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

The DesignCore® RS-1843A/RS-6843 mmWave Radar Sensor Evaluation Kit is simple but feature-rich sensor based on the Texas Instruments AWR1843/IWR6843 RFIC. The AWR1843/IWR6843 has a full radar transceiver with 3 transmitters and 4 receivers, a Hardware Accelerator for processing raw data samples, a C67XX 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 third transmitter enables both azimuth and elevation sensing.

The RS-1843A/RS-6843 Sensor has USB-Serial, I2C, SPI and GPIO interfaces. Many algorithms are available as a basis for a solution for your application.

D3 Engineering 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, Logic Level I/O, JTAG, 2x2 LVDS
- Integrated MIMO Antenna
- 16 Mb QSPI Flash

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Form Factor</td>
<td>3” x 2” (76.2 x 50.8 mm) stand-alone circuit card</td>
</tr>
<tr>
<td>Voltage Input</td>
<td>5 to 36 V</td>
</tr>
<tr>
<td>Interfaces</td>
<td>USB, I/O, JTAG, I2C, SPI, UART, Logic Level I/O, LVDS</td>
</tr>
<tr>
<td>RF Spectrum</td>
<td>76 to 81 GHz (RS-1843A) 60 to 64 GHz (RS-6843)</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>4 GHz</td>
</tr>
<tr>
<td>Receive Channels</td>
<td>4</td>
</tr>
<tr>
<td>Transmit Channels</td>
<td>3</td>
</tr>
<tr>
<td>DSP</td>
<td>600 MHz TI C67XX</td>
</tr>
<tr>
<td>Microprocessor</td>
<td>200 MHz TI ARM R4F</td>
</tr>
<tr>
<td>Hardware Accelerator</td>
<td>Pre-processing, FFT, Log-Magnitude, and CFAR-CA Coprocessor</td>
</tr>
<tr>
<td>Power Options</td>
<td>From connector, USB-C, or optional baseboard</td>
</tr>
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</table>

**APPLICATIONS**

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

Bring the rich feature set support of mmWave radar into your automotive or industrial application.
LOWER YOUR RISK WITH OUR DESIGNCORE® SOLUTIONS

DesignCore® Solutions are platforms, reference designs, and development tools available from D3 Engineering to lower the risk of your next product development project. They contain tested and reliable hardware, software, algorithms, design documentation, and more. D3 Engineering 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 Platforms – 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 Engineering for a systems development project.

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