

24GHz

MIMO Radar Sensor Product Evaluation Kit

Our radar sensor products are high precision and small size by using 24GHz radar MMICs manufactured by Analog Devices and our proprietary signal-processing technique.

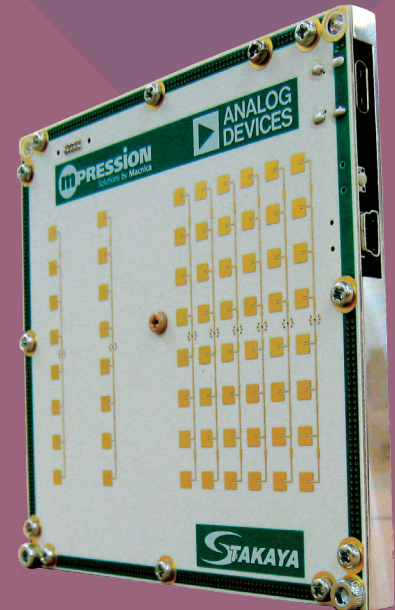
The products adopt MIMO(Multi Input Multi Output) technology to estimate detection of arrival with longer-range and wider azimuth.

To support your requests, six types of antenna variation are available, and they are also certified with radio regulatory in Japan, so you can use our products soon in public field.

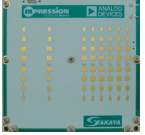
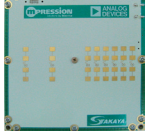

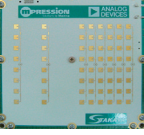
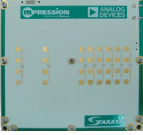

Specifications

Size	mm	100(W)×100(D)×7.5(H)
Interface		USB2.0(DATA) USB3.0(Bus Power)
Supply Voltage	V	5.0
Current Consumption	A	0.7
RF Frequency	GHz	24.05 - 24.25
Modulation Bandwidth	MHz	180, 80 (1)
Detection Range(Typ)	m	0.75 - 07 2.3 - 41 (1)
Detection Angle(Typ)	deg	±40
Chirp Time	us	260

(1) Using the AtlasDemoKitApp software.



Antenna Variations

Type Name		AT1_01080108V	AT2_01040104V	AT3_01020102V	AT4_01080108H	AT5_01040104H	AT6_01020102H
Antenna Type							
TX	Patch	1×8	1×4	1×2	1×8	1×4	1×2
RX	Patch	1×8	1×4	1×2	1×8	1×4	1×2
Transmitter Antenna Half-power Angle (Typ)							
Azimuth	deg	±40	±40	±40	±70	±70	±70
Elevation	deg	±7	±10	±20	±7	±10	±20
Receive Antenna Half-power Angle (Typ)							
Azimuth	deg	±40	±40	±40	±70	±70	±70
Elevation	deg	±7	±10	±20	±7	±10	±20
Polarization Direction		Vertical	Vertical	Vertical	Horizontal	Horizontal	Horizontal
Output Power(Typ)	dBm EIRP	20	18.5	16	18.5	15	12

* Please contact the distributor or below for inquiries about this catalog.

* This specification is subject to change without prior notice.

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Macnica Altima Company, Inc.

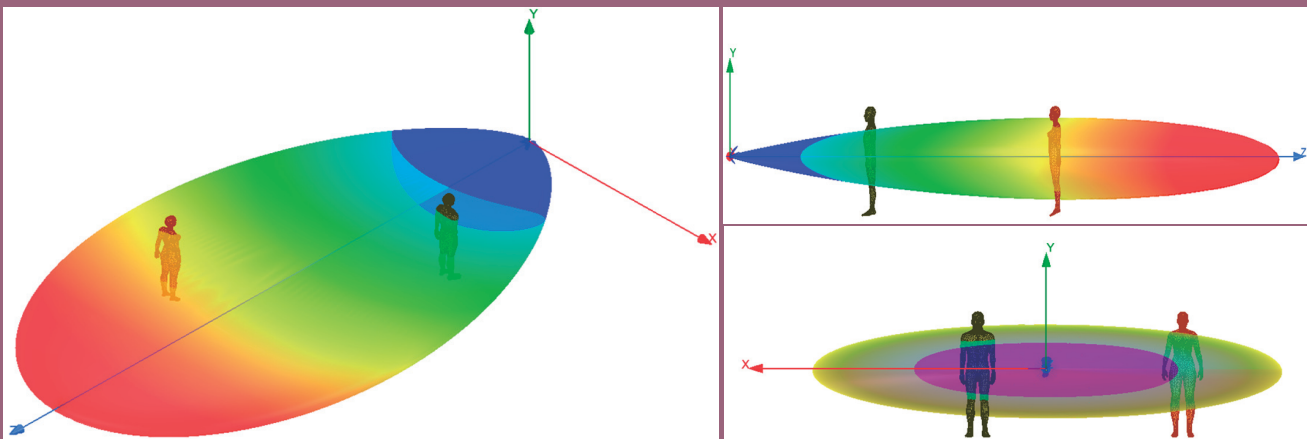
https://www.macnica.co.jp/business/semiconductor/manufacturers/analog_devices/

Features

It has excellent environmental resistance and less susceptible to rain, fog, smog, etc.
It can also nighttime and illuminance changes without being affected.

Method	Merit	Demerit	Applications
Vision (Camera)	High Resolution(Best) Color Information	Nighttime Bad Weather Detection Range	Target Classification
LiDAR	High Resolution Detection Range	Target Color Dependence Bad Weather	3D mapping Obstacle Detection Initial Targeting Classification
Ultrasonic Sensor	Any Weather Low-cost	Detection Range Low Resolution(Worst) Response Speed	Low-speed Target Close-up (proximity)
Radar	Any Weather Detection Range(Best) Speed Measurement Size Estimation	Low Resolution	Target Detection Target Tracking

Radio Emission Image



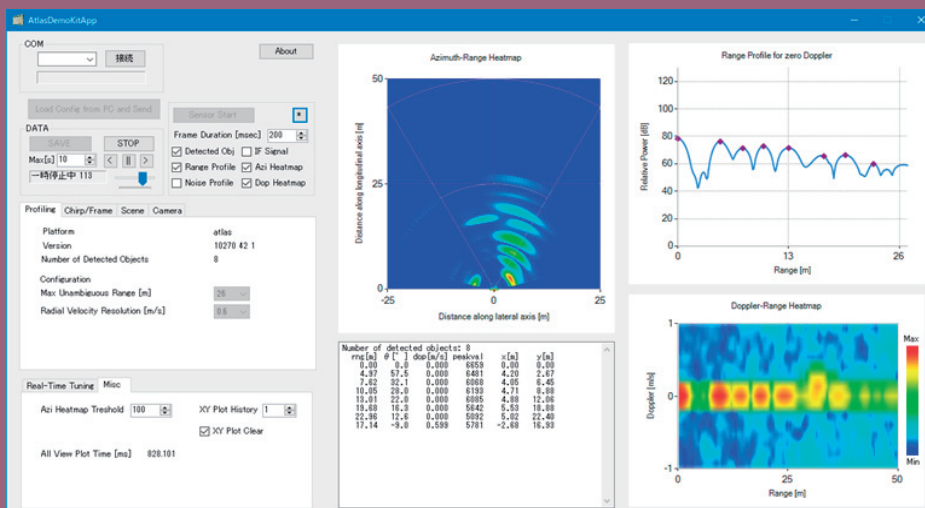
* Irradiation image to human (AT1-01080108V.AT4_01080108H)

This is a visual display of areas with strong signal strength.

In reality, radio waves are emitted over a wide range, and the detection range is wider than this.

Evaluation Application (for Windows10)

The Radar Sensor Product Evaluation Kit supports display various measurement data.
It is easy to display sensor settings, display and record/playback measured data.



Display of various measurement data

- X-Y Scatter Plot
- Azimuth-Range Heatmap
- Doppler-Range Plot
- Doppler- Heatmap
- Camera image display
- Saving/Playing Data