

79GHz



MIMO Radar Sensor Product Evaluation Kit

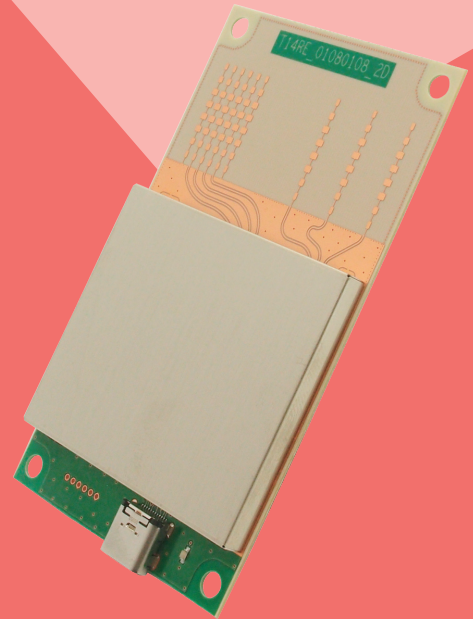
Our radar sensor products are high precision and small MIMO(Multi Input Multi Output) radar sensor products that achieve not only RAW data output but also distance FFT data output by using 79GHz radar MMICs(IWR1443) manufactured by Texas Instruments. They are certified with radio regulatory in Japan.

We prepare evaluation software for displaying angle readings, tools for storing RAW/FFT data, and a sample project in C#, Python, MATLAB, LabVIEW for capturing data from sensor product ,so it can evaluate immediately after obtaining it. After evaluation, it can be transferred to mass production if required.

Specifications

Size	mm	50(W) × 4.7(D) × 85(H)
Interface		USB3.1 Type-C
Supply Voltage	V	5.0 (1)
Current Consumption	A	(Average) 0.3 (2) / (Peak) 0.8
RF Frequency	GHz	77 - 81
Modulation Bandwidth	GHz	3.6
Detection Range (Typ)	m	0.4 - 49
Detection Angle (Typ)	deg	±45
Range Resolution	cm	4.47
Chirp Time	us	120
Operating Temperature Range	°C	from -20 to 60

(1) Operates on bus-power by connecting USB3.1.
(2) When running at 16 chirp and 10fps sets.



Antenna Variations

Type Name		T14RE_01080108_2D	T14RE_01030103_2R5D	T14RE_01010101_3D
Antenna Type				
TX	Patch	1×8	1×3	1×1
RX	Patch	1×8	1×3	1×1
Transmitter Antenna Half-power Angle (Typ)				
Azimuth	deg	±33	±33	±33
Elevation	deg	±4	±15	±45
Receive Antenna Half-power Angle (Typ)				
Azimuth	deg	±45	±45	±45
Elevation	deg	±4	±15	±45
Frequency Band	GHz	79	79	79
3D Detection		unsupported	supported	supported
Detection Distance(Max)(3)	m	49	49	49
Output Power (Typ)	dBm EIRP	24	20	16

(3) Theoretical value.

- Please contact the distributor or below for inquiries about this catalog.
- This specification is subject to change without prior notice.

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719-0301,JAPAN
<https://www.s-takaya.co.jp>

Macnica Clavis Company, Inc.

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

TOKYO ELECTRON DEVICE LIMITED

<https://www.teldevice.co.jp/>

MARUBUN CORPORATION

<https://www.marubun.co.jp>

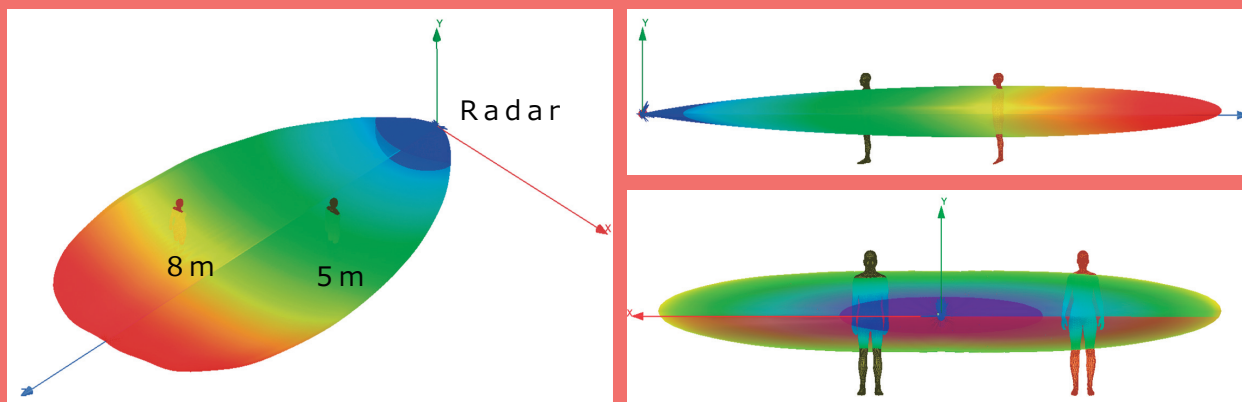
Features

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

Performance/Method	TITAN Radar	Laser	Ultrasound Sensor	Stereo Camera	Infrared Camera
Near Range(up to 2m)Detection	○	○	○	○	○
Medium Range(up to 30m)Detection	○	○	×	○	○
Long Range(up to 150m)Detection	△	△	×	×	○
Range Resolution(less than 30cm)	○	○	×	×	×
Angle-detection Area(±60deg or more)	○	×	△	○	○
Relative Speed Detection	○	×	×	×	×
Weather Resistance (rain/fog)	○	×	×	×	○
Nighttime (Dark Detection)	○	○	○	×	○
Size	○	△	○	△	×

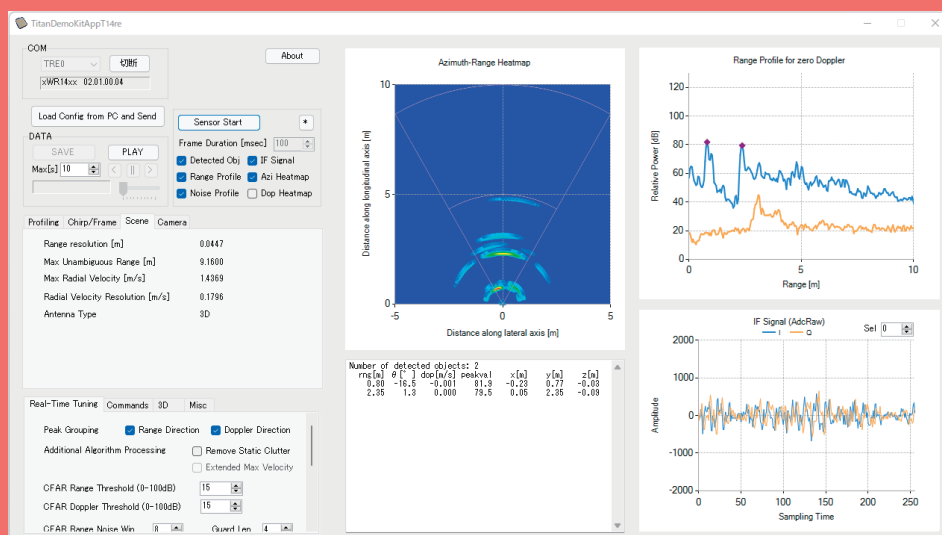
○ Suitable △ Available × Not Available

Radio Emission Image



Evaluate Application(for Windows)

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
- 3D Scatter plot
- Azimuth-Range Heatmap
- Doppler-Range Plot
- Doppler-Range Heatmap