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Table of contents

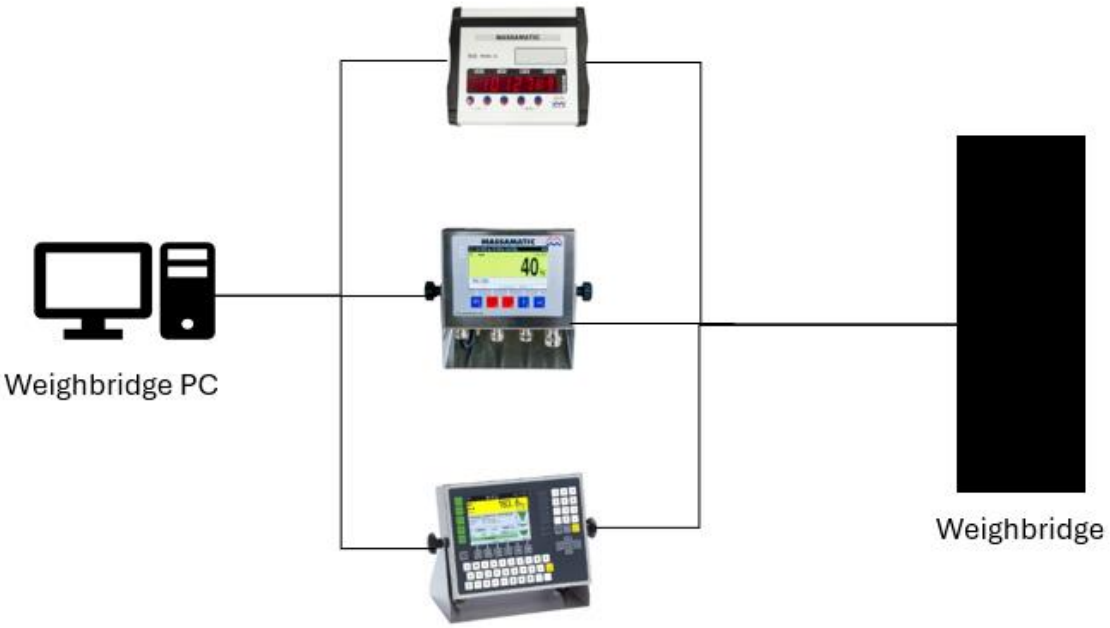
1 W8Link Overview

We have developed a unique REST-based platform for integration with hardware such as robots, beams, cameras, ANPR, and weighbridge indicators. Unlike traditional RS232, which supports only a single point of integration, our REST-based service allows you to query any hardware device seamlessly.

W8Link comprises various stations, each enabling **W8Suite** to communicate with and control different hardware components. We will have a look at each station.

W8Link can be sold as a standalone application that can be used by 3rd parties for hardware integration using a REST based JSON interface with user access control (roles and security)

2 Weigh station

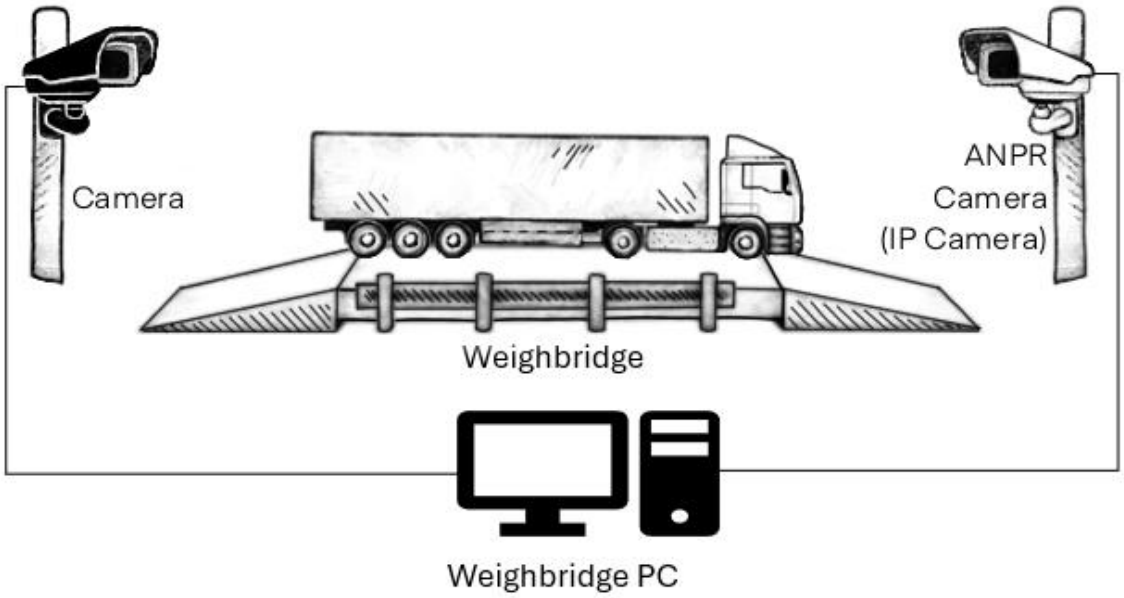


The primary function of the **W8Link Weigh Station** is to read various data strings from multiple indicators. A single W8Link: Weigh Station can interface with multiple indicators connected to a PC, as illustrated.

The W8Link: Weigh Station operates as an API service running in the background of your PC. This service collects essential information from the indicators, such as weight measurements and whether the weighbridge is still in motion and makes this data available for the W8Suite module.

The illustration demonstrates how a PC equipped with the W8Suite module and a W8Link: Weigh Station can operate with multiple connected indicators.

3 Camera & ANPR station



The **W8Link Camera Station** is designed to capture images from cameras based on various events configured in the W8Suite Module. For example, it can take a picture of a vehicle before a weighing transaction or while the vehicle is on the weighbridge during a transaction. These images are then associated with the transaction for easy access and future reference.

The station can capture multiple images from multiple cameras for specific events. Typically, clients use this station to take frontend and backend images of vehicles during transactions. The illustration demonstrates how a PC equipped with the W8Suite module and W8Link: Camera **Station** can capture images of the vehicle's backend while it is on the weighbridge.

The **W8Link ANPR Station** includes the functionality of the W8Link: Camera Station, with the added capability of vehicle license plate recognition. The primary purpose of the W8Link: ANPR Station is to capture the vehicle's license plate and automatically link it to a transaction without any human intervention. The license plate number is then associated with the transaction for future reference.

These stations are designed to ensure the data integrity of all transactions that occur on the weighbridge.

4 Relay station

The **W8Link Relay Station** enables the **W8Suite** Module to interface with a relay card, facilitating the automation of traffic lights, sensor beams, and security gates based on events within the W8Suite module.

For instance, as illustrated, when a vehicle arrives for a weigh-in, the operator initiates a transaction, causing the barriers to open automatically, allowing the vehicle to drive onto the weighbridge. Once the vehicle is on the weighbridge, the barriers close automatically. After the transaction is complete, the barriers open again, permitting the vehicle to exit the weighbridge before closing automatically. This automation can also be applied to traffic lights and any hardware devices utilising a relay card.

5 RFID station

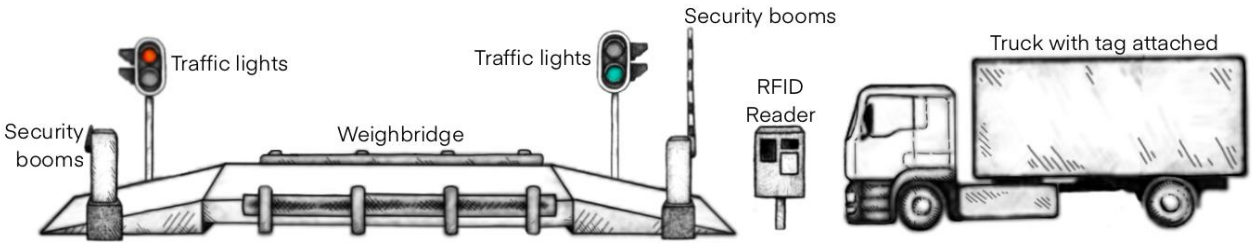
The **W8Link RFID Station** utilises RFID sensors and tags to facilitate automatic weighing transactions without human intervention. RFID tags are preloaded with essential data required for completing a transaction, such as the vehicle registration number, transporter name, and product information. These tags are attached to the vehicles, enabling automatic transaction processing when the RFID tag is scanned by the sensor.

We will now look at the entire automated weighing transaction procedure.

Procedure

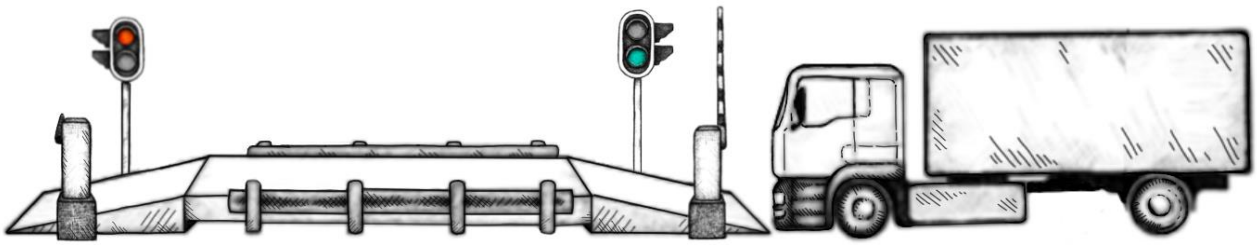
Each vehicle will be equipped with an RFID tag that is pre-configured with all the essential data required to facilitate a seamless weighing transaction. This data includes, but is not limited to, the client's name, transporter details, vehicle registration number, and other pertinent information.

To demonstrate the system in action, we will utilize a site layout designed for optimal traffic management, featuring security booms and traffic lights. These elements work together to ensure smooth and controlled vehicle movement throughout the site, enhancing both efficiency and safety during the weighing process.



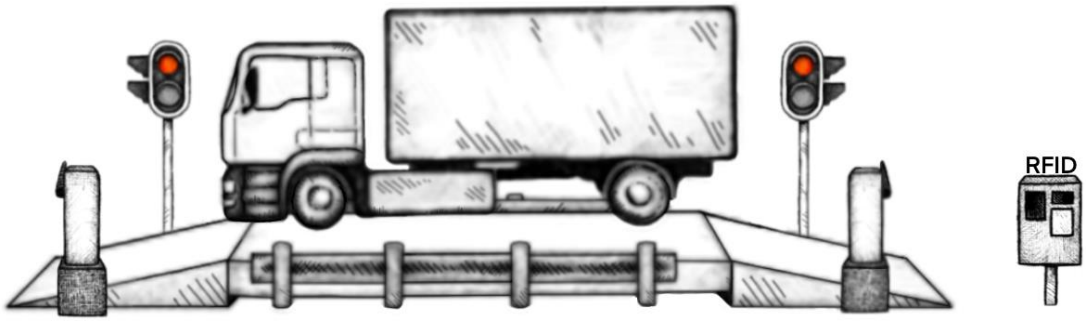
The vehicle driver will approach the RFID reader, which will automatically scan the attached RFID tag. If the tag's details are invalid or if the vehicle has been barred from the system, the security booms and traffic lights will remain unchanged, preventing the vehicle from proceeding.

However, when the tag details are verified as correct and the vehicle is authorized for a weighing transaction, the system will signal the traffic lights to turn green, and the security booms will open. This indicates to the driver that they are cleared to proceed with the weighing process, as illustrated below.

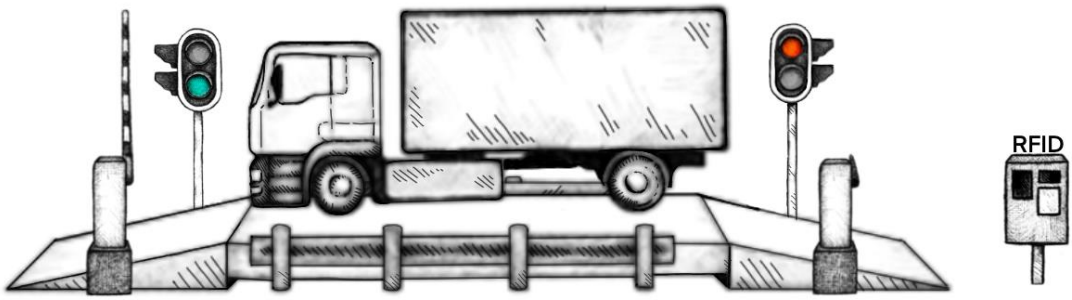


The driver will then proceed to drive the vehicle onto the weighbridge. Once the truck is correctly positioned on the weighbridge, the security booms will close, and the traffic lights will turn red, signalling that the vehicle is securely stationed, as shown in the illustration below.

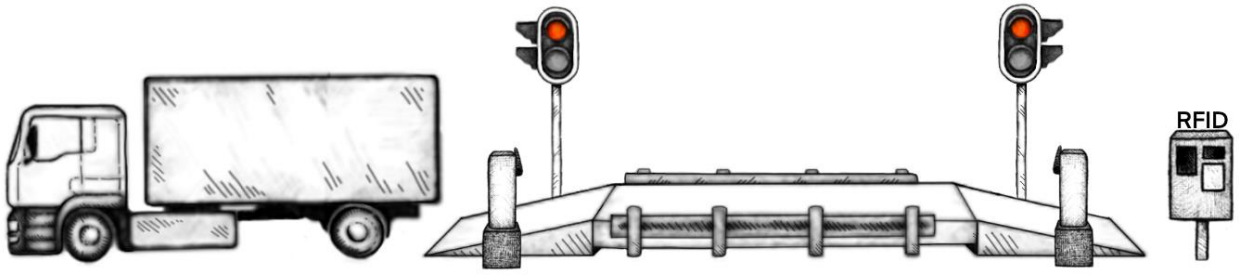
At this point, the W8Link: RFID Station will seamlessly integrate with W8Suite, working in the background to capture all relevant details and the weight of the vehicle. This ensures that the weigh transaction is accurately recorded and processed.



Once the process has been completed in the background, the security booms will open, and the traffic lights will turn green, indicating that the transaction has been successfully processed. This signals to the driver that they are free to exit the weighbridge. Please refer to the illustration below for a visual representation.



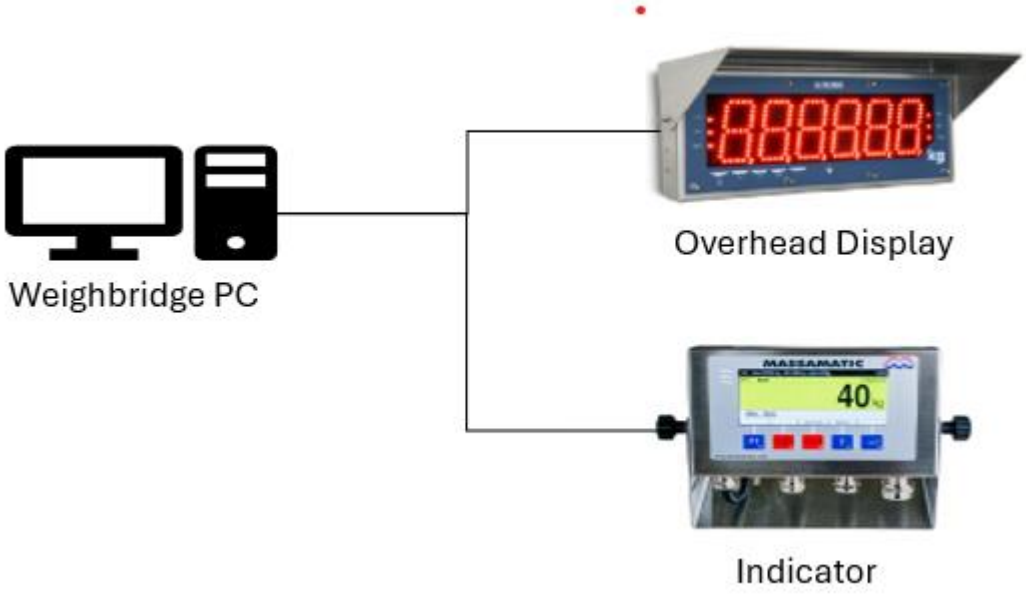
When the driver exits the weighbridge and the vehicle's weight is no longer detected, the security booms will close, and the traffic lights will turn red, as illustrated below. At this point, the weighbridge is ready for the next weighing transaction.



6 Overhead display

The **W8Link Overhead Display Station** is an API service that allows the W8Suite module to display messages on overhead displays. These messages are fully customisable, and event driven.

In the illustration, the weighbridge PC utilises both an overhead display station and a weigh station to show the weight received from the indicator on the overhead display.



7 Sign pad station

The **W8Link Sign pad station** enables the W8Suite Module to integrate a signature pad during transactions. This service allows operators and customers to digitally sign on the signature pad after transactions, automatically attaching their signatures to the weigh transaction slip when it is printed.

8 Server integration

All **W8Link** stations can be configured to be discoverable by any PC connected to the same network. This enables operators to access services running on other networked PCs configured to be discoverable.

With this functionality, as illustrated, operators using Weighbridge PC 1 can access the services of Weighbridge PC 2. This allows Weighbridge PC 1 to read the weight indicators from Weighbridge PC 2 and vice versa.

Additionally, PCs without a W8Link station can utilise the W8Link service running on the network. For instance, Weighbridge PC 3 can perform transactions using the weight from the indicator connected to Weighbridge PC 1.

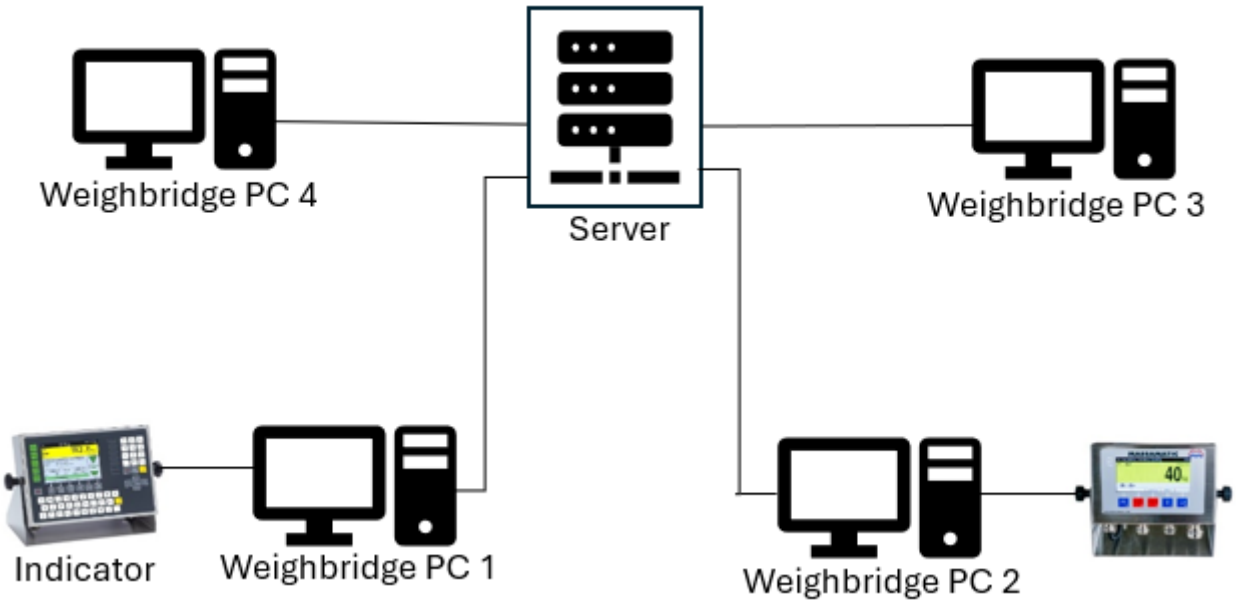
Reasons why this has been developed:

- An operator at Weighbridge PC 1 can access weight data from Weighbridge PC 2 without physically moving to that location. This ensures efficient data collection and monitoring, centralizing all weight data for easy reporting and analysis.

- Operators can redistribute tasks among available weighbridges by accessing services across different PCs. If Weighbridge PC 2 is busy, Weighbridge PC 1 can temporarily handle its transactions, ensuring smoother operations and reducing wait times.

- If Weighbridge PC 1 encounters a malfunction, operators can switch to Weighbridge PC 2 to continue operations seamlessly. This redundancy ensures that there is minimal disruption to the workflow.

- Managers can access the weighbridge data from their PCs without needing W8Link Stations installed. They can monitor weights and transactions from any networked PC, providing greater flexibility and oversight.



9 Stations summary

Station	Description
Weigh	This station is included with each W8Suite module, enabling the module to read from and communicate with various indicators.
Camera	This station facilitates image capture within W8Suite transactions, storing them for subsequent review and reference.
ANPR	This station automatically captures vehicle registration numbers and integrates them into transactions without requiring operator intervention. The registration plate images are subsequently appended to transactions for future reference.
Relay	This station enables the W8Suite module to interface with relay cards, enabling control over booms, beams, robots, and other devices that utilise relay cards.
RFID	The RFID station enables vehicles equipped with RFID tags to conduct automated transactions without human intervention. Transaction details, such as weigh information, are preloaded onto the tag, simplifying the process for vehicles during their first and second weigh-ins.
Overhead Display	This station allows the W8Suite module to read from and write to overhead displays, enabling it to showcase weights and customisable messages on the display.
Signpad	This station facilitates the use of a signature pad by operators or drivers during or after transactions, automatically incorporating their signatures into transaction slips as required.
Backup	This station allows your database to be backed up at scheduled time frames, in case of any data corruption or hardware failure.

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