



Integrated Sensor

The ERD-5801SCBB0-001 is a fully integrated 5.8GHz Doppler radar module operating at 5.725–5.825GHz.

The module uses fixed-frequency directional transmit and receive antennas (1T1R) and integrates IF demodulation, signal amplification, and digital processing functions.

Advantages

- Non-wall penetrating detection
- Strong anti-interference capability
- Excellent clutter and harmonic suppression
- High stability and consistency

Features

- Adjustable sensing distance
- Adjustable delay time
- Adjustable ambient light sensitivity
- Reserved SMD light sensor circuit
- User-adjustable parameters
- Infrared remote control support

Specifications

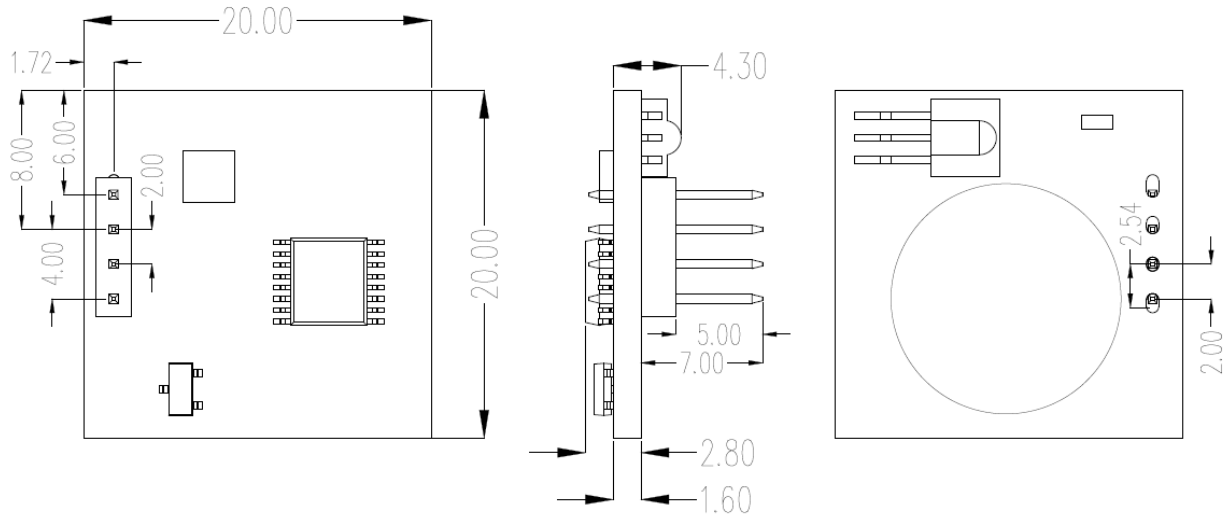
- Operating Frequency: 5.724-5.825GHz
- Operating Voltage: +4.7V to 13V
- Module Size: 0.79" (20mm) × 0.79" (20mm) × 0.39"(9.8mm)
- Maximum sensing distance:>9m (front detection on bare board)
- High/Low level output and PWM output
- Detection range: installation height: 3m, radius 2-5m

The product uses power supply mode with adjustable duty cycle and approximately 14mA power consumption.

Sensor for Reno Products

Category	Series	Model #
Double Ring Ceiling Fixtures	DECO	R31032 - RENO-CLD-12"-BN-MW-MCCT-MS-G2
	DECO	R31033 - RENO-CLD-14"-BN-MW-MCCT-MS-G2
	DECO	R31034 - RENO-CLD-16"-BN-MW-MCCT-MS-G2
Flush Mount Fixtures	Luma	R31041 - RENO-CFM-10"-MW-MCCT-MS
	Luma	R31042- RENO-CFM-13"-MW-MCCT-MS
	Luma	R31043- RENO -CFM-15"-MW-MCCT-MS
Wall Sconce	DECO	R32014 - RENO-WSP-MCCT-MW-MS-G2

Product Configuration



Dimension Tolerance: ±0.2mm
Unit:mm

Module Dimensions

Module Size	Pin Pitch	PCB Thickness
20.0(±0.3) × 20.0(±0.3) × 9.8(±0.3) mm	2.54mm	1.6(±0.1) mm

Notes:

- V-O-G interface compatible with 2.0mm / 2.54mm
- Hole diameter: 0.85mm

Applications

Smart Lighting

- Garages
- Corridors
- Smart Homes
- Offices
- Hotels
- Schools
- Sensor Ceiling Lights

Other Applications

- Smart Security Systems
- Home Appliances
- Electrical Equipment

Examples

- Light ON when people/vehicles arrive
- Light OFF when people/vehicles leave
- Wardrobe sensor lighting
- Smart panel switch applications

Product Configuration

Version	Delay Time	Lock Time	Light Sensor Function	Brightness	Pin Header	Remarks
1.0	5s (remote adjustable)	1s	Disabled by default (remote adjustable)	Full ON/OFF	YES	Installation height 3m, sensing radius 2-5m

Power Characteristics

Operating Voltage(VCC)	Operating Current	Microwave Frequency	Transmit Power	Output Voltage	Power-On Stabilization Time
4.7-13V	Typical 14mA	5.725-5.825GHz	0dBm	5.0V	5s Typical

Detection Specifications

X-Axis Detection Distance	Y-Axis Detection Distance	Z-Axis Detection Distance	Turn-On Delay (TS)	Turn-Off Lock Time (T0)	Trigger Ambient Light	Detection Angle
2-5m	2-5m	7-9m	5s	1s	15 Lux	90°-110°

Notes:

- Detection of distance can be customized.
- Delay and lock times are adjustable.
- Light trigger threshold can be customized.

Operating Conditions

Operating Temperature	Storage Temperature	Operating Humidity	Storage Humidity
-20°C to +85°C	-20°C to +85°C	RH 25%–75% (non-condensing)	RH 30%–75% (non-condensing)

Key Components

Type	Model	Package	Quantity
IC	RC5801S	TSSOP (5x4.4mm)	1 PCS

Pin Definition

PIN	Function	Description
PIN1	VCC	DC 4.7–13V power supply
PIN2	OUT	TTL output (High 5V / Low 0V) or PWM output
PIN3	GND	Ground
PIN4	VCC	DC 4.7–13V power supply

Recommended drive current: >5V @ 40mA

Light Sensor Mode

Description

- D1 is an SMD light sensor
- Light threshold can be selected as required
- Light sensing function is disabled by default
- Contact technical support if enabling is required

Timing

- Default lock time T0: 1s
- Default delay time TS: 5s
- Both values can be customized

Operating Logic

- When ambient light is bright enough, the light will not turn on even if motion is detected
- When ambient light is below the preset threshold, motion detection turns the light on automatically
- After motion stops, the light remains on during the delay period
- After the delay time expires, the light turns off automatically

Detection Range Notes

- Detection sensitivity can be adjusted
- Actual sensing distance depends on installation environment
- Metal housing can significantly reduce the detection range
- Detection results may vary depending on movement speed, posture, and environment

Reference Test Conditions:

- Human target height: 1.65m
- Weight: 65kg
- Movement speed: 1

Packaging

Packaging Process:

1. Place modules into blister tray
2. Stack Trays
3. Pack into Carton

Important Notes

Power Supply Design

- Use stable power supplies to meet voltage/current/ripple requirements
- Unstable power can cause false triggering or malfunction
- Ripple should be controlled within 120mV
- Keep radar modules away from transformers and high-interference components

Usage Precautions

- Metal objects near the antenna affect performance
- Avoid deformation or heavy vibration
- Keep at least 2mm of free space around the module
- Initialization time after power-on is about 8 seconds
- During mass production testing, keep powered modules at least 1m apart

Installation Precautions

- Avoid installation near ventilation ducts, vibrating machinery, or large metal objects
- Avoid electromagnetic interference sources
- Recommended antenna-to-housing distance: >5mm
- Keep multiple radar devices at least 1m apart
- Avoid direct face-to-face installation of multiple radar modules
- RF modules should maintain at least 5mm spacing from radar modules to prevent interference