



VanJee WIM system in toll station Guangdong China which consists WIM scale, infrared separator and deductive loop



#### WIM Scale: DCS-30K II

DCS-30K II is cost-effective low-speed WIM scale for truck weight measurement speed under 20km/h and accuracy within  $\pm 1\%$ . The scale has maximized effective measuring distance because it adopts tracking algorithms base on real-time data. The scale can identify and measure axle distance and axle weight. Additionally, the scale can adapt any driving behaviors and has strong anti-cheat features such as acceleration, deceleration, vehicle jump, braking and steering.

Product Parameters	
Scale size	(common lane 3.2 * 1.2m (common lane), 4-lane lane 16.2 * 1.6m (4-lane lane))
Rated load	30t
Maximum overload capacity	100%FS
Accuracy level	Level 2 (vehicle weighing accuracy)
Axis or axle group weighing accuracy	Level C
Protection level of weighing sensor	IP68
Operating temperature	-40°C ~ +60°C
MTBF	> 20000h



### The WIM Management Platform:

VanJee has developed WIM big data platform to help traffic agency monitor every truck on the road. VanJee has connected the most local weighing station database to the central platform to provide WIM big data service, GIS information and statistical analysis. The platform would provide necessary and sufficient WIM enforcement evidence including time, location, plate number, gross weight, axle number, overweight rate, short video and local truck or not. The agency would search the specific truck plate number and violation records to improve WIM enforcement efficiency.

Additionally, the platform would also generate blacklist for trucks which has too many violation records. If the driver has dissent on the penalty, the platform can provide overloading truck short video to assist a tribunal's judgment. In conclusion, WIM direct enforcement would improve enforcement efficiency and justice as well as improve traffic efficiency.



The platform shows vehicle picture and corresponding vehicle information such as plate number and gross weight

Traffic agency adopts VanJee WIM platform to monitor most truck on the road

#### VanJee International policy on business partners and local agencies

VanJee is looking for business partners and local agents, VanJee would provide fully support for local partners with sufficient guides and clear goals. VanJee and partners would work together to establish distribution channels and pursue common interest. As a result, VanJee and partners would achieve leadership sales, profit and value creation in a new market.



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## Weigh-In-Motion PRODUCTS



## Weigh-In-Motion Product:

### VanJee Technology is Weigh-In-Motion market leader which hold the largest WIM market share in China.

VanJee provides both high-Speed WIM System and low speed-System WIM System. Most importantly, VanJee launched the first WIM Direct Enforcement System in China. As a result, traffic agency would regulate overloaded trucks more effectively to protect road quality and improve traffic safety. VanJee has distributed more than 16 thousand WIM equipment to the transportation industry as well as has obtained more than 100 intellectual property rights in the WIM industry. VanJee Weigh-In-Motion also has been used in worldwide including Togo, Republic of Congo, Mozambique and Myanmar.

VanJee WIM Direct Enforcement System is to regulate overloaded truck in free flow situation with the speed 6-130 km/h. This all-inclusive WIM Direct enforcement solution includes high-speed weigh-in-motion system, LIDAR, ANPR, the traffic video monitoring system and WIM data management platform. This system collects not only accurate truck weight data but also the complete chain of legal evidence to perform weight enforcement. The front part of the system (the weighing system and LIDAR system) would collect vehicle information including axle weights, gross vehicle weights, vehicle type, axle number, axle distance, single or dual tire, date and time, location, plate number, speed, vehicle driving direction to the platform. Based on these data, the platform can automatically determine whether truck is overloaded or not. The policemen do not need to stop the trucks one by one in the highway but only to stop the targeted trucks. The direct enforcement method improves the efficiency of weighing system significantly.



VanJee WIM direct enforcement system



VanJee Direct enforcement system at Haining, China



### Strain Gauge Sensor (Bar Sensor)

VanJee designs the bar sensor base on strain gauge technology and develop specific interlocking sensor layout in WIM system to meet the weight enforcement accuracy requirement with  $\pm 2.5\%$ . First of all, VanJee bar sensor elastomer is only 3cm which means the sensor has small pressure area and has less amount of shape changing. Therefore, VanJee bar sensor has the great competitive advantage in durability and lifespan. The sensor is not limited by roadway lanes width and it is flexible to install in any road position.

- 1 The bar sensor is easy to install and maintain.
- 2 The bar sensor requires small construction workload which causes less damage to the road.
- 3 The bar sensors can be dugged out and reinsert into slit to use again when client need to work on rutting issue.
- 4 VanJee has develop temperature compensation on bar sensor. The bar sensor has little effect on weight accuracy under extreme cold weather as well as truck vibration.

Bar sensor parameter and specification			
size	1800mm*70mm*70mm or 273mm*70mm*70mm	Repeatability	0.1%FS
material	stainless steel	Insulation resistance	5K $\Omega$ /ohm
sensor type	strain gauge sensor	Rated load wheel load	15t
input electrical resistance	3.0K $\Omega$	Overload capacity	150%
output electrical resistance	2.0K $\Omega$	Protection class	IP68, can use in the water
Sensitivity	0.415mV/V	Temperature range	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C
Non-linear ratio	0.2%LD	Sensor lifespan	>20 million axles
		Installation method	Inserted in the road surface



### Intelligent Weighing datalogger:

The intelligent weighing datalogger is to process weighing signal and information from bar sensors. Additionally, the datalogger would transform weighing data and update real-time data to the database. The datalogger has great software compatibility to work with different weighing scales. The datalogger adopts the dual-system architecture model to guarantee the high stability. The datalogger has its automatic fault detection and alarming mechanism to reduce the maintenance costs. The datalogger has a variety of interface to guarantee the use of new WIM technologies. The datalogger has several great features such as high stability, good software compatibility, good interface extensibility and low maintenance costs.

Product Parameters	Performance Parameters
CPU	dual-CPU design (CortexA8 + CortexM4)
Operating system	dual-operating system design (Linux + uCOS)
Memory	AB: DDR3 (512M), MA: RAM (2M)
Communication Interfaces	RJ45 network interface (2), USB interface (3), RS232 (1), RS422 (3), VGA interface (1), CAN interface (2)
Storage space	AB: NAND (256M) + SD card expansion; MA: eMMC (512M)
Control	keyboard + touch control
Display	800 * 480 LCD touch screen
Dimensions	344 * 210 * 188mm
Weight	4KG
Color	silver gray + midnight black
Operating temperature	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C
Mean time between failure (MTBF)	$\geq 20000$ h



WIM scales in VanJee manufacturing base



VanJee products in WIM station