



## **Aicuda-ATR-8899**

### **Visual Traffic Scene Radar**

Aicuda traffic scene radar is mainly used in highway traffic monitoring and intelligent control of traffic lights in cities. Detection of illegal parking, speeding, side-by-side traffic on the road within 250 meters ahead, illegal side-by-side, shoulder lane driving and other events. Obtain the location of each vehicle in the current monitoring scene and track the trajectory of all vehicles. Users can instantly learn about road conditions through radar, thus identifying traffic congestion, abnormal events and so on.

#### First, **functional characteristics**

- The radar has high resolution distance and speed capabilities, accurate vehicle positioning and accurate speed measurement.
- Radar has multi-lane detection that automatically divides lanes, tracks vehicles in different lanes, accurately detects their speed and location, and automatically identifies where vehicles are coming and going.



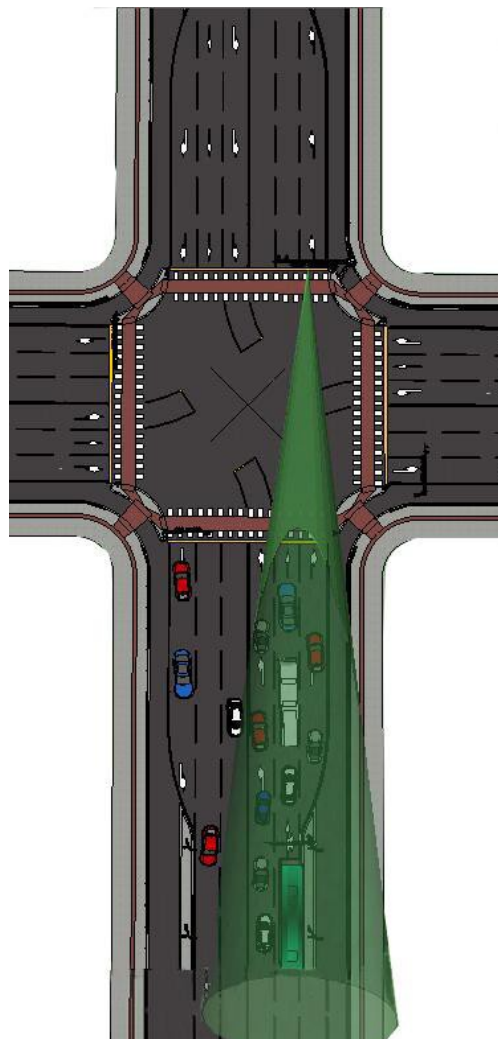
- Radar horizontal coverage of up to 1 to 8 lanes, vertical coverage of up to 250 meters real scene detection.
- The radar covers traditional microwave vehicle detector functions and provides information such as vehicle speed, vehicle flow, head time, model classification, road occupancy and more.
- Radar has lane congestion information to determine, count the length of queued vehicles, send congestion information.
- Radar can determine traffic anomalies such as vehicle retrograde, emergency stop and diversion according to vehicle trajectory.
- The radar has a real-time clock that can be synchronized with the network clock.
- Radar has a large storage area and is not lost due to power outages.
- Radars work around the clock and are not affected by light and rain, snow, fog, etc.

## Second, **typical application**

- Monitor congestion and queue length at city intersections in real time, providing dynamic number control applications.



- Highway / city road at an intersection or section of traffic statistics, traffic information collection.
- Real-time monitoring of highway traffic conditions, full track tracking of all vehicles, analysis of vehicle driving behavior.
- Highway abnormal event monitoring, such as road congestion, vehicle retrograde, stop-and-about, traffic violations, high-speed, low-speed driving, etc.
- Smart city road coordination, optimize traffic organization, all vehicles in the entire section of the road track follow, full section traffic monitoring, traffic lights fully automatic control.



Traffic light junction planning



### Third, main technical parameters and performance indicators

Technical parameters	
Antenna type	Flat-panel microstrip array antenna
Antenna beam width	Launch:18 degrees × 20 degrees @3dB
	Reception:18degrees × 80degrees@3dB
Center frequency	76.5GHz
Center frequency error	≤±10MHz
Transmit power	≤13dBm
power supply	( 10-24 ) VDC
Rated power	10w
Operating temperature range	-40℃ ~+85℃
Operating humidity range	5%RH-95%RH
Radar size	240×195×58mm
Communication interface	Network (Cat5),customizable RS485,relay,TTL
Time synchronization	NTP connection synchronization
How it is installed	Top, side top
Performance metrics	
The number of lanes covered	1-8 lanes (standard lane width, no isolation zone).
Probe distance	30-250 m
Speed range	-220km/h --- -220km/h
Angle resolution	Short-range 3.2 degrees,remote 1.6 degrees
Angular accuracy	The short range is 0.6 degrees,and the far end is 0.2 degrees
Speed resolution	0.4km/h
Speed measurement accuracy	0.2km/h
Distance resolution	Short-range 0.4m,remote 1.8m
Range accuracy	Short range 0.1m,far end 0.4m
Vehicle track capture accuracy	≥97%
The continuous accuracy of the vehicle's trajectory	≥95%
Track the number of targets	Maximum 128
Traffic	Single-lane ≥ 95% and total lane ≥95%.

Lane occupancy	Single-lane $\geq 95\%$ and total lane $\geq 95\%$ .
Congestion information is accurately judged	95%
Retrograde vehicle identification accuracy	95%
The accuracy of vehicle identification for diversions	95%
Probability of abnormal stop incident	95%
Update rate of information	$\leq 100\text{ms}$

Radar these indicators are measured in an ideal environment, i.e. without trees, billboards, large and small cars, etc. in case of blocking and non-congestion.

#### Fourth, **traffic scene event monitoring**

- The retrograde vehicle can be monitored and judged in real time.
- Real-time monitoring can be used to determine vehicles changing lanes.
- Real-time monitoring is available to determine emergency stop vehicles.
- Can determine the road traffic jam queue incident.
- The vehicle's speeding events can be determined.
- The vehicle's low-speed driving events can be determined.
- It can be determined that high speed vehicles are too close to the vehicle event, traffic scene event monitoring.



