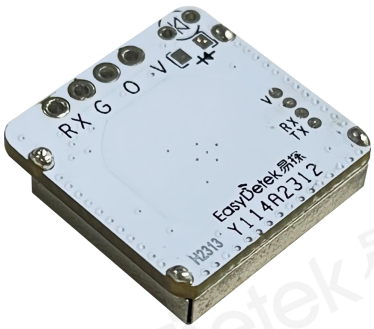


EDC114

(sensor Can pass the above certification)

Product Description

- wider FOV, no need Fresnel lens, no risk of aging of the Fresnel lens
- No affected by temperature, humidity, airflow, dust, noise, lighting, etc., and has strong anti-interference ability;
- can penetrate acrylic, glass and thin non-metallic materials;
- Built in MCU, embedded multiple digital filtering algorithm, with higher immunity.
- Patented antenna. Module size 20 * 20MM

Electric performance

Operation frequency :	5.75GHz-5.87GHz
Input voltage :	5-12V
Output High level :	3.3V
Output low level :	< 0.5 V
3db Beam Angle :	97 ° (XZ plane) 99 ° (YZ plane)
Operation current :	19-25mA
Detection range :	4-6m
Hold time :	30s± 10%
Operating temperature :	-20... + 85℃
Storage temperature :	-20... + 105℃

Remarks:

1.Working logic: Enter initialization after power-on, OUT pin outputs high level, changed to low level after 5s, enter the induction state and receives serial port commands, after receiving the set parameters, comes back to the return value and switches to the normal mode,restore the induction function and IO output.

2.Default factory configuration: The default sensitivity threshold is 300, no photosensitive, and the default delay time is 5s;

3. The delay time can be customized , with a delay tolerance of ± 10%.

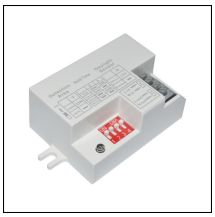
Typical application

Down light

Proofing

Cast light

Tube


Microwave radar switc

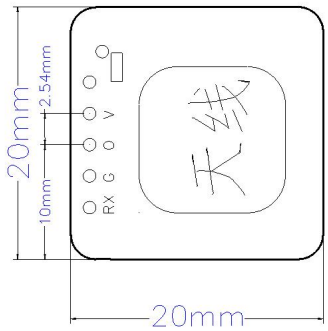
Panel light

Radar switch

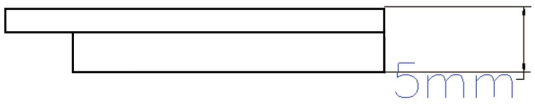
ceiling lamp

* These are typical application, which can expand more products

Dimension drawing



Top view



Side view

EDC114 Dimensional tolerance: ±0.2mm

(Row needle welding aperture: Ø 1.0mm Tolerance: ± 0.05mm)

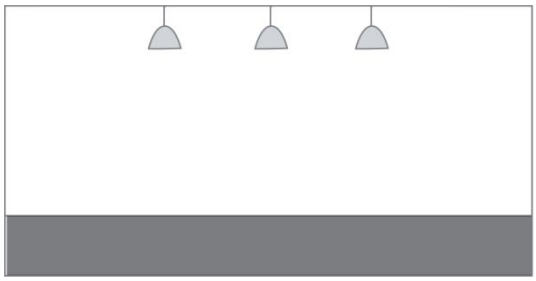
Pin definition

Pin	Description
V	Power supply
O	output/UART TX
G	Ground
RX	UART RX

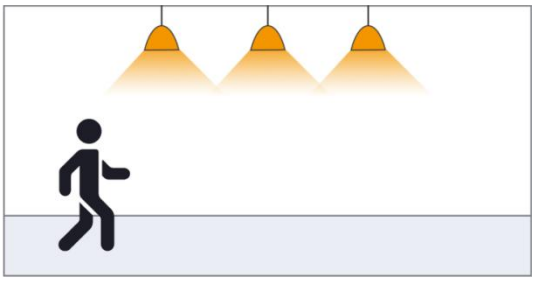
Packaging information

Plastic absorption packaging ☑ bubble bag package ☐ PE bag packaging

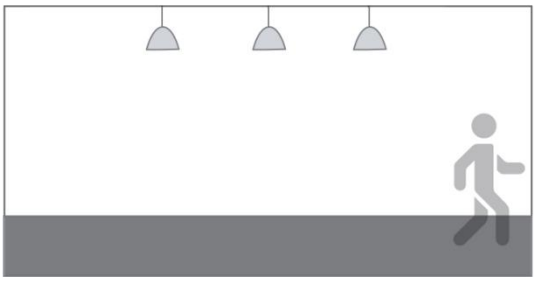
Function description



No moving object is detected, and the lamp is off



When the sensor detects a moving object, the lamp will automatically light up at 100% brightness and enter the set delay time



After the delay time, when the sensor cannot detect the moving object, the lamp will go out

Label

EasyDetek 易探

Product Name: 5.8G Radar module
Model No. :EDC114
Input voltage: 5-12V DC
Output voltage: 3.3V DC
FCCID: 2ARDMEDC114

Application note

1. During product installation, the module is required to keep a certain height from the metal plane. It is recommended that the module should be controlled at 5-12mm from the metal plane and should not be close to or touch the metal plane, otherwise the product may not work normally!
2. The product has good penetration effect on plastic and wood. At the same time, avoid metal shielding in front of the antenna, which will reflect microwave and affect the actual induction effect;
3. The glass or ceramic in front of the antenna will bring reflection and penetration attenuation of electromagnetic wave and reduce the sensing distance of the sensor, and the attenuation will be more serious with the increase of thickness;
4. Please use the power supply with small ripple, especially the low-frequency ripple, which is easy to interfere with the work of the sensor, resulting in false alarm of the sensor. Recommended power supply output capacitance 470

UF; It is suggested that the power ripple should be within 100mV, and the effect is better when the ripple reaches 50mV;

5. The signal output of the sensor has weak load current capacity, and may not be able to directly drive the back-end equipment.

6. When multiple sensors are applied in the field, the recommended product installation spacing is greater than 1.5m. The installation distance is too close, which may cause individual cycle false alarms;

7. The antenna surface shall be protected from high current circuit coverage. The electromagnetic field generated by the circuit loop will interfere with the normal radiation of the antenna, resulting in false alarm or changing the induction range;

8. If microwave sensor and wireless communication module (Nb, Bluetooth, WiFi, 2.4G module) coexist, the installation spacing between IOT module antenna and microwave module antenna shall be enlarger and more. At the same time, try to shield or not receive the trigger signal of the microwave module during the communication of the Internet of things module; Microwave sensors or products with built-in microwave sensors will be interfered by wireless routers. It is recommended to keep a distance of more than 1m from routers, wireless hotspots and other high-power wireless communication equipment during installation;

9. The light sensor threshold is the test value under the conditions of sunny environment, no shadow and diffuse reflection of ambient light. The wavelength of light sensing detection light covers 400nm ~ 1100nm (including visible light, LED lamp and infrared light band). The illuminance value detected by light sensor may be different in different periods and different weather conditions;

10. The antenna surface of the microwave sensor shall avoid facing the AC driving power supply, and shall be far away from the rectifier bridge, transformer, switch MOSFET and other high-power devices of the driving power supply as far as possible, so as to avoid the power frequency signal interfering with the microwave module and causing false alarm;

11. In the practical application environment, the electromagnetic wave emitted by microwave sensor, the different reflectivity of obstacles will lead to different induction range, which is a normal phenomenon;

12. Product specifications and parameters may be upgraded without prior notice.

Product naming rules

ED	Frequency section	Product categories	Product subdivision	Product Number	Hold time	Serial number
ED	C	1	1	4	30N	
	☐S 3GHz	☑1 Microwave sensor module	☐0 Ultra-low-power series	0-9，A-Z	☐Y Has light sensor	
	☐F 6GHz	☐2. Microwave radar switch	☑1 Flagship series		☑N no light sensor	
	☑C 5.8GHz	☐3 Radar antenna	☐2 Short-distance series		☐P programmable	
	☐Q 24GHz	☐4 MCU	☐3 Adjustable series			
	☐V 60GHz	☐5 Microwave power supply	☐4 External antenna series			
	☐W 77GHz	☐6 IC	☐5 General Series			
	☐X 10.5GHz	☐7 Other	☐6 To be defined			
		☐8 Networking	☐7 To be defined			
			☐8 Basic series			
			☐9 High altitude series			

Historical revision records

Version	Time	description	Note
V1.0	2022-12-15	Release version	-

Configuration version description

[Hardware]:
[Software]:

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference, and
This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

FCC Part 15 Subpart C 15.247 & 15.207 & 15.209

2.3 Specific operational use conditions

Operation Frequency:5750~5870MHz

Number of Channel:120 Channels

Modulation Type:CW

Antenna Type:PCB antenna

Antenna Gain(Peak):3.24 dBi (Provided by customer)

The module can be used for mobile or portable applications with a maximum 3.24dBi antenna. The host manufacturer installing this module into their product must ensure that the final composit product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operaition. The host manufacturer has to be aware not to provide informationto the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

2.4 Limited module procedures

Not applicable. The module is a Single module and complies with the requirement of FCC Part 15.212.

2.5 Trace antenna designs

Not applicable. The module has its own antenna, and doesn't need a host's printed board microstrip trace antenna etc.

2.6 RF exposure considerations

The module must be installed in the host equipment such that at least 20mm is maintained between the antenna and users' body; and if RF exposure statement or module layout is changed, then the host product manufacturer required to take responsibility of the module through a change in FCC ID or new application. The FCC ID of the module cannot be used on the final product. In these circumstances, the host manufacturer will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.7 Antennas

Antenna Specification are as follows:

Antenna Type:PCB antenna

Antenna Gain(Peak):3.24 dBi (Provided by customer)

This device is intended only for host manufacturers under the following conditions: The transmitter module may not be co-located with any other transmitter or antenna;

The module shall be only used with the External antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employ a 'unique' antenna coupler.

As long as the conditions above are met, further transmitter test will not be required. However, the host manufacturer is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

2.8 Label and compliance information

Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID 2ARDMEDC114 With their finished product.

2.9 Information on test modes and additional testing requirements

Operation Frequency:5750~5870MHz
Number of Channel:120 Channels
Modulation Type:CW
Antenna Type:PCB antenna
Antenna Gain(Peak):3.24 dBi (Provided by customer)
Host manufacturer must perfom test of radiated & conducted emission and spurious emission, etc according to the actual test modes for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.
Only when all the test results of test modes comply with FCC requirements, then the end product canbe sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is **only** FCC authorized for FCC Part 15 Subpart C 15.247 & 15.207 & 15.209 and that the host product manufacturer is responsible for compliance to any other FCC rules that applyto the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.