



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



# 77GHz mmWave Fusion RADAR Module

## OVERVIEW

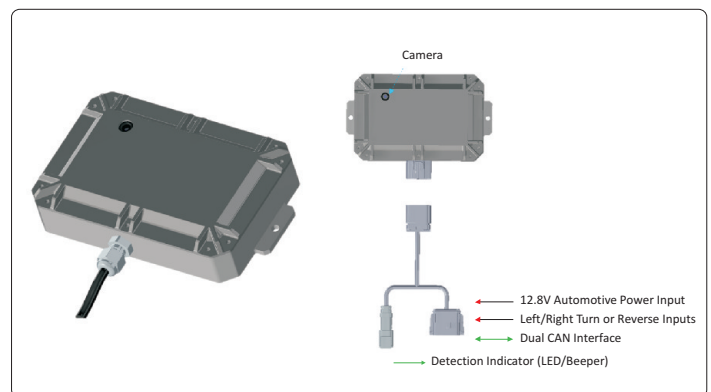
The 77GHz mmWave Fusion Radar Module from Mistral is an integrated, easy to use, compact, light-weight radar providing high functionality for automotive, industrial and smart city applications. Based on Texas Instruments AWR1443 ultra high-resolution single chip radar and TDA3 DSP in a single platform, the module offers Advanced Camera & RADAR Fusion Processing.

The 77GHz mmWave Fusion Radar Module is ideal for advanced, next-gen driver assistance automotive applications. The module consists of an RF board mounted on a processor board. The processor board provides automotive and industrial interface for high-end vision processing. It includes starterware & demo applications for common automotive radar/ camera. An additional debug board is provided for test and development.

The Module is designed with a rugged and light weight enclosure. The small footprint of the hardware ensure custom optimized enclosure design to suit specific applications. The module comes with built-in self-test and self-calibrating RF section that address aging and temperature-based variations.

Complex signal processing run within the Module and only the point cloud data (object's ID, Range, Angle, Velocity and Signal strength) is given out over serial/CAN interfaces. In addition, raw data output is made available via LVDS/CSI ports, for enhanced data processing.

The Radar Module is built around the latest and very popular AWR1443 and TDA3 DSP from Texas Instruments assuring long lifecycle and support.



## HIGHLIGHTS



### Compact Modular Design

Ideal for lab applications & can be directly integrated into an end product design



### DSP and large memory

Computing power for advanced post processing and video analytics



### Camera Sensor

Built-in sensor eliminates need for additional sensor integration; development can start on the fly



### GigE and CAN Interface

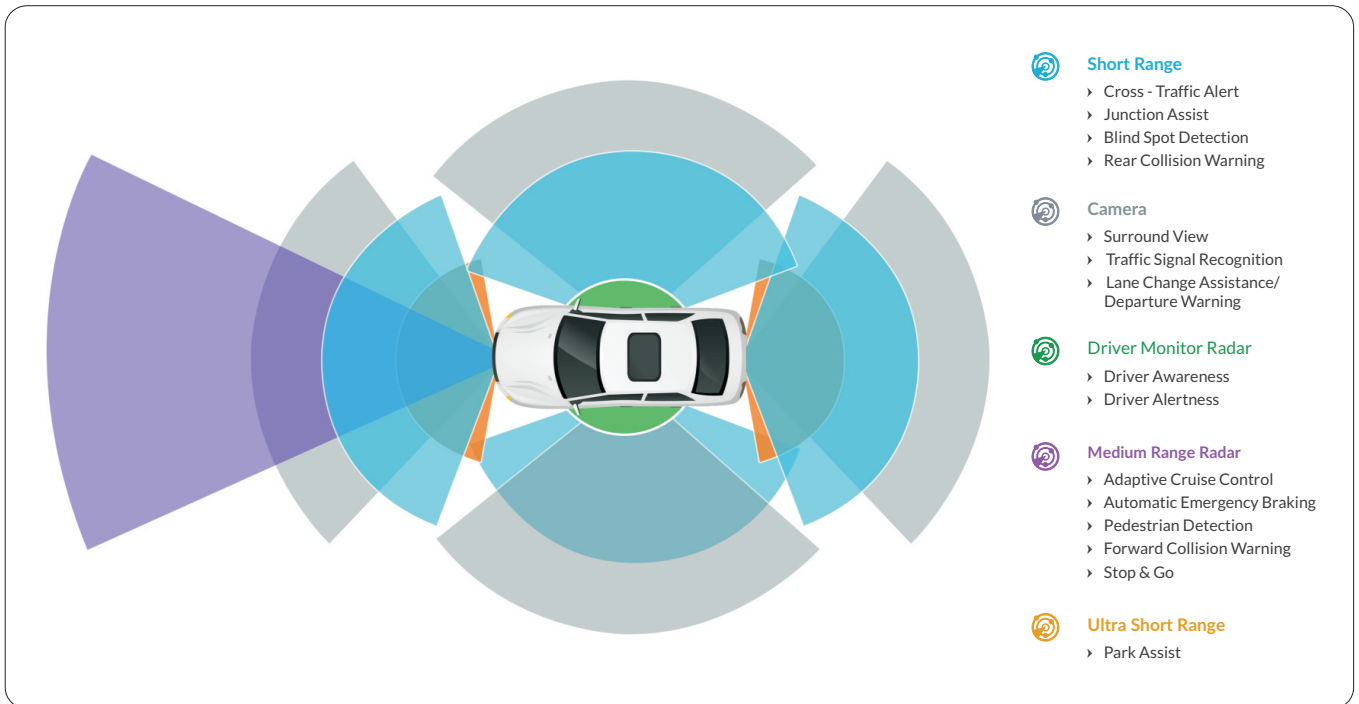
Multiple In-vehicle and industrial connectivity options available through CAN, GigE and other serial interfaces



### ASIL Targeted

Designed to meet ASIL safety standards enabling quick approval of final design

## AUTOMOTIVE APPLICATION



## FEATURES

- ▶ RF Module
  - Radar Front End
    - AWR1443 FMCW Transceiver
    - Hardware Accelerator
    - 76 - to 81- GHz Coverage with 4 GHz Bandwidth
    - FOV of 150°
    - Angle resolution, range resolution
- ▶ Processor Board
  - TDA3L-SoC
    - C66x Floating-Point VLIW DSP with up to Thirty-two 16 × 16-Bit Fixed-Point Multiplies per Cycle
    - 2 x Cortex M4
    - Embedded Vision Engine
    - Image Subsystem Processor
    - Automotive AEC-Q100 Qualified
  - Memory
    - 2GB DDR3
    - 32GB SD Card
  - Connectors
    - SPI, LVDS, I2C, CAN, GigE, UART, JTAG
  - Power
    - 12.8V Automotive Power Input
  - Debug board for UART and JTAG
  - Operating Temperature Range: -40°C to 125°C

## CUSTOMIZATION

Mistral can also provide the 77GHz mmWave Fusion Radar Module on the AWR1642 & AWR1243 RF chips from TI. We can provide cascading support on the AWR1243 RF Module for MRR and LRR applications.

Mistral also offers customization services to automotive customers for a wide range of ADAS and other automotive applications. We develop reference designs 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.

## ABOUT MISTRAL

Mistral is a technology design and systems engineering company providing end-to-end solutions for product design and application deployment. Mistral is focused in three business domains: Product Engineering Services, Aerospace & Defense and Homeland Security. Mistral provides total solutions for a given requirement, which may include hardware design, embedded software development, systems integration and customized turnkey solutions.

Mistral's strategic partnerships with leading technology companies help provide customers with a comprehensive package of end-to-end solutions.