Global and China Telematics-Box(T-Box) Industry Report, 2020

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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.

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Abstract

T-Box Research: 46.7% of Passenger Cars Carry T-Box in 2020Q1

T-Box (Telematics-Box), also called telematics control unit (TCU), is comprised of GPS unit, outer interfaces for communications, electronic processing units, microcontrollers, mobile communication units and memory, enabling interaction between the terminal information in the car, the cloud and the roadside unit (RSU).

Around 2014, the mainstream solution of the first-generation T-BOX was a single-chip solution resorting to a combination of 2G+GPS. From 2015 to 2016, the second-generation T-BOX was added with memory, rich interfaces, and changed to employ Beidou/GPS dual-mode; also it was endowed with such new features as fault diagnosis, low power consumption design, dormant wake-up, SD card expansion, output power, RS232/485, USB and IO interfaces.

Since 2017, T-BOX communication has been upgraded to 4G, and the 4G module -- OPEN CPU technology solution has been prevailing in the industry as it boasts more powerful edge computing capabilities, supports vehicle Ethernet, over-the-air (OTA), fault diagnosis of protocols, Bluetooth, WIFI and other functions, and it even integrates gateways, CAN gateways, etc.

In 2019, 4G T-Box constituted 86% of passenger car OEM T-BOX, and the share rose to 93% in Q1 2020, according to ResearchInChina.

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4G as a Percentage in Passenger Car OEM T-BOX, 2019

	3G T-Box	4G T-Box
2018	22%	70%
2019	11%	86%
Q1 2019	14%	82%
Q1 2020	6%	93%

Source: ResearchInChina

In China, 46.7% of passenger cars were installed with T-Box in Q1 2020, 14.2 percentage points higher than 32.5% in Q1 2019.

By price, the proportion of models worth RMB100,000-150,000 with T-Box rises fastest, from 34% in Q1 2019 to 40% in Q1 2020, largely thanks to Toyota (Corolla, LEVIN), Chevrolet (MONZA), Changan CS75 PLUS, etc.

Among the new models launched in Q1 2020, GAC NE AionS has the most versatile remote functions enabling remote opening and closing of doors, windows and the trunk, remote engine start, remote air conditioning control, remote horns, remote flashing, and remote seat warming. For most models carrying T-BOX, there is universal availability of remote door control, remote horns, and remote flashing, while remote engine start-up, remote air conditioning control, remote seat warming, remote opening and closing of windows and the trunk are gaining ground.

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Comparison of Remote Control Functions of Newly Released Models in 2020Q1 (Part)

Brand	Model	Version	Price (RMB)	Remote Door Control	Remote Engine Start	Remote Air Conditioning Control	Remote Horns	Remote Flashing	Remote Window Control	Remote Trunk Open/Close	Remote Seat Warming	OTA Updates	OTA Update content
Skoda	Spaceback	1.5L AT sports (2020)	109,900	/	/	/	/	/	/	/	/	•	IVI system and firmware/navigation
Jeep	Compass	220T AT four-wheel drive Premium Flagship (2020)	229,800	•	•	/	•	•	/	/	/	•	IVI system and firmware
BMW	5 Series New Energy	530Le extended mileage pioneer (2020)	536,900	•	•	•	•	•	/	/	/	•	Navigation/ functional system
Mercedes-Benz	Benz E	Refitted E 350 L 4MATIC sports (2020)	623,800	•	•	•	•	•	/	/	/	•	IVI system and firmware
BYD	SONG Pro	1.5T MT Elite (2020)	92,800	•	•	•	•	•	/	/	/	•	IVI system and firmware
Buick	Excelle	1.5L AT Elite (2020)	125, 900	•	•	•	•	•	•	•	/	•	IVI system and firmware/navigation/function system
Toyota	Wildlander	Dual-engine 2.5L two-drive Tech (2020)	241,800	•	/	/	•	•	/	/	/	/	/
GAC NE	Aion S	Glamor 630 Safe Smart Drive (2020)	182, 800	•	•	•	•	•	•	•	•	•	IVI system and firmware/navigation/function system

Source: ResearchInChina

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Policies and the market players are pressing ahead with T-Box as a standard configuration.

Circular of the Ministry of Industry and Information Technology on Further Supervision over Promotion, Application and Security of New Energy Vehicles requires that the vehicles listed in the "Recommended Model Catalog for the Promotion and Application of New Energy Vehicles" must be packed with T-BOX.

On April 17, 2020, the Ministry of Ecology and Environment of China released Technical Specifications for Remote Emission Monitoring of Heavy Vehicles (Draft), which explicitly stipulates platform construction of remote emission system for heavy vehicles, T-BOX technology and measurement methodology, communication protocols and data formats.

With advances in Telematics, ADAS and OTA, in-vehicle systems will inevitably be interconnected with the cloud through T-BOX. At the same time, the massive data exchange between in-vehicle systems and remote terminals will beyond doubt fuel 4G T-BOX to head toward 5G T-BOX. Huawei is a leading enabler for 5G T-BOX.

In July 2019, Huawei rolled out the 5G automotive module -- MH5000.

In September 2019, Huawei unveiled the next-generation automotive T-Box platform at the Dongfeng Aeolus Smart Cockpit Conference, which substantially improves responsive agility and running speed of the smart cockpit and enabling remote start-up, air conditioning, vehicle control, and vehicle status review. Meanwhile, it features 5G capabilities like high speed and excellent reliability, allowing personalized interactivity such as intelligent scenario modes, voice via cloud, audiobooks and music.

In April 2020, BAIC BJEV's top-range brand ARCFOX installed the Huawei MH5000 T-BOX on its first production SUV -- ARCFOX α-T.

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In May 2020, GAC Aion V pre-sales started. Aion V integrates 5G+C-V2X automotive intelligent communication system and Huawei MH5000.

Flaircomm Microelectronics, a leading Chinese T-BOX supplier, is conducting the IPO on the SSE STAR Market, with a plan to raise RMB239.84 million for 5G T-Box R&D and industrialization projects. The raised funds will be earmarked to develop the 5GNR technology-oriented T-BOX, a fusion of new technologies like CANFD, Ethernet and smart antennas.

However, investors have doubts about Flaircomm Microelectronics whose revenue remains on a downswing over the past two years.

Revenue of Flaircomm Microelectronics by Product, 2017-2019

	2019		2018		2017	
Products	Operating revenue (RMB mln)	Unit price (RMB)	Operating revenue (RMB mln)	Unit price (RMB)	Operating revenue (RMB mln)	Unit price (RMB)
Telematics Intelligent Terminals	160.2124	481.06	207.0233	526.74	214.9059	552.17
Internet of Things Smart Modules	97.4128	27.00	85.6108	27.93	99.6534	30.05
Software and Services	15.6666		6.6387		9.6223	
Total	**273.2919**		**299.2727**		**324.1817**	

Source: Flaircomm Microelectronics

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Like gateways, T-BOX, as a key integral of intelligent connected vehicle (ICV), involves OTA and network security. To take the initiative, OEMs tend to self-develop T-BOX software.

Amid OEMs enlarging software development teams, Tier1 hardware suppliers may turn into standard hardware vendors and have an ever weaker say. It is, indeed, a challenge not only to T-Box vendors but to Tier1 hardware suppliers.

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