79 GHz Safety Radar

Small. Easy Setup. Highly Customizable.

AINSTEIN

Safety from numbers

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Overview

Ainstein's T79 SRR is positioned as the next generation of revolutionary short and medium-range automotive millimeter wave radar for ADAS and autonomous driving. Using next generation 79GHz RFCMOS technology, highly integrated hardware design, and advanced radar signal processing algorithms, creates a 360-degree smart car perception solution without blind spots.

FEATURES

- Adopts advanced 79GHz RFCMOS radio frequency technology.
- Uses powerful signal processing algorithms and computing platforms, which are highly customizable.
- Suitable for the current mainstream passenger car ADAS radar 4+1 solution.

FUNCTIONS

- Blind spot detection (BSD)
- Lane change assistance (LCA)
- Rear cross traffic alert (RCTA)

Specifications

Table 1

Frequence Range	76 ~ 77 GHz
Power Consumption	4.5 W
Quiescent Current	< 1 mA
Radar Operating Voltage	12 ~ 24 V DC
Operating Temperature	-40° ~ 85° C
Protection Rafting	IP67
Detection Range	0.5 ~ 80 m
Range Accuracy	0.4 m
Range Resolution	0.78 m
Maximum Detection Velocity	±200 km/h
Velocity Accuracy	0.13 m/s
Velocity Resolution	0.4 m/s
Field of View (Azimuth)	±60°
Field of View (Elevation)	±4°
Angle Accuracy	0.4°
Update Rate	20Hz
Maximum Tracked Targets	64
Output Date Interface	CAN

Hardware Interface

INTERFACE MODEL

Table 2

Interface model	Supplier	Connector model
349681801	Molex	34967-1001 (Terminal: 34905-2447)

Figure 1 shows the order of the pins in both orientations. Table 3 lists the interface connector pinout.

- Interface Part Manufacturer: Molex
- Molex Part Number:
    - Cable Interface 34967-1001(Terminal 34905-2447)

Figure 1: Connector Pin Orientation

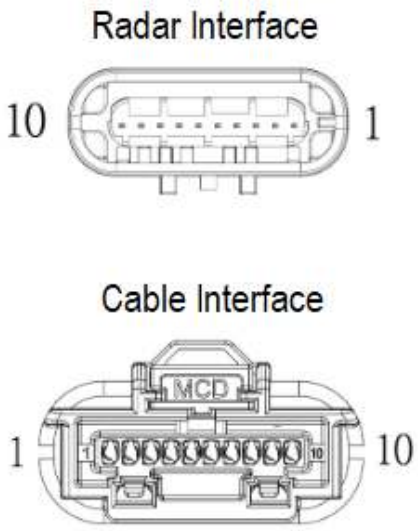
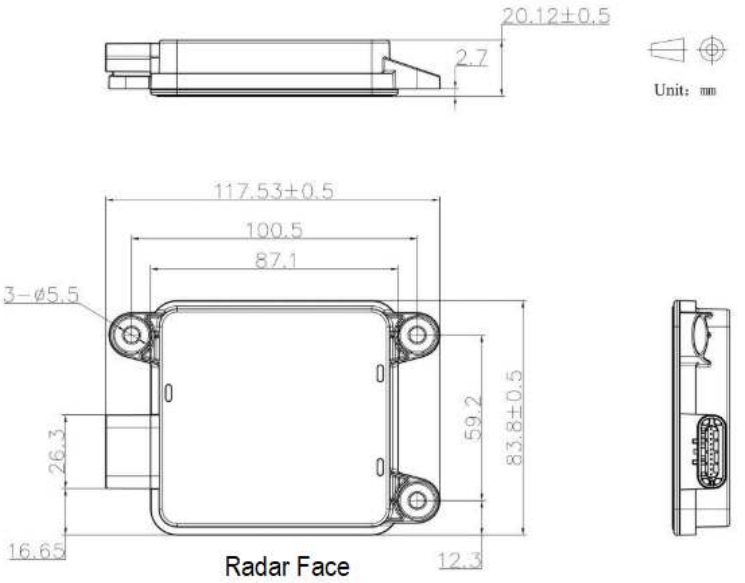


Table 3

Pin	Line Color	Definition
1	Orange	IGNITION
2	Grey	GND-LED
3	Purple	5V_LED
4	White	DATA_CAN_L
5	Green	DATA_CAN_H
6	Blue	VEH_CAN_L
7	Yellow	VEH_CAN_H
8	Black	GND_IN
9	--	NC
10	Red	DC_IN

Figure 2 Product Appearance

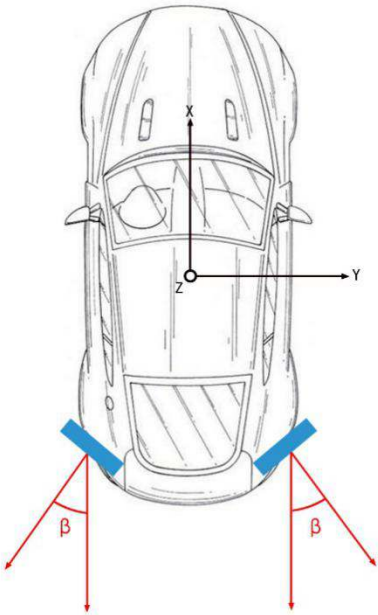
Figure 3 Physical Dimensions of T79 in millimeters

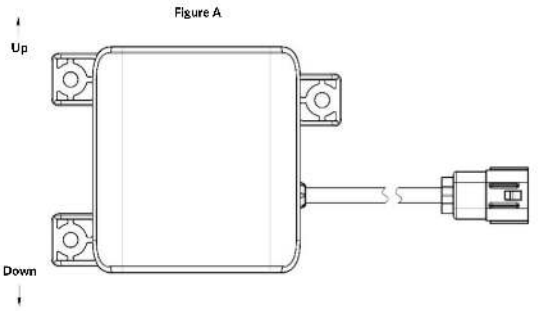


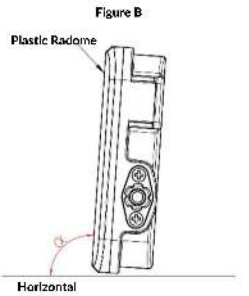
Installation

For BSD/LCA, the radar is installed on both sides of the rear of the vehicle. The installation position is shown in the figure below. The angle β between the vertical plane of the radar and the direction of the vehicle body on the horizontal plane is about 40°, and it should be kept in perpendicular to the horizontal plane, or slightly upward about 1°（α=91°）.

Figure 4







Note: The specific installation of position and angle of the radar should be determined accordingly to the needs of different vehicle.

About Ainstein

Our mission is to enable safer driving, flying, working and living through radar-based technology. We are in the business of improving safety and protecting valuable assets through innovations in radar technology.

Ainstein makes radar systems smarter, more affordable and easier to deploy. We offer complete solutions for autonomous drones, advanced driver-assistance systems (ADAS), autonomous vehicles and industrial sensing – incorporating a combination of millimeter wave (mmWave) radar, sensor fusion and artificial intelligence (AI).

For years, cost, weight and performance constraints have hindered the wider adoption of radar. Ainstein makes radar systems accessible to everyone by overcoming these constraints. One recent innovation: we've developed the world's first UAV collision avoidance radar with 4D detection.

Radar systems and sensor data processing intelligence are keys to our autonomous future. We offer deep scientific, mathematical and engineering expertise along with a full spectrum portfolio (24GHz, 60GHZ, 76-81GHz) of hardware and software to support our customers in developing highly customized solutions with unmatched precision in unpredictable environments.

Our core team has more than a combined 100 years of experience in radar research and development with deep knowledge gained through projects funded by NASA, the U.S. National Science Foundation (NSF), the European Space Agency and others.

Other radar companies are at least two to three years behind Ainstein. Startups have been slow to market and are unable to produce at scale, while established companies are slow to adopt the newest technological innovations.

Ainstein products can be fully customized to specific application requirements, have unmatched precision in ALL weather conditions and surface types, and are a fraction of the price of competitive products.

Visit our website (www.ainstein.ai) for more information, or get in touch with Andrew Boushie, Vice President for Strategy and Partnerships, at andrew.boushie@ainstein.ai to arrange a phone call.