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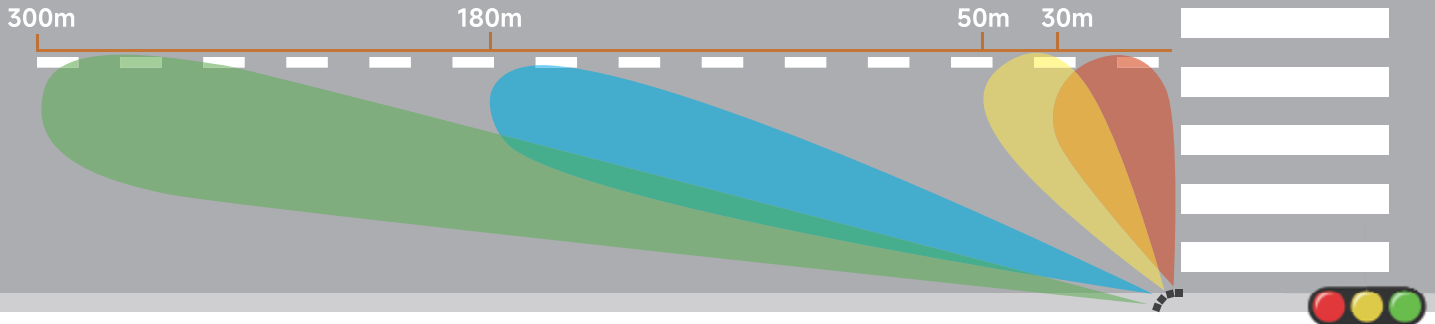


Radar Sensor for Traffic Management





24GHz Traffic Speed Radar



Multi-Lane Speed Radar
TSR20



Multi-Lane Speed Radar
TSR18

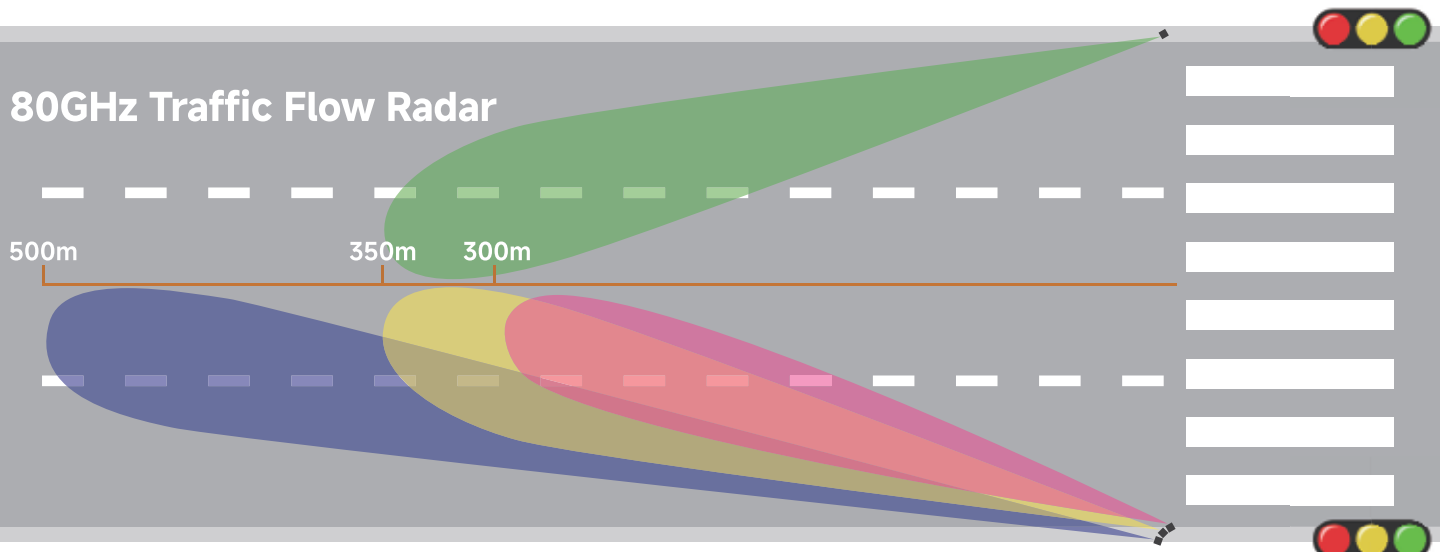


Multi-Lane Speed Radar
TSC224



Single Lane Speed Radar
TSR10

80GHz Traffic Flow Radar



Traffic Flow Radar
TCM873



Traffic Flow Radar
TCM863



Traffic Flow Radar
MR76S



Traffic Flow Radar
TCR300



TSR10 is a 24GHz traffic distance and speed measurement radar. It can accurately measure target distance, speed and other information. TSR10 uses narrow beam to cover only a single lane, avoiding interference of adjacent lanes. It can meet the application requirements of single-lane speed measurement and flow monitoring of gate system.



Dual-Mode Engine

Spectrum refinement technology for simultaneous range and velocity Measurement



Precise Positioning

Vehicle capture position within $\pm 0.5\text{m}$, with a consistency rate greater than 99%



Strong Anti-Interference

Narrow beam design to avoid interference from adjacent lanes



Integrated Design

Equipped with a level meter and angular scale for easy installation and maintenance



Rich Interfaces

Supports RS485, RS232 and WiFi



Vehicle Direction Recognition

Coming/going direction can be distinguish



Application scenario Checkpoint systems, distance and speed measurement, and traffic flow monitoring

Transmit frequency	24.00~24.25GHz	Capture rate	$\geq 99\%$
Modulating waveform	FMCW	Typical voltage	12V DC
Beam width	$7^\circ \times 7.5^\circ$	Operating current	0.17A@12V DC
Speed range	5~300km/h	Power consumption	< 2W
Transmission frequency error	$\pm 45\text{MHz}$	Operating temperature	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Installation height	5~10m (adjustable)	Trigger consistency	$\pm 0.5\text{m}$
Capture distance	15~30m (adjustable)	Degree of protection	IP66
Output interface	RS485/RS232/L(H) level/Wi-Fi	Overall dimensions	198 × 169 × 42mm





TSC224 is a high-performance multi-lane speed radar with completely independent intellectual property rights owned by Nanoradar Technology. It adopts "MIMO + DBF" technology, and can detect the speed of vehicles in up to four lanes, cooperate with the camera to complete the capture of speeding vehicles, and the capture rate is as high as 99%.



Multi-Lane Coverage

Support 1 to 4 lanes



Precise Positioning

Vehicle snapshot positioning
accuracy $\pm 0.5\text{m}$



Multi-Target Monitoring

Capable of monitoring up to 32
targets simultaneously



Vehicle Direction Recognition

Support three capture modes of
coming, going and two-way



Easy to Use

Integrated with a lane sight, level
meter, and gyroscope to assist in
calibrating radar installation



All-weather Operation

Free from external interference
such as light, dust, rain and snow



Application scenario Speed law enforcement, lane-level early warning, traffic monitoring

Transmit frequency	24.00~24.25GHz	Capture Rate	> 99% (traffic condition dependent)
Modulating waveform	FMCW	Transmitting power	10dBm
Beam width	64°× 16°	Typical voltage	12V DC
Cover the lane	4 lanes	Operating humidity	5%RH ~ 95%RH
Speed range	5~250km/h	Operating temperature	-40°C ~+85°C
Ranging range	6~50m	Degree of protection	IP67
Output interface	RS485/Wi-Fi/Network port	Overall dimensions	150 × 150 × 48mm
Response time	50ms	Installation method	Horizontal installation Side installation





The TSR18/TSR20 is a 24GHz high-performance traffic speed radar with a microstrip array antenna design, ensuring precise speed measurement. It distinguishes between incoming and outgoing vehicles and monitors speeds across 1 to 4 lanes, ideal for applications like speed capture and feedback systems. Widely deployed in highways, urban roads, intersections, school zones, and residential areas, it accurately detects and displays vehicle speeds, alerting drivers to reduce speeding and prevent accidents.



Multi-Lane Coverage

Support 1 to 4 lanes



Precise Positioning

The accuracy is better than 1km/h



Long Detection Range

The maximum detection is 180/300m



Wide Speed Range

Speed range 5~255km/h



Easy to Use

Easy installation, easy integration



All-weather Operation

Free from external interference such as light, dust, rain and snow



Application scenario Oncoming vehicle alerts, side-mounted traffic speed detection, and speed feedback systems

Transmit frequency	24.00~24.25GHz	Installation height	1.5~4m
Modulating waveform	FMCW	Antenna	1T1R
Beam width	10°× 50° (TSR18) 9.3°× 37° (TSR20)	Typical voltage	12V DC
Transmitting power	20dBm	Power consumption	1 (TSR18) 1.6W (TSR20)
Speed range	5~255km/h	Operating temperature	-40°C ~+85°C
Ranging range	1~180 (TSR18) 1~300m (TSR20)	Degree of protection	IP66
Output interface	RS485/RS232/Switching	Overall dimensions	137 × 117 × 35mm





The MR62 is Nanoradar's latest multi-lane speed radar, using 60GHz ISM band, FMCW, and multi-antenna technology. It measures speed across 1-4 lanes for 32 targets up to 90 meters, supporting lane division, speed, distance, angle, and energy output. It distinguishes direction, compensates for lane installation, and meets national speed measurement standards.



Multi-Lane Coverage

Support 1 to 4 lanes



Long Detection Range

The maximum detection distance is 90m



Multi-Target Monitoring

Capable of monitoring up to 32 targets simultaneously



Wide Speed Range

Speed range 5~200km/h



Easy to Use

Support customized communication protocol, radar parameter configuration



All-weather Operation

Free from external interference such as light, dust, rain and snow



Application scenario Multi-lane speed measurement, roadside illegal parking

Transmit frequency	61.2~61.5GHz	Installation height	1.5~6m (adjustable)
Speeding capture rate	≥ 97%	Power consumption	≤ 2.5W
Capture rate	≥ 99% >95% (traffic jam)	Typical voltage	12V DC
Speed range	5~200km/h	Operating temperature	-40°C ~+70°C
Ranging range	2~90m	Operating humidity	5%~90%RH
Beam width	56°× 17°	Output interface	TTL serial port
Multi-Target monitoring	32	Overall dimensions (module)	48 × 58mm





The MR76S traffic flow radar utilizes 80GHz MIMO technology to detect all targets within its range. It incorporates advanced technologies such as DBF digital beamforming, MIMO virtual aperture, and near-far beam shaping, achieving a measurement range of 1.2-300m and supporting the detection of 128 targets. Compact, highly sensitive, stable, lightweight, and easy to integrate.



Multi-Lane Coverage

Support 1 to 6 lanes



Long Detection Range

The maximum detection distance is 300m



Multi-Target Monitoring

Capable of monitoring up to 128 targets simultaneously



Vehicle Direction Recognition

Support two capture modes of coming and going



Easy to Use

Small size, light weight, easy installation



All-weather Operation

Free from external interference such as light, dust, rain and snow



Application scenario High speed flow monitoring, intersection monitoring, intersection to detect vehicles

Transmit frequency	80.00~81.00GHz	Transmitting power	30dBm
Modulating waveform	FMCW	Power consumption	2.5W@12V DC
Beam width	LRR:22°× 13° / SRR:90°× 13°	Typical voltage	12V DC
Refresh rate	12.5Hz	Storage temperature	-40°C ~+85°C
Speed range	-200~250km/h	Operating temperature	-40°C ~+70°C
Ranging range	LRR:1.2~300m@0° / SRR:1.2~50m@ ± 45°	Degree of protection	IP67
Output interface	CAN/UART	Overall dimensions	137 × 75 × 20mm





The TCR300 traffic flow radar employs 80GHz MIMO technology to detect all targets within its range, filtering out static objects and false alarms caused by clutter. It enhances multi-target detection, accurately measuring speed, distance, and angle of moving targets. With high precision, easy calibration, and excellent stability, it can monitor 4-6 lanes and 128 targets simultaneously, with a maximum detection range of 350 meters. Ideal for traffic monitoring and vehicle detection.



Multi-Lane Coverage

Support 4 to 6 lanes
support two capture modes
of coming and going



Cost-Effective

Integrated design of radar
module, reduce costs by
more than 40%



High Precision

Accurate speed measurement
The accuracy is better than
1km/h



Easy to Use

Easy installation, easy
integration



Multi-Target Monitoring

Capable of monitoring
up to 128 targets
simultaneously



All-weather Operation

Free from external
interference such as light,
dust, rain and snow



Application scenario Statistics of current traffic flow, speed, vehicle queue length, traffic flow, etc. for traffic light switching

Transmit frequency	80.00~81.00GHz	Modulating waveform	FMCW
Beam width	90°× 13°	Power consumption	≤ 4W@12V DC
Speed range	0~250km/h	Typical voltage	12V DC
Ranging range	1.2~350m	Operating temperature	-40°C ~+70°C
Lane section flow	94% (Urban congestion)	Output interface	RJ45/RS485
	96% (Urban patency)	Degree of protection	IP66
	97% (Highway)	Overall dimensions	149.5 × 126 × 45mm





The TCM863 is an 80GHz traffic flow radar with dual-beam design, offering a stable detection range of 350m. It identifies large, medium, and small vehicles, non-motorized vehicles, and pedestrians, supporting 128 targets with real-time data on distance, speed, azimuth, and status. Compact, highly sensitive, stable, lightweight, and easy to integrate.



Multi-Lane Coverage

Support 8 lanes



Long Detection Range

Stable detection 350m



Multi-Target Monitoring

Capable of monitoring up to 128 targets simultaneously



Wide Speed Range

Speed range -300~+300km/h



Easy to Use

Support customized communication protocol, radar parameter configuration



All-weather Operation

Free from external interference such as light, dust, rain and snow



Application scenario Traffic intersection, road section, highway, tunnel, park, holographic intersection flow monitoring, intersection monitoring, road side illegal stop detection

Transmit frequency	79~81GHz	Modulating waveform	FMCW
Beam width	120°× 26° (SRR) ; 28°× 9° (LRR)	Power consumption	≤ 4.2W
Speed range	-300~+300km/h	Typical voltage	12V DC
Ranging range	350m	Storage temperature	-40°C ~+85°C
Accuracy of ranging	± 0.3m (Wide beam) ± 0.8m (Narrow beam)	Operating temperature	-40°C ~+70°C
Distance resolution	0.6m	Output interface	RS485/Network port
Multi-Target monitoring	128	Overall dimensions	185 × 176 × 44.9mm



The TCM863 is an 80GHz traffic flow radar with dual-beam design, offering a stable detection range of 500m. It identifies large, medium, and small vehicles, non-motorized vehicles, and pedestrians, supporting 512 targets with real-time data on distance, speed, azimuth, and status. Compact, highly sensitive, stable, lightweight, and easy to integrate.



Multi-Lane Coverage

Support 10 lanes



Long Detection Range

Stable detection 500m



Multi-Target Monitoring

Capable of monitoring up to 512 targets simultaneously



Wide Speed Range

Speed range -300~+300km/h



Easy to Use

Support customized communication protocol, radar parameter configuration



All-weather Operation

Free from external interference such as light, dust, rain and snow

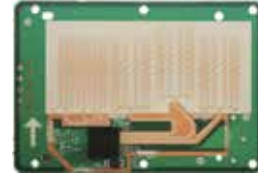


Application scenario Traffic intersections, road sections, highways, tunnels, campuses, and holographic intersections for flow monitoring, intersection surveillance, and roadside illegal parking

Transmit frequency	80~81GHz	Modulating waveform	FMCW
Beam width	80°× 14° (SRR) ; 22°× 14° (LRR)	Power consumption	≤ 8W
Speed range	-300~+300km/h	Direction recognition	Coming,going and two-way
Ranging range	500m	Refresh rate	12.5Hz
Accuracy of ranging	± 0.25m (Narrow beam) ± 0.1m (Wide beam)	Operating temperature	-40°C ~+70°C
Distance resolution	1m	Output interface	RS485/Network port
Multi-Target monitoring	512	Overall dimensions	185 × 176 × 44.9mm



The TCM811 is a compact 80GHz radar using MIMO+DBF technology for 1.2-150m range and 6-lane detection. It tracks 128 targets, supports lane division, parking queue detection, frequency switching, and angle compensation. Ideal for monitoring large/small vehicles and electric bikes, it's small, powerful, and easy to integrate.



Multi-Lane Coverage

Support 1 to 6 lanes



Vehicle Direction Recognition

Support two capture modes of coming and going



Long Detection Range

The maximum detection distance is 150m



Easy to Use

Easy installation, easy integration



Multi-Target Monitoring

Capable of monitoring up to 128 targets simultaneously



All-weather Operation

Free from external interference such as light, dust, rain and snow



Application scenario Traffic flow monitoring and intersection congestion detection

Transmit frequency	80.00~81.00GHz	Modulating waveform	FMCW
Capture rate	100m ≥ 99%	Power consumption	<2.5W
Refresh rate	12.5Hz	Typical voltage	12V DC
Beam width	90°× 14.5°	Output interface	TTL serial port
Speed range	-250~+250km/h	Operating temperature	-40°C ~+70°C
Ranging range	1.2~150m	Installation height	3~6m (adjustable)
Angle measurement range	± 45°	Overall dimensions (module)	84 × 58mm

