

## RADAR5.8GATO RADAR MODULE

WENSHING Electronics release the [RADAR5.8GATO](#) (Dopple) long-distance power-saving human body motion detection module series in November 2022. The [RADAR5.8GATO](#) is in the 5.8GHz legal ISM band. This is to use the principle of radio wave reflection to design human body detection. The Doppler intermediate frequency effect is generated due to human body movement. The intermediate frequency is selected in the circuit design, and the intermediate frequency is detected through DSP to know whether there is any Triggered by object movement. It is save the user's cost. The detection distance is up to 40 meters, the minimum operating voltage is 2.1V, and the power consumption current only 90uA.

### Applications

- Anti-theft device
- Billboard power saving detection
- Deportation of agricultural birds
- Person approaching detection
- Pet detection
- Remote control aircraft ground detection
- Smart Street Light
- Intelligent light control
- Smart toilet
- Long-term care
- Fall detection



### Features

- Detect people moving distance 35 meters
- Low operating current: 90uA
- Small size: 2cmX3.3cm
- Built-in light sensor CDS
- Comply with CE/FCC regulations
- I2c communication interface
- Work independently, no need to add MCU
- Low working voltage: 2.1V
- Multi-channel

### Version History

Version	Date	Changes
V1.01	2022/11/29	1 <sup>st</sup> . Edition

## DC Electrical Characteristics

Parameter	Specification	Unit
	.	
Frequency Range	5805	MHz
IF Frequency Range	1	HZ
Transmit power	-20	dBm
Supply Voltage, VDD	2.1	V

### RADAR5.8GATO-X-XX LIST

Model	LDO/LED Function
RADAR5.8GATO-1-XX	LDO 3.3V, with LED light (standard)
RADAR5.8GATO-2-XX	LDO 3.3V, no LED signal
RADAR5.8GATO-3-XX	No LDO, no lights
RADAR5.8GATO-5-XX	With light sensor LDO 3.3V, with LED light (standard)
RADAR5.8GATO-6-XX	With light sensor LDO 3.3V, without LED light signal
RADAR5.8GATO-7-XX	With light sensor LDO, no light signal

Hardware trigger delay options:

Model	Tigger off-delay time
RADAR5.8GATO-X-01	The trigger is HI, and it is LOW after 1 second (standard)
RADAR5.8GATO-X-15	The trigger is HI, LOW after 15 seconds
RADAR5.8GATO-X-30	The trigger is HI, LOW after 30 seconds
RADAR5.8GATO-X-60	The trigger is HI, LOW after 60 seconds

PS. If the post-trigger delay time process is triggered again, its time will continue to be extended accordingly.

This module can declare other functions externally, please contact us if necessary.

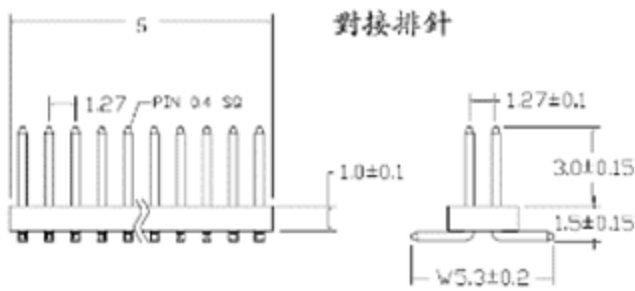
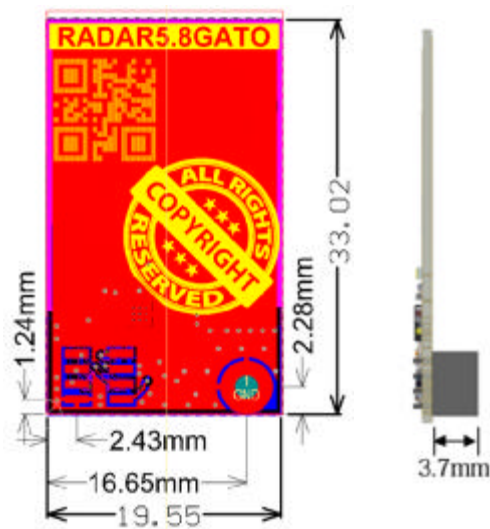


## Pin Assignment



Pin	Name	Function	Description
1	VDD	POWER	Power Supply 2.1~5.5V
2	IF	O	IF Export
3	ENABLE	I	Control LDO HI actions
4	SDA	I/O	I2c communication interface
5	INT	O	There is a trigger output HI when moving
6	SCL		I2c communication interface
7	GND	GND	Power GND
8	VCC	O	Internal LDO output 3.3V

Dimensions



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

## List of applicable FCC rules

FCC Part 15 Subpart C 15.249 & 15.209

## Specific operational use conditions

The module is in the 5.8GHz legal ISM band.

Operation Frequency: 5805MHz

Number of Channel: 1

Modulation: GFSK

Type: PCB Antenna

Gain: 3.80 dBi Max.

The module can be used for mobile or portable applications with a maximum 3.8dBi antenna.

The host manufacturer installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation. The host manufacturer has to be aware not to provide information to 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 shown in this manual.

## Limited module procedures

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

## Trace antenna designs

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

## RF exposure considerations

The module must be installed in the host equipment such that at least 20cm 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.

## Antennas

Antenna Specification are as follows:

Type: PCB Antenna

Gain: 3.8 dBi

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 internal 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.).

## Label and compliance information

Host product manufacturers need to provide a physical or e-label stating “Contains FCC ID: OYQ-5.8GATO” with their finished product.

## Information on test modes and additional testing requirements

Operation Frequency: 5805MHz

Number of Channel: 1

Modulation: GFSK

Host manufacturer must perform 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 can be sold legally.

## **Additional testing, Part 15 Subpart B disclaimer**

The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247 & 15.209 and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to 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 circuitry), 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.

### **Federal Communication Commission Statement (FCC, U.S.)**

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 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

### **IMPORTANT NOTES**

Co-location warning:

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

OEM integration instructions:

This device is intended only for OEM integrators 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.

As long as the conditions above are met, further transmitter test will not be required.

However, the OEM integrator 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.).

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End product labeling:

The final end product must be labeled in a visible area with the following: “Contains Transmitter Module FCC ID: OYQ-58GATO”.