



### 1 Selection Table

- PIR Module HT7M2xxx Series

Part No.	Viewing Angle H/V	Center Distance (meter)	Lens Color
HT7M2126	121° / 77°	3.5 ~ 6.0	Natural
HT7M2127	121° / 77°	2.8 ~ 5.0	Black
HT7M2136	91° / 10°	5.5 ~ 8.0	Natural
HT7M2156	10° / 20°	8.0 ~ 12	Natural
HT7M2176	86° / 75°	5.0 ~ 7.5	Natural

### 2 Component Description

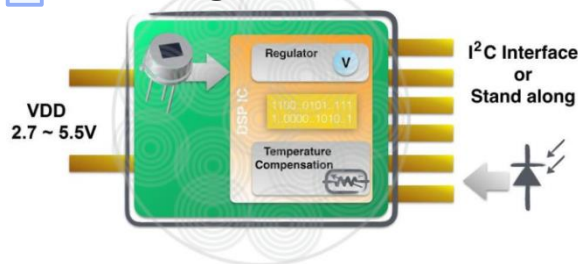


- 1 Lens
- 2 Lens holder
- 3 Model No.
- 4 Pins header
- 5 PCB

### 3 Features

- Wide operating voltage range
- Low power consumption
- Intelligent signal recognition algorithm
- Optional communication interfaces: I<sup>2</sup>C or I/O
- Adjustable sensing sensitivity – Network Mode
- Customizable trigger modes: Single/Continuous – Network Mode
- Adjustable trigger output time
- Low voltage detection function
- Supports external optical sensors
- Integrated temperature sensor with temperature compensation
- Quick stabilisation: ready for stable operation within 12 seconds after power on

### 4 Block Diagram

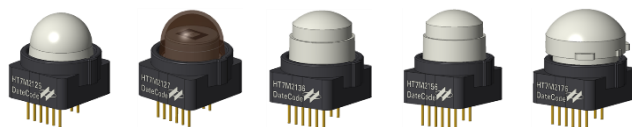


### 5 Pin Assignment

Pin #	Function	
	Stand-alone Mode	Network Mode
1	VSS	
2	VDD	
3	STATUS	SDA
4	TRO	SCL
5	FTS	
6	VSS	
7	MODE/DT	MODE/ACT
8	TP1	

### 6 Module Model Selection

- Selects the appropriate model according to product application requirements



### 7 Module Mode Configuration

- The Pin #7 (MODE pin) is used for mode selection
- Stand-alone mode: an external pull-low resistor is connected on the MODE pin
- Network mode: an external pull-high resistor or no resistor is connected on the MODE pin



### 8 Stand-alone Mode

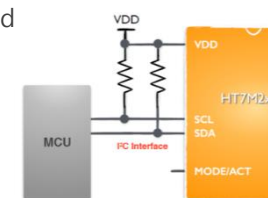
- The TRO pin will output a high pulse when a moving human body is detected
- The high pulse duration is determined by the external resistance  $R_A + R_T$  together with the capacitance of  $0.22\mu\text{F}$

$R_A + R_T$ Resistance ( $\Omega$ )	1.8K	2.2K	2.7K
TRO output duration	3sec.	10sec.	38sec.

	3K	3.3K	3.6K	3.9K
	1mins.	3mins.	5mins.	10mins.

### 9 Network Mode

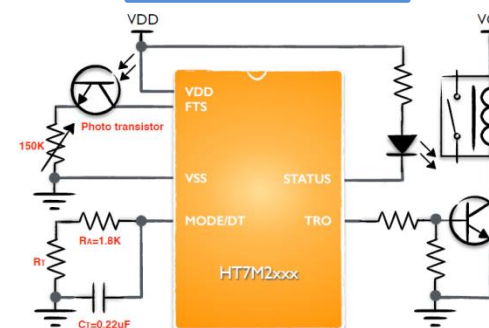
- The MODE/ACT pin will output a high pulse with a 30 seconds width when a moving human body is detected
- The Host MCU reads and configures the module using I<sup>2</sup>C interface



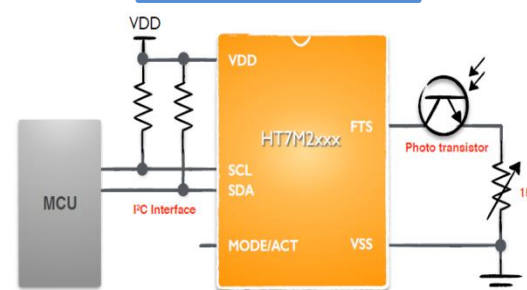
### 14 Appendix

- HT7M2xxx Application Circuits

#### Stand-alone Mode



#### Network Mode



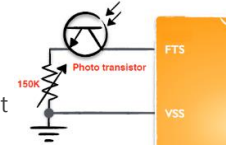
### 10 Status LED

- In the Stand-alone mode, the Pin #3 is used for Status output, an LED can be connected for indication
- Warm-up status: LED flickers with a frequency of 2.5Hz
- Detection status: LED flickers with a frequency of 0.25Hz
- Module low voltage status: LED flickers with a frequency of 2Hz when the module voltage is lower than 2.7V



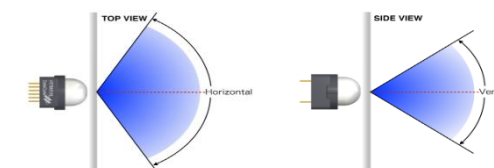
### 11 Optical Sensing Function

- An external photo sensor can be connected on the Pin #5 (FTS pin)
- When the FTS pin voltage  $> 0.24 \times V_{DD}$ , the PIR trigger output function will be enabled
- When no external photo sensor is connected, the PIR trigger output function will be enabled by default



### 12 Installation and Detection Angle

- The device number should be turned upward or downward (face toward the ground) when installing the module
- Horizontal viewing angle: left to right; vertical viewing angle: up to down



### 13 Specifications

- Operating voltage: 2.7V ~ 5.5V
- Operating temperature:  $-10^\circ\text{C} \sim 60^\circ\text{C}$
- Low power consumption: standby with detecting mode  $< 50\mu\text{A}$ , operating mode (Moving object to be detected)  $< 2.0\text{mA}$
- Adjustable sensing sensitivity: 8-segment trigger threshold, 32-segment OPA amplification factor – Network Mode
- Adjustable trigger output time: 16-bit  $\times 100\text{ms}$  – Network Mode 3sec. ~ 10mins – Stand-alone Mode
- Low voltage detection: 2.0V~4.0V, 8 options – Network Mode
- Quick stabilisation: ready for stable operation within 12 seconds after power on