



Inertial sensing for ADAS locator

The challenge:

The autonomous vehicle must know where it is and where it's going to, at better accuracy than available from GNSS and also when GNSS does not work, camera is not able to identify landmarks and also have redundancy for positioning through various technologies.

Customer challenges:

GNSS positioning is not accurate enough for reliably identifying which lane the vehicle is in and more specifically if the vehicle is properly in the lane or between the lanes.

Camera based inertial sensing of the vehicle dynamic state is not reliable due to extremely high variation of environmental conditions leading to false identification of vehicle movement.

For functional safety a redundant method of positioning is needed which is independent of the environmental conditions.

The Murata Solution:

The product:

SCC2000 Series Gyro Accelerometer Combo Sensors

How it works:

MEMS sensors provide reliable, automotive qualified components for inertial navigation in Autonomous vehicle. A 6 DOF (Degrees Of Freedom) Inertial Measurement Unit provides data of the vehicle movement independent of the climate conditions, other vehicles in traffic, velocity of the vehicle and generally works as "voice of reason" in conditions where other sensor systems are confused.

Integration of the IMU to GNSS enables positioning in situations with reduced GNSS reception or lack of GNSS signal.

IMU integration also enables improvement of GNSS accuracy from scale of meters to centimeters, what is needed for positioning within lane.



Product features:

SCC2000 Series

- High temperature stability range from -40 to +125 degrees C
- Shock robustness
- Bias stability characteristics and consists of a low-g 3-axis accelerometer
- Short-term bias stability of 1°/h
- Small size: The single-chip 24-pin MEMS package measures just 15.00 x 12.10 x 4.35mm

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More info:

For further information about Murata solutions, please contact your local sales manager.

Data sheets and application notes for Murata products can be found at

www.murata.com

