

MP131, MP132



K-band Motion Detector

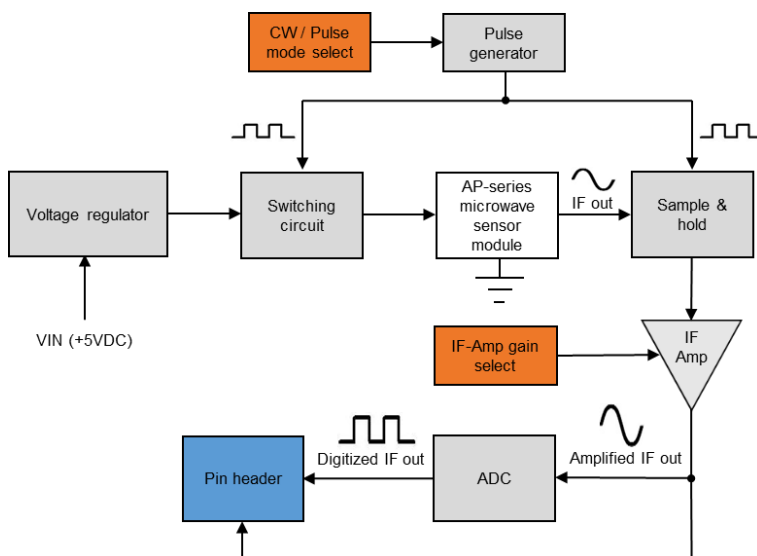
AGIL's MP131/132¹ is a miniature motion detector. It's small size and compact design are ideal for applications in small spaces.

The MP131/132 performs signal processing, conditioning and digitizes AGIL's microwave sensors' analog output signal.

Onboard IF-amplifier dual-gain selector is available for users selection based on their application needs.

Aside from the standard 5V version, the 3V² and higher speed detection versions are also available to cater for 3V systems and higher speed detection applications.

Block Diagram



Key Applications:

- Motion detection
- Lighting control
- Security alarm
- Automatic door control
- Home automation

Key Features:

- Small and flat profile
- Selectable CW and pulse mode operation
- Selectable IF-amplifier gain
- Low current consumption
- Digital and analog signal outputs

Technical Specifications

| PARAMETER | MODEL | REMARKS | MIN | TYPICAL | MAX | UNITS |
|--|---|---------------|------|--------------------|-------|----------|
| OPERATING CONDITIONS | | | | | | |
| Supply voltage, V_{IN} | MP131-3, MP132-3, MP131-3B | | 2.85 | 3 | 12 | V_{DC} |
| | MP131, MP131/HP, MP132 | | 4.75 | 5 | 12 | V_{DC} |
| Current consumption (Includes sensor) | MP131-3, MP132-3 | Pulse/CW mode | | 3.5/40 | | mA |
| | MP131-3B | Pulse/CW mode | | 8.5/40 | | mA |
| | MP131, MP132, MP131/HP | Pulse/CW mode | | 5/40 | | mA |
| Operating temperature | All variants | | -20 | | 60 | °C |
| PULSE MODE OPERATION | | | | | | |
| Pulse frequency | MP131-3, MP132-3, MP131, MP132, MP131/HP | Pulse mode | | 1 | | KHz |
| Duty cycle | | | | 4 | | % |
| Pulse frequency | MP131-3B | | | 8 | | KHz |
| Duty cycle | | | | 14 | | % |
| TRANSMITTER | | | | | | |
| Operating frequency | All variants | | 24 | 24.125 | 24.25 | GHz |
| ANTENNA | | | | | | |
| Field of view | MP131-3, MP131-3B, MP131, MP131/HP | | | 32 × 80 | | ° |
| | MP132-3, MP132 | | | Omni-Directional | | |
| Antenna sidelobe rejection | MP131-3, MP131-3B, MP131, MP131/HP | | | 15 | | dBc |
| IF-Amplifier | | | | | | |
| Gain | MP131-3, MP132-3, MP131-3B, MP131, MP132 | Selectable | | 55/70 | | dB |
| | MP131/HP | | | 70 | | dB |
| Bandwidth | MP131-3, MP132-3, MP131, MP132, MP131/HP | | | 15-300 | | Hz |
| | MP131-3B | | | 50-1500 | | Hz |
| Detectable speed | MP131-3, MP132-3, MP131, MP132, MP131/HP | | 0.3 | | 7 | km/hr |
| | MP131-3B | | 1 | | 33.5 | km/hr |
| PHYSICAL PROPERTIES | | | | | | |
| Dimensions | All variants | | | 35.0 × 28.0 × 12.2 | | mm |
| Weight | All variants | | | 6.3 | | g |

Unless noted otherwise, the specifications are measured at +25°C

Note 1: ¹MP131 and MP132 comes with an AP96 and AP98 miniature K-band microwave sensor module respectively. Please refer to AP96 and AP98's datasheets for detection pattern.

Note 2: ²MP131-3/MP131-3B and MP132-3 comes with an AP96-3 and AP98-3 miniature K-band microwave sensor module respectively. Please refer to AP96-3 and AP98-3's datasheets for detection pattern.

Note 3: Sensors used complies with EN 300 440 and FCC Part 15.245.

Note 4: **CAUTION: ELECTROSTATIC SENSITIVE DEVICE.** Observe precautions for handling and storage.

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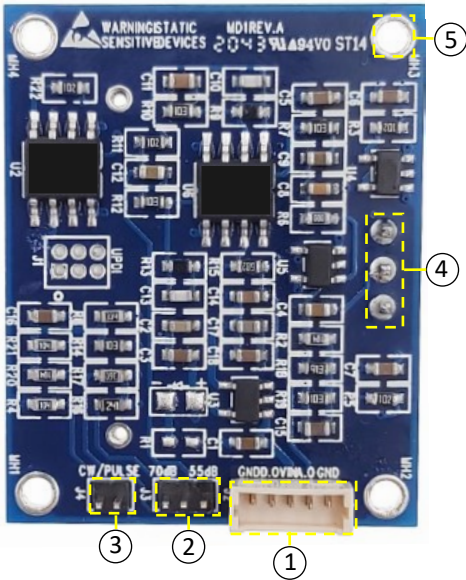
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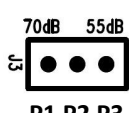

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On-board Connectors and Controls



| LABEL | DESCRIPTION | FUNCTIONS |
|-------|--|--|
| 1 | Five-way pin header [^]  | Power supply and outputs V_{IN} - +3/5V _{DC} power supply A.O - Analog IF Output D.O - Digital IF Output GND - Ground |
| 2 | Three-way pin header*  | IF-amplifier gain selector ¹ SHORT PIN 1 & 2 - 70dB SHORT PIN 2 & 3 - 55dB |
| 3 | Two-way pin header [#]  | Operating mode selector ¹ SHORT - Pulse OPEN - CW |
| 4 | 2.54mm pitch sensor mounting holes | Microwave sensor module interface |
| 5 | Ø2mm x 4 PCB mounting holes | Mounting holes to attach PCB to an enclosure or surface |

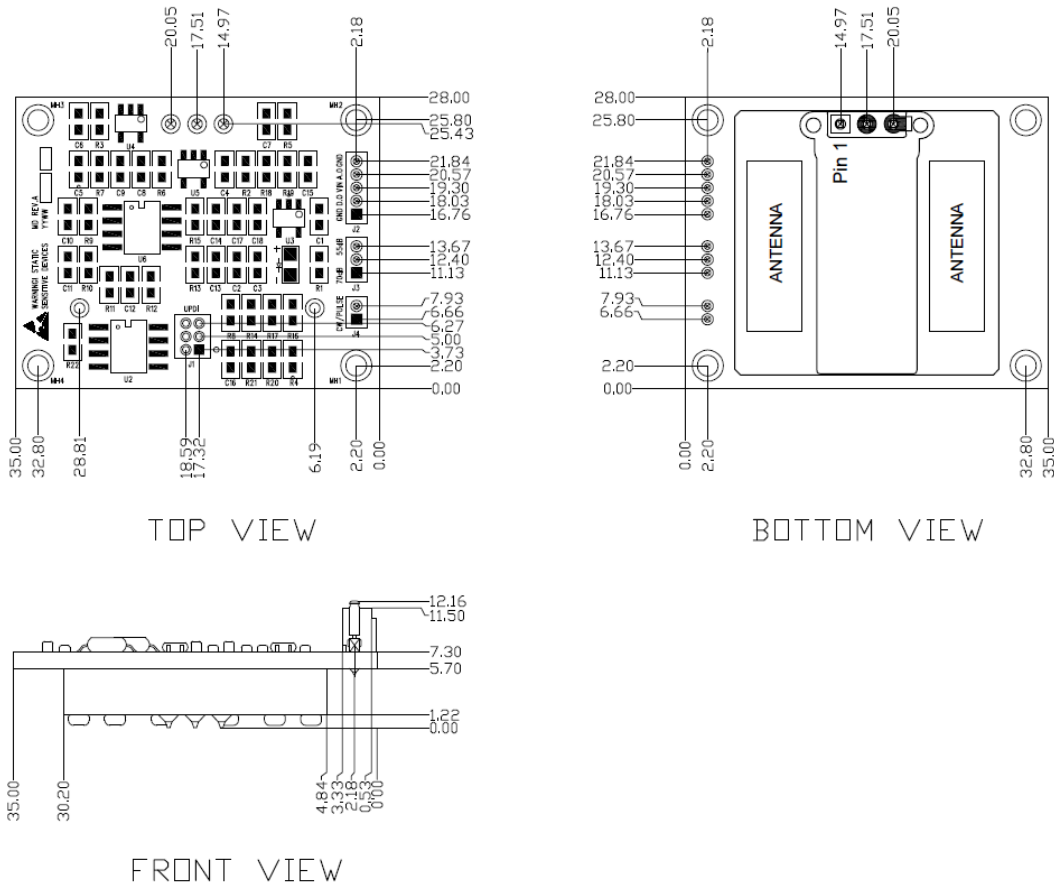
[^]Recommended mating cable assembly: Molex 15134-0500 - 5 contact—1.25mm Pitch 50mm Picoblade

*Recommended mating receptacle: Harwin M50-3030342 - 3 contact—1.27mm Pitch Vertical Socket

[#]Recommended mating receptacle: Harwin M50-3030242 - 2 contact—1.27mm Pitch Vertical Socket

¹Pin headers 2 & 3 are shorted to 70 dB and Pulse for MP131/HP

Outline Diagram



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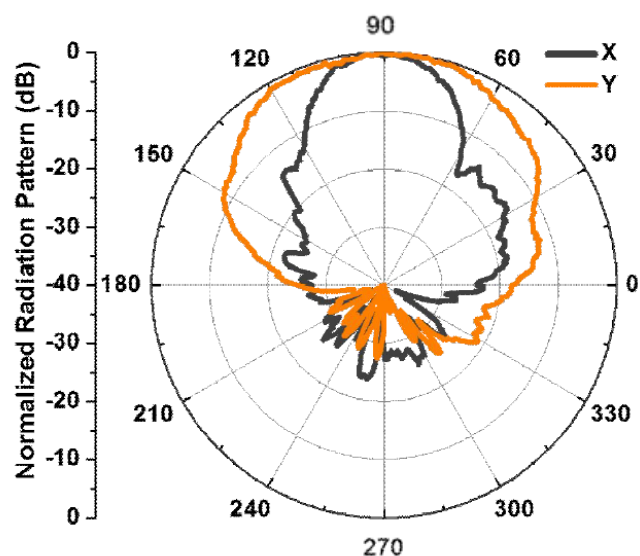
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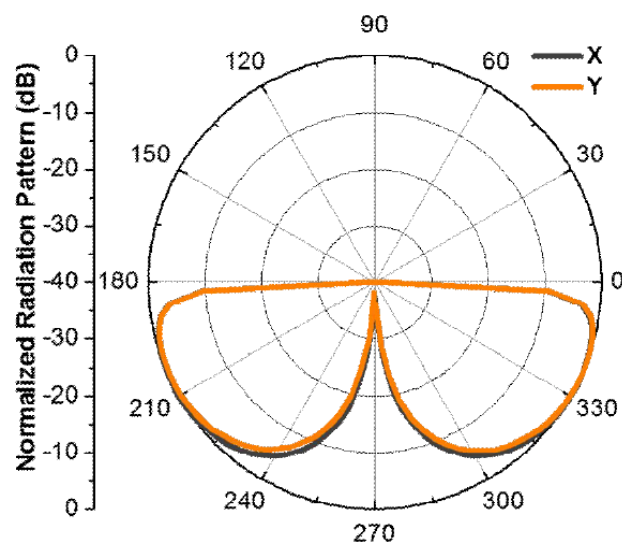
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Antenna Beam Pattern



MP131



MP132

Ordering Information

| Order Code | Description |
|------------|---|
| MP131-3 | +3V _{DC} V _{IN} , AP96-3 K-band sensor module |
| MP132-3 | +3V _{DC} V _{IN} , AP98-3 K-band sensor module |
| MP131-3B | +3V _{DC} V _{IN} , AP96-3 K-band sensor module, wide bandwidth |
| MP131 | +5V _{DC} V _{IN} , AP96 K-band sensor module |
| MP132 | +5V _{DC} V _{IN} , AP98 K-band sensor module |
| MP131/HP | +5V _{DC} V _{IN} , AP96 K-band sensor module, fixed 70 dB gain & Pulse |

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