SC1221AR3-B-122
Evaluation Kit for CMOS 60GHz Radar Sensor

Overview

“The 2D location sensing evaluation kit (EVK), SC1221AR3-B-122, provides an evaluation environment of the Socionext 60GHz Radar Sensor (SC1221AR3).

The EVK consists of EVK main unit (sensor board, interface board, and DragonBoard™*), accessory, and the software package which is to be used under the host windows OS PC connected with the EVK via a USB cable.

*: DragonBoard is a trademark of Qualcomm Incorporated, registered in the United States and other countries.

Functions

● Selectable three sensing results through API:
  1. 1D/2D location detection result
  2. FFT operation data
  3. IQ data

● 2D location library optimized for human detection.
  - Several operation modes with reduced power consumption.

● GUI based evaluation software:
  - View 2D location library results on GUI application.
  - A rich set of viewers, including 2D heat-maps, 2D plots, and FFT analysis graphs.
  - Application that detects intrusion into a specified zone.

EVK System Structure
### Specifications

<table>
<thead>
<tr>
<th>Frequency</th>
<th>61.025 - 61.475GHz</th>
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<tr>
<td>Sensing mode</td>
<td>FMCW/ CW/ FSKCW*1, *2</td>
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</table>
| Output (API)     | • IQ/FFT Data (API of Sensor Library)  
|                  | • Distance/ 2D Location (API of 2D Location Library) |
| Interface        | USB2.0 (micro-B)   |

*1: FMCW: Frequency Modulated Continuous Wave, FSKCW: Frequency Shift Keying Continuous Wave  
*2: In the 2D location library, FMCW sensing mode is used.

### Contents of EVK Software

- **DragonBoard™ Sensor Board & Interface Board**
  - Sensor Driver
  - Sensor Library
  - 2D Location Library

- **Customer’s PC (Windows)**
  - Sensing Control Code Generator Software (.exe)
  - Command Line Interface Tool
  - Sample C Code for IQ/FFT Data Acquisition
  - Sample MATLAB Code for IQ/FFT Data Acquisition
  - 2D Location Evaluation Software (.exe)
  - Sample C Code for 2D Location

#### Measurement environment using EVK

**Setting**: Connects the Evaluation Kit (EVK) to the host PC, on which the 2D location sensing software is installed, by a USB cable.

**Notes**: In order to detect objects on the ground, the EVK should be faced to the detection target area, for example, placing it on the wall or with a supporter like a tripod stand as shown in the right figure.