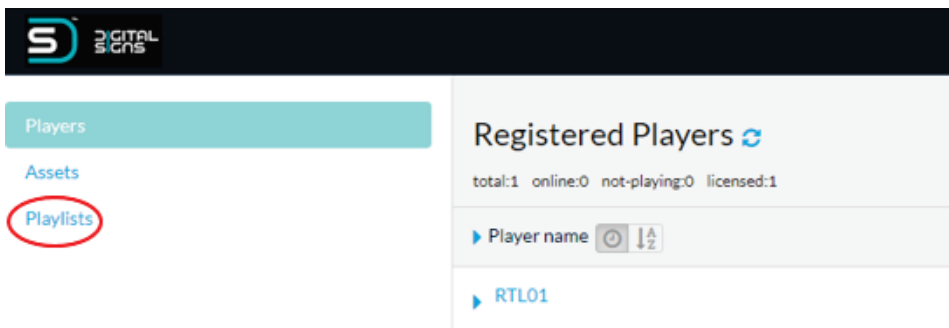
7.5. Select your image and click Open

7.6. An Upload Status prompt will appear

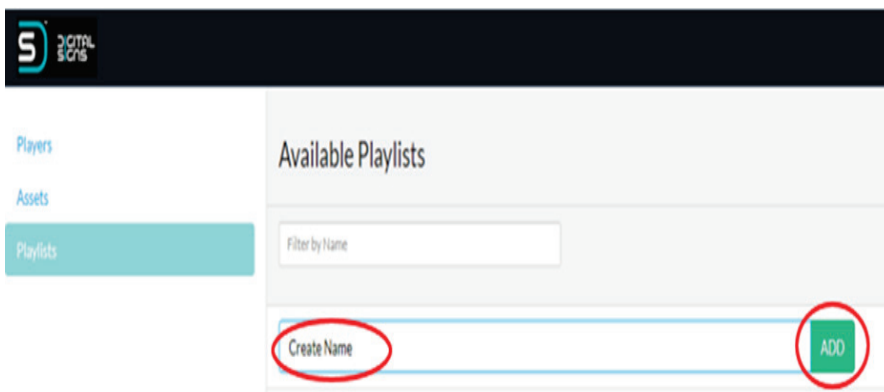
7.7. Click Continue and then click OK

8. CREATING A PLAYLIST

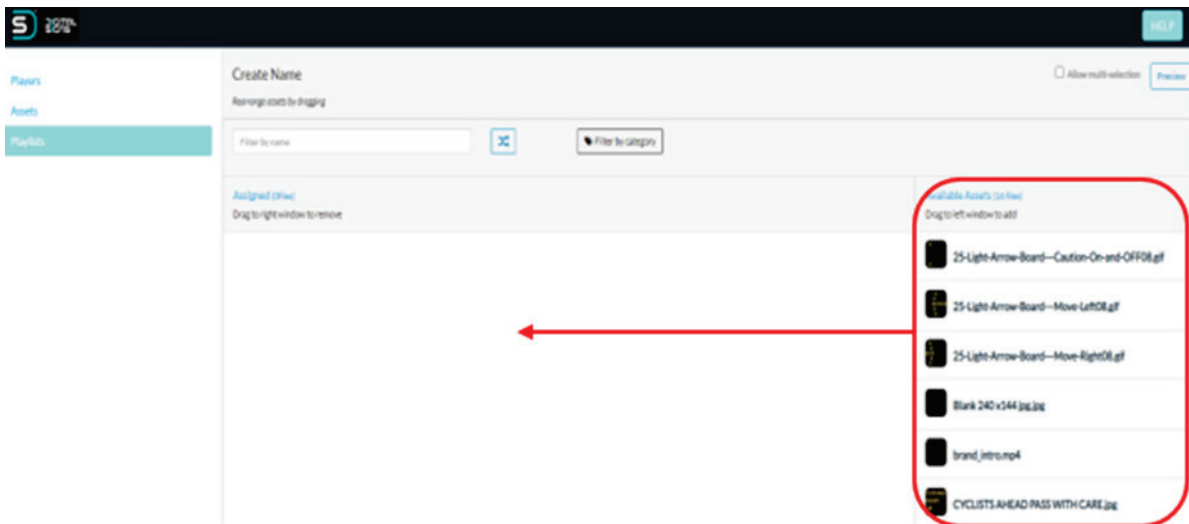
8.1. Click Playlists on the left menu



8.2. Create Playlist name + ADD



8.3. Select image and Click and drag from left to right. Add as many as required



8.4. Display time can be set for each image – in seconds

8.5. Images can be removed by clicking on it and dragging it back to the Right side

8.6. The order of the images can be changed by Clicking on it and dragging it up or down in the Playlist

