

Specification

Product Name:	Integrated Circuit Microwave Module		
Product Model:	MIC23-5GH		

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Versions	Release / Change Date	Reasons	Publishing
V1.0	2023.10.19		Leun Huang



[Product Feature]

- The product adopts patented low-impedance antenna technology, which has a larger detection range and strong anti-interference ability
- It can resist interference from wireless devices, while not interfering with other wireless devices, stably output high and low level signals
- Long-distance integrated circuit solution, suitable for parking lot application scenarios, long detection distance
- Single lamp detects vehicle and human body movement signals. The terminal is simple to use and no settings are required.
- Can pass FCC and RED certification in batches





[Parameter]

Input							
Rated Voltage	8-13Vdc						03
Working Current	11±2mA						\mathcal{O}
Ripple Voltage	<120mVp-p						
Output							
Output Signal	5V high-low level si	gnal			5		
Sensor Parameter							
Working Frequency	5.8 GHz ±75MHz, I	SM wave band	~	1			
Transmitting Power	1mW Max.						
Detection Area	100%						
Hold Time	02s	⊙30s	06		0s	○90s	
	⊖2min	O3min		O5ı	min		⊖10min
Daylight Sensor	Daylight sensor:	ODisable	\odot	15Lux	○30Lu	IX	⊖50Lux
Default setting	Set factory settings	based on actual	selec	tion of par	ameters		
	Ceiling mounting height 3m						
Detection Area(Radius)	Vehicle detection: r≥5m@10km/h(Typical value)						
Detection Area(radids)	Human detection: r≥4.5m@0.3-1m/s						
©	Test condition: set detection area to 100%, test in underground parking lot						
Mounting Height	3m(6m Max)					_/	
Environment							
Working Environment	-25~85℃						
Temperature	-23 03 0						
Storage Temperature	20℃~30℃, Humidit	y ≤60% (Non-co	ondens	sing)	01		
Certificate Standard							
Certificate	RED (Pending)、	FCC (Pending))				
Environmental Requirement	Compliant to RoHS	2.0, Reach					
IP Rating	IP00						



Other	
Wiring	Customizable Pin Header (see attachment for details)
Installation	Built-in
Package	Clapboard + Carton(K=A)
Net weight	3±0.5g
Lifetime	5 years warranty @Ta

[Function]

☑ON/OFF function	When the light control control Disable or the external brightness value is lower than the set value, when the microwave sensor detects the movement of an object, the sensor is triggers to enter the light-on state, and after a		
□Two-step dimming function	N/A		
□Three-step dimming function	N/A		
□Daylight harvesting	N/A		
□Daylight priority	N/A		

[Product Information]

• Dimension (Unit: mm), Function







Functional pin definition

Name Description		Function and Parameters	
V	Power input positive	Voltage input range: 8-13Vdc	
0	High-low level signal	High-low level signal output terminal, level voltage: 0/5	
G	Negative pole of power input	Negative pole of power supply.	
Daylight sensor	Photosensitive sensor	Sensor that detects the intensity of external light.	



Installation Instruction



Note:

When installing and designing, please pay attention to the distance between the microwave antenna and the light panel, high-frequency components and high-current wires. See the precautions for details.

[Radiation Pattern]





[Functional Sequential Logic]



Note:

This type module only has high-low level output functions and no PWM output function.

[Typical Application Circuit& Parameters]



[Mode]

Working Mode	Modes of Changing Mode	Hold Time of O Pin Header Output
Normal Mode	Normal Power Supply	Actual selection hold time setting
Test Mode	Continuous ON/OFF Five Times	2s
Being-on Mode	Continuous ON/OFF Ten Times	∞

Nata	After powering on for 3 seconds, the switch count will be automatically cleared.
NOTE:	The power input interval for continuous switches must be greater than 2.5s, because the capacity of the



input capacitor affects the switching interval, the larger the capacity, the longer the switching interval. Such as: power on0.5s \rightarrow power off2s (First cycle operation) \rightarrow power on0.5s \rightarrow power off 2s (Second cycle operation).....

[Initialization]

The light will be turned on 100% brightness after power on, and will be turned off after 5 seconds. During initialization, no external motion sensing signal will be detected.

[Application Notice]

• Sensor should be installed by a professional electrician. Please turn off power before installing, wiring.

• Microwave sensor has good penetration ability to plastic and wood, but microwaves cannot penetrate metal. Neither metal nor glass is not allowed to cover above the product, otherwise the transmitting and receiving of microwave antennas will be affected.

• Sensitivity area is related to moving speed of objects, size of moving objects, mounting height, mounting angle, working environment, reflecting materials and etc..And the sensing distance in different directions will also have certain differences.

• The daylight thresholds are measured on a sunny day without shadow and in an ambient light diffuse reflection status. Different environment and climate cause different brightness values that daylight sensor measures.

• The installation spacing between sensors is recommended to be greater than 1.5m, and the installation spacing between sensors and routers is recommended to be greater than 2.5m. So as not to interfere with the normal operation of the microwave.

• The installation plane of the product (for example, aluminum substrate, PCB board) needs to be a certain height different from the antenna plane of the microwave module. The spacing between the sensor antenna and surrounding materials should be greater than 5mm.

• It is recommended to connect with stable AUX power supply with lower current and ripple voltage (ripple voltage< 120mV; the minimum load current > 100mA), and to set an electrolytic capacitor filter of no less than 220uF at the VCC port of the input power supply.

• Vibration signals will be regarded as moving signals to trigger sensor. Installing sensor should be away from the object that vibrates for a long time, such as large metal equipment, pipes, air conditioning outlets, exhaust vents, smoke exhaust machine ports, shaking fans, etc.

• The antenna surface of microwave module should be away from AC drive power supply, rectifier bridge, transformer, switch tube and other high-power devices to avoid high frequency signals affecting the normal operation of microwave sensor's antenna.

• When design product: The antenna surface of the microwave module and its nearby circuit should avoid large current flow, and it also should avoid transformers or high-frequency components nearby, the distance should be greater than 10mm.

• When wiring, the antenna surface and the component surface on the back of the product should not be shielded by wires or large current flow, avoid to influence the normal operation of the sensor.



• There should be no metal or glass barrier directly in front of or near the product, avoid to influence the normal operation of the sensor. Meanwhile, the height between the antenna surface and plastic should be greater than 3.2mm. The thickness of the plastic should be less than 2mm. If it is too thick, it will affect the detection effect and orientation of the microwave module. Please refer to the spacing item description in the installation diagram.

• The height between the antenna surface and metal plane(aluminum substrate, iron shell) is recommended greater than 0.5mm.

• When the product structure, power supply mode/circuit, sensor antenna front shield changes, should notice the sensor manufacturer for confirmation, so as not to cause the product to work abnormally. If the change is not notified to the manufacturer, the manufacturer will not take responsibility to the abnormal.

• The input and output pins are not welded by default.

• For the new installation environment, it is recommended to install and test 5pcs of prototypes before batch installation.