TREK-154

Intelligent Blind Spot Detection Camera Module

Features

- Compliant with BSIS, UNECE R151 (dual camera), R158, R159 regulations
- AI-based object detection and identification of vulnerable road users (VRUs) and vehicles (via inner wheel difference)
- Pedestrian and optional vehicle detection (blind spot detection)
- Adjustable alarm area ensures flexible deployment in vehicles of different heights and types

Introduction

TREK-154 is an intelligent blind spot detection camera module that uses image recognition technologies and algorithms to monitor vehicle blind spots in order to detect objects and identify danger in the dynamic environment. Designed for installation in on-road trucks, buses, and off-road heavy-duty vehicle fleets, TREK-154 is compatible with various video formats (CVBS/AHD/TVI) and can withstand operation under harsh conditions. To ensure accurate detection even in direct sunlight or low lighting, the camera supports high dynamic range (HDR) imaging, while the ultra-wide FoV facilitates the recognition of multiple objects, including pedestrians, cyclists, motorcycles, and vehicles. By providing real-time blind spot monitoring and alarm notifications, TREK-154 provides a vision-based safety solution that can be easily deployed for increased driving safety.

Specifications

Intelligent Video Analysis	Machine Learning Object Detection	VRUs, vehicles
	Sensing / Viewing FOV (Horizontal)	180°/170°
Electrical Interface	Camera Sensor	CMOS type, 1280 x 960 (1280 x 720 viewing resolution), 100 dB dynamic range
	I/O	1 x Video out (RCA, male), cascading RS-485 connectors for connecting multiple modules, and 1 x ACC/GND (open wire)
	Power Input	10 ~ 36 V_{DC}
	Power Consumption	< 4W
Environmental	Operating Temperature	-40 ~ 85 °C/-40 ~ 185 °F
	Storage Temperature	-40 ~ 105 °C/-40 ~ 221 °F
	Operating Humidity	30 ~ 80% RH @ 40 °C/104 °F
	IP Rating	IP69K
	Shock/Vibration	TBA
	Drop Tolerance	TBA
Certification	EMC	FCC/CE
	Safety	TBA
Mechanical	Dimensions (D x H)	50 x 44.7 mm/1.96 x 1.76 in (w/o bracket)
	Weight	Camera module: 132 g/0.29 lb Camera bracket: 88 g/0.19 lb

Dimensions

Unit: mm
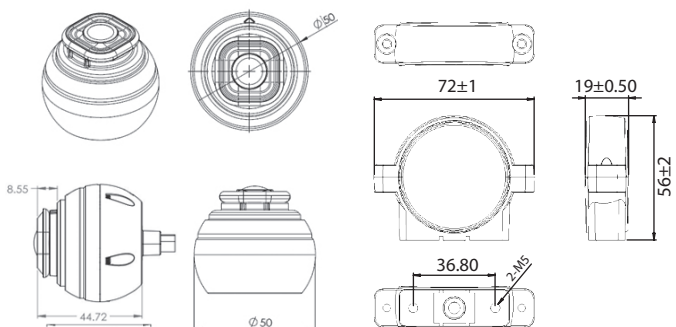
Ordering Information

Part Number	Description
TREK-154-FA01A0E	Blind spot detection module (front) with NTSC, RS-485
TREK-154-LA01A0E	Blind spot detection module (left) with NTSC, RS-485
TREK-154-RA01A0E	Blind spot detection module (right) with NTSC, RS-485
TREK-154-BA01A0E	Blind spot detection module (rear) with NTSC, RS-485
TREK-154-LB01A0E	Inner wheel detection module (left) with NTSC, RS-485
TREK-154-RB01A0E	Inner wheel detection module (right) with NTSC, RS-485

Disclaimer

1. Environmental conditions, such as obstructions to the camera sensor may block event trigger.
2. The presence of dirt or moisture on the camera can affect recognition accuracy.
3. TREK-154 only emits an alarm notification when an object is within the region of interest. The module does not provide automated emergency braking functions unless the event log is integrated with the vehicle control system.
4. TREK-154 only notifies drivers of potential collisions. It does not replace any functions drivers would ordinarily perform when driving, nor does it eliminate the need to remain vigilant and alert at all times, to conform to safe driving practices, and to obey traffic regulations.