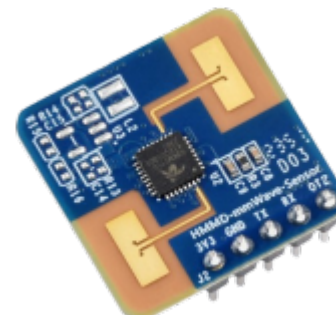


# Radar Module RD-xx

## Radar Module Rd-03

The Radar Module **Rd-03** features silicon micro-S3KM1110 chips, which are integrated single-chip millimeter-wave sensor SoCs based on **FMCW** (*Frequency-Modulated Continuous-Wave*) radar transceiver technology. The S3KM1110 operates in the 24 GHz K-band, with a maximum modulation bandwidth of 1 GHz per frequency.



The FMCW continuous wave technology is used to detect targets within a specific area. When combined with radar signal processing and an accurate human body sensing algorithm, it enables high-sensitivity detection of human presence. This allows for recognizing human bodies in both moving and still states.

The Rd-03 module can detect the presence of a moving or micro-movements of a human body within a specific area and provides real-time detection results. It includes a visual configuration tool that makes it easy to set the sensing distance, sensitivity levels, and unmanned delay time.

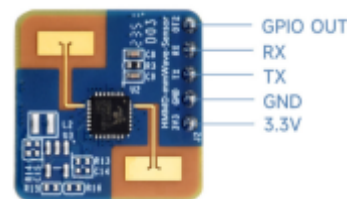
### Technical characteristics

<b>Package</b>	DIP-5
<b>Chip</b>	S3KM1110
<b>Size</b>	20 * 20 mm
<b>Antenna</b>	On-board antenna
<b>Frequency</b>	24 .. 24.25 GHz K-band
<b>Operation temperature</b>	-40 .. 85 °C
<b>Storage environment</b>	-40 .. 125 °C, < 90% RH
<b>Support voltage</b>	<b>3.0 .. 3.6 V</b>
<b>Power supply current <math>\geq 200\text{m A}</math></b>	
<b>Range</b>	< 10 m
<b>Max Sensing Range</b>	< 5 m
<b>Radar angle</b>	$\pm 60$ degrees
<b>Interface</b>	UART
<b>UART baud rate</b>	Default 115200 bps



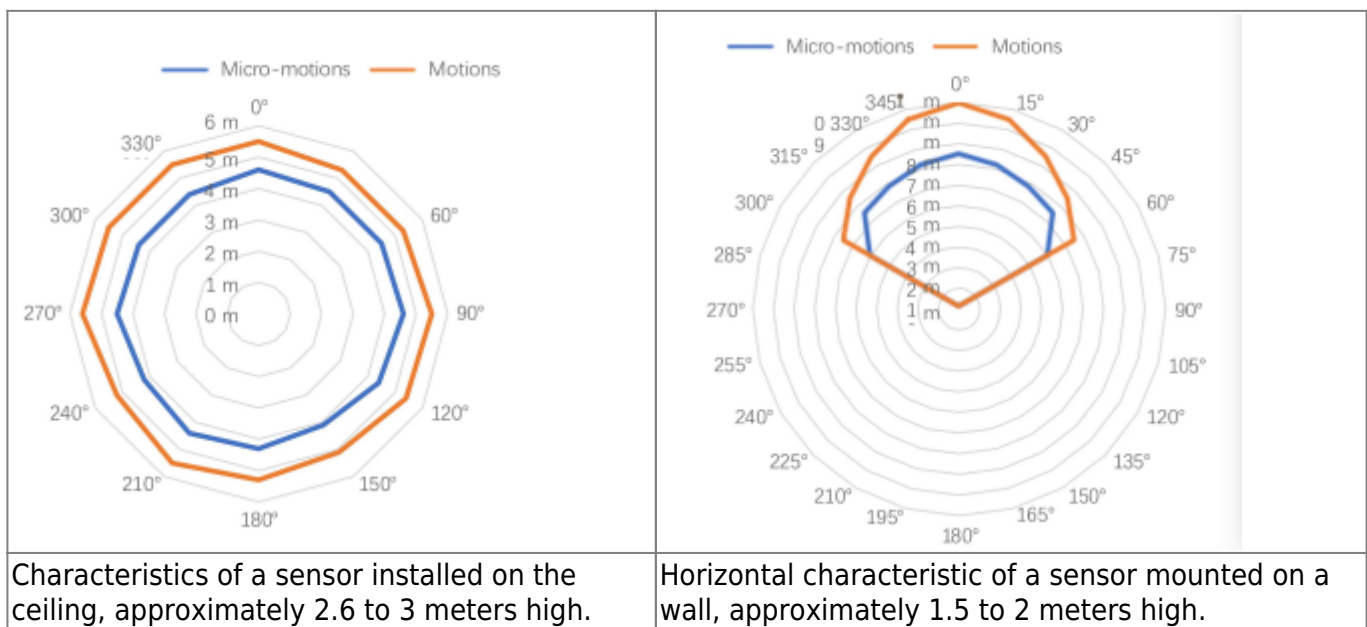
Rd-03 is an electrostatically sensitive piece of equipment; special precautions should be taken during handling.

### PIN out



<b>3V3</b>	input power
<b>GND</b>	Ground
<b>OT1</b>	UART_TX
<b>RX</b>	UART_RX
<b>OT2</b>	Detection result output, output high level when sensing, output low level when not sensing

### Characteristics of perception



### Sources

<https://cdn.robotshop.com/media/A/Ait/RB-Ait-27/pdf/ai-thinker-radar-module-rd-03-datasheet.pdf>

### Sensor topics on lamaPLC

Page	Date	Tags
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC project: Arduino - OLED SH1106 with AHT20/BMP280 Sensor</a></li> </ul>	2026/02/12 22:14	<a href="#">bmp280</a> , <a href="#">aht20</a> , <a href="#">temperature</a> , <a href="#">humidity</a> , <a href="#">pressure</a> , <a href="#">sensor</a> , <a href="#">arduino</a> , <a href="#">oled</a> , <a href="#">sh1106</a> , <a href="#">arduino code</a>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: A0221AU / A02YYUW Waterproof Ultrasonic Distance Sensor with UART communication</a></li> </ul>	2026/02/14 22:31	<a href="#">a0221au</a> , <a href="#">a02yyuw</a> , <a href="#">waterproof</a> , <a href="#">ultrasonic</a> , <a href="#">distance</a> , <a href="#">sensor</a> , <a href="#">uart</a> , <a href="#">ip67</a> , <a href="#">serial</a> , <a href="#">sen0311</a> , <a href="#">dfrobot</a>

• LamaPLC: AHT10 Modul	2026/03/21 19:20	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• LamaPLC: AHT20 / BMP280 Modul	2026/02/15 20:33	bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c
• LamaPLC: Allegro ACS758 Hall-effect linear current sensors	2026/02/14 23:38	cjmcu, cjmcu-758, acs758, acs758lcb-050b, acs758lcb-100b, acs758kcb-150b, acs758ecb-200b, hall-effect, current, sensor, analog, arduino, code
• LamaPLC: APDS - Avago ALS and proximity detection sensors with I <sup>2</sup> C communication	2026/02/14 22:24	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
• lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/03/28 22:07	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I <sup>2</sup> C communication	2026/02/15 20:40	bme280, bme680, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, cjmcu
• LamaPLC: BQ25570 / CJMCU-2557 - Texas Instruments nano-power management IC and module	2026/02/14 23:36	bq25570, sensor, texas instruments, nano-power management, dc-dc boost charger, mppt, solar, thermoelectric, piezoelectric
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I <sup>2</sup> C communication	2026/02/14 23:37	cjmcu-219, ina-219, ina219, breakout board, i2c, communication, sensor, voltage, current, arduino, code, cjmcu
• LamaPLC: CJMCU-3216 / AP-3216 integrated digital ambient light and proximity sensor module/IC with I <sup>2</sup> C communication	2026/02/14 22:40	cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication
• LamaPLC: CJMCU-3901/PMW-3901 compact optical flow sensor module/IC by PixArt with SPI communication	2026/02/14 22:39	cjmcu-3901, cjmcu, pmw3901, pmw-3901, optical flow, sensor, pixart, spi, communication, arduino, code, pmw3901mb-txqt
• LamaPLC: CJMCU-6701: Biosensor for measuring Galvanic Skin Response (GSR) with SPI communication	2026/02/14 23:39	cjmcu, cjmcu-6701, acs758, acs-758, galvanic skin response, gsr, electrodermal activity, eda, spi, communication, arduino, code, sensor, healthcare
• LamaPLC: CJMCU-6814 combined gas sensor module for CO, NO <sub>2</sub> , NH <sub>3</sub>	2026/02/14 22:16	analog, cjmcu, cjmcu-6814, mics6814, mics-6814, sensor, arduino, code, carbon monoxide, co, ammonia, nh <sub>3</sub> , nitrogen dioxide, no <sub>2</sub>
• lamaPLC: CJMCU-811 CCS811 Gas Sensor (VOCs TVOC CO <sub>2</sub> )	2026/03/21 22:25	cjmcu-811, ccs811, gas, sensor, vocs, tvoc, eco2, co2, arduino, air quality metal oxide, mox, i2c
• LamaPLC: CJMCU-8221 Analog Devices Precision instrumentation amplifier module	2026/02/14 22:55	cjmcu-8221, ad8221ar, analog devices, amplifier, sensor, cjmcu
• LamaPLC: D6T Omron Non-Contact Thermal Sensors with I <sup>2</sup> C communication	2026/02/14 18:19	d6t, d6t-32l, d6t-44l, d6t-8l, d6t-1a, omron, non-contact, thermal, sensor, i2c, arduino, code

- [LamaPLC: DHT Temperature /Humidity sensors with 1-wire / I<sup>2</sup>C communication](#) 2026/02/15 20:42 [dht11, dht20, dht22, temperature, humidity, pressure, sensor, 1-wire, arduino, code](#)
- [LamaPLC: DPS Infineon Temperature/Pressure sensors with I<sup>2</sup>C communication](#) 2026/02/14 18:11 [dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code](#)
- [lamaPLC: DS18B20 1-Wire Digital Thermometer](#) 2026/02/15 20:44 [ds18b20, sensor, 1-wire, communication, arduino, thermometer, parasitic mode](#)
- [lamaPLC: Energy, power, current, and voltage](#) 2025/05/31 21:32 [i2c, i c, communication, arduino, energy, power, current, sensor, ina226](#)
- [LamaPLC: ENS ScioSense Multi-gas sensors with I<sup>2</sup>C communication](#) 2026/02/14 19:29 [ens160, sciosense, gas-quality, i2c, communication, sensor, arduino, code, eco2, tvoc, aqi, indoor air quality, iaq, co2, voc](#)
- [lamaPLC: ENS160 + AHT21 Air Quality Sensor - CO, ECO, TVOC, Temp & Humidity Module](#) 2026/03/21 20:45 [arduino, ens160, aht21, air quality, sensor, co, eco, tvoc, module, aqi](#)
- [LamaPLC: Gas sensors](#) 2023/07/01 15:29 [gas, sensor, i2c, onewire, communication, mq-3, mq-4, mq-5, mq-6, mq-7, mq-8, mq-9, mq-135, gm-102b, gm-302b, gm-502b, gm-702b, alcohol, ch4, natural gas, smoke, lng, co, co2, lpg, h2, iso-butane, nox, nh3, benzene, town gas, formaldehyde, propane, humidity, temperature, voc, grv gas sens v2](#)
- [LamaPLC: GM MEMS Gas-sensors](#) 2026/02/14 22:18 [gm-102b, gm-302b, gm-502b, gm-702b, mems, gas-quality, sensor, arduino, code, nitrogen dioxide, no2, volatile organic compounds, voc, carbon monoxide, co, ethyl alcohol, c2h5ch, formaldehyde, ch2o, alcohol, c2h5oh](#)
- [lamaPLC: GY-511 6DOF sensor module](#) 2026/03/22 00:26 [stmicroelectronics, lsm303dlhc, i2c, lsm303, sensor, gy-511, 6dof, pololu, module, arduino](#)
- [LamaPLC: HC-SR04 Ultrasonic Sensor Module](#) 2026/02/14 22:19 [hc-sr04, ultrasonic, sensor, arduino, code](#)
- [LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I<sup>2</sup>C communication](#) 2026/02/14 22:09 [sht21, htu21, si7021, gy-21, gy-213v, hdc1080, gy-213v-hdc1080, cjmcu, cjmcu-1080, texas instruments, temperature, humidity, sensor, i2c, communication, arduino, code](#)
- [LamaPLC: HTU TE Connectivity temperature/humidity sensors with I<sup>2</sup>C communication](#) 2026/02/14 21:54 [htu, htu31d, htu21d, htu20d, sht20, htu20, sht21, htu21, si7021, gy-21, gy-213v, hdc1080, si702, gy-20, sht31, htu31, si7031, gy-31, te connectivity, temperature, humidity, i2c, communication, sensor, arduino, code](#)

• LamaPLC: HX711 24-bit analog-to-digital converter (ADC)	2026/02/15 23:59	hx711, hx-711, analog-to-digital, adc, converter, load cell, wheatstone bridge, weight, sensor, communication, arduino, code
• lamaPLC: INA modules with Arduino libraries	2026/03/28 18:02	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, ina226, ina228, ina237, ina238, ina260, ina3221, ina
• lamaPLC: INA226 - current/voltage/power monitor with I <sup>2</sup> C communication	2026/02/14 23:58	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC	2026/02/14 23:35	communication, arduino, sensor, energy harvesting, energy, ambient power
• LamaPLC: M01 - V0.4 Laser ranging sensor with UART communication	2026/02/14 22:24	distance measurement, laser, distance, sensor, m01
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/02/14 23:38	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• lamaPLC: Max31865 RTD to Digital Converter - PT100/PT1000 Platine	2026/02/14 17:38	max31865, rtd, pt 100, pt 1000, temperature, spi, platinum, arduino, code, sensor, adafruit
• LamaPLC: MAX4466/MAX9814: Low-noise Microphone Preamplifiers	2026/02/15 17:35	audio, microphone, analogue audio, max4466, max9814, max 4466, max 9814, agc, preamplifiers, sensor, arduino, code
• LamaPLC: MH-Z19 series of NDIR CO <sub>2</sub> sensors	2026/02/15 20:20	mh-z19, mh-z19d, mh-z19c, mh-z19b, mh-z19e, ndir, co <sub>2</sub> , sensor, winsen, uart, pwm, communication, non-dispersive infrared, infrared, ir, temperature, arduino, code, tasmota
• lamaPLC: MPU-6050 (HW-123, GY-521) 6-axis MotionTracking device	2026/03/22 01:24	mpu-6050, hw-123, gy-521, 6-axis motiontracking, dmp, temperature, sensor, mems, arduino code, arduino, accelerometer, gyroscope, tilt
• LamaPLC: MQ Winsen Gas-sensors	2026/02/14 21:17	mq, mq-2, mq-3, mq-4, mq-5, mq-6, mq-7, mq-8, mq-9, mq-131, mq-135, mq-137, winsen, gas-sensor, sensor, arduino, code, alcohol, c <sub>2</sub> h <sub>5</sub> oh, benzine gas, smoke, lpg, propane, c <sub>3</sub> h <sub>8</sub> , hydrogen, h <sub>2</sub> , methane, ch <sub>4</sub> , iso-butane, town gas, ammonia, nh <sub>3</sub>
• LamaPLC: PIR sensors	2026/02/15 16:39	hc-sr501, hc-sr505, am-312, ekmb ekmc, pir, motion, sensor, arduino, code
• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I <sup>2</sup> C communication	2026/02/14 22:23	paj7620u2, gy-paj7620, pixart, gesture recognition, i2c, communication, sensor, arduino, code
• lamaPLC: PT100 / PT1000	2025/09/23 16:59	pt100, pt1000, temperature, sensor, platine, rtd
• lamaPLC: PTA8C04 4-channel PT100 Modbus Modul	2026/02/14 17:42	pta8c04, sensor, modbus, rtu, rs-485, communication, platine, um72

- [LamaPLC: RCWL - Microwave radar sensor](#) 2026/02/14 22:33 [rcwl-0516, rcwl, microwave, radar, sensor, arduino, code](#)
- [lamaPLC: RD-xx - Ai-Thinker Radar Module with UART communication](#) 2026/02/14 22:33 [radar, s3km1110, fmcw, rd-01, rd-03, rd-03d, ai-thinker, k-band, 24 ghz, sensor, distance, micro-movements](#)
- [LamaPLC: SGP Sensirion Gas-sensors with I<sup>2</sup>C communication](#) 2026/02/15 20:27 [sgp30, sgp40, sgp41, sensirion, gas-sensor, i2c, communication, sensor, arduino, code, eco2, voc, tvoc, indoor air quality, iaq, nox, hydrogen](#)
- [LamaPLC: SHT Sensirion Temperature/humidity sensor with I<sup>2</sup>C communication](#) 2026/02/15 20:29 [sht20, sht21, sht25, sht30, sht31, sht35, sht40, gy21, temperature, humidity, i2c, communication, sensor, arduino, code](#)
- [LamaPLC: Texas Instruments ADCs: Delta-sigma multi-channel Analog Converters with SPI communication](#) 2026/02/15 22:34 [ads111x, ads12xx, delta-sigma, converter, texas instruments, adc, spi, communication, sensor, arduino, code, ads1110, ads1112, ads1113, ads1114, ads1115, ads1118, ads1119, ads1220, ads1232, ads1234, ads1256, ads1261, ads1263, multi channel](#)
- [LamaPLC: TOFnnnC STMicroelectronics Time-of-Flight \(ToF\) sensors with I<sup>2</sup>C communication](#) 2026/02/14 22:22 [tof050c, vl6180, tof200c, vl5310x, tof400c, vl5311x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code](#)
- [LamaPLC: UICPAL Temp.humi.sensor](#) 2023/06/24 22:43 [simatic, s7, modbus, communication, temperature, humidity, sensor](#)
- [LamaPLC: VL53Lnn STMicroelectronics time-of-flight \(ToF\) laser-ranging sensors with I<sup>2</sup>C communication](#) 2026/02/14 22:21 [vl5310x, vl5311x, vl5310 1xv2, gy-530, time-of-flight, tof, laser-ranging, i2c, communication, sensor, arduino, code](#)
- [LamaPLC: VL6180X STMicroelectronics Time-of-Flight \(ToF\) sensor with I<sup>2</sup>C communication](#) 2026/02/14 22:22 [vl6180x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code](#)
- [LamaPLC: Waveshare TOF Laser Range Sensor with UART / I<sup>2</sup>C communication](#) 2026/02/14 22:32 [distance measurement, laser, range, sensor, tof, waveshare](#)
- [lamaPLC: YR-3180 - Weight sensor module with UART or Modbus communication](#) 2026/02/14 23:00 [communication, modbus, rtu, sensor, weight, yr-3180, hx710b, arduino, ttl, rs-485](#)
- [Magnetic angle sensors](#) 2026/03/05 20:19 [magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive](#)
- [NT18B07: 7 Kanal RS485 Temperatur Sensor with Modbus RTU](#) 2026/02/14 17:49 [nt18b07, sensor, modbus, rtu, rs-485, communication, platine](#)
- [PT100 / PT1000 sensors](#) 2025/12/10 17:50 [rtd, pt100, pt1000, sensor, temperature](#)
- [Radar Module RD-xx](#) 2025/11/09 17:38 [radar, s3km1110, fmcw, rd-03, k-band, 24 ghz, sensor, distance, micro-movements](#)

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