

PRODUCT BROCHURE

Nanjing · Shanghai · Suzhou · Shenzhen



ICLEGEND MICRO

ICLEGEND MICRO is committed to developing high-performance wireless SoC and making RF technology smart. Our products and technologies cover broad wireless applications such as millimeter wave sensors, next generation mobile communication, satellite internet, etc.

The team of the company consists of senior technical and management experts, with rich experience of globe leading IC technology R&D, management, and entrepreneurship, and accelerates the high-end RFIC product development.

Upholding the principle of technological innovation as core value, the company develops revolutionary chip and micro-system products, grants smart devices with wireless perception, cognition, and communication abilities, and makes every effort to promote wireless technology breakthrough in high-end applications with the integration of system-on-chip, modules, software, and algorithms, etc.

Contents

Breakthrough Metric boost

Power consumption

low power consumption, battery powered

SoC Size

Compact size in 4mm x 4mm

Cost-effective

Rapid development reduces costs

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Motion & Human Presence



Range & Velocity Measurement



Gesture Recognition



Vital Signs Monitoring





1T1R 1T2R

nTnR



24 GHz

24 GHz MIMO

60GHz MIMO



24 GHz

60GHz
77GHz



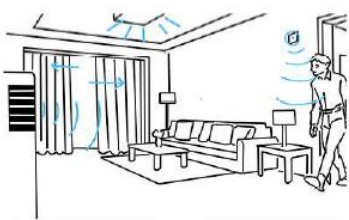
S3 series 24 GHz



Lightweight and Easy to use

1T1R

- Intelligent Space Management
- Human Presence Detection
- Range Measurement
- Gesture Recognition



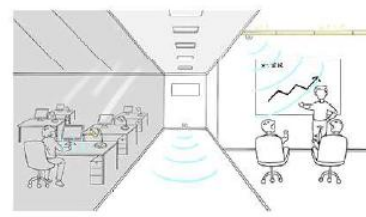
S5 series 24 GHz



Flexible and practical

1TnR

- Positioning and Tracking
- Body sensing
- Space division
- High-accuracy, wide coverage



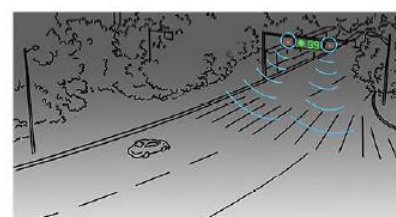
S7 series 24 GHz



Extreme performance

nTnR

- Long-range detection
- Multi-target tracking
- 4D imaging
- Large-scale space management



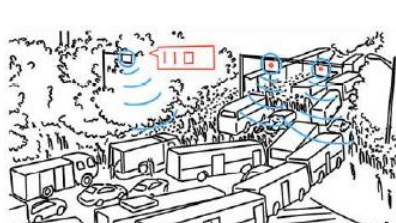
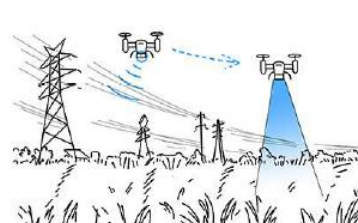
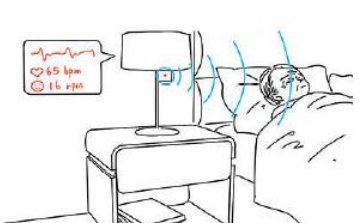
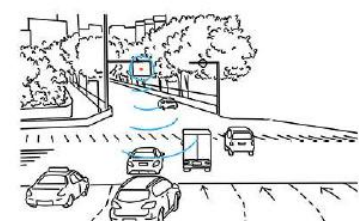
S7 series 60GHz



Ultra-high precision

nTnR

- Precise Space Management
- Gesture Recognition
- Fall Detection



IC Series & Multiple Application

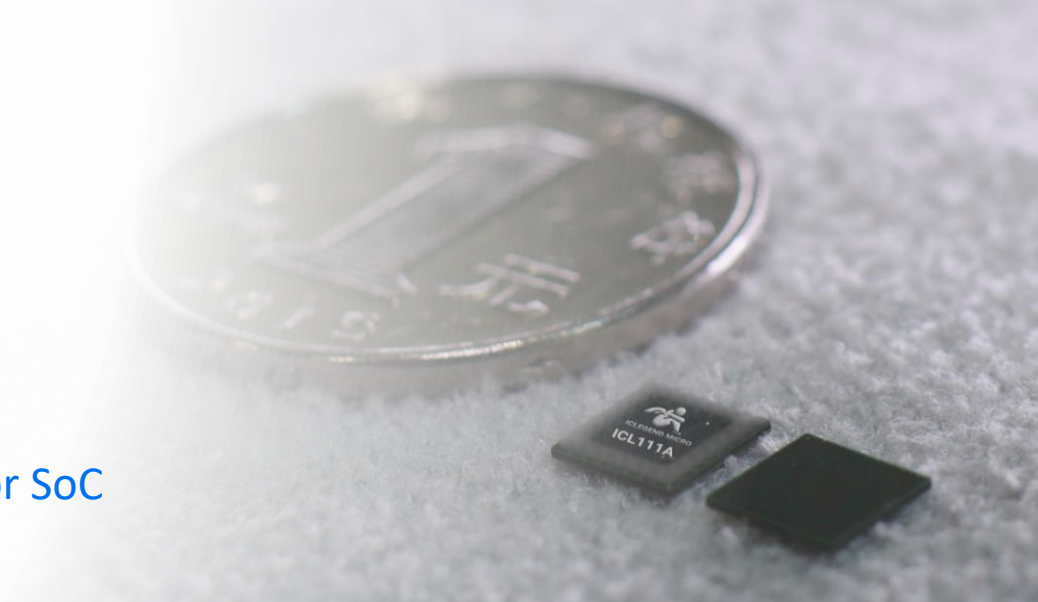
Sensor SoC series | Selection Table

Category	Parameter Indicator		ICL111A	ICL1112	ICL1122	S5KM312CL
Chip Architecture	Transceiver channels		1T1R AiP 	1T1R 	1T2R 	
	AiP Antenna		Support	/		
	Low Power Mode		Support 55 μA @0.3% duty cycle	Support 70 uA @0.3% duty cycle	/	
	Cascading Extension includes RF and synchronization signals		No	Support		
Receiver	Noise figure		10 dB (E.I.N.F)	10 dB	10.5 dB	
	Power control range		1~9 dBm (E.I.R.P.)	0~12 dBm	9~12dBm	
	High precision power control		1dB	MIN. 0.25dB	MIN. 1dB	
	Transmission power detection			Support	/	
Frequency Synthesizer	Frequency modulation bandwidth			24~25 GHz	23~27 GHz	
	Phase noise includes fractional division			-97 dBc/Hz	-91dBc/Hz	
	rms frequency modulation error 250MHz @24GHz FCC/CE			<0.045%	<0.5%	
	Zero-padding super resolution			Support	/	
DSP/ADC	Maximum 1D/2D FFT points			256/1024		
	On-chip target detection mechanism			CFAR	2D FFT peak value	
	16-bit ADC sampling rate			312.5K~2.5MHz programmable	2.5MHz	
Data Interface	SPI interface type		Slave/Master		Slave	
	SPI transmission rate		2 x 25 Mbps		2 x 16.67 Mbps	
Chip Appearance	Package type and size		FCCSP 5.5 x 5.5 mm	QFN32 4 mm x 4 mm		



ICL111A 1T1R

24GHz 1T1R mmWave AIP Sensor SoC



The ICL111A stands as an unique advantageous 24 GHz mmWave AIP sensor SoC with patent protected AIP antenna design and μ A-level ultra-low power consumption. This chip presents a fully integrated mmWave sensing solution, consisting of mmWave antenna, full transceiver and signal processing system. ICL111A requires fewer external peripherals, brings much smaller size of sensor modules, provides more convenience for design and production, has better environmental adaptability.

Key Parameters	ICL111A
Channel	1T1R
Typical Operation Frequency	24 - 24.25 GHz
Modulation Bandwidth	250 MHz
Max TX E.I.R.P effective isotropic radiated power	9 dBm
Beam width	90° @-3 dB 120° @-6 dB
FMCW Ramp Rate	Max. 20 MHz/ μ s
Frequency Error	0.045% @250 MHz FCC/CE compliant
E.I.N.F. effective isotropic noise figure	10 dB
PLL Phase Noise	-97 dBc @1 MHz
ADC	2.5 MHz/16 bit
DSP	Super-Resolution/ Filter/CFAR Detection etc.
Interface	I2C/SPI/UART
Operating Voltage	3.0 - 3.6 V
Average Current	55 μ A @0.3% duty cycle
Power control precision	(Minimum) 0.5 dB
High-precision TX Power Control/Detection	Support

Package 5.5 x 5.5 mm, FCCSP

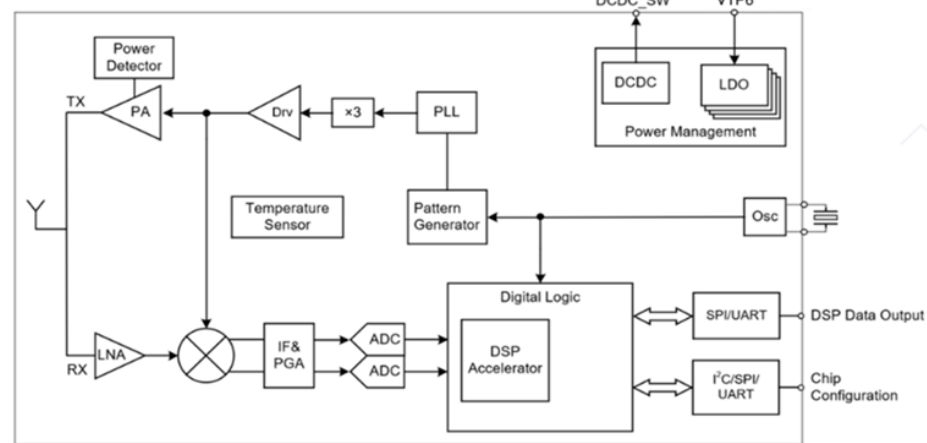
Features

Smaller sensor module size: the sensor module can be as narrow as 6mm, enabling integration into various compact spaces.

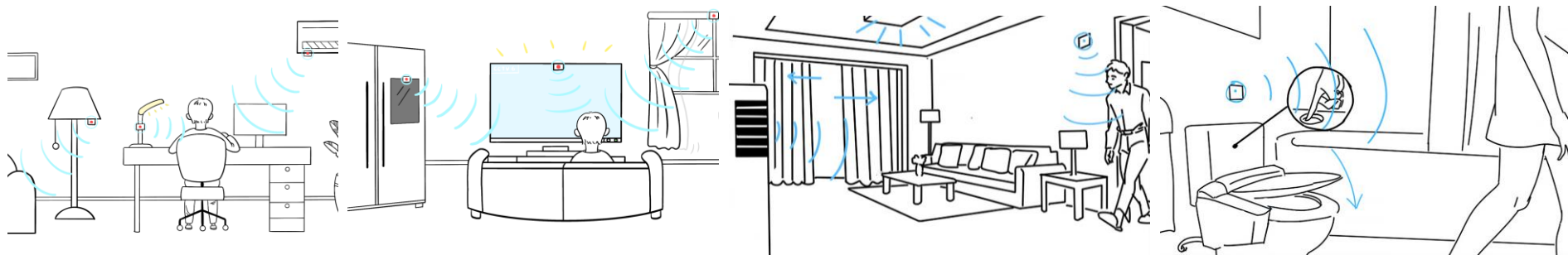
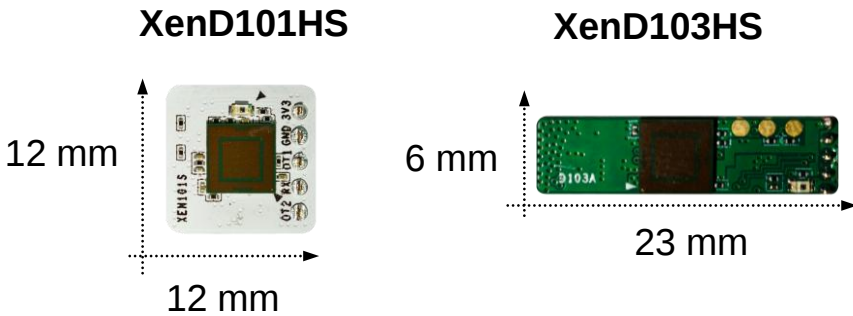
Convenient for design and production: no antenna development or high frequency board processing is required, which significantly shortens time to market.

Good for mass production: no mass production experience of mmWave modules is required, which enables the rapid mass production.

Supper low power consumption: capable of μ A-level battery-powered operation



ICL111A Block Diagram



Smart Application Screen wakeup Space management Human machine interaction

ICL1112

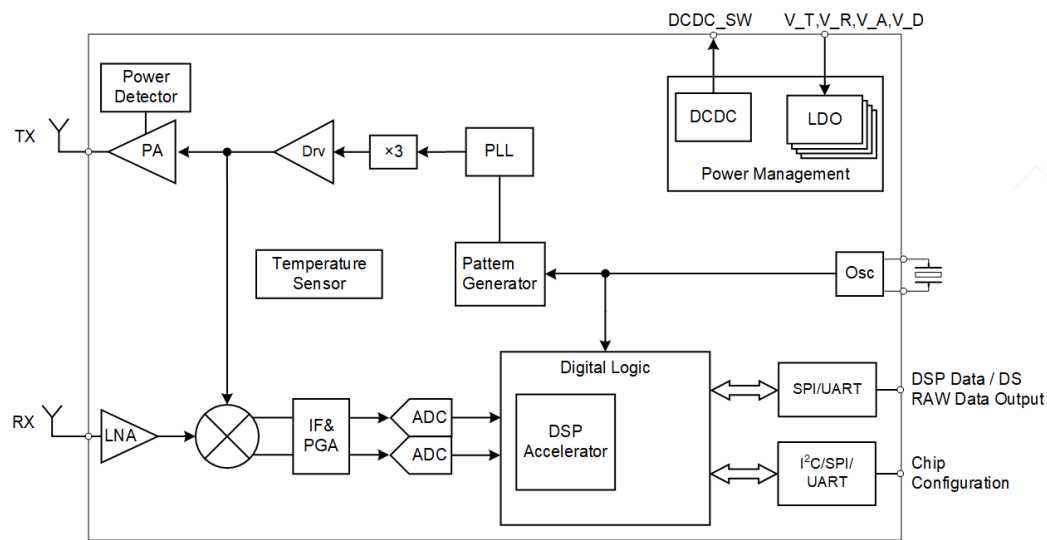
1T1R

24GHz 1T1R mmWave Sensor SoC

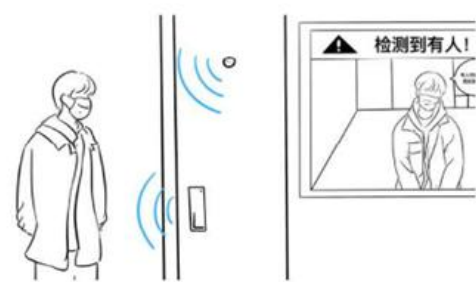
The ICL1112 stands as an industry-leading μ A-level 24 GHz mmWave sensor SoC, boasting an impressive combination of ultra-low power consumption (a mere 55 μ A in a typical working scenario) and remarkable long-range detection capability (extending beyond 150 meters). This chip presents a fully integrated mmWave sensing solution, with all transceiver and signal processing paths consolidated onto a single, robust CMOS chip. With fewer external peripherals and enhanced user-friendliness, it ushers in a new era of convenience. The latest enhancements not only cater to battery-powered applications but also empower extended-range monitoring in consumer scenarios. This innovative solution offers an ideal fit for a wide spectrum of sensor applications, facilitating the detection of human movement and even life presence. The ICL1112 is set to redefine sensor technology.

Key Parameters	ICL1112
RF Channel	1T1R
Operating Frequency Range	24 ~ 25 GHz
Max. TX Output Power	12 dBm
FMCW Ramp Rate	Max. 20 MHz/ μ s
Frequency Modulation Error	0.045% @250 MHz, FCC/CE compliant
RX Noise Figure	10 dB
PLL Phase Noise	-97 dBc @1 MHz
ADC	2.5 MHz/16 bit
DSP	Super-Resolution/Filter/CFAR Detection etc.
CFAR	Support
Interface	I2C/SPI/UART
Supply Voltage	3.0 ~ 3.6 V
Average Current Consumption	55 μ A @0.3% duty cycle
High-precision TX Power Control/Detection	Support
Temperature	QFN32/4 mm x 4 mm

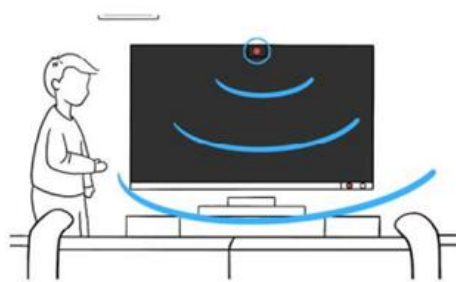
- Features
- Single-chip SoC solution, with integration of 1 Tx, 1 Rx, ADC, PLL, DSP, PMIC. Powerful on-chip algorithms such as super-resolution, filtering and CFAR object detection for real-time detection of target's distance and velocity.
- Capable of μ A-level battery-powered operation with the integration of power management and multiple low-power mode and suitable for ultra-low power consumption AIoT applications.
- Extremely low-frequency modulation error, large dynamic range and excellent RF performance. Capable of high precision and wide range detection, suitable for human presence detection.



ICL1112 SoC block diagram



Low Energy Smart Homes
Devices and Smart Lock



Human Presence Sensor
Smart Appliances



Distance and Velocity Detection
Radar for Two-wheelers

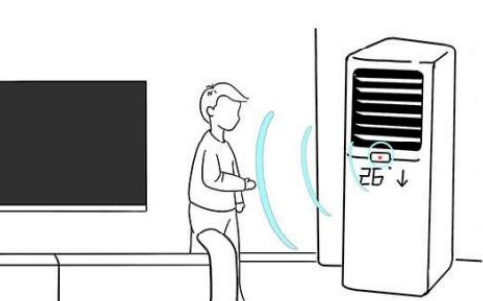
ICL1122 1T2R

24GHz 1T2R mmWave Sensor SoC

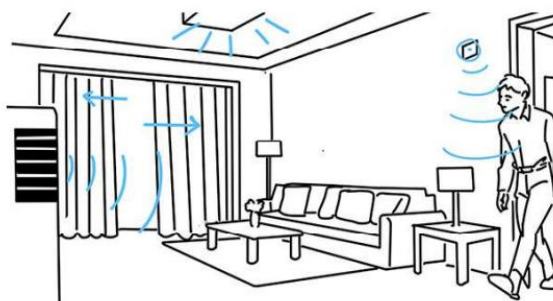


The ICL1122 represents a cutting-edge μ A-level 24 GHz mmWave sensor SoC, ushering in the next generation of sensor technology. This remarkable SoC boasts several outstanding features, including ultra-low power consumption (typically operating at a mere 70 μ A), exceptional positioning and detection capabilities across extended ranges and vast areas. The SoC seamlessly integrates the full functionality of a robust sensor into a single CMOS chip, encompassing everything from the mmWave transceiver to baseband signal processing. Moreover, its limitless cascading functionality allows for the unlimited expansion of sensing arrays, with other ICL1122s providing support. With fewer external peripherals and enhanced user-friendliness, this chip heralds a new era of convenience. These latest enhancements cater not only to battery-powered applications but also empower extended-area monitoring and positioning in various consumer scenarios. This innovative solution is ideally suited for a wide range of sensor applications, including multiple indoor object tracking and traffic vehicle pedestrian monitoring.

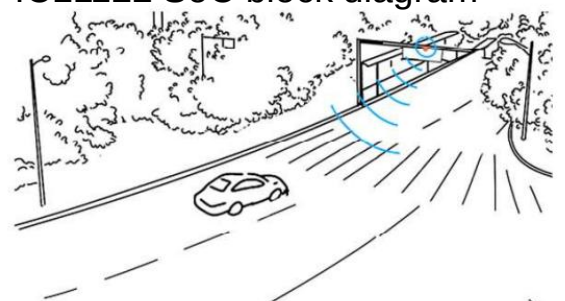
Key Parameters	ICL1122
RF Channel	1T2R
Operating Frequency Range	24 ~ 25 GHz
Max. TX Output Power	12 dBm
FMCW Ramp Rate	Max. 20 MHz/ μ s
Frequency Modulation Error	0.045% @250 MHz, FCC/CE compliant
RX Noise Figure	10 dB
PLL Phase Noise	-97 dBc @1 MHz
ADC	2.5 MHz/16 bit
DSP	Super-Resolution/Filter/ CFAR Detection etc.
CFAR	Support
Interface	I2C/SPI/UART
Supply Voltage	3.0 ~ 3.6 V
Average Current Consumption	70 μ A @0.3% duty cycle
High-precision TX Power Control/Detection	Support
Temperature	QFN32/4 mm x 4 mm



Multi-persons Tracking Detection
Smart Appliances



Human Position Perception
Smart Home



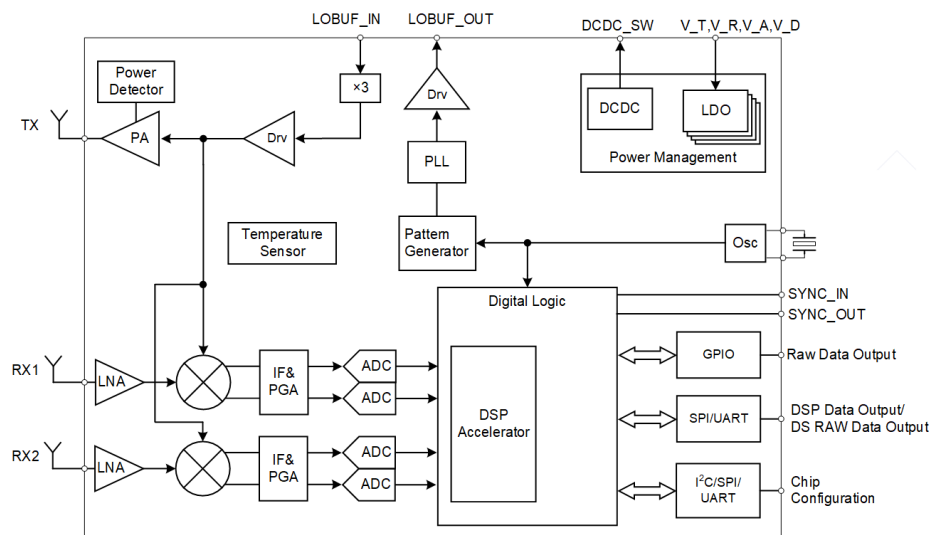
Long-range Distance and Velocity Detection
Intelligent Transportation

Features

Single chip SoC solution, with integration of 1 Tx, 2 Rx, ADC, PLL, DSP, PMIC. Powerful on-chip algorithms such as super-resolution, filtering and CFAR object detection for real-time detection of multiple target distances, velocities, and angles.

Extremely low frequency modulation error, large dynamic range, capable of detecting both far and near targets. Excellent RF performance, combined with multiple-chip cascading capability, enables high-precision multiple target localization over 150 meters.

Capable of μ A-level battery-powered operation with the integration of power management and multiple low-power mode.



ICL1122 SoC block diagram

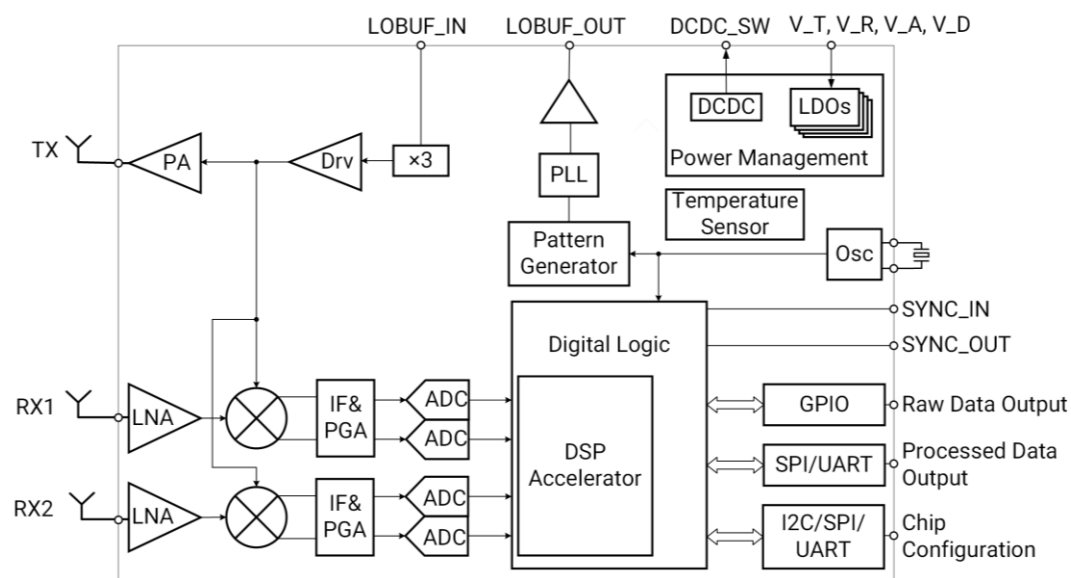
S5KM312CL 1T2R

S5 series | mmWave Sensor SoC

S5KM312CL is an 1T2R mmWave sensor SoC features high-performance mmWave DSP, ultra-high detection precision satisfying requirements of various AIoT applications, and over 4 GHz sweeping bandwidth providing centimeter level high resolution. S5KM312CL supports cascading applications, presenting supreme performance in compact size.

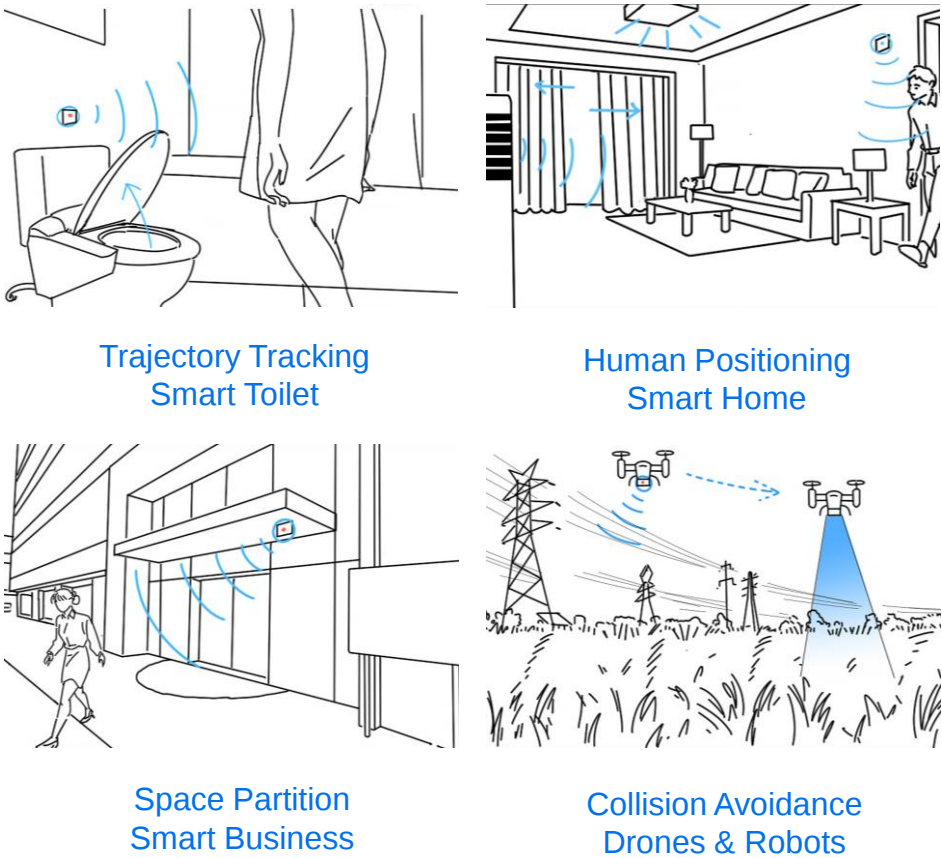
Key Parameters	S5KM312CL
Channels	1T2R
Frequency	22.5 ~ 27.5 GHz
Bandwidth	4 GHz
Cascade	Support
TX Max. power* (including ADC)	12 dBm
RX noise figure (RF/BB/ADC)	10.5 dB
Adjustable receive gain	15~31 dB
PLL phase noise @ 1mhz offset	-97 dBc @ 1 MHz
ADC Sample Rate	2.5 MSPS
ADC Precision	16 bits
Interface	IIC/SPI/UART
Operating voltage	3.0 ~ 3.6 V
Operating current	78 mA
Package	4 mm x 4 mm QFN
Temperature	-40°C~85°C

*The power consumption is measured @ 50% chirp duty cycle with all circuits on.



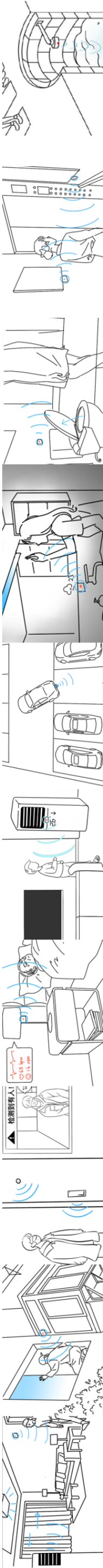
S5KM312CL SoC block diagram

- Features
- Two integrated Rx channels for 2D positioning
 - Wide 4 GHz FMCW bandwidth for high resolution applications
 - Capable of multiple-chip cascading to expand the number of channels
 - Compact CMOS design with PLL, TRX and ADC integrated on chip
 - On-chip DSP accelerator, minimizing off-chip processing resource
 - Built-in power management module, supporting 3.3 V single power supply
 - Peripheral interfaces including I2C, SPI, UART, etc.



EZ-XENSOR Product series | Selection Table

Category	Product ID	Full Name	Field of View	Hardware Size	Operating Voltage	Average Current	Applications
Human Presence Detection XenD101 Series	XenD101H	Stationary Human Presence Detection	120 ° x 120 °	20 x 20 mm	3.3 V	50 mA	Smart Lighting, Smart Appliances, Smart Home, Smart Hotel
	XenD101HW	Wide-Area Human Presence Detection					
	XenD101HS	AiP Human Presence Detection		12 x 12 mm		42 mA	
Human Presence Detection XenD103 Series	XenD103H	Narrow-Edge Human Presence Detection	120 ° x 120 °	35 x 7 mm	3.3 V	50 mA	Smart Lighting, Smart Appliances, Smart Home, Smart Hotel
	XenD103HW	Narrow-Edge Wide-Area Human Presence Detection					
	XenD103HS	Narrow-Edge Ultra-Compact AiP Human Presence Detection		23 x 6 mm		42 mA	
Ultra-Low Energy Human Presence Detection XenD Series	XenD106L	Battery-Operated Ultra-Low Power Human Presence Detection	60 ° x 60 °	20 x 20 mm	3.3 V	56 µA	Human Presence Sensor, Smart Appliances, Doorbell & Door Lock Aalarms
Gesture Recognition Control XenG Series	XenG101G	Hand Wave Gesture Recognition (Counting)	75 ° x 75 °	20 x 20 mm	3.3 V	100 mA	Smart TV Screens, Smart Appliances, Smart Lighting, Smart Kitchen and Bath
	XenG202G	Hand Wave Gesture Recognition (2D)	80 ° x 80 °	30 x 7 mm		78 mA	
Multi-Human Tracking XenP Series	XenP202TE Vertical mount	High Precision Multi-Human Tracking	140 ° x 60 °	15 x 40 mm	5 V	50 mA	Smart Appliances, Smart bathrooms, Health and Wellness, Smart Lighting
	XenP202TH Horizontal mount		140 ° x 70 °	34 x 15 mm			
	XenP202TS Horizontal mount			30 x 7 mm			
	XenP202TV Vertical mount		120 ° x 100 °	15 x 25 mm	3.3 V	75 mA	
Multi-Human Tracking XenP Series	XenP112TT	Wide-Area High Precision Multi-Human Tracking	120 ° x 120 °	23 x 50 mm	5 V	200 mA @10Hz	Smart Appliances, Smart bathrooms, Health and Wellness, Smart Lighting
Liquid Level and Position Detection XenP Series	XenP108Y	Miniaturized High-precision Liquid Level and Position Detection	24 ° x 24 °	36 x 44 mm	3.3 V	6 mA @1Hz 15 mA @6Hz	Industrial Application, Intelligent Cities, Smart Transportation



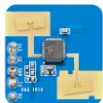
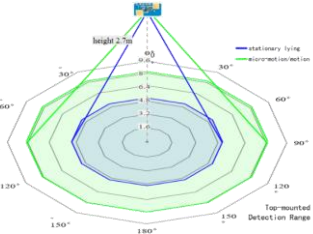
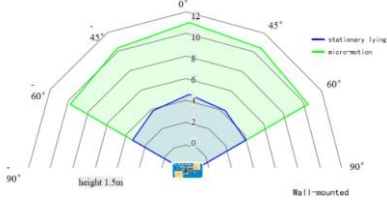
XenD101 Series

Human Presence Detection

mmWave Sensor

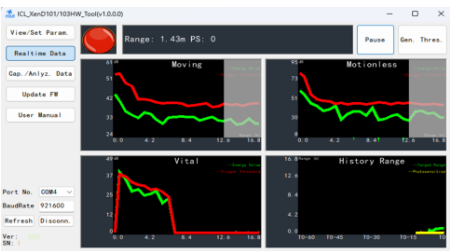


- Long-Range Sensing11m motion/micro-motion
6m stationary detection
- Easy IntegrationOn-chip antenna,
fast design & production
- Enhanced DurabilityHighly resistant
Wide temp range
- Ultra-Compact Size12 x 12 mm | 20 x 20 mm
Ultra-small form factors
- Cost-EffectiveEfficient algorithms
cost-effective performance
- Mass Production ReadyUser-friendly tools,
fast mass production
- Precise DetectionStationary/lying/sleeping
human presence
- Easy DeploymentAuto parameters, fast
scenario adaptation
- Scenario OptimizationIntegrated features
ready to use

Specifications	XenD101HW 	XenD101H 	XenD101HS 
Top-mounted Projection radius @ height 2.7 m 	Stationary Lying 10 m 	Stationary Lying 8 m 	Stationary Lying 7 m 
	Micro-motion/Motion 16 m 	Micro-motion/Motion 12 m 	Micro-motion/Motion 9 m 
Wall-mounted Detection Range @ height 1.5 m 	Stationary Lying 6 m 	Stationary Lying 3.5 m 	Stationary Lying 4 m 
	Micro-motion/Motion 11.5 m 	Micro-motion/Motion 7 m 	Micro-motion/Motion 7.5 m 
Hardware Size	20 mm x 20 mm		12 mm x 12 mm
Sensor SoC	S1 Series 1T1R		ICL111A (1T1R AiP)
Operating Current	50 mA		42 mA
Operating Voltage	3.3 V		
Detection Angle	±60°		
Operating Frequency	24~24.25 GHz, SRRC/FCC/CE compliant		
IAP Function	Supports serial port upgrades		
Interface	UART, GPIO		

Note: The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

The XenD101 series features a 1T1R SoC (optional AiP SoC). Adopting FMCW technology, it integrates human presence sensing and ranging functions, reliably detecting stationary, reclining and sleeping occupants. Its wide-beam antenna design delivers extensive coverage, ideal for large spaces such as living rooms, meeting rooms and public areas. Compatible with ceiling and wall mounting, it supports independent sensitivity adjustment per zone and automatic parameter generation. Suited for Smart Lighting, Home Appliances, Security and Energy-saving applications, it achieves accurate detection of stationary human presence.



Human presence detection demonstration tool



Smart Lighting

Smart Appliances

Smart Home

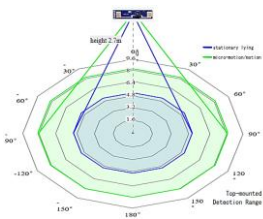
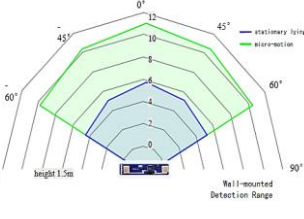
Smart Hotel

XenD103 Series

Narrow-Edge Human Presence Detection
mmWave Sensor

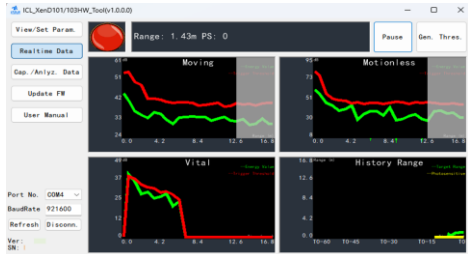


- Long-Range Sensing11m motion/micro-motion
6m stationary detection
- Easy IntegrationOn-chip antenna,
fast design & production
- Enhanced DurabilityHighly resistant
Wide temp range
- Ultra-Compact Size35 x 7 mm | 23 x 6 mm
Ultra-narrow bezel
- Cost-EffectiveEfficient algorithms
cost-effective performance
- Mass Production ReadyUser-friendly tools,
fast mass production
- Precise DetectionStationary/lying/sleeping
human presence
- Easy DeploymentAuto parameters, fast
scenario adaptation
- Scenario OptimizationIntegrated features
ready to use

Specifications Top-mounted Projection radius @ height 2.7 m  Wall-mounted Detection Range @ height 1.5 m 	XenD103HW Stationary Lying10 m Micro-motion/Motion16 m	XenD103H103Hb Stationary Lying7 m Micro-motion/Motion10 m	XenD103HS Stationary Lying4.5 m Micro-motion/Motion6.8 m
	Stationary Lying6 m Micro-motion/Motion11.5 m	Stationary Lying4.5 m Micro-motion/Motion8.5 m	Micro-motion/Motion6.8 m
	Hardware Size35 mm x 7 mm	23 mm x 6 mm	
	Sensor SoCS1 Series 1T1R	ICL111A (1T1R AiP)	
	Operating Current50 mA	42 mA	
	Operating Voltage3.3 V		
	Detection Angle±60°		
	Operating Frequency24~24.25 GHz, SRRC/FCC/CE compliant		
	IAP FunctionSupports serial port upgrades		
	InterfaceUART, GPIO		

Note: The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

The XenD103 series features a 1T1R SoC with optional AiP packaging. Adopting FMCW technology, it integrates human presence sensing and ranging functions, reliably detecting stationary, reclining and sleeping occupants. The hardware is engineered for easy embedding within the frames of smart panels, light fixtures and similar devices. Compatible with ceiling and wall mounting, it supports independent sensitivity adjustment per zone and automatic parameter generation. Seamlessly applicable to hospitality, residential and office environments, it achieves accurate detection of stationary human presence.



Human presence detection demonstration tool



Smart Lighting



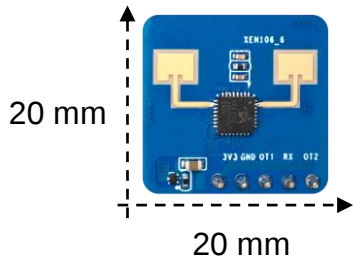
Smart Appliances



Smart Home

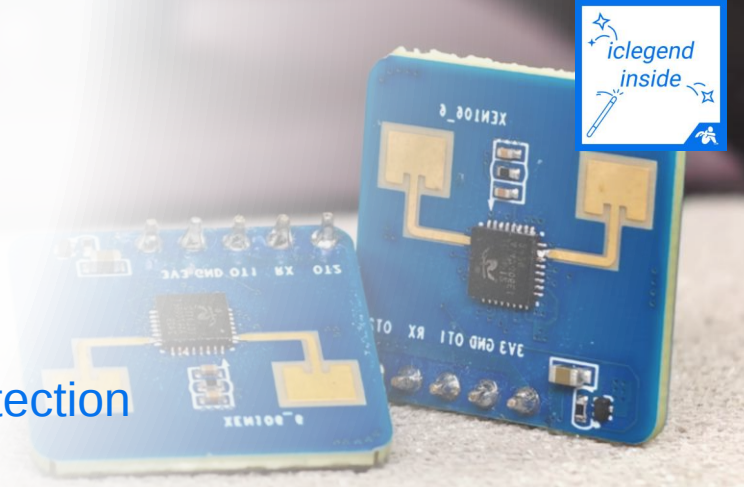


Smart Hotel



XenD106L Ultra-Low-Power Human Presence Detection

Battery-Powered Human Presence Detection mmWave Sensor



Features

Ultra-Low Power: μ A-level current for long battery life

Human Life Detection: Moving, micro-moving, stationary sitting and stationery lying human status distinguishable

Wider Coverage: Broad detection for stable sensing within the target zone

Flexible Usage: Battery-powered, compact size for easy integration

Effortless Deployment: Auto-generated parameter configuration for quick adaptation to diverse scenarios

Worry-free Manufacturing: Easy-to-use supporting resources for quick mass production

Specifications

Detection Range	0 ~ 6 m motion and micro-motion 0 ~ 4 m stationary sitting and lying detection range configurable
Operating Frequency	24 ~ 24.25 GHz, FCC/CE/SRRC compliant
Operating Voltage	3.3 V
Typical Operating Current	56 μ A
Detection Delay Time	250 ms
Sensor SoC	ICL1112 (1T1R SoC)
Hardware Size	20 mm x 20 mm
Detection Angle	60° x 60°
Interface	UART, GPIO
IAP Function	In-application programming (IAP) using UART

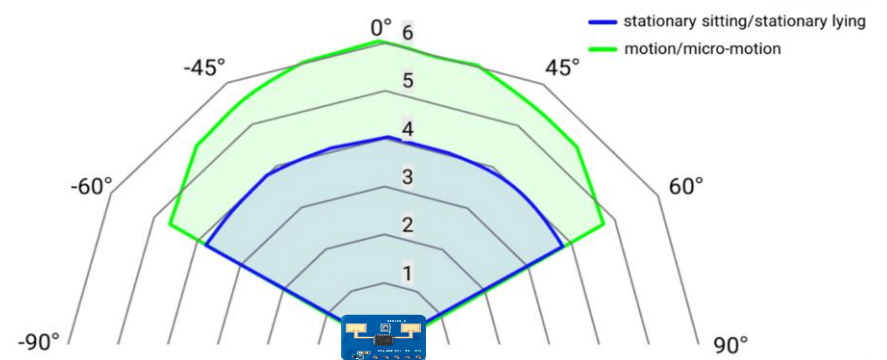
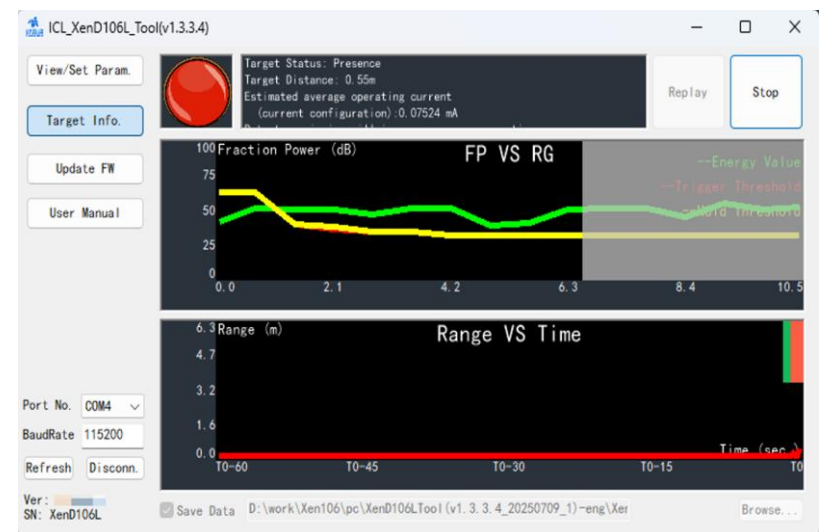


Illustration of Detection Range



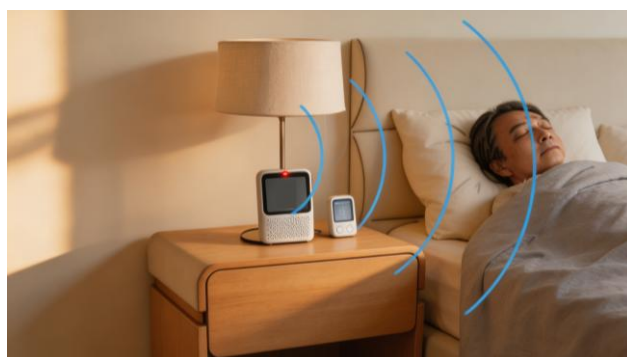
Visualization Tool for Ultra-Low Power Human Presence Detection

Note: The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

Powered by ICLEGEND MICRO mmWave sensor SoC ICL1112, together with highly accuracy human presence detection algorithm, the XenD106L provides the ability of detecting moving/micro moving or stationary sitting / stationary lying human within reconfigurable detection area and reports the real-time human target position under μ A-level operating current. The ultra-low energy operation can be powered by button batteries over years. It is suitable for standalone human presence sensor, smart small appliances, and doorbell & door lock alarm system.



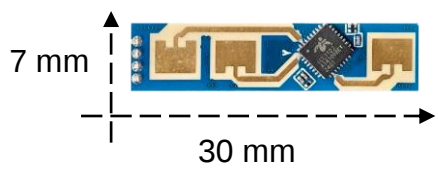
Standalone Human Presence Sensor



Smart Small Appliances



Doorbell & Door Lock Human Presence Alarm System



XenG202G Gesture Recognition Control

Hand Wave Gesture Recognition (2D)
mmWave Sensor

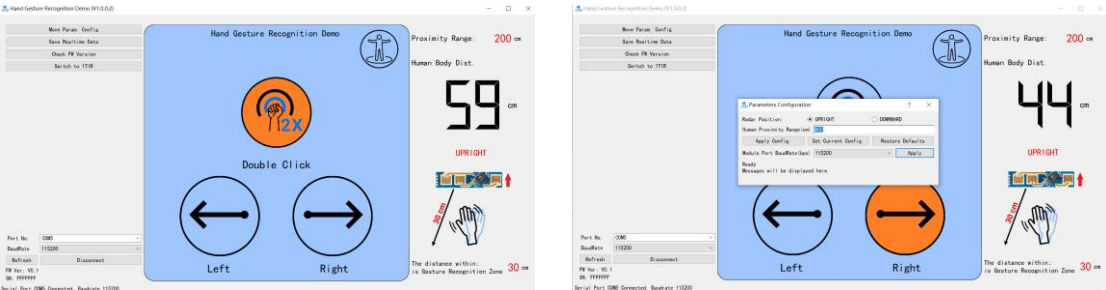


The XenG202G is a high-precision 24GHz millimeter-wave sensor reference design. It integrates gesture recognition and human proximity wake-up functions. Based on FMCW (Frequency Modulated Continuous Wave) technology and target recognition algorithms, it enables proximity wake-up of smart devices and gesture control functions such as left wave, right wave and tap. It is suitable for applications such as smart screens, smart lighting, smart home appliances, and smart kitchen and bathroom appliances.

Specifications	
Human Proximity Range	0.2 ~ 7 m
Hand Gesture Range	Waving 1 ~ 20 cm
Human Detection Accuracy	± 20 cm
Horizontal FOV (Proximity)	80 °
Azimuth FOV (Proximity)	150 °
Operating Frequency	24 ~ 24.25 GHz SRRC/FCC/CE compliant
Operating Voltage	3.3 V
Average Operating Current	78 mA
Max. Sweep Bandwidth	250 MHz
Max. EIRP	15 dBm
Refresh Cycle	50 ms

Note:The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

Features
Gesture recognition: Non-contact control, high-precision gesture recognition, capable of identifying five gestures: left wave, right wave and tap.
Convenient development: Integrated human sensing and ranging function, with multi-parameter configuration available.
Precise ranging: Human ranging accuracy ±20 cm, with adjustable sensing range.
Interference shielding: Outputs distance and speed, with user-configurable response distance and speed thresholds for secondary development.



Visualization Tool for Hand Gesture Recognition

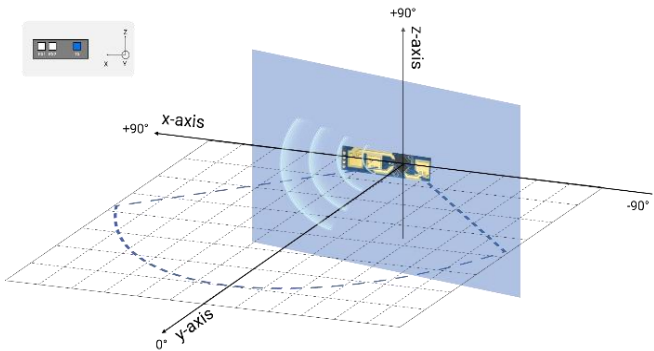


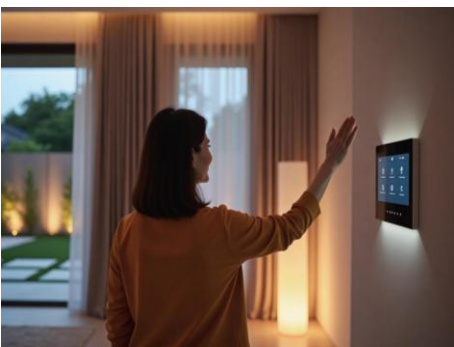
Illustration of Detection Range



Smart screens



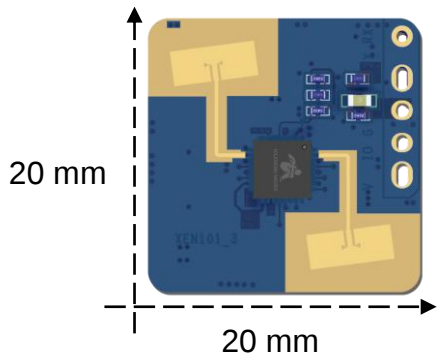
Smart home appliances



Smart Lighting



Smart kitchen and bathroom



XenG101G Gesture Recognition Control

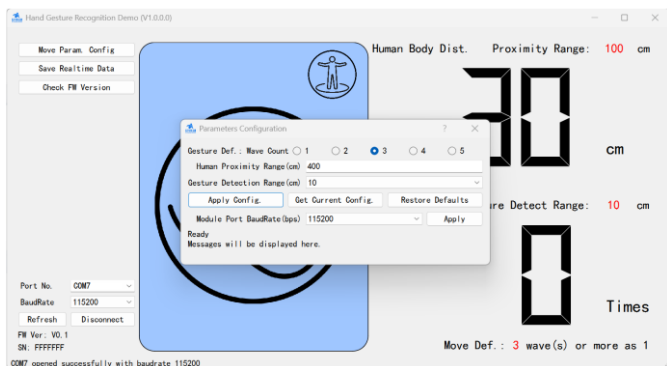
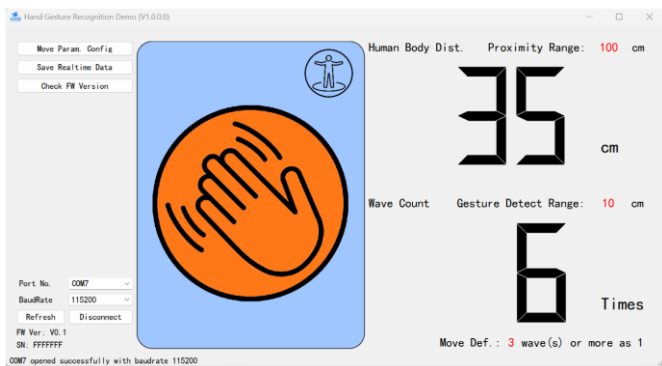
Hand Wave Gesture Recognition(Counting) mmWave Sensor

XenG101G is a high-precision 24GHz mmWave sensor reference design, integrating hand wave recognition and human proximity wake-up functionality. Based on FMCW technology and target recognition algorithms, it accurately detects hand wave gestures (1~20 cm) and measures human distance (0.2 ~ 4 m). It enables proximity-based wake-up and gesture control for smart devices, making it ideal for applications such as smart displays, smart home systems, smart appliances, and smart kitchen and bath products.

Specifications	
Human Proximity Range	0.2 ~ 4 m
Hand Gesture Range	Wave 1 ~ 20 cm
Human Detection Accuracy	± 20 cm
Horizontal FOV	150 °
Azimuth FOV	150 °
Operating Frequency	24 ~ 24.25 GHz SRRC/FCC/CE compliant
Operating Voltage	3.3 V
Average Operating Current	100 mA
Max. EIRP	11 dBm
Refresh Cycle	50 ms

Note:The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

Features
Gesture recognition: Non-contact control with high-precision hand wave detection.
Convenient Development: Integrated human sensing and distance measurement function with multi-parameter configuration.
Accurate Ranging: Human distance measurement accuracy of ±20 cm with configurable sensing range.
Interference Shielding: Precisely defined gesture recognition zone to block out interference beyond the designated area.



Visualization Tool for Hand Gesture Recognition

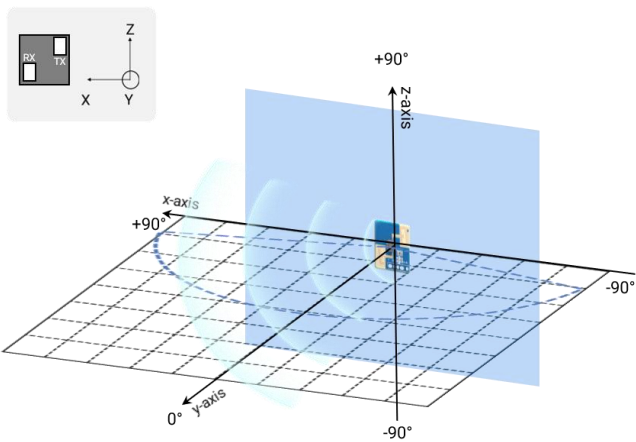


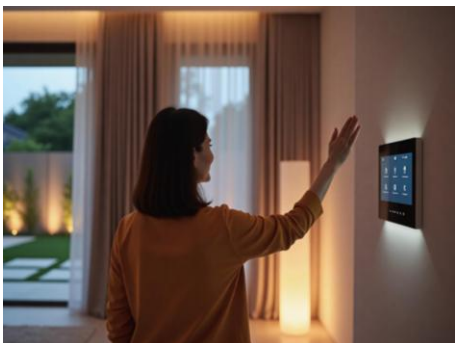
Illustration of Detection Range



Smart TV Screens



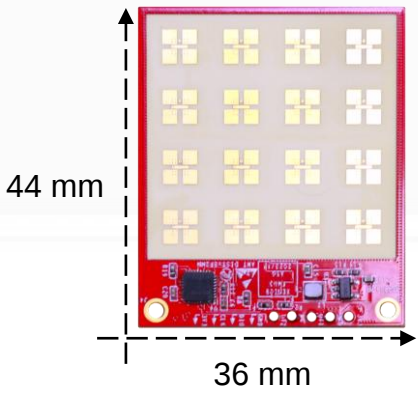
Smart Appliances



Smart Lighting



Smart Kitchen & Bath



XenP108Y Liquid Level and Position Detection

Miniaturized High-precision Liquid Level and Position Detection

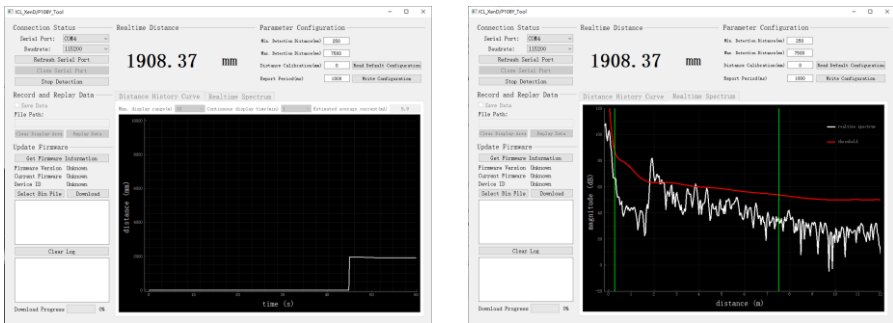


XenP108Y is a compact high-precision liquid level and position detection sensor reference design developed based on the ICL S5KM312CL SoC. The sensor utilizes miniaturized narrow-beam antennas, ultra-wideband FMCW waveforms, along with proprietary radar signal processing and an embedded high-precision liquid level and position detection algorithm. This combination enables millimeter-level accurate detection of target distances within a specified area, with real-time reporting of results. With this reference design, users can swiftly develop compact and high-precision liquid level detection sensing products.

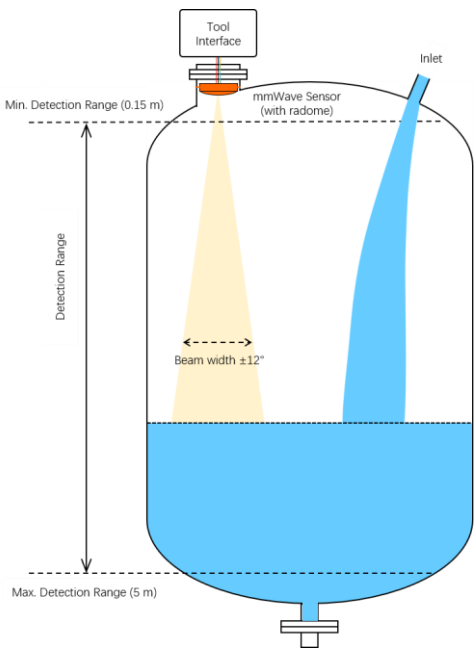
Specifications	
Detection range	0.15 ~ 10 m
Accuracy	0.5 mm
Precision	0.03 ~ 0.15 mm
Operating Frequency	23 ~ 27 GHz
Operating Voltage	3.0 ~ 3.6 V
Average Current	6 mA (report period: 1 s) 15 mA (report period: 160 ms) *refer to section 9.5 of UM10036P.
Sensor SoC	S5KM312CL
Hardware Size	36 mm × 44 mm
Beam Width	±12° (-6 dB, round trip)
Interface	UART
IAP Function	In-application programming (IAP) using UART

Note:The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.

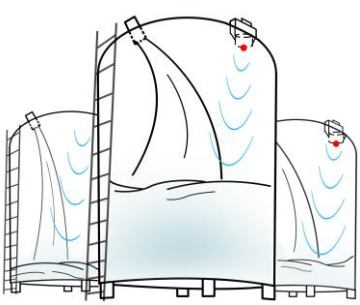
Features
Wide Range, High Precision: The detection precision within the range of 0.15 to 10 meters is 0.03 ~ 0.15 millimeters.
Energy-efficient and Easy to Adapt: Low operating current reduces power consumption and heat generation.
Compact and Easy to Deploy: Small size for convenient installation.
Flexible and Easy to Develop: Real-time reporting of results with configurable parameter settings.



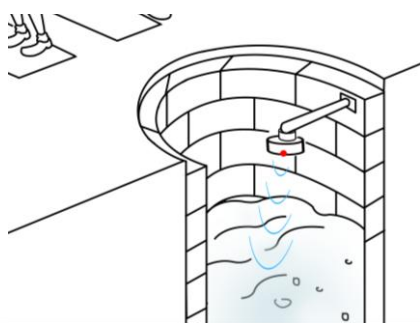
Liquid level and position detection demonstration tool
Real-time display of distance history curves and detection waveforms



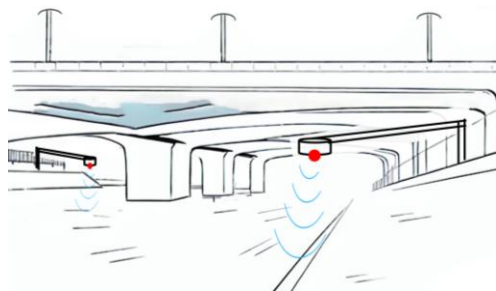
Recommended Installation Illustration



Industrial Application Tank Level Detection



Intelligent Cities Well Cellar Level Detection



Hydrological Monitoring Bridge Tunnel Water Level Detection

XenP202T series

Multi-Person Trajectory Detection

High-Precision Multi-Person Trajectory mmWave Sensor

Featuring the ICL1122 mmWave sensor SoC and movement tracking algorithms, it enables real-time detection of multiple human positions, distinguishes individual movements, and predicts motion trends. With a detection range of up to 10 meters and 55 mA low power consumption, it supports accurate multi-person separation and consistent movement tracking updates. Equipped with AI enhanced human sensing, it identifies motion, micromovements, and stationary presence. Applications include Smart Appliances, Smart Bathrooms, Health & Wellness, and Smart Lighting.

Multitarget Detection: Realtime detection of multiple human targets

Stable Tracking: High sensitivity trajectory information of human motion/micromotion

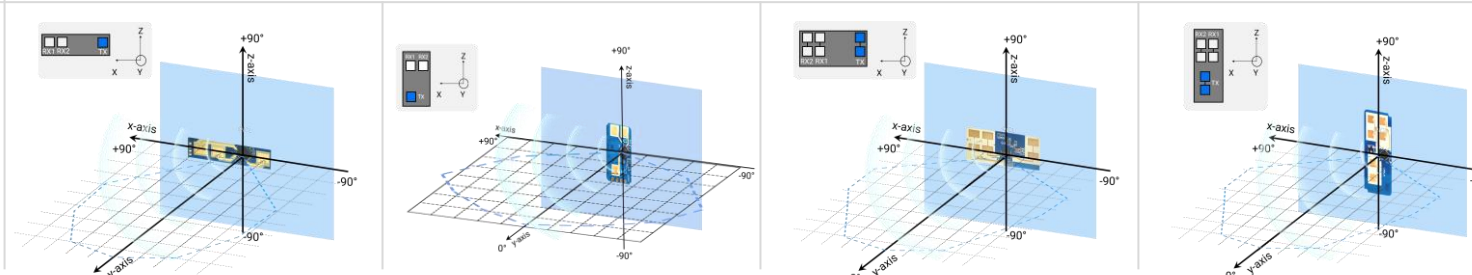
Low Power Consumption: Smart power management for prolonged, efficient operation

Accurate Positioning: Range accuracy of 15 cm, angle accuracy of 10°

Minimalist Size: Compatible with various product designs

Compact Design: Flexible horizontal and vertical mounting for enhanced installation convenience

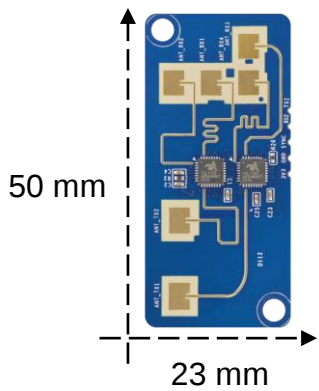


Specifications	XenP202TS v3		XenP202TV v3	XenP202TH v3		XenP202TE v3
Development Platform	ARM Cortex M4					
Operating Voltage	3.3 V			5 V		
Operating Current	75 mA			50 mA		
Installation Methods	Horizontally	Vertically		Horizontally	Vertically	
Detection Angle (azimuth)	120° x 100°			140° x 70°	140° x 60°	
Hardware Size	30 x 7 mm	15 x 25 mm		34 x 15 mm	15 x 40 mm	
Operating Frequency	24 ~ 24.25 GHz, SRRC/FCC/CE compliant					
Sensor SoC	ICL1122 (1T2R)					
Tracked Targets	Up to 3 persons					
Detection Range	Up to 10 meters					
Response Time	0.18 seconds					
Detection Capability	human motion/micromotion/stationary states					
IAP Function	Supports serial port upgrades					
Interface	UART, TTL					
Data Refresh Rate	16 Hz (maximum)					
Detection Range						

Note:The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.



Smart Appliances Smart Bathrooms Health & Wellness Smart Lighting Visualization tool for multitarget detection



XenP112TT Multi-Person Trajectory Detection

Wide-Area High-Precision Multi-Person Trajectory

mmWave Sensor



Featuring two ICL1122 mmWave sensor SoCs and movement tracking algorithms, it enables real-time detection of multiple human positions, distinguishes individual movements, and predicts motion trends. In ceiling-mounted scenarios, it achieves a detection radius of 4 meters for motion and 3 meters for micro-motion. It supports low power consumption and accurate multi-person separation, it delivers faster response times and smoother target tracking, effortlessly identifying both motion and micro-motion states. Applications include Smart Appliances, Smart Bathrooms, Health & Wellness, and Smart Lighting.

Multi target Detection: Real-time detection of up to 5 human targets

Stable Tracking: High sensitivity trajectory information of human motion/micromotion/stationary sitting.

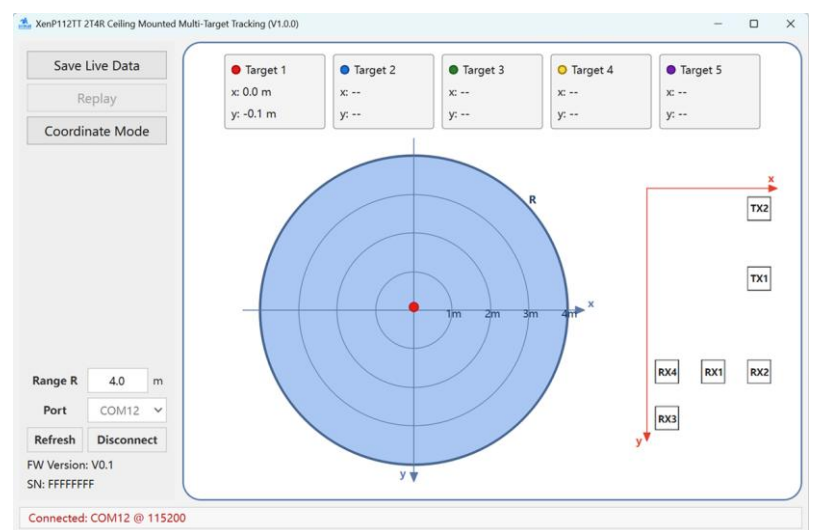
Accurate Positioning: Range accuracy of 15 cm, angle accuracy of 5°

Compact & Simplified: Small footprint, easily adaptable to various product aesthetics.

Compact Design: Flexible mounting for enhanced installation convenience

Specifications	XenP112TT (2T4R)
Development Platform	ARM Cortex M4
Operating Voltage	5 V
Operating Current	200 mA
Installation Methods	Ceiling Mounting
Hardware Size	23 mm x 50 mm
Operating Frequency	24 ~ 24.25 GHz, SRRC/FCC/CE compliant
Sensor SoC	ICL1122
Tracked Targets	Up to 5 persons
Top-mounted Projection diameter @ Height 3 m	Human Motion 8 m Micro-motion 6 m
Response Time	0.5 sec
Detection Capability	Human Motion / Micro-motion
Interface	UART, TTL
Data Refresh Rate	10 Hz (maximum)

Note: The detection range is affected by the environment and the user's RCS, so the actual performance is subject to the test results in the application environment.



Visualization tool for multitarget detection

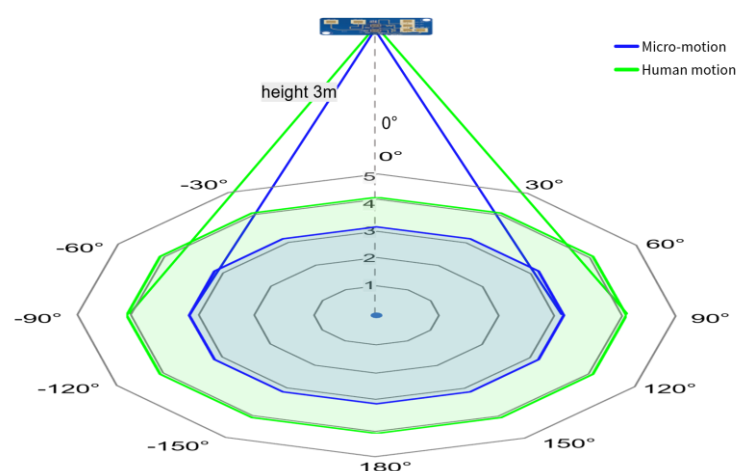
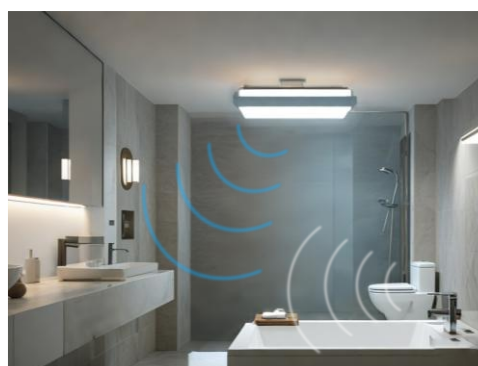


Illustration of Detection Range



Smart Appliances



Smart Bathrooms



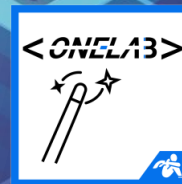
Health & Wellness



Smart Lighting

mmWave Sensor Development Tool

ONELAB Development Kit



ICL mmWave Sensor Development Tool enables real-time interaction with ICL development boards. Developers can intuitively view live data from millimeter-wave sensors and monitor target status information.

The tool supports waveform configuration, data export, and data analysis, simplifying the debugging process and helping users validate algorithms and scenario performance more efficiently.

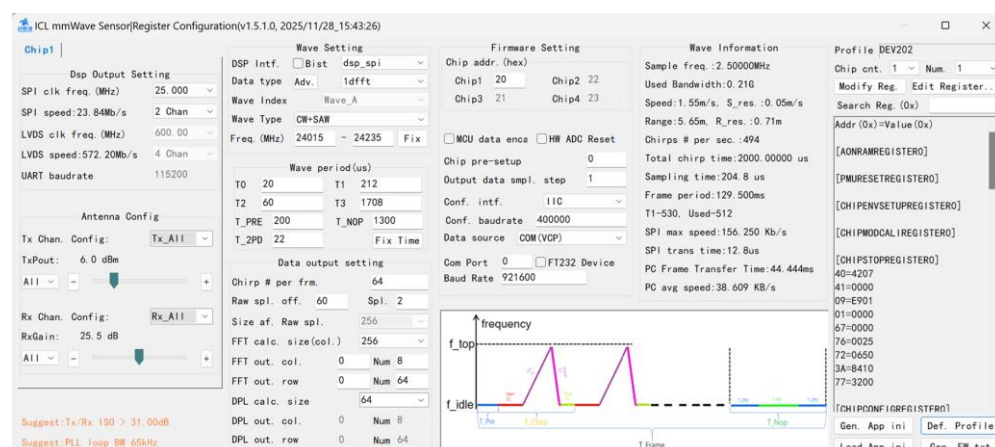
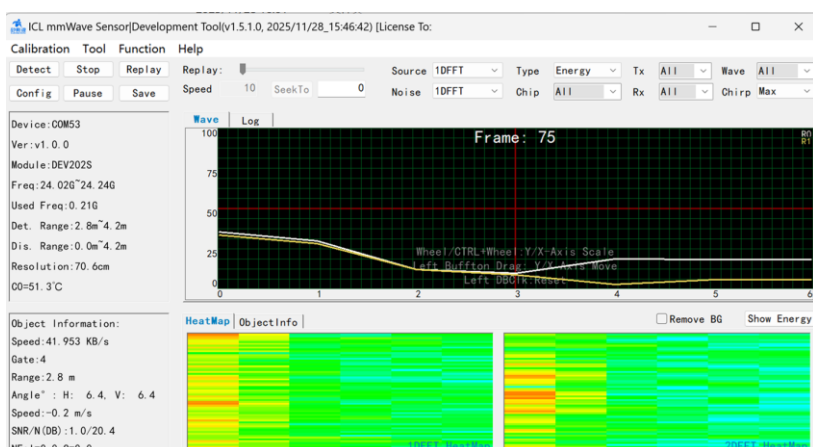
Key Features

Waveform Interaction: Effortlessly switch between multiple waveform modes and inspect details via mouse drag — intuitive and beginner-friendly.

Scenario Adaptation: Smart parameter recommendations and near-field heatmap assistance enable even non-experts to fine-tune radar configurations.

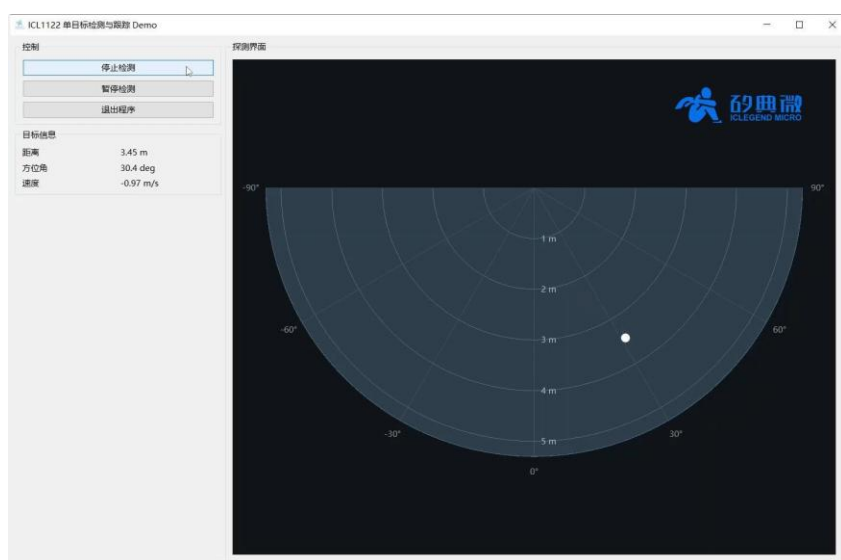
Closed-Loop Data: Combines data acquisition, processing, and diagnostics in one platform — no need to switch tools for a seamless, end-to-end development experience.

Open Source Instances: Embedded Python source code for ranging/trajectory tracking reference algorithms comes with a visual interface, enabling fast - track development.



Tool Demonstration Interface

Configuration Interface

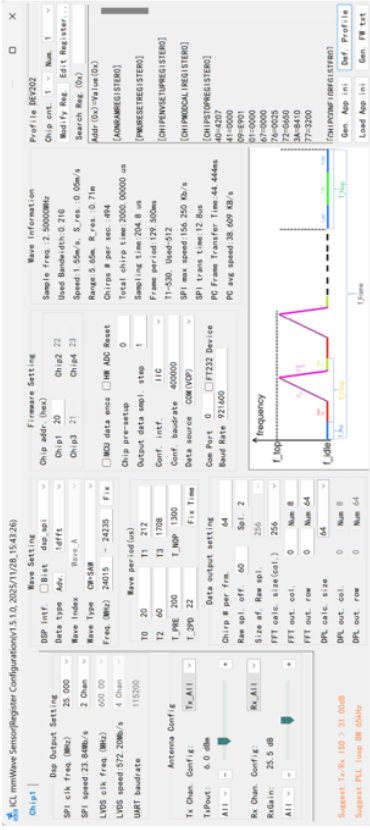


1T2R Radar Trajectory Tracking Open Source

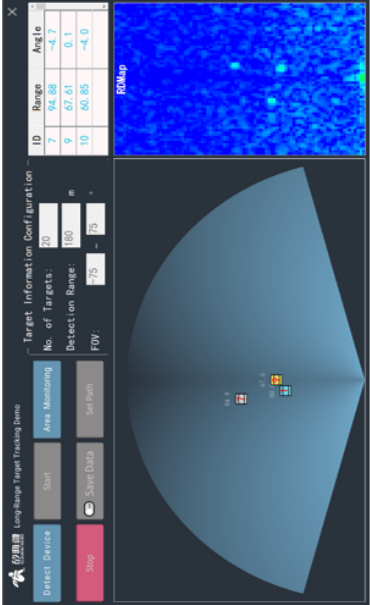
1T1R Radar Single-Target Ranging Open Source

Evaluation Board series | Optional Selection Table

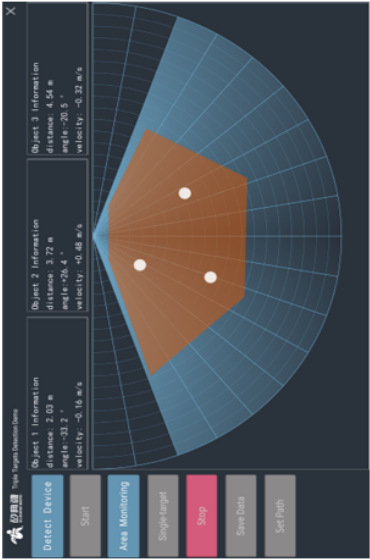
Category	EVB1122	EVBKS5-E	EVBKS5
Full Name	ICL1122 SoC evaluation board with high-gain antennas		
	ICL1122 SoC evaluation board with wide bandwidth antennas		
Sensor SoC	ICL1122 (1T2R)		
Sweeping Bandwidth	24~25 GHz		
Equivalent Isotropic Radiated Power	22 dBm(reconfigurable)		
Field of View	86° x 28°		
MCU	STM32F429 Cortex-M4		
Hardware Size	43 mm × 41 mm		
Interface	UART/Type-C USB		
Operating Voltage	5 V		
IAP Function	In-application programming(IAP) using UART		
Applications	Indoor Multi-Human Tracking Outdoor Long-Range Target Tracking		
	Human Presence Detection Indoor Multi-Human Tracking		



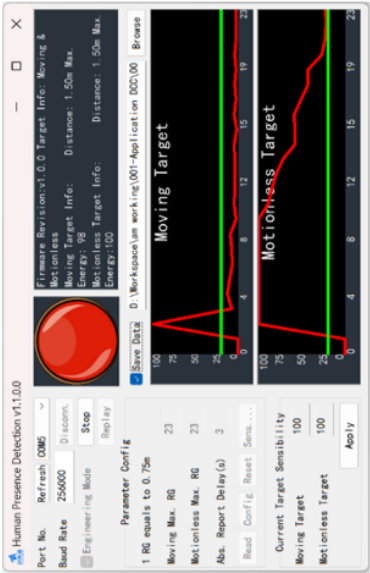
mmWave Sensor Development Tool



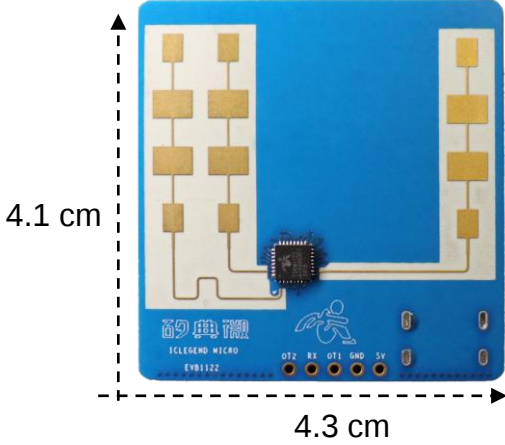
Outdoor Long-Range Target Tracking



Indoor Multi-Human Tracking Tool



Human Presence Detection Tool



EVB1122 mmWave Sensor Evaluation Board

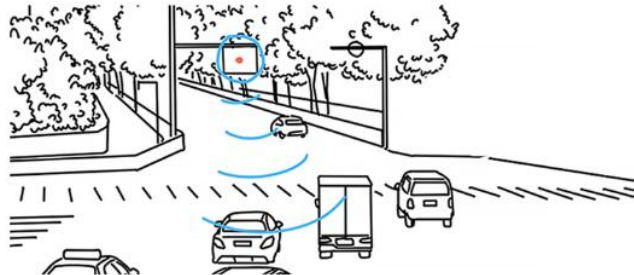
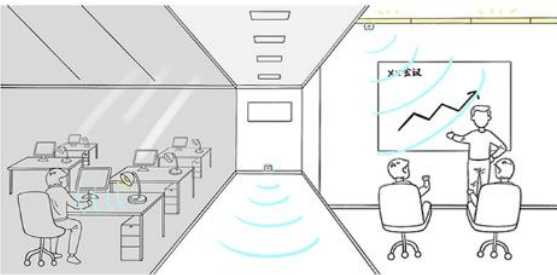
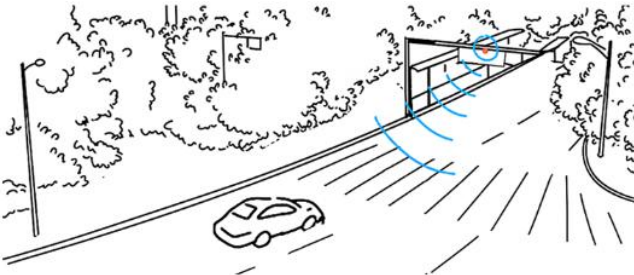
ICL1122 SoC evaluation board with high-gain antennas



The EVB1122, equipped with the ICL1122 SoC, 1T2R multi-patch high-gain antennas, and ARM Cortex-M4 MCU, is designed to streamline the evaluation of SoC's long-range detection performance for developers. This advanced platform automatically generates SoC register configurations tailored to mmWave sensor parameter settings, simplifying the development process. It empowers developers to effortlessly craft algorithms for a wide range of applications by providing real-time data gathering and analysis capabilities. Additionally, the EVB1122 offers multiple intuitive application demonstrations, including indoor multi-human tracking and outdoor long-range (>100 m) target tracking.

Specifications	Features
Operating Frequency	24 GHz
Sweeping Bandwidth	24 ~ 25 GHz (reconfigurable)
Equivalent Isotropic Radiated Power	22 dBm (reconfigurable)
Operating Voltage	5V
Sensor SoC	ICL1122 (1T2R)
Hardware Size	43 mm x 41 mm
Field of View (6 dB beamwidth)	86° x 28°
IAP Function	In-application programming (IAP) using UART

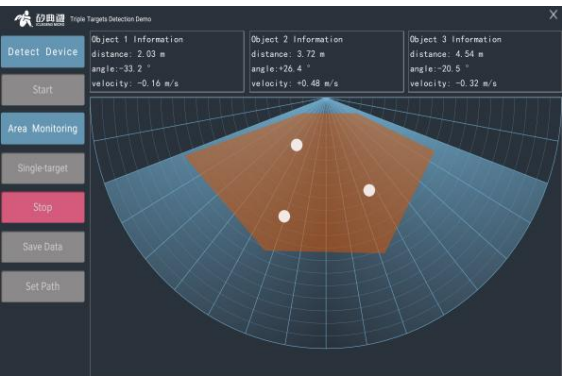
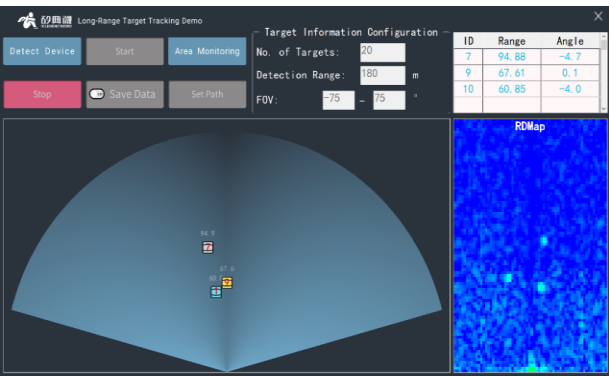
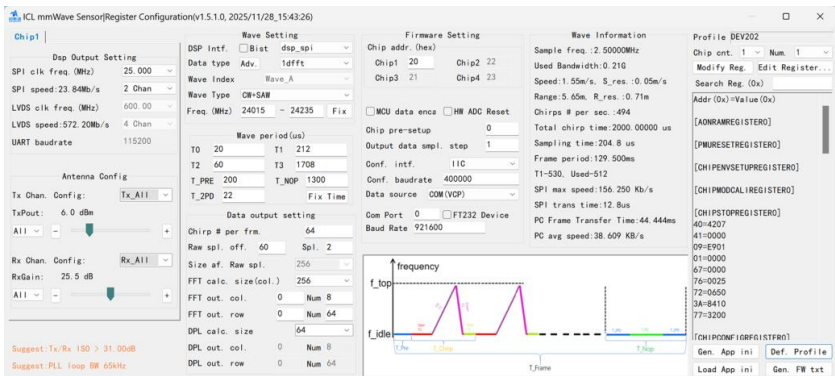
Power Supply and Interfaces	
Support UART/USB Type-C/ I/O interface communication	Support debugging and programming via SWD
Maximum data transfer rate 34 Mbps	Support USB power supply (default) or external power supply via J1



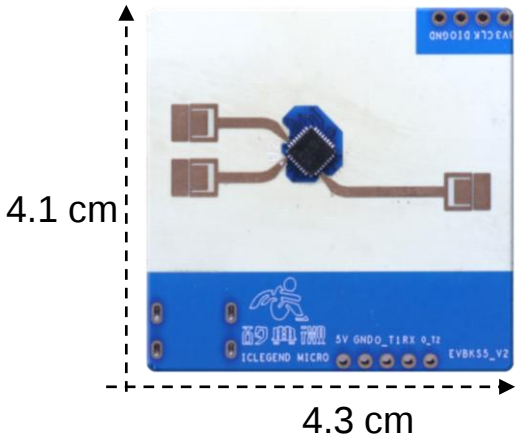
Parameter Configuration Interface

Indoor Multi-Human Tracking

Outdoor Long-Range Target Tracking



mmWave Sensor Development Tool Outdoor Long-Range Target Tracking Indoor Multi-Human Tracking Tool



EVBKS5-E mmWave Sensor Evaluation Board

ICL1122 SoC evaluation board equipped with wide bandwidth antennas



The EVBKS5-E, equipped with the ICL1122 SoC, 1T2R wide bandwidth antennas, and ARM Cortex-M4 MCU, is designed to streamline the evaluation of SoC performance for developers. This advanced platform automatically generates SoC register configurations tailored to mmWave sensor parameter settings, simplifying the development process. It empowers developers to effortlessly craft algorithms for a wide range of applications by providing real-time data gathering and analysis capabilities. Additionally, the EVBKS5-E offers multiple intuitive application demonstrations, including human presence detection and multi-human tracking.

Specifications

Sweeping Bandwidth	Max. 1 GHz (adjustable)
Equivalent omnidirectional radiated power	Max. 16 dBm (adjustable)
Operating Voltage	5 V
Operating Frequency	24 ~ 25 GHz
Sensor SoC	ICL1122 (1T2R)
Hardware Size	43 mm x 41 mm
FoV (6 dB beamwidth)	115 ° H x 114 ° V
IAP function	In-application programming (IAP) using UART

Features

- Complete hardware system: Integrated 1T2R mmWave SoC, wide bandwidth antennas, high-performance MCU, and high-rate USB type-C interface.
- Agile developing tools: Comprehensive SoC evaluation system, intuitive radar configuration and real-time signal waveform analysis tools.
- Diverse user experience: Built-in typical application demos, i.e. human presence detection and multi-human tracking.

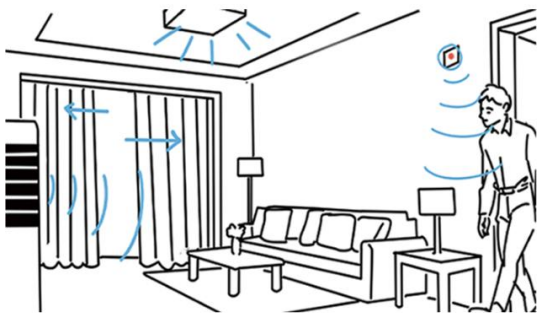
Power Supply and Interfaces

Support UART/USB Type-C/ I/O interface communication

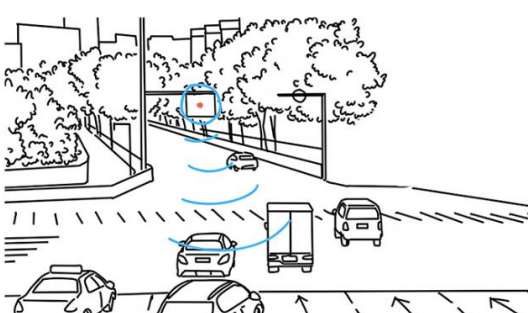
Maximum data transfer rate 34 Mbps

Support debugging and programming via SWD

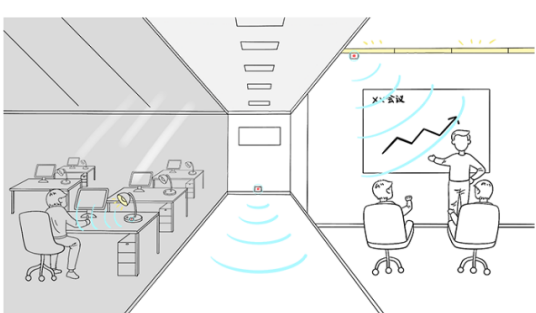
Support external power supply via USB (default) or J1



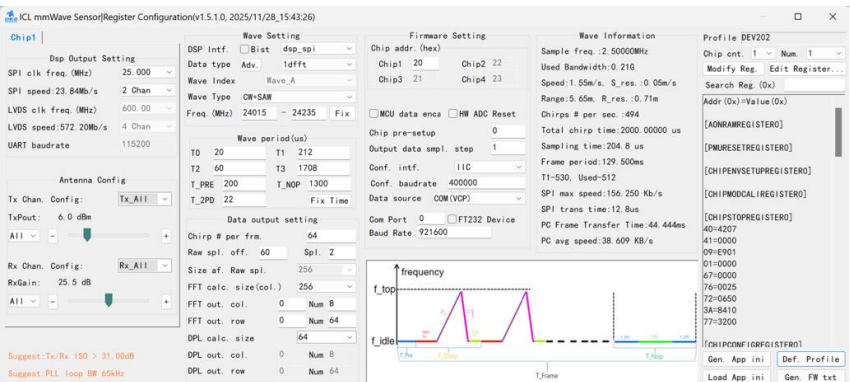
Human Presence Detection



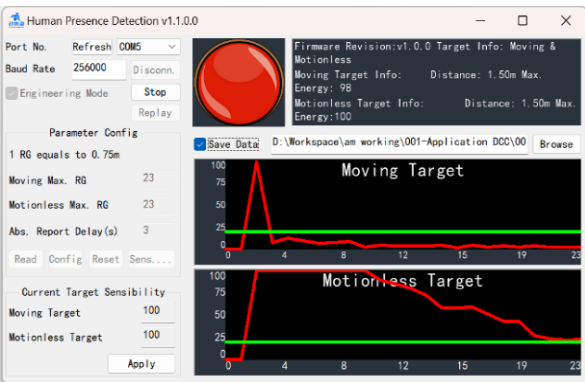
Accurate Range Velocity and Angle Measurement



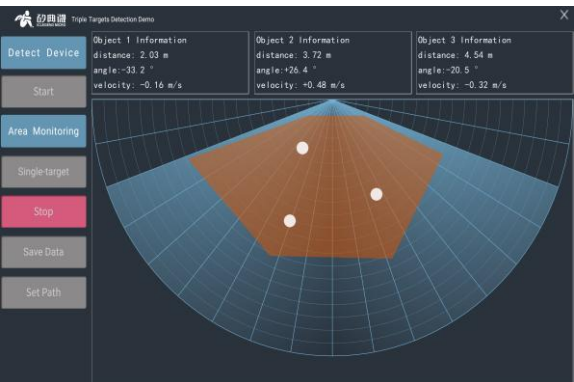
Multi-Human Tracking



mmWave Sensor Development Tool



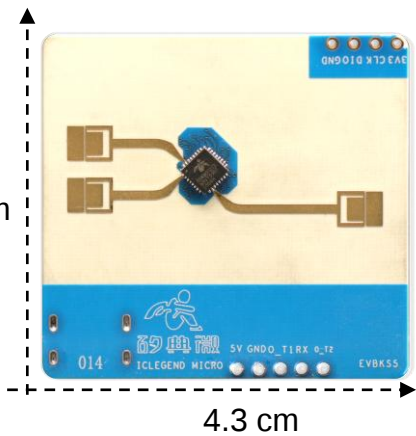
Human Presence Detection Tool



Indoor Multi-Human Tracking Tool



4.1 cm



4.3 cm

EVBKS5 mmWave Sensor Evaluation Board

S5KM312CL SoC evaluation board with wide bandwidth antennas

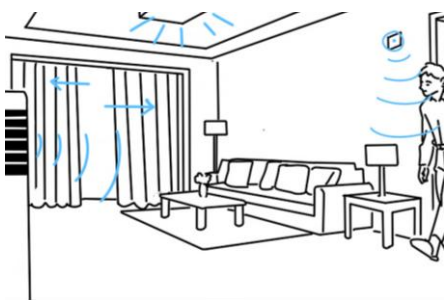


The EVBKS5, equipped with the S5KM312CL SoC, 1T2R wide bandwidth antennas, and ARM Cortex-M4 MCU, is designed to streamline the evaluation of SoC performance for developers. This advanced platform automatically generates SoC register configurations tailored to mmWave sensor parameter settings, simplifying the development process. It empowers developers to effortlessly craft algorithms for a wide range of applications by providing real-time data gathering and analysis capabilities. Additionally, the EVBKS5 offers multiple intuitive application demonstrations, including human presence detection and human tracking.

Specifications	
Operating Frequency	24 GHz
Sweeping Bandwidth	Max. 4 GHz (adjustable)
Equivalent omnidirectional radiated power	Max. 16 dBm (adjustable)
Operating Voltage	5 V
Sensor SoC	S5KM312CL (1T2R)
Hardware Size	43 mm x 41 mm
Field of View 6 dB beamwidth	115° x 114°
IAP function	In-application programming (IAP) using UART

Features
Highly integrated: 1T2R mmWave sensor SoC
Complete hardware system: Integrated 1T2R mmWave SoC, wide bandwidth antennas, high-performance MCU, and high-rate USB type-C interface.
Agile developing tools: Comprehensive SoC evaluation system, intuitive radar configuration and real-time signal waveform analysis tools
Diverse user experience: Built-in typical application demos, i.e. human presence detection and human tracking

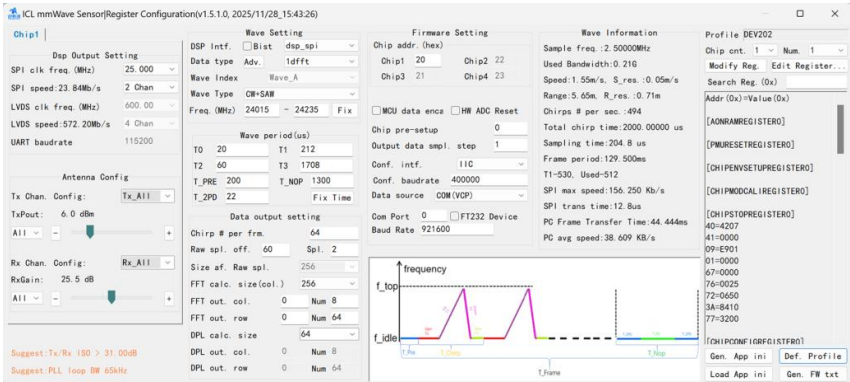
Power Supply and Interfaces
Built-in 24 GHz 1T2R wide bandwidth micro-strip antennas
Support UART/ USB Type-C communication
Max. transfer rate 34 Mbps
Support debugging and programming via SWD
Support two ways of power supply



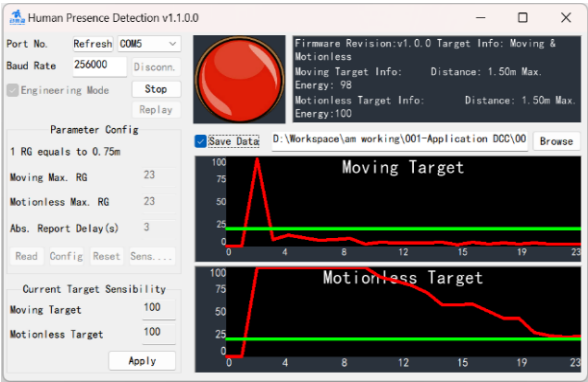
Human Presence Detection



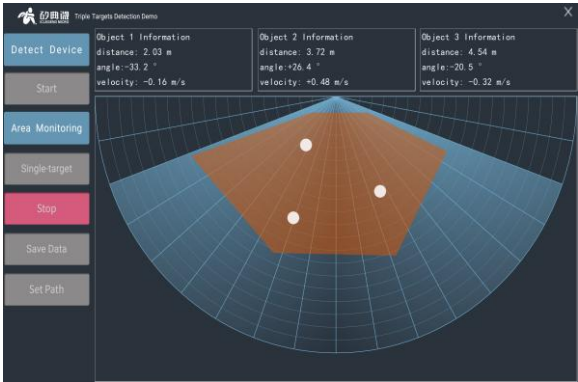
Moving Target Detection



mmWave Sensor Development Tool



Human Presence Detection Tool



Indoor Multi-Human Tracking Tool

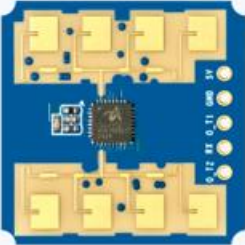
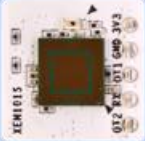


DEV Series

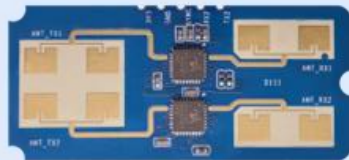
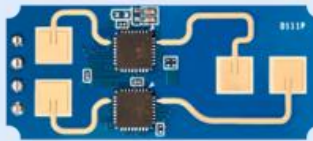
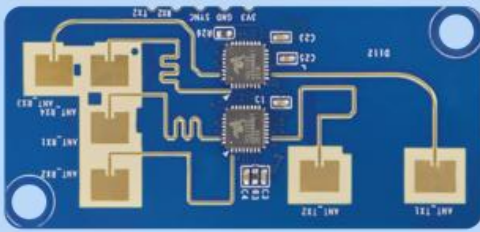
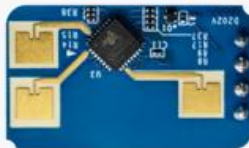
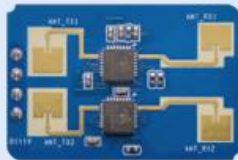


ONELAB

Open & Empower Development Tool

1T1R		AiP 1T1R	
M4 MCU 64KB·144MHz Enhanced Memory/ Clock Speed	DEV101Pro 1 dBi 20 x 20 mm Ultimate Cost-Efficiency ICL1112 	DEV103Pro 5.5 dBi 35 x 7 mm Ultra-Narrow Bezel ICL1112 	DEV102 14 dBi 25 x 25 mm High precision ICL1112 
	DEV101 1 dBi 20 x 20 mm Ultimate Cost-Efficiency ICL1112 	DEV103 5.5 dBi 35 x 7 mm Ultra-Narrow Bezel ICL1112 	DEV103A Pro 4 dBi 35 x 6mm Ultra-Mini + Ultra-Narrow Bezel ICL111A 
M0 MCU 8KB·24MHz High Cost- Effectiveness		DEV101A 4 dBi 12 x 12mm Ultra-Mini ICL111A 	DEV103A 4 dBi 23 x 6mm Ultra-Mini + Ultra-Narrow Bezel ICL111A 



1T2R		2T2R		2T4R	
DEV202H 14 dBi 34 x 15 mm Horizontal Installation Optimized ICL1122 	DEV202E 15 dBi 15 x 40 mm Long-Distance Ranging for Large Spaces ICL1122 	DEV111E 15 dBi 20 x 44 mm Large Space + High Angle Accuracy ICL1112 	DEV111P 10 dBi 15 x 35 mm Small Size + 4D Performance ICL1112 	DEV112P 6.5 dBi 50 x 23 mm Large Space + 4D Performance ICL1122 	
DEV202S 7 dBi 30 x 7 mm Ultra-Thin Long-Distance Detection ICL1122 	DEV202V 6 dBi 15 x 25 mm Small Size + Vertical Installation ICL1122 	DEV111V 7 dBi 20 x 30 mm Small Size + High Angle Accuracy ICL1112 			
M4 MCU 64KB·144MHz Enhanced Memory/Clock Speed		M4 MCU 96+128KB·240MHz Enhanced Memory/ Main Frequency		M4 MCU 96+128KB·240MHz Enhanced Memory/ Main Frequency	



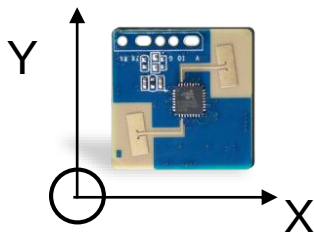
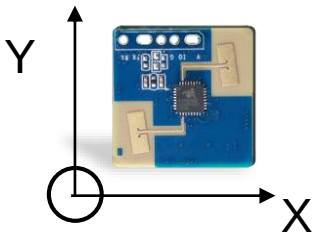
DEV101 | 1T1R

ONELAB | 24G mmWave Sensor Development Kit

DEV101/101Pro development kits are equipped with ICL1112 (1T1R) mmWave sensor SoC. Users can select between the M0 MCU Standard Edition or the M4 MCU High-Performance Edition. The module adopts a compact 20 mm x 20 mm hardware design.

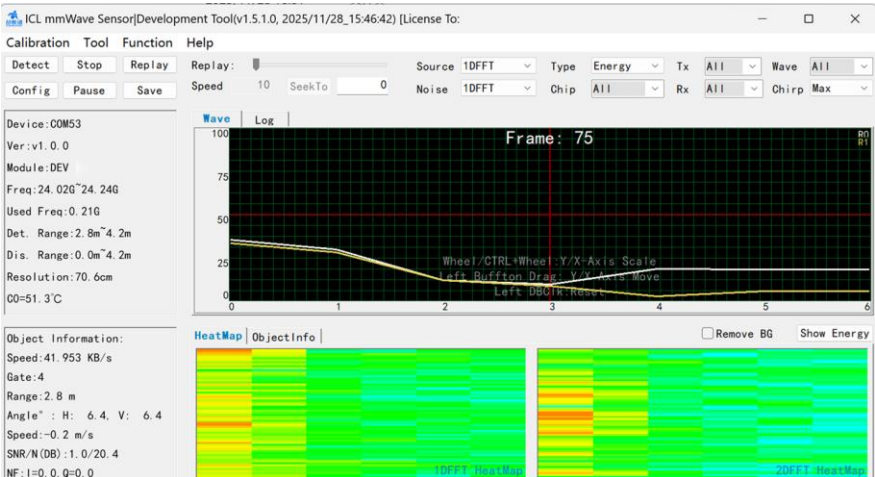


1 - Yuan Coin Size Comparison



Specifications	DEV101 (1T1R)	DEV101Pro (1T1R)
MCU	M0 MCU Standard Edition	M4 MCU High-Performance Edition
Sensor SoC	ICL1112	
Beamwidth (6 dB)	X: -70°~70° Y: -70°~70°	
Antenna Gain	1 dBi	
Data Interface	UART, GPIO	
Power Interface	Compatible with 2.54 mm and 2 mm pitch headers	
Hardware Size	20 mm x 20 mm	

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

Configuration Interface



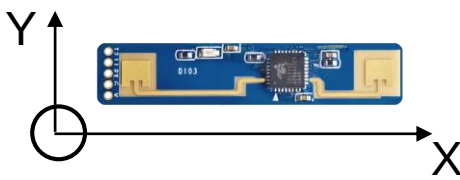
DEV103 | 1T1R

ONELAB | 24G mmWave Sensor Development Kit

DEV103/103Pro development kits are equipped with ICL1112 (1T1R) mmWave sensor SoC. Users can select between the M0 MCU Standard Edition or the M4 MCU High-Performance Edition. The module features a 35 mm x 7 mm narrow-bezel compact design.



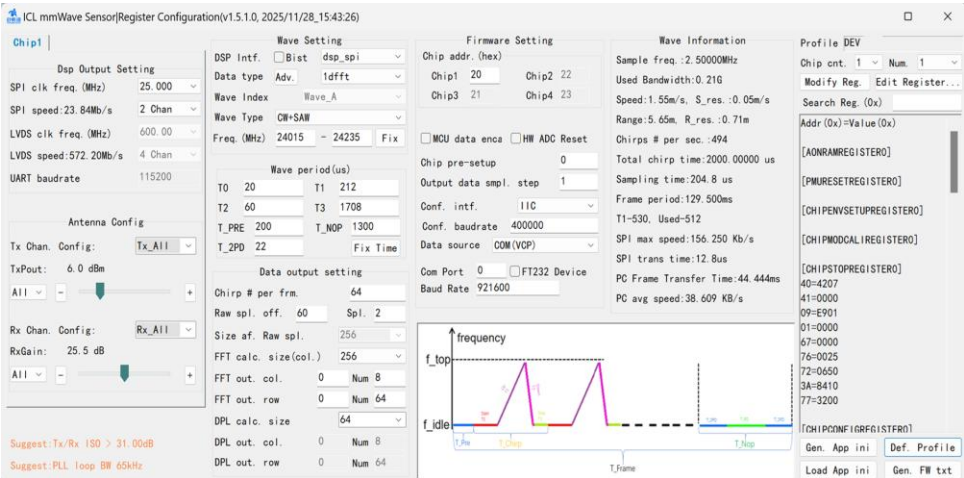
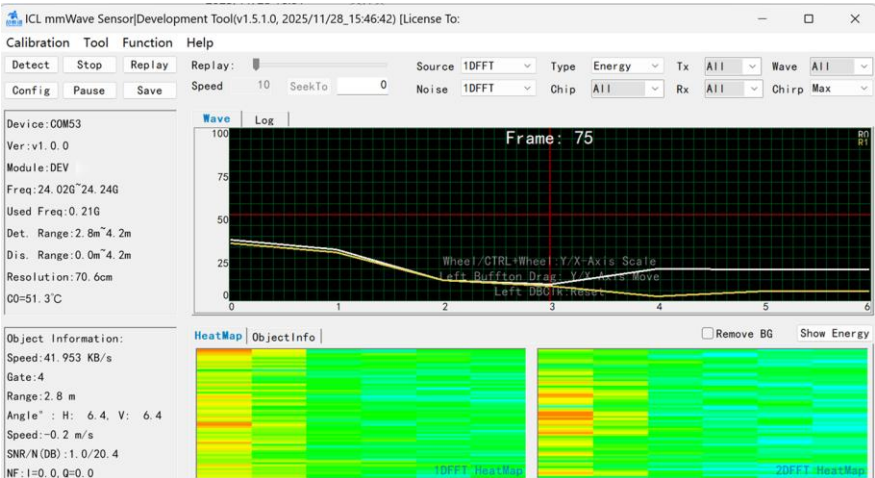
1 - Yuan Coin Size Comparison



Specifications	DEV103 (1T1R)	DEV103Pro (1T1R)
MCU	M0 MCU Standard Edition	M4 MCU High-Performance Edition
Sensor SoC	ICL1112	
Beamwidth (6 dB)	X: -35 °~35 ° Y: -50 °~50 °	
Antenna Gain	5.5 dBi	
Data Interface	UART, GPIO	
Power Interface	1.27 mm pin headers	

Hardware Size 35 mm x 7 mm

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

Configuration Interface

DEV101A | AiP 1T1R

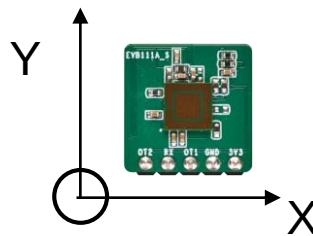
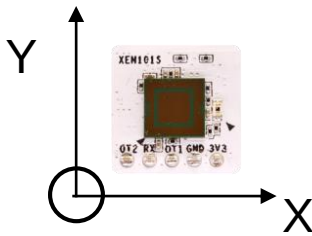
ONELAB | 24G mmWave Sensor Development Kit



DEV101A development kits are integrated with ICL111A AiP 1T1R mmWave sensor SoC, with options for the M0 MCU Standard Edition or M4 MCU High-Performance Edition. The module adopts an ultra-mini 12 mm x 12 mm / 15 mm x 15 mm form factor, supporting flexible integration into compact systems.

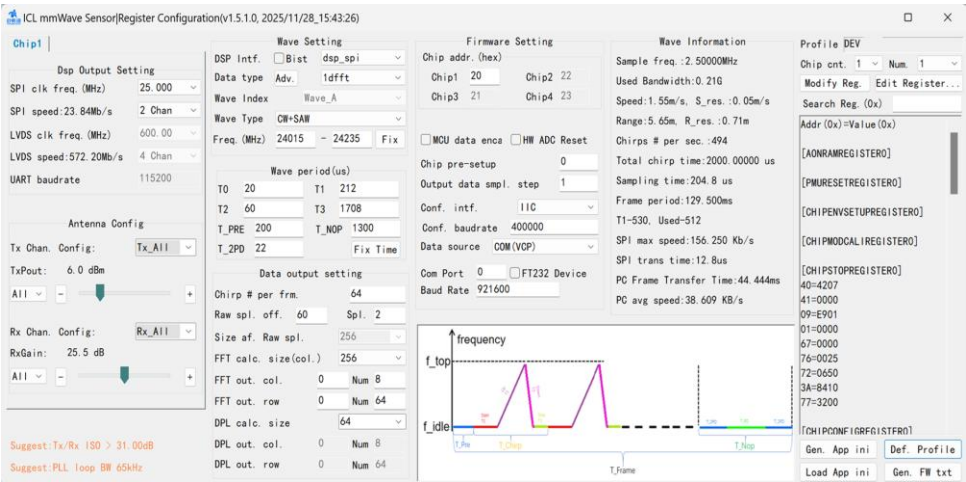
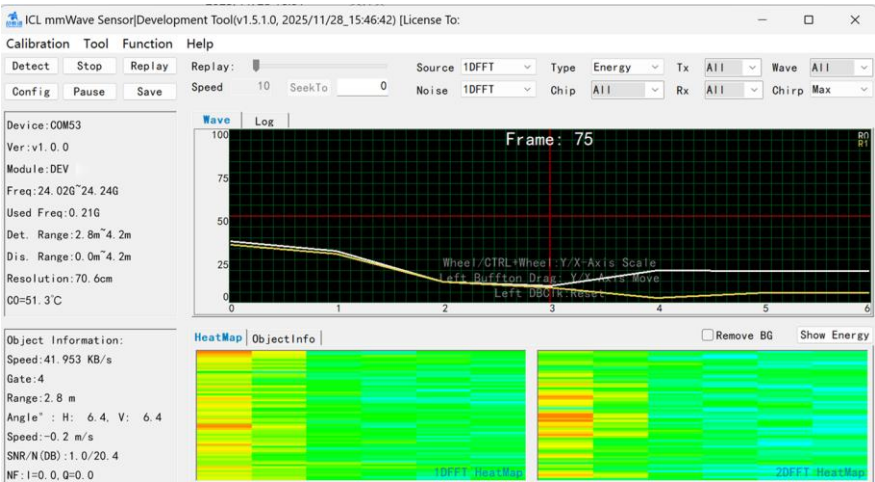


1 - Yuan Coin Size Comparison



Specifications	DEV101A (AiP 1T1R)	DEV101A Pro (AiP 1T1R)
MCU	M0 MCU Standard Edition	M4 MCU High-Performance Edition
Sensor SoC	ICL111A	
Beamwidth (6 dB)	X: -60°~60° Y: -70°~70°	
Antenna Gain	4 dBi	
Data Interface	UART, GPIO	
Power Interface	2 mm pitch headers	2.54 mm pitch headers
Hardware Size	12 mm x 12 mm	15 mm x 15 mm

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

Configuration Interface

DEV103A | AiP 1T1R

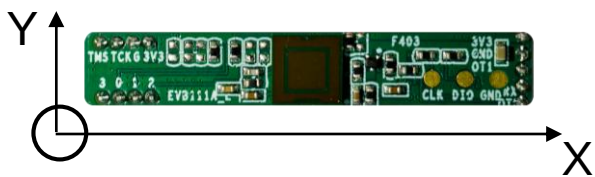
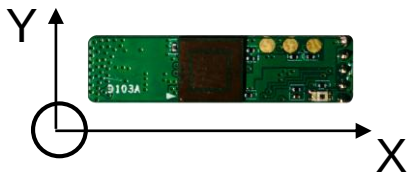
ONELAB | 24G mmWave Sensor Development Kit



DEV103A/103A Pro development kits are equipped with ICL111A AiP 1T1R mmWave sensor SoC. Users can select between the M0 MCU Standard Edition or the M4 MCU High-Performance Edition. It features an ultra-compact 23 mm x 6 mm / 35 mm x 6 mm narrow-bezel design, ideal for space-constrained applications.

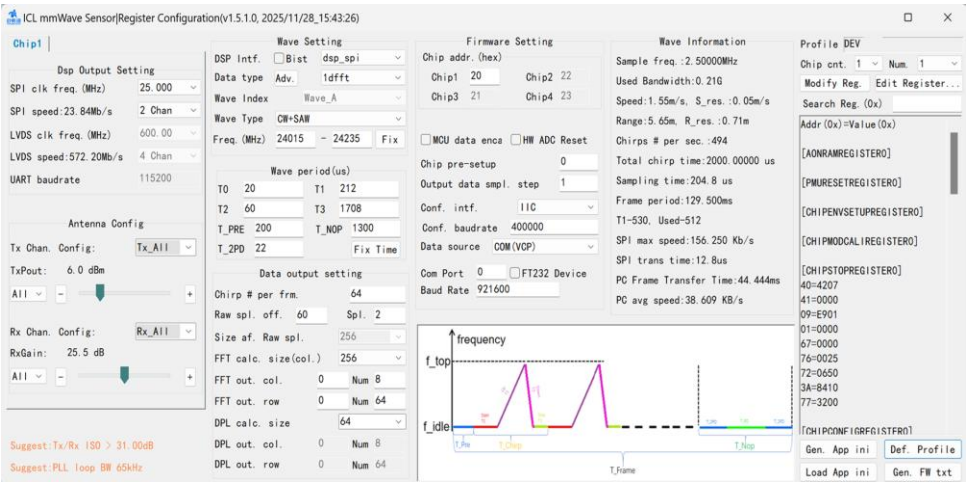
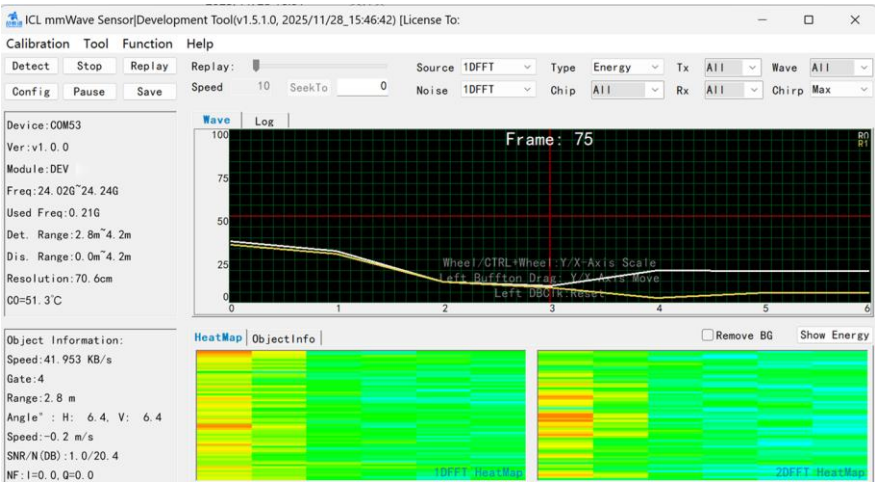


1 - Yuan Coin Size Comparison



Specifications	DEV103A (AiP 1T1R)	DEV103A Pro (AiP 1T1R)
MCU	M0 MCU Standard Edition	M4 MCU High-Performance Edition
Sensor SoC	ICL111A	
Beamwidth (6 dB)	X: -50 °~50 ° Y: -60 °~50 °	
Antenna Gain	4 dBi	
Data Interface	UART, GPIO	
Power Interface	1.27 mm pitch headers	
Hardware Size	23 mm x 6 mm	35 mm x 6 mm

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

Configuration Interface

DEV102 | 1T1R

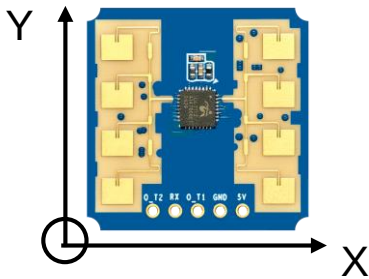
ONELAB | 24G mmWave Sensor Development Kit



DEV102 development kit is based on ICL1112 1T1R mmWave sensor SoC, offering M4 MCU High-Performance configurations. It comes in 25 mm x 25 mm layout options.

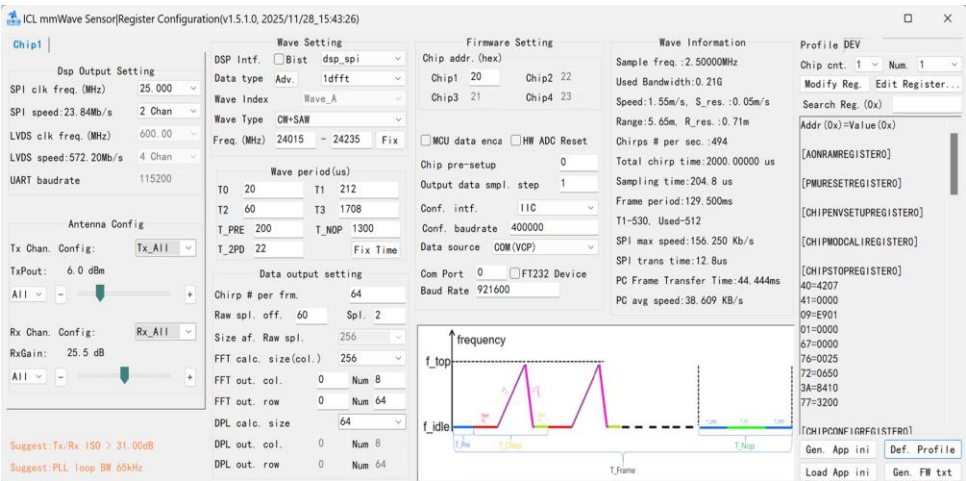
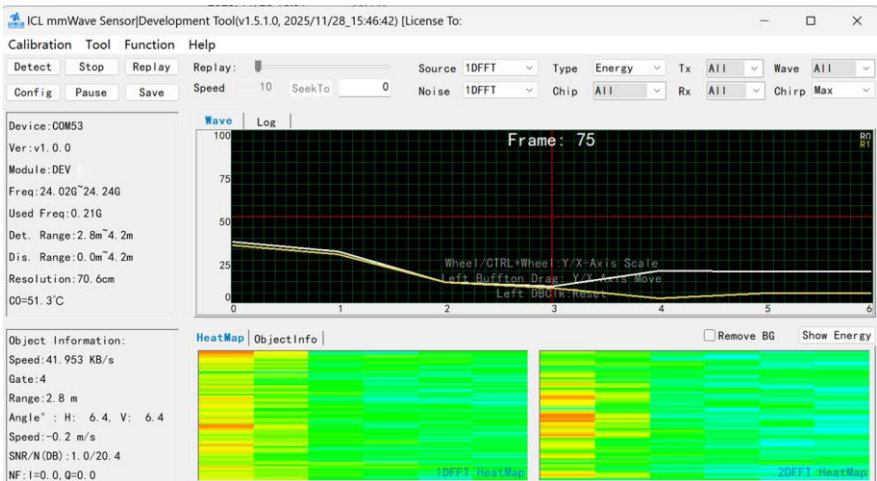


1 - Yuan Coin Size Comparison



Specifications	DEV102 (1T1R)
MCU	M4 MCU High-Performance Edition
Sensor SoC	ICL1112
Beamwidth (6 dB)	X: -42°~42° Y: -17°~17°
Antenna Gain	14 dBi
Data Interface	UART
Power Interface	2.54 mm pin headers
Hardware Size	25 mm x 25 mm

*The above specifications are for reference only. Performance and features may be updated according to specific project



Tool Demonstration Interface

Configuration Interface



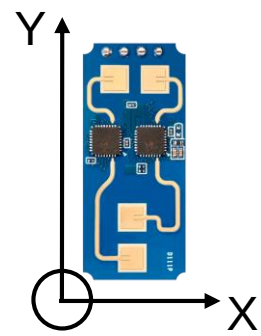
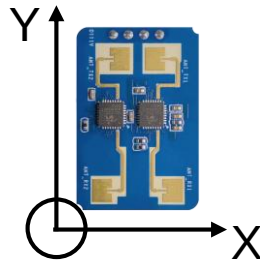
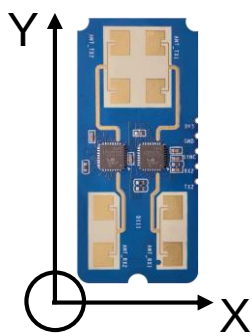
DEV111 series | 2T2R

ONELAB | 24G mmWave Sensor Development Kit

DEV111 series development kits are based on two ICL1112 1T1R mmWave sensor SoCs, offering M4 MCU High-Performance configurations. They come in 20mm x 44mm / 20mm x 30mm / 15mm×35mm layout options.

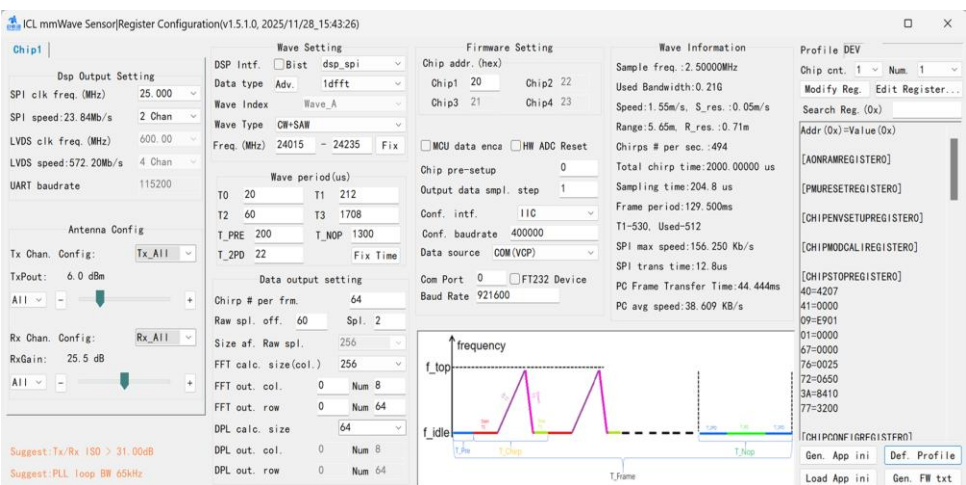
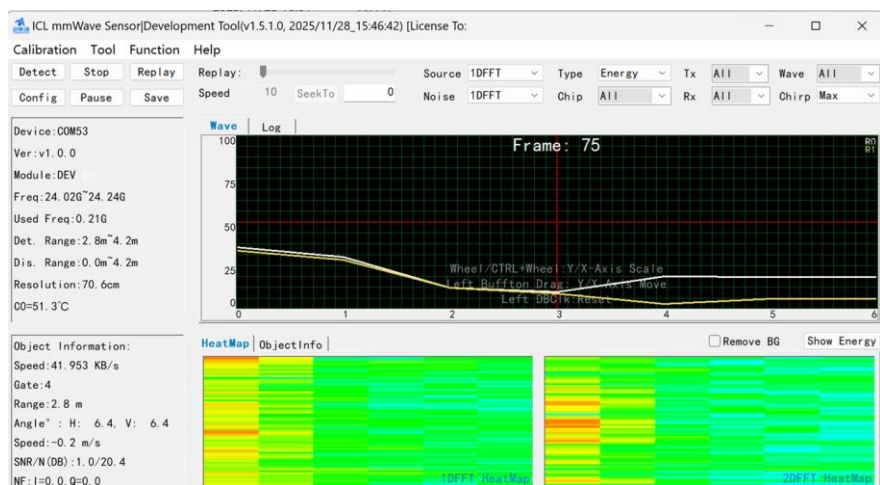


1 - Yuan Coin Size Comparison



Specification s	DEV111E (2T2R)	DEV111V (2T2R)	DEV111P(2T2R)
MCU	M4 MCU High-Performance Edition		
Sensor SoC	ICL1112		
Beamwidth (6 dB)	X: -55°~55° Y: -20°~20°	X: -60°~60° Y: -30°~30°	X: -50°~50° Y: -40°~40°
Antenna Gain	15 dBi	7 dBi	10 dBi
Data Interface	UART		
Power Interface	1.5 mm (ZH1.5) connectors	1.27 mm pin headers	
Hardware Size	20 mm x 44 mm	20 mm x 30 mm	15 mm x 35 mm

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

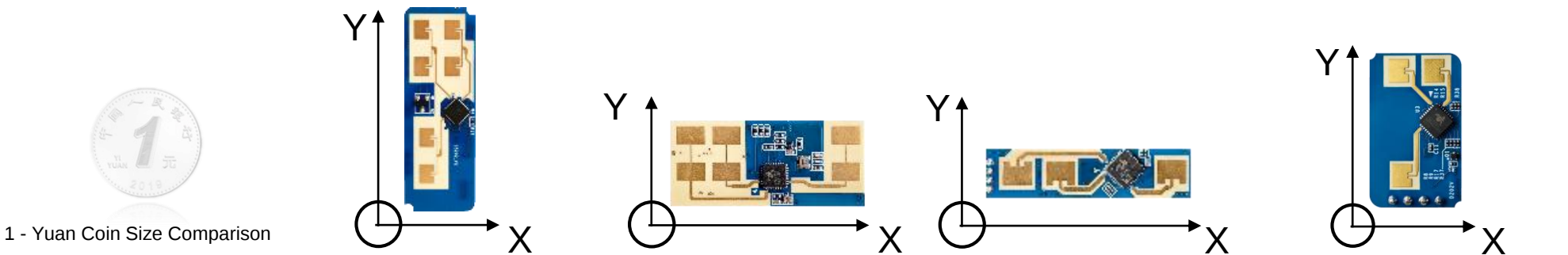
Configuration Interface



DEV202 | 1T2R

ONELAB | 24G mmWave Sensor Development Kit

DEV202 series development kits are based on ICL1122 1T2R mmWave sensor SoC, offering M4 MCU High-Performance configurations. They come in 15 mm x 40 mm / 15 mm x 34 mm / 7 mm x 30 mm / 15 mm x 25 mm layout options.



Specifications	DEV202E (1T2R)	DEV202H (1T2R)	DEV202S (1T2R)	DEV202V (1T2R)
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MCU M4 MCU High-Performance Edition

Sensor SoC	ICL1122			
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Beamwidth (6 dB)	X: -55°~55° Y: -20°~20°	X: -45°~45° Y: -25°~25°	X: -50°~50° Y: -50°~50°	X: -60°~60° Y: -45°~45°
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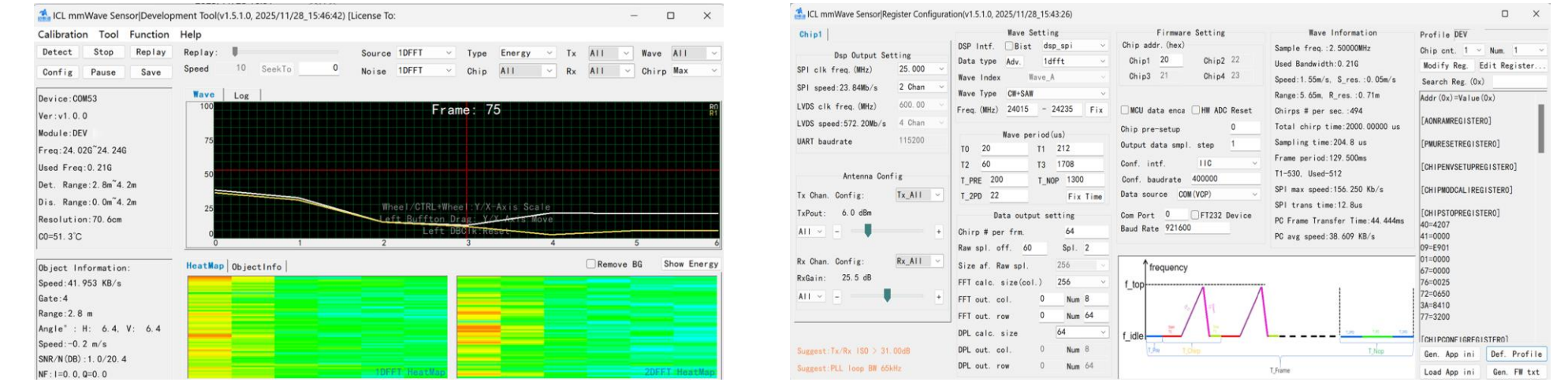
Antenna Gain	15 dBi	14 dBi	7 dBi	6 dBi
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Data Interface UART

Power Interface	1.5 mm (ZH1.5) connectors	1.27 mm pin headers
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Hardware Size	15 mm x 40 mm	34 mm x 15 mm	30 mm x 7 mm	15 mm x 25 mm
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* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



Tool Demonstration Interface

Configuration Interface



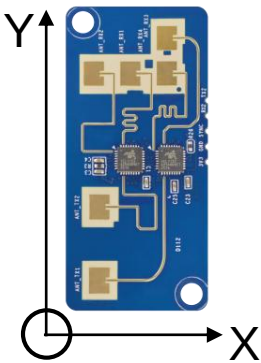
DEV112P | 2T4R

ONELAB | 24G mmWave Sensor Development Kit

DEV112P development kit is based on two ICL1122 1T2R mmWave sensor SoCs, offering M4 MCU High-Performance configurations. It comes in 23 mm x 50 mm layout options.



1 - Yuan Coin Size Comparison



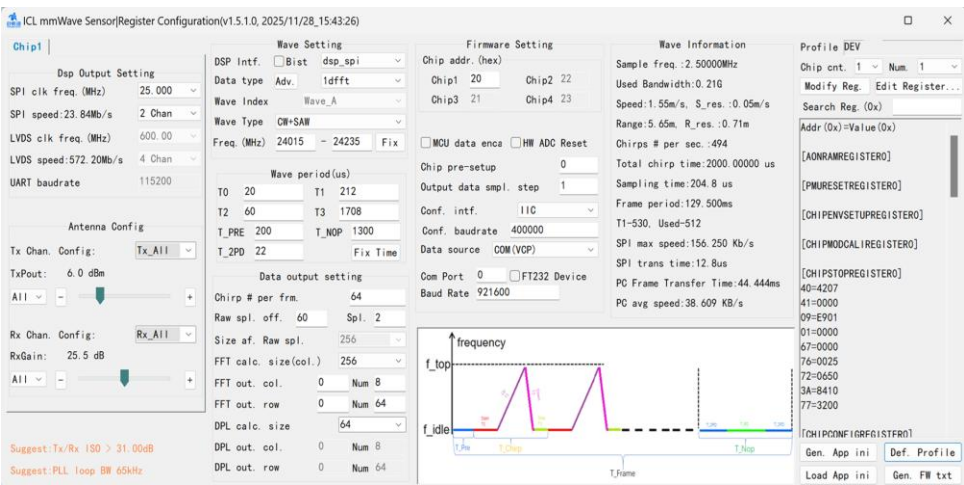
Specifications	DEV112P (2T4R)
MCU	M4 MCU High-Performance Edition
Sensor SoC	ICL1122
Beamwidth (6 dB)	X: -50°~50° Y: -40°~40°
Antenna Gain	6.5 dBi
Data Interface	UART
Power Interface	1.5 mm (ZH1.5) connectors

Hardware Size 23 mm x 50 mm

* The above specifications are for reference only. Performance and features may be updated according to specific project requirements.



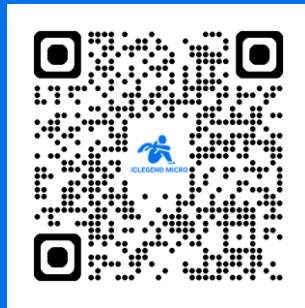
Tool Demonstration Interface



Configuration Interface



Wechat



Online shop

ICLEGEND MICRO

info@iclegend.com

iclegend.com

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