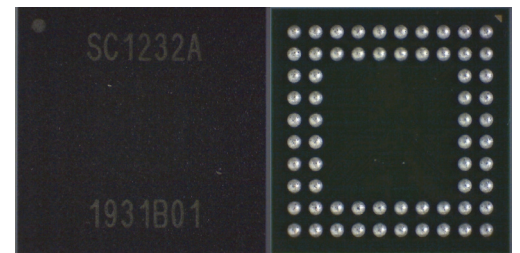


24GHz Radio-wave ranging sensor 1D Detection model SC1232AR3



“Easy-to-use” & “All-in-one” 24GHz radar sensor enabling motion and distance detection without any external MCU calculations.



SC1232AR3

■ Features

● Easy to use

- System BOM can be reduced by “All-in-one” package radar sensor
- Built-in autonomous motion/distance detection function enables only I²C/SPI connection for settings & result acquisition

● Wide detection area

- Preferable detection area: 8m^{*1} in front direction
- 120deg / 95deg selectable FOV^{*1*2} with Digital beam shaper

● Suited for battery operation

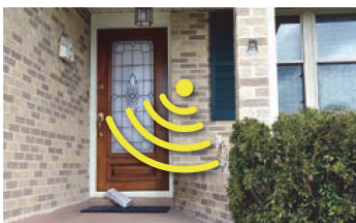
- 0.5mW average operating power consumption on human detection application^{*3}
- After sensor setup & run, MCU can sleep until something detected

*1: Detection area depends on environmental condition

*2: Half distance angle

*3: In case of 0.1% duty cycle operation in Motion Detection mode

■ Applications



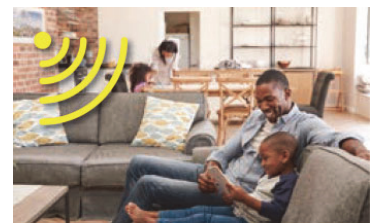
Detection of people at the front door
(use in a doorbell)



Detection of people to switch the liquid crystal
display of smart home appliances on and off

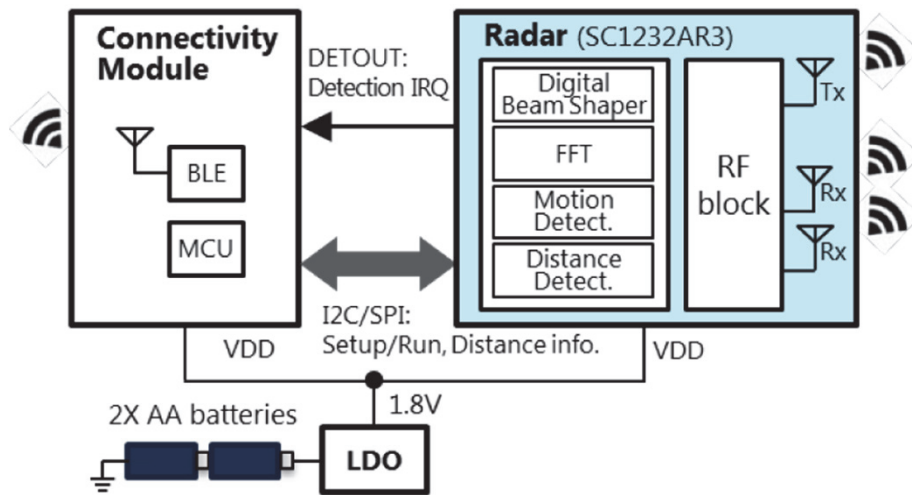


Gesture operations



Detection of people in rooms such as the
living room(use in a smart thermostat)

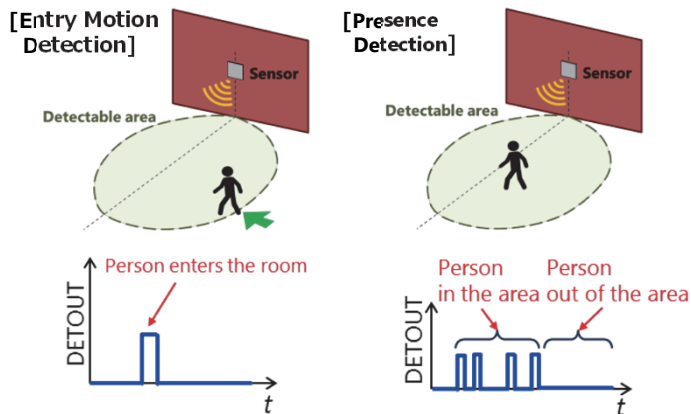
Example System Configuration



Example use case

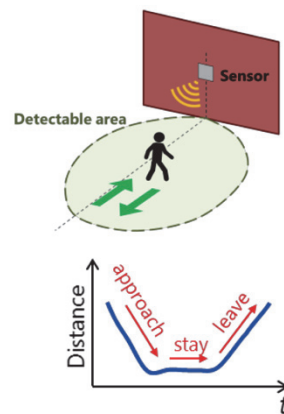
Entry Motion/ Presence Detection

Internal processing engine calculates & outputs Motion Detection (Entry Motion / Presence Detection) result through DETOUT.



Distance Detection

Internal processing engine calculates & outputs Distance to the moving objects through I²C or SPI.



Specifications

Frequency range	24.06 - 24.24GHz
Size, Package	Size: 9mm x 9mm x 1.18mm, BGA package, 0.8mm pitch, 64pin
Supply voltage	1.8V
Power consumption	average 0.5mW ^{*3}
Operating package top temperature	-40 to 105°C
Output power	Tx EIRP (typ) 4.0dBm
Detection area	Preferable detection area: 8m ^{*1} in front direction, 120/95° selectable FOV ^{*1*2}
Sensor output	Motion Detection result, Distance Detection result

*1: Detection area depends on environmental condition
 *2: Half distance angle
 *3: In case of 0.1% duty cycle operation in Motion Detection mode

Deliverables of the Evaluation kit

- SC1232AR3 evaluation kit hardware with USB cable (A to micro-B)
- Sensor library / Evaluation software (GUI)
- Related documents
 - Evaluation software (GUI) operation manual
 - API specification of control API
 - Application note (Sensor setting parameters / Sample C source for API)