

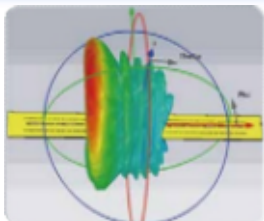
TRAFFIC DETECTION SENSOR



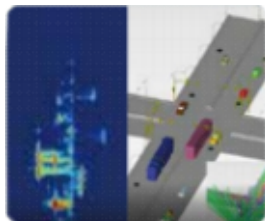
INTRODUCTION

The radar-video integrated device employs intelligent fusion technology that combines wide-coverage radar and video monitoring, leveraging their complementary strengths. It utilizes radar for real-time, large-area, multi-target detection on roadways and integrates advanced algorithms to track traffic object trajectories and monitor their operational status. Video technology is used to capture detailed characteristic information of the targets. Through intelligent analysis and fusion of this multi-dimensional, heterogeneous data, the device achieves comprehensive digitalization of traffic operations. Its outputs include real-time target states (position, speed, type), traffic flow statistics (volume, average speed, occupancy, queue length, etc.), traffic event information (stopped vehicle, speeding, lane change, wrong-way driving, congestion), and visualized characteristic data.

TECHNOLOGY



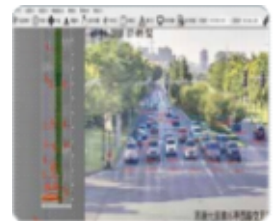
**Multi-channel Microwave
Antenna Technology**



**Multi-target Signal
Processing Technology**



**Multi-modal Artificial
Intelligence Technology**



**Intelligent Multi-sensor
Fusion Technology**



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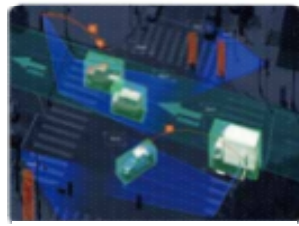
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APPLICATIONS



Intelligent Transportation Systems



Vehicle-Road Coordination



Smart Highway Solutions



Holistic Perception Intersection

PERFORMANCE

Vehicle Feature Recognition	Provides vehicle license plate recognition (LPR) within designated areas.
Comprehensive Target Recognition	Identifies vehicles (from trucks to buses), non-motorized vehicles, and pedestrians.
Continuous Trajectory Tracking	Accurately follows the path of every moving object.
Precise Queue Analysis	Measures static and dynamic queues with $\pm 5\%$ accuracy. Configurable for real-time traffic management.
Rich Traffic Intelligence	Generates comprehensive traffic data including vehicle volume, average speed, lane occupancy rate, average time headway, average space headway, and 85th percentile speed.
Smart Event Alerting	Detects a wide range of traffic anomalies such as illegal parking, wrong-way driving, solid-line lane changing, speeding, abnormally low speed, congestion, lane violation, unauthorized entry, queue spillover, and emergency lane occupancy. Supports user-defined detection zones and customizable alarm outputs.



SPECIFICATIONS

Core Specifications			
Detection Range	350 m	Lanes Covered	8 lanes
Radar Frequency	80GHz	Targets Tracked	256
Refresh Rate	50ms	Speed Range	-300~300km/h
Video Capability	Radar-Visual Fusion ; 8 Megapixels		
Detection Data	Trajectory Data: Position, Speed, Type		
	Traffic Flow Data: Volume, Speed, Occupancy, Queue Length		
	Event Data: Stopped Vehicle, Speeding, Lane Change, Wrong-way Driving		
	Visualization Data: Video Stream, Target Features		
Detection Accuracy	Position: 0.2 m		
	Speed: 0.1 km/h		
	Traffic Flow: ≥99%		
	Event: ≥99%		
Environmental & Physical Parameters			
Temperature	-40~+70°C	Humidity	60~95%
Mounting Height	6-9m	Protection Rating	IP67
Environmental & Physical Parameters			
Power Supply	24V DC	Interface	RJ45/RS232
Power Consumption	<12W	MTBF	100000h



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