

TOPGRD® – Enforcement

Advanced 60 GHz Radar

TOPGRD is a 60 GHz radar sensor supporting **demanding enforcement applications**. Its hardware and software architecture deliver **high-resolution speed and position detection with exceptional accuracy**.

TOPGRD features a unique hardware self-test and integrated secondary radar, ensuring reliable operation for safety systems worldwide. It sets a new standard in enforcement technology with device monitoring for updated sensor status.

Wide Speed Range

The speed of the target can be detected in the range of

-340 km/h **+340** km/h

Frequency Range

60 GHz

IMPROVING SAFETY THROUGH PRECISE DETECTION

Driving the data into safety compliance systems, the TOPGRD is designed to be **used internationally** to provide **highly accurate data** to inform decision making

CONCLUSIONS

Why choose the TOPGRD ?

Enforcement Focus ✓

Supports demanding enforcement applications requiring precise speed and position detection.

Built-In Reliability ✓

Integrated secondary radar provides on-demand self-test of complete internal measurement chain.

Unmatched Accuracy ✓

Delivers precise speed and position detection for trusted enforcement results.

Worldwide Use ✓

60 GHz radar technology for worldwide enforcement applications.

Key Features



60 GHz Operating Frequency

Ensures high range and angular resolution for maximum precision in enforcement applications.



Speed Detection up to 340 km/h (±)

Covers the full spectrum from city traffic to high-speed highways.



Integrated Secondary Radar

Provides a hardware-based full-spectrum self-test for unmatched reliability.



Independent Clock Sources

Guarantee improved accuracy and system integrity in all operating conditions.



Super Resolution AI Tracking

Features new high-performance AI algorithm for seamless tracking and unmatched detection.

Where to use?

Enforcement Applications of the TOPGRD

Speed Enforcement



Red-Light Enforcement



Driver Behaviour Enforcement



Object Tracking



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PERFORMANCE

Long-Range Mode

Operating Frequency		61...61.5GHz 2 center frequencies (bands)
Range	Minimum	3m
	Max.: Passenger Car ²	181m
	Max.: Truck	181m
	Instrumented ³	181m
	Separation	≤ 1.62m
	Accuracy	< 0.45m or 1% (bigger of)
Speed	Min./Max.	-340...+340km/h
	Separation	<0.6km/h
	Accuracy	<+0.3km/h or 1% (bigger of)
Angle	Field of View: Azimuth ⁴	-32...+32°
	Field of View: Elevation	-23...+23°
	Accuracy: Azimuth ⁵	≤ 0.5°
	Accuracy: Elevation	≤ 0.5°

Mechanical Details

Weight	≤ 410g ≤ 14.46oz
Dimensions (H/W/D)	114.7 x 97.5 x 38mm 4.4 x 3.8 x 1.5in (plus connector)

Further Information

Initialization Time	< 10s
Processing Latency	2-4 cycles
Operating Voltage ⁶	7...32V
Power Consumption	<5W
Update Cycle Time	≤60ms or ≤50ms ⁷

² Typical values; all values given for bore sight; they may vary depending on the clutter environment. Please note that the radar system can neither achieve a detection probability of 100% nor a false alarm rate equal to zero.

³ The instrumented range indicates the maximum range at which the sensor can effectively process detections.

⁴ The total field of view is an angle interval in which reflectors can be detected; 3dB field of view is narrower.

⁵ Typical value; measured at target output level at bore sight, for a point reflector showing >23dB SNR. Error may increase towards larger angles. In addition to this angle error, angle may drift over temperature, typically -0.5deg to + 0.5deg over specified operation temperature interval.

⁶ Measured at the connector.

⁷ Depending on selected application (intersection or enforcement).