DS-Live™ User Guide



DS-Live[™] is web-based system developed by Data Signs Pty Ltd. It allows users to interact with their fleet of Data Signs' products including Variable Message Signs, Portable Traffic Lights, Variable Speed Limit Signs and Arrow Boards.

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Log In

DS-Live™ is optimised for Google Chrome and Microsoft Edge. Please do not use Internet Explorer as Microsoft have stopped support.

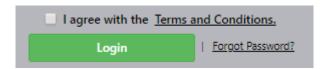
Go to https://ds-live.com.au on your PC, Laptop or any other internet enabled device.



Enter your email address (as username) and password at the Log In screen to access DS-Live™. You will also need to agree with the Terms and Conditions each time you log in.

Your DS-Live™ login details will be sent by email on purchasing your first Data Signs product. As a DS-Live™ admin, you will be able to create other admins and user logins.

To reset your password, click on the 'Forgot Password' link. Enter your email address and click Submit. You will receive an email with a link to reset your password. This link will expire in 1 hour.



Note: Some features of DS-Live™ may not be compatible with older Data Signs' products. Specifically, the firmware (or program) that runs on the Sign Controller may be out of date or the Controller does not support the function. For more information regarding firmware versions and Sign Controllers, please contact our Help Desk

Online Help

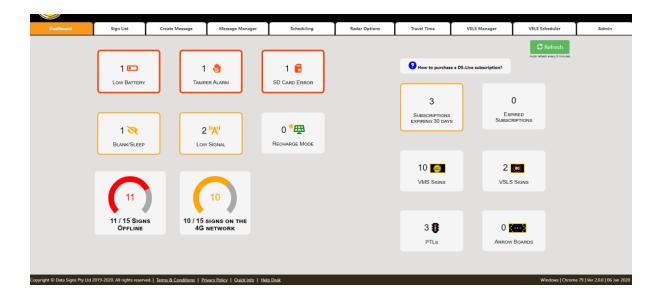
DS-Live™ contains a link to the <u>Help Desk</u> should you require any further support or assistance with your signs.



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Dashboard

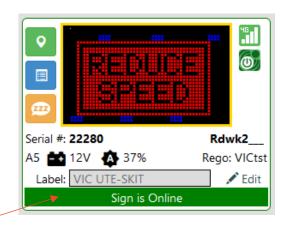
When you log into DS Live™ the first screen you will see is the dashboard which gives you a quick view of your fleet's status. Indicators in RED require immediate action i.e. Low Battery, Tamper Alarm, SD card error etc. AMBER indicators are warnings to be checked at the earliest.



Sign List

The Sign List tab lists all the signs you have permission to view. On the left, you will notice a map with the location of all the signs that have a GPS position. To show/hide this map, click on the BLUE pin icon .

Quick details of each sign like the Serial No., battery voltage, brightness, etc... are displayed in a panel. An animated image of the message displaying on the sign can be seen in the centre of each panel. On the right, you will notice status icons indicating the status of each sign and if they need any attention.



Status Bar

The Status Bar in the signs list tab is a visual indicator of the sign's status.

A green status bar indicates that the sign is currently online.

A grey status bar indicates that the sign is offline and is not in communication with the DS-Live™ Server for at least 30 minutes. When the status bar is GREY you cannot remotely program the Sign. All values displayed are *last known* values. Click here for steps to diagnose why the sign is offline.

A red status bar indicates that an alarm has been set and the sign needs immediate attention.

An amber status is a warning and indicates that a sign is about to enter red status.

On older Signs, during a tamper alarm, the battery voltage will show as 0.1V as the same line is used to measure both voltage and tamper. On current controllers a separate battery voltage level is provided.

When the temperature exceeds 45 degrees Celsius inside the Sign Head, the fans will start. When the temperature inside the Sign exceeds 70 degrees, the status bar becomes red. The electronics in the Sign should continue to operate to around 85 degrees, temperatures that are shown consistently high may mean one or both fans have failed and need replacement.

Set/Save Label Button



Just above the status bar is a Label. This is a free-text field allowing for easier tracking of your fleet. Click the Edit button to enter the details and click Save to save this label.

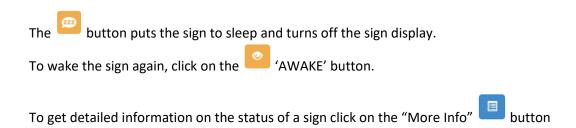
Find Sign, More Info, Sleep/Awake

On the left side of each panel, you will notice 3 action buttons.

Click the button to view the location of the sign. This will open Google Maps in a separate tab in your browser. This button will be disabled if the sign does not have a GPS position. Where GPS is unavailable:

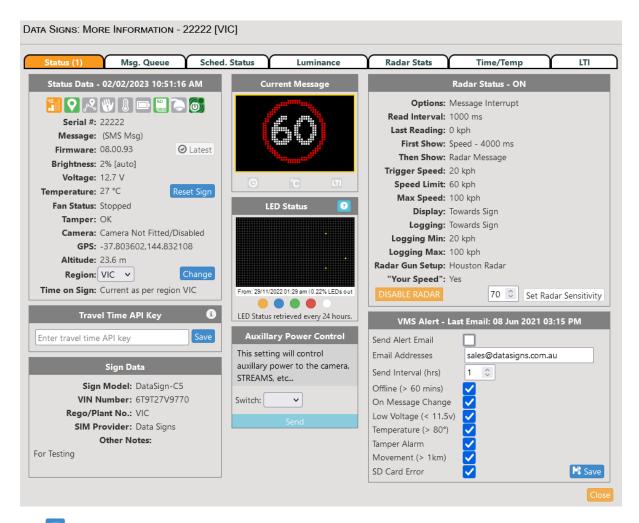
- Check that the GPS antenna has a clear view of the open sky. The sign in not under a bridge or placed indoors.
- On earlier type controllers, Check the GPS antenna is not cracked, even a small crack that can let water in will cause this issue.
- o Or check the GPS cable is plugged in OK and no fault with the wire.

Otherwise, there may be an issue with the GPS component on the Sign Controller itself.



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More Info Popup



The More Info button brings up the More Info popup screen. This screen gives a detailed view of the status of a sign. The date/time stamp at the top of the screen shows when the status was last received. Users can set the Region of the sign so that the time is calculated correctly based on the local DST. If required, users can reset a sign remotely.



The LED Status section shows the position and colour of any LEDs that are not functional on the sign display, click each coloured circle to check corresponding colour. This LED status data is updated at midnight each night. The Sign constantly monitors its LED status internally.



The Firmware Upgrade button allows you to remotely update the firmware version that is operating on your Data Signs product. It is beneficial to always ensure your products is running the latest firmware to maximise performance. If your controller requires a firmware upgrade the button will be blue – if you are on the current version, it will be greyed out and state 'Latest'.

Cautionary Note: Executing a software upgrade may require a power cycle afterwards. It is recommended this is done while the sign is in close vicinity.

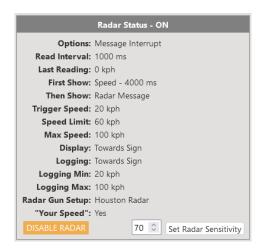


The Auxiliary Power Control allows you to remotely control the power output to supplementary devices such as a PTZ camera or STREAMS.



If a Data Signs supplied radar unit is fitted to the sign and the radar has been set using the Radar Options - Radar Setup or Radar Scheduling tab, the current radar status will display. The reading values show the last speed detected when the status was last retrieved from the sign.

Users can change the sensitivity of the radar as required. The value must be between 1 and 99.

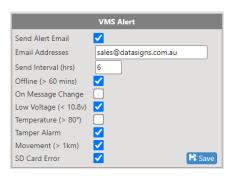


VMS Alert.

This enables Monitoring and Reporting by Email the Sign's status, alerts or message changes.

Check the Send Alert Email Checkbox to have VMS Alerts activated.

The Send Interval (hrs) check box and number entry box will cause an email to be re-sent every set number of hours if the Alert condition is still not resolved.



Battery Recharge Mode

When the battery voltage drops below 10.5 Volts, the batteries are considered unserviceable to operate the VMS Display. The sign display will blank, and the sign will enter Battery Recharge Mode allowing the batteries to recharge. The sign will exit Battery Recharge Mode once the battery voltage exceeds 12.5V.

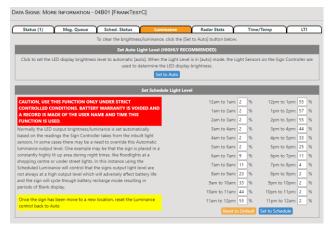
Steps need to be taken to rectify low battery voltage if the voltage does not recover. It may be due to solar regulator problems or solar panel wiring issues.

The Override Battery Recharge Mode section can be used to take the sign out of Battery Recharge Mode. Use of this function is recorded. Overriding the battery recharge mode by clicking the send button WILL void the warranty if the batteries drop lower than 9 volts as this *will* cause irreversible damage to the batteries.

Msg. Queue: is a list of messages that have been queued to be sent to a sign at a certain time.

Shed. Status: If a schedule is running on the sign, this tab will show all the details of that schedule including start and end dates, message list and times of scheduled message changes. Set the 'On Message Change' Alert notification option if you want to be alerted when the message has changed on the sign.

Luminance *** use with Caution, read the cautionary note used for this function ***



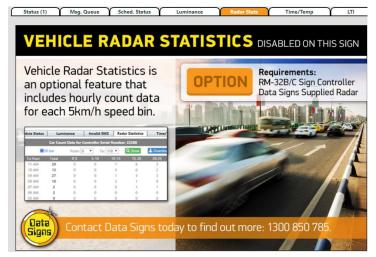
The Luminance tab allows you to schedule the brightness of the LEDs for different times of the day and night. The Luminance scheduling is only available on sign controllers running firmware 06.02.35, or later. This can be used to reduce the amount of power the sign uses if it is placed near continuous high light conditions. i.e. flood lights. To change back to automatic brightness levels, click the Auto button. *Data Signs recommend you use the Automatic brightness setting for most scenarios*.

Use with caution if setting high brightness levels on the sign.

High brightness uses more power and will therefore discharge the batteries faster.

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Vehicle Radar Stats



Vehicle Radar Statistics also known as "Car Counting" is an optional feature offered by Data Signs Pty Ltd on DS-Live™. The Vehicle Radar Statistics feature is only available on signs running the RM-32B Controller or later, and where a radar gun supplied by Data Signs has been fitted.

If the Vehicle Radar Statistics option has been purchased for your Sign, click the Radar Stats tab in

the More Info popup to view and download the radar statistics. To start

collecting Radar Stats data

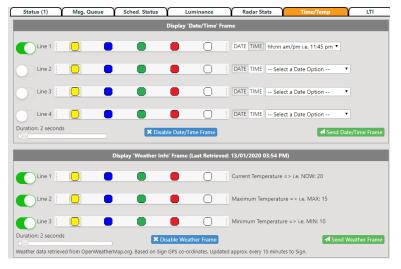
once the Sign has been deployed, enable the radar using the *Radar Options* tab within DS-Live™, using the Radar Setup section. You will also need to enable Data Logging (tick the box) at the bottom of this section. View the **Radar Options** section of this Guide for more details.

The data is retrieved from the Sign every hour. The data contains a count of the number of cars in the various speed bins, where each speed bin is a 5 km/h interval. Each vehicle is counted once. The Radar unit can count cars over multiple lanes.

Click the Download Data as CSV button to download the data to an Excel® spreadsheet, or equivalent as Comma Separated data (.csv) file.

Note: If a Sign has the Vehicle Radar Statistics option activated, it replaces radar data logging.

Time/Temp



The Time/Temp option is only available on signs running the RM-32B Controller or later. The Time Source is retrieved from the GPS receiver on the Sign Controller. The weather data is obtained through the DS-Live™ Cloud from the

http://openweathermap.org website, where the weather is retrieved based on the GPS position of the Sign itself where weather data is provided for the data source located closest to that position. The Weather data is updated onto the

Sign approximately every 10 to 15 minutes.

Note: Data Signs does not control the weather data, it is simply retrieved and displayed based on information provided through the Open Weather Map project; you can view their website for details about the sources of data, they use in different areas.

The Date/Time Frame is displayed on one Frame if sent to the Sign, and/or Weather Frame is then displayed (as separate Frame). If sent to the Sign, the Time or Weather Frame is displayed immediately after the current message has run through once, at the end of each message display cycle. To use this screen, select to use one or more Lines using the slider on the left.

Select the colour to display the text on that line (default is Amber).

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For the Date/Time Frame, select the type of Time or Date to display. Click the Send Date/Time Frame button to show this Date/Time Frame on the Sign.

For the Weather Frame, click the Send Weather Frame button to show the weather data on the Sign. This may take up to 10 minutes to update during which time the weather data is retrieved for this location.

LTI (Lost Time Injury)



The Lost Lime Injury option is an optional feature added to DS-Live[™]. It is only available on Signs running the RM-32B Controller or later. A Lost Time Injury (LTI) is a work-related injury resulting in time lost from work of at least one day or shift. The Lost Lime Injury option uses *Month* as the timeframe for measuring the Lost Lime Injury data. Click the LTI tab to setup the Lost Lime Injury data. Each piece of data will be displayed on a separate frame.

Once you have inserted the initial data, click the Send Lost Time Injury Frame button to send the data to the Sign. Again, note this is *Month*-based.

If an Injury occurs, click the Injury? button to increment the number of injuries this month value. The Days Since Last Lost Lime Injury value is automatically incremented on the Sign at midnight.

If the Days Since Last Lost Lime Injury value is greater than the Best Record value, the Best Record value is also automatically incremented.

Create Message

The Create Message tab allows you to create a message and send it the Sign(s) for display. The first step is to enter text or draw on the frame (grid). Each page of the message is called a frame.

Step 1a: Enter and format text.

Note: Please finalise all textual changes before drawing because textual changes at a later point will clear all drawings on a frame.

What you see displayed in the grid is what will be displayed on the sign. However, if you make use of colour and send the created



message to a sign with only amber LEDs, the colour is converted to amber automatically.

You can set each character on a line to a different colour by selecting the colour before entering the text OR to change the colour of a text, simply select the entire line of text or a single character and then select the required colour.

Step 1b: Drawing

Besides entering text, you can draw on the screen using a set of colour pens. Select a colour; then click and move the mouse over the cells to free-hand draw on the screen.



You can also choose from a set of drawing tools to draw a line, square (rectangle) or circle (oval). First select a colour pen, then select the drawing tool and click and move the mouse over the cells to draw the selected shape. You can fill colour in an enclosed shape by first selecting a colour pen; then click on the Fill Colour option then click on a black cell on the screen. To replace a colour on the screen, start by first clicking on the colour pen to select the colour to be replaced; then click on the Replace Colour option; then click on the colour pen to select the new colour. To move a section of drawing start by first clicking on the Select Rectangle option. Then click and mark the area to be moved. You can then use the mouse or the arrow keys on the keyboard to move the selection on the screen. When you are done, click on the Cancel option to clear the selection. Finally, you can undo up to 10 recent drawing changes by clicking on the Undo option.



Effects can be applied on a frame or between frames as a transition. Click the effects tab in step 1

and select the type of effect from the list. Click the Load Effects button to apply the effect, the type of transition or effect applied should now appear below the grid (bottom left).

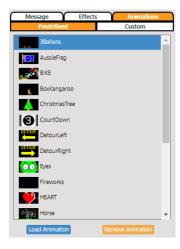
Note: The use of Effects will create multiple message frames and a much bigger message file, the Preview and Send Times will be much longer!

There are several pre-defined animations in Step 1 that you can use in your message.

Select from the list and click the Load Animation button. Below the grid on the left, the name of the selected Animation will be shown.

Note: The animation will be played *before* the current frame is displayed. So, the current frame can have text. The "Frame Display Time" has no effect on the length of the animation; it will play to completion before the current frame is displayed.

Note: The use of Animations will create multiple message frames and a much bigger message file, the Preview and Send Times will be much longer!



Step 2: Frame Display Time



The Frame Display Time can be set from 0.1 to 99 seconds. This is the time for which the current

frame will be shown on the Sign display. The default display time per frame is 2 seconds.

Step 3: Frame Navigation

The frame navigation section allows you to move back and forth between frames. Insert a frame before or after the current frame by clicking the Insert Frame button. Use the Delete Frame button to remove the current frame from the message.

The Clear button simply clears the current frame of any text or drawing.

The Manage Frames is an especially useful function for checking and editing large messages.

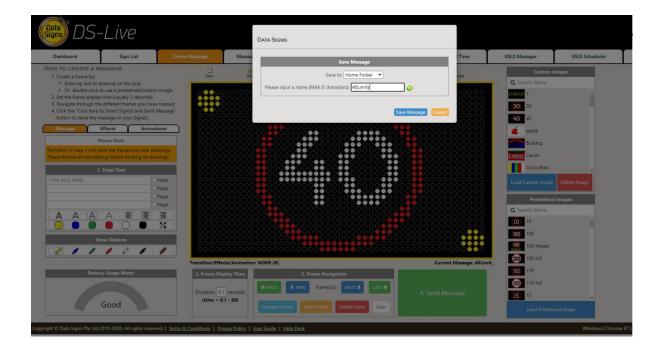


Once you have finished creating your message, you can preview it by clicking the Preview button located above the grid. This gives you a good idea as to how it will look on the physical sign itself.

Step 4: Sending a Message

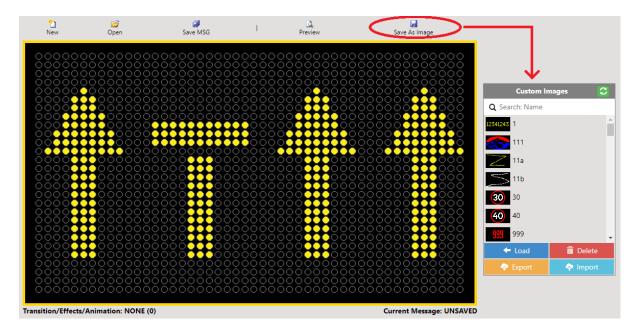
To send the message, click the '4. Send Message'. A window will appear prompting you to either save the message before sending or, send as unsaved. If sent as unsaved, you will be unable to edit this message later. Tick the checkbox next to each Sign for it to receive the message and click Send Message.

The message can also be sent at a predetermined time. Use the Send When: option for this. Select a date and time at which you want the message to appear on the Sign. Then click the Send Message button. This will also appear in Status 2 Window.



Custom and Predefined Images

A custom frame can be saved for future reference by click on the "Save as Image" button. This will save the frame as an image in the Custom Images list. This image can then be later reused in another message by clicking on the Load button or it can be Exported to a DSI file to be shared and Imported by another user as required.



Predefined Images are generated by Data Signs and Shared with all our clients. Double-click the image in the Predefined Images list to load it onto the current frame.

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Message Manager

Use the Message Manager tab to manage message folders and send message files to your sign. All message files and folders are stored on the Cloud Server; therefore, they are accessible from any device that you used to log into DS-Live™.



Each DS-Live™ account has a default home folder where all message files are if they are saved. Message files can be saved from the Create Message tab. Click the Create New Folder button to create additional folders. If you create a new folder then you may also need to change who can access this folder using the Manage Users tab. Full access is provided; by default, to all users on your DS-Live™ account.

Step 1:

Click on the Folder Name for a specific folder; this opens the contents of the folder, displayed on the right.

Step 2:

Clicking the actual message preview will open that message in the Create Message tab.

You can select multiple messages using the checkbox and delete more than one message at a time by click on this button Use with caution as a deleted message cannot be retrieved.

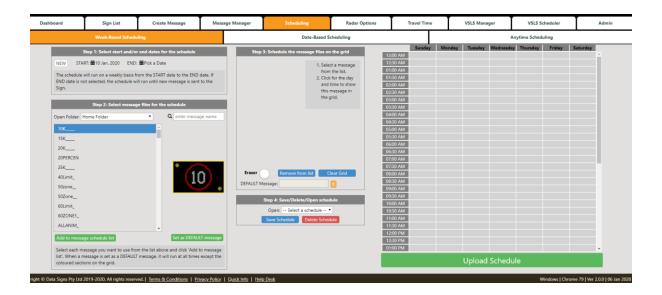
Clicking on the Send button will allow you to send the message directly as the Send message screen is opened to allow this.



Selected messages can be Moved or Copied from the current folder to another folder.

Selected messages can also be Exported to a local DSM file. This DSM file can shared with anyone and later Imported back into DS-Live into their account.

Scheduling



There are three types of scheduling available on DS-Live™. Before using the Scheduling tab, you will need to create <u>and save</u> the message files you wish to use as part of the schedule. A summary of each schedule type is provided:

- Week-Based scheduling runs on a weekly cycle between a specified start and end date.
- Date-Based scheduling has two modes:
 - Run a message between the start and end times on each day between a specified start and end date.
 - Run a message *continuously* from the specified start time/date to the end time/date.
- Anytime scheduling allows you to specify a date-range in which you can then schedule a message for any ½ hour period for any day in that date range.

Default Message

For each schedule type, it is recommended to set a Default message by selecting a message from the list and clicking the Set as DEFAULT message button.

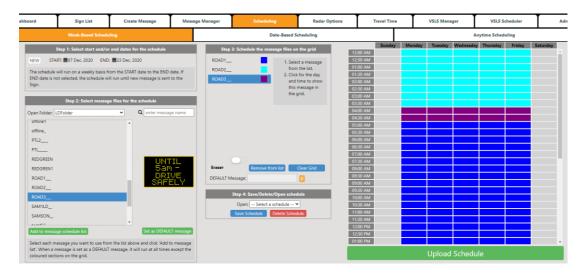
The Default message will run when the schedule ends or when another message is not scheduled rather than filling the schedule with entries.

Note: When a new message is sent to a Sign using the Create Message tab or the Message Manager tab, this will clear any schedule currently set for the Sign and will start displaying this Message.

Week-Based Scheduling

Use Week-Based Scheduling to schedule message to change on a weekly cycle, in ½ hour increments. This type of scheduling can be used to inform drivers of night road works as in the following example, For night road work to complete asphalting or re-surfacing works. A maximum of 20 entries in the schedule applies.

The first message (ROAD1) would run during the day from 5am until 9pm. The second message alerting drivers to road works and delays (ROAD2) would run from 9pm until 4am. A third message to let drivers, know that the road works will finish at 5am (ROAD3) could run each morning from 4am until 5am. As road works could not be conducted over the weekend, no messages would run on the weekend and the Sign would be blank if no default message is set. The following message files would be created and saved on the Create Message tab.



The screen is divided into several steps.

Step 1: Select the Start and End date for this schedule. The schedule will run between, and including, these dates. Click the icon to select a date. After the scheduled End Date is reached, the Sign will run whatever Default message has been loaded, or the Sign will blank. This will show as 'DEFAULTA' message name in the Sign List tab for that Sign.

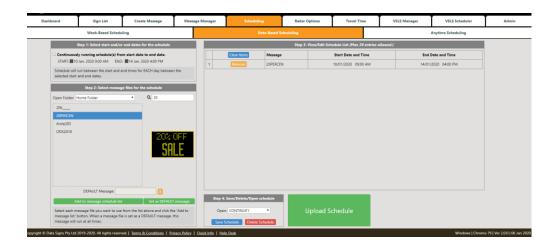
Step 2: Select each message that forms part of the schedule and then click the Add to message schedule list button for each selection. In this example, you would do this for the ROAD1, ROAD2 and ROAD3 message files. See previous note regarding the default message. MAXIMUM 10 messages allowed in the list box.

Step 3: Select a message from the list box and click the times in the grid at which to display this message. Use the Eraser button and click to clear any boxes in the grid you mistakenly fill.

Step 4: You can optionally save the schedule. Alternatively, you can open a previously created schedule for editing or to send to Sign(s).

Once completed, click the Upload Schedule button to send the schedule to your Sign(s).

Date-Based Scheduling



Use Date-Based scheduling to run a message for a specified period for *each* day between the start and end dates. The message will be displayed between these dates and times set. If the *'Continuously running schedule'* box is checked, the message will run continuously between the dates and ignore the times set.

Date-based scheduling is useful where an event occurs every day between set times for a particular date-period.

Step 1: Select the Start Date, End Date and the Start and End Time to run the message between these dates. You would schedule a separate Start/End Date and Start/End Time for each message.

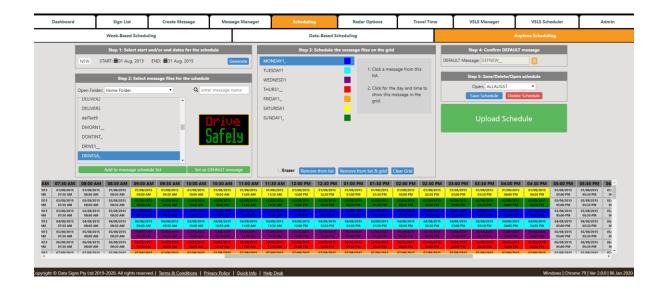
Step 2: Select each message that forms part of the schedule and then click the Add to message schedule list button for each selection. The entry will then be displayed in the schedule list in Step 3.

Step 3: You can optionally remove a schedule entry from the schedule list as required. The example above shows how you could display a "20% OFF SALE" message for a 4-day period, between 9am and 4pm each day.

Step 4: You can optionally save the schedule. Alternatively, you can open a previously created schedule for editing or to send to Sign(s).

Once completed, click the Upload Schedule button to send the schedule to your Sign(s)

Anytime Scheduling



This allows for messages to be scheduled to run for any ½ hour time slot in any day between (and including) the set Start Date and End Date. Maximum of up to 45 days.

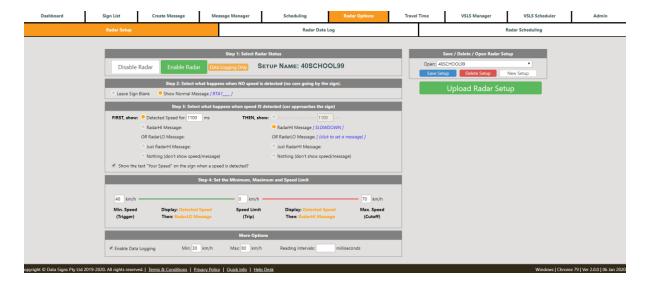
Note: If you select a DEFAULT message, this is displayed on the Sign until the schedule starts. If you don't select a DEFAULT message, the Sign will remain blank until the scheduled start date.

- Step 1: Select the Start Date, and the End Date and click on the Generate button
- Step 2: Select each message that forms part of the schedule and then click the Add to message schedule list button for each selection. The entry will then be displayed in the schedule list in Step 3.
- Step 3: Select the message you want for each ½ hour block and click on the schedule block Select each message for each ½ block in any order.
- Step 4: You can optionally save the schedule. Alternatively, you can open a previously created schedule for editing or to send to Sign(s).

Once completed, click the Upload Schedule button to send the schedule to your Sign(s).

Radar Options

The Radar Options tab only applies where a Data Signs Supplied Radar unit (speed detector) is fitted to your Variable Message Sign.

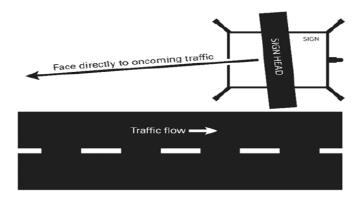


Performance: Detection Range is typically 30 to 90 Meters for compact vehicles on open and level road with radar mounted at least 1.5 meters high and pointed straight into oncoming traffic. This performance will vary with installation as well as road and weather conditions.

Detection range specified is typical for speeds between 10KPH and 100KPH. It tapers off below and above this speed range. We therefore recommend setting the radar settings between this speed range where possible to avoid false readings.

Setting up a Sign with Radar Gun

It is important that the Sign be setup correctly to ensure the radar gun operates as required. As shown in the diagram below, position the Sign so that the radar gun will face oncoming traffic square-on.



Use the wind-down legs on the trailer to level out the Sign so that the radar gun is as level as possible with the oncoming traffic. If the radar gun is detecting vehicles from too far away, then you can adjust the back wind-down legs so that the radar gun faces down a little more.

It is useful to spend a bit of time at the Sign with the radar gun setup to observe that it works according to your requirements.

Determine Your Radar Requirements

Before setting up the radar scheduling you will need to determine how you want to make use of the radar in the Sign. There are several ways the radar gun can be used in with the normal Variable Message Sign features to:

- advise drivers of the current speed zone
- advise drivers of the speed they are travelling
- state whether the speed the driver is travelling is TOO FAST or not
- advise drivers only when they are going above the set speed limit
- display a message when a vehicle is detected for targeted alerts (i.e., STEEP CURVES AHEAD)
- display a message only when a vehicle is detected, power saving feature and grabs attention.

Different combinations of the above may be used as part of the radar gun setup.

Typically, the radar gun is setup to do the following when a speed is detected by the radar gun:

- 1. Advise the driver of the speed they are travelling display this speed.
- 2. Display a TOO FAST or THANKYOU message depending on their speed. As the car approaches the Sign the above sequence may occur multiple times, this is dependent on the way the radar gun is positioned and the sensitivity and other settings as set on the radar gun.
- 3. Then, go back to displaying a normal message, the Interrupt message.

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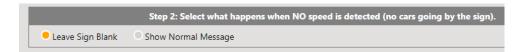
Radar Setup

Use the Radar Setup option to create a radar setup scenario. Starting at the top of the screen tick the Enable Radar checkbox to enable the radar and continue down the screen selecting the required options.

Step 1: Select "Enable Radar". This will open the form with more options as detailed below. A radar setup on a sign can be disabled from the "More Info" section or by sending a Disable Radar command from this screen.



Step 2: Select what happens when NO cars are going by the sign. You have 2 options: Leave blank or Show a message. If you select show a message you have to click on the blue link to set a message.



Step 3: Select what happens when a car approaches the sign and is detected by the radar. You have several options to display multiple frames of information if required.

Show Detected Speed: will show the speed of the approaching car for the duration (1.1 second) **Show HI/LO message**: will show a HI (slow down) or LO (thank you) message based on the speed of the car and the selected Speed Limit. Click on the blue link to select a set a HI and LO message. **Show Just HI message**: will show a message only when the car's speed is above the Speed Limit **Do Nothing**: will show nothing on the sign (but Data Logging will continue if it has been selected)



Step 4: Set the speed limit of the road. Set the minimum speed to avoid unwanted readings like people walking or cycling. Set the maximum speed which can be a max of 200 KPH.



In the "More Options" section you can enable Data Logging. Select the Min and Max speed at which to log



the radar data. The Reading Interval specifies how often the Radar captures data. By default, the Reading Interval is set to 1100 milliseconds (1.1 seconds). Data Signs recommends Reading Interval values between 900 and 1900 milliseconds.

Radar Data Log

If you have enabled radar data logging on a Sign, use the Radar Data Log screen to setup the retrieval of the radar data log files. See example of a saved excel file.

In the Add Radar Data Log section, select the Sign that is logging radar data. Enter up to three email addresses, then click the Add button.

	Α	В	С
1	Speed	Date	Time
2	9	24/01/2019	12:14:50
3	8	24/01/2019	12:14:52
4	8	24/01/2019	12:14:53
5	6	24/01/2019	12:22:28
6	5	24/01/2019	12:26:52
7	6	24/01/2019	12:27:01
8	7	24/01/2019	12:27:03
9	7	24/01/2019	12:27:04
10	6	24/01/2019	12:34:05
11	6	24/01/2019	12:39:01
12	11	24/01/2019	12:39:03



The log files that have previously been retrieved from a Sign will appear in the Select Log File section for each Sign. The Log Files column of the grid contains a drop-down list. Where a radar log file exists for a specific date, that date will be listed. You can then download the log file to your PC/laptop by clicking the Download Log button. The Select Log File grid shows what Signs are set to currently retrieve log files from. Click the Edit link to edit or delete an entry for a specific sign.

The log data cannot be used as a car count, but to get an idea of speeds of vehicles passing the Sign. The radar unit may record more than one speed per vehicle depending on the following factors:

- speed zone
- speed of the vehicle travelling towards the radar gun
- sensitivity of the radar gun (i.e., how far from the radar gun the vehicles are detected)
- reading interval as set in DS-Live.

Note: The radar schedule will only work where the Sign has obtained a valid GPS satellite Signal.

Radar Car Counting

Vehicle Radar Statistics as described above in the "More Info" section, is a more efficient radar data logging feature that can be purchased as an option from Data Signs for new Signs that have a Data Signs supplied Radar fitted. This allows hourly radar data logs, with 5 km/h speed bins. To find out more please contact Data Signs Sales https://www.datasigns.com.au/ContactUs

Save the Radar Setup that you have created if you wish to use this as part of a Radar Schedule. Send the Radar Setup to your Sign(s) by ticking each Sign and clicking the Upload Radar Setup button.

Radar Scheduling

The radar scheduling can be used to schedule when the Radar operates during different times of the day or night. Some uses may include school zones where a reduced speed limit applies, night road works that only happen between certain times at night.

The radar schedule screen uses similar concepts to Week-Based Scheduling. You will first need to create and save each Radar Setup scenario using that screen under the Radar Options tab.

Step 1: Select the Start and End date for this schedule. The schedule will run between, and including,

these dates. Click the icon to select a date. After the scheduled End Date is reached, the Sign will run whatever Default message has been loaded, or the Sign will blank.

Step 2: Select the radar setup files to use.

In the most common scenario where the radar scheduling is used for School Zones, Data Signs recommends using the School Zone radar setup file (i.e., 40ZONE) and setting the normal speed zone radar setup file as the Default setup file.

When you select a file, the radar setup specified in that file will be shown.

Fill in the grid for each of the radar setup files set in Step 3.

The screen shot above shows a typical School Zone setup as a radar schedule.

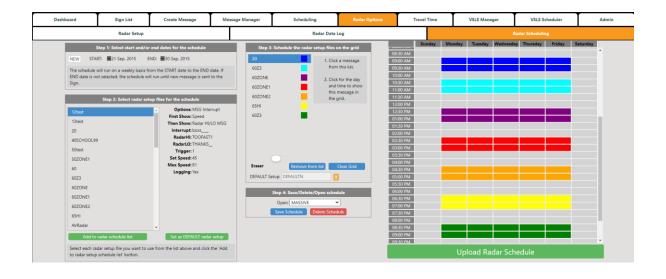
You can also save the radar scheduling file for further editing or use as needed.

Step 3: Select a message from the list box and click the times in the grid at which to display this message. Use the Eraser button and click to clear any boxes in the grid you mistakenly fill.

Step 4: You can optionally save the Radar schedule. Alternatively, you can open a previously created schedule for editing or to send to Sign(s).

Once completed, click the Upload Schedule button to send the Radar schedule to your Sign(s).

Step 5: Upload the Radar Schedule to the Sign.



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Travel Time

Travel time is an advanced feature used by Councils and Road Authorities to display on a sign, the time it would take to get from the location of that sign to another sign or a fixed location down the road.

Travel Time data is obtained from Google Maps and a Google API key must be obtained and set it up on each sign to use this feature. The API key is setup under the "More Info" section. For step-by-step instructions on how to obtain the API key click on the white information icon.

To setup Travel Time on a sign, log-in to DS-Live and go to the Travel Time section. Signs that have an API key, they will appear in the left sign list panel. Signs that have not been added to another setup will have a red plus indicator besides them.





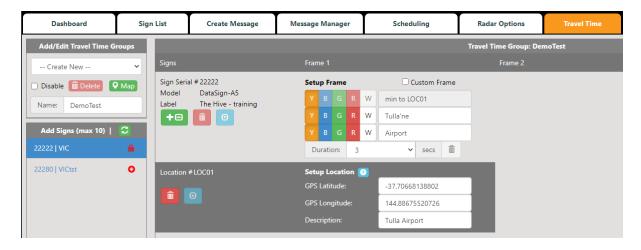
1: Start by entering a name for the setup and add the first sign by clicking on the red plus indicator. The red plus indicator will change to a red lock indicating the sign is now in use and is no longer available for any other setup.

Travel time data will display on this sign and the location of this sign is automatically obtained by its GPS position, so ensure this sign is set in an open area with a clear view of the sky.

- 2: You now have the option to either select another sign which will be positioned down the road or select a fixed location on Google Maps.
- 3: To add a fixed location, click on "Add Fixed Location" to add LOC01 to the list. To pick a location, click on the green Map button on the left.
- 4: When the map is loaded, zoom in as much as possible to the area of the location and click on the map to automatically select the latitude and longitude position of the road. When the map flips back to the list view, click on the blue Latt Long button to paste the copied position and then enter a description of this position.
- 5: Now, on the first sign, uncheck the "Custom Frame" checkbox to display the time it would take to get to LOC01 and enter the location details to displaying on the sign using Line 1 and Line 2. You can set a custom colour for each line. The colour for the first line displaying the time in minutes will be set based on the time threshold duration. If the road is heavily congested, the time will display in RED. If it is normal, then GREEN else AMBER.
- 6: Save this setup and you are done. The data will get pulled in the next cycle and will start displaying on the sign. If you are not yet ready, check the Disable option until such a time that the sign is in position and ready to display.



This a basic setup wherein, we have 1 sign and 1 fixed location, displaying 1 frame of data.



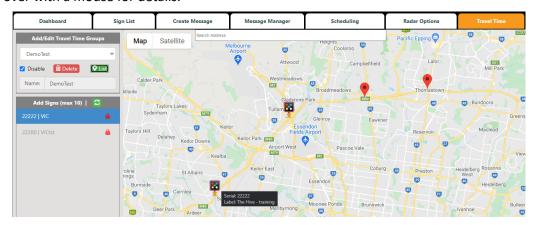
Let us now try an advanced setup with 2 signs and 2 fixed locations, displaying multiple frames of travel time data. To add frames to display on a sign, click on the green add frame button Travel Time setup, a sign can display a max of 3 frames with 3 lines of text per frame.

In the setup below, sign 22222 will display 3 frames of travel time data displaying time in minutes to get to sign 22280, LOC01 and LOC02. Sign 22280 will display 2 frames of travel time data to LOC01 and LOC02 and 1 custom data frame. You can delete a custom frame if not required.

You can move items up or down the list by clicking on the blue UP / DOWN buttons. Click on the red bin to remove a sign or fixed location or click on the white bin to remove a frame.



Map view outlines how the signs and fixed locations are positioned. Hover over with a mouse for details.



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VSLS Manager

Variable Speed Limit Signs (VSLS) are used by Councils and Road Authorities to inform users of a change in a road's speed limit due to road works.

VSLS Manager facilitates a quick and easy way to display speed messages on your VSLS.

- 1: Click on the speed or message icon to be displayed on the sign. You can display multiple frames of information like a speed and a message.
- 2: The default display duration is 2 seconds. This can be changed if required to min 1 second and max 9 seconds. If you need to remove a message, click on the icon.
- 3: Select the annulus option (1) No Annulus information only (2) Solid Annulus normal enforced speed limit (3) Flashing Annulus speed limit has changed and is enforced.
- 4: Select VSLS signs to display the message
- 5: Select option to display now or later and click on the blue Send to Sign button.

If a message contains multiple frames, you have the option to save the message of later use. Saved messages are displayed in the left most panel.

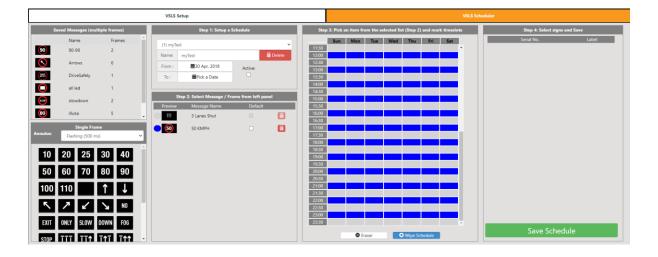


VSLS Scheduler

There could be occasions where the speed of road may need to be changed based on the time of day when construction work is in order.

VSLS Scheduler facilitates setting up a week-based schedule to change the road speed accordingly.

- 1: Select a saved message or a single frame speed from the left most panels. Each selected message will have a different colour tag.
- 2: Enter a schedule name and select a start and end date of this schedule.
- 3: The default message identified by the grey tag is a blank message. If you wish to change this default to display a specific speed rather than blank, then check the box besides that selected speed and its colour tag will change to grey. You can choose to delete the original blank message.
- 4: Select the speed with the coloured tag and plot it on the grid based on the date and time you wish this message to display.
- 5: Select the signs to display this schedule speed message and click on Save.



PTL Manager

Internet Mode Setup

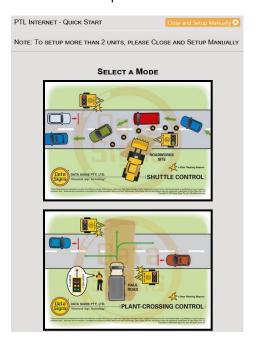
This feature allows users to setup and operate a set of PTL units over the internet under special circumstances where RF mode (line-of-sight) is not suitable, example: in a hilly or congested area, around a bend or over a long distance out of RF range.

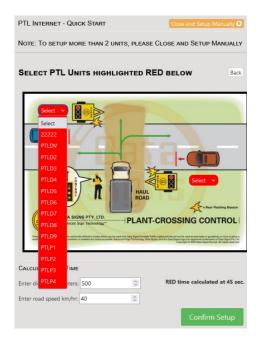
In Internet Mode, the units operate over the mobile internet so please ensure there is good mobile reception in the area.

Start by setting the PTL controllers, both Master and Slave to Internet Mode. Turn the key switch to Program mode. Navigate through menu items: UNIT SETTING > COMMUNICATION > INTERNET. Turn the key switch to Shuttle or Plant to save setting and begin operation

To setup the units in DS-Live, start by clicking on the "Add New Setup" button in Step 1.

In the pop-up window, select an operation mode; Shuttle or Plant-Crossing and select the PTL units from the red dropdown boxes.





The default RED aspect time is set to 10 seconds. If you enter a distance and road speed; the system will calculate a new RED aspect time based on the parameters entered.

Click on confirm and the setup will be prepared.

To setup more than 2 units in different configurations; close the quick setup wizard and setup the units manually. Click on the OPTL button to add a PTL unit. When all the units have been added, click on the OPhase button to add an execution phase. Enter the RED and GREEN interval in seconds and click on the RED and GREEN dots to set the required lights for this phase. Continue adding more phases as required.

Now enter a setup name and email address(es) to receive email alerts in case the system goes down.

You can change the Amber, Red & Green interval and change the entire setup manually from Step 2.

The Run Mode can be set to either Automatic or Demand (Manual). In Auto mode, the signs will run continuously without intervention based on their Phase setup.

In Demand (Manual) mode, the signs will stay on ALL RED until a demand is posted either manually by a user or by a radar unit fitted on the PTL unit. When a car approaches a PTL, the radar unit will detect the car and will post a demand for the lights to go Green.

Demand mode also has an **Auto-Green** option to automatically put a set of traffic lights back to Green without the need for any external demand. This is useful at intersections where lights at a main road need to go Green automatically until a demand is requested from the side roads.

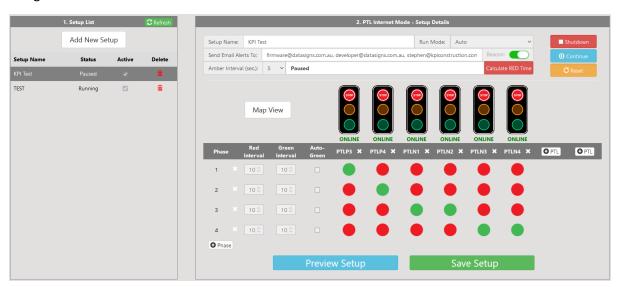
When ready, click on the SAVE button. To preview the setup and confirm the PTL units are setup in the right location, click on the PREVIEW button to load the entire setup in a Google map view.

When the units are in position and ready to be operated, click the START button and answer the checklist questions.

To stop an operation, click on the STOP button or to restart the operation (in case of errors) click on the RESET button.

To pause an operation, click on the PAUSE button. In this case all the units to complete their phase execution and will pause on RED. When done, click on the CONTINUE button.

Once the setup is operational, it will run automatically in the background, and you can continue using the other features of DS-Live.



From the screenshot above, you will notice errors displaying in RED for each unit and warning displaying in AMBER for each unit.

On an error, the operation will stop until the error is rectified.

On a warning like Low Signal, the operation will continue but could be unstable. So, please rectify the warning if possible.

Other details warning and errors of an operation will display in the header next to the Amber Interval setting.

Global On/Off Scheduler

This feature allows users to power ON/OFF a PTL based on a weekly schedule.

First select what should happen during the OFF time. You have two options:

- Keep flashing Amber until the next time the aspects switch ON.
- Flash Amber for 1 minute and then switch off the aspects to save power.

Then, set up the ON time schedule.

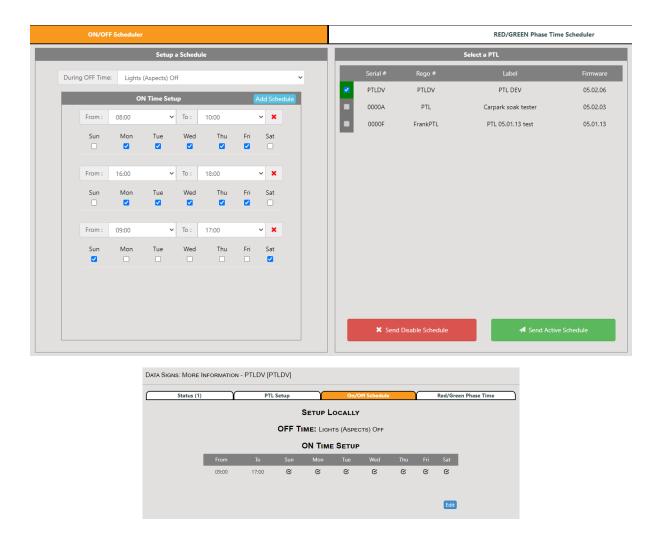
- Select the time From and To during which the PTL is operational.
- Select the weekdays during which the PTL is operational.

The user can add multiple schedules for various combinations of weekdays and start and end times.

Finally select a PTL from the list on the right side and click on the green "Send Active Schedule" button. Please note, this feature will only work on PTLs with the latest firmware greater than 05.02.02.

To disable a schedule, select the PTL from the list and click on the red "Send Disable Schedule" button.

The current ON/OFF schedule can be checked in DS-Live under the sign's More Info tab. Click on the Edit button to load and update the schedule.



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RED/GREEN Phase Time Scheduler

This advanced feature allows users to alter a PTL's RED/GREEN Phase time to manage traffic surges during peak hours.

Start by entering a schedule name and pick a Start and End Date. If an End Date is not selected the schedule will run indefinitely until disabled manually.

In step 2, you will notice a default phase time setup in White. The default setup will execute when an actual setup is not marked on the grid (the white areas in the grid). You can update this default setup as required.

Next, click on the "Add Phase Time" button to add the first setup and change the time as required. This setup will appear with a BLUE tag. Feel free to create more phase times which will appear with different colour tags.

Next, click on the desired colour tag (a white checkbox will appear) and plot the colour on the grid in step 3 to the desired weekday and time. Repeat this process for all the other phase time colour tags.

When ready, select the relevant PTL's in step 4. Please note, this feature will only work on PTLs with the latest firmware greater than 05.02.02.

Finally click on the Save Schedule button and the setup is activated instantly. Schedules execute in 30-minute blocks and if Active will run immediately.

To pause or disable a schedule unchecking the Action checkbox or unchecking all the PTLs from the schedule and click on the Save button.

A PTL can be added to only one schedule at a time to prevent conflicting schedules. If the checkbox in the PTL list in step 4 is disabled, there are only 2 possible reasons (1) the PTL does not have the correct firmware (2) the PTL is already assigned to another setup.

The current Red / Green Phase Time can be checked in DS-Live under the sign's More Info tab. Click on the Edit button to load and update the schedule.



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PTL-VMS Integration

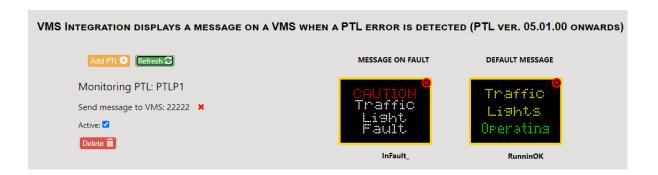
With this integration, when a selected PTL goes into an error state like aspect failure or fallen over, etc... it can be setup to display a message on a VMS board.

Follow these steps to setup a VMS Integration:

- 1. Start by adding a PTL unit to the setup. Click on the from the pop-up list. Please note only the latest PTLs with firmware 05.01.00 and above can be monitored.
- 2. After adding the PTL, proceed to add a VMS board on which the message will be displayed. Click on the button and select a VMS from the list.
- 3. Select a message to be displayed when a Fault is detected. Click on the Add Fault Message

 button and select a message from the list.
- 4. Then select a message to be displayed when the Fault is rectified. Click on the Add Default Message button and select a message from the list.
- 5. When ready, click on the Save Save the setup and it will start monitoring immediately.

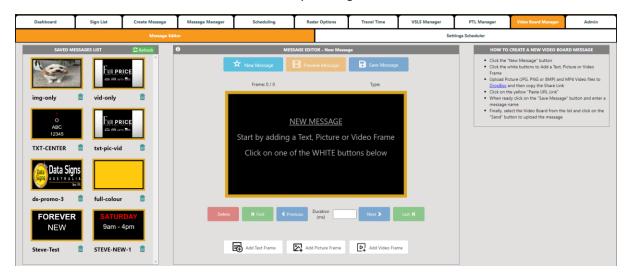
To temporary disable the setup, uncheck the Active checkbox and click on Save.



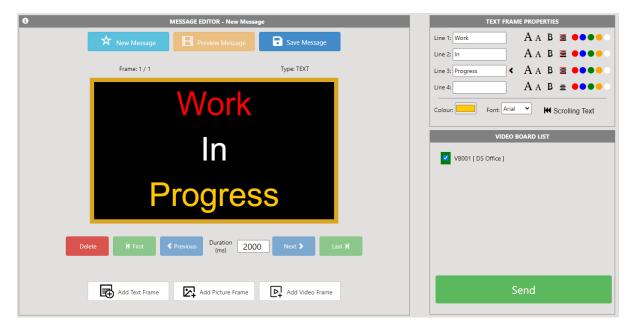
Video Board Manager

Message Editor

Message Editor is used to generate Video Board messages. Start by clicking on the New Message button and add a Text, Picture or Video frame by clicking on one the white buttons below.



A Text frame can contain max 4 lines of text. You can alter the size, alignment, colour and make the font bold. You also have the option to change the font and make a line of text scroll. The text colour can be set to either one of the preset 5 colours on the right of each line or you can select a rich set of colours from the Colour palette.



Picture or Video frames require the content to be first uploaded to DropBox. Start by creating a DropBox account and upload all the relevant content into that account.

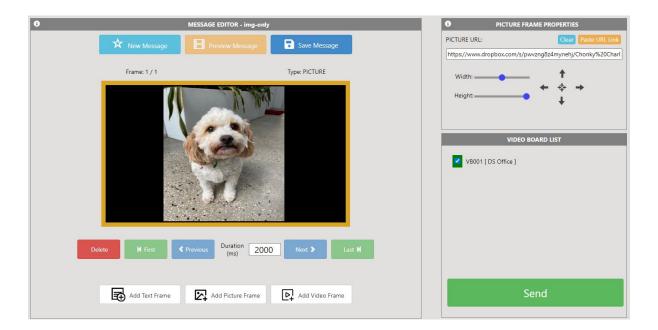
Copy the DropBox Share Link and then accordingly add a new Picture or Video frame. Click on the yellow "Paste URL Link" in the top right corner. This step will load the content from DropBox and present it in the preview window. Adjust the Width and Height of the content and you can also change the positioning on screen as required.

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The Duration of a text or picture frame can be set in milliseconds as required. The duration of a video frame is automatically set based on the length of the video.

When done, Preview and Save the message. Saved messages will appear in the message list section on the left side.

When ready, select the relevant video board(s) from the list on the right side and hit the Send button.



Setting Scheduler

The Brightness and Screen display of a Video Board can be setup on a scheduled to run as required.

Click on the Screen On/Off button to setup a display schedule. Select the display state and then select a Start and End date and select a time. For specific weekdays check the relevant box and click Add.

Click on the Brightness button to setup a brightness schedule. Enter brightness values as a percentage. Select the Start and End dates and select a time. For specific weekdays check the relevant box and click Add. At the end of the schedule the video board will return to auto-brightness.

Select the relevant video board(s) and click the Set button.

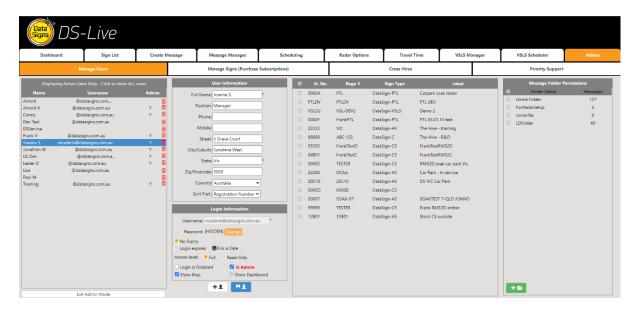


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Admin - you must have administrator access to use this tab

Manage Users

From this tab you can add or remove users, check and update the details for your user accounts and manage sign access. Click on the Username or email address on this tab to make changes. You can create new user accounts and edit existing users' details and access levels.

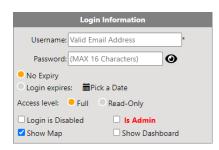


Create a New User

Enter the details for this user in the User Information section on the screen. The fields marked with an asterisk are mandatory.



For Login information, enter a Username (this must be a valid email address) and a Password.



You can specify a date/time when this user account will expire. If you select an access Level of Read-Only, the user will only be able to view the signs but not change them.

To disable an account, select the user account from the list and tick the 'Login is Disabled' checkbox, then click the Save button. The user list will display active users by default. You can click on the header to show all users.

DS-Live[™] has provided the option where you can allow access only to certain signs when you create a new user. This may be useful for example where a hire company wishes to provide a client access to some VMS boards that they have hired out, so the client can complete message changes on only these boards themselves. To provide the user with access to all signs, tick the checkbox on the top/left. To give access to individual Signs, tick those signs only in the list.



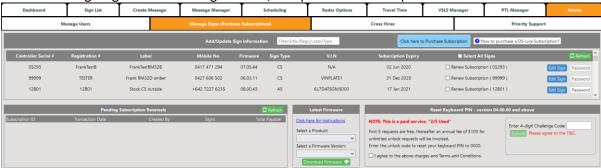
Message Folder Permissions can be applied for each user to allow or restrict access. By default access is granted to all Message Folders. To grant access only to selected folders, simply tick the checkbox of each folders. Additional folders can be created in this section using the Create New Folder button.



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Manage Signs (Purchase Subscriptions)

Use the Manage Signs tab to edit sign details, and purchase Subscriptions.



To edit the details for a Sign, click the Edit Sign button.

You can make changes to:

- Registration #
- Label
- Mobile # (if it is not a Data Signs SIM Card)

The Controller Serial Number values cannot be edited. If changes to these serial numbers are required, please contact the Data Signs Help Desk.



Password

To change the Sign Password.
Used for VMS Computer or SMS Messaging Access



Keyboard Password

This feature allows you to reset the PIN code on your VMS keyboard. The first 5 requests are free and thereafter the requests will be chargeable.



Latest Firmware

This section allows the admin to download the latest firmware version to be uploaded manually to a product.

Click on the link for Instruction before proceeding with the download. When ready, select the relevant product from the dropdown list; then select the required firmware version and then click on the Download button. Install the firmware as per the instructions.



Managing / Renewing Subscriptions

After logging in to DS-Live using your email and your password, go to the Admin Tab and then the Manage Signs (Purchase Subscriptions) Tab.

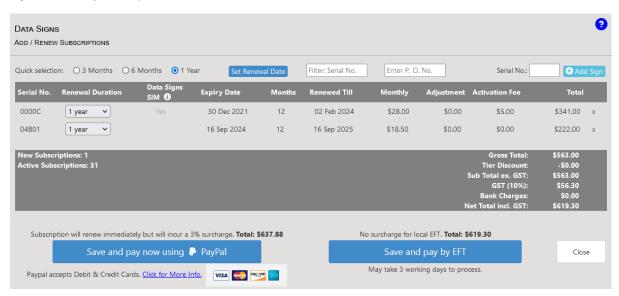
You can select the How to purchase a DS-Live Subscription? for step-by-step instructions. You can print this out if necessary.

To select which sign(s) you want to subscribe to for DS-Live™ Access, select the Renew Subscription checkbox for each sign you want to enable Access.

After that press the Click here to Purchase Subscription

This will bring up the Add / Renew Subscriptions Payment Screen.

Note: subscription rates will be dependent on current offer, subscription period and total number of signs selected for the period.



You can select your renewal duration across all signs by clicking on the Quick selection option in the header or you can individually set a renewal duration for each sign.

In the header, you also have an option to set the company purchase order (P. O.) number for your reference only.

To manually add products to the subscription list, you can enter the Serial No. and click on the Add Sign button.

If the renewal dates (Renewed Till) of the selected signs are different and you wish to standardize them to a single date, you can manually select a renewal date by clicking on the "Set Renewal Date" button in the header. A popup window will appear with a calendar option on the left allowing you to select a Renewal Date. On confirmation, the selected date will be set across all selected signs and the renewal months and total amount will be automatically calculated.



Users have several options to pay for their subscription. Each option differs in costs and features.

- EFT (bank transfer): This option will save your renewal request and will send you an invoice with the bank transfer details. A bank transfer could take up to 3 days to clear into our account and your subscription will be renewed only after the amount has been received. There is no charge for local bank transfers within Australia but international and transfers from New Zealand will incur a \$25 bank fee.
 - Please ensure you enter the Subscription Tax Invoice No. as reference on the EFT Payment details to prevent delays.
- PayPal: This payment method ensures the subscription is renewed immediately but will incur a flat 3% surcharge for Australia clients and a 4.5% surcharge for our New Zealand and international clients. To pay by PayPal the client must have a PayPal account and login.
- Credit Card (ONLINE): If you do not have a PayPal account but wish to pay online using a Credit
 Card, please click on the PayPal button. In the popup window, click on the "Pay with a Card"
 option and enter your credit card and other details as prompted. The subscription will be
 renewed immediately but will incur a surcharge as per the PayPal option above.
- Credit Card (OVER THE PHONE): to pay with a credit card over the phone, please save the
 subscription request by clicking on the "Save and pay by EFT" option. When you receive the
 invoice by email, please call our office on 1300-850-785 or +61-3-9312 2177 and keep the
 subscription invoice number ready. Our administrative team collected your subscription and
 credit card details and will renew your subscription immediately. There will be a surcharge as
 per the PayPal option above.
- Cash payments can be made at our office and your subscription will be renewed immediately. There is no additional surcharge or bank fees.

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DS-SIM - SMS Setup

SMS Setup allows users to query or manage a VMS using SMS commands. This feature is pertinent to VMS's that are using a Data Signs SIM card.

A user can send an SMS command to a Data Signs managed mobile no. +61447 493 693. The SMS command is forward to the relevant VMS and it will reply or carry out the action accordingly.

There are 2 response modes: (1) by Email (2) by SMS



Email responses are Free whereas SMS responses are chargeable and the response is sent to the senders mobile phone.

To start using this feature, click on the light blue button from the Manage Signs list. In the pop-up window, select the Response Type and if Email, enter the receiver's email address.

Then select the Password Type from the 3 options (1) User Set (2) VMS Label (3) VMS Rego #

User Set password allows the user to enter a 6 char password.

VMS Label and Rego# are details related to the relevant VMS. If the Label is set to "At Tulla Airport" the password will be the first 6 characters "AtTull" without spaces. Same in case of Rego#. If it is set to "BRX 136" the password will be "BRX136" without spaces.

Once the setup is saved, the feature is active and ready to use.

The SMS command format is important with each section separated by a dot:

Syntax: Serial#(dot)Password(dot)Command <Serial#>•<Password>•<Command>

Example: 22222.abc123.Q

The following commands are available:

.Q	Query the sign's current status and data
.Z	Sleep the sign
.X	Wake the sign
.0	(zero) Reset the sign

To display a DS-Live message using SMS commands, use these commands:

.M <msgname> Display a DS-Live message. Search by message name</msgname>	
.F <foldername></foldername>	Optional. Folder name. Default is Home folder

Example: 22222.VIC123.M60Limit

Will display DS-Live message "60Limit" from the "Home" folder

Example: 22222.VIC123.Moffline1.Fsample

Will display DS-Live message "offline1" from the "sample" folder

To display a Text message using SMS commands, use these commands:

.= <x></x>	Line Colour. Set x to R=Red, B=Blue, G=Green, Y=Yellow, W=White
.1	One Line Font. X-Large one-line font.
.2	Two Line Font. Large two-line font.
.3	Three Line Font. Normal three-line font.
.4	Four Line Font. Small four-line font.
.L	Left Justify a line of text.
.T <x></x>	Frame Time (duration) in seconds. Set x between 1 and 9 seconds. Default is 2 seconds.
.N	Next Line. Will start a new line of text
.F	Next Frame. Will start a new empty frame
.P <xx></xx>	Displays an Image in a frame. Set xx between 01 and 99 (refer image list below)

Example: 22222.VIC123.3.=WROAD.NWORK.N.=RAHEAD.F.3SEEK.NALT.NROUTE.F.P90 Will display a 3-frame message as below:







Images List

01 - 40 Speed Limit	60 02 - 60 Speed Limit	70 03 - 70 Speed Limit	80 04 - 80 Speed Limit
90 05 - 90 Speed Limit	ACCIDENT AHEAD 06 - Accident Ahead	07 - Arrow1	09 - Bike Only INVERT
09 - Bike Only	添 10 - Bike Pedestrian	BLASTING * AREA * SUITON OFF IRRESMITES 11 - Blasting	and the state of t
LANE ONLY 13 - Bus Lane Only	14 - Bus	DANGER HOSMORINE 15 - Danger Gas	ENTICLOSE BILT'ROUTE 16 - Exit Closed
17 - Flagman	FORM 1 18 - Form 1 Lane	FORM 2 LAMES 19 - Form 2 Lanes	20 - Giveway
21 - Keep Left	22 - Lane Closed II-	23 - Lane Closed I	24 - Lane Closed -II
25 - Lane Closed I	MERGE MERGE RIGHT 26 - Lane Closed Merge Right	LEFT LANE MUST TURN LEFT 27 - Left Lane	ONLY 28 - Left Only
LINEMARKING	JINEMARKING 30 - Line Marking 2	31 - Loose Stones (Pic)	32 - Loose Stones
33 - No Buses	34 - No Cars	O LEFT TURN 35 - No Left Turn	RIGHT TURN 36 - No Right Turn

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TURN 37 - No U Turn	⊘ NEWAYI 38 - One Way (Left)	39 - One Way (Right)	ONE WAY 40 - One Way 3
ONE WAY 41 - One Way 4	42 - Parking Disabled	43 - Plane	RAIL 8'ING 44 - Rail X'ing
4 5 - Railway X	ONLY 46 - Right Only	ROMOWAY HARROWS 47 - Road Narrows I-	HARROWS HARROWS 48 - Road Narrows -I
49 - Road Work Ahead	50 - Round About	51 - Slippery When Wet (Pic)	52 - Slippery When Wet
SLOW 53 - Slow (Invert)	SLOW 54 - Slow (Solid)	SLOW DOWN 55 - SLOW DOWN	56 - Steep Climb
57 - Steep Descent	STUP 58 - STOP	(STOP) 59 - Stop (Solid)	60 - Stop (Invert)
ONLY 61 - Straight Only	62 - TOO FAST slow down	TWO TU WAY TO 63 - Twoway	TURN PERMITTED 64 - U-Turn
65 - Warning 11	66 - Warning 12	67 - Warning 13	68 - Warning Arrows Left
69 - Warning Arrows Right	70 - Warning Bendy Road	71 - Warning Bump	72 - Warning Corner Right
73 - Warning Cross-roads	74 - Warning Fork	75 - Warning Giveway	76 - Warning Hairpin bend
77 - Warning Lights	78 - Warning Road Joins	79 - Warning Road Narrows	80 - Warning Road Narrows2
81 - Divided Road Ahead	82 - Warning Roundabout	83 - Warning Sharp Right	84 - Warning Sharp Road bend
85 - Warning Stop Sign	86 - Warning T Intersection	87 - Warning T Intersection2	88 - Warning Truck
89 - Warning Right Bend	90 - Workman	Gigns 91 - DataSigns Logo	92 - Left Arrow Dots
93 - Right Arrow Dots	94 - Left Arrow	95 - Right Arrow	96 – Detour Left
97 - Detour Right	98 - Up Arrow	99 - Down Arrow	(blank)

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Cross Hire

The cross-hire function allows you to share signs with existing DS-live™ users.

This feature means that cross hiring for business to business is easy.

To add another Company to Cross Hire, enter the users email address (the logon email address)



Then select which of your sign you want to Cross Hire and set the Expiry date of the Hire.

After the expiry date, the signs will get pulled off their access automatically.



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