TREK-130

Front Collision Avoidance ADAS Module

Features

- Image recognition algorithms for front-view monitoring
  - Lane departure warning system (LDWS)
  - Forward collision warning system (FCWS)
- Supports optional video recording board
- Easily display detection through video output
- High dynamic range imaging ensures clear image
- Vehicle-grade design
- Wide operating temperature range (-30 ~ 85 °C/-22 ~ 185 °F)
- MIL-STD-810G and EN60721 (5M3) certified for shock and vibration tolerance
- Easily paired with TREK x-86 in-vehicle computing terminals (TREK-6xx/5xx/7xx) via a single-cable connection
- Supports firmware updates

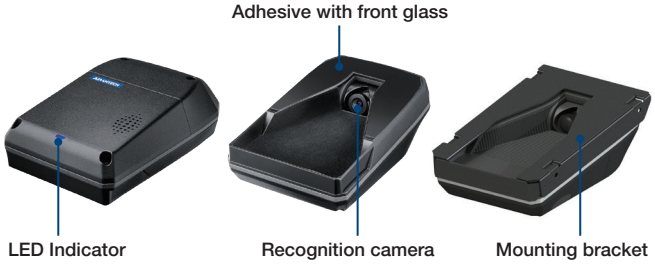
Introduction

The TREK-130 is an advanced, multifunction Advanced Driver Assistance System (ADAS) module that combines Front Collision Warning (FCW) and Lane Departure Warning (LDW) algorithms. It is a vision-based active safety solution for accident prevention and injury mitigation using video recognition technologies. This ADAS module can detect surrounding vehicles and pre-alert drivers with audible alerts if a high-risk situation is identified.

Specifications

Intelligent Video Analysis [1, 2]	Lane Departure Warning System (LDWS)	For LDWS applications, the camera sensor monitors lane markings to detect if the vehicle drifts into another lane. If the system detects that the vehicle has drifted, visual and audio alerts are emitted to warn the driver.
	Forward Collision Warning System (FCWS)	For FCWS applications, the camera sensor processes the images captured by the front camera to detect vehicles ahead and potential collision risks. If a vehicle is detected within a dangerously close proximity, visual and audio alerts are emitted to warn the driver.
Electrical Interface	Camera Sensor	CMOS type, 720p@30fps resolution, 115dB dynamic range; field of view3 (D x H x V): 45/35/26°
	I/O	1 x 4-pin automotive connector (white) for video output 1 x 6-pin automotive connector (grey) for TX/RX and ACC/GND
	Power Input	Supports 12/24 V vehicle power, 9 ~36 V_{DC}, with ISO-7637-II compliance
	Power Consumption	12W typical (input current <1A@ 12 V)
Environment	Operating Temperature	-30 ~ 85 °C (-22 ~ 185 °F)
	Storage Temperature	-40 ~ 105 °C (-40 ~ 221 °F)
	Operating Humidity	30 ~ 80% @ 40 °C/104 °F
	Vibration/Shock	MIL-STD-810G, EN60721 (5M3)
	Drop Testing	Twice dropped 1.0 m onto concrete
Certification	EMC	FCC/CE/CCC
	Safety	UL/cUL/CB/LVD
Mechanical	Dimensions (W x H x D)	131.3 x 45 x 88 mm (5.16 x 1.77 x 3.46 in)
	Weight	400 g (0.88 lb)

[1] To ensure optimum performance, the system's warning function is only activated when the vehicle speed reaches 60 kmh (37.2 mph).
[2] The module is optimized for vehicles under 1600 mm in height. If the target vehicle exceeds 2000 mm, the module may need to be recalibrated. This service is available upon request.
[3] Because this system is an imaging-based driver assistance system, some conditions and situations may influence the detection accuracy. Please refer to the user manual for further details.



Disclaimer

1. Environmental conditions, such as bright lighting or the camera being covered, may trigger false warnings.
2. The presence of dirt or moisture on the camera may impact the recognition capabilities.
3. The TREK-13x series only provides warnings when an object is within the detection area. Additionally, the module does not include an impact breaking function.
4. The TREK-13x series is designed to alert drivers to certain potentially dangerous situations. However, the module cannot replace the functions that drivers would ordinarily perform when driving a vehicle, nor does it reduce the need to remain vigilant and alert at all times, to conform to safe driving standards and practices, and to obey all traffic laws, rules, and regulations.

Ordering Information

Part Number	Description
TREK-130-AL01A0E	TREK-130 (Front View Monitoring) with Std. Mount and 2-Meter cables for Low-Height vehicle

Optional Accessories

Part Number	Description
TREK130CALKIT0-ES	ES P/N for TREK-130 Installation and Calibration Kits

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