1SYSTEM®

bf1systems 1SYSTEM GMS GUI (Sample) User Guide

from

bf1systems

1system@bf1systems.com

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Table of Contents

- Table of Contents
- Introduction
- System Requirements
- Installation Instructions
  - Web
  - Windows
- UI Overview
  - Menu
  - Tyre Data
  - Search
  - Sort
  - Rearrange
  - Export CSV
  - Tyre Stack
  - Colours and positions
  - Unassigned area
  - Tyre stack area
  - Create tyre stacks
  - Rearrange sensors
  - Unassign sensors
  - Rename tyre stacks
  - Delete tyre stacks
  - Complete tyre sets
  - Tyre Fitting
  - Tags
  - Settings
  - Data feed
  - Units
  - Tyre data
  - Tyre stack
  - Tyre fitting
  - View
  - Appearance
  - Version number
  - Connection Status

- Troubleshooting
  - Status indicator shows `Cannot connect`
  - API address
  - API client secret
  - API trust
  - API protocol
  - Status indicator shows `Disconnected`
- Glossary
  - GMS
  - tag
- Support Contact Details

Introduction

The 1SYSTEM® Garage Monitoring System (GMS) is a sample application demonstrating how TPMS sensor data can be displayed and interacted with. GMS also showcases how virtual tags, stored in the 1SYSTEM® API can be managed and used to organise tyres into sets. Tags can be batch imported and exported to quickly load tyre configurations into your virtual garage. GMS also provides an interface to attach other tyre information as a tag to the closest sensor to the receiver.

System Requirements

GMS is available as either a web application, or a standalone Windows Application. The web application requires any desktop with a browser and internet connection, and the Windows Application requires Windows 10 or above.

Installation Instructions

Web

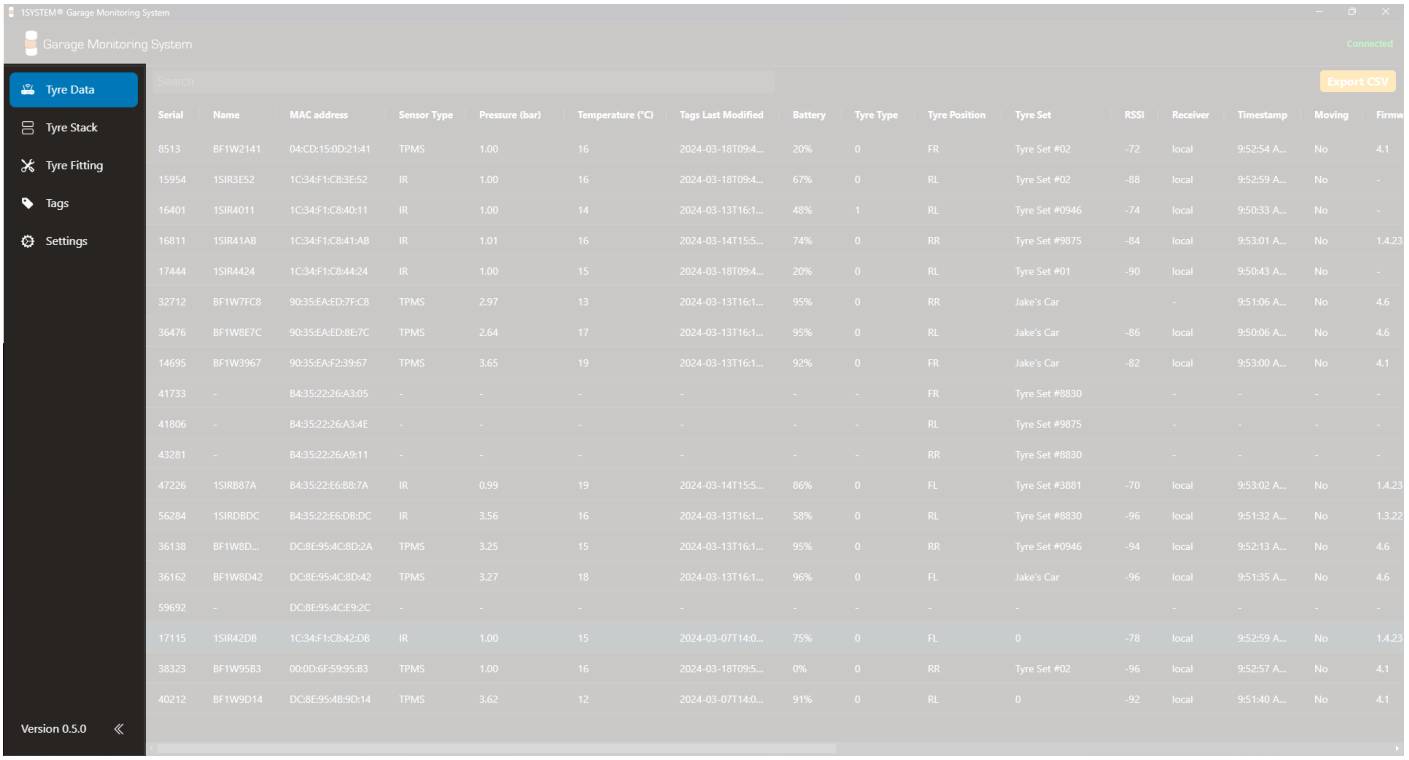
There is no installer for GMS on the web, simply navigate to the URL (https://demo.1system.app/) in any modern browser. *Supported browsers: Edge, Chrome, Firefox, Safari, Opera and Brave and more.*

Windows

Open the 1SYSTEM® Garage Monitoring System Setup executable to install GMS on your Windows machine. Once this is complete, you will see a message indicating GMS has installed successfully along with an option the run GMS. The installer will create a shortcut on your desktop for easy access to start the GMS app.

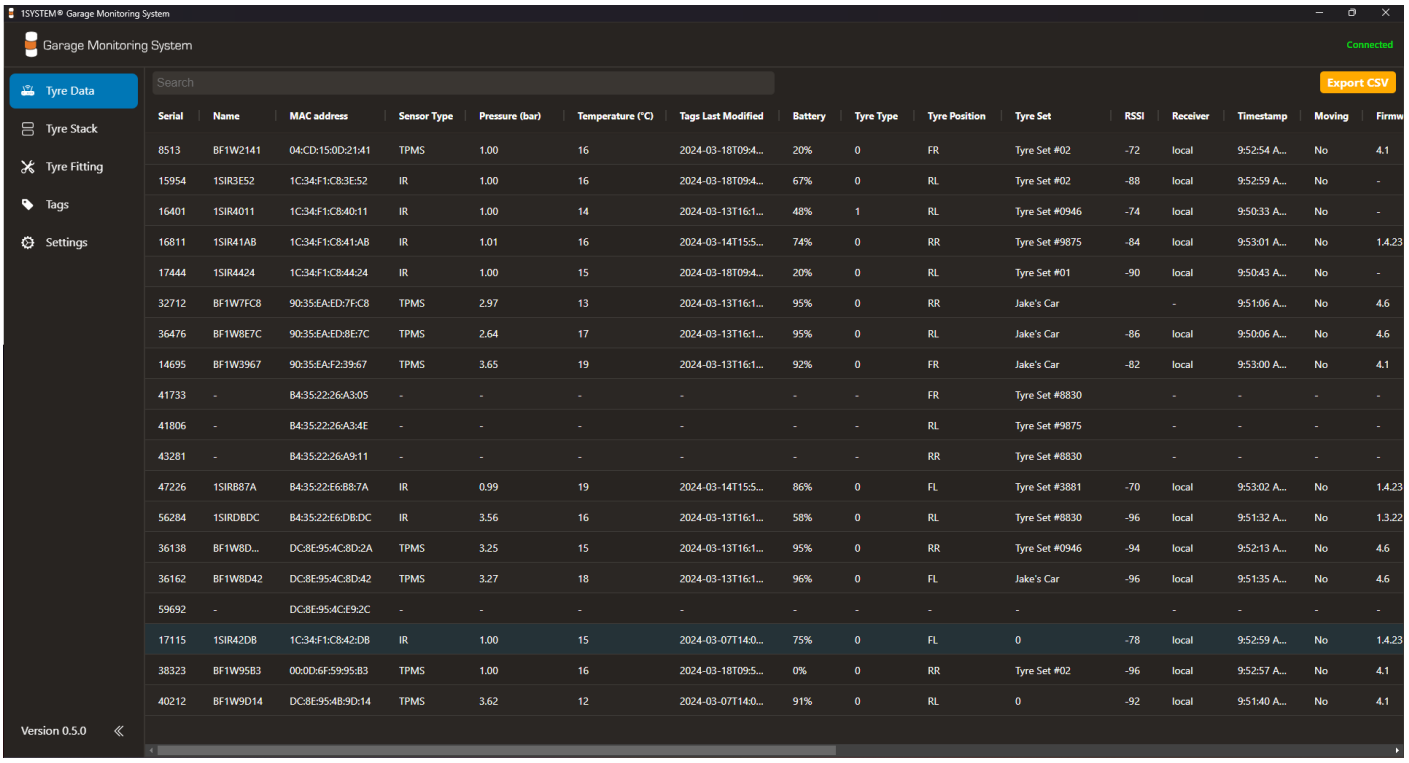
UI Overview

Menu



Navigate between pages using the menu sidebar. This can be opened and collapsed using the chevron at the bottom of the menu sidebar.

Tyre Data



Serial	Name	MAC address	Sensor Type	Pressure (bar)	Temperature (°C)	Tags Last Modified	Battery	Tyre Type	Tyre Position	Tyre Set	RSSI	Receiver	Timestamp	Moving	Firmw
8513	BF1W2141	04:CD:15:0D:21:41	TPMS	1.00	16	2024-03-18T09:4...	20%	0	FR	Tyre Set #02	-72	local	9:52:54 A...	No	4.1
15954	1SIR3E52	1C:34:F1:C8:3E:52	IR	1.00	16	2024-03-18T09:4...	67%	0	RL	Tyre Set #02	-88	local	9:52:59 A...	No	-
16401	1SIR4011	1C:34:F1:C8:40:11	IR	1.00	14	2024-03-13T16:1...	48%	1	RL	Tyre Set #0946	-74	local	9:50:33 A...	No	-
16811	1SIR41AB	1C:34:F1:C8:41:AB	IR	1.01	16	2024-03-14T15:5...	74%	0	RR	Tyre Set #9875	-84	local	9:53:01 A...	No	1.4.23
17444	1SIR4424	1C:34:F1:C8:44:24	IR	1.00	15	2024-03-18T09:4...	20%	0	RL	Tyre Set #01	-90	local	9:50:43 A...	No	-
32712	BF1W7FC8	90:35:EA:ED:7F:C8	TPMS	2.97	13	2024-03-13T16:1...	95%	0	RR	Jake's Car		-	9:51:06 A...	No	4.6
36476	BF1W8E7C	90:35:EA:ED:8E:7C	TPMS	2.64	17	2024-03-13T16:1...	95%	0	RL	Jake's Car	-86	local	9:50:06 A...	No	4.6
14695	BF1W3967	90:35:EA:F2:39:67	TPMS	3.65	19	2024-03-13T16:1...	92%	0	FR	Jake's Car	-82	local	9:53:00 A...	No	4.1
41733	-	B4:35:22:26:A3:05	-	-	-	-	-	-	FR	Tyre Set #8830		-	-	-	-
41806	-	B4:35:22:26:A3:4E	-	-	-	-	-	-	RL	Tyre Set #9875		-	-	-	-
43281	-	B4:35:22:26:A9:11	-	-	-	-	-	-	RR	Tyre Set #8830		-	-	-	-
47226	1SIRB87A	B4:35:22:E6:B8:7A	IR	0.99	19	2024-03-14T15:5...	86%	0	FL	Tyre Set #3881	-70	local	9:53:02 A...	No	1.4.23
56284	1SIRDBDC	B4:35:22:E6:DB:DC	IR	3.56	16	2024-03-13T16:1...	58%	0	RL	Tyre Set #8830	-96	local	9:51:32 A...	No	1.3.22
36138	BF1W8D...	DC:8E:95:4C:8D:2A	TPMS	3.25	15	2024-03-13T16:1...	95%	0	RR	Tyre Set #0946	-94	local	9:52:13 A...	No	4.6
36162	BF1W8D42	DC:8E:95:4C:8D:42	TPMS	3.27	18	2024-03-13T16:1...	96%	0	FL	Jake's Car	-96	local	9:51:35 A...	No	4.6
59692	-	DC:8E:95:4C:E9:2C	-	-	-	-	-	-	-	-		-	-	-	-
17115	1SIR42DB	1C:34:F1:C8:42:DB	IR	1.00	15	2024-03-07T14:0...	75%	0	FL	0	-78	local	9:52:59 A...	No	1.4.23
38323	BF1W95B3	00:0D:6F:59:95:B3	TPMS	1.00	16	2024-03-18T09:5...	0%	0	RR	Tyre Set #02	-96	local	9:52:57 A...	No	4.1
40212	BF1W9D14	DC:8E:95:4B:9D:14	TPMS	3.62	12	2024-03-07T14:0...	91%	0	RL	0	-92	local	9:51:40 A...	No	4.1

The Tyre Data page shows real-time data from the sensor advertisements route on the API.

Search

Use the search bar to quickly find sensors by any field. Press the ✕ to clear the search.

Sort

Click the column headers to sort the grid rows by either ascending or descending order. Press the column headers again to toggle the sort direction. When a column sort is active, a small arrow will appear next to the column name indicating the sort direction. The grid will continue to sort in real time as new data is received.

Rearrange

Drag the column headers to rearrange the grid columns. The new column arrangement will automatically be saved.

Export CSV

Click the `Export CSV` button to download the current grid data as a CSV file. The CSV file will contain all columns currently visible in the grid. If a search is active, the CSV file will only contain the search results. The exported columns will be in the same order as they are displayed in the grid.

Tyre Stack

The Tyre Stack page shows sensors organised into tyre stacks. Sensors can be dragged and dropped to create, edit and remove tyre stacks. By moving sensors between sets, their tyre information tag changes in the API. When dragging a sensor, the blue outline represents the zone where the sensor will be dropped.

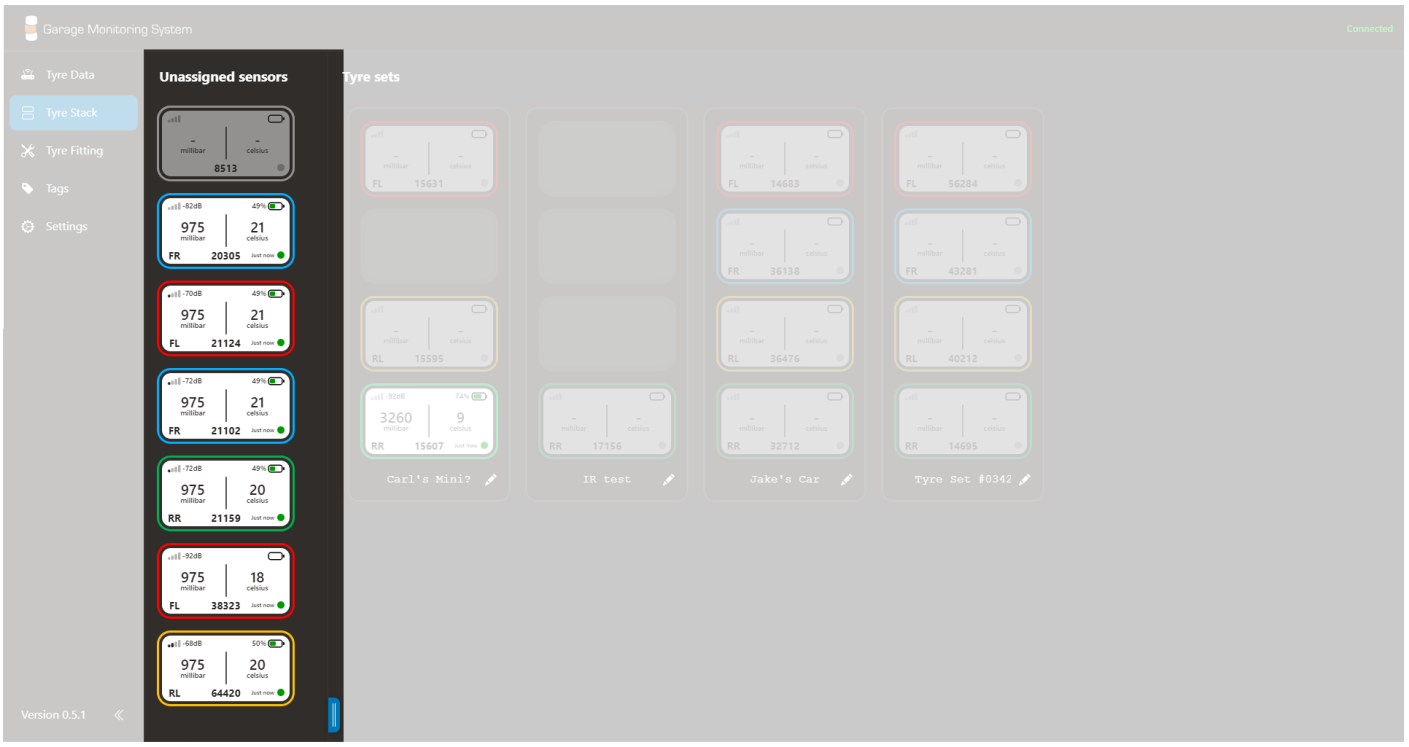
Colours and positions

The colour of the ring around the sensor indicates the sensor's tyre position. The sensor's position in the tyre stack also indicates it's wheel position on the car.

- Red/top - **Front Left**
- Blue/second - **Front Right**
- Yellow/third - **Rear Left**
- Green/bottom - **Rear Right**

By default, the sensor's position is defined by the position in it's advertisement. This can be overridden by setting a tyre position in the sensors tyre information tag. If a sensor's advertised position is not available then a white ring will show.

Unassigned area



The unassigned sensor area is a collapsible panel on the left of the screen showing all sensors that do not have a tyre information tag. Sensors can be dragged from this area into tyre stacks to assign them to a tyre set. Hover over the blue tab to reveal the toggle for collapsing the unassigned sensor area.

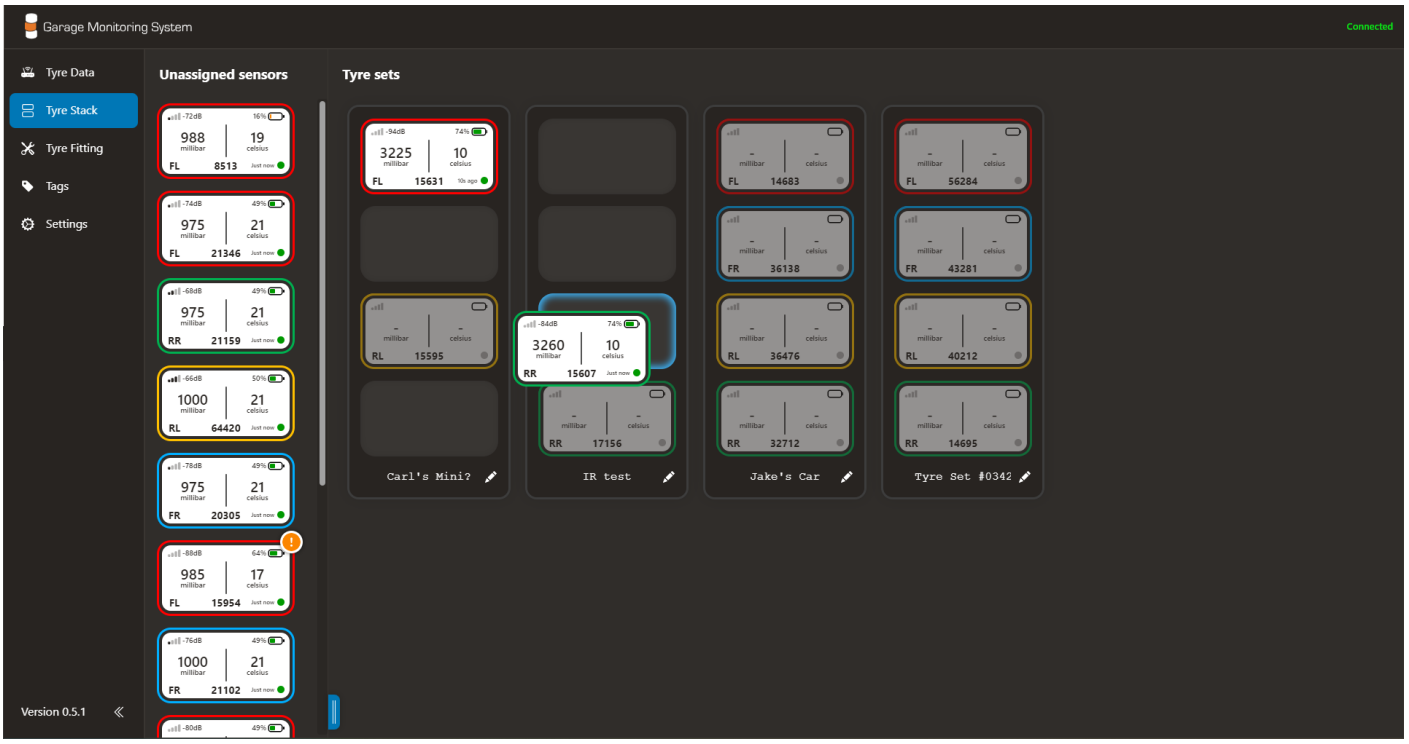
Tyre stack area

The tyre stack area is the main area of the page where sensors are organised into tyre stacks. Sensors can be dragged between tyre stacks to reassign them. Read below for more information on how to create, edit and delete tyre stacks.

Create tyre stacks

Drag a sensor from the unassigned sensor area into the tyre stack area to create a new tyre stack.

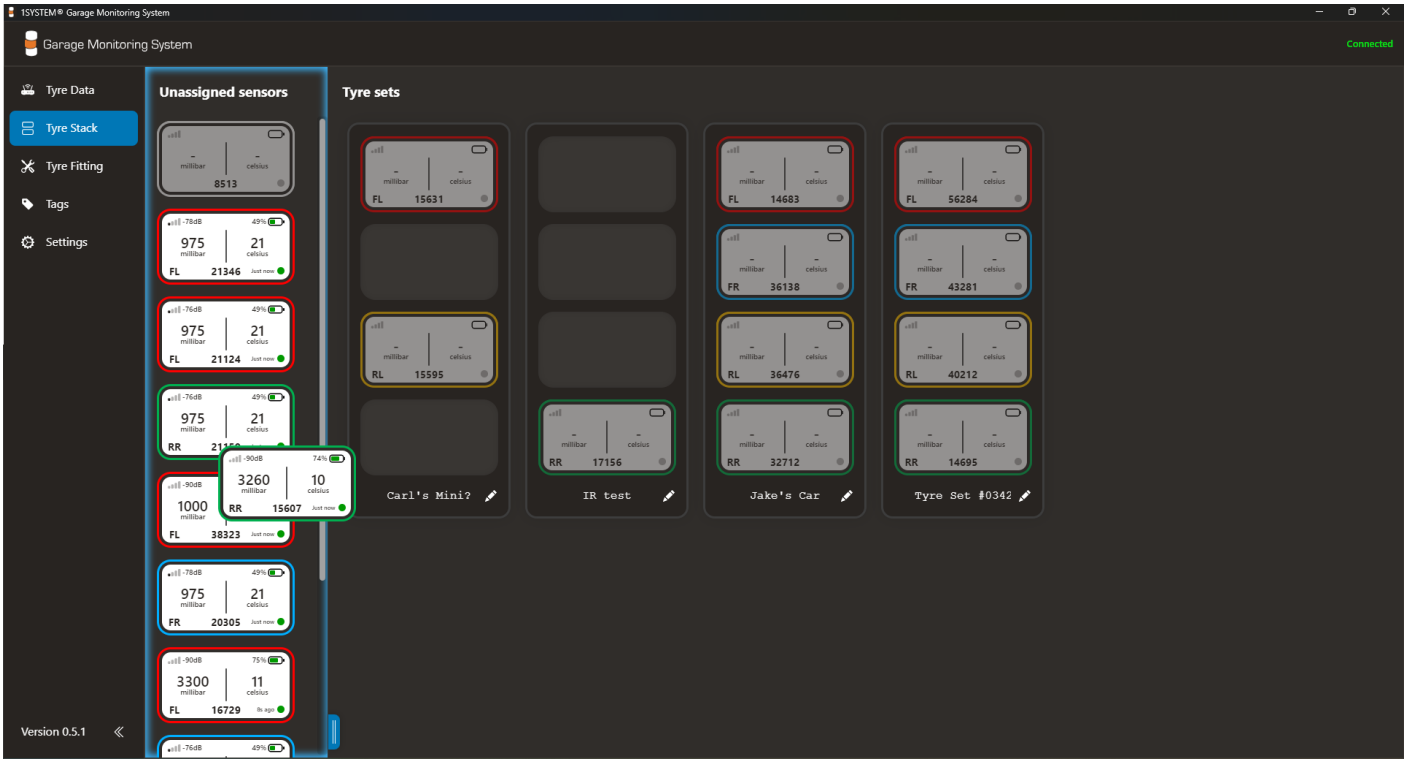
Rearrange sensors



Drag sensors between tyre sets to reassign them.

> **Note**
>
> You **cannot** drag a sensor into a position that is being occupied by another sensor. Dropping a sensor in an occupied slot will result in new tyre set being created.

Unassign sensors



Drag a sensor out of a tyre stack and into the unassigned area to unassign it from the tyre set.

> **Note**
>
> Dropping the sensor into the space surrounding the tyre sets will result in a new stack being created.

Rename tyre stacks

Click on the pencil icon next to the tyre set name to rename it. The tyre set name is visible at the bottom of the tyre stack. Once renamed, click the save icon to save the changes. this will update the set name across all sensors in the stack.

Delete tyre stacks

Drag all sensors out of a stack to delete a tyre set.

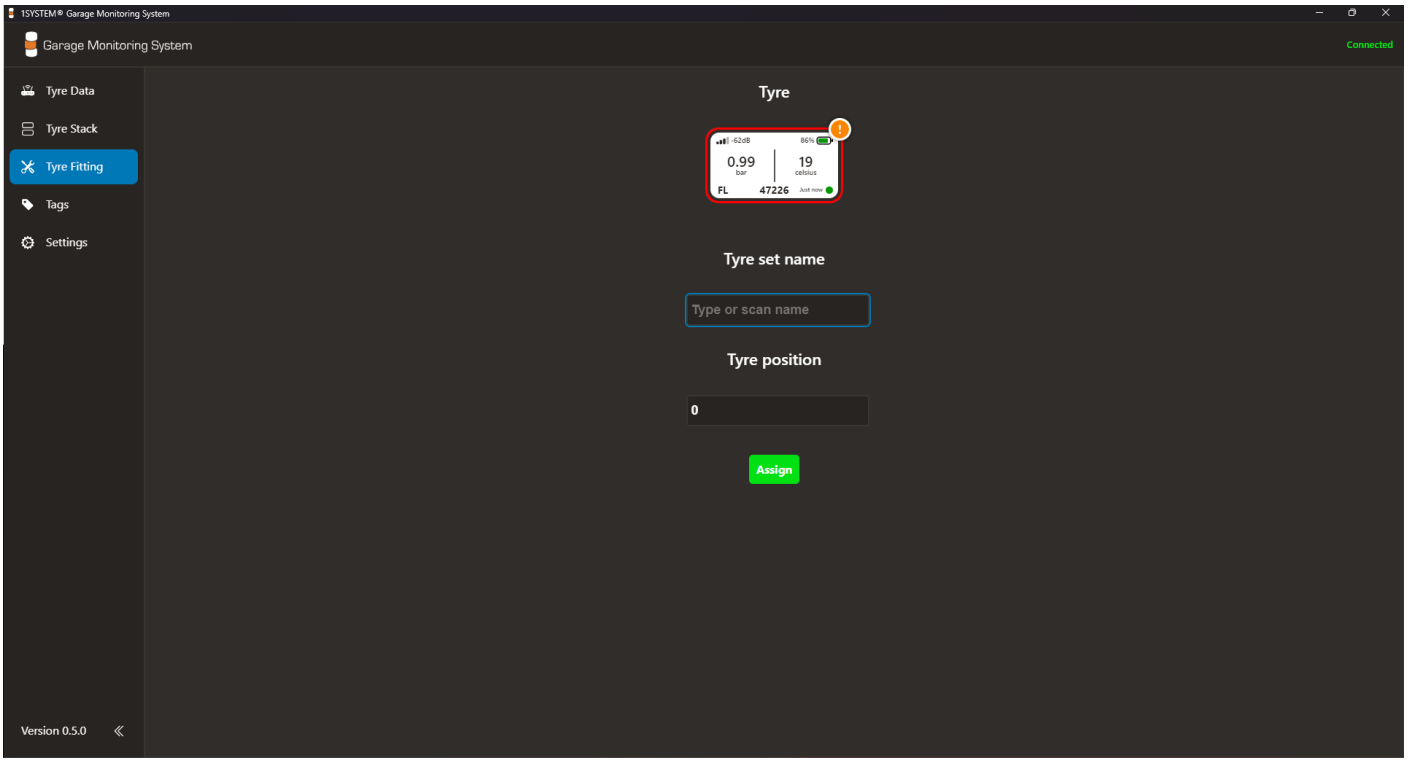
> **Note**
> If there are no sensors in a tyre stack, the tyre stack will be deleted.

> **Warning**
> If GMS fails to set a sensor's tags in the API when dragged, the sensor will snap back to its original position and an error notification will be shown.

Complete tyre sets

A tyre set is complete when 4 sensors are all online and in a tyre stack. This is indicated by the stack turning green. If a sensor from a complete stack expires or becomes unassigned, the stack colour will revert back to grey.

Tyre Fitting



The Tyre Fitting page can be used to attach data such as a tyre set name and position to a sensor using a tag.

When a tyre is placed over a receiver, it's sensor should appear at the top of the page. A tyre set name and tyre position can then be assigned to the sensor. The tyre set name will be visible at the bottom of the tyre stack on the tyre stack page.

Tyre set name has no input restrictions however tyre position must be either `0, 1, 2, 3`, representing tyre positions `FL, FR, RL, RR` respectively.

Tags

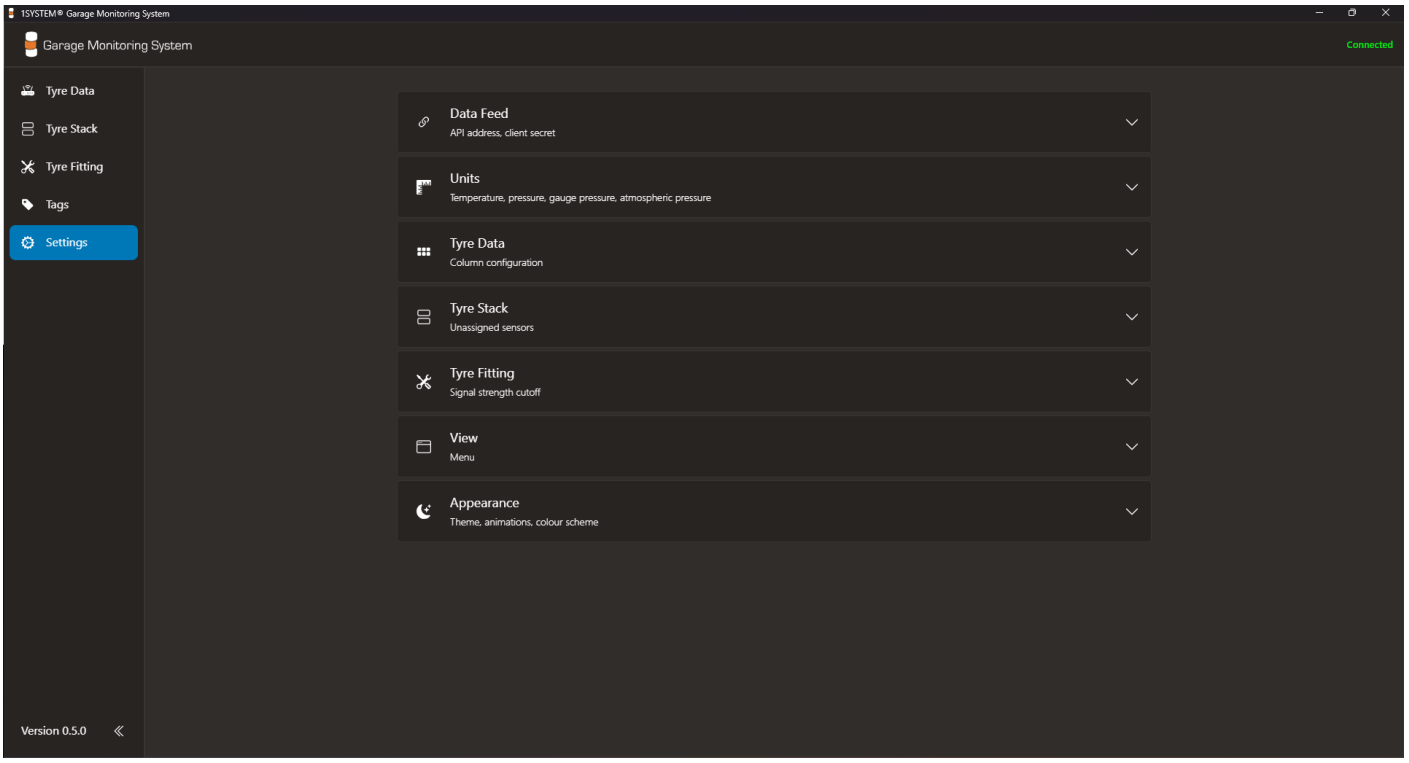
The Tags page manages the tags stored in the API. This pages allows you to batch import and export tyre sets in CSV format from the API using a Tyre Information tag. You can also export all types of tags to CSV with the `Export all tags` button. `Import sets` and `Export sets` make it easy to create, edit and rearrange a virtual garage externally (ie. Excel) and then import the changes back into GMS.

`Import sets` allows you to import tyre sets in CSV format. When importing tyre sets, the tyre position must be in the format `FL, FR, RL, RR` (case sensitive) and the tyre set name must be unique.

`Export sets` allows you to export tyre sets in CSV format. The exported CSV file will contain all tyre sets in the API.

`Export all tags` allows you to export all tags in the API in CSV format. The exported CSV file will contain all tags in the API.

Settings



The Settings page allows you to configure GMS for your garage. This includes connecting to your API feed, settings global units of measure, data grid column configuration and other customisation settings. All changes to settings are saved automatically for both web and Windows and will persist next time you use GMS. Settings are stored locally on your machine and are not shared between devices.

Data feed

The data feed settings allow you to connect to your API. You will need to enter the URL address of your API and the client secret. Click `Connect` to attempt to connect to the API. If the connection is successful, the status indicator will show `Connected`. If the connection is unsuccessful, the status indicator will show `Cannot connect`. Click the status indicator to show the error notification and troubleshoot the issue.

Units

The units settings allow you to configure the units of measure across GMS. You can set the temperature unit to either `°C` or `°F`, the pressure unit to either `bar`, `millibar` or `psi`, configure the pressure display to show either `gauge` or `absolute` and set the atmospheric pressure to a custom value.

Tyre data

The tyre data settings allow you to configure the columns displayed in the tyre data grid. You can show or hide columns by toggling the switch next to the column name. The new column arrangement will automatically be saved.

Tyre stack

The tyre stack settings allow you to toggle unassigned sensors visibility in the tyre stack page. You can also configure if and when sensors will expire. Sensors will expire after the set time has passed since the last advertisement.

Tyre fitting

The tyre fitting settings give you control over the signal strength threshold for the target sensor. The target sensor is the one closest to the API receiver (highest signal strength). Slide the threshold until only one sensor is visible, making sure your target sensor is closest to the receiver.

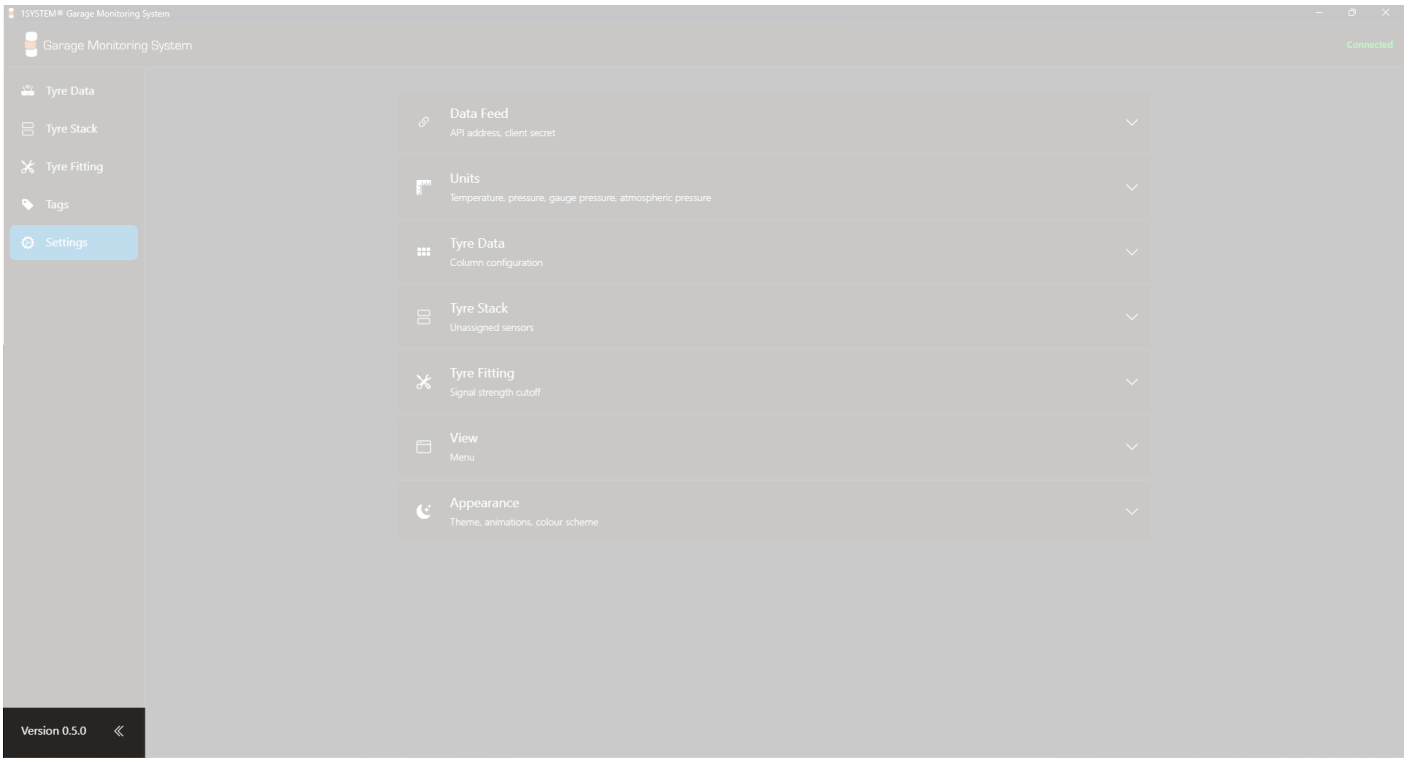
View

Provides a toggle for showing/hiding the side menu.

Appearance

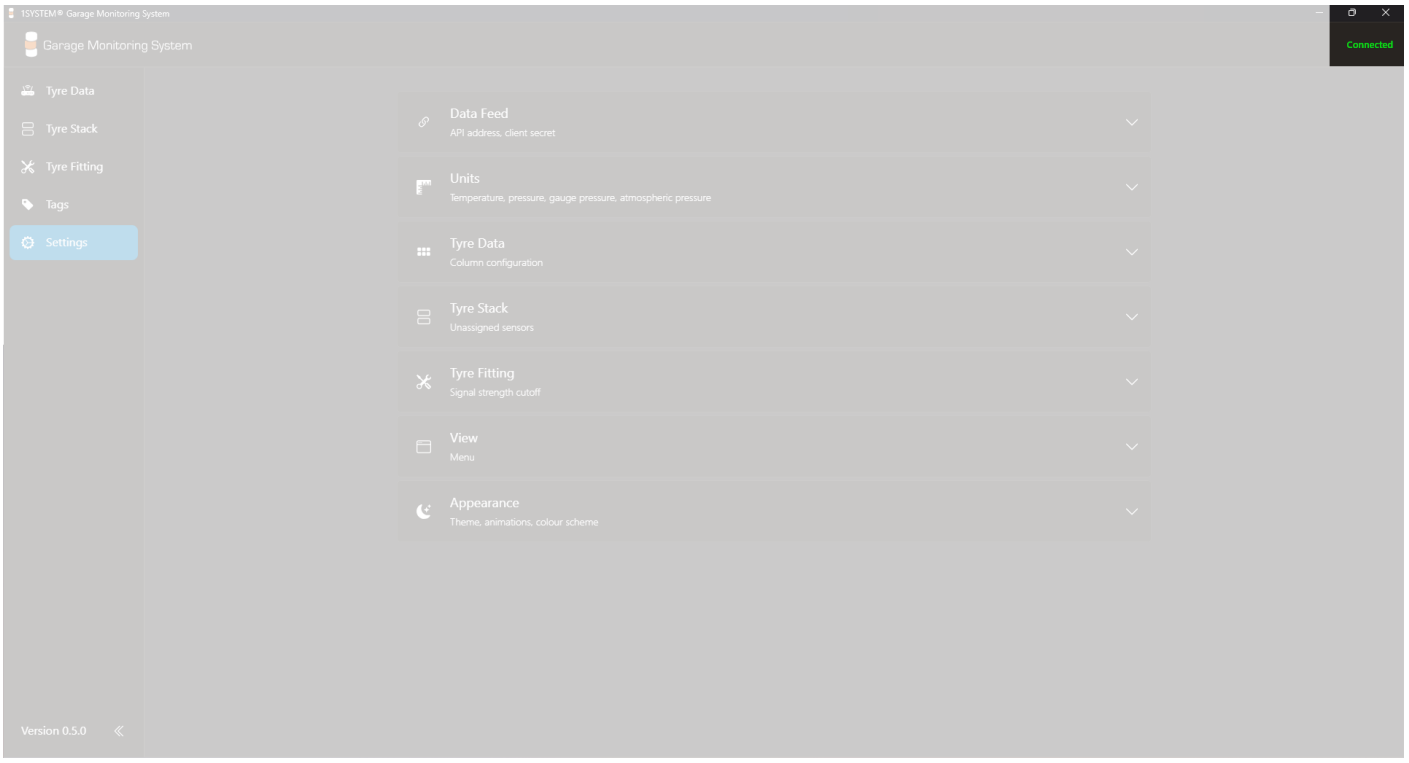
The appearance settings allow you to toggle the app's theme (`dark` / `light`). A toggle for row animations in the data grid is also available, along with default colours for tyre and car information tags.

Version number



The version number of GMS is located at the bottom of the menu sidebar. *Note: the version number is only visible when the menu is open.*

Connection Status



The API connection status is located in the the top right corner of the screen. This displays the current connection status to the API.

GMS has 4 different connection states to the API: `Connected`, `Connecting`, `Cannot connect` and `Disconnected`.

`Connected` indicates that GMS is currently connected to the API and is receiving data.

`Connecting` indicates that GMS is attempting to connect to the API.

`Cannot connect` indicates that GMS is unable to connect to the API. Click the status indicator to show the error notification and troubleshoot the issue.

`Disconnected` indicates that GMS is not connected to the API. This is an unlikely state and can be resolved by refreshing the page (Web) or restarting GMS (Windows).

Troubleshooting

Status indicator shows `Cannot connect`

There are various reasons GMS may be unable to connect to the API. This may be due to one of the following causes:

API address

> **Cause**
> The URL address in settings does not match your API's URL endpoint.

> **Resolution**
> Check the URL address in settings and ensure it matches your API's URL endpoint. Click `Connect` after you've made any changes.

API client secret

> **Cause**
> The client secret in settings does not match your API's client secret.

> **Resolution**
> Check the client secret in settings and ensure it matches your API's client secret. Click `Connect` after you've made any changes.

API trust

> **Cause**
> The browser/window GMS is running in does not trust the API and is blocking the connection.

> **Resolution**
> Click the `Cannot connect` status indicator to show the error notification. Click `Info` to open a troubleshooting dialogue. Click `Trust now` to open the API `/Advertisements` route in a new window. If this window shows a message indicating the connection is not secure, click `Advanced` and then `Proceed to (unsafe)`. This will add the API to your browser's trusted sites list and allow GMS to connect. Once trusted, close the window and click `Connect` in GMS.

API protocol

> **Cause**
> A `http` protocol is being used in the URL address in settings whilst GMS is loaded over `https` (only applicable to web version).

> **Resolution**

> Change the API URL address in settings to use `https` instead of `http`. Click `Connect` after you've made any changes.

Status indicator shows `Disconnected`

GMS attempts to connect to the API automatically on startup. If there is a connection issue, the status indicator will show `Cannot connect`. In the unlikely event that GMS does not initialise a connection, the status indicator will show `Disconnected`. If this happens, try refreshing the page (Web) or restarting GMS (Windows).

Glossary

GMS

Garage monitoring system.

tag

A plain text value or file that stores customisable information associated with sensor addresses. These are stored virtually by the API in a local database and not on the sensors themselves.

Support Contact Details

For support, please contact bf1systems at 1system@bf1systems.com.