



EVAL-DEMORAD

Radar Demonstration Platform. Evaluates Radar chipset including the ADF5901, ADF5904 and ADF4159.

Overview

Features and Benefits

- Out-of-the-box Radar demonstration platform.
- Evaluates 24GHz Radar chipset
- Antenna to bits functionality.
- Accompanying software GUI to evaluate:
 - o FMCW
 - o Range Doppler
 - o Digital Beam Forming.

Product Details

The 24 GHz radar sensor platform called Demorad is a novel microwave radar evaluation platform solution with out-of-the-box software examples and easy startup of radar sensor all done within minutes. Demorad platform enables rapid product prototyping aimed at R&D interests in investigating radar and developing radar sensor products that can measure real-time information such as target/object presence, its movement, angular position, velocity, and range from the sensor.

The Demorad platform provides both hardware and software that allows for very fast evaluation and development of 24 GHz radar without the need to have RF microwave and signal chain system expertise, and significantly reduces development time and system expertise during product development phases.

A high performance RF and analog full signal chain including DSP processing, that is, an RF to bits solution is provided that allows for flexible processing on raw acquisition data, allowing radar experiments on a state-of-the art level hardware in a very short time.

Full software support of 24 GHz radar ICs using a software graphical user interface (GUI) and in DSP radar support function libraries with added capability to write raw data for post processing on PC using Matlab tools.

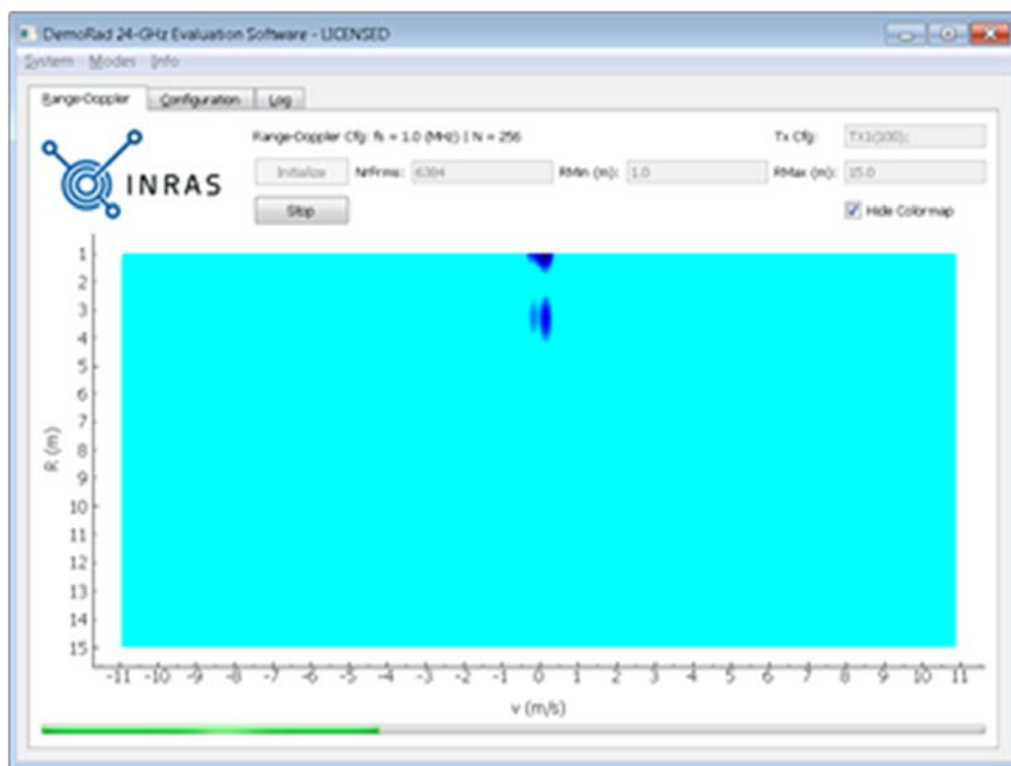


Figure 1. Demorad 24GHz Evaluation Software Window showing Range-Doppler mode

Demorad Details

The Demorad uses ADI's 24 GHz, multichannel radar solution. The sensor consists of a single PCB with 2 transmitter/4 receiver antennas on the front side connected to the 24 GHz RF chipset and data acquisition ADC's and DSP on the reverse side. This forms the basis for a reference design that customers can use to build their final product design.

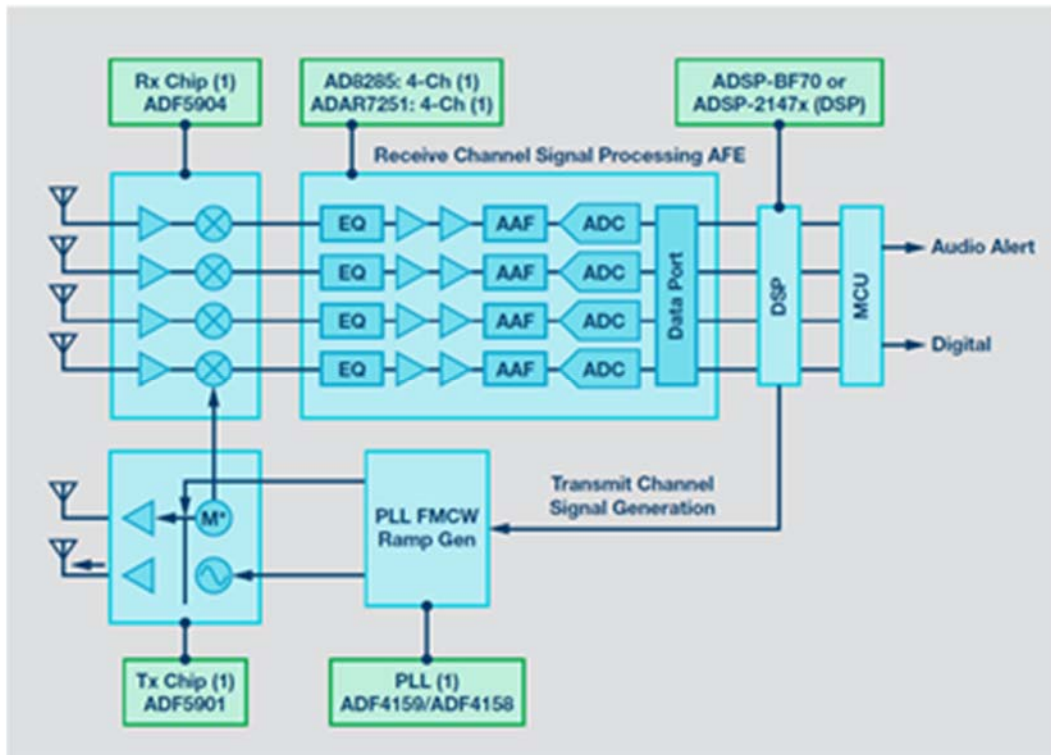


Figure 2. Demorad full signal chain.

The Demorad uses FMCW radar to detect range and velocity of objects up to 200 m away with a resolution of approximately 75 cm. The field of view (FOV) is approximately 120° in azimuth and 15° in elevation based on the antenna array design. By combining antennas as used in digital beam forming (DBF), the Demorad uses DBF to calculate angular information in the FOV.

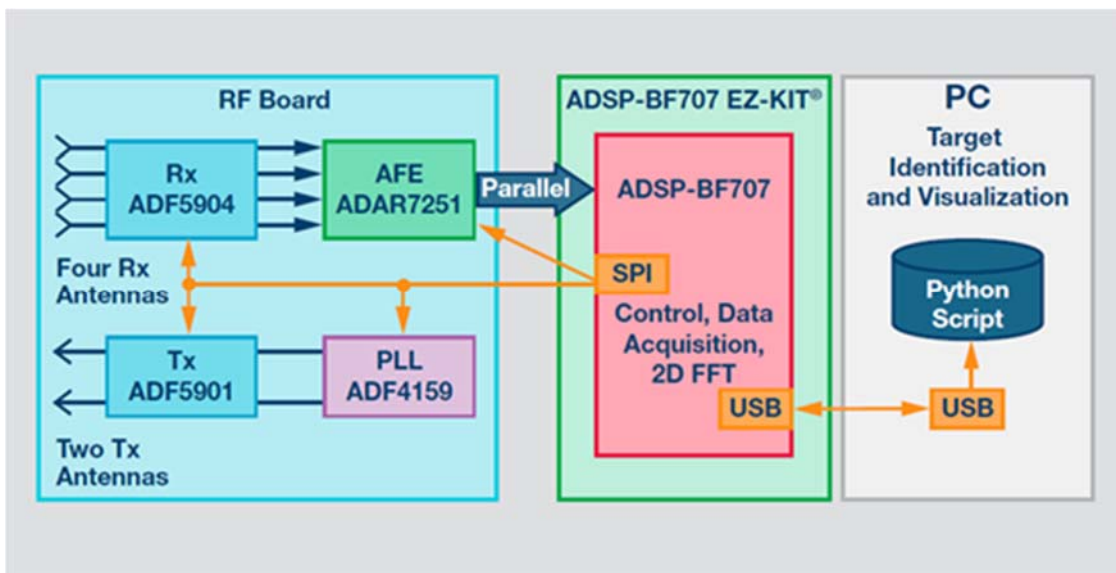


Figure 3. Demorad system setup.

Applications

- Traffic monitoring and car parking
- UAV/drone collision avoidance and altimeters
- Monitoring and security systems

Markets & Technology

- Aerospace and Defense
 - Milcom
 - Missiles and Precision Munitions
- Industrial Automation Technology (IAT)
 - Field Instruments
- Automotive
 - Video Connectivity
 - Audio Connectivity
 - Head Units and Cluster
 - Automotive RADAR
- Building Technology
 - Building Control and Automation
- Security and Surveillance

Applicable Parts

- ADF5901
- ADF5904
- ADF4159
- ADAR7251
- ADSP-BF707

Package Contents

- Demorad sensor
- USB key containing Software
- USB mini cable
- Power cable

Model	Description
EV-DEMORAD24G Production	Evaluation Board

