RSP1 Radar Signal Processor

Product Information

Features

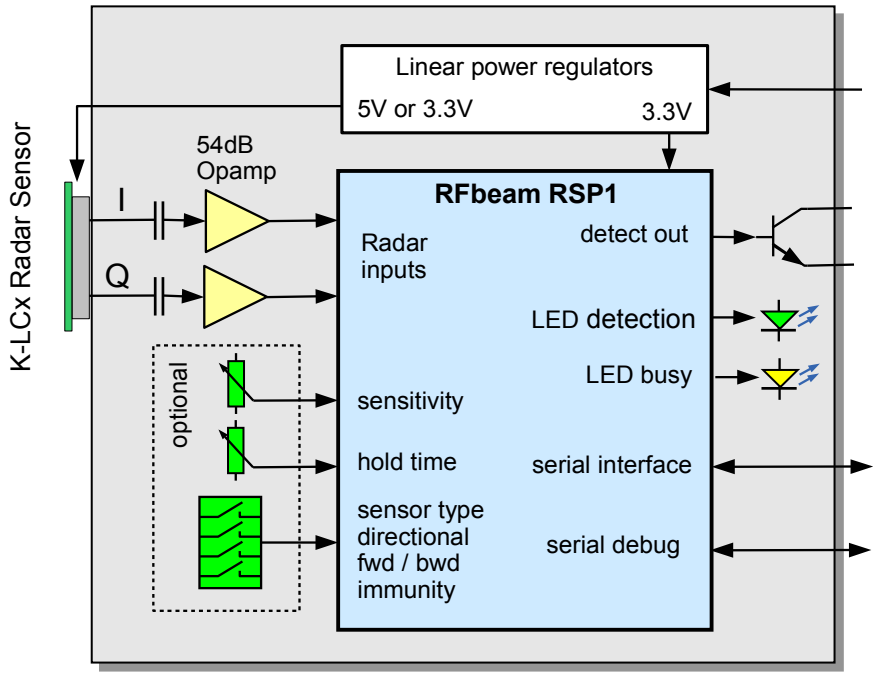
- Universal Doppler Radar signal processor
- Complete I/Q Radar sensor interface
- Complex FFT based signal processing
- Double detection distance compared to traditional solutions
- Object speed and direction detection up to 250km/h
- Efficient adaptive interference suppression
- Stand-alone or hosted operation
- Serial interfaces to host processor
- Evaluation Kit available

Applications

- Movement detectors
- Lighting control systems
- Security applications
- Object speed detection

Description

Up to now, development of Doppler Radar signal processing has been a time consuming matter and needed experience in analog and digital electronics. RSP1 reduces the development process to configuration by setting parameters.
RSP1 contains all Doppler signal processing and uses advanced complex FFT technology. Typical applications need minimal external components. Configuration can be made by switches and potentiometers or fully digital via serial interface.



RSP1 Typical Application

RSP1 Radar Signal Processor *Product Information*

RSPx Family

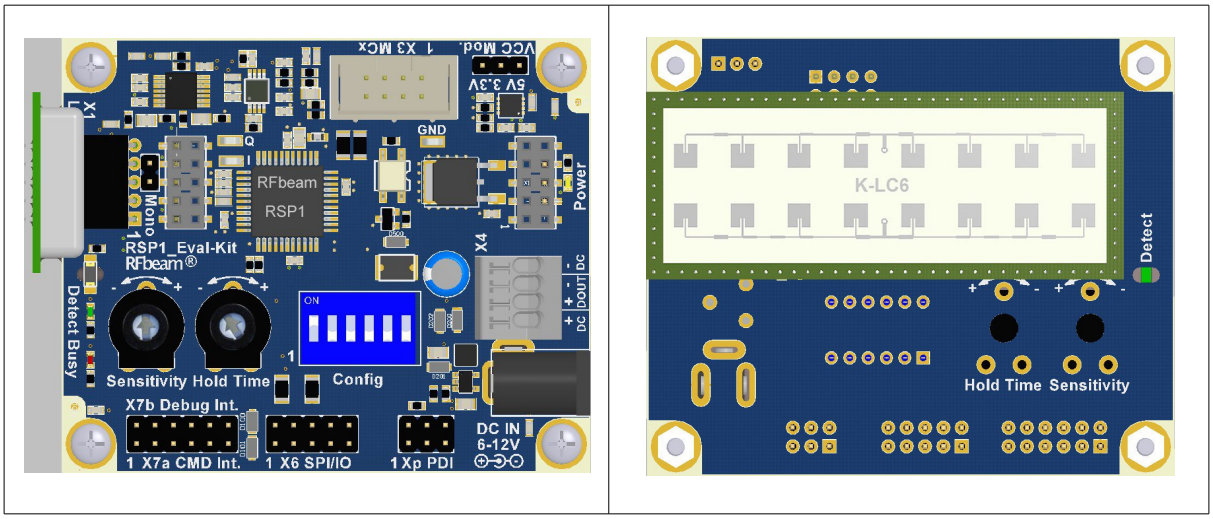
RSP1 is the first member of a growing family of RFbeam Radar signal processors.
The RSPx family helps users concentrating on their application know-how instead of investing time and money in raw FFT signal processing.

RSP1 covers slow movement detectors as well as speed estimators up 250km/h.
It can be used as stand alone processor or as a oc-processor in higher complexity systems.
User has only to add an input amplifier and digital output drivers and gets a high performance detection system.
Reference designs and application notes are available in the RSP1 datasheet.
The **RSP1_Eval-Kit** is an indispensable starting point for developing RSP1 applications.

Key Data

- 12 Bit ADC
- Differential analog inputs for I and Q signals
- Internal programmable gain amplifier
- Sampling rates from 1280Hz to 22.5kHz
- Efficient 256pt complex FFT
- Logarithmic detection algorithms
- Adaptive noise and interference analysis and canceling algorithms
- Serial command and debug/streaming interfaces
- Commands include peak magnitude, frequency and sign, noise level and many more
- Highly configurable by serial interface and/or digital and analog inputs
- Application settings can be down- and uploaded from chip

Evaluation Kit



RSP1_Eval-Kit; Left: K-LC2 sensor on front connector; Right: Backside equipped with K-LC6 sensor

With RSP1_Eval-Kit, you can explore most features of RSP1 working with different RFbeam sensors.
Using the supplied serial **RSP_Terminal**, you have access to around 30 parameters. Explore FFT, noise and other signals with the RFbeam **RSP_Scope** PC Software, that also makes part of the kit.
All schematics, PCB layout and BOM are included as a reference.

Fore more details, please consult the download area on website www.rfbeam.ch.