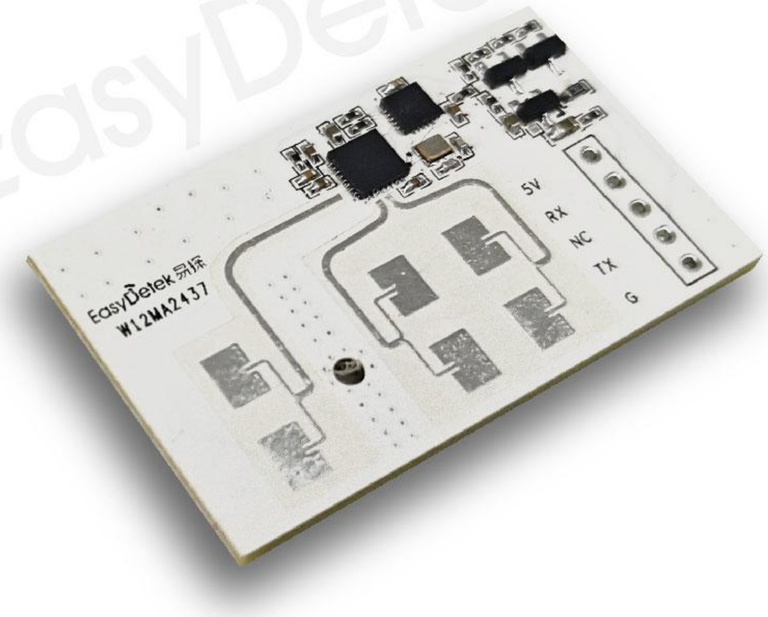
深圳市易探科技有限公司
Shenzhen EasyDetek Technology Co.,Ltd

EasyDetek易探

EDQ12M Specification

24GHz Short Range Series Modules



Product Features

- **High-precision ranging function with low detection error**
- **One-transmitter-two-receiver radar module, supports azimuth recognition**
- **Special algorithm design, support small angle detection and passing without triggering function**
- **Support serial port online upgrade program firmware**

Electrical Parameters

Input Voltage	5-8V DC
Operating Current	40-60mA
Output Voltage	5V
Output Signal	UART / IO
Power Consumption	＜0.5W

Functional Parameters

Side-mounted motion sensing ①	1.6m
Hanging height	side-mounted 0.4-0.8m
Distance accuracy ②	±10cm
Angular accuracy	±10°
Detection angle	±30°

Output Parameters

Center frequency	24GHz
3dB Beam Angle	97° (XZ plane) 99° (YZ plane)

Environment & Lifespan

Operating Temperature	-40~+85°C
Storage Temperature	-20~+105°C

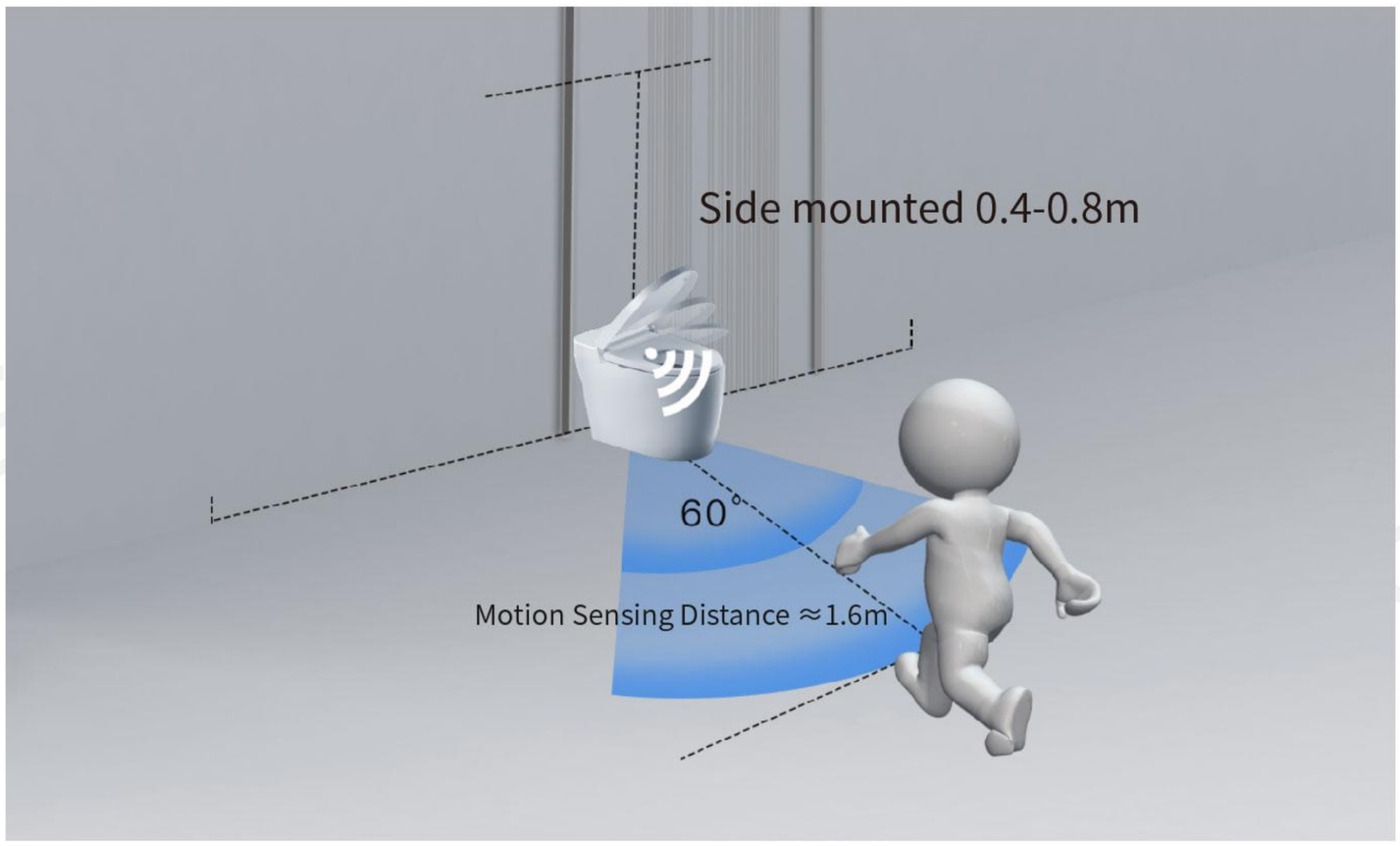
Remarks:

① Side-mounted test distance range test scenario: the sensor side-mounted hanging height of 0.5m indoor installation environment test, the tester height 170cm, weight 65-75kg, walking speed 1m / s. The test is conducted in a different installation scenario may cause changes to the actual test shall prevail.

Different scenarios of installation may cause changes in the range, subject to the actual test.

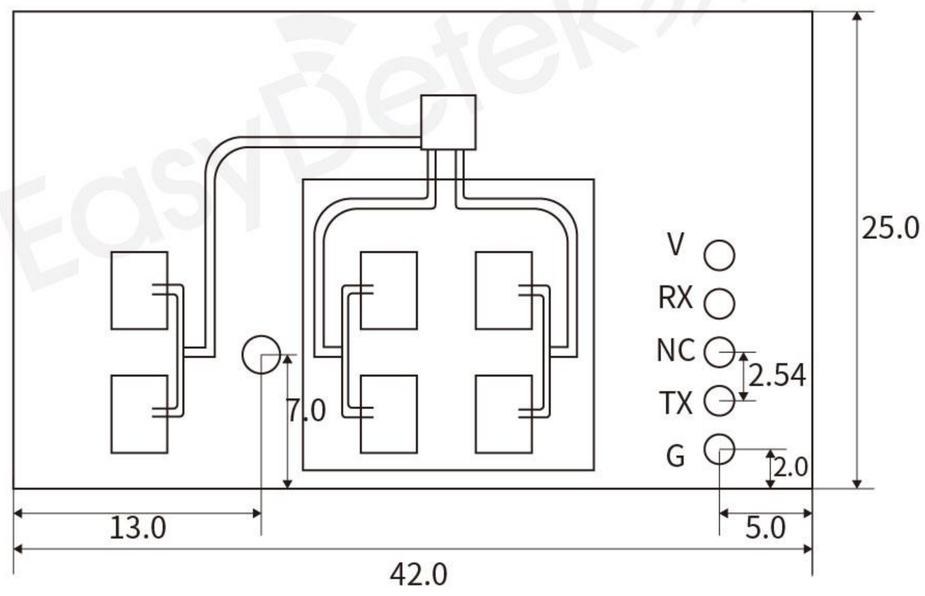
② The data comes from the motion point target simulator of EasyDetek laboratory, there are errors in the movement of the human body, the actual test shall prevail.

Detection Schematic



Dimension Drawing / Pinout

Size unit：mm



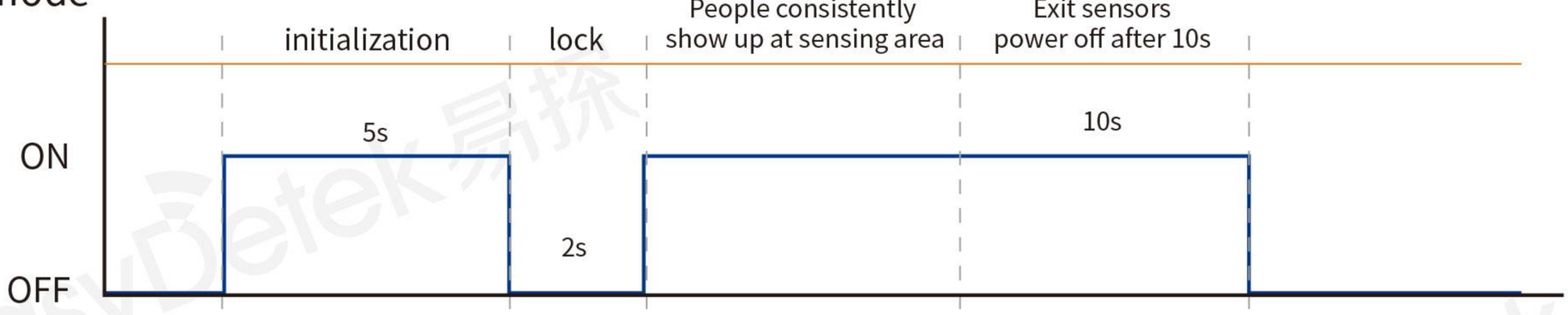
EDQ12M Dimensional tolerance: ±0.2
Welding hole of the row of pins：ϕ0.9

Pin Description

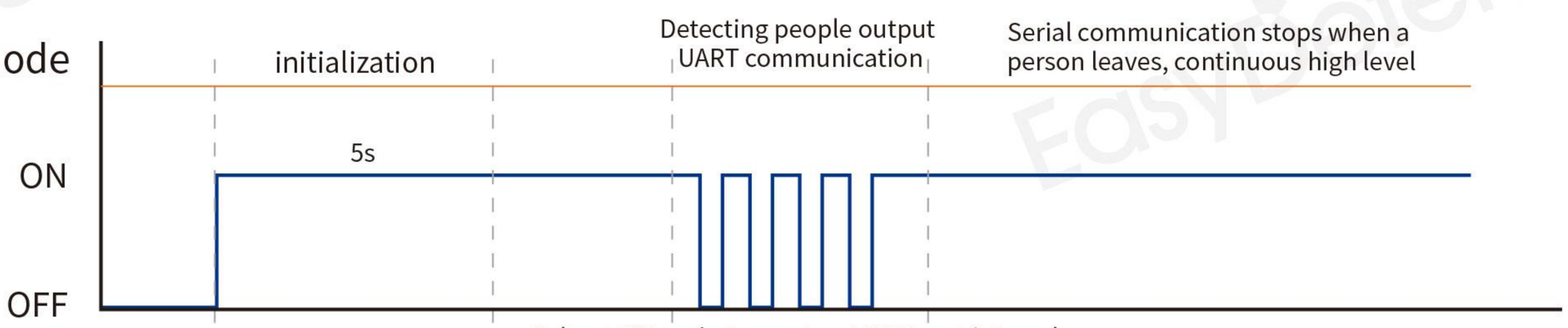
Pin	Description
V	5-8V power supply
RX	Serial Receive Pins
NC	-
TX	Default is IO output, support serial output
G	Groundings

Timing Diagram

IO mode



UART Mode



At least 200ms between two UART port intervals

Typical application

When the sensor detects a moving object approachingautomatically flips the lid

Exit sensors automatic closing of the lid after the time delay

Application Scenarios/Products

toilet applications

advertising machine

gates

cabinet lighting

Product Naming Law

ED	Frequency Band	Product Categories	Product Subdivision	Product Number	Delay Time	Serial number
ED	Q	1	2	M		
EasyDetek	C 5.8GHz	1 Microwave sensor module	0 Ultra-low-power series	0-9, A-Z	Y Has light sensor	
	X 10.5GHz	2. Microwave radar switch	1 Flagship series		N no light sensor	
	Q 24GHz	3 Radar antenna	2 Short-distance series		P programmable	
	V 60GHz	4 MCU	3 Adjustable series			
	W 77GHz	5 Microwave power supply	4 External antenna series			
		6 IC	5 General Series			
		7 Other	6 To be defined			
		8 Networking	7 To be defined			
			8 Basic series			
			9 High altitude series			

Configuration Version Description

【material number】:EDQ12M-N-01

【hardware】:

【software】:

Historical Revision Record

Version	Time	Descriptive	Note
V1.0	2025-01-02	first edition	-

Precautions

Precautions for Product Driver Circuit Design

1. The voltage of the power supply should meet the product requirements, and it is recommended to control the ripple within 100mV;

2. The radar antenna surface should avoid facing directly towards the driving power supply and be as far away as possible from high-power components such as rectifier bridges, transformers, and switch tubes of the driving power supply to avoid false alarms caused by power frequency signal interference or affecting the induction range;

3. The radar antenna surface should avoid high current circuit coverage to prevent false alarms or changes in sensing range caused by electromagnetic fields generated by the loop.

Product installation precautions

1. Radar signals have good penetration through glass, wood, and plastic, but there may be some reflection and penetration attenuation, which reduces the sensing distance;

2. Electromagnetic waves have poor penetration and reflection on metal materials, which can easily cause false alarms or changes in sensing distance in radar reception. Our products have passed internal laboratory metal environment testing and can withstand the impact of metal reflection under certain conditions;

3. Metal casing and large-area copper-clad PCB board have shielding and blocking effects on electromagnetic waves; The module installation should not be closely attached to the metal plane to avoid abnormal radar operation. It is recommended to control the distance between the antenna panel and the metal plane at 6-12mm;

4. For radar modules installed on surface mount, it is recommended to lay copper on the PCB surface for hollowing out treatment;

5. When installing the product, it should be avoided to install it on the same installation plane as regular mechanical vibration equipment, as the regular vibration of the radar itself can easily generate false alarms;

6. When installing the product, it should be kept at a certain distance from surrounding micro moving devices (such as drainage pipes, fire pipes, ventilation pipes), and regular vibrating or swinging objects (such as fans, swinging green plants, fluttering curtains) should be kept at a certain distance; Suggest that the speed of moving objects within a radius of 0.5m be less than 10mm/s;

7. When multiple products of the same type are applied in the same site, installing them too close may cause false alarms. It is recommended that the installation distance of 24G products be greater than 2m;

When the 8.5.8G radar is used in conjunction with wireless communication modules (NB, Bluetooth, WIFI), a distance should be maintained to avoid signal interference and false alarms. It is recommended to install at a distance of more than 2 meters or adjust the antenna direction of the wireless communication module appropriately;

During the product installation process, live working should be avoided to avoid endangering personal safety or damaging the product due to misoperation.