

Monocular Radar-Vision Integrated Camera SV-ETL-E1A-EX

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Product Overview

The SV-ETL-E1A-EX Monocular Radar-Vision Integrated Camera is an intelligent transportation product that deeply integrates high-definition video perception and wide-area microwave detection; features all-weather all-day operation, long detection distance, and high resolution; widely used in highways, urban intersections and road sections; integrates motor vehicle, non-motor vehicle, and pedestrian detection, and also has functions such as traffic statistics and traffic event detection, providing real-time and accurate data for road holographic perception and vehicle-road-cloud integration.

Product Appearance



Functional Features

- Adopts high-definition image sensor: 8MP starlight low-light CMOS image sensor, with strong light suppression and wide dynamic range capabilities, can stably perform accurate detection in different lighting environments;
- Adopts high-computing processor, built-in neural network acceleration engine, realizes local data processing, improves real-time performance and accuracy;
- Adopts millimeter wave radar module, stable and reliable detection performance for motor vehicles, unaffected by complex environments;

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- Adopts self-developed real-time synchronization and radar-video deep fusion perception technology, leveraging the advantages of both radar and video, providing high-resolution, high-penetration all-weather perception capability;
- Built-in deep learning and self-calibration functions, enabling automatic rapid calibration of radar and video according to deployment scenarios;
- Built-in intelligent detection functions such as traffic flow detection and traffic event detection, outputting relevant intelligent analysis results and traffic flow data;
- Supports multi-stream output, H.265/H.264 high and low resolution combination, balancing remote preview and HD storage;
- Real-time data analysis and processing;
- Integrated industrial-grade design, IP67 ingress protection rating;
- Supports remote device software upgrade and parameter configuration.

Technical Parameters

Parameter Name	Parameter Value
Camera Parameters	
Image Sensor	1/1.8", 8MP Starlight Series CMOS Image Sensor
Protocol	Supports ONVIF/GB/T 28181 protocols, supports network protocols such as RTSP/NTP
Video Processing	H.265+/H.265X video encoding, supports dual streams, AVI format Supports adjustable bitrate 256Kbps~16Mbps
Video Frame Rate	Supports adjustable frame rate 1~30 fps
Shutter Speed	Auto/Manual 1/25~1/1000S
Lens Mount	M12
Noise Reduction	2D/3D Digital Noise Reduction
Wide Dynamic Range	Digital WDR
Image Output	Main Stream: 3840*2160@30fps, Sub Stream: 1920*1080@30fps
Lens Parameters	
Focal Length	Focal length 8/12/16mm (optional, configured according to usage scenario)
Resolution	8 mega pixels
Built-in Algorithm	
Detection Algorithm	Deep learning target recognition/tracking algorithm, target coordinate projection transformation, ranging and camera internal/external parameter calibration algorithm, traffic flow statistics algorithm, etc.
Radar-Vision Fusion	Self-developed real-time synchronization technology, realizing deep fusion of radar data and video
Radar Parameters	
Antenna Beam Width	Azimuth Angle: $\pm 12.5^{\circ}$ Pitch Angle: $\pm 8^{\circ}$



Detection Distance	30~250m
Speed Measurement Range	-250km/h---+250km/h
Speed Measurement Accuracy	±0.2Km/h
Ranging Accuracy	± 0.3m
Basic Parameters	
Power Interface	DC5521
Network Interface	RJ45
Voltage	DC12V±5%
Power Consumption	<10W
Weight	≈3KG
Operating Temperature	-30°C - 60°C
Ingress Protection Rating	IP67

Order Model

SV-ETL-E1A-EX(08): Equipped with 8mm fixed lens

SV-ETL-E1A-EX(12): Equipped with 12mm fixed lens

SV-ETL-E1A-EX(16): Equipped with 16mm fixed lens

Application Scenarios

Intelligent Transportation: Expressway, Full Digital Intersection, Intelligent Connected, Full Digital Road Section, Vehicle-Road Collaboration

