

Product Data Sheet

AGIL Sense AP97

Dual Channel Miniature K-band Microwave Sensor

Product Overview

The AP97 series K-band miniature sensor is a Doppler transceiver with a HEMT oscillator, two single-balanced mixers and bi-static microstrip patch antenna arrays. It is suitable for applications in automatic access control, intrusion detection, lighting control and speed measurement. It also has I-Q outputs to discriminate motion direction.

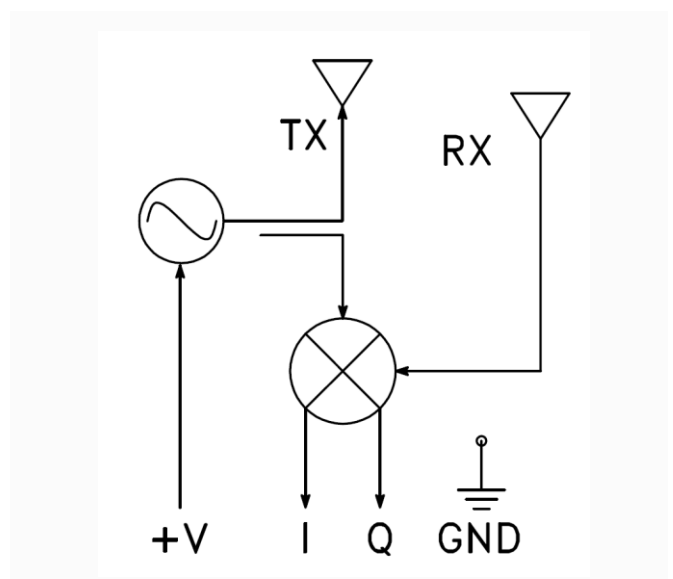
Its lightweight, miniature size and slim profile offer the flexibility to OEMs in making trendy and slim products.

Key Features

- Motion direction discrimination
- Low current consumption
- Small and flat profile
- Light weight
- CW and pulse mode operation capable

Key Applications

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



Block Diagram

Technical Specifications

Parameter	Remarks	Min.	Typical	Max.	Unit
Operating Condition					
Supply voltage, V_{IN}	AP97, AP97-1, AP97-2	4.75	5	5.25	V_{DC}
	AP97-3	2.85	3	3.15	V_{DC}
Current consumption			30	40	mA
Operating temperature		-20		60	°C
Operating Condition					
Pulse frequency	Pulse mode		2		KHz
Duty cycle	Pulse mode		2		%
Transmitter					
Operating frequency	AP97	24.000	24.125	24.250	GHz
	AP97-1	24.075	24.125	24.175	GHz
	AP97-2	24.150	24.200	24.250	GHz
	AP97-3	24.000	24.125	24.250	GHz
Radiated power, EIRP				13	dBm
Spurious emission				-30	dBm
Frequency drift VS temperature			-1		MHz/°C
Antenna					
Antenna Beam-width, 3 dB – X × Y			32 × 80		°
Antenna Sidelobe Rejection			15		dB
Receiver					
I&Q Amplitude Balance			0.5	3	dB
I&Q Phase Difference		70	90	110	°
Physical Properties					
Dimensions		25.4 × 25.4 × 11.7			mm
Weight		3			g

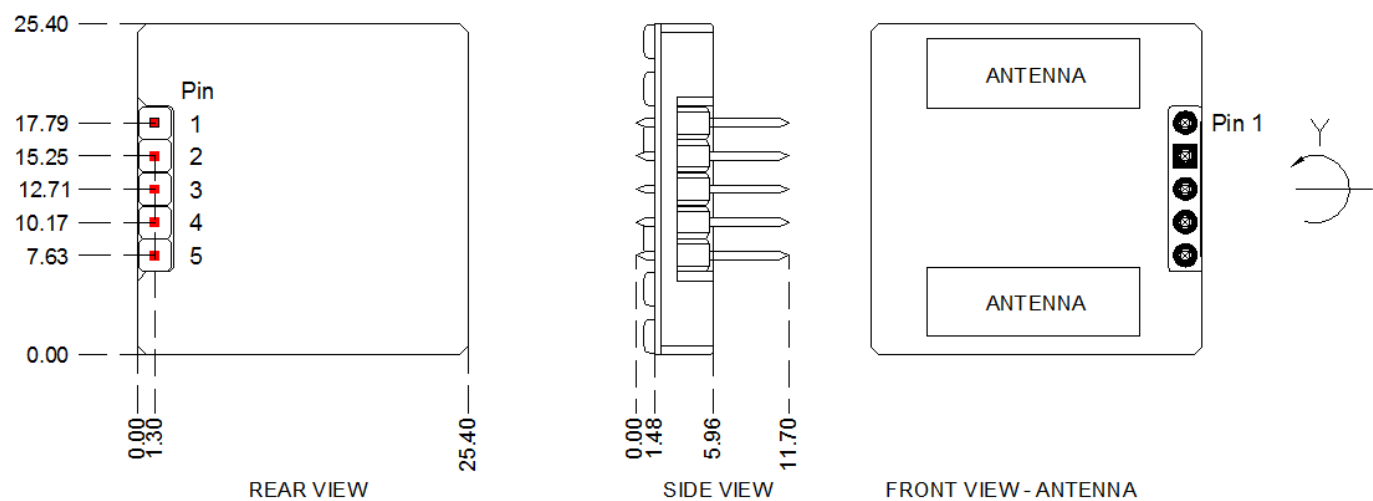
Unless noted otherwise, the specifications are measured in CW mode, $V_{IN} = +5 V_{DC}$ and 12 k Ω load at +25 °C.

Note 1: AP97 complies with EN 300 440.

Note 2: AP97 complies with FCC part 15.245.

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

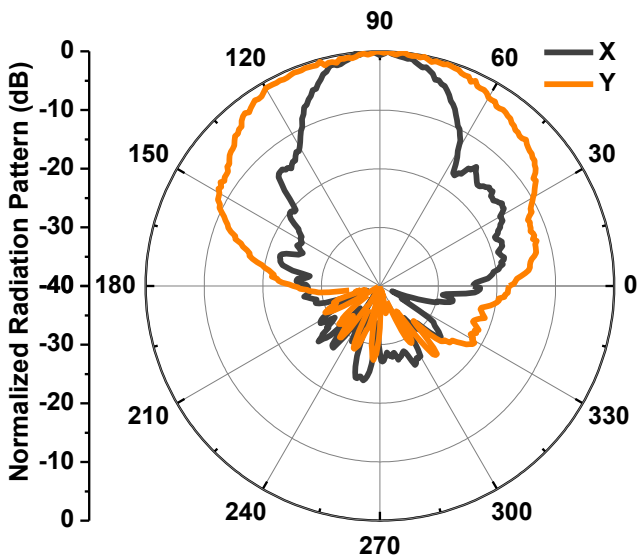
Module Outline



All dimensions are in mm.

Pin	Name	Description
1	NC	Not connected
2	+V	Supply voltage, V_{IN}
3	I	Channel I
4	GND	Ground
5	Q	Channel Q

Antenna Beam Pattern



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