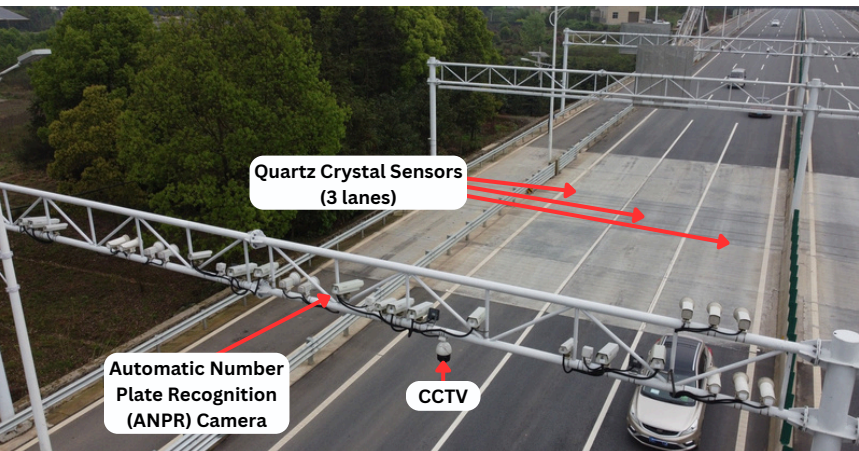


# WIM System

## X7b Low & X7a Hi-Speed Weigh In-Motion System

Smarter Roads Start with Smarter Weighing



### System Composition

The X7 systems includes quartz sensors, amplifiers, a WIM controller, inductive loops, and other components for high-speed, high-precision vehicle data collection and accurately measures speed, axle load, and wheelbase across varying speeds. Compared to static platforms, X7 offers better accuracy, faster installation, easier maintenance, strong anti-interference performance, and reliable operation in diverse weather conditions.

### System Features

Both the quartz weighing system and the platform weighing system are capable of high-speed, high-density, and high-precision data sampling of moving vehicles. Accurately calculate key metrics such as vehicle speed, axle load, and wheelbase in real-time.

**Low Speed and Hi-Speed Weigh In-Motion (WIM) systems** measure vehicle weight, axle loads, speed, and vehicle classification. Installed in or alongside roadways and facility entrances, the X7 series delivers real-time data for traffic monitoring, overload control, and enforcement. These systems feature license plate recognition, data acquisition software, over dimension detection, infrared vehicle separators, charge amplifiers, and a centralised monitoring center. Trakblaze X7 WIM supports highway safety and planning, while low speed WIM ensures accurate weighing at checkpoints. Together, they enhance road safety, optimise load management, and provide vital data for efficient transport regulation and infrastructure development.



### TECHNICAL DATA

Accuracy	95% (subject to installation conditions)
Single axle rated load	<b>Low Speed:</b> 40t <b>High Speed:</b> 150% (single axle)
Speed range	0.5 to 100km/h
Speed error	$\leq \pm 1$ km/h
Wheelbase error	$\leq \pm 100$ mm
Working voltage	AC 220-240V 50Hz
Maximum lane coverage (one direction)	<b>Low Speed:</b> 2 lanes <b>High Speed:</b> 8 lanes
Data storage	40000 vehicle data
Data interface	<b>Low Speed:</b> RJ45 <b>High Speed:</b> Ethernet
Working temperature	-40°C to +85°C
Confidence	$\geq 96\%$
Output Information	Speed, total weight, axle load, number of axles, wheelbase, vehicle type, and passing time

Note: Subject to change without notice. Images are for illustration purposes only. Speeds and accuracies may vary based on site conditions and vehicle operator.

## Other WIM Applications:

### X8 Bridge Safety Inspection & Monitoring System

Bridge Safety Monitoring System combines smart sensors, real-time data acquisition, advanced analytics, and remote monitoring to deliver continuous insight into structural performance. With intelligent alarms and automated reporting, it ensures proactive maintenance and informed decision-making—enhancing safety, reliability, and longevity of critical bridge infrastructure.

## Software

Trakblaze WIM software will collect and analyse large-scale data from all weighing stations within the installation area. The system streamlines the entire process for managing oversized vehicles including document review, filing, notification & archiving. It also enables precise authority management for overload control stations and law enforcement personnel.

By leveraging AI-powered big data analytics, the system delivers in-depth statistical insights to support informed decision-making. This significantly enhances the efficiency of overload control operations ensuring fair & consistent law enforcement, deters violations by freight drivers & actively contributes to the prevention & reduction of overloaded/heavy vehicles.

### Software Features

The management platform is built on a Browser/Server architecture and supports standard open interfaces for seamless integration with public platforms. Its back-end service architecture is developed using cross-platform languages ensuring compatibility with both Windows and Linux operating systems.

### Dynamic Weighing Data Acquisition

The dynamic weighing data acquisition software is designed for the Windows operating system, with core functions including data acquisition, matching, synthesis, display & storage in complex operational environments. Typically installed using a on-site industrial computer, the software runs continuously 24/7. It features a lightweight, installation-free design optimised for low resource consumption. Additional advantages include automatic fault detection and self-recovery capabilities along with strong compatibility across a wide range of hardware devices. The system offers high flexibility and scalability, supporting service clustering and automatic data backup while maintaining robust data security. The adoption of an open and modular architecture provides a strong foundation for future functional expansions and system upgrades.



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