



smartmicro
SMART MICROWAVE SENSORS

Universal Traffic Management Radar | **UMRR-0A**

Most Advanced Object Tracking Radar Technology.
Four Sensor Models.
Numerous Traffic Applications.
Exceptional Performance.



Features

- Precisely measures position (x,y) and speed vector for each object.
- Tracks and classifies up to 64 objects simultaneously (trucks, vehicles, bicycles, pedestrians).
- Operates for 4 lanes (and more) up to 300m (1000feet).
- Precise speed measurement up to 300km/h.
- Flexible Installation: at the road side, at the corner of an intersection, on a mast arm or a gantry on top of the road.
- Measures per lane and for multiple measurement lines vehicle volume, occupancy, 85th percentile speed, gap, headway and more.
- Event based triggering for presence, wrong way, ETA, speed, queue length and custom applications in user defined zones.
- On board self-calibration and diagnostics.
- All weather operation.
- Small, lightweight, robust.
- Maintenance free.
- Four antenna versions available.
- Multiple interface options.

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How it works

Object Tracking Radar

UMRR-0A is a 24GHz Radar sensor projecting a low power microwave beam on the road and capturing all objects within its coverage. The applied Radar principle allows real time direct measurement of range, speed and azimuth angle of all reflectors simultaneously. Detection happens 20 times per second, the data are tracked (filtered) over time. As a result all objects in the field of view will be reliably detected and reported with excellent precision.

Flexible Installation

Installation is possible at the road side, at the corner of an intersection, on a mast arm or a gantry on top of the road. For 4 lanes and more, up to 4 measurement points along each lane may be configured. Those may be used as detection points, effectively representing inductive loops for measuring vehicle presence near intersections.

Statistics Module

The statistics function provides per lane volume, occupancy, classification, vehicle presence, wrong way detection and more.

Event Trigger Module

The Event Trigger Module enables the user to define events for which the sensor sends out a trigger signal. Events may be presence, wrong way, ETA, speed, queue length and more.

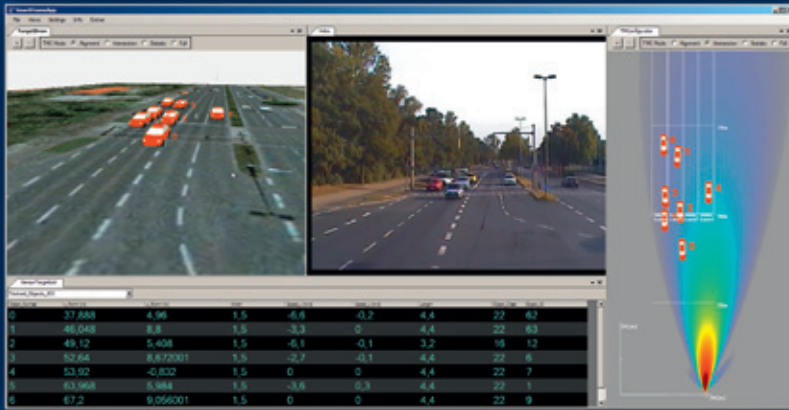
Setup Software

In order to setup the sensor conveniently and straight forward the Traffic Management Configurator is available.



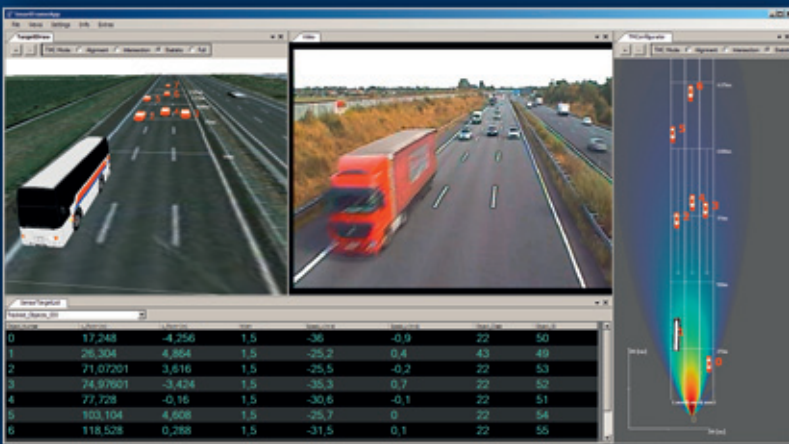
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Intersection Applications

- Stop Bar Detection
- Loop Replacement
- Speed and Red Light Enforcement
- Advance Detection
- Dilemma Zone Monitoring
- Estimated Time of Arrival
- Traffic Statistics Data
- Event Based Signal Triggering



Road Traffic Applications

- Fixed and Mobile Counting Stations
- Traffic Statistics Data
- Speed Enforcement
- Congestion / Incidence Monitoring
- Advance Traffic Information
- Wrong Way Detection
- Ramp Metering
- Loop Replacement
- Variable Message Sign Triggering
- Street Lighting Control

Specifications

Parameter and Model	Type 29 (Standard Model)	Type 30	Type 31	Type 32
PERFORMANCE				
Pedestrian Detection Range	50m (164ft)	46m (151ft)	27m (88ft)	90m (295ft)
Vehicle Detection Range	160m (525ft)	105m (344ft)	60m (197ft)	240m (787ft)
Optional Vehicle Detection Range	180m (591ft)			305m (1000ft)
Azimuth Field Of View	-18...+18deg	-35...+35deg	-50...+50deg	-12...+12deg
Minimum Detection Range			1.5 m (5 ft)	
Range Accuracy		typ. < +/- 2.5% or < +/- 0.25m (bigger of)		
Speed Accuracy; Interval	typ. < +/-0.28m/sec or +/-1% (bigger of); -83.34m/sec to -0.1m/sec and 0.1m/sec to 83.34m/sec			
Refresh Time	50msec			
Simultaneously Tracked Objects	Up to 64			
MECHANICAL				
Weight	330g (0.73lbs)	295g (0.65lbs)	275g (0.61lbs)	1276g (2.81lbs)
Dimensions	110 x 99 x 31mm	95 x 85 x 31mm	95 x 85 x 31mm	213 x 155 x 31mm
Enclosure	Rugged, Watertight casing conforming to IP67			
ENVIRONMENTAL				
Operating Temperature	-40 to +85deg C (-40 to +185deg F)			
Shock; Vibration	100g rms; 14g rms			
GENERAL				
Frequency Band; EIRP	24.0 to 24.25 GHz (K Band); 20dBm			
Mounting Height	0.5 to 10 meters (1.6 to 33 ft) (limitations apply)			
Power Supply	7 to 32 VDC; 3.7 Watts			
Connector	8 Pin plug Binder Series 712			
Communication Interface	RS485 and CAN Bus with options for Ethernet (POE), Relay Contacts			
Compatible Interface Modules	NEMA Cabinet Cards (Relays), HSDPA/UMTS/GPRS Wifi Modems, NTCIP Compliant Field Controller with Ethernet and Storage.			