SC1220AT2-B-113
Evaluation Kit for CMOS 60GHz Radar Sensor

**Overview**

“The 3D radar sensing evaluation kit (EVK), SC1220AT2-B-113, provides an evaluation environment of the Socionext 60GHz radar sensor (SC1220AT2).

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/3D location detection result
  2. FFT operation data
  3. IQ data
- 3D location library for several use-cases:
  - 30cm range for finger location, 50cm range for hand location, 7m range for human location.
- GUI based evaluation software:
  - View 3D location library results on GUI application.
  - A rich set of viewers, including 3D color-maps, heat-maps, and distance graphs.
  - Gesture application that recognize hand movements.

**EVK System Structure**
**Specifications**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>57.1 - 63.9GHz</th>
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<tr>
<td>Sensing mode</td>
<td>FMCW/ CW/ FSKCW*1,*2</td>
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| Output (API)       | • IQ/ FFT Data (API of Sensor Library)  
|                    | • Distance/ 3D Location (API of 3D Location Library) |
| Interface          | USB2.0 (micro-B) |

*1: FMCW: Frequency Modulated Continuous Wave, FSKCW: Frequency Shift Keying Continuous Wave  
*2: In the 3D location library, FMCW sensing mode is used.

**Contents of EVK Software**

- **Customer’s PC (Windows10)**  
  - Sensing Control Code Generator Software (.exe)  
  - Command Line Interface Tool  
  - Sample C Code for FIFO Data Acquisition  
  - Sample MATLAB Code for FIFO Data Acquisition  
  - 3D Location Evaluation Software (.exe)  
  - Sample C Code for 3D Location

- **DragonBoard™**  
  - Sensor Library  
  - Sensor Driver  
  - 3D Location Library  
  - Socionext SC1220AT2

**Measurement environment using EVK**

**Setting**: Connects the Evaluation Kit (EVK) to the host PC, on which the 3D location sensing software is installed, by a USB cable.

**Notes**: In order to detect objects like a human and its hand, the EVK should be placed on a horizontal plate like a table and be faced in the vertical upper direction (z-axis) as shown in the right figure.