

**ADAS and Autonomous Driving Industry  
Chain Report, 2018-2019  
– Automotive Radar**

**Mar. 2019**

## **STUDY GOAL AND OBJECTIVES**

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

## **REPORT OBJECTIVES**

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

## **METHODOLOGY**

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

## **INFORMATION SOURCES**

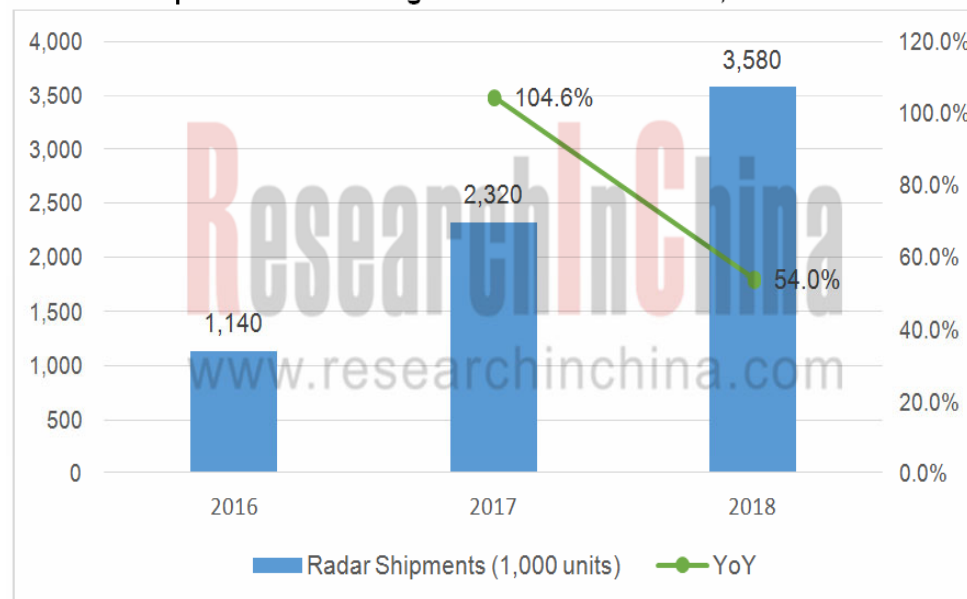
The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

## Abstract

China's passenger car radar market gathered pace from 2017, with shipments approaching 2.32 million units in the year, an annualized spurt of 104.6%. The growth trend continued in the first half of 2018 but slowed markedly in the second half due to a decline in automobile sales, leading to a much lower full-year growth in shipments. In 2018, the shipments of passenger car radars reached 3.58 million units in China, up by 54% versus 2017.

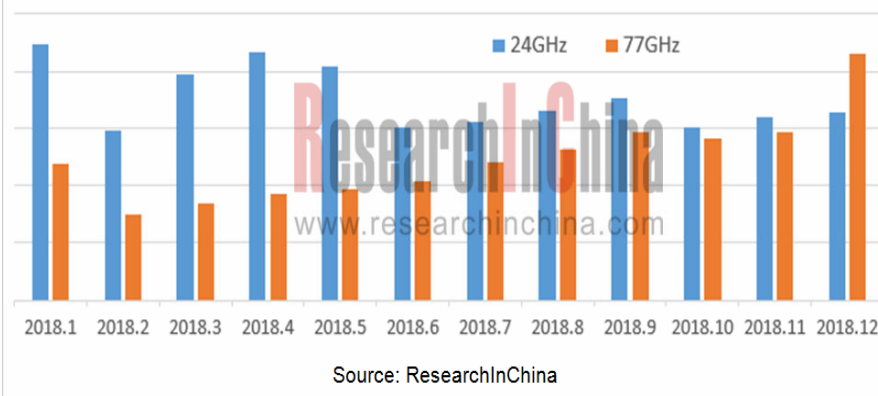
According to our monthly study of radar, 77GHz radar was narrowing its shipment gap with 24GHz radar in recent years, and came from behind at last in December 2018, two years earlier than we expected.

Shipments of Passenger Car Radars in China, 2016-2018



Source: ResearchInChina

Monthly Shipments of Passenger Car Radars in China, 2017-2018



It also comes as a surprise that Chinese radar chip vendors have sprung up. Main players include Xiamen IMSEMI Technology Co., Ltd., Radaric (Beijing) Technology Co., Ltd., SGR Semiconductors Inc., Calterah Semiconductor Technology (Shanghai) Co., Ltd., Nanjing Citta Microelectronics Co., Ltd. and Hangzhou Andar Technology Co., Ltd.

In 2017, Calterah Semiconductor Technology (Shanghai) Co., Ltd. released Yosemite (2T4R/4T8R), a 77GHz transceiver chip series for CMOS-based automotive radars; in 2018 Xiamen IMSEMI Technology Co., Ltd. rolled out SG24TR12, a 24GHz 1T2R chip and SG24TR14, a 24GHz 1T4R chip.

Radaric (Beijing) Technology Co., Ltd. founded in 2010 with the background of Tsinghua University, designed a CMOS-based 77GHz multi-channel monolithic integrated radar chip. SGR Semiconductors Inc., the successor of RFIC Division under Shanghai Industrial  $\mu$ Technology Research Institute (SITRI), closed series A funding of RMB80 million in 2017 and finished capital increase in the A-round in 2018.

In February 2019 Hangzhou Andar Technology Co., Ltd. unveiled ADT2001, a phased array architecture-based 16T16R 77GHz radar chip with CMOS process and ADT1002, a 2T2R radar chip.

Though there are radar chip start-ups in China, they commit themselves to the development of RF transceiver modules. Their transceiver units play a small role in the whole radar system and cost not much. China-made radar chips are still not provided with the core function of algorithms about processing radar signals.

In 2018, new radar entrants in China grew up fleetly by resorting to the strategy of “encircling the cities from the rural areas”.

Wuhu Sensortech Intelligent Technology Co., Ltd. was invested by security giant Hikvision and affiliates of BAIC and GAC, with team members growing to over 300 persons. In 2018, Sensortech shipped more than 100,000 radars, generating the revenue of nearly RMB100 million. Security and transportation were main markets using around 70% of Sensortech’s radars.

Quite a few start-ups in China apply the business model: polishing products in other markets whilst forging ahead in automotive market. Sensortech's radars will be available to 10 models in 2019 after being used in two mass-produced passenger car models in 2018. Sensortech targets to earn RMB200 million in 2019, including 40% from automotive business. Sensortech also plans to expand its team members to 1,000 in the next two years from the current 300 with the help of Hikvision. Suzhou Millimeter-wave Technology Co., Ltd. saw shipments of 2,000 sets of 24Ghz automotive radars in OEM market in 2018 before expectedly shipping 50,000 sets for passenger cars in 2019 as it becomes a designated supplier of two automakers for five of their models.

In August 2018, Shenzhen Anngic Technology Co., Ltd. announced the closing of RMB50 million series A rounds. Its products get utilized in automobiles, drones, security, transportation, etc..

The trend for high precision forces not only Chinese radar start-ups but time-honored brands to have stronger competence in radar signal processing algorithms. For instance, Analog Devices, Inc. (ADI), a 15-year-old company managed in March 2018 to acquire Germany-based Symeo whose RF and sensor technologies enable real-time position detection and distance measurement. ADI will leverage Symeo's signal processing algorithms to offer customers a radar platform with significant improvements in angular accuracy and resolution.

### **Vision-radar Fusion Solutions**

It grows a trend that vision and radar get fused safer and more reliable ADAS capabilities. Take Volvo S90 city safety system as an example. The Aptiv RACam system for it combines a 77GHz radar and a monocular camera mounted at the top of the windshield to deliver such functions as FCW, AEB and ACC.

Suzhou Millimeter-wave Technology Co., Ltd. is creating a radar and camera all-in-one. With pre-fusion technology for pixel-level fusion of two sensors, the device becomes much more aware of surroundings and robust in object recognition.

Sensortech and Hikvision team up to develop pixel-level radar and vision fusion technologies.

ADAS and Autonomous Driving Industry Chain Report, 2018-2019 of ResearchInChina covers following 17 reports:

- 1) **Global Autonomous Driving Simulation and Virtual Test Industry Chain Report, 2018-2019**
- 2) **China Car Timeshare Rental and Autonomous Driving Report, 2018-2019**
- 3) **Report on Emerging Automakers in China, 2018-2019**
- 4) **Global and China HD Map Industry Report, 2018-2019**
- 5) **Global and China Automotive Domain Control Unit (DCU) Industry Report, 2018-2019**
- 6) **Global and China Automated Parking and Autonomous Parking Industry Report, 2018-2019**
- 7) **Cooperative Vehicle Infrastructure System (CVIS) and Vehicle to Everything (V2X) Industry Report, 2018-2019**
- 8) **Autonomous Driving High-precision Positioning Industry Report, 2018-2019**
- 9) **ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Processor**
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- 11) **ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Automotive Radar**
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- 16) **ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Low-speed Autonomous Vehicle**
- 17) **ADAS and Autonomous Driving Industry Chain Report, 2018-2019– L4 Autonomous Driving**

**1 Introduction to Radar Technology**

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