Automotive HUD (Head-up Display) Industry Report, 2018-2019

May 2019

ResearchInChina
www.researchinchina.com

ResearchInChina

The Vertical Portal for China Business Intelligence

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.

Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

Abstract

Automotive Head-up Display (HUD) Industry Report: Installation of OEM HUD for Passenger Cars Soared by 94.1% Year on Year in China in 2018

In 2018, 308,900 units of OEM HUDs were installed in passenger cars in China, a 94.1% upsurge from a year earlier, according to our recent report -- Automotive HUD Industry Report, 2018-2019.

We worked out 2019Q1 lists of passenger car HUD supplier ranking by competitiveness with efforts from secondary research, data processing, and investigation & integration to evaluation & analysis. Denso came to the top spot among all suppliers and CarRobot ranked first among Chinese suppliers.

Secondary Research

We collate existing data about HUD to specify its definition and classification, key technologies and development trends. With enough knowledge of players on the industry chain, we are clear about automotive HUD industry structure and relationships between these suppliers. We finally know overview and status quo of HUD industry by analyzing companies' financial statements and reports from other agencies.

Data Processing

We sort out all HUD-enabled passenger car models for sale in the Chinese market on the basis of our connected car database. We also offer analysis results of car sales from January 2018 to March 2019, including installation of HUDs by type/model/automaker, and penetration.

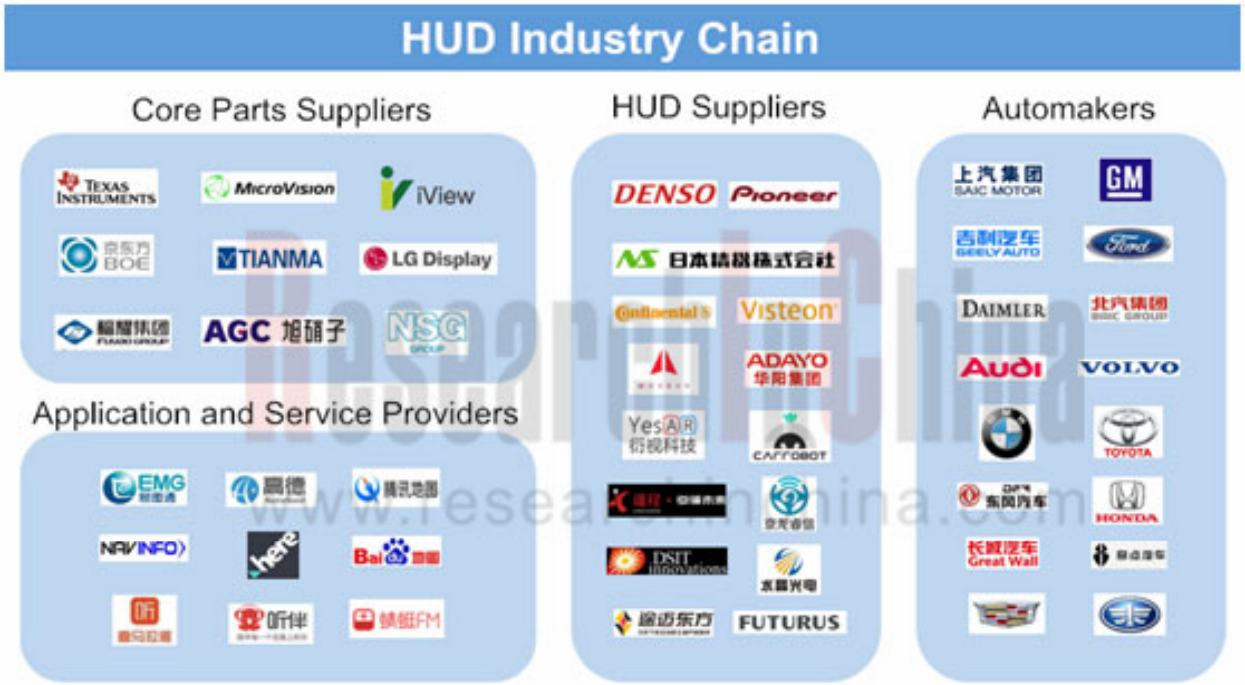
Investigation & Integration

We acquire information of HUD suppliers whose HUD is installed in over 96% of passenger cars through our investigation channels, and then calculate their market shares in terms of pre-installation in passenger car from 2018Q1 to 2019Q1. We also offer information on projects of these suppliers and their latest news, and write a draft of the report based on secondary research and collated data.

Evaluation & Analysis

We build an evaluation index system based on the draft and raw data sheets, covering the following: the most important index--installation, operation of companies (number of passenger car models carrying their marketed or developing OEM HUDs, their own factories, ability to raise funds, etc.), and product features (voice interaction, WeChat, music radio station, driver monitoring, lane departure warning, forward collision warning, etc.), through which we can mark competitiveness of suppliers.

HUD was in vogue from 2014 to 2015. NAVDY that was a typical supplier then, however, doesn't appear on our latest HUD industry chain.



NAVDY followed a digital light processing (DLP) technology roadmap, but DLP HUD had some drawbacks like complicated design and high cost. In TI's case, its first-generation DLP chip only worked at temperatures of -40-85℃, short of automotive standards. Navdy raised USD42 million from Qualcomm and several other venture capital firms. Navdy HUD which should have been launched in the first quarter of 2015 came out just in recent two years. In October 2016, the product was put on sale, but its price surged to USD799 from the pre-sale price of USD299. In 2018, NAVDY had to go into liquidation after its failure in aftermarket.

Many a HUD start-up applied Navdy's technology between 2016 and 2017. Using DLP as display system only left them a range of technology bottlenecks and often deferred launch of products. Most of them then turned to thin film transistor (TFT) display technology. Examples include CarRobot who designed its first-generation HUD with DLP technology but changed to TFT for its second-generation products.

In 2018, TI officially rolled out the 2nd-generation automotive chips DLP3030-Q1 and DLP5530-Q1 featuring smaller size and wider field of view and sufficing for AR head-up display (HUD). DLP3030-Q1 sees the digital micromirror device (DMD) footprint reduction by 65%, enabling smaller picture generation unit (PGU) design. It can operate between -40°C and +105°C

Technically, DLP is the best and most mature display technology by far. Therefore, Sunny Optical and other giants are still optimistic about HUD based on DLP technology, and they even spend tens of millions of yuan on introducing free-form surface mirror production lines.

The second HUD craze since 2018 arises from the emergence of AR HUD.
AR HUD, the augmented reality head-up display technology, superimposes some driving information in the driver's field of vision reasonably and combines it with real traffic conditions. Compared with HUD, AR HUD displays a wider range from a farther distance, and it is more complex. HUD is just a device that projects and displays information, while AR HUD needs to be deeply integrated with ADAS to achieve more advanced effects and functions.

Given the deep integration of AR HUD with ADAS, the burgeoning development of ADAS as a must for automotive intelligence has driven the demand for AR HUD.

The image display of AR HUD is generally distributed in two or three layers. For instance, the AR-HUD of Nippon Seiki boasts three layers: the near field display layer, the far field display layer, and the side layer. The near field display layer is mainly a presentation of vehicle status, the far field display layer displays ADAS information, and the stereo side layer offers lane or navigation information.

2-Plane HUDの表示像構成
Image Configuration of the 2-Plane HUD

Amid the intelligent connected trend of cars, any automotive electronic product is difficult to be independent. As an automotive electronic product, HUD has been an integral of the cockpit electronics solution and the overall ADAS solution.

Panasonic Automotive showcased its latest SPYDR 2.0 at CES 2019, which is a single-chip cockpit domain controller solution integrating Driver Monitoring System (DMS) with Head-Up Display (HUD). Besides, SPYDR 2.0 can integrate In-Vehicle Infotainment (IVI), dashboard, surround view system, Active Noise Control (ANC), HUD and four IVI displays on a platform.

For this integration trend, traditional Tier1 giants enjoy first-mover advantages, whereas independent HUD suppliers have to establish close cooperation with other product suppliers. The collaboration modes -- Jiang Cheng + Baidu, Carrobot + China Unicom, Carrobot + AI Speech, etc. just follow the integration trend.

ResearchInChina

The Vertical Portal for China Business Intelligence

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
10) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Automotive Lidar
11) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Automotive Radar
12) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Automotive Vision
13) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Passenger Car Makers
14) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– System Integrators
15) ADAS and Autonomous Driving Industry Chain Report, 2018-2019– Commercial Vehicle Automated Driving
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

Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

ResearchInChina

The Vertical Portal for China Business Intelligence

Table of contents

Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080

Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

Table of contents

Table of contents

ResearchInChina

The Vertical Portal for China Business Intelligence

How to Buy

You can place your order in the following alternative ways:

1.Order online at www.researchinchina.com

2.Fax order sheet to us at fax number:+86 10 82601570

3. Email your order to: report@researchinchina.com

4. Phone us at +86 10 82600828

Party A:			
Name:			
Address:			
Contact Person:		Tel	
E-mail:		Fax	

Party B:			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080		
Contact Person:	Liao Yan	Phone:	86-10-82600828
E-mail:	report@researchinchina.com	Fax:	86-10-82601570
Bank details:	Beneficial Name: Beijing Waterwood Technologies Co., Ltd Bank Name: Bank of Communications, Beijing Branch Bank Address: NO.1 jinxiyuan shijicheng,Landianchang,Haidian District,Beijing Bank Account No #: 110060668012015061217 Routing No # : 332906 Bank SWIFT Code: COMMCNSHBJG		

Title	Format	Cost
Total		

Choose type of format

PDF (Single user license) ……..2,800 USD

Hard copy …… 3,000 USD

PDF (Enterprisewide license)…..... 4,200 USD

※ Reports will be dispatched immediately once full payment has been received. Payment may be made by wire transfer or credit card via PayPal.

ResearchInChina

www.researchinchina.com

ResearchInChina

The Vertical Portal for China Business Intelligence

RICDB service

About ResearchInChina

ResearchInChina (www.researchinchina.com) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

Our Major Activities

- ***Multi-users market reports***
- ***Database-RICDB***
- ***Custom Research***
- ***Company Search***

RICDB (http://www.researchinchina.com/data/database.html), is a visible financial data base presented by map and graph covering global and China macroeconomic data, industry data, and company data. It has included nearly 500,000 indices (based on time series), and is continuing to update and increase. The most significant feature of this base is that the vast majority of indices (about 400,000) can be displayed in map.

After purchase of our report, you will be automatically granted to enjoy 2 weeks trial service of RICDB for free.

After trial, you can decide to become our formal member or not. We will try our best to meet your demand. For more information, please find at www.researchinchina.com

For any problems, please contact our service team at:

Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com