Smart Radar Sense For Traffic Safety

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ZT-RADAR

Hunan ZTRadar Technology Co., Ltd.

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Traffic Flow Radar

Product Overview

Traffic flow radar is developed to help to optimize the traffic control management and improve the transportation safety. By microwave monitoring and AI algorithm, the radar detection is featured high accuracy and reliability. It can monitor vehicle flow in real time to report the ID, distance, lane, speed and other information periodically. So it can be applied to detect the vehicle queue at crossroads and count the traffic flow. With integration to ANPR camera, it can be applied to monitor the highway and downtown intersection, lower down the traffic violation and improve the traffic efficiency.

Application Scenarios

Product Features

- Integrated edge design and structured data output
- IP67 protection level, unaffected by adverse weather conditions
- Accurate detection and centimeter level trajectory tracking
- Ethernet interface for high efficiency data transmission
- Multi lanes and multi targets detection for various scenarios
- Built in smart algorithm for easy maintenance and remote configuration

Product Parameters

Model	ZT-TFRE100	ZT-TFRK100	ZT-TFRE350
Detection Range	100m;≤8 lanes	100m;≤8 lanes	350m;≥8 lanes
Targets Number	256	128	512
Center Frequency	77GHz	24GHz	77GHz
Fresh Rate	20Hz	20Hz	20Hz
Speed Range	±200Km/h	±200Km/h	±200Km/h
Speed Accuracy	±0.1Km/h	±0.2Km/h	±0.3Km/h
Distance Resolution	0.4m	1m	0.35m (<100m);1.4m (<350m)
Distance Accuracy	±0.1m	±0.5m	±0.1m (<100m); ±0.3m (<350m)
Angle Resolution	6°	14°	6°(<100m); 1.5°(<350m)
Angle Accuracy	±1°	±2°	±1°(<100m); ±0.2°(<350m)
Output Interface	RJ45/RS485/4*GPIO	RJ45/RS485/4*GPIO	RJ45/RS485/4*GPIO
Working Temperature	-40°~85°	-40°~85°	-40°~85°
Protection Level	IP67	IP67	IP67
Average Power Consumption	DC 24V;8W	DC 24V;8W	DC 24V;8W
Installation method	L-Pole/Signal Light/Gantry/Roadside	L-Pole/Signal Light/Gantry/Roadside	L-Pole/Signal Light/Gantry/Roadside
Dimension	200mm x 148mm x 61mm	200mm x 148mm x 61mm	200mm x 148mm x 61mm

Field Installation Photos
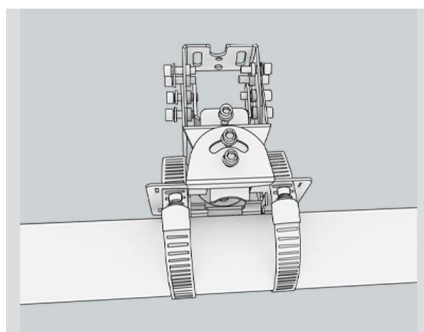
Camera Integrated Radar

Product Overview

Camera Integrated Radar is developed and designed all in one with traffic flow radar, video camera, supplement light and AI algorithm. With the data fusion from radar detection and camera AI, it can greatly help transportation authorities to monitor the traffic vehicles by features like type, color, manufacturer; and record the driving violation behaviors like driving on lane line, illegal lane change, opposite direction, emergency lane occupation, over-speeding and ultra-low speed etc. It can be installed both roadside and gantry.

Application Scenarios

Product Features

- Target recognition and classification: vehicles types, pedestrians, vehicle colors
- Traffic statistics summary: traffic volume, average speed, vehicle spacing, lane occupancy
- Target trajectory: target type, distance, lane and speed shown visually as a track
- Queued lanes: number of queued vehicles, queue length, vehicle position & speed
- Event detection: illegal lane change, ultra-low speed, over-speeding, occupying emergency lane, illegal parking, reverse driving, running red light
- Intelligent algorithm: built-in smart algorithm, easy maintenance and remote configuration

Product Parameters

Model	ZT-AIRE100	ZT-AIRE350
Detection Range	100m;≤8 lanes	350m;≤ 12 lanes
Targets Number	256	512
Center Frequency	77GHz	77GHz
Fresh Rate	20Hz	20Hz
Speed Range	±200Km/h	±200Km/h
Speed Accuracy	±0.1Km/h	±0.1Km/h
Distance Resolution	0.35m	0.35 (<100m); 1.4m (<350m)
Distance Accuracy	±0.1m	±0.1m (<100m); ±0.3m (<350m)
Angle Resolution	6°	6°(<100m); 1.5°(<350m)
Angle Accuracy	±1°	±1°(<100m); ±0.2°(<350m)
Speed Resolution	0.3Km/h	0.3Km/h
Horizontal Angle	±45°(<100m); ±12°(<350m)	±45°(<100m); ±12°(<350m)
Pitch Angle	-16~6.5°(<100m) ;±6°(<350m)	-16~6.5°(<100m) ;±6°(<350m)
Camera Resolution	4 MP	8MP
Smart Function	Vehicle type classification; color identification;no-plate vehicle capture; vehicle driving direction detection	
Output Interface	RJ45/RS485/4*GPIO	RJ45/RS485/4*GPIO
Working Temperature	-40~85°C	-40~85°C
Protection Level	IP67	IP67
Average Power Consumption	DC 24V; 8W	DC 24V; 12W
Installation method	L-Pole/Signal Light/Gantry/Roadside	L-Pole/Signal Light/Gantry/Roadside
Dimension	200mm*148mm*61mm	200mm*148mm*61mm

Field Installation Photos
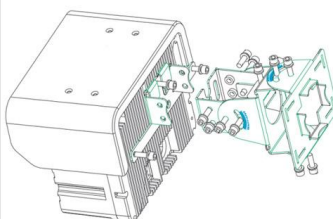
Traffic Speed Radar

Product Overview

Excessive speed is the main cause of road traffic fatalities. Traffic speed radar is widely recognized to monitor the vehicle over-speeding for warning and enforcement. By adopting advanced microwave and high-speed digital signal processing technology, the speed radar can ensure the precise positioning and triggering of all types of passing vehicles and can meet the application requirements of international speed measurement and flow monitoring at the traffic checkpoint. Narrow beam speed radar measures the speed and distance of an approaching or receding vehicle in a single lane. Multi-lane speed radar is to monitor multiple lanes and multiple targets on the road. Those can be widely applied to speeding checkpoints in highway, tunnel, and various roads.

Application Scenarios

Product Features

- 24GHz ISM Band internationally accepted by traffic speed enforcement.
- Continuously track the vehicle and identify the location and speed.
- Flexible installation like gantry and roadside above the traffic.
- Wireless connection and visual interface for configuration.
- Vehicle capture position within ± 0.5m difference, the consistency is 99% above.
- All weather resistance, not affected by light, dust, rain, snow, haze and other harsh environment

Product Parameters

| Model	ZT-TSRK01LE	ZT-TSRK04LE
Installation Type	Gantry	Gantry/Roadside
Installation Height	5m~10m	5m~10m
Tracking Distance	80m	100m
Trigger Distance	15m~30m	15m~50m
Position Accuracy	±0.5m	±0.5m
Detection Lanes	Single lane	4 lanes
Speed Range	1~300 km/h	5~250 km/h
Speed Error	(-4~ 0) km/h	(-4~ 0) km/h
Center Frequency	K band :24GHz	K band :24GHz
EIRP	<20dBm	<20dBm
Fresh Rate	20ms	50ms
Output Interface	RS485/RS232/Wi-Fi/GPIO; Baud rate 9600bps~256000bps adjustable	RS485/Ethernet/Wi-Fi; Baud rate 9600bps~256000bps adjustable
Working Temperature	-40°C ~ 70°C	-40°C ~ 70°C
Power Supply	DC12v	DC9-32v
Power Consumption	< 2.5W	< 3.5W
Mechanical Performance	LEXAN material shell, compliant with NEMA6 and IP66 standards	LEXAN material shell, compliant with NEMA6 and IP66 standards
Dimension	L 198mmx W 42mmx H 169mm	L 150mmx W 45mmx H 150mm
Weight	0.8kg	0.8kg

Field Installation Photos
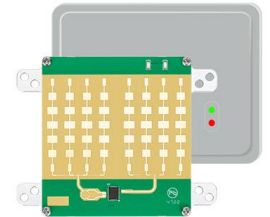
Speed Detection Radar

Product Overview

This speed detection radar is developed to warn the drivers with its speed feedback. It is recommended to install this type of radar with LED display, traffic warning lights or ANPR camera by the roadside in expressway, ordinary highway, community entrance road, corner intersection and school road section etc. so as to effectively reduce traffic accidents.

Application Scenarios
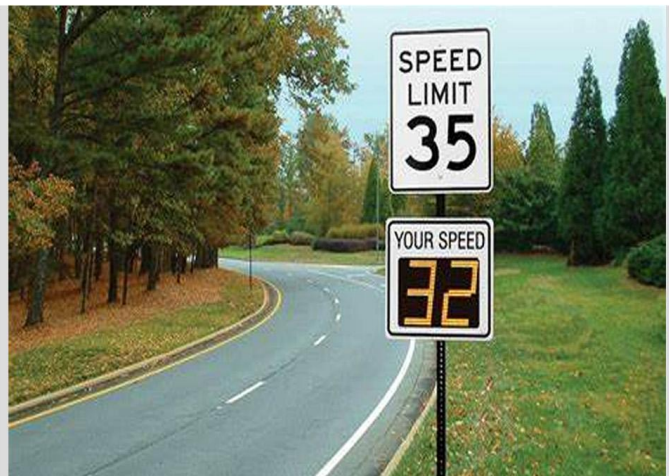
Product Features

- 24GHz ISM Band internationally accepted by traffic management
- Accurate speed measurement and difference within 1km/h
- Flexible installation like gantry and roadside above the traffic
- Support multiple lanes coverage for LED speed sign display
- All weather resistance, not affected by light, dust, rain, snow, haze and harsh environment

Product Parameters

Model	ZT-TSRK100SF	ZT-TSRK200SF
Frequency	24GHZ	24GHZ
Transmission Power	6dBm	6dBm
Fresh Rate	20ms	20ms
Speed Range	1~220Km/h	1~240Km/h
Speed Accuracy	-1~0Km/h	-1~0Km/h
Detection Range	100M	200M
Direction	Coming/Leaving	Coming/Leaving
Beam Azimuth	±24	±15
Beam Elevation	±9	±8
Output Interface	RS485/TTL/GPIO	RS485/RS232/GPIO
Working Voltage	12~24VDC	12~24VDC
Power Consumption	≤0.5W	≤1.2W
Temperature Range	-40~80°C	-40~80°C
LED Indication	Red:Function /Green:Target	Red:Function /Green:Target
Dimension	60*47mm	70*90*7mm
Installation Height	1-6M	1.5-6m

Field Installation Photos
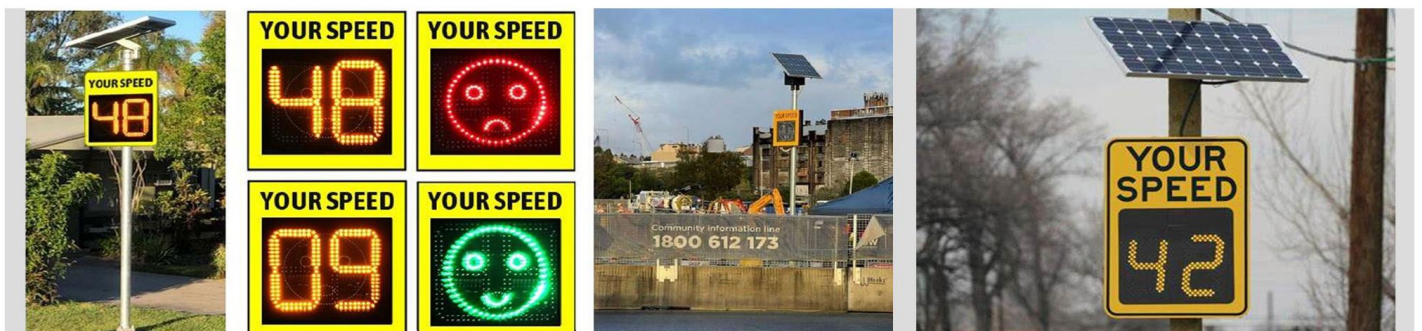
Barrier Gate Radar

Product Overview

Putting the latest millimetre wave sensing technology to ensure the accurate detection on vehicle, human and object at the parking gate control area, the barrier gate radar is developed to replace the traditional loop sensor. It can detect the vehicle presence and proximity and deliver reliable relay output to control the parking access gate. This series includes both anti-hit model at the barrier control and trigger model for vehicle plate recognition camera. It is just easy to install and configure, no need to have any further construction on ground, cost saving solution to traditional sensors.

Application Scenarios

Product Features

- 24GHz ISM Band, no license required for application
- Adjustable detection ranges to suit specific scenario
- Free of learning, applicable to more complex environments
- Convenient installation and maintenance with low manual workload
- Advanced signal processing technology to detect pedestrian and vehicle stably and prevent the boom pole of the barrier gate from falling down when there is pedestrian and vehicle passing.
- All weather resistance, not affected by light, dust, rain, snow, haze and other harsh environment .
- Adopted with LED indicators to indicate the radar working status.
- Strong environmental adaptability without influence of the electromagnetic interference, illumination, dust, rain, snow, etc. towards the detection performance.

Product Parameters

Model	ZT-PGRK001NP	ZT-PGRK002NP	ZT-PGRK003NP
Application	Barrier	Complex Fence	Trigger
Detection Range	6m Max (adjustable)	6m Max (adjustable)	6m Max (adjustable)
Center Frequency	24GHz ISM Band	24GHz ISM Band	24GHz ISM Band
Modulation	FMCW	FMCW	FMCW
EIRP	15dBm	15dBm	15dBm
Horizontal Beam	35±5°	35±5°*15±3°	15±3°
Pitch Beam	15±3°	15±3°*35±5°	35±5°
Configuration	Button & LED Display	Button & LED Display	Button & LED Display
Output Interface	Relay (NO, NC,COM)	Relay (NO, NC,COM)	Relay (NO, NC,COM)
Power input	12V DC	12V DC	12V DC
Current	250mA	250mA	250mA
Working Temperature	-40°~85°	-40°~85°	-40°~85°
Protection Level	IP65	IP65	IP65
Demension	127*97*26mm	127*97*26mm	127*97*26mm

Field Installation Photos

Smart Radar Sense For Traffic Safety

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