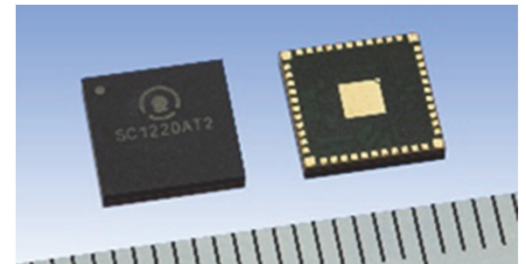


# 60GHz Radio-Wave Ranging Sensor

## 3D Detection Model SC1220AT2

SC1220AT2 is a low power CMOS 60GHz radar sensor device and available for 3D motion sensing.



SC1220AT2

### ■ Features

#### ● 3Suited for 3D motion sensing

- 2 Tx and 2 x 2 Rx antennas detect azimuth / elevation angle, velocity and distance
- Wide bandwidth (6.8GHz max.) and high-accuracy linear chirp FMCW radar
- Sensing area example: up to 0.5m\*<sup>1</sup> with < 1cm\*<sup>2</sup> resolution (in case of palm gesture)

#### ● Highly integrated device enabling easy hardware design

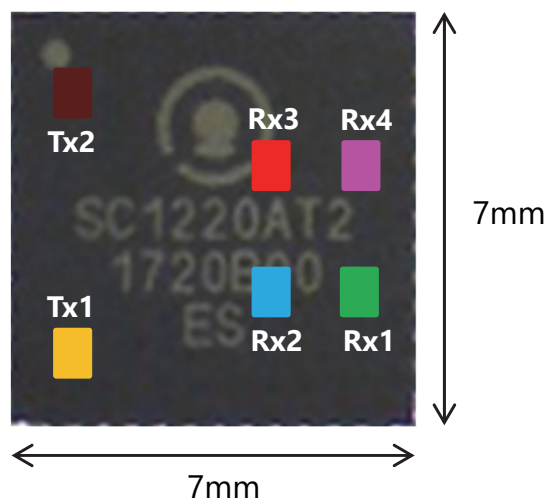
- Integrating antennas, radio, ADC, FIFO and SPI interface
- Enable to use reasonable PCB, less BOM and easy assembly
- Small package (7.0mm x 7.0mm, LGA package)

#### ● Low power consumption

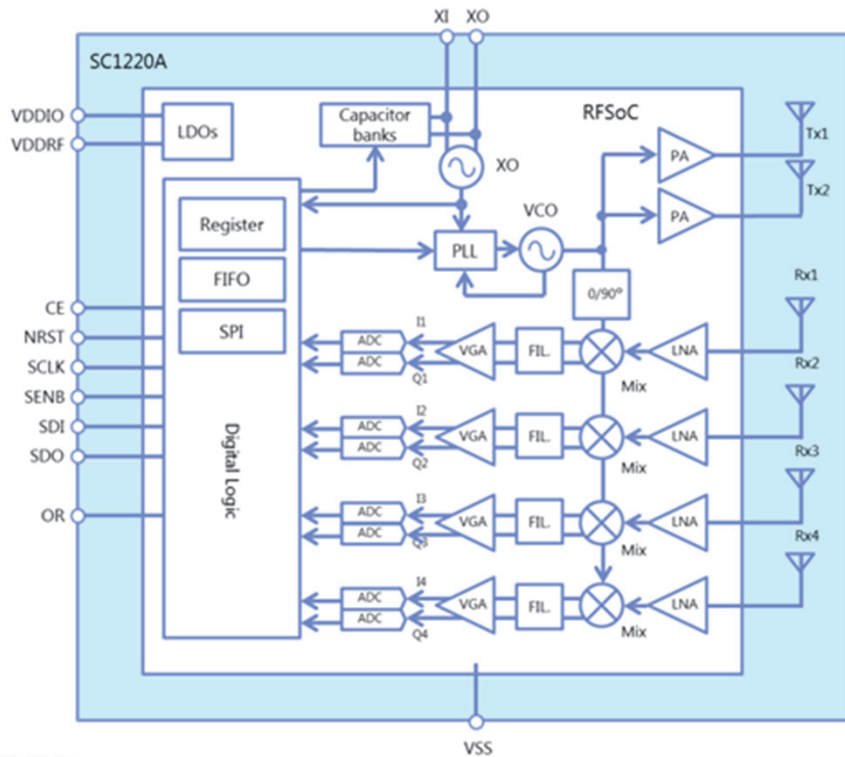
- 4-Level operation states (Shutdown, Deep Sleep, Light Sleep, Sensing)
- Intelligent power control sequencer managing flexible duty cycle operation
- 2.5mW average power consumption at palm gesture sensing\*<sup>3</sup>

- 1: Depending on sensor configuration and environmental conditions
- 2: To be changed according to further study
- 3: In case of conditions that Socionext assumed

### ■ Antenna Configuration



## ■ Block Diagram



## ■ Specifications

<b>Radar mode</b>	FMCW/FSKCW/CW
<b>Power Supply</b>	1.5V - 1.8V (core) / 1.8 - 3.3V (I/O)
<b>Power Consumption</b>	308mW (Peak power consumption) 2.5mW (0.5% duty cycle operation using deep sleep)
<b>Transmitter</b>	Frequency: 57.1 - 63.9GHz (6.8GHz bandwidth) EIRP: -7dBm
<b>Receiver</b>	Noise Figure: 12dB
<b>Digital block</b>	ADC (11bit 10MHz), FIFO (32KB), SPII/F (≤50MHz)
<b>Temperature</b>	-40 to 85°C

## ■ Evaluation Kit Deliverables

- SC1220AT2 evaluation kit hardware with USB cable
- Sensor driver/ library and 3D location sensing evaluation software (GUI)
- Related documents
  - Evaluation software (GUI) operation manual
  - API specification of control API
  - Application note (MATLAB and Sample C source for API)