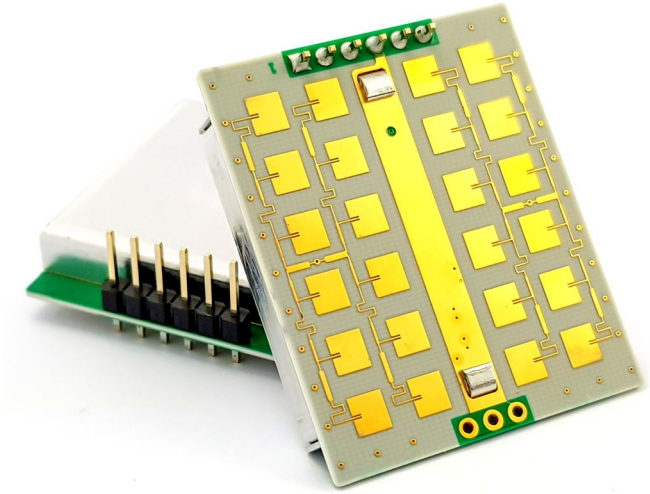
AP81

Mid-Range K-band Microwave Sensor



Features:

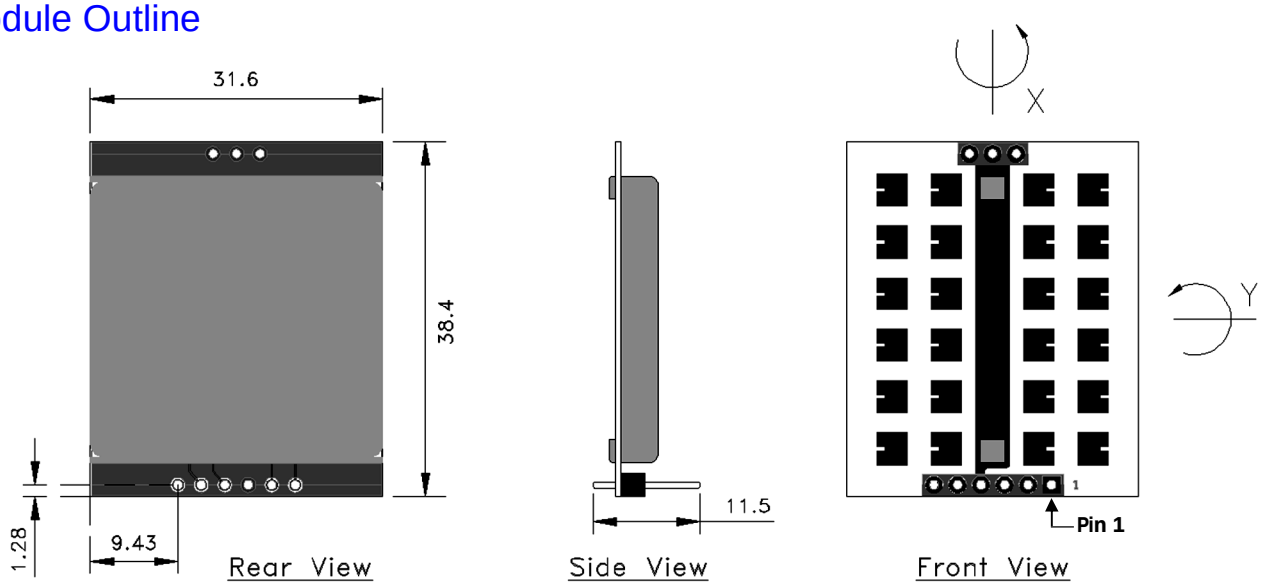
- Motion direction discrimination
- CW and pulse mode operation
- Low current consumption
- I & Q channels
- Flat profile & light weight

Applications:

- Motion detection
- Traffic counting
- Speed measurement
- Security Alarm

The AP81 microwave sensor is a K-band Doppler transceiver. It consists of a HEMT oscillator, two single balanced mixers, and bi-static microstrip patch antenna arrays. It also has I-Q outputs to discriminate motion direction. It is suitable for applications in automatic access, security, and speed measurement.

Module Outline



All dimensions are in mm.

Pin	Name	Description
1	NC	Not connected
2	NC	Not connected
3	V_{IN}	+5 V_{DC}
4	GND	Ground
5	I	Channel I
6	Q	Channel Q

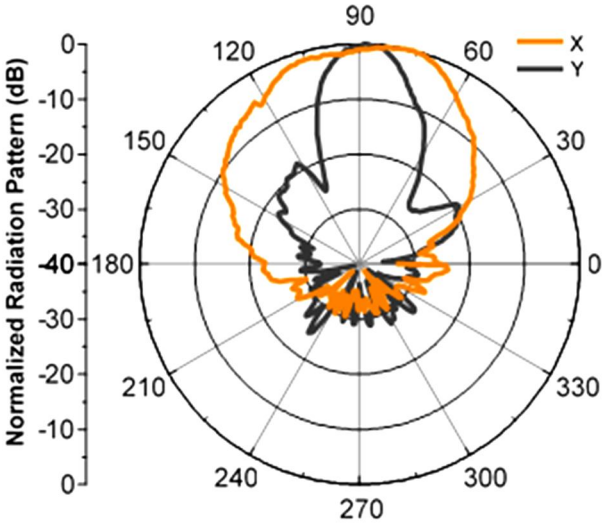
Note 1: AP81 is designed to meet the requirements of EN 300 440 and FCC Part 15.245.

Note 2: Built-in voltage regulator ensures the performance of the sensor is independent of voltage supply.

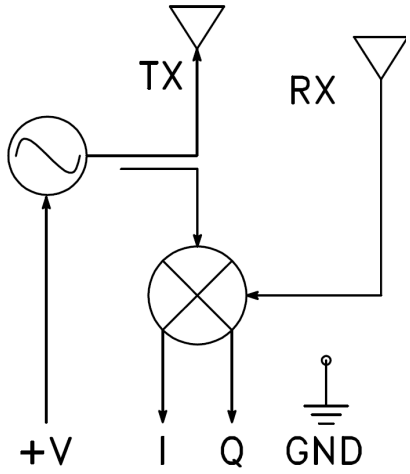
Note 3: **CAUTION: ELECTROSTATIC SENSITIVE DEVICE.** Observe precautions for handling and storage.

RoHS COMPLIANT

Antenna Beam Pattern



Block Diagram



Technical Specifications

Unless noted otherwise, the specifications are measured in CW mode, V_{IN} = +5 V_{DC} and 12k ohm load at +25°C.

Parameter	Remarks	Min	Typical	Max	Units
Operating Conditions					
Supply voltage, V_{IN}		4.75	5	5.25	V_{DC}
Current consumption			30	40	mA
Operating temperature		-20		60	°C
Recommended Pulse Scheme					
Pulse frequency	Pulse mode		2		KHz
Duty cycle	Pulse mode		2		%
Transmitter					
Operating frequency		24.000	24.125	24.250	GHz
Radiated power (EIRP)			15		dBm
Spurious emission				-30	dBm
Frequency drift vs temperature			-1		MHz/°C
Antenna					
Antenna beam-width (3 dB) - X			50		°
Antenna beam-width (3 dB) - Y			24		°
Antenna sidelobe rejection			15		dB
Receiver					
I&Q amplitude balance			0.5	3	dB
I&Q phase difference		70	90	110	°
Physical Properties					
Dimensions			38.4×31.6×11.5		mm
Weight			5		g

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