



TOPGRD®

Smart Intersection & Highway Management

A cost-effective multi-lane 4D radar with a compact form factor and low power consumption, providing reliable traffic detection for intersections and highways.

The traffic management sensor with Pixel High Definition (PxHD) resolution detects stopped and moving motorized vehicles as well as Vulnerable Road Users (VRUs) in both approaching and receding travel directions.

REDUCE CONGESTION
IMPROVE SAFETY
AND OPTIMIZE TRAFFIC FLOW BY
DEPLOYING **TOPGRD** IN YOUR CITY

CONCLUSIONS

Key Features



Forward-firing

TOPGRD's wide beam allows flexible roadside mounting (poles, gantries, etc.) at moderate heights, minimizing occlusion issues and providing the best coverage possible.



Coverage of large areas, replacing multiple loops

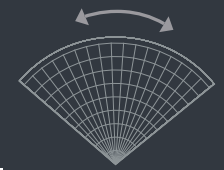


Compliant with European Road Regulations



Maintenance-free

Frequency



Field of view of up to 100°

Range of up to 240 m

Covering up to 10 lanes

Why choose the TOPGRD ?



No privacy concerns ✓

A major advantage of radar detection is the high privacy protection, as they do not capture identifying images.

Above-Ground Detection ✓

Mounted on existing Infrastructure. Their flexible reconfiguration ensures accurate detection as traffic patterns change.

Unaffected by weather ✓

Radar sensors provide accurate detection in all weather conditions. TOPGRD is unaffected by rain, fog, or darkness.

Precise Trajectory Tracking ✓

Tracks each vehicle's exact path and movement in real-time – even in complex traffic scenarios.

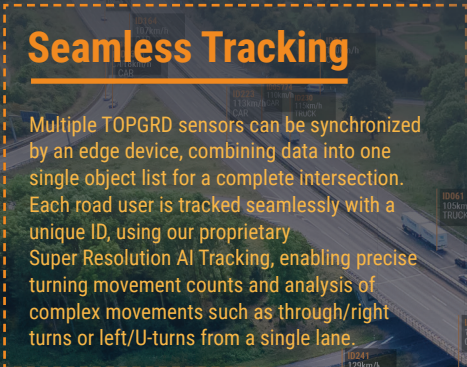
RADAR versus LOOP

TOPGRD eliminates the need for costly and disruptive road works for installation. One smartmicro sensor replaces up to 32 loops with configurable detection zones and does not require maintenance. The combined stop bar and advance detection with a single device saves hardware costs.

- ✓ No Road Cutting
- ✓ Maintenance-free

Seamless Tracking

Multiple TOPGRD sensors can be synchronized by an edge device, combining data into one single object list for a complete intersection. Each road user is tracked seamlessly with a unique ID, using our proprietary Super Resolution AI Tracking, enabling precise turning movement counts and analysis of complex movements such as through/right turns or left/U-turns from a single lane.



Where to use ?

- Safety of VRUs
- Intersection Management
- Highway Management
- Smart Cities

It is the perfect fit for urban and interurban traffic detection applications.

GET IN TOUCH

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TOPGRD

PERFORMANCE

Range	Detection Max. (passenger car)	240 m
	Detection Min. (at 6 m installation height)	15 m
	Accuracy	< 0.2 m
Speed	Measurement Range	up to 320 km/h in both directions
	Accuracy	≤ 0.07 m/s
Number of Lanes		Up to 10 for highway management, up to 6 for intersection management

GENERAL

Operating Frequency		76...77 GHz
Center Frequencies (to avoid interference)		4 center frequencies
Update Cycle Time		≤ 55 ms
Field of View	Azimuth (horizontal)	-50...+50°
	Elevation (vertical)	-10...+10°
Operating Voltage / Power Consumption		7...32 V / < 6 W
Operating Temperature		-40...+85°C
Communication options		RS485 full duplex; Ethernet 10/100; PowerLine Communication
Dimensions		98 x 115 x 34 mm + connector
Connector		Hirose LF10 series
Ingress Protection Rating		IP 67

smartmicro Accessories

Connection Box (Simple J-Box, Full J-Box, PLC J-Box),
Mounting Bracket (Straight, Advanced),
Cabinet Equipment (COM HUB Family, CRO),
COM HUB Family user interface (Traffic UI, Traffic Web UI)

