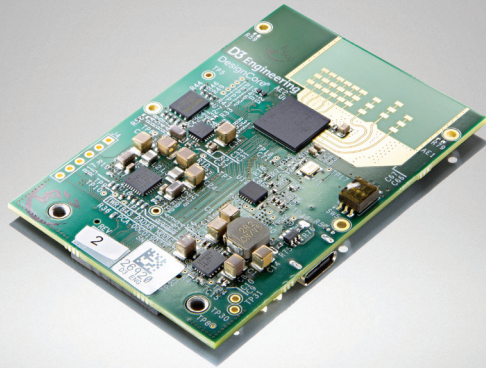


# DESIGNCORE<sup>®</sup> PLATFORM

## RS-1843A/RS-6843 mmWAVE RADAR SENSOR EVALUATION KIT



Bring the rich feature set support of mmWave radar into your automotive or industrial application.

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

The DesignCore<sup>®</sup> platform 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, CAN 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 MIMO Antenna
Integrated PLL, Transmitter, Receiver, Baseband, A2D	16 Mb QSPI Flash
Ultra-Accurate Chirp (Timing) Engine Based on Fractional-N PLL	
USB, I2C, SPI, UART, CAN, Logic Level I/O, JTAG, 2+2 LVDS	

### SPECIFICATIONS

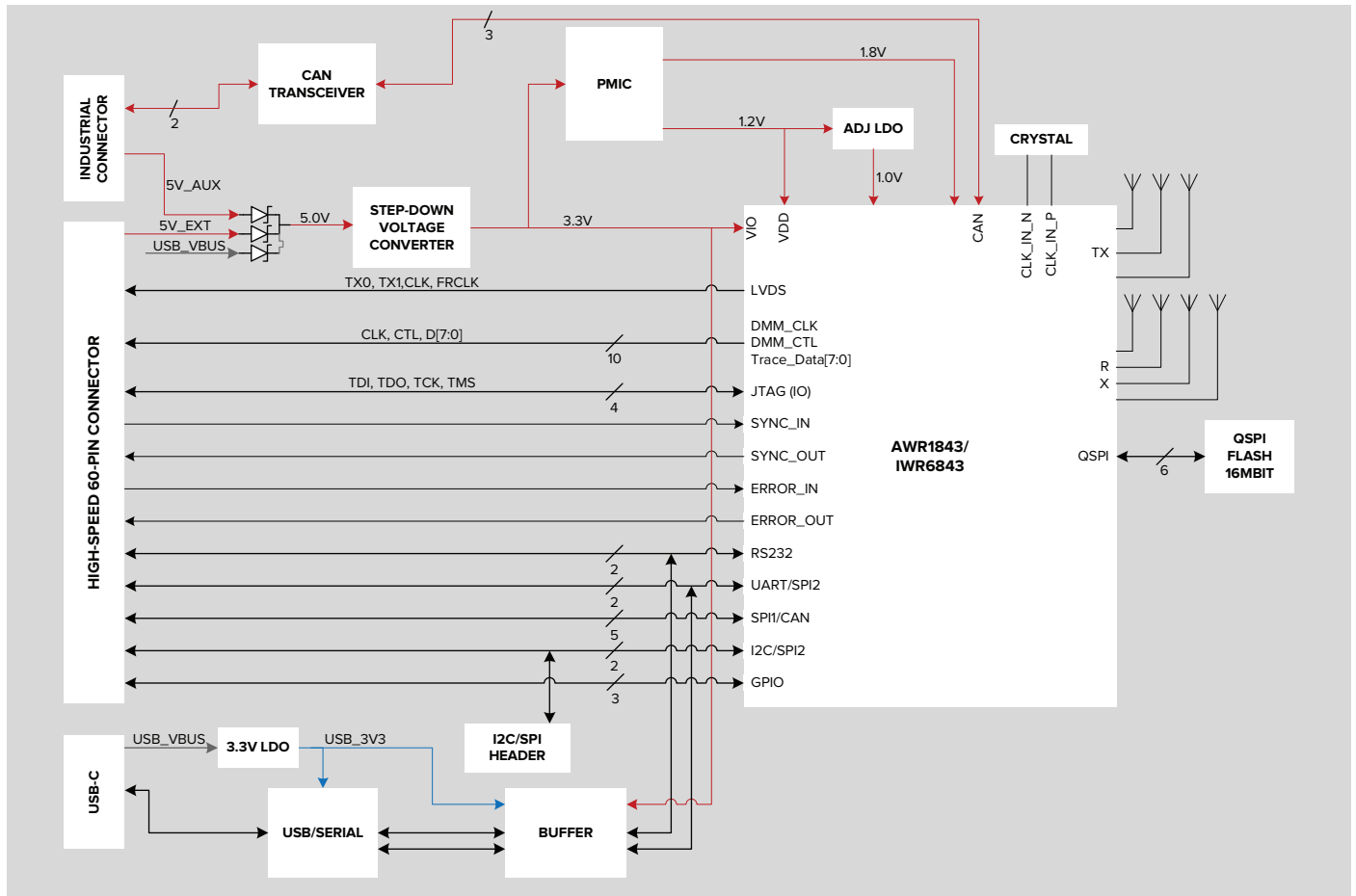
Form Factor	3" x 2" (76.2 x 50.8 mm) stand-alone circuit card
Voltage Input	5 to 36 V
Interfaces	USB, I/O, JTAG I2C, SPI, UART, CAN, Logic Level I/O, LVDS
RF Spectrum	76 to 81 GHz (RS-1843A) 60 to 64 GHz (RS-6843)
Bandwidth	4 GHz
Channels	4 RX, 3 TX
Forward Human Detection Range	75 – 80 m
Field of View Az, El	+/- 60 deg, +/- 15 deg
Angular Separation to Resolve Separate Objects Az, El	15 deg, 58 deg
DSP	600 MHz TI C67XX
Microprocessor	200 MHz TI ARM R4F
Hardware Accelerator	Pre-processing, FFT, Log-Magnitude, and CFAR-CA Coprocessor
Power Options	From industrial connector, USB-C, or optional baseboard

### APPLICATIONS

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



DESIGNCORE® RS-1843A/RS-6843 mmWAVE RADAR SENSOR BLOCK DIAGRAM



LOWER YOUR RISK WITH 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 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 Engineering for a systems development project.

CALL: 585-429-1550

EMAIL: sales@D3Engineering.com

VISIT: D3Engineering.com