Implement one of many different mmWave radar sensing algorithms to measure, detect, and track

The DesignCore® Platform RS-2944A mmWave Radar Sensor Evaluation Kit is simple but feature-rich sensor based on the Texas Instruments AWR2944 RFIC. The AWR2944 has a full radar transceiver with 4 transmitters and 4 receivers, a Hardware Accelerator for processing raw data samples, a C66x DSP for algorithms, and an ARM processor for decision-making and interfacing. It provides a hardware and software starting point for your design. This sensor’s offset transmitter enables both azimuth and elevation sensing.

The RS-2944A sensor has USB-Serial, I2C, SPI, CAN and GPIO interfaces. Many algorithms are available as a basis for a solution for your application.

D3 supports OEM/ODM customers with embedded system development and customized production modules for radar applications.

**FEATURES**

- Single Board Form Factor Design
- Integrated PLL, Transmitter, Receiver, Baseband, A2D
- Ultra-Accurate Chirp (Timing) Engine Based on Fractional-N PLL
- USB, I2C, SPI, UART, CAN, Logic Level I/O, JTAG, 2+2 LVDS
- Integrated MIMO Antenna
- 16 Mb QSPI Flash
- 360 MHz TI C66x DSP
- 300 MHz TI ARM R5F Microprocessor
- Pre-processing, FFT, Log-Magnitude, and CFAR-CA Coprocessor Hardware Accelerator
- From industrial connector, USB-C, or optional baseboard Power Options

**APPLICATIONS**

- Stand-Alone mmWave Radar Sensor
- Autonomous Machines
- Automotive Driver Assistance
- Edge Sensor Processing
- Industrial Vehicle Systems
- Facility Monitoring Tracking
- Robotics

**SPECIFICATIONS**

- **Form Factor**: 3” x 2” (76.2 x 50.8 mm) stand-alone circuit card
- **Voltage Input**: 5 to 36 V
- **Interfaces**: USB, I/O, JTAG, I2C, SPI, UART, CAN, Logic Level I/O, LVDS
- **RF Spectrum**: 76 to 81 GHz
- **Bandwidth**: 4 GHz
- **Channels**: 4 RX, 4 TX
- **Forward Human Detection Range**: 75 – 80 m
- **Field of View Az, El**: +/- 60 deg, +/- 15 deg
- **Angular Separation to Resolve Separate Objects Az, El**: 9.5 deg, 58 deg
- **Microprocessor**: 300 MHz TI ARM R5F

**Call**: 1-585-429-1550  
**Email**: sales@D3Engineering.com
DESIGNCORE® RS-2944A mmWAVE RADAR SENSOR BLOCK DIAGRAM

LOWER YOUR RISK WITH DESIGNCORE® SOLUTIONS

DesignCore® Solutions are platforms, reference designs, and development tools available from D3 to lower the risk of your next product development project. They contain tested and reliable hardware, software, algorithms, design documentation, and more. D3 can quickly work with your team to customize these platforms for your application. They allow you to rapidly move from prototype to design, and then to production. DesignCore Solutions lower risk in three important areas:

Technical Risk: DesignCore Solutions are tested and reliable.

Schedule Risk: DesignCore Solutions consist of reliable and tested components for your design. Accelerate your time to market by 6-9 months.

Cost Risk: DesignCore Solutions have been designed for market specific applications.

The designs have been cost-optimized for:

DesignCore Platform – Hardware and Software starting point for your design. Allows rapid prototyping and customization.

DesignCore Reference Design – Application specific hardware and software for popular applications.

DesignCore Development Kit – Development tools that can be purchased and used for prototyping and testing.

ORDERING INFORMATION

This sensor is available when you engage D3 for a systems development project.

CALL: 585-429-1550
EMAIL: sales@D3Engineering.com
VISIT: D3Engineering.com