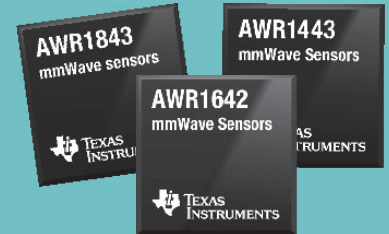




  
**MISTRAL**  
... Partners in Real Time



# 77GHz mmWave RADAR on Module

## OVERVIEW

The 77GHz mmWave Automotive RADAR on Module (RoM) from Mistral is an easy to use, compact, light-weight RADAR providing high functionality for automotive applications. Based on Texas Instruments AWR1443/AWR1642/AWR1843 ultra high-resolution single chip FMCW RADAR sensor SoC, the mmWave Automotive RADAR on Module is ideal for low-power, self-monitored, ultra-accurate RADAR systems in the automotive environment.



The Automotive RoM operates at frequency bands of 76-81GHz & is ideal for next gen ADAS applications.

The module consists of:

- ▶ **RF Board** - FMCW Transceiver with Integrated PLL, Baseband ADC, R4F controller with accelerator, SPI flash, optional DSP etc.
- ▶ **Power Board** - Provides automotive power, communication & debug interfaces.

The RF board is mounted on a Power Board and the module is powered via DC input.

Complex signal processing run within the Module and only the processed Point Cloud RADAR data (Object's ID, Range, Angle and Velocity) is given out over serial/CAN interfaces. In addition, raw data output is made available via LVDS/CSI ports, for development and debug purpose. The Raw ADC data capture can also be enabled by pairing with TI's DCA1000EVM real-time data capture adapter.

The module comes with built-in self-test and self-calibrating RF section that address safety, aging and temperature-based variations. Module includes starterware and sample applications for common automotive RADAR use cases. The automotive RoM comes with SDK 2.1, along with object detection sample application (for Short/Ultra Short Range).

## FEATURES

- ▶ Ideal for Next Gen ADAS applications
- ▶ Small and optimized footprint
- ▶ Built-in Calibration and Self-test
- ▶ Optional DSP for Advanced Signal Processing
- ▶ Supports Host of Connectivity; Dual CAN, UART, SPI, I2C, JTAG and LVDS
- ▶ Supports TI's SDK 2.1

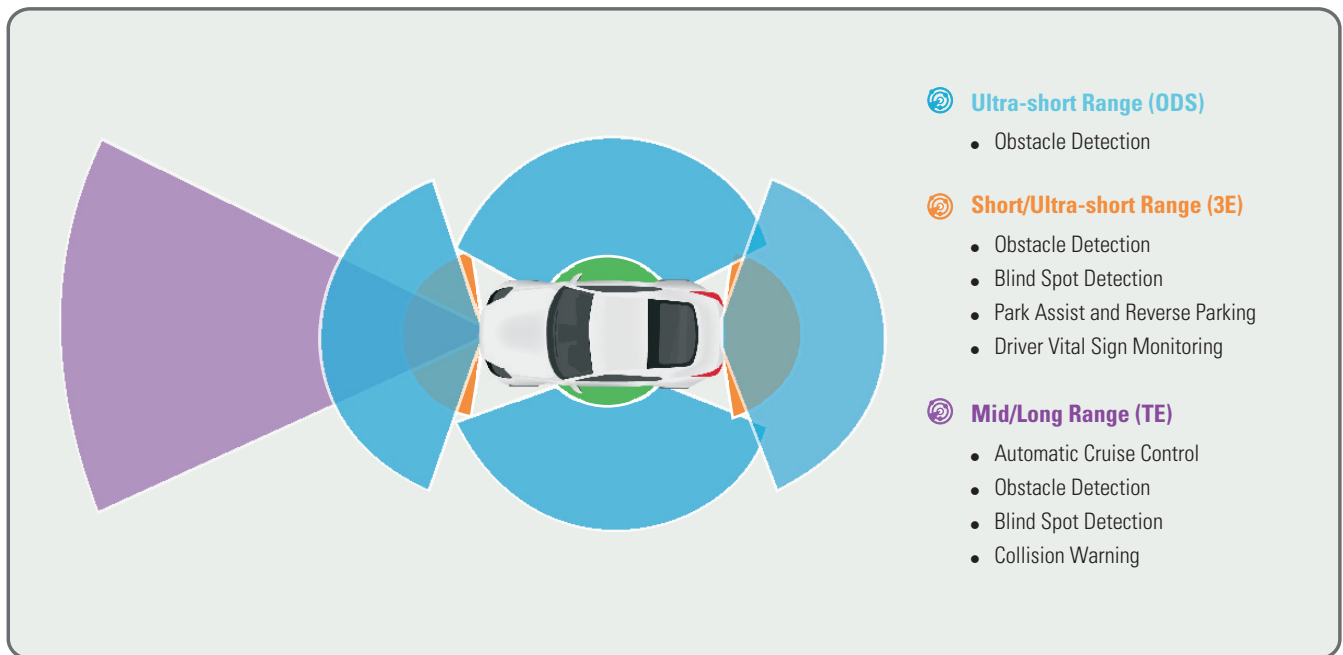
The small footprint of the RADAR module ensure that customers can design custom optimized enclosure to suit their application. Mistral can also build and provide custom IP6x compliant enclosures based on the customer requirements.

The 77GHz RADAR on Module is built around the AWR1443/AWR1642/AWR1843 mmWave RADAR Sensor SoC from Texas Instruments assuring long lifecycle and support.

The 77GHz RADAR on Module is available in three Antenna variants to cater to different ADAS application.

- ▶ Ultra-short Range (ODS)
- ▶ Short Range (Three Elements)
- ▶ Mid-Range (Tapered Elems)

## APPLICATIONS



## CUSTOMIZATION

Mistral provides customization support for all variants of 77GHz mmWave RADAR chips [AWR1443, AWR1843, AWR1642 and AWR1243] from TI. We can provide cascading support on the AWR1243 Module for Medium Range RADAR (MRR) and Long-range RADAR (LRR) applications.

Mistral also offers customization services to automotive customers for a wide range of ADAS and other automotive applications

Mistral can provide customization to support RADAR Drivers and Integration, Chirp Profile Tuning, Multi-Core SOC Application

Development, RADAR integration with Camera Fusion, FCC / CE Certification, Thermal Validation and System Integration based on the customer need.

We develop products and System on Modules customized to customer specific requirements. With our expertise in Automotive RADAR and related imaging sensors and video analytics, we can help developer's reduced time to market for their products while ensuring high reliability and low cost of development.

### Mistral Solutions Pvt. Ltd.,

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