Mobile Speed Radar Sign
User Guide



PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE OPERATING THE UNIT

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1. Important Safe Work Instructions

- Always use the Mobile Speed Radar Sign (RADAR SIGN) in a safe manner
- The head of the unit should not be forced open. Failure to do so will void the warranty.
- The RADAR SIGN must be turned off and dismantled correctly whenever the unit is transported. Damage caused to the RADAR SIGN will not be covered under warranty for failure to do so.
- Ensure that the area surrounding and ABOVE the RADAR SIGN is clear of obstructions when setting up the unit.
- Do not overtighten locking knobs as this will cause damage over time to the tripod.
- Sandbags must be used **AT ALL TIMES** to keep the unit weighted down during operation and meet wind loading requirements.
- DO NOT USE THE EQUIPMENT FOR ANY OTHER PURPOSE THAN IT WAS INTENDED FOR!
- READ ALL Instructions before using this equipment.

Note! Once raised into position, and BEFORE leaving the RADAR SIGN unattended, the stand locking pin and stand locking knobs MUST be securely in position, AND sandbags in place to meet wind loading requirements of the RADAR SIGN.

2. Additional Resources:

Online Support:

Visit http://www.rtl.co.nz for the latest version of this manual.

Scan the QR Code to view our Product Tutorial & Resource Page.

For Technical Support – Contact us via our Book a Service or contact 0800 785 744.

3. Maintenance

- The RADAR SIGN contains no user serviceable parts. Should a malfunction occur, please contact the supplier of the system for assistance. Any tampering with the internal parts of the RADAR SIGN will void the warranty.
- If there is no response from the RADAR SIGN, please make sure the battery has sufficient charge before operating.
- If the battery voltage is **below 10 volts**, the unit will need to be recharged by connecting a suitable battery charger.
- Perform a visual inspection of the tripod stand and head of the unit monthly.
- Check the LED Module panels secure.
- Read **ALL INSTRUCTIONS** before using this RADAR SIGN.

4. Transportation

The RADAR SIGN was designed to be easily transported by vehicle or on foot. Total weight of the unit is approximately 12KG. Use of a trolley or two people may be required to transport the unit and avoid injury.

4.1. Setting up the Stand



- Take the stand and unscrew the bottom locking knob.
- Push down on the stand mount to move the tripod legs into position.
- Tighten the locking knob until its secure. Do not overtighten.
- Unscrew the top locking knob.
- Pull the locking pin apart, adjust the stand to your desired height and insert the pin into the hole according to your height requirements.



- Put the latch back onto the locking pin to secure it in place.
- Tighten the locking knob to complete stand setup.

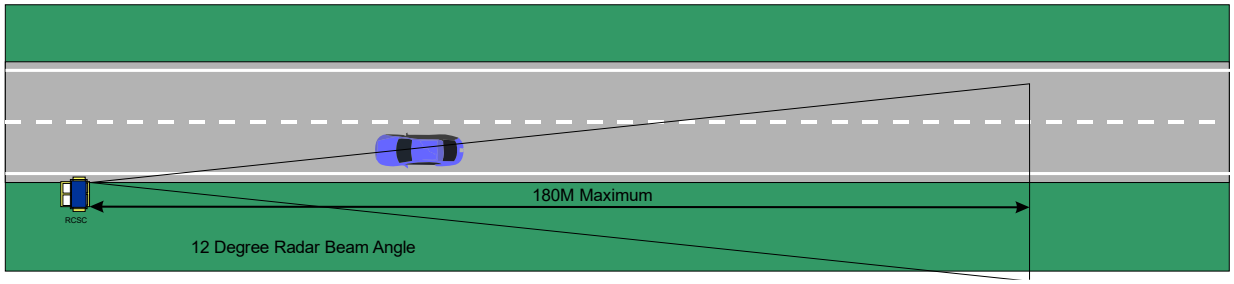
4.2. Mounting the Head of the Unit

- Pick up the head of the unit by the handle.
- Place it on the stand and align the pin holes.
- Pull the locking pin apart, place the pin inside and attach the latch.

5. Setup: Radar Sign Positioning

The RADAR SIGN must be positioned on reasonably flat stable ground in a safe position clear of obstructions, traffic and pedestrians.

The Beam angle of the Radar is 12 degree in X axis and 14 Degree in Y Axis, with a maximum pickup distance of 180M. The Speed detection will be dependent terrain and placement of the sign.



1. Setup: Sandbags (Mandatory)

The unit must be weighed down to meet wind loading requirements. Any damage sustained from the unit falling over is not covered under warranty.

- Place 6x sand bags on and around the unit to meet the wind loading requirement.
- One on each leg (3x)
- One on each leg extension (3x)



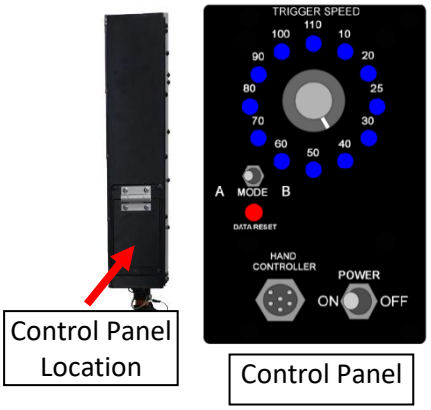
<u>Leaving the RADAR SIGN Unattended</u>

While the RADAR SIGN can be left unattended, it's best to always have someone nearby to prevent theft of the unit.

To leave unattended, make sure the unit is set up correctly with sandbags to meet wind loading requirements.

1. Panel & Start Up (Operation)

All operations of the RADAR SIGN are controlled via the control panel which is located on the side of the head of the unit. Lift the latch up to access the control panel.



Control Panel Location

Control Panel

1.1. Control Panel Layout

The control panel consists of:

- 1 rotary switch / dial (Set Trigger Speed)
- (ON/OFF Toggle
- MODE Toggle
- Data reset button
- Hand controller port.

All the switches are described below.

1.2. Power ON/OFF

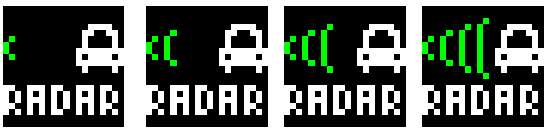
This switch controls (ON or OFF) power to the RADAR SIGN. **NOTE:** Turning the sign off will also reset the under and over speed counters within the sign.

Initial Power ON
Turn the sign on via the Power ON/OFF switch located in the control box. The sign will go through the start-up procedure.

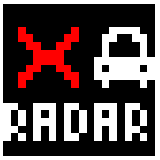
1. The sign will display the current trigger speed selected. For example. If the trigger speed is selected for 40km/h then the sign will display the 40km/h speed limit sign.



2. The sign will then check the connection between the radar and the main sign controller. If the communication is valid between the radar and sign controller the main sign will display the following messages and then blank the screen waiting for a speed detection to occur.

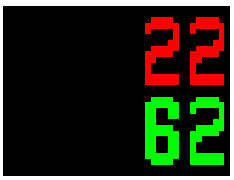


NOTE: If the connection between the radar and the main controller board is not valid the sign will display the following message and stay on this screen until the problem is rectified.



1.3. Data Reset button

Holding this button down for one second will display the number of over speed and under speed detections on the sign. The sign will display the over speed detections in Red and the under speed detections in green. These values will flash three times on the screen and then reset the counters to zero for the number of over speed and under speed detections. For example the following image has detected 22 over speed limits and 62 under speed limits.



2. Light Sensor

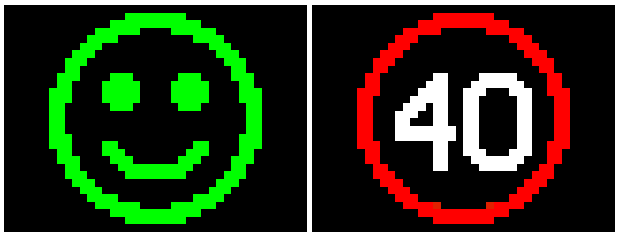
The RADAR SIGN will automatically adjust the brightness level of the sign to the conditions read by the light sensor.

3. Display Modes

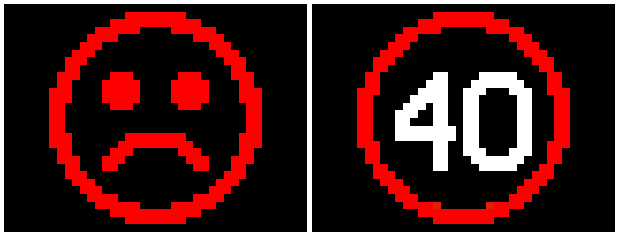
There are two Modes of operation for the RADAR SIGN.

Mode A – The sign will display the Happy/Sad face and selected Speed Limit sign dependent on the trigger speed set on the rotary switch and the detected speed of the vehicle.

For example if the Trigger speed is set for 40km/h on the rotary switch. Any vehicle speeds that the RADAR SIGN detects below the trigger speed the RADAR SIGN will display a Green Happy Face as shown below. The Green Smiley Face will be displayed for 1 Second and will go blank until another speed is detected.



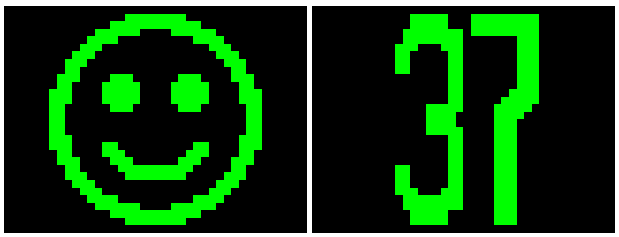
If the detected speed is over the trigger speed the RADAR SIGN will display a Red Sad face and then the selected speed limit sign and then a flashing SLOW DOWN message.





Mode B – The sign will display the Happy/Sad face the detected speed of the vehicle, slow down message dependent on the trigger speed set on the rotary switch and the detected speed of the vehicle.

For example if the Trigger speed is set for 40km/h on the rotary switch. Any vehicle speeds that the RADAR SIGN detects below the trigger speed the RADAR SIGN will display a Green Happy Face and the detected speed in green as shown below. The Green Smiley Face will be displayed for 1 Second and will display the detected speed for 1 second and then go blank until another speed is detected.

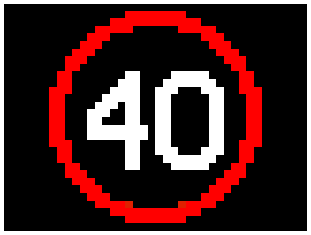


If the detected speed is over the trigger speed, the RADAR SIGN will display a Red Sad face and then the speed limit detected, followed by flashing SLOW DOWN message.



3.1. Trigger Speed (Selection via Rotary Switch)

The rotary switch selection sets the trigger speed of the RADAR SIGN. The trigger speeds can be set to the following speed settings 10, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 110. There is an LED light which will show the current selected trigger speed. When the position of the switch is changed the new speed limit will be displayed on the sign to indicate the change.



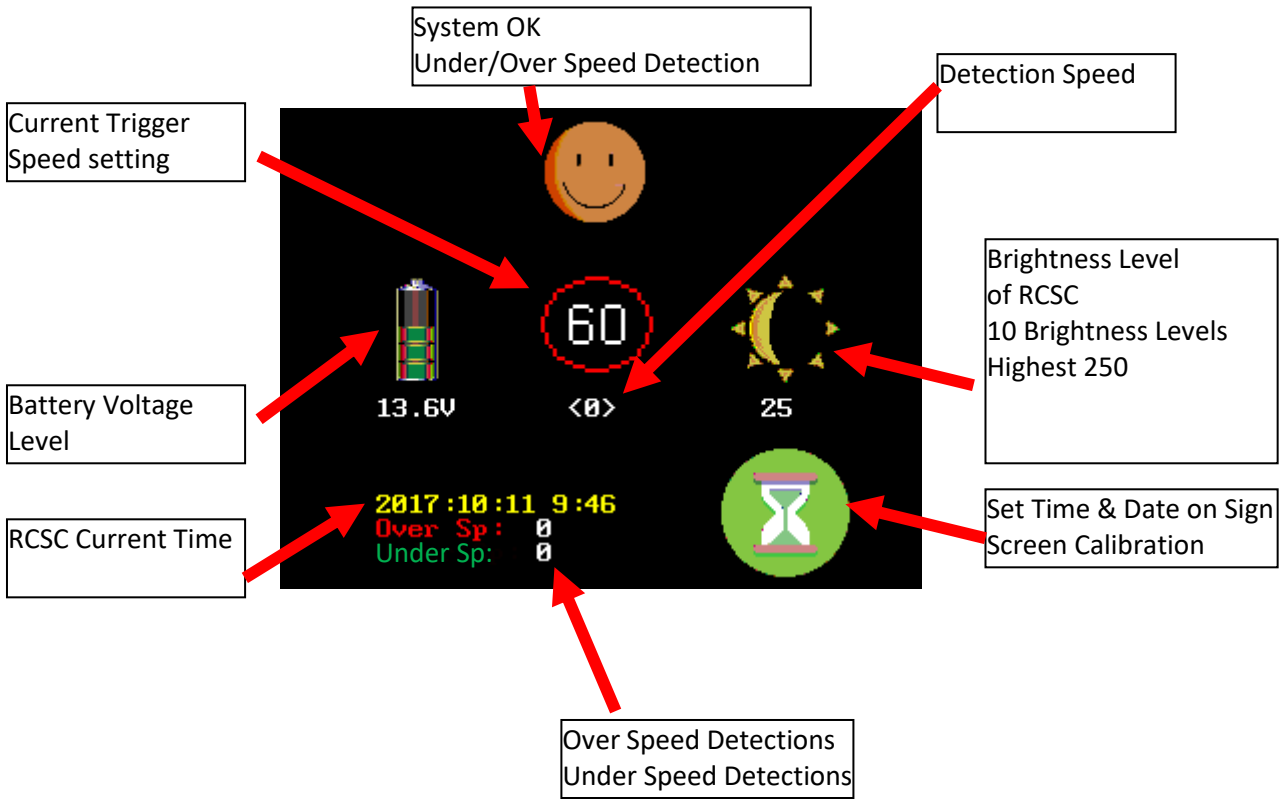
NOTE: The trigger speed selection can be changed whilst the sign is operational. The Speed Limit that is selected will be displayed on the sign.

Test pattern can be run on the screen by turning the trigger speed to 110 it will cycle test pattern of RED, GREEN and BLUE and then become operational

4. Connecting the Hand Controller (Optional)

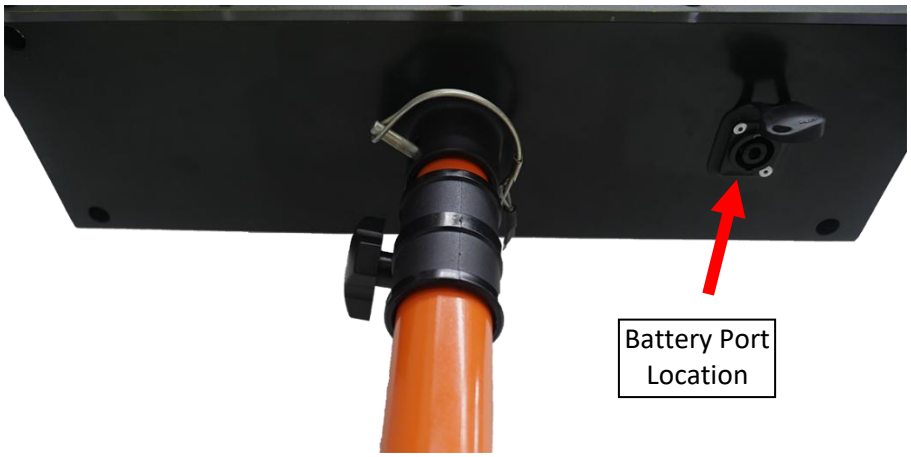
The control panel has a Hand Controller connection that is used for diagnostic purposes only.

When the hand controller is plugged in and initialized it will show the following screen. The layout of the screen is shown below.



5. Battery Charging

The battery charging port is located under the head of the unit. Connect the Meanwell battery charger to mains power via the IEC cable, connect the charging cable to the charging port on the head of the unit.



On Initial operation of the battery charger, once connected there are two lights at the end of the charger. These will illuminate either Red or Green depending on the charging state. Ensure that the IDC cables are connected to the charger and that the Speakon charge connection is also secure/



Image of charging unit

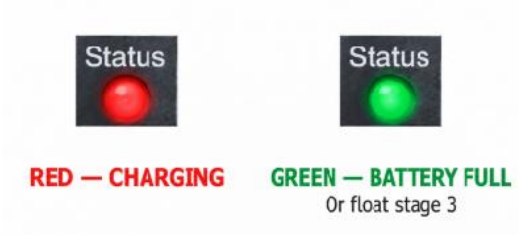


Image of status lights

It is recommended that when changing the Lithium Battery that it should be set for 2 stage if the units if the unit is regularly cycled. Stage 3 is also compatible with the battery used within the sign.

5.1. Table of charge times from Flat

CHARGE RATE (A)	APPROXIMATE TIME REQUIRED FOR FULL CHARGE
6.75A	Approximately 4 hours from fully discharged

Allow longer if the equipment is operating whilst charging, and also if the battery is cold as these can be stored in the back of work vehicles.

6. Specifications

- Primary Power Supply: 20AH@12VDC 1 x LiFEPo4
- Nominal Operational Voltage Range: 10.5 to 15VDC
- Auxiliary Battery Charger: 240VAC, 230W,
- Light Specifications – 2 x P16 RGB Modules
- Radar Spec- Pickup Distance 180m maximum,
- Beam Angle 12deg x 14 deg
- Radar Detection Speed 11kph to 120kph
- Expected Runtime of unit with full charge 13Hours
- Mechanical Dimensions: 450mm x 600mm x 140mm
- Sign Weight Only: 12KG

7. Troubleshooting

FAULT	CAUSE
Unit displaying no Transmit message	Check connection to Radar unit
Unit not displaying message	Check Power ON/OFF switch
	Check Battery Volts
	Check power connection to LED modules
LED Module displaying irregular pattern	Check IDC connections between modules and Main control board
	Check power to LED Module (5V)
No Detection of vehicle speed	Check Radar connections

8. Disclaimer

This document provides information on our products, and all efforts are made to ensure the accuracy of the information contained within. The specifications of the products are subject to change and continual improvement without notification.