

mmWave Radar Sensing Reference Design for Safer Robot Perception

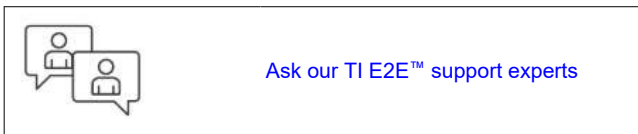


Description

This reference design features a safety millimeter-wave (mmWave) radar sensor (IWR6843AOP) and safety power management integrated circuit (PMIC) (LP87745) to enable safe perception in robotics and industrial automation applications. The design supports Q&A watchdog communication, level or PWM error signal monitoring (ESM), safety diagnostics, and radar reset functions for autonomous mobile robots (AMRs), automated guided vehicles (AGVs), humanoid, industrial robots, and collaborative robots.

Resources

TIDA-010281	Design Folder
IWR6843AOP	Product Folder
LP87745	Product Folder
LM68635-Q1	Product Folder

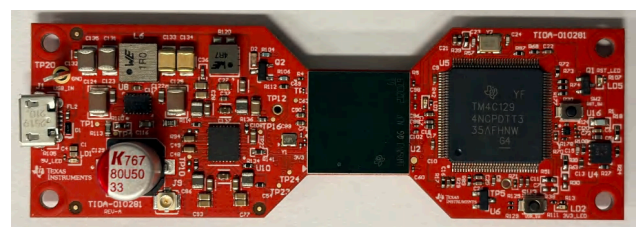
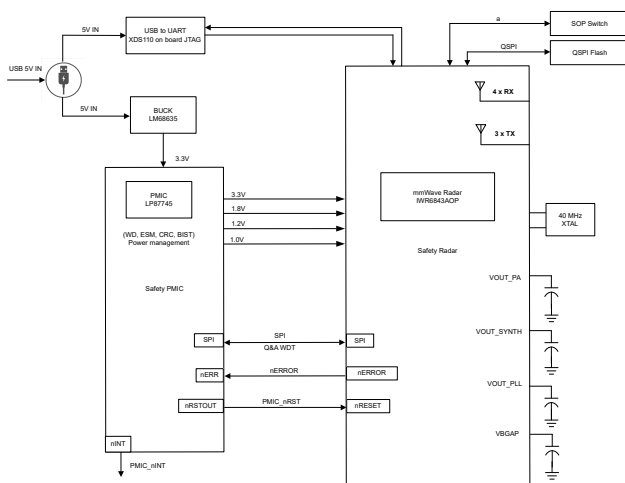


Features

- Functional safety compliant radar with hardware integrity level up to SIL-2 and systematic capability of SIL-3
- Functional safety compliant PMIC with hardware integrity level up to SIL-2 and systematic capability of SIL-3
- Software support for watchdog communication between PMIC and radar
- Provides test results for:
 - Radar performance with the safety PMIC
 - Q&A watchdog functionality from the PMIC
 - Level or PWM error signal monitoring (ESM)
 - Safety diagnostics and radar reset

Applications

- [Mobile robot sensor](#)
- [Humanoid robot sensor module](#)
- [Robot sensor module](#)
- [Motion detector](#)
- [Occupancy detection \(people tracking, people counting\)](#)



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