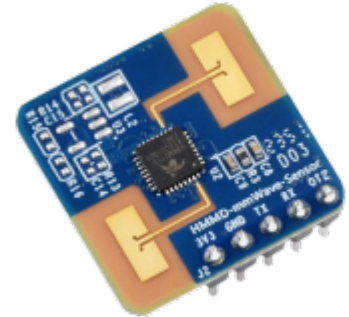


Radar Module RD-xx

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.

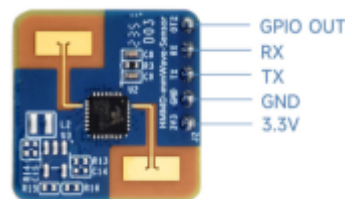
Technical characteristics

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



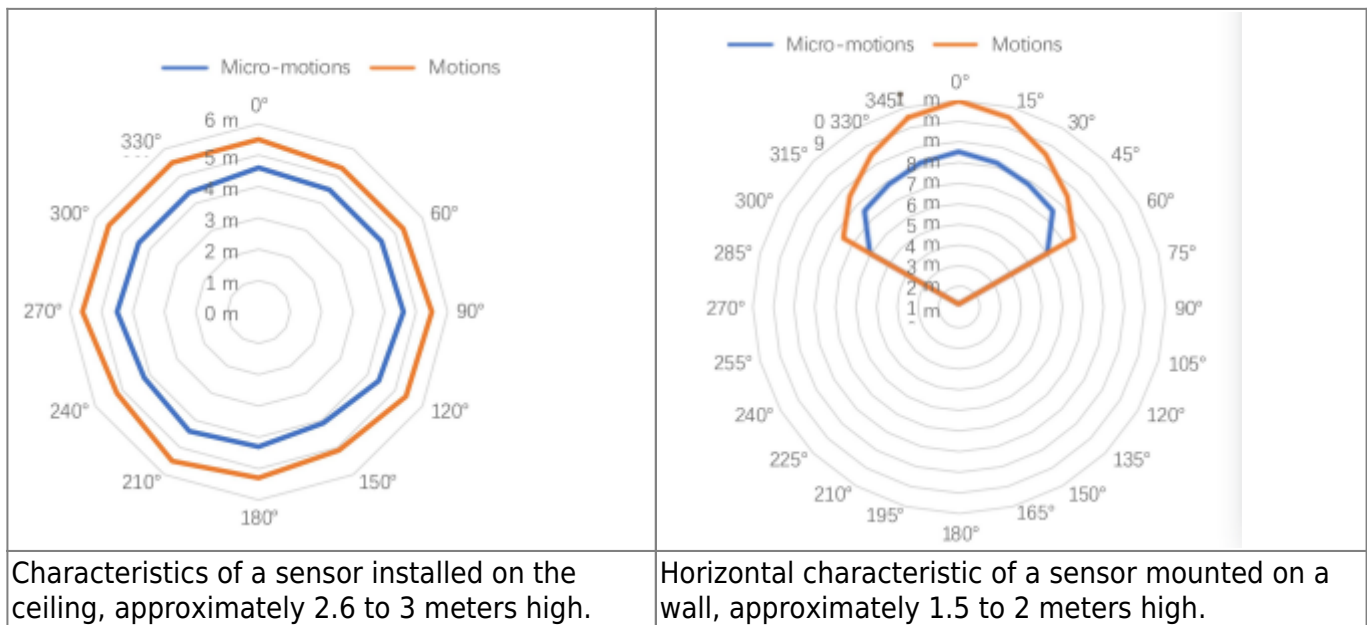
Rd-03 is an electrostatically sensitive piece of equipment; special precautions should be taken during handling.

PIN out



3V3	input power
GND	Ground
OT1	UART_TX
RX	UART_RX
OT2	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"> • lamaPLC project: Arduino - OLED SH1106 with AHT20/BMP280 Sensor 	2026/04/23 21:51	bmp280 , aht20 , temperature , humidity , pressure , sensor , arduino , oled , sh1106 , arduino code
<ul style="list-style-type: none"> • lamaPLC project: Arduino - Vibration sensors 	2026/04/15 17:21	vibration , sensor , piezoelectric , mems , eddy-current , electrodynamic , gxfm0459 , ldtm-028k , arduino , arduino code

• lamaPLC project: Digitales Potentiometer Board Moduls	2026/04/11 18:29	sensor, module, arduino code, renesas, x9c series, x9c102, x9c103, x9c104, x9c503, xdcp, digitally controlled potentiometer
• lamaPLC project: Sension SCD CO² measurement module	2026/04/15 19:34	scd30, scd40, scd41, iaq, ndir, sensor, i2c, arduino code
• lamaPLC: A0221AU / A02YYUW Waterproof Ultrasonic Distance Sensor with UART communication	2026/04/23 21:52	a0221au, a02yyuw, waterproof, ultrasonic, distance, sensor, uart, ip67, serial, sen0311, dfrobot
• LamaPLC: AHT10 Modul	2026/03/22 03:14	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• LamaPLC: AHT20 / BMP280 Modul	2026/04/23 21:52	bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c
• LamaPLC: Allegro ACS758 Hall-effect linear current sensors	2026/04/23 21:52	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 I²C communication	2026/04/23 21:52	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
• lamaPLC: Arduino Modul: BME680	2026/05/12 18:40	code, c, 2026, arduino, bme680, sensor, i2c, comunication
• lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/05/13 00:06	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I²C communication	2026/04/23 21:52	bme280, bme680, bme688, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, ai, cjmcu, volatile organic compounds, vocs, volatile sulfur compounds, vscs, iaq
• LamaPLC: BQ25570 / CJMCU-2557 - Texas Instruments nano-power management IC and module	2026/04/23 21:52	bq25570, sensor, texas instruments, nano-power management, dc-dc boost charger, mppt, solar, thermoelectric, piezoelectric, energy harvesting, eh
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I²C communication	2026/04/23 21:52	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 I²C communication	2026/04/23 21:52	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	2026/04/23 21:52	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](#) 2026/04/23 21:52

[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, NO₂, NH₃](#) 2026/04/23 21:52

[analog](#), [cjmcu](#), [cjmcu-6814](#), [mics6814](#), [mics-6814](#), [sensor](#), [arduino](#), [code](#), [carbon monoxide](#), [co](#), [ammonia](#), [nh₃](#), [nitrogen dioxide](#), [no₂](#)
- [lamaPLC: CJMCU-811 CCS811 Gas Sensor \(VOCs TVOC CO₂\)](#) 2026/04/23 21:52

[cjmcu-811](#), [ccs811](#), [gas](#), [sensor](#), [vocs](#), [tvoc](#), [eco2](#), [co2](#), [arduino](#), [air quality metal oxide](#), [mox](#), [i2c](#), [micropython](#), [rp2040-eth](#)
- [LamaPLC: CJMCU-8221 Analog Devices Precision instrumentation amplifier module](#) 2026/04/23 21:52

[cjmcu-8221](#), [ad8221ar](#), [analog devices](#), [amplifier](#), [sensor](#), [cjmcu](#)
- [LamaPLC: D6T Omron Non-Contact Thermal Sensors with I²C communication](#) 2026/04/23 21:52

[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 / I²C communication](#) 2026/04/23 21:52

[dht11](#), [dht20](#), [dht22](#), [temperature](#), [humidity](#), [pressure](#), [sensor](#), [1-wire](#), [arduino](#), [code](#)
- [LamaPLC: DPS Infineon Temperature/Pressure sensors with I2C communication](#) 2026/04/23 21:52

[dps310](#), [infineon](#), [temperature](#), [pressure](#), [sensor](#), [arduino](#), [i2c](#), [communication](#), [code](#)
- [lamaPLC: DS18B20 1-Wire Digital Thermometer](#) 2026/04/23 21:52

[ds18b20](#), [sensor](#), [1-wire](#), [communication](#), [arduino](#), [thermometer](#), [parasitic mode](#)
- [lamaPLC: Energy, power, current, and voltage](#) 2025/05/31 23:32

[i2c](#), [i c](#), [communication](#), [arduino](#), [energy](#), [power](#), [current](#), [sensor](#), [ina226](#)
- [LamaPLC: ENS ScioSense Multi-gas sensors with I²C communication](#) 2026/04/23 21:52

[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](#) 2026/04/23 21:52

[arduino](#), [ens160](#), [aht21](#), [air quality](#), [sensor](#), [co](#), [eco](#), [tvoc](#), [module](#), [aqi](#)
- [LamaPLC: Gas sensors](#) 2023/07/01 17:29

[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](#) 2026/04/23 21:52

[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	2026/04/23 21:52	stmicroelectronics, lsm303dlhc, i2c, lsm303, sensor, gy-511, 6dof, pololu, module, arduino
• LamaPLC: HC-SR04 Ultrasonic Sensor Module	2026/04/23 21:52	hc-sr04, ultrasonic, sensor, arduino, code
• LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I ² C communication	2026/04/23 21:52	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 ² C communication	2026/04/23 21:52	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)	2026/04/11 18:28	hx711, hx-711, analog-to-digital, adc, converter, load cell, wheatstone bridge, weight, sensor, communication, arduino, code
• lamaPLC: INA modules with Arduino libraries	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, gy-219, ina226, gy-216, ina228, gy-228, ina237, ina238, ina260, ina3221, ina
• lamaPLC: INA226 - current/voltage/power monitor with I ² C communication	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC	2026/04/23 21:52	communication, arduino, sensor, energy harvesting, eh, energy, ambient power
• LamaPLC: M01 - V0.4 Laser ranging sensor with UART communication	2026/04/23 21:52	distance measurement, laser, distance, sensor, m01
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/04/23 21:52	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• lamaPLC: Max31865 RTD to Digital Converter - PT100/PT1000 Platine	2026/04/23 21:52	max31865, rtd, pt 100, pt 1000, temperature, spi, platinum, arduino, code, sensor, adafruit
• LamaPLC: MAX4466/MAX9814: Low-noise Microphone Preamplifiers	2026/04/23 21:52	audio, microphone, analogue audio, max4466, max9814, max 4466, max 9814, agc, preamplifiers, sensor, arduino, code
• LamaPLC: MH-Z19 series of NDIR CO ₂ sensors	2026/04/23 21:52	mh-z19, mh-z19d, mh-z19c, mh-z19b, mh-z19e, ndir, co ₂ , 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	2026/04/23 21:52	mpu-6050, hw-123, gy-521, 6-axis motiontracking, dmp, temperature, sensor, mems, arduino code, arduino, accelerometer, gyroscope, tilt

• LamaPLC: MQ Winsen Gas-sensors	2026/04/23 21:52	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, c2h5oh, benzine gas, smoke, lpg, propane, c3h8, hydrogen, h2, methane, ch4, iso-butane, town gas, ammonia, nh3
• LamaPLC: PIR sensors	2026/04/23 21:52	hc-sr501, hc-sr505, am-312, ekmb ekmc, pir, motion, sensor, arduino, code
• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication	2026/04/23 21:52	paj7620u2, gy-paj7620, pixart, gesture recognition, i2c, communication, sensor, arduino, code
• lamaPLC: PT100 / PT1000	2025/09/23 18:59	pt100, pt1000, temperature, sensor, platine, rtd
• lamaPLC: PTA8C04 4-channel PT100 Modbus Modul	2026/02/14 18:42	pta8c04, sensor, modbus, rtu, rs-485, communication, platine, um72
• LamaPLC: RCWL - Microwave radar sensor	2026/04/23 21:52	rcwl-0516, rcwl, microwave, radar, sensor, arduino, code
• lamaPLC: RD-xx - Ai-Thinker Radar Module with UART communication	2026/04/23 21:52	radar, s3km1110, fmcw, rd-01, rd-03, rd-03d, ai-thinker, k-band, 24 ghz, sensor, distance, micro-movements
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data	2026/05/12 21:06	code, micropython, 2026, rp2040 eth, bme680, i2c, sensor, communication
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data and store in Modbus input registers	2026/05/12 18:58	code, micropython, 2026, rp2040 eth, bme680, i2c, sensor, communication
• LamaPLC: Sensors	2026/04/15 19:42	sensor
• LamaPLC: SGP Sensirion TVOC/VOC sensors with I²C communication	2026/04/15 19:41	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 I²C communication	2026/04/23 21:52	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	2026/04/23 21:52	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 I²C communication	2026/04/23 21:52	tof050c, vl6180, tof200c, vl53l0x, tof400c, vl53l1x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code
• LamaPLC: UICPAL Temp.humi.sensor	2023/06/25 00:43	simatic, s7, modbus, communication, temperature, humidity, sensor
• LamaPLC: VL53Lnn STMicroelectronics time-of-flight (ToF) laser-ranging sensors with I²C communication	2026/04/23 21:52	vl53l0x, vl53l1x, vl53l0 1xv2, gy-530, time-of-flight, tof, laser-ranging, i2c, communication, sensor, arduino, code

- LamaPLC: VL6180X STMicroelectronics Time-of-Flight (ToF) sensor with I²C communication 2026/04/23 21:52 vl6180x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code
- LamaPLC: Waveshare TOF Laser Range Sensor with UART / I²C communication 2026/04/23 21:52 distance measurement, laser, range, sensor, tof, waveshare communication, i2c, sensor, modul, pressure, cfsensor, xgzp68xx, xgzp6810d, xgzp6857d, xgzp6859d, xgzp6887d, xgzp6897d, xgzp6899a, piezoresistive, capacitive
- lamaPLC: XGZP68xx: Silicon Pressure Sensors/Module 2026/05/15 15:17 communication, modbus, rtu, sensor, weight, yr-3180, hx710b, arduino, ttl, rs-485
- lamaPLC: YR-3180 - Weight sensor module with UART or Modbus communication 2026/02/15 00:00 communication, analog, lm393, lm-393, flame, ir, sound, hall, sensor, ky-026, hw-484, ky-037, ky-038, fc-03, hc-89, ky-024, modul
- LM393: Dual differential comparator (flame, light, sound sensors) 2026/05/12 22:18 magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive
- Magnetic angle sensors 2026/04/23 21:52 nt18b07, sensor, modbus, rtu, rs-485, communication, platine
- NT18B07: 7 Kanal RS485 Temperatur Sensor with Modbus RTU 2026/02/14 18:49 rtd, pt100, pt1000, sensor, temperature
- PT100 / PT1000 sensors 2026/04/23 21:52 radar, s3km1110, fmcw, rd-03, k-band, 24 ghz, sensor, distance, micro-movements
- Radar Module RD-xx 2026/04/23 21:52

radar, S3KM1110, FMCW, Rd-03, K-band, 24 GHz, sensor, distance, micro-movements

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