

76 / 79GHz

MIMO Radar Sensor Product Evaluation Kit

Our radar sensor products are high precision and small by using 76/79GHz radar MMIC(IWR1843) manufactured by Texas Instruments 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, we prepare five types of radar sensor products that can detect in 2D and 3D by giving variations to the antenna. They are also certified with radio regulatory in Japan, so you can use our products soon in public field.

Specifications

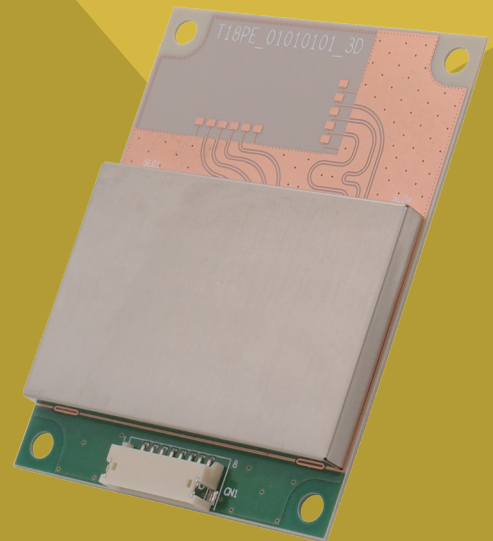
Size	mm	50(W)×4.7(D)×85(H) ⁽¹⁾ 50(W)×4.7(D)×65(H)
Interface		UART×2ch (USB-TypeC) ⁽²⁾
Supply Voltage	v	5.0
Current Consumption(Typ)	A	0.3
RF Frequency	GHz	76 - 77 ⁽³⁾ 77 - 81 ⁽⁴⁾
Modulation Bandwidth	GHz	0.2 ⁽³⁾ 3.6 ⁽⁴⁾
Detection Range(Typ)	m	0.4 - 149 ⁽³⁾
Detection Angle(Typ)	deg	±45
Range Resolution	cm	3.75
Chirp Time	us	120
Operating Temperature Range	°C	from -20 to 65

(1) Narrow beam model (T18PE_01120112_2R5D_76G,T18PE_01120112_2D)

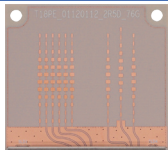
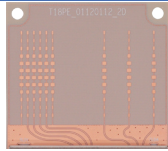
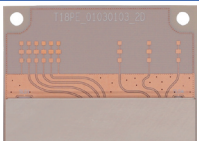
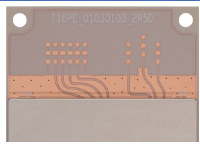
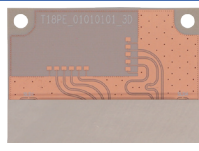
(2) The included UART-USB converter board is used to connect PC and can be operated with bus power.

(3) 76GHz band model

(4) 79GHz band model



Antenna Variations

Type Name		T18PE_01120112_2R5D_76G	T18PE_01120112_2D	T18PE_01030103_2D	T18PE_01030103_2R5D	T18PE_01010101_3D
Antenna Type						
TX	Patch	1×12	1×12	1×3	1×3	1×1
RX	Patch	1×12	1×12	1×3	1×3	1×1
Transmitter Antenna Half-power Angle (Typ)						
Azimuth	deg	±33	±33	±33	±33	±33
Elevation	deg	±4	±4	±15	±15	±45
Receive Antenna Half-power Angle (Typ)						
Azimuth	deg	±45	±45	±45	±45	±45
Elevation	deg	±4	±4	±15	±15	±45
Frequency Band	GHz	76	79	79	79	79
3D Detection		supported	unsupported	unsupported	supported	supported
Detection Distance (Max) ⁽⁵⁾	m	149	49	49	49	49
Output Power (Typ)	dBm EIRP	24	24	21	21	17

(5) 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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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>

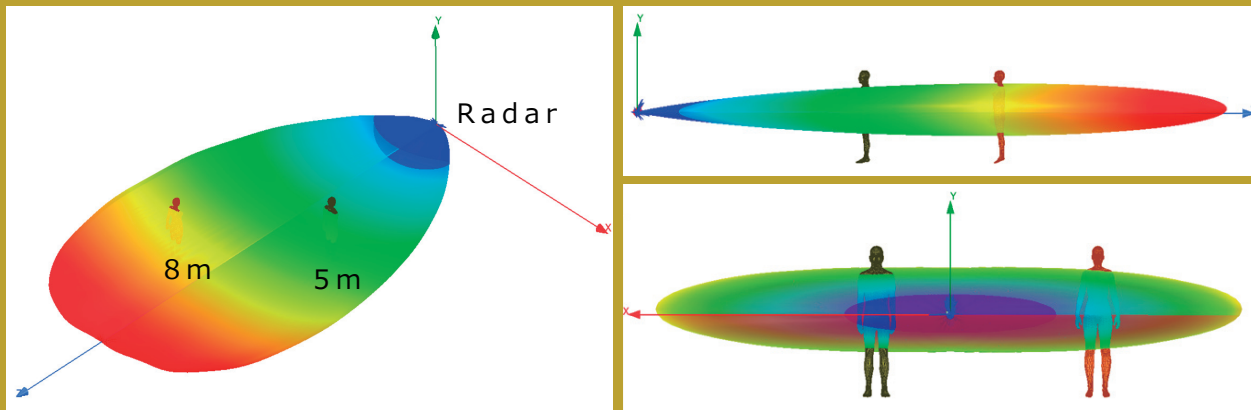
Features

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 (2m or less) Detection	○	○	○	○	○
Medium Range (30m or less) Detection	○	○	×	○	○
Long Range (~ 150m or less) Detection	△	△	×	×	○
Range Resolution (less than 30cm)	○	○	×	×	×
Angle-detection Area ($\pm 60^\circ$ or more)	○	×	△	○	○
Relative Speed Detection	○	×	×	×	×
Weather Resistance (rain/fog)	○	×	×	×	○
Nighttime (Dark Detection)	○	○	○	×	○
Size	○	△	○	△	×

○: Suitable △: Available ×: Not Available

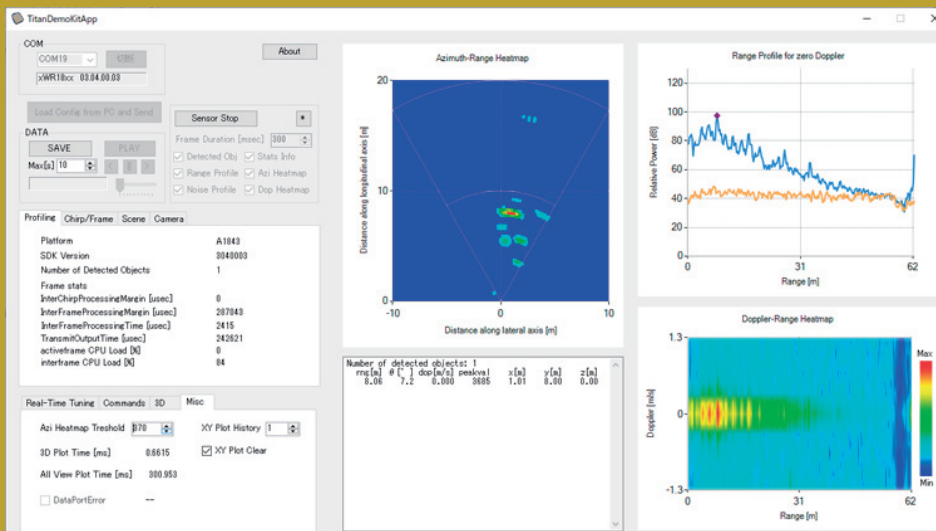
Radio Emission Image



*T18PE_01120112_2D Emission image

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