Truck Mounted VMS (TVMS) User Guide



PLEASE READ THIS MANUAL INCONJUNCTION WITH THE INSTALLATION MANUAL BEFORE OPERATING THE UNIT.

Version 1.1

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2. Product Introduction

RTL's Truck Mounted VMS provides clear, high-visibility road user information for static and mobile operations, work zone safety, incident response and event management. The full-matrix, full-colour P8 LED display supports text, symbols, graphics, arrow board displays and speed-triggered radar messaging.

The operator and traffic management team are responsible for selecting messages, symbols and operating modes that are appropriate for the site, road environment and traffic management plan. The TVMS does not replace required traffic management devices, procedures or site controls.

3. Intended applications

- Road user information and advance warning
- Temporary traffic management and mobile operations
- Work zone and lane management messaging
- Incident and emergency response
- Event and network management
- 25-light arrow board displays for mobile or static operations
- Speed-triggered messaging using the integrated radar

4. About This Guide

This user guide covers the operating requirements for the RTL Truck Mounted Variable Message Sign (TVMS). For installation, electrical, commissioning etc, please refer to the RTL TVMS Installation Manual available on the RTL website.

5. Care, Safety & Maintenance

- Keep the TVMS housing, light sensor and radar clean and unobstructed.
- Do not use high-pressure water or steam cleaning directly on the TVMS, connectors, radar or service-door seals.
- Use an soft damp cloth for normal cleaning.
- Do not use solvents, abrasive cleaners or chemicals that may damage powder coating, seals, labels or the LED face.
- Inspect mounting fasteners, wiring, cable protection, connectors, battery terminals and charging equipment at normal vehicle service intervals.
- Keep the rear service doors closed and latched during normal operation and accessible after installation.

6. Technical Support & Product Resources

For installation questions, commissioning support, operating assistance or service, contact RTL before proceeding if any requirement is unclear. Phone: 0800 785 744 | Website: rtl.co.nz | Service: services@rtl.co.nz

Technical Support services@rtl.co.nz	**TVMS Product Page** Product specifications & downloads	**Videos & Tutorials** Operating guides & training

7. Product Specifications

Specification	TVMS
Display compliance	EN12966 compliant display
Working temperature	T1 (-15 °C to +60 °C)
Beam width	B7
Luminous intensity	L2
Colour class	C2
Mechanical protection	IP65
Pixel pitch	8 mm
Display	Full-colour SMD LED
Resolution	200 pixels wide x 120 pixels high
Display area	1600 mm wide x 960 mm high
Housing	1600 mm wide x 960 mm high x 226 mm deep
LED module	320 mm wide x 160 mm high
Housing material	Aluminium
Finish	Powder-coated black
Maintenance access	Twin rear door access
Weight	Approx. 85 kg, excluding batteries
Ambient light sensor	Yes
Maximum power consumption	Approx. 600 W
Speed radar	Included
Supply voltage	12 V DC
Communication	Ethernet / network cable
Controller	Windows touchscreen Tablet

8. Operator Pre-Shift / Post-Shift Checks

When	Check	Action
Before shift	Auxiliary battery condition	Start with batteries fully charged.
Before shift	TVMS housing and mounting	Check for damage, loose fasteners or movement.
Before shift	Radar and light sensor	Clean, secure and unobstructed.
Before shift	Cables and connectors	Check for damage, loose plugs or exposed wiring.
Before shift	Controller connection	Confirm Current Display is green.
Before shift	Display test	Confirm required message displays correctly.
After shift	Display	Turn system off and isolate when no longer required.
After shift	Battery charging	Connect mains charger.
After shift	Damage / faults	Report faults before the next deployment.

9. Battery Charging

Battery care is part of normal TVMS operation. The DC/DC charger provides charging while the vehicle is operating; the mains charger is the primary method for returning the auxiliary battery bank to full charge after use.

- Start each shift with the TVMS auxiliary batteries fully charged.
- Connect the vehicle to mains charging after each shift or whenever the TVMS has had significant use.
- Do not rely on driving time alone to recover a heavily discharged battery bank.
- Do not leave the TVMS operating when the vehicle is parked and no road user message is required.

Expected operating time:
The TVMS battery system is 12 V (2x 6v in series = 244 Ah. Average current draw of 9.9 A (RTL preset image library, measured in workshop) with a 50% depth of discharge (optimal for AGM deep cycle batteries will give an estimated battery life: 16-20 hours. **Note:** Actual battery performance and operating time may vary depending on battery age, condition, ambient temperature, and system load.

10. TVMS Start-up procedure

1. Confirm the vehicle is in the required operating position, and it is safe to display a message.
2. Turn on the TVMS Auxiliary Battery Isolator Switch
3. Power up the tablet
4. Wait for Windows to load – The AWVMS / TVMS software will load automatically.
5. Wait until Current Display is green (approx. 2-3 minute for TVMS to boot up)
6. In the software click TURN SYSTEM ON
7. Select the required saved message and verify the preview before sending it to the sign

11. Shut down Procedure

1. Select TURN SYSTEM OFF. This blanks the LED display but does not isolate the TVMS electronics.
2. Close the software if required and the tablet will shut down
3. Use the TVMS isolator into the OFF position after the shift, or when the equipment is being shut down, serviced or left out of use.
4. Connect mains charging after the shift.

12. TVMS Main Interface

AWVMS is a text editing software specifically designed for TVMS, which can edit and send messages, read screen status information, control the yellow flashing light, set screen brightness, etc.

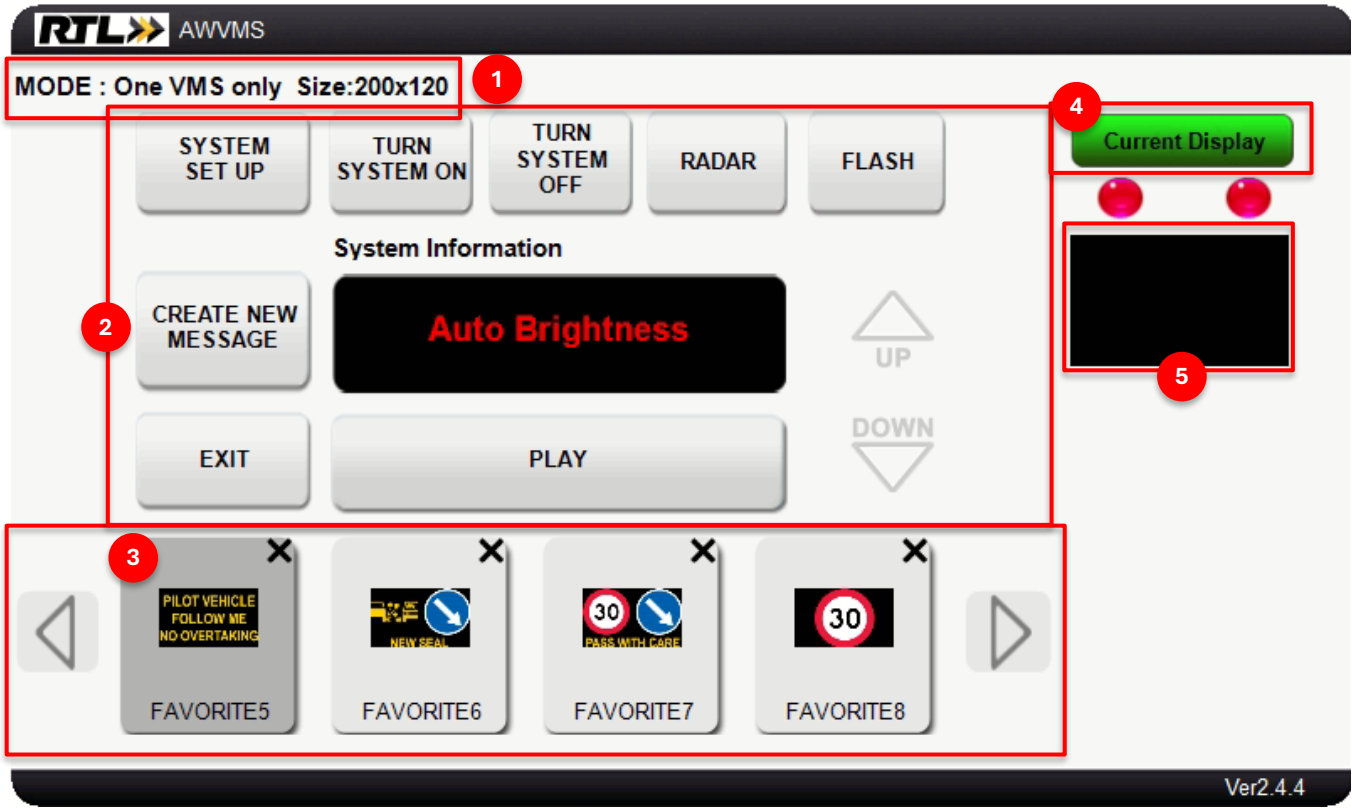


Figure 1.1 Main interface

1. VMS mode information, allowing users to view the current VMS mode and size. TVMS is set to 200x120 by RTL.
2. Function button area, allowing users to access image library, control the VMS screen on and off, radar setting, etc.
3. Message list area, allowing users to view message lists using left and right arrows
4. CURRENT DISPLAY – Shows connection status with the TVMS – Green = connected. Red = Disconnected.
5. Play preview area, allowing users to view the currently loaded message

Note:

- SYSTEM SETUP is password-protected. This has system setup including configuration, system information, mode change and brightness settings etc. Please reach out to RTL if access is required.
- FLASH – Designed for external LED lamps. This feature is not currently supported.

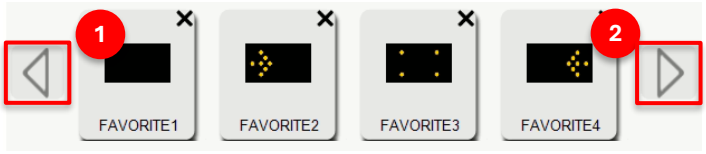
13. Favourites

Messages are pre-saved to favourite slots for to quickly show a message. Use the Left (1) and Right (2) arrows to change to the next set of favourites. The first 12 favourites are set up for your convenience. There are 36 favourite slots available.

BLANK is saved to Favourite 1 – Use this during the shift to quickly blank the screen.

Page 1:

1. BLANK DISPLAY IMAGE
2. Arrow board right (3 images at 1 sec)
3. Arrow bard caution (caution light + blank 1
4. Arrow board left (3 images at 1 sec)



sec)

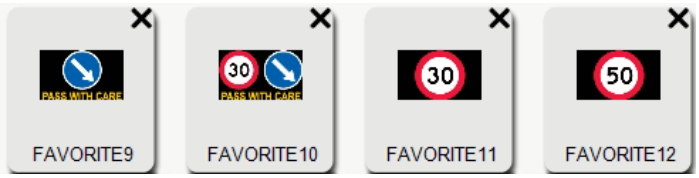
Page 2:

5. Please follow Me
6. Pilot Vehicle Follow me No overtaking
7. Slow down
8. Slow down workers ahead



Page 3:

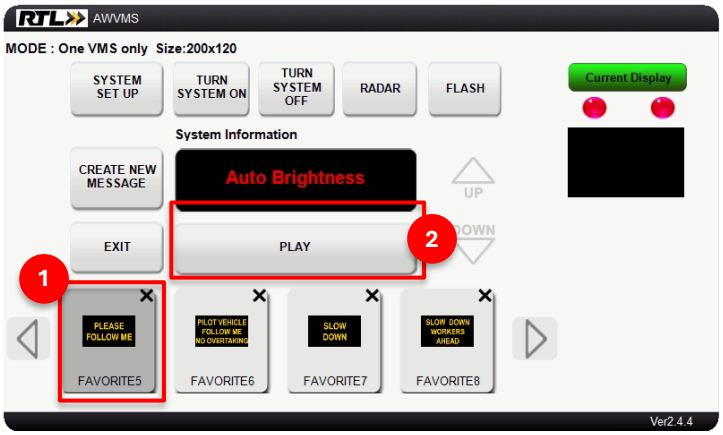
9. Keep Right Pass with Care
10. 30 RG17 Pass with Care
11. 30 Speed
12. 50 Speed



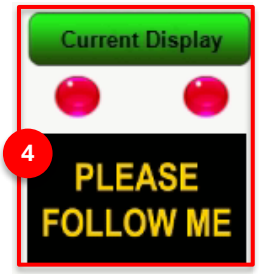
14. Displaying a Message

To display a message from a favourite, simply follow the steps here:

1. From the main screen, select the required message from the favourites list.
2. Select PLAY.
3. At the confirmation prompt, select OK. The TVMS will load.
4. Confirm the required message is shown in the Current Display preview and on the TVMS.



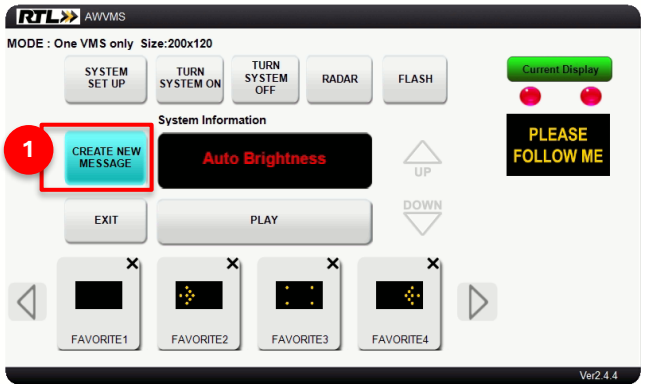




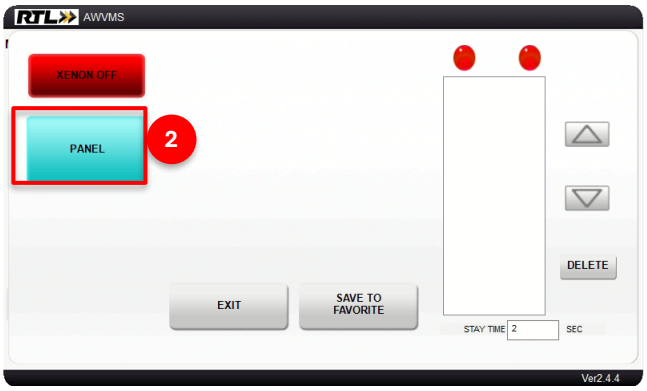
OPERATOR CHECK: Always confirm the displayed message is correct for the site before exposing it to road users. If the message is wrong or no longer required, change or blank the display (favourite 1) immediately.

15. Creating & Saving Messages

1. Select CREATE NEW MESSAGE.
2. Select PANEL to open the available symbol/image library.



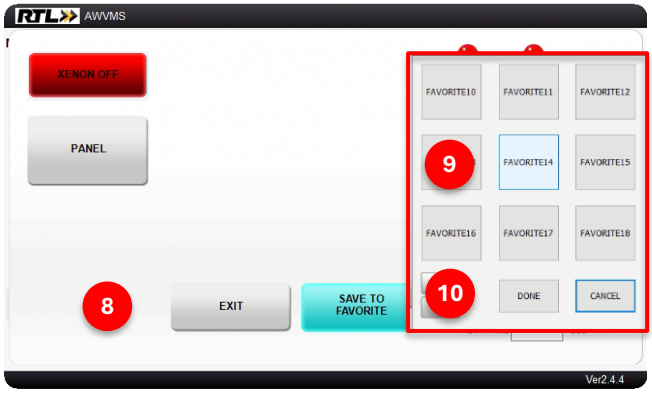
Create New Message screen.



Select a favourite location and save the message.

3. Select the required symbol or image. add further items if the required message uses a sequence. It will appear in the message preview.
4. Push Done and Image box will close.
5. Set stay time for how long the images display on the TVMS Screen.
6. Reordering Sequence: Select an image and use up and down arrows to reorder the images
7. Remove an image from Sequence – select on the image and hit delete





8. Select SAVE TO FAVOURITE or Exit to quit
9. Choose the required favourite location.
10. Select DONE, then OK to confirm the save.
11. Return to the main screen and verify the new favourite before use.

Setting up Arrow board Sequence

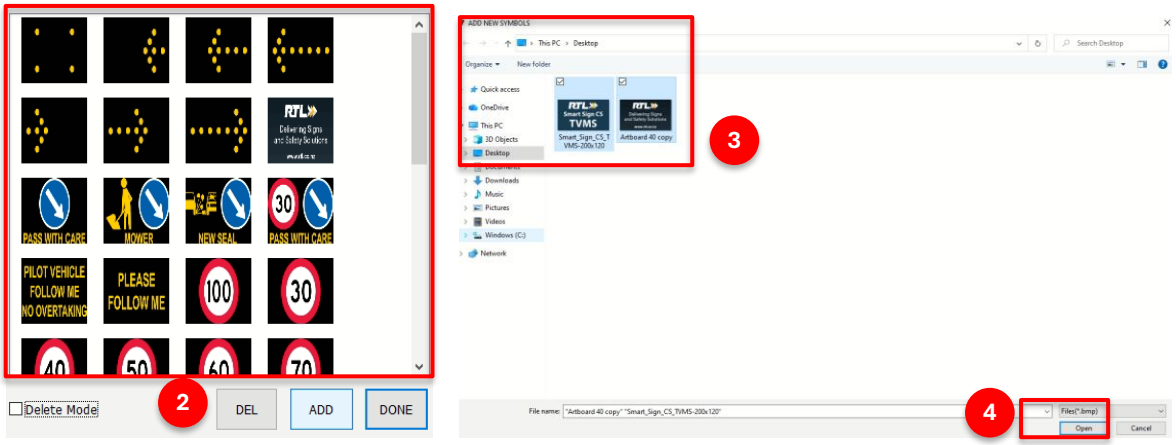
For both left and right arrow board sequence, ensure all three images are selected and stay time is set to 1 second. For Arrow board caution, select caution light and blank image and set stay time to 1 second.

16. Custom Images

The software allows additional bitmap images to be loaded into the TVMS. Bitmap images must be 200 pixels wide x 120 pixels high.

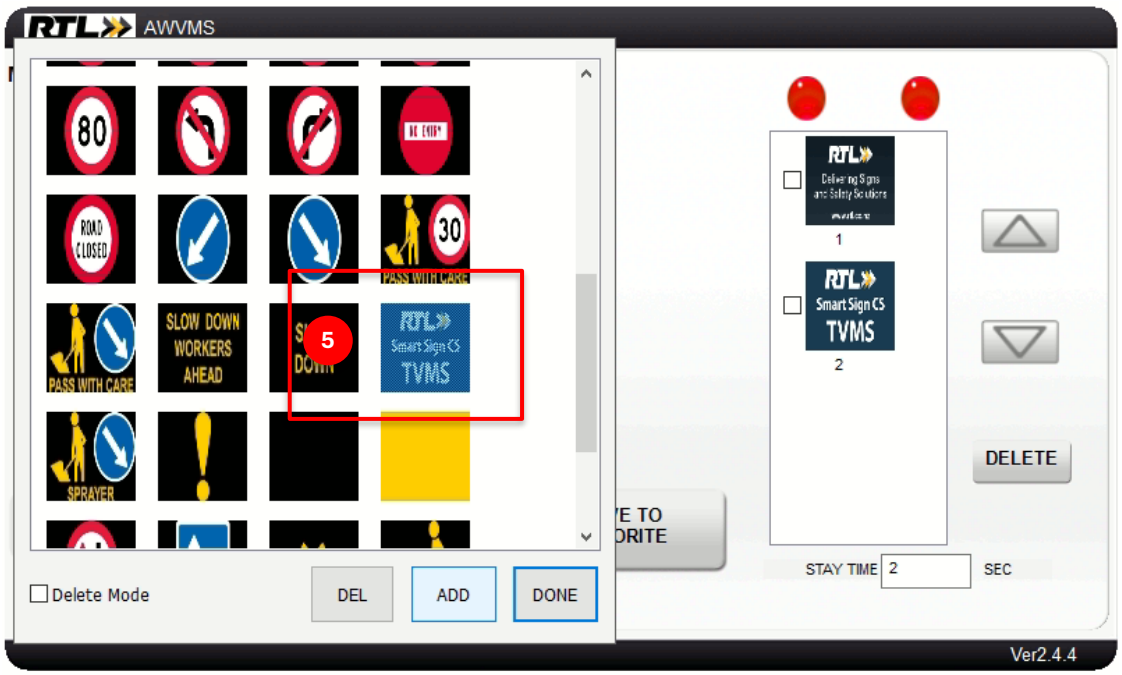
IMAGE PREPARATION: Use correctly sized, simple, high-contrast images. Keep the image library controlled and remove unused files if communication or upload performance slows. Loading and Displaying Custom Images are the sole responsibility of the user.

1. Open CREATE NEW MESSAGE and select PANEL.
2. Select ADD
3. Select the image(s)
4. Choose OPEN.



Select prepared image files to add to the panel library.

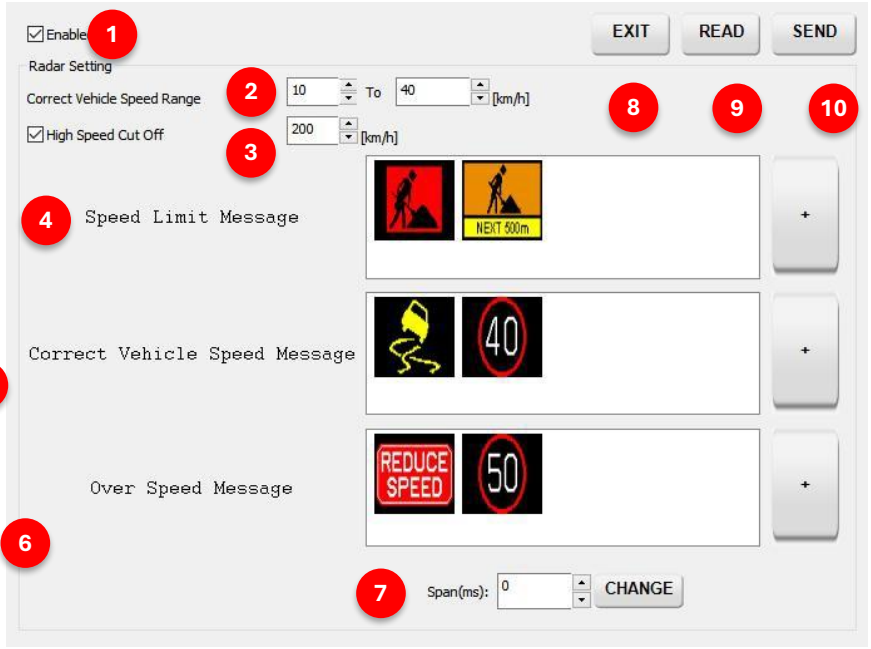
5. Confirm the new image(s) appears in the panel library.
6. Save to Favourites and create a test message and check the image on the physical TVMS before operational use.



New images shown in the panel library.

17. Radar Speed Messaging

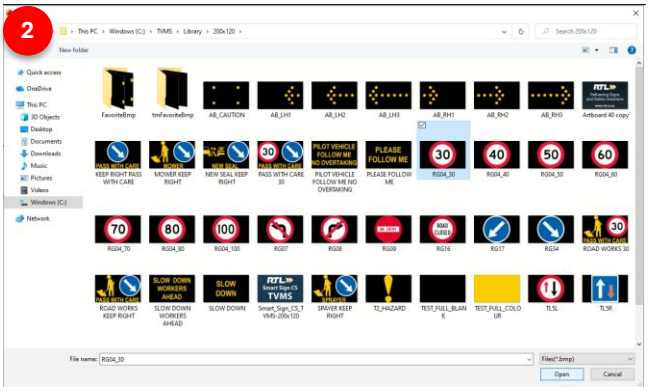
The radar function allows the TVMS to change the displayed message based on detected vehicle speed.

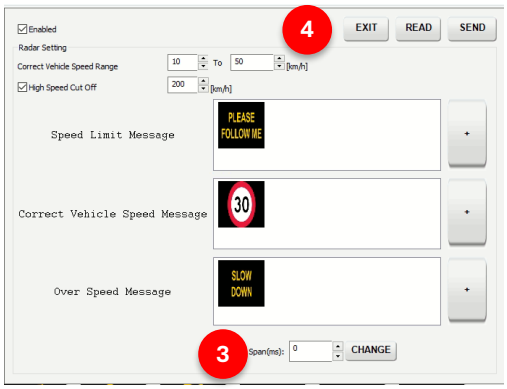


Radar settings screen.

	Setting	Function
1	Enabled	Turns radar-controlled messaging on or off.
2	Correct Vehicle Speed Range	Sets the speed range treated as the normal/valid detection range.
3	High Speed Cut Off	Sets the upper speed threshold used by the radar function.
4	Speed Limit Message	Message or symbol associated with the configured speed limit condition.
5	Correct Vehicle Speed Message	Message shown when the detected speed is within the configured valid range.
6	Over Speed Message	Message shown when the detected speed exceeds the configured range/threshold.
7	Span (ms)	Playback duration setting used by the configured radar message sequence.
8	Exit	Exits the Radar Application
9	Read	Requests existing loaded radar settings from the TVMS
10	Send	Sends the current radar settings to the TVMS

1. To load images against each section click Plus Symbol
2. Navigate to C:\TVMS\Library\200x120 and select existing image. Hold Shift and click to select multiple images.
3. Change SPAN – You MUST select image then type in new value and push CHANGE
4. Push Exit to cancel or Send to activate Radar with loaded images.





NOTE: After changing radar settings, test the function with a controlled vehicle pass before putting the TVMS into service. Confirm the displayed message changes at the intended thresholds.

18. Troubleshooting

Symptom	Likely cause	Action
Current Display is red	No communication between controller and TVMS	Check TVMS power, isolator, Ethernet cable, IP address and port. Reconnect before changing advanced settings.
Display is black after TURN SYSTEM ON	TVMS not powered, communication fault or display fault	Confirm auxiliary supply and Current Display status. Check fuses and isolator. Contact RTL if power is present but the display remains blank.
Display too bright or too dim	Fixed brightness selected or light sensor obstructed	Select AUTO and confirm the top light sensor is clean and unobstructed.
Radar does not trigger messages	Radar disabled, incorrect thresholds, poor mounting or blocked detection path	Check Enabled, thresholds, central radar mounting and forward view. Carry out a controlled test pass.
Battery does not recover after shift	Insufficient charging time, charger fault or battery condition	Connect mains charger and confirm charging operation. Check AC supply and charger indication. Arrange battery/charger test if repeated.
TVMS shuts down or resets under load	Low battery voltage, poor connection or supply fault	Stop operation, inspect battery state, terminals, fuses, isolator and power cabling. Do not continue cycling the system.
New custom image looks distorted	Incorrect image dimensions or automatic resizing	Rebuild the image to the recommended panel dimensions and reload it.